



**Groundwater Sample Results,
Level 2 Laboratory Report, Level 4 Laboratory Report,
Electronic Data Deliverable, Data Validation Report,
and the Sample Location Report, SDG J26105-1**

*Naval Air Station Meridian
Meridian, Mississippi*

July 2019

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

TestAmerica Job ID: 320-26105-1
Client Project/Site: Meridian 10006-7-105420 JM01 Navy Clean
Revision: 1

For:
CH2M Hill, Inc.
2411 Dulles Corner Park
Suite 500
Herndon, Virginia 20171

Attn: Mr. Michael Zamboni



Authorized for release by:
3/29/2017 4:55:43 PM

Jill Kellmann, Manager of Project Management
(916)374-4402
jill.kellmann@testamericainc.com

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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.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	6
Client Sample Results	9
Surrogate Summary	16
Isotope Dilution Summary	17
QC Sample Results	18
QC Association Summary	22
Lab Chronicle	25
Certification Summary	30
Method Summary	31
Sample Summary	32
Chain of Custody	33
Receipt Checklists	35

Definitions/Glossary

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

TestAmerica Job ID: 320-26105-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.

LCMS

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
E	Result exceeded calibration range.
M	Manual integrated compound.
D	The reported value is from a dilution.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
Q	One or more quality control criteria failed.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: 320-26105-1

Job ID: 320-26105-1

Laboratory: TestAmerica Sacramento

Narrative

CASE NARRATIVE

Client: CH2M Hill, Inc.

Project: Meridian 10006-7-105420 JM01 Navy Clean

Report Number: 320-26105-1

Revision - March 27, 2017

Revision created to include PFBS in the method 537 Mod analyte list.

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 02/25/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was C.

Receipt Exceptions

The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): MEAFF-BLD192-SB03-0001 (320-26105-8) and MEAFF-BLD192-SB03-0204 (320-26105-9). The container labels list MEAFF-BLD192-SB03, while the COC lists MEAFF-BLD197-SB03. The client instructed the laboratory to report using 'BLD192'.

Additionally, the client instructed the laboratory to add an 'A' to sample MEAFF-MRD-1A01-0217 collected on 2/24/17 at 3:30PM which is now

Case Narrative

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

TestAmerica Job ID: 320-26105-1

Job ID: 320-26105-1 (Continued)

Laboratory: TestAmerica Sacramento (Continued)

listed as MEAFF-MRD-1A01-0217A.

1,4-DIOXANE

Elevated reporting limits are provided for the following sample due to insufficient sample (less than 1 liter) provided for the sample preparation/analysis: MEAFF-08MW01-0217 (320-26105-2). Samples associated with preparation batch 320-152910.

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

PFAS

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 is above the method recommended limit for 13C4-PFOA in the following sample: (MB 320-152929/1-A). All associated sample IDA recoveries fell within acceptance criteria and quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Due to the high concentration of Perfluorooctanoic acid (PFOA), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-152929 and analytical batch 320-153421 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Due to the high concentration of Perfluorooctanoic acid (PFOA), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-152929 and analytical batch 320-154016 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 320-152929 and analytical batch 320-154016 were outside control limits for Perfluorooctanesulfonic acid (PFOS). Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The following samples were diluted to bring the concentration of target analytes within the calibration range: MEAFF-08MW01-0217 (320-26105-2), MEAFF-MRD-1A14-0217 (320-26105-3), MEAFF-MRD-1A14-0217 (320-26105-3[MS]), MEAFF-MRD-1A14-0217 (320-26105-3[MSD]), and MEAFF-SWON-SB03-0001 (320-26105-10). Elevated reporting limits (RLs) are provided.

Due to an excessive amount of sediment in sample bottles the aqueous portion of sample was decanted to new bottles prior to spiking and extraction. MEAFF-08MW01D-0217 (320-26105-1) and MEAFF-08MW01-0217 (320-26105-2)

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: 320-26105-1

Client Sample ID: MEAFF-08MW01D-0217

Lab Sample ID: 320-26105-1

No Detections.

Client Sample ID: MEAFF-08MW01-0217

Lab Sample ID: 320-26105-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.0	M	1.6	0.32	ug/L	1		WS-MS-0011	Total/NA
Perfluorooctanoic acid (PFOA)	490	E	2.5	0.74	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	270		3.9	1.3	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	14	M	2.5	0.91	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	520	D M	12	3.7	ng/L	5		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	270	D M	20	6.3	ng/L	5		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	16	D M	12	4.5	ng/L	5		537 (Modified)	Total/NA

Client Sample ID: MEAFF-MRD-1A14-0217

Lab Sample ID: 320-26105-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	480	E J	2.3	0.69	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	43		3.7	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8	M	2.3	0.85	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	500	D M J	12	3.5	ng/L	5		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	24	D M J	19	5.9	ng/L	5		537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD002-SB01-0204

Lab Sample ID: 320-26105-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.1	M	0.61	0.15	ug/Kg	1	☒	537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD002-SB01-0001

Lab Sample ID: 320-26105-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.25	J M	0.55	0.11	ug/Kg	1	☒	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	19	M	0.55	0.14	ug/Kg	1	☒	537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD002-SB02-0001

Lab Sample ID: 320-26105-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	6.3	M	0.58	0.12	ug/Kg	1	☒	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	21	M	0.58	0.15	ug/Kg	1	☒	537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD002-SB02-0204

Lab Sample ID: 320-26105-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.15	J M	0.58	0.12	ug/Kg	1	☒	537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD192-SB03-0001

Lab Sample ID: 320-26105-8

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	5.1	M	0.60	0.12	ug/Kg	1	☒	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	15	M	0.60	0.15	ug/Kg	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: 320-26105-1

Client Sample ID: MEAFF-BLD192-SB03-0204

Lab Sample ID: 320-26105-9

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.28	J	0.64	0.13	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.40	J M	0.64	0.16	ug/Kg	1	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-SWON-SB03-0001

Lab Sample ID: 320-26105-10

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	38	M	0.58	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	65	E M	0.58	0.15	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.0		0.46	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	42	D M	5.8	1.2	ug/Kg	10	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	64	D M	5.8	1.5	ug/Kg	10	☼	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	1.8	J D	4.6	1.2	ug/Kg	10	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-SWON-SB03-0204

Lab Sample ID: 320-26105-11

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	8.3	M	0.59	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.3	M	0.59	0.15	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6		0.47	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-08MW03-0217

Lab Sample ID: 320-26105-12

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	14	M	0.97	0.19	ug/L	1		WS-MS-0011	Total/NA
Perfluorooctanoic acid (PFOA)	3.9	M	2.2	0.67	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	5.5	M	2.2	0.82	ng/L	1		537 (Modified)	Total/NA

Client Sample ID: MEAFF-08MW06-0217

Lab Sample ID: 320-26105-13

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	M	0.96	0.19	ug/L	1		WS-MS-0011	Total/NA
Perfluorooctanoic acid (PFOA)	130		2.3	0.69	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	55		3.7	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	22	M	2.3	0.85	ng/L	1		537 (Modified)	Total/NA

Client Sample ID: MEAFF-FD02-0217

Lab Sample ID: 320-26105-14

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	M	0.96	0.19	ug/L	1		WS-MS-0011	Total/NA
Perfluorooctanoic acid (PFOA)	130		2.1	0.63	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	54		3.3	1.1	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	20	M	2.1	0.77	ng/L	1		537 (Modified)	Total/NA

Client Sample ID: MEAFF-MRD-IA01-0217A

Lab Sample ID: 320-26105-15

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	120		2.4	0.71	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.9	M	2.4	0.87	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: 320-26105-1

Client Sample ID: MEAFF-FD03-0217

Lab Sample ID: 320-26105-16

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	120		2.4	0.72	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	5.2	M	2.4	0.88	ng/L	1		537 (Modified)	Total/NA

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: 320-26105-1

Client Sample ID: MEAFF-08MW01D-0217

Lab Sample ID: 320-26105-1

Date Collected: 02/24/17 12:15

Matrix: Water

Date Received: 02/25/17 08:50

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.48	U	0.95	0.19	ug/L		03/02/17 13:45	03/14/17 17:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	80		42 - 91				03/02/17 13:45	03/14/17 17:42	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.9	U	2.4	0.72	ng/L		03/02/17 14:24	03/06/17 02:11	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.9	1.2	ng/L		03/02/17 14:24	03/06/17 02:11	1
Perfluorobutanesulfonic acid (PFBS)	1.9	U	2.4	0.89	ng/L		03/02/17 14:24	03/06/17 02:11	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	88		25 - 150				03/02/17 14:24	03/06/17 02:11	1
13C4 PFOS	125		25 - 150				03/02/17 14:24	03/06/17 02:11	1
18O2 PFHxS	127		25 - 150				03/02/17 14:24	03/06/17 02:11	1

Client Sample ID: MEAFF-08MW01-0217

Lab Sample ID: 320-26105-2

Date Collected: 02/24/17 12:00

Matrix: Water

Date Received: 02/25/17 08:50

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.0	M	1.6	0.32	ug/L		03/02/17 13:45	03/14/17 18:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	59		42 - 91				03/02/17 13:45	03/14/17 18:05	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	490	E	2.5	0.74	ng/L		03/02/17 14:24	03/06/17 02:19	1
Perfluorooctanesulfonic acid (PFOS)	270		3.9	1.3	ng/L		03/02/17 14:24	03/06/17 02:19	1
Perfluorobutanesulfonic acid (PFBS)	14	M	2.5	0.91	ng/L		03/02/17 14:24	03/06/17 02:19	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	82		25 - 150				03/02/17 14:24	03/06/17 02:19	1
13C4 PFOS	100		25 - 150				03/02/17 14:24	03/06/17 02:19	1
18O2 PFHxS	99		25 - 150				03/02/17 14:24	03/06/17 02:19	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	520	D M	12	3.7	ng/L		03/02/17 14:24	03/08/17 20:17	5
Perfluorooctanesulfonic acid (PFOS)	270	D M	20	6.3	ng/L		03/02/17 14:24	03/08/17 20:17	5
Perfluorobutanesulfonic acid (PFBS)	16	D M	12	4.5	ng/L		03/02/17 14:24	03/08/17 20:17	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	105		25 - 150				03/02/17 14:24	03/08/17 20:17	5
13C4 PFOS	98		25 - 150				03/02/17 14:24	03/08/17 20:17	5
18O2 PFHxS	104		25 - 150				03/02/17 14:24	03/08/17 20:17	5

TestAmerica Sacramento

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-MRD-1A14-0217

Lab Sample ID: 320-26105-3

Date Collected: 02/24/17 15:00

Matrix: Water

Date Received: 02/25/17 08:50

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.48	U	0.95	0.19	ug/L		03/02/17 13:45	03/14/17 18:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	73		42 - 91				03/02/17 13:45	03/14/17 18:28	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	480	E J	2.3	0.69	ng/L		03/02/17 14:24	03/06/17 02:26	1
Perfluorooctanesulfonic acid (PFOS)	43		3.7	1.2	ng/L		03/02/17 14:24	03/06/17 02:26	1
Perfluorobutanesulfonic acid (PFBS)	2.8	M	2.3	0.85	ng/L		03/02/17 14:24	03/06/17 02:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	46		25 - 150				03/02/17 14:24	03/06/17 02:26	1
13C4 PFOS	129		25 - 150				03/02/17 14:24	03/06/17 02:26	1
18O2 PFHxS	132		25 - 150				03/02/17 14:24	03/06/17 02:26	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	500	D M J	12	3.5	ng/L		03/02/17 14:24	03/08/17 20:24	5
Perfluorooctanesulfonic acid (PFOS)	24	D M J	19	5.9	ng/L		03/02/17 14:24	03/08/17 20:24	5
Perfluorobutanesulfonic acid (PFBS)	9.3	U M	12	4.3	ng/L		03/02/17 14:24	03/08/17 20:24	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	48		25 - 150				03/02/17 14:24	03/08/17 20:24	5
13C4 PFOS	120		25 - 150				03/02/17 14:24	03/08/17 20:24	5
18O2 PFHxS	141		25 - 150				03/02/17 14:24	03/08/17 20:24	5

Client Sample ID: MEAFF-BLD002-SB01-0204

Lab Sample ID: 320-26105-4

Date Collected: 02/24/17 09:00

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 82.5

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.37	U M	0.61	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:20	1
Perfluorooctanesulfonic acid (PFOS)	2.1	M	0.61	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 17:20	1
Perfluorobutanesulfonic acid (PFBS)	0.37	U M	0.49	0.13	ug/Kg	☼	03/02/17 17:04	03/11/17 17:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	100		25 - 150				03/02/17 17:04	03/11/17 17:20	1
13C4 PFOS	58		25 - 150				03/02/17 17:04	03/11/17 17:20	1
18O2 PFHxS	93		25 - 150				03/02/17 17:04	03/11/17 17:20	1

Client Sample ID: MEAFF-BLD002-SB01-0001

Lab Sample ID: 320-26105-5

Date Collected: 02/24/17 09:05

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 89.9

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.25	J M	0.55	0.11	ug/Kg	☼	03/02/17 17:04	03/11/17 17:27	1

TestAmerica Sacramento

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-BLD002-SB01-0001

Lab Sample ID: 320-26105-5

Date Collected: 02/24/17 09:05

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 89.9

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	19	M	0.55	0.14	ug/Kg	☼	03/02/17 17:04	03/11/17 17:27	1
Perfluorobutanesulfonic acid (PFBS)	0.33	U M	0.44	0.11	ug/Kg	☼	03/02/17 17:04	03/11/17 17:27	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	109		25 - 150				03/02/17 17:04	03/11/17 17:27	1
13C4 PFOS	83		25 - 150				03/02/17 17:04	03/11/17 17:27	1
18O2 PFHxS	93		25 - 150				03/02/17 17:04	03/11/17 17:27	1

Client Sample ID: MEAFF-BLD002-SB02-0001

Lab Sample ID: 320-26105-6

Date Collected: 02/24/17 09:15

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 87.2

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	6.3	M	0.58	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:35	1
Perfluorooctanesulfonic acid (PFOS)	21	M	0.58	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 17:35	1
Perfluorobutanesulfonic acid (PFBS)	0.35	U M	0.46	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	95		25 - 150				03/02/17 17:04	03/11/17 17:35	1
13C4 PFOS	61		25 - 150				03/02/17 17:04	03/11/17 17:35	1
18O2 PFHxS	92		25 - 150				03/02/17 17:04	03/11/17 17:35	1

Client Sample ID: MEAFF-BLD002-SB02-0204

Lab Sample ID: 320-26105-7

Date Collected: 02/24/17 09:20

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.3

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.15	J M	0.58	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:42	1
Perfluorooctanesulfonic acid (PFOS)	0.35	U M	0.58	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 17:42	1
Perfluorobutanesulfonic acid (PFBS)	0.35	U	0.46	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:42	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	104		25 - 150				03/02/17 17:04	03/11/17 17:42	1
13C4 PFOS	56		25 - 150				03/02/17 17:04	03/11/17 17:42	1
18O2 PFHxS	95		25 - 150				03/02/17 17:04	03/11/17 17:42	1

Client Sample ID: MEAFF-BLD192-SB03-0001

Lab Sample ID: 320-26105-8

Date Collected: 02/24/17 11:10

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 83.3

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	5.1	M	0.60	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:50	1
Perfluorooctanesulfonic acid (PFOS)	15	M	0.60	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 17:50	1
Perfluorobutanesulfonic acid (PFBS)	0.36	U M	0.48	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:50	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	107		25 - 150				03/02/17 17:04	03/11/17 17:50	1
13C4 PFOS	72		25 - 150				03/02/17 17:04	03/11/17 17:50	1

TestAmerica Sacramento

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-BLD192-SB03-0001

Date Collected: 02/24/17 11:10

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-8

Matrix: Solid

Percent Solids: 83.3

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	100		25 - 150	03/02/17 17:04	03/11/17 17:50	1

Client Sample ID: MEAFF-BLD192-SB03-0204

Date Collected: 02/24/17 11:15

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-9

Matrix: Solid

Percent Solids: 79.3

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.28	J	0.64	0.13	ug/Kg	☼	03/02/17 17:04	03/11/17 17:57	1
Perfluorooctanesulfonic acid (PFOS)	0.40	J M	0.64	0.16	ug/Kg	☼	03/02/17 17:04	03/11/17 17:57	1
Perfluorobutanesulfonic acid (PFBS)	0.38	U	0.51	0.13	ug/Kg	☼	03/02/17 17:04	03/11/17 17:57	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	119		25 - 150	03/02/17 17:04	03/11/17 17:57	1			
13C4 PFOS	78		25 - 150	03/02/17 17:04	03/11/17 17:57	1			
18O2 PFHxS	108		25 - 150	03/02/17 17:04	03/11/17 17:57	1			

Client Sample ID: MEAFF-SWON-SB03-0001

Date Collected: 02/24/17 11:35

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-10

Matrix: Solid

Percent Solids: 86.1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	38	M	0.58	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 18:05	1
Perfluorooctanesulfonic acid (PFOS)	65	E M	0.58	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 18:05	1
Perfluorobutanesulfonic acid (PFBS)	3.0		0.46	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 18:05	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	85		25 - 150	03/02/17 17:04	03/11/17 18:05	1			
13C4 PFOS	56		25 - 150	03/02/17 17:04	03/11/17 18:05	1			
18O2 PFHxS	59		25 - 150	03/02/17 17:04	03/11/17 18:05	1			

Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	42	D M	5.8	1.2	ug/Kg	☼	03/02/17 17:04	03/13/17 17:01	10
Perfluorooctanesulfonic acid (PFOS)	64	D M	5.8	1.5	ug/Kg	☼	03/02/17 17:04	03/13/17 17:01	10
Perfluorobutanesulfonic acid (PFBS)	1.8	J D	4.6	1.2	ug/Kg	☼	03/02/17 17:04	03/13/17 17:01	10
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	94	M	25 - 150	03/02/17 17:04	03/13/17 17:01	10			
13C4 PFOS	52		25 - 150	03/02/17 17:04	03/13/17 17:01	10			
18O2 PFHxS	81		25 - 150	03/02/17 17:04	03/13/17 17:01	10			

TestAmerica Sacramento

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-SWON-SB03-0204

Lab Sample ID: 320-26105-11

Date Collected: 02/24/17 11:40

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.4

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	8.3	M	0.59	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 18:20	1
Perfluorooctanesulfonic acid (PFOS)	8.3	M	0.59	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 18:20	1
Perfluorobutanesulfonic acid (PFBS)	1.6		0.47	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 18:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	108		25 - 150				03/02/17 17:04	03/11/17 18:20	1
13C4 PFOS	53		25 - 150				03/02/17 17:04	03/11/17 18:20	1
18O2 PFHxS	82		25 - 150				03/02/17 17:04	03/11/17 18:20	1

Client Sample ID: MEAFF-08MW03-0217

Lab Sample ID: 320-26105-12

Date Collected: 02/24/17 11:30

Matrix: Water

Date Received: 02/25/17 08:50

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	14	M	0.97	0.19	ug/L		03/02/17 13:45	03/14/17 19:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	69		42 - 91				03/02/17 13:45	03/14/17 19:35	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	3.9	M	2.2	0.67	ng/L		03/02/17 14:24	03/06/17 02:49	1
Perfluorooctanesulfonic acid (PFOS)	2.7	U M	3.6	1.1	ng/L		03/02/17 14:24	03/06/17 02:49	1
Perfluorobutanesulfonic acid (PFBS)	5.5	M	2.2	0.82	ng/L		03/02/17 14:24	03/06/17 02:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	68		25 - 150				03/02/17 14:24	03/06/17 02:49	1
13C4 PFOS	131		25 - 150				03/02/17 14:24	03/06/17 02:49	1
18O2 PFHxS	141		25 - 150				03/02/17 14:24	03/06/17 02:49	1

Client Sample ID: MEAFF-08MW06-0217

Lab Sample ID: 320-26105-13

Date Collected: 02/24/17 13:15

Matrix: Water

Date Received: 02/25/17 08:50

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	M	0.96	0.19	ug/L		03/02/17 13:45	03/14/17 19:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	74		42 - 91				03/02/17 13:45	03/14/17 19:58	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	130		2.3	0.69	ng/L		03/02/17 14:24	03/06/17 02:56	1
Perfluorooctanesulfonic acid (PFOS)	55		3.7	1.2	ng/L		03/02/17 14:24	03/06/17 02:56	1
Perfluorobutanesulfonic acid (PFBS)	22	M	2.3	0.85	ng/L		03/02/17 14:24	03/06/17 02:56	1

TestAmerica Sacramento

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-08MW06-0217

Date Collected: 02/24/17 13:15

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-13

Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	59		25 - 150	03/02/17 14:24	03/06/17 02:56	1
13C4 PFOS	120		25 - 150	03/02/17 14:24	03/06/17 02:56	1
18O2 PFHxS	128		25 - 150	03/02/17 14:24	03/06/17 02:56	1

Client Sample ID: MEAFF-FD02-0217

Date Collected: 02/24/17 00:00

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-14

Matrix: Water

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	M	0.96	0.19	ug/L		03/02/17 13:45	03/14/17 20:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	62		42 - 91	03/02/17 13:45	03/14/17 20:21	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	130		2.1	0.63	ng/L		03/02/17 14:24	03/06/17 03:11	1
Perfluorooctanesulfonic acid (PFOS)	54		3.3	1.1	ng/L		03/02/17 14:24	03/06/17 03:11	1
Perfluorobutanesulfonic acid (PFBS)	20	M	2.1	0.77	ng/L		03/02/17 14:24	03/06/17 03:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	65		25 - 150	03/02/17 14:24	03/06/17 03:11	1
13C4 PFOS	124		25 - 150	03/02/17 14:24	03/06/17 03:11	1
18O2 PFHxS	132		25 - 150	03/02/17 14:24	03/06/17 03:11	1

Client Sample ID: MEAFF-MRD-IA01-0217A

Date Collected: 02/24/17 15:30

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-15

Matrix: Water

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	120		2.4	0.71	ng/L		03/02/17 14:24	03/06/17 03:19	1
Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	1.2	ng/L		03/02/17 14:24	03/06/17 03:19	1
Perfluorobutanesulfonic acid (PFBS)	6.9	M	2.4	0.87	ng/L		03/02/17 14:24	03/06/17 03:19	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	79		25 - 150	03/02/17 14:24	03/06/17 03:19	1
13C4 PFOS	115		25 - 150	03/02/17 14:24	03/06/17 03:19	1
18O2 PFHxS	107		25 - 150	03/02/17 14:24	03/06/17 03:19	1

Client Sample ID: MEAFF-FD03-0217

Date Collected: 02/24/17 00:00

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-16

Matrix: Water

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	120		2.4	0.72	ng/L		03/02/17 14:24	03/06/17 03:26	1
Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	1.2	ng/L		03/02/17 14:24	03/06/17 03:26	1

TestAmerica Sacramento

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-FD03-0217

Lab Sample ID: 320-26105-16

Date Collected: 02/24/17 00:00

Matrix: Water

Date Received: 02/25/17 08:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	5.2	M	2.4	0.88	ng/L		03/02/17 14:24	03/06/17 03:26	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOA	83		25 - 150				03/02/17 14:24	03/06/17 03:26	1
13C4 PFOS	133		25 - 150				03/02/17 14:24	03/06/17 03:26	1
18O2 PFHxS	124		25 - 150				03/02/17 14:24	03/06/17 03:26	1



Surrogate Summary

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

TestAmerica Job ID: 320-26105-1

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	NBZ (42-91)
320-26105-1	MEAFF-08MW01D-0217	80
320-26105-2	MEAFF-08MW01-0217	59
320-26105-3	MEAFF-MRD-1A14-0217	73
320-26105-3 MS	MEAFF-MRD-1A14-0217	75
320-26105-3 MSD	MEAFF-MRD-1A14-0217	74
320-26105-12	MEAFF-08MW03-0217	69
320-26105-13	MEAFF-08MW06-0217	74
320-26105-14	MEAFF-FD02-0217	62
LCS 320-152910/2-A	Lab Control Sample	73
LCSD 320-152910/3-A	Lab Control Sample Dup	74
MB 320-152910/1-A	Method Blank	69

Surrogate Legend

NBZ = Nitrobenzene-d5

Isotope Dilution Summary

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

TestAmerica Job ID: 320-26105-1

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/ (25-150)	3C4 PFO: (25-150)	3O2 PFHx (25-150)
320-26105-4	MEAFF-BLD002-SB01-0204	100	58	93
320-26105-5	MEAFF-BLD002-SB01-0001	109	83	93
320-26105-6	MEAFF-BLD002-SB02-0001	95	61	92
320-26105-7	MEAFF-BLD002-SB02-0204	104	56	95
320-26105-8	MEAFF-BLD192-SB03-0001	107	72	100
320-26105-9	MEAFF-BLD192-SB03-0204	119	78	108
320-26105-10	MEAFF-SWON-SB03-0001	85	56	59
320-26105-10 - DL	MEAFF-SWON-SB03-0001	94 M	52	81
320-26105-11	MEAFF-SWON-SB03-0204	108	53	82
LCS 320-152961/2-A	Lab Control Sample	113	100	108
MB 320-152961/1-A	Method Blank	122 M	99	113

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/ (25-150)	3C4 PFO: (25-150)	3O2 PFHx (25-150)
320-26105-1	MEAFF-08MW01D-0217	88	125	127
320-26105-2	MEAFF-08MW01-0217	82	100	99
320-26105-2 - DL	MEAFF-08MW01-0217	105	98	104
320-26105-3	MEAFF-MRD-1A14-0217	46	129	132
320-26105-3 - DL	MEAFF-MRD-1A14-0217	48	120	141
320-26105-3 MS	MEAFF-MRD-1A14-0217	57	113	115
320-26105-3 MS - DL	MEAFF-MRD-1A14-0217	71	119	134
320-26105-3 MSD	MEAFF-MRD-1A14-0217	54	122	122
320-26105-3 MSD - DL	MEAFF-MRD-1A14-0217	68	128	147
320-26105-12	MEAFF-08MW03-0217	68	131	141
320-26105-13	MEAFF-08MW06-0217	59	120	128
320-26105-14	MEAFF-FD02-0217	65	124	132
320-26105-15	MEAFF-MRD-IA01-0217A	79	115	107
320-26105-16	MEAFF-FD03-0217	83	133	124
LCS 320-152929/2-A	Lab Control Sample	140	125	128
MB 320-152929/1-A	Method Blank	158 Q	128	134

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: 320-26105-1

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Lab Sample ID: MB 320-152910/1-A
Matrix: Water
Analysis Batch: 154875

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 152910

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.50	U	1.0	0.20	ug/L		03/02/17 13:45	03/14/17 15:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	69		42 - 91				03/02/17 13:45	03/14/17 15:04	1

Lab Sample ID: LCS 320-152910/2-A
Matrix: Water
Analysis Batch: 154875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 152910

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	10.0	3.23	M	ug/L		32	12 - 52
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Nitrobenzene-d5	73		42 - 91				

Lab Sample ID: LCSD 320-152910/3-A
Matrix: Water
Analysis Batch: 154875

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 152910

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	10.0	3.00	M	ug/L		30	12 - 52	7	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
Nitrobenzene-d5	74		42 - 91						

Lab Sample ID: 320-26105-3 MS
Matrix: Water
Analysis Batch: 154875

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152910

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	0.48	U	9.50	2.59	M	ug/L		27	12 - 52
Surrogate	MS %Recovery	MS Qualifier	Limits						
Nitrobenzene-d5	75		42 - 91						

Lab Sample ID: 320-26105-3 MSD
Matrix: Water
Analysis Batch: 154875

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152910

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	0.48	U	9.48	2.68	M	ug/L		28	12 - 52	3	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Nitrobenzene-d5	74		42 - 91								

TestAmerica Sacramento

QC Sample Results

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

TestAmerica Job ID: 320-26105-1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-152929/1-A
Matrix: Water
Analysis Batch: 153421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 152929

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	2.0	U M	2.5	0.75	ng/L		03/02/17 14:24	03/06/17 01:49	1
Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	1.3	ng/L		03/02/17 14:24	03/06/17 01:49	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	0.92	ng/L		03/02/17 14:24	03/06/17 01:49	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	158	Q	25 - 150	03/02/17 14:24	03/06/17 01:49	1
13C4 PFOS	128		25 - 150	03/02/17 14:24	03/06/17 01:49	1
18O2 PFHxS	134		25 - 150	03/02/17 14:24	03/06/17 01:49	1

Lab Sample ID: LCS 320-152929/2-A
Matrix: Water
Analysis Batch: 153421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 152929

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanoic acid (PFOA)	40.0	43.7		ng/L		109	60 - 140
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5		ng/L		104	60 - 140
Perfluorobutanesulfonic acid (PFBS)	35.4	44.5		ng/L		126	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFOA	140		25 - 150
13C4 PFOS	125		25 - 150
18O2 PFHxS	128		25 - 150

Lab Sample ID: 320-26105-3 MS
Matrix: Water
Analysis Batch: 153421

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanoic acid (PFOA)	480	E J	36.6	499	E 4	ng/L		65	60 - 140
Perfluorooctanesulfonic acid (PFOS)	43		33.9	79.8		ng/L		110	60 - 140
Perfluorobutanesulfonic acid (PFBS)	2.8	M	32.3	43.3		ng/L		125	50 - 150

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFOA	57		25 - 150
13C4 PFOS	113		25 - 150
18O2 PFHxS	115		25 - 150

Lab Sample ID: 320-26105-3 MSD
Matrix: Water
Analysis Batch: 153421

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanoic acid (PFOA)	480	E J	37.0	478	E 4	ng/L		7	60 - 140	4	30
Perfluorooctanesulfonic acid (PFOS)	43		34.3	76.1		ng/L		98	60 - 140	5	30

TestAmerica Sacramento

QC Sample Results

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

TestAmerica Job ID: 320-26105-1

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

Lab Sample ID: 320-26105-3 MSD
Matrix: Water
Analysis Batch: 153421

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid (PFBS)	2.8	M	32.7	41.3		ng/L		118	50 - 150	5	30
MSD MSD											
Isotope Dilution	%Recovery	Qualifier	Limits								
13C4 PFOA	54		25 - 150								
13C4 PFOS	122		25 - 150								
18O2 PFHxS	122		25 - 150								

Lab Sample ID: MB 320-152961/1-A
Matrix: Solid
Analysis Batch: 154503

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 152961

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.30	U M	0.50	0.10	ug/Kg		03/02/17 17:04	03/11/17 15:42	1
Perfluorooctanesulfonic acid (PFOS)	0.30	U	0.50	0.13	ug/Kg		03/02/17 17:04	03/11/17 15:42	1
Perfluorobutanesulfonic acid (PFBS)	0.30	U	0.40	0.10	ug/Kg		03/02/17 17:04	03/11/17 15:42	1
MB MB									
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	122	M	25 - 150				03/02/17 17:04	03/11/17 15:42	1
13C4 PFOS	99		25 - 150				03/02/17 17:04	03/11/17 15:42	1
18O2 PFHxS	113		25 - 150				03/02/17 17:04	03/11/17 15:42	1

Lab Sample ID: LCS 320-152961/2-A
Matrix: Solid
Analysis Batch: 154503

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 152961

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanoic acid (PFOA)	4.00	4.25		ug/Kg		106	60 - 140
Perfluorooctanesulfonic acid (PFOS)	3.71	3.90	M	ug/Kg		105	60 - 140
Perfluorobutanesulfonic acid (PFBS)	3.54	4.04		ug/Kg		114	50 - 150
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C4 PFOA	113		25 - 150				
13C4 PFOS	100		25 - 150				
18O2 PFHxS	108		25 - 150				

Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL

Lab Sample ID: 320-26105-3 MS
Matrix: Water
Analysis Batch: 154016

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanoic acid (PFOA) - DL	500	D M J	36.6	530	D M 4	ng/L		84	60 - 140
Perfluorooctanesulfonic acid (PFOS) - DL	24	D M J	33.9	78.7	D M J	ng/L		162	60 - 140

TestAmerica Sacramento

QC Sample Results

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

TestAmerica Job ID: 320-26105-1

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

Lab Sample ID: 320-26105-3 MS

Matrix: Water

Analysis Batch: 154016

Client Sample ID: MEAFF-MRD-1A14-0217

Prep Type: Total/NA

Prep Batch: 152929

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Perfluorobutanesulfonic acid (PFBS) - DL	9.3	U M	32.3	42.7	D	ng/L		132		50 - 150
Isotope Dilution		MS	MS							
	%Recovery	Qualifier	Limits							
13C4 PFOA - DL	71		25 - 150							
13C4 PFOS - DL	119		25 - 150							
18O2 PFHxS - DL	134		25 - 150							

Lab Sample ID: 320-26105-3 MSD

Matrix: Water

Analysis Batch: 154016

Client Sample ID: MEAFF-MRD-1A14-0217

Prep Type: Total/NA

Prep Batch: 152929

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Perfluorooctanoic acid (PFOA) - DL	500	D M J	37.0	504	D M 4	ng/L		12		60 - 140	5	30
Perfluorooctanesulfonic acid (PFOS) - DL	24	D M J	34.3	76.8	D M J	ng/L		154		60 - 140	2	30
Perfluorobutanesulfonic acid (PFBS) - DL	9.3	U M	32.7	40.7	D	ng/L		125		50 - 150	5	30
Isotope Dilution		MSD	MSD									
	%Recovery	Qualifier	Limits									
13C4 PFOA - DL	68		25 - 150									
13C4 PFOS - DL	128		25 - 150									
18O2 PFHxS - DL	147		25 - 150									

QC Association Summary

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

TestAmerica Job ID: 320-26105-1

GC/MS Semi VOA

Prep Batch: 152910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-1	MEAFF-08MW01D-0217	Total/NA	Water	3510C	
320-26105-2	MEAFF-08MW01-0217	Total/NA	Water	3510C	
320-26105-3	MEAFF-MRD-1A14-0217	Total/NA	Water	3510C	
320-26105-12	MEAFF-08MW03-0217	Total/NA	Water	3510C	
320-26105-13	MEAFF-08MW06-0217	Total/NA	Water	3510C	
320-26105-14	MEAFF-FD02-0217	Total/NA	Water	3510C	
MB 320-152910/1-A	Method Blank	Total/NA	Water	3510C	
LCS 320-152910/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 320-152910/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
320-26105-3 MS	MEAFF-MRD-1A14-0217	Total/NA	Water	3510C	
320-26105-3 MSD	MEAFF-MRD-1A14-0217	Total/NA	Water	3510C	

Analysis Batch: 154875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-1	MEAFF-08MW01D-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-2	MEAFF-08MW01-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-3	MEAFF-MRD-1A14-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-12	MEAFF-08MW03-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-13	MEAFF-08MW06-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-14	MEAFF-FD02-0217	Total/NA	Water	WS-MS-0011	152910
MB 320-152910/1-A	Method Blank	Total/NA	Water	WS-MS-0011	152910
LCS 320-152910/2-A	Lab Control Sample	Total/NA	Water	WS-MS-0011	152910
LCSD 320-152910/3-A	Lab Control Sample Dup	Total/NA	Water	WS-MS-0011	152910
320-26105-3 MS	MEAFF-MRD-1A14-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-3 MSD	MEAFF-MRD-1A14-0217	Total/NA	Water	WS-MS-0011	152910

LCMS

Prep Batch: 152929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-1	MEAFF-08MW01D-0217	Total/NA	Water	3535	
320-26105-2 - DL	MEAFF-08MW01-0217	Total/NA	Water	3535	
320-26105-2	MEAFF-08MW01-0217	Total/NA	Water	3535	
320-26105-3	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-3 - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-12	MEAFF-08MW03-0217	Total/NA	Water	3535	
320-26105-13	MEAFF-08MW06-0217	Total/NA	Water	3535	
320-26105-14	MEAFF-FD02-0217	Total/NA	Water	3535	
320-26105-15	MEAFF-MRD-IA01-0217A	Total/NA	Water	3535	
320-26105-16	MEAFF-FD03-0217	Total/NA	Water	3535	
MB 320-152929/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-152929/2-A	Lab Control Sample	Total/NA	Water	3535	
320-26105-3 MS - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-3 MS	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-3 MSD - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-3 MSD	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	

Prep Batch: 152961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-4	MEAFF-BLD002-SB01-0204	Total/NA	Solid	SHAKE	

TestAmerica Sacramento

QC Association Summary

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

TestAmerica Job ID: 320-26105-1

LCMS (Continued)

Prep Batch: 152961 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-5	MEAFF-BLD002-SB01-0001	Total/NA	Solid	SHAKE	
320-26105-6	MEAFF-BLD002-SB02-0001	Total/NA	Solid	SHAKE	
320-26105-7	MEAFF-BLD002-SB02-0204	Total/NA	Solid	SHAKE	
320-26105-8	MEAFF-BLD192-SB03-0001	Total/NA	Solid	SHAKE	
320-26105-9	MEAFF-BLD192-SB03-0204	Total/NA	Solid	SHAKE	
320-26105-10 - DL	MEAFF-SWON-SB03-0001	Total/NA	Solid	SHAKE	
320-26105-10	MEAFF-SWON-SB03-0001	Total/NA	Solid	SHAKE	
320-26105-11	MEAFF-SWON-SB03-0204	Total/NA	Solid	SHAKE	
MB 320-152961/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-152961/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Analysis Batch: 153421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-1	MEAFF-08MW01D-0217	Total/NA	Water	537 (Modified)	152929
320-26105-2	MEAFF-08MW01-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929
320-26105-12	MEAFF-08MW03-0217	Total/NA	Water	537 (Modified)	152929
320-26105-13	MEAFF-08MW06-0217	Total/NA	Water	537 (Modified)	152929
320-26105-14	MEAFF-FD02-0217	Total/NA	Water	537 (Modified)	152929
320-26105-15	MEAFF-MRD-IA01-0217A	Total/NA	Water	537 (Modified)	152929
320-26105-16	MEAFF-FD03-0217	Total/NA	Water	537 (Modified)	152929
MB 320-152929/1-A	Method Blank	Total/NA	Water	537 (Modified)	152929
LCS 320-152929/2-A	Lab Control Sample	Total/NA	Water	537 (Modified)	152929
320-26105-3 MS	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3 MSD	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929

Analysis Batch: 154016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-2 - DL	MEAFF-08MW01-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3 - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3 MS - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3 MSD - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929

Analysis Batch: 154503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-4	MEAFF-BLD002-SB01-0204	Total/NA	Solid	537 (Modified)	152961
320-26105-5	MEAFF-BLD002-SB01-0001	Total/NA	Solid	537 (Modified)	152961
320-26105-6	MEAFF-BLD002-SB02-0001	Total/NA	Solid	537 (Modified)	152961
320-26105-7	MEAFF-BLD002-SB02-0204	Total/NA	Solid	537 (Modified)	152961
320-26105-8	MEAFF-BLD192-SB03-0001	Total/NA	Solid	537 (Modified)	152961
320-26105-9	MEAFF-BLD192-SB03-0204	Total/NA	Solid	537 (Modified)	152961
320-26105-10	MEAFF-SWON-SB03-0001	Total/NA	Solid	537 (Modified)	152961
320-26105-11	MEAFF-SWON-SB03-0204	Total/NA	Solid	537 (Modified)	152961
MB 320-152961/1-A	Method Blank	Total/NA	Solid	537 (Modified)	152961
LCS 320-152961/2-A	Lab Control Sample	Total/NA	Solid	537 (Modified)	152961

Analysis Batch: 154808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-10 - DL	MEAFF-SWON-SB03-0001	Total/NA	Solid	537 (Modified)	152961

TestAmerica Sacramento

QC Association Summary

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

TestAmerica Job ID: 320-26105-1

General Chemistry

Analysis Batch: 152396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-4	MEAFF-BLD002-SB01-0204	Total/NA	Solid	D 2216	
320-26105-5	MEAFF-BLD002-SB01-0001	Total/NA	Solid	D 2216	
320-26105-6	MEAFF-BLD002-SB02-0001	Total/NA	Solid	D 2216	
320-26105-7	MEAFF-BLD002-SB02-0204	Total/NA	Solid	D 2216	

Analysis Batch: 152404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-8	MEAFF-BLD192-SB03-0001	Total/NA	Solid	D 2216	
320-26105-9	MEAFF-BLD192-SB03-0204	Total/NA	Solid	D 2216	
320-26105-10	MEAFF-SWON-SB03-0001	Total/NA	Solid	D 2216	
320-26105-11	MEAFF-SWON-SB03-0204	Total/NA	Solid	D 2216	

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-08MW01D-0217

Lab Sample ID: 320-26105-1

Date Collected: 02/24/17 12:15

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1051.4 mL	1.0 mL	152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1			154875	03/14/17 17:42	A1C	TAL SAC
Total/NA	Prep	3535			258.4 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			153421	03/06/17 02:11	TC1	TAL SAC

Client Sample ID: MEAFF-08MW01-0217

Lab Sample ID: 320-26105-2

Date Collected: 02/24/17 12:00

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			625 mL	1.0 mL	152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1			154875	03/14/17 18:05	A1C	TAL SAC
Total/NA	Prep	3535			253.3 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			153421	03/06/17 02:19	TC1	TAL SAC
Total/NA	Prep	3535	DL		253.3 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	5			154016	03/08/17 20:17	CBW	TAL SAC

Client Sample ID: MEAFF-MRD-1A14-0217

Lab Sample ID: 320-26105-3

Date Collected: 02/24/17 15:00

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1052.2 mL	1.0 mL	152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1			154875	03/14/17 18:28	A1C	TAL SAC
Total/NA	Prep	3535			269.3 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			153421	03/06/17 02:26	TC1	TAL SAC
Total/NA	Prep	3535	DL		269.3 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	5			154016	03/08/17 20:24	CBW	TAL SAC

Client Sample ID: MEAFF-BLD002-SB01-0204

Lab Sample ID: 320-26105-4

Date Collected: 02/24/17 09:00

Matrix: Solid

Date Received: 02/25/17 08:50

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			152396	02/27/17 15:45	MY1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB01-0204

Lab Sample ID: 320-26105-4

Date Collected: 02/24/17 09:00

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			4.95 g	1 mL	152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1			154503	03/11/17 17:20	TC1	TAL SAC

TestAmerica Sacramento

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-BLD002-SB01-0001

Lab Sample ID: 320-26105-5

Date Collected: 02/24/17 09:05

Matrix: Solid

Date Received: 02/25/17 08:50

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			152396	02/27/17 15:45	MY1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB01-0001

Lab Sample ID: 320-26105-5

Date Collected: 02/24/17 09:05

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.08 g	1 mL	152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1			154503	03/11/17 17:27	TC1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB02-0001

Lab Sample ID: 320-26105-6

Date Collected: 02/24/17 09:15

Matrix: Solid

Date Received: 02/25/17 08:50

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			152396	02/27/17 15:45	MY1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB02-0001

Lab Sample ID: 320-26105-6

Date Collected: 02/24/17 09:15

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 87.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			4.98 g	1 mL	152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1			154503	03/11/17 17:35	TC1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB02-0204

Lab Sample ID: 320-26105-7

Date Collected: 02/24/17 09:20

Matrix: Solid

Date Received: 02/25/17 08:50

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			152396	02/27/17 15:45	MY1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB02-0204

Lab Sample ID: 320-26105-7

Date Collected: 02/24/17 09:20

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.00 g	1 mL	152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1			154503	03/11/17 17:42	TC1	TAL SAC

TestAmerica Sacramento

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-BLD192-SB03-0001

Lab Sample ID: 320-26105-8

Date Collected: 02/24/17 11:10

Matrix: Solid

Date Received: 02/25/17 08:50

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			152404	02/27/17 16:11	MY1	TAL SAC

Client Sample ID: MEAFF-BLD192-SB03-0001

Lab Sample ID: 320-26105-8

Date Collected: 02/24/17 11:10

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 83.3

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 mL	152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1			154503	03/11/17 17:50	TC1	TAL SAC

Client Sample ID: MEAFF-BLD192-SB03-0204

Lab Sample ID: 320-26105-9

Date Collected: 02/24/17 11:15

Matrix: Solid

Date Received: 02/25/17 08:50

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			152404	02/27/17 16:11	MY1	TAL SAC

Client Sample ID: MEAFF-BLD192-SB03-0204

Lab Sample ID: 320-26105-9

Date Collected: 02/24/17 11:15

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 79.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			4.95 g	1 mL	152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1			154503	03/11/17 17:57	TC1	TAL SAC

Client Sample ID: MEAFF-SWON-SB03-0001

Lab Sample ID: 320-26105-10

Date Collected: 02/24/17 11:35

Matrix: Solid

Date Received: 02/25/17 08:50

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			152404	02/27/17 16:11	MY1	TAL SAC

Client Sample ID: MEAFF-SWON-SB03-0001

Lab Sample ID: 320-26105-10

Date Collected: 02/24/17 11:35

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.02 g	1 mL	152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1			154503	03/11/17 18:05	TC1	TAL SAC
Total/NA	Prep	SHAKE	DL		5.02 g	1 mL	152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	10			154808	03/13/17 17:01	CBW	TAL SAC

TestAmerica Sacramento

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-SWON-SB03-0204

Lab Sample ID: 320-26105-11

Date Collected: 02/24/17 11:40

Matrix: Solid

Date Received: 02/25/17 08:50

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			152404	02/27/17 16:11	MY1	TAL SAC

Client Sample ID: MEAFF-SWON-SB03-0204

Lab Sample ID: 320-26105-11

Date Collected: 02/24/17 11:40

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			4.94 g	1 mL	152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1			154503	03/11/17 18:20	TC1	TAL SAC

Client Sample ID: MEAFF-08MW03-0217

Lab Sample ID: 320-26105-12

Date Collected: 02/24/17 11:30

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1032.9 mL	1.0 mL	152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1			154875	03/14/17 19:35	A1C	TAL SAC
Total/NA	Prep	3535			278.5 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			153421	03/06/17 02:49	TC1	TAL SAC

Client Sample ID: MEAFF-08MW06-0217

Lab Sample ID: 320-26105-13

Date Collected: 02/24/17 13:15

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1045.4 mL	1.0 mL	152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1			154875	03/14/17 19:58	A1C	TAL SAC
Total/NA	Prep	3535			270.5 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			153421	03/06/17 02:56	TC1	TAL SAC

Client Sample ID: MEAFF-FD02-0217

Lab Sample ID: 320-26105-14

Date Collected: 02/24/17 00:00

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1039.7 mL	1.0 mL	152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1			154875	03/14/17 20:21	A1C	TAL SAC
Total/NA	Prep	3535			298.8 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			153421	03/06/17 03:11	TC1	TAL SAC

TestAmerica Sacramento

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-MRD-IA01-0217A

Lab Sample ID: 320-26105-15

Date Collected: 02/24/17 15:30

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			264.6 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			153421	03/06/17 03:19	TC1	TAL SAC

Client Sample ID: MEAFF-FD03-0217

Lab Sample ID: 320-26105-16

Date Collected: 02/24/17 00:00

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.4 mL	0.50 mL	152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			153421	03/06/17 03:26	TC1	TAL SAC

Laboratory References:

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

Certification Summary

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

TestAmerica Job ID: 320-26105-1

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	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	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
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	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17 *
Oregon	NELAP	10	4040	01-28-18
Pennsylvania	NELAP	3	68-01272	03-31-17 *
Texas	NELAP	6	T104704399	07-31-17
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	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-17
Wyoming	State Program	8	8TMS-L	01-29-17 *

* Certification renewal pending - certification considered valid.

Method Summary

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

TestAmerica Job ID: 320-26105-1

Method	Method Description	Protocol	Laboratory
WS-MS-0011	1,4-Dioxane (GC/MS SIM)	TAL SOP	TAL SAC
537 (Modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

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: 320-26105-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-26105-1	MEAFF-08MW01D-0217	Water	02/24/17 12:15	02/25/17 08:50
320-26105-2	MEAFF-08MW01-0217	Water	02/24/17 12:00	02/25/17 08:50
320-26105-3	MEAFF-MRD-1A14-0217	Water	02/24/17 15:00	02/25/17 08:50
320-26105-4	MEAFF-BLD002-SB01-0204	Solid	02/24/17 09:00	02/25/17 08:50
320-26105-5	MEAFF-BLD002-SB01-0001	Solid	02/24/17 09:05	02/25/17 08:50
320-26105-6	MEAFF-BLD002-SB02-0001	Solid	02/24/17 09:15	02/25/17 08:50
320-26105-7	MEAFF-BLD002-SB02-0204	Solid	02/24/17 09:20	02/25/17 08:50
320-26105-8	MEAFF-BLD192-SB03-0001	Solid	02/24/17 11:10	02/25/17 08:50
320-26105-9	MEAFF-BLD192-SB03-0204	Solid	02/24/17 11:15	02/25/17 08:50
320-26105-10	MEAFF-SWON-SB03-0001	Solid	02/24/17 11:35	02/25/17 08:50
320-26105-11	MEAFF-SWON-SB03-0204	Solid	02/24/17 11:40	02/25/17 08:50
320-26105-12	MEAFF-08MW03-0217	Water	02/24/17 11:30	02/25/17 08:50
320-26105-13	MEAFF-08MW06-0217	Water	02/24/17 13:15	02/25/17 08:50
320-26105-14	MEAFF-FD02-0217	Water	02/24/17 00:00	02/25/17 08:50
320-26105-15	MEAFF-MRD-IA01-0217A	Water	02/24/17 15:30	02/25/17 08:50
320-26105-16	MEAFF-FD03-0217	Water	02/24/17 00:00	02/25/17 08:50

TestAmerica Laboratories, Inc.

Regulatory Program: DW NPDES RCRA Other

Project Manager: Bryan Burkingstock
Site Contact: Ryan Brown
Lab Contact: Jill Keilmann
Date: 2/24/17
Carrier: FedEx

Client Contact
CH2M Hill
6600 Peachtree Dunwoody Rd., 400 Embassy Row, Suite 600
Atlanta, GA 30328
Phone (678) 530-4060
FAX (770) 604-9183
Project Name: Meridian 10006-7-105420 JM01 Navy Clean
Site: NAS Meridian
P O #: 10006-7-105420

Analysis Turnaround Time
 CALENDAR DAYS
 WORKING DAYS
 TAT if different from below: 21 days
 2 weeks
 1 week
 2 days
 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)
MEAFF-08HW01D-0217	2/24/17	12:15	G	GW	4	M	X
MEAFF-08HW01-0217		12:00			2	X	X
MEAFF-MRD-1A14-0217		15:00			4	X	X
MEAFF-MRD-1A14-0217-N5						X	X
MEAFF-MRD-1A14-0217-SD				SD	1	X	X
MEAFF-01D002-5B01-0001		09:00				X	X
MEAFF-01D002-5B01-0001		09:05				X	X
MEAFF-01D002-5B02-0001		09:15				X	X
MEAFF-01D002-5B02-0204		09:20				X	X
MEAFF-01D197-5B03-0001		11:10				X	X
MEAFF-01D197-5B03-0204		11:15				X	X
MEAFF-SW0N-5B03-0001		11:35				X	X

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

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

Received by: [Signature] Company: CH2M
Date/Time: 2/24/17
Cooler Temp. (°C): Obs'd: 2.0
Therm ID No.: ACC

Received by: [Signature] Company: CH2M
Date/Time: 2-25-17 8:50

Received in Laboratory by: [Signature] Company: CH2M
Date/Time: 2-25-17

West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248

TestAmerica Laboratories, Inc.

Client Contact CH2M Hill 6600 Peachtree Dunwoody Rd., 400 Embassy Row, Suite 600 Atlanta, GA 30328 (678) 530-4060 Phone (770) 604-9183 FAX Project Name: Meridian 10006-7-105420 JM01 Navy Clean Site: NAS Meridian P.O.#: 10006-7-105420		Regulatory Program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other:		Project Manager: Bryan Burkingstock Tel/Fax:		Site Contact: Ryan Brown Lab Contact: Jill Kellmann		Date: 2/24/17 Carrier: FedEx		COC No.: 4 1 of 2 COCs	
Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below: <u>11 days</u> <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Sample Identification		Sample Type (C=Comp, G=Grab)		Matrix		# of Cont.		Sample Specific Notes:	
MEAFF-SWON-SB03-0204		2/24/17 1140		G SD		NN		1		field duplicate	
MEAFF-08MW03-0217		1130		GW		X		4		field duplicate	
MEAFF-08MW00-0217		1315		↓		X		↓		field duplicate	
MEAFF-FD02-0217		1530		↓		X		2		field duplicate	
MEAFF-FD03-0217		↓		GW		X		2		field duplicate	
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other											
Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.											
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)											
Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months											
Special Instructions/QC Requirements & Comments: send results to Mike Zamboni -> address on file				Company: CH2M Date/Time: 2/24/17				Company: Plus Date/Time: 2-25-17			
Company: CH2M Date/Time:				Company: Plus Date/Time:				Company: Date/Time:			



Login Sample Receipt Checklist

Client: CH2M Hill, Inc.

Job Number: 320-26105-1

Login Number: 26105
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: 320-26105-1

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
3/29/2017 4:57 PM

Jill Kellmann, Manager of Project Management
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4402
jill.kellmann@testamericainc.com
03/29/2017
Revision: 1

Table of Contents

Cover Title Page	1
Data Summaries	5
Definitions	5
Case Narrative	6
Detection Summary	8
Client Sample Results	11
Default Detection Limits	18
Surrogate Summary	19
Isotope Dilution Summary	20
QC Sample Results	21
QC Association	25
Chronicle	28
Certification Summary	33
Method Summary	34
Sample Summary	35
Manual Integration Summary	36
Reagent Traceability	55
COAs	84
Organic Sample Data	329
GC/MS Semi VOA	329
Method 8270C SIM	329
Method 8270C SIM QC Summary	330
Method 8270C SIM Sample Data	337
Standards Data	369
Method 8270C SIM ICAL Data	369
Method 8270C SIM CCAL Data	399

Table of Contents

Raw QC Data	411
Method 8270C SIM Blank Data	411
Method 8270C SIM LCS/LCSD Data	415
Method 8270C SIM MS/MSD Data	425
Method 8270C SIM Run Logs	435
Method 8270C SIM Prep Data	437
LCMS	466
Method PFC DOD	466
Method PFC DOD QC Summary	467
Method PFC DOD Sample Data	477
Standards Data	618
Method PFC DOD ICAL Data	618
Method PFC DOD CCAL Data	689
Raw QC Data	886
Method PFC DOD Blank Data	886
Method PFC DOD LCS/LCSD Data	906
Method PFC DOD MS/MSD Data	924
Method PFC DOD Run Logs	968
Method PFC DOD Prep Data	975
Inorganic Sample Data	1012
General Chemistry Data	1012
Gen Chem Cover Page	1013
Gen Chem MDL	1014
Gen Chem Analysis Run Log	1016
Gen Chem Prep Data	1018
Gen Chem Raw Data	1020

Table of Contents

Shipping and Receiving Documents	1022
Client Chain of Custody	1023
Sample Receipt Checklist	1025

Definitions/Glossary

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

TestAmerica Job ID: 320-26105-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.

LCMS

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
E	Result exceeded calibration range.
M	Manual integrated compound.
D	The reported value is from a dilution.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: 320-26105-1

Revision - March 27, 2017

Revision created to include PFBS in the method 537 Mod analyte list.

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 02/25/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was C.

Receipt Exceptions

The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): MEAFF-BLD192-SB03-0001 (320-26105-8) and MEAFF-BLD192-SB03-0204 (320-26105-9). The container labels list MEAFF-BLD192-SB03, while the COC lists MEAFF-BLD197-SB03. The client instructed the laboratory to report using 'BLD192'.

Additionally, the client instructed the laboratory to add an 'A' to sample MEAFF-MRD-1A01-0217 collected on 2/24/17 at 3:30PM which is now listed as MEAFF-MRD-1A01-0217A.

1,4-DIOXANE

Elevated reporting limits are provided for the following sample due to insufficient sample (less than 1 liter) provided for the sample preparation/analysis: MEAFF-08MW01-0217 (320-26105-2). Samples associated with preparation batch 320-152910.

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

PFAS

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 is above the method recommended limit for 13C4-PFOA in the following sample: (MB 320-152929/1-A). All associated sample IDA recoveries fell within acceptance criteria and quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Due to the high concentration of Perfluorooctanoic acid (PFOA), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-152929 and analytical batch 320-153421 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Due to the high concentration of Perfluorooctanoic acid (PFOA), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-152929 and analytical batch 320-154016 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 320-152929 and analytical batch 320-154016 were outside control limits for Perfluorooctanesulfonic acid (PFOS). Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The following samples were diluted to bring the concentration of target analytes within the calibration range: MEAFF-08MW01-0217 (320-26105-2), MEAFF-MRD-1A14-0217 (320-26105-3), MEAFF-MRD-1A14-0217 (320-26105-3[MS]), MEAFF-MRD-1A14-0217 (320-26105-3[MSD]), and MEAFF-SWON-SB03-0001 (320-26105-10). Elevated reporting limits (RLs) are provided.

Due to an excessive amount of sediment in sample bottles the aqueous portion of sample was decanted to new bottles prior to spiking and extraction. MEAFF-08MW01D-0217 (320-26105-1) and MEAFF-08MW01-0217 (320-26105-2)

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: 320-26105-1

Client Sample ID: MEAFF-08MW01D-0217

Lab Sample ID: 320-26105-1

No Detections.

Client Sample ID: MEAFF-08MW01-0217

Lab Sample ID: 320-26105-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.0	M	1.6	0.32	ug/L	1		WS-MS-0011	Total/NA
Perfluorooctanoic acid (PFOA)	490	E	2.5	0.74	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	270		3.9	1.3	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	14	M	2.5	0.91	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	520	D M	12	3.7	ng/L	5		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	270	D M	20	6.3	ng/L	5		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	16	D M	12	4.5	ng/L	5		537 (Modified)	Total/NA

Client Sample ID: MEAFF-MRD-1A14-0217

Lab Sample ID: 320-26105-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	480	E J	2.3	0.69	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	43		3.7	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8	M	2.3	0.85	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	500	D M J	12	3.5	ng/L	5		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	24	D M J	19	5.9	ng/L	5		537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD002-SB01-0204

Lab Sample ID: 320-26105-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.1	M	0.61	0.15	ug/Kg	1	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD002-SB01-0001

Lab Sample ID: 320-26105-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.25	J M	0.55	0.11	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	19	M	0.55	0.14	ug/Kg	1	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD002-SB02-0001

Lab Sample ID: 320-26105-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	6.3	M	0.58	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	21	M	0.58	0.15	ug/Kg	1	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD002-SB02-0204

Lab Sample ID: 320-26105-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.15	J M	0.58	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-BLD192-SB03-0001

Lab Sample ID: 320-26105-8

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	5.1	M	0.60	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	15	M	0.60	0.15	ug/Kg	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: 320-26105-1

Client Sample ID: MEAFF-BLD192-SB03-0204

Lab Sample ID: 320-26105-9

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.28	J	0.64	0.13	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.40	J M	0.64	0.16	ug/Kg	1	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-SWON-SB03-0001

Lab Sample ID: 320-26105-10

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	38	M	0.58	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	65	E M	0.58	0.15	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.0		0.46	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	42	D M	5.8	1.2	ug/Kg	10	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	64	D M	5.8	1.5	ug/Kg	10	☼	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	1.8	J D	4.6	1.2	ug/Kg	10	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-SWON-SB03-0204

Lab Sample ID: 320-26105-11

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	8.3	M	0.59	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.3	M	0.59	0.15	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6		0.47	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-08MW03-0217

Lab Sample ID: 320-26105-12

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	14	M	0.97	0.19	ug/L	1		WS-MS-0011	Total/NA
Perfluorooctanoic acid (PFOA)	3.9	M	2.2	0.67	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	5.5	M	2.2	0.82	ng/L	1		537 (Modified)	Total/NA

Client Sample ID: MEAFF-08MW06-0217

Lab Sample ID: 320-26105-13

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	M	0.96	0.19	ug/L	1		WS-MS-0011	Total/NA
Perfluorooctanoic acid (PFOA)	130		2.3	0.69	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	55		3.7	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	22	M	2.3	0.85	ng/L	1		537 (Modified)	Total/NA

Client Sample ID: MEAFF-FD02-0217

Lab Sample ID: 320-26105-14

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	M	0.96	0.19	ug/L	1		WS-MS-0011	Total/NA
Perfluorooctanoic acid (PFOA)	130		2.1	0.63	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	54		3.3	1.1	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	20	M	2.1	0.77	ng/L	1		537 (Modified)	Total/NA

Client Sample ID: MEAFF-MRD-IA01-0217A

Lab Sample ID: 320-26105-15

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	120		2.4	0.71	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.9	M	2.4	0.87	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: 320-26105-1

Client Sample ID: MEAFF-FD03-0217

Lab Sample ID: 320-26105-16

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	120		2.4	0.72	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	5.2	M	2.4	0.88	ng/L	1		537 (Modified)	Total/NA

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: 320-26105-1

Client Sample ID: MEAFF-08MW01D-0217

Date Collected: 02/24/17 12:15

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-1

Matrix: Water

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.48	U	0.95	0.19	ug/L		03/02/17 13:45	03/14/17 17:42	1
Surrogate									
Nitrobenzene-d5	80		42 - 91				03/02/17 13:45	03/14/17 17:42	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.9	U	2.4	0.72	ng/L		03/02/17 14:24	03/06/17 02:11	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.9	1.2	ng/L		03/02/17 14:24	03/06/17 02:11	1
Perfluorobutanesulfonic acid (PFBS)	1.9	U	2.4	0.89	ng/L		03/02/17 14:24	03/06/17 02:11	1
Isotope Dilution									
13C4 PFOA	88		25 - 150				03/02/17 14:24	03/06/17 02:11	1
13C4 PFOS	125		25 - 150				03/02/17 14:24	03/06/17 02:11	1
18O2 PFHxS	127		25 - 150				03/02/17 14:24	03/06/17 02:11	1

Client Sample ID: MEAFF-08MW01-0217

Date Collected: 02/24/17 12:00

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-2

Matrix: Water

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.0	M	1.6	0.32	ug/L		03/02/17 13:45	03/14/17 18:05	1
Surrogate									
Nitrobenzene-d5	59		42 - 91				03/02/17 13:45	03/14/17 18:05	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	490	E	2.5	0.74	ng/L		03/02/17 14:24	03/06/17 02:19	1
Perfluorooctanesulfonic acid (PFOS)	270		3.9	1.3	ng/L		03/02/17 14:24	03/06/17 02:19	1
Perfluorobutanesulfonic acid (PFBS)	14	M	2.5	0.91	ng/L		03/02/17 14:24	03/06/17 02:19	1
Isotope Dilution									
13C4 PFOA	82		25 - 150				03/02/17 14:24	03/06/17 02:19	1
13C4 PFOS	100		25 - 150				03/02/17 14:24	03/06/17 02:19	1
18O2 PFHxS	99		25 - 150				03/02/17 14:24	03/06/17 02:19	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	520	D M	12	3.7	ng/L		03/02/17 14:24	03/08/17 20:17	5
Perfluorooctanesulfonic acid (PFOS)	270	D M	20	6.3	ng/L		03/02/17 14:24	03/08/17 20:17	5
Perfluorobutanesulfonic acid (PFBS)	16	D M	12	4.5	ng/L		03/02/17 14:24	03/08/17 20:17	5
Isotope Dilution									
13C4 PFOA	105		25 - 150				03/02/17 14:24	03/08/17 20:17	5
13C4 PFOS	98		25 - 150				03/02/17 14:24	03/08/17 20:17	5
18O2 PFHxS	104		25 - 150				03/02/17 14:24	03/08/17 20:17	5

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-MRD-1A14-0217

Lab Sample ID: 320-26105-3

Date Collected: 02/24/17 15:00

Matrix: Water

Date Received: 02/25/17 08:50

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.48	U	0.95	0.19	ug/L		03/02/17 13:45	03/14/17 18:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	73		42 - 91				03/02/17 13:45	03/14/17 18:28	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	480	E J	2.3	0.69	ng/L		03/02/17 14:24	03/06/17 02:26	1
Perfluorooctanesulfonic acid (PFOS)	43		3.7	1.2	ng/L		03/02/17 14:24	03/06/17 02:26	1
Perfluorobutanesulfonic acid (PFBS)	2.8	M	2.3	0.85	ng/L		03/02/17 14:24	03/06/17 02:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	46		25 - 150				03/02/17 14:24	03/06/17 02:26	1
13C4 PFOS	129		25 - 150				03/02/17 14:24	03/06/17 02:26	1
18O2 PFHxS	132		25 - 150				03/02/17 14:24	03/06/17 02:26	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	500	D M J	12	3.5	ng/L		03/02/17 14:24	03/08/17 20:24	5
Perfluorooctanesulfonic acid (PFOS)	24	D M J	19	5.9	ng/L		03/02/17 14:24	03/08/17 20:24	5
Perfluorobutanesulfonic acid (PFBS)	9.3	U M	12	4.3	ng/L		03/02/17 14:24	03/08/17 20:24	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	48		25 - 150				03/02/17 14:24	03/08/17 20:24	5
13C4 PFOS	120		25 - 150				03/02/17 14:24	03/08/17 20:24	5
18O2 PFHxS	141		25 - 150				03/02/17 14:24	03/08/17 20:24	5

Client Sample ID: MEAFF-BLD002-SB01-0204

Lab Sample ID: 320-26105-4

Date Collected: 02/24/17 09:00

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 82.5

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.37	U M	0.61	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:20	1
Perfluorooctanesulfonic acid (PFOS)	2.1	M	0.61	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 17:20	1
Perfluorobutanesulfonic acid (PFBS)	0.37	U M	0.49	0.13	ug/Kg	☼	03/02/17 17:04	03/11/17 17:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	100		25 - 150				03/02/17 17:04	03/11/17 17:20	1
13C4 PFOS	58		25 - 150				03/02/17 17:04	03/11/17 17:20	1
18O2 PFHxS	93		25 - 150				03/02/17 17:04	03/11/17 17:20	1

Client Sample ID: MEAFF-BLD002-SB01-0001

Lab Sample ID: 320-26105-5

Date Collected: 02/24/17 09:05

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 89.9

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.25	J M	0.55	0.11	ug/Kg	☼	03/02/17 17:04	03/11/17 17:27	1

TestAmerica Sacramento

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-BLD002-SB01-0001

Lab Sample ID: 320-26105-5

Date Collected: 02/24/17 09:05

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 89.9

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	19	M	0.55	0.14	ug/Kg	☼	03/02/17 17:04	03/11/17 17:27	1
Perfluorobutanesulfonic acid (PFBS)	0.33	U M	0.44	0.11	ug/Kg	☼	03/02/17 17:04	03/11/17 17:27	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	109		25 - 150				03/02/17 17:04	03/11/17 17:27	1
13C4 PFOS	83		25 - 150				03/02/17 17:04	03/11/17 17:27	1
18O2 PFHxS	93		25 - 150				03/02/17 17:04	03/11/17 17:27	1

Client Sample ID: MEAFF-BLD002-SB02-0001

Lab Sample ID: 320-26105-6

Date Collected: 02/24/17 09:15

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 87.2

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	6.3	M	0.58	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:35	1
Perfluorooctanesulfonic acid (PFOS)	21	M	0.58	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 17:35	1
Perfluorobutanesulfonic acid (PFBS)	0.35	U M	0.46	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	95		25 - 150				03/02/17 17:04	03/11/17 17:35	1
13C4 PFOS	61		25 - 150				03/02/17 17:04	03/11/17 17:35	1
18O2 PFHxS	92		25 - 150				03/02/17 17:04	03/11/17 17:35	1

Client Sample ID: MEAFF-BLD002-SB02-0204

Lab Sample ID: 320-26105-7

Date Collected: 02/24/17 09:20

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.3

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.15	J M	0.58	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:42	1
Perfluorooctanesulfonic acid (PFOS)	0.35	U M	0.58	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 17:42	1
Perfluorobutanesulfonic acid (PFBS)	0.35	U	0.46	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:42	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	104		25 - 150				03/02/17 17:04	03/11/17 17:42	1
13C4 PFOS	56		25 - 150				03/02/17 17:04	03/11/17 17:42	1
18O2 PFHxS	95		25 - 150				03/02/17 17:04	03/11/17 17:42	1

Client Sample ID: MEAFF-BLD192-SB03-0001

Lab Sample ID: 320-26105-8

Date Collected: 02/24/17 11:10

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 83.3

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	5.1	M	0.60	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:50	1
Perfluorooctanesulfonic acid (PFOS)	15	M	0.60	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 17:50	1
Perfluorobutanesulfonic acid (PFBS)	0.36	U M	0.48	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 17:50	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	107		25 - 150				03/02/17 17:04	03/11/17 17:50	1
13C4 PFOS	72		25 - 150				03/02/17 17:04	03/11/17 17:50	1

TestAmerica Sacramento

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-BLD192-SB03-0001

Lab Sample ID: 320-26105-8

Date Collected: 02/24/17 11:10

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 83.3

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	100		25 - 150	03/02/17 17:04	03/11/17 17:50	1

Client Sample ID: MEAFF-BLD192-SB03-0204

Lab Sample ID: 320-26105-9

Date Collected: 02/24/17 11:15

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 79.3

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.28	J	0.64	0.13	ug/Kg	☼	03/02/17 17:04	03/11/17 17:57	1
Perfluorooctanesulfonic acid (PFOS)	0.40	J M	0.64	0.16	ug/Kg	☼	03/02/17 17:04	03/11/17 17:57	1
Perfluorobutanesulfonic acid (PFBS)	0.38	U	0.51	0.13	ug/Kg	☼	03/02/17 17:04	03/11/17 17:57	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	119		25 - 150	03/02/17 17:04	03/11/17 17:57	1			
13C4 PFOS	78		25 - 150	03/02/17 17:04	03/11/17 17:57	1			
18O2 PFHxS	108		25 - 150	03/02/17 17:04	03/11/17 17:57	1			

Client Sample ID: MEAFF-SWON-SB03-0001

Lab Sample ID: 320-26105-10

Date Collected: 02/24/17 11:35

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	38	M	0.58	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 18:05	1
Perfluorooctanesulfonic acid (PFOS)	65	E M	0.58	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 18:05	1
Perfluorobutanesulfonic acid (PFBS)	3.0		0.46	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 18:05	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	85		25 - 150	03/02/17 17:04	03/11/17 18:05	1			
13C4 PFOS	56		25 - 150	03/02/17 17:04	03/11/17 18:05	1			
18O2 PFHxS	59		25 - 150	03/02/17 17:04	03/11/17 18:05	1			

Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	42	D M	5.8	1.2	ug/Kg	☼	03/02/17 17:04	03/13/17 17:01	10
Perfluorooctanesulfonic acid (PFOS)	64	D M	5.8	1.5	ug/Kg	☼	03/02/17 17:04	03/13/17 17:01	10
Perfluorobutanesulfonic acid (PFBS)	1.8	J D	4.6	1.2	ug/Kg	☼	03/02/17 17:04	03/13/17 17:01	10
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	94	M	25 - 150	03/02/17 17:04	03/13/17 17:01	10			
13C4 PFOS	52		25 - 150	03/02/17 17:04	03/13/17 17:01	10			
18O2 PFHxS	81		25 - 150	03/02/17 17:04	03/13/17 17:01	10			

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-SWON-SB03-0204

Lab Sample ID: 320-26105-11

Date Collected: 02/24/17 11:40

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.4

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	8.3	M	0.59	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 18:20	1
Perfluorooctanesulfonic acid (PFOS)	8.3	M	0.59	0.15	ug/Kg	☼	03/02/17 17:04	03/11/17 18:20	1
Perfluorobutanesulfonic acid (PFBS)	1.6		0.47	0.12	ug/Kg	☼	03/02/17 17:04	03/11/17 18:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	108		25 - 150				03/02/17 17:04	03/11/17 18:20	1
13C4 PFOS	53		25 - 150				03/02/17 17:04	03/11/17 18:20	1
18O2 PFHxS	82		25 - 150				03/02/17 17:04	03/11/17 18:20	1

Client Sample ID: MEAFF-08MW03-0217

Lab Sample ID: 320-26105-12

Date Collected: 02/24/17 11:30

Matrix: Water

Date Received: 02/25/17 08:50

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	14	M	0.97	0.19	ug/L		03/02/17 13:45	03/14/17 19:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	69		42 - 91				03/02/17 13:45	03/14/17 19:35	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	3.9	M	2.2	0.67	ng/L		03/02/17 14:24	03/06/17 02:49	1
Perfluorooctanesulfonic acid (PFOS)	2.7	U M	3.6	1.1	ng/L		03/02/17 14:24	03/06/17 02:49	1
Perfluorobutanesulfonic acid (PFBS)	5.5	M	2.2	0.82	ng/L		03/02/17 14:24	03/06/17 02:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	68		25 - 150				03/02/17 14:24	03/06/17 02:49	1
13C4 PFOS	131		25 - 150				03/02/17 14:24	03/06/17 02:49	1
18O2 PFHxS	141		25 - 150				03/02/17 14:24	03/06/17 02:49	1

Client Sample ID: MEAFF-08MW06-0217

Lab Sample ID: 320-26105-13

Date Collected: 02/24/17 13:15

Matrix: Water

Date Received: 02/25/17 08:50

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	M	0.96	0.19	ug/L		03/02/17 13:45	03/14/17 19:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	74		42 - 91				03/02/17 13:45	03/14/17 19:58	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	130		2.3	0.69	ng/L		03/02/17 14:24	03/06/17 02:56	1
Perfluorooctanesulfonic acid (PFOS)	55		3.7	1.2	ng/L		03/02/17 14:24	03/06/17 02:56	1
Perfluorobutanesulfonic acid (PFBS)	22	M	2.3	0.85	ng/L		03/02/17 14:24	03/06/17 02:56	1

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-08MW06-0217

Lab Sample ID: 320-26105-13

Date Collected: 02/24/17 13:15

Matrix: Water

Date Received: 02/25/17 08:50

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	59		25 - 150	03/02/17 14:24	03/06/17 02:56	1
13C4 PFOS	120		25 - 150	03/02/17 14:24	03/06/17 02:56	1
18O2 PFHxS	128		25 - 150	03/02/17 14:24	03/06/17 02:56	1

Client Sample ID: MEAFF-FD02-0217

Lab Sample ID: 320-26105-14

Date Collected: 02/24/17 00:00

Matrix: Water

Date Received: 02/25/17 08:50

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	M	0.96	0.19	ug/L		03/02/17 13:45	03/14/17 20:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	62		42 - 91	03/02/17 13:45	03/14/17 20:21	1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	130		2.1	0.63	ng/L		03/02/17 14:24	03/06/17 03:11	1
Perfluorooctanesulfonic acid (PFOS)	54		3.3	1.1	ng/L		03/02/17 14:24	03/06/17 03:11	1
Perfluorobutanesulfonic acid (PFBS)	20	M	2.1	0.77	ng/L		03/02/17 14:24	03/06/17 03:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	65		25 - 150	03/02/17 14:24	03/06/17 03:11	1
13C4 PFOS	124		25 - 150	03/02/17 14:24	03/06/17 03:11	1
18O2 PFHxS	132		25 - 150	03/02/17 14:24	03/06/17 03:11	1

Client Sample ID: MEAFF-MRD-IA01-0217A

Lab Sample ID: 320-26105-15

Date Collected: 02/24/17 15:30

Matrix: Water

Date Received: 02/25/17 08:50

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	120		2.4	0.71	ng/L		03/02/17 14:24	03/06/17 03:19	1
Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	1.2	ng/L		03/02/17 14:24	03/06/17 03:19	1
Perfluorobutanesulfonic acid (PFBS)	6.9	M	2.4	0.87	ng/L		03/02/17 14:24	03/06/17 03:19	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	79		25 - 150	03/02/17 14:24	03/06/17 03:19	1
13C4 PFOS	115		25 - 150	03/02/17 14:24	03/06/17 03:19	1
18O2 PFHxS	107		25 - 150	03/02/17 14:24	03/06/17 03:19	1

Client Sample ID: MEAFF-FD03-0217

Lab Sample ID: 320-26105-16

Date Collected: 02/24/17 00:00

Matrix: Water

Date Received: 02/25/17 08:50

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	120		2.4	0.72	ng/L		03/02/17 14:24	03/06/17 03:26	1
Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	1.2	ng/L		03/02/17 14:24	03/06/17 03:26	1

Client Sample Results

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-FD03-0217

Lab Sample ID: 320-26105-16

Date Collected: 02/24/17 00:00

Matrix: Water

Date Received: 02/25/17 08:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	5.2	M	2.4	0.88	ng/L		03/02/17 14:24	03/06/17 03:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C4 PFOA	83		25 - 150				03/02/17 14:24	03/06/17 03:26	1
¹³ C4 PFOS	133		25 - 150				03/02/17 14:24	03/06/17 03:26	1
¹⁸ O2 PFHxS	124		25 - 150				03/02/17 14:24	03/06/17 03:26	1

Default Detection Limits

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

TestAmerica Job ID: 320-26105-1

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Prep: 3510C

Analyte	LOQ	DL	Units	Method
1,4-Dioxane	1.0	0.20	ug/L	WS-MS-0011

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)

Surrogate Summary

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

TestAmerica Job ID: 320-26105-1

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	NBZ (42-91)
320-26105-1	MEAFF-08MW01D-0217	80
320-26105-2	MEAFF-08MW01-0217	59
320-26105-3	MEAFF-MRD-1A14-0217	73
320-26105-3 MS	MEAFF-MRD-1A14-0217	75
320-26105-3 MSD	MEAFF-MRD-1A14-0217	74
320-26105-12	MEAFF-08MW03-0217	69
320-26105-13	MEAFF-08MW06-0217	74
320-26105-14	MEAFF-FD02-0217	62
LCS 320-152910/2-A	Lab Control Sample	73
LCSD 320-152910/3-A	Lab Control Sample Dup	74
MB 320-152910/1-A	Method Blank	69

Surrogate Legend

NBZ = Nitrobenzene-d5

Isotope Dilution Summary

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

TestAmerica Job ID: 320-26105-1

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)
320-26105-4	MEAFF-BLD002-SB01-0204	100	58	93
320-26105-5	MEAFF-BLD002-SB01-0001	109	83	93
320-26105-6	MEAFF-BLD002-SB02-0001	95	61	92
320-26105-7	MEAFF-BLD002-SB02-0204	104	56	95
320-26105-8	MEAFF-BLD192-SB03-0001	107	72	100
320-26105-9	MEAFF-BLD192-SB03-0204	119	78	108
320-26105-10	MEAFF-SWON-SB03-0001	85	56	59
320-26105-10 - DL	MEAFF-SWON-SB03-0001	94 M	52	81
320-26105-11	MEAFF-SWON-SB03-0204	108	53	82
LCS 320-152961/2-A	Lab Control Sample	113	100	108
MB 320-152961/1-A	Method Blank	122 M	99	113

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)
320-26105-1	MEAFF-08MW01D-0217	88	125	127
320-26105-2	MEAFF-08MW01-0217	82	100	99
320-26105-2 - DL	MEAFF-08MW01-0217	105	98	104
320-26105-3	MEAFF-MRD-1A14-0217	46	129	132
320-26105-3 - DL	MEAFF-MRD-1A14-0217	48	120	141
320-26105-3 MS	MEAFF-MRD-1A14-0217	57	113	115
320-26105-3 MS - DL	MEAFF-MRD-1A14-0217	71	119	134
320-26105-3 MSD	MEAFF-MRD-1A14-0217	54	122	122
320-26105-3 MSD - DL	MEAFF-MRD-1A14-0217	68	128	147
320-26105-12	MEAFF-08MW03-0217	68	131	141
320-26105-13	MEAFF-08MW06-0217	59	120	128
320-26105-14	MEAFF-FD02-0217	65	124	132
320-26105-15	MEAFF-MRD-IA01-0217A	79	115	107
320-26105-16	MEAFF-FD03-0217	83	133	124
LCS 320-152929/2-A	Lab Control Sample	140	125	128
MB 320-152929/1-A	Method Blank	158 Q	128	134

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: 320-26105-1

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Lab Sample ID: MB 320-152910/1-A
Matrix: Water
Analysis Batch: 154875

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 152910

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.50	U	1.0	0.20	ug/L		03/02/17 13:45	03/14/17 15:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	69		42 - 91				03/02/17 13:45	03/14/17 15:04	1

Lab Sample ID: LCS 320-152910/2-A
Matrix: Water
Analysis Batch: 154875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 152910

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	10.0	3.23	M	ug/L		32	12 - 52
Surrogate	LCS %Recovery	LCS Qualifier	Limits				%Rec. Limits
Nitrobenzene-d5	73		42 - 91				

Lab Sample ID: LCSD 320-152910/3-A
Matrix: Water
Analysis Batch: 154875

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 152910

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	10.0	3.00	M	ug/L		30	12 - 52	7	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits				%Rec. Limits	RPD	Limit
Nitrobenzene-d5	74		42 - 91						

Lab Sample ID: 320-26105-3 MS
Matrix: Water
Analysis Batch: 154875

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152910

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	0.48	U	9.50	2.59	M	ug/L		27	12 - 52
Surrogate	MS %Recovery	MS Qualifier	Limits						%Rec. Limits
Nitrobenzene-d5	75		42 - 91						

Lab Sample ID: 320-26105-3 MSD
Matrix: Water
Analysis Batch: 154875

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152910

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	0.48	U	9.48	2.68	M	ug/L		28	12 - 52	3	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits						%Rec. Limits	RPD	Limit
Nitrobenzene-d5	74		42 - 91								

QC Sample Results

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

TestAmerica Job ID: 320-26105-1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-152929/1-A
Matrix: Water
Analysis Batch: 153421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 152929

Analyte	MB	MB	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid (PFOA)	2.0	U M	2.5	0.75	ng/L		03/02/17 14:24	03/06/17 01:49	1
Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	1.3	ng/L		03/02/17 14:24	03/06/17 01:49	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	0.92	ng/L		03/02/17 14:24	03/06/17 01:49	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFOA	158	Q	25 - 150	03/02/17 14:24	03/06/17 01:49	1
13C4 PFOS	128		25 - 150	03/02/17 14:24	03/06/17 01:49	1
18O2 PFHxS	134		25 - 150	03/02/17 14:24	03/06/17 01:49	1

Lab Sample ID: LCS 320-152929/2-A
Matrix: Water
Analysis Batch: 153421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 152929

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits
		Result	Qualifier				
Perfluorooctanoic acid (PFOA)	40.0	43.7		ng/L		109	60 - 140
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5		ng/L		104	60 - 140
Perfluorobutanesulfonic acid (PFBS)	35.4	44.5		ng/L		126	50 - 150

Isotope Dilution	LCS	LCS	Limits
	%Recovery	Qualifier	
13C4 PFOA	140		25 - 150
13C4 PFOS	125		25 - 150
18O2 PFHxS	128		25 - 150

Lab Sample ID: 320-26105-3 MS
Matrix: Water
Analysis Batch: 153421

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152929

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
Perfluorooctanoic acid (PFOA)	480	E J	36.6	499	E 4	ng/L		65	60 - 140
Perfluorooctanesulfonic acid (PFOS)	43		33.9	79.8		ng/L		110	60 - 140
Perfluorobutanesulfonic acid (PFBS)	2.8	M	32.3	43.3		ng/L		125	50 - 150

Isotope Dilution	MS	MS	Limits
	%Recovery	Qualifier	
13C4 PFOA	57		25 - 150
13C4 PFOS	113		25 - 150
18O2 PFHxS	115		25 - 150

Lab Sample ID: 320-26105-3 MSD
Matrix: Water
Analysis Batch: 153421

Client Sample ID: MEAFF-MRD-1A14-0217
Prep Type: Total/NA
Prep Batch: 152929

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Perfluorooctanoic acid (PFOA)	480	E J	37.0	478	E 4	ng/L		7	60 - 140	4	30
Perfluorooctanesulfonic acid (PFOS)	43		34.3	76.1		ng/L		98	60 - 140	5	30

QC Sample Results

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

TestAmerica Job ID: 320-26105-1

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

Lab Sample ID: 320-26105-3 MSD

Matrix: Water

Analysis Batch: 153421

Client Sample ID: MEAFF-MRD-1A14-0217

Prep Type: Total/NA

Prep Batch: 152929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid (PFBS)	2.8	M	32.7	41.3		ng/L		118	50 - 150	5	30
MSD MSD											
Isotope Dilution	%Recovery	Qualifier	Limits								
13C4 PFOA	54		25 - 150								
13C4 PFOS	122		25 - 150								
18O2 PFHxS	122		25 - 150								

Lab Sample ID: MB 320-152961/1-A

Matrix: Solid

Analysis Batch: 154503

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 152961

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.30	U M	0.50	0.10	ug/Kg		03/02/17 17:04	03/11/17 15:42	1
Perfluorooctanesulfonic acid (PFOS)	0.30	U	0.50	0.13	ug/Kg		03/02/17 17:04	03/11/17 15:42	1
Perfluorobutanesulfonic acid (PFBS)	0.30	U	0.40	0.10	ug/Kg		03/02/17 17:04	03/11/17 15:42	1
MB MB									
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	122	M	25 - 150				03/02/17 17:04	03/11/17 15:42	1
13C4 PFOS	99		25 - 150				03/02/17 17:04	03/11/17 15:42	1
18O2 PFHxS	113		25 - 150				03/02/17 17:04	03/11/17 15:42	1

Lab Sample ID: LCS 320-152961/2-A

Matrix: Solid

Analysis Batch: 154503

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 152961

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanoic acid (PFOA)	4.00	4.25		ug/Kg		106	60 - 140
Perfluorooctanesulfonic acid (PFOS)	3.71	3.90	M	ug/Kg		105	60 - 140
Perfluorobutanesulfonic acid (PFBS)	3.54	4.04		ug/Kg		114	50 - 150
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C4 PFOA	113		25 - 150				
13C4 PFOS	100		25 - 150				
18O2 PFHxS	108		25 - 150				

Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL

Lab Sample ID: 320-26105-3 MS

Matrix: Water

Analysis Batch: 154016

Client Sample ID: MEAFF-MRD-1A14-0217

Prep Type: Total/NA

Prep Batch: 152929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanoic acid (PFOA) - DL	500	D M J	36.6	530	D M 4	ng/L		84	60 - 140
Perfluorooctanesulfonic acid (PFOS) - DL	24	D M J	33.9	78.7	D M J	ng/L		162	60 - 140

TestAmerica Sacramento

QC Sample Results

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

TestAmerica Job ID: 320-26105-1

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

Lab Sample ID: 320-26105-3 MS

Matrix: Water

Analysis Batch: 154016

Client Sample ID: MEAFF-MRD-1A14-0217

Prep Type: Total/NA

Prep Batch: 152929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	MS %Rec.	MS Limits
Perfluorobutanesulfonic acid (PFBS) - DL	9.3	U M	32.3	42.7	D	ng/L		132		50 - 150
MS MS										
Isotope Dilution	%Recovery	Qualifier	Limits							
<i>13C4 PFOA - DL</i>	71		25 - 150							
<i>13C4 PFOS - DL</i>	119		25 - 150							
<i>18O2 PFHxS - DL</i>	134		25 - 150							

Lab Sample ID: 320-26105-3 MSD

Matrix: Water

Analysis Batch: 154016

Client Sample ID: MEAFF-MRD-1A14-0217

Prep Type: Total/NA

Prep Batch: 152929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	MSD %Rec.	MSD Limits	RPD	RPD Limit
Perfluorooctanoic acid (PFOA) - DL	500	D M J	37.0	504	D M 4	ng/L		12		60 - 140	5	30
Perfluorooctanesulfonic acid (PFOS) - DL	24	D M J	34.3	76.8	D M J	ng/L		154		60 - 140	2	30
Perfluorobutanesulfonic acid (PFBS) - DL	9.3	U M	32.7	40.7	D	ng/L		125		50 - 150	5	30
MSD MSD												
Isotope Dilution	%Recovery	Qualifier	Limits									
<i>13C4 PFOA - DL</i>	68		25 - 150									
<i>13C4 PFOS - DL</i>	128		25 - 150									
<i>18O2 PFHxS - DL</i>	147		25 - 150									

QC Association Summary

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

TestAmerica Job ID: 320-26105-1

GC/MS Semi VOA

Prep Batch: 152910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-1	MEAFF-08MW01D-0217	Total/NA	Water	3510C	
320-26105-2	MEAFF-08MW01-0217	Total/NA	Water	3510C	
320-26105-3	MEAFF-MRD-1A14-0217	Total/NA	Water	3510C	
320-26105-12	MEAFF-08MW03-0217	Total/NA	Water	3510C	
320-26105-13	MEAFF-08MW06-0217	Total/NA	Water	3510C	
320-26105-14	MEAFF-FD02-0217	Total/NA	Water	3510C	
MB 320-152910/1-A	Method Blank	Total/NA	Water	3510C	
LCS 320-152910/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 320-152910/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
320-26105-3 MS	MEAFF-MRD-1A14-0217	Total/NA	Water	3510C	
320-26105-3 MSD	MEAFF-MRD-1A14-0217	Total/NA	Water	3510C	

Analysis Batch: 154875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-1	MEAFF-08MW01D-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-2	MEAFF-08MW01-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-3	MEAFF-MRD-1A14-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-12	MEAFF-08MW03-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-13	MEAFF-08MW06-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-14	MEAFF-FD02-0217	Total/NA	Water	WS-MS-0011	152910
MB 320-152910/1-A	Method Blank	Total/NA	Water	WS-MS-0011	152910
LCS 320-152910/2-A	Lab Control Sample	Total/NA	Water	WS-MS-0011	152910
LCSD 320-152910/3-A	Lab Control Sample Dup	Total/NA	Water	WS-MS-0011	152910
320-26105-3 MS	MEAFF-MRD-1A14-0217	Total/NA	Water	WS-MS-0011	152910
320-26105-3 MSD	MEAFF-MRD-1A14-0217	Total/NA	Water	WS-MS-0011	152910

LCMS

Prep Batch: 152929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-1	MEAFF-08MW01D-0217	Total/NA	Water	3535	
320-26105-2 - DL	MEAFF-08MW01-0217	Total/NA	Water	3535	
320-26105-2	MEAFF-08MW01-0217	Total/NA	Water	3535	
320-26105-3 - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-3	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-12	MEAFF-08MW03-0217	Total/NA	Water	3535	
320-26105-13	MEAFF-08MW06-0217	Total/NA	Water	3535	
320-26105-14	MEAFF-FD02-0217	Total/NA	Water	3535	
320-26105-15	MEAFF-MRD-IA01-0217A	Total/NA	Water	3535	
320-26105-16	MEAFF-FD03-0217	Total/NA	Water	3535	
MB 320-152929/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-152929/2-A	Lab Control Sample	Total/NA	Water	3535	
320-26105-3 MS	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-3 MS - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-3 MSD	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	
320-26105-3 MSD - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	3535	

Prep Batch: 152961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-4	MEAFF-BLD002-SB01-0204	Total/NA	Solid	SHAKE	

TestAmerica Sacramento

QC Association Summary

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

TestAmerica Job ID: 320-26105-1

LCMS (Continued)

Prep Batch: 152961 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-5	MEAFF-BLD002-SB01-0001	Total/NA	Solid	SHAKE	
320-26105-6	MEAFF-BLD002-SB02-0001	Total/NA	Solid	SHAKE	
320-26105-7	MEAFF-BLD002-SB02-0204	Total/NA	Solid	SHAKE	
320-26105-8	MEAFF-BLD192-SB03-0001	Total/NA	Solid	SHAKE	
320-26105-9	MEAFF-BLD192-SB03-0204	Total/NA	Solid	SHAKE	
320-26105-10	MEAFF-SWON-SB03-0001	Total/NA	Solid	SHAKE	
320-26105-10 - DL	MEAFF-SWON-SB03-0001	Total/NA	Solid	SHAKE	
320-26105-11	MEAFF-SWON-SB03-0204	Total/NA	Solid	SHAKE	
MB 320-152961/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-152961/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Analysis Batch: 153421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-1	MEAFF-08MW01D-0217	Total/NA	Water	537 (Modified)	152929
320-26105-2	MEAFF-08MW01-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929
320-26105-12	MEAFF-08MW03-0217	Total/NA	Water	537 (Modified)	152929
320-26105-13	MEAFF-08MW06-0217	Total/NA	Water	537 (Modified)	152929
320-26105-14	MEAFF-FD02-0217	Total/NA	Water	537 (Modified)	152929
320-26105-15	MEAFF-MRD-IA01-0217A	Total/NA	Water	537 (Modified)	152929
320-26105-16	MEAFF-FD03-0217	Total/NA	Water	537 (Modified)	152929
MB 320-152929/1-A	Method Blank	Total/NA	Water	537 (Modified)	152929
LCS 320-152929/2-A	Lab Control Sample	Total/NA	Water	537 (Modified)	152929
320-26105-3 MS	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3 MSD	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929

Analysis Batch: 154016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-2 - DL	MEAFF-08MW01-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3 - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3 MS - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929
320-26105-3 MSD - DL	MEAFF-MRD-1A14-0217	Total/NA	Water	537 (Modified)	152929

Analysis Batch: 154503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-4	MEAFF-BLD002-SB01-0204	Total/NA	Solid	537 (Modified)	152961
320-26105-5	MEAFF-BLD002-SB01-0001	Total/NA	Solid	537 (Modified)	152961
320-26105-6	MEAFF-BLD002-SB02-0001	Total/NA	Solid	537 (Modified)	152961
320-26105-7	MEAFF-BLD002-SB02-0204	Total/NA	Solid	537 (Modified)	152961
320-26105-8	MEAFF-BLD192-SB03-0001	Total/NA	Solid	537 (Modified)	152961
320-26105-9	MEAFF-BLD192-SB03-0204	Total/NA	Solid	537 (Modified)	152961
320-26105-10	MEAFF-SWON-SB03-0001	Total/NA	Solid	537 (Modified)	152961
320-26105-11	MEAFF-SWON-SB03-0204	Total/NA	Solid	537 (Modified)	152961
MB 320-152961/1-A	Method Blank	Total/NA	Solid	537 (Modified)	152961
LCS 320-152961/2-A	Lab Control Sample	Total/NA	Solid	537 (Modified)	152961

Analysis Batch: 154808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-10 - DL	MEAFF-SWON-SB03-0001	Total/NA	Solid	537 (Modified)	152961

QC Association Summary

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

TestAmerica Job ID: 320-26105-1

General Chemistry

Analysis Batch: 152396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-4	MEAFF-BLD002-SB01-0204	Total/NA	Solid	D 2216	
320-26105-5	MEAFF-BLD002-SB01-0001	Total/NA	Solid	D 2216	
320-26105-6	MEAFF-BLD002-SB02-0001	Total/NA	Solid	D 2216	
320-26105-7	MEAFF-BLD002-SB02-0204	Total/NA	Solid	D 2216	

Analysis Batch: 152404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26105-8	MEAFF-BLD192-SB03-0001	Total/NA	Solid	D 2216	
320-26105-9	MEAFF-BLD192-SB03-0204	Total/NA	Solid	D 2216	
320-26105-10	MEAFF-SWON-SB03-0001	Total/NA	Solid	D 2216	
320-26105-11	MEAFF-SWON-SB03-0204	Total/NA	Solid	D 2216	

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-08MW01D-0217

Date Collected: 02/24/17 12:15

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1	154875	03/14/17 17:42	A1C	TAL SAC
Total/NA	Prep	3535			152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	153421	03/06/17 02:11	TC1	TAL SAC

Client Sample ID: MEAFF-08MW01-0217

Date Collected: 02/24/17 12:00

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1	154875	03/14/17 18:05	A1C	TAL SAC
Total/NA	Prep	3535			152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	153421	03/06/17 02:19	TC1	TAL SAC
Total/NA	Prep	3535	DL		152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	5	154016	03/08/17 20:17	CBW	TAL SAC

Client Sample ID: MEAFF-MRD-1A14-0217

Date Collected: 02/24/17 15:00

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1	154875	03/14/17 18:28	A1C	TAL SAC
Total/NA	Prep	3535			152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	153421	03/06/17 02:26	TC1	TAL SAC
Total/NA	Prep	3535	DL		152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	5	154016	03/08/17 20:24	CBW	TAL SAC

Client Sample ID: MEAFF-BLD002-SB01-0204

Date Collected: 02/24/17 09:00

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	152396	02/27/17 15:45	MY1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB01-0204

Date Collected: 02/24/17 09:00

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-4

Matrix: Solid
Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1	154503	03/11/17 17:20	TC1	TAL SAC

TestAmerica Sacramento

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-BLD002-SB01-0001

Date Collected: 02/24/17 09:05

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	152396	02/27/17 15:45	MY1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB01-0001

Date Collected: 02/24/17 09:05

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-5

Matrix: Solid

Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1	154503	03/11/17 17:27	TC1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB02-0001

Date Collected: 02/24/17 09:15

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	152396	02/27/17 15:45	MY1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB02-0001

Date Collected: 02/24/17 09:15

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-6

Matrix: Solid

Percent Solids: 87.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1	154503	03/11/17 17:35	TC1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB02-0204

Date Collected: 02/24/17 09:20

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	152396	02/27/17 15:45	MY1	TAL SAC

Client Sample ID: MEAFF-BLD002-SB02-0204

Date Collected: 02/24/17 09:20

Date Received: 02/25/17 08:50

Lab Sample ID: 320-26105-7

Matrix: Solid

Percent Solids: 86.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1	154503	03/11/17 17:42	TC1	TAL SAC

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-BLD192-SB03-0001

Lab Sample ID: 320-26105-8

Date Collected: 02/24/17 11:10

Matrix: Solid

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	152404	02/27/17 16:11	MY1	TAL SAC

Client Sample ID: MEAFF-BLD192-SB03-0001

Lab Sample ID: 320-26105-8

Date Collected: 02/24/17 11:10

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1	154503	03/11/17 17:50	TC1	TAL SAC

Client Sample ID: MEAFF-BLD192-SB03-0204

Lab Sample ID: 320-26105-9

Date Collected: 02/24/17 11:15

Matrix: Solid

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	152404	02/27/17 16:11	MY1	TAL SAC

Client Sample ID: MEAFF-BLD192-SB03-0204

Lab Sample ID: 320-26105-9

Date Collected: 02/24/17 11:15

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 79.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1	154503	03/11/17 17:57	TC1	TAL SAC

Client Sample ID: MEAFF-SWON-SB03-0001

Lab Sample ID: 320-26105-10

Date Collected: 02/24/17 11:35

Matrix: Solid

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	152404	02/27/17 16:11	MY1	TAL SAC

Client Sample ID: MEAFF-SWON-SB03-0001

Lab Sample ID: 320-26105-10

Date Collected: 02/24/17 11:35

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1	154503	03/11/17 18:05	TC1	TAL SAC
Total/NA	Prep	SHAKE	DL		152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	10	154808	03/13/17 17:01	CBW	TAL SAC

TestAmerica Sacramento

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-SWON-SB03-0204

Lab Sample ID: 320-26105-11

Date Collected: 02/24/17 11:40

Matrix: Solid

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	152404	02/27/17 16:11	MY1	TAL SAC

Client Sample ID: MEAFF-SWON-SB03-0204

Lab Sample ID: 320-26105-11

Date Collected: 02/24/17 11:40

Matrix: Solid

Date Received: 02/25/17 08:50

Percent Solids: 86.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152961	03/02/17 17:04	ERW	TAL SAC
Total/NA	Analysis	537 (Modified)		1	154503	03/11/17 18:20	TC1	TAL SAC

Client Sample ID: MEAFF-08MW03-0217

Lab Sample ID: 320-26105-12

Date Collected: 02/24/17 11:30

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1	154875	03/14/17 19:35	A1C	TAL SAC
Total/NA	Prep	3535			152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	153421	03/06/17 02:49	TC1	TAL SAC

Client Sample ID: MEAFF-08MW06-0217

Lab Sample ID: 320-26105-13

Date Collected: 02/24/17 13:15

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1	154875	03/14/17 19:58	A1C	TAL SAC
Total/NA	Prep	3535			152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	153421	03/06/17 02:56	TC1	TAL SAC

Client Sample ID: MEAFF-FD02-0217

Lab Sample ID: 320-26105-14

Date Collected: 02/24/17 00:00

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			152910	03/02/17 13:45	NGK	TAL SAC
Total/NA	Analysis	WS-MS-0011		1	154875	03/14/17 20:21	A1C	TAL SAC
Total/NA	Prep	3535			152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	153421	03/06/17 03:11	TC1	TAL SAC

Lab Chronicle

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

TestAmerica Job ID: 320-26105-1

Client Sample ID: MEAFF-MRD-IA01-0217A

Lab Sample ID: 320-26105-15

Date Collected: 02/24/17 15:30

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	153421	03/06/17 03:19	TC1	TAL SAC

Client Sample ID: MEAFF-FD03-0217

Lab Sample ID: 320-26105-16

Date Collected: 02/24/17 00:00

Matrix: Water

Date Received: 02/25/17 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			152929	03/02/17 14:24	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	153421	03/06/17 03:26	TC1	TAL SAC

Laboratory References:

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

Certification Summary

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

TestAmerica Job ID: 320-26105-1

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	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	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
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	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17 *
Oregon	NELAP	10	4040	01-28-18
Pennsylvania	NELAP	3	68-01272	03-31-17 *
Texas	NELAP	6	T104704399	07-31-17
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	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-17
Wyoming	State Program	8	8TMS-L	01-29-17 *

* Certification renewal pending - certification considered valid.

Method Summary

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

TestAmerica Job ID: 320-26105-1

Method	Method Description	Protocol	Laboratory
WS-MS-0011	1,4-Dioxane (GC/MS SIM)	TAL SOP	TAL SAC
537 (Modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

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: 320-26105-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-26105-1	MEAFF-08MW01D-0217	Water	02/24/17 12:15	02/25/17 08:50
320-26105-2	MEAFF-08MW01-0217	Water	02/24/17 12:00	02/25/17 08:50
320-26105-3	MEAFF-MRD-1A14-0217	Water	02/24/17 15:00	02/25/17 08:50
320-26105-4	MEAFF-BLD002-SB01-0204	Solid	02/24/17 09:00	02/25/17 08:50
320-26105-5	MEAFF-BLD002-SB01-0001	Solid	02/24/17 09:05	02/25/17 08:50
320-26105-6	MEAFF-BLD002-SB02-0001	Solid	02/24/17 09:15	02/25/17 08:50
320-26105-7	MEAFF-BLD002-SB02-0204	Solid	02/24/17 09:20	02/25/17 08:50
320-26105-8	MEAFF-BLD192-SB03-0001	Solid	02/24/17 11:10	02/25/17 08:50
320-26105-9	MEAFF-BLD192-SB03-0204	Solid	02/24/17 11:15	02/25/17 08:50
320-26105-10	MEAFF-SWON-SB03-0001	Solid	02/24/17 11:35	02/25/17 08:50
320-26105-11	MEAFF-SWON-SB03-0204	Solid	02/24/17 11:40	02/25/17 08:50
320-26105-12	MEAFF-08MW03-0217	Water	02/24/17 11:30	02/25/17 08:50
320-26105-13	MEAFF-08MW06-0217	Water	02/24/17 13:15	02/25/17 08:50
320-26105-14	MEAFF-FD02-0217	Water	02/24/17 00:00	02/25/17 08:50
320-26105-15	MEAFF-MRD-IA01-0217A	Water	02/24/17 15:30	02/25/17 08:50
320-26105-16	MEAFF-FD03-0217	Water	02/24/17 00:00	02/25/17 08:50

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: SV1 Analysis Batch Number: 151686Lab Sample ID: IC 320-151686/1 Client Sample ID: _____Date Analyzed: 02/22/17 09:35 Lab File ID: 14D0222A.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.36	Baseline	onishim	02/22/17 14:19
Nitrobenzene-d5	8.06	Peak Tail	onishim	02/22/17 14:19

Lab Sample ID: IC 320-151686/2 Client Sample ID: _____Date Analyzed: 02/22/17 09:56 Lab File ID: 14D0222B.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.36	Poor chromatography	onishim	02/22/17 14:19
Nitrobenzene-d5	8.06	Poor chromatography	onishim	02/22/17 14:19

Lab Sample ID: IC 320-151686/3 Client Sample ID: _____Date Analyzed: 02/22/17 10:19 Lab File ID: 14D0222C.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.36	Baseline	onishim	02/22/17 14:19
Nitrobenzene-d5	8.06	Peak Tail	onishim	02/22/17 14:19

Lab Sample ID: IC 320-151686/4 Client Sample ID: _____Date Analyzed: 02/22/17 10:41 Lab File ID: 14D0222D.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.35	Poor chromatography	onishim	02/22/17 14:19

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: SV1 Analysis Batch Number: 151686Lab Sample ID: ICIS 320-151686/5 Client Sample ID: _____Date Analyzed: 02/22/17 11:03 Lab File ID: 14D0222E.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.35	Poor chromatography	onishim	02/22/17 14:19

Lab Sample ID: IC 320-151686/6 Client Sample ID: _____Date Analyzed: 02/22/17 11:25 Lab File ID: 14D0222F.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.36	Poor chromatography	onishim	02/22/17 14:19

Lab Sample ID: IC 320-151686/7 Client Sample ID: _____Date Analyzed: 02/22/17 11:47 Lab File ID: 14D0222G.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.36	Poor chromatography	onishim	02/22/17 14:19

Lab Sample ID: IC 320-151686/8 Client Sample ID: _____Date Analyzed: 02/22/17 12:09 Lab File ID: 14D0222H.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.37	Poor chromatography	onishim	02/22/17 14:19

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: SV1 Analysis Batch Number: 154875Lab Sample ID: CCV 320-154875/2 Client Sample ID: _____Date Analyzed: 03/14/17 14:42 Lab File ID: 14D0314.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.32	Peak Tail	onishim	03/15/17 14:26

Lab Sample ID: LCS 320-152910/2-A Client Sample ID: _____Date Analyzed: 03/14/17 15:27 Lab File ID: S031402.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.32	Peak Tail	onishim	03/15/17 14:27

Lab Sample ID: LCSD 320-152910/3-A Client Sample ID: _____Date Analyzed: 03/14/17 15:49 Lab File ID: S031403.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.32	Peak Tail	onishim	03/15/17 14:27

Lab Sample ID: 320-26105-2 Client Sample ID: MEAFF-08MW01-0217Date Analyzed: 03/14/17 18:05 Lab File ID: S031409.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.32	Peak Tail	lardieo	03/15/17 14:28

Lab Sample ID: 320-26105-3 MS Client Sample ID: MEAFF-MRD-1A14-0217 MSDate Analyzed: 03/14/17 18:50 Lab File ID: S031411.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.32	Peak Tail	lardieo	03/15/17 14:29

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: SV1 Analysis Batch Number: 154875Lab Sample ID: 320-26105-3 MSD Client Sample ID: MEAFF-MRD-1A14-0217 MSDDate Analyzed: 03/14/17 19:13 Lab File ID: S031412.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.31	Peak Tail	lardieo	03/15/17 14:29

Lab Sample ID: 320-26105-12 Client Sample ID: MEAFF-08MW03-0217Date Analyzed: 03/14/17 19:35 Lab File ID: S031413.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.32	Peak Tail	lardieo	03/15/17 14:29

Lab Sample ID: 320-26105-13 Client Sample ID: MEAFF-08MW06-0217Date Analyzed: 03/14/17 19:58 Lab File ID: S031414.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.33	Peak Tail	lardieo	03/15/17 14:29

Lab Sample ID: 320-26105-14 Client Sample ID: MEAFF-FD02-0217Date Analyzed: 03/14/17 20:21 Lab File ID: S031415.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.32	Peak Tail	lardieo	03/15/17 14:29

Lab Sample ID: CCVC 320-154875/29 Client Sample ID: _____Date Analyzed: 03/15/17 00:49 Lab File ID: 14D0314A.D GC Column: HP-5MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	3.32	Peak Tail	onishim	03/15/17 08:36

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 152681

Lab Sample ID: IC 320-152681/2 Client Sample ID: _____

Date Analyzed: 03/01/17 11:08 Lab File ID: 2017.03.01CURVE_003.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.51	Isomers	chandrase nas	03/01/17 15:43
Perfluorooctanoic acid (PFOA)	2.86	Incomplete Integration	chandrase nas	03/01/17 15:43
Perfluorooctanesulfonic acid (PFOS)	3.23	Isomers	chandrase nas	03/01/17 15:43

Lab Sample ID: IC 320-152681/4 Client Sample ID: _____

Date Analyzed: 03/01/17 11:23 Lab File ID: 2017.03.01CURVE_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.83	Baseline	chandrase nas	03/01/17 15:43
Perfluorooctanesulfonic acid (PFOS)	3.17	Baseline	chandrase nas	03/01/17 15:43

Lab Sample ID: IC 320-152681/5 Client Sample ID: _____

Date Analyzed: 03/01/17 11:31 Lab File ID: 2017.03.01CURVE_006.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.49	Isomers	chandrase nas	03/01/17 15:43

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 152681

Lab Sample ID: IC 320-152681/6 Client Sample ID: _____

Date Analyzed: 03/01/17 11:38 Lab File ID: 2017.03.01CURVE_007.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.48	Isomers	chandrase nas	03/01/17 15:43
13C2 PUnA	3.87	Incomplete Integration	chandrase nas	03/01/17 15:43

Lab Sample ID: IC 320-152681/7 Client Sample ID: _____

Date Analyzed: 03/01/17 11:46 Lab File ID: 2017.03.01CURVE_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.19	Baseline	chandrase nas	03/01/17 15:43
M2-8:2FTS	3.52	Incomplete Integration	chandrase nas	03/01/17 15:43
13C2 PFDaA	4.15	Incomplete Integration	chandrase nas	03/01/17 15:43

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 153421

Lab Sample ID: CCV 320-153421/46 Client Sample ID: _____

Date Analyzed: 03/06/17 01:41 Lab File ID: 2017.03.04A_046.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorododecanoic acid (PFDoA)	4.15	Split Peak	changnoit	03/07/17 14:32

Lab Sample ID: MB 320-152929/1-A Client Sample ID: _____

Date Analyzed: 03/06/17 01:49 Lab File ID: 2017.03.04A_047.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.83	Baseline	westendor fc	03/07/17 15:01

Lab Sample ID: 320-26105-2 Client Sample ID: MEAFF-08MW01-0217

Date Analyzed: 03/06/17 02:19 Lab File ID: 2017.03.04A_051.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.83	Assign Peak	chandrase nas	03/27/17 13:23

Lab Sample ID: 320-26105-3 Client Sample ID: MEAFF-MRD-1A14-0217

Date Analyzed: 03/06/17 02:26 Lab File ID: 2017.03.04A_052.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.85	Baseline	changnoit	03/07/17 14:43

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 153421

Lab Sample ID: 320-26105-12 Client Sample ID: MEAFF-08MW03-0217

Date Analyzed: 03/06/17 02:49 Lab File ID: 2017.03.04A_055.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.85	Assign Peak	chandrase nas	03/27/17 13:23
Perfluorooctanoic acid (PFOA)	2.81	Baseline	westendor fc	03/27/17 13:23
Perfluorooctanesulfonic acid (PFOS)	3.05	Isomers	changnoit	03/27/17 13:23

Lab Sample ID: 320-26105-13 Client Sample ID: MEAFF-08MW06-0217

Date Analyzed: 03/06/17 02:56 Lab File ID: 2017.03.04A_056.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.84	Baseline	chandrase nas	03/27/17 13:24

Lab Sample ID: CCV 320-153421/57 Client Sample ID: _____

Date Analyzed: 03/06/17 03:04 Lab File ID: 2017.03.04A_057.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorododecanoic acid (PFDoA)	4.14	Split Peak	changnoit	03/07/17 14:54

Lab Sample ID: 320-26105-14 Client Sample ID: MEAFF-FD02-0217

Date Analyzed: 03/06/17 03:11 Lab File ID: 2017.03.04A_058.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.84	Baseline	chandrase nas	03/27/17 13:24

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 153421

Lab Sample ID: 320-26105-15 Client Sample ID: MEAFF-MRD-IA01-0217A

Date Analyzed: 03/06/17 03:19 Lab File ID: 2017.03.04A_059.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.84	Baseline	chandrase nas	03/27/17 13:25
Perfluorooctanesulfonic acid (PFOS)	3.06	Baseline	westendor fc	03/27/17 13:25

Lab Sample ID: 320-26105-16 Client Sample ID: MEAFF-FD03-0217

Date Analyzed: 03/06/17 03:26 Lab File ID: 2017.03.04A_060.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.84	Baseline	chandrase nas	03/27/17 13:26
Perfluorooctanesulfonic acid (PFOS)	3.05	Baseline	westendor fc	03/27/17 13:25

Lab Sample ID: CCV 320-153421/62 Client Sample ID: _____

Date Analyzed: 03/06/17 03:41 Lab File ID: 2017.03.04A_062.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.47	Isomers	changnoit	03/07/17 14:57
Perfluorododecanoic acid (PFDoA)	4.15	Split Peak	changnoit	03/07/17 14:58

Lab Sample ID: CCV 320-153421/64 Client Sample ID: _____

Date Analyzed: 03/06/17 03:56 Lab File ID: 2017.03.04A_064.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorododecanoic acid (PFDoA)	4.16	Split Peak	changnoit	03/07/17 15:02

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154016

Lab Sample ID: CCV 320-154016/3 CCVL Client Sample ID: _____

Date Analyzed: 03/08/17 19:39 Lab File ID: 2017.03.08B_002.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.46	Isomers	westendor fc	03/10/17 13:57
6:2FTS	2.78	Baseline	westendor fc	03/10/17 13:57
Perfluorooctanesulfonic acid (PFOS)	3.16	Isomers	westendor fc	03/10/17 13:56

Lab Sample ID: CCV 320-154016/4 Client Sample ID: _____

Date Analyzed: 03/08/17 19:47 Lab File ID: 2017.03.08B_003.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.46	Isomers	westendor fc	03/10/17 13:58
Perfluorooctanesulfonic acid (PFOS)	3.17	Isomers	westendor fc	03/10/17 13:58
Perfluorotridecanoic Acid (PFTriA)	4.42	Baseline	westendor fc	03/10/17 13:59

Lab Sample ID: 320-26105-2 DL Client Sample ID: MEAFF-08MW01-0217 DL

Date Analyzed: 03/08/17 20:17 Lab File ID: 2017.03.08B_007.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.86	Baseline	chandrase nas	03/27/17 13:36
Perfluorooctanoic acid (PFOA)	2.82	Isomers	westendor fc	03/27/17 13:36
Perfluorooctanesulfonic acid (PFOS)	3.18	Isomers	westendor fc	03/27/17 13:36

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154016

Lab Sample ID: 320-26105-3 DL Client Sample ID: MEAFF-MRD-1A14-0217 DL

Date Analyzed: 03/08/17 20:24 Lab File ID: 2017.03.08B_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.86	Baseline	westendor fc	03/09/17 14:14
Perfluorooctanoic acid (PFOA)	2.82	Isomers	westendor fc	03/09/17 14:14
Perfluorooctanesulfonic acid (PFOS)	3.07	Isomers	westendor fc	03/09/17 14:14

Lab Sample ID: 320-26105-3 MS DL Client Sample ID: MEAFF-MRD-1A14-0217 MS DL

Date Analyzed: 03/08/17 20:32 Lab File ID: 2017.03.08B_009.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.80	Isomers	westendor fc	03/09/17 14:14
Perfluorooctanesulfonic acid (PFOS)	3.18	Isomers	westendor fc	03/09/17 14:14

Lab Sample ID: 320-26105-3 MSD DL Client Sample ID: MEAFF-MRD-1A14-0217 MSD DL

Date Analyzed: 03/08/17 20:39 Lab File ID: 2017.03.08B_010.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.82	Isomers	westendor fc	03/09/17 14:14
Perfluorooctanesulfonic acid (PFOS)	3.19	Isomers	westendor fc	03/09/17 14:14

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154016

Lab Sample ID: CCV 320-154016/13 Client Sample ID: _____

Date Analyzed: 03/08/17 21:02 Lab File ID: 2017.03.08B_013.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.45	Isomers	westendorfc	03/09/17 08:55
Perfluorooctanesulfonic acid (PFOS)	3.17	Isomers	westendorfc	03/09/17 08:55

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154503

Lab Sample ID: CCV 320-154503/1 CCVL Client Sample ID: _____

Date Analyzed: 03/11/17 12:34 Lab File ID: 2017.03.11C_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.56	Baseline	changnoit	03/13/17 11:37
Perfluorohexanesulfonic acid (PFHxS)	2.52	Isomers	changnoit	03/13/17 11:38
Perfluorooctanesulfonic acid (PFOS)	3.25	Isomers	changnoit	03/13/17 11:38

Lab Sample ID: CCV 320-154503/24 Client Sample ID: _____

Date Analyzed: 03/11/17 15:27 Lab File ID: 2017.03.11C_027.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.48	Isomers	changnoit	03/16/17 08:04
Perfluorooctanesulfonic acid (PFOS)	3.19	Isomers	changnoit	03/16/17 08:04

Lab Sample ID: MB 320-152961/1-A Client Sample ID: _____

Date Analyzed: 03/11/17 15:42 Lab File ID: 2017.03.11C_029.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C4 PFOA	2.81	Baseline	westendor fc	03/16/17 08:05
Perfluorooctanoic acid (PFOA)	2.81	Baseline	westendor fc	03/16/17 08:06

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154503

Lab Sample ID: LCS 320-152961/2-A Client Sample ID: _____

Date Analyzed: 03/11/17 15:50 Lab File ID: 2017.03.11C_030.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.18	Isomers	changnoit	03/16/17 08:06

Lab Sample ID: CCV 320-154503/35 Client Sample ID: _____

Date Analyzed: 03/11/17 16:50 Lab File ID: 2017.03.11C_038.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.46	Isomers	changnoit	03/16/17 08:12
Perfluorooctanesulfonic acid (PFOS)	3.18	Isomers	changnoit	03/16/17 08:12

Lab Sample ID: 320-26105-4 Client Sample ID: MEAFF-BLD002-SB01-0204

Date Analyzed: 03/11/17 17:20 Lab File ID: 2017.03.11C_042.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.85	Baseline	chandrase nas	03/27/17 11:26
Perfluorooctanoic acid (PFOA)	2.81	Isomers	changnoit	03/27/17 11:26
Perfluorooctanesulfonic acid (PFOS)	3.18	Isomers	changnoit	03/27/17 11:26

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154503

Lab Sample ID: 320-26105-5 Client Sample ID: MEAFF-BLD002-SB01-0001

Date Analyzed: 03/11/17 17:27 Lab File ID: 2017.03.11C_043.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.85	Baseline	chandrase nas	03/27/17 11:27
Perfluorooctanoic acid (PFOA)	2.82	Isomers	changnoit	03/27/17 11:26
Perfluorooctanesulfonic acid (PFOS)	3.19	Isomers	changnoit	03/27/17 11:26

Lab Sample ID: 320-26105-6 Client Sample ID: MEAFF-BLD002-SB02-0001

Date Analyzed: 03/11/17 17:35 Lab File ID: 2017.03.11C_044.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.85	Baseline	chandrase nas	03/27/17 11:27
Perfluorooctanoic acid (PFOA)	2.81	Isomers	changnoit	03/27/17 11:27
Perfluorooctanesulfonic acid (PFOS)	3.19	Isomers	changnoit	03/27/17 11:27

Lab Sample ID: 320-26105-7 Client Sample ID: MEAFF-BLD002-SB02-0204

Date Analyzed: 03/11/17 17:42 Lab File ID: 2017.03.11C_045.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.83	Isomers	changnoit	03/27/17 11:33
Perfluorooctanesulfonic acid (PFOS)	3.19	Isomers	changnoit	03/27/17 11:33

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154503

Lab Sample ID: 320-26105-8 Client Sample ID: MEAFF-BLD192-SB03-0001

Date Analyzed: 03/11/17 17:50 Lab File ID: 2017.03.11C_046.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.87	Baseline	chandrase nas	03/27/17 11:28
Perfluorooctanoic acid (PFOA)	2.83	Isomers	changnoit	03/27/17 11:27
Perfluorooctanesulfonic acid (PFOS)	3.20	Isomers	changnoit	03/27/17 11:27

Lab Sample ID: 320-26105-9 Client Sample ID: MEAFF-BLD192-SB03-0204

Date Analyzed: 03/11/17 17:57 Lab File ID: 2017.03.11C_047.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.19	Isomers	changnoit	03/27/17 11:33

Lab Sample ID: 320-26105-10 Client Sample ID: MEAFF-SWON-SB03-0001

Date Analyzed: 03/11/17 18:05 Lab File ID: 2017.03.11C_048.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.83	Isomers	changnoit	03/27/17 11:33
Perfluorooctanesulfonic acid (PFOS)	3.20	Isomers	changnoit	03/27/17 11:33

Lab Sample ID: CCV 320-154503/46 Client Sample ID: _____

Date Analyzed: 03/11/17 18:12 Lab File ID: 2017.03.11C_049.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.48	Isomers	changnoit	03/16/17 08:14
Perfluorooctanesulfonic acid (PFOS)	3.20	Isomers	changnoit	03/16/17 08:14

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154503

Lab Sample ID: 320-26105-11 Client Sample ID: MEAFF-SWON-SB03-0204

Date Analyzed: 03/11/17 18:20 Lab File ID: 2017.03.11C_050.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.81	Isomers	changnoit	03/27/17 11:33
Perfluorooctanesulfonic acid (PFOS)	3.19	Isomers	changnoit	03/27/17 11:33

Lab Sample ID: CCV 320-154503/48 Client Sample ID: _____

Date Analyzed: 03/11/17 18:27 Lab File ID: 2017.03.11C_051.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.46	Isomers	changnoit	03/16/17 08:15
Perfluorooctanesulfonic acid (PFOS)	3.19	Isomers	changnoit	03/16/17 08:15

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154721

Lab Sample ID: CCV 320-154721/1 CCVL Client Sample ID: _____

Date Analyzed: 03/13/17 11:39 Lab File ID: 2017.03.13A_004.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanoic acid (PFBA)	1.55	Baseline	changnoit	03/14/17 11:30

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 154808

Lab Sample ID: CCV 320-154808/1 Client Sample ID: _____

Date Analyzed: 03/13/17 15:52 Lab File ID: 2017.03.13A_037.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.19	Isomers	westendor fc	03/14/17 13:29
M2-8:2FTS	3.55	Baseline	westendor fc	03/14/17 13:29

Lab Sample ID: 320-26105-10 DL Client Sample ID: MEAFF-SWON-SB03-0001 DL

Date Analyzed: 03/13/17 17:01 Lab File ID: 2017.03.13A_046.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.82	Isomers	westendor fc	03/27/17 12:21
13C4 PFOA	2.83	Baseline	westendor fc	03/27/17 12:21
Perfluorooctanesulfonic acid (PFOS)	3.20	Isomers	westendor fc	03/27/17 12:21

Lab Sample ID: CCV 320-154808/11 Client Sample ID: _____

Date Analyzed: 03/13/17 17:08 Lab File ID: 2017.03.13A_047.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.20	Isomers	westendor fc	03/14/17 13:30

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
LCMPFCSU_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	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
					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_00017	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_00017	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
LCPFc_FULL-L1_00001	06/14/17	02/16/17	MeOH/H2O, Lot 90285	5 mL	LCMPFC2SU_00014	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_00047	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
							1802 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
					LCPFC2SP_00025	25 uL	13C4 PFOS	47.8 ng/mL		
							13C2 PFUnA	50 ng/mL		
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ng/mL		
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ng/mL		
							N-ethylperfluoro-1-octanesulfonamide	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		
							LCPFCSP_00078	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				
					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									
.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		

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LCMPFCSU_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	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
					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_00017	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 M4PFHpaA0516		(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_00017	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	
.LCPFC2SP_00025	06/28/17	01/30/17	Methanol, Lot 104453	10000 uL	LCPFC2SP_00020	2000 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.0948 ug/mL
							Sodium 1H,1H,2H,2H-perfluorooctane 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
..LCPFC2SP_00020	06/28/17	12/28/16	Methanol, Lot 104453	10000 uL	LC6:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ug/mL
					LC8:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCN-EtFOSA-M_00003	100 uL	N-ethylperfluoro-1-octanesulfo namide	0.5 ug/mL
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
					LCN-MeFOSA-M_00002	100 uL	MeFOSA	0.5 ug/mL
					LCN-MeFOSAA_00003	100 uL	N-methyl perfluorooctane sulfonamidoacetic acid	0.5 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-perfluorooctane 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
.LCPFCSP_00078	06/14/17	01/16/17	Methanol, Lot 090285	10000 uL	LCPFCSP_00075	2000 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_00075	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFCSP_00074	5000 uL	Perfluorobutyric acid	0.5 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.442 ug/mL
							Perfluorodecanoic acid	0.5 ug/mL
							Perfluorododecanoic acid	0.5 ug/mL
							Perfluorodecane Sulfonic acid	0.482 ug/mL
							Perfluoroheptanoic acid	0.5 ug/mL
							Perfluoroheptanesulfonic Acid	0.476 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanoic acid	0.5 ug/mL
							Perfluorohexadecanoic acid	0.5 ug/mL
							Perfluorohexanesulfonic acid	0.455 ug/mL
							Perfluorononanoic acid	0.5 ug/mL
							Perfluorooctanoic acid (PFOA)	0.5 ug/mL
							Perfluorooctadecanoic acid	0.5 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
							Perfluorooctane Sulfonamide	0.5 ug/mL
							Perfluoropentanoic acid	0.5 ug/mL
							Perfluorotetradecanoic acid	0.5 ug/mL
							Perfluorotridecanoic acid	0.5 ug/mL
							Perfluoroundecanoic acid	0.5 ug/mL
...LCPFCSP_00074	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFBA 00005	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00005	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA 00005	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA 00005	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS 00006	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA 00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS 00009	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA 00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA 00006	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br 00002	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00006	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00006	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00006	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00002	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA 00008	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00005	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 00005	200 uL	Perfluoroundecanoic acid	1 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)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
...LCPFDA 00005	07/02/20		Wellington Laboratories, Lot PFDA0615			(Purchased Reagent)	Perfluorodecanoic acid	50 ug/mL
...LCPFDoA 00005	01/30/20		Wellington Laboratories, Lot PFDoA0115			(Purchased Reagent)	Perfluorododecanoic acid	50 ug/mL
...LCPFDS 00006	05/24/21		Wellington Laboratories, Lot LPFDS0516			(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 00009	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 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)	Perfluorohexanesulfonic acid	45.5 ug/mL
...LCPFNA 00006	10/23/20		Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)	Perfluorononanoic acid	50 ug/mL
...LCPFOA 00006	11/06/20		Wellington Laboratories, Lot PFOA1115			(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	50 ug/mL
...LCPFODA 00006	04/29/21		Wellington Laboratories, Lot PFODA0416			(Purchased Reagent)	Perfluorooctadecanoic acid	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCPFOS-br_00002	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
....LCPFOSA 00008	09/02/17		Wellington Laboratories, Lot FOSA0815I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
...LCPFPeA 00005	01/30/20		Wellington Laboratories, Lot PFPeA0115		(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
LCPFC_FULL-L2_00001	06/14/17	02/16/17	MeOH/H2O, Lot 090285	5 mL	LCMPFC2SU_00014	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_00047	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_00025	50 uL	Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	0.948 ng/mL
							Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (8:2)	0.958 ng/mL
							N-ethylperfluoro-1-octanesulfo namide	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
LCPFCSP_00078	50 uL	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					

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							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
.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_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	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
					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 00017	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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..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_00017	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
.LCPFC2SP_00025	06/28/17	01/30/17	Methanol, Lot 104453	10000 uL	LCPFC2SP_00020	2000 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.0948 ug/mL
							Sodium 1H,1H,2H,2H-perfluorooctane 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_00020	06/28/17	12/28/16	Methanol, Lot 104453	10000 uL	LC6:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ug/mL
					LC8:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ug/mL
					LCN-EtFOSA-M_00003	100 uL	N-ethylperfluoro-1-octanesulfo namide	0.5 ug/mL
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
					LCN-MeFOSA-M_00002	100 uL	MeFOSA	0.5 ug/mL
					LCN-MeFOSAA_00003	100 uL	N-methyl perfluorooctane sulfonamidoacetic acid	0.5 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-perfluorooctane 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
.LCPFCSP_00078	06/14/17	01/16/17	Methanol, Lot 090285	10000 uL	LCPFCSP_00075	2000 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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							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_00075	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFCSP_00074	5000 uL	Perfluorobutyric acid	0.5 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.442 ug/mL
							Perfluorodecanoic acid	0.5 ug/mL
							Perfluorododecanoic acid	0.5 ug/mL
							Perfluorodecane Sulfonic acid	0.482 ug/mL
							Perfluoroheptanoic acid	0.5 ug/mL
							Perfluoroheptanesulfonic Acid	0.476 ug/mL
							Perfluorohexanoic acid	0.5 ug/mL
							Perfluorohexadecanoic acid	0.5 ug/mL
							Perfluorohexanesulfonic acid	0.455 ug/mL
							Perfluorononanoic acid	0.5 ug/mL
							Perfluorooctanoic acid (PFOA)	0.5 ug/mL
							Perfluorooctadecanoic acid	0.5 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
							Perfluorooctane Sulfonamide	0.5 ug/mL
							Perfluoropentanoic acid	0.5 ug/mL
							Perfluorotetradecanoic acid	0.5 ug/mL
							Perfluorotridecanoic acid	0.5 ug/mL
							Perfluoroundecanoic acid	0.5 ug/mL
...LCPFCSP_00074	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFBA_00005	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00005	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00005	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00005	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00006	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00009	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00006	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00002	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFNA 00006	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00006	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00006	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00002	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA 00008	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00005	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 00005	200 uL	Perfluoroundecanoic acid	1 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)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
....LCPFDA 00005	07/02/20		Wellington Laboratories, Lot PFDA0615		(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
....LCPFDaA 00005	01/30/20		Wellington Laboratories, Lot PFDoA0115		(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
....LCPFDS 00006	05/24/21		Wellington Laboratories, Lot LPFDS0516		(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 00009	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 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)		Perfluorohexanesulfonic acid	45.5 ug/mL
....LCPFNA 00006	10/23/20		Wellington Laboratories, Lot PFNA1015		(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
....LCPFOA 00006	11/06/20		Wellington Laboratories, Lot PFOA1115		(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 00008	09/02/17		Wellington Laboratories, Lot FOSA0815I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
....LCPFPeA 00005	01/30/20		Wellington Laboratories, Lot PFPeA0115		(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
LCPFC_FULL-L3_00001	06/14/17	02/16/17	MeOH/H2O, Lot 090285	5 mL	LCMPFC2SU_00014	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_00047	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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFC2SP_00025	250 uL	13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	4.74 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane 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		
					LCPFCSP_00078	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_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	

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LCMPFCSU_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	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
					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_00017	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 M4PFHpaA0516			(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_00017	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	
.LCPFC2SP_00025	06/28/17	01/30/17	Methanol, Lot 104453	10000 uL	LCPFC2SP_00020	2000 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.0948 ug/mL
							Sodium 1H,1H,2H,2H-perfluorooctane 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
..LCPFC2SP_00020	06/28/17	12/28/16	Methanol, Lot 104453	10000 uL	LC6:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ug/mL
					LC8:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCN-EtFOSA-M_00003	100 uL	N-ethylperfluoro-1-octanesulfo namide	0.5 ug/mL
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
					LCN-MeFOSA-M_00002	100 uL	MeFOSA	0.5 ug/mL
					LCN-MeFOSAA_00003	100 uL	N-methyl perfluorooctane sulfonamidoacetic acid	0.5 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-perfluorooctane 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
.LCPFCSP_00078	06/14/17	01/16/17	Methanol, Lot 090285	10000 uL	LCPFCSP_00075	2000 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_00075	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFCSP_00074	5000 uL	Perfluorobutyric acid	0.5 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.442 ug/mL
							Perfluorodecanoic acid	0.5 ug/mL
							Perfluorododecanoic acid	0.5 ug/mL
							Perfluorodecane Sulfonic acid	0.482 ug/mL
							Perfluoroheptanoic acid	0.5 ug/mL
							Perfluoroheptanesulfonic Acid	0.476 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanoic acid	0.5 ug/mL
							Perfluorohexadecanoic acid	0.5 ug/mL
							Perfluorohexanesulfonic acid	0.455 ug/mL
							Perfluorononanoic acid	0.5 ug/mL
							Perfluorooctanoic acid (PFOA)	0.5 ug/mL
							Perfluorooctadecanoic acid	0.5 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
							Perfluorooctane Sulfonamide	0.5 ug/mL
							Perfluoropentanoic acid	0.5 ug/mL
							Perfluorotetradecanoic acid	0.5 ug/mL
							Perfluorotridecanoic acid	0.5 ug/mL
							Perfluoroundecanoic acid	0.5 ug/mL
...LCPFCSP_00074	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFBA 00005	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00005	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA 00005	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA 00005	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS 00006	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA 00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS 00009	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA 00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA 00006	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br 00002	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00006	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00006	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00006	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00002	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA 00008	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00005	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 00005	200 uL	Perfluoroundecanoic acid	1 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)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
...LCPFDA 00005	07/02/20		Wellington Laboratories, Lot PFDA0615			(Purchased Reagent)	Perfluorodecanoic acid	50 ug/mL
...LCPFDoA 00005	01/30/20		Wellington Laboratories, Lot PFDoA0115			(Purchased Reagent)	Perfluorododecanoic acid	50 ug/mL
...LCPFDS 00006	05/24/21		Wellington Laboratories, Lot LPFDS0516			(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 00009	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 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)	Perfluorohexanesulfonic acid	45.5 ug/mL
...LCPFNA 00006	10/23/20		Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)	Perfluorononanoic acid	50 ug/mL
...LCPFOA 00006	11/06/20		Wellington Laboratories, Lot PFOA1115			(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	50 ug/mL
...LCPFODA 00006	04/29/21		Wellington Laboratories, Lot PFODA0416			(Purchased Reagent)	Perfluorooctadecanoic acid	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCPFOS-br_00002	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
....LCPFOSA 00008	09/02/17		Wellington Laboratories, Lot FOSA0815I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
...LCPFPeA 00005	01/30/20		Wellington Laboratories, Lot PFPeA0115		(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
LCPFC_FULLL-L4_00001	06/14/17	02/16/17	MeOH/H2O, Lot 090285	5 mL	LCMPFC2SU_00014	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_00047	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_00026	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	18.96 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane 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
					LCPFCSP_00074	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							

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							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
.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_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	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
					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 00017	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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..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_00017	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
.LCPFC2SP_00026	07/30/17	01/30/17	Methanol, Lot 104453	10000 uL	LC6:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ug/mL
					LC8:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ug/mL
					LCN-EtFOSA-M_00003	100 uL	N-ethylperfluoro-1-octanesulfo namide	0.5 ug/mL
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
					LCN-MeFOSA-M_00002	100 uL	MeFOSA	0.5 ug/mL
					LCN-MeFOSAA_00003	100 uL	N-methyl perfluorooctane sulfonamidoacetic acid	0.5 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-perfluorooctane 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
.LCPFCSP_00074	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFBa_00005	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBs_00005	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDa_00005	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDa_00005	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00006	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpa_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHps_00009	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00006	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00002	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00006	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00006	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00006	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00002	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
LCPFOSA_00008	200 uL	Perfluorooctane Sulfonamide	1 ug/mL					

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFPeA 00005	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 00005	200 uL	Perfluoroundecanoic acid	1 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)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA 00005	07/02/20		Wellington Laboratories, Lot PFDA0615		(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
..LCPFDoA 00005	01/30/20		Wellington Laboratories, Lot PFDoA0115		(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
..LCPFDS 00006	05/24/21		Wellington Laboratories, Lot LPFDS0516		(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 00009	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 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)		Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA 00006	10/23/20		Wellington Laboratories, Lot PFNA1015		(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
..LCPFOA 00006	11/06/20		Wellington Laboratories, Lot PFOA1115		(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 00008	09/02/17		Wellington Laboratories, Lot FOSA0815I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
..LCPFPeA 00005	01/30/20		Wellington Laboratories, Lot PFPeA0115		(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
LCPFC_FULL-L5_00001	06/14/17	02/16/17	MeOH/H2O, Lot 090285	5 mL	LCPMFC2SU_00014	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
					LCPMFCSU_00047	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_00026	500 uL	Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	47.4 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

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 (8:2)	47.9 ng/mL
							N-ethylperfluoro-1-octanesulfonamide	50 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	50 ng/mL
							MeFOSA	50 ng/mL
					LCPFCSP_00074	250 uL	N-methyl perfluorooctane sulfonamidoacetic acid	50 ng/mL
							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_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_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	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.: 320-26105-1

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 00017	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 00017	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
..LC6:2FTS_00026	07/30/17	01/30/17	Methanol, Lot 104453	10000 uL	LC6:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ug/mL
					LC8:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ug/mL
					LCN-EtFOSA-M_00003	100 uL	N-ethylperfluoro-1-octanesulfonamide	0.5 ug/mL
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
					LCN-MeFOSA-M 00002	100 uL	MeFOSA	0.5 ug/mL
					LCN-MeFOSAA_00003	100 uL	N-methyl perfluorooctane sulfonamidoacetic acid	0.5 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-perfluorooctane 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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LCPFCSP_00074	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFBA_00005	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00005	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00005	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00005	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00006	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00009	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00006	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00002	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00006	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00006	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00006	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00002	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00008	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00005	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_00005	200 uL	Perfluoroundecanoic acid	1 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)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA_00005	07/02/20	Wellington Laboratories, Lot PFDA0615			(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
..LCPFDoA_00005	01/30/20	Wellington Laboratories, Lot PFDoA0115			(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
..LCPFDS_00006	05/24/21	Wellington Laboratories, Lot LPFDS0516			(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_00009	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_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)		Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA_00006	10/23/20	Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
..LCPFOA_00006	11/06/20	Wellington Laboratories, Lot PFOA1115			(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_00008	09/02/17	Wellington Laboratories, Lot FOSA0815I			(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
..LCPFPeA_00005	01/30/20	Wellington Laboratories, Lot PFPeA0115			(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_00005	08/19/20	Wellington Laboratories, Lot PFUdA0815			(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
LCPFC_FULL-L6_00002	06/14/17	02/24/17	MeOH/H2O, Lot 090285	5 mL	LCMPFC2SU_00014	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.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMPFCSU_00047	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_00027	1000 uL	Sodium	189.6 ng/mL
							1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	
							Sodium	191.6 ng/mL
							1H, 1H, 2H, 2H-perfluorooctane sulfonate (8:2)	
							N-ethylperfluoro-1-octanesulfoamide	200 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	200 ng/mL
					LCPFCSP_00080	2000 uL	MeFOSA	200 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	200 ng/mL
							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							
.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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCd-NMeFOSA-M 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_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	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
					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 00017	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 00017	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
..LCPFCS2SP_00027	08/24/17	02/24/17	Methanol, Lot 104453	10000 uL	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-perfluorooctane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00003	200 uL	N-ethylperfluoro-1-octanesulfoamide	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

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
..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-perfluorooctane 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
..LCPFCSP_00080	08/01/17	02/01/17	Methanol, Lot 090285	10000 uL	LCPFBA_00005	100 uL	Perfluorobutyric acid	0.5 ug/mL
					LCPFBS_00005	100 uL	Perfluorobutanesulfonic acid (PFBS)	0.442 ug/mL
					LCPFDA_00005	100 uL	Perfluorodecanoic acid	0.5 ug/mL
					LCPFDoA_00005	100 uL	Perfluorododecanoic acid	0.5 ug/mL
					LCPFDS_00006	100 uL	Perfluorodecane Sulfonic acid	0.482 ug/mL
					LCPFHpA_00006	100 uL	Perfluoroheptanoic acid	0.5 ug/mL
					LCPFHpS_00009	100 uL	Perfluoroheptanesulfonic Acid	0.476 ug/mL
					LCPFHxA_00005	100 uL	Perfluorohexanoic acid	0.5 ug/mL
					LCPFHxDA_00006	100 uL	Perfluorohexadecanoic acid	0.5 ug/mL
					LCPFHxS-br_00002	100 uL	Perfluorohexanesulfonic acid	0.455 ug/mL
					LCPFNA_00006	100 uL	Perfluorononanoic acid	0.5 ug/mL
					LCPFOA_00006	100 uL	Perfluorooctanoic acid (PFOA)	0.5 ug/mL
					LCPFODA_00006	100 uL	Perfluorooctadecanoic acid	0.5 ug/mL
					LCPFOS-br_00002	100 uL	Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
					LCPFOSA_00008	100 uL	Perfluorooctane Sulfonamide	0.5 ug/mL
					LCPFPeA_00005	100 uL	Perfluoropentanoic acid	0.5 ug/mL
					LCPFTeDA_00005	100 uL	Perfluorotetradecanoic acid	0.5 ug/mL
					LCPFTrDA_00005	100 uL	Perfluorotridecanoic acid	0.5 ug/mL
					LCPFUdA_00005	100 uL	Perfluoroundecanoic acid	0.5 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)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA_00005	07/02/20		Wellington Laboratories, Lot PFDA0615		(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
..LCPFDoA_00005	01/30/20		Wellington Laboratories, Lot PFDoA0115		(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
..LCPFDS_00006	05/24/21		Wellington Laboratories, Lot LPFDS0516		(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_00009	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_00006	05/25/21		Wellington Laboratories, Lot PFHxDA0516		(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFHxS-br 00002	07/03/20		Wellington Laboratories, Lot brPFHxSK0615		(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA 00006	10/23/20		Wellington Laboratories, Lot PFNA1015		(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
..LCPFOA 00006	11/06/20		Wellington Laboratories, Lot PFOA1115		(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 00008	09/02/17		Wellington Laboratories, Lot FOSA0815I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
..LCPFPeA 00005	01/30/20		Wellington Laboratories, Lot PFPeA0115		(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 00005	08/19/20		Wellington Laboratories, Lot PFUDA0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
LCPFCIC_FULL_00001	06/01/17	02/16/17	MeOH/H2O, Lot 09285	5 mL	LCMPFC2SU_00014	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_00047	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
LCPFACMXB_00007	125 uL	Perfluorooctanesulfonic acid (PFOS)	47.75 ng/mL					
		Perfluorooctanoic acid (PFOA)	50 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_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	50000 uL	LCM2PFHxDA_00008	1000 uL	13C2-PFHxDA	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					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_00017	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_00017	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
..LCPFACMXB_00007	11/06/20		Wellington Laboratories, Lot PFACMXB1115		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	1.91 ug/mL
							Perfluorooctanoic acid (PFOA)	2 ug/mL
LCPFCSP_00080	08/01/17	02/01/17	Methanol, Lot 090285	10000 uL	LCPFBA_00005	100 uL	Perfluorobutyric acid	0.5 ug/mL
					LCPFBS_00005	100 uL	Perfluorobutane Sulfonate	0.442 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.442 ug/mL
					LCPFDA_00005	100 uL	Perfluorodecanoic acid	0.5 ug/mL
					LCPFDoA_00005	100 uL	Perfluorododecanoic acid	0.5 ug/mL
					LCPFDS_00006	100 uL	Perfluorodecane Sulfonate	0.482 ug/mL
							Perfluorodecane Sulfonic acid	0.482 ug/mL
					LCPFHFA_00006	100 uL	Perfluoroheptanoic acid	0.5 ug/mL
					LCPFHFS_00009	100 uL	Perfluoroheptane Sulfonate	0.476 ug/mL
							Perfluoroheptanesulfonic Acid	0.476 ug/mL
					LCPFHxA_00005	100 uL	Perfluorohexanoic acid	0.5 ug/mL
					LCPFHxDA_00006	100 uL	Perfluorohexadecanoic acid	0.5 ug/mL
					LCPFHxS-Br_00002	100 uL	Perfluorohexane Sulfonate	0.455 ug/mL
							Perfluorohexanesulfonic acid	0.455 ug/mL
					LCPFNA_00006	100 uL	Perfluorononanoic acid	0.5 ug/mL
					LCPFOA_00006	100 uL	Perfluorooctanoic acid (PFOA)	0.5 ug/mL
					LCPFOdA_00006	100 uL	Perfluorooctadecanoic acid	0.5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFOS-br_00002	100 uL	Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
					LCPFOSA 00008	100 uL	Perfluorooctane Sulfonamide	0.5 ug/mL
					LCPFPeA 00005	100 uL	Perfluoropentanoic acid	0.5 ug/mL
					LCPFTeDA 00005	100 uL	Perfluorotetradecanoic acid	0.5 ug/mL
					LCPFTrDA 00005	100 uL	Perfluorotridecanoic acid	0.5 ug/mL
					LCPFUdA 00005	100 uL	Perfluoroundecanoic acid	0.5 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 00005	07/02/20	Wellington Laboratories, Lot PFDA0615			(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
.LCPFDoA 00005	01/30/20	Wellington Laboratories, Lot PFDoA0115			(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 00006	11/06/20	Wellington Laboratories, Lot PFOA1115			(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 00008	09/02/17	Wellington Laboratories, Lot FOSA0815I			(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
.LCPFPeA 00005	01/30/20	Wellington Laboratories, Lot PFPeA0115			(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
MS14DICV_00004	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS8270IS 00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS8270IS 00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DICV_00004	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DIC_00008	100 uL	1,4-Dioxane	10 ug/mL
							Nitrobenzene-d5	10 ug/mL
.MS14DIC_00008	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DIC 00007	500 uL	1,4-Dioxane	100 ug/mL
					MS8270SU 00100	200 uL	Nitrobenzene-d5	100 ug/mL
..MS14DIC 00007	02/21/18		Restek, Lot A0124653		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
..MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Reagent)		Nitrobenzene-d5	5000 ug/mL
MS14DL1_00011	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	5 uL	1,4-Dioxane	0.5 ug/mL
							Nitrobenzene-d5	0.5 ug/mL
					MS8270IS 00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA_00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA 00023	500 uL	1,4-Dioxane	100 ug/mL
					MS8270SU 00100	200 uL	Nitrobenzene-d5	100 ug/mL
..MS14DTA 00023	02/21/18		Restek, Lot A0121319		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
..MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Reagent)		Nitrobenzene-d5	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL2_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	10 uL	1,4-Dioxane	1 ug/mL
							Nitrobenzene-d5	1 ug/mL
					MS8270IS_00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA_00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA_00023	500 uL	1,4-Dioxane	100 ug/mL
					MS8270SU_00100	200 uL	Nitrobenzene-d5	100 ug/mL
..MS14DTA_00023	02/21/18		Restek, Lot A0121319		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
..MS8270SU_00100	02/21/18		Restek, Lot A0103960		(Purchased Reagent)		Nitrobenzene-d5	5000 ug/mL
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL3_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	20 uL	1,4-Dioxane	2 ug/mL
							Nitrobenzene-d5	2 ug/mL
					MS8270IS_00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA_00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA_00023	500 uL	1,4-Dioxane	100 ug/mL
					MS8270SU_00100	200 uL	Nitrobenzene-d5	100 ug/mL
..MS14DTA_00023	02/21/18		Restek, Lot A0121319		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
..MS8270SU_00100	02/21/18		Restek, Lot A0103960		(Purchased Reagent)		Nitrobenzene-d5	5000 ug/mL
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL4_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	50 uL	1,4-Dioxane	5 ug/mL
							Nitrobenzene-d5	5 ug/mL
					MS8270IS_00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA_00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA_00023	500 uL	1,4-Dioxane	100 ug/mL
					MS8270SU_00100	200 uL	Nitrobenzene-d5	100 ug/mL
..MS14DTA_00023	02/21/18		Restek, Lot A0121319		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
..MS8270SU_00100	02/21/18		Restek, Lot A0103960		(Purchased Reagent)		Nitrobenzene-d5	5000 ug/mL
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL5_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	100 uL	1,4-Dioxane	10 ug/mL
							Nitrobenzene-d5	10 ug/mL
					MS8270IS_00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA_00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA_00023	500 uL	1,4-Dioxane	100 ug/mL
					MS8270SU_00100	200 uL	Nitrobenzene-d5	100 ug/mL
..MS14DTA_00023	02/21/18		Restek, Lot A0121319		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
..MS8270SU_00100	02/21/18		Restek, Lot A0103960		(Purchased Reagent)		Nitrobenzene-d5	5000 ug/mL
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL6_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	200 uL	1,4-Dioxane	20 ug/mL
							Nitrobenzene-d5	20 ug/mL
					MS8270IS_00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA_00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA_00023	500 uL	1,4-Dioxane	100 ug/mL
					MS8270SU_00100	200 uL	Nitrobenzene-d5	100 ug/mL
..MS14DTA_00023	02/21/18		Restek, Lot A0121319		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
..MS8270SU_00100	02/21/18		Restek, Lot A0103960		(Purchased Reagent)		Nitrobenzene-d5	5000 ug/mL
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL7_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	500 uL	1,4-Dioxane	50 ug/mL
							Nitrobenzene-d5	50 ug/mL
					MS8270IS_00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA_00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA_00023	500 uL	1,4-Dioxane	100 ug/mL
					MS8270SU_00100	200 uL	Nitrobenzene-d5	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MS14DTA_00023	02/21/18		Restek, Lot A0121319		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
..MS8270SU_00100	02/21/18		Restek, Lot A0103960		(Purchased Reagent)		Nitrobenzene-d5	5000 ug/mL
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL8_00005	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	1000 uL	1,4-Dioxane	100 ug/mL
							Nitrobenzene-d5	100 ug/mL
					MS8270IS_00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA_00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA_00023	500 uL	1,4-Dioxane	100 ug/mL
					MS8270SU_00100	200 uL	Nitrobenzene-d5	100 ug/mL
..MS14DTA_00023	02/21/18		Restek, Lot A0121319		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
..MS8270SU_00100	02/21/18		Restek, Lot A0103960		(Purchased Reagent)		Nitrobenzene-d5	5000 ug/mL
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DSP_00030	06/20/17	12/20/16	Methanol, Lot 0000152413	100 mL	MS14DTA_00022	1 mL	1,4-Dioxane	20 ug/mL
.MS14DTA_00022	09/30/18		SUPELCO, Lot LC16305V		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
MS14DSU_00003	03/21/17	10/31/16	Methanol, Lot 00000142776	200 mL	MS8270SU_00094	20 mL	2,4,6-Tribromophenol	10 ug/mL
							2-Fluorobiphenyl (Surr)	10 ug/mL
							2-Fluorophenol	10 ug/mL
							Nitrobenzene-d5	10 ug/mL
							Phenol-d5	10 ug/mL
							Terphenyl-d14	10 ug/mL
.MS8270SU_00094	03/21/17		Restek, Lot A0117528		(Purchased Reagent)		2,4,6-Tribromophenol	100 ug/mL
							2-Fluorobiphenyl (Surr)	100 ug/mL
							2-Fluorophenol	100 ug/mL
							Nitrobenzene-d5	100 ug/mL
							Phenol-d5	100 ug/mL
							Terphenyl-d14	100 ug/mL
MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL

Reagent

LC6:2FTS_00002

R: 8/23/16 SBC



715544

ID: LC6:2FTS_00002

Exp: 06/25/21 Pppl: SBC

6:2FTS

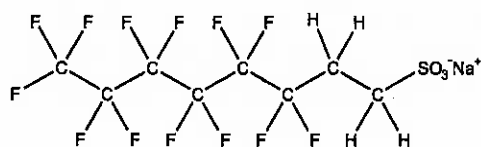


WELLINGTON LABORATORIES

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: C₈H₄F₁₃SO₃Na **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:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

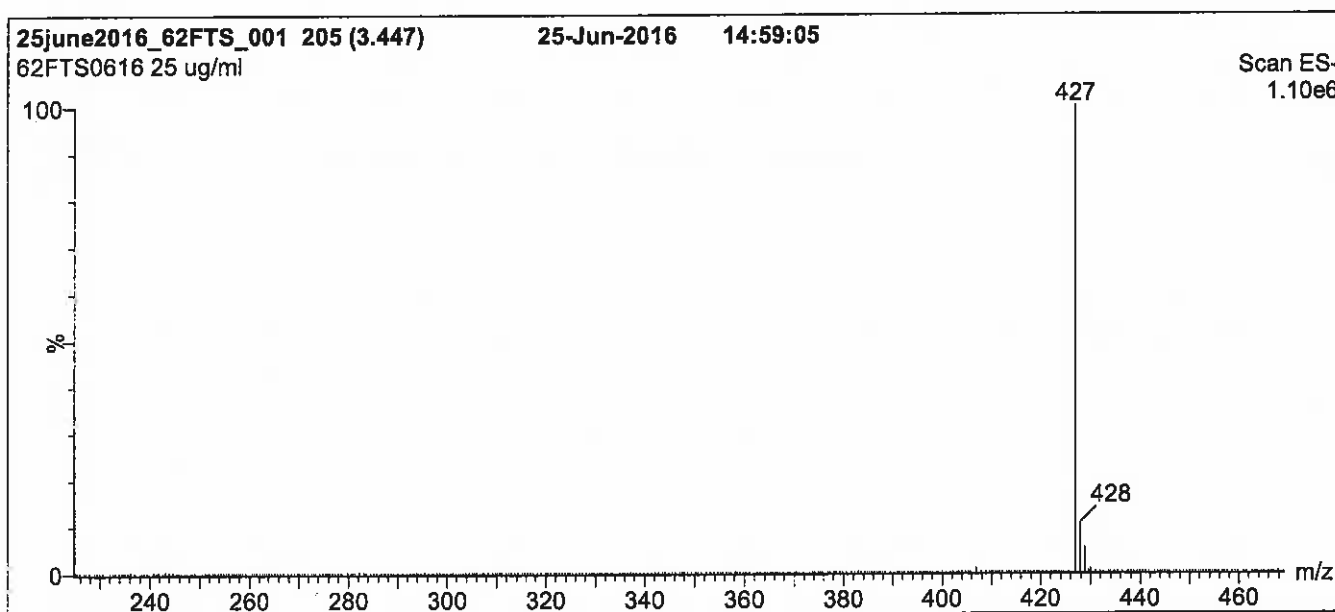
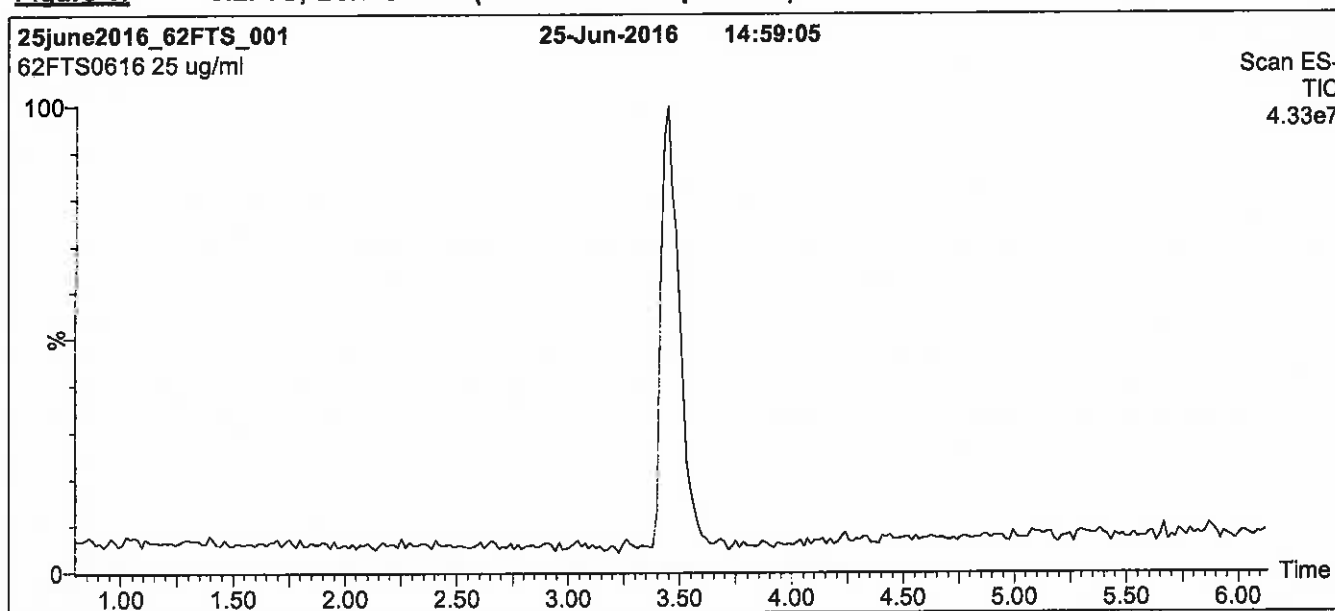
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: 6:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

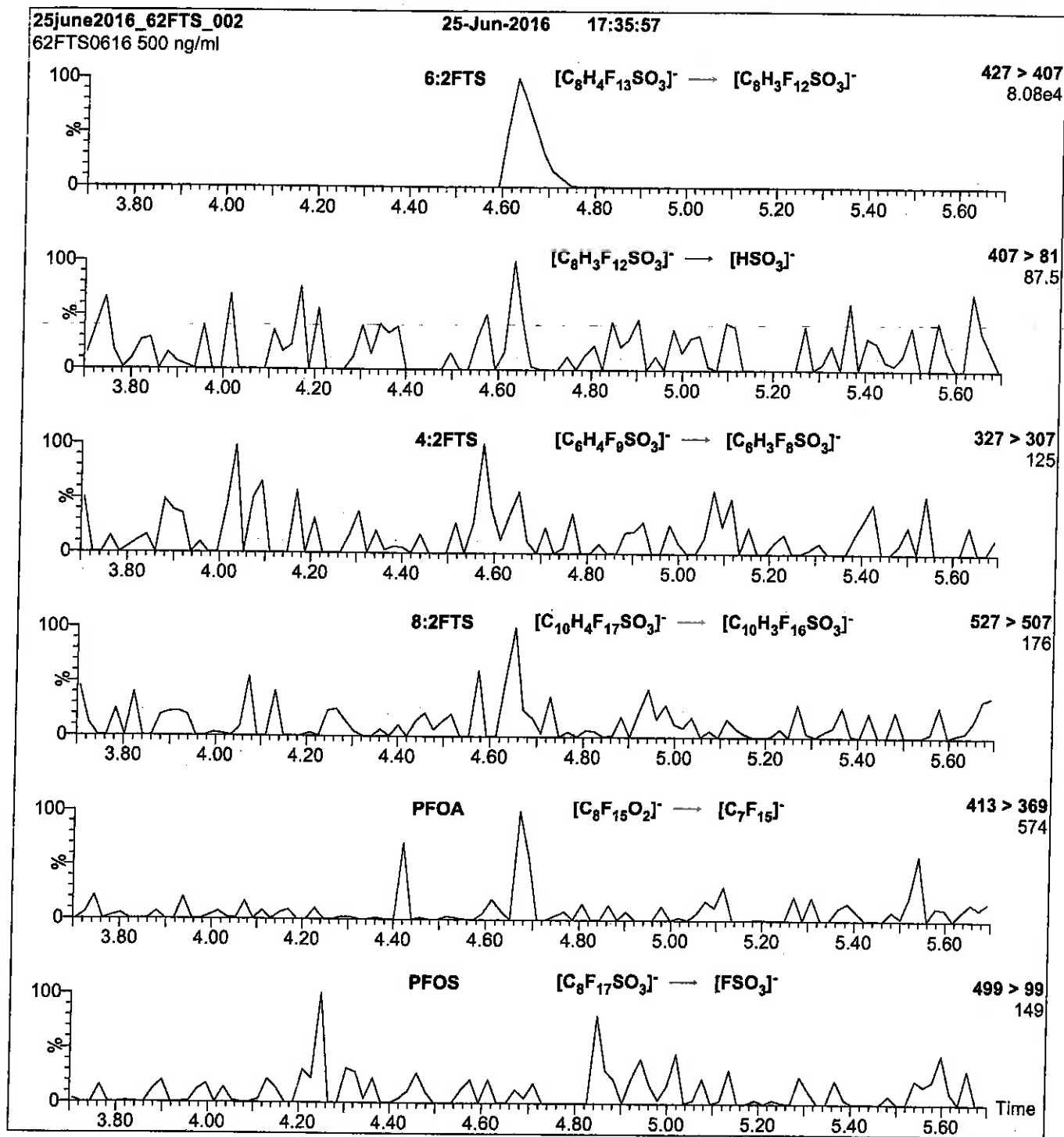
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 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 μ l (500 ng/ml 6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 25

Reagent

LC8 : 2FTS _ 00002

R: 8/23/16 SBC

715545
ID: LC8:2FTS_00002
Exp: 10/23/20 Prod: SBC
8:2FTS

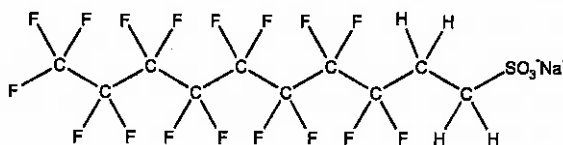


WELLINGTON LABORATORIES

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: C₁₀H₄F₁₇SO₃Na **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.

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.

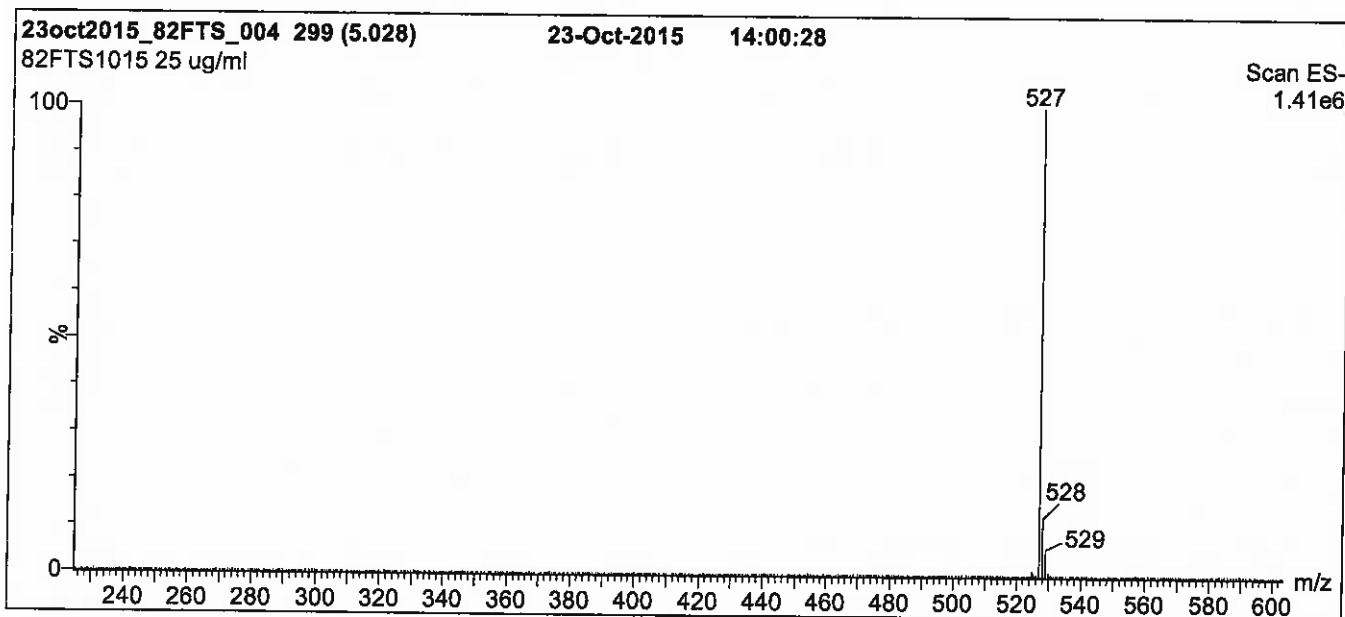
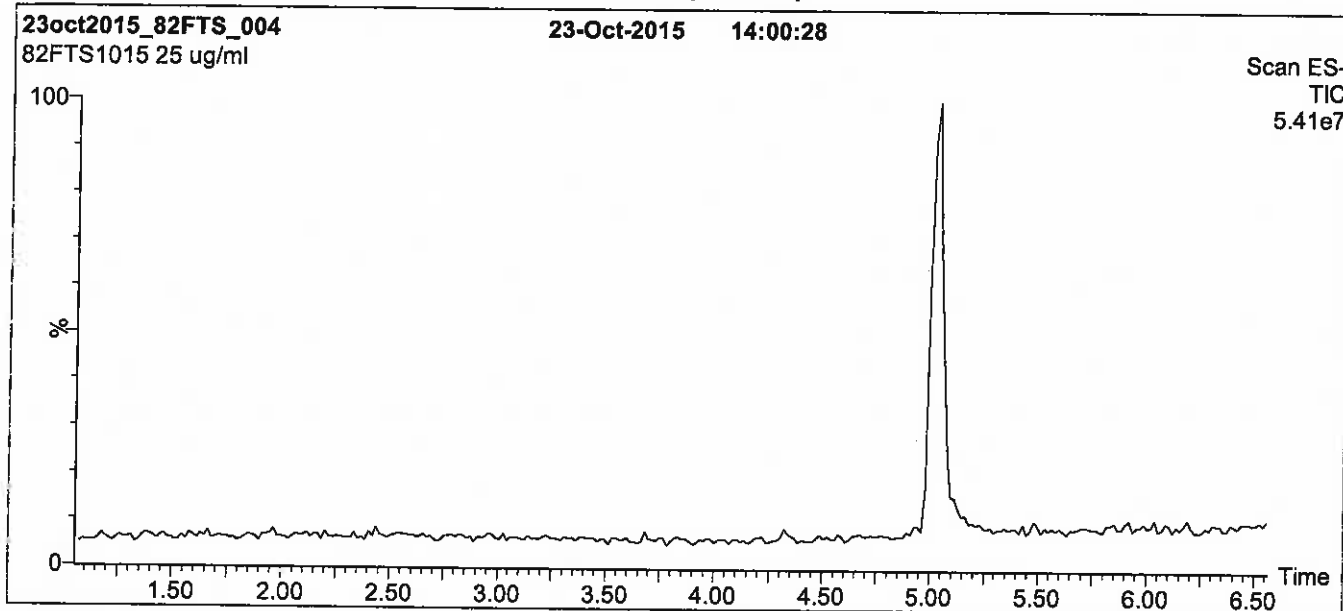
QUALITY MANAGEMENT:

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 or contact us directly at info@well-labs.com

Figure 1: 8:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min.
Return to Initial conditions in 0.5 min.
Time: 10 min

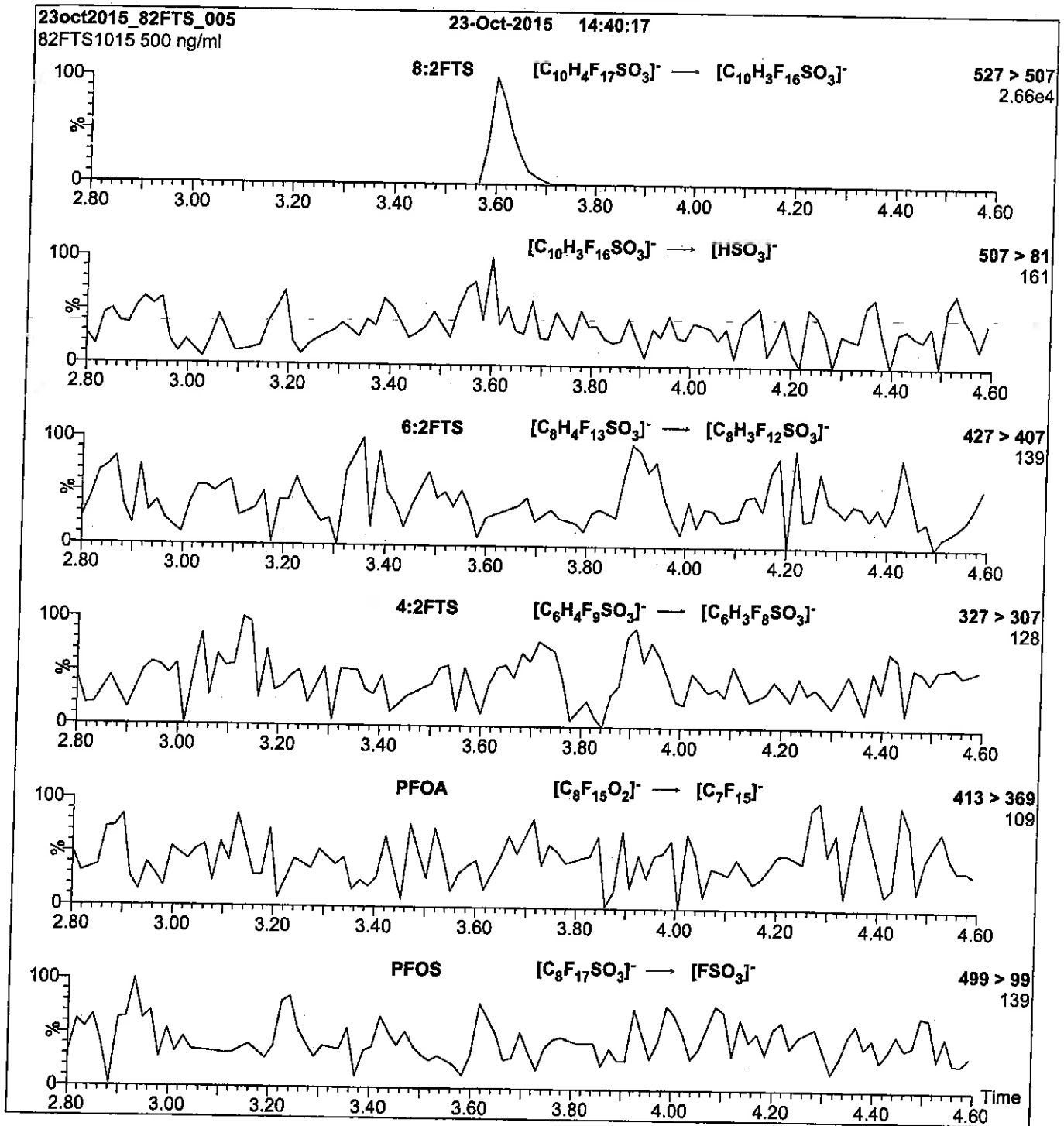
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: 8:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml 8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 30

Reagent

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

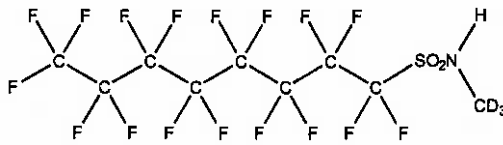


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d-N-MeFOSA-M **LOT NUMBER:** dNMeFOSA0616M
COMPOUND: N-methyl-d₃-perfluoro-1-octanesulfonamide

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: C₈D₃HF₁₇NO₂S **MOLECULAR WEIGHT:** 516.19
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥98% ²H₃
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:  **Date:** 06/16/2016
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.

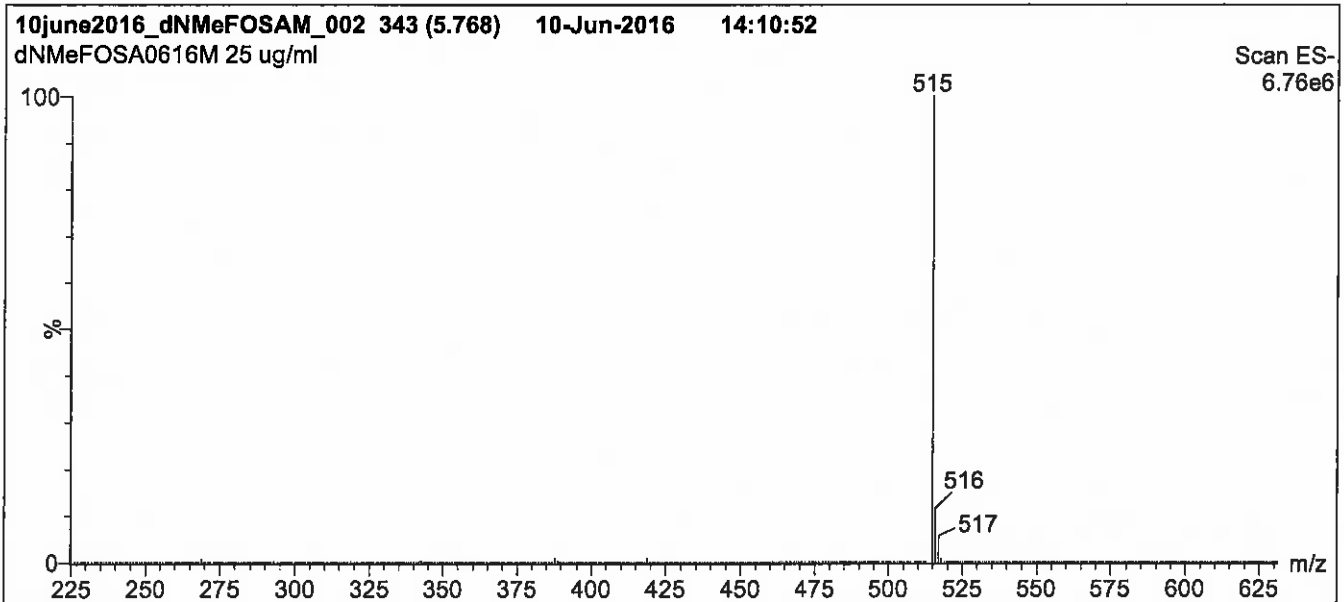
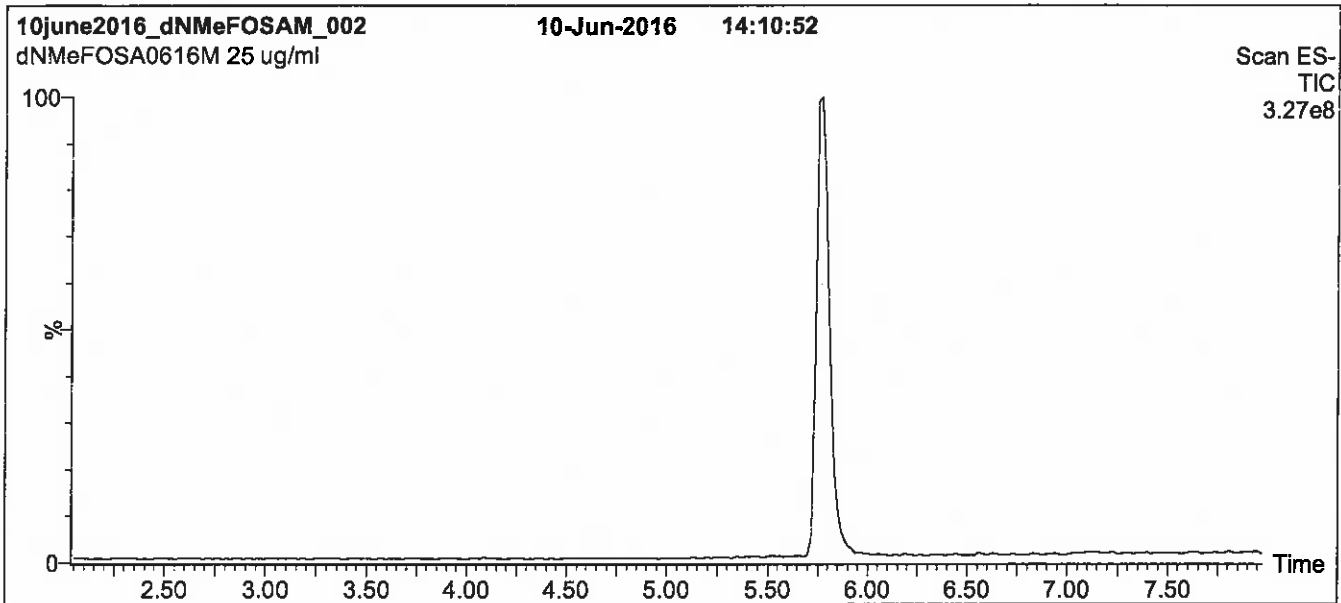
QUALITY MANAGEMENT:

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).



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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_{1a}
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 40% H₂O / 60% (80:20 MeOH:ACN)
 (both with 10mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

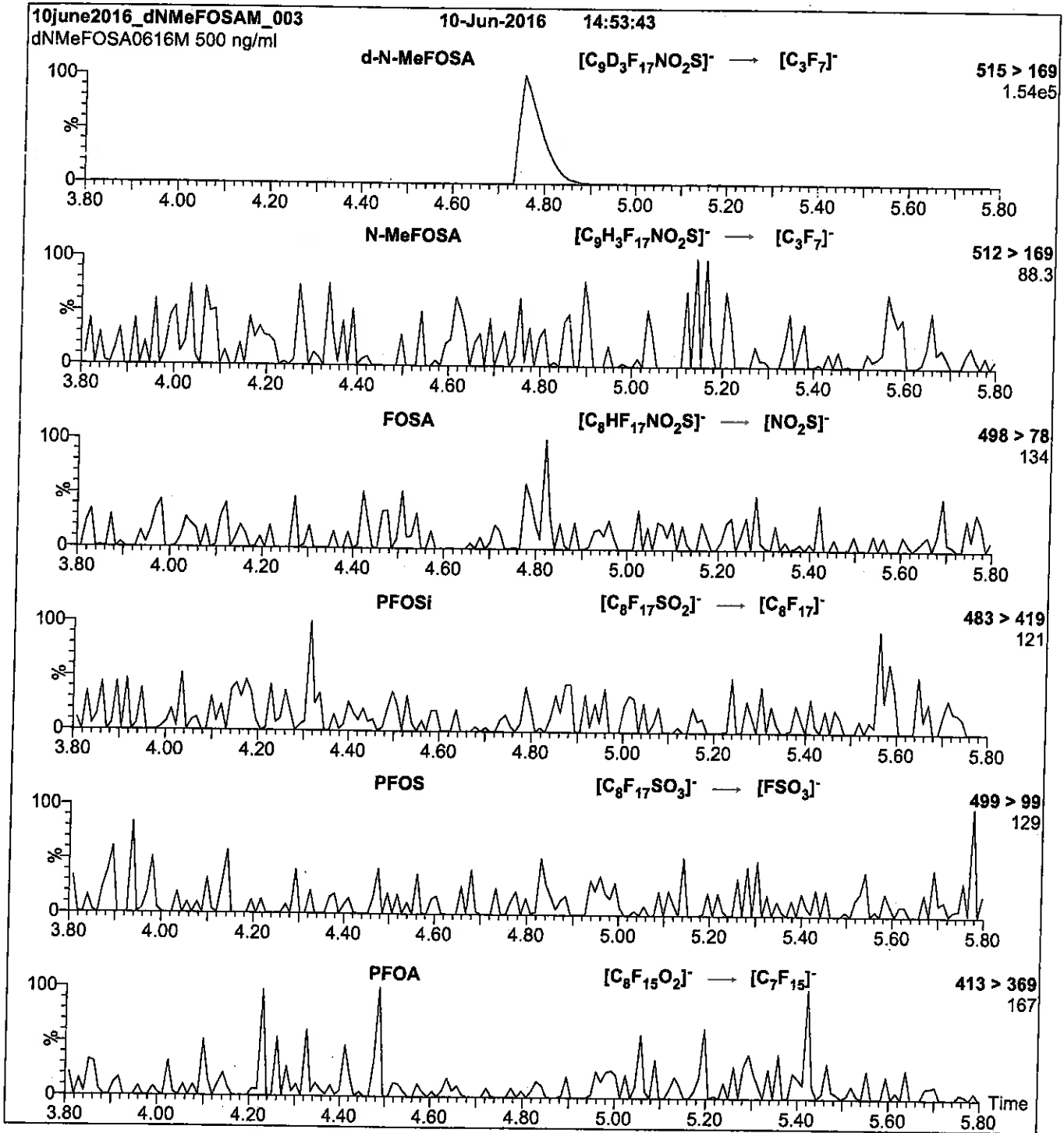
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.50
 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 μ l (500 ng/ml d-N-MeFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
 Collision Energy (eV) = 25

Reagent

LCd3-NMeFOSAA_00003

R: 9/9/16
SBC



728300
ID: LCd3-NMeFOSAA_00003
Exp: 05/31/21 Prpd: SBC
d3-N-MeFOSAA

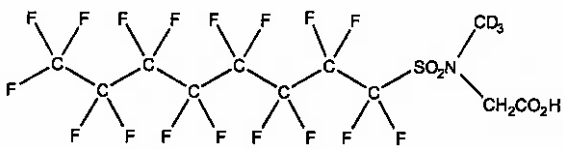


WELLINGTON LABORATORIES

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: C₁₁D₃H₃F₁₇NO₄S **MOLECULAR WEIGHT:** 574.23
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥98% ²H₃
LAST TESTED: (mm/dd/yyyy) 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:

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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:

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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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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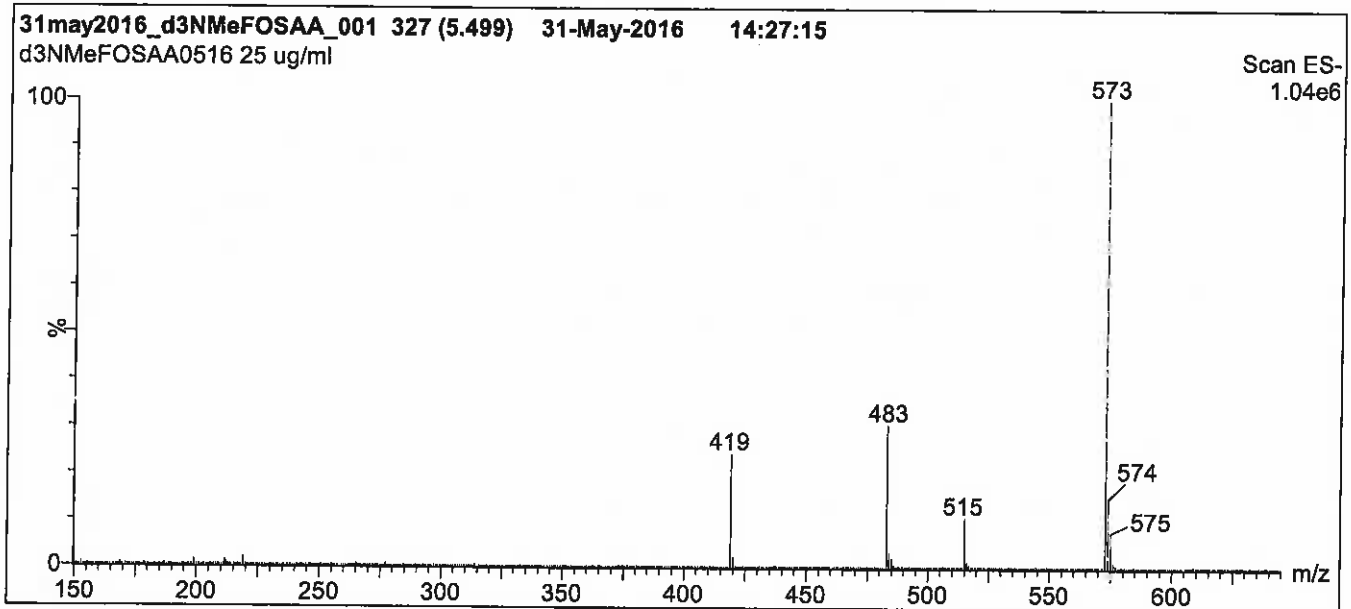
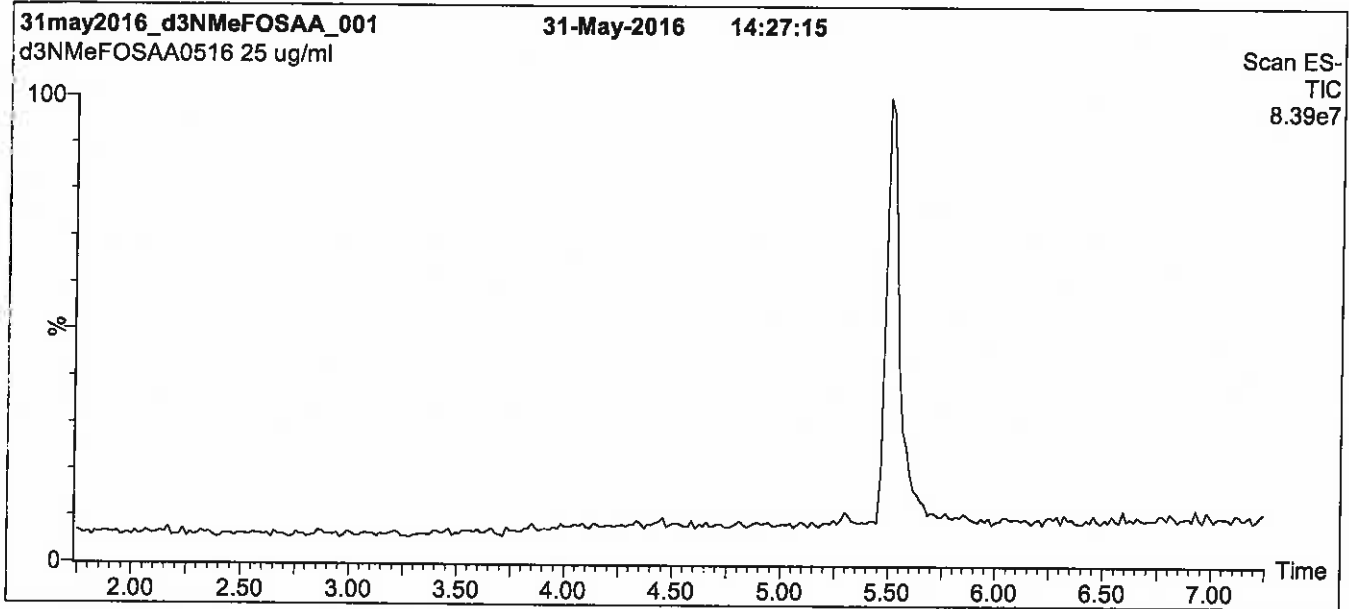
QUALITY MANAGEMENT:

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Figure 1: d3-N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5
min before returning to initial conditions in 0.5 min.
Time: 10 min

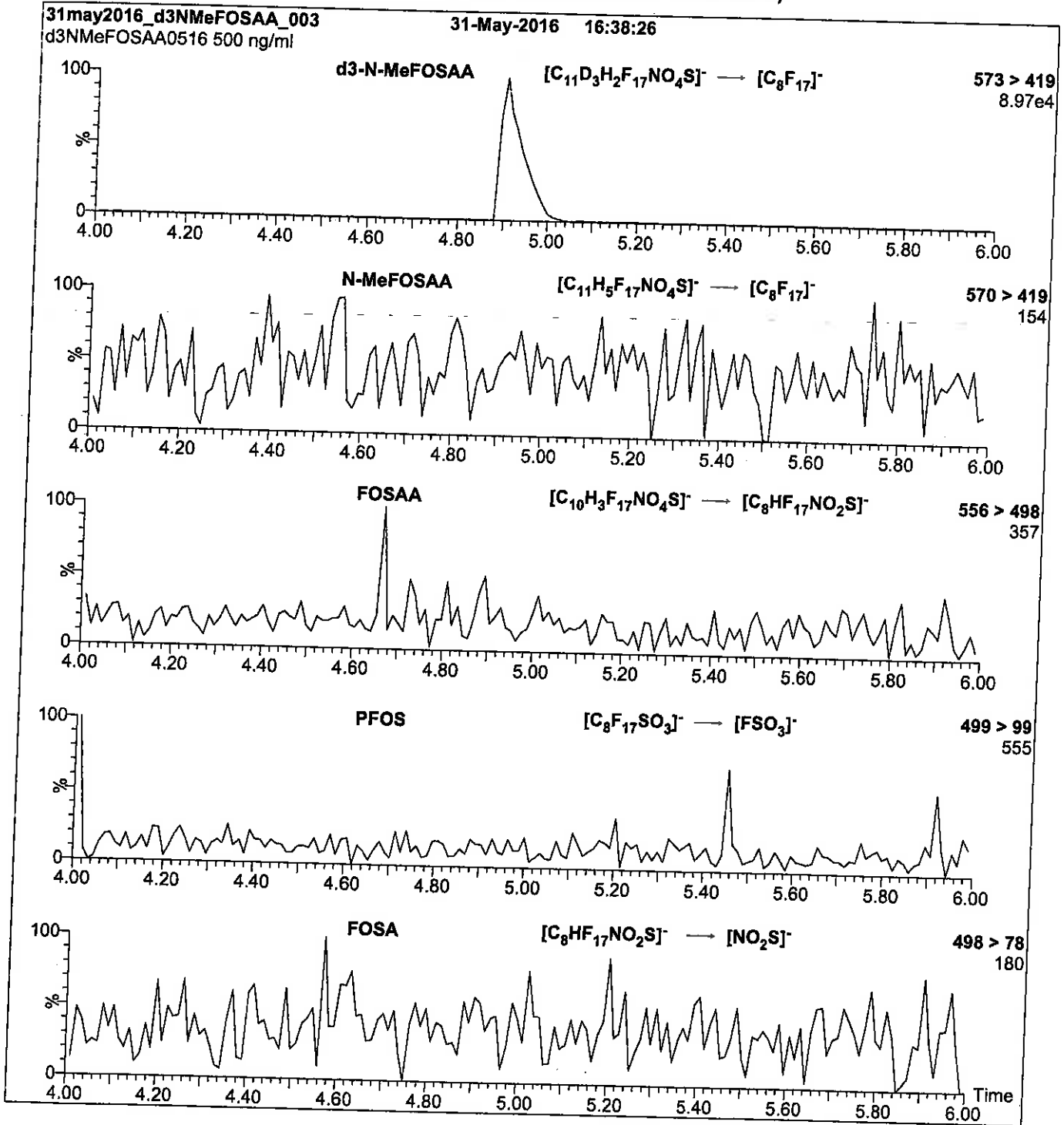
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 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 μ l (500 ng/ml d3-N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 25

Reagent

LCd5-NEtFOSAA_00003

R: 9/9/16 SBC



728301
ID: LCd5-NEtFOSAA_00003
Exp: 08/02/21 Prod: SBC
d5-N-EtFOSAA

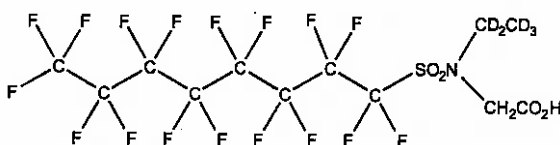


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA0716
COMPOUND: N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: C₁₂D₈H₃F₁₇NO₄S
CONCENTRATION: 50 ± 2.5 µg/ml
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/02/2016
EXPIRY DATE: (mm/dd/yyyy) 08/02/2021
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 590.26
SOLVENT(S): Methanol
Water (<1%)
ISOTOPIC PURITY: ≥98% ²H₅

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:
B.G. Chittim Date: 08/09/2016
(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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TRACEABILITY:

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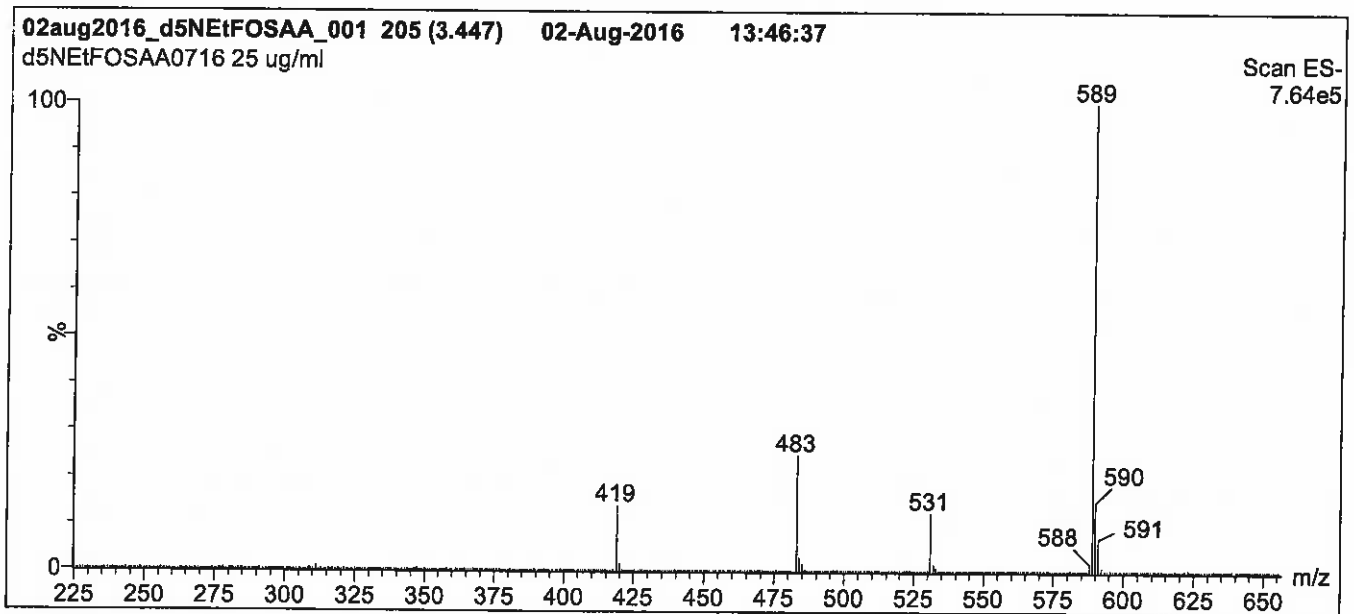
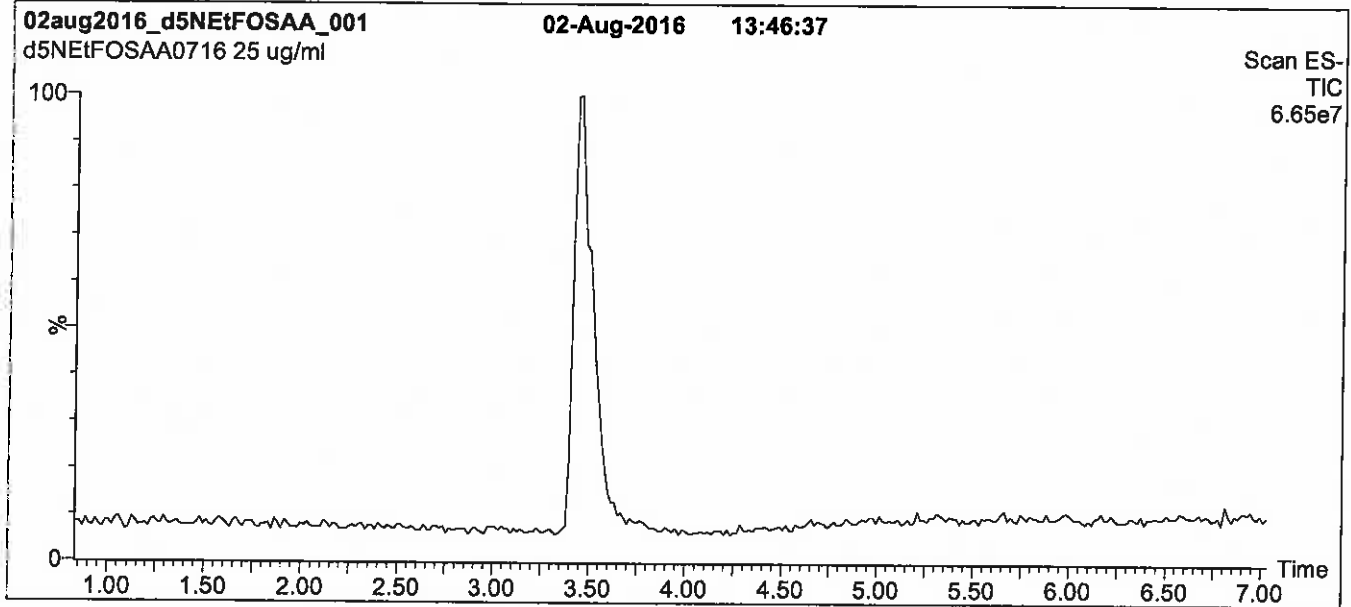
QUALITY MANAGEMENT:

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Figure 1: d5-N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 65% (80:20 MeOH:ACN) / 35% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

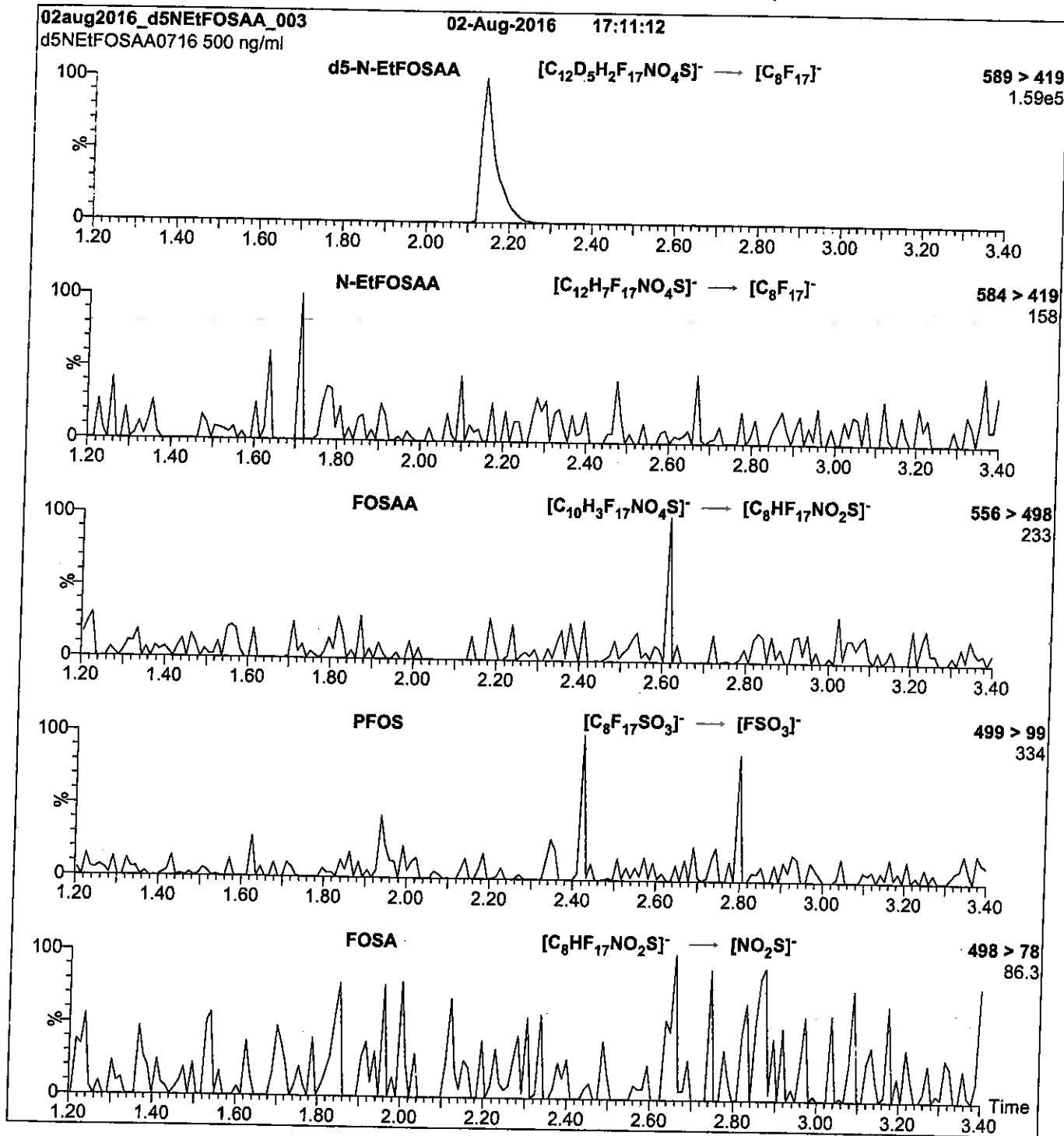
Flow: 350 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml d5-N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 25

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

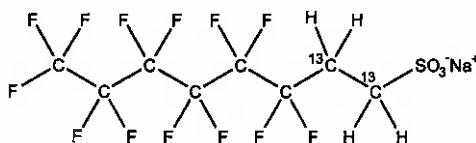


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-6:2FTS **LOT NUMBER:** M262FTS0116
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-¹³C₂]octane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	¹³ C ₂ ¹² C ₆ H ₄ F ₁₃ SO ₃ 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)	ISOTOPIC PURITY:	≥99% ¹³ C (1,2- ¹³ C ₂)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	01/08/2016		
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 ³⁴S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim **Date:** 01/11/2016
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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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 NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

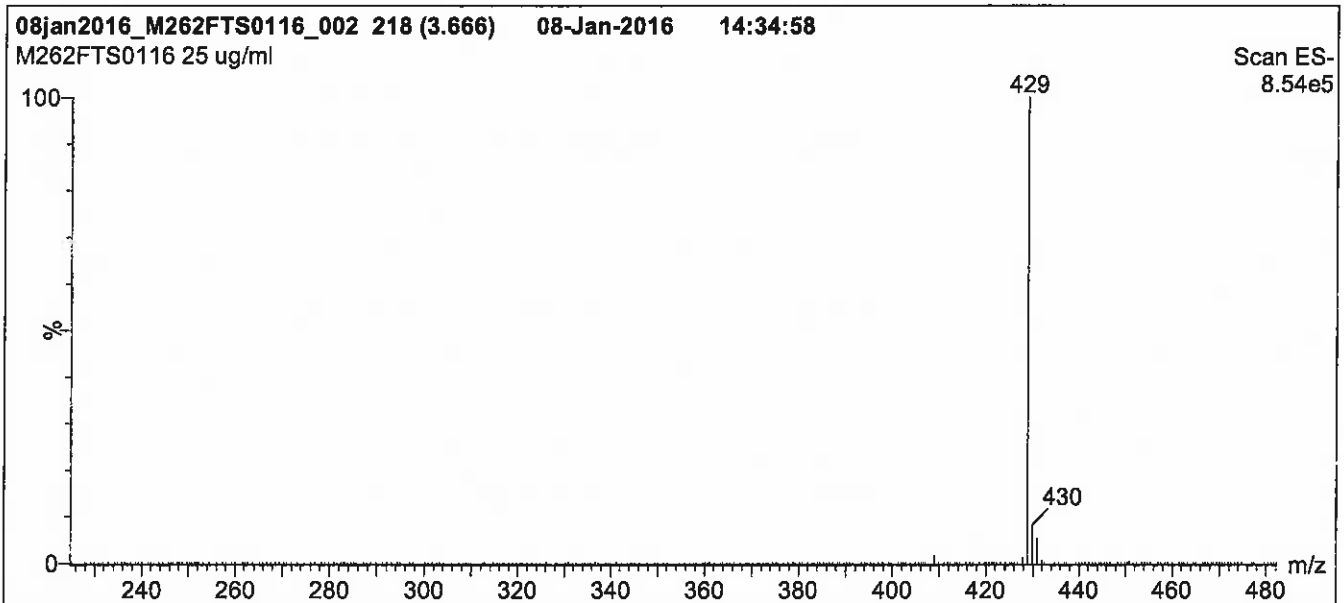
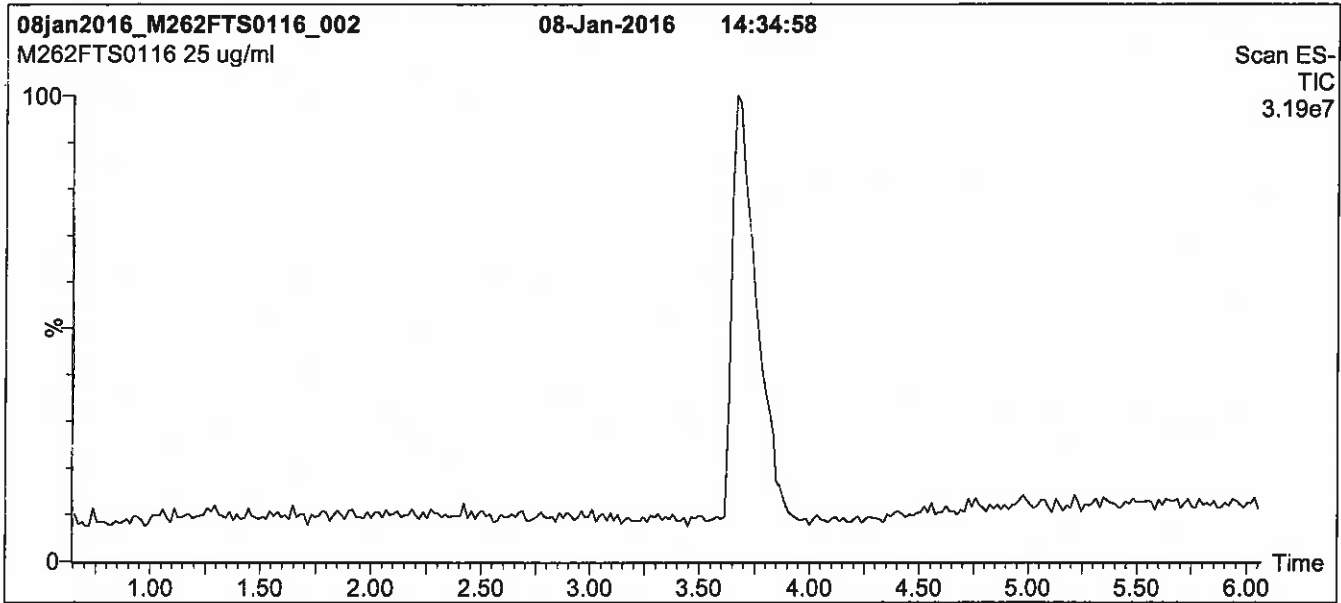
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M2-6:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min
and hold for 2 min before returning
to initial conditions in 0.5 min.
Time: 10 min

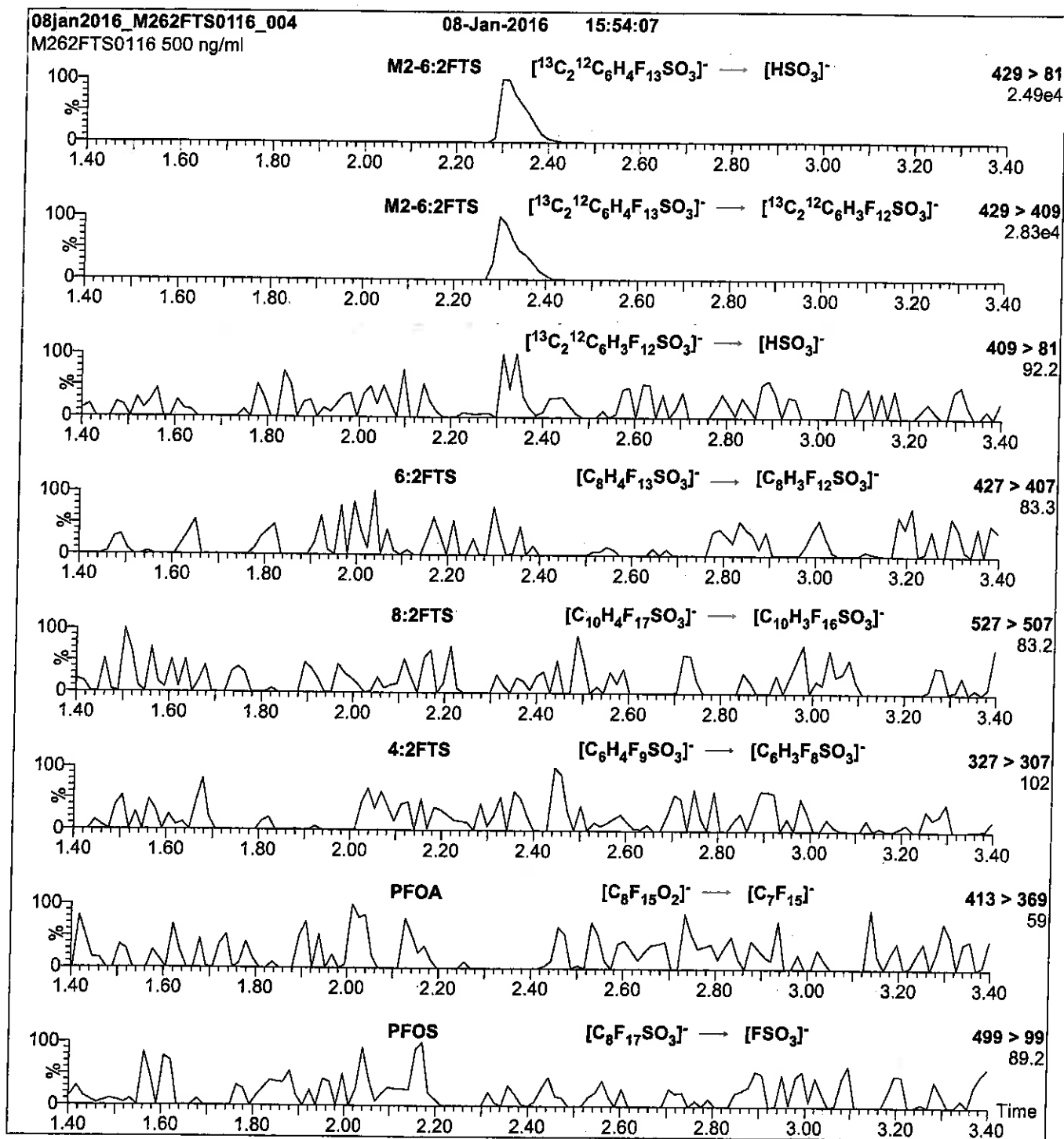
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2-6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 25

Reagent

LCM2PFHxDA_00008

R: SBC 9/22/16

739512
ID: LCM2PFHxDA_00008
Exp: 01/07/21 Prod: SBC
13C2-PFHxDA at 50ug/mL

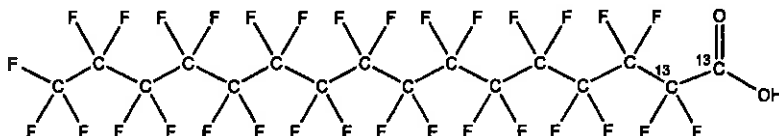


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFHxDA **LOT NUMBER:** M2PFHxDA1112
COMPOUND: Perfluoro-n-[1,2-¹³C₂]hexadecanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₁₄HF₃₁O₂ **MOLECULAR WEIGHT:** 816.11
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
(1,2-¹³C₂)
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:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

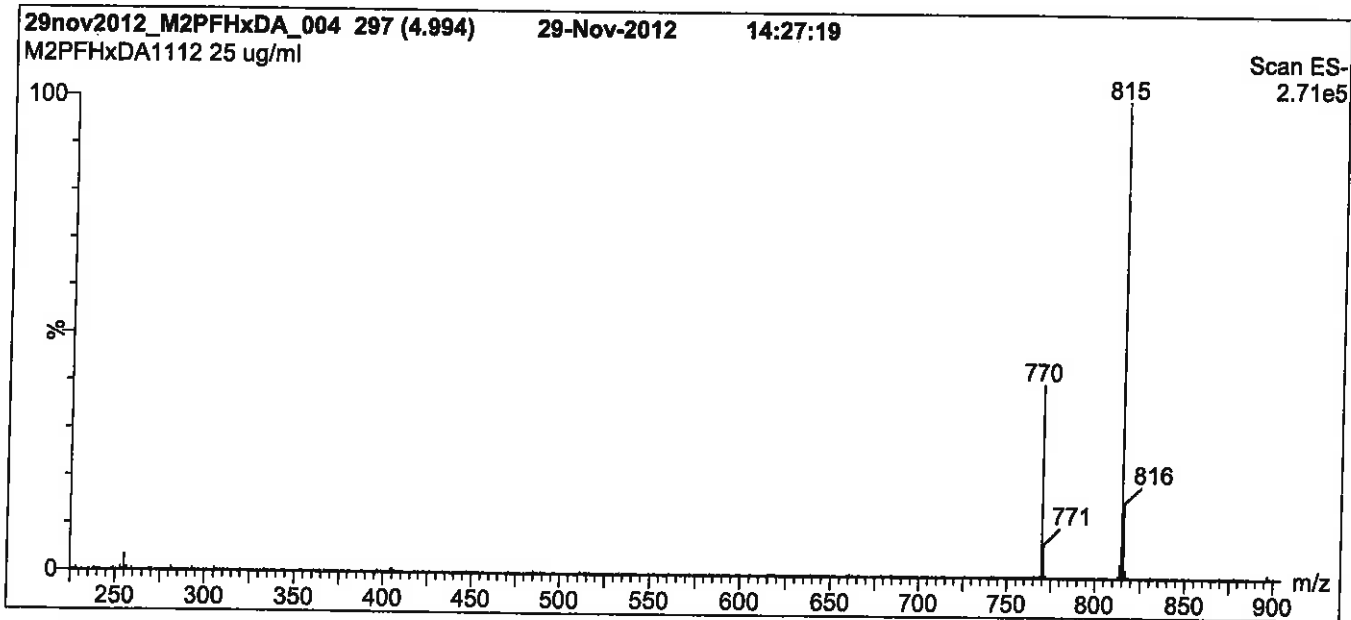
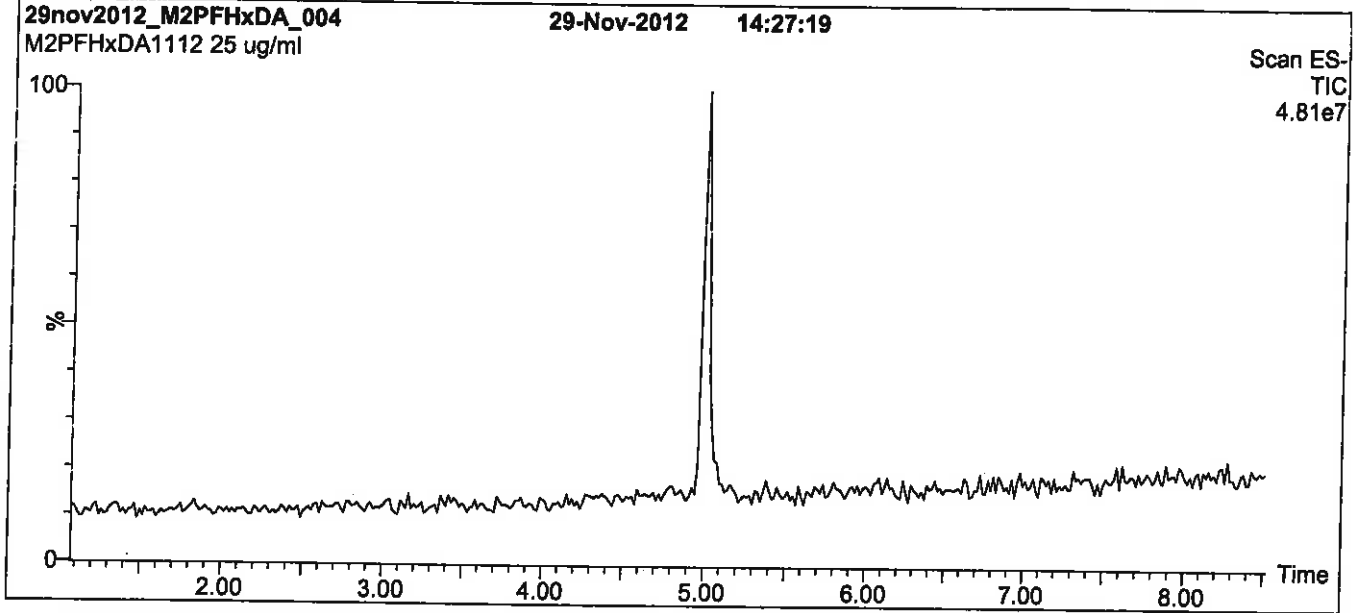
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M2PFHxDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

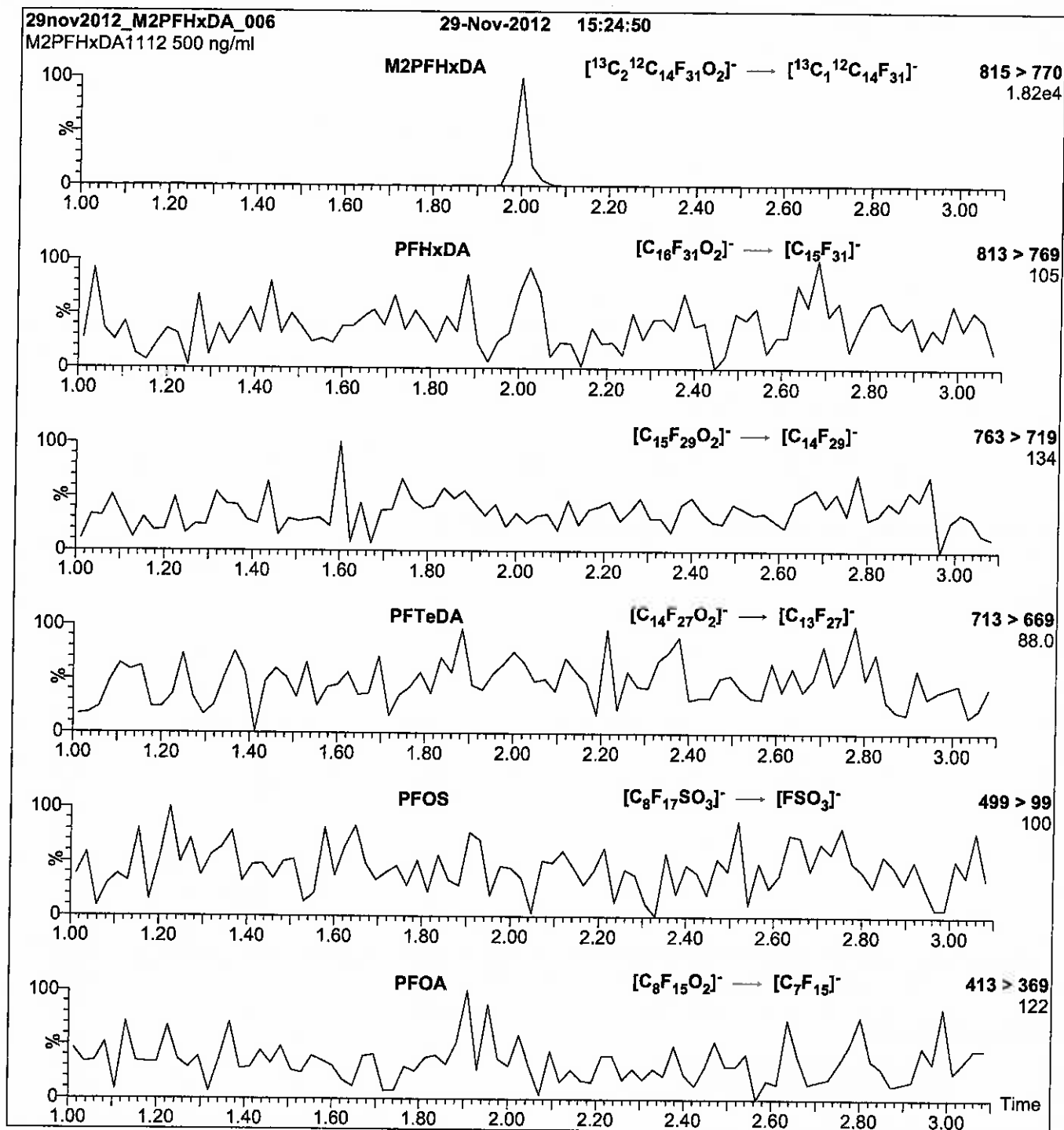
Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 100% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ 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 μl (500 ng/ml M2PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 15

Reagent

LCM2PFTeDA_00007

Scanned 10/14/16 R: SDC 9/22/16

739563
ID: LCM2PFTeDA_00007
Exp: 12/07/20 Prod: SBC
13C2-PFTeDA at 50ug/mL

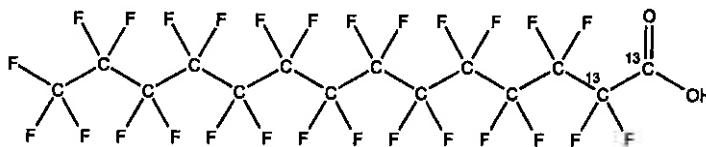


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFTeDA **LOT NUMBER:** M2PFTeDA1115
COMPOUND: Perfluoro-n-[1,2-¹³C₂]tetradecanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₁₂HF₂₇O₂ **MOLECULAR WEIGHT:** 716.10
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 12/07/2015 (1,2-¹³C₂)
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
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:

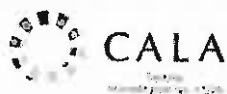
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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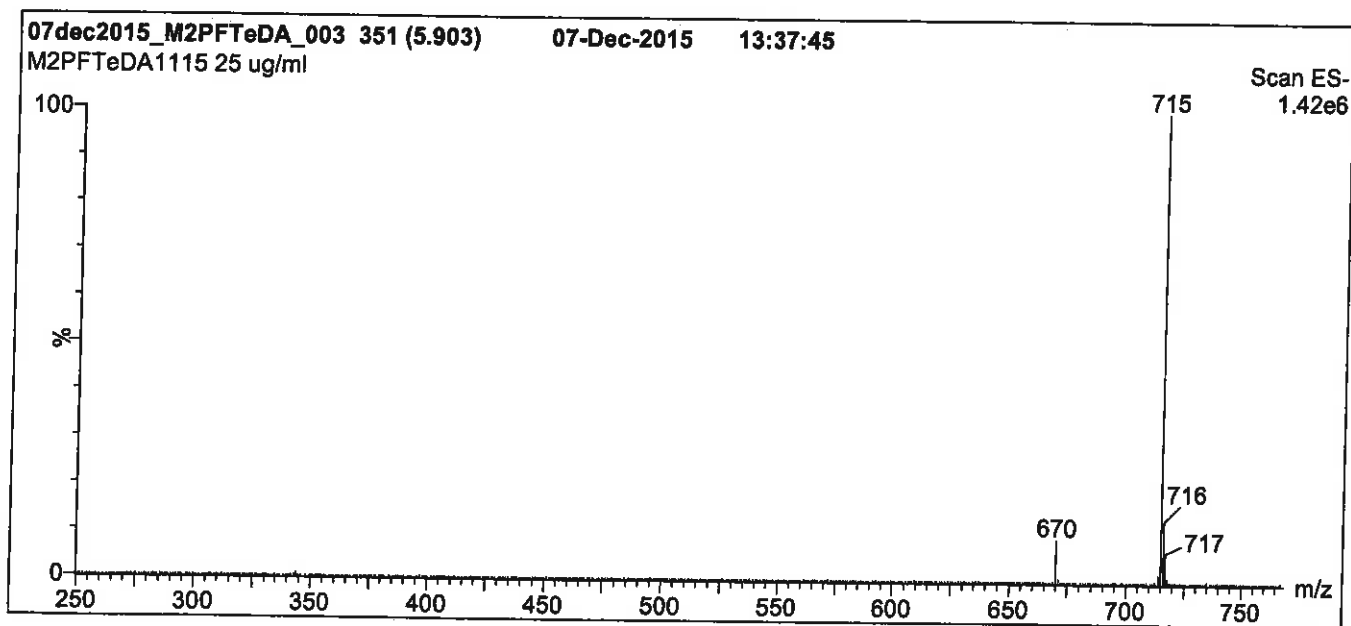
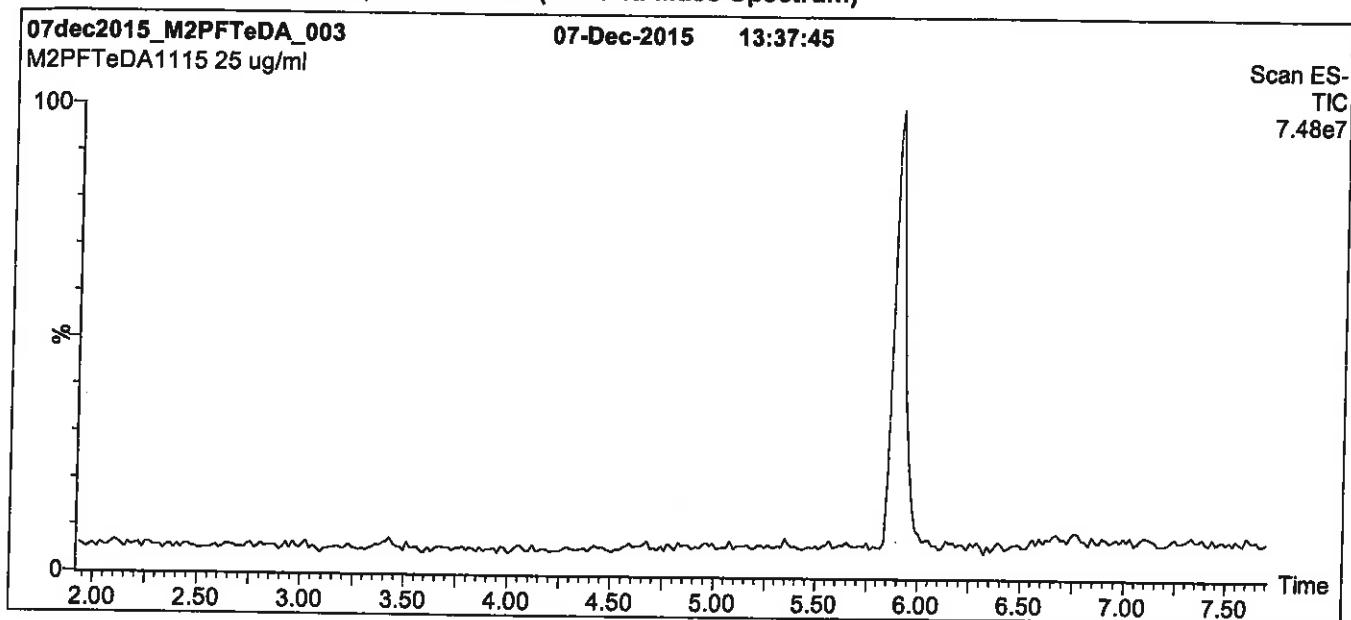
QUALITY MANAGEMENT:

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: M2PFTeDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 65% (80:20 MeOH:ACN) / 35% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

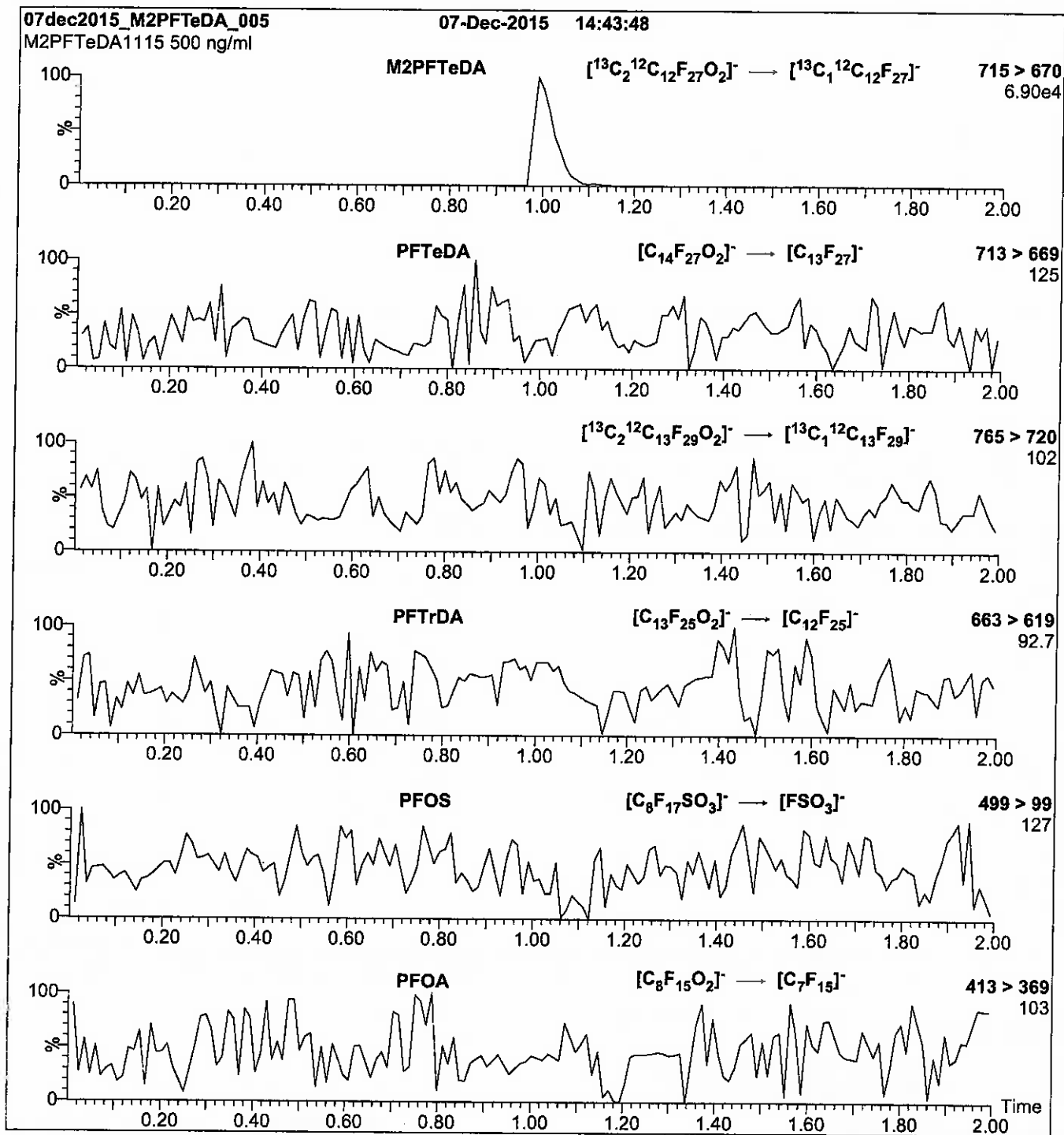
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (250 - 1250 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 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 μl (500 ng/ml M2PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 14

Reagent

LCM4PFHPA_00007

f: SBC a/22/16

739567
ID: LCM4PFHPA_00007
Exp: 05/27/21 Prpd: SBC
13C4-Perfluoroheptanoic a



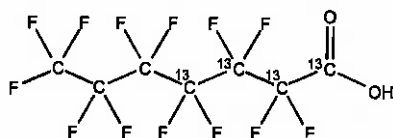
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

Scanned 10/14/16 SK

PRODUCT CODE: M4PFHpA **LOT NUMBER:** M4PFHpA0516
COMPOUND: Perfluoro-n-[1,2,3,4-¹³C₄]heptanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₄¹²C₃HF₁₃O₂ **MOLECULAR WEIGHT:** 368.03
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
(1,2,3,4-¹³C₄)
LAST TESTED: (mm/dd/yyyy) 05/27/2016
EXPIRY DATE: (mm/dd/yyyy) 05/27/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

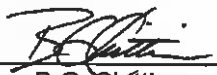
DOCUMENTATION/ DATA ATTACHED:

- 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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HOMOGENEITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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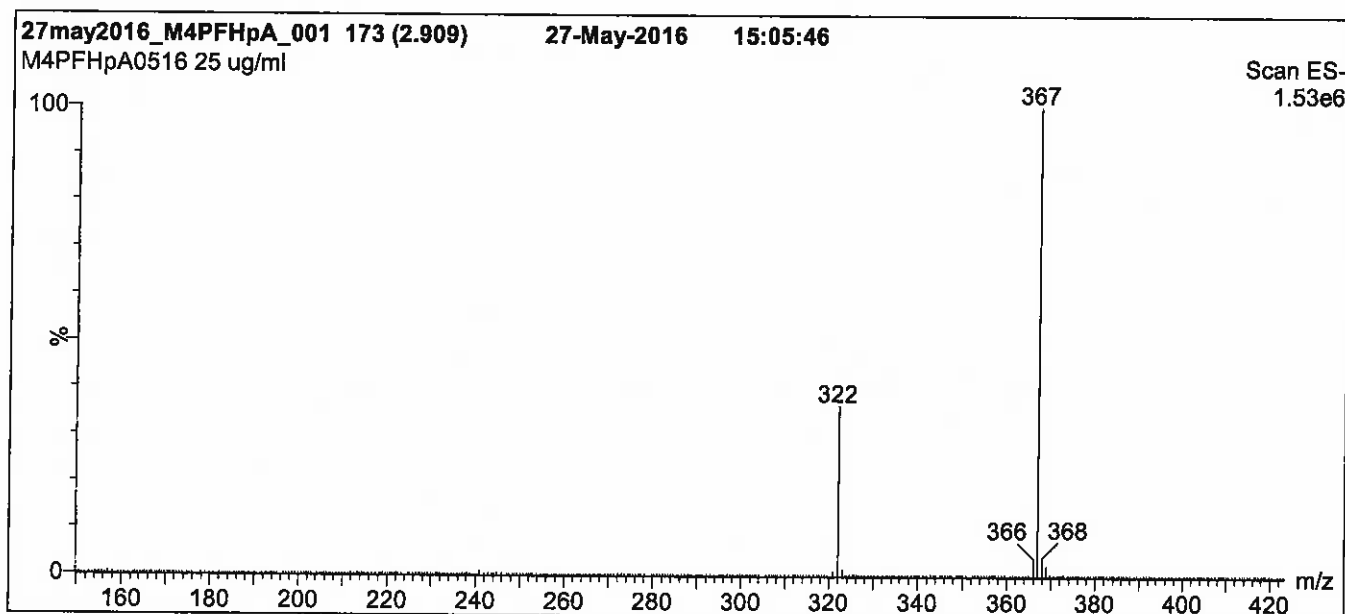
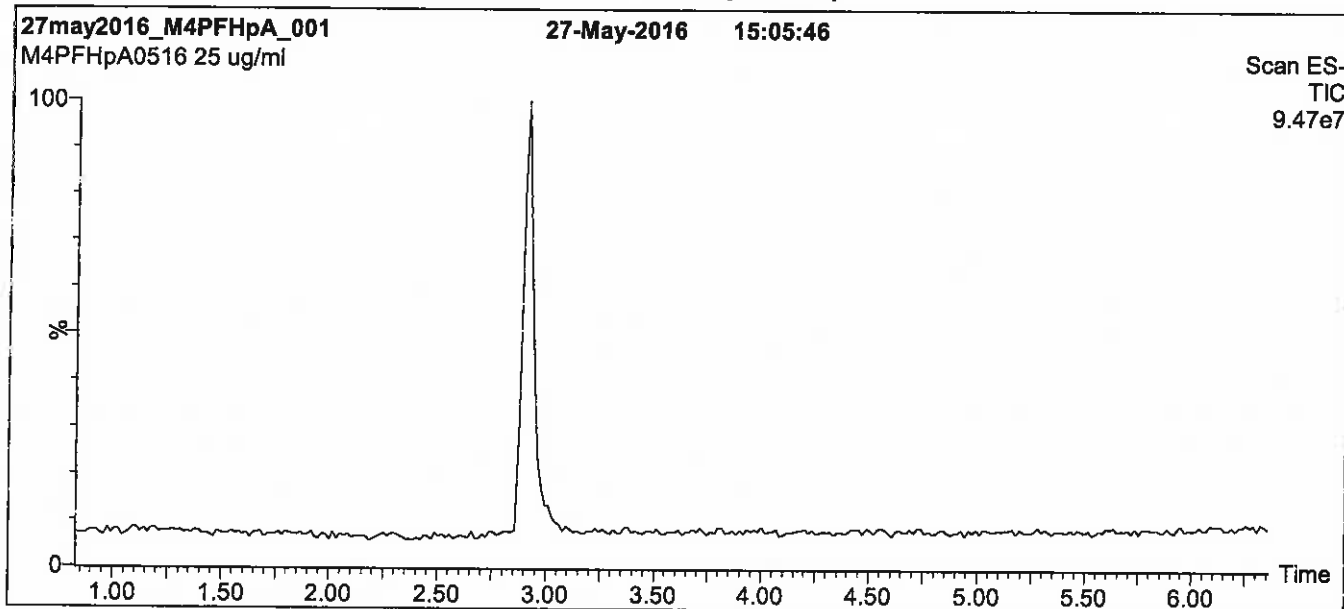
QUALITY MANAGEMENT:

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Figure 1: M4PFHpA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

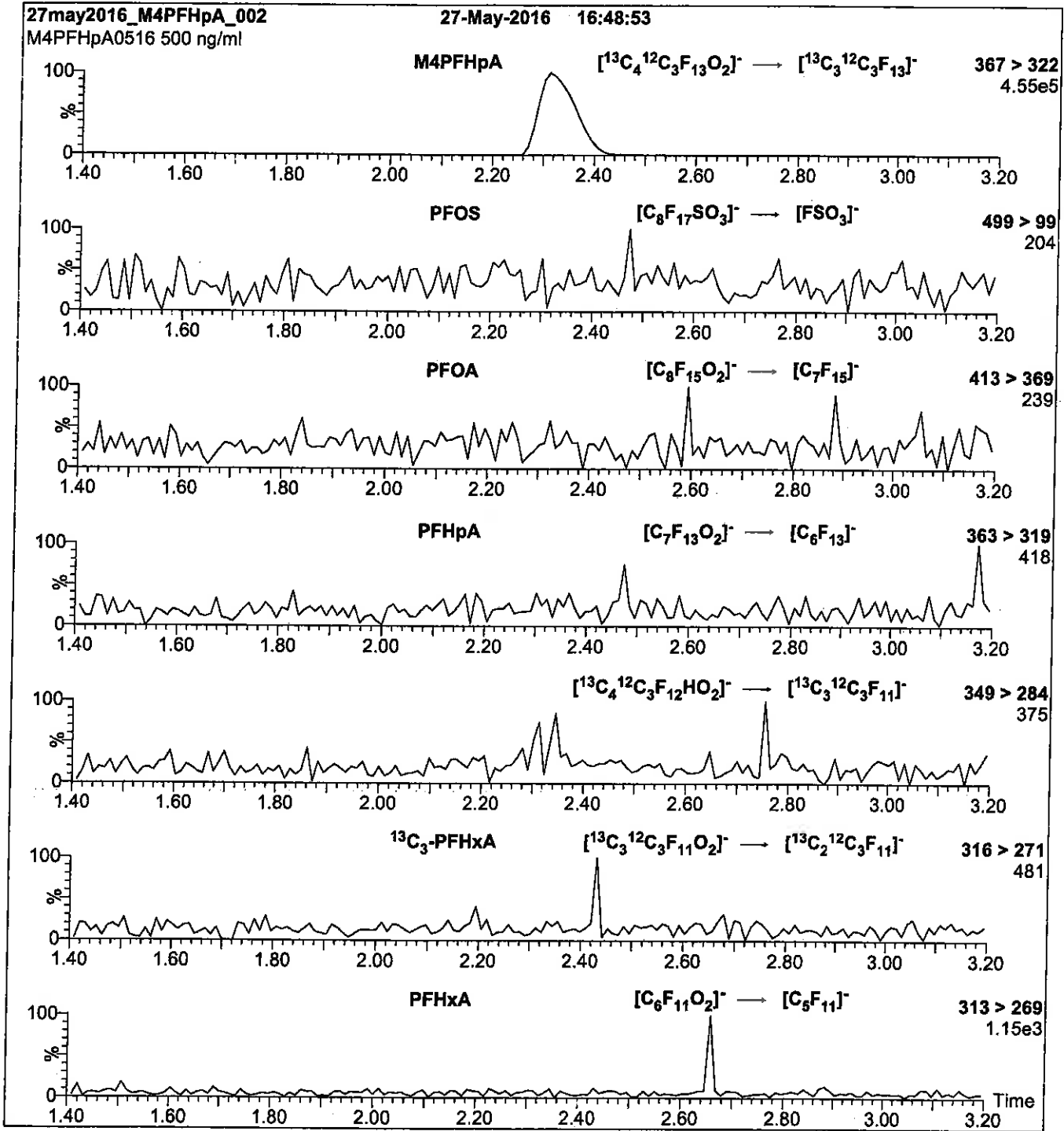
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
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 μl (500 ng/ml M4PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 11

Reagent

LCM5PFPEA_00008

R: 8BC 9/22/16



739590
ID: LCM5PFPEA_00008
Exp: 05/22/20 Prpt: SAC
13C5-Perfluoropentanoic a



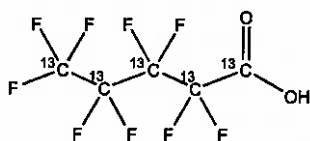
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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PRODUCT CODE: M5PFPeA **LOT NUMBER:** M5PFPeA0515
COMPOUND: Perfluoro-n-[¹³C₅]pentanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₅HF₉O₂ **MOLECULAR WEIGHT:** 269.01
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
(¹³C₅)
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

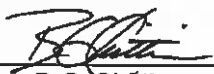
DOCUMENTATION/ DATA ATTACHED:

- 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
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.

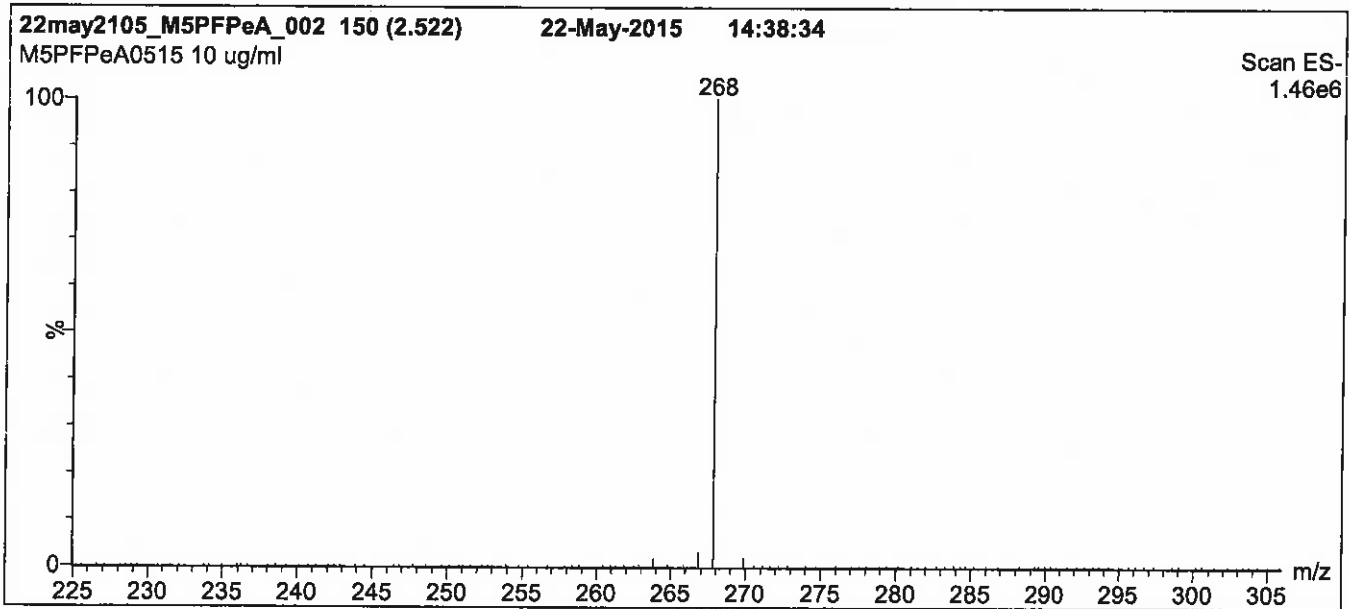
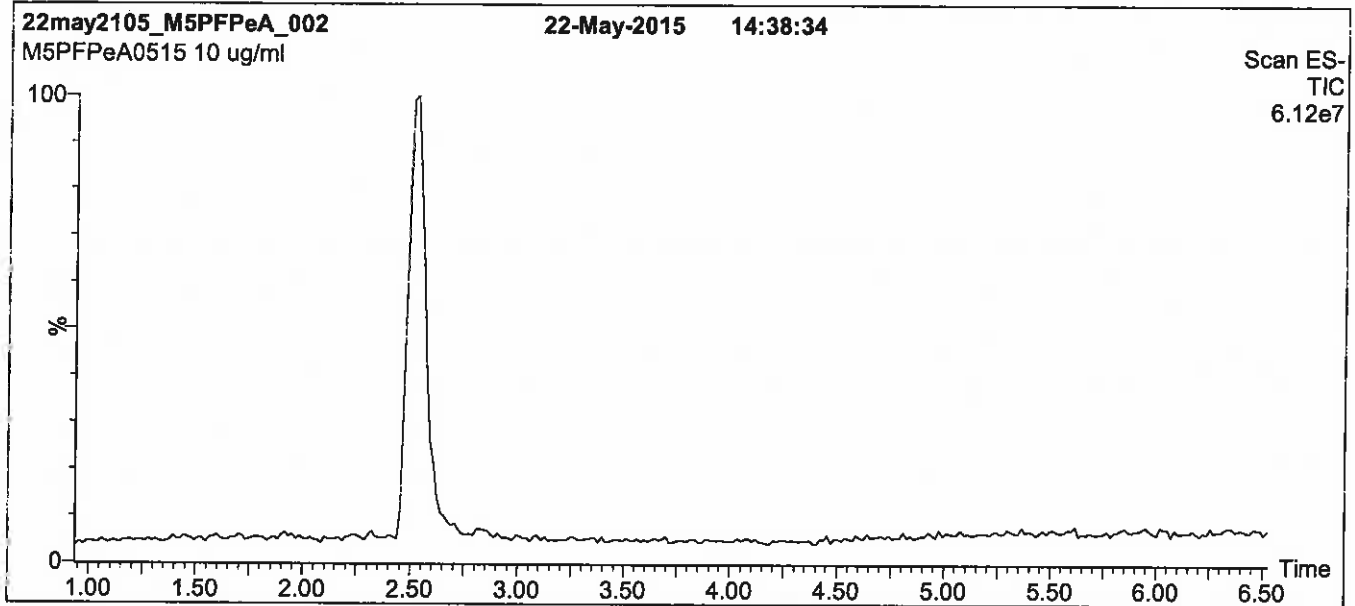
QUALITY MANAGEMENT:

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: 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

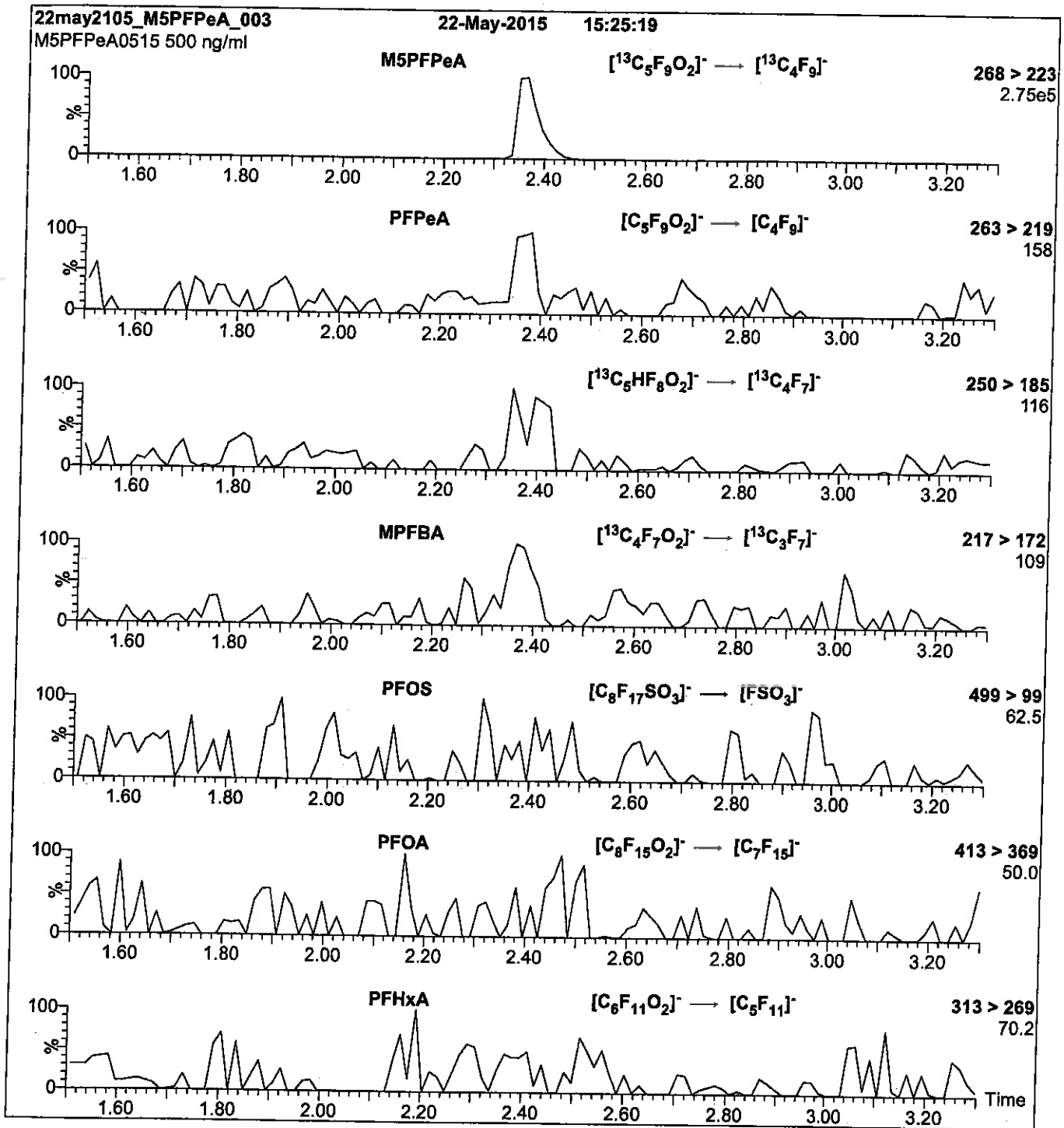
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 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 μl (500 ng/ml M5PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = $3.35\text{e-}3$
Collision Energy (eV) = 9

Reagent

LCM8FOSA_00011

R: SBC
Scanned 10/14/16
9/22/16



739615
ID: LCM8FOSA_00011
Exp: 12/22/17 Prod: SBC
13C8-Perfluorooctanesulfo

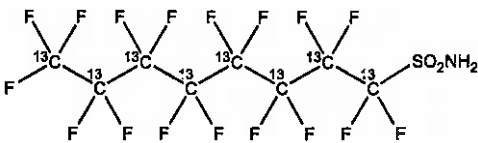


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8FOSA-I **LOT NUMBER:** M8FOSA1215I
COMPOUND: Perfluoro-1-[¹³C]₈octanesulfonamide

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₈H₂F₁₇NO₂S **MOLECULAR WEIGHT:** 507.09
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Isopropanol
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 12/22/2015 (¹³C₈)
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:  **Date:** 01/14/2016
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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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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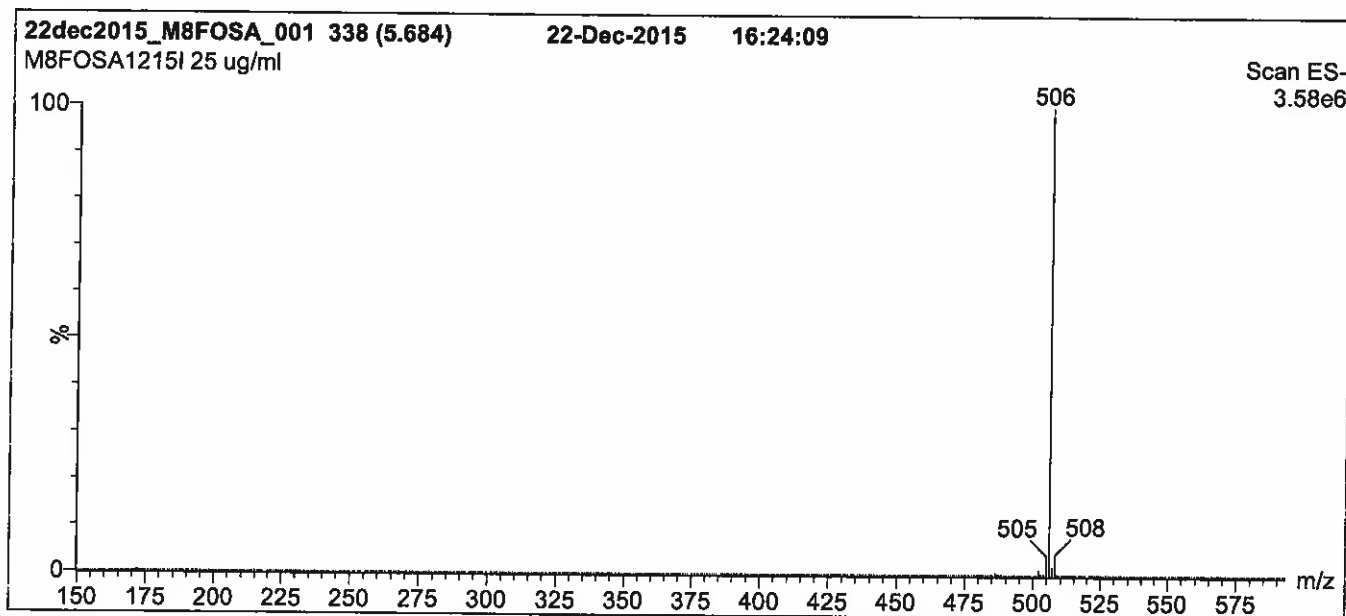
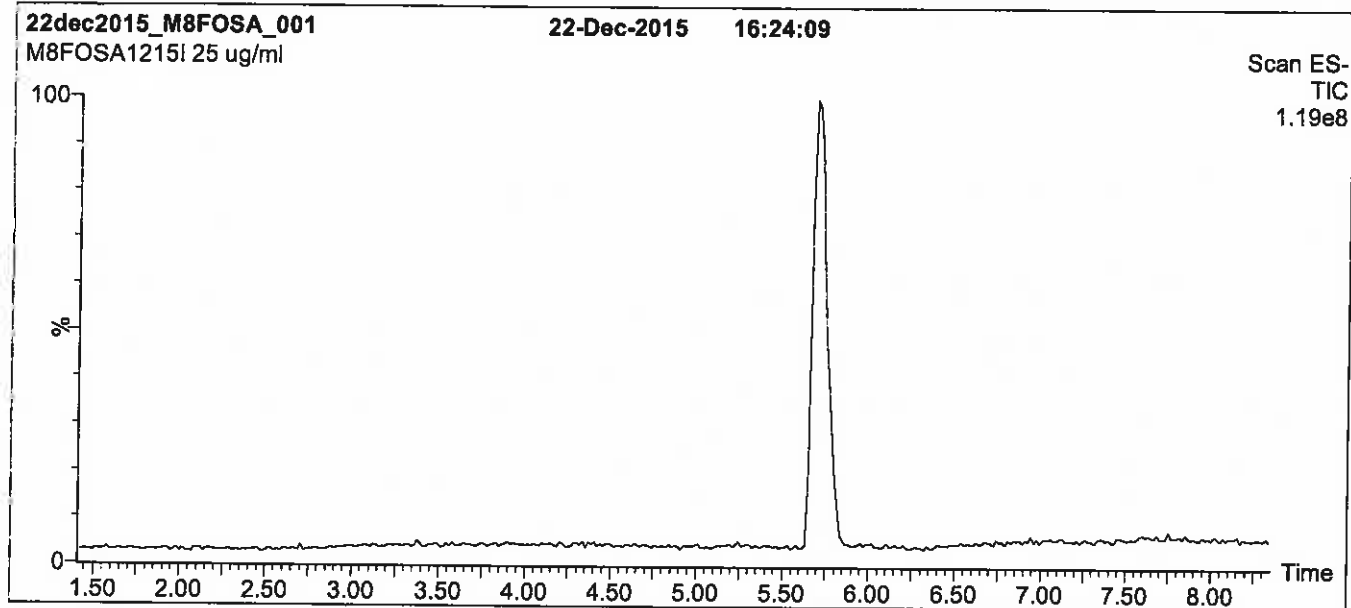
QUALITY MANAGEMENT:

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).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M8FOSA-I; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

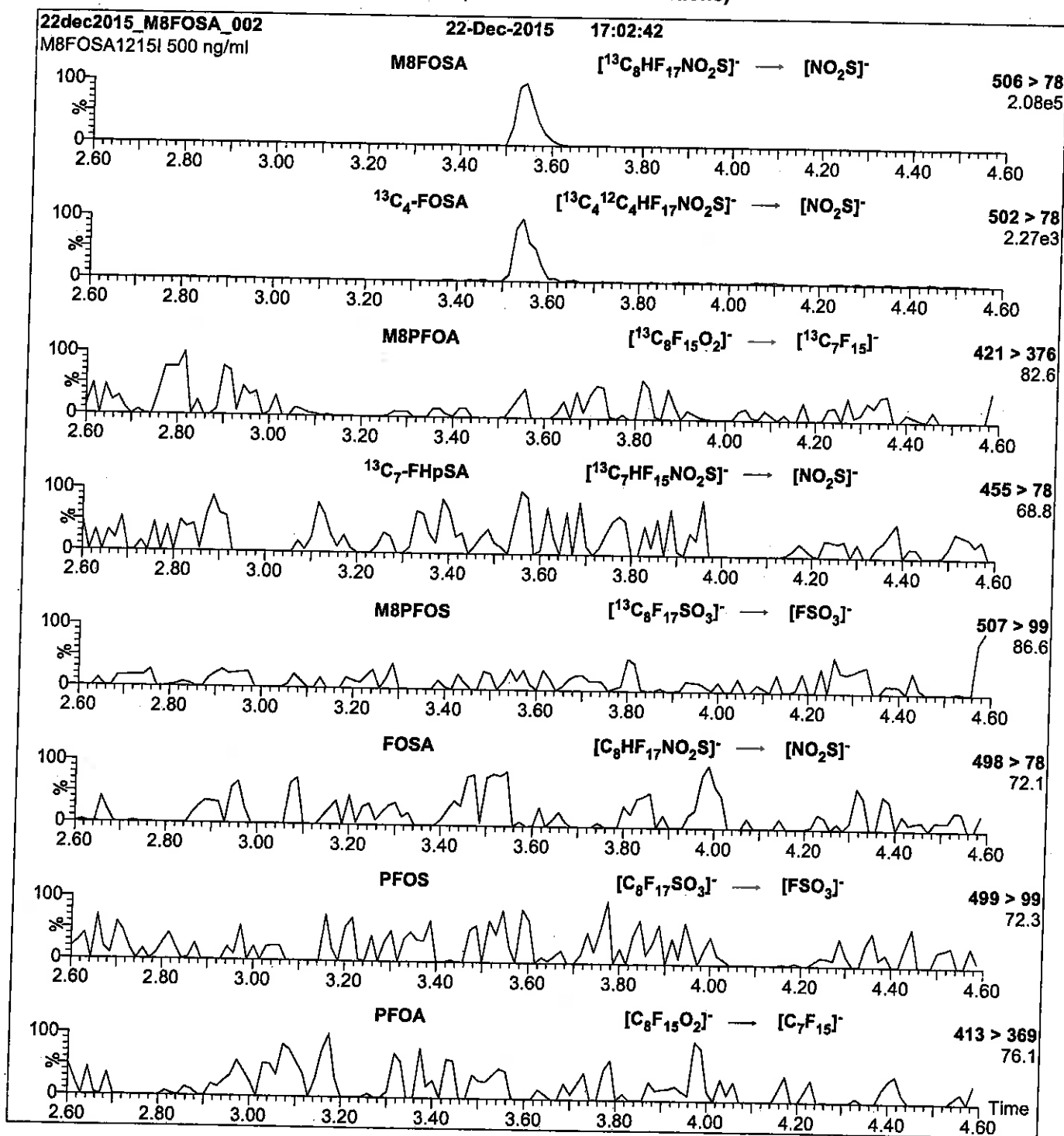
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
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_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 30

Reagent

LCMPFBA_00008

R: 8BC 9/22/16



739593

ID: LCMFBA_00008

Exp: 05/24/21 Prep: SEC

¹³C4-Perfluorobutanoic ac



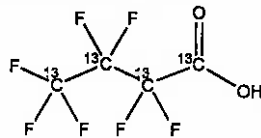
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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PRODUCT CODE: MPFBA **LOT NUMBER:** MPFBA0516
COMPOUND: Perfluoro-n-[1,2,3,4-¹³C₄]butanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₄HF₉O₂ **MOLECULAR WEIGHT:** 218.01
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
(1,2,3,4-¹³C₄)
LAST TESTED: (mm/dd/yyyy) 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.

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

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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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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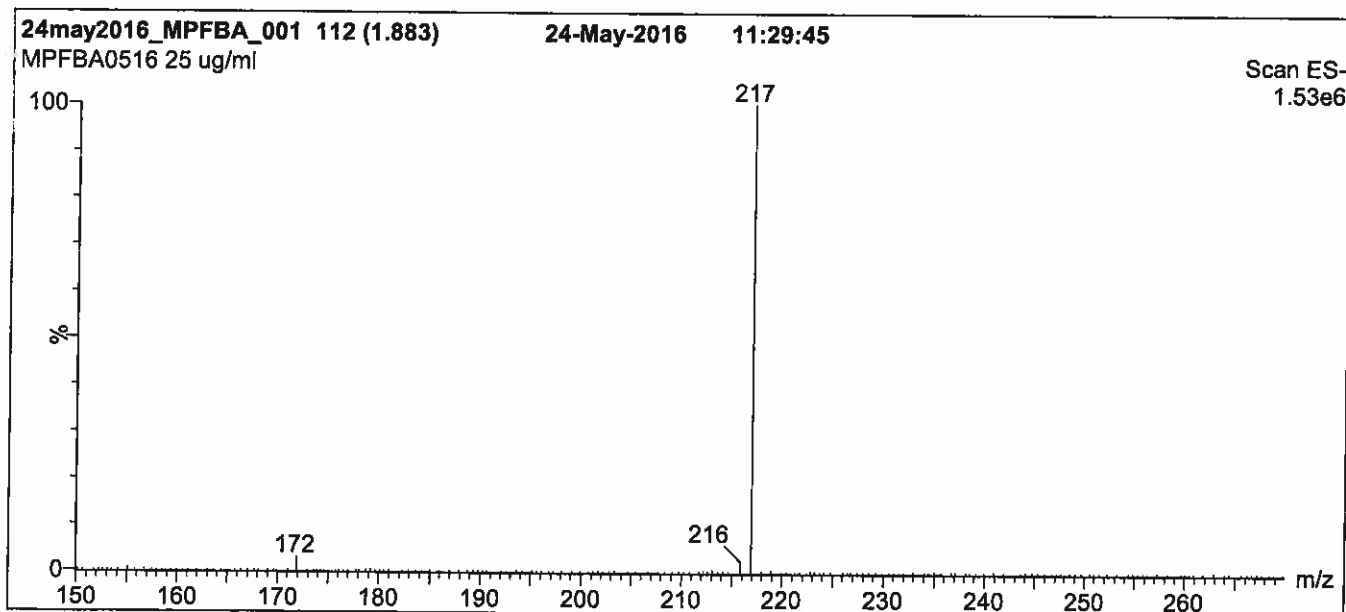
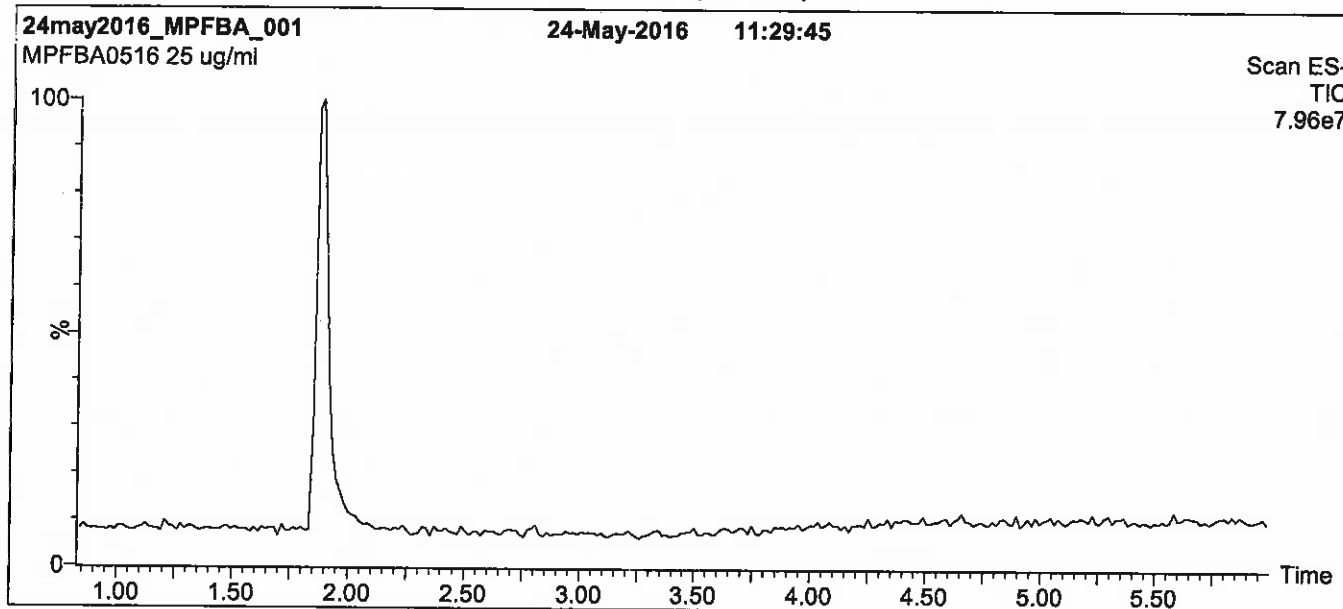
QUALITY MANAGEMENT:

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Figure 1: MPFBA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 30% (80:20 MeOH:ACN) / 70% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

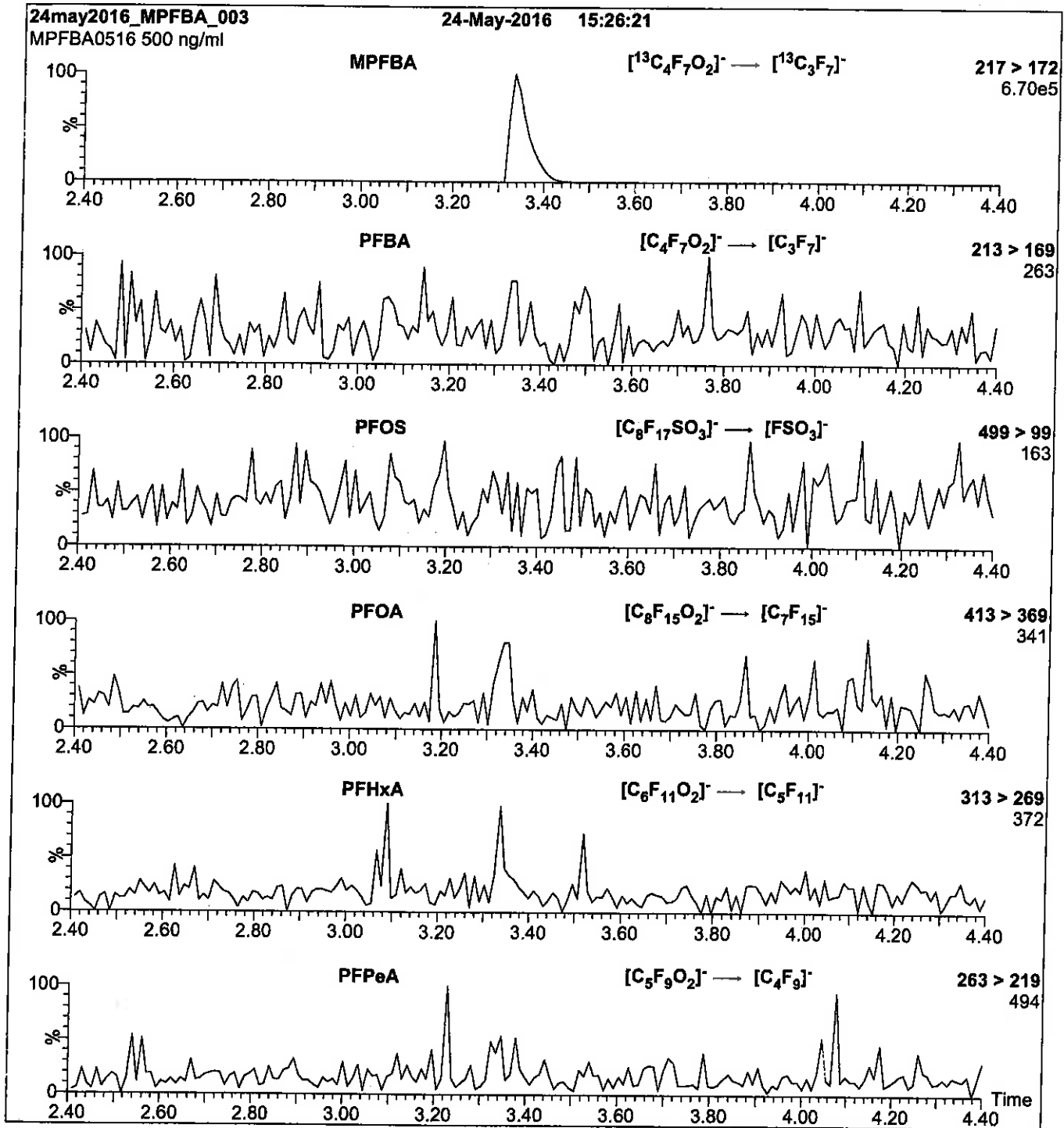
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 3.00
 Cone Voltage (V) = 10.00
 Cone Gas Flow (l/hr) = 100
 Desolvation Gas Flow (l/hr) = 750

Figure 2: MPFBA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop Injection
10 μl (500 ng/ml MPFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 10

Reagent

LCMPFDA_00011

Scanned 10/14/16 R: SBC 9/22/16

739609
ID: LCMFDA_00011
Exp: 08/19/20 Prep: SBC
13C2-Perfluorodecanoic a

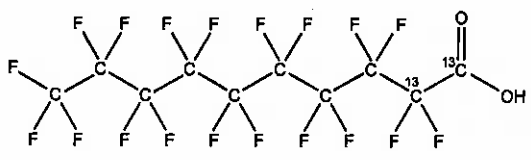


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFDA **LOT NUMBER:** MPFDA0815
COMPOUND: Perfluoro-n-[1,2-¹³C₂]decanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₈HF₁₈O₂ **MOLECULAR WEIGHT:** 516.07
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
(1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 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 ¹³C₁-PFNA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 08/21/2015
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:

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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.

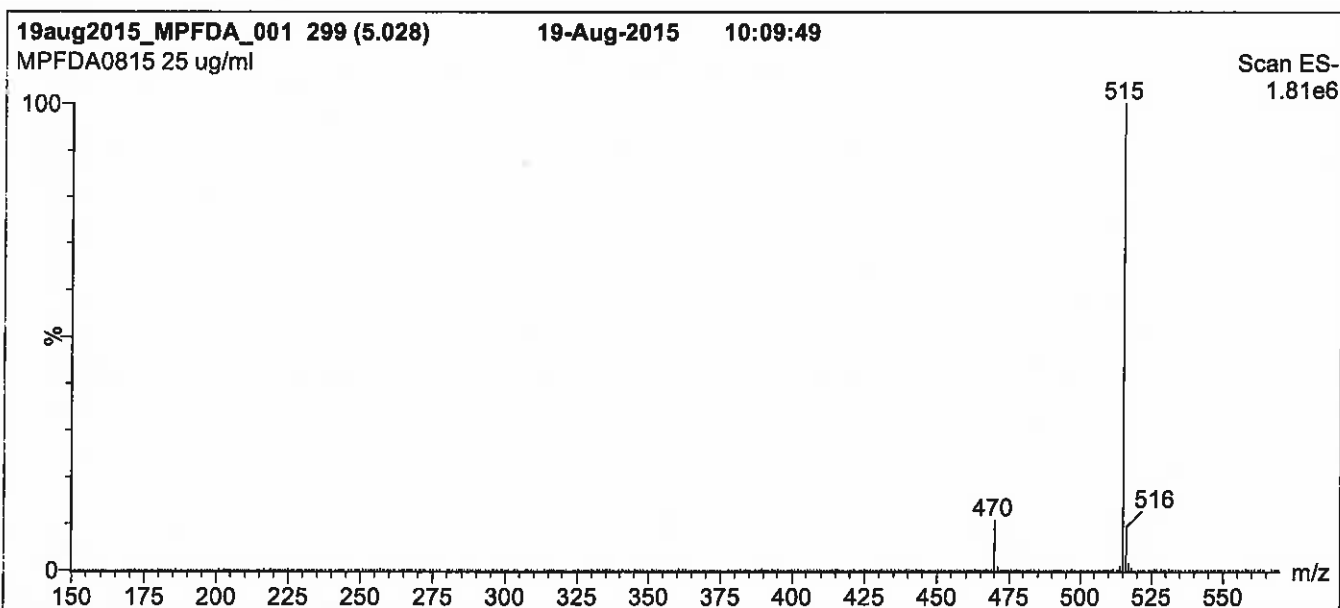
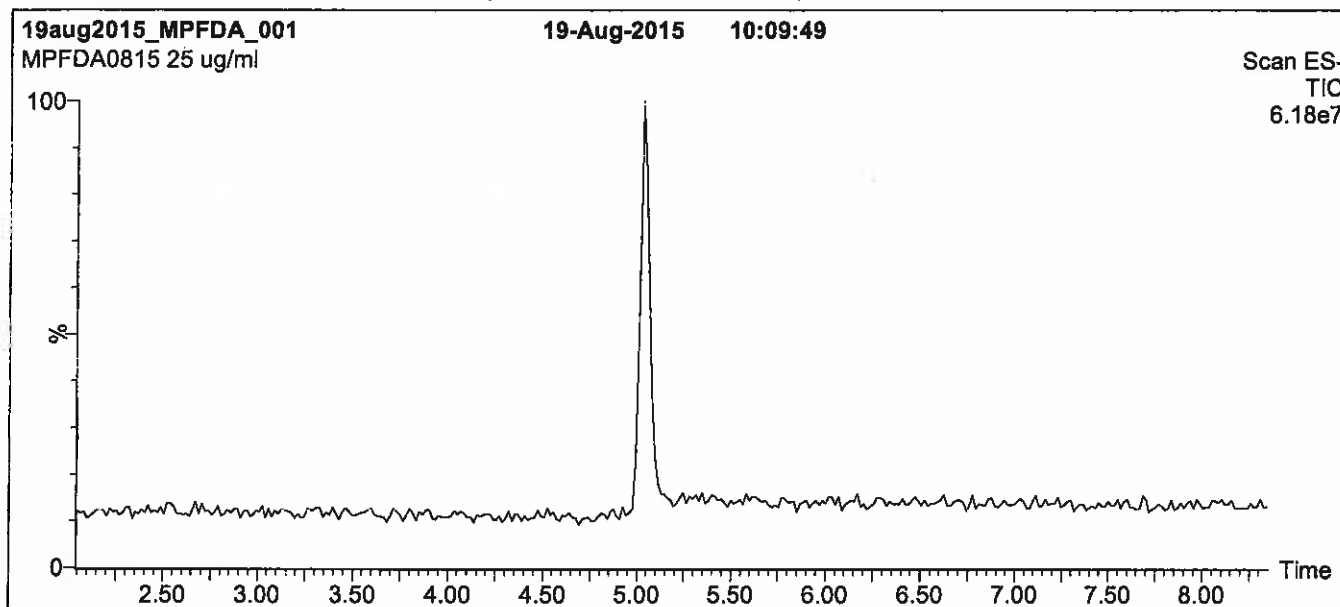
QUALITY MANAGEMENT:

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 or contact us directly at info@well-labs.com

Figure 1: MPFDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 50% (80:20 MeOH:ACN) / 50% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 2 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

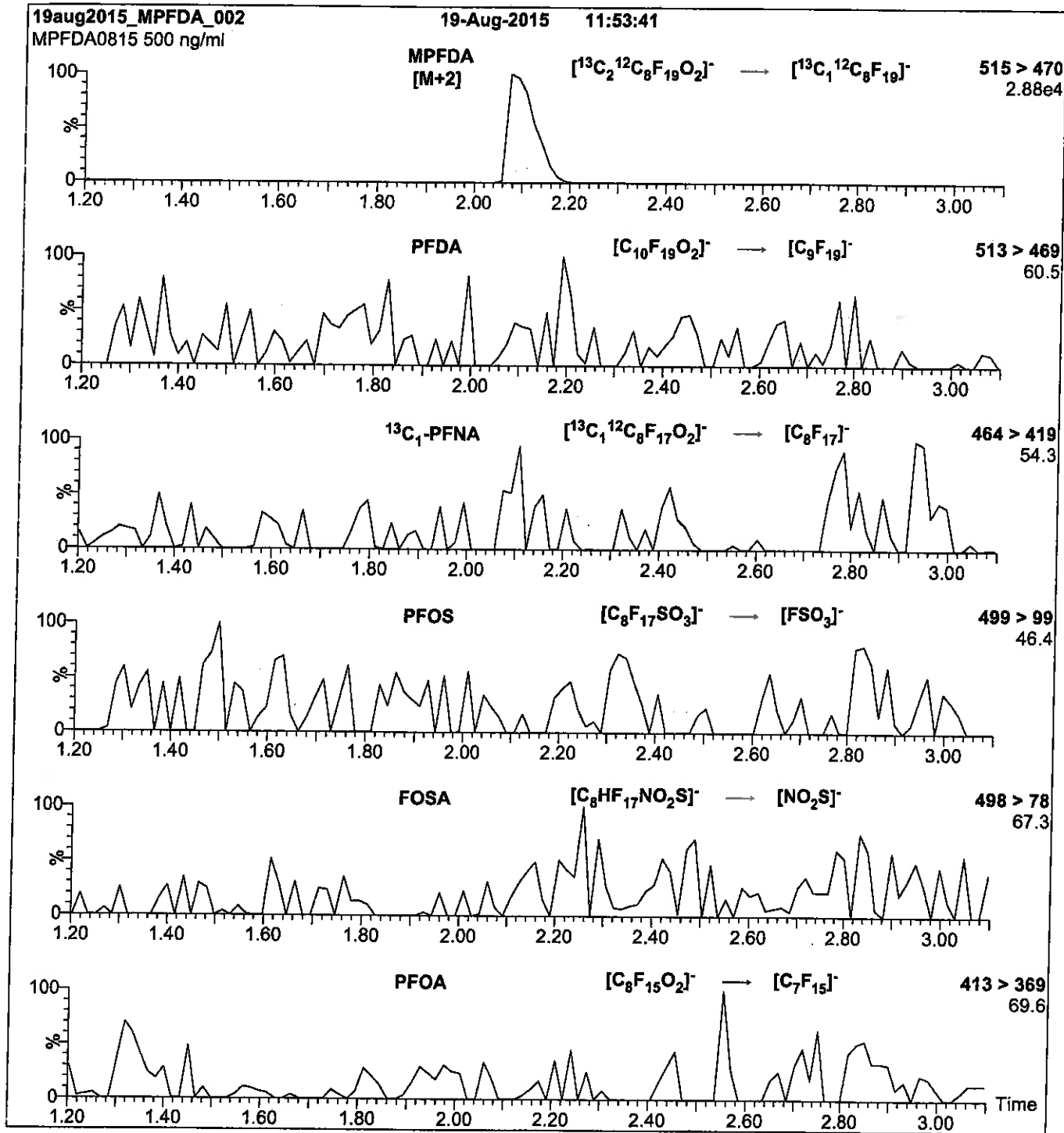
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 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 μ l (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
 Collision Energy (eV) = 13

Reagent

LCMPFD_oA_00008

R: 882 9/22/16

739598
ID: LCMFDoA_00008
Exp: 04/08/21 Prod: SBC
13C2-Perfluorododecanoic



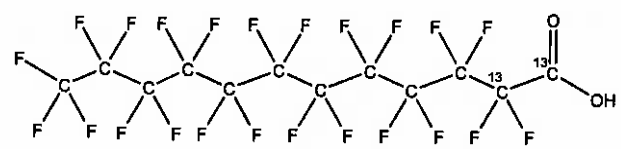
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

Scanned 10/14/16 SR

PRODUCT CODE: MPFDoA **LOT NUMBER:** MPFDoA0416
COMPOUND: Perfluoro-n-[1,2-¹³C₂]dodecanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₁₀HF₂₃O₂ **MOLECULAR WEIGHT:** 616.08
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
(1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 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:  **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

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:

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LIMITED WARRANTY:

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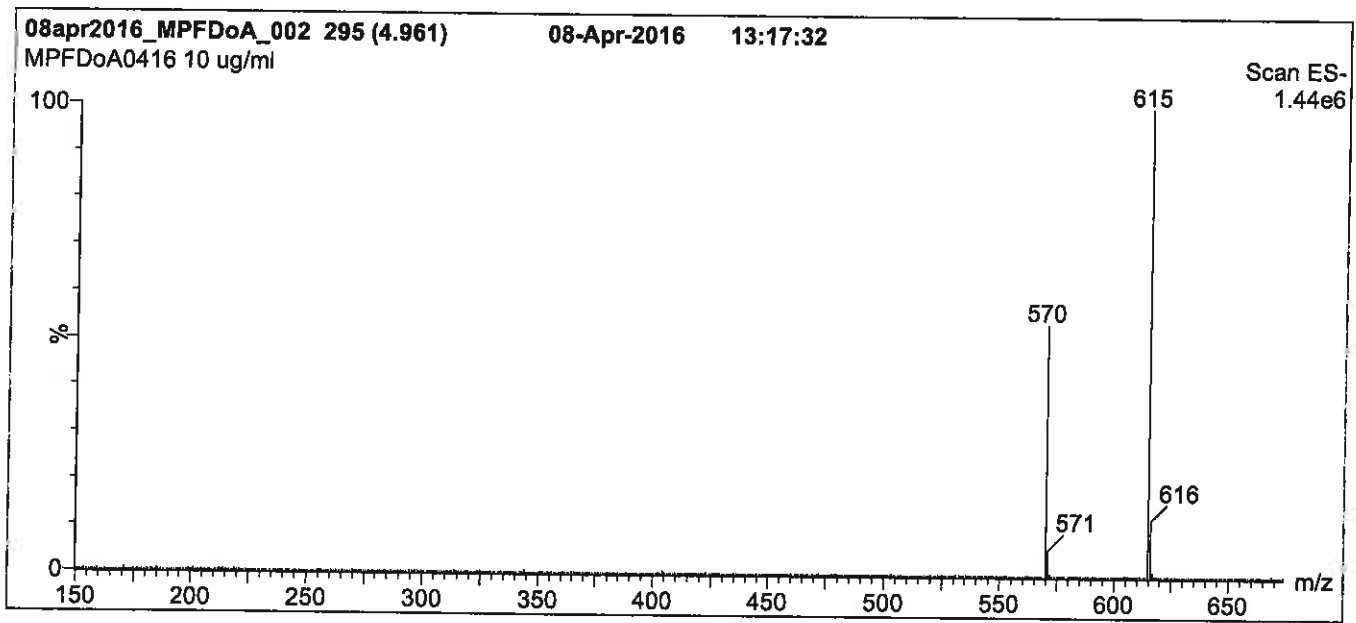
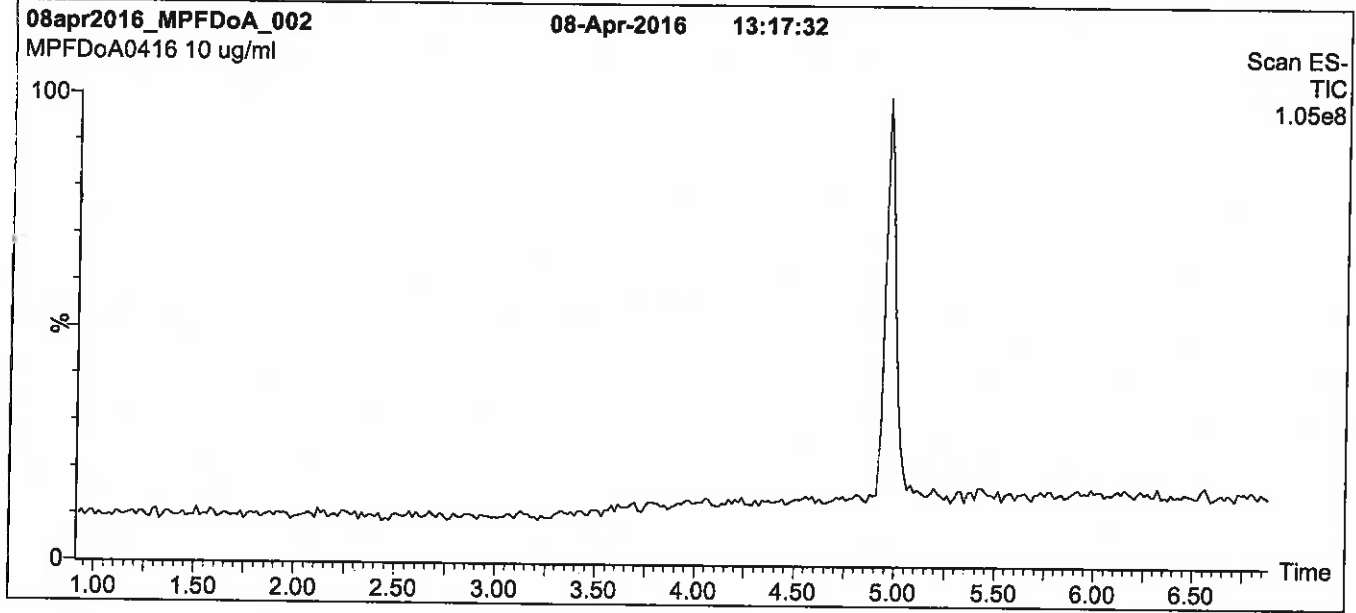
QUALITY MANAGEMENT:

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: MPFDoA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

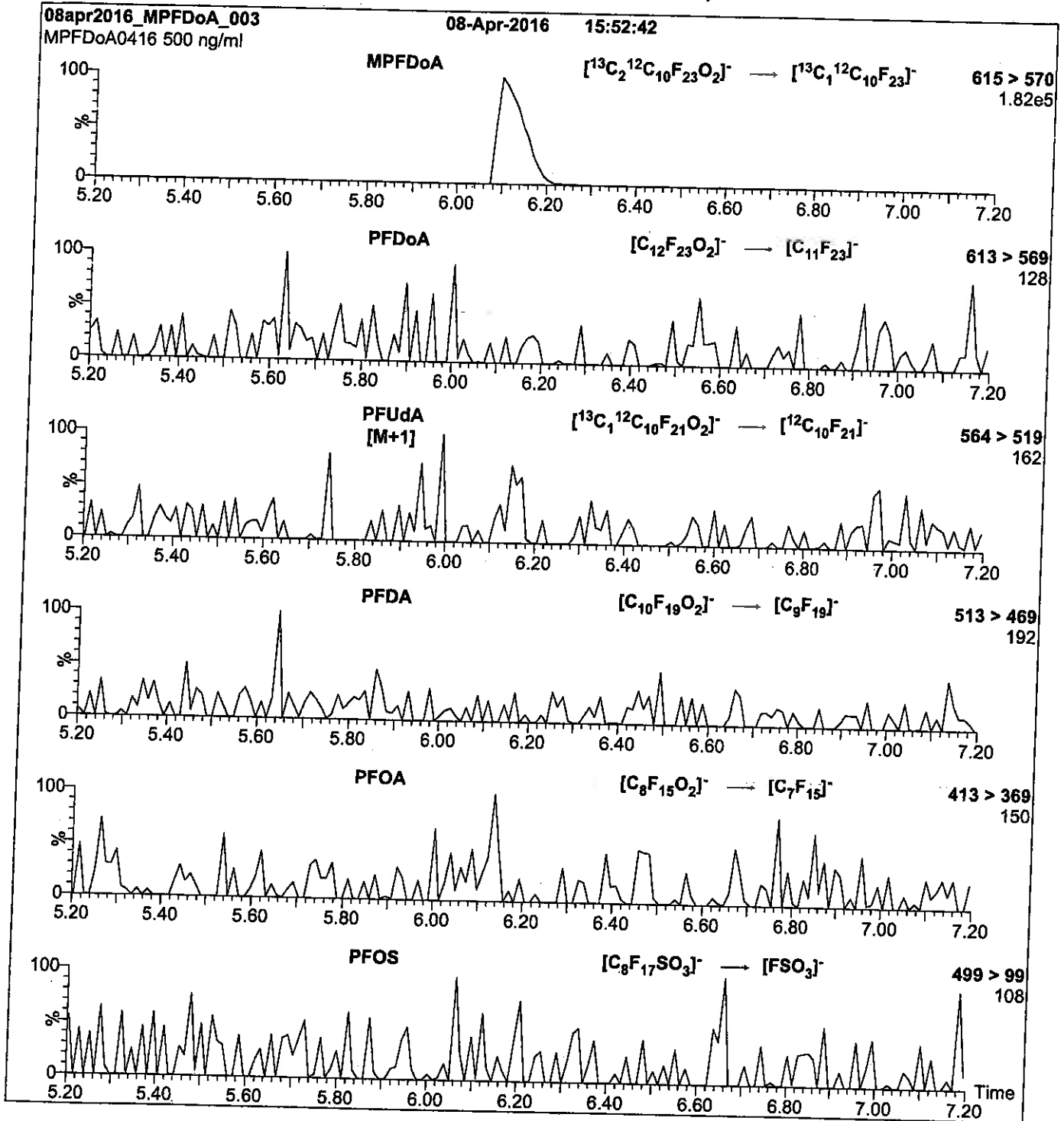
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (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 μl (500 ng/ml MPFDoA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 13

Reagent

LCMPFHxA_00012

Scanned 10/14/16 R: SBC 9/22/16

739612
ID: LCMPFHxA_00012
Exp: 04/08/21 Prpd: SBC
13C2-Perfluorohexanoic ac



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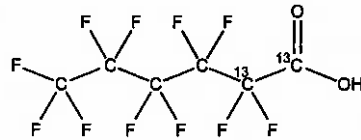
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxA
COMPOUND: Perfluoro-n-[1,2-¹³C₂]hexanoic acid

LOT NUMBER: MPFHxA0416

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: ¹³C₂¹²C₄HF₁₁O₂
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 316.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: ≥99%¹³C
(1,2-¹³C₂)

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.
- 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

INTENDED USE:

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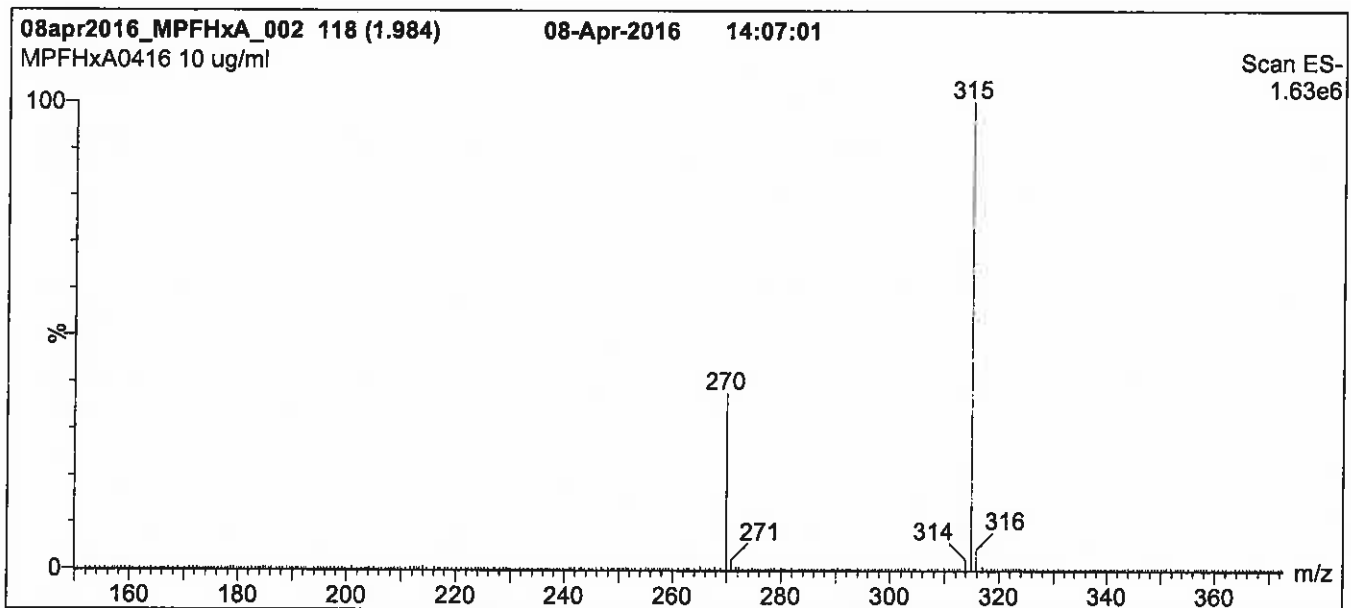
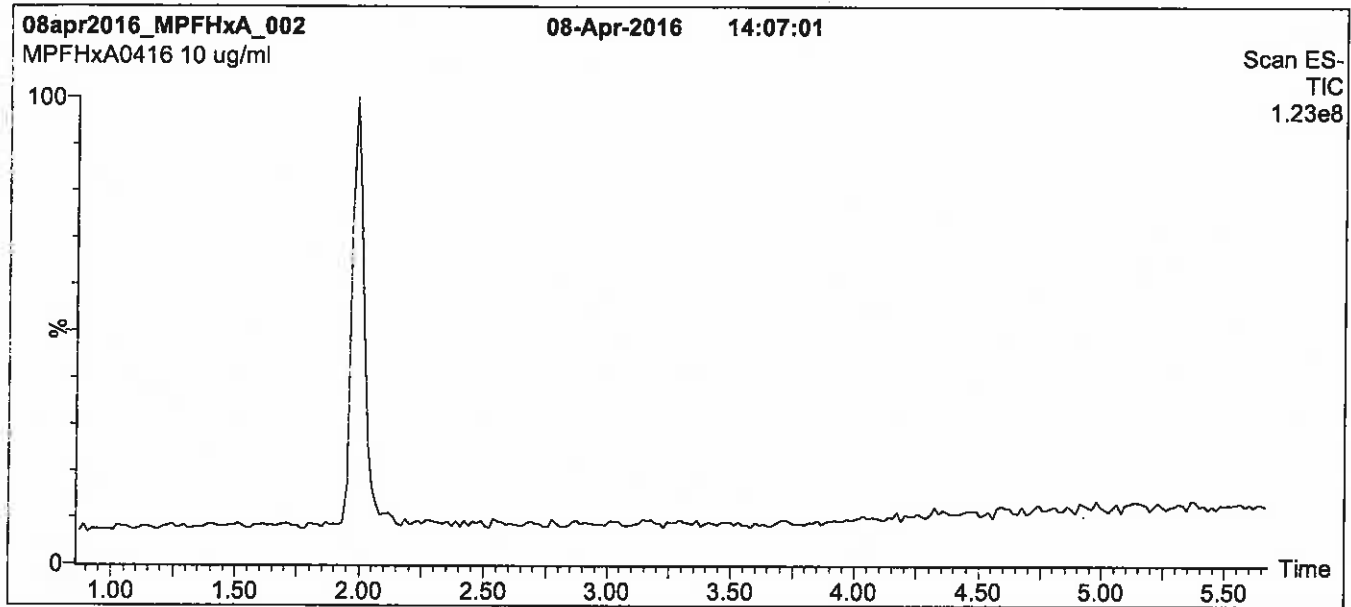
QUALITY MANAGEMENT:

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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 RP₁₈
 1.7 μ m, 2.1 x 100 mm

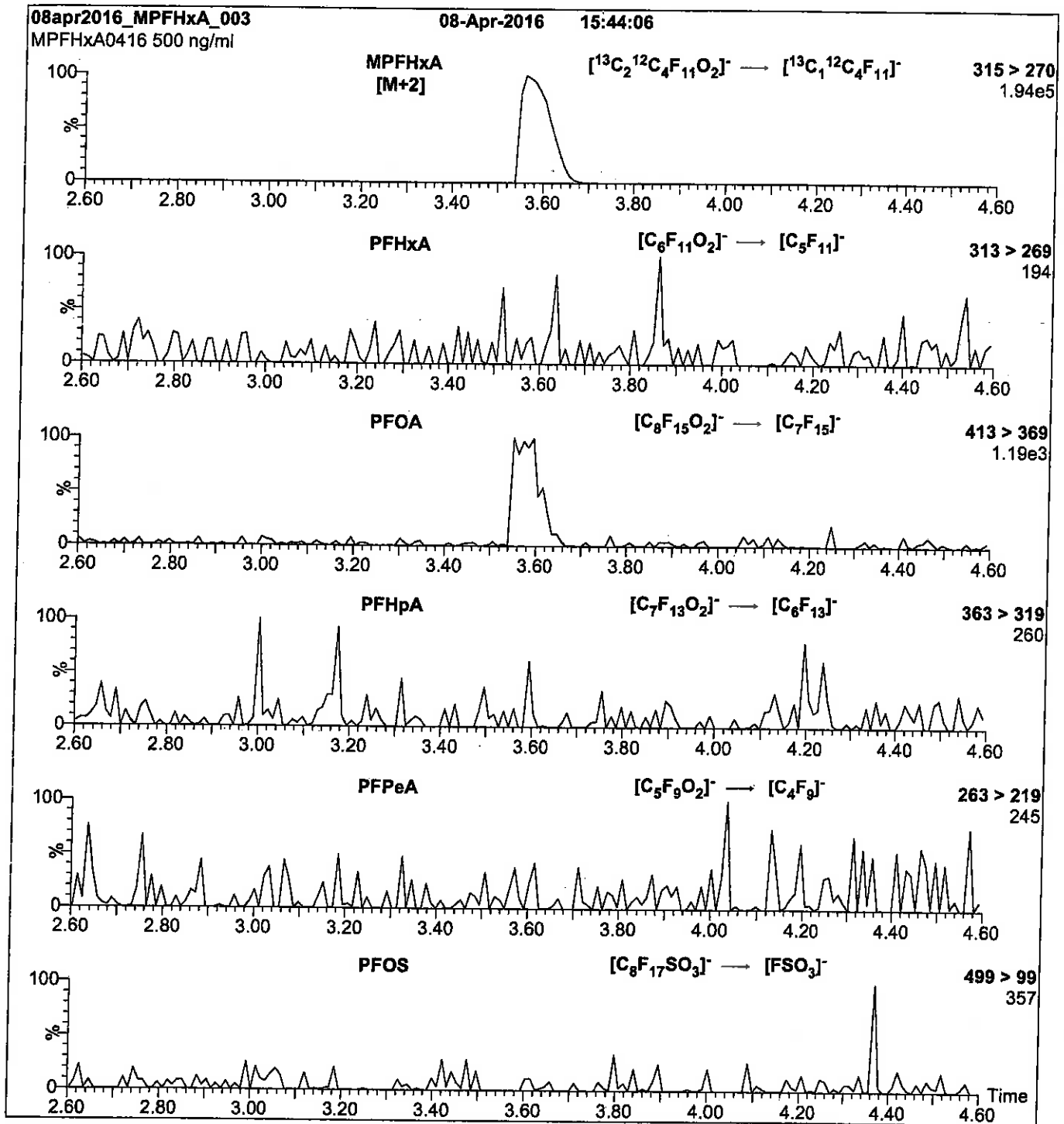
Mobile phase: Gradient
 Start: 50% (80:20 MeOH:ACN) / 50% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7.5 min and hold for 1.5 min
 before returning to initial conditions over 0.5 min.
 Time: 10 min

Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (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 μl (500 ng/ml MPFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

Reagent

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

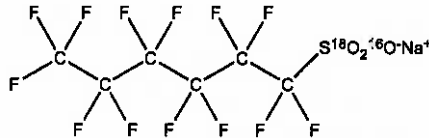
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PRODUCT CODE: MPFHxS
COMPOUND: Sodium perfluoro-1-hexane[¹⁸O₂]sulfonate

LOT NUMBER: MPFHxS1015

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: C₆F₁₃S¹⁸O₂¹⁶ONa
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt)
47.3 ± 2.4 µg/ml (MPFHxS anion)
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

MOLECULAR WEIGHT: 426.10
SOLVENT(S): Methanol
ISOTOPIC PURITY: >94% (¹⁸O₂)

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS (C₆F₁₃S¹⁸O₂¹⁶O) has been observed to be up to 10% lower than for PFHxS (C₆F₁₃S¹⁶O₃) when both compounds are injected together. This difference may vary between instruments.
- Due to the isotopic purity of the starting material (¹⁸O₂ >94%), MPFHxS contains ~ 0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim

Date: 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:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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LIMITED WARRANTY:

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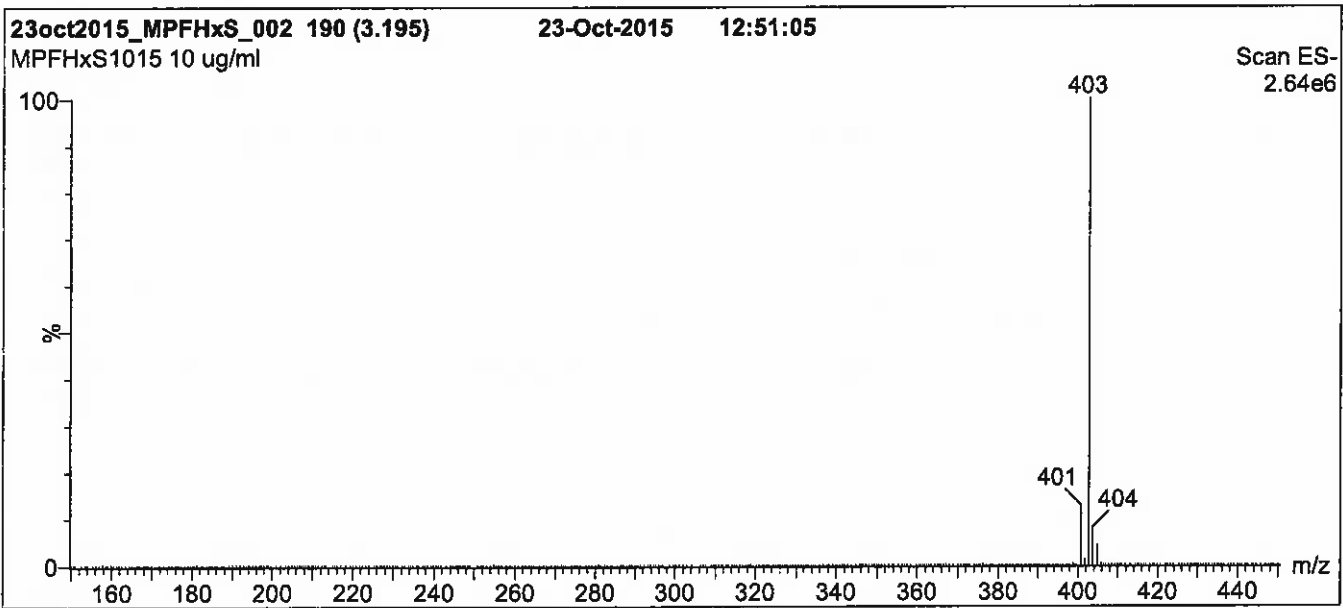
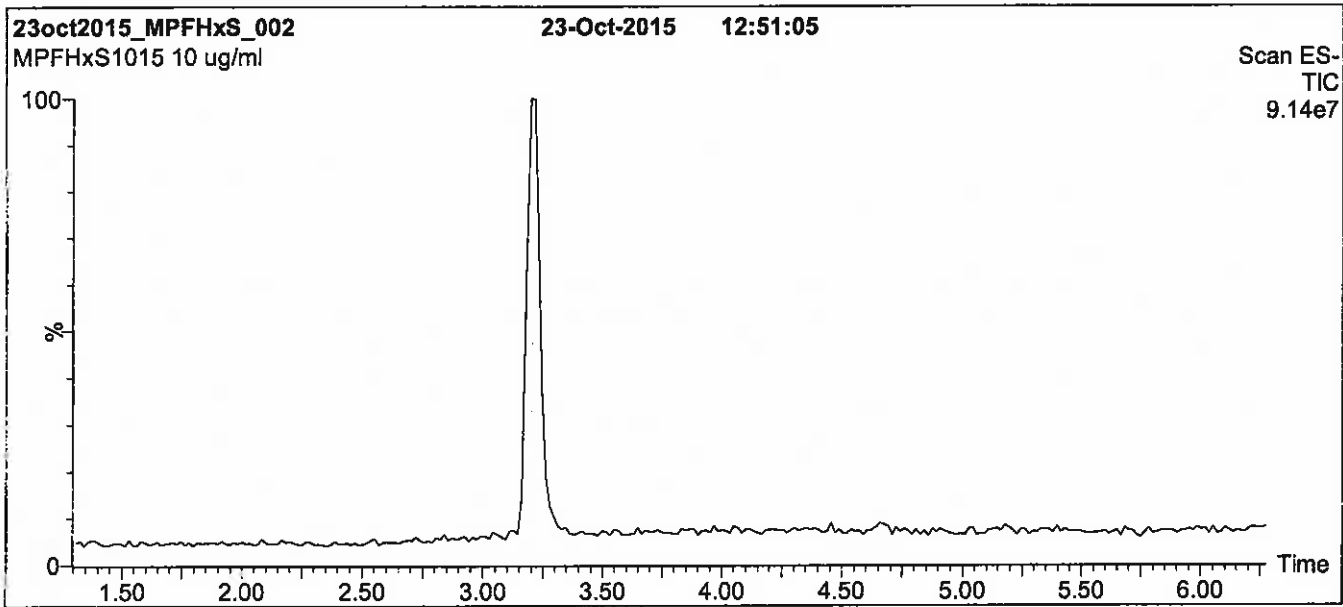
QUALITY MANAGEMENT:

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 RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 50% (80:20 MeOH:ACN) / 50% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 2 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

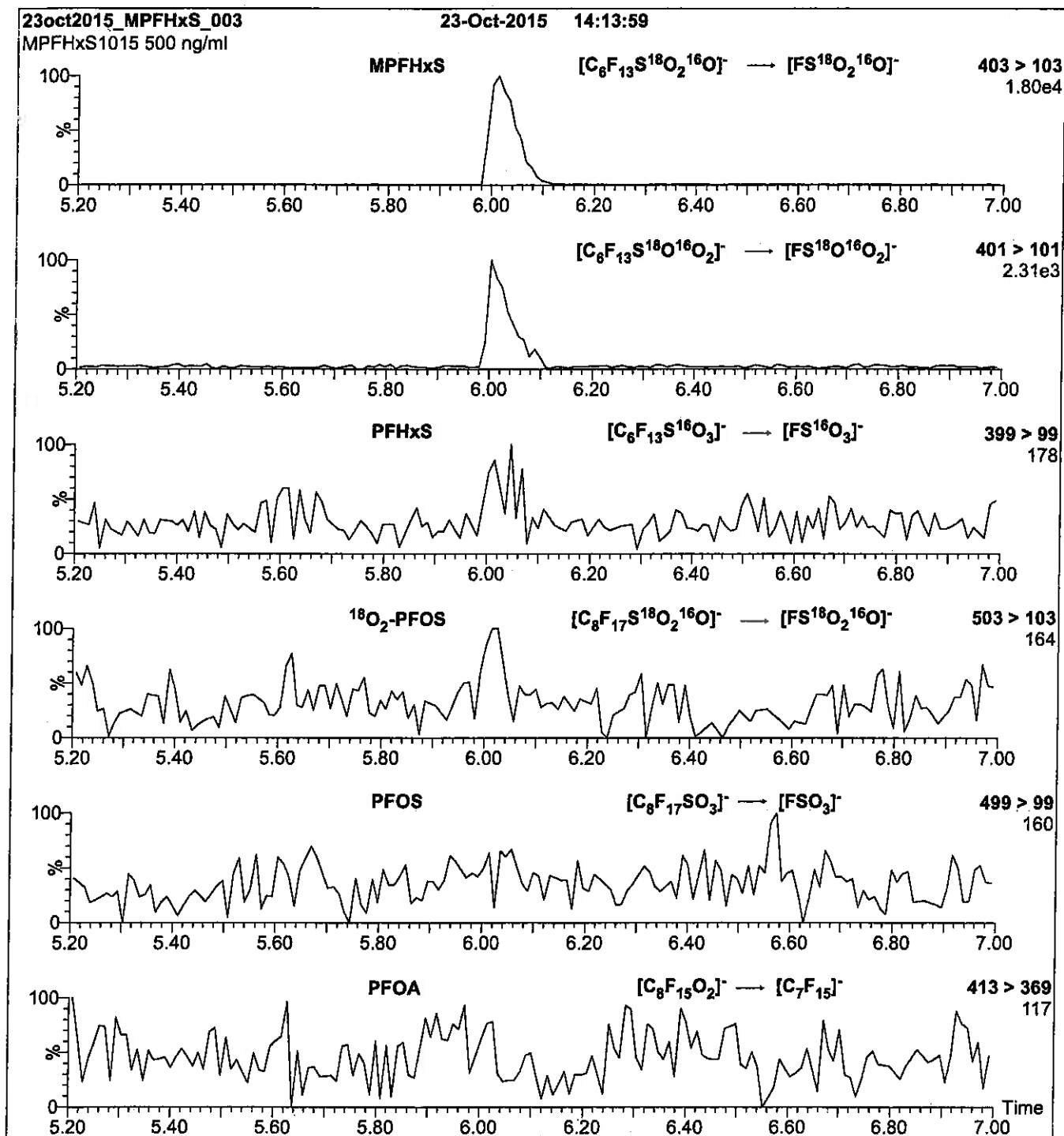
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 3.00
 Cone Voltage (V) = 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 μ l (500 ng/ml MPFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
 Collision Energy (eV) = 30

Reagent

LCMPFNA_00008

Scanned 10/14/16 R: SBC 9/22/16



739637
ID: LCM:PFNA_0008
Exp: 04/13/19 Pppl: SBC
13C5-Perfluoronoic aci

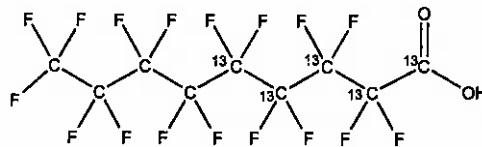


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFNA **LOT NUMBER:** MPFNA0414
COMPOUND: Perfluoro-n-[1,2,3,4,5-¹³C₅]nonanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₅¹²C₄HF₁₇O₂ **MOLECULAR WEIGHT:** 469.04
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
(1,2,3,4,5-¹³C₅)
LAST TESTED: (mm/dd/yyyy) 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:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

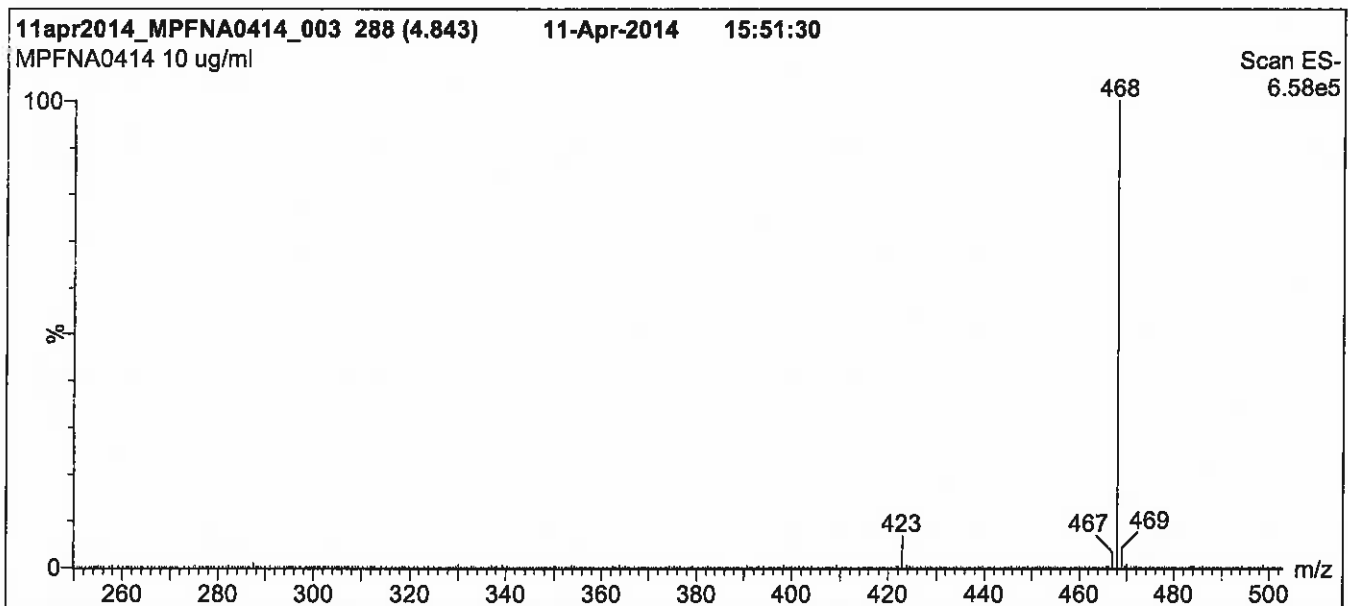
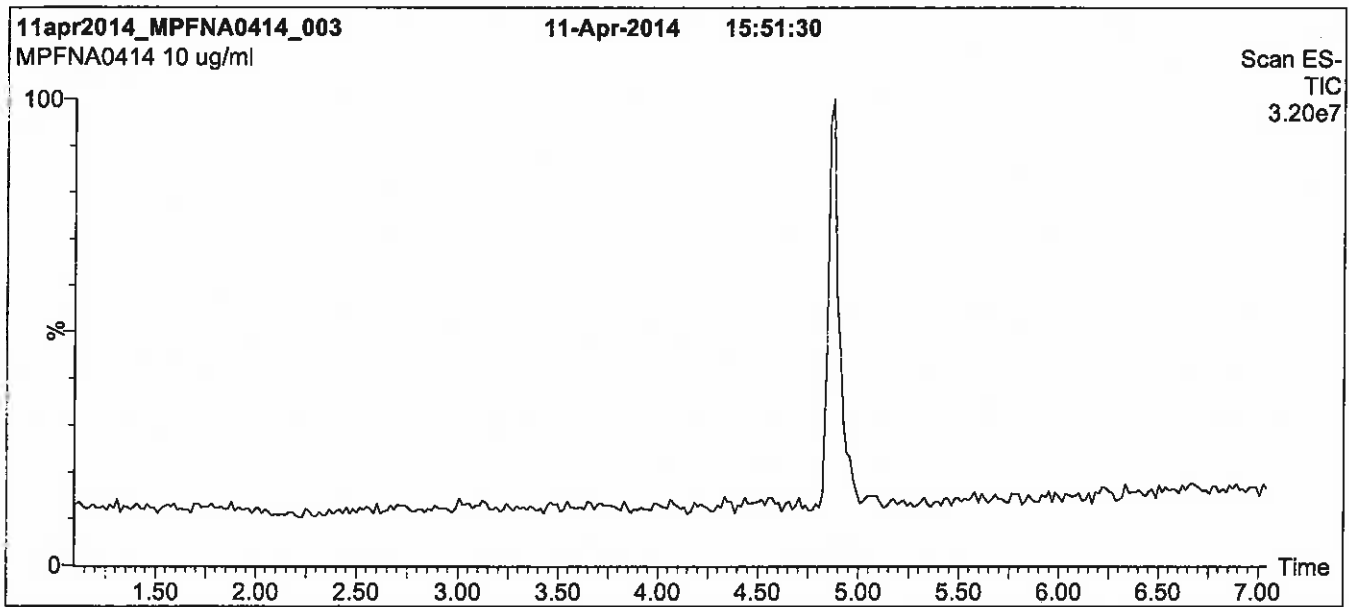
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: MPFNA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

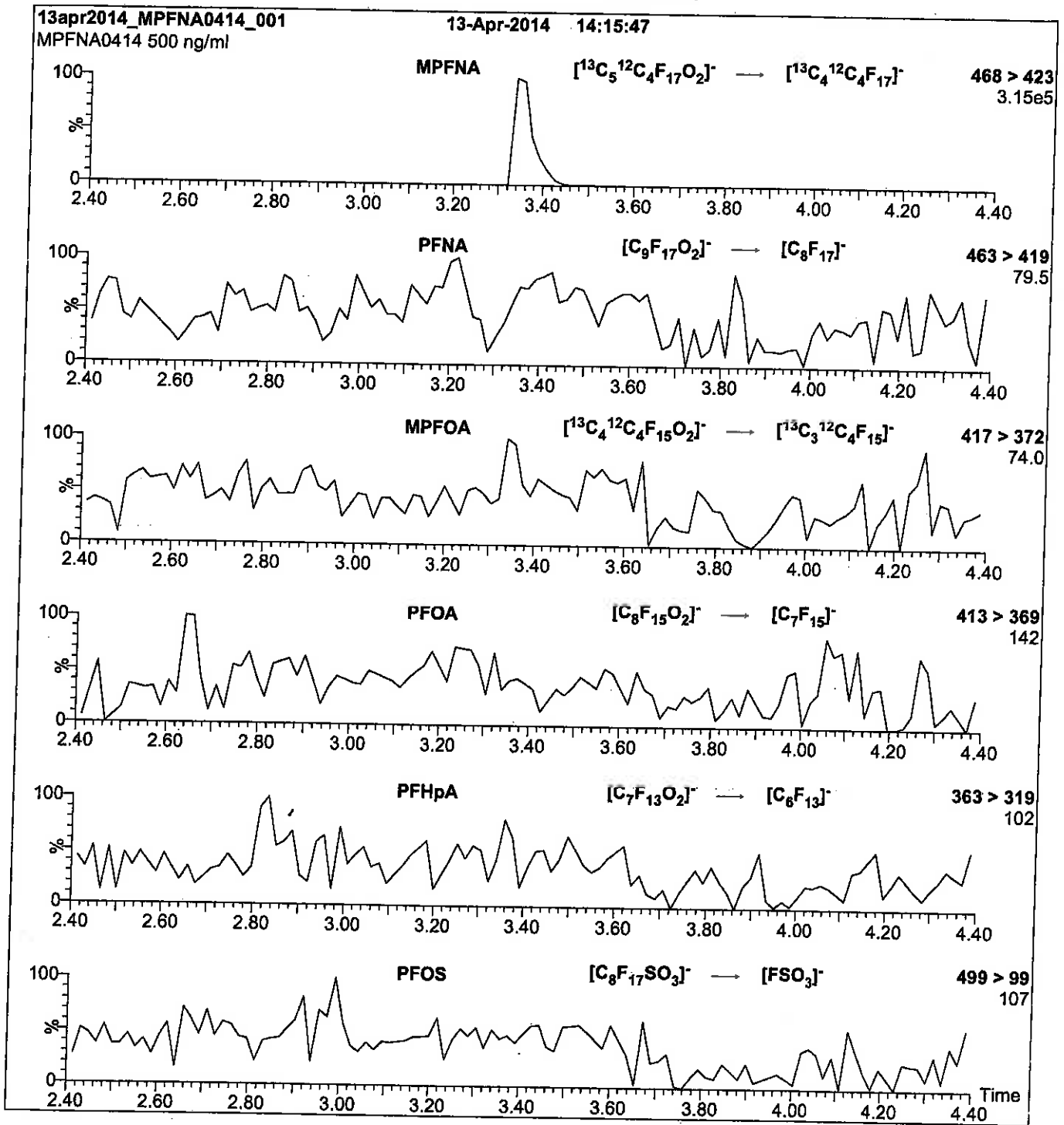
Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm
Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (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 μl (500 ng/ml MPFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 11

Reagent

LCMPFOA_00012

R: SBC 9/22/16



738683
ID: LCMFOA_00012
Exp: 01/22/21 Prep: SBC
13C4-Perfluorooctanoic ac



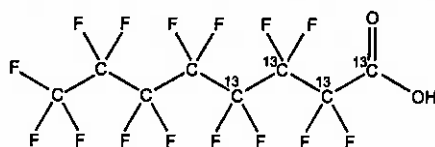
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOA
COMPOUND: Perfluoro-n-[1,2,3,4-¹³C₄]octanoic acid

LOT NUMBER: MPFOA0116

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₄¹²C₄HF₁₅O₂
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 418.04
SOLVENT(S): Methanol
Water (<1%)
ISOTOPIC PURITY: ≥99% ¹³C
(1,2,3,4-¹³C₄)

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

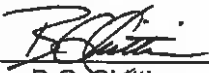
DOCUMENTATION/ DATA ATTACHED:

- 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.
- 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:

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:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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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.

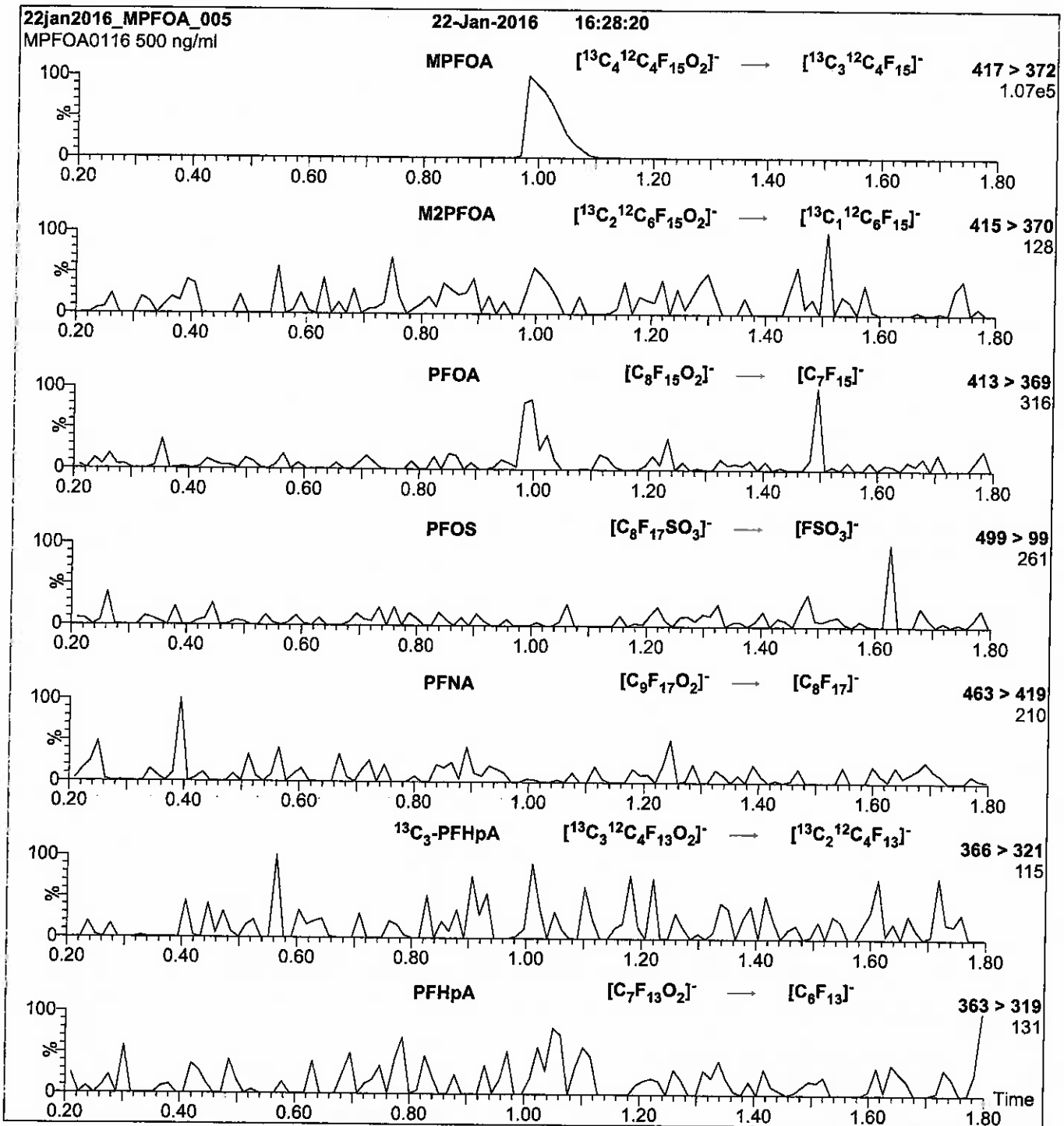
QUALITY MANAGEMENT:

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 or contact us directly at info@well-labs.com

Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml MPFOA)

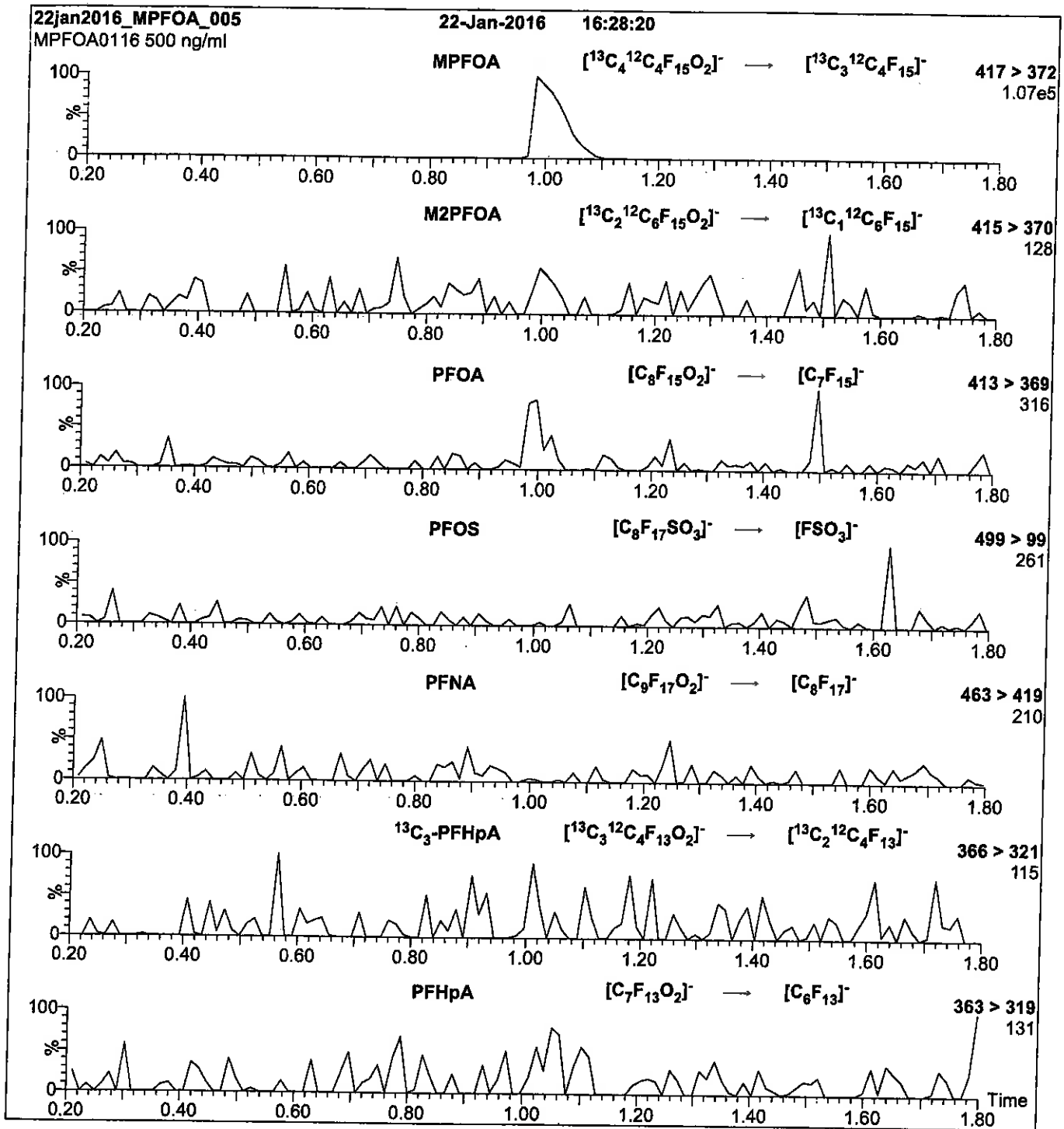
Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.58e-3
Collision Energy (eV) = 10

Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml MPFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.58e-3
Collision Energy (eV) = 10

Reagent

LCMPFOS_00017

R: 9/9/16 802

728309
ID: LCMPPFOS_00017
Exp: 08/03/21 Prpd: SBC
13C4-Perfluorooctanesulfo

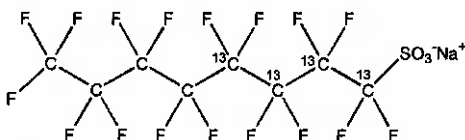


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0816
COMPOUND: Sodium perfluoro-1-[1,2,3,4-¹³C₄]octanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	¹³ C ₄ ¹² C ₄ F ₁₇ SO ₃ Na	MOLECULAR WEIGHT:	526.08
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.8 ± 2.4 µg/ml (MPFOS anion)	SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%	ISOTOPIC PURITY:	≥99% ¹³ C (1,2,3,4- ¹³ C ₄)
LAST TESTED: (mm/dd/yyyy)	08/03/2016		
EXPIRY DATE: (mm/dd/yyyy)	08/03/2021		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		


DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.8% Sodium perfluoro-1-[1,2,3-¹³C₃]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:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

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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.

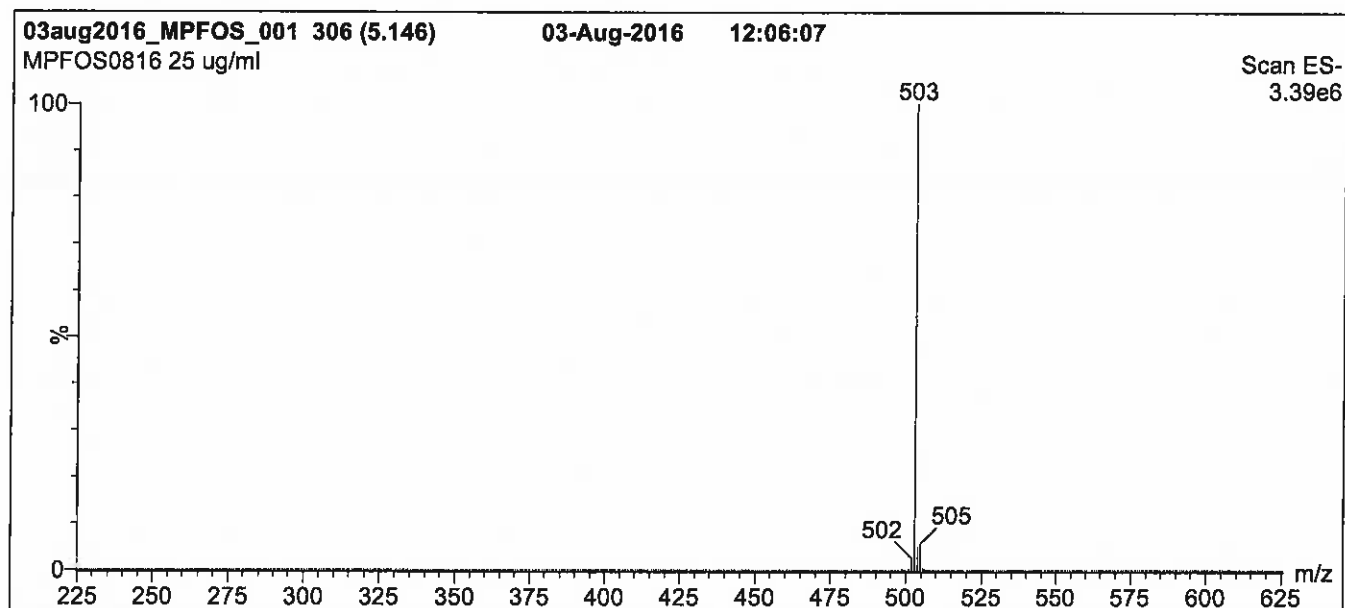
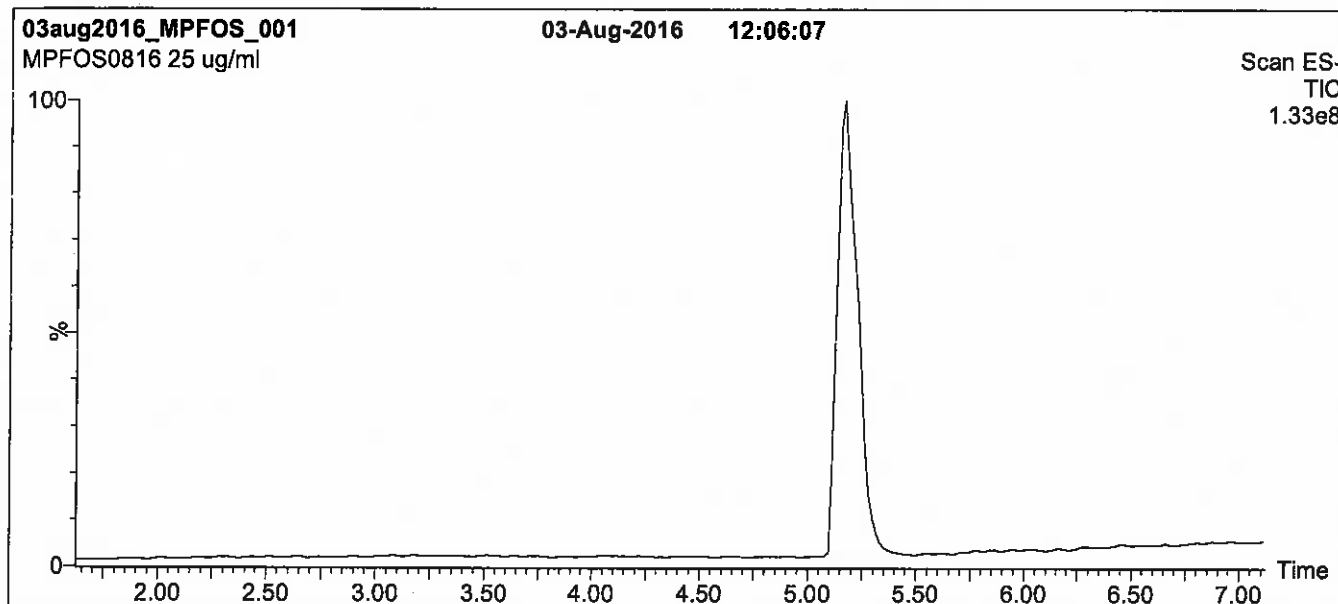
QUALITY MANAGEMENT:

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 or contact us directly at info@well-labs.com

Figure 1: MPFOS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% (80:20 MeOH:ACN) / 55% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

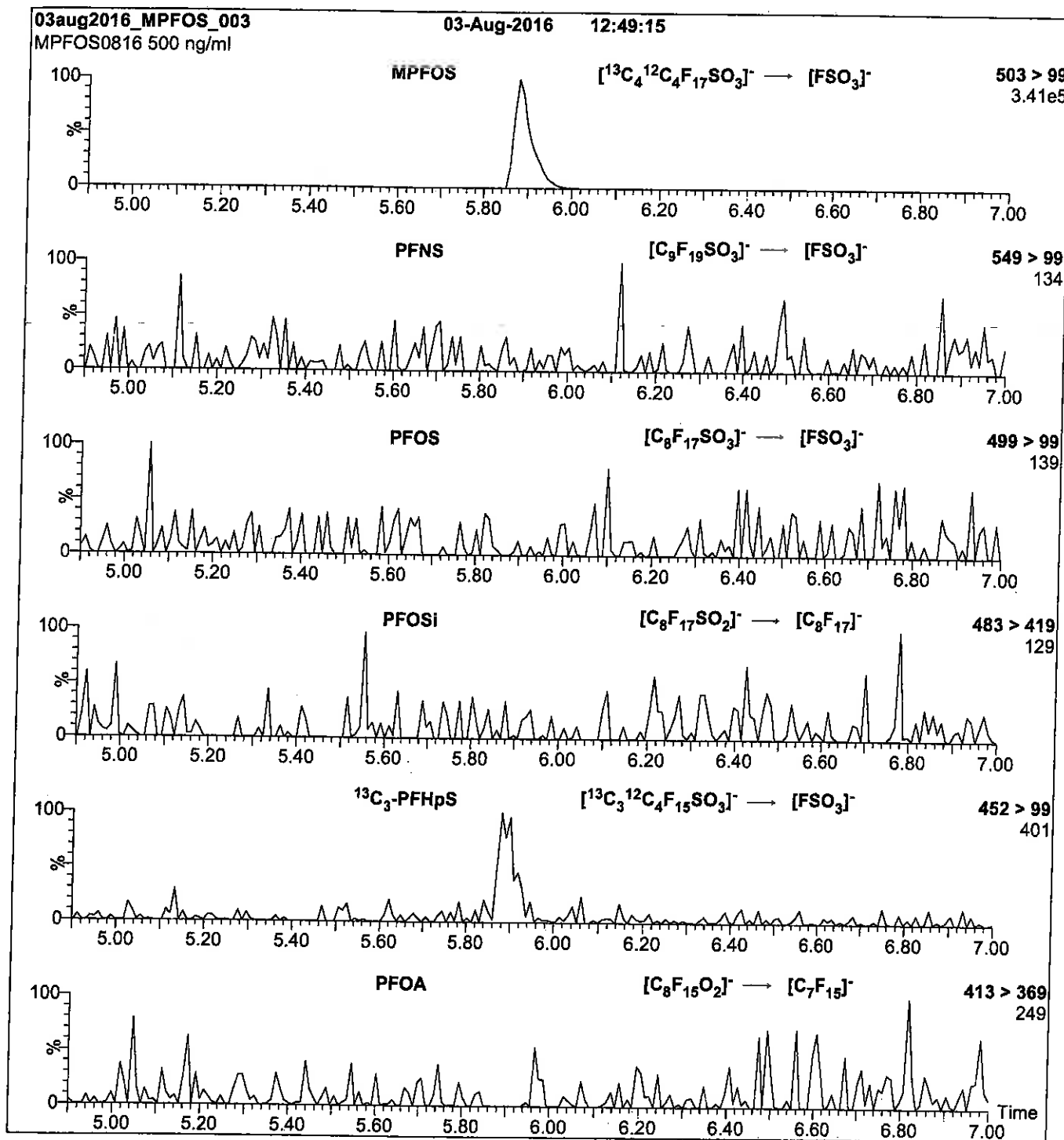
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 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 μl (500 ng/ml MPFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 40

Reagent

LCMPFUdA_00009

R: SBC 9/22/16



739604

ID: LCMPFUdA_00009

Exp: 02/12/21 Prpt: SBC

¹³C2-Perfluoroundecanoic



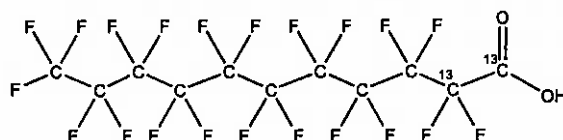
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

Scanned 10/14/16 SK

PRODUCT CODE: MPFUdA **LOT NUMBER:** MPFUdA0216
COMPOUND: Perfluoro-n-[1,2-¹³C₂]undecanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₉HF₂₁O₂
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 566.08
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

ISOTOPIC PURITY: ≥99% ¹³C
(1,2-¹³C₂)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Presence of 1-¹³C₁-PFUdA (~1%; see Figure 2), 2-¹³C₁-PFUdA (~1%), and PFUdA (~0.2%; see Figure 2) are due to the isotopic purity of the ¹³C-precursor.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____

B.G. Chittim

Date: 02/24/2016
(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:

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HOMOGENEITY:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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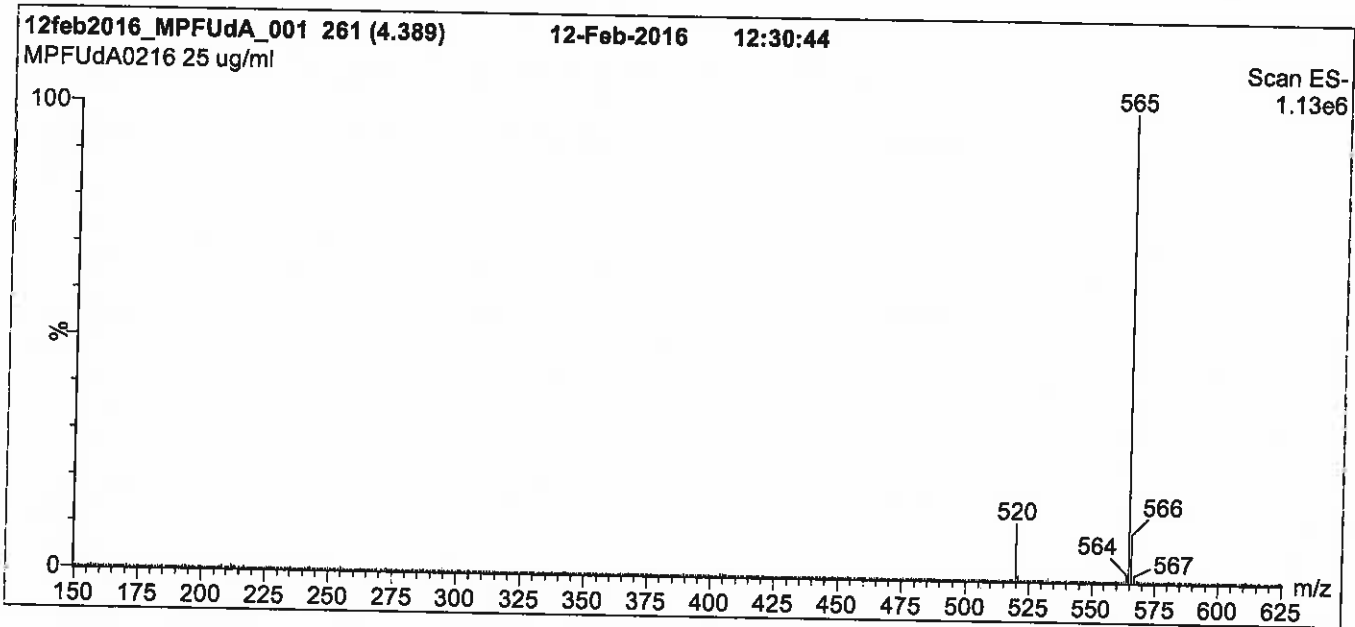
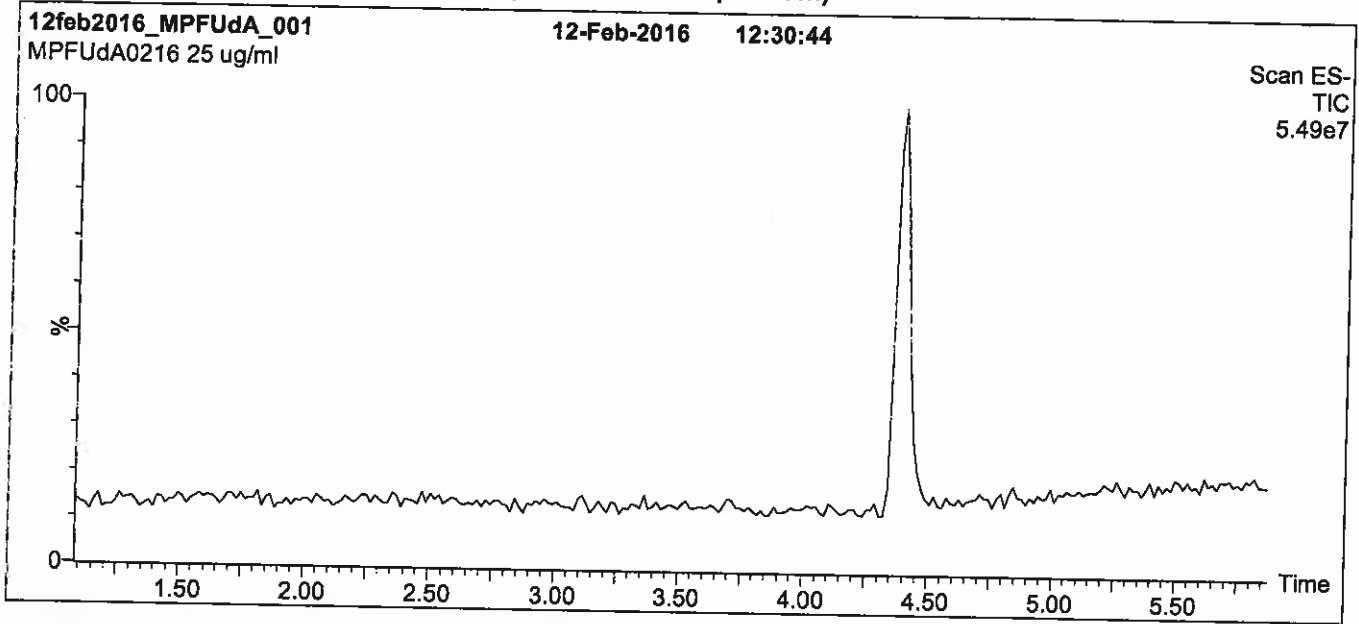
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: MPFUdA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 60% (80:20 MeOH:ACN) / 40% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for
 1.5 min before returning to initial conditions in 0.5 min.
 Time: 10 min

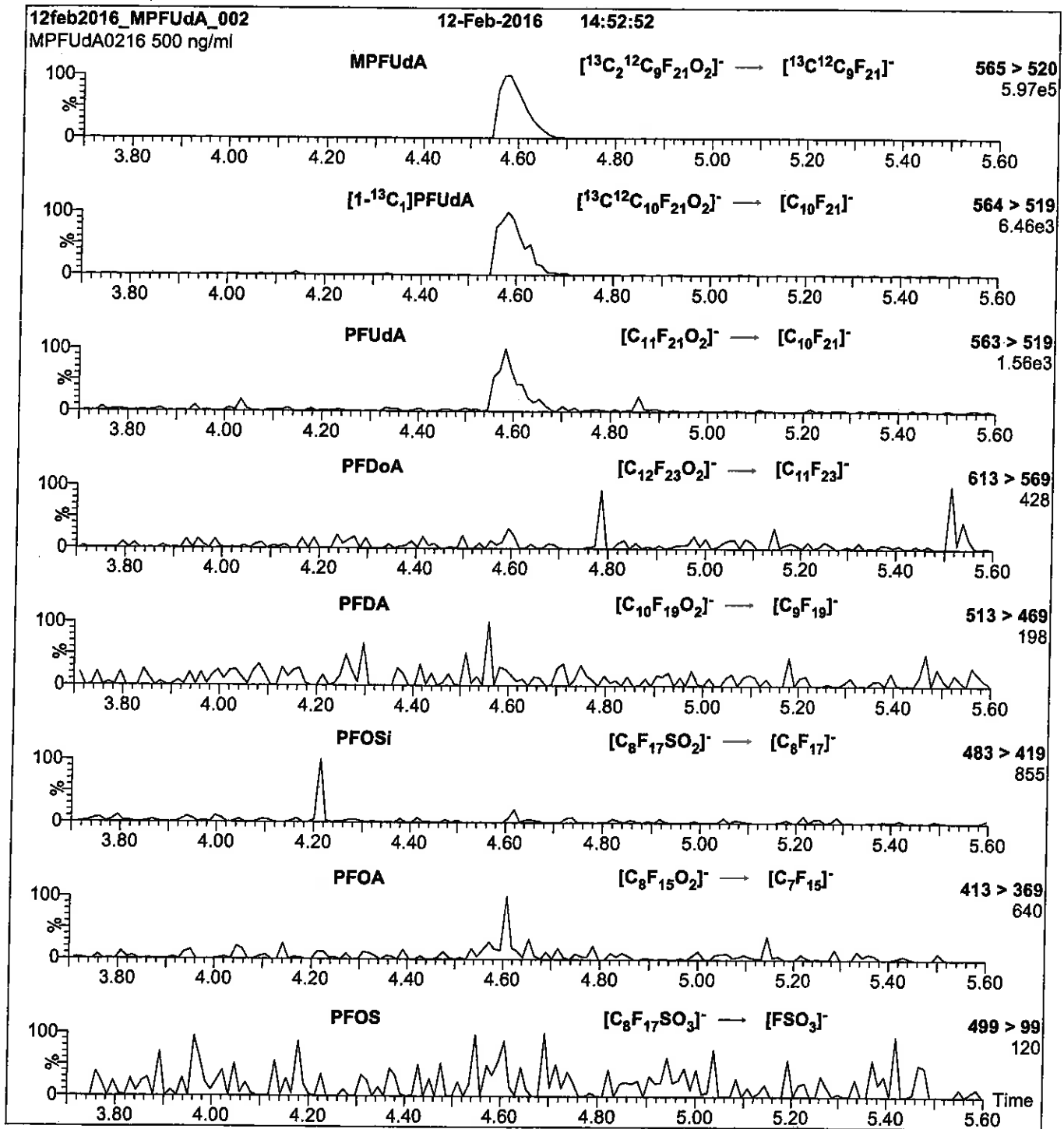
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (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 μl (500 ng/ml MPFUdA)

Mobile phase: Isocratic 80% MeOH / 20% H_2O

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.35e-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 Prpt: SBC
N-EtFOSA-M

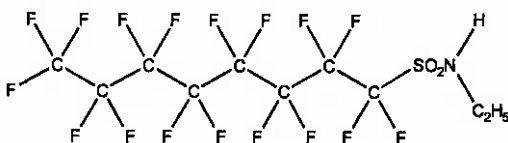


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M **LOT NUMBER:** NEtFOSA0516M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide

STRUCTURE: **CAS #:** 4151-50-2



MOLECULAR FORMULA: C₁₀H₈F₁₇NO₂S **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.

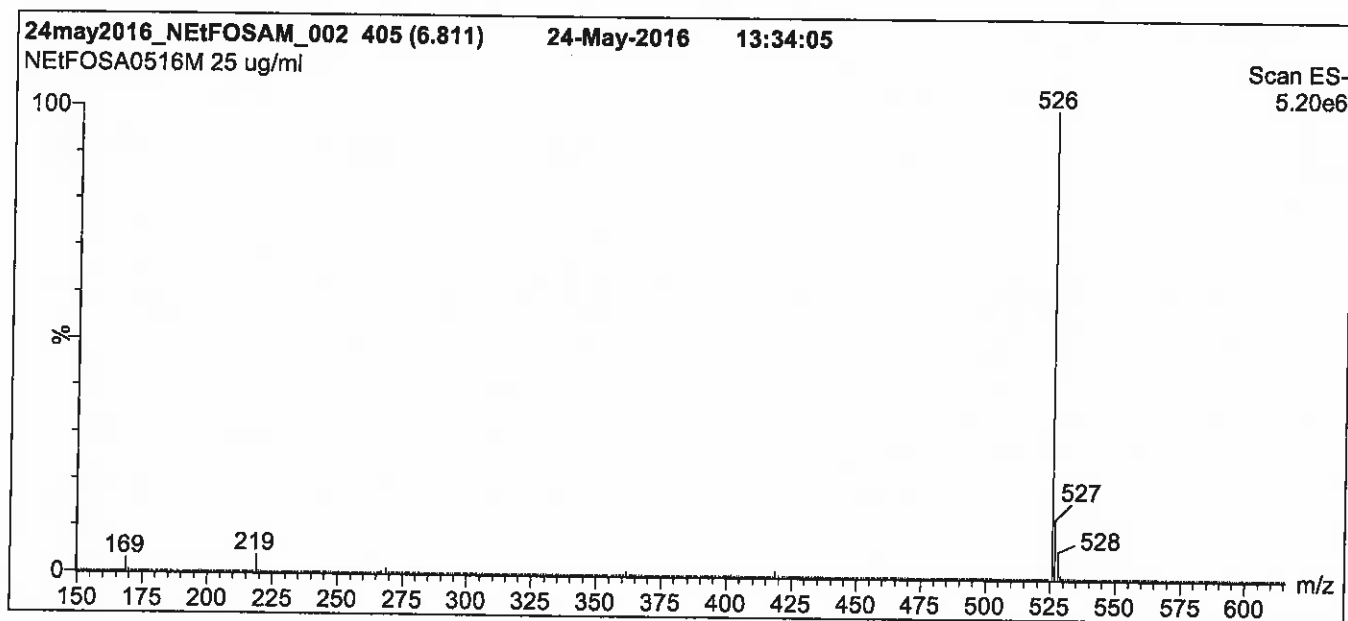
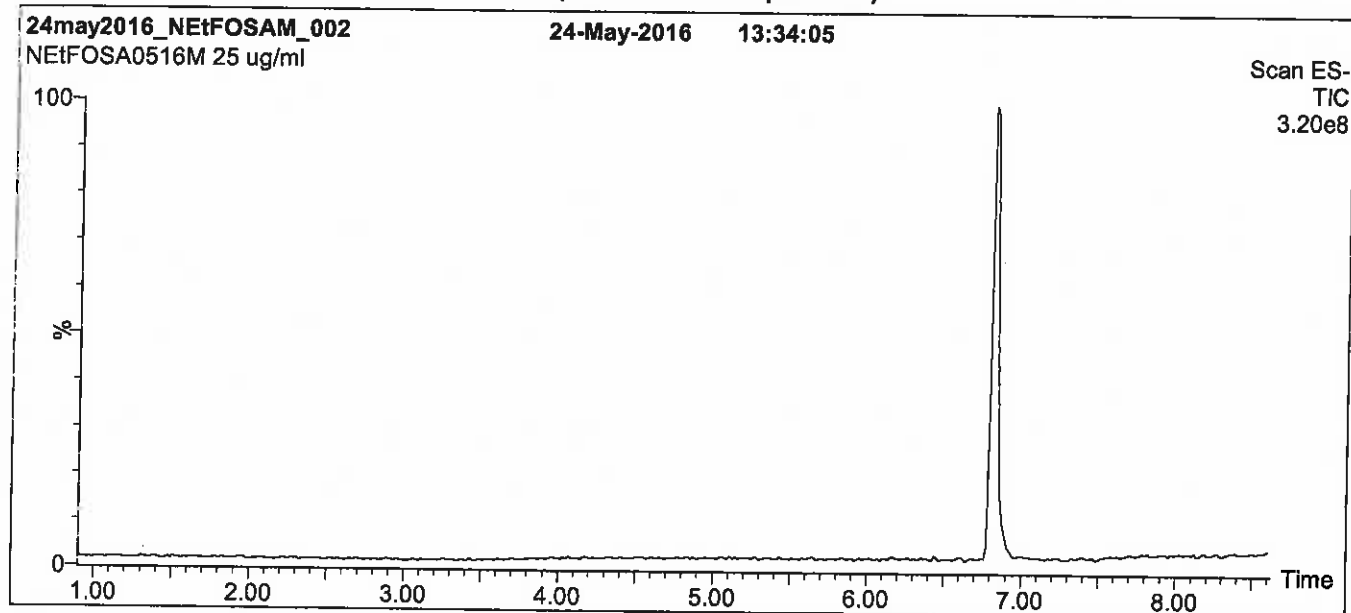
QUALITY MANAGEMENT:

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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 RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 45% H₂O / 55% (80:20 MeOH:ACN)
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
 Time: 10 min

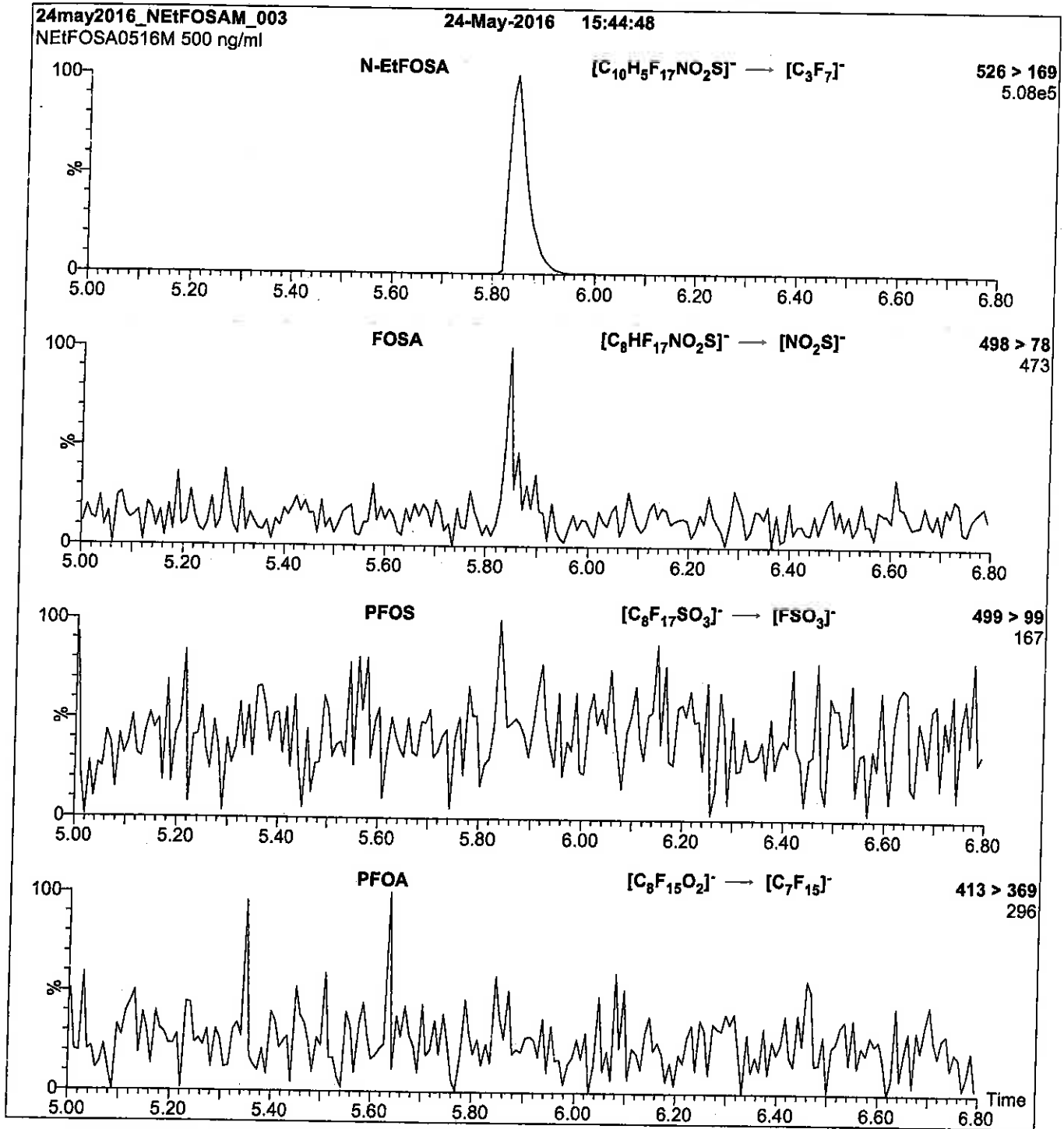
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.50
 Cone Voltage (V) = 40.00
 Cone Gas Flow (l/hr) = 50
 Desolvation Gas Flow (l/hr) = 750

Figure 2: N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 μ l (500 ng/ml N-EtFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.54e-3
 Collision Energy (eV) = 30

Reagent

LCN-ETFOSAA_00002

R: 8/23/16 SBC



715561
ID: LCN-EiFOSAA_00002
Exp: 01/2021 Pp# 98C
N-EiFOSAA

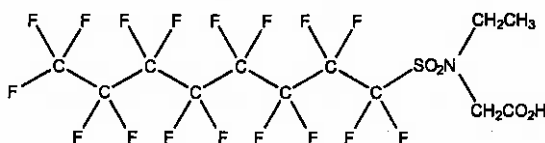


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSAA **LOT NUMBER:** NEiFOSAA0116
COMPOUND: N-ethylperfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** 2991-50-6



MOLECULAR FORMULA: C₁₂H₈F₁₇NO₄S **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

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.

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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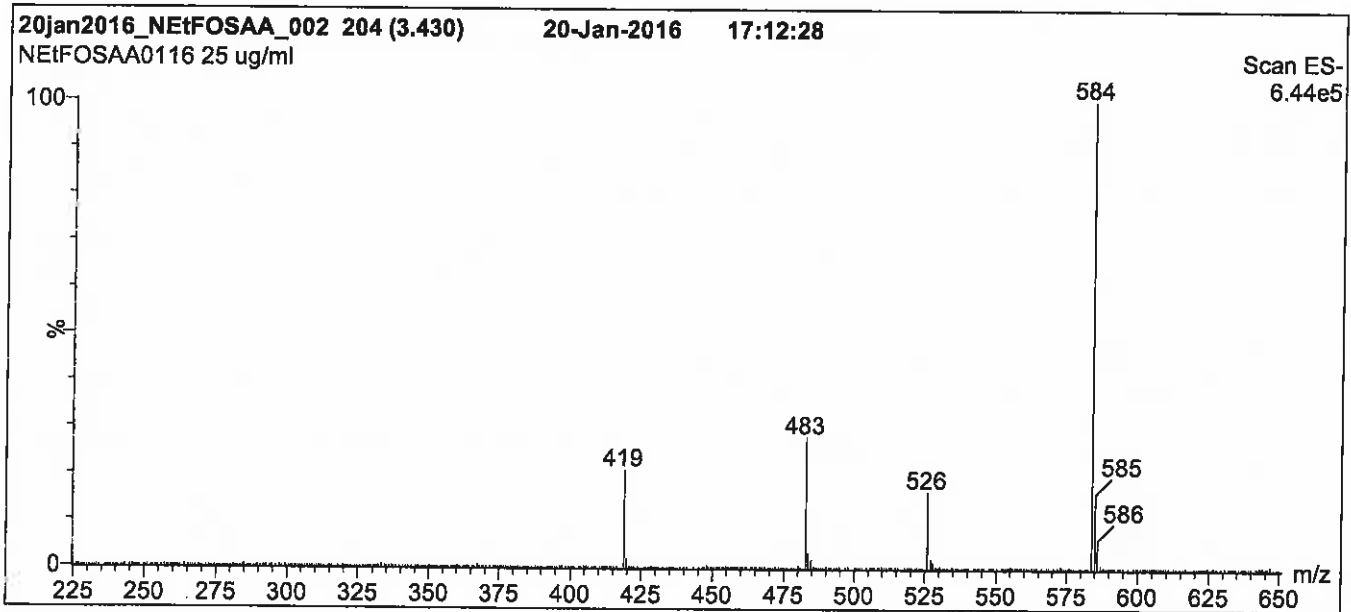
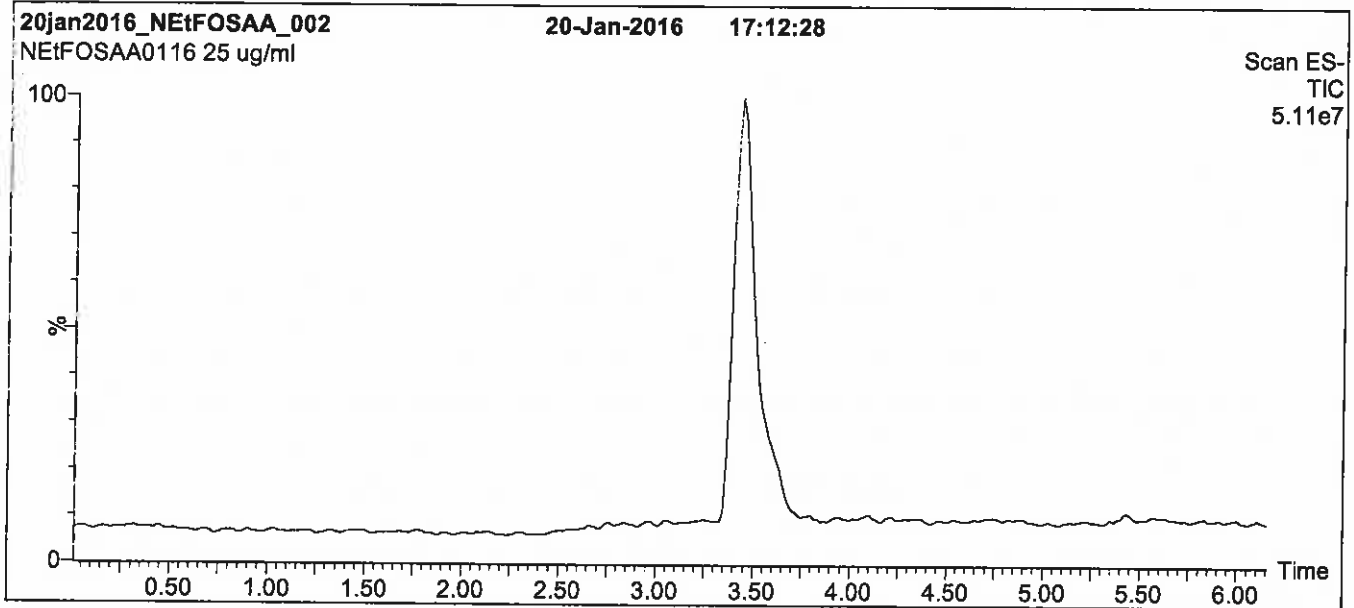
QUALITY MANAGEMENT:

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Figure 1: N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 60% (80:20 MeOH:ACN) / 40% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

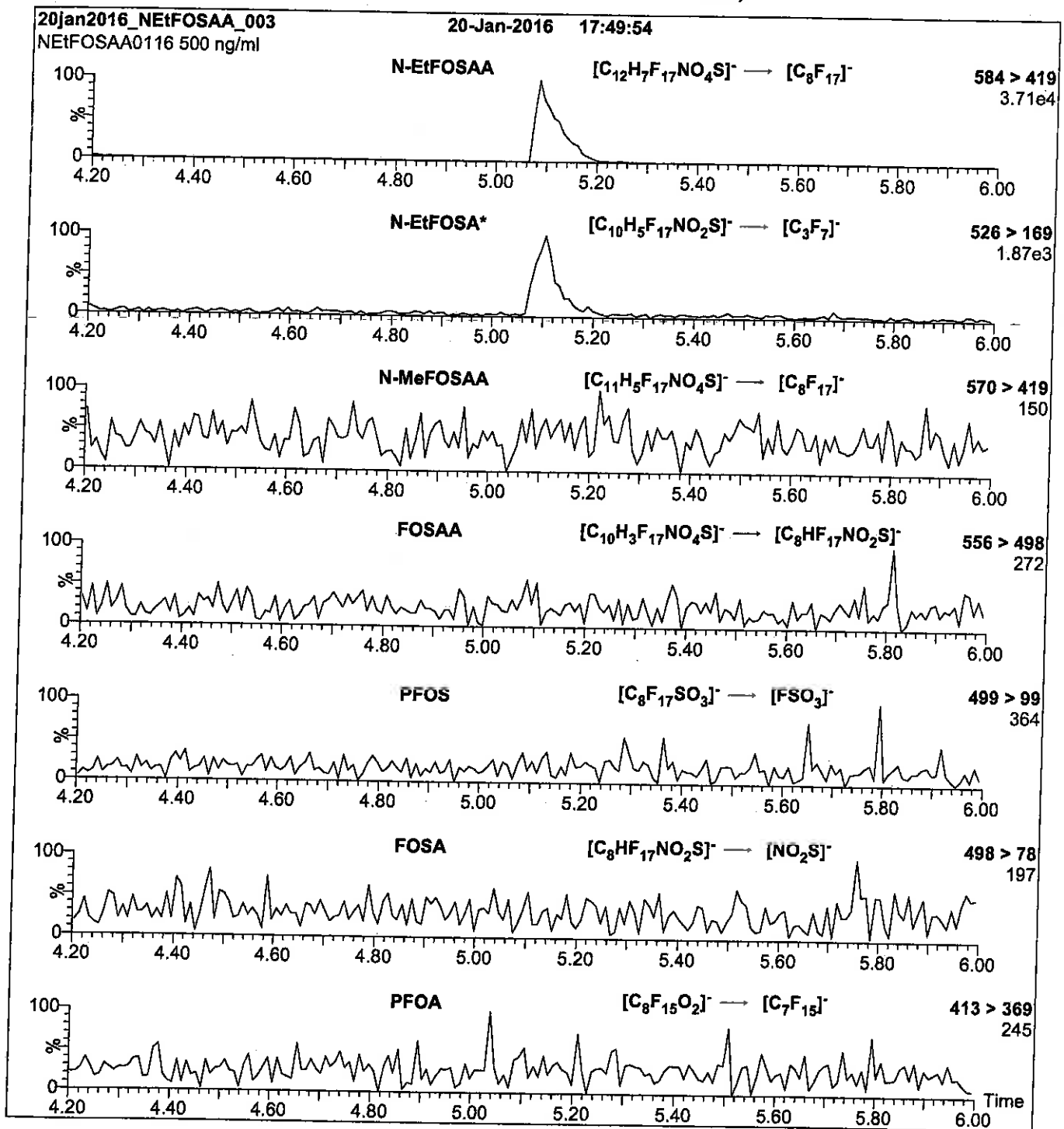
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 3.00
 Cone Voltage (V) = 35.00
 Cone Gas Flow (l/hr) = 50
 Desolvation Gas Flow (l/hr) = 750

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 μ l (500 ng/ml N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 25

Reagent

LCN-MeFOSA-M_00002

R: 8/23/16 SBC



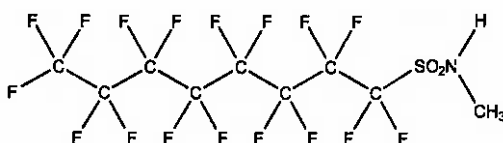
715564
ID: LCN-MeFOSA-M_00002
Exp: 05/24/21 Pppl: SBC
N-MeFOSA-M



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: C₉H₄F₁₇NO₂S **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

INTENDED USE:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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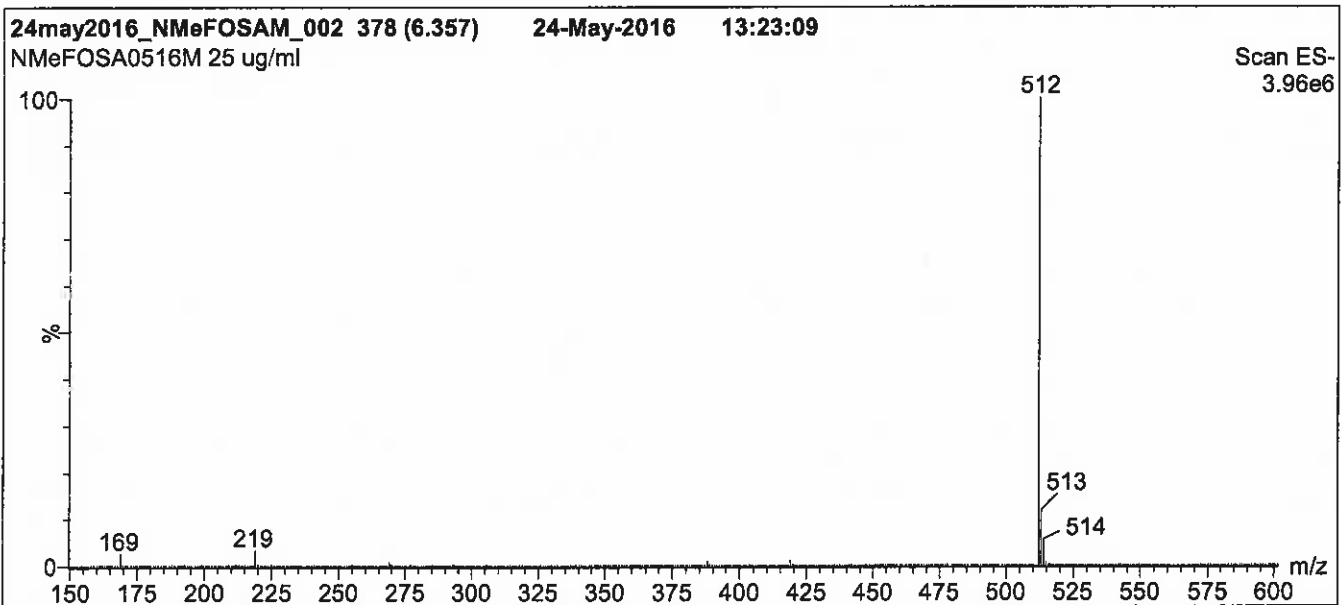
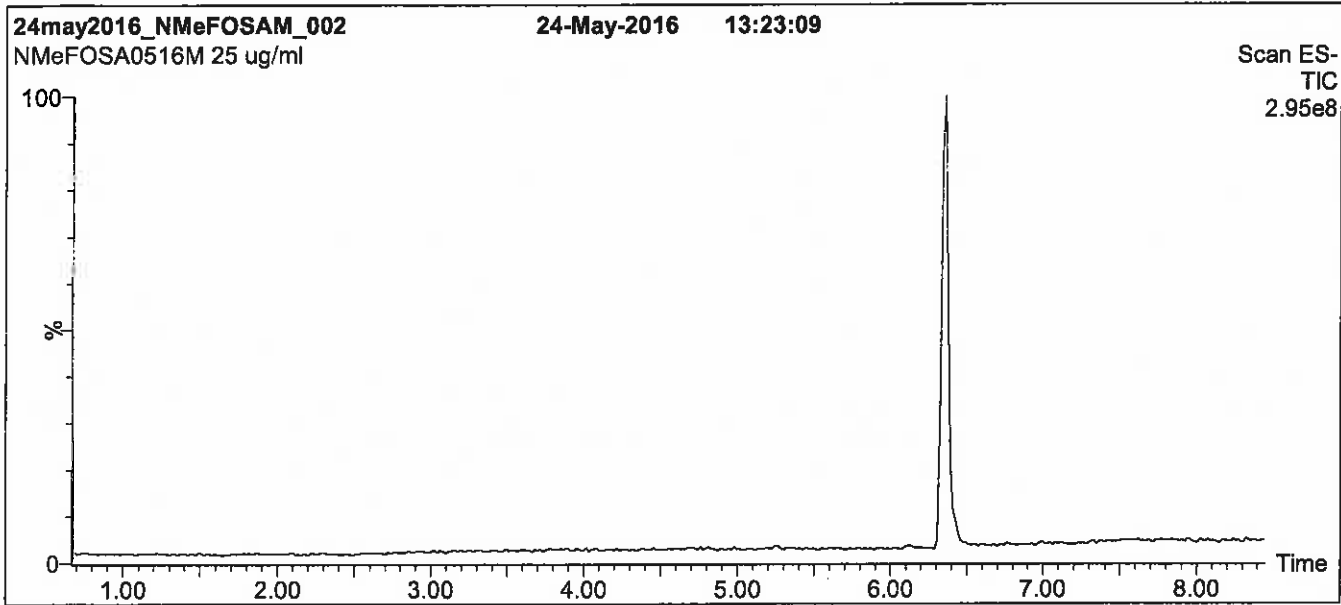
QUALITY MANAGEMENT:

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Figure 1: N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 45% H₂O / 55% (80:20 MeOH:ACN)
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7.5 min and hold for
 1.5 min before returning to initial conditions in 0.5 min.
 Time: 10 min

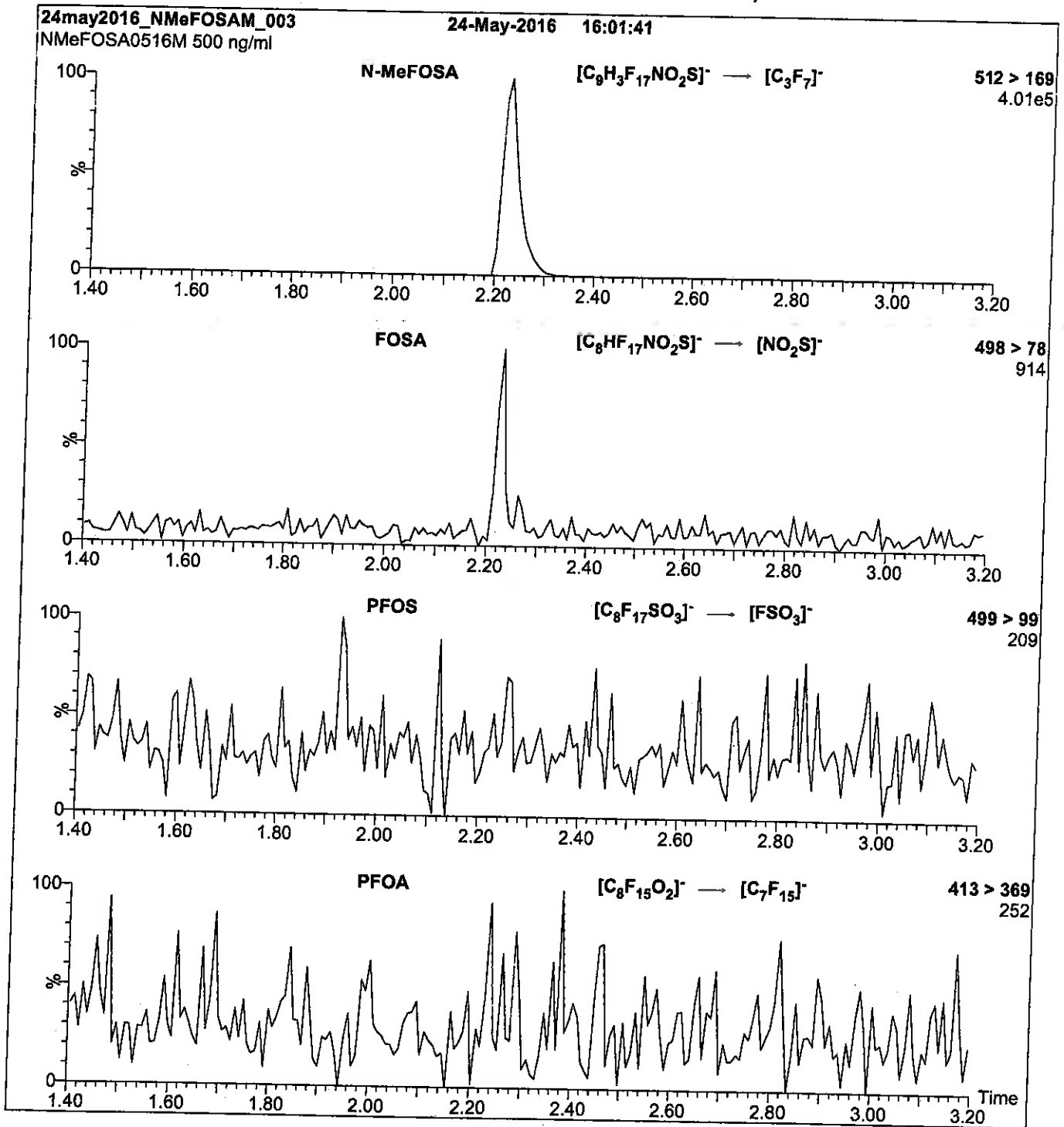
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.50
 Cone Voltage (V) = 40.00
 Core 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 μ 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% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

Reagent

LCN-MeFOSAA_00003

R: 8/23/16 JAE



715562
ID: LCN-MeFOSAA_00003
Exp: 01/20/21 Prod. SEC
N-MeFOSAA

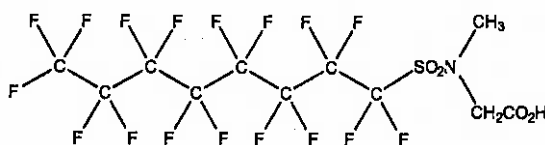


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSAA **LOT NUMBER:** NMeFOSAA0116
COMPOUND: N-methylperfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** 2355-31-9



MOLECULAR FORMULA: C₁₁H₈F₁₇NO₄S **MOLECULAR WEIGHT:** 571.21
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/20/2016
EXPIRY DATE: (mm/dd/yyyy) 01/20/2021
RECOMMENDED STORAGE: Refrigerate ampoule


DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim **Date:** 01/21/2016
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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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:

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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:

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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.

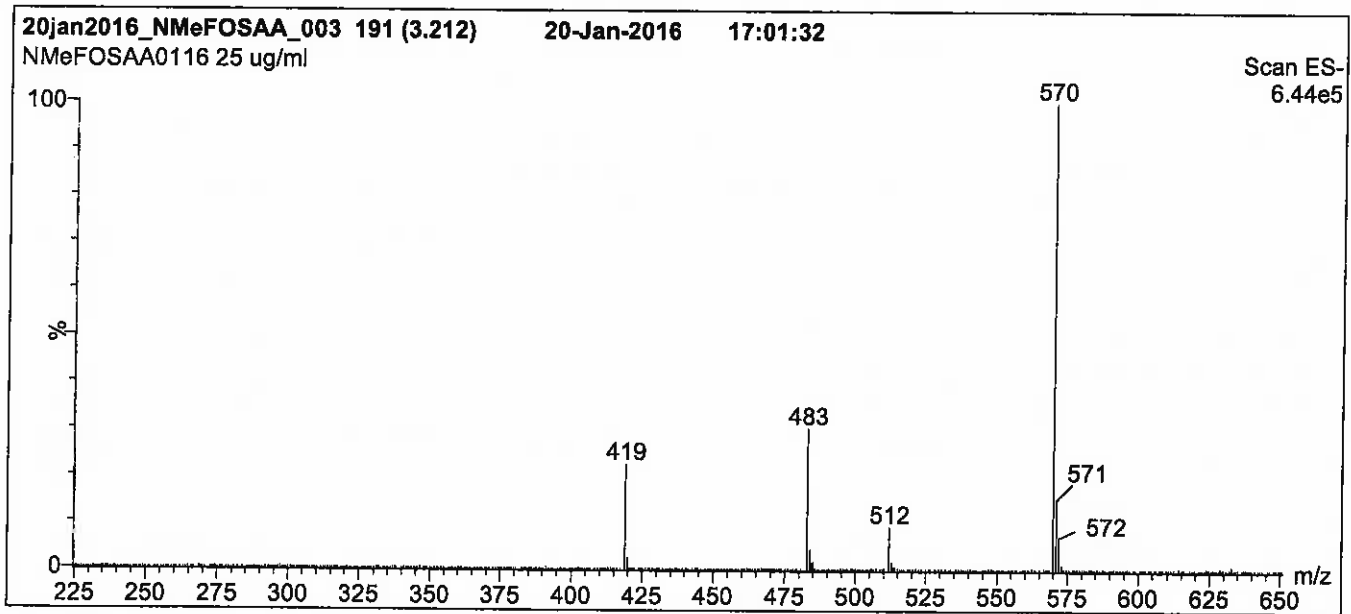
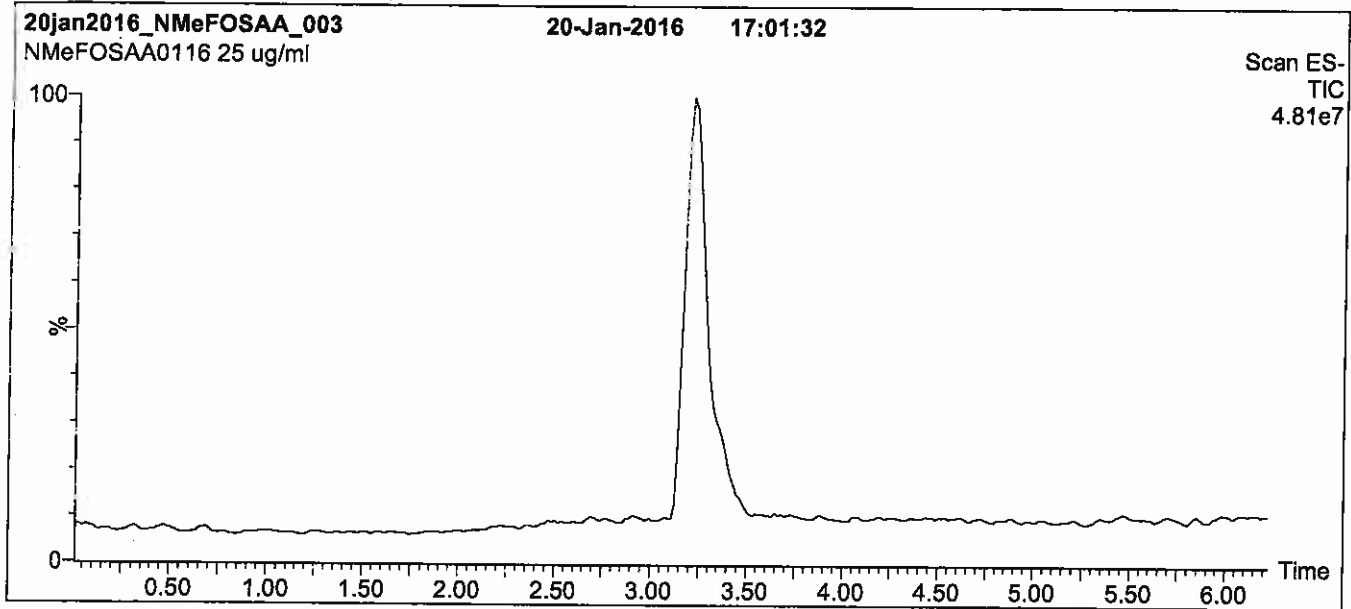
QUALITY MANAGEMENT:

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: N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 60% (80:20 MeOH:ACN) / 40% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

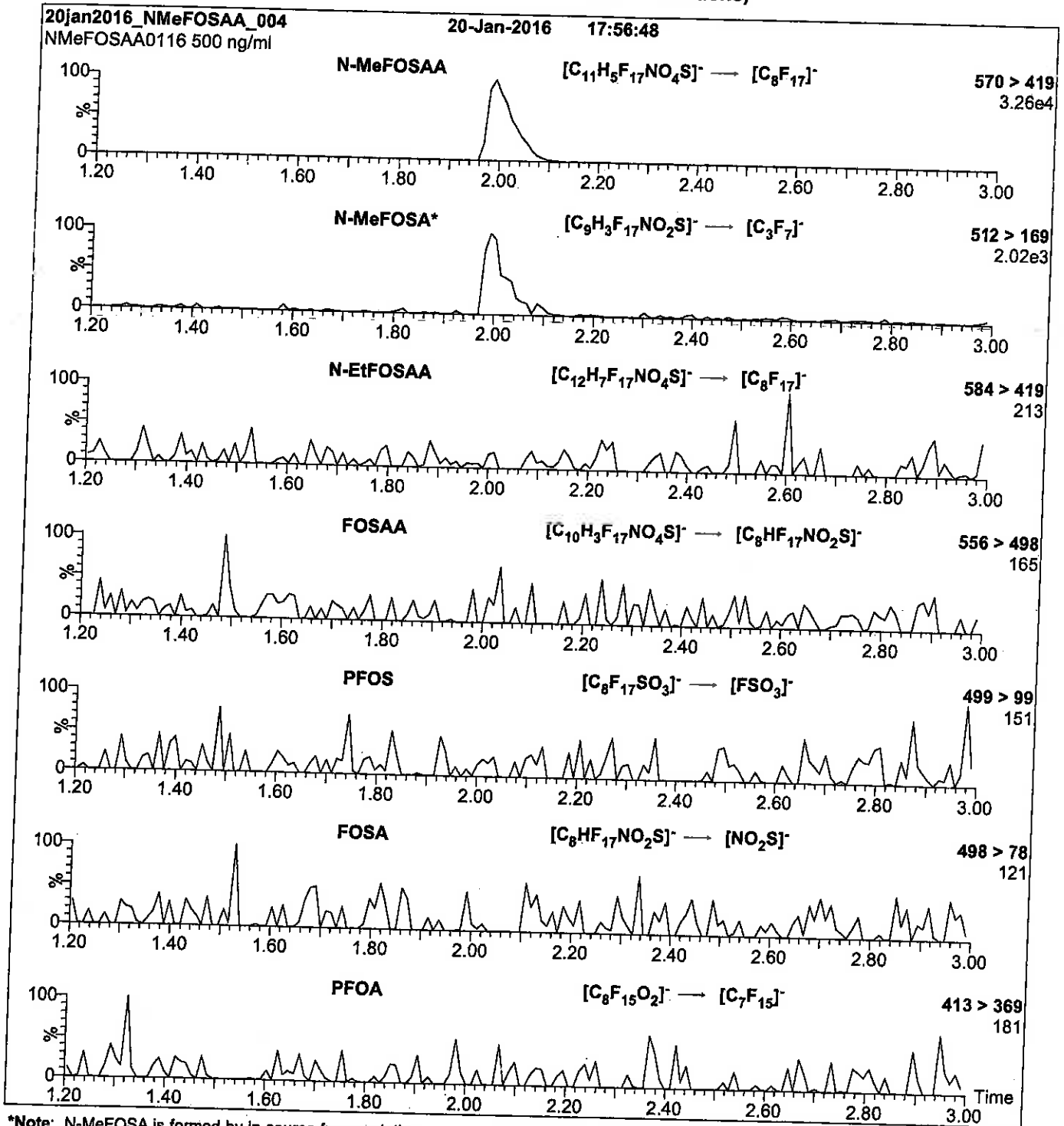
MS Parameters

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 μ 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 μ l (500 ng/ml N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 25

Reagent

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 (C₄-C₁₄, C₁₆, and C₁₈) and four native perfluoroalkylsulfonates (C₄, C₆, C₈ and C₁₀). 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**

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:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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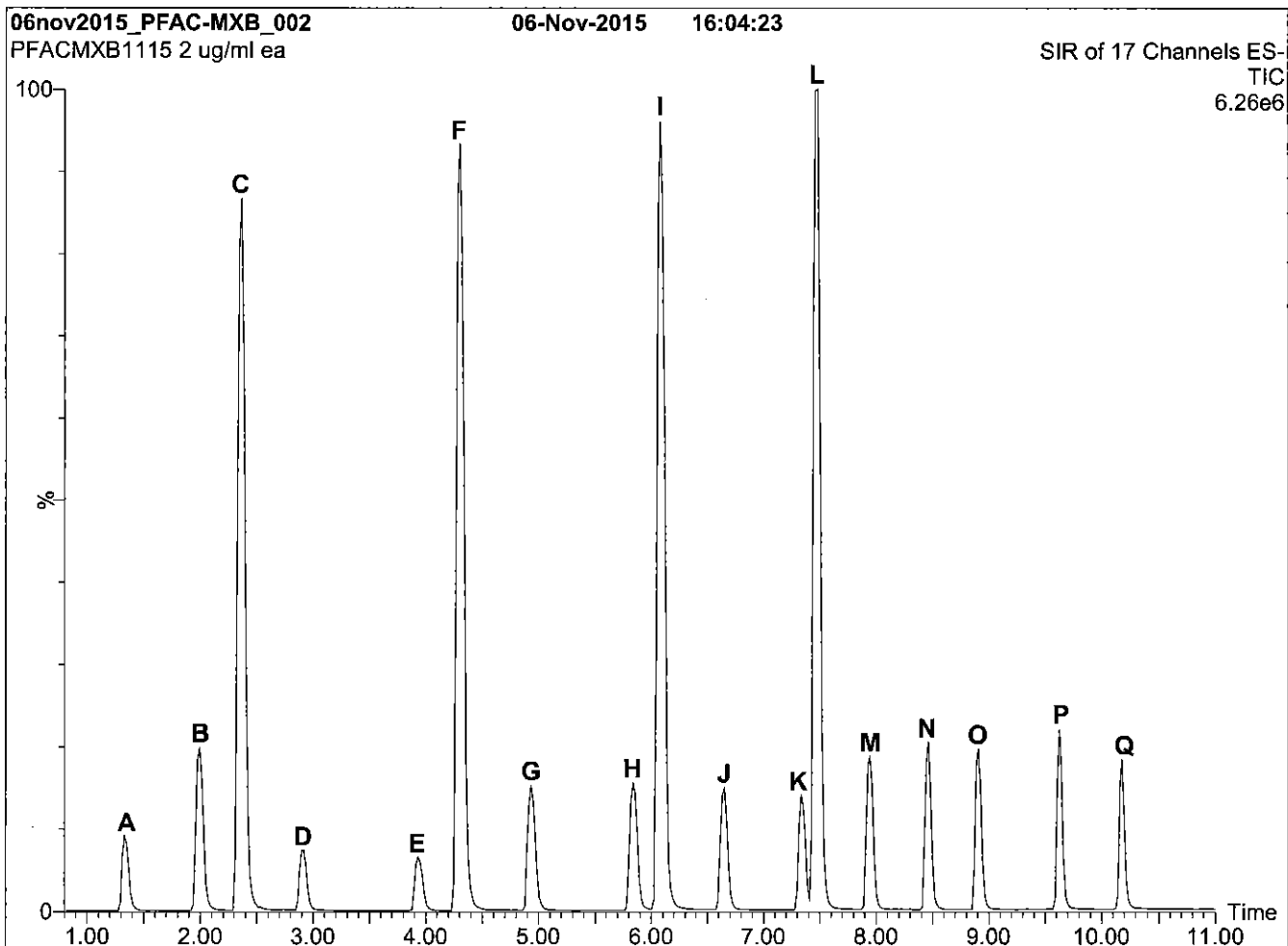
Table A: PFAC-MXB; Components and Concentrations (ng/ml, ± 5% in Methanol / Water (<1%))

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 RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 55% H₂O / 45% (80:20 MeOH:ACN)
 (both with 10 mM NH₄OAc 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 μ 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)

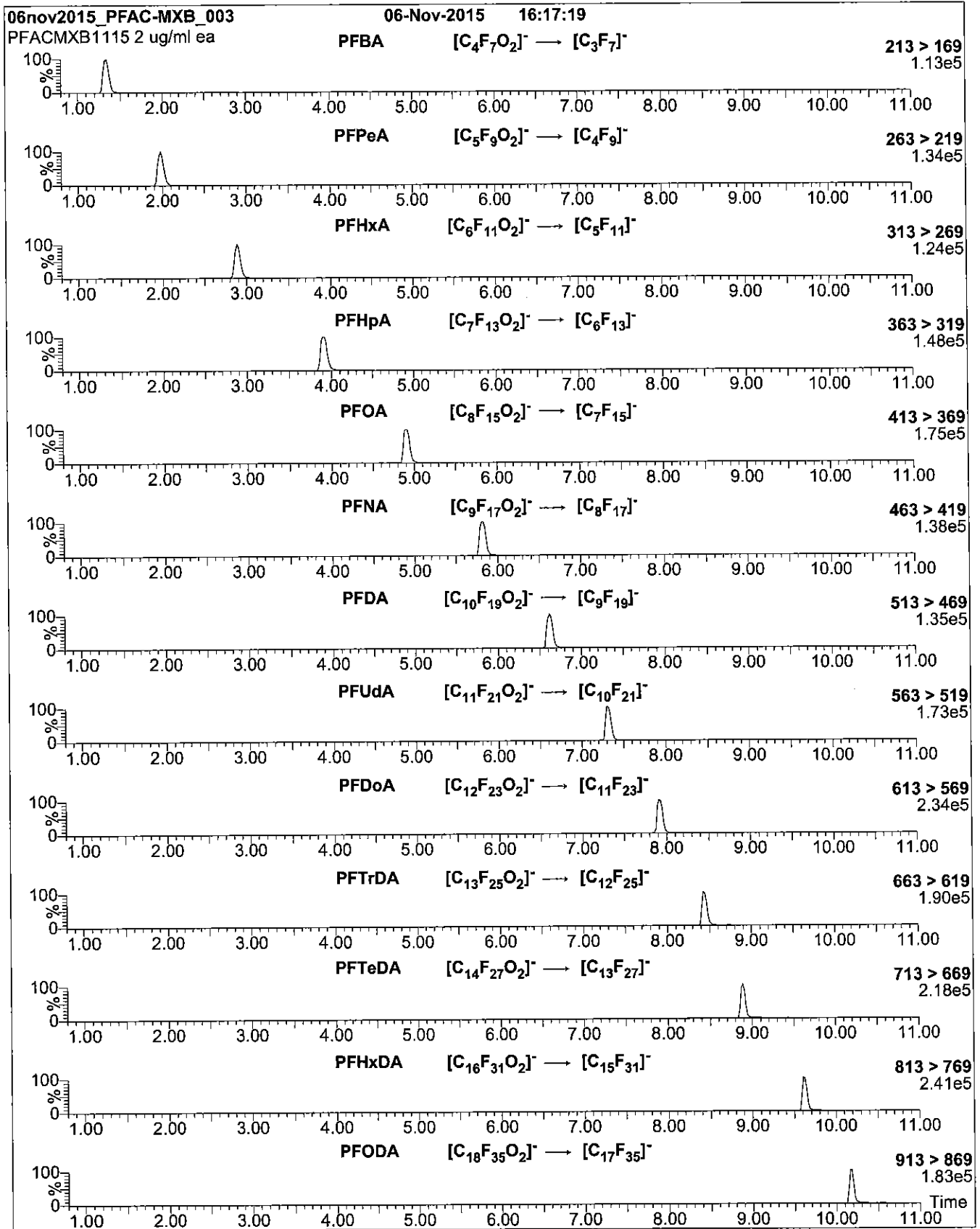
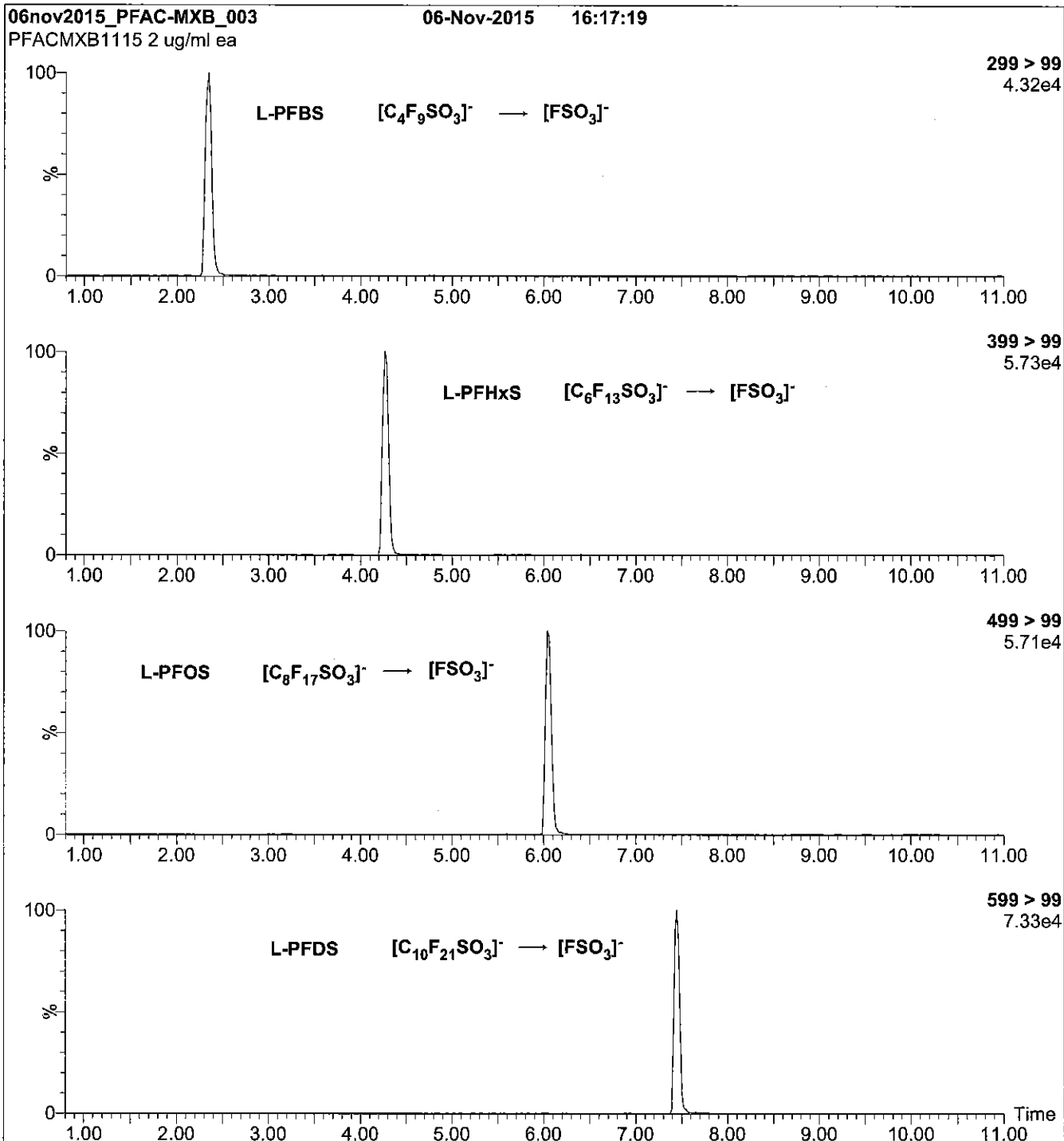


Figure 3: PFAC-MXB; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figures 2 and 3:

Injection: on-column (PFAC-MXB)
 Mobile phase: Same as Figure 1
 Flow: 300 μ /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



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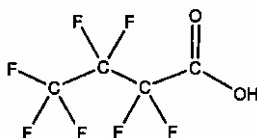
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFBA
COMPOUND: Perfluoro-n-butanolic acid

LOT NUMBER: PFBA0516

STRUCTURE:

CAS #: 375-22-4



MOLECULAR FORMULA: C₄HF₇O₂
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)

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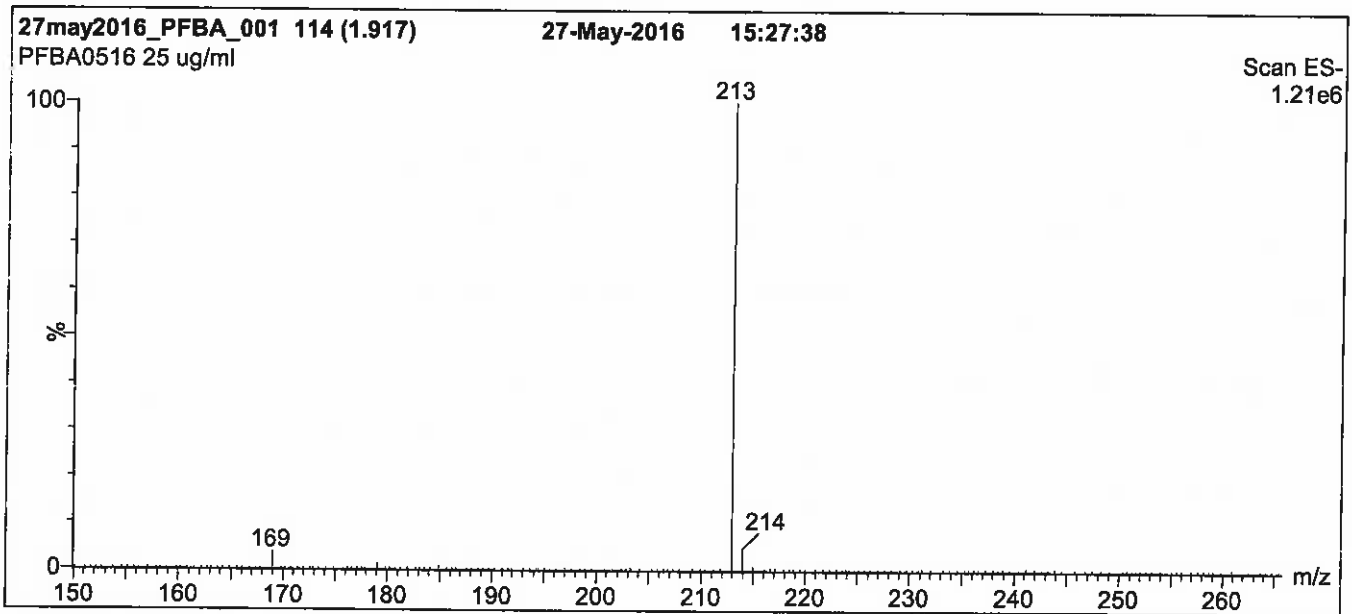
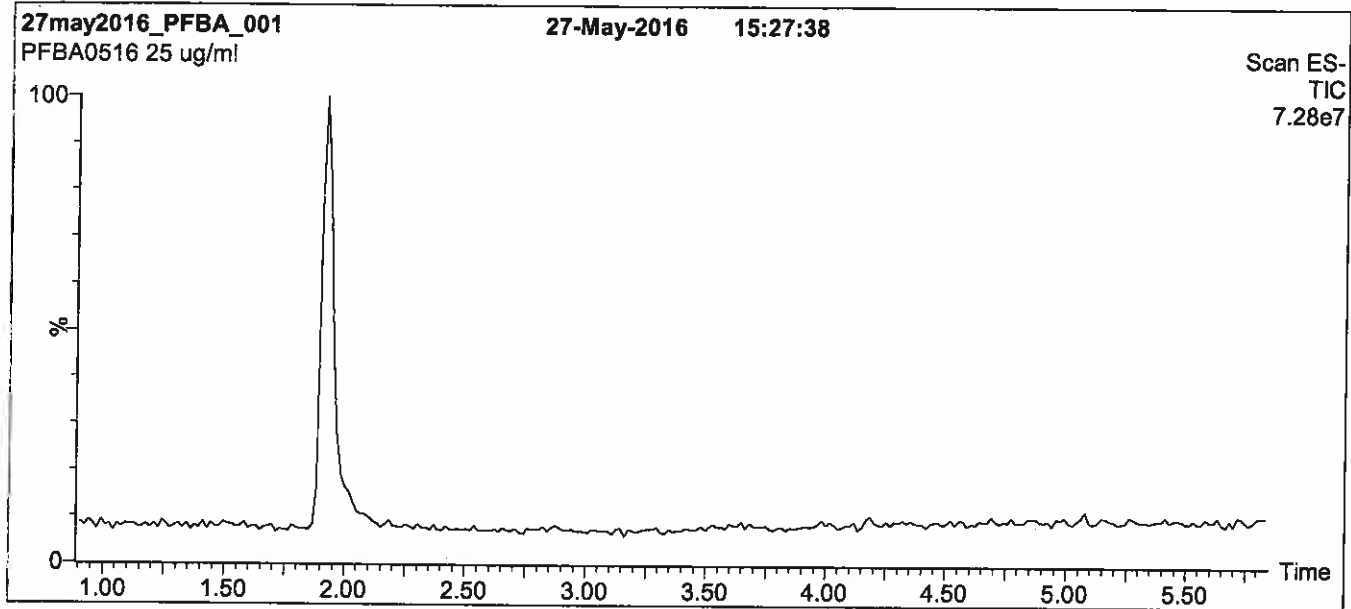
QUALITY MANAGEMENT:

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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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

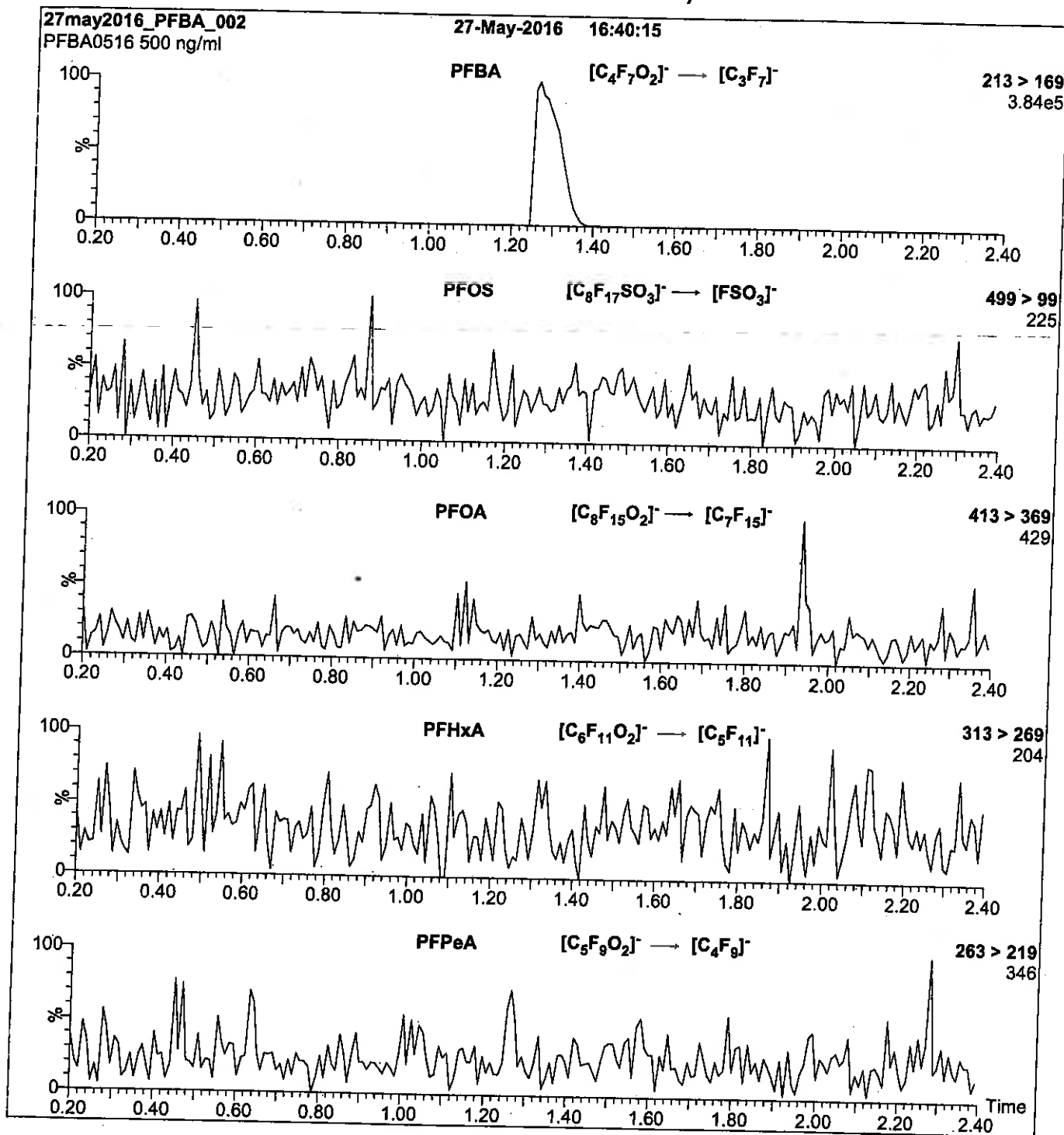
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: PFBA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.62e-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

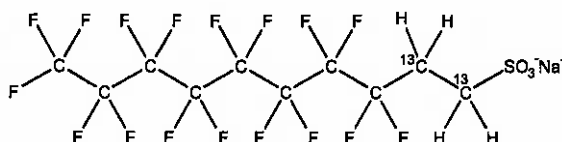


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS0116
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-¹³C₂]decane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	¹³ C ₂ ¹² C ₈ H ₄ F ₁₇ SO ₃ 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)	ISOTOPIC PURITY:	≥99% ¹³ C
CHEMICAL PURITY:	>98%		(1,2- ¹³ C ₂)
LAST TESTED: (mm/dd/yyyy)	01/08/2016		
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 ³⁴S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim

Date: 01/18/2016
(mm/dd/yyyy)

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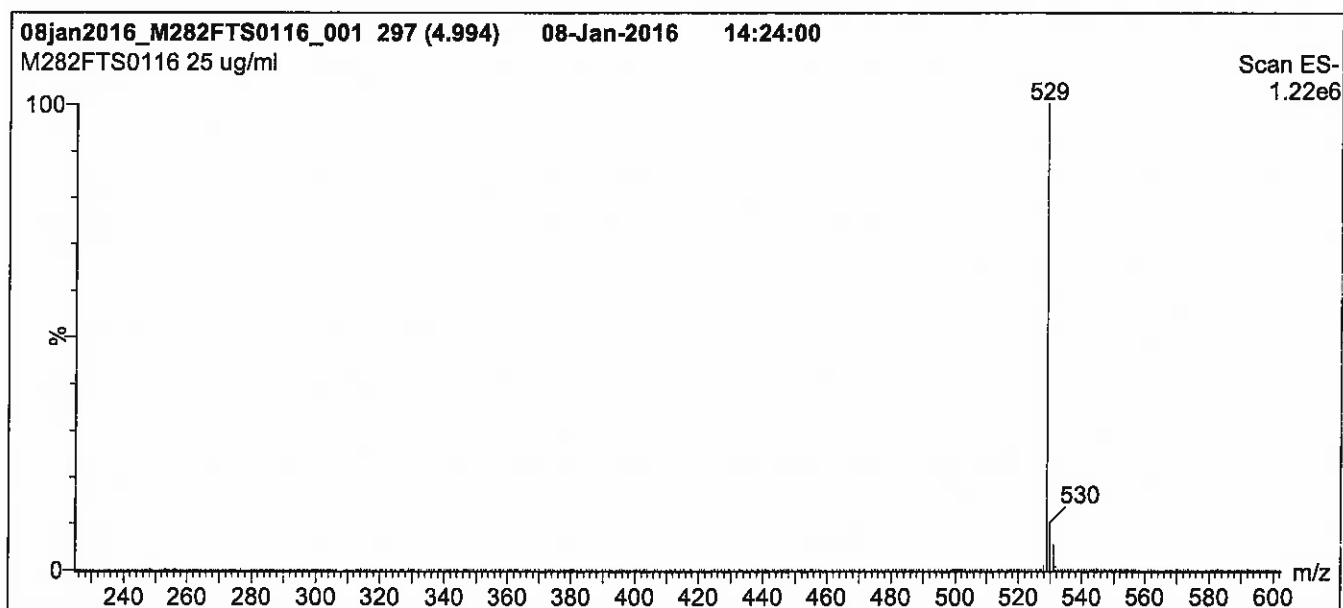
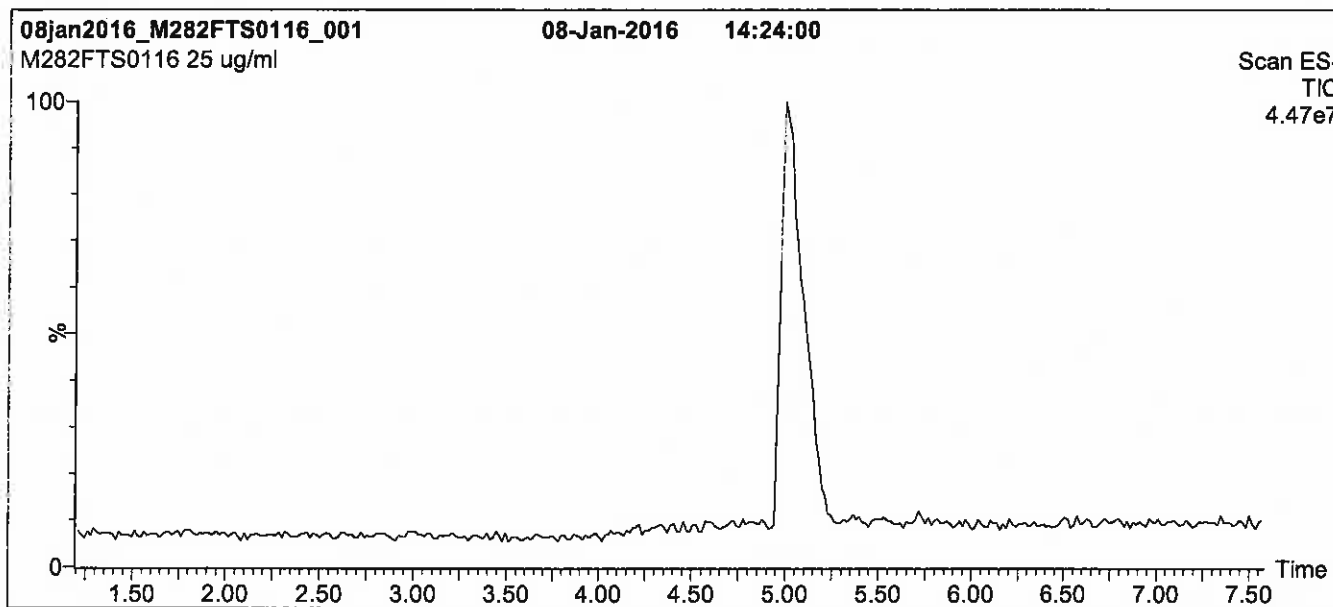
QUALITY MANAGEMENT:

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).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M2-8:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min
and hold for 2 min before returning
to initial conditions in 0.5 min.
Time: 10 min

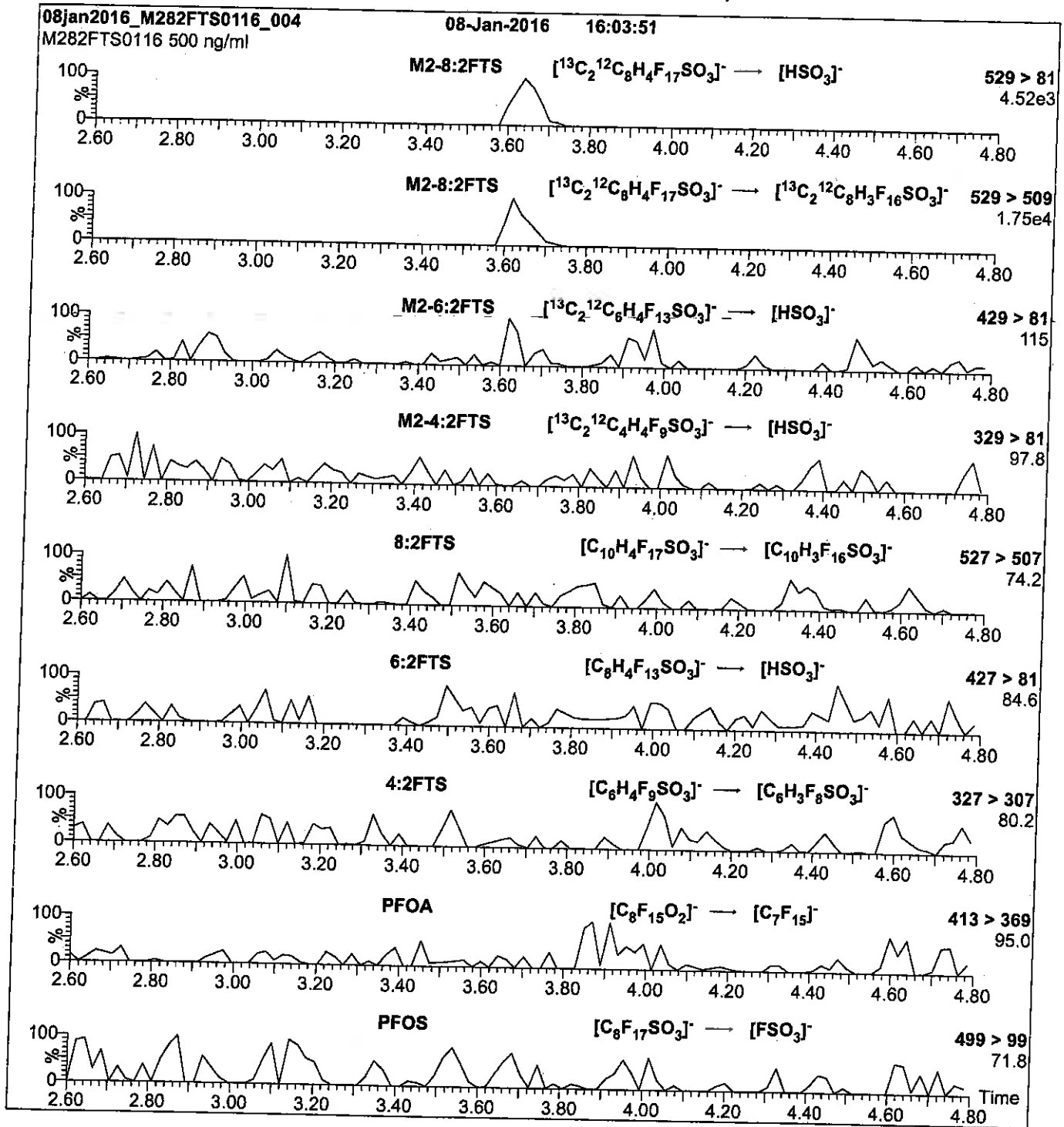
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2-8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 30

R: 8BC 9/13/16



730511
ID: LCPFBS_00005
Exp: 03/15/21 Pripd: 8BC
PF-1-butanefulfonate K sa



730512
ID: LCPFBS_00006
Exp: 03/15/21 Pripd: 8BC
PF-1-butanefulfonate K sa

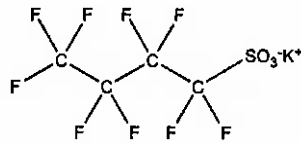


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFBS **LOT NUMBER:** LPFBS0316
COMPOUND: Potassium perfluoro-1-butanefulfonate

STRUCTURE: **CAS #:** 29420-49-3



MOLECULAR FORMULA: C₄F₉SO₃K **MOLECULAR WEIGHT:** 338.19
CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt) **SOLVENT(S):** Methanol
44.2 ± 2.2 µg/ml (PFBS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/15/2016
EXPIRY DATE: (mm/dd/yyyy) 03/15/2021
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:** 03/21/2016
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:

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.

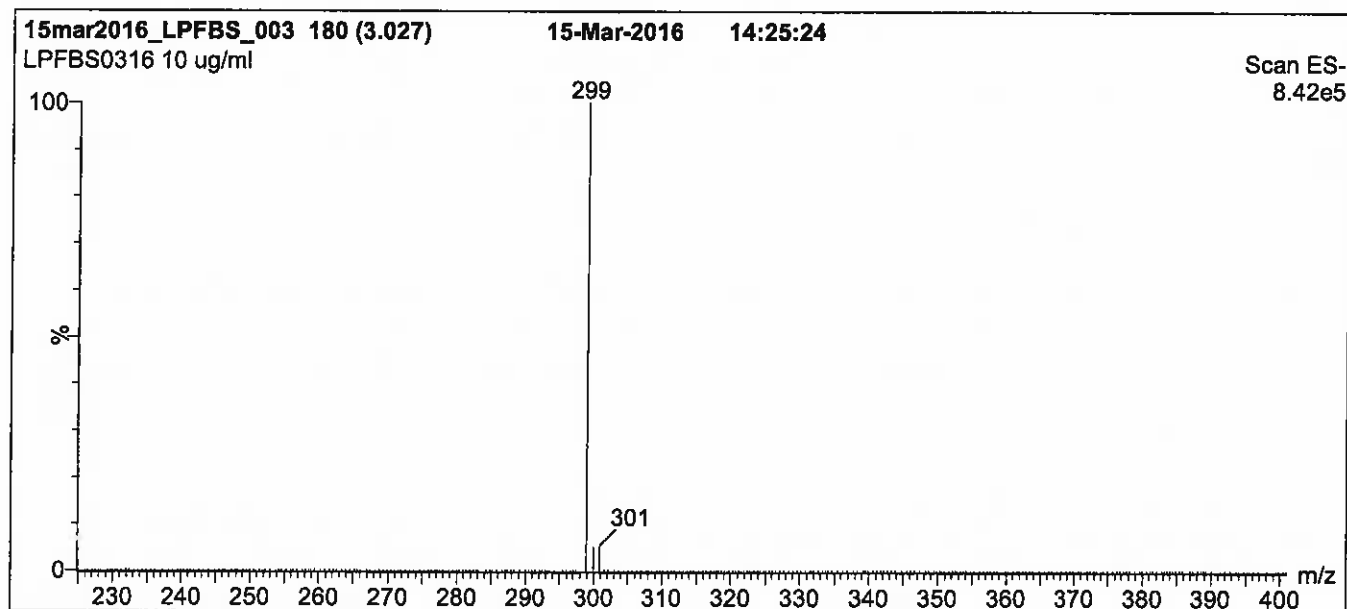
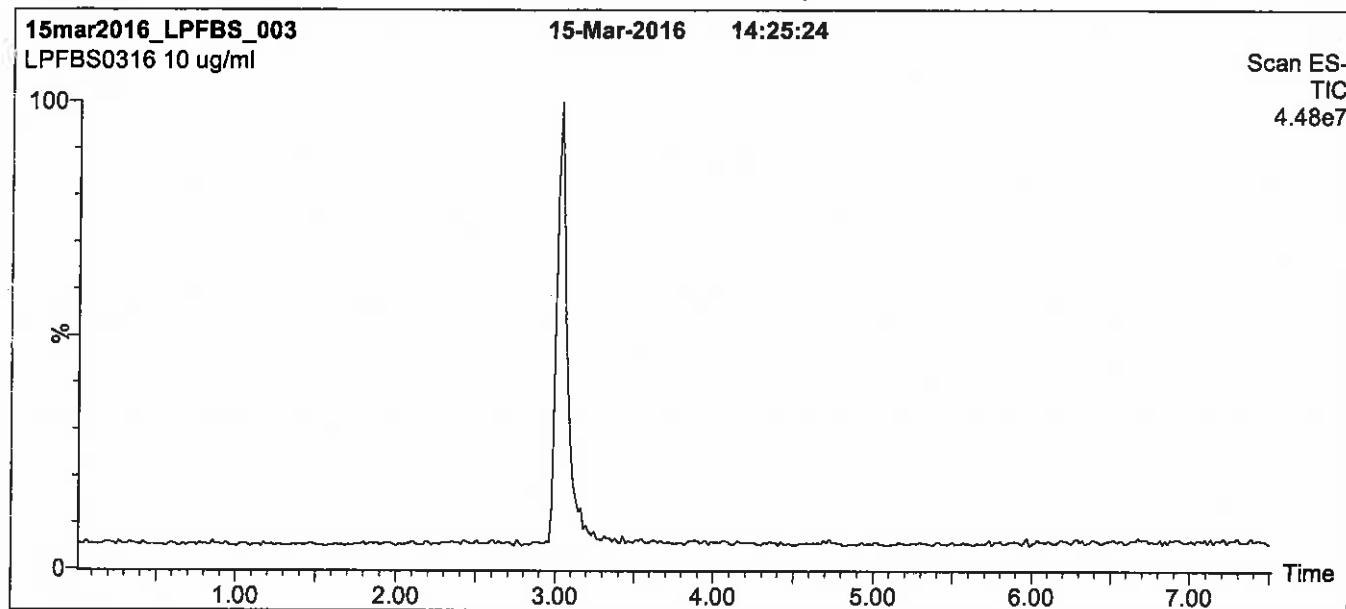
QUALITY MANAGEMENT:

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: L-PFBS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

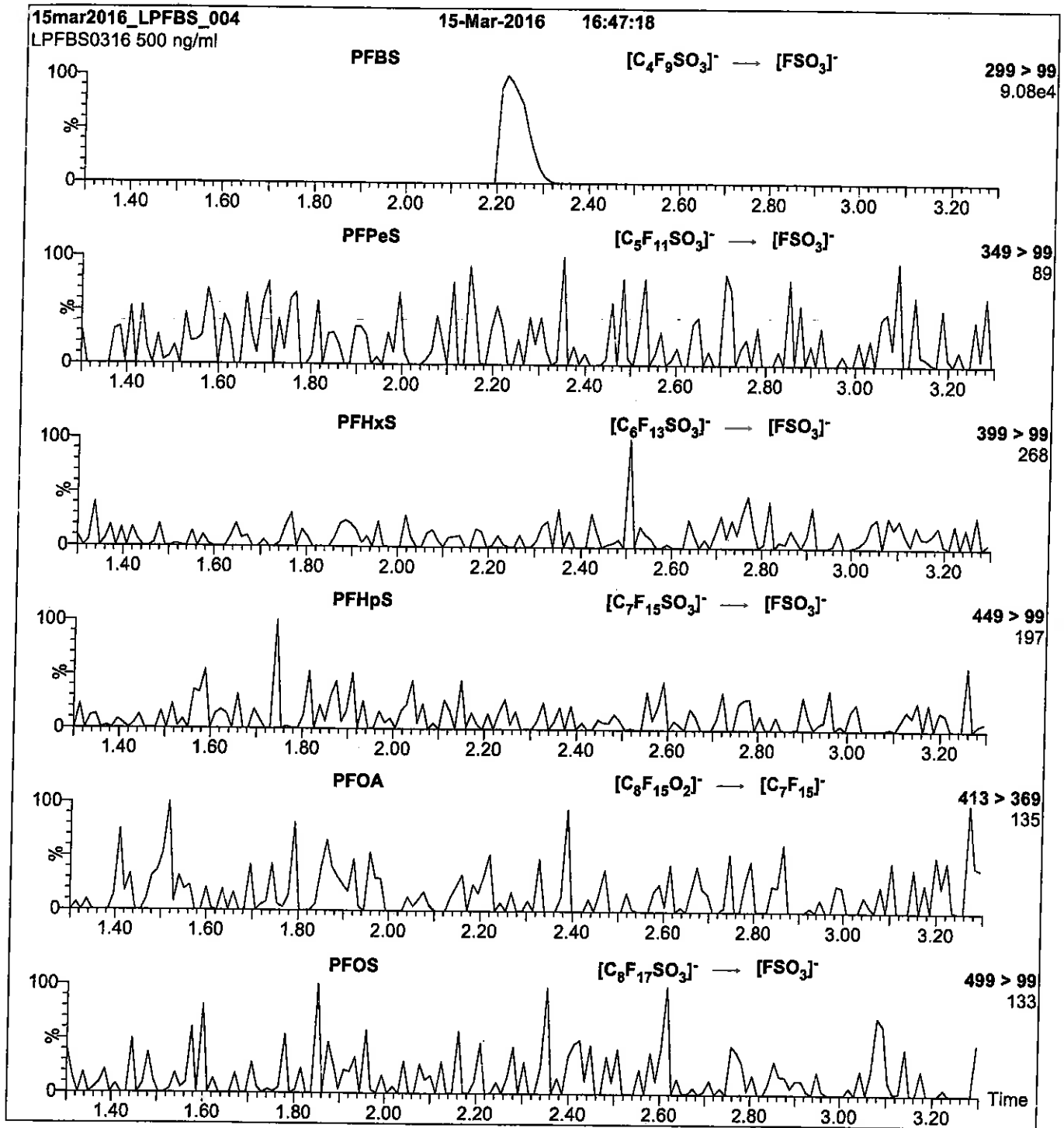
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 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 μ l (500 ng/ml L-PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
 Collision Energy (eV) = 25

Reagent

LCPFDA_00005

R: 7/16/16 CBW



671576
ID: LCPFDA_00305
Exp: 07/02/20 Pipd: CBW
PF-n-decanoic acid

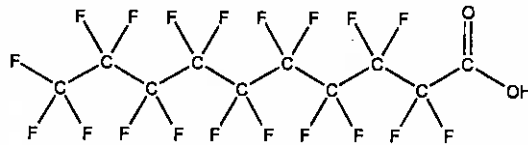


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LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFDA **LOT NUMBER:** PFDA0615
COMPOUND: Perfluoro-n-decanoic acid

STRUCTURE: **CAS #:** 335-76-2



MOLECULAR FORMULA: $C_{10}HF_{19}O_2$ **MOLECULAR WEIGHT:** 514.08
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
Water (<1%)

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 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.6% PFNA and ~ 0.3% PFOA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 07/24/2015
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:

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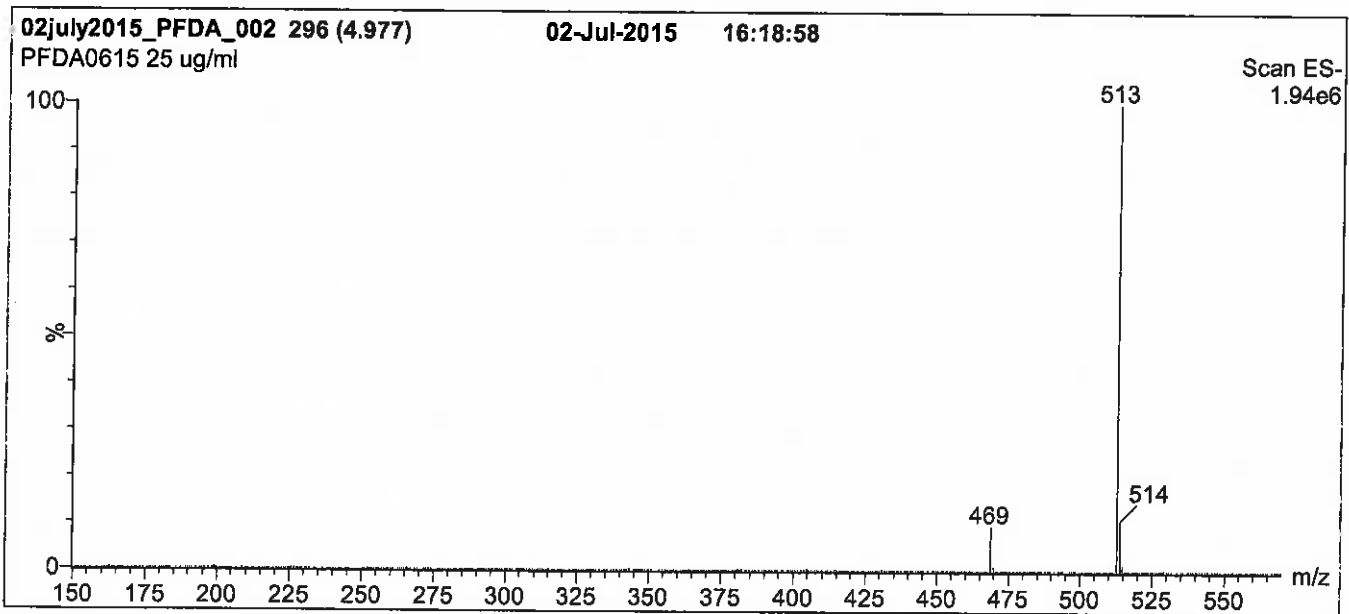
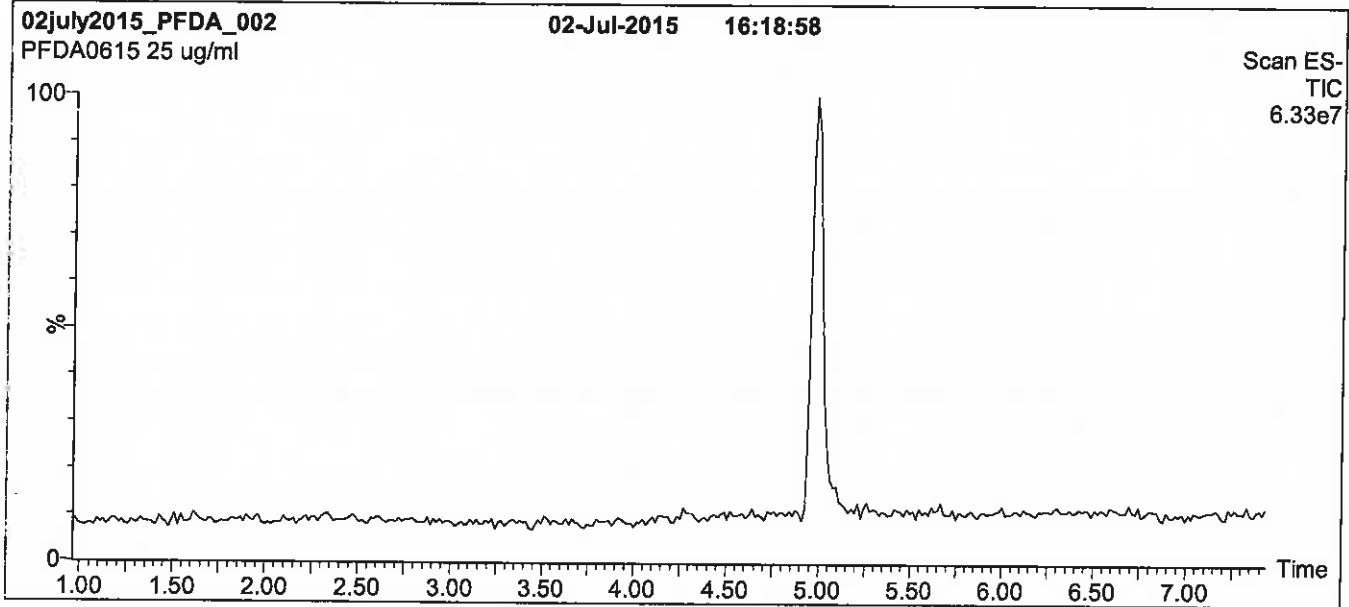
QUALITY MANAGEMENT:

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Figure 1: PFDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

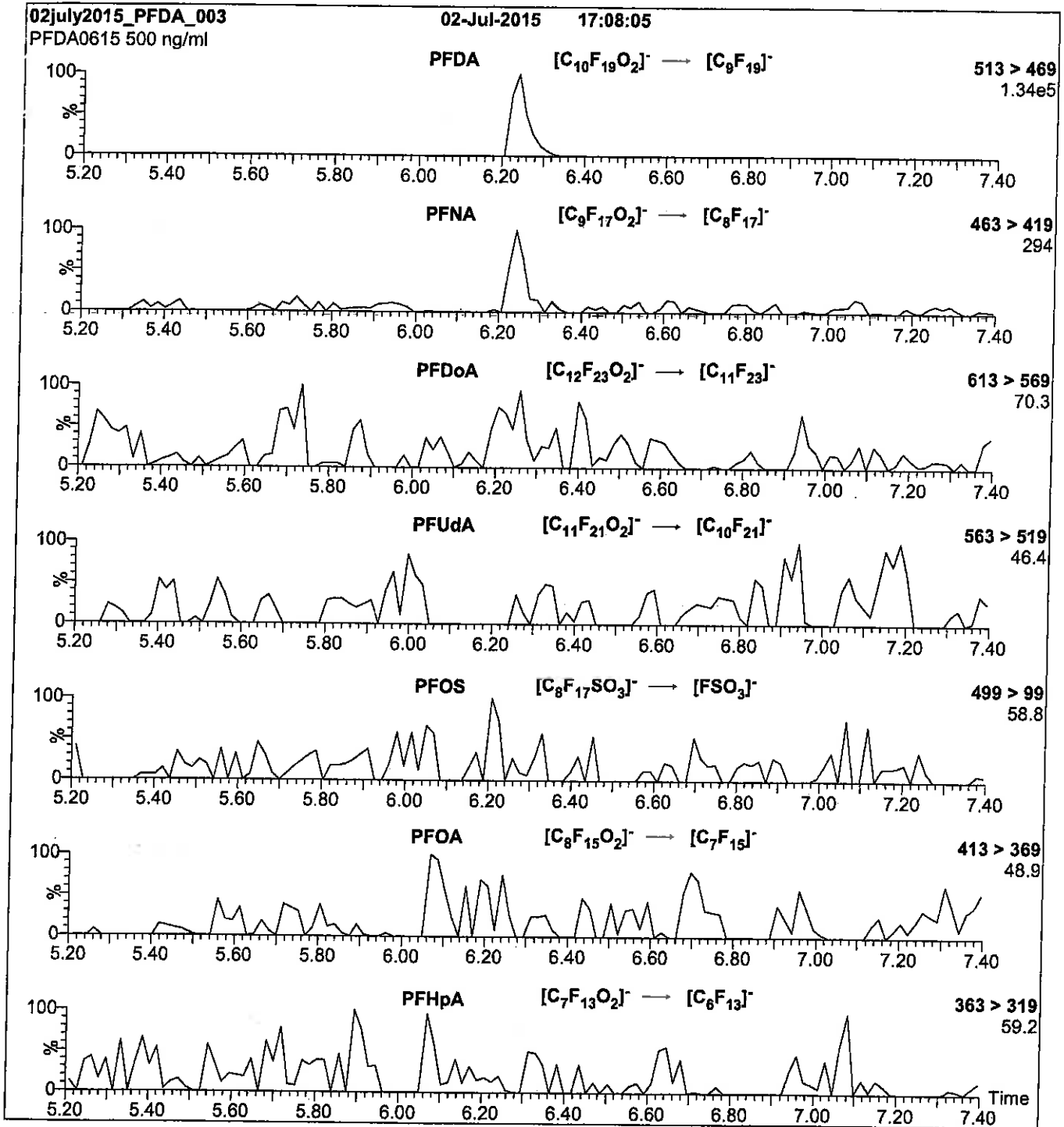
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 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 μ l (500 ng/ml PFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.62e-3
Collision Energy (eV) = 13

Reagent

LCPFDoA_00005

R: 7/6/16 can

671601
ID: LCPFD0A_00005
Exp: 01/30/20 Pripd: CBW
PF-n-dodecanoic acid

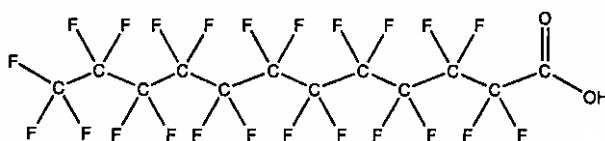


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFD0A **LOT NUMBER:** PFD0A0115
COMPOUND: Perfluoro-n-dodecanoic acid

STRUCTURE: **CAS #:** 307-55-1



MOLECULAR FORMULA: C₁₂HF₂₃O₂ **MOLECULAR WEIGHT:** 614.10
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/30/2015
EXPIRY DATE: (mm/dd/yyyy) 01/30/2020
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

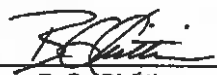
DOCUMENTATION/ DATA ATTACHED:

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:  **Date:** 03/25/2015
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:

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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:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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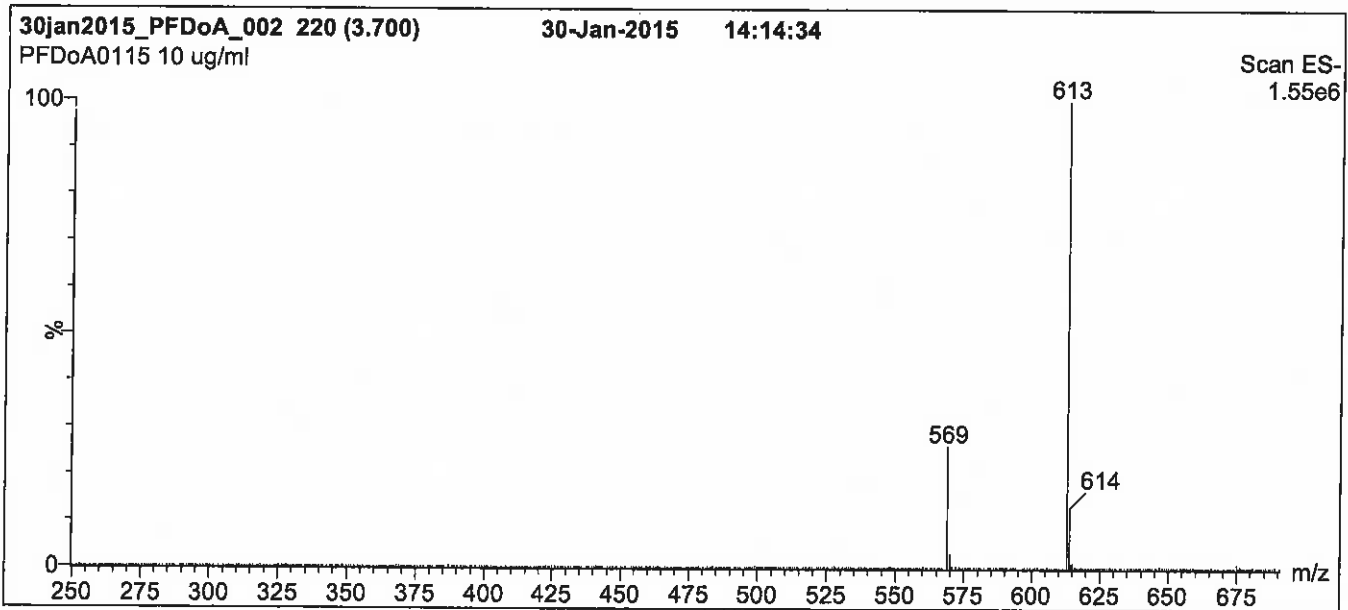
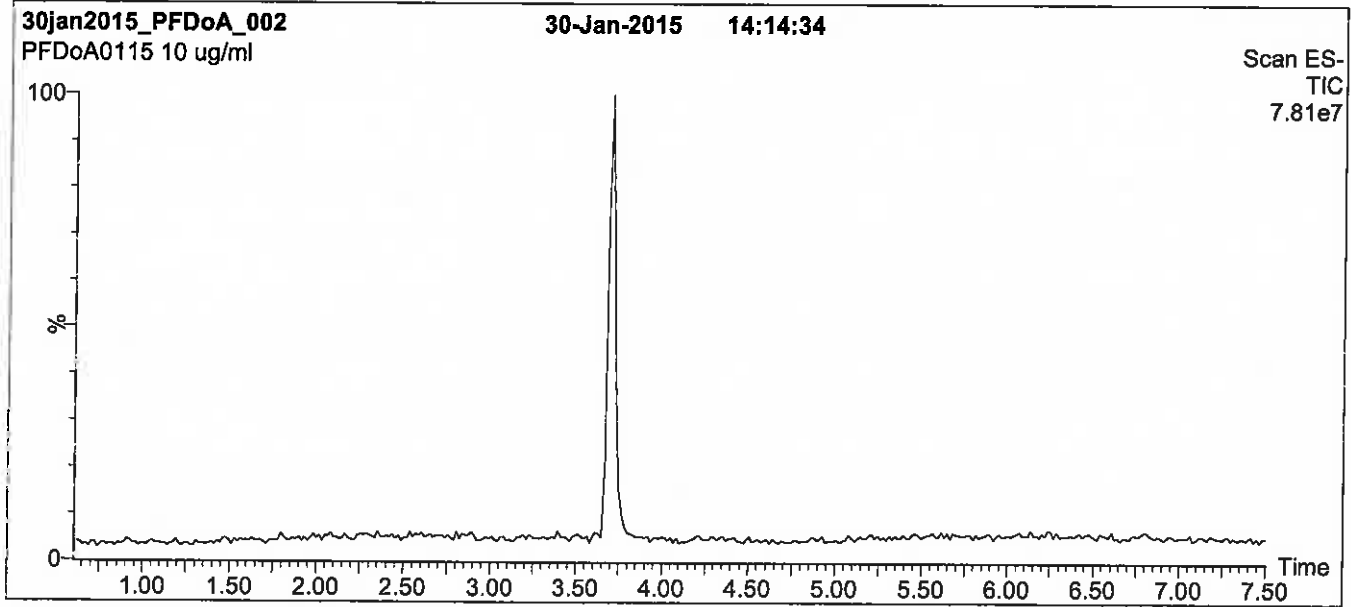
QUALITY MANAGEMENT:

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Figure 1: PFD_oA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 60% (80:20 MeOH:ACN) / 40% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

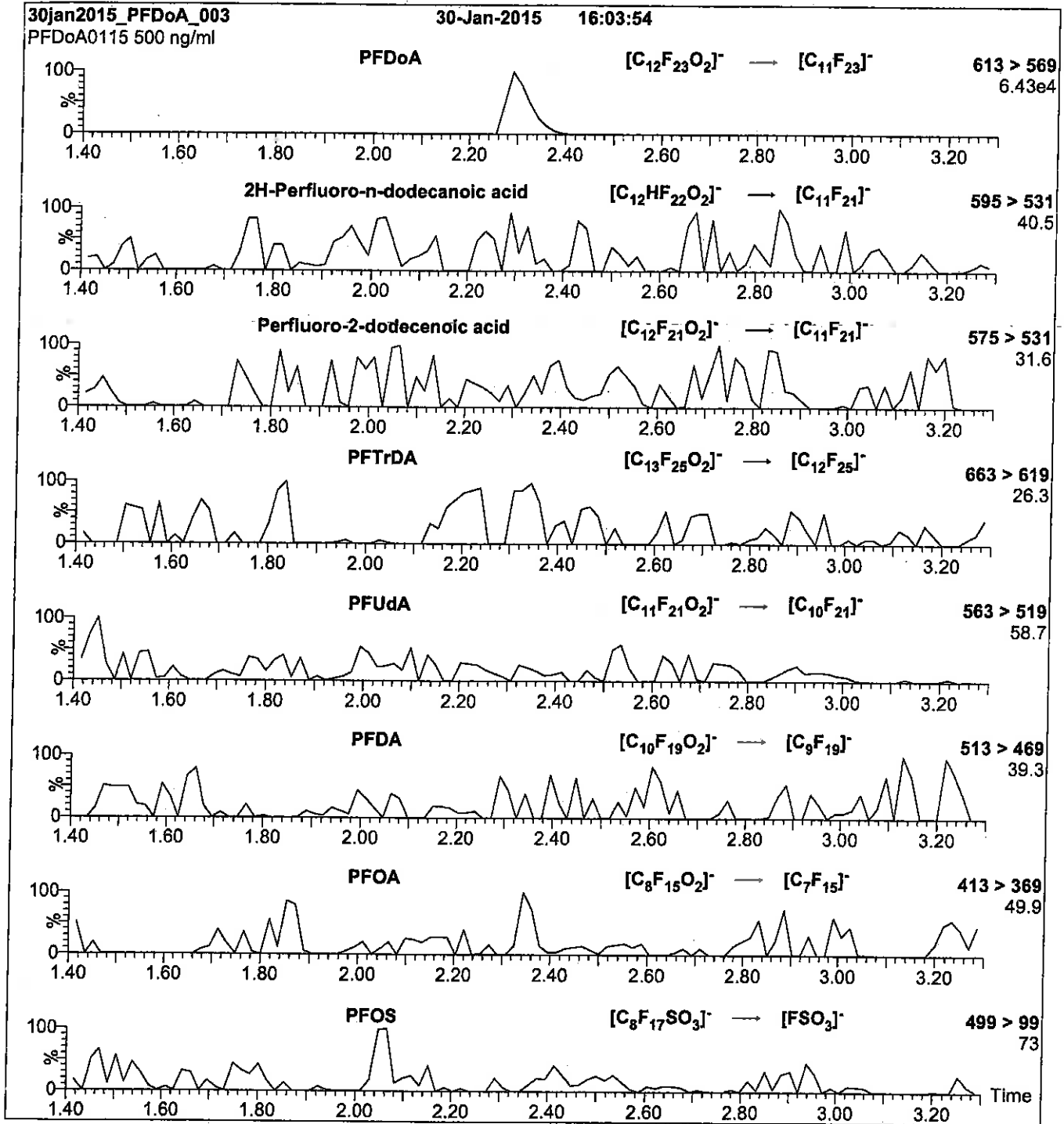
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (250 - 1000 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 μ l (500 ng/ml PFDoA)

MS Parameters

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Collision Gas (mbar) = 3.28e-3
 Collision Energy (eV) = 13

Flow: 300 μ l/min

Reagent

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



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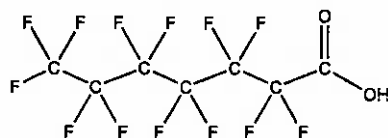
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHpA
COMPOUND: Perfluoro-n-heptanoic acid

LOT NUMBER: PFHpA0116

STRUCTURE:

CAS #: 375-85-9



MOLECULAR FORMULA: C₇HF₁₃O₂
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:

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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UNCERTAINTY:

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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:

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.

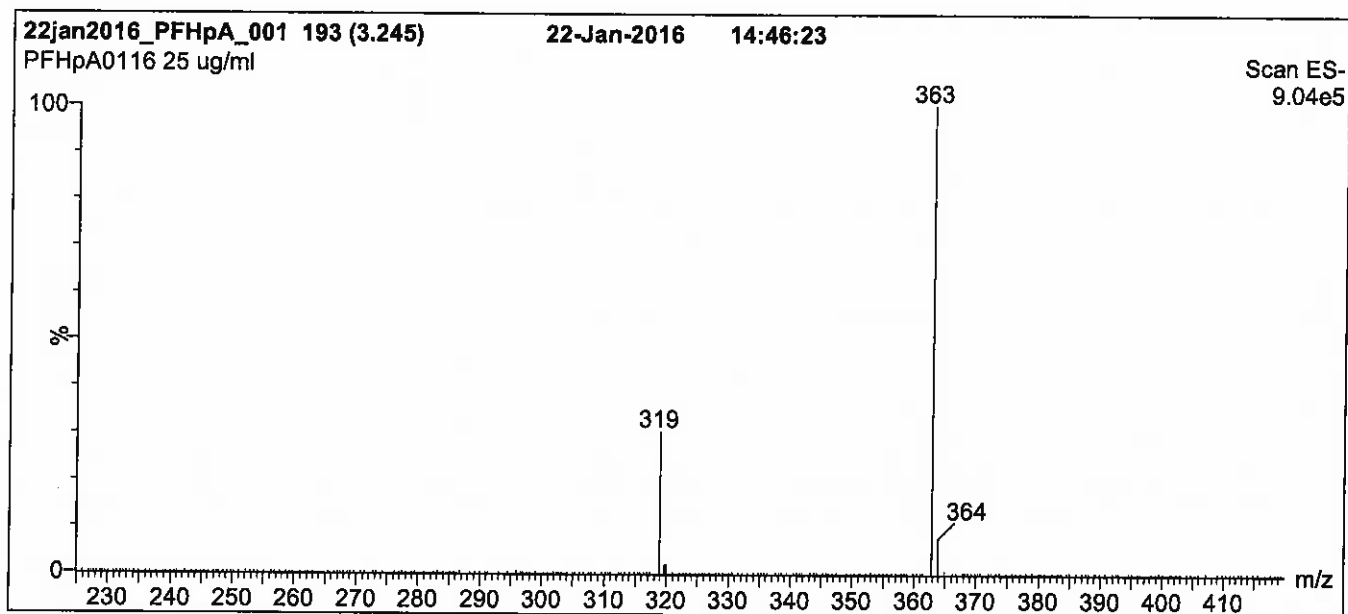
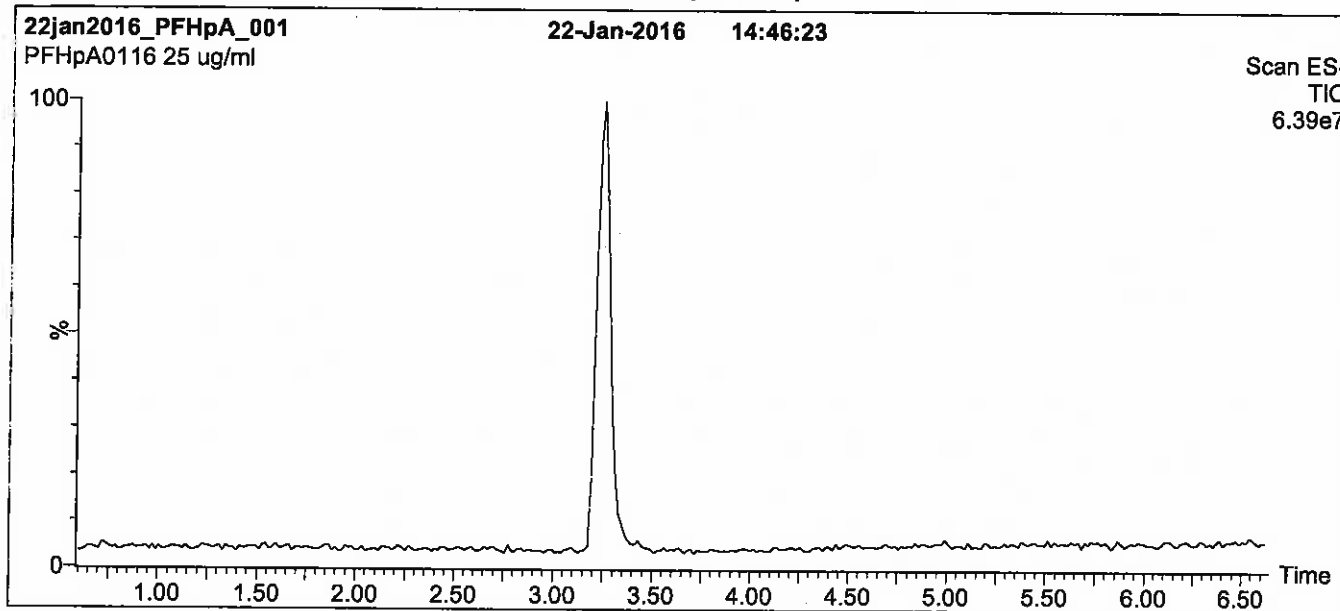
QUALITY MANAGEMENT:

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: PFHpA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

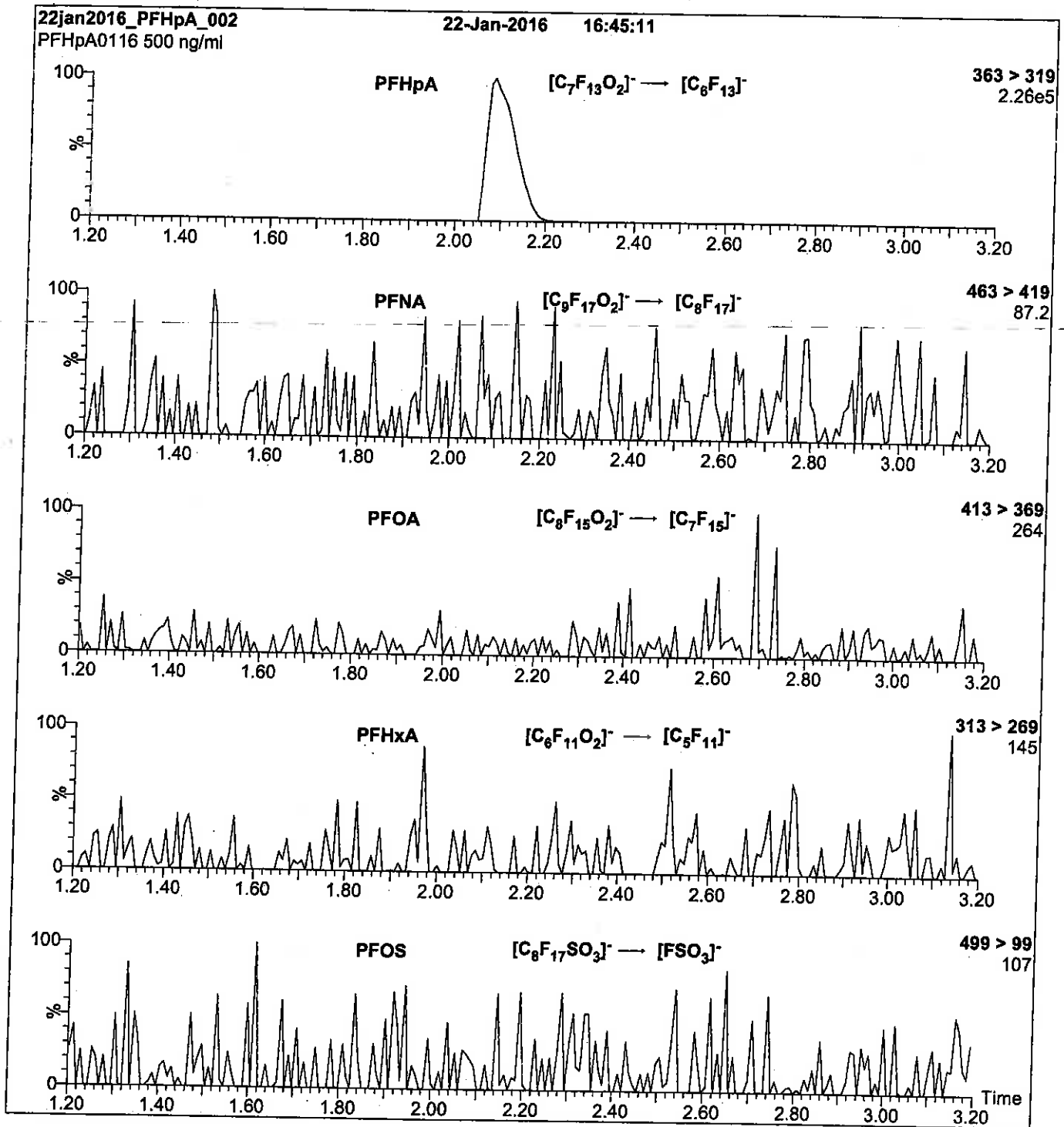
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 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 μ l (500 ng/ml PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 11

Reagent

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



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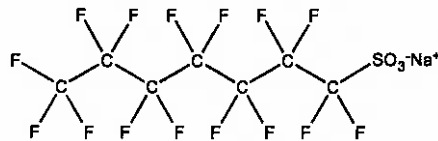
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFHpS
COMPOUND: Sodium perfluoro-1-heptanesulfonate

LOT NUMBER: LPFHpS1115

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: C₇F₁₅SO₃Na
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 (C₆F₁₃SO₃Na) and ~ 0.2% of L-PFOS (C₈F₁₇SO₃Na).

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:

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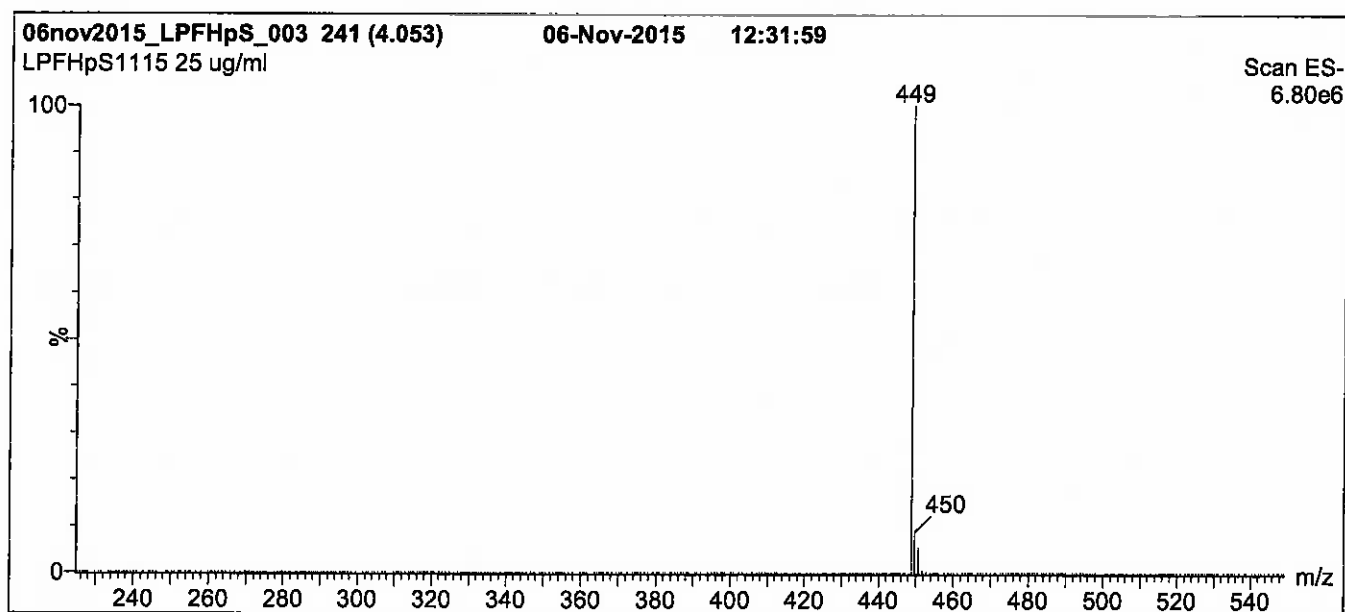
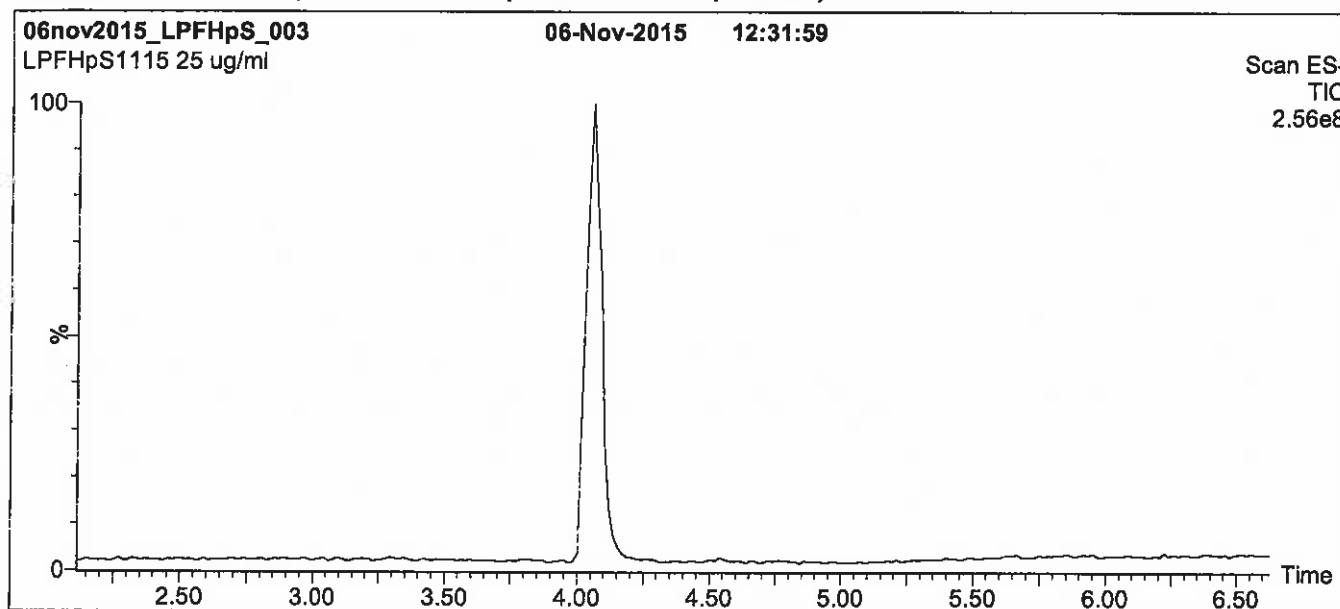
QUALITY MANAGEMENT:

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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 RP₁₈,
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 50% (80:20 MeOH:ACN) / 50% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold
 for 2 min before returning to initial conditions in 0.5 min.
 Time: 10 min

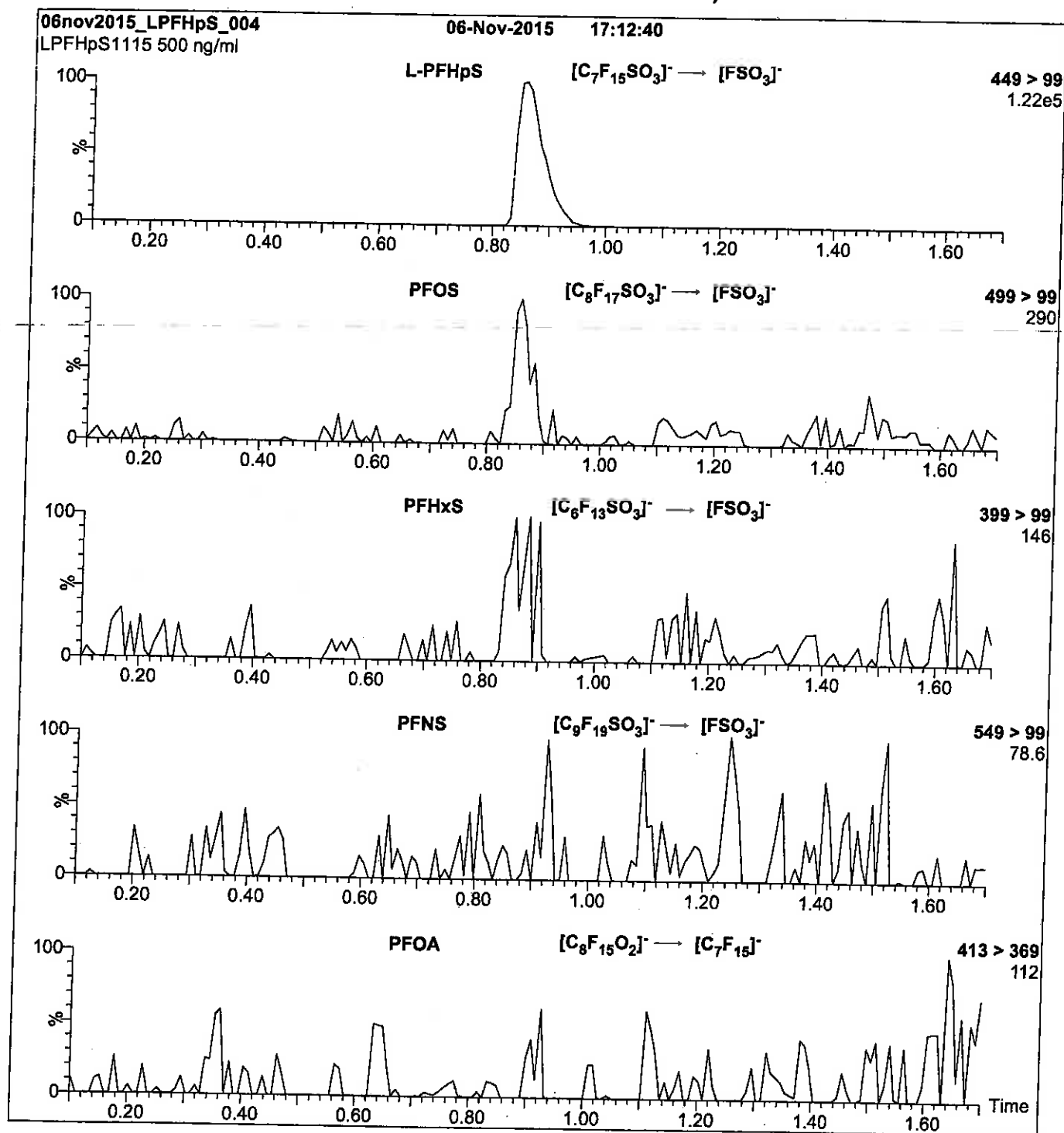
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.00
 Cone Voltage (V) = 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 μ l (500 ng/ml L-PFHpS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 35

Reagent

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



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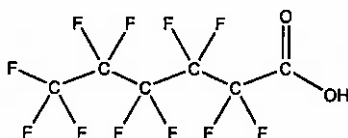
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxA
COMPOUND: Perfluoro-n-hexanoic acid

LOT NUMBER: PFHxA1215

STRUCTURE:

CAS #: 307-24-4



MOLECULAR FORMULA: C₆H₁₁F₁₁O₂
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 314.05
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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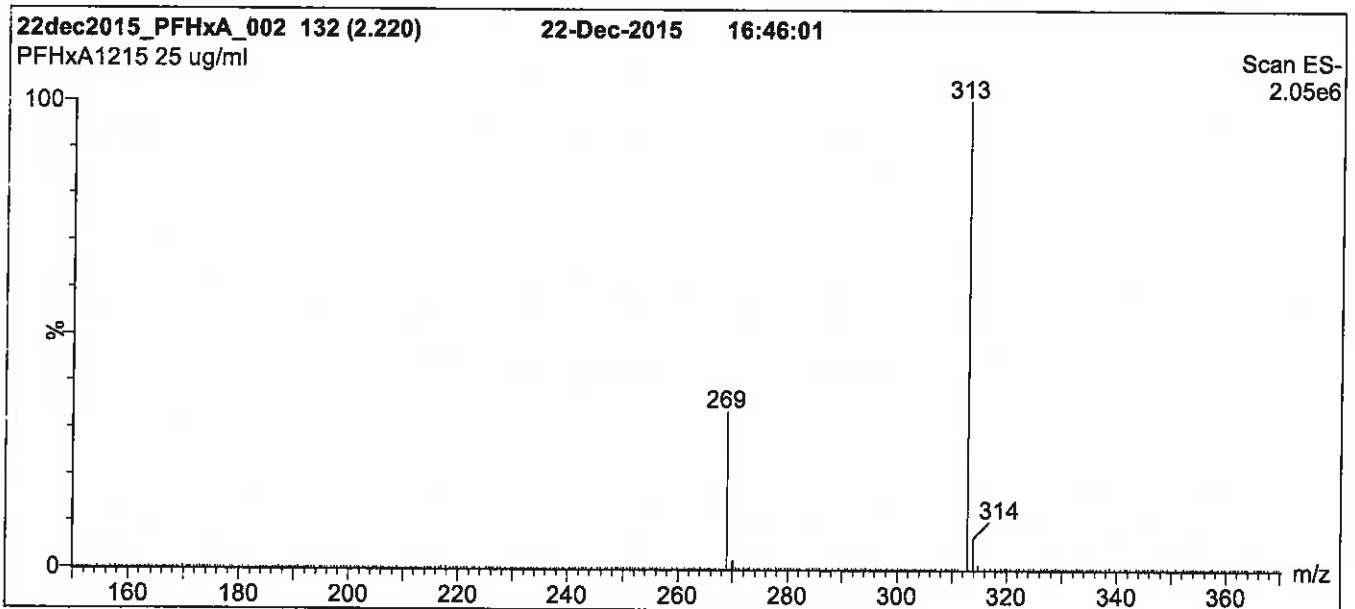
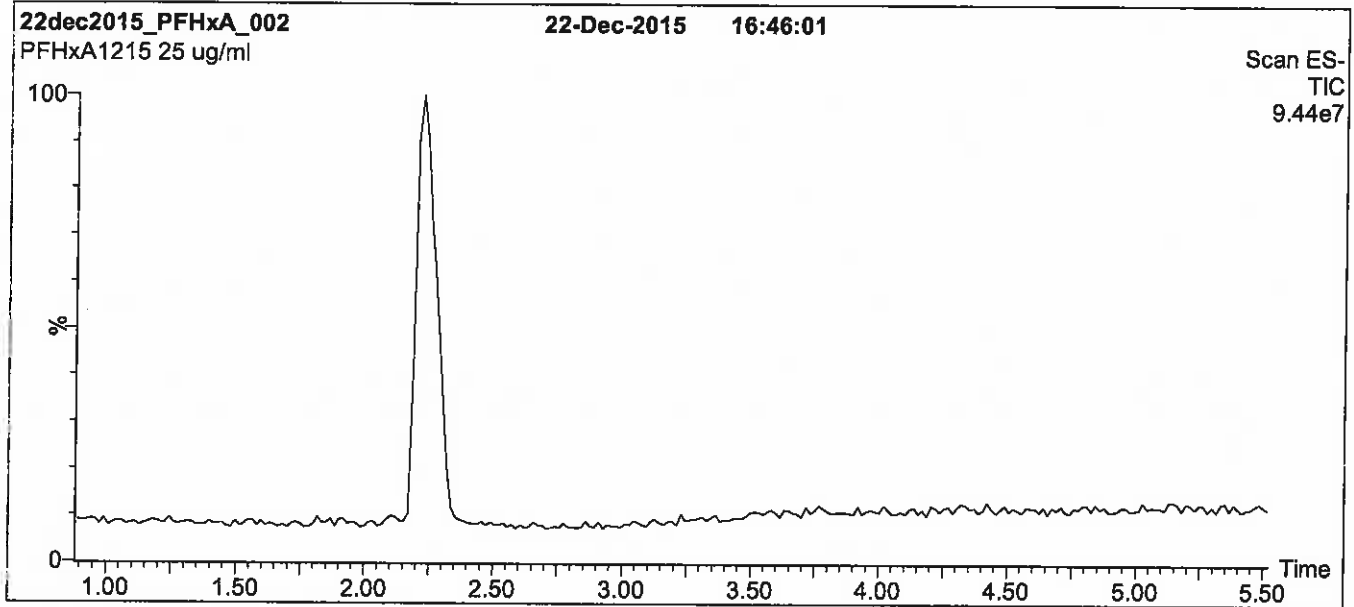
QUALITY MANAGEMENT:

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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 RP₁₈
1.7 μ m, 2.1 x 100 mm

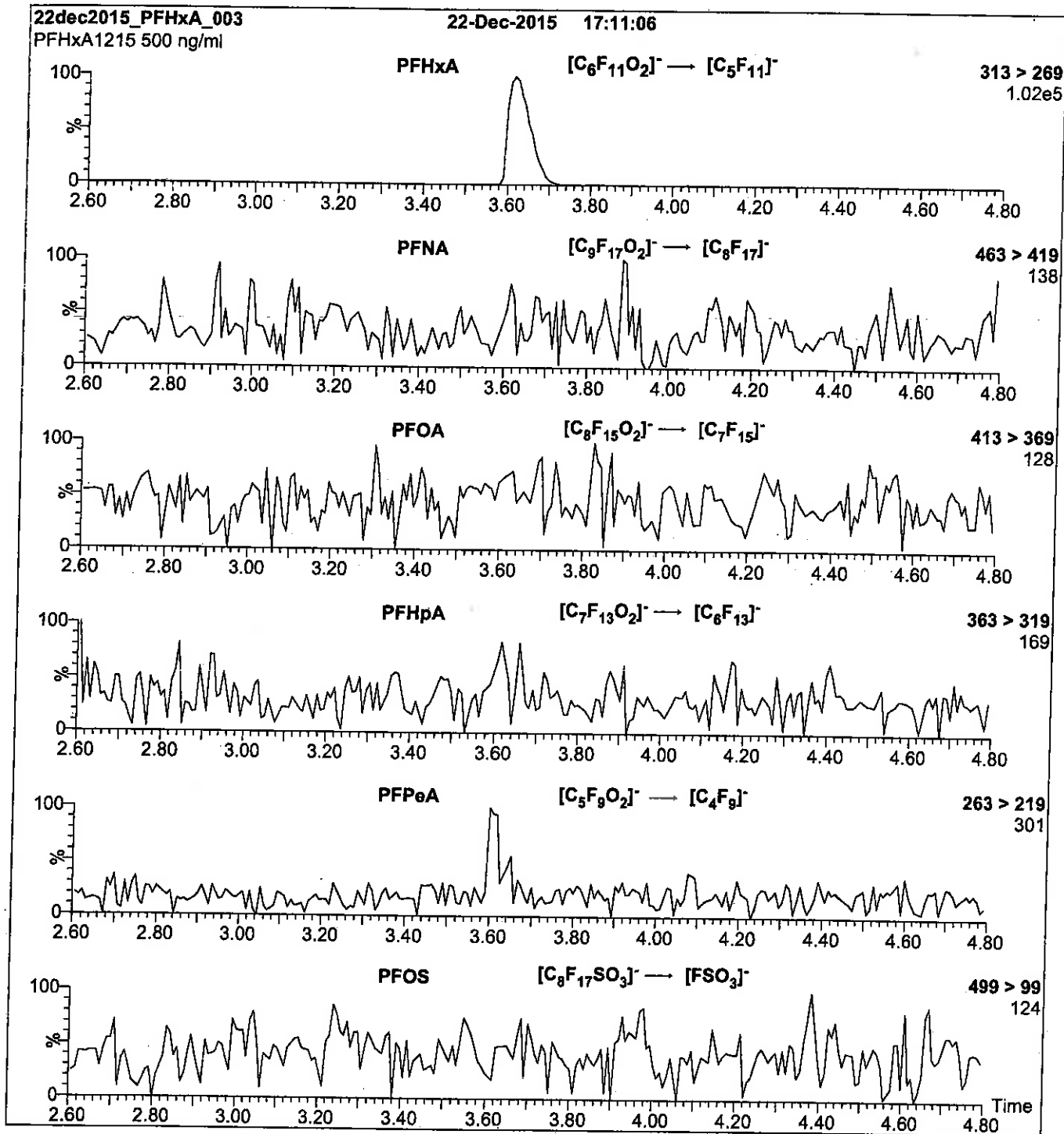
Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 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 μ l (500 ng/ml PFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 10

Reagent

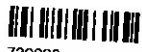
LCPFHxDA_00006

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

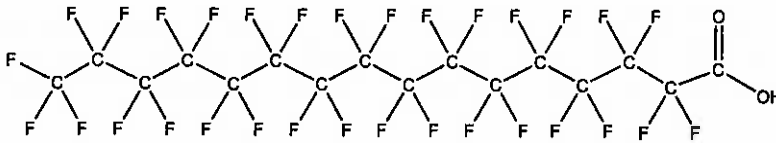


730631
ID: LCPFHxDA_00007
Exp: 05/25/21 Prpd: SBC
PFHxDA stock 50ug/mL

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0516
COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆H₃₁O₂ **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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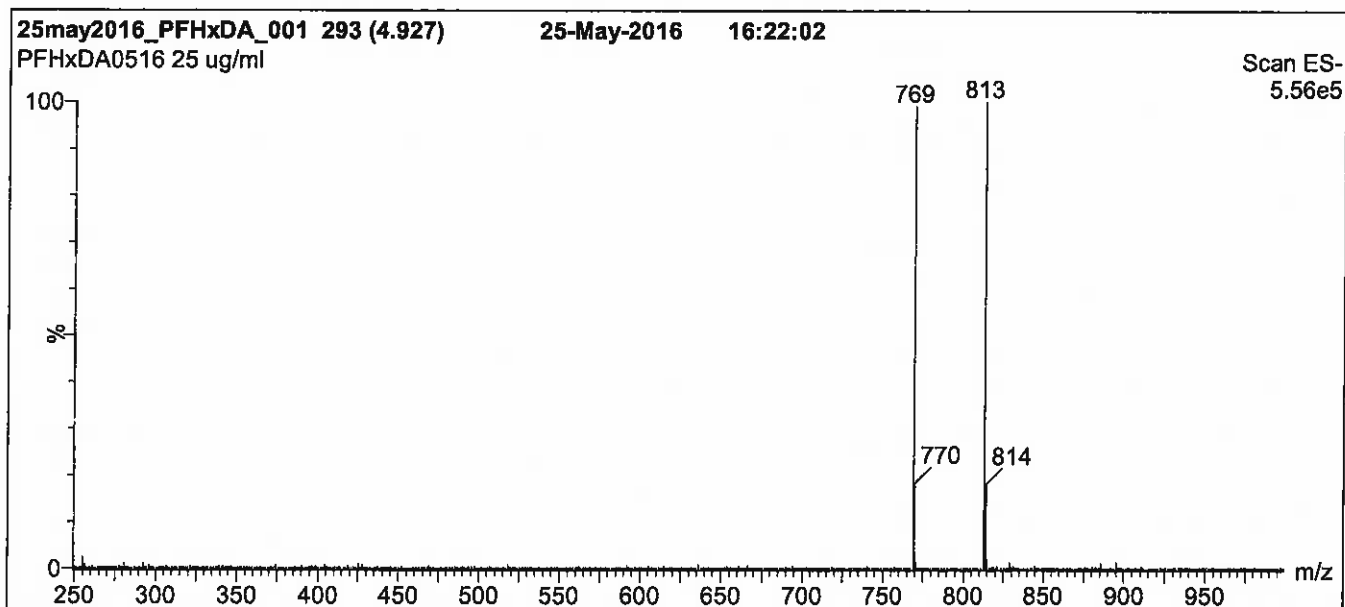
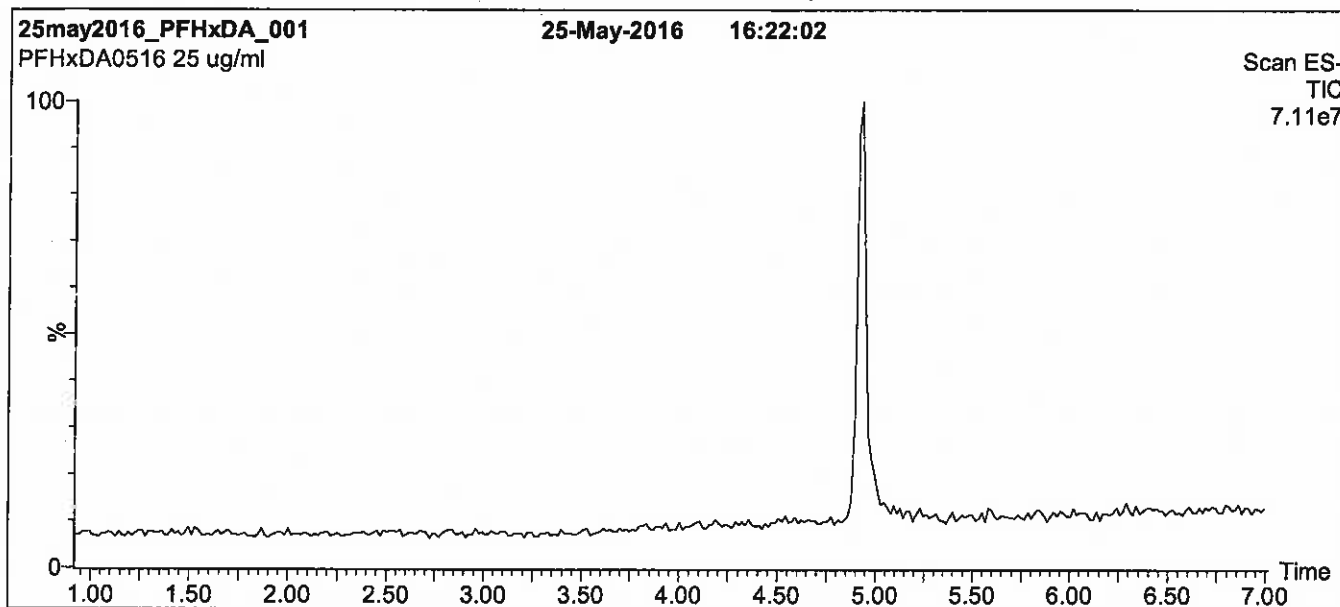
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Figure 1: PFHxDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 70% (80:20 MeOH:ACN) / 30% H₂O
(both with 10 mM NH₄OAc 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

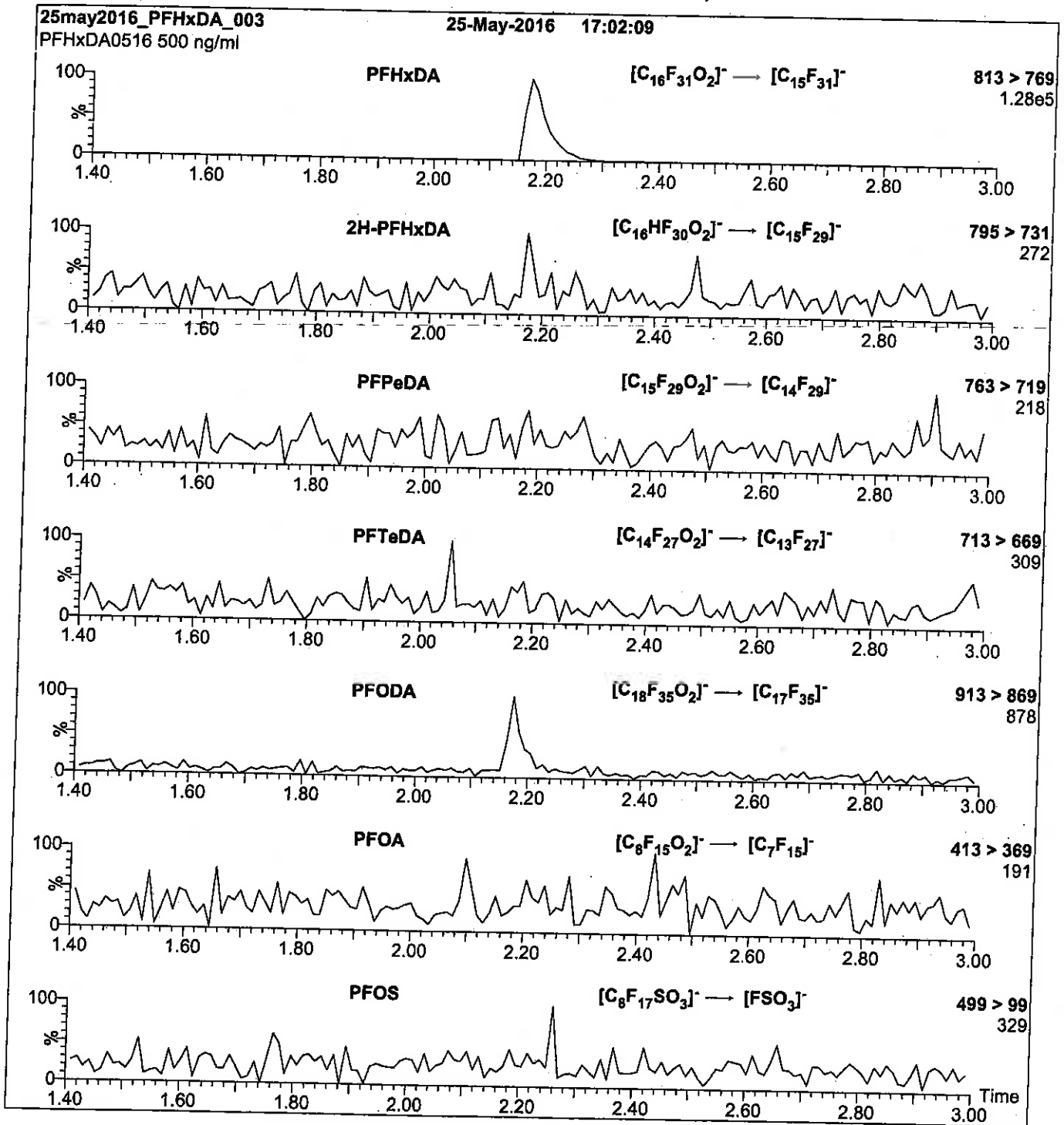
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (250 - 1250 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

Figure 2: PFHxDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 μ l (500 ng/ml PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
 Collision Energy (eV) = 15

Reagent

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



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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.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data
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).

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:

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HAZARDS:

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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:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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Table A: br-PFHxSK; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

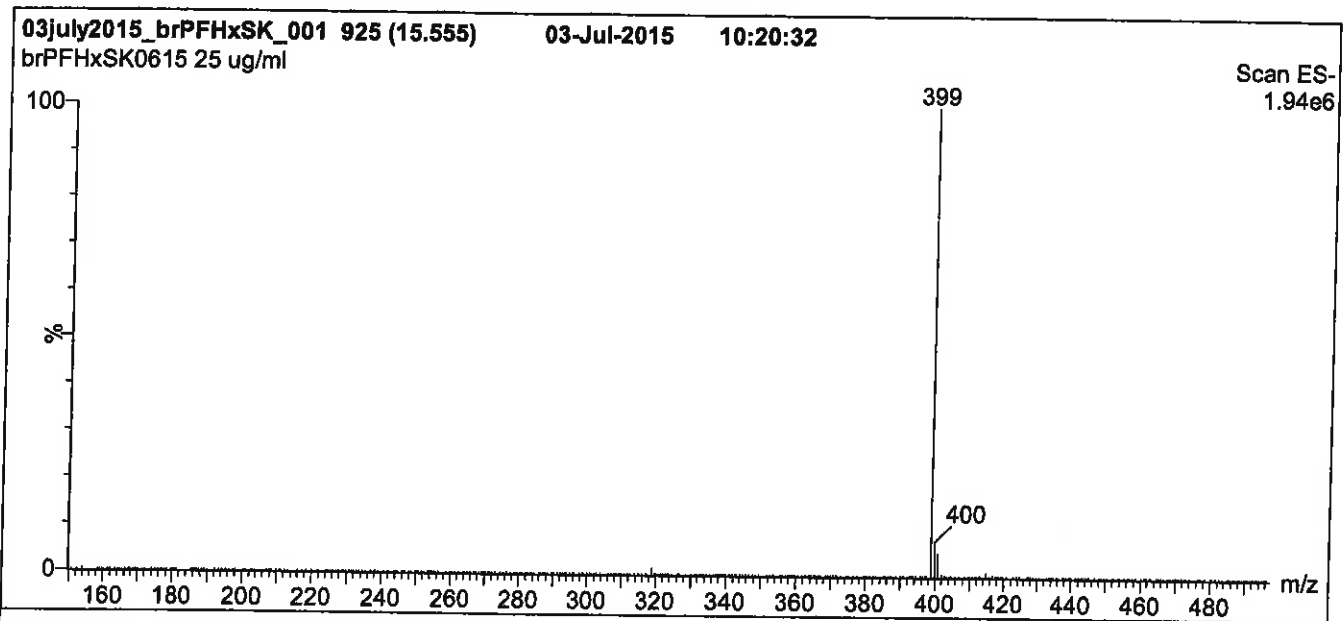
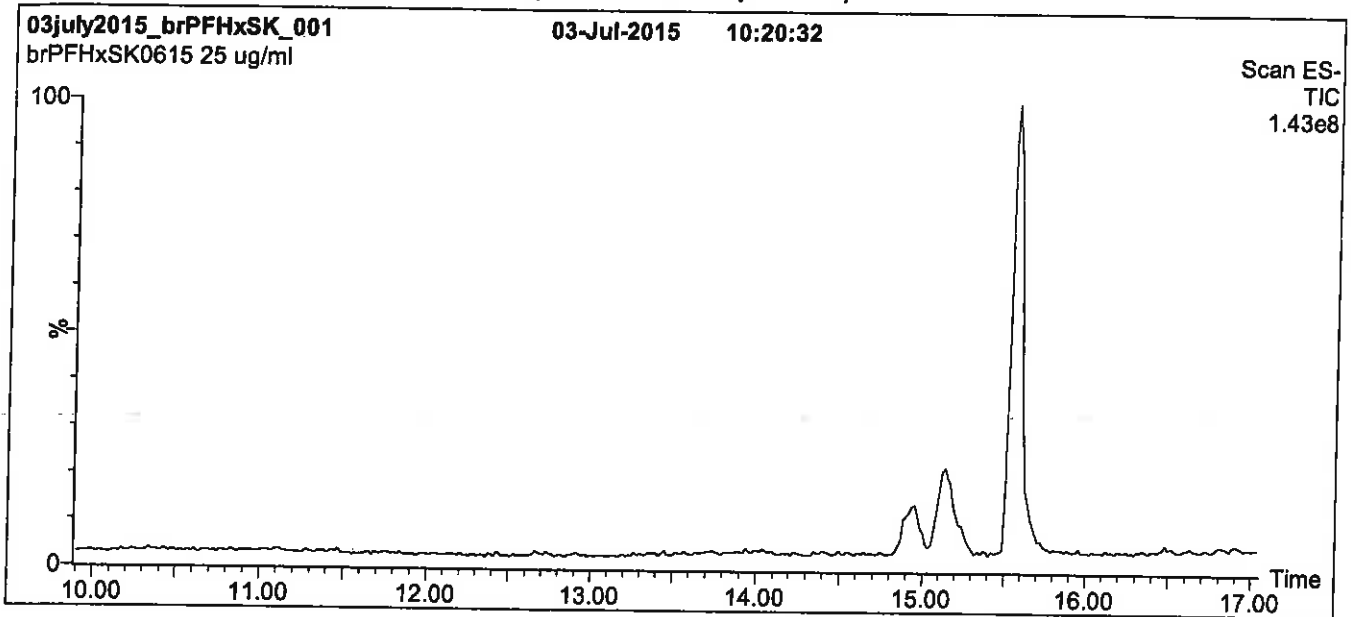
Isomer	Name	Structure	Percent Composition by ¹⁹ F-NMR
1	Potassium perfluoro-1-hexanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 20% (80:20 MeOH:ACN) / 80% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 50% organic over 14 min. Ramp to
90% organic over 3 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 20 min

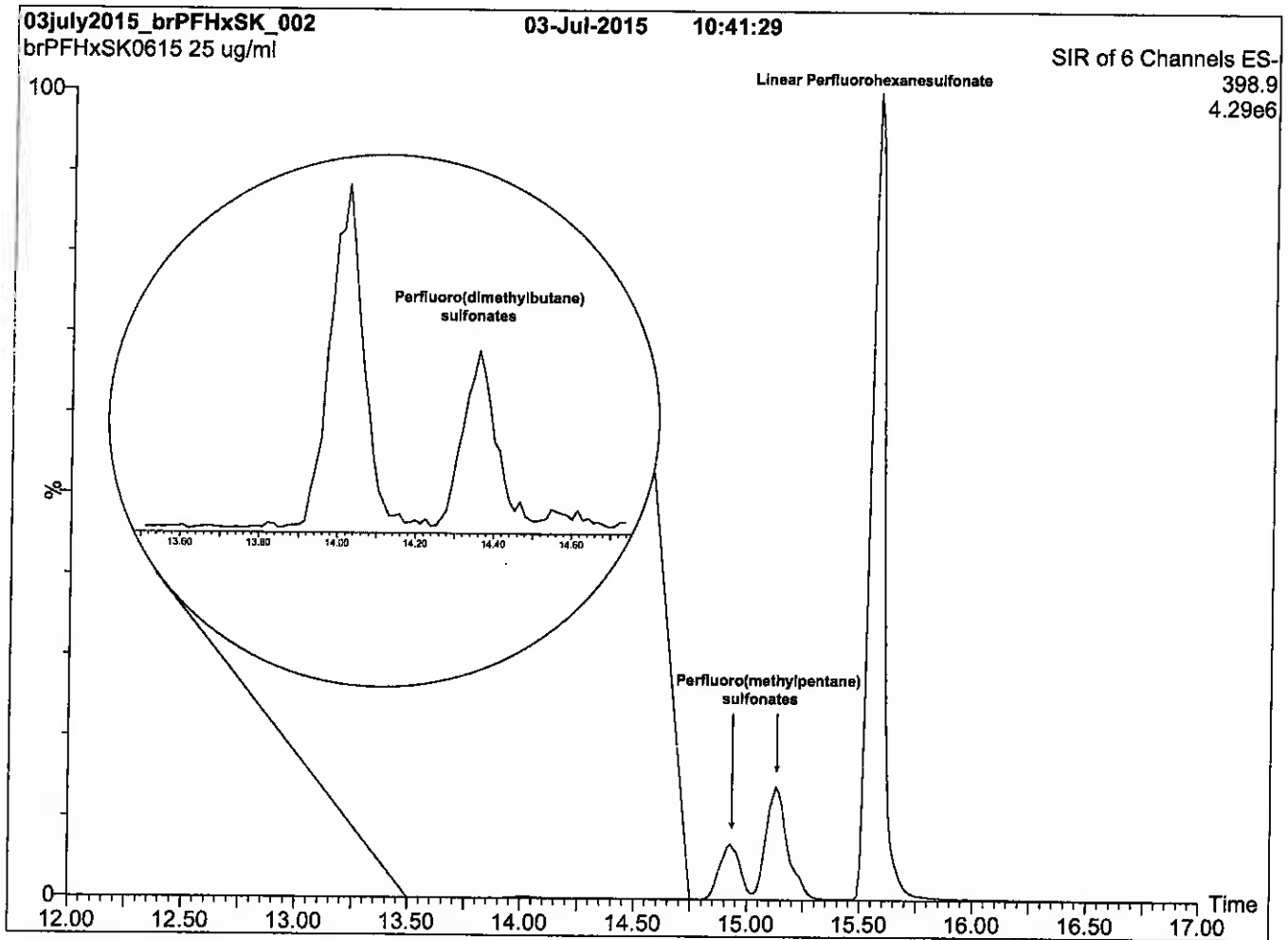
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (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 RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 20% (80:20 MeOH:ACN) / 80% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 50% organic over 14 min. Ramp to
 90% organic over 3 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 20 min

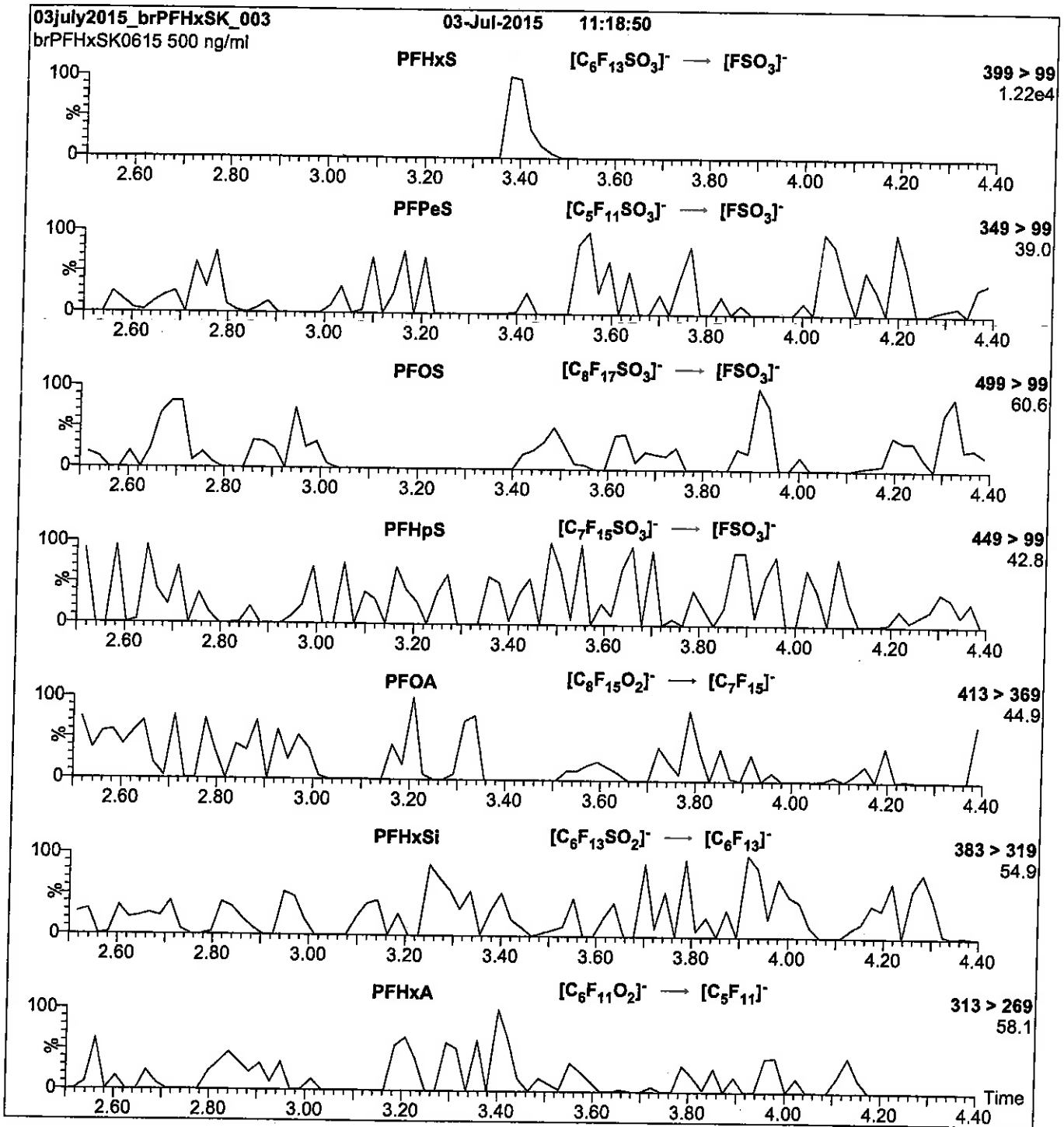
Flow: 300 μ l/min

MS Parameters

Experiment: SIR (6 channels)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 3.00
 Cone Voltage (V) = 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 μ l (500 ng/ml br-PFHxSK)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.54e-3
Collision Energy (eV) = 30

Reagent

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



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:

PFNA

LOT NUMBER:

PFNA1015

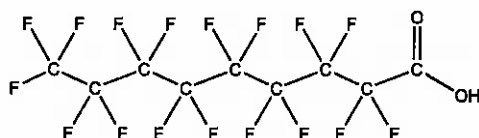
COMPOUND:

Perfluoro-n-nonanoic acid

STRUCTURE:

CAS #:

375-95-1



MOLECULAR FORMULA:

C₉H_F₁₇O₂

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).

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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:

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HAZARDS:

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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:

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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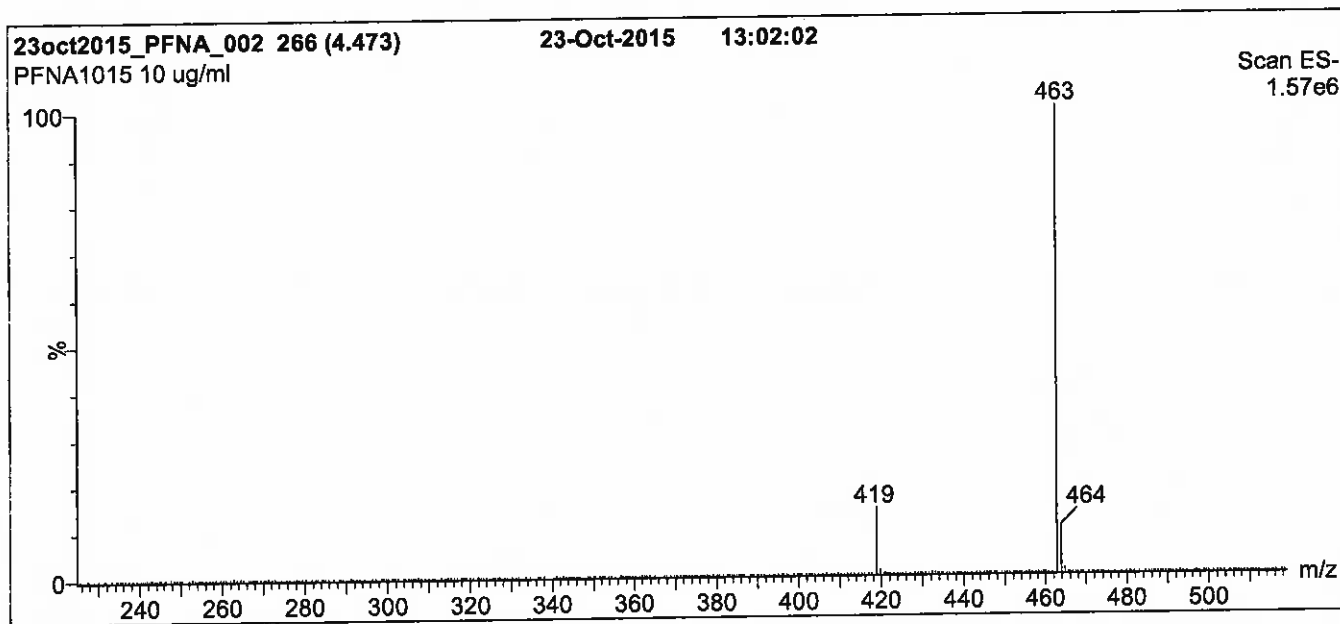
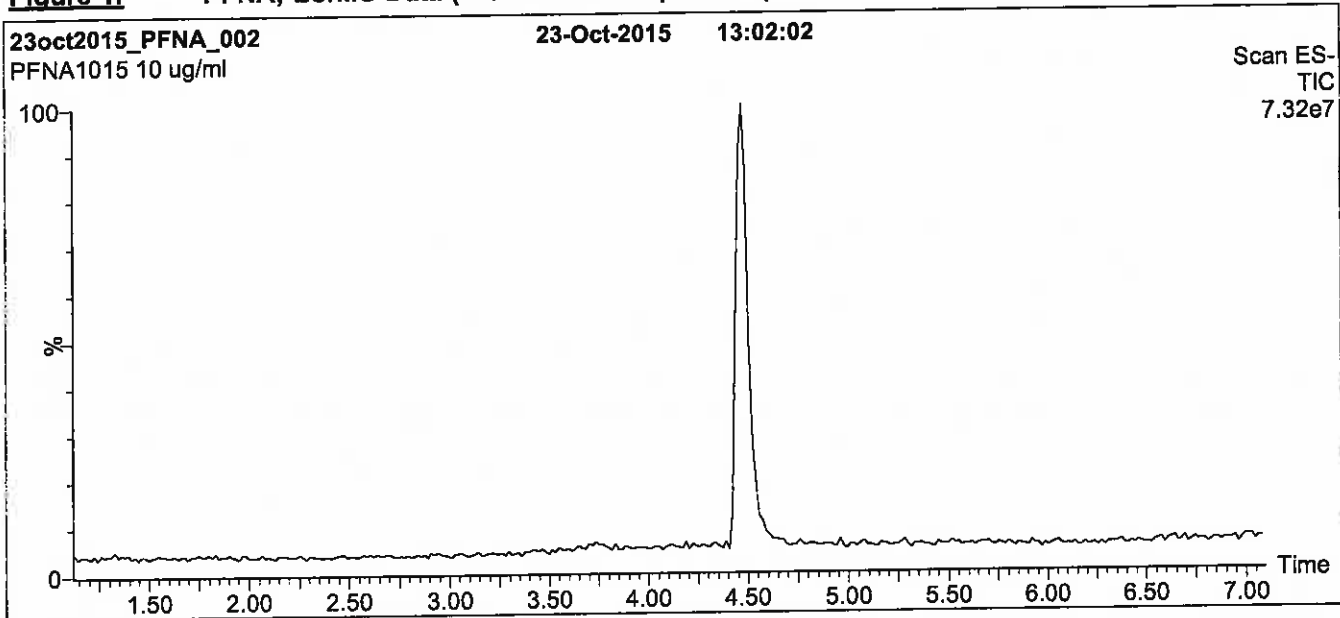
QUALITY MANAGEMENT:

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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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

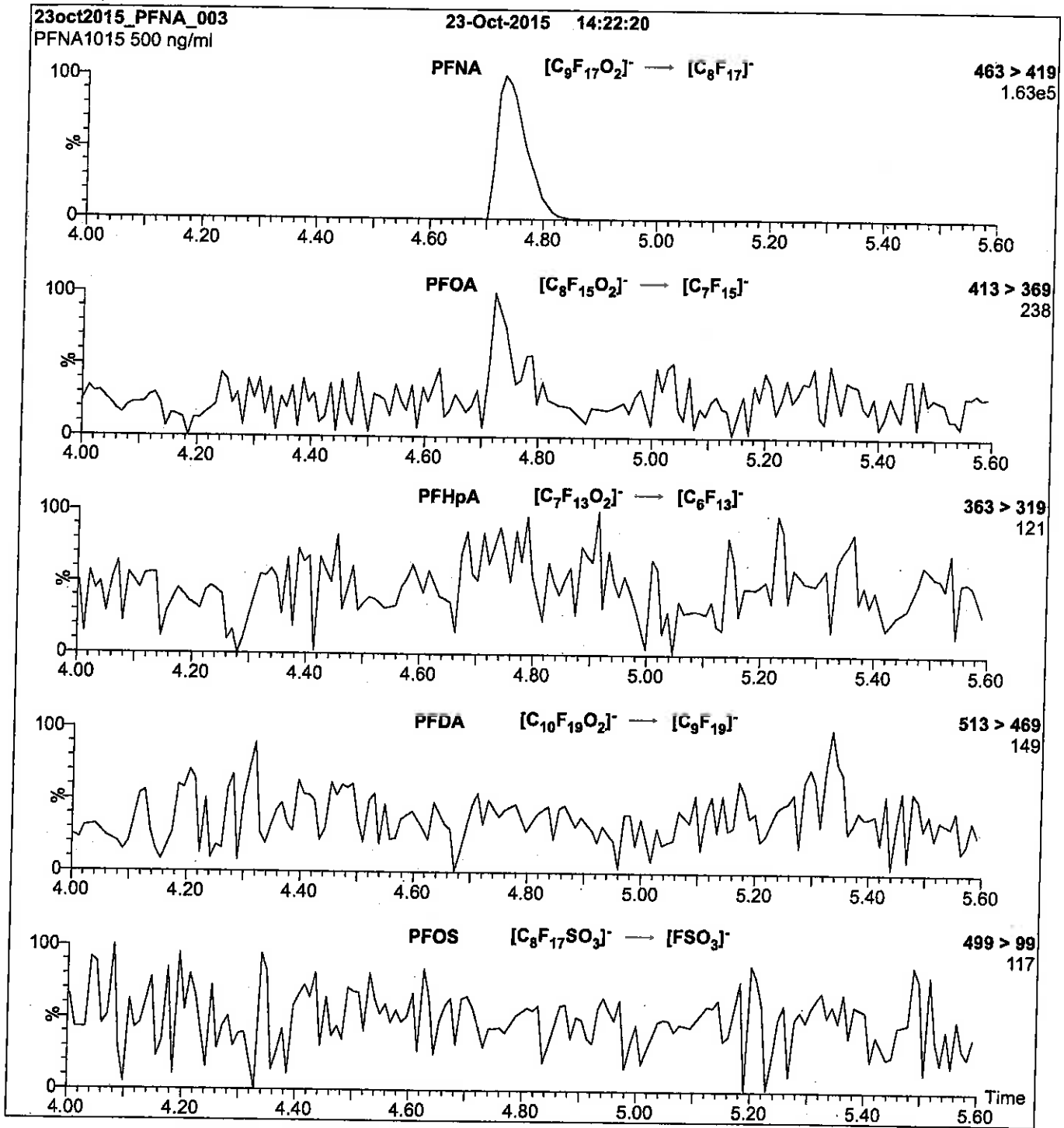
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: PFNA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 μ l (500 ng/ml PFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
 Collision Energy (eV) = 11

Reagent

LCPFOA_00006

R-716/16CBW

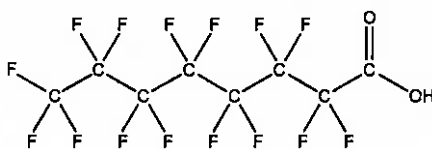
671577
ID: LCPFOA_00006
Exp: 11/06/20 Prod: CBW
PF-n-octanoic acid



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

<u>PRODUCT CODE:</u>	PFOA	<u>LOT NUMBER:</u>	PFOA1115
<u>COMPOUND:</u>	Perfluoro-n-octanoic acid		
<u>STRUCTURE:</u>		<u>CAS #:</u>	335-67-1



<u>MOLECULAR FORMULA:</u>	C ₈ H _F ₁₅ O ₂	<u>MOLECULAR WEIGHT:</u>	414.07
<u>CONCENTRATION:</u>	50 ± 2.5 µg/ml	<u>SOLVENT(S):</u>	Methanol Water (<1%)
<u>CHEMICAL PURITY:</u>	>98%		
<u>LAST TESTED:</u> (mm/dd/yyyy)	11/06/2015		
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	11/06/2020		
<u>RECOMMENDED STORAGE:</u>	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: 11/11/2015
(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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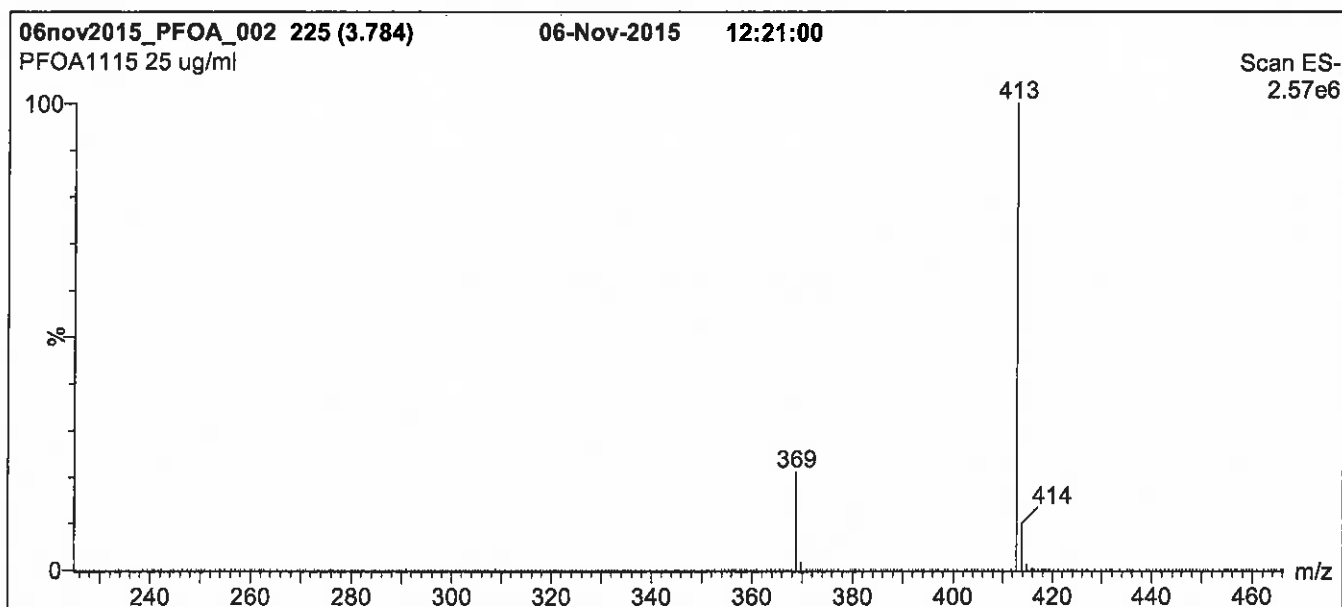
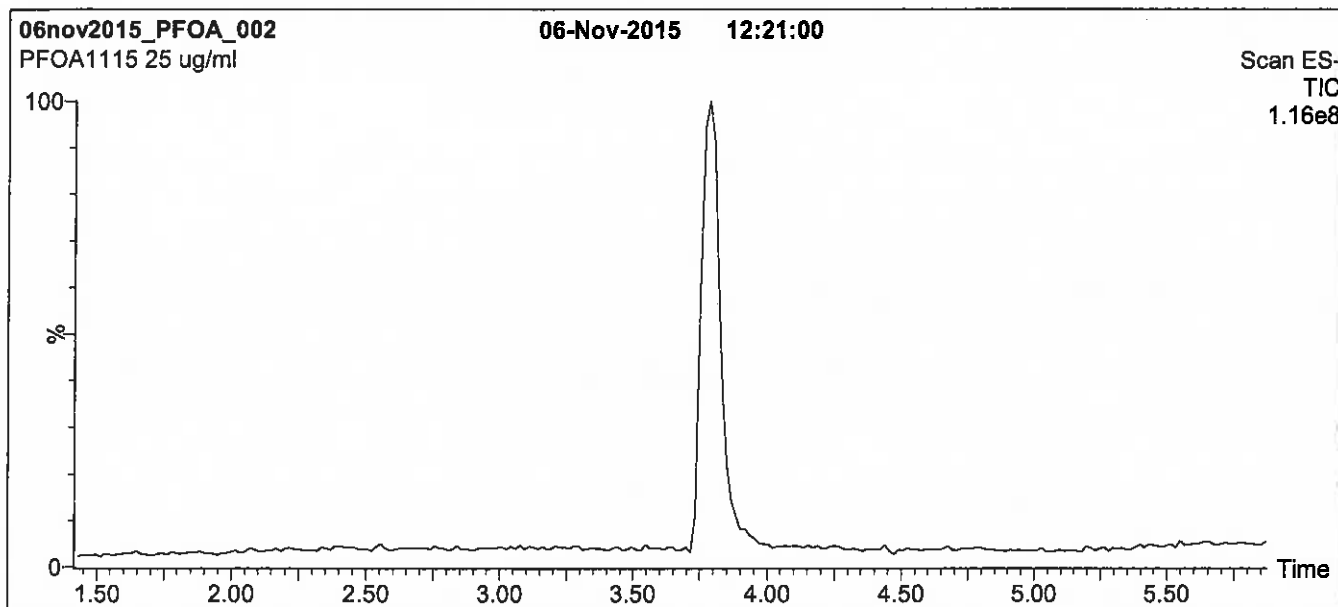
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Figure 1: PFOA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈,
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 50% (80:20 MeOH:ACN) / 50% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for
 2 min before returning to initial conditions in 0.5 min.
 Time: 10 min

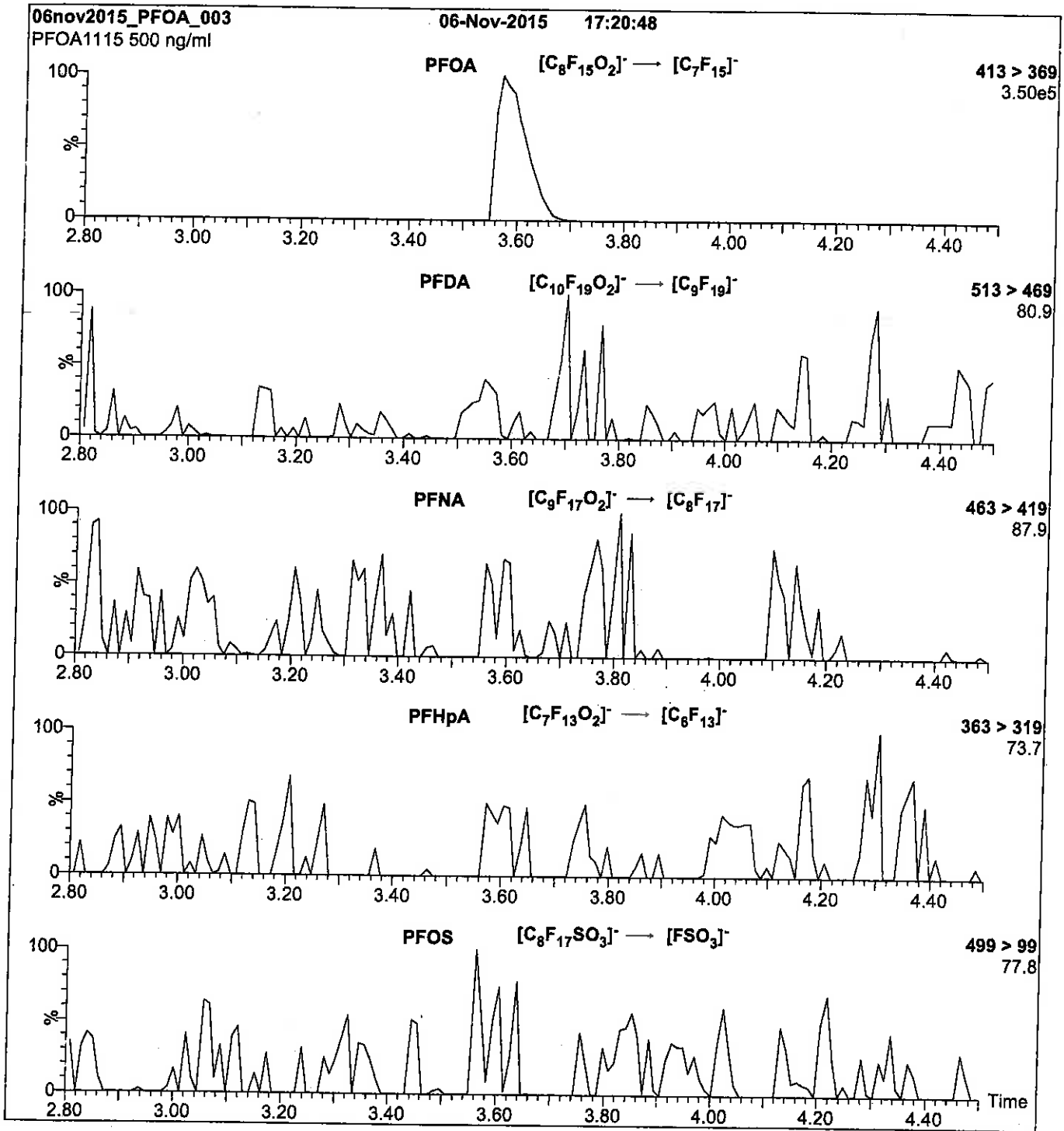
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 3.00
 Cone Voltage (V) = 15.00
 Cone Gas Flow (l/hr) = 100
 Desolvation Gas Flow (l/hr) = 750

Figure 2: PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.17e-3
Collision Energy (eV) = 10

Reagent

LCPFODA_00006

Scanned
07/14/16

R: SBC
9/13/16

730632
ID: LCPFODA_00006
Exp: 04/29/21 Prod: SBC
PFODA stock 50ug/mL

730633
ID: LCPFODA_00007
Exp: 04/29/21 Prod: SBC
PFODA stock 50ug/mL

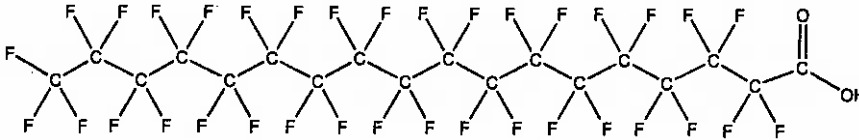


WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFODA **LOT NUMBER:** PFODA0416
COMPOUND: Perfluoro-n-octadecanoic acid

STRUCTURE: **CAS #:** 16517-11-6



MOLECULAR FORMULA: C₁₈H_F₃₆O₂ **MOLECULAR WEIGHT:** 914.14
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 04/29/2016
EXPIRY DATE: (mm/dd/yyyy) 04/29/2021
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: 05/20/2016

(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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UNCERTAINTY:

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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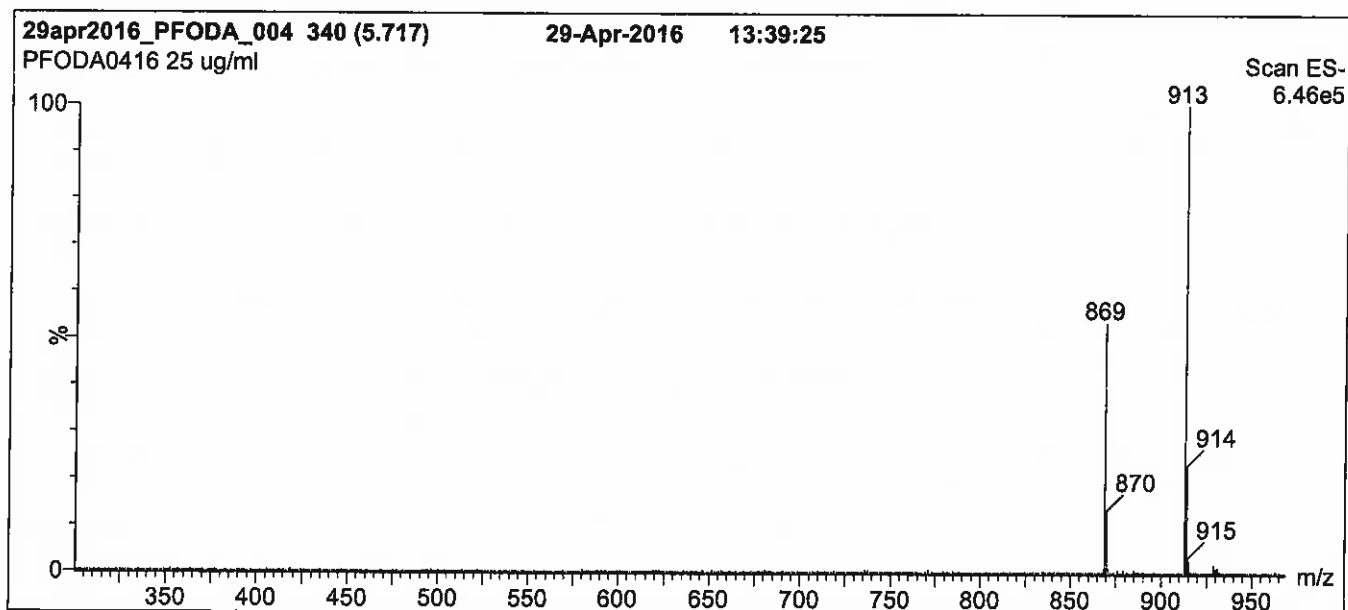
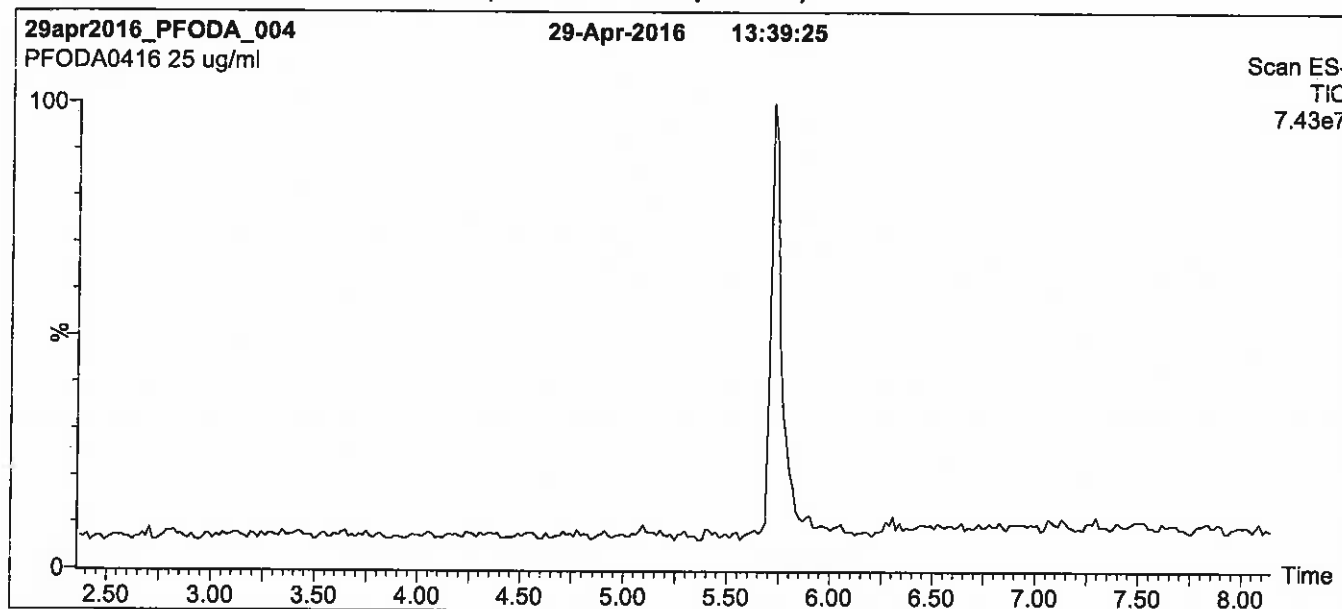
QUALITY MANAGEMENT:

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: PFODA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 70% (80:20 MeOH:ACN) / 30% H₂O
(both with 10 mM NH₄OAc 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

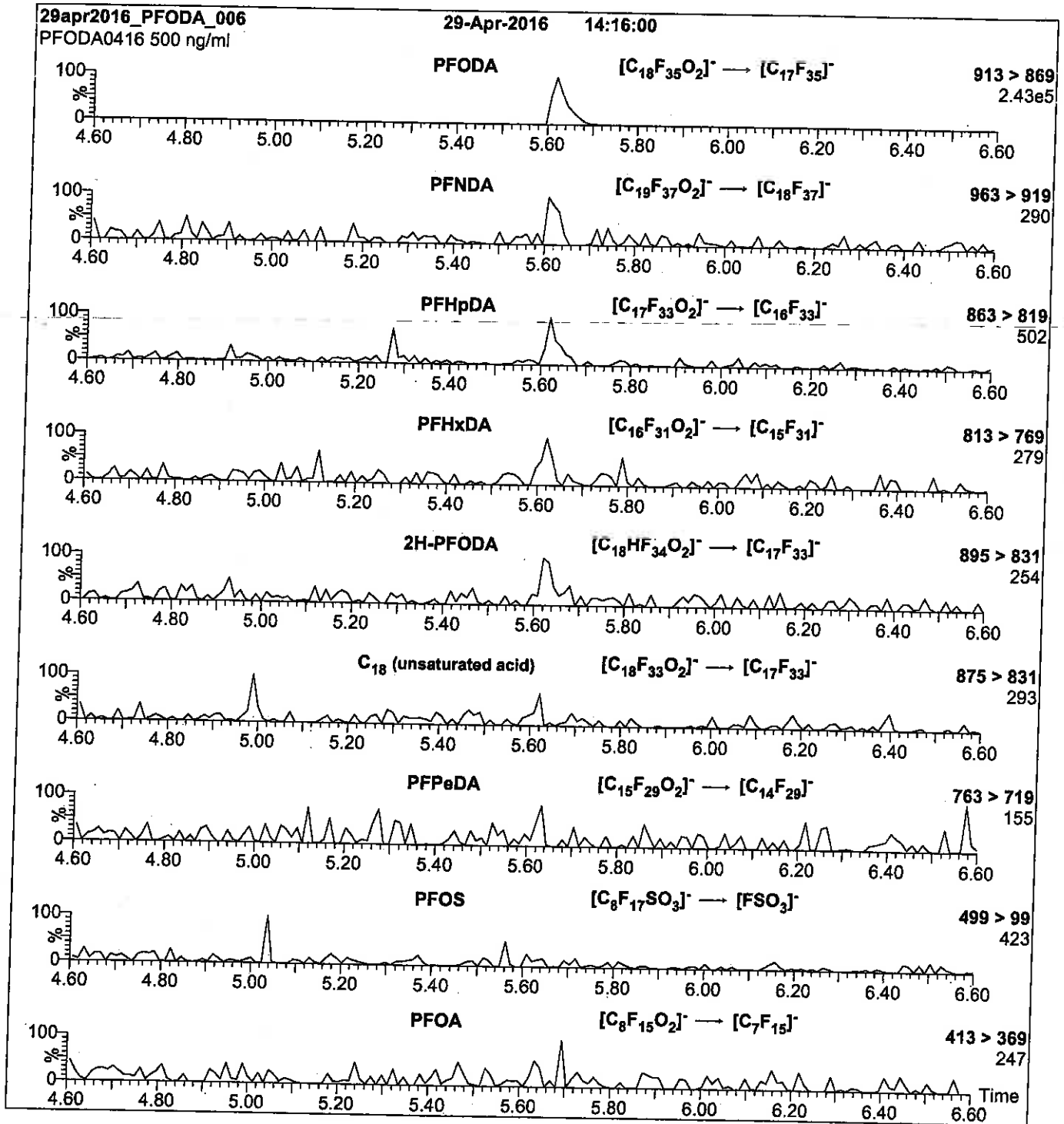
Flow: 300 μ l/min

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% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 15

Reagent

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 ¹⁹F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer; potassium salt).

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Table A: br-PFOSK; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

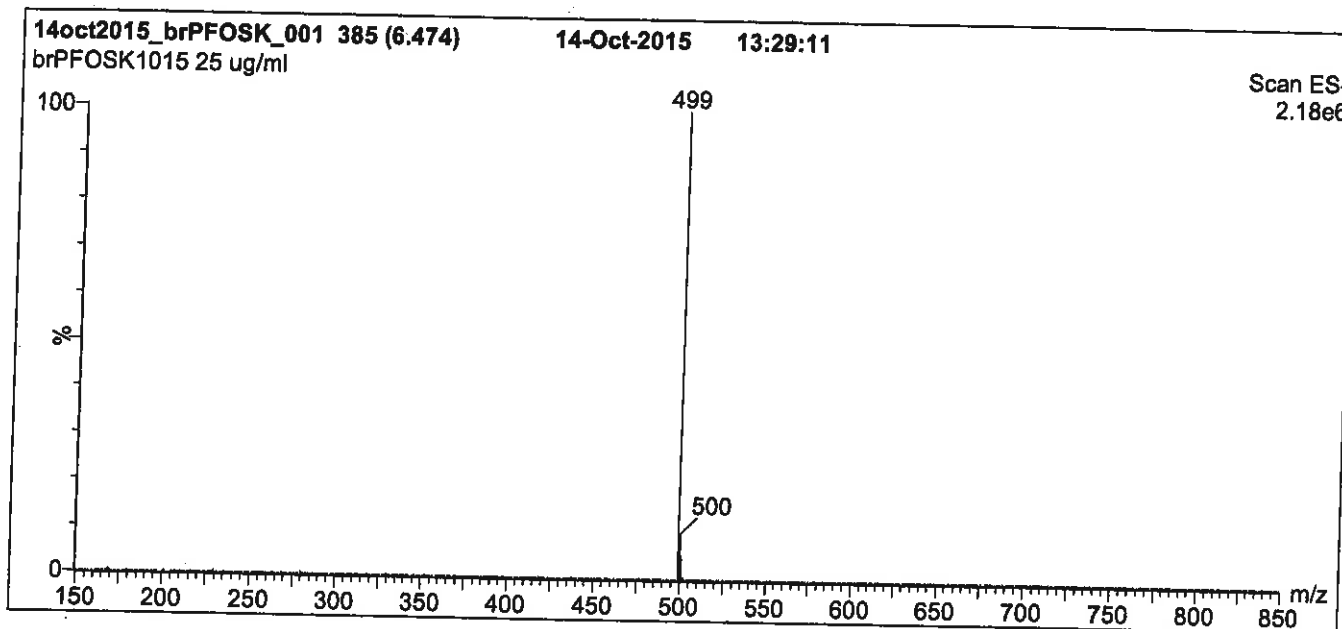
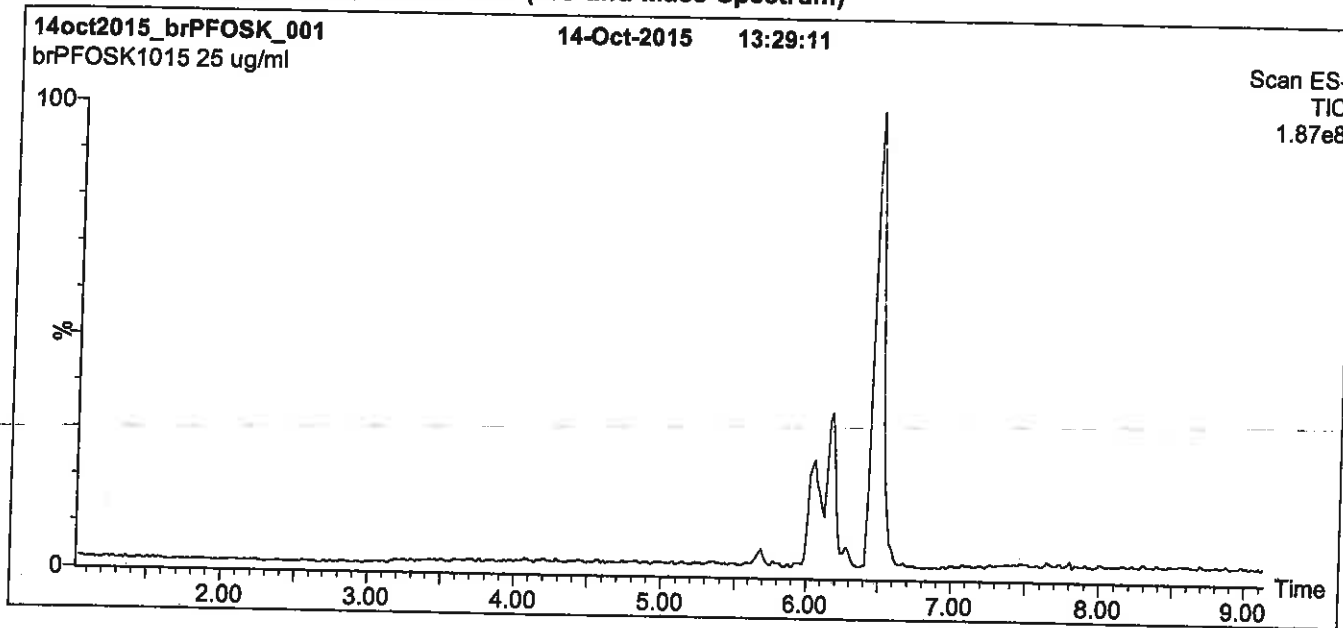
Isomer	Name	Structure	Percent Composition by ¹⁹ F-NMR
1	Potassium perfluoro-1-octanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	1.2
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	0.6
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	1.9
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	2.2
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	4.5
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	10.0
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ -C-CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF ₂ -C-CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	0.03
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ -CF-CF-CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃ CF ₃	0.4
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ -CF-CF ₂ -CF-CF ₂ CF ₂ SO ₃ K ⁺ CF ₃ CF ₃	0.07

* Percent of total perfluorooctanesulfonate isomers only. Isomers are labeled in Figure 2.
 ** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: 
 B.G. Chittim

Date: 10/15/2015
(mm/dd/yyyy)

Figure 1: br-PFOSK; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈,
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 45% (80:20 MeOH:ACN) / 55% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 12 min and hold for 2 min.
 Return to initial conditions over 0.5 min.
 Time: 16 min

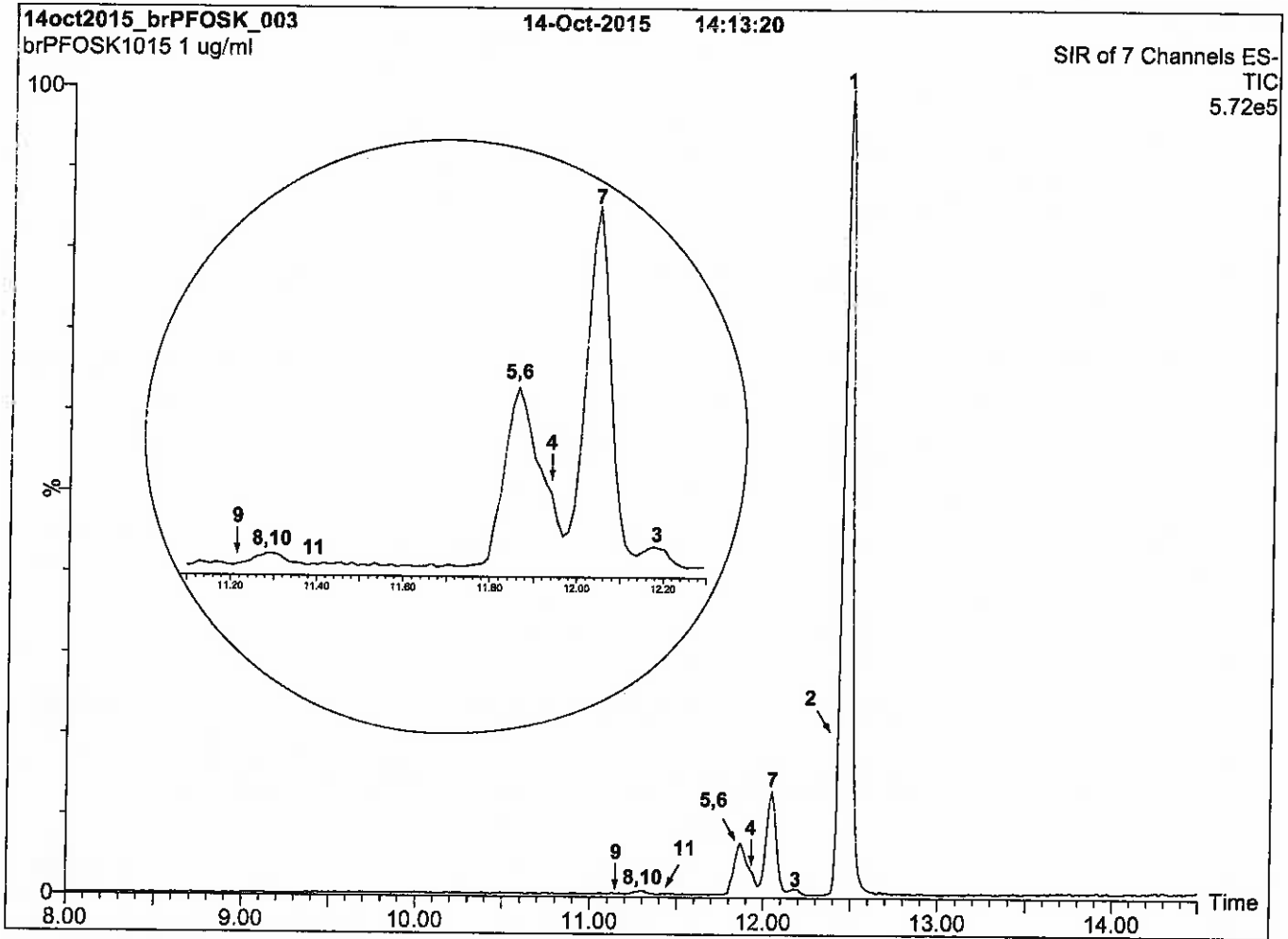
Flow: 300 μ l/min

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

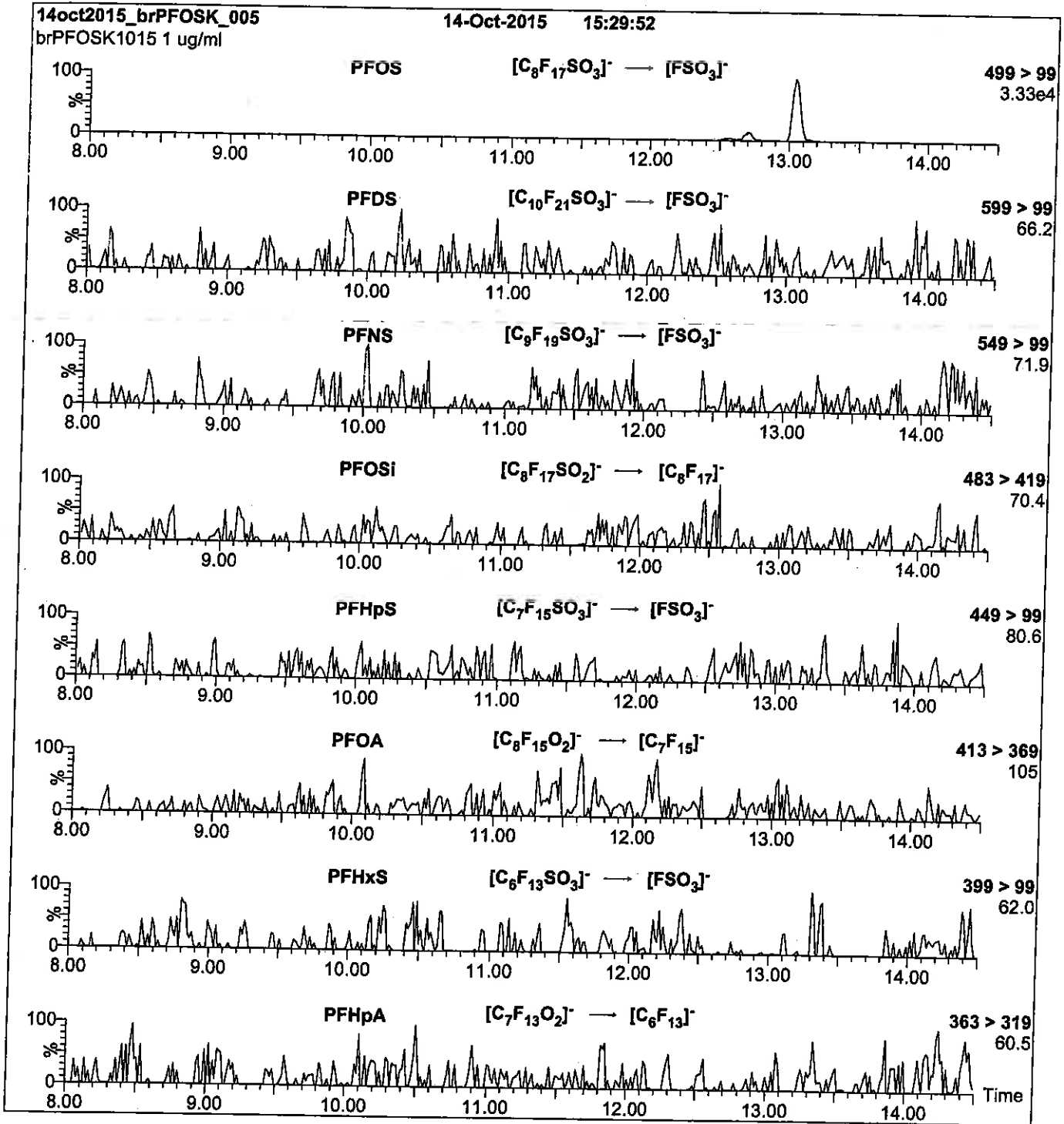
Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈ (1.7 μ m, 2.1 x 100 mm)
Injection: 1.0 μ g/ml of br-PFOSK
Mobile Phase: Gradient
45% (80:20 MeOH:ACN) / 55% H₂O (both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 15 min and hold for 3 min.
Return to initial conditions over 1 min.
Time: 20 min
Flow: 300 μ l/min

MS Conditions:

SIR (ES)
Source = 110 °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 μ /min

MS Parameters

Collision Gas (mbar) = 3.06e-3

Collision Energy (eV) = 11-50 (variable)

Reagent

LCPFOSA_00008

Scanned
10/14/16

R: SBC 9/13/16



730534
ID: LCPFOA_00009
Exp: 09/02/17 Prod: SBC
PF-1-octanesulfonamide



730533
ID: LCPFOA_00008
Exp: 09/02/17 Prod: SBC
PF-1-octanesulfonamide



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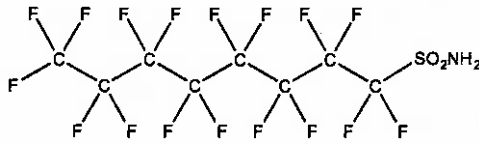
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FOSA-I
COMPOUND: Perfluoro-1-octanesulfonamide

LOT NUMBER: FOSA0815I

STRUCTURE:

CAS #: 754-91-6



MOLECULAR FORMULA: C₈H₂F₁₇NO₂S
CONCENTRATION: 50 ± 2.5 µg/ml
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/02/2015
EXPIRY DATE: (mm/dd/yyyy) 09/02/2017
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 499.14
SOLVENT(S): Isopropanol

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim

Date: 09/11/2015
(mm/dd/yyyy)

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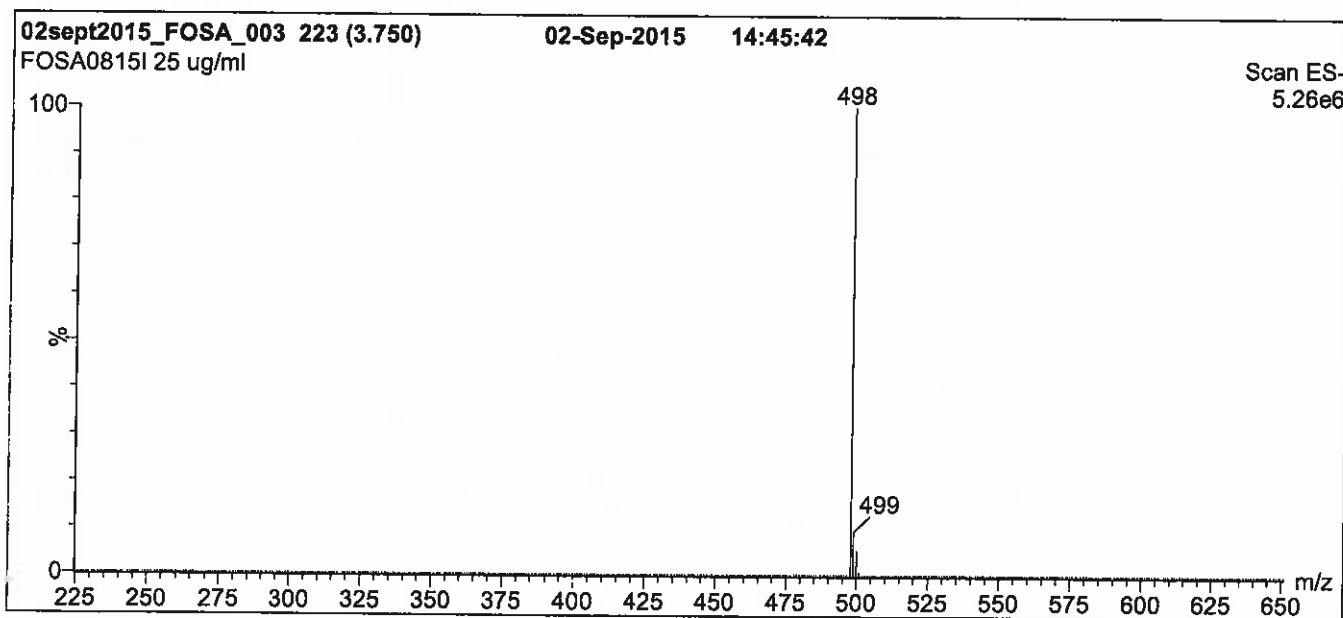
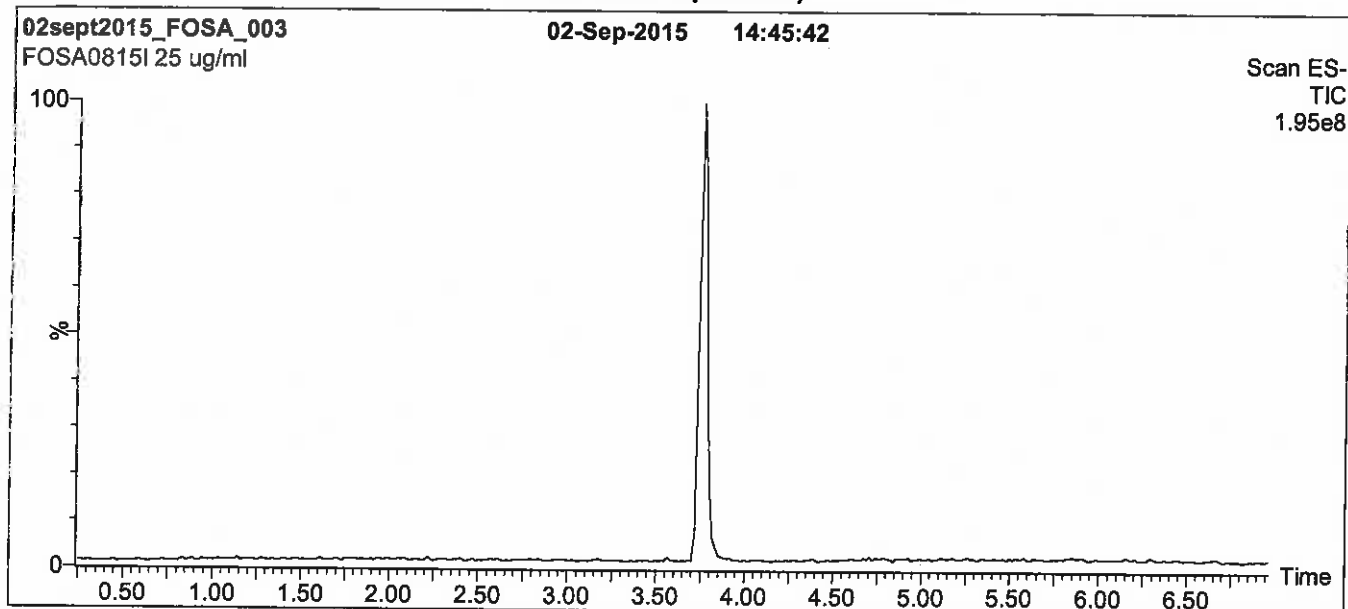
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Figure 1: FOSA-I; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

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MS: Micromass Quattro micro API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈,
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 60% (80:20 MeOH:ACN) / 40% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

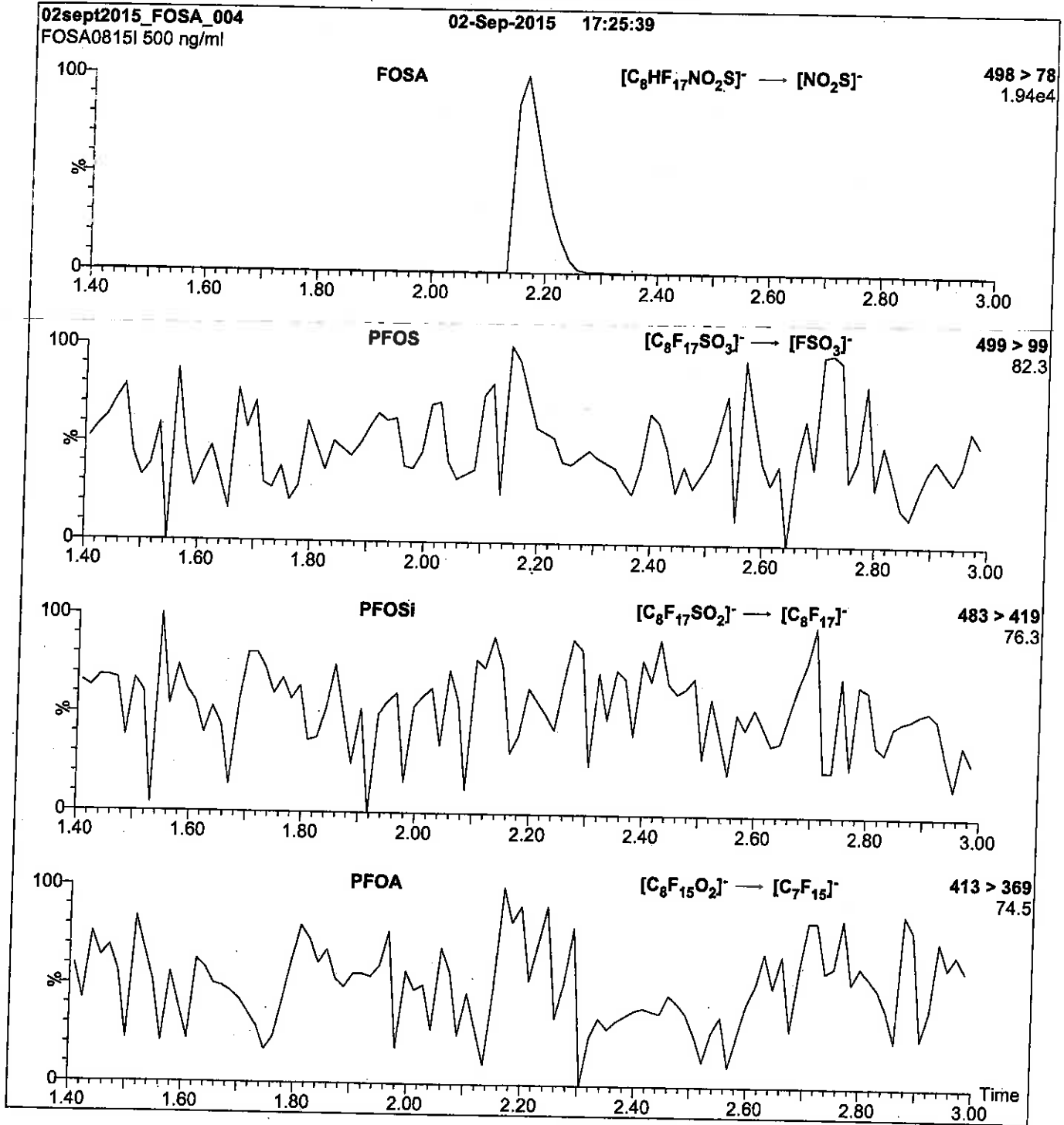
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.50
 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 μ l (500 ng/ml FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.54e-3
Collision Energy (eV) = 30

Reagent

LCFPeA_00005

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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:

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.

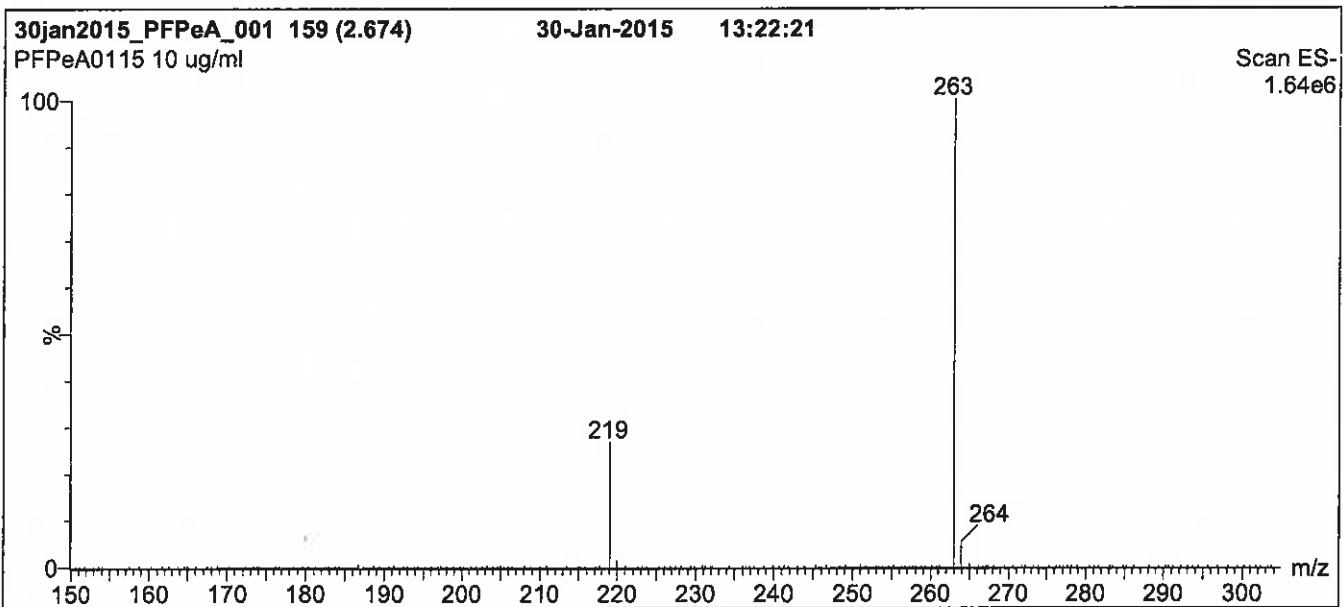
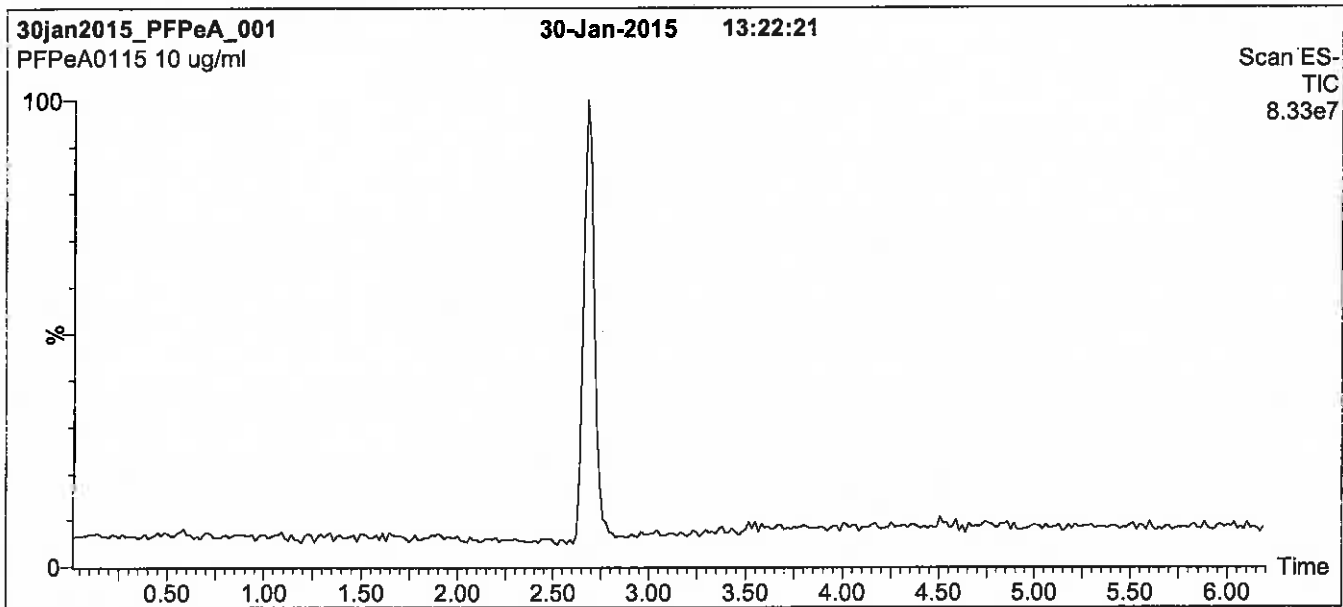
QUALITY MANAGEMENT:

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: PFPeA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 30% (80:20 MeOH:ACN) / 70% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7.5 min and hold for 1 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

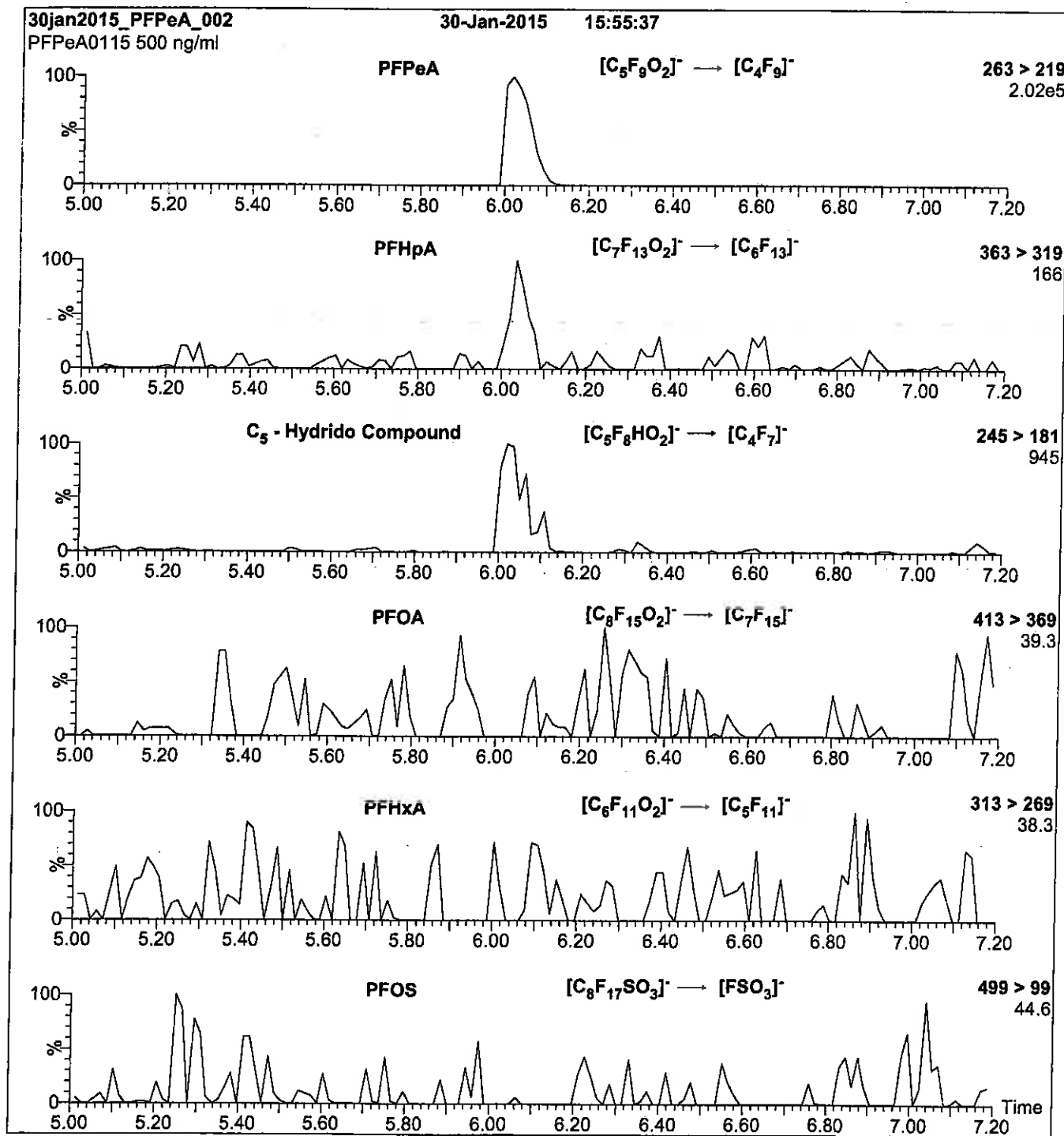
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.00
 Cone Voltage (V) = 15.00
 Cone Gas Flow (l/hr) = 60
 Desolvation Gas Flow (l/hr) = 750

Figure 2: PFPeA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 µl (500 ng/ml PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
 Collision Energy (eV) = 9

Reagent

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

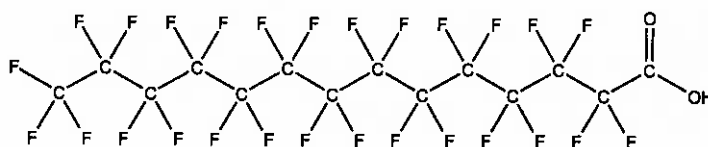


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFTeDA **LOT NUMBER:** PFTeDA1215
COMPOUND: Perfluoro-n-tetradecanoic acid

STRUCTURE: **CAS #:** 376-06-7



MOLECULAR FORMULA: C₁₄H_{F₂₇}O₂ **MOLECULAR WEIGHT:** 714.11
CONCENTRATION: 50 ± 2.5 µg/ml **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 (C₁₂H_{F₂₃}O₂) and ~ 0.2% of PFPeDA (C₁₆H_{F₂₉}O₂).

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
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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LIMITED WARRANTY:

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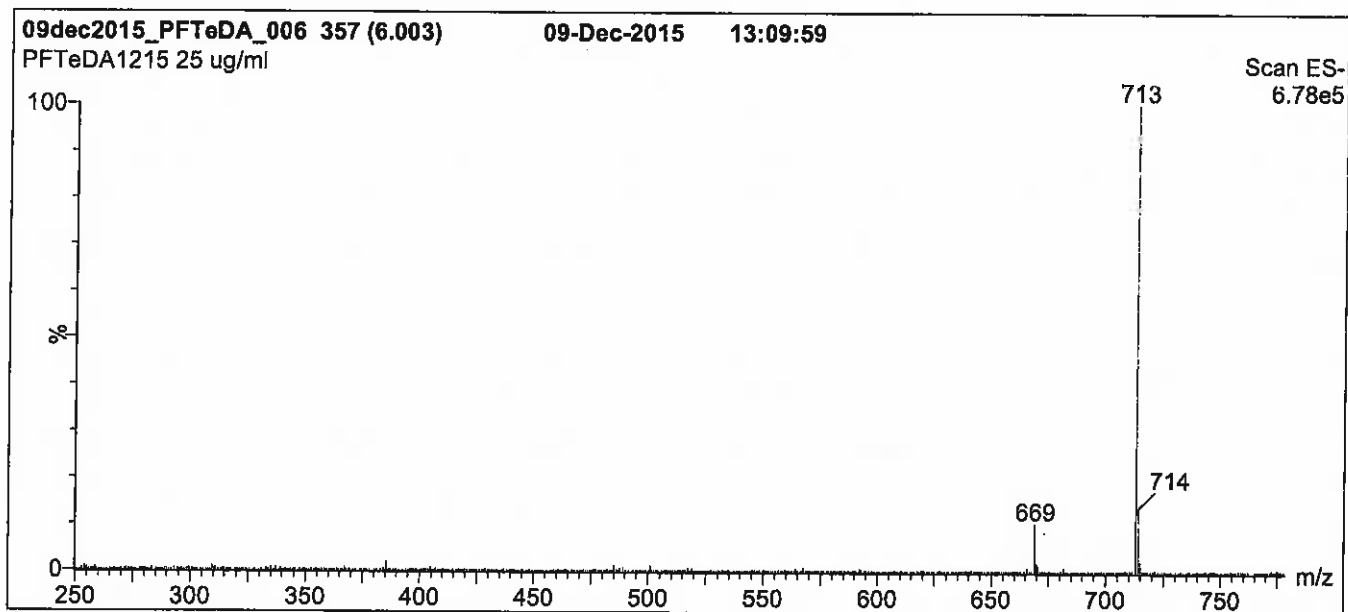
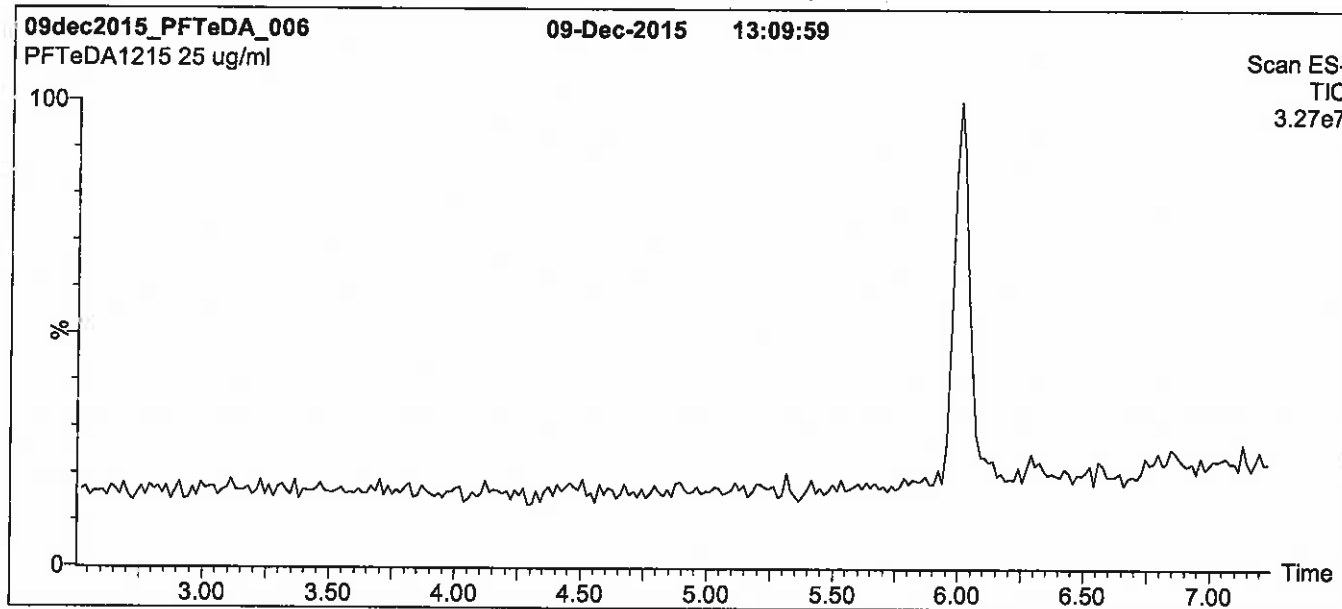
QUALITY MANAGEMENT:

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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 RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 65% (80:20 MeOH:ACN) / 35% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7.5 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

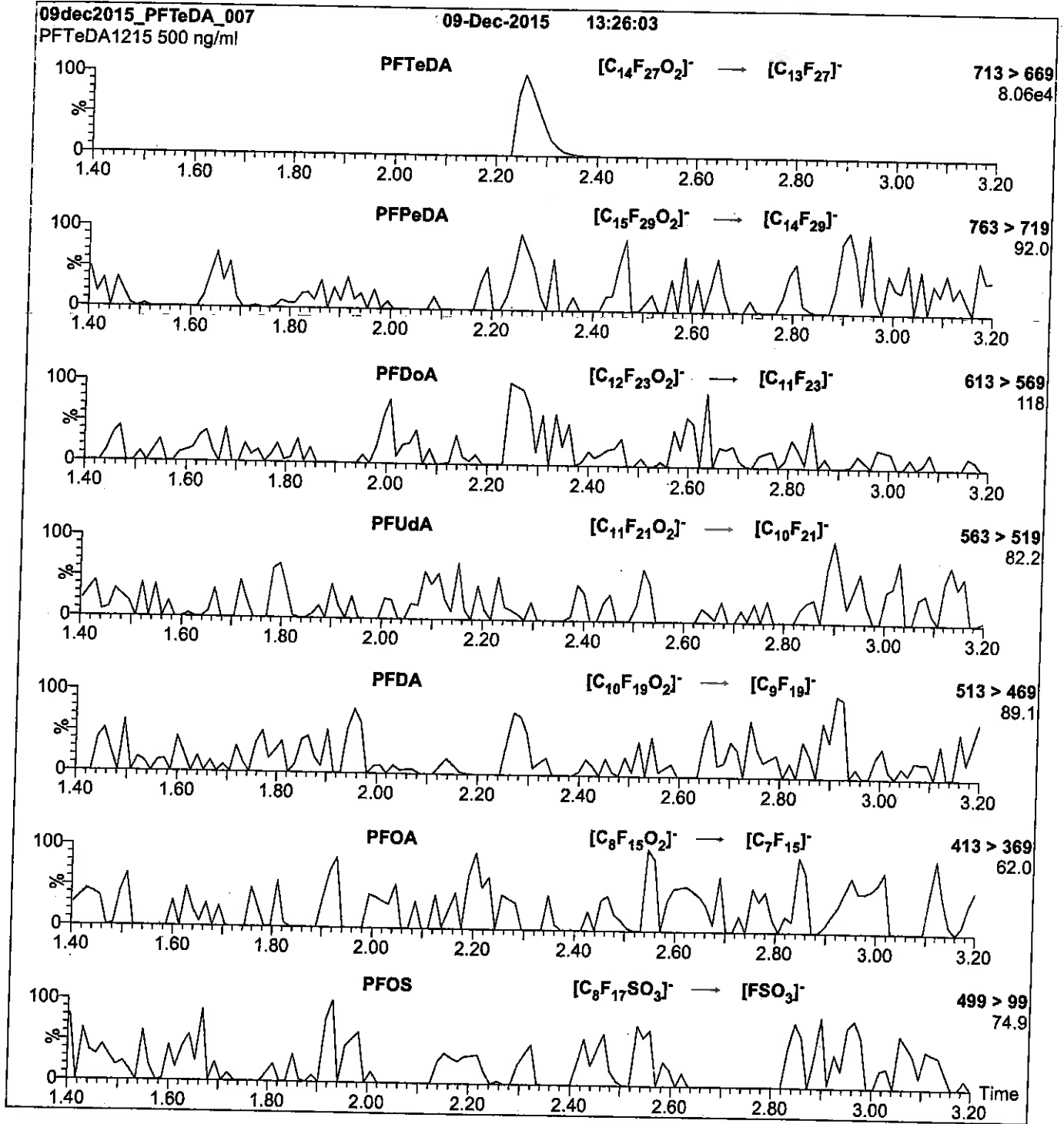
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (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 μ l (500 ng/ml PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 14

Reagent

LCPFT_rDA_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

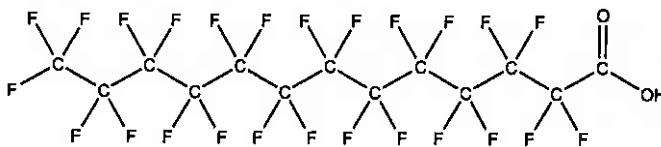


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LABORATORIES

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:

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HAZARDS:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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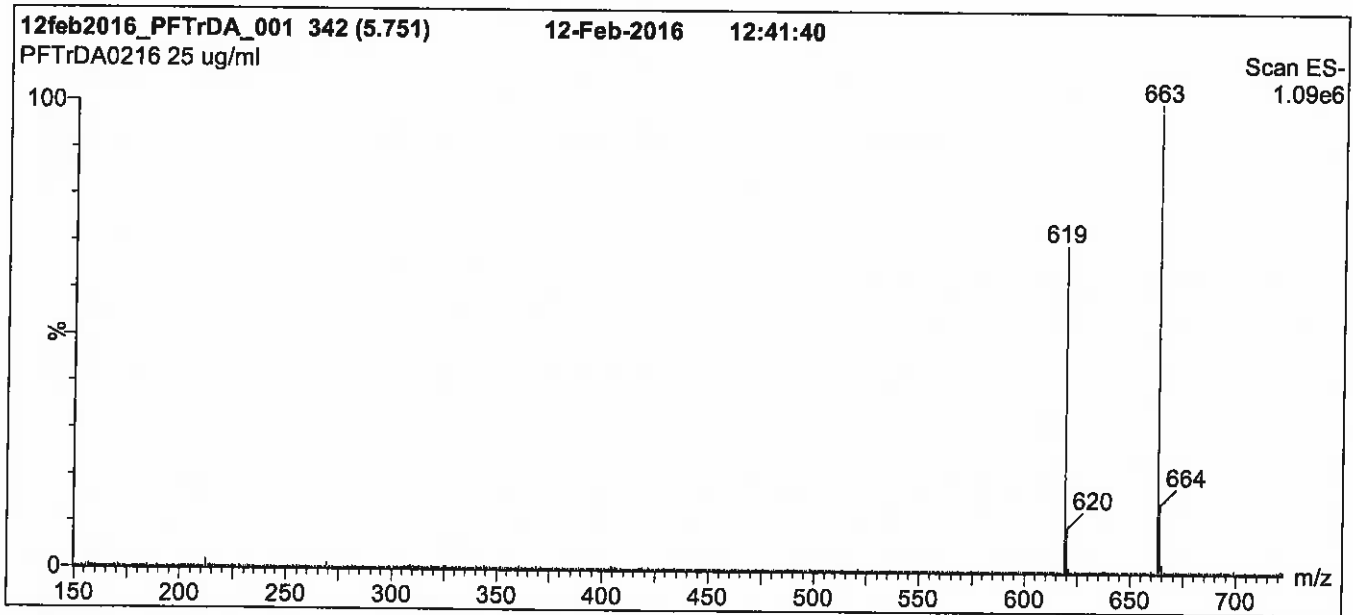
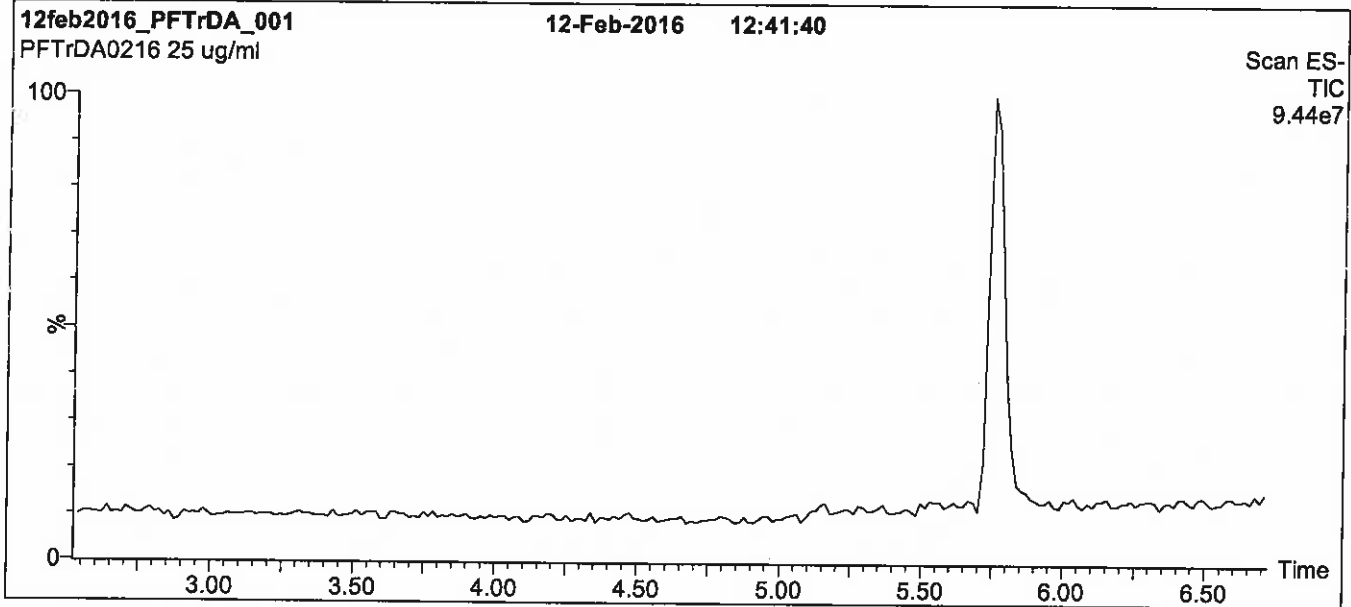
QUALITY MANAGEMENT:

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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 RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 60% (80:20 MeOH:ACN) / 40% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

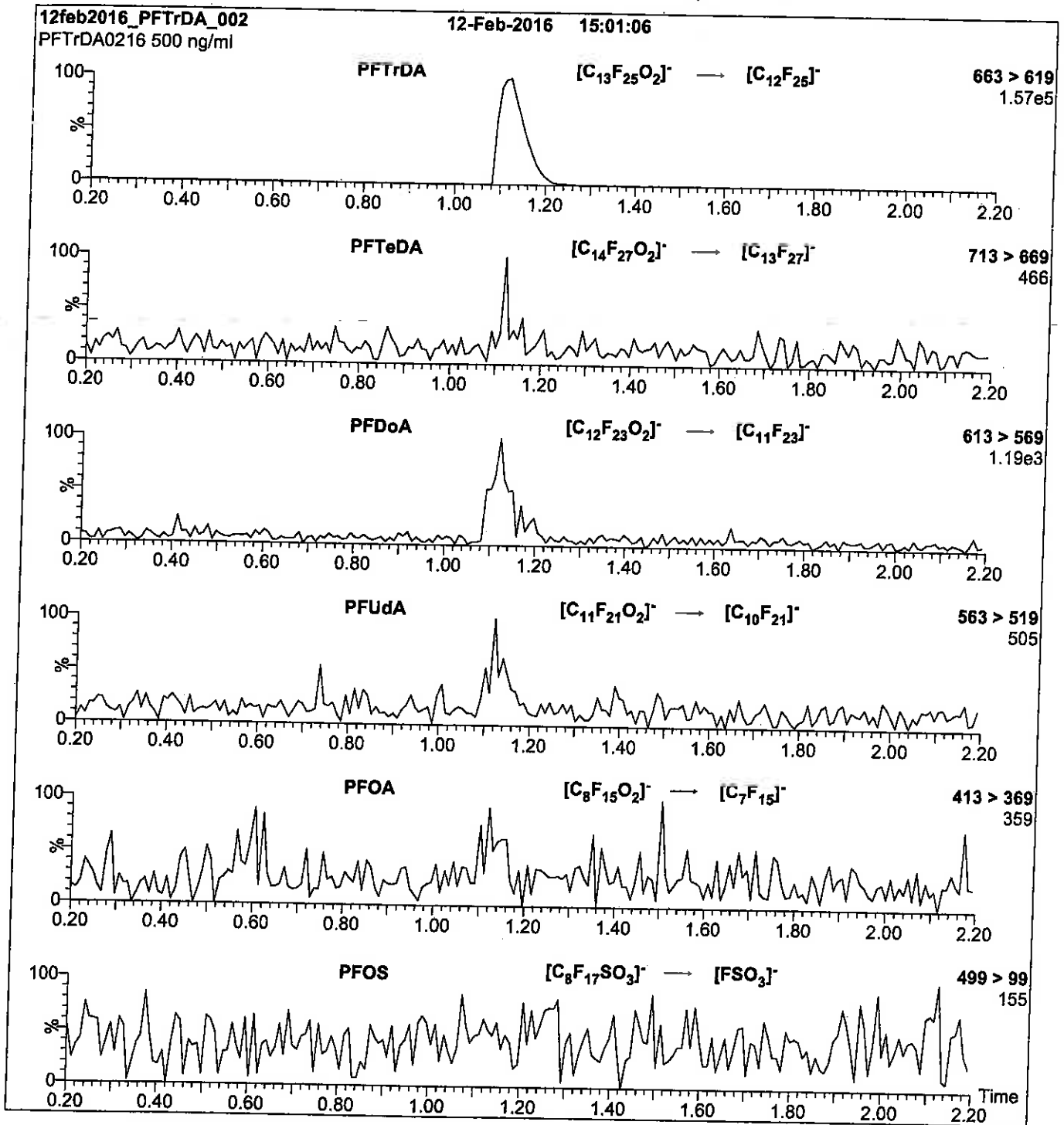
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (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 μ l (500 ng/ml PFTrDA)

Mobile phase: Isocratic 80% MeOH / 20% H₂O

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 15

Reagent

LCPFUdA_00005

Scanned
10/14/16 R: SBC 9/13/16



730535
ID: LCPFUdA_00005
Exp: 08/19/20 Prj: SBC
PF-n-undecanoic acid



730536
ID: LCPFUdA_00006
Exp: 08/19/20 Prj: SBC
PF-n-undecanoic acid

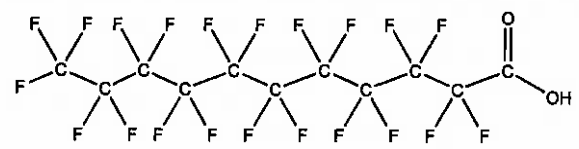


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFUdA **LOT NUMBER:** PFUdA0815
COMPOUND: Perfluoro-n-undecanoic acid

STRUCTURE: **CAS #:** 2058-94-8



MOLECULAR FORMULA: C₁₁H_{F₂₁}O₂
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 564.09
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
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.

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:

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EXPIRY DATE / PERIOD OF VALIDITY:

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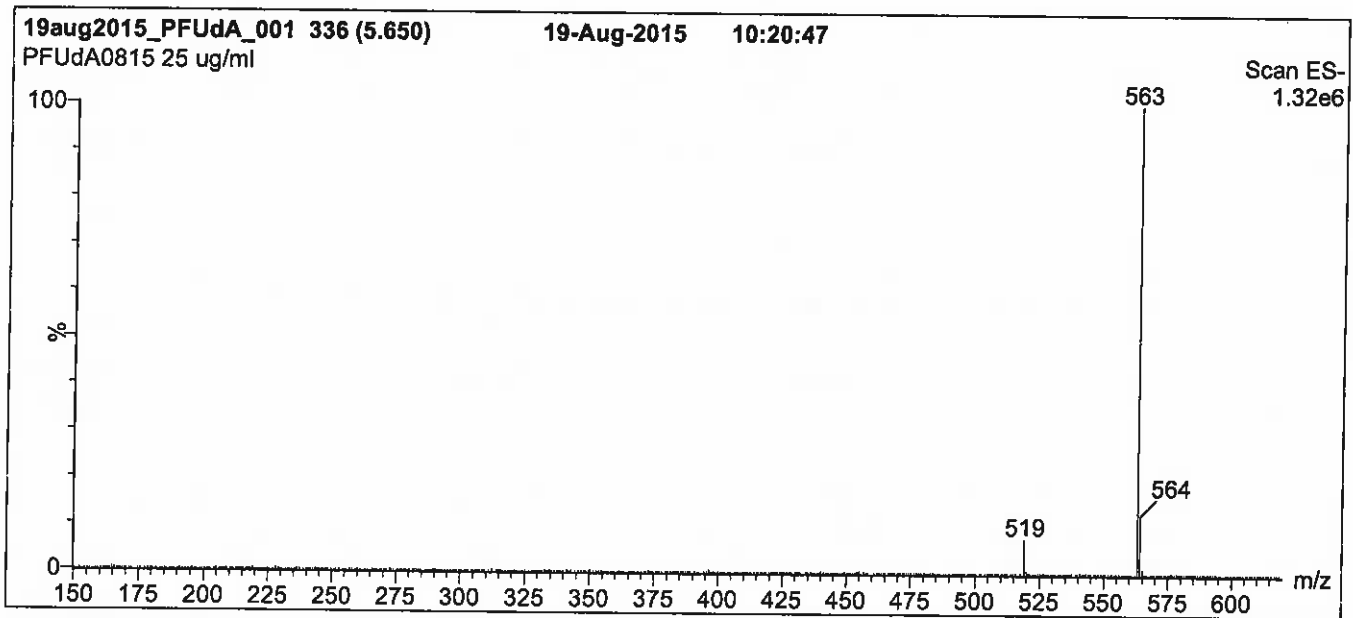
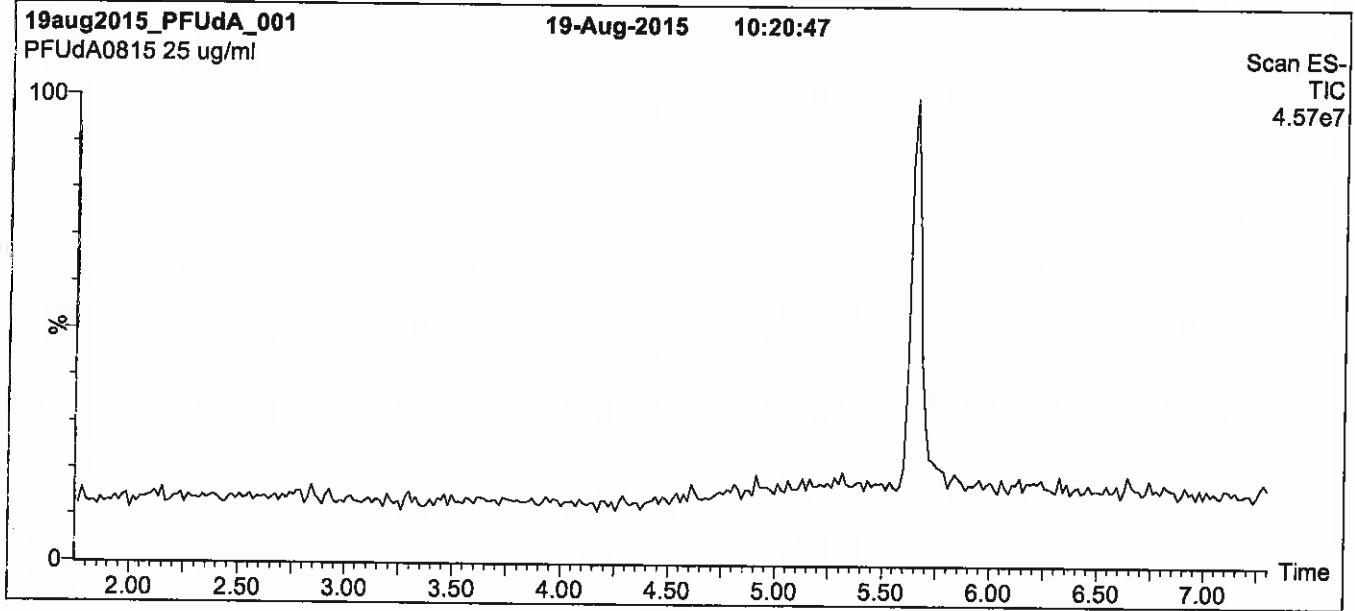
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Figure 1: PFUdA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro micro API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 50% (80:20 MeOH:ACN) / 50% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 2 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

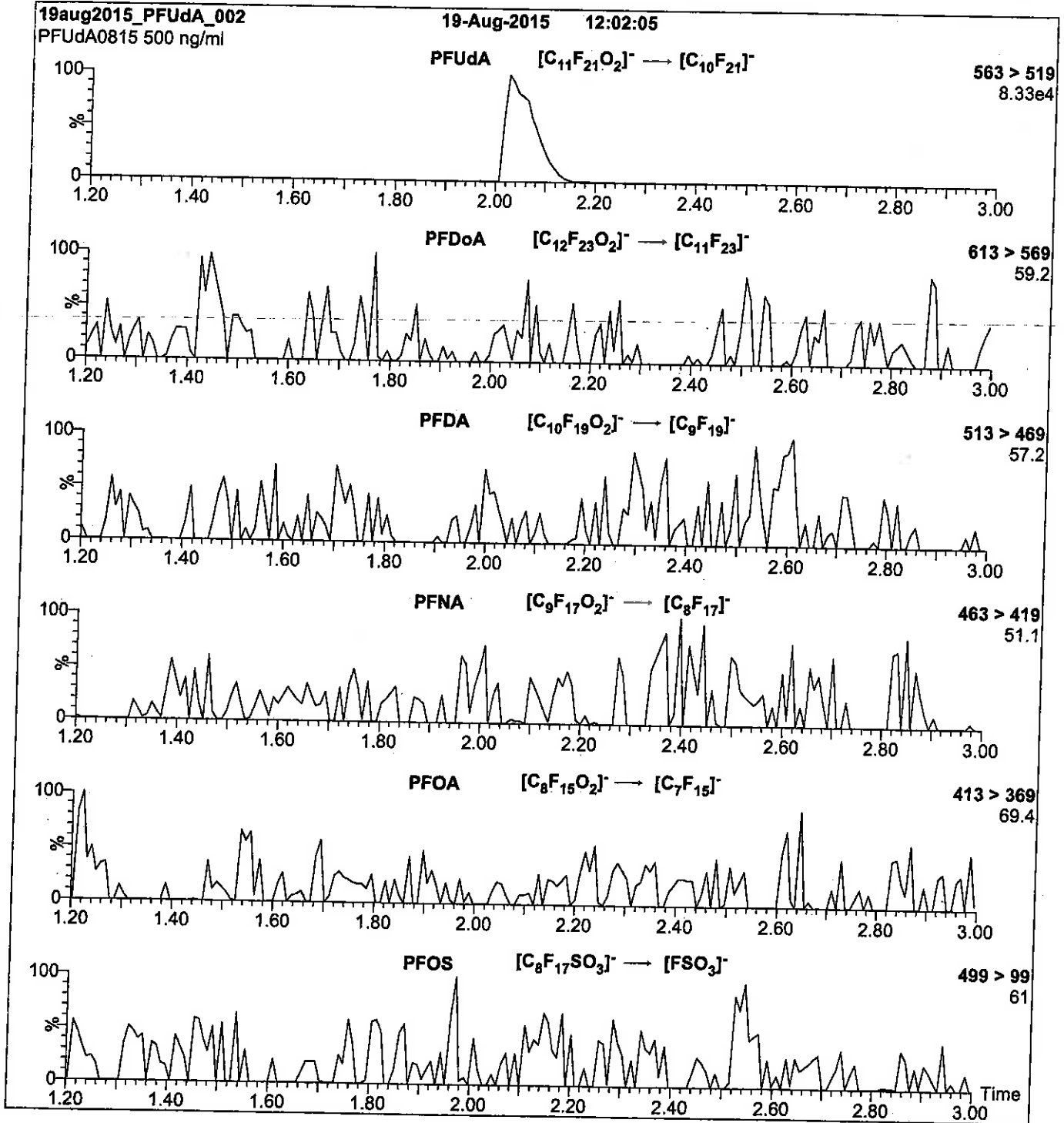
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 3.00
 Cone Voltage (V) = 15.00
 Cone Gas Flow (l/hr) = 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 μ l (500 ng/ml PFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
 Collision Energy (eV) = 11

Reagent

MS14DIC_00007



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 Lot No.: A0124653

Description : 1,4-dioxane
1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL Pkg Amt: > 1 mL

Expiration Date : February 28, 2022 Storage: 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dioxane CAS # 123-91-1 Purity 99% (Lot SHBG6312V)	1,984.0 µg/mL	+/- 11.7844	µg/mL	Gravimetric
			+/- 42.5460	µg/mL	Unstressed
			+/- 43.7790	µg/mL	Stressed

Solvent: Methylene Chloride (MEOH FREE)
CAS # 75-09-2
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

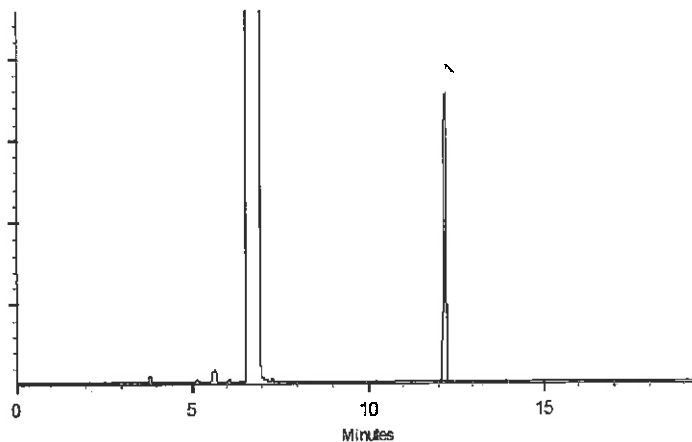
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Tom Suckal - Mix Technician

Date Mixed: 02-Feb-2017 **Balance:** 1128360905


Justine Albertson - Operations Tech-ARM GC

Date Passed: 06-Feb-2017

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

Reagent

MS14DTA_00022

Certificate of Analysis

Description: 1,4-Dioxane, 1x1ml, methanol, 2000ug/ml

Catalog Number: CRM48367

Lot Number: LC16305V

Expiration: September 2018

Storage: Room Temperature

Instructions for Use:

This sample is ready to use.
No additional sample preparation
is necessary.

Analyte	CAS Number	Certified Conc. ug/mL	Uncertainty ug/mL	k
1,4-Dioxane	123-91-1	2000	+/- 58.2	2.00

Manufactured and certified by Sigma-Aldrich RTC, Inc.



Page 1 of 2

SIGMA-ALDRICH[®]

Notes:

- Certified value – based on a prepared to value and analytically verified by RTC with associated uncertainties from the preparation and analytical procedures.
- Expanded Uncertainty – Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies.
- k: Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. Confidence interval = 95%
- Traceability: The standard was manufactured under an ISO/IEC certified quality system. The balance used to weight raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SMRs were available or other certified reference material as specified by each analyte.
- Homogeneity: Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See instructions for minimum sub-sample size.

Certification Date: 9/25/2015
Form: CRM48367



Duane Funk
QC Manager

Manufactured and certified by Sigma-Aldrich RTC, Inc.



SIGMA-ALDRICH®

Reagent

MS14DTA_00023



CERTIFIED REFERENCE MATERIAL

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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 **Lot No.:** A0121319

Description : 1,4-dioxane
1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	1,4-Dioxane	2,001.0 µg/mL (Lot SHBG1461V)	+/-	11.7430	µg/mL	Gravimetric
	CAS # 123-91-1		+/-	42.8714	µg/mL	Unstressed
	Purity 99%		+/-	44.1160	µg/mL	Stressed

Solvent: Methylene Chloride (MEOH FREE)
CAS # 75-09-2
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

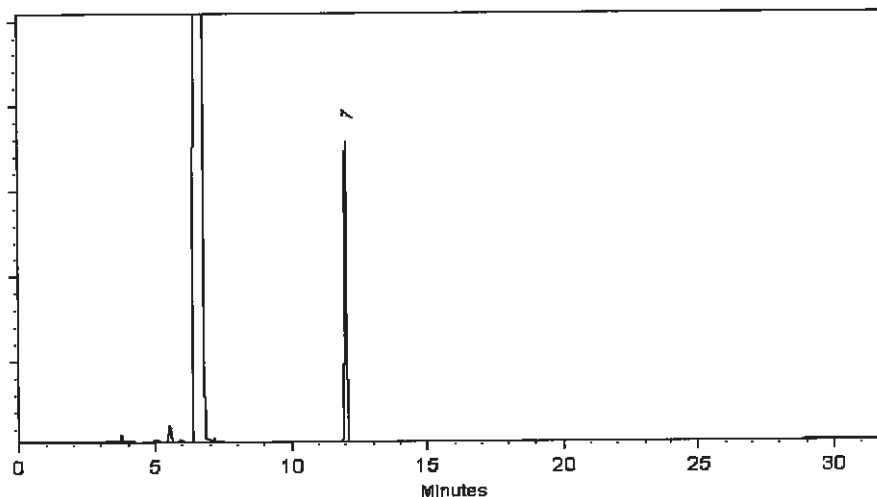
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dawn Brownson
Dawn Brownson - Mix Technician

Date Mixed: 31-Aug-2016 **Balance:** 1128360905

Jennifer L. Pollino
Jennifer L. Pollino - QC Analyst

Date Passed: 02-Sep-2016

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

Reagent

MS8270IS_00016



CERTIFIED REFERENCE MATERIAL

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Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567684 **Lot No.:** A0120796

Description : 8270 Internal Standard
8270 Internal Standard 2,000µg/mL, Methylene Chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2021 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)			
1	1,4-Dichlorobenzene-d4 CAS # 3855-82-1 Purity 99% (Lot PR-18488)	2,008.2 µg/mL	+/-	11.6758	µg/mL	Gravimetric
			+/-	90.4505	µg/mL	Unstressed
			+/-	100.3660	µg/mL	Stressed
2	Naphthalene-d8 CAS # 1146-65-2 Purity 99% (Lot M-1452)	2,004.0 µg/mL	+/-	11.6514	µg/mL	Gravimetric
			+/-	90.2614	µg/mL	Unstressed
			+/-	100.1561	µg/mL	Stressed
3	Acenaphthene-d10 CAS # 15067-26-2 Purity 99% (Lot PR-25444)	2,007.7 µg/mL	+/-	11.6729	µg/mL	Gravimetric
			+/-	90.4280	µg/mL	Unstressed
			+/-	100.3410	µg/mL	Stressed
4	Phenanthrene-d10 CAS # 1517-22-2 Purity 99% (Lot PR-23065)	2,011.4 µg/mL	+/-	11.6945	µg/mL	Gravimetric
			+/-	90.5947	µg/mL	Unstressed
			+/-	100.5260	µg/mL	Stressed
5	Chrysene-d12 CAS # 1719-03-5 Purity 98% (Lot PR-26678)	2,018.8 µg/mL	+/-	11.7375	µg/mL	Gravimetric
			+/-	90.9280	µg/mL	Unstressed
			+/-	100.8958	µg/mL	Stressed
6	Perylene-d12 CAS # 1520-96-3 Purity 99% (Lot PR-24113)	2,002.6 µg/mL	+/-	11.6433	µg/mL	Gravimetric
			+/-	90.1983	µg/mL	Unstressed
			+/-	100.0862	µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

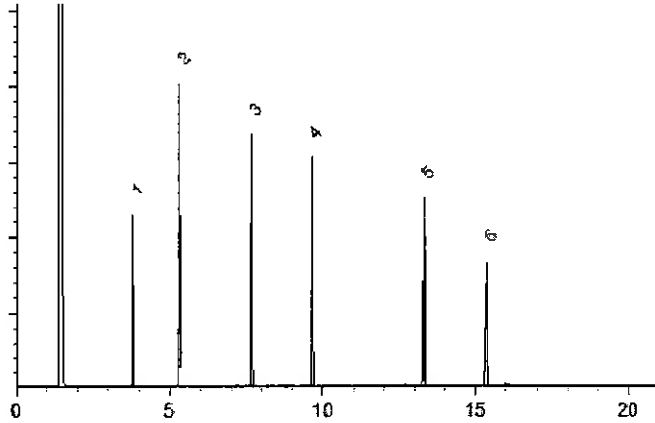
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dawn Brownson
Dawn Brownson - Mix Technician

Date Mixed: 03-Aug-2016 **Balance:** 1128353505

[Signature]
Quality Assurance - QC Analyst

Date Passed: 05-Aug-2016

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

Reagent

MS8270SU_00094



CERTIFIED REFERENCE MATERIAL

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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 570814 **Lot No.:** A0117528

Description : 8270 Surrogate Standard RTS with Indicator
8270 Surrogate Standard RTS with Indicator 100 µg/ml,
Methanol/Methylene Chloride (95:5), 100 ml/bottle

Container Size : 100 mL **Pkg Amt:** > 100 mL

Expiration Date : February 28, 2019 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2-Fluorophenol CAS # 367-12-4 Purity 99% (Lot STBC5591V)	100.5 µg/mL	+/-	0.5843	µg/mL Gravimetric
			+/-	2.9326	µg/mL Unstressed
			+/-	3.5586	µg/mL Stressed
2	Phenol-d5 CAS # 4165-62-2 Purity 99% (Lot X479P8)	100.2 µg/mL	+/-	0.5827	µg/mL Gravimetric
			+/-	2.9250	µg/mL Unstressed
			+/-	3.5494	µg/mL Stressed
3	Nitrobenzene-d5 CAS # 4165-60-0 Purity 99% (Lot PR-24042)	100.0 µg/mL	+/-	0.5814	µg/mL Gravimetric
			+/-	2.9183	µg/mL Unstressed
			+/-	3.5413	µg/mL Stressed
4	2-Fluorobiphenyl CAS # 321-60-8 Purity 99% (Lot S26B003)	100.0 µg/mL	+/-	0.5815	µg/mL Gravimetric
			+/-	2.9186	µg/mL Unstressed
			+/-	3.5416	µg/mL Stressed
5	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99% (Lot 29699MJV)	100.6 µg/mL	+/-	0.5846	µg/mL Gravimetric
			+/-	2.9344	µg/mL Unstressed
			+/-	3.5608	µg/mL Stressed
6	p-Terphenyl-d14 CAS # 1718-51-0 Purity 99% (Lot PR-21037)	100.0 µg/mL	+/-	0.5814	µg/mL Gravimetric
			+/-	2.9183	µg/mL Unstressed
			+/-	3.5413	µg/mL Stressed

Solvent: Methanol/Methylene Chloride (95:5)
CAS # 67-56-1/75-09-2
Purity 99%

Tech Tips:

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:
30m x 0.25mm x 0.25µm
Rtx-S (cat.#10223)

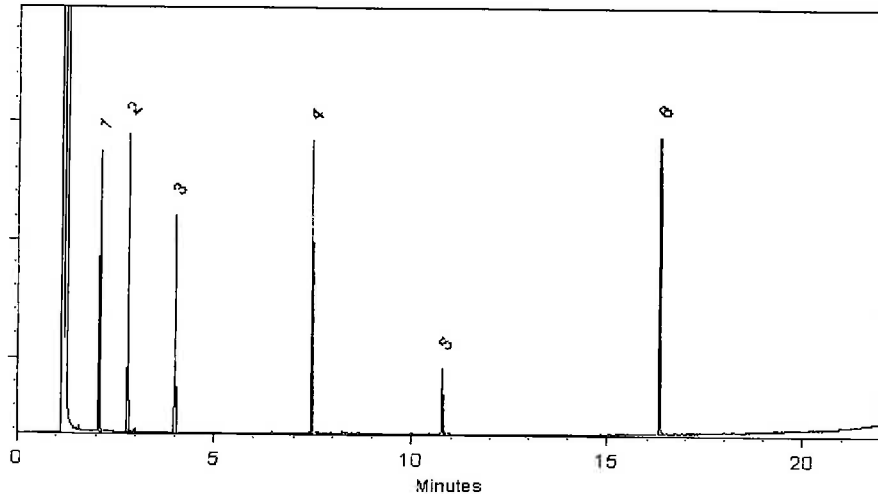
Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 0.86 min.)

Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Brandon Cook - Mix Technician

Date Mixed: 23-Feb-2016 Balance: B442140311


Amanda Miller - QC Analyst

Date Passed: 26-Feb-2016

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MS8270SU_00100



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567685 Lot No.: A0103960

Description : 8270 Surrogate Standard
8270 Surrogate Standard 5,000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 5 mL Pkg Amt: > 5 mL

Expiration Date : June 30, 2019 Storage: 10°C or colder

Handling: Sonicate prior to use.

Rec'd 4/22/16

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)	
1	2-Fluorophenol	5,006.1 µg/mL	+/- 29.1044 µg/mL	Gravimetric
	CAS # 367-12-4 (Lot STBC5591V)		+/- 124.7363 µg/mL	Unstressed
	Purity 99%		+/- 156.8636 µg/mL	Stressed
2	Phenol-d5	5,002.5 µg/mL	+/- 29.0834 µg/mL	Gravimetric
	CAS # 4165-62-2 (Lot X479P6)		+/- 124.6466 µg/mL	Unstressed
	Purity 99%		+/- 156.7508 µg/mL	Stressed
3	Nitrobenzene-d5	5,003.7 µg/mL	+/- 29.0901 µg/mL	Gravimetric
	CAS # 4165-60-0 (Lot PR-20474)		+/- 124.6753 µg/mL	Unstressed
	Purity 99%		+/- 156.7868 µg/mL	Stressed
4	2-Fluorobiphenyl	5,002.4 µg/mL	+/- 29.0826 µg/mL	Gravimetric
	CAS # 321-60-8 (Lot B19Z016)		+/- 124.6429 µg/mL	Unstressed
	Purity 99%		+/- 156.7461 µg/mL	Stressed
5	2,4,6-Tribromophenol	5,024.2 µg/mL	+/- 29.2093 µg/mL	Gravimetric
	CAS # 118-79-6 (Lot 29699MJV)		+/- 125.1861 µg/mL	Unstressed
	Purity 99%		+/- 157.4292 µg/mL	Stressed
6	p-Terphenyl-d14	5,010.4 µg/mL	+/- 29.1291 µg/mL	Gravimetric
	CAS # 1718-51-0 (Lot PR-20577)		+/- 124.8422 µg/mL	Unstressed
	Purity 99%		+/- 156.9968 µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Tech Tips:

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:

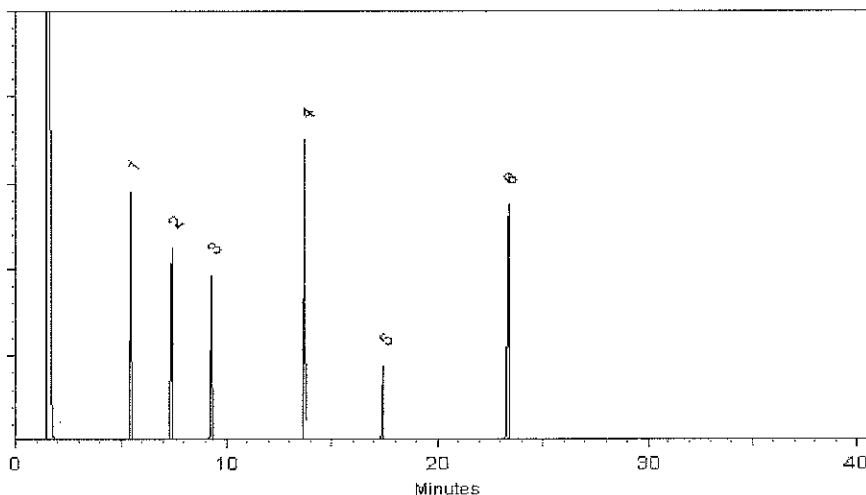
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Rebecca Hawer

Date Mixed: 11-Jun-2014 **Balance:** 1128360905

Jennifer L. Pollino

Jennifer L. Pollino - QC Analyst

Date Passed: 23-Jun-2014

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

Method 8270C SIM

Semivolatile Organic Compounds
(GC/MS SIM) by Method 8270C (SIM)

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): HP-5MS ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	NBZ #
MEAFF-08MW01D-0217	320-26105-1	80
MEAFF-08MW01-0217	320-26105-2	59
MEAFF-MRD-1A14-0217	320-26105-3	73
MEAFF-08MW03-0217	320-26105-12	69
MEAFF-08MW06-0217	320-26105-13	74
MEAFF-FD02-0217	320-26105-14	62
	MB 320-152910/1-A	69
	LCS 320-152910/2-A	73
	LCSD 320-152910/3-A	74
MEAFF-MRD-1A14-0217 7 MS	320-26105-3 MS	75
MEAFF-MRD-1A14-0217 7 MSD	320-26105-3 MSD	74

NBZ = Nitrobenzene-d5

QC LIMITS
42-91

Column to be used to flag recovery values

FORM II WS-MS-0011

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: S031402.D

Lab ID: LCS 320-152910/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	10.0	3.23	32	12-52	M

Column to be used to flag recovery and RPD values

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: S031403.D

Lab ID: LCSO 320-152910/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCSO CONCENTRATION (ug/L)	LCSO % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,4-Dioxane	10.0	3.00	30	7	20	12-52	M

Column to be used to flag recovery and RPD values

FORM III
GC/MS SEMI VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: S031411.D
 Lab ID: 320-26105-3 MS Client ID: MEAFF-MRD-1A14-0217 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,4-Dioxane	9.50	0.48 U	2.59	27	12-52	M

Column to be used to flag recovery and RPD values
 FORM III WS-MS-0011

FORM III
GC/MS SEMI VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: S031412.D

Lab ID: 320-26105-3 MSD Client ID: MEAFF-MRD-1A14-0217 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,4-Dioxane	9.48	2.68	28	3	20	12-52	M

Column to be used to flag recovery and RPD values

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab File ID: S031401.D Lab Sample ID: MB 320-152910/1-A
 Matrix: Water Date Extracted: 03/02/2017 13:45
 Instrument ID: SV1 Date Analyzed: 03/14/2017 15:04
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-152910/2-A	S031402.D	03/14/2017 15:27
	LCSD 320-152910/3-A	S031403.D	03/14/2017 15:49
MEAFF-08MW01D-0217	320-26105-1	S031408.D	03/14/2017 17:42
MEAFF-08MW01-0217	320-26105-2	S031409.D	03/14/2017 18:05
MEAFF-MRD-1A14-0217	320-26105-3	S031410.D	03/14/2017 18:28
MEAFF-MRD-1A14-0217 MS	320-26105-3 MS	S031411.D	03/14/2017 18:50
MEAFF-MRD-1A14-0217 MSD	320-26105-3 MSD	S031412.D	03/14/2017 19:13
MEAFF-08MW03-0217	320-26105-12	S031413.D	03/14/2017 19:35
MEAFF-08MW06-0217	320-26105-13	S031414.D	03/14/2017 19:58
MEAFF-FD02-0217	320-26105-14	S031415.D	03/14/2017 20:21

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Sample No.: ICIS 320-151686/5 Date Analyzed: 02/22/2017 11:03
 Instrument ID: SV1 GC Column: HP-5MS ID: 0.25 (mm)
 Lab File ID (Standard): 14D0222E.D Heated Purge: (Y/N) N
 Calibration ID: 28577

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		786305	7.20				
UPPER LIMIT		1572610	7.70				
LOWER LIMIT		393153	6.70				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 320-151686/9		879747	7.20				
CCV 320-154875/2		683060	7.17				
MB 320-152910/1-A		701549	7.17				
LCS 320-152910/2-A		668815	7.17				
LCSD 320-152910/3-A		666531	7.17				
320-26105-1	MEAFF-08MW01D-0217	647599	7.18				
320-26105-2	MEAFF-08MW01-0217	647812	7.18				
320-26105-3	MEAFF-MRD-1A14-0217	665415	7.17				
320-26105-3 MS	MEAFF-MRD-1A14-0217 MS	610199	7.17				
320-26105-3 MSD	MEAFF-MRD-1A14-0217 MSD	613392	7.17				
320-26105-12	MEAFF-08MW03-0217	625072	7.17				
320-26105-13	MEAFF-08MW06-0217	644561	7.17				
320-26105-14	MEAFF-FD02-0217	607140	7.17				
CCVC 320-154875/29		679174	7.17				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01D-0217 Lab Sample ID: 320-26105-1
 Matrix: Water Lab File ID: S031408.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 12:15
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1051.4 (mL) Date Analyzed: 03/14/2017 17:42
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	0.48	U	0.95	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	80		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031408.D
 Lims ID: 320-26105-B-1-A
 Client ID: MEAFF-08MW01D-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 17:42:30 ALS Bottle#: 8 Worklist Smp#: 10
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-b-1-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: lardieo Date: 14-Mar-2017 18:15:49

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
-----	-----------	---------------	---------------	---	----------	-----------------	-------------	-------	-------

1 1,4-Dioxane									
58		3.320				ND			
88		3.320							
* 2 1,4-Dichlorobenzene-d4									
152	7.178	7.172	0.006	96	647599	10.0	80- 120	100	
150	7.178	7.172	0.006		1002264		135- 175	155	
115	7.170	7.172	-0.002		362599		35.8- 75.8	56.0	
\$ 3 Nitrobenzene-d5									
82	8.033	8.035	-0.002	95	313631	4.01	80- 120	100	
128	8.041	8.035	0.006		167790		33.8- 73.8	53.5	
54	8.033	8.035	-0.002		181721		37.5- 77.5	57.9	

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031408.D

Injection Date: 14-Mar-2017 17:42:30

Instrument ID: SV1

Operator ID:

Lims ID: 320-26105-B-1-A

Lab Sample ID: 320-26105-1

Worklist Smp#: 10

Client ID: MEAFF-08MW01D-0217

Injection Vol: 1.0 ul

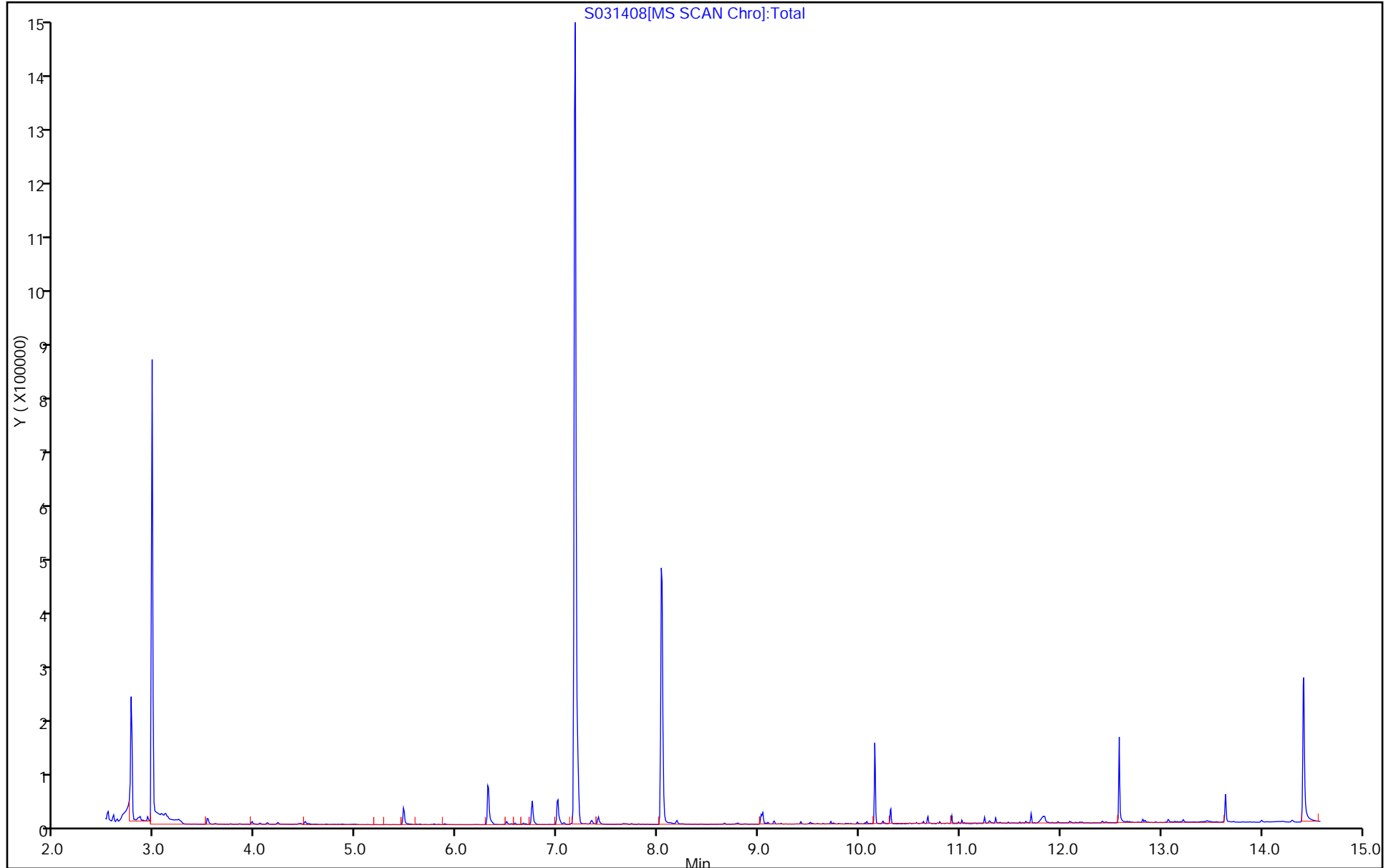
Dil. Factor: 1.0000

ALS Bottle#: 8

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031408.D
 Lims ID: 320-26105-B-1-A
 Client ID: MEAFF-08MW01D-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 17:42:30 ALS Bottle#: 8 Worklist Smp#: 10
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-b-1-a
 Operator ID: Instrument ID: SV1

Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: lardieo Date: 14-Mar-2017 18:15:49

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	4.01	80.20

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01-0217 Lab Sample ID: 320-26105-2
 Matrix: Water Lab File ID: S031409.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 12:00
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 625 (mL) Date Analyzed: 03/14/2017 18:05
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	4.0	M	1.6	0.80	0.32

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	59		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031409.D
 Lims ID: 320-26105-A-2-A
 Client ID: MEAFF-08MW01-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 18:05:30 ALS Bottle#: 9 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-2-a
 Operator ID: Instrument ID: SV1

Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: lardieo Date: 14-Mar-2017 21:27:27

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane									
58	3.318	3.320	-0.002	80	64826	2.49	80- 120	100	M
88	3.327	3.320	0.007		75753		90- 130	117	
* 2 1,4-Dichlorobenzene-d4									
152	7.181	7.172	0.009	95	647812	10.0	80- 120	100	
150	7.173	7.172	0.001		1028339		135- 175	159	
115	7.173	7.172	0.001		376191		35.8- 75.8	58.1	
\$ 3 Nitrobenzene-d5									
82	8.043	8.035	0.008	93	230830	2.95	80- 120	100	
128	8.043	8.035	0.008		129494		33.8- 73.8	56.1	
54	8.035	8.035	0.000		137782		37.5- 77.5	59.7	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031409.D

Injection Date: 14-Mar-2017 18:05:30

Instrument ID: SV1

Operator ID:

Lims ID: 320-26105-A-2-A

Lab Sample ID: 320-26105-2

Worklist Smp#: 11

Client ID: MEAFF-08MW01-0217

Injection Vol: 1.0 ul

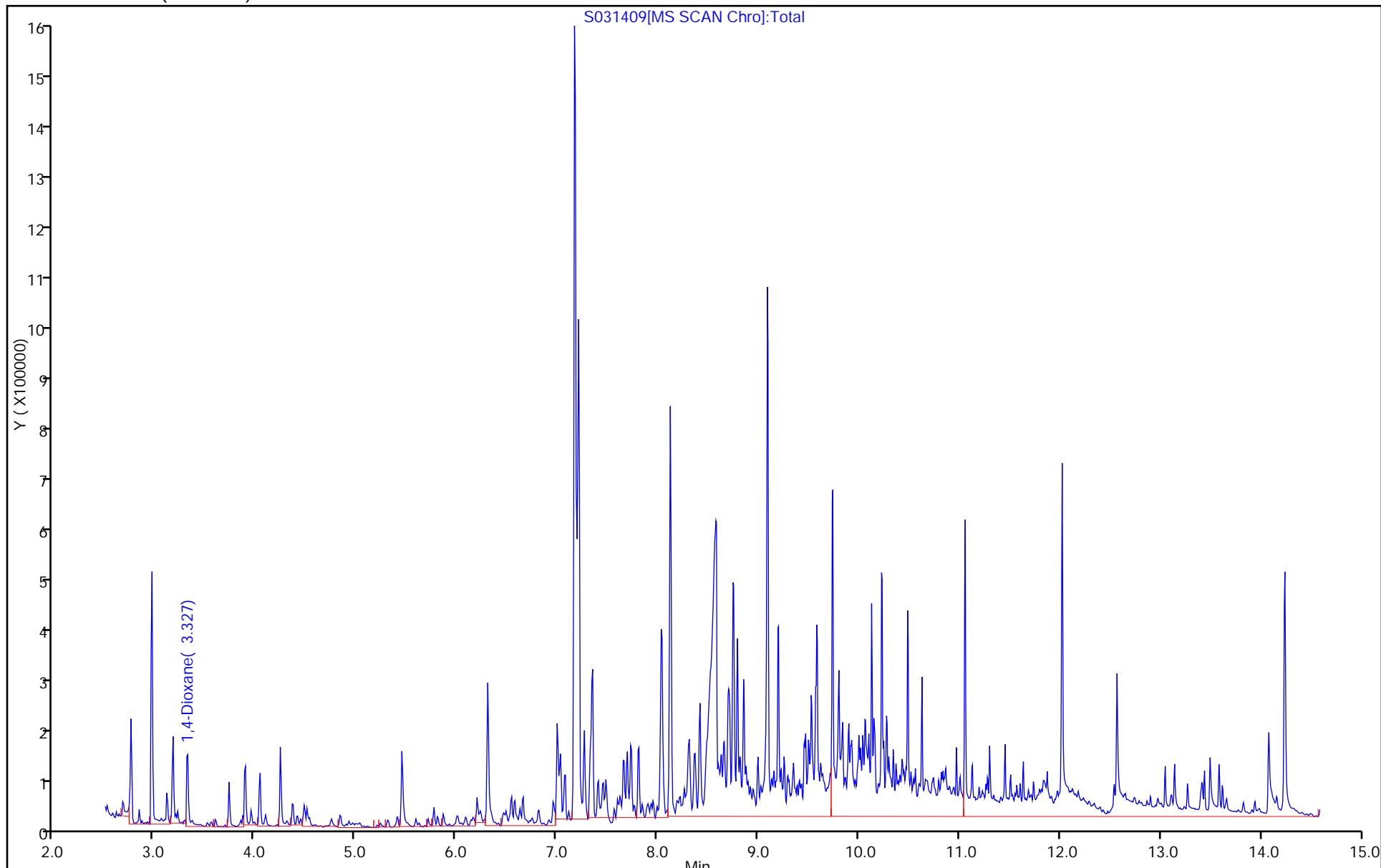
Dil. Factor: 1.0000

ALS Bottle#: 9

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031409.D
 Lims ID: 320-26105-A-2-A
 Client ID: MEAFF-08MW01-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 18:05:30 ALS Bottle#: 9 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-2-a
 Operator ID: Instrument ID: SV1

Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: lardieo Date: 14-Mar-2017 21:27:27

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	2.95	59.01

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031409.D

Injection Date: 14-Mar-2017 18:05:30

Instrument ID: SV1

Lims ID: 320-26105-A-2-A

Lab Sample ID: 320-26105-2

Client ID: MEAFF-08MW01-0217

Operator ID:

ALS Bottle#: 9

Worklist Smp#: 11

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

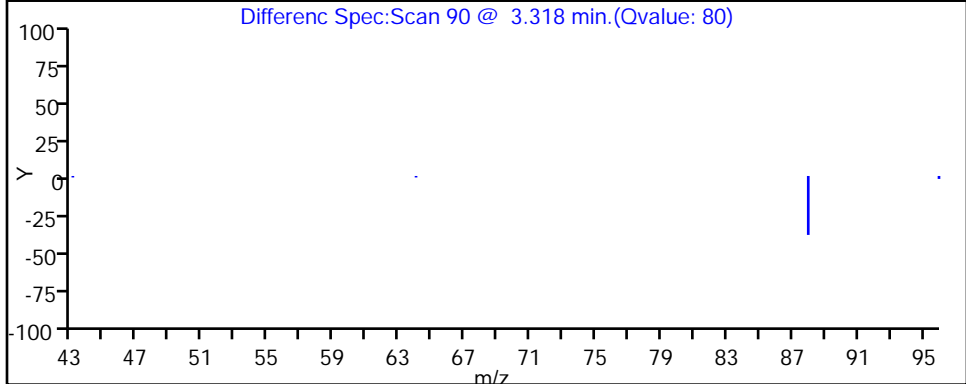
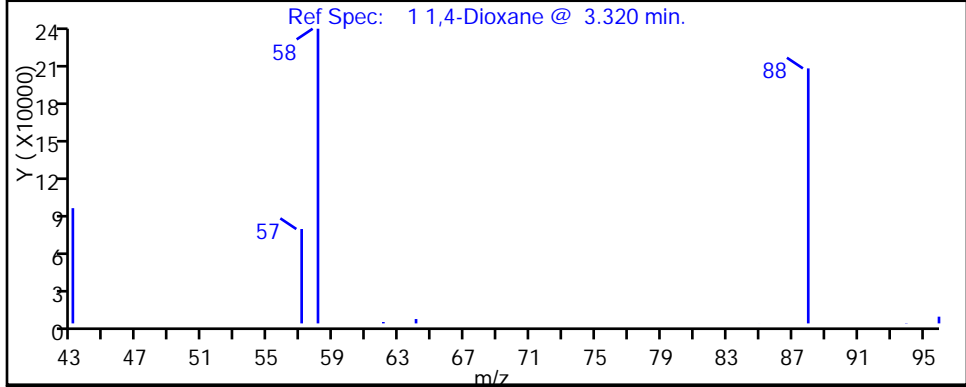
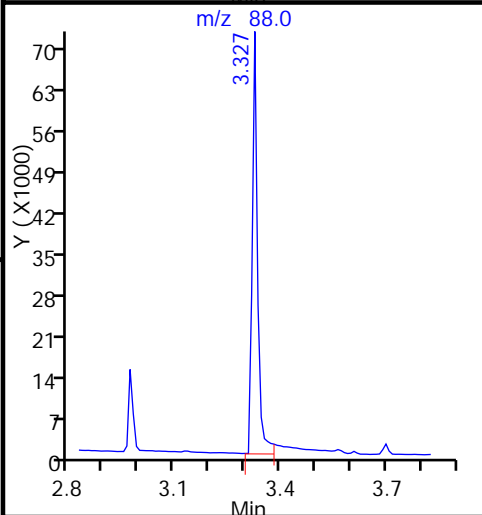
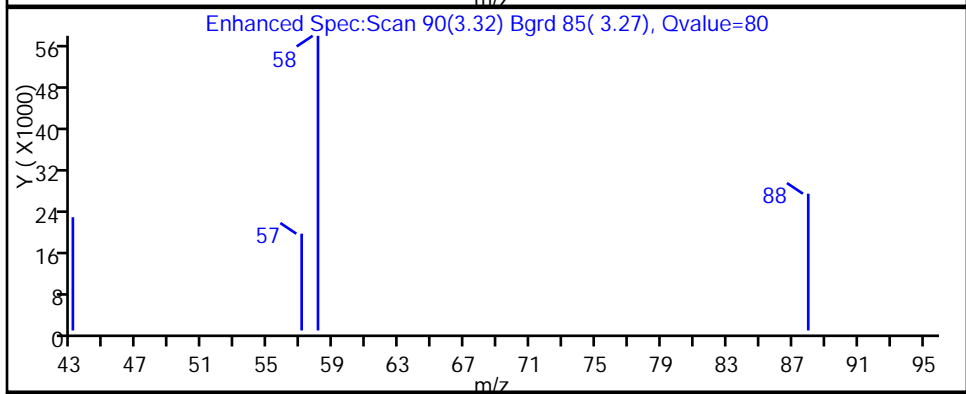
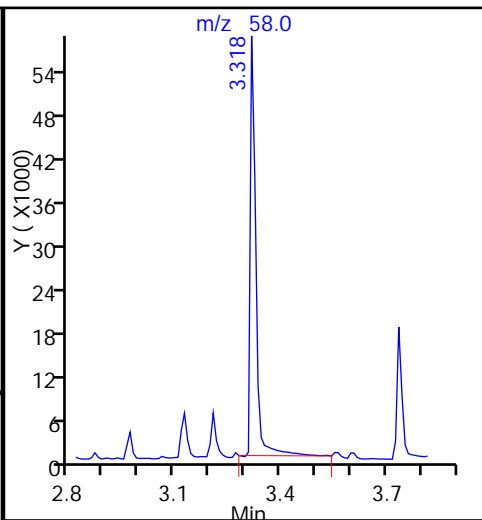
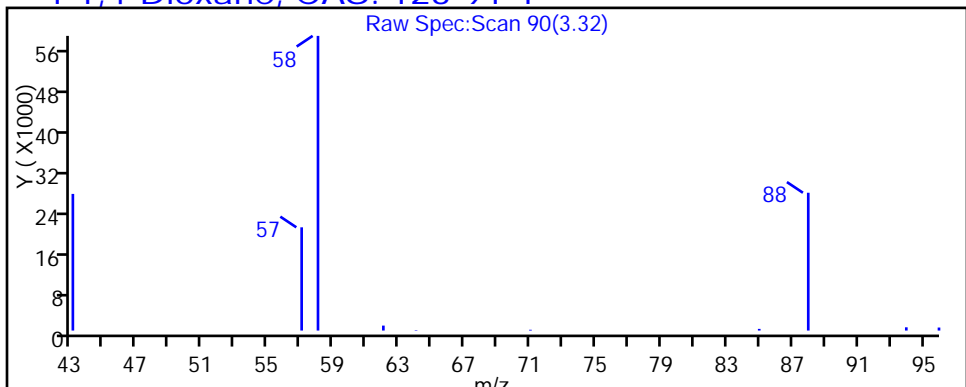
Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)

Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1



TestAmerica Sacramento

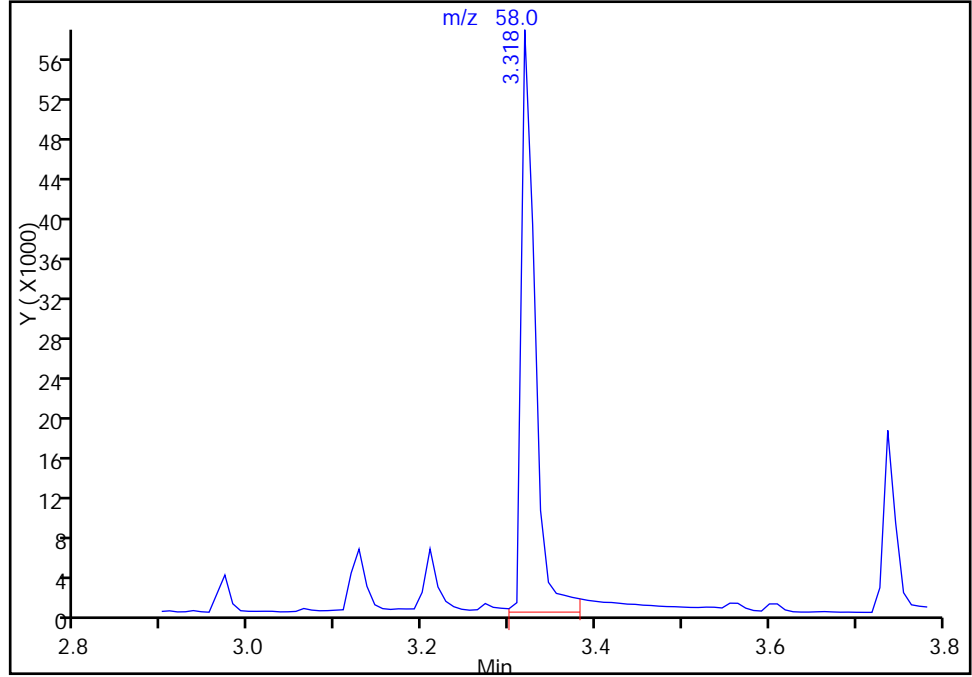
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031409.D
Injection Date: 14-Mar-2017 18:05:30 Instrument ID: SV1
Lims ID: 320-26105-A-2-A Lab Sample ID: 320-26105-2
Client ID: MEAFF-08MW01-0217
Operator ID: ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

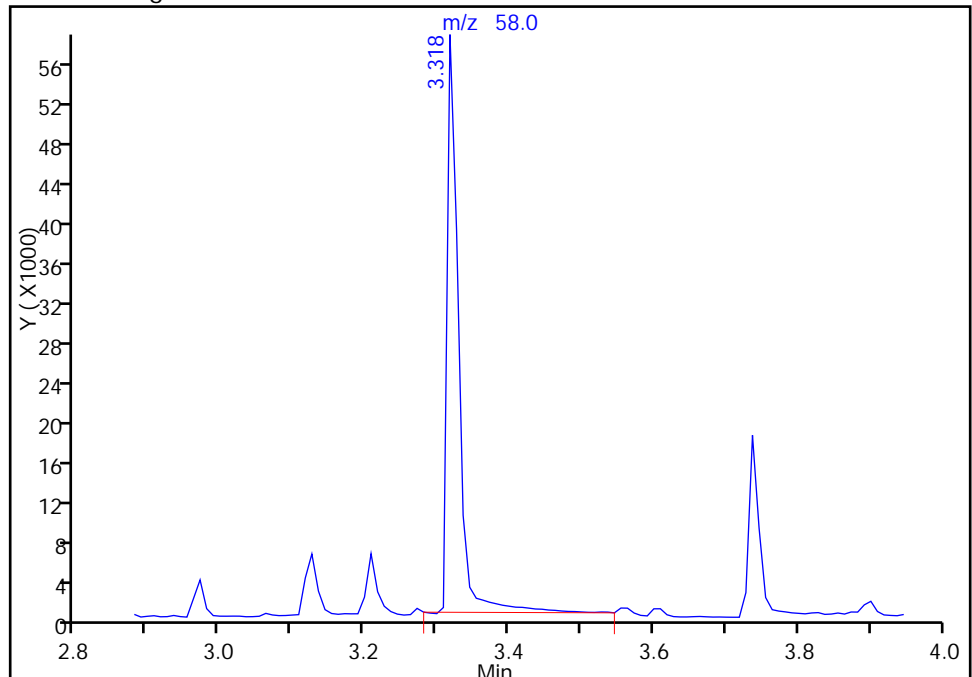
RT: 3.32
Area: 64843
Amount: 2.494802
Amount Units: ug/ml

Processing Integration Results



RT: 3.32
Area: 64826
Amount: 2.494148
Amount Units: ug/ml

Manual Integration Results



Reviewer: lardieo, 15-Mar-2017 14:28:50
Audit Action: Manually Integrated

Audit Reason: Peak Tail

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 Lab Sample ID: 320-26105-3
 Matrix: Water Lab File ID: S031410.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 15:00
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1052.2 (mL) Date Analyzed: 03/14/2017 18:28
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	0.48	U	0.95	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	73		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031410.D
 Lims ID: 320-26105-A-3-A
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 18:28:30 ALS Bottle#: 10 Worklist Smp#: 12
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-3-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:29:09

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
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1 1,4-Dioxane									
58		3.320				ND			
88		3.320							
* 2 1,4-Dichlorobenzene-d4									
152	7.173	7.172	0.001	100	665415	10.0	80- 120	100	
150	7.173	7.172	0.001		1033217		135- 175	155	
115	7.173	7.172	0.001		372407		35.8- 75.8	56.0	
\$ 3 Nitrobenzene-d5									
82	8.035	8.035	0.000	100	293076	3.65	80- 120	100	
128	8.035	8.035	0.000		158155		33.8- 73.8	54.0	
54	8.035	8.035	0.000		168165		37.5- 77.5	57.4	

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031410.D

Injection Date: 14-Mar-2017 18:28:30

Instrument ID: SV1

Operator ID:

Lims ID: 320-26105-A-3-A

Lab Sample ID: 320-26105-3

Worklist Smp#: 12

Client ID: MEAFF-MRD-1A14-0217

Injection Vol: 1.0 ul

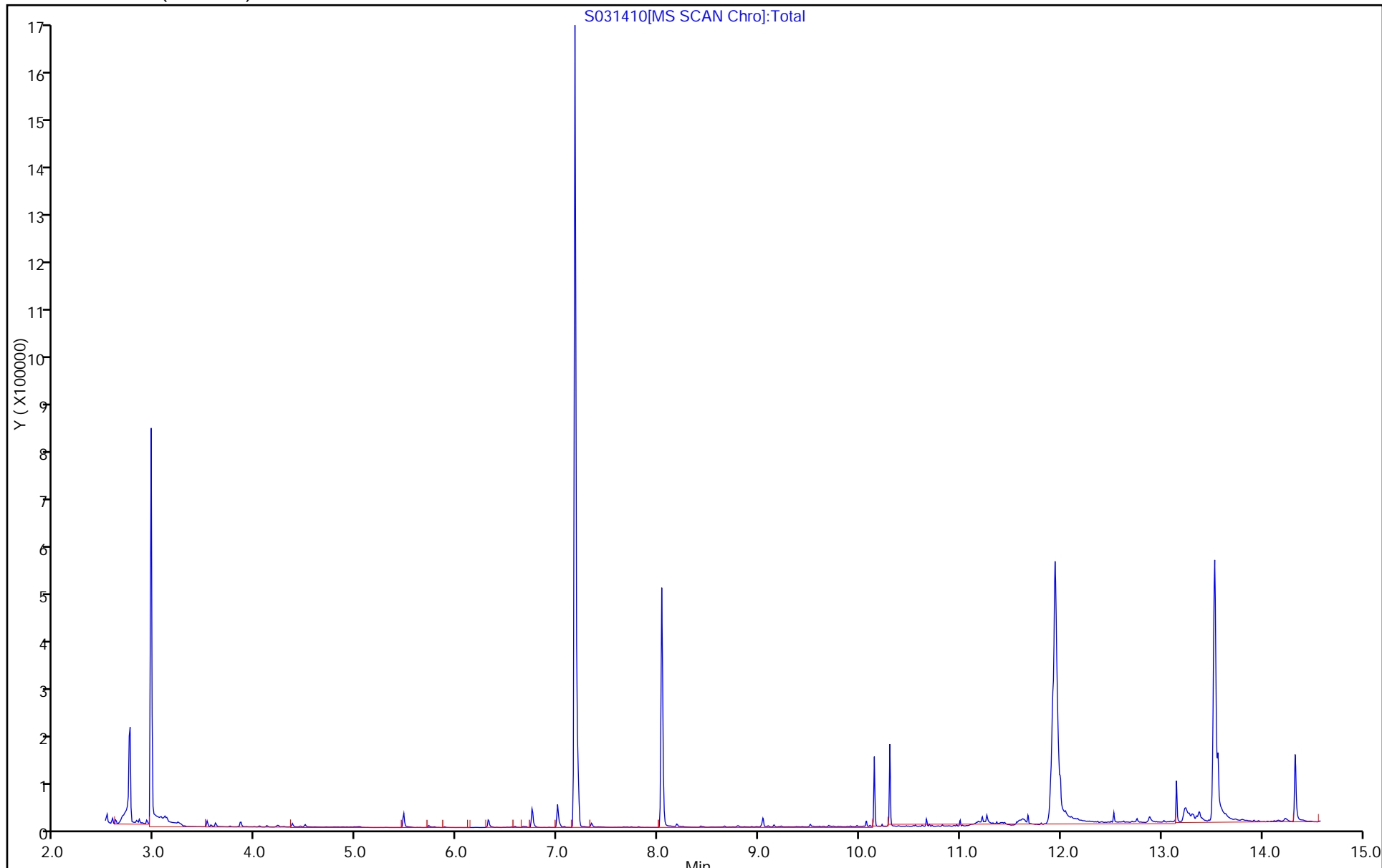
Dil. Factor: 1.0000

ALS Bottle#: 10

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031410.D
 Lims ID: 320-26105-A-3-A
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 18:28:30 ALS Bottle#: 10 Worklist Smp#: 12
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-3-a
 Operator ID: Instrument ID: SV1

Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:29:09

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.65	72.94

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW03-0217 Lab Sample ID: 320-26105-12
 Matrix: Water Lab File ID: S031413.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 11:30
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1032.9 (mL) Date Analyzed: 03/14/2017 19:35
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	14	M	0.97	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	69		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031413.D
 Lims ID: 320-26105-B-12-A
 Client ID: MEAFF-08MW03-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 19:35:30 ALS Bottle#: 13 Worklist Smp#: 15
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-b-12-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:29:40

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane									
58	3.321	3.320	0.001	80	356110	14.2	80- 120	100	M
88	3.321	3.320	0.001		381768		90- 130	107	
* 2 1,4-Dichlorobenzene-d4									
152	7.172	7.172	0.000	100	625072	10.0	80- 120	100	
150	7.172	7.172	0.000		963429		135- 175	154	
115	7.172	7.172	0.000		351275		35.8- 75.8	56.2	
\$ 3 Nitrobenzene-d5									
82	8.034	8.035	-0.001	97	260461	3.45	80- 120	100	
128	8.042	8.035	0.007		138602		33.8- 73.8	53.2	
54	8.034	8.035	-0.001		148666		37.5- 77.5	57.1	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031413.D

Injection Date: 14-Mar-2017 19:35:30

Instrument ID: SV1

Operator ID:

Lims ID: 320-26105-B-12-A

Lab Sample ID: 320-26105-12

Worklist Smp#: 15

Client ID: MEAFF-08MW03-0217

Injection Vol: 1.0 ul

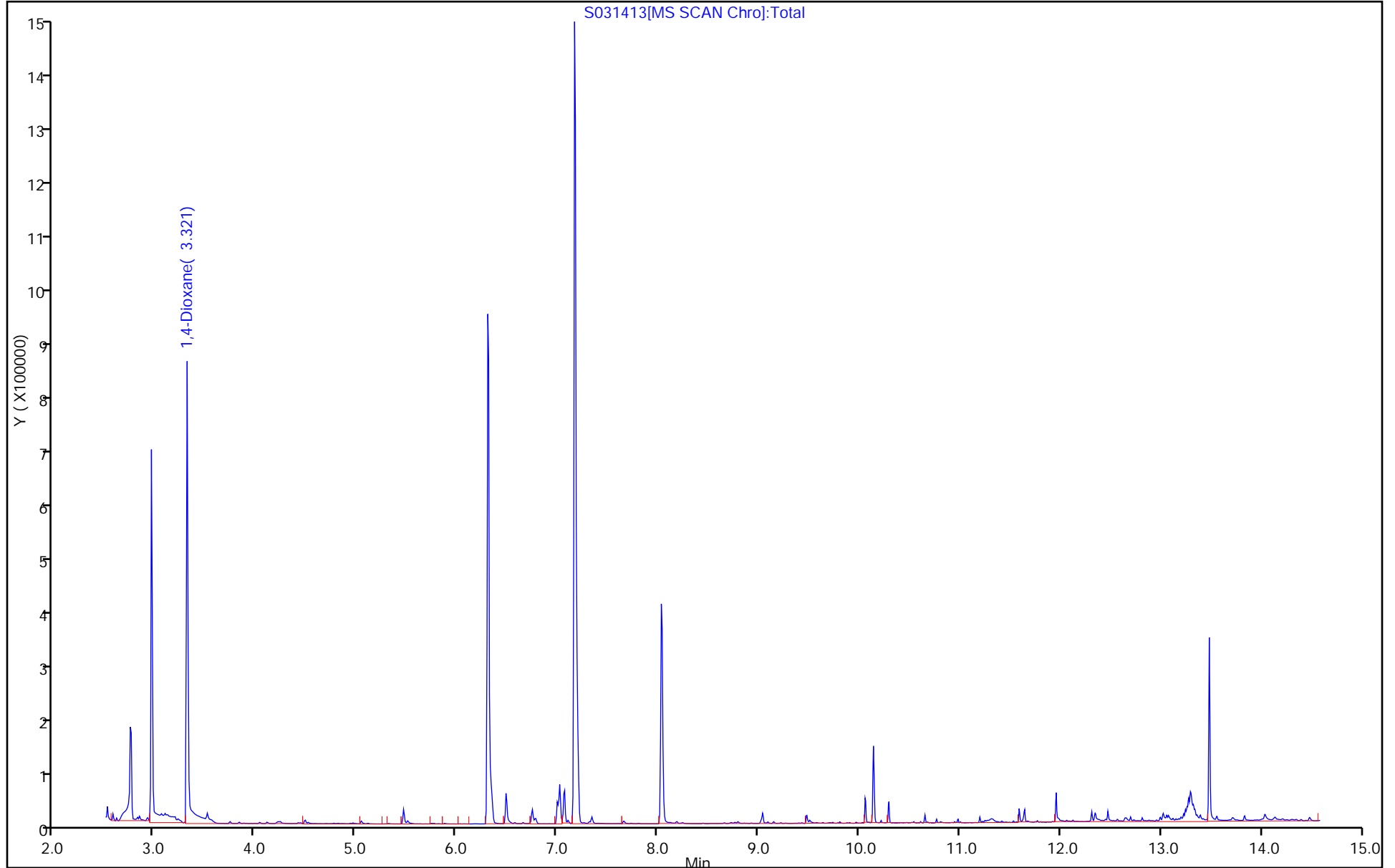
Dil. Factor: 1.0000

ALS Bottle#: 13

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031413.D
 Lims ID: 320-26105-B-12-A
 Client ID: MEAFF-08MW03-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 19:35:30 ALS Bottle#: 13 Worklist Smp#: 15
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-b-12-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:29:40

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.45	69.01

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031413.D

Injection Date: 14-Mar-2017 19:35:30

Instrument ID: SV1

Lims ID: 320-26105-B-12-A

Lab Sample ID: 320-26105-12

Client ID: MEAFF-08MW03-0217

Operator ID:

ALS Bottle#: 13

Worklist Smp#: 15

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

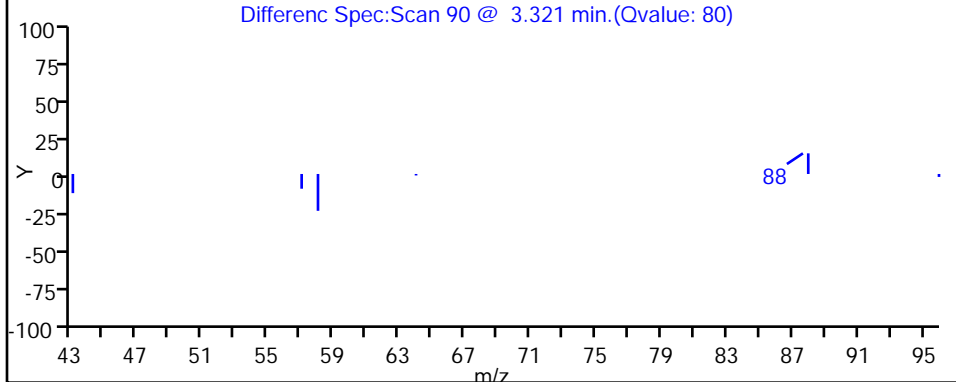
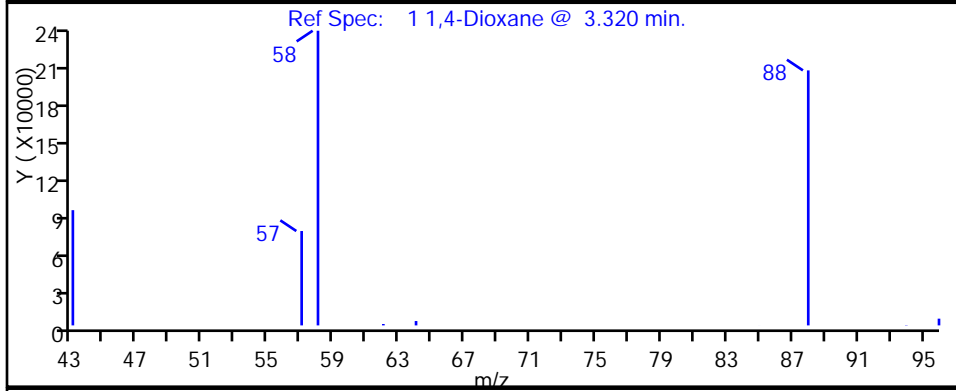
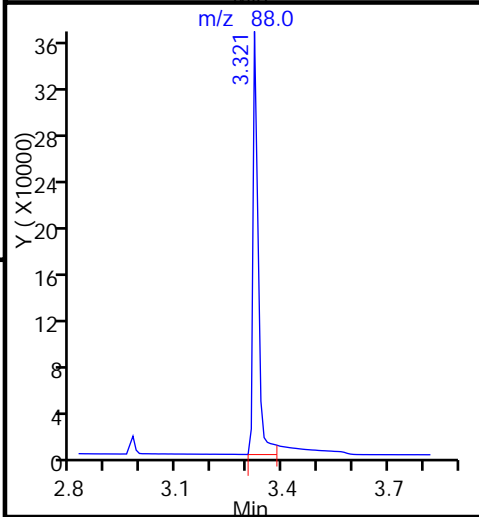
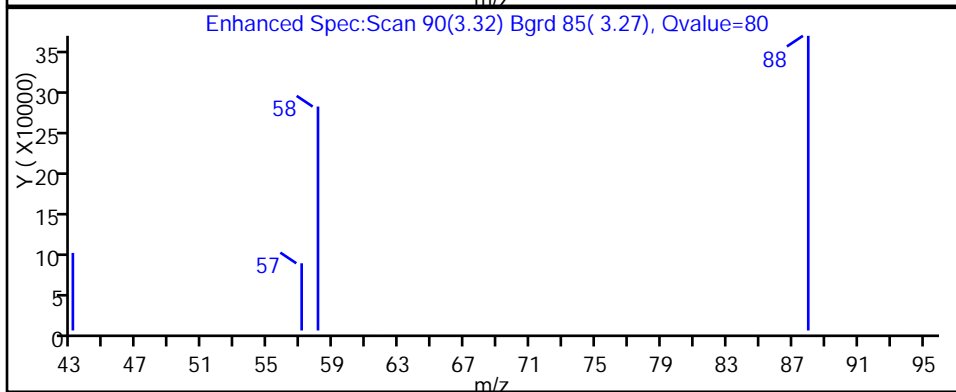
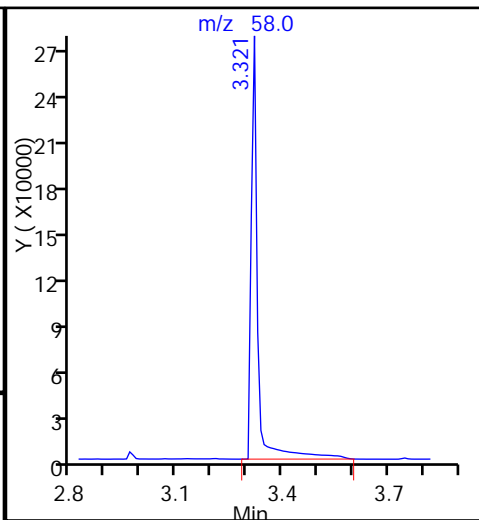
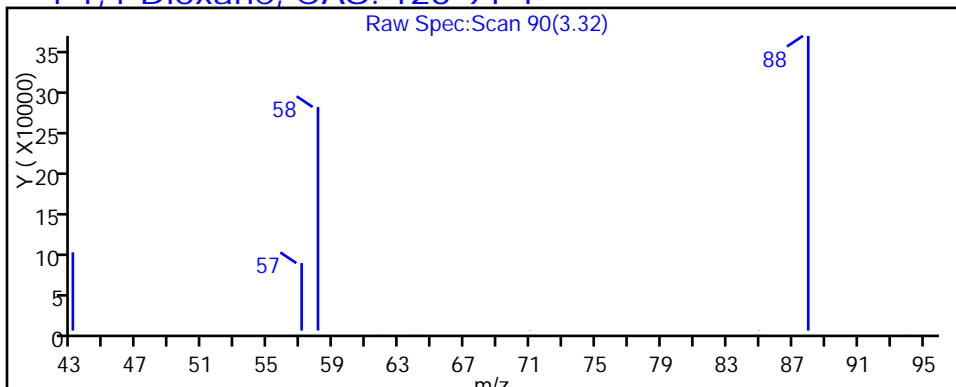
Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)

Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1



TestAmerica Sacramento

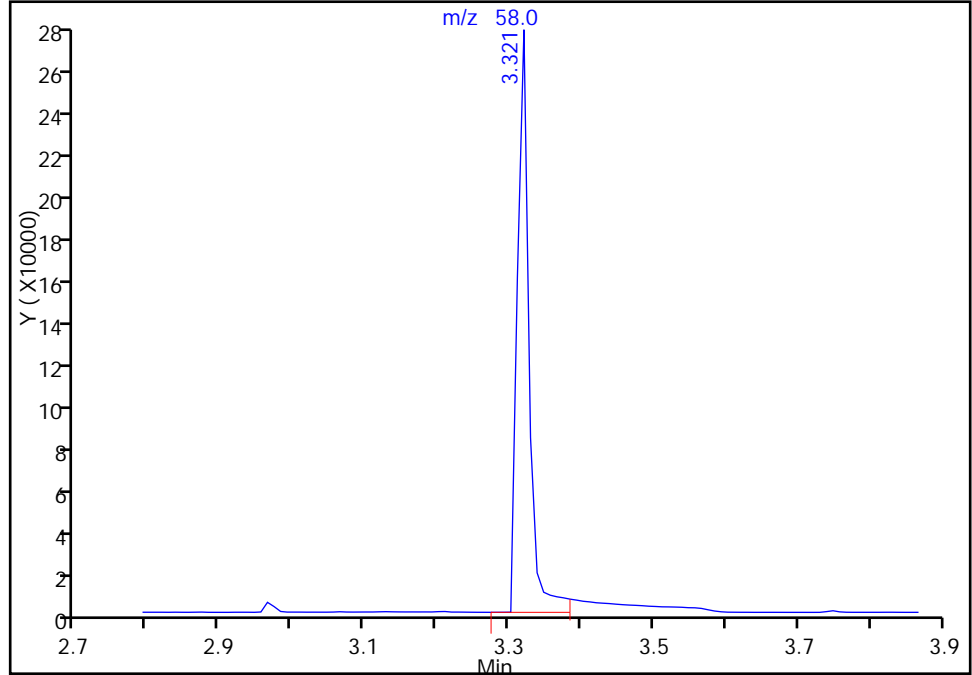
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031413.D
Injection Date: 14-Mar-2017 19:35:30 Instrument ID: SV1
Lims ID: 320-26105-B-12-A Lab Sample ID: 320-26105-12
Client ID: MEAFF-08MW03-0217
Operator ID: ALS Bottle#: 13 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

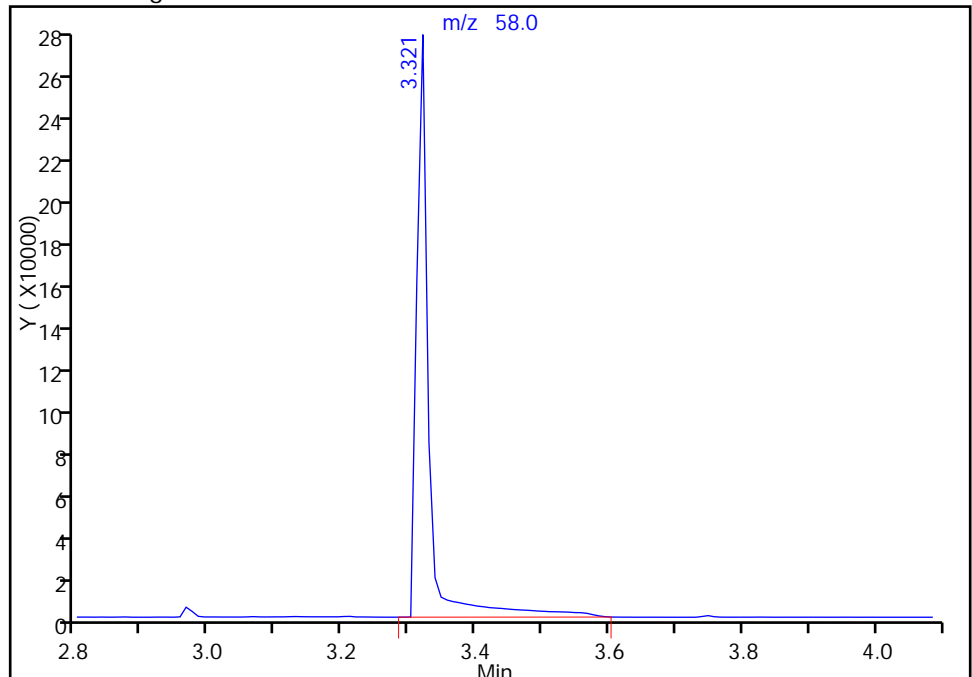
RT: 3.32
Area: 317968
Amount: 12.678719
Amount Units: ug/ml

Processing Integration Results



RT: 3.32
Area: 356110
Amount: 14.199601
Amount Units: ug/ml

Manual Integration Results



Reviewer: lardieo, 15-Mar-2017 14:29:29
Audit Action: Manually Integrated

Audit Reason: Peak Tail

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW06-0217 Lab Sample ID: 320-26105-13
 Matrix: Water Lab File ID: S031414.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 13:15
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1045.4 (mL) Date Analyzed: 03/14/2017 19:58
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	1.4	M	0.96	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	74		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031414.D
 Lims ID: 320-26105-B-13-A
 Client ID: MEAFF-08MW06-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 19:58:30 ALS Bottle#: 14 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-b-13-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: lardieo Date: 14-Mar-2017 21:29:00

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane									
58	3.328	3.320	0.008	77	38398	1.48	80- 120	100	M
88	3.328	3.320	0.008		44922		90- 130	117	
* 2 1,4-Dichlorobenzene-d4									
152	7.173	7.172	0.001	100	644561	10.0	80- 120	100	
150	7.173	7.172	0.001		992800		135- 175	154	
115	7.173	7.172	0.001		359568		35.8- 75.8	55.8	
\$ 3 Nitrobenzene-d5									
82	8.035	8.035	0.000	99	288470	3.71	80- 120	100	
128	8.044	8.035	0.009		154635		33.8- 73.8	53.6	
54	8.035	8.035	0.000		163796		37.5- 77.5	56.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031414.D

Injection Date: 14-Mar-2017 19:58:30

Instrument ID: SV1

Operator ID:

Lims ID: 320-26105-B-13-A

Lab Sample ID: 320-26105-13

Worklist Smp#: 16

Client ID: MEAFF-08MW06-0217

Injection Vol: 1.0 ul

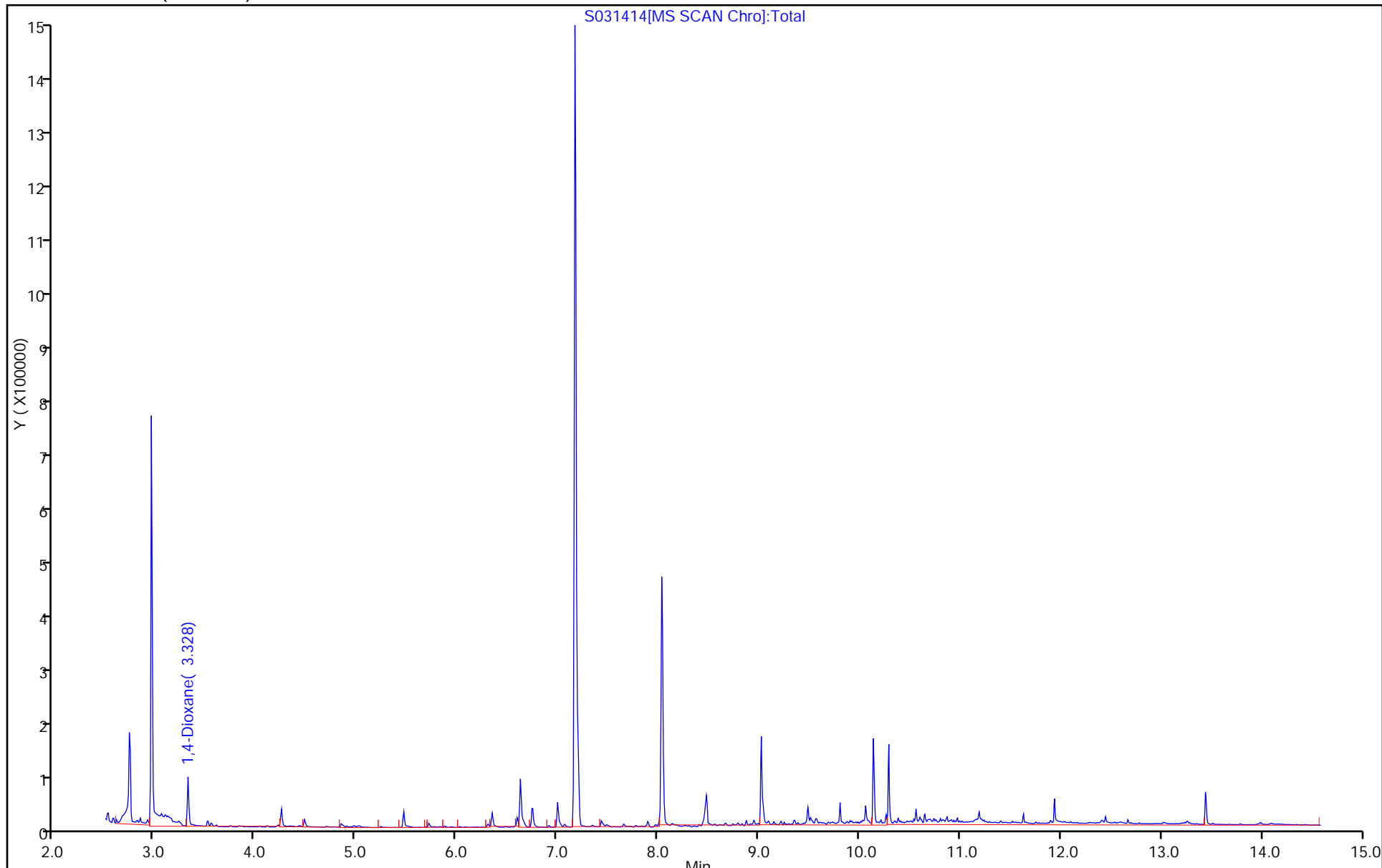
Dil. Factor: 1.0000

ALS Bottle#: 14

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031414.D
 Lims ID: 320-26105-B-13-A
 Client ID: MEAFF-08MW06-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 19:58:30 ALS Bottle#: 14 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-b-13-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: lardieo Date: 14-Mar-2017 21:29:00

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.71	74.12

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031414.D

Injection Date: 14-Mar-2017 19:58:30

Instrument ID: SV1

Lims ID: 320-26105-B-13-A

Lab Sample ID: 320-26105-13

Client ID: MEAFF-08MW06-0217

Operator ID:

ALS Bottle#: 14

Worklist Smp#: 16

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

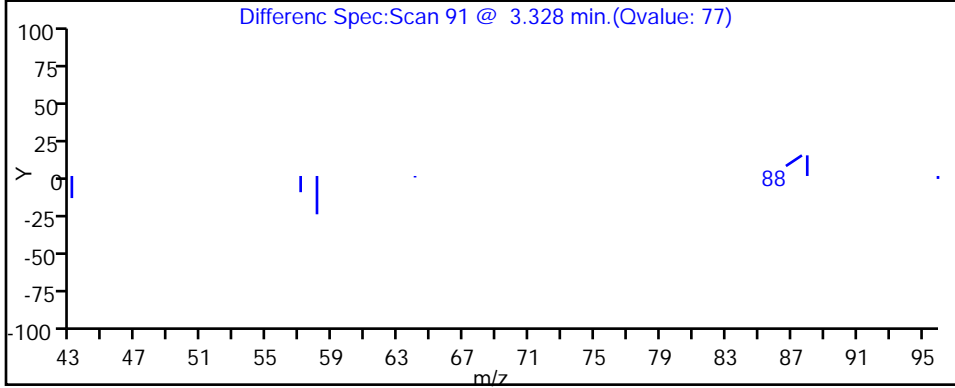
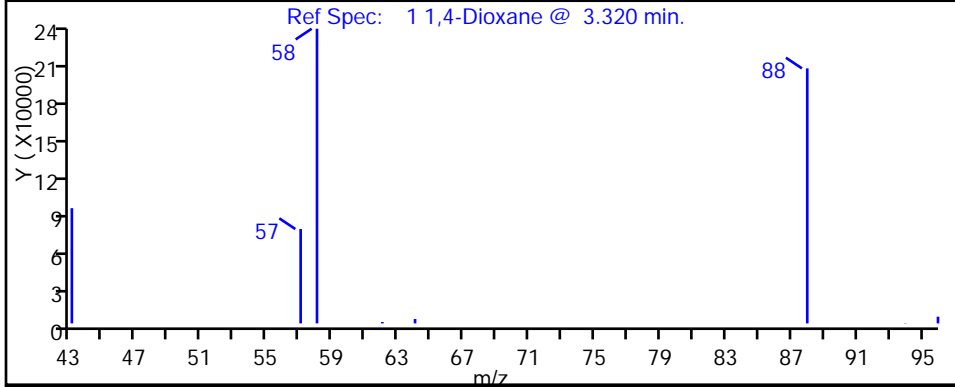
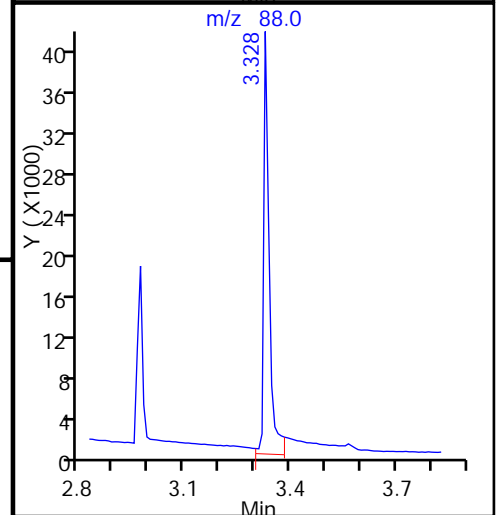
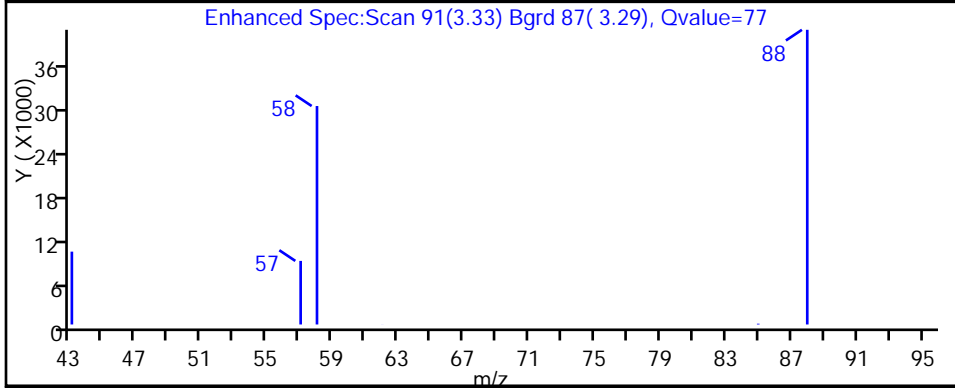
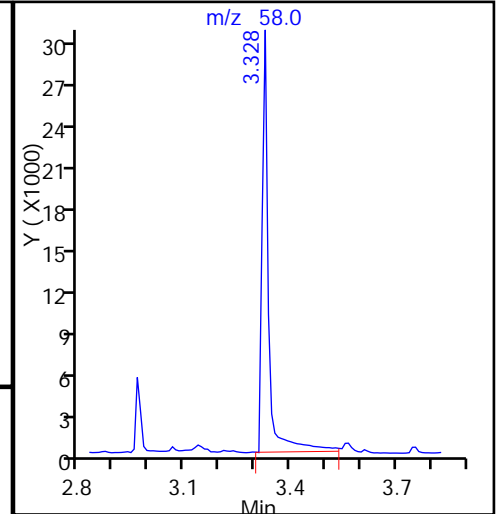
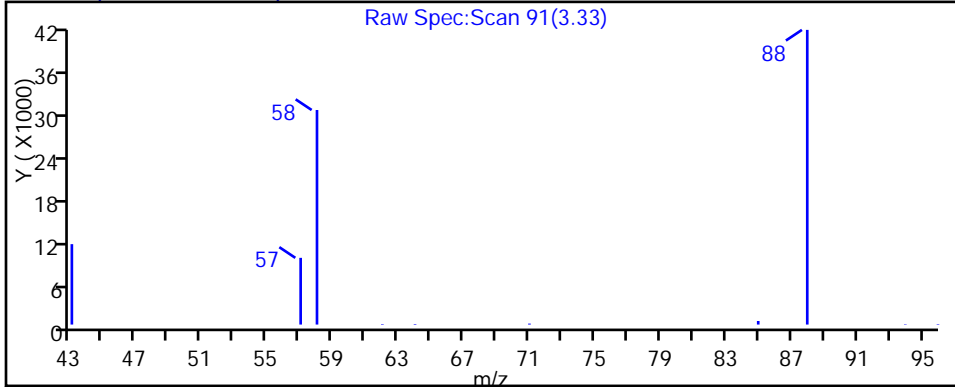
Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)

Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1



TestAmerica Sacramento

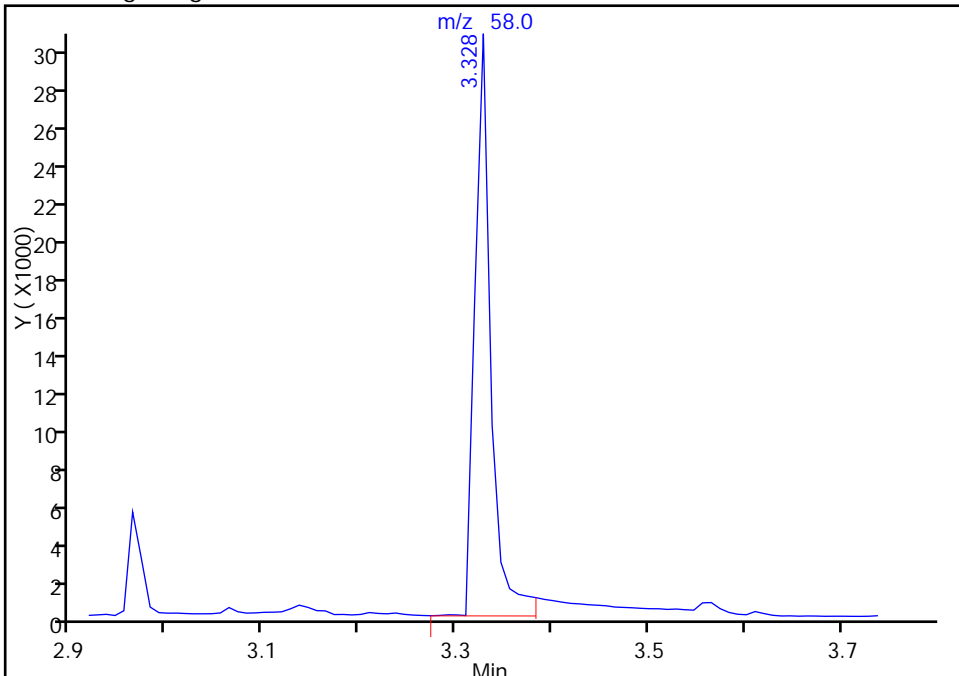
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031414.D
Injection Date: 14-Mar-2017 19:58:30 Instrument ID: SV1
Lims ID: 320-26105-B-13-A Lab Sample ID: 320-26105-13
Client ID: MEAFF-08MW06-0217
Operator ID: ALS Bottle#: 14 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

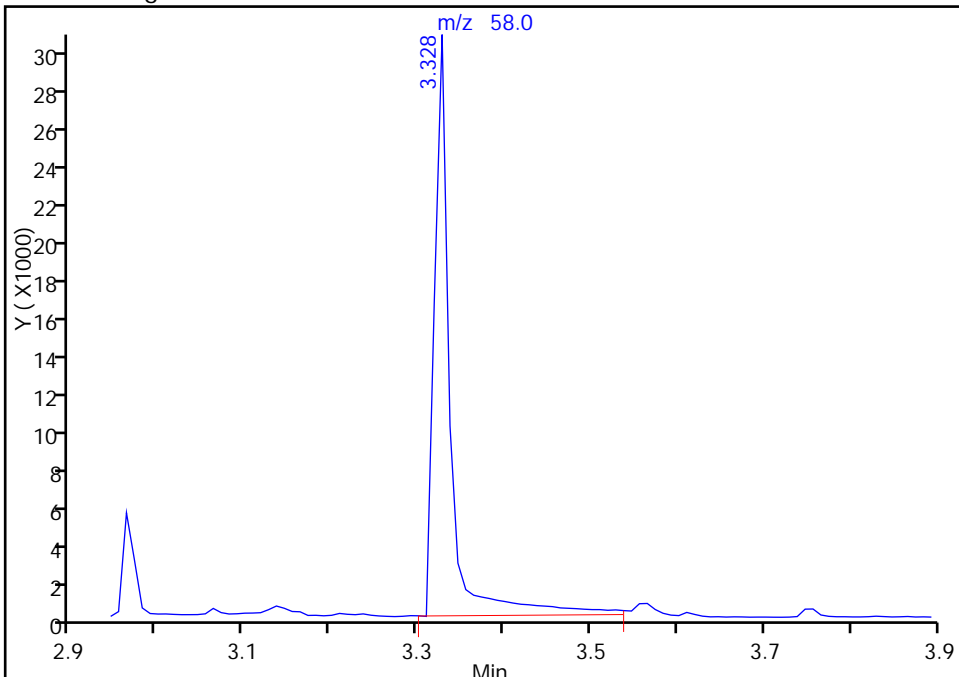
RT: 3.33
Area: 34816
Amount: 1.346285
Amount Units: ug/ml

Processing Integration Results



RT: 3.33
Area: 38398
Amount: 1.484795
Amount Units: ug/ml

Manual Integration Results



Reviewer: lardieo, 15-Mar-2017 14:29:42
Audit Action: Manually Integrated

Audit Reason: Peak Tail

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-FD02-0217 Lab Sample ID: 320-26105-14
 Matrix: Water Lab File ID: S031415.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 00:00
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1039.7 (mL) Date Analyzed: 03/14/2017 20:21
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	1.4	M	0.96	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	62		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031415.D
 Lims ID: 320-26105-A-14-A
 Client ID: MEAFF-FD02-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 20:21:30 ALS Bottle#: 15 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-14-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: lardieo Date: 14-Mar-2017 21:29:17

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
	1 1,4-Dioxane								
58	3.320	3.320	0.000	83	35755	1.47	80- 120	100	M
88	3.320	3.320	0.000		42552		90- 130	119	
	* 2 1,4-Dichlorobenzene-d4								
152	7.173	7.172	0.001	100	607140	10.0	80- 120	100	
150	7.173	7.172	0.001		939148		135- 175	155	
115	7.173	7.172	0.001		337996		35.8- 75.8	55.7	
	\$ 3 Nitrobenzene-d5								
82	8.035	8.035	0.000	99	226670	3.09	80- 120	100	
128	8.043	8.035	0.008		122328		33.8- 73.8	54.0	
54	8.035	8.035	0.000		128316		37.5- 77.5	56.6	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031415.D

Injection Date: 14-Mar-2017 20:21:30

Instrument ID: SV1

Operator ID:

Lims ID: 320-26105-A-14-A

Lab Sample ID: 320-26105-14

Worklist Smp#: 17

Client ID: MEAFF-FD02-0217

Injection Vol: 1.0 ul

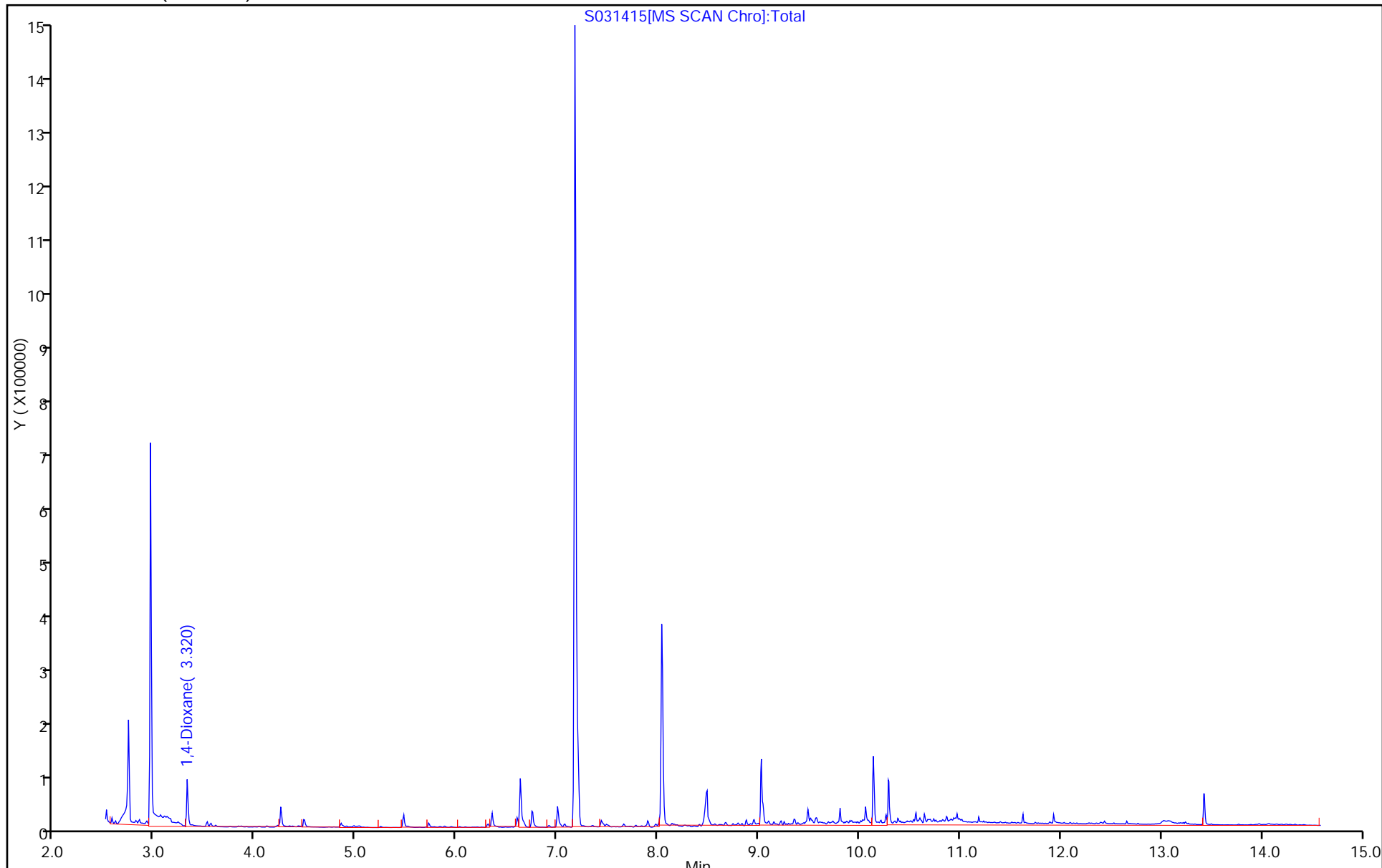
Dil. Factor: 1.0000

ALS Bottle#: 15

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031415.D
 Lims ID: 320-26105-A-14-A
 Client ID: MEAFF-FD02-0217
 Sample Type: Client
 Inject. Date: 14-Mar-2017 20:21:30 ALS Bottle#: 15 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-14-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: lardieo Date: 14-Mar-2017 21:29:17

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.09	61.83

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031415.D

Injection Date: 14-Mar-2017 20:21:30

Instrument ID: SV1

Lims ID: 320-26105-A-14-A

Lab Sample ID: 320-26105-14

Client ID: MEAFF-FD02-0217

Operator ID:

ALS Bottle#: 15

Worklist Smp#: 17

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

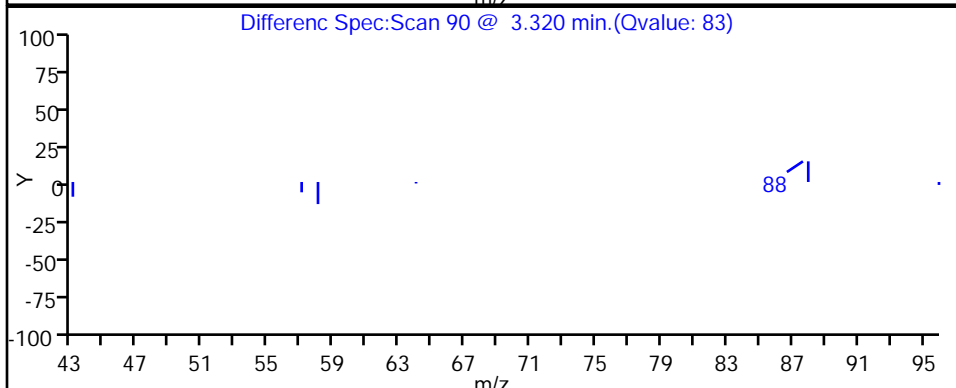
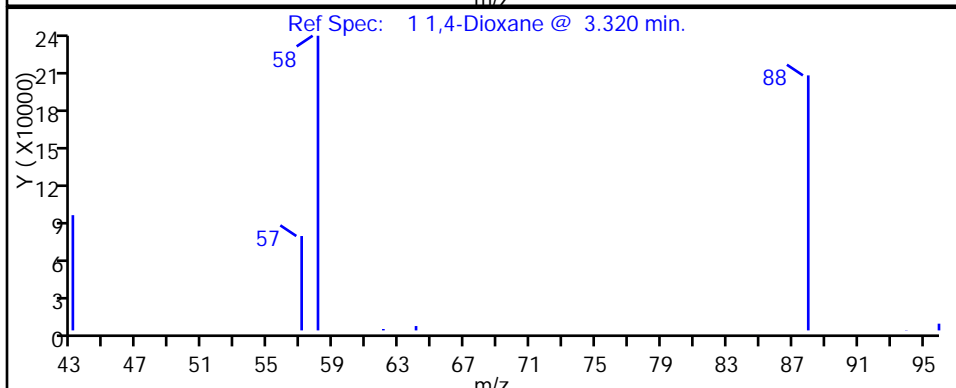
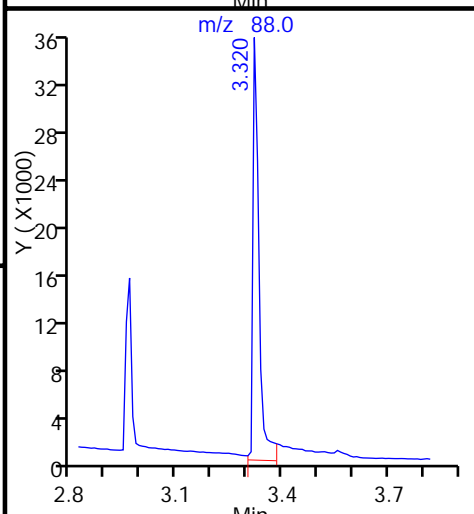
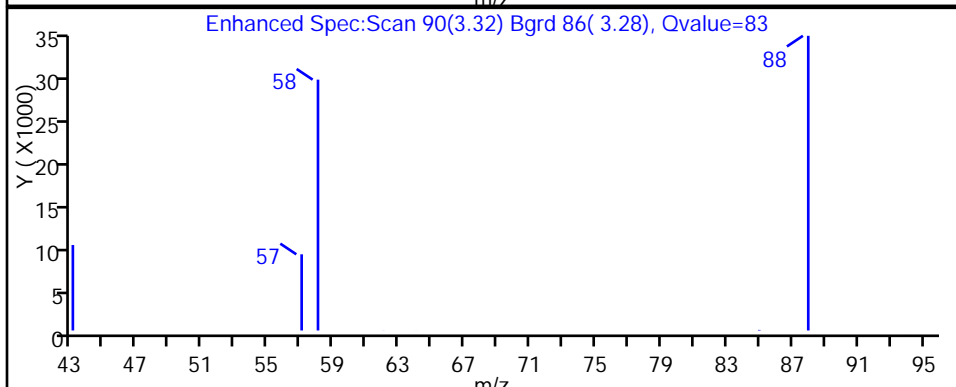
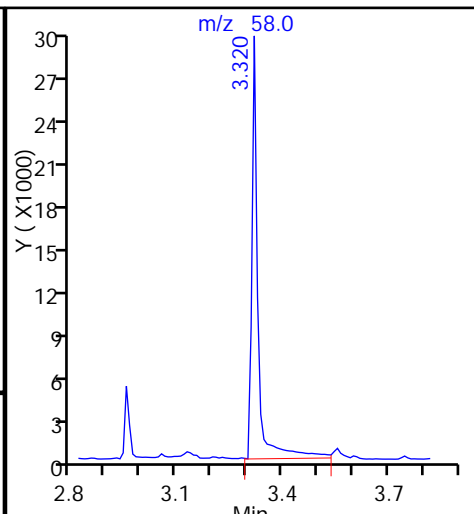
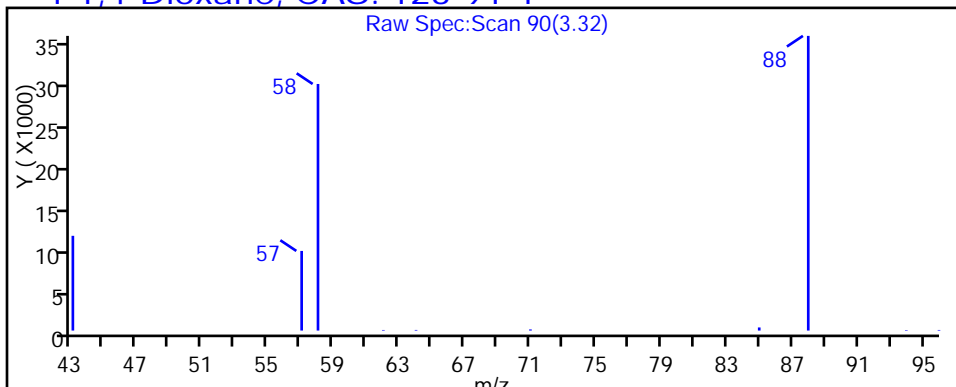
Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)

Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1



TestAmerica Sacramento

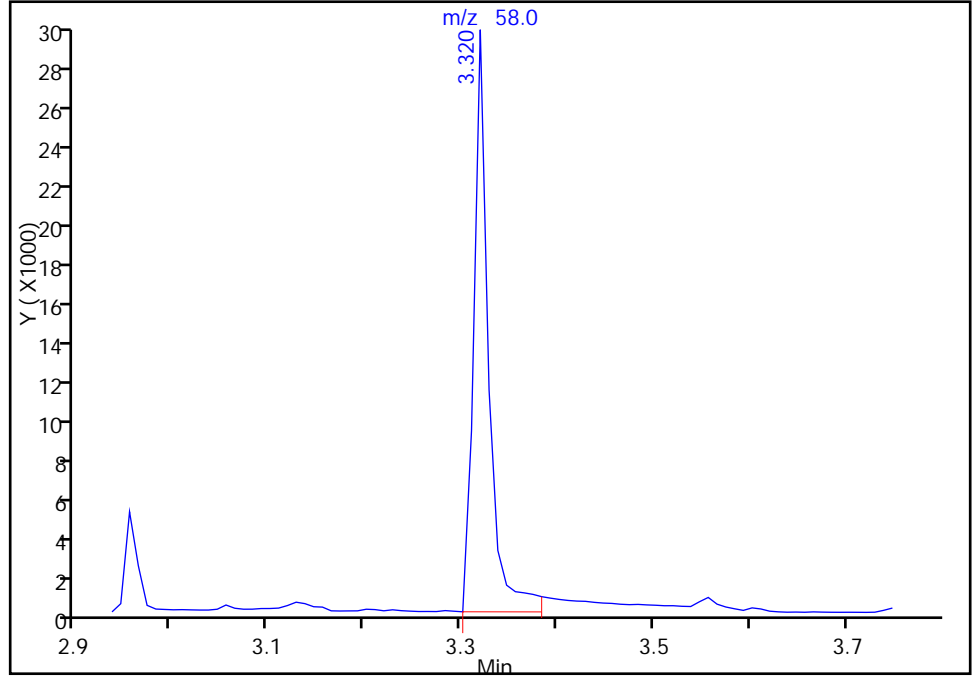
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031415.D
Injection Date: 14-Mar-2017 20:21:30 Instrument ID: SV1
Lims ID: 320-26105-A-14-A Lab Sample ID: 320-26105-14
Client ID: MEAFF-FD02-0217
Operator ID: ALS Bottle#: 15 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

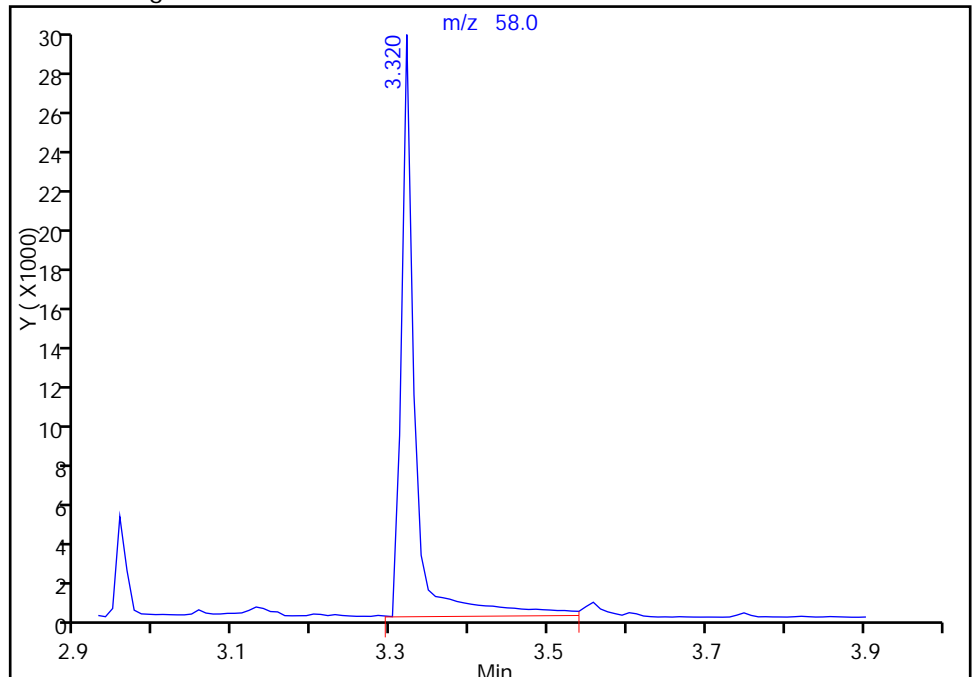
RT: 3.32
Area: 32041
Amount: 1.315344
Amount Units: ug/ml

Processing Integration Results



RT: 3.32
Area: 35755
Amount: 1.467810
Amount Units: ug/ml

Manual Integration Results



Reviewer: lardieo, 15-Mar-2017 14:29:51
Audit Action: Manually Integrated

Audit Reason: Peak Tail

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1 Analy Batch No.: 151686

SDG No.: _____

Instrument ID: SV1 GC Column: HP-5MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/22/2017 09:35 Calibration End Date: 02/22/2017 12:09 Calibration ID: 28577

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-151686/1	14D0222A.D
Level 2	IC 320-151686/2	14D0222B.D
Level 3	IC 320-151686/3	14D0222C.D
Level 4	IC 320-151686/4	14D0222D.D
Level 5	ICIS 320-151686/5	14D0222E.D
Level 6	IC 320-151686/6	14D0222F.D
Level 7	IC 320-151686/7	14D0222G.D
Level 8	IC 320-151686/8	14D0222H.D

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	LVL 8														
1,4-Dioxane	0.4455 0.3906	0.3950 0.4282	0.3860 0.3515	0.4401	0.3728	Ave		0.4012			8.4		15.0				
Nitrobenzene-d5	1.2661 1.2121	1.1089 1.3702	1.1243 1.1151	1.3085	1.1565	Ave		1.2077			8.2		15.0				

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1 Analy Batch No.: 151686

SDG No.: _____

Instrument ID: SV1 GC Column: HP-5MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/22/2017 09:35 Calibration End Date: 02/22/2017 12:09 Calibration ID: 28577

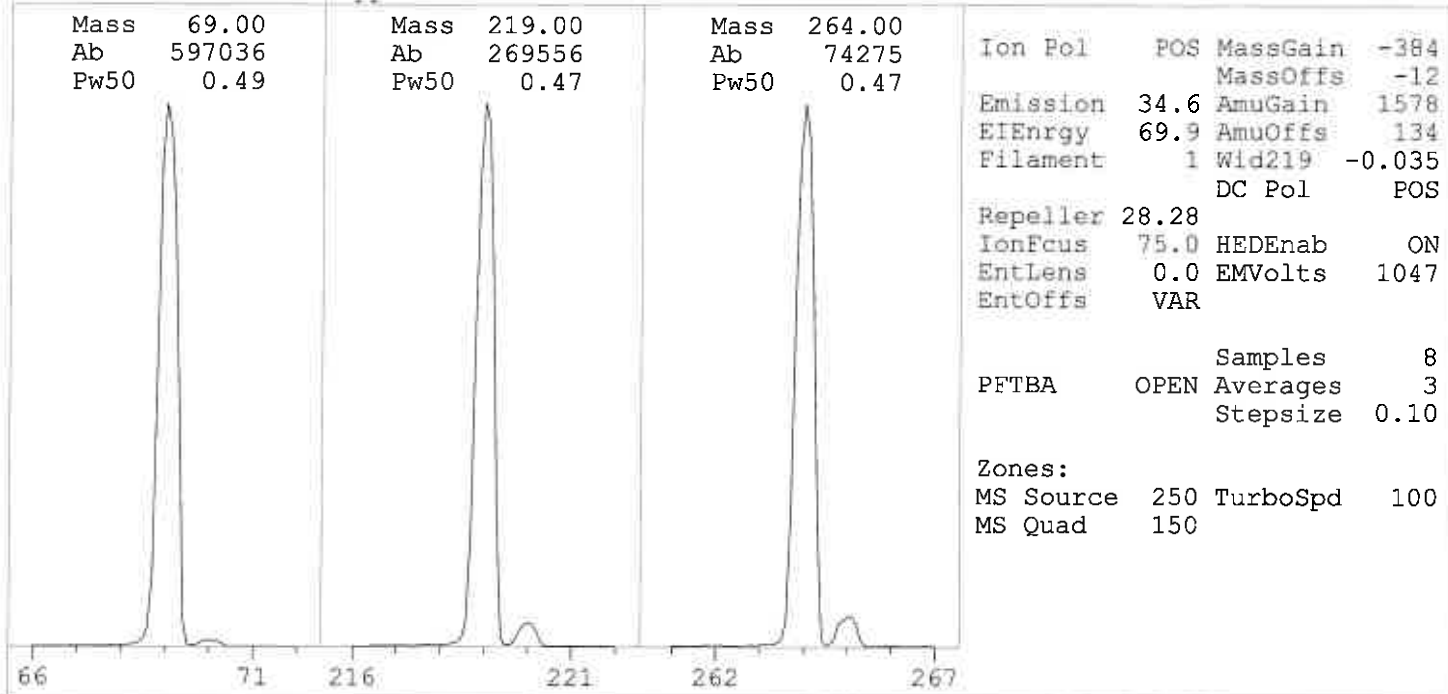
Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-151686/1	14D0222A.D
Level 2	IC 320-151686/2	14D0222B.D
Level 3	IC 320-151686/3	14D0222C.D
Level 4	IC 320-151686/4	14D0222D.D
Level 5	ICIS 320-151686/5	14D0222E.D
Level 6	IC 320-151686/6	14D0222F.D
Level 7	IC 320-151686/7	14D0222G.D
Level 8	IC 320-151686/8	14D0222H.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/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 8			LVL 6	LVL 7	LVL 8		
1,4-Dioxane	DCBd 4	Ave	15367 570238	28517 1391248	59554 2749219	150814	293131	0.500 20.0	1.00 50.0	2.00 100	5.00	10.0
Nitrobenzene-d5	DCBd 4	Ave	43667 1769342	80062 4451578	173471 8721763	448379	909372	0.500 20.0	1.00 50.0	2.00 100	5.00	10.0

Curve Type Legend:

Ave = Average ISTD

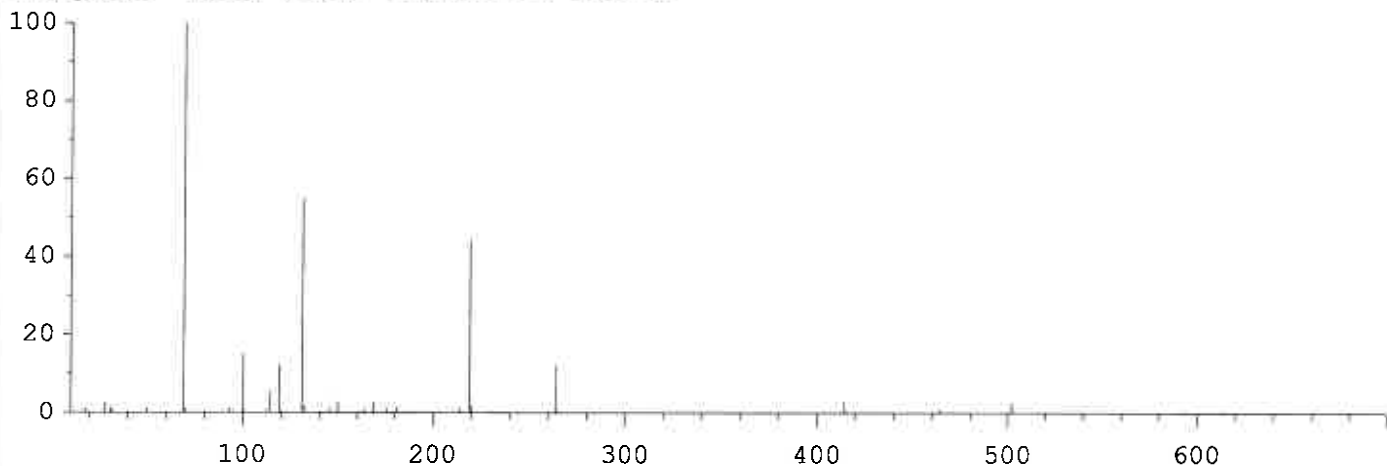


Ion Pol POS MassGain -384
 MassOffs -12
 Emission 34.6 AmuGain 1578
 EIEnrgy 69.9 AmuOffs 134
 Filament 1 Wid219 -0.035
 DC Pol POS
 Repeller 28.28
 IonFcus 75.0 HEDEnab ON
 EntLens 0.0 EMVolts 1047
 EntOffs VAR

Samples 8
 PFTBA OPEN Averages 3
 Stepsize 0.10

Zones:
 MS Source 250 TurboSpd 100
 MS Quad 150

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
 126 peaks Base: 69.00 Abundance: 484096



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	484096	100.00	70.10	5442	1.12
219.00	215424	44.50	220.00	9518	4.42
264.00	59680	12.33	265.00	3715	6.22

Air/Water Check: H2O~0.93% N2~2.53% O2~0.67% CO2~0.07% N2/H2O~272.84%

Column Flow: Front: 1.4 Back: 0 ml/min. Interface Temp: 250

Ramp Criteria:

Ion Focus Maximum 90 volts using ion 264; EM Gain 158740
 Repeller Maximum 35 volts using ion 219;

MassGain Values @Samples: -384@3 -384@2 -384@1 -384@0 -384@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	134.0	134.0	134.0	134.0	134.0	134.0	134.0
Entrance Lens Offset:	14.6	12.0	13.3	12.5	13.8	12.8	12.8
Target Abund(%):	1.0	100.0	55.0	45.0	3.0	2.0	
Actual Tune Abund(%):	1.0	100.0	55.0	44.5	3.0	2.4	

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222A.D
 Lims ID: IC CS-1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 22-Feb-2017 09:35:30 ALS Bottle#: 1 Worklist Smp#: 1
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC CS-1 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 22-Feb-2017 14:19:26 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 10:04:37

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	S/N	Flags	
	1,4-Dioxane											
	58	3.355	3.354	0.001	78	15367	0.5000	0.5552	80- 120	100	13377	M
	88	3.355	3.354	0.001		19805			92- 132	129		
	* 2,4-Dichlorobenzene-d4											
	152	7.197	7.197	0.000	99	689814	10.0	10.0	80- 120	100		
	150	7.197	7.197	0.000		1067566			136- 176	155		
	115	7.197	7.197	0.000		393942			37.1- 77.1	57.1		
	\$ 3 Nitrobenzene-d5											
	82	8.059	8.059	0.000	100	43667	0.5000	0.5242	80- 120	100		M
	128	8.059	8.059	0.000		20703			29.8- 69.8	47.4		M
	54	8.059	8.059	0.000		25267			38.3- 78.3	57.9		

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL1_00011

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222A.D

Injection Date: 22-Feb-2017 09:35:30

Instrument ID: SV1

Operator ID:

Lims ID: IC CS-1

Worklist Smp#: 1

Client ID:

Injection Vol: 1.0 ul

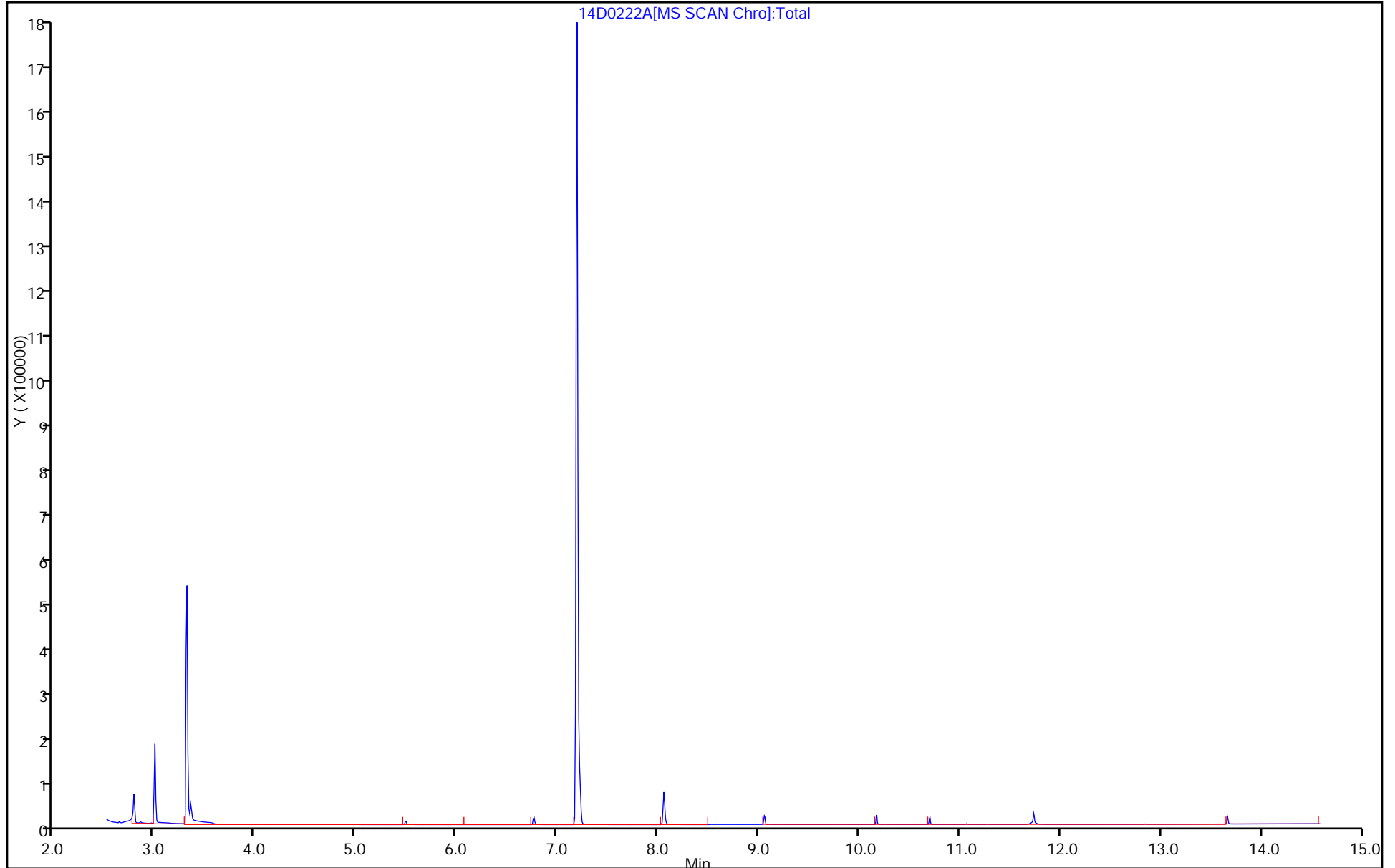
Dil. Factor: 1.0000

ALS Bottle#: 1

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

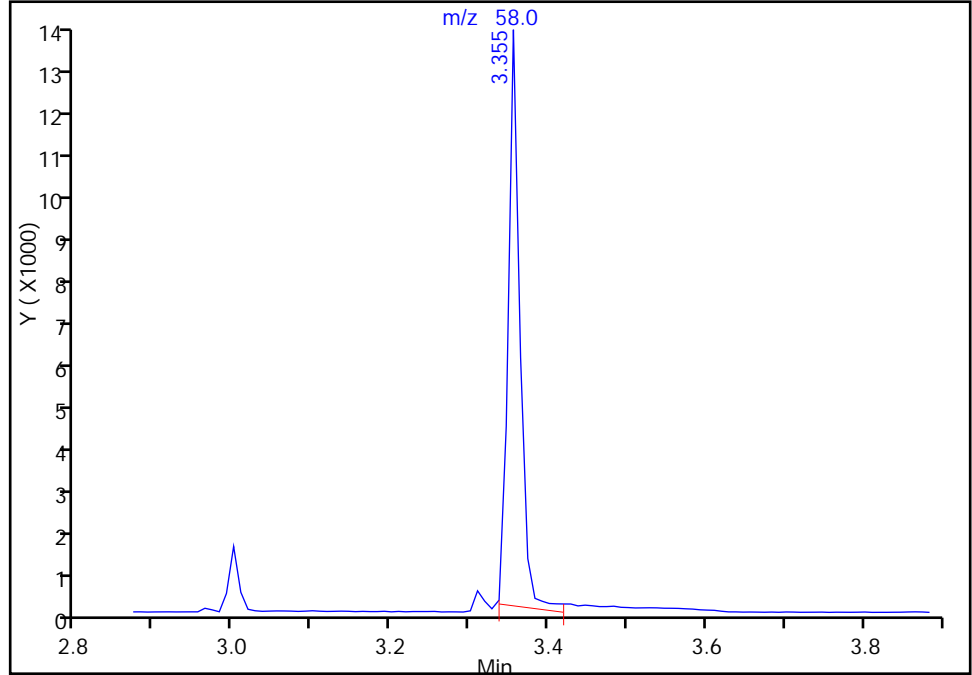
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222A.D
Injection Date: 22-Feb-2017 09:35:30 Instrument ID: SV1
Lims ID: IC CS-1
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

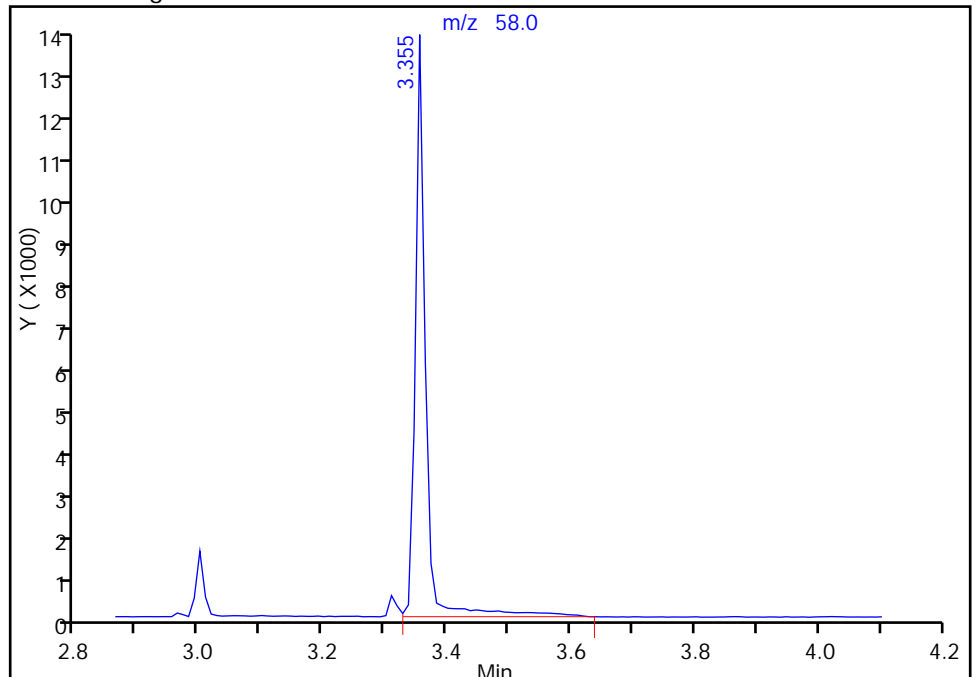
RT: 3.36
Area: 13722
Amount: 0.500000
Amount Units: ug/ml

Processing Integration Results



RT: 3.36
Area: 15367
Amount: 0.555238
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:26
Audit Action: Manually Integrated

Audit Reason: Baseline

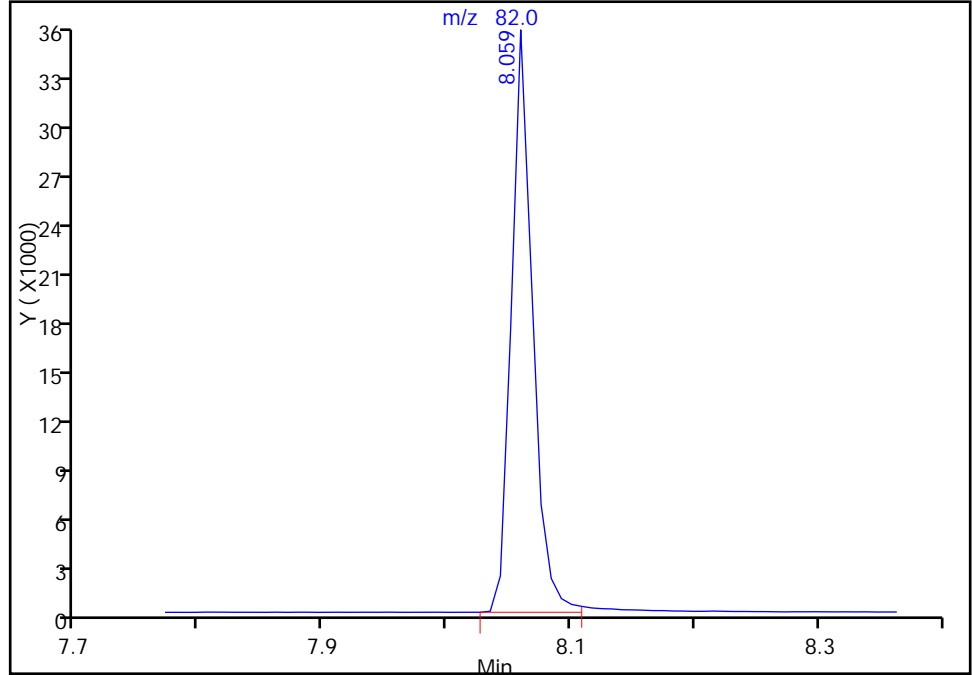
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222A.D
Injection Date: 22-Feb-2017 09:35:30 Instrument ID: SV1
Lims ID: IC CS-1
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

\$ 3 Nitrobenzene-d5, CAS: 4165-60-0
Signal: 1

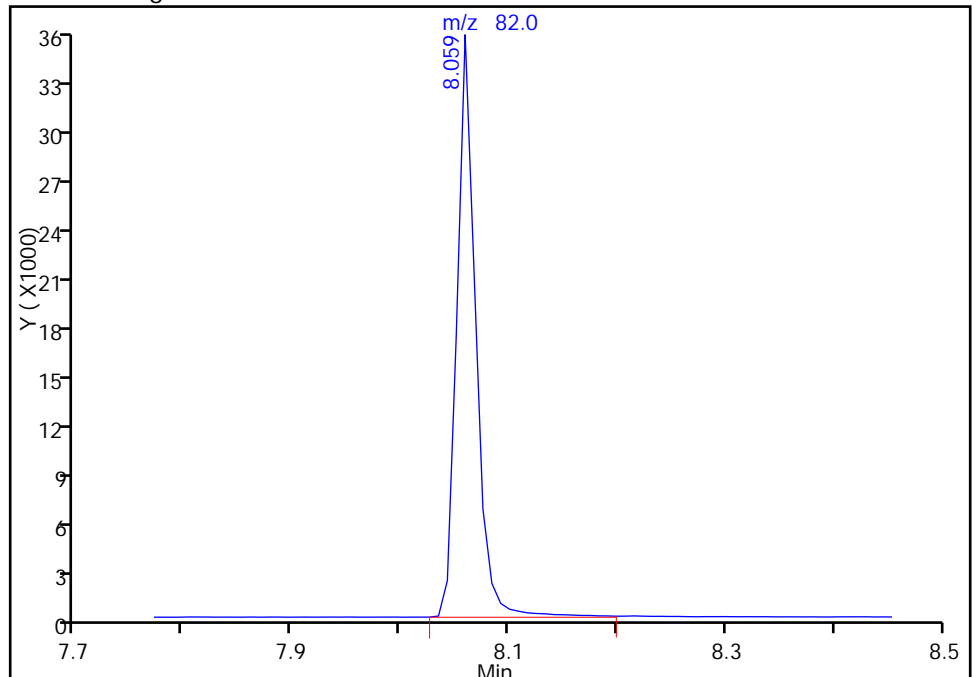
RT: 8.06
Area: 42828
Amount: 0.500000
Amount Units: ug/ml

Processing Integration Results



RT: 8.06
Area: 43667
Amount: 0.524163
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:26
Audit Action: Manually Integrated

Audit Reason: Peak Tail

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222B.D
 Lims ID: IC CS-2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 22-Feb-2017 09:56:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC CS-2 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 22-Feb-2017 14:19:27 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 10:17:50

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
	1 1,4-Dioxane									
	58	3.355	3.354	0.001	97	28517	1.00	0.9844	80- 120	100 M
	88	3.364	3.354	0.010		33413			92- 132	117
	* 2 1,4-Dichlorobenzene-d4									
	152	7.197	7.197	0.000	100	721993	10.0	10.0	80- 120	100
	150	7.197	7.197	0.000		1123841			136- 176	156
	115	7.197	7.197	0.000		416847			37.1- 77.1	57.7
	\$ 3 Nitrobenzene-d5									
	82	8.060	8.059	0.001	99	80062	1.00	0.9182	80- 120	100 M
	128	8.060	8.059	0.001		38136			29.8- 69.8	47.6
	54	8.060	8.059	0.001		46077			38.3- 78.3	57.6

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL2_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222B.D

Injection Date: 22-Feb-2017 09:56:30

Instrument ID: SV1

Operator ID:

Lims ID: IC CS-2

Worklist Smp#: 2

Client ID:

Injection Vol: 1.0 ul

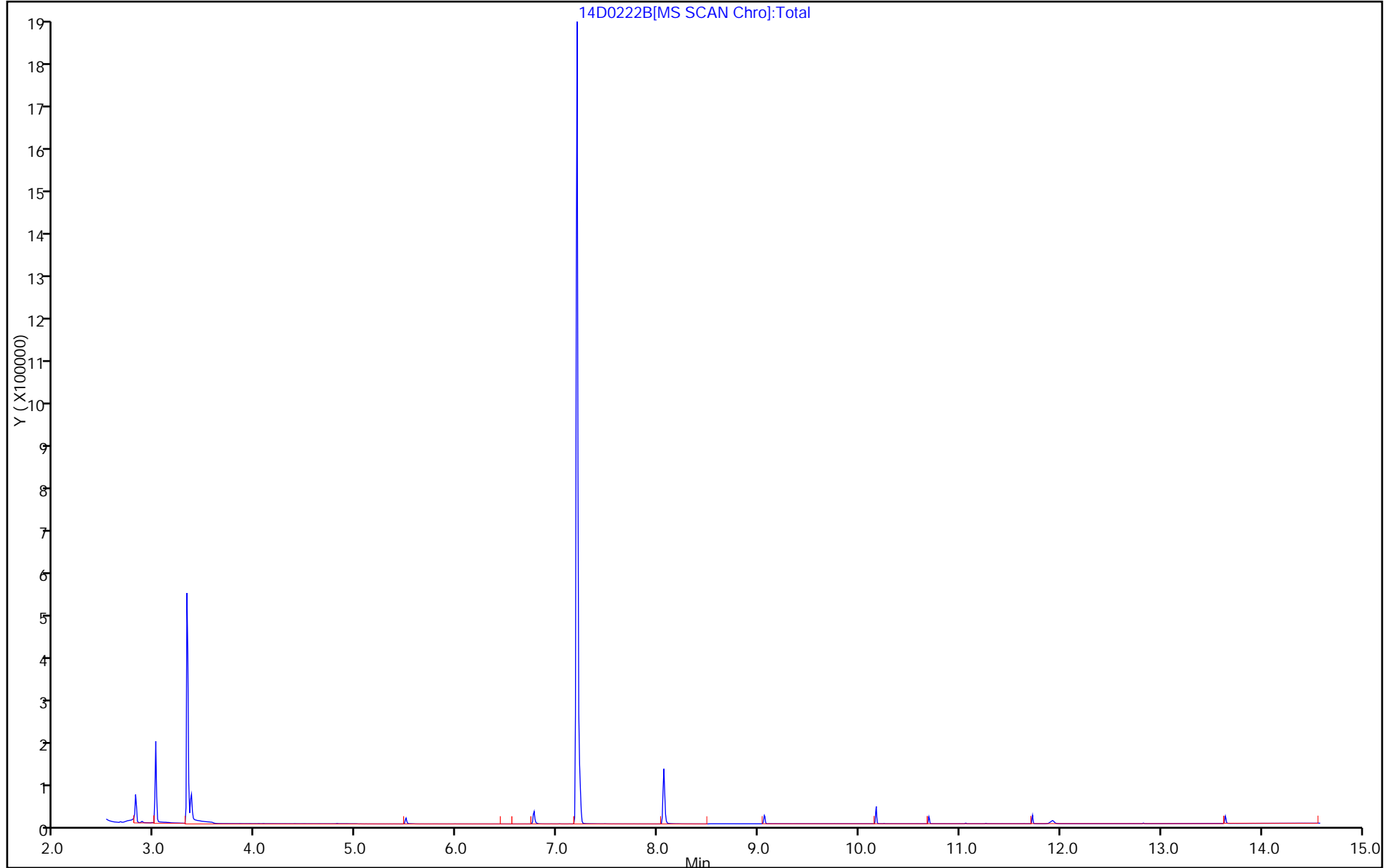
Dil. Factor: 1.0000

ALS Bottle#: 2

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

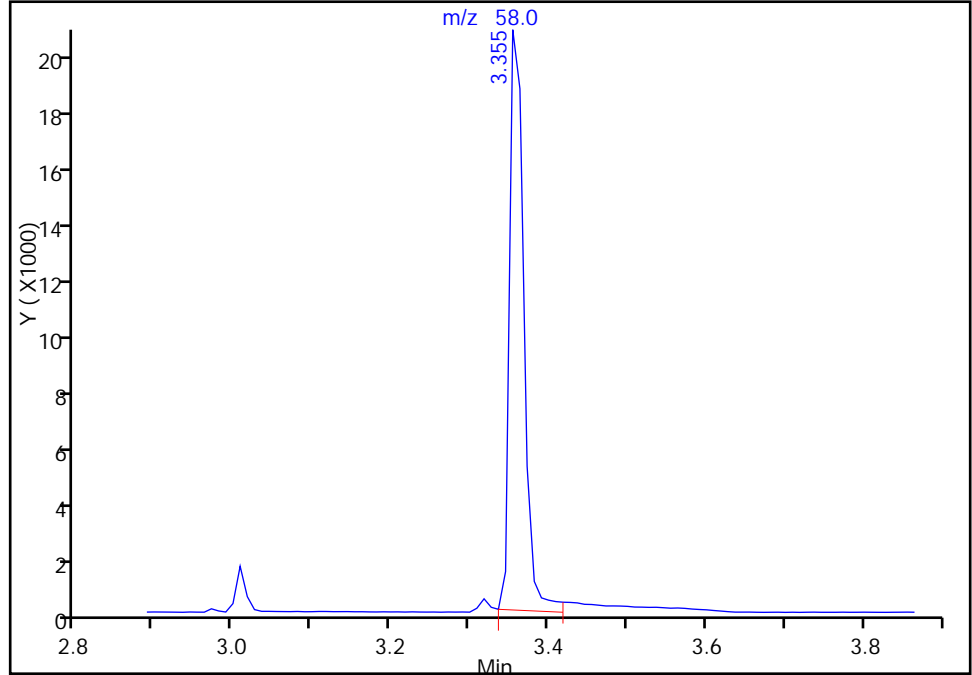
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222B.D
Injection Date: 22-Feb-2017 09:56:30 Instrument ID: SV1
Lims ID: IC CS-2
Client ID:
Operator ID: ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

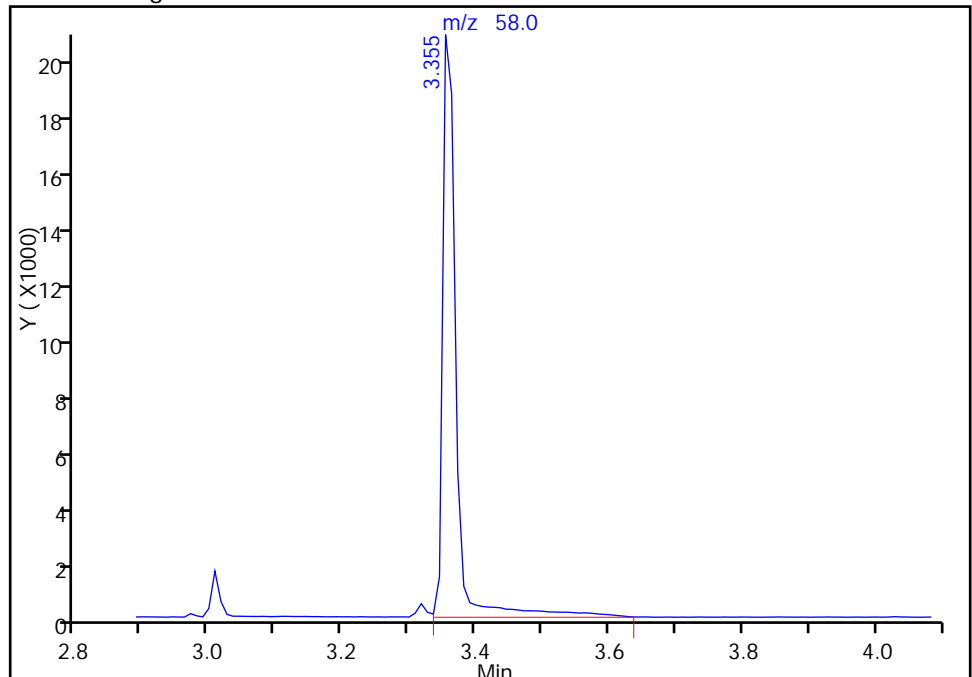
RT: 3.35
Area: 25950
Amount: 0.893015
Amount Units: ug/ml

Processing Integration Results



RT: 3.35
Area: 28517
Amount: 0.984448
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:27
Audit Action: Manually Integrated

Audit Reason: Poor chromatography

TestAmerica Sacramento

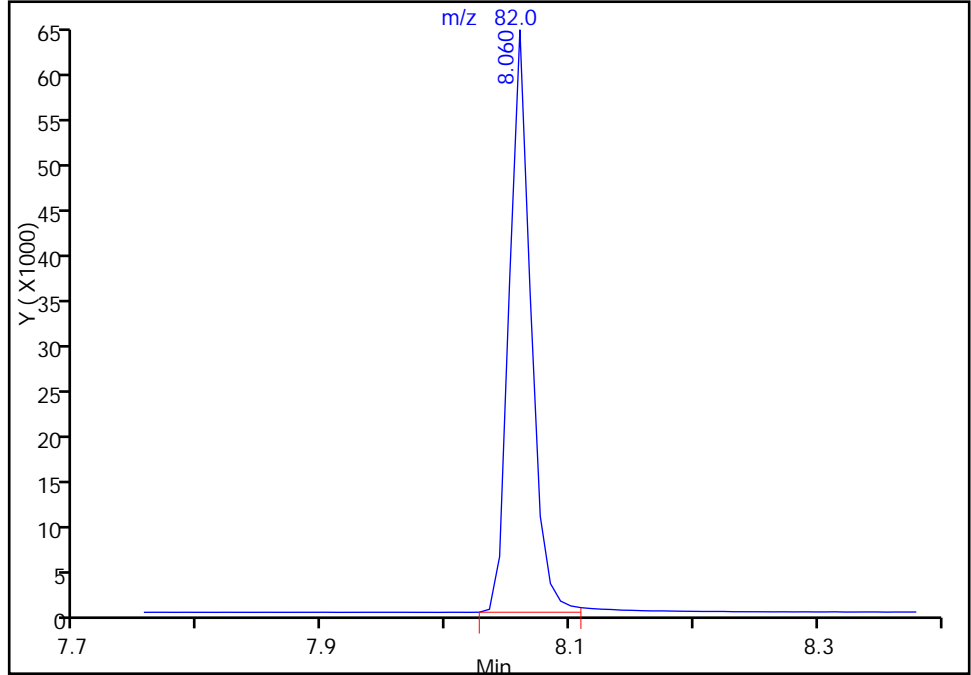
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222B.D
Injection Date: 22-Feb-2017 09:56:30 Instrument ID: SV1
Lims ID: IC CS-2
Client ID:
Operator ID: ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

\$ 3 Nitrobenzene-d5, CAS: 4165-60-0

Signal: 1

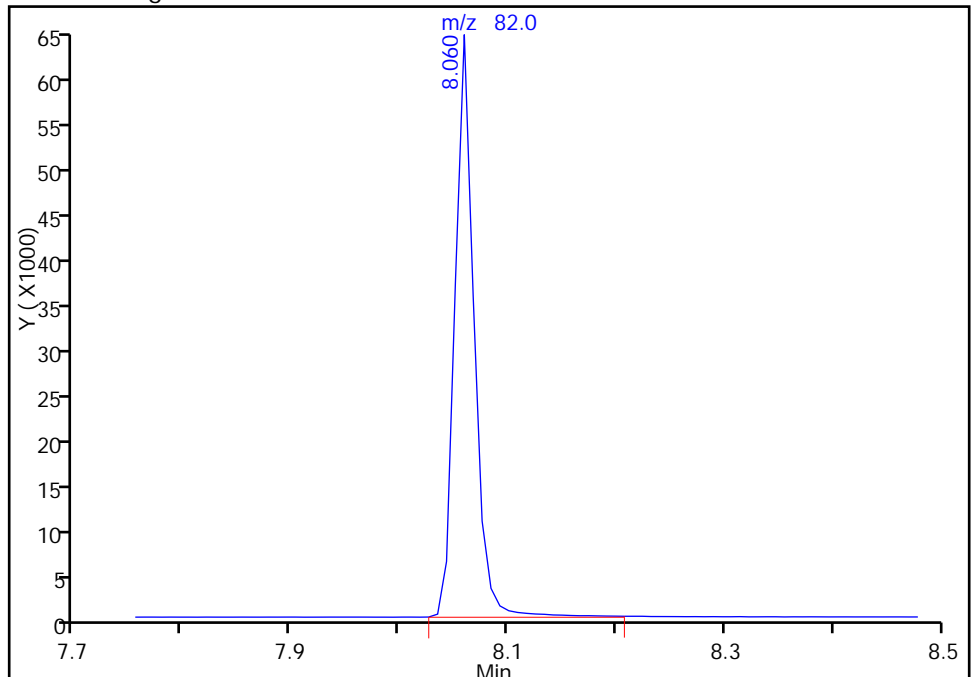
RT: 8.06
Area: 78635
Amount: 0.924884
Amount Units: ug/ml

Processing Integration Results



RT: 8.06
Area: 80062
Amount: 0.918203
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:27

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222C.D
 Lims ID: IC CS-3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 22-Feb-2017 10:19:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC CS-3 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 22-Feb-2017 14:19:28 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 10:46:45

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
	1 1,4-Dioxane									M
58	3.357	3.354	0.003	97	59554	2.00	1.92	80- 120	100	M
88	3.366	3.354	0.012		69299			92- 132	116	
	* 2 1,4-Dichlorobenzene-d4									
152	7.197	7.197	0.000	100	771483	10.0	10.0	80- 120	100	
150	7.197	7.197	0.000		1199044			136- 176	155	
115	7.197	7.197	0.000		444192			37.1- 77.1	57.6	
	\$ 3 Nitrobenzene-d5									M
82	8.060	8.059	0.001	97	173471	2.00	1.86	80- 120	100	M
128	8.060	8.059	0.001		83892			29.8- 69.8	48.4	
54	8.060	8.059	0.001		99669			38.3- 78.3	57.5	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL3_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222C.D

Injection Date: 22-Feb-2017 10:19:30

Instrument ID: SV1

Operator ID:

Lims ID: IC CS-3

Worklist Smp#: 3

Client ID:

Injection Vol: 1.0 ul

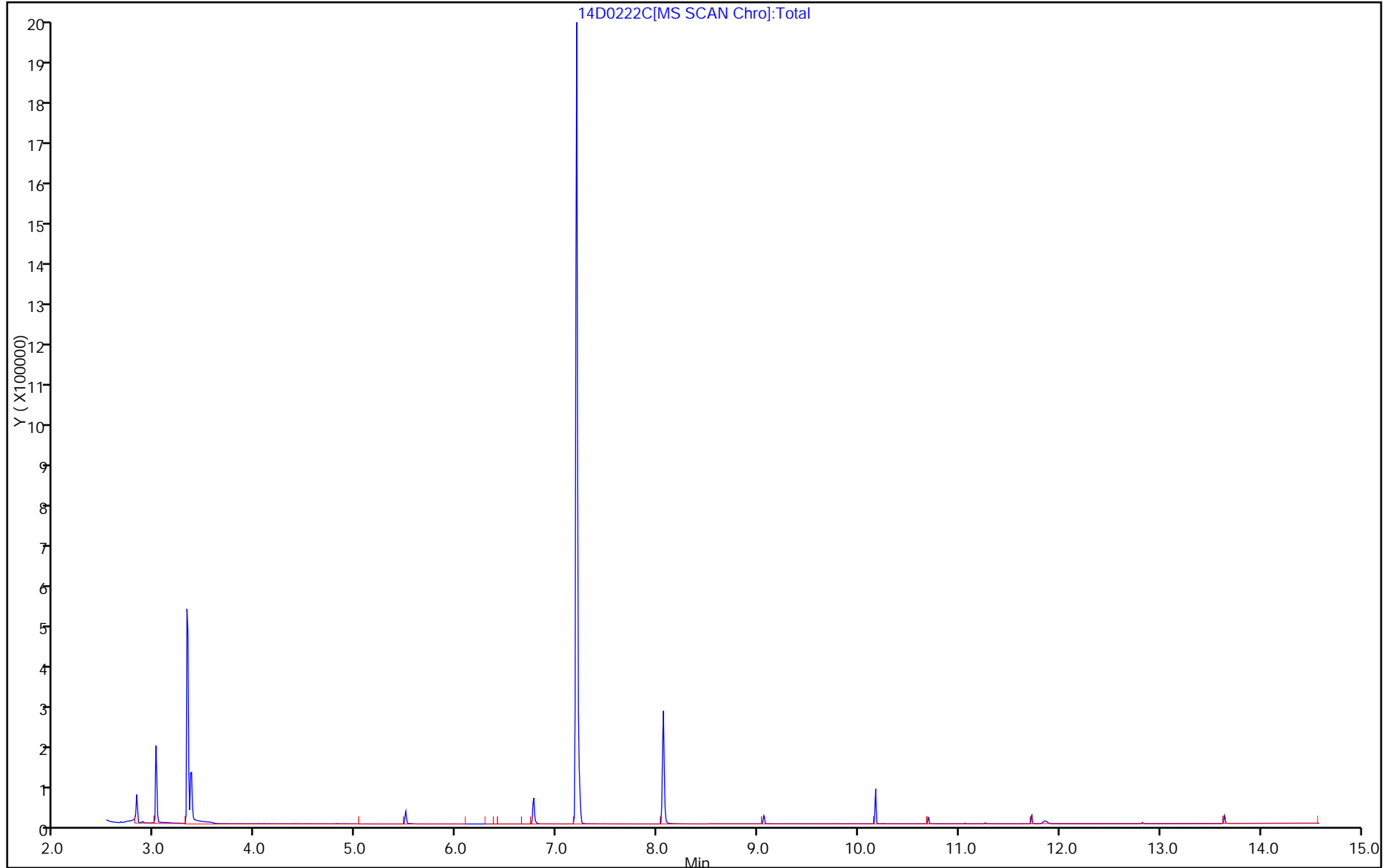
Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

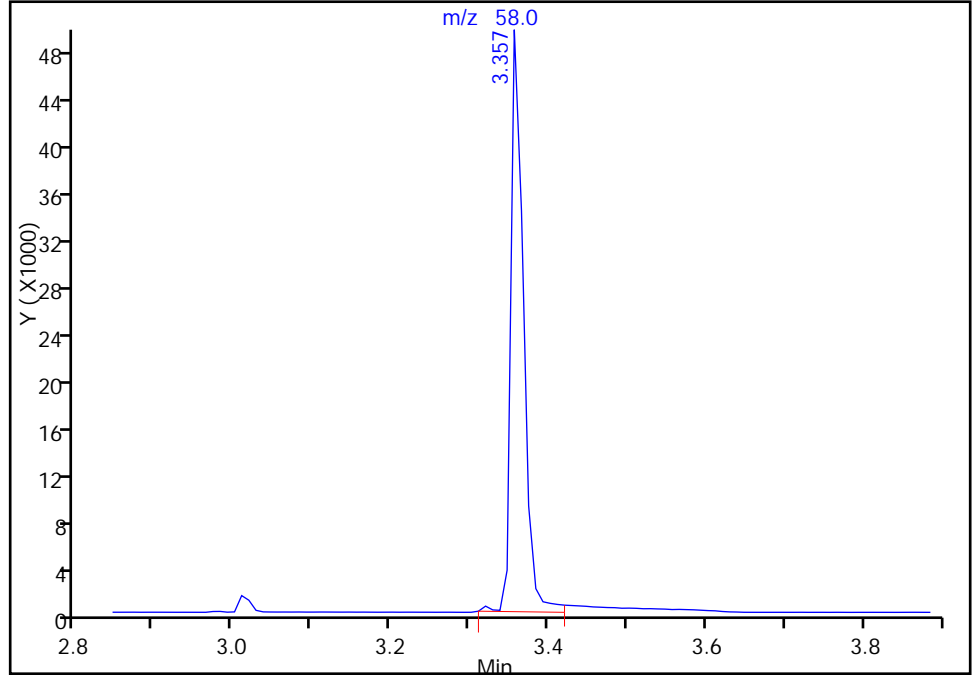
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222C.D
Injection Date: 22-Feb-2017 10:19:30 Instrument ID: SV1
Lims ID: IC CS-3
Client ID:
Operator ID: ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

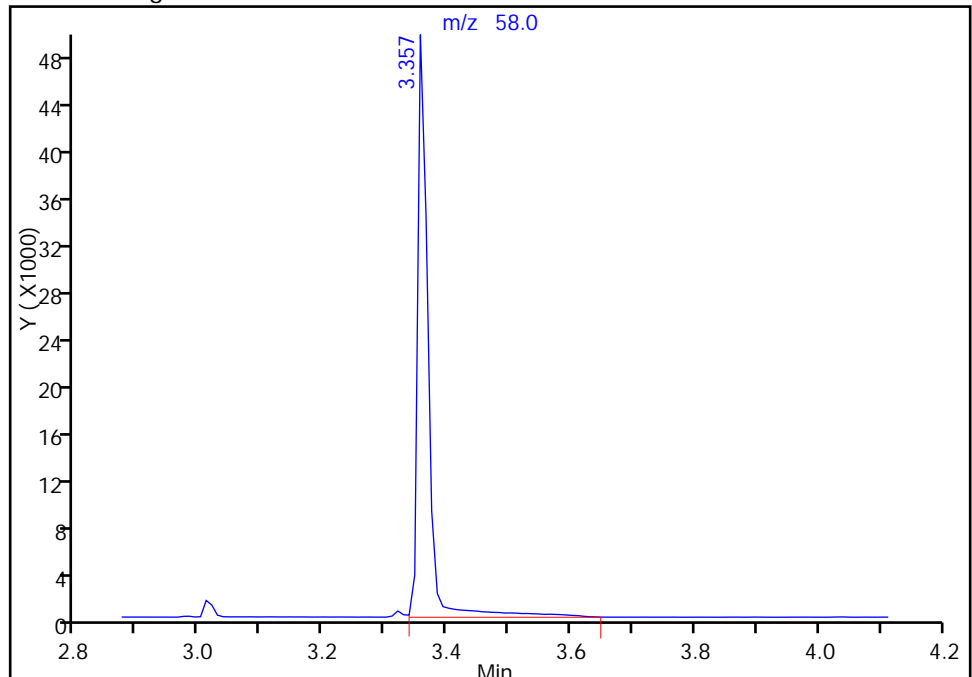
RT: 3.36
Area: 55647
Amount: 1.801497
Amount Units: ug/ml

Processing Integration Results



RT: 3.36
Area: 59554
Amount: 1.924007
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:28
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

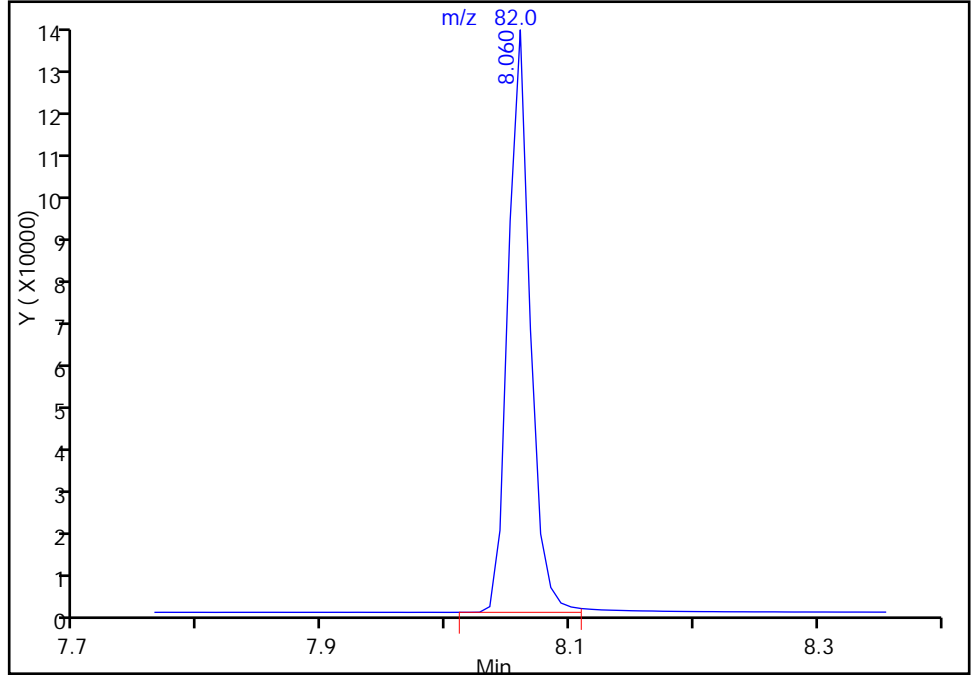
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222C.D
Injection Date: 22-Feb-2017 10:19:30 Instrument ID: SV1
Lims ID: IC CS-3
Client ID:
Operator ID: ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

\$ 3 Nitrobenzene-d5, CAS: 4165-60-0

Signal: 1

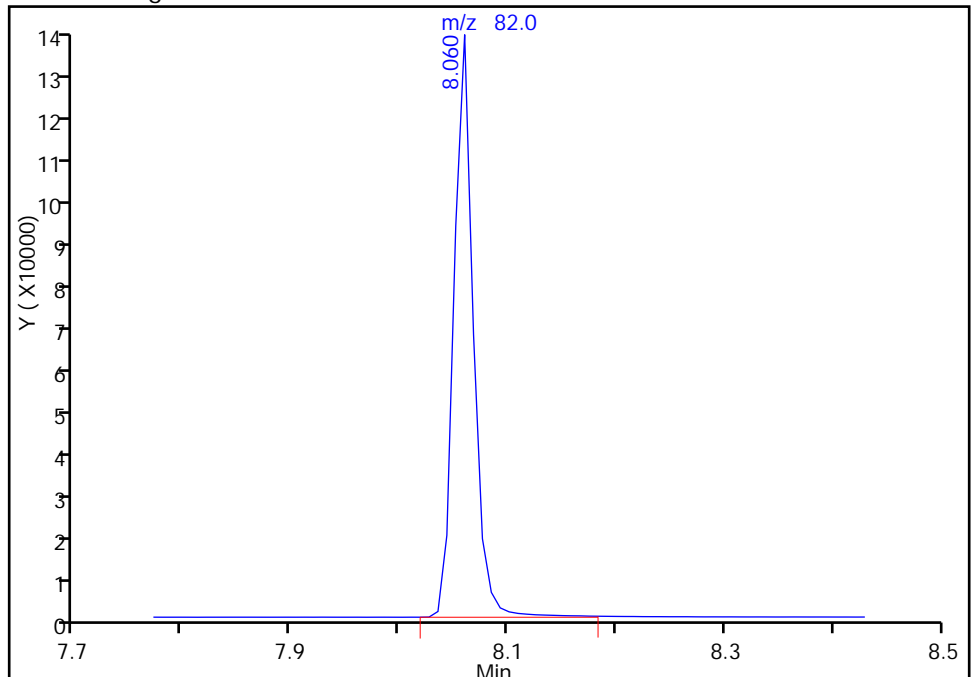
RT: 8.06
Area: 171502
Amount: 1.912842
Amount Units: ug/ml

Processing Integration Results



RT: 8.06
Area: 173471
Amount: 1.861855
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:28
Audit Action: Manually Integrated

Audit Reason: Peak Tail

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222D.D
 Lims ID: IC CS-4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 22-Feb-2017 10:41:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC CS-4 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 22-Feb-2017 14:19:29 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 11:21:20

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane										
58	3.345	3.354	-0.009	96	150814	5.00	5.48	80- 120	100	M
88	3.354	3.354	0.000		168162			92- 132	112	
* 2 1,4-Dichlorobenzene-d4										
152	7.197	7.197	0.000	100	685347	10.0	10.0	80- 120	100	
150	7.197	7.197	0.000		1065860			136- 176	156	
115	7.197	7.197	0.000		391582			37.1- 77.1	57.1	
\$ 3 Nitrobenzene-d5										
82	8.060	8.059	0.001	97	448379	5.00	5.42	80- 120	100	
128	8.060	8.059	0.001		223263			29.8- 69.8	49.8	
54	8.051	8.059	-0.008		261235			38.3- 78.3	58.3	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL4_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222D.D

Injection Date: 22-Feb-2017 10:41:30

Instrument ID: SV1

Operator ID:

Lims ID: IC CS-4

Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul

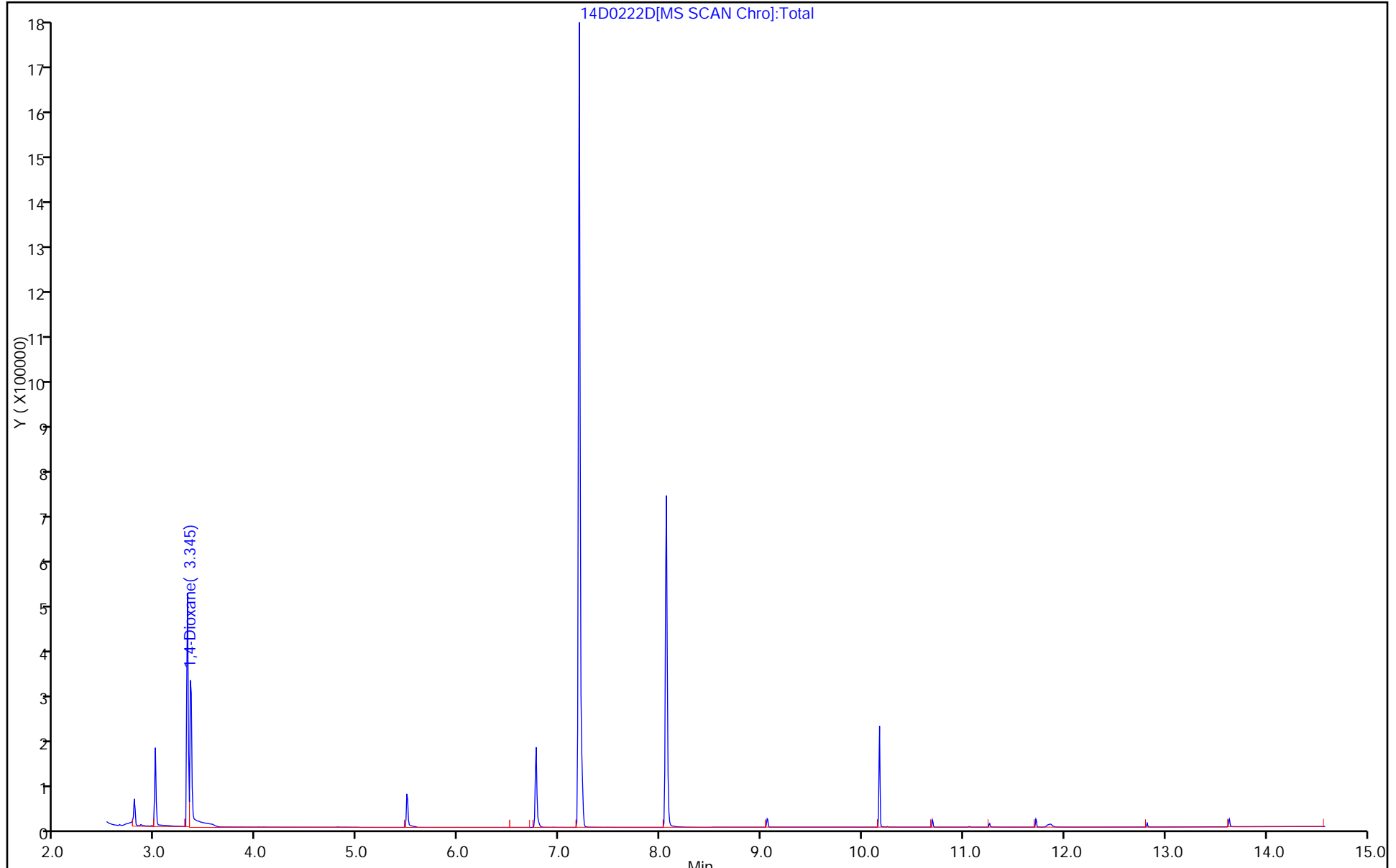
Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

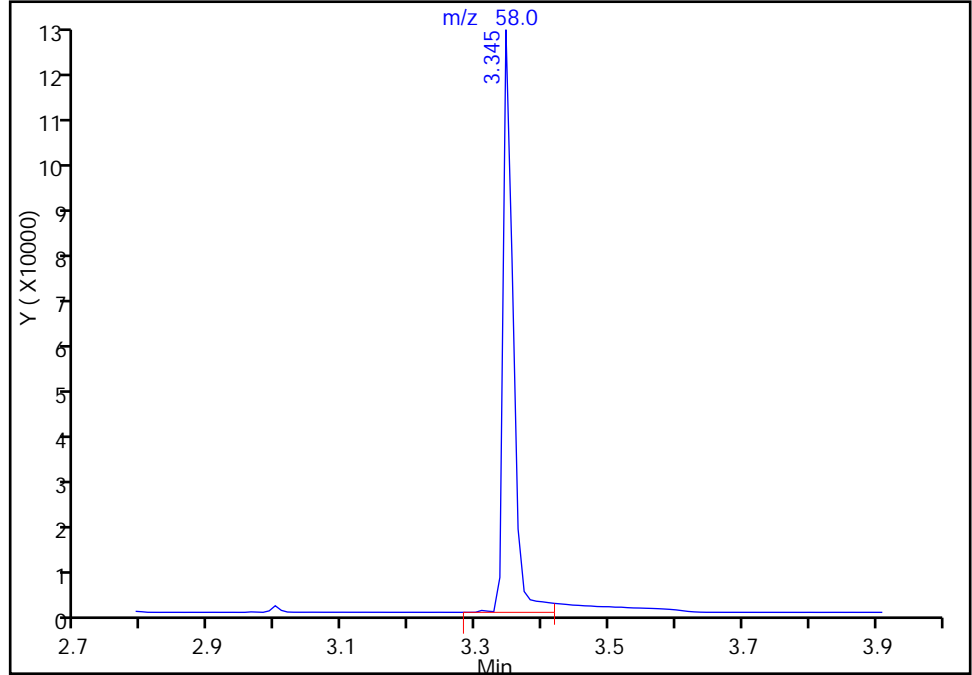
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222D.D
Injection Date: 22-Feb-2017 10:41:30 Instrument ID: SV1
Lims ID: IC CS-4
Client ID:
Operator ID: ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

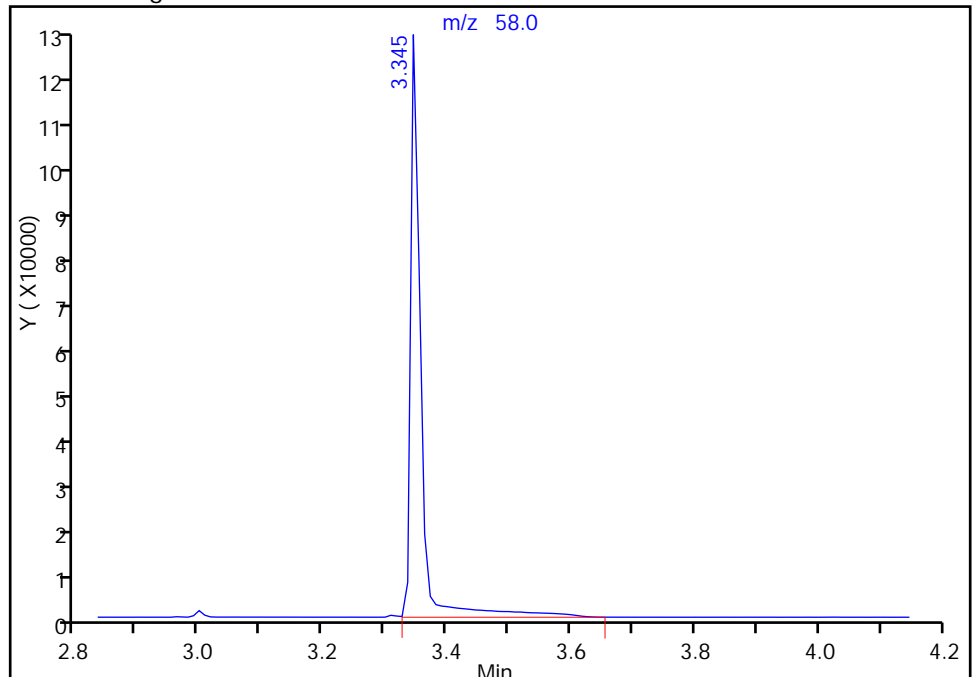
RT: 3.35
Area: 137931
Amount: 4.941853
Amount Units: ug/ml

Processing Integration Results



RT: 3.35
Area: 150814
Amount: 5.484704
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:29
Audit Action: Manually Integrated

Audit Reason: Poor chromatography

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222E.D
 Lims ID: ICIS CS-5
 Client ID:
 Sample Type: ICIS Calib Level: 5
 Inject. Date: 22-Feb-2017 11:03:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICIS CS-5 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 22-Feb-2017 14:19:30 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 11:21:43

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	S/N	Flags
	1 1,4-Dioxane										M
58	3.354	3.354	0.000	81	293131	10.0	9.29	80- 120	100	145920	M
88	3.354	3.354	0.000		351365			92- 132	120		
	* 2 1,4-Dichlorobenzene-d4										
152	7.197	7.197	0.000	100	786305	10.0	10.0	80- 120	100		
150	7.197	7.197	0.000		1219926			136- 176	155		
115	7.197	7.197	0.000		448437			37.1- 77.1	57.0		
	\$ 3 Nitrobenzene-d5										
82	8.059	8.059	0.000	99	909372	10.0	9.58	80- 120	100		
128	8.059	8.059	0.000		466333			29.8- 69.8	51.3		
54	8.051	8.059	-0.008		534392			38.3- 78.3	58.8		

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL5_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222E.D

Injection Date: 22-Feb-2017 11:03:30

Instrument ID: SV1

Operator ID:

Lims ID: ICIS CS-5

Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul

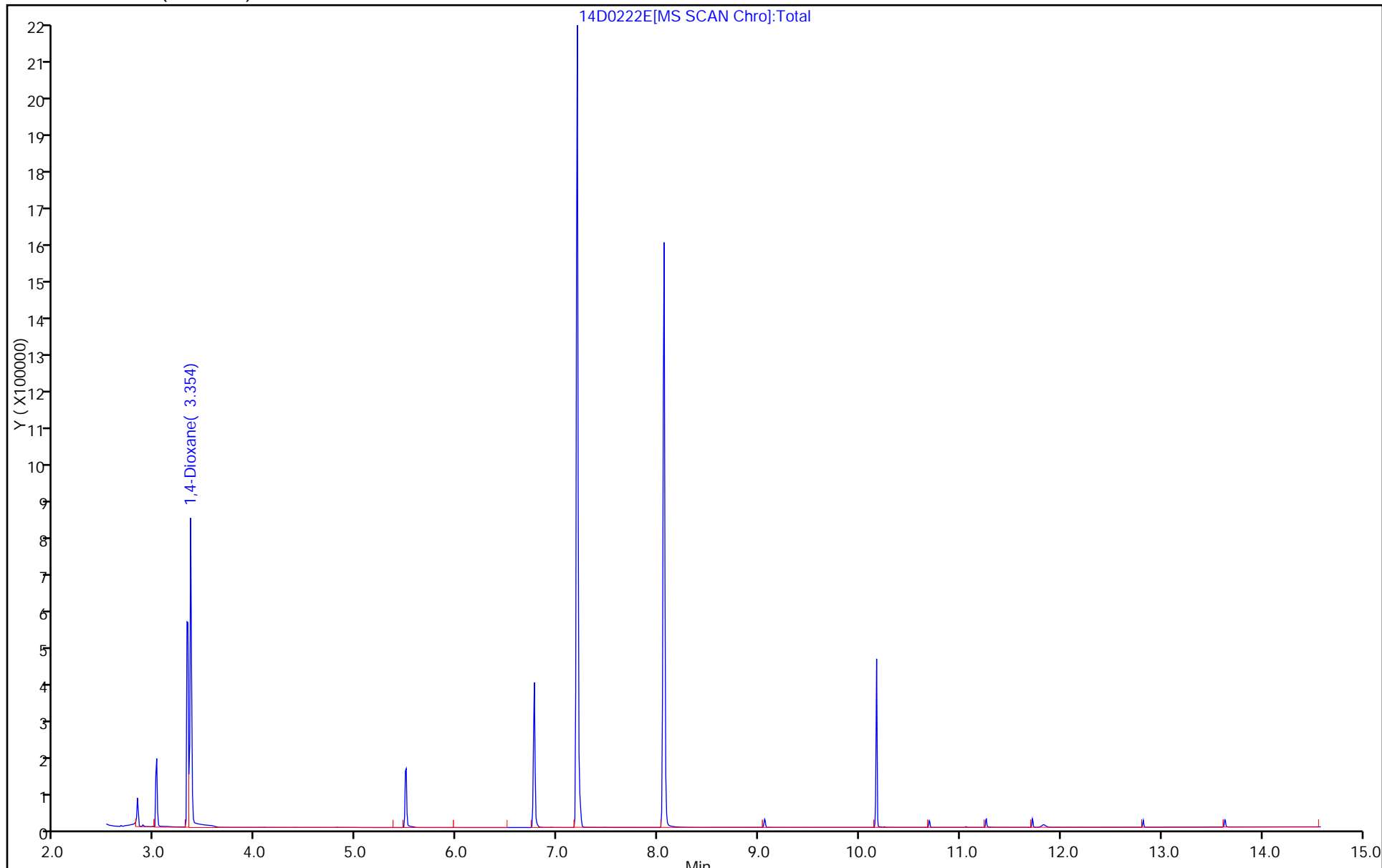
Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

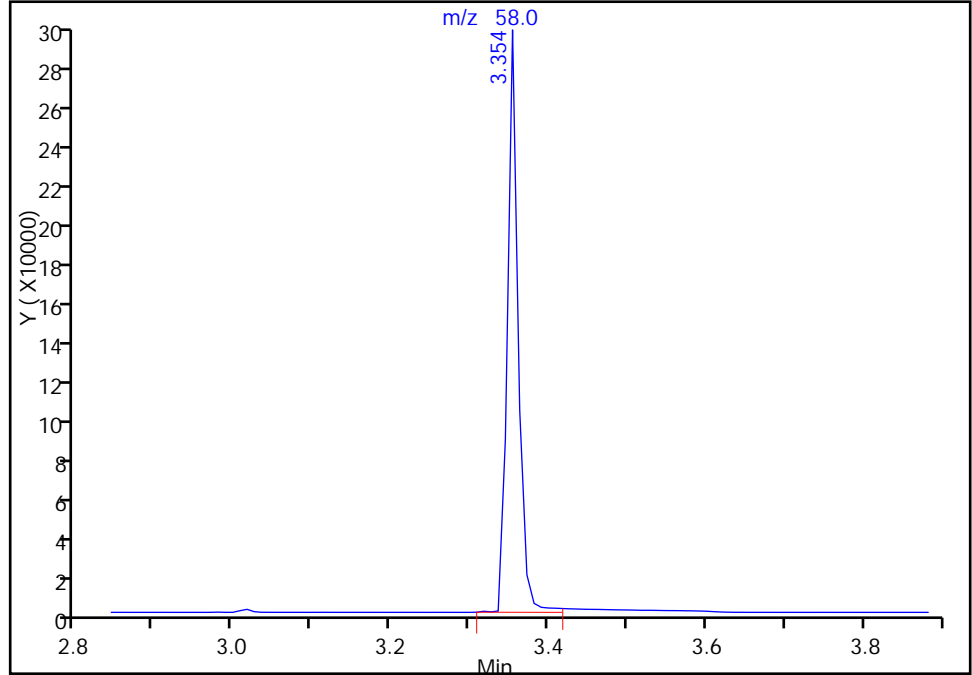
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222E.D
Injection Date: 22-Feb-2017 11:03:30 Instrument ID: SV1
Lims ID: ICIS CS-5
Client ID:
Operator ID: ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

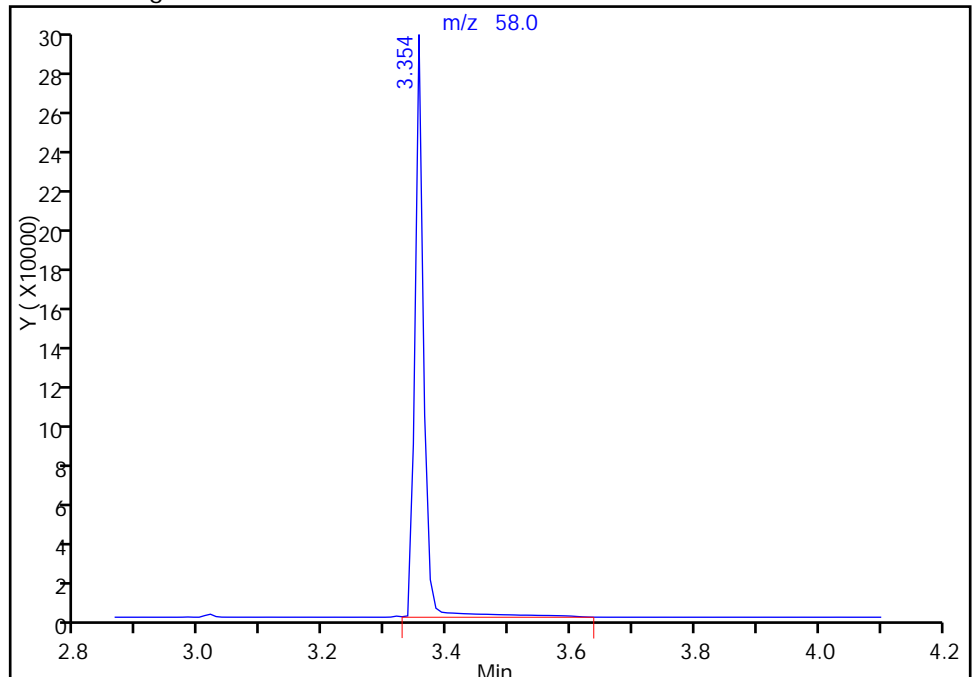
RT: 3.35
Area: 280244
Amount: 8.808838
Amount Units: ug/ml

Processing Integration Results



RT: 3.35
Area: 293131
Amount: 9.291648
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:30
Audit Action: Manually Integrated

Audit Reason: Poor chromatography

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222F.D
 Lims ID: IC CS-6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 22-Feb-2017 11:25:30 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC CS-6 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 22-Feb-2017 14:19:31 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 11:46:54

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane										
58	3.355	3.354	0.001	100	570238	20.0	19.5	80- 120	100	M
88	3.364	3.354	0.010		655548			92- 132	115	
* 2 1,4-Dichlorobenzene-d4										
152	7.197	7.197	0.000	100	729888	10.0	10.0	80- 120	100	
150	7.197	7.197	0.000		1138534			136- 176	156	
115	7.197	7.197	0.000		417127			37.1- 77.1	57.1	
\$ 3 Nitrobenzene-d5										
82	8.059	8.059	0.000	96	1769342	20.0	20.1	80- 120	100	
128	8.068	8.059	0.009		911496			29.8- 69.8	51.5	
54	8.059	8.059	0.000		1041598			38.3- 78.3	58.9	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL6_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222F.D

Injection Date: 22-Feb-2017 11:25:30

Instrument ID: SV1

Operator ID:

Lims ID: IC CS-6

Worklist Smp#: 6

Client ID:

Injection Vol: 1.0 ul

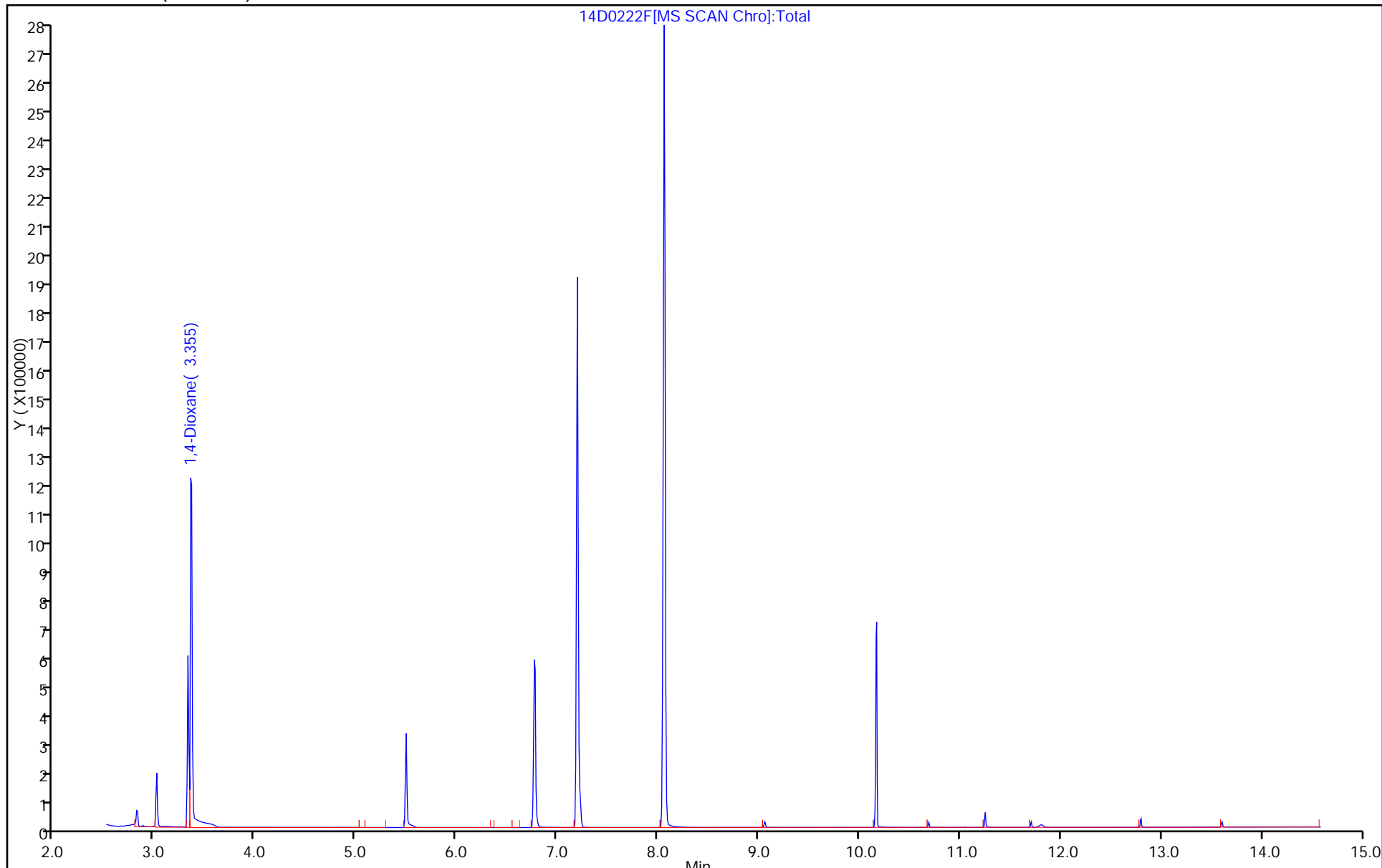
Dil. Factor: 1.0000

ALS Bottle#: 6

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

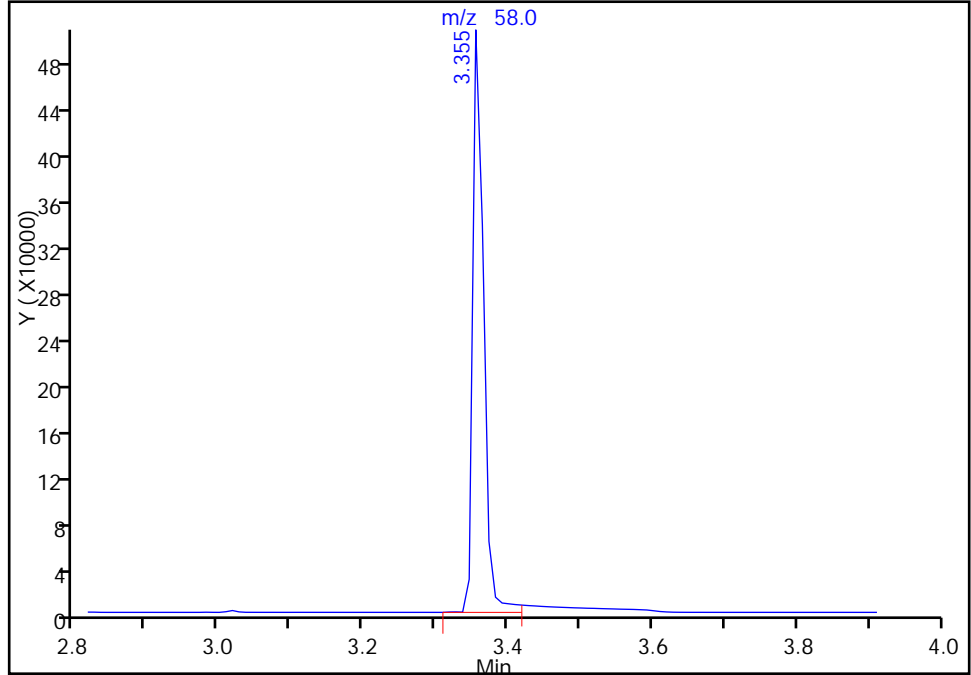
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222F.D
Injection Date: 22-Feb-2017 11:25:30 Instrument ID: SV1
Lims ID: IC CS-6
Client ID:
Operator ID: ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

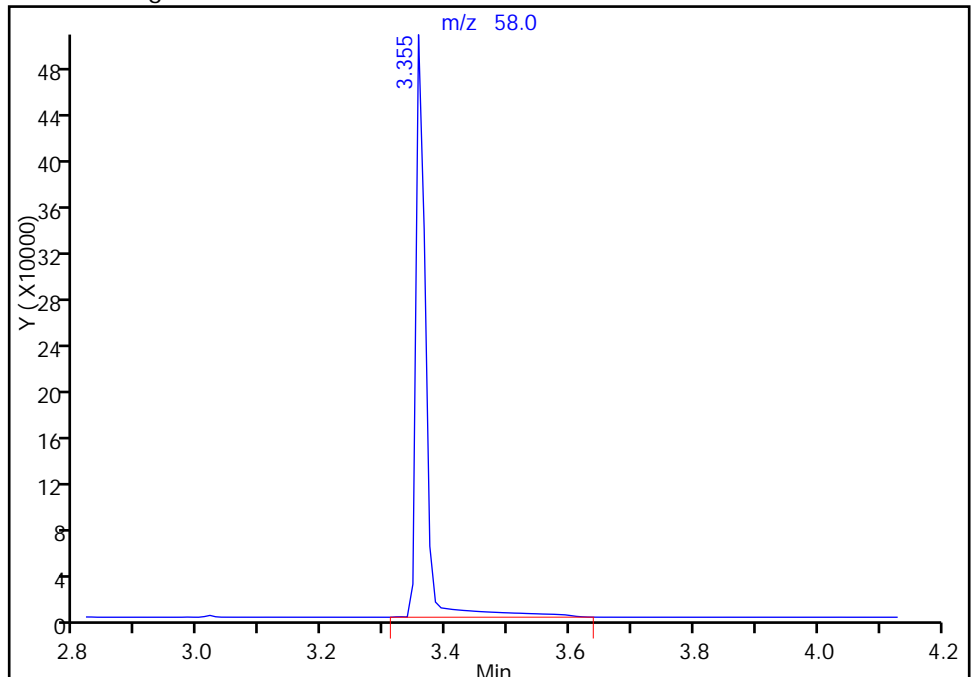
RT: 3.36
Area: 530709
Amount: 18.155454
Amount Units: ug/ml

Processing Integration Results



RT: 3.36
Area: 570238
Amount: 19.472510
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:30
Audit Action: Manually Integrated

Audit Reason: Poor chromatography

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222G.D
 Lims ID: IC CS-7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 22-Feb-2017 11:47:30 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC CS-7 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 22-Feb-2017 14:19:31 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 12:18:18

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane										
58	3.355	3.354	0.001	90	1391248	50.0	53.4	80- 120	100	M
88	3.364	3.354	0.010		1577040			92- 132	113	
* 2 1,4-Dichlorobenzene-d4										
152	7.198	7.197	0.001	100	649782	10.0	10.0	80- 120	100	
150	7.198	7.197	0.001		1006292			136- 176	155	
115	7.198	7.197	0.001		370252			37.1- 77.1	57.0	
\$ 3 Nitrobenzene-d5										
82	8.068	8.059	0.009	97	4451578	50.0	56.7	80- 120	100	
128	8.068	8.059	0.009		2303805			29.8- 69.8	51.8	
54	8.068	8.059	0.009		2601883			38.3- 78.3	58.4	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL7_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222G.D

Injection Date: 22-Feb-2017 11:47:30

Instrument ID: SV1

Operator ID:

Lims ID: IC CS-7

Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul

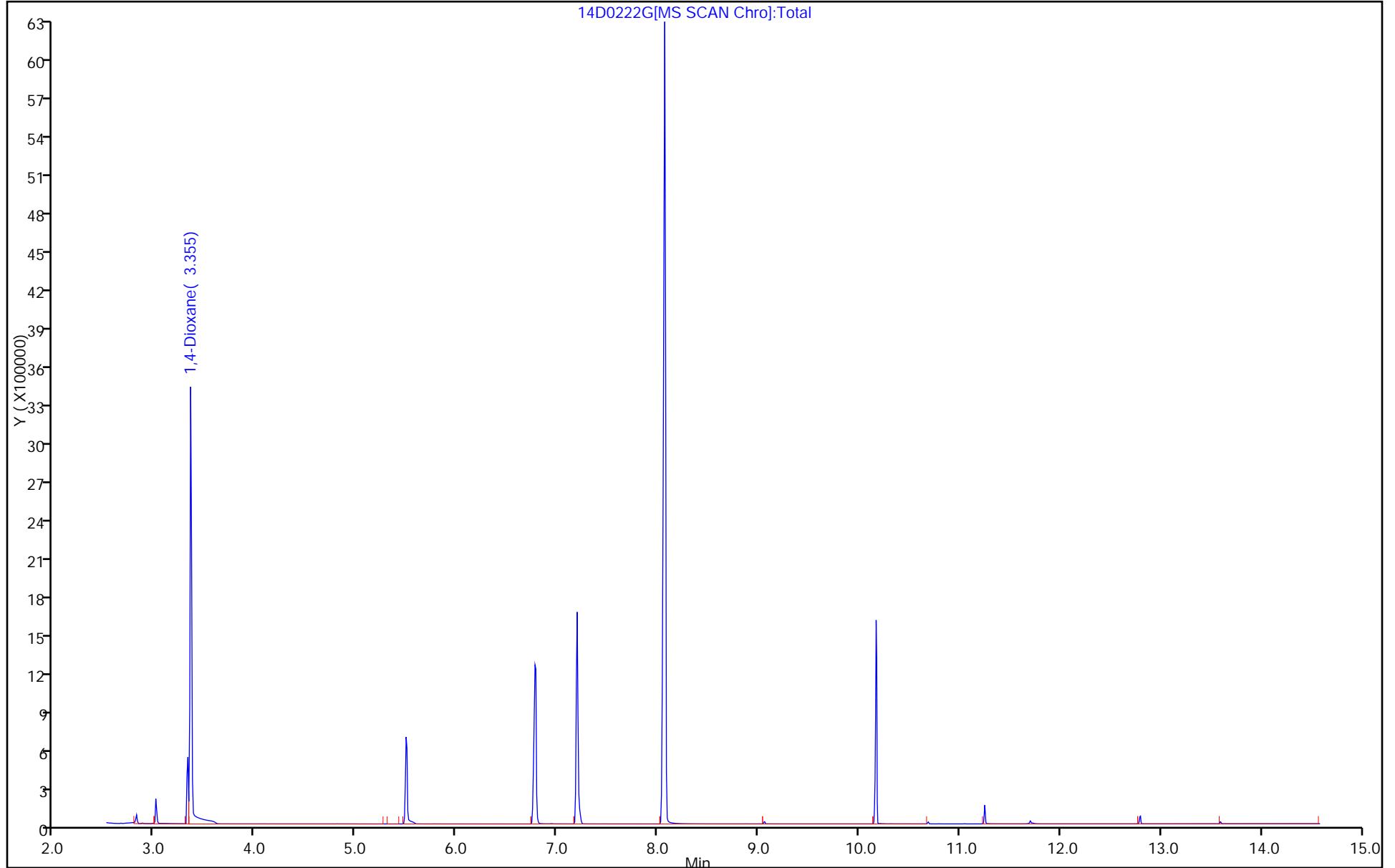
Dil. Factor: 1.0000

ALS Bottle#: 7

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

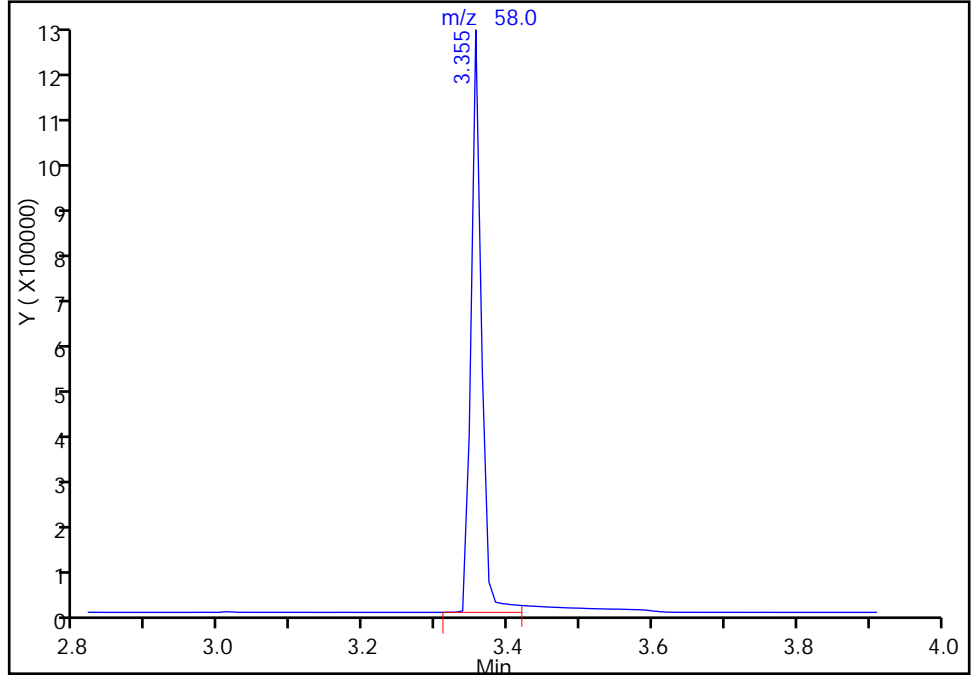
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222G.D
Injection Date: 22-Feb-2017 11:47:30 Instrument ID: SV1
Lims ID: IC CS-7
Client ID:
Operator ID: ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

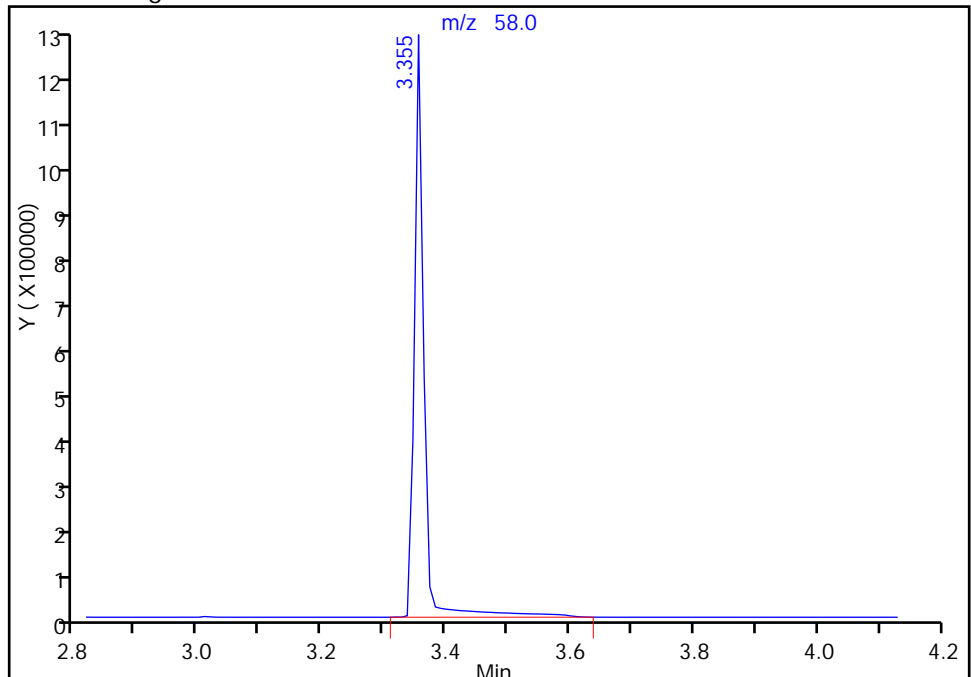
RT: 3.36
Area: 1295874
Amount: 49.348837
Amount Units: ug/ml

Processing Integration Results



RT: 3.36
Area: 1391248
Amount: 53.365292
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:31
Audit Action: Manually Integrated

Audit Reason: Poor chromatography

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Lims ID: IC CS-8
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 22-Feb-2017 12:09:30 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC CS-8 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 22-Feb-2017 14:19:32 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 12:42:13

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane										
58	3.365	3.354	0.011	73	2749219	100.0	87.6	80- 120	100	M
88	3.365	3.354	0.011		3047664			92- 132	111	
* 2 1,4-Dichlorobenzene-d4										
152	7.198	7.197	0.001	99	782185	10.0	10.0	80- 120	100	
150	7.198	7.197	0.001		1219969			136- 176	156	
115	7.198	7.197	0.001		445630			37.1- 77.1	57.0	
\$ 3 Nitrobenzene-d5										
82	8.085	8.059	0.026	98	8721763	100.0	92.3	80- 120	100	
128	8.085	8.059	0.026		4541021			29.8- 69.8	52.1	
54	8.077	8.059	0.018		5217430			38.3- 78.3	59.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL8_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Injection Date: 22-Feb-2017 12:09:30

Instrument ID: SV1

Operator ID:

Lims ID: IC CS-8

Worklist Smp#: 8

Client ID:

Injection Vol: 1.0 ul

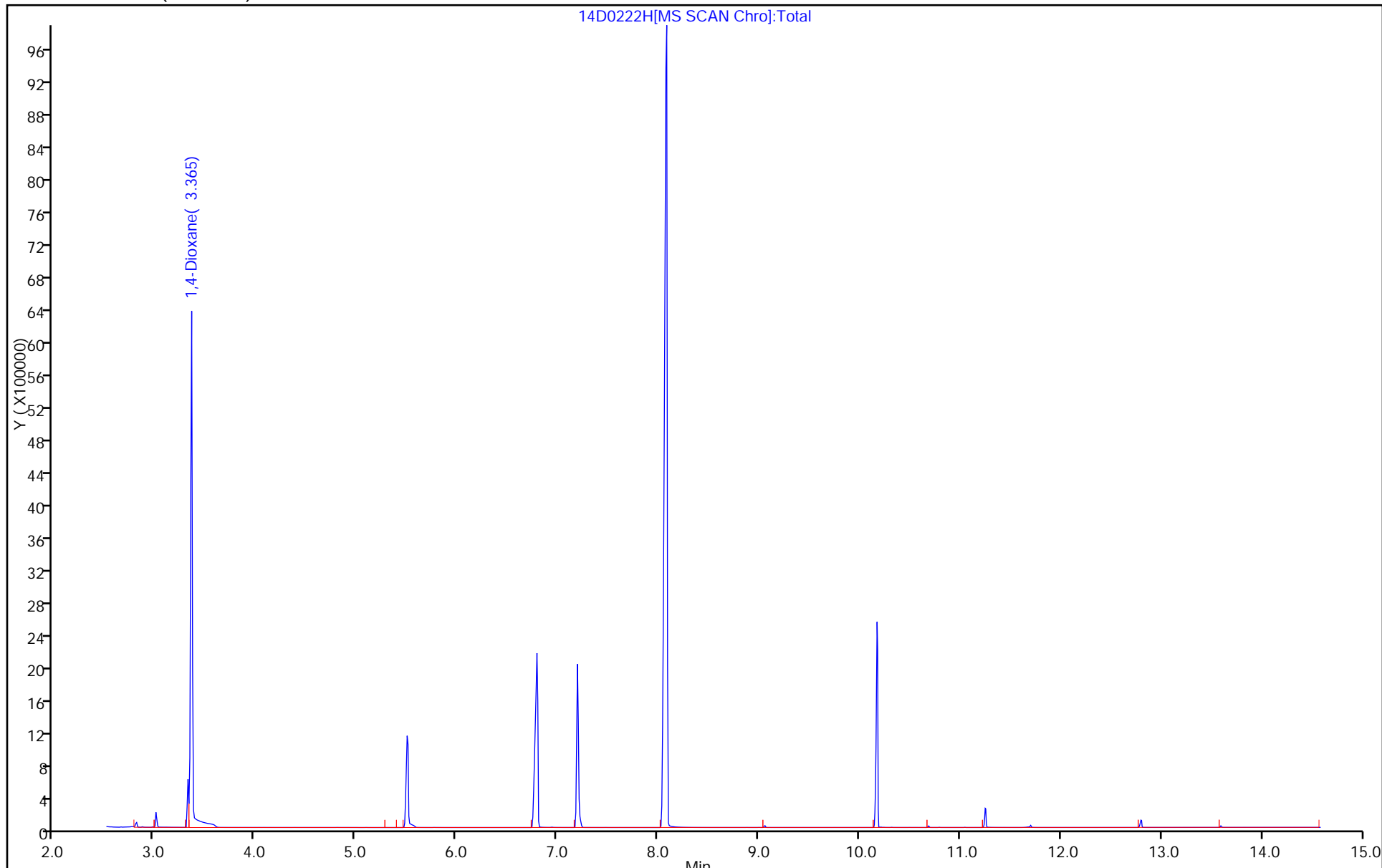
Dil. Factor: 1.0000

ALS Bottle#: 8

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

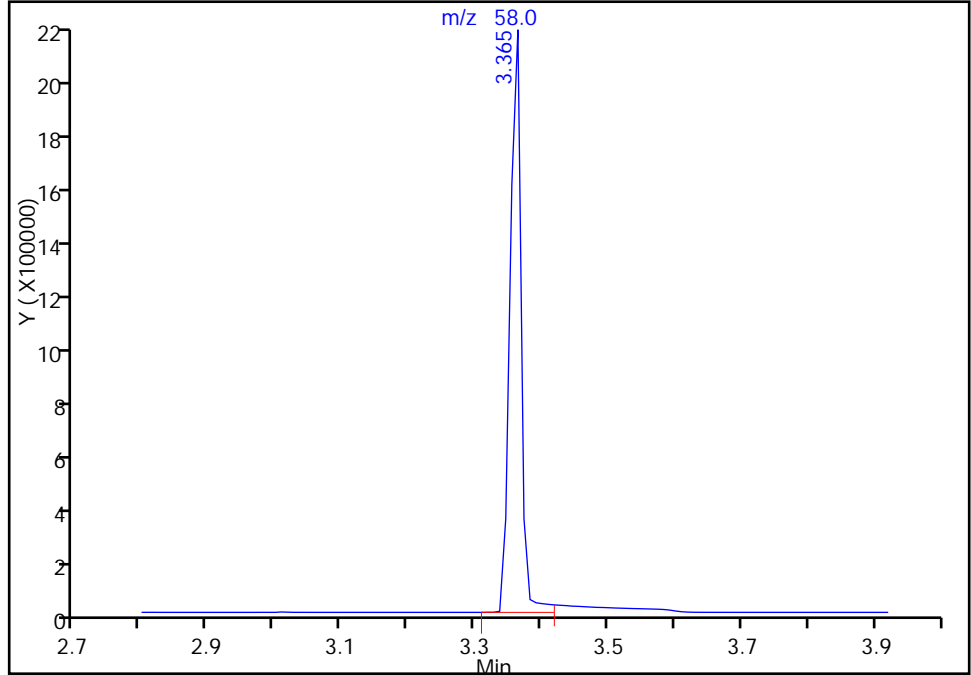
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
Injection Date: 22-Feb-2017 12:09:30 Instrument ID: SV1
Lims ID: IC CS-8
Client ID:
Operator ID: ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

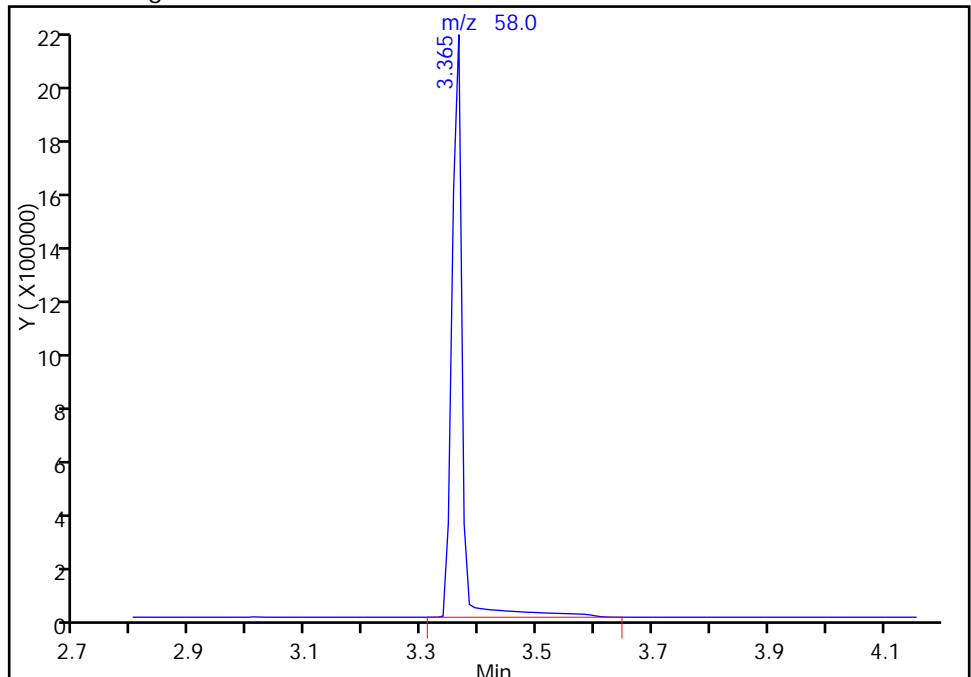
RT: 3.36
Area: 2566879
Amount: 82.391732
Amount Units: ug/ml

Processing Integration Results



RT: 3.36
Area: 2749219
Amount: 87.603583
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 22-Feb-2017 14:19:32
Audit Action: Manually Integrated

Audit Reason: Poor chromatography

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: ICV 320-151686/9 Calibration Date: 02/22/2017 12:31
 Instrument ID: SV1 Calib Start Date: 02/22/2017 09:35
 GC Column: HP-5MS ID: 0.25 (mm) Calib End Date: 02/22/2017 12:09
 Lab File ID: 14D0222.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.4012	0.3365		8.39	10.0	-16.1	30.0
Nitrobenzene-d5	Ave	1.208	1.092		9.04	10.0	-9.6	

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-Feb-2017 12:31:30 ALS Bottle#: 9 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV 14D
 Operator ID: Instrument ID: SV1
 Sublist:

Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 22-Feb-2017 14:19:32 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK015

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	S/N	Flags
1 1,4-Dioxane											
58	3.371	3.354	0.017	62	295999	10.0	8.39	80- 120	100	1939	
88	3.371	3.354	0.017		362512			92- 132	122		
* 2 1,4-Dichlorobenzene-d4											
152	7.198	7.197	0.001	100	879747	10.0	10.0	80- 120	100		
150	7.198	7.197	0.001		1372333			136- 176	156		
115	7.198	7.197	0.001		505357			37.1- 77.1	57.4		
\$ 3 Nitrobenzene-d5											
82	8.060	8.059	0.001	99	960674	10.0	9.04	80- 120	100		
128	8.060	8.059	0.001		494326			29.8- 69.8	51.5		
54	8.052	8.059	-0.007		562315			38.3- 78.3	58.5		

Reagents:

MS14DICV_00004 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222.D

Injection Date: 22-Feb-2017 12:31:30

Instrument ID: SV1

Operator ID:

Lims ID: ICV

Worklist Smp#: 9

Client ID:

Injection Vol: 1.0 ul

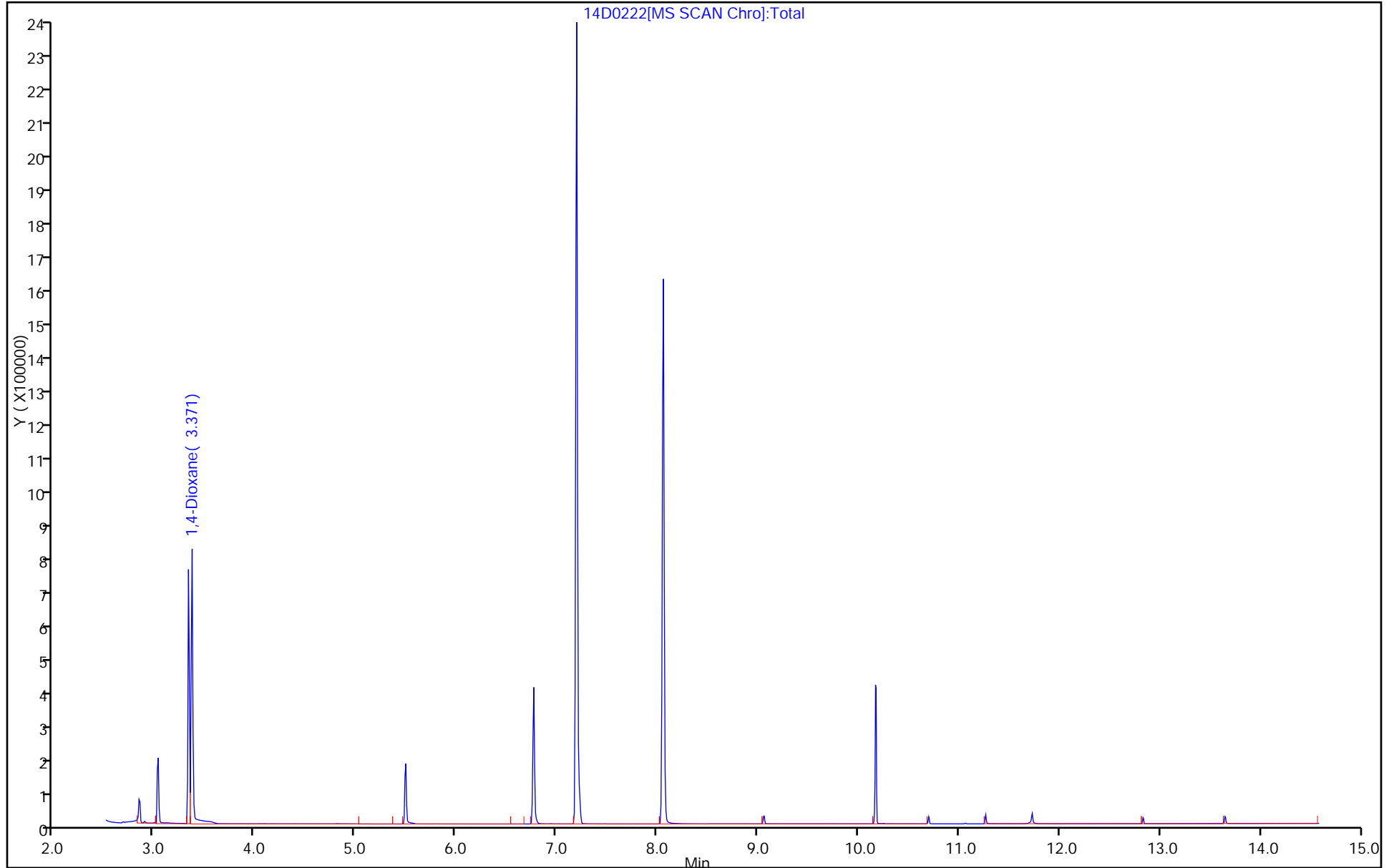
Dil. Factor: 1.0000

ALS Bottle#: 9

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

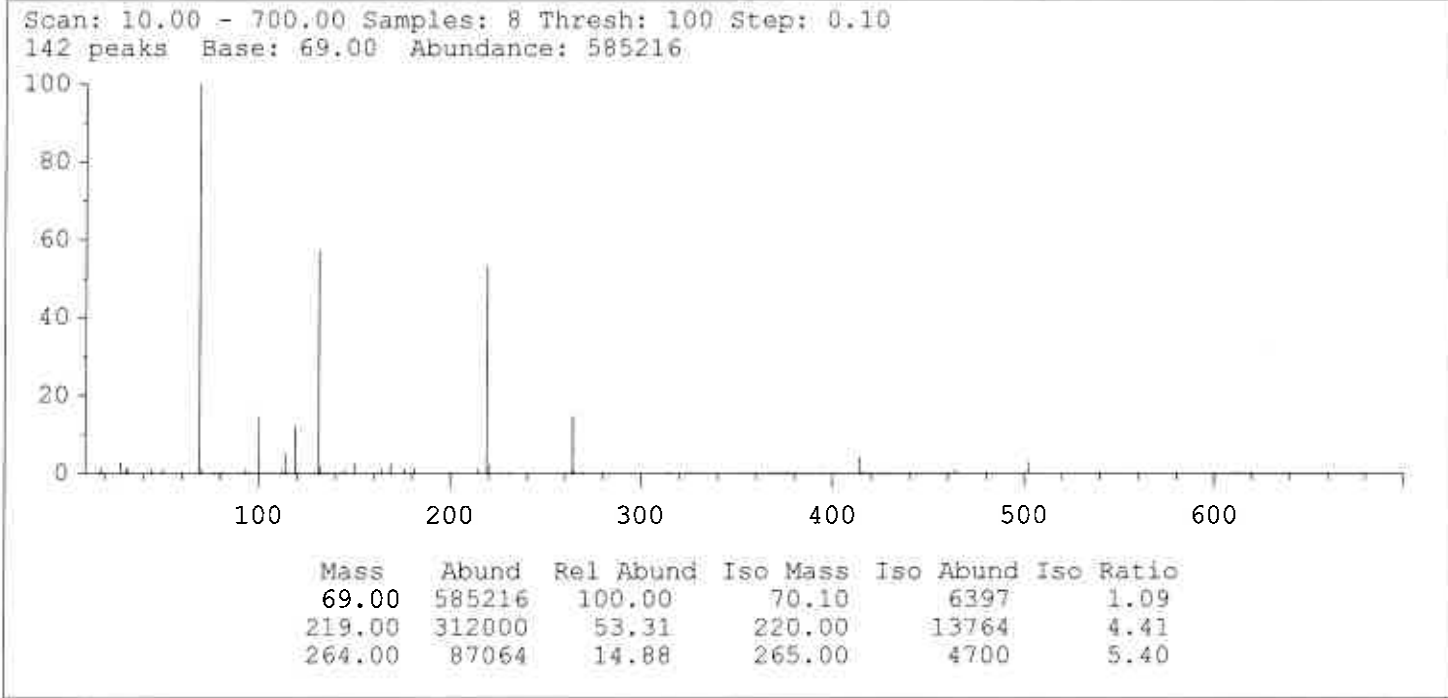
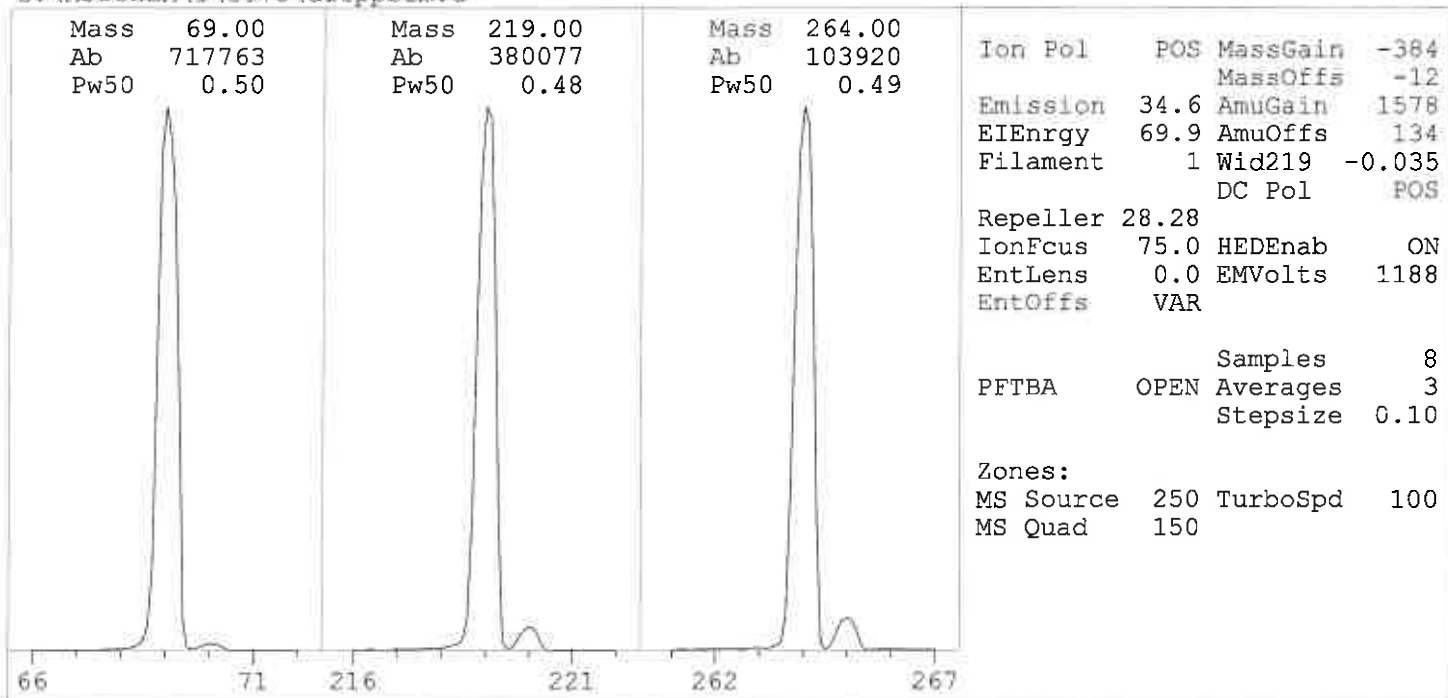
Column: HP-5MS (0.25 mm)



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154875/2 Calibration Date: 03/14/2017 14:42
 Instrument ID: SV1 Calib Start Date: 02/22/2017 09:35
 GC Column: HP-5MS ID: 0.25 (mm) Calib End Date: 02/22/2017 12:09
 Lab File ID: 14D0314.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.4012	0.3923		9.78	10.0	-2.2	30.0
Nitrobenzene-d5	Ave	1.208	1.204		9.97	10.0	-0.3	30.0



Air/Water Check: H2O~1.49% N2~2.83% O2~0.93% CO2~0.99% N2/H2O~190.25%

Column Flow: Front: 1.4 Back: 0 ml/min. Interface Temp: 250

Ramp Criteria:

Ion Focus Maximum 90 volts using ion 264; EM Gain 206251
Repeller Maximum 35 volts using ion 219;

MassGain Values @Samples: -384@3 -384@2 -384@1 -384@0 -384@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	134.0	134.0	134.0	134.0	134.0	134.0	134.0
Entrance Lens Offset:	14.6	12.0	13.3	12.5	13.8	12.8	12.8
Target Abund(%):	1.0	100.0	55.0	45.0	3.0	2.0	
Actual Tune Abund(%):	0.9	100.0	57.1	53.3	4.3	3.0	

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\14D0314.D
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 14-Mar-2017 14:42:30 ALS Bottle#: 96 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: onishim Date: 14-Mar-2017 15:23:26

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	S/N	Flags
1 1,4-Dioxane											M
58	3.320	3.320	0.000	91	267975	10.0	9.78	80- 120	100	118656	M
88	3.329	3.320	0.009		295886			90- 130	110		
* 2 1,4-Dichlorobenzene-d4											
152	7.172	7.172	0.000	97	683060	10.0	10.0	80- 120	100		
150	7.172	7.172	0.000		1056782			135- 175	155		
115	7.172	7.172	0.000		381437			35.8- 75.8	55.8		
\$ 3 Nitrobenzene-d5											
82	8.035	8.035	0.000	96	822559	10.0	9.97	80- 120	100		
128	8.035	8.035	0.000		442211			33.8- 73.8	53.8		
54	8.035	8.035	0.000		472906			37.5- 77.5	57.5		

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL5_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\14D0314.D

Injection Date: 14-Mar-2017 14:42:30

Instrument ID: SV1

Operator ID:

Lims ID: CCV

Worklist Smp#: 2

Client ID:

Injection Vol: 1.0 ul

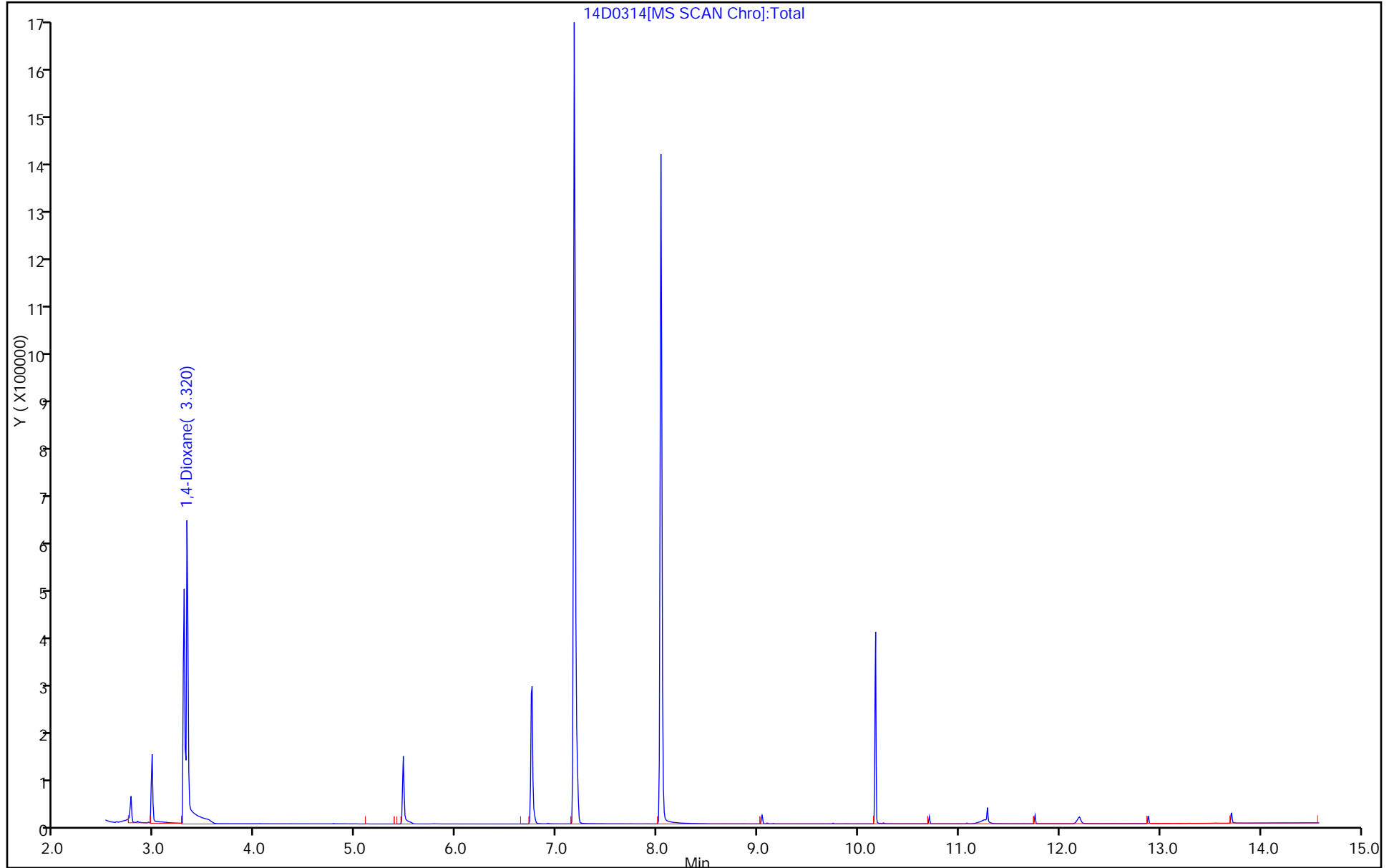
Dil. Factor: 1.0000

ALS Bottle#: 96

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

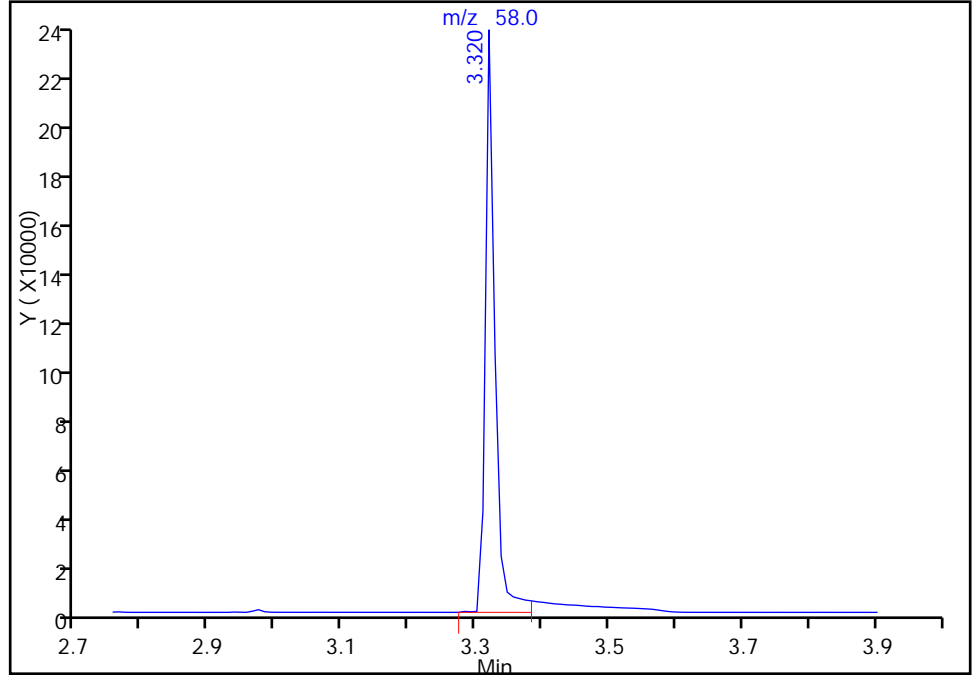
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\14D0314.D
Injection Date: 14-Mar-2017 14:42:30 Instrument ID: SV1
Lims ID: CCV
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

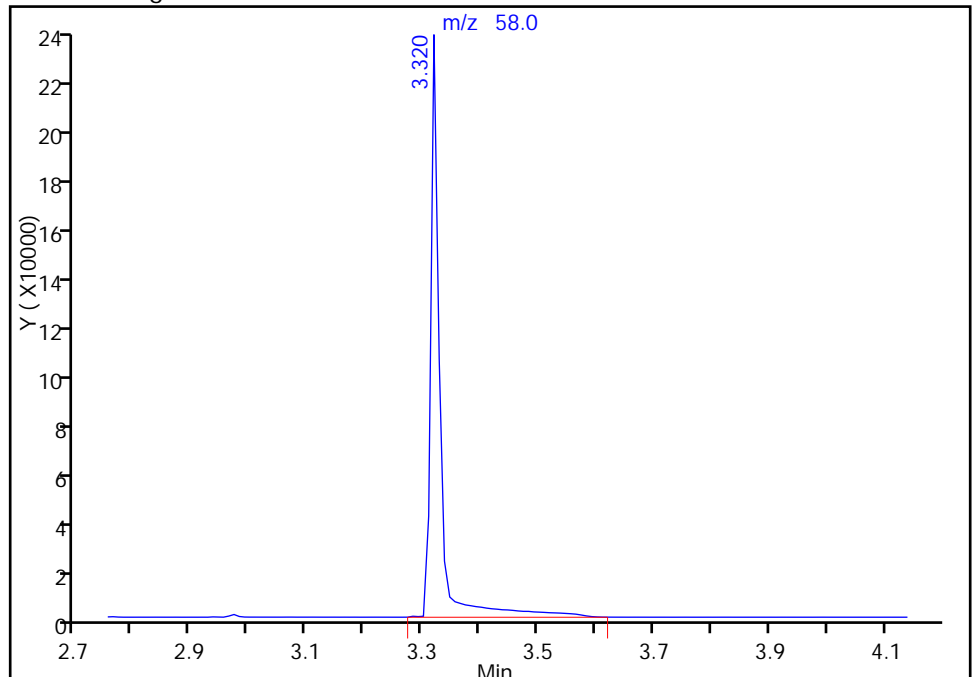
RT: 3.32
Area: 238941
Amount: 8.718742
Amount Units: ug/ml

Processing Integration Results



RT: 3.32
Area: 267975
Amount: 9.778167
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 15-Mar-2017 14:26:39
Audit Action: Manually Integrated

Audit Reason: Peak Tail

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCVC 320-154875/29 Calibration Date: 03/15/2017 00:49
 Instrument ID: SV1 Calib Start Date: 02/22/2017 09:35
 GC Column: HP-5MS ID: 0.25 (mm) Calib End Date: 02/22/2017 12:09
 Lab File ID: 14D0314A.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.4012	0.3975		9.91	10.0	-0.9	50.0
Nitrobenzene-d5	Ave	1.208	1.204		9.97	10.0	-0.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\14D0314A.D
 Lims ID: CCVC
 Client ID:
 Sample Type: CCVC
 Inject. Date: 15-Mar-2017 00:49:30 ALS Bottle#: 96 Worklist Smp#: 29
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCVC 14D
 Operator ID: Instrument ID: SV1
 Sublist: chrom-1,4-Dioxane*sub8
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 08:36:53 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK031

First Level Reviewer: chajjita Date: 15-Mar-2017 15:13:17

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	S/N	Flags
	1 1,4-Dioxane										
58	3.319	3.319	0.000	78	269963	10.0	9.91	80- 120	100	66474	M
88	3.319	3.319	0.000		290765			88- 128	108		
	* 2 1,4-Dichlorobenzene-d4										
152	7.174	7.174	0.000	100	679174	10.0	10.0	80- 120	100		
150	7.174	7.174	0.000		1055158			135- 175	155		
115	7.174	7.174	0.000		381694			36.2- 76.2	56.2		
	\$ 3 Nitrobenzene-d5										
82	8.036	8.036	0.000	99	817415	10.0	9.97	80- 120	100		
128	8.036	8.036	0.000		440948			33.9- 73.9	53.9		
54	8.036	8.036	0.000		465051			36.9- 76.9	56.9		

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL5_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\14D0314A.D

Injection Date: 15-Mar-2017 00:49:30

Instrument ID: SV1

Operator ID:

Lims ID: CCVC

Worklist Smp#: 29

Client ID:

Injection Vol: 1.0 ul

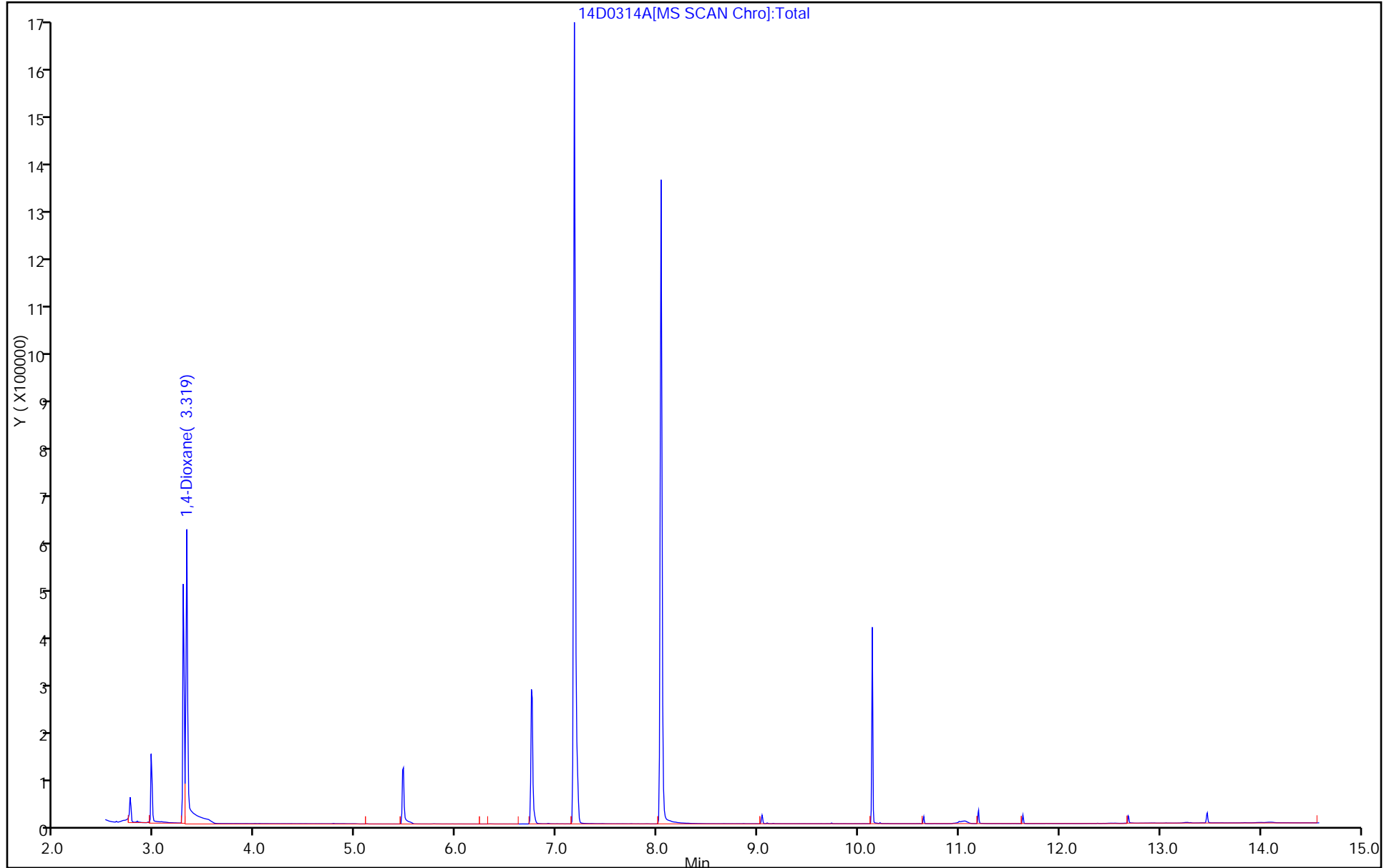
Dil. Factor: 1.0000

ALS Bottle#: 96

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento

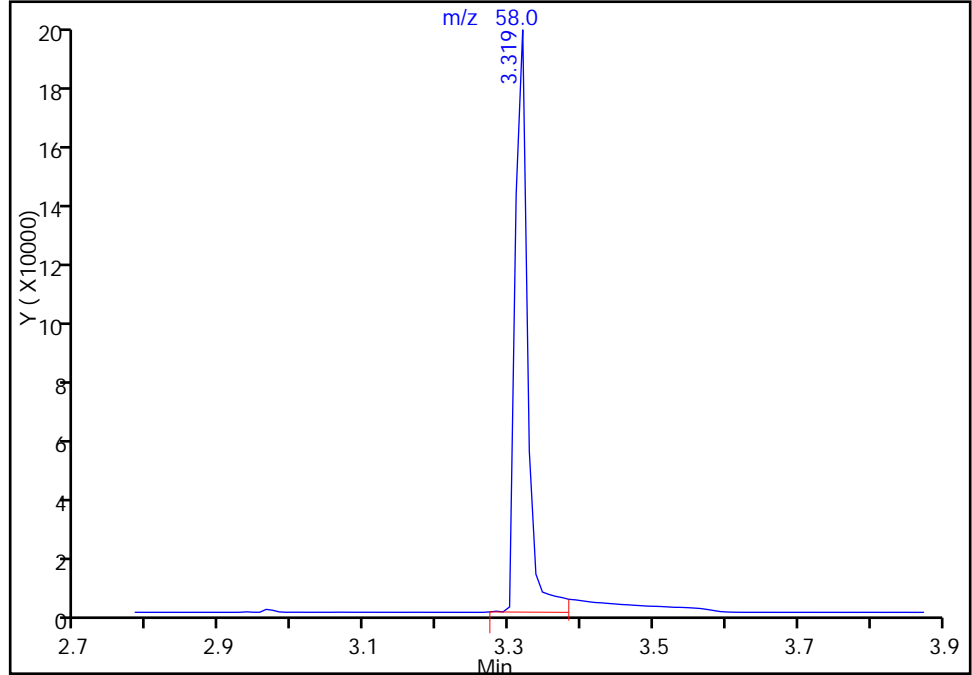
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\14D0314A.D
Injection Date: 15-Mar-2017 00:49:30 Instrument ID: SV1
Lims ID: CCVC
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

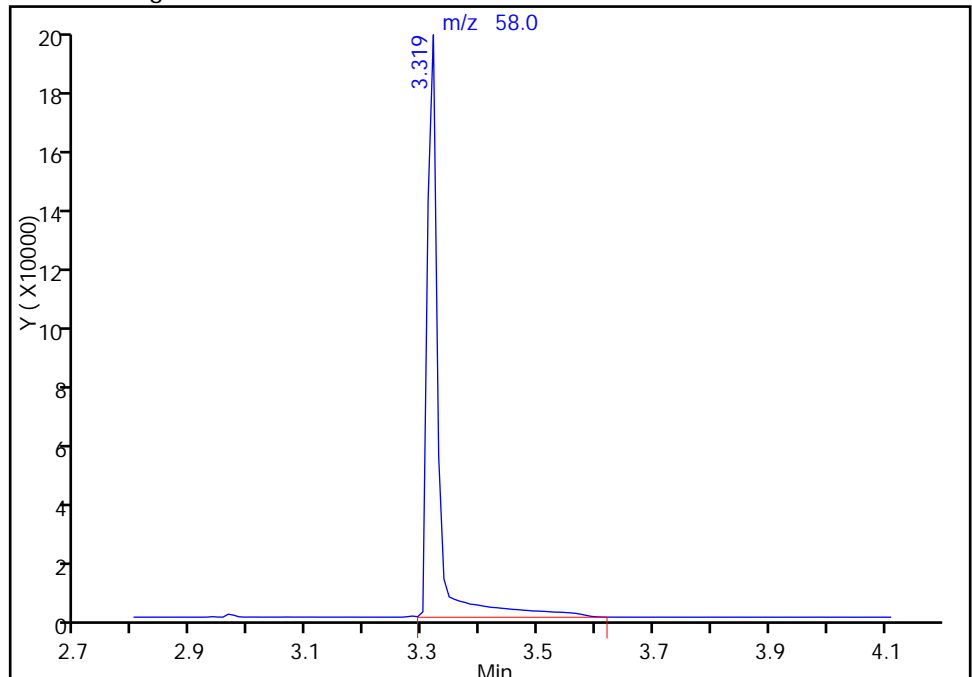
RT: 3.32
Area: 240662
Amount: 8.831785
Amount Units: ug/ml

Processing Integration Results



RT: 3.32
Area: 269963
Amount: 9.907069
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 15-Mar-2017 08:36:50
Audit Action: Manually Integrated

Audit Reason: Peak Tail

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-152910/1-A
 Matrix: Water Lab File ID: S031401.D
 Analysis Method: WS-MS-0011 Date Collected: _____
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1000 (mL) Date Analyzed: 03/14/2017 15:04
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	0.50	U	1.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	69		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031401.D
 Lims ID: MB 320-152910/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 14-Mar-2017 15:04:30 ALS Bottle#: 1 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-152910/1-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: onishim Date: 14-Mar-2017 15:23:54

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
-----	-----------	---------------	---------------	---	----------	---------------	-----------------	-------------	-------	-------

1 1,4-Dioxane										
58		3.320								ND
88		3.320								
* 2 1,4-Dichlorobenzene-d4										
152	7.173	7.172	0.001	100	701549	10.0	10.0	80- 120	100	
150	7.173	7.172	0.001		1088625			135- 175	155	
115	7.173	7.172	0.001		393895			35.8- 75.8	56.1	
\$ 3 Nitrobenzene-d5										
82	8.036	8.035	0.001	99	290807	5.00	3.43	80- 120	100	
128	8.036	8.035	0.001		153968			33.8- 73.8	52.9	
54	8.036	8.035	0.001		166488			37.5- 77.5	57.3	

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031401.D

Injection Date: 14-Mar-2017 15:04:30

Instrument ID: SV1

Operator ID:

Lims ID: MB 320-152910/1-A

Worklist Smp#: 3

Client ID:

Injection Vol: 1.0 ul

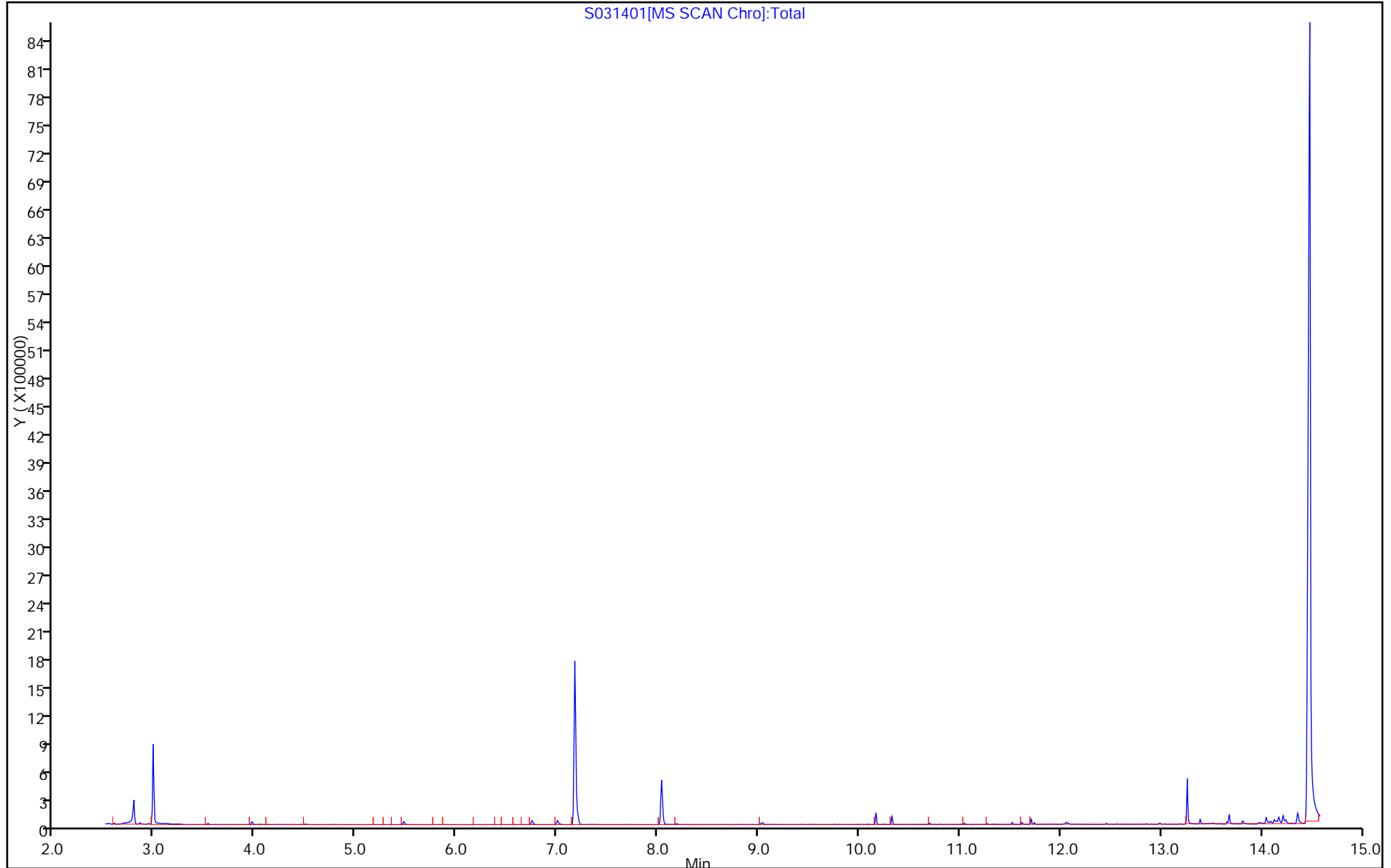
Dil. Factor: 1.0000

ALS Bottle#: 1

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031401.D
 Lims ID: MB 320-152910/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 14-Mar-2017 15:04:30 ALS Bottle#: 1 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-152910/1-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: onishim Date: 14-Mar-2017 15:23:54

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.43	68.65

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 320-152910/2-A
 Matrix: Water Lab File ID: S031402.D
 Analysis Method: WS-MS-0011 Date Collected: _____
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1000 (mL) Date Analyzed: 03/14/2017 15:27
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	3.23	M	1.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	73		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031402.D
 Lims ID: LCS 320-152910/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 14-Mar-2017 15:27:30 ALS Bottle#: 2 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-152910/2-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: onishim Date: 14-Mar-2017 16:24:22

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane										
58	3.321	3.320	0.001	84	86567	10.0	3.23	80- 120	100	M
88	3.330	3.320	0.010		93055			90- 130	107	
* 2 1,4-Dichlorobenzene-d4										
152	7.173	7.172	0.001	100	668815	10.0	10.0	80- 120	100	
150	7.173	7.172	0.001		1033555			135- 175	155	
115	7.173	7.172	0.001		374147			35.8- 75.8	55.9	
\$ 3 Nitrobenzene-d5										
82	8.035	8.035	0.000	99	294068	5.00	3.64	80- 120	100	
128	8.035	8.035	0.000		156872			33.8- 73.8	53.3	
54	8.035	8.035	0.000		168384			37.5- 77.5	57.3	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031402.D

Injection Date: 14-Mar-2017 15:27:30

Instrument ID: SV1

Operator ID:

Lims ID: LCS 320-152910/2-A

Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul

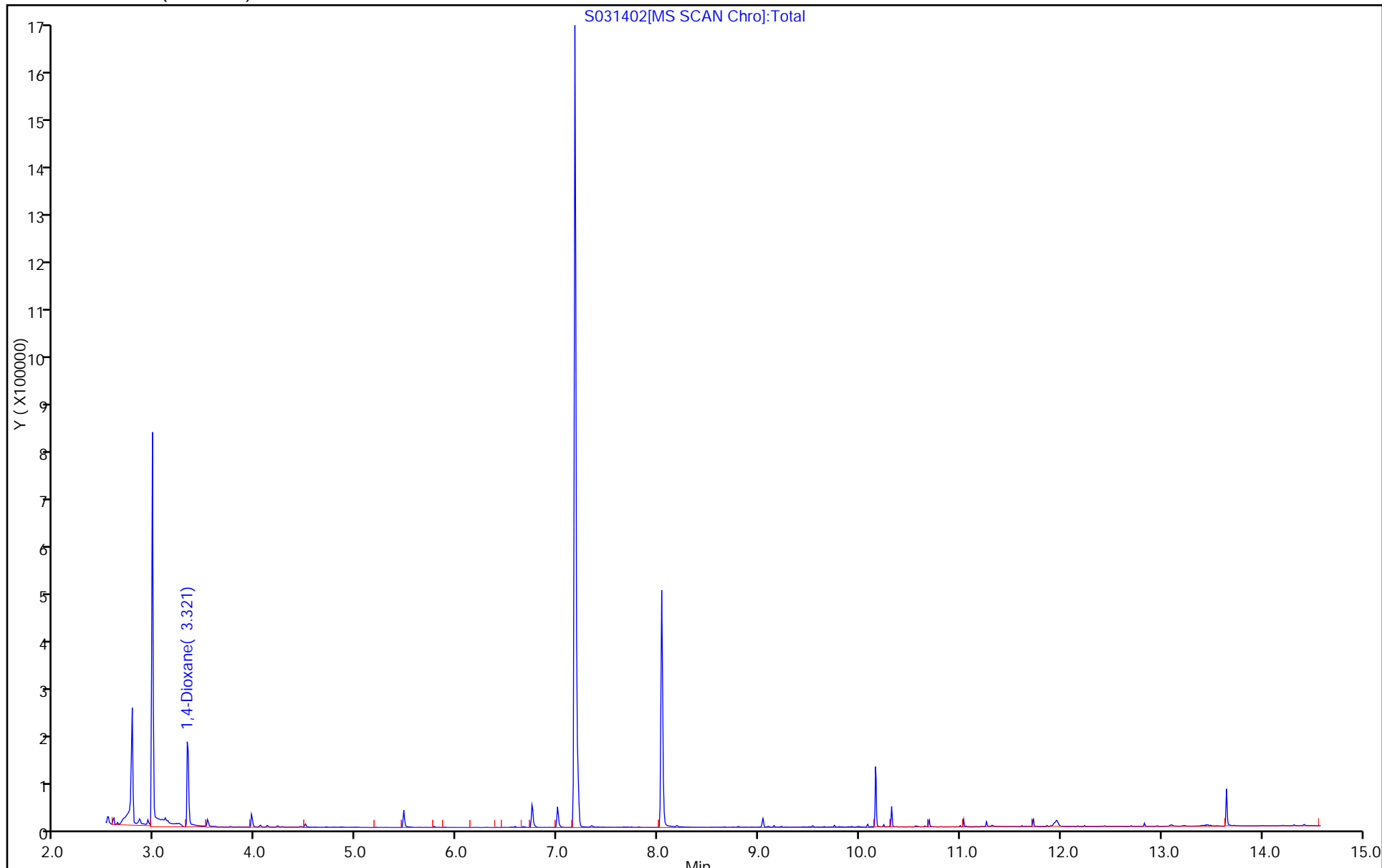
Dil. Factor: 1.0000

ALS Bottle#: 2

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031402.D
 Lims ID: LCS 320-152910/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 14-Mar-2017 15:27:30 ALS Bottle#: 2 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-152910/2-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: onishim Date: 14-Mar-2017 16:24:22

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.64	72.81

TestAmerica Sacramento

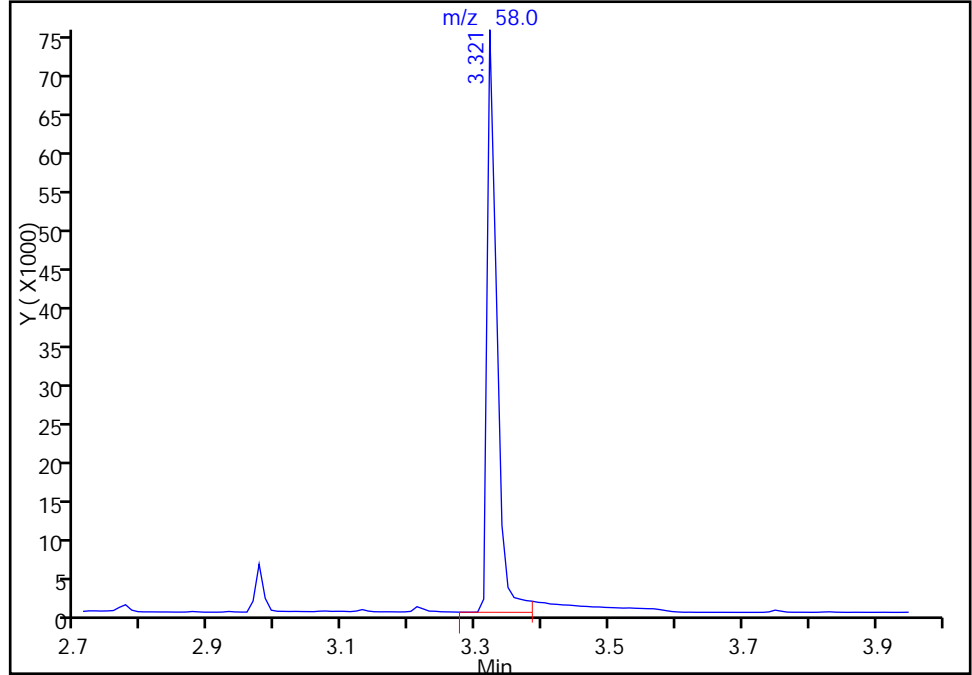
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031402.D
Injection Date: 14-Mar-2017 15:27:30 Instrument ID: SV1
Lims ID: LCS 320-152910/2-A
Client ID:
Operator ID: ALS Bottle#: 2 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

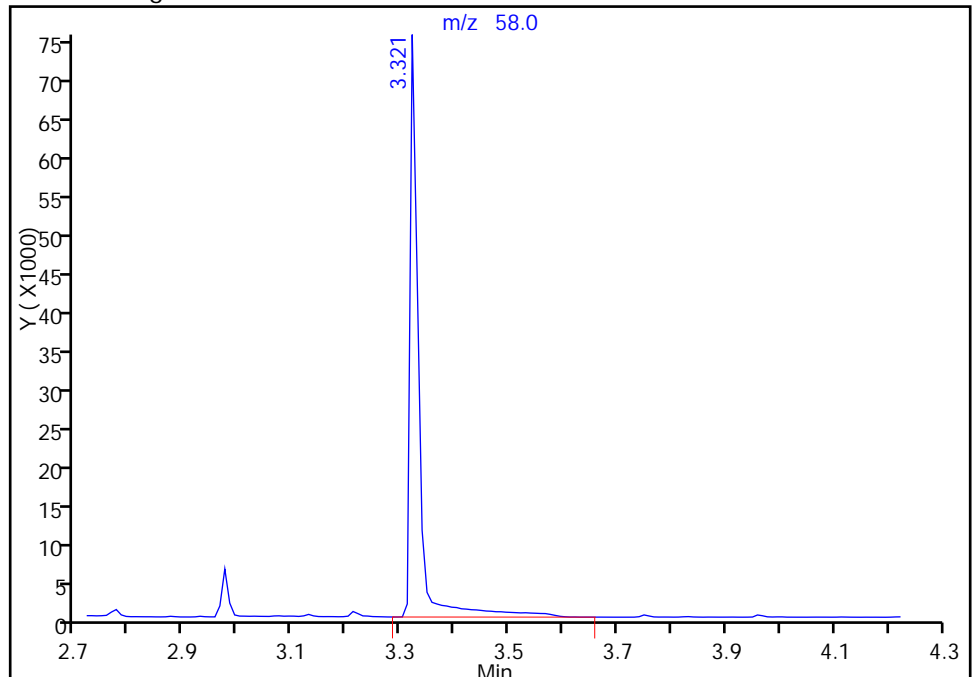
RT: 3.32
Area: 77953
Amount: 2.905018
Amount Units: ug/ml

Processing Integration Results



RT: 3.32
Area: 86567
Amount: 3.226030
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 15-Mar-2017 14:27:06
Audit Action: Manually Integrated

Audit Reason: Peak Tail

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCSD 320-152910/3-A
 Matrix: Water Lab File ID: S031403.D
 Analysis Method: WS-MS-0011 Date Collected: _____
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1000 (mL) Date Analyzed: 03/14/2017 15:49
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	3.00	M	1.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	74		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031403.D
 Lims ID: LCSD 320-152910/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 14-Mar-2017 15:49:30 ALS Bottle#: 3 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd 320-152910/3-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:27:20

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane										
58	3.320	3.320	0.000	71	80341	10.0	3.00	80- 120	100	M
88	3.329	3.320	0.009		84337			90- 130	105	
* 2 1,4-Dichlorobenzene-d4										
152	7.173	7.172	0.001	100	666531	10.0	10.0	80- 120	100	
150	7.173	7.172	0.001		1033458			135- 175	155	
115	7.173	7.172	0.001		374542			35.8- 75.8	56.2	
\$ 3 Nitrobenzene-d5										
82	8.035	8.035	0.000	100	299630	5.00	3.72	80- 120	100	
128	8.043	8.035	0.008		158722			33.8- 73.8	53.0	
54	8.035	8.035	0.000		172676			37.5- 77.5	57.6	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031403.D

Injection Date: 14-Mar-2017 15:49:30

Instrument ID: SV1

Operator ID:

Lims ID: LCSD 320-152910/3-A

Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul

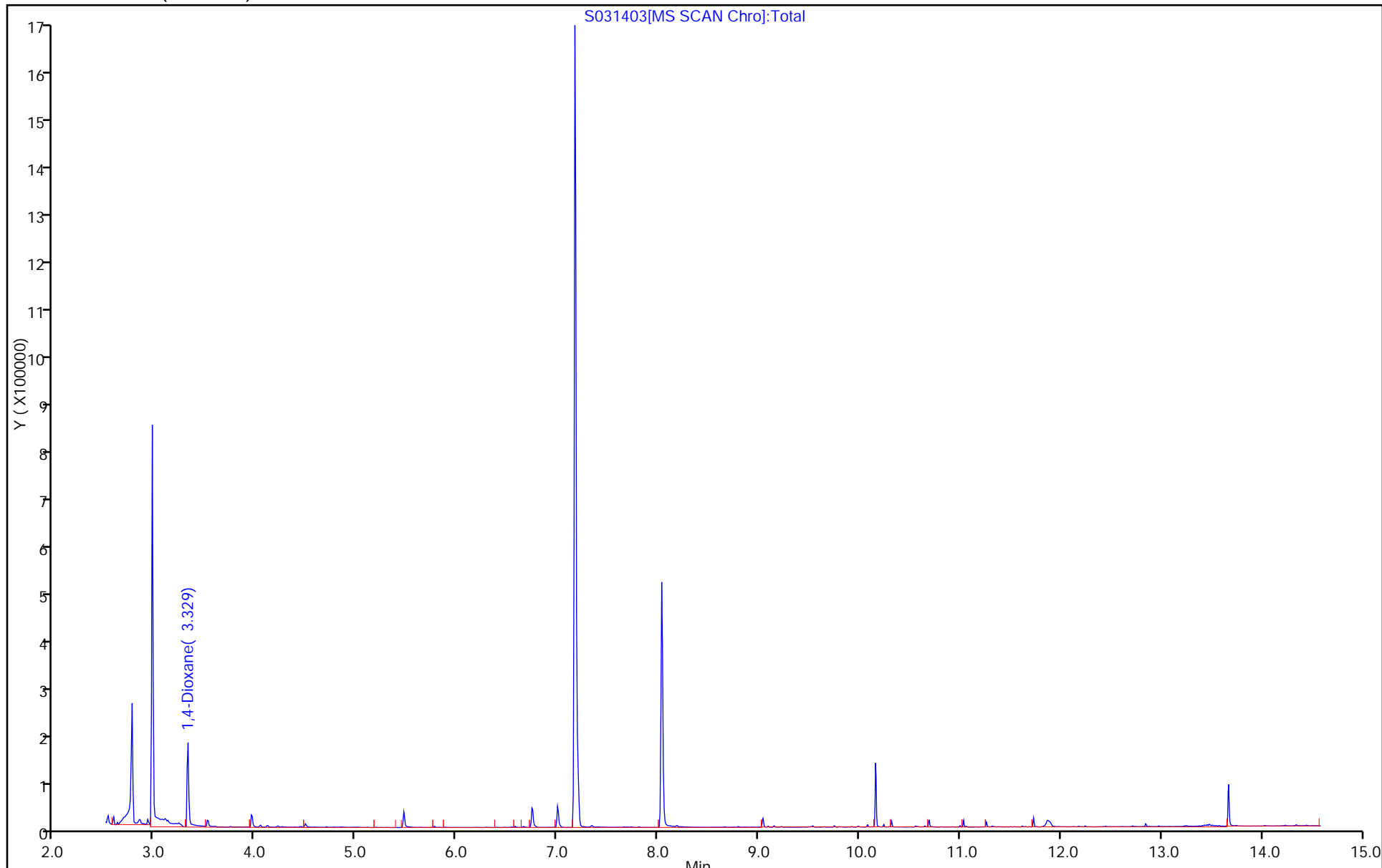
Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031403.D
 Lims ID: LCSD 320-152910/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 14-Mar-2017 15:49:30 ALS Bottle#: 3 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd 320-152910/3-a
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:27:20

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.72	74.45

TestAmerica Sacramento

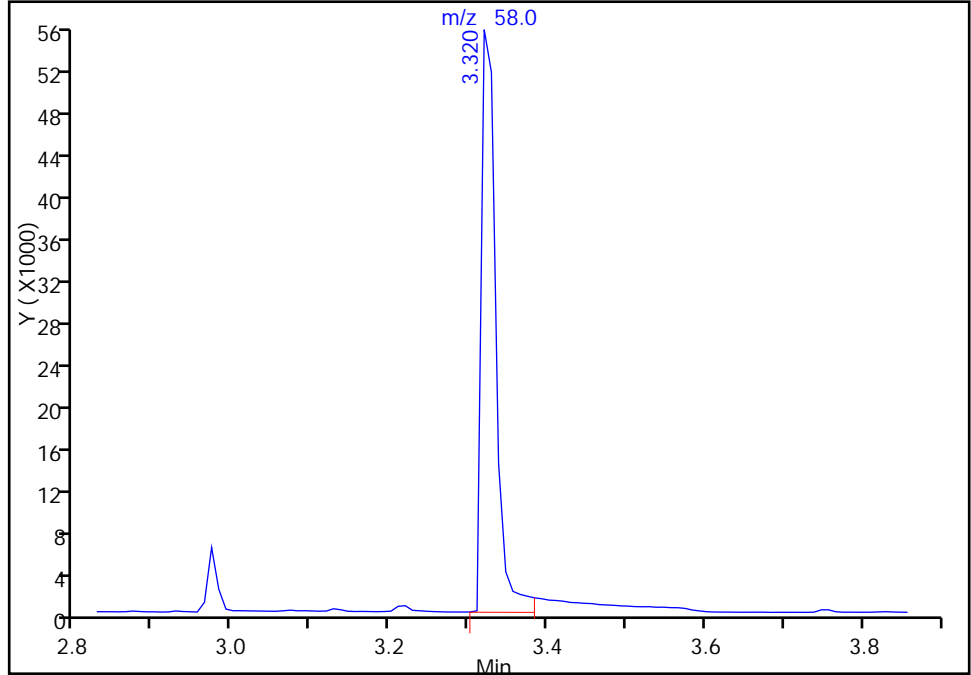
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031403.D
Injection Date: 14-Mar-2017 15:49:30 Instrument ID: SV1
Lims ID: LCSD 320-152910/3-A
Client ID:
Operator ID: ALS Bottle#: 3 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

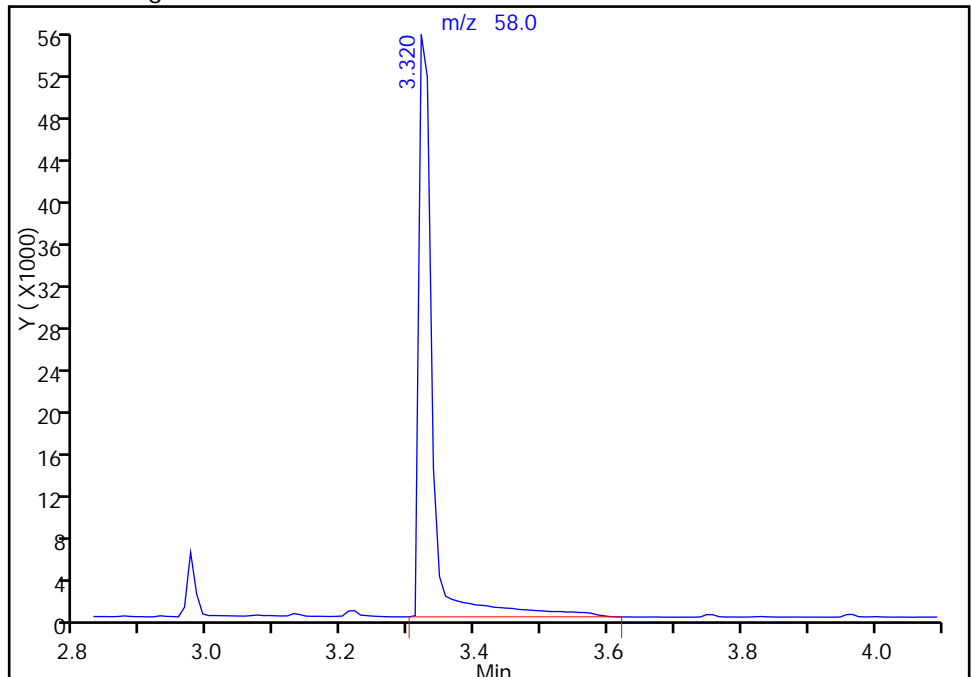
RT: 3.32
Area: 72253
Amount: 2.701827
Amount Units: ug/ml

Processing Integration Results



RT: 3.32
Area: 80341
Amount: 3.004270
Amount Units: ug/ml

Manual Integration Results



Reviewer: onishim, 15-Mar-2017 14:27:14
Audit Action: Manually Integrated

Audit Reason: Peak Tail

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 MS Lab Sample ID: 320-26105-3 MS
 Matrix: Water Lab File ID: S031411.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 15:00
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1052.1 (mL) Date Analyzed: 03/14/2017 18:50
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	2.59	M	0.95	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	75		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031411.D
 Lims ID: 320-26105-A-3-B MS
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: MS
 Inject. Date: 14-Mar-2017 18:50:30 ALS Bottle#: 11 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-3-b ms
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:29:19

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane										
58	3.320	3.320	0.000	90	66660	10.0	2.72	80- 120	100	M
88	3.329	3.320	0.009		71971			90- 130	108	
* 2 1,4-Dichlorobenzene-d4										
152	7.174	7.172	0.002	100	610199	10.0	10.0	80- 120	100	
150	7.174	7.172	0.002		944457			135- 175	155	
115	7.174	7.172	0.002		339747			35.8- 75.8	55.7	
\$ 3 Nitrobenzene-d5										
82	8.036	8.035	0.001	100	276829	5.00	3.76	80- 120	100	
128	8.036	8.035	0.001		148380			33.8- 73.8	53.6	
54	8.036	8.035	0.001		159037			37.5- 77.5	57.4	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031411.D

Injection Date: 14-Mar-2017 18:50:30

Instrument ID: SV1

Operator ID:

Lims ID: 320-26105-A-3-B MS

Worklist Smp#: 13

Client ID: MEAFF-MRD-1A14-0217

Injection Vol: 1.0 ul

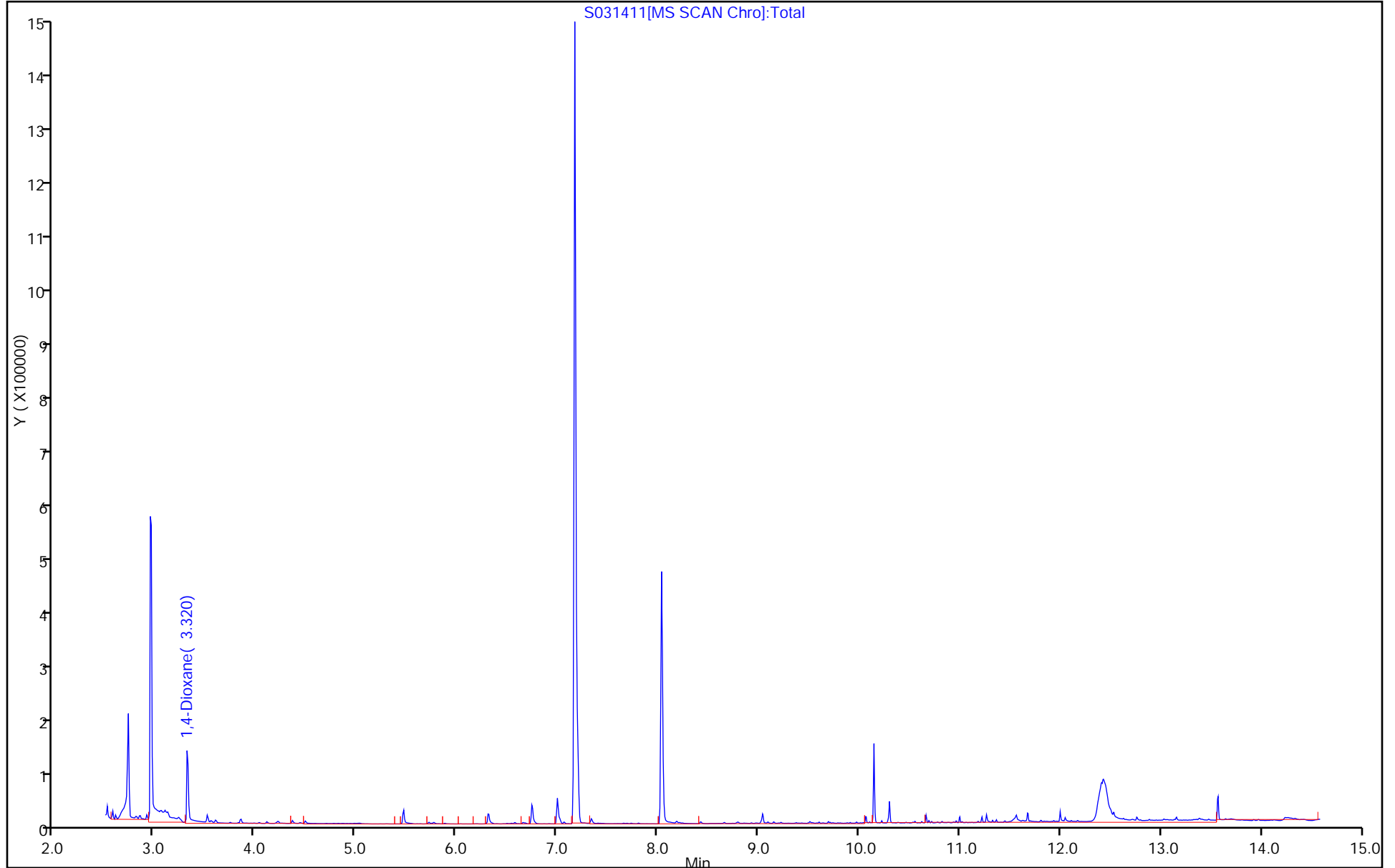
Dil. Factor: 1.0000

ALS Bottle#: 11

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031411.D
 Lims ID: 320-26105-A-3-B MS
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: MS
 Inject. Date: 14-Mar-2017 18:50:30 ALS Bottle#: 11 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-3-b ms
 Operator ID: Instrument ID: SV1

Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:29:19

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.76	75.13

TestAmerica Sacramento

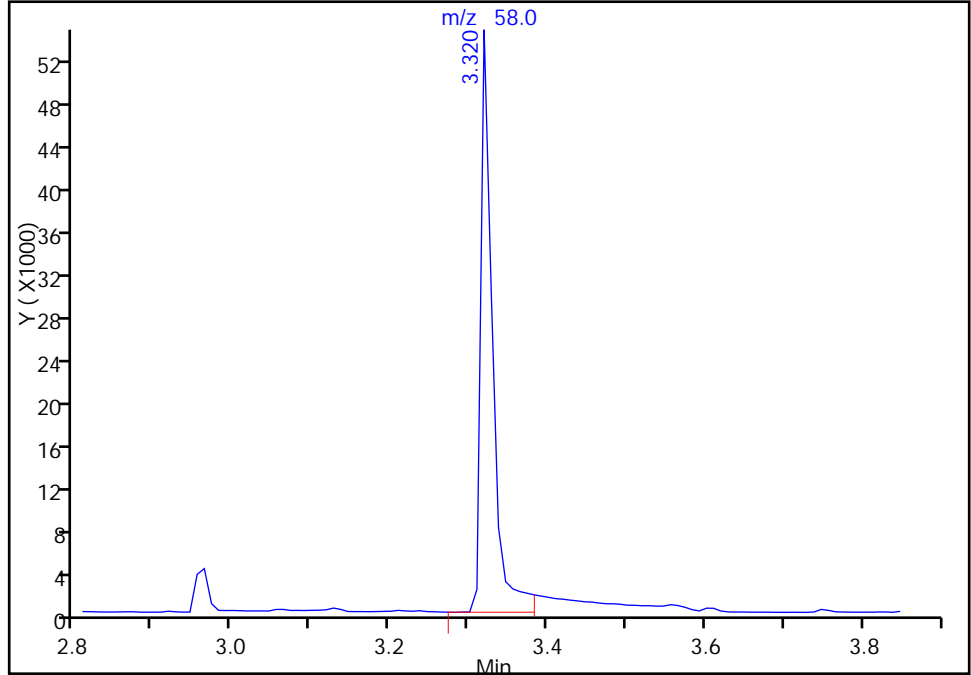
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031411.D
Injection Date: 14-Mar-2017 18:50:30 Instrument ID: SV1
Lims ID: 320-26105-A-3-B MS
Client ID: MEAFF-MRD-1A14-0217
Operator ID: ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

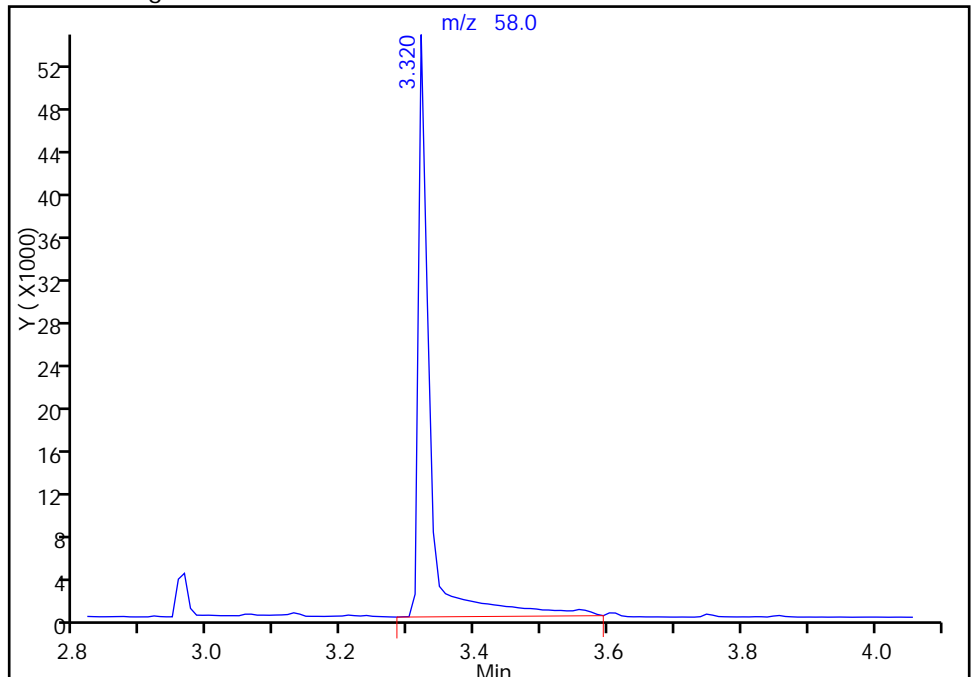
RT: 3.32
Area: 57542
Amount: 2.350366
Amount Units: ug/ml

Processing Integration Results



RT: 3.32
Area: 66660
Amount: 2.722801
Amount Units: ug/ml

Manual Integration Results



Reviewer: lardieo, 15-Mar-2017 14:29:11
Audit Action: Manually Integrated

Audit Reason: Peak Tail

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 MSD Lab Sample ID: 320-26105-3 MSD
 Matrix: Water Lab File ID: S031412.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 15:00
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1055.2 (mL) Date Analyzed: 03/14/2017 19:13
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	2.68	M	0.95	0.47	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	74		42-91

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031412.D
 Lims ID: 320-26105-A-3-C MSD
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: MSD
 Inject. Date: 14-Mar-2017 19:13:30 ALS Bottle#: 12 Worklist Smp#: 14
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-3-c msd
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:29:27

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,4-Dioxane										
58	3.311	3.320	-0.009	85	69548	10.0	2.83	80- 120	100	M
88	3.321	3.320	0.001		74477			90- 130	107	
* 2 1,4-Dichlorobenzene-d4										
152	7.173	7.172	0.000	100	613392	10.0	10.0	80- 120	100	
150	7.173	7.172	0.000		953157			135- 175	155	
115	7.173	7.172	0.000		342390			35.8- 75.8	55.8	
\$ 3 Nitrobenzene-d5										
82	8.035	8.035	0.000	100	274757	5.00	3.71	80- 120	100	
128	8.043	8.035	0.008		146779			33.8- 73.8	53.4	
54	8.035	8.035	0.000		157148			37.5- 77.5	57.2	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031412.D

Injection Date: 14-Mar-2017 19:13:30

Instrument ID: SV1

Operator ID:

Lims ID: 320-26105-A-3-C MSD

Worklist Smp#: 14

Client ID: MEAFF-MRD-1A14-0217

Injection Vol: 1.0 ul

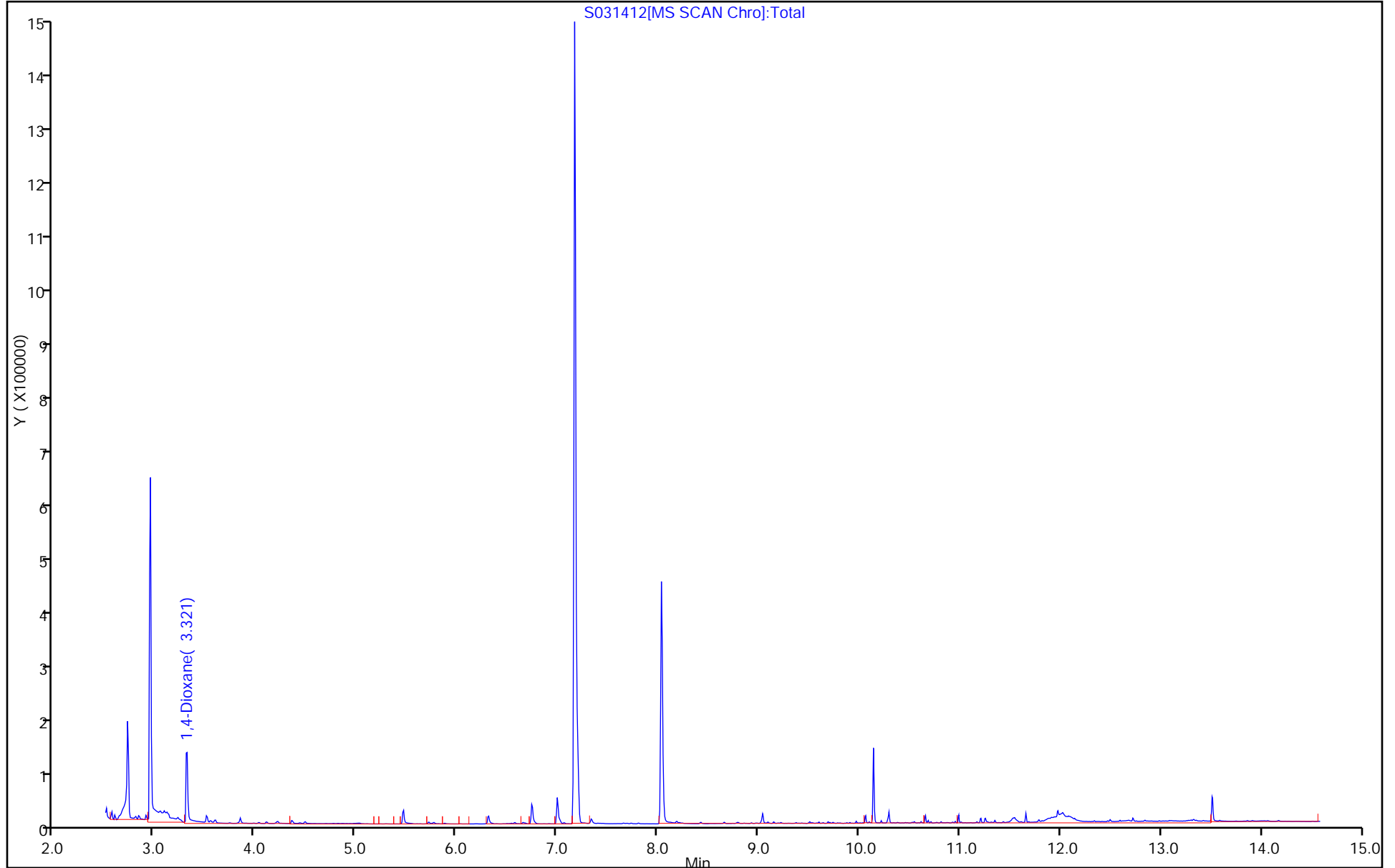
Dil. Factor: 1.0000

ALS Bottle#: 12

Method: 1,4-Dioxane

Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031412.D
 Lims ID: 320-26105-A-3-C MSD
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: MSD
 Inject. Date: 14-Mar-2017 19:13:30 ALS Bottle#: 12 Worklist Smp#: 14
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-3-c msd
 Operator ID: Instrument ID: SV1
 Method: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\1,4-Dioxane.m
 Limit Group: MSS - 8270SIM 14DX - ICAL
 Last Update: 15-Mar-2017 14:26:50 Calib Date: 22-Feb-2017 12:09:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D
 Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: chajjita Date: 15-Mar-2017 14:29:27

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.71	74.18

TestAmerica Sacramento

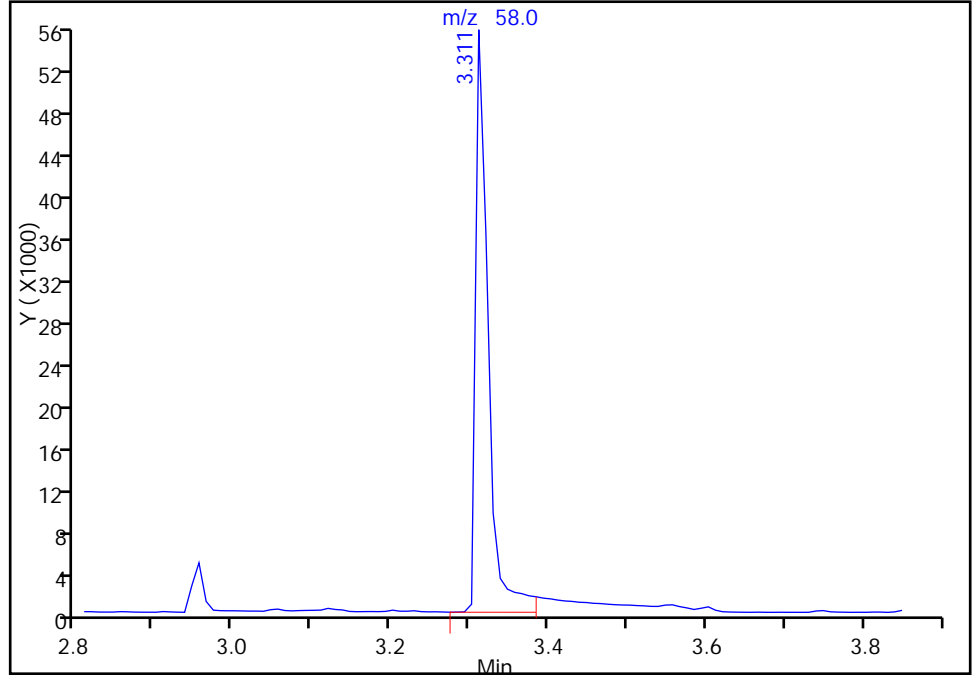
Data File: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b\S031412.D
Injection Date: 14-Mar-2017 19:13:30 Instrument ID: SV1
Lims ID: 320-26105-A-3-C MSD
Client ID: MEAFF-MRD-1A14-0217
Operator ID: ALS Bottle#: 12 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4-Dioxane Limit Group: MSS - 8270SIM 14DX - ICAL
Column: HP-5MS (0.25 mm) Detector: MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

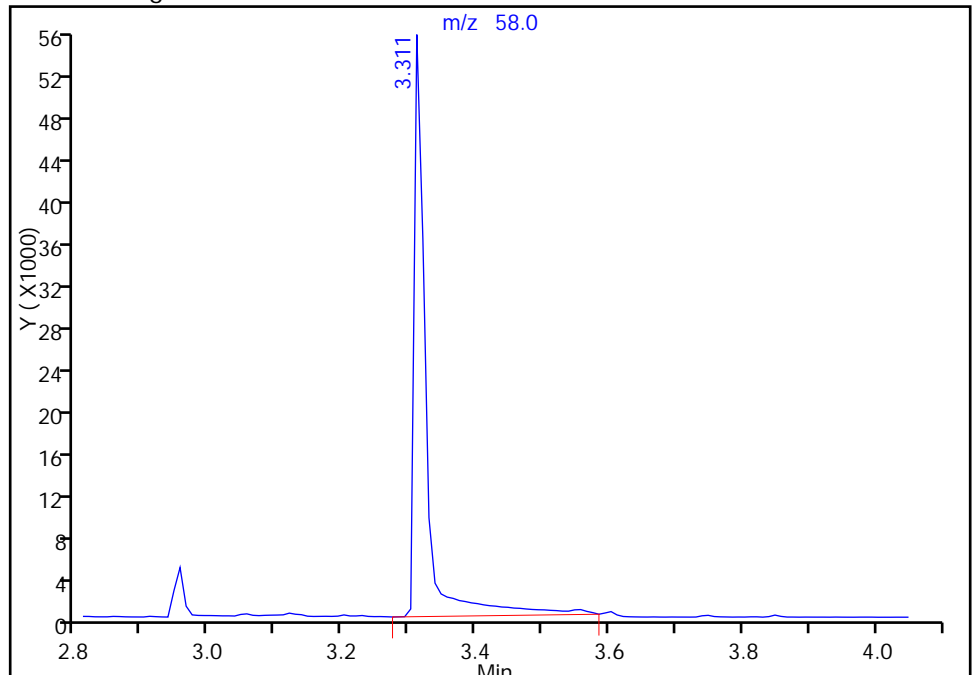
RT: 3.31
Area: 62617
Amount: 2.544346
Amount Units: ug/ml

Processing Integration Results



RT: 3.31
Area: 69548
Amount: 2.825977
Amount Units: ug/ml

Manual Integration Results



Reviewer: lardieo, 15-Mar-2017 14:29:21
Audit Action: Manually Integrated

Audit Reason: Peak Tail

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: SV1 Start Date: 02/22/2017 09:35

Analysis Batch Number: 151686 End Date: 02/22/2017 12:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-151686/1		02/22/2017 09:35	1	14D0222A.D	HP-5MS 0.25 (mm)
IC 320-151686/2		02/22/2017 09:56	1	14D0222B.D	HP-5MS 0.25 (mm)
IC 320-151686/3		02/22/2017 10:19	1	14D0222C.D	HP-5MS 0.25 (mm)
IC 320-151686/4		02/22/2017 10:41	1	14D0222D.D	HP-5MS 0.25 (mm)
ICIS 320-151686/5		02/22/2017 11:03	1	14D0222E.D	HP-5MS 0.25 (mm)
IC 320-151686/6		02/22/2017 11:25	1	14D0222F.D	HP-5MS 0.25 (mm)
IC 320-151686/7		02/22/2017 11:47	1	14D0222G.D	HP-5MS 0.25 (mm)
IC 320-151686/8		02/22/2017 12:09	1	14D0222H.D	HP-5MS 0.25 (mm)
ICV 320-151686/9		02/22/2017 12:31	1	14D0222.D	HP-5MS 0.25 (mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: SV1 Start Date: 03/14/2017 14:42

Analysis Batch Number: 154875 End Date: 03/15/2017 00:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-154875/2		03/14/2017 14:42	1	14D0314.D	HP-5MS 0.25 (mm)
MB 320-152910/1-A		03/14/2017 15:04	1	S031401.D	HP-5MS 0.25 (mm)
LCS 320-152910/2-A		03/14/2017 15:27	1	S031402.D	HP-5MS 0.25 (mm)
LCSD 320-152910/3-A		03/14/2017 15:49	1	S031403.D	HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 16:12	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 16:35	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 16:57	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 17:20	1		HP-5MS 0.25 (mm)
320-26105-1		03/14/2017 17:42	1	S031408.D	HP-5MS 0.25 (mm)
320-26105-2		03/14/2017 18:05	1	S031409.D	HP-5MS 0.25 (mm)
320-26105-3		03/14/2017 18:28	1	S031410.D	HP-5MS 0.25 (mm)
320-26105-3 MS		03/14/2017 18:50	1	S031411.D	HP-5MS 0.25 (mm)
320-26105-3 MSD		03/14/2017 19:13	1	S031412.D	HP-5MS 0.25 (mm)
320-26105-12		03/14/2017 19:35	1	S031413.D	HP-5MS 0.25 (mm)
320-26105-13		03/14/2017 19:58	1	S031414.D	HP-5MS 0.25 (mm)
320-26105-14		03/14/2017 20:21	1	S031415.D	HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 20:43	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 21:06	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 21:28	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 21:50	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 22:13	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 22:35	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 22:57	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 23:20	1		HP-5MS 0.25 (mm)
ZZZZZ		03/14/2017 23:42	1		HP-5MS 0.25 (mm)
ZZZZZ		03/15/2017 00:04	1		HP-5MS 0.25 (mm)
ZZZZZ		03/15/2017 00:27	1		HP-5MS 0.25 (mm)
CCVC 320-154875/29		03/15/2017 00:49	1	14D0314A.D	HP-5MS 0.25 (mm)

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Batch Number: 152910 Batch Start Date: 03/02/17 13:45 Batch Analyst: Kuzmenko, NataliaBatch Method: 3510C Batch End Date: 03/06/17 12:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	ReceivedpH	GrossWeight	TareWeight	InitialAmount	FinalAmount	MS14DSP 00030
MB 320-152910/1		3510C, WS-MS-0011		8 SU			1000 mL	1.0 mL	
LCS 320-152910/2		3510C, WS-MS-0011		8 SU			1000 mL	1.0 mL	500 uL
LCSD 320-152910/3		3510C, WS-MS-0011		8 SU			1000 mL	1.0 mL	500 uL
320-26105-A-14	MEAFF-FD02-0217	3510C, WS-MS-0011	T	7 SU	1555.1 g	515.42 g	1039.7 mL	1.0 mL	
320-26105-B-1	MEAFF-08MW01D-02 17	3510C, WS-MS-0011	T	7 SU	1561.7 g	510.29 g	1051.4 mL	1.0 mL	
320-26105-A-2	MEAFF-08MW01-021 7	3510C, WS-MS-0011	T	7 SU	1136.1 g	511.14 g	625 mL	1.0 mL	
320-26105-A-3	MEAFF-MRD-1A14-0 217	3510C, WS-MS-0011	T	7 SU	1560.1 g	507.95 g	1052.2 mL	1.0 mL	
320-26105-A-3 MS	MEAFF-MRD-1A14-0 217	3510C, WS-MS-0011	T	7 SU	1566.4 g	514.35 g	1052.1 mL	1.0 mL	500 uL
320-26105-A-3 MSD	MEAFF-MRD-1A14-0 217	3510C, WS-MS-0011	T	7 SU	1568.6 g	513.40 g	1055.2 mL	1.0 mL	500 uL
320-26105-B-12	MEAFF-08MW03-021 7	3510C, WS-MS-0011	T	7 SU	1548.0 g	515.12 g	1032.9 mL	1.0 mL	
320-26105-B-13	MEAFF-08MW06-021 7	3510C, WS-MS-0011	T	7 SU	1559.4 g	513.96 g	1045.4 mL	1.0 mL	

Lab Sample ID	Client Sample ID	Method Chain	Basis	MS14DSU 00003	AnalysisComment				
MB 320-152910/1		3510C, WS-MS-0011		0.5 mL					
LCS 320-152910/2		3510C, WS-MS-0011		0.5 mL					
LCSD 320-152910/3		3510C, WS-MS-0011		0.5 mL					
320-26105-A-14	MEAFF-FD02-0217	3510C, WS-MS-0011	T	0.5 mL					
320-26105-B-1	MEAFF-08MW01D-02 17	3510C, WS-MS-0011	T	0.5 mL					
320-26105-A-2	MEAFF-08MW01-021 7	3510C, WS-MS-0011	T	0.5 mL	Brown water and dark brown particualtes present				
320-26105-A-3	MEAFF-MRD-1A14-0 217	3510C, WS-MS-0011	T	0.5 mL					
320-26105-A-3 MS	MEAFF-MRD-1A14-0 217	3510C, WS-MS-0011	T	0.5 mL					

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.

WS-MS-0011

Page 1 of 2

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Batch Number: 152910 Batch Start Date: 03/02/17 13:45 Batch Analyst: Kuzmenko, Natalia

Batch Method: 3510C Batch End Date: 03/06/17 12:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	MS14DSU 00003	AnalysisComment				
320-26105-A-3 MSD	MEAFF-MRD-1A14-0 217	3510C, WS-MS-0011	T	0.5 mL					
320-26105-B-12	MEAFF-08MW03-021 7	3510C, WS-MS-0011	T	0.5 mL					
320-26105-B-13	MEAFF-08MW06-021 7	3510C, WS-MS-0011	T	0.5 mL					

Batch Notes	
Balance ID	QA-036
Analyst ID - Concentration	NGK 3/06/17 FV-1mL vials # 16178661
Na2SO4 ID	SS00346
Oven, Bath or Block Temperature 1	75 C
Pipette ID	K35057E
Prep Solvent ID	0000164143
Prep Solvent Name	DCM
Prep Solvent Volume Used	180 mL
Person's name who did the prep	SR/AAR 03/02/2017
Analyst ID - Reagent Drop Witness	AAR 3/2/17
Analyst ID - Reagent Drop	SR 3/2/17
Water Bath ID	BT-021, BT-020

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.

Due 3/22
LH



Sacramento
GCMS Semivolatile CCV and Tune Data Review Checklist

LIMS Batch Number: 154975	Worklist #: 40922	Instrument ID: SV1
Analyst/1 st Reviewer: Aptimul 3/15/17	Method (circle): 625 8270C 8270D TO-13A NPE CWM (1,4-Dx) PAH PAH-IDA	Analysis Type (circle): Full Scan (SIM)
Matrix: (Non-potable Water) Solid Leachate Tissue Air Waste	QC Type (circle): Standard QAPP (DOD) Other- Explain QSM 5.0	
Job Nos: 320-26103, 320-26105, 320-26273, 320-26324	Prep Batch(es): 152910, 153906	ICAL Batch: 151696

Review Items	NA	Yes	No	2 nd Rev	If No, why is data reportable?
A. Tune/Calibration Verification					
1. Did DFTPP meet tune criteria? If SIM, did the PFTBA Tune check meet ion ratio criteria?		/		✓	
2. Are the Benzidine and PCP tailing ≤ 2? (8270D) Benzidine tailing ≤ 3 and PCP tailing ≤ 5? (8270C)	/			✓	If no, list details: _____
3. Is the DDT degradation ≤ 20%	/			✓	If no, list details: _____
4. Were all standards injected within 12 hr of DFTPP? (or 24 hrs for 625)?		/		✓	If no, list details: _____
5. Was the correct ICAL used for quantitation? Date and Instrument ID of ICAL verified? (Check in both Chrom/Target and TALS)		/		✓	
6. Do the RFs meet method minimum criteria? (8270D/625) Are the RFs for SPCCs ≥ 0.050? (8270C) SPCC: 2,4-Dinitrophenol, 4-Nitrophenol, Hexachlorocyclopentadiene & N-nitroso-di-n-propylamine		/		✓	If no, list details: _____
7. Is the %D (difference or drift) ≤ 20% for all CCCs? All other analytes within 15%, or lab limits (8270C); %D ≤ 20% for all analytes, at least 80% of compounds meet criteria? (8270D) %D ≤ 30% for all analytes (non-DOD SIM) %D ≤ 20% for all analytes (DOD SIM) CCC: Phenol, 1,4-DCB, 2-Nitrophenol, 2,4-Dichlorophenol, Hexachlorobutadiene, 4-Chloro-3-methylphenol, 2,4,6-Trichlorophenol, Acenaphthene, N-nitrosodiphenylamine, Pentachlorophenol, DI-n-octyl phthalate & Benzo(a)pyrene		/		✓	If no, list details: _____ (8270C: %D high, samples ND?) (8270D: <20% of cmpds fail criteria & for failed cmpds RL standard verifies sensitivity for NDs?)
8. For any compound > 20% D (low), was RL standard analyzed and detected? (8270D)	/			✓	
9. NOTE: For any compounds > 20% D (high or low), detects will be flagged as "EST" & narrated.	/			✓	<input type="checkbox"/> Must be done in consultation with client.
10. Are the internal standard responses within limits?	/			✓	If no, list details: _____

MSS-002 Rev 1 2016-07-20
Based on Corp Form No. CA-Q-WI-045, Rev. 0, dated 11 Nov 2014

TestAmerica Sacramento

GCMS CCV and Tune Data Review Checklist

LIMS Batch Number: 154975	Worklist #: 40922	Instrument ID: SV1
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(between -50% and +100% of the mid-level ICAL standard)					
11. Are the internal standard retention times within method limits? (± 30 sec of ICAL mid pt for 8270C/D)				<input checked="" type="checkbox"/>	If no, list details: _____
12. Benzo(b & k)fluoranthene: height of the valley between must be less than 50% of the average of the two peak heights?				<input checked="" type="checkbox"/>	
13. Elution order checked Isomeric pairs and coeluters?					Chrom: View/Documents/Methods/Isomers)
• aniline / bis(2-chloroethyl)ether	<input checked="" type="checkbox"/>				
• n-nitrosodiphenylamine/diphenylamine * (conc)	<input checked="" type="checkbox"/>				
• 1,3-, 1,4-, 1,2-dichlorobenzene	<input checked="" type="checkbox"/>				
• benzyl alcohol / 2-methylphenol / 4-methylphenol	<input checked="" type="checkbox"/>				
• 2 & 1 - methylnaphthalene	<input checked="" type="checkbox"/>				
• 2,4,6- and 2,4,5-trichlorophenol	<input checked="" type="checkbox"/>				
• phenanthrene / anthracene	<input checked="" type="checkbox"/>				
• fluoranthene / pyrene	<input checked="" type="checkbox"/>				
• benzo(a)anthracene / chrysene	<input checked="" type="checkbox"/>				
• benzo(e)pyrene / benzo(a)pyrene / perylene	<input checked="" type="checkbox"/>				
• bis(2-ethylhexyl)/di-n-octyl phthalate	<input checked="" type="checkbox"/>				
• benzo(b)fluoranthene / benzo(k)fluoranthene	<input checked="" type="checkbox"/>				
• indeno(1,2,3-cd)pyrene / benzo(g,h,i)perylene	<input checked="" type="checkbox"/>				
• safrole/1-chloronaphthalene	<input checked="" type="checkbox"/>				
• 1-/2-naphthylamine	<input checked="" type="checkbox"/>				
• 2 and 1-chloronaphthalene	<input checked="" type="checkbox"/>				
• 2,4- and 2,6-dichlorophenol	<input checked="" type="checkbox"/>				
14. If any criteria from items above were not met, was a NCM generated & approved by supervisor?				<input checked="" type="checkbox"/>	
15. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)				<input checked="" type="checkbox"/>	
16. Is the ICV properly linked?				<input checked="" type="checkbox"/>	
17. Is the FC43 Tune Documentation attached in TALS (SIM Methods: NPE, CWM, 1,4-Dx, PAH, PAH-IDA)				<input checked="" type="checkbox"/>	
18. Isotope Dilution: S/N for all IDA > 10:1, S/N for targets > 2.5:1				<input checked="" type="checkbox"/>	
19. 1,4-Dx: S/N > 10:1 (client criteria > 20:1)?				<input checked="" type="checkbox"/>	

2nd Reviewer:

Review Date:

3/17/17

Comments:

LIMS Batch Number: <u>154875</u>	Worklist #: <u>40922</u>	Instrument ID: <u>SV1</u>
Analyst/1 st Reviewer: <u>APIWAL 3/15/17</u>	Method (circle): <u>625 8270C 8270D TO-13A</u> NPE CWM <u>(1,4-Dx)</u> PAH PAH-IDA	Analysis Type (circle): Full Scan <u>(SIM)</u>
Matrix: <u>(Non-potable Water)</u> Solid Leachate Tissue <u>Air Waste</u>	QC Type (circle): Standard QAPP <u>(DOD)</u> Other- Explain: <u>SM 5.0</u>	
Job Nos: <u>320 - 26103, 320 - 26105,</u> <u>320 - 26273, 320 - 26324</u>	Prep Batch(es): <u>152910, 153806</u>	

Review Items	NA	Yes	No	2 nd Rev	If No, why is data reportable?
B. Client Sample and QC Sample Results					
1. All samples & QC injected within method time criteria? (8270C, 8270D 12 hr; 625=24 hr)		/		/	Time of last Injection: <u>00:49</u>
2. LCS (LFB) %recovery within limits? (625=compd specific-Table 5 'P' value (All other methods =lab statistical limits)		/		/	
3. MS/MSD (LFM/LFMD) %recoveries within limits? (625=compd specific-Table 5 'P' value (All other methods =lab statistical limits)		/		/	
4. MS/MSD RPD within limits? (625=compd specific-limits) (All other methods =lab statistical limits)		/		/	
5. Do all spiked samples (LCS, MS, MSD) yield positive detections? Concentrations of ND require evaluation, correction or explanation.		/		/	
6. Are all duplicate or spiked duplicate sample RPDs <75%? Excessive RPDs (>75%) require evaluation, correction or explanation.		/		/	
7. Target compds in Method Blank are below required concentration.		/		/	
8. Surrogates within %Recovery acceptance limits for all samples and QC? <i>If no, list details:</i>		/		/	<input type="checkbox"/> Samples submitted for re-extraction <input type="checkbox"/> Confirmed by re-extraction <input type="checkbox"/> Insufficient sample for re-extraction <input type="checkbox"/> Surrogates high, samples ND <input type="checkbox"/> Visual Matrix Interference-Client notified- Explain: _____ _____ _____
9. Internal standard (IS) response between -50% and +100% of (circle one) CCV standard? Mid-point ICAL? <i>If no, list details:</i>		/		/	<input type="checkbox"/> High IS response. Sample(s) rerun to confirm, or at dilution. <input type="checkbox"/> Low IS response. Sample(s) reanalyzed.

MSS-002 Rev 1 2016-07-20

Based on Corp Form No. CA-Q-WI-045, Rev. 0, dated 11 Nov 2014

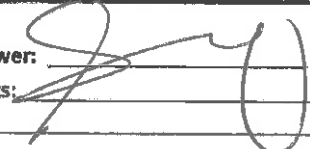
Page 3 of 5

LIMS Batch Number: 154875	Worklist #: 40822	Instrument ID: SV1
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Review Items	NA	Yes	No	2 nd Rev	If No, why is data reportable?
B. Client Sample and QC Sample Results (continued)					
10. Are internal standards <0.5 min of IS in last CCV?		/		/	
11. Samples with target analyte concentrations > calibration range diluted and reanalyzed? <i>If no, list details:</i>		/		/	<input type="checkbox"/> Results E flagged
11. Are peaks evaluated to assure there are no saturated peaks?		/		/	
12. Were preparation & analysis Holding Times met for all samples in the batch? Were analytical holding times met for all samples in the batch? <i>If no, list details:</i>		/		/	<input type="checkbox"/> H flag for samples past hold <input type="checkbox"/> NCM filed for samples past hold
13. Were prep and dilution factors verified between Chrom and TALS and final report?		/		/	Comments:
14. Were spectra for all detections evaluated for correct identification?		/		/	
15. Was a review performed of all chromatographic peaks that were deleted to verify removal was appropriate?		/		/	
16. Were unidentified peaks reviewed for missed target compounds?		/		/	
17. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		/		/	
18. Were isomeric pairs checked for correct assignment? (verify against ICAL & CCV)		/		/	
19. Were results from diluted & undiluted runs compared?	/			/	
20. Dilution: Is highest target analyte >20% of calibration range?	/			/	<input type="checkbox"/> Is there matrix preventing? <input type="checkbox"/> Are clean ups required?
C. Other -- Final Report Data Review					
21. Were all project requirements met?		/		/	
22. Samples checked to ensure all requested targets uploaded and reported correctly?		/		/	
23. Results for Samples/LCS/MS/MSD calculated/reported correctly in TALS and in final report? <i>Are recovery & RPD limits present in final report?</i>		/		/	(Reagents associated correctly?) (Limits in reference data?)
24. NCMs reviewed for applicability, correct references to batches/analytes, grammatical/typographical errors?		/		/	
25. Raw Data					
a. Unused data is clearly identified		/		/	
b. All crossed out data is initialed and dated		/		/	
c. Out of control QC is clearly identified		/		/	
d. Any data that has a qualifier tick is commented on with appropriate action taken		/		/	

LIMS Batch Number: 154875	Worklist #: 40822	Instrument ID: SV1
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Review Items	NA	Yes	No	2 nd Rev	If No, why is data reportable?
C. Other -- Final Report Data Review (continued)					
e. The first page of the run includes the filename, instrument, and analyst initials/signature		/		/	
26. Run Log					If Chrom worklist is used for runlog, all runs upload to Worklist
a. Unused data is clearly identified		/		/	
b. All crossed out data is initialed and dated, not obliterated		/		/	
c. Analyst initials/signature provided		/		/	
27. TALS Samples Tab				/	
a. LIMS Sample IDs / Containers are correct		/		/	
b. Method and matrix are correct		/		/	
c. Date and time match raw data		/		/	
• Dilutions are correct		/		/	
• Correct suffix designated (where applicable)		/		/	
28. TALS Worksheet Tab is complete and correct		/		/	
29. TALS Reagent Tab is complete and correct		/		/	
30. TALS QC Links Tab is correct		/		/	Missing QC? <input type="checkbox"/> Check QC links, to samples and duplicates <input type="checkbox"/> Check cross batch links <input type="checkbox"/> QC at second level review? Missing limits? <input type="checkbox"/> Check QC links <input checked="" type="checkbox"/> Check spike (reagents) associated with appropriate analytes <input type="checkbox"/> check limits in ref. data-QA
31. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted		/		/	
b. All reported analytes are marked Primary or Secondary		/		/	
c. Flags are correctly applied (no flags missing)		/		/	<input type="checkbox"/> Apply manually <input type="checkbox"/> Failing condition not propagated to samples- Re-calc
32. TALS Batch Information Screen documentation is complete		/		/	
32. TALS Status set to appropriate review level		/		/	<input type="checkbox"/> Check for "yellow calculator"

2nd Reviewer:  Review Date: 3/17/17

Comments: _____

GCMS Semivolatile ICAL Data Review Checklist

Internal Standard

LIMS Batch Number: 151686	Worklist #: 40122	Instrument ID: SV1 (2/22/17)
Analyst/1 st Reviewer: ONL	Method (circle): 625 8270C 8270D TO-13A NPE CWM (1,4-Dx) PAH PAH-IDA	Analysis Type (circle): Full Scan (SIM)
QC Type (circle): Standard QAPP DOD Other-Explain _____		

Review Items	NA	Yes	No	2 nd Rev	If No, why is data reportable?
A: Tune/Calibration Verification					
1. Did DFTPP meet tune criteria? If SIM, did the PFTBA Tune check meet ion ratio criteria?		✓		✓	
2. Are the Benzidine and PCP tailing ≤ 2? (8270D) Benzidine tailing ≤ 3 and PCP tailing ≤ 5? (8270C)	✓				If no, list details: _____
3. Is the DDT degradation ≤ 20%	✓				If no, list details: _____
4. Were all standards injected within 12 hr of DFTPP? (or 24 hrs for 625)?		✓		✓	If no, list details: _____
5. Were ≥ 5 levels of each compound analyzed? (≥ 3 levels for 625) (≥ 5 levels of surrogate analyzed for DoD)?		✓		✓	
6. Was low level standard at or below RL?		✓		✓	
7. If calibration points removed, were reasons for removal documented? Did sufficient calibration points remain? (removal from middle of curve not allowed)		✓		✓	(e.g.; some points <RL removed)
8. Does the low level standard have enough sensitivity to produce at least 5-10 scans across the peak, and all secondary ions are present?		✓		✓	
9. Do the average RFs meet minimum RF requirements? (625 – not method defined) (8270C-SPCCs = ≥0.05) (8270D- all cmpds have min RFs defined in method/SOP)		✓		✓	SPCC: 2,4-Dinitrophenol, 4-Nitrophenol, Hexachlorocyclopentadiene & N-nitroso-di-n-propylamine
10. Did the calibration %RSD meet method requirements? (625: ≤ 35% all cmpds) (8270C: ≤ 30% for CCCs & ≤ 15% for all other cmpds/surrogates) (8270D: ≤ 20% for all cmpds/surrogates) (SIM Methods: ≤ 30% for all cmpds/surrogates (Std) or : ≤ 15% for all cmpds/surrogates (DOD))		✓		✓	CCC: Phenol, 1,4-DCB, 2-Nitrophenol, 2,4-Dichlorophenol, Hexachlorobutadiene, 4-Chloro-3-methylphenol, 2,4,6-Trichlorophenol, Acenaphthene, N-nitrosodiphenylamine, Pentachlorophenol, Di-n-octyl phthalate & Benzo(a)pyrene
11. Was a linear or quadratic regression fit used for analytes that exceeded the %RSD requirements?	✓				
12. If regression fit used, is correlation coefficient ≥ 0.990?	✓				
13. Does the low point of a linear regression fit meet	✓				

LIMS Batch Number: 151686	Worklist #: 4022	Instrument ID: SVI
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the ±30% read-back criteria? (8270D)				
14. At least 6 consecutive points used for quadratic curves?	/			
15. For quadratic – examine plot: Is a tangent’s slope to the curve entirely positive or negative and continuous? (does not flatten or recurve within the range of calibration)	✓			
16. For quadratic – evaluate curve fitting errors: Does each point fall within criteria when ‘read-back’ against the curve? (TA requirement – CA-Q-S-005; recommended limits ±30% low point & ±20% all other points) (Chrom Report = Details of Calibration per Analyte)	✓			
17. Is the concentration intercept < RL for each cmpd? ("X" intercept in Chrom; "Y" intercept in Target)		/	/	
18. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2 nd review of all MIs required)		/	/	Reasons: 1)Split Peak; 2)Undetected peak; 3)Tailing; 4)RT shift; 5)Wrong peak selected; 6)Baseline Correction; 7)Other-explain
19. Was the high point checked for detector saturation?		/	/	
20. Do the relative retention times for each analyte in each standard agree within ± 0.006 units?		/	/	
21. Benzo(b & k)fluoranthene: height of the valley between must be less than 50% of the average of the two peak heights?	/			
22. Elution order checked Isomeric pairs and coeluters?				Chrom: View/Documents/Methods/Isomers)
• aniline / bis(2-chloroethyl)ether	/			
• n-nitrosodiphenylamine/diphenylamine * (conc)	/			
• 1,3- , 1,4- , 1,2-dichlorobenzene	✓			
• benzyl alcohol / 2-methylphenol / 4-methylphenol	✓			
• 2 & 1 - methylnaphthalene	✓			
• 2,4,6- and 2,4,5-trichlorophenol	✓			
• phenanthrene / anthracene	✓			
• fluoranthene / pyrene	✓			
• benzo(a)anthracene / chrysene	✓			
• benzo(e)pyrene / benzo(a)pyrene / perylene	✓			
• bis(2-ethylhexyl)/di-n-octyl phthalate	✓			
• benzo(b)fluoranthene / benzo(k)fluoranthene	✓			
• indeno(1,2,3-cd)pyrene / benzo(g,h,i)perylene	✓			
• safrole/1-chloronaphthalene	✓			
• 1-/2-naphthylamine	✓			
• 2 and 1-chloronaphthalene	✓			
• 2,4- and 2,6-dichlorophenol	✓			
• 2,4,6 and 2,4,5-tribromophenol	✓			







TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 40822_031417_14D Worklist Num: 40822
 Instrument: SV1 Method: 1,4-Dioxane
 Batch Directory: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b
 Analysis Type: SemiVOA Creator: Onishi, Marc
 Inj Volume: 1.00 Inj Vol Units: ul
 Run Reagents:
 MS8270IS_00016, Amount Added: 5.00 , Units: uL

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
primer	320-0040822-001	Client	14-Mar-2017 14:16:30	QC031401.D	96	1.0		sv
CCV	320-0040822-002	CCV	14-Mar-2017 14:42:30	14D0314.D	96	1.0		sv
MB 320-152910/1-A	320-0040822-003	MB	14-Mar-2017 15:04:30	S031401.D	1	1.0		sv
LCS 320-152910/2-A	320-0040822-004	LCS	14-Mar-2017 15:27:30	S031402.D	2	1.0		sv
LCSD 320-152910/3-A	320-0040822-005	LCSD	14-Mar-2017 15:49:30	S031403.D	3	1.0		sv
320-26103-A-6-A	320-0040822-006	Client	14-Mar-2017 16:12:30	S031404.D	4	1.0	MEAFF-MRD-0504-0217	sv
320-26103-C-7-A	320-0040822-007	Client	14-Mar-2017 16:35:30	S031405.D	5	1.0	MEAFF-MRD-0621-0217	sv
320-26103-A-11-A	320-0040822-008	Client	14-Mar-2017 16:57:30	S031406.D	6	1.0	MEAFF-MRD-0503-0217	sv
320-26103-D-12-A	320-0040822-009	Client	14-Mar-2017 17:20:30	S031407.D	7	1.0	MEAFF-MRD-0615-0217	sv
320-26105-B-1-A	320-0040822-010	Client	14-Mar-2017 17:42:30	S031408.D	8	1.0	MEAFF-08MW01D-0217	sv
320-26105-A-2-A	320-0040822-011	Client	14-Mar-2017 18:05:30	S031409.D	9	1.0	MEAFF-08MW01-0217	sv
320-26105-A-3-A	320-0040822-012	Client	14-Mar-2017 18:28:30	S031410.D	10	1.0	MEAFF-MRD-1A14-0217	sv
320-26105-A-3-B MS	320-0040822-013	MS	14-Mar-2017 18:50:30	S031411.D	11	1.0	MEAFF-MRD-1A14-0217	sv
320-26105-A-3-C MSD	320-0040822-014	MSD	14-Mar-2017 19:13:30	S031412.D	12	1.0	MEAFF-MRD-1A14-0217	sv
320-26105-B-12-A	320-0040822-015	Client	14-Mar-2017 19:35:30	S031413.D	13	1.0	MEAFF-08MW03-0217	sv
320-26105-B-13-A	320-0040822-016	Client	14-Mar-2017 19:58:30	S031414.D	14	1.0	MEAFF-08MW06-0217	sv
320-26105-A-14-A	320-0040822-017	Client	14-Mar-2017 20:21:30	S031415.D	15	1.0	MEAFF-FD02-0217	sv
MB 320-153806/1-A	320-0040822-018	MB	14-Mar-2017 20:43:30	S031416.D	16	1.0		sv
LCS 320-153806/2-A	320-0040822-019	LCS	14-Mar-2017 21:06:30	S031417.D	17	1.0		sv
LCSD 320-153806/3-A	320-0040822-020	LCSD	14-Mar-2017 21:28:30	S031418.D	18	1.0		sv
320-26273-A-1-A	320-0040822-021	Client	14-Mar-2017 21:50:30	S031419.D	19	1.0	MEAFF-4AMW03-0317	sv
320-26273-B-2-A	320-0040822-022	Client	14-Mar-2017 22:13:30	S031420.D	20	1.0	MEAFF-MRD-0630-0317	sv
320-26273-B-3-A	320-0040822-023	Client	14-Mar-2017 22:35:30	S031421.D	21	1.0	MEAFF-4AMW01-0317	sv
320-26273-A-4-A	320-0040822-024	Client	14-Mar-2017 22:57:30	S031422.D	22	1.0	MEAFF-4CMW01-0317	sv
320-26273-B-5-A	320-0040822-025	Client	14-Mar-2017 23:20:30	S031423.D	23	1.0	MEAFF-4CMW03-0317	sv
320-26273-B-6-A	320-0040822-026	Client	14-Mar-2017 23:42:30	S031424.D	24	1.0	MEAFF-FD05-0317	sv
320-26324-D-5-A	320-0040822-027	Client	15-Mar-2017 00:04:30	S031425.D	25	1.0	MEAFF-EB03-GW-0317	sv
320-26324-C-6-A	320-0040822-028	Client	15-Mar-2017 00:27:30	S031426.D	26	1.0	MEAFF-EB04-GW-0317	sv
CCVC	320-0040822-029	CCVC	15-Mar-2017 00:49:30	14D0314A.D	96	1.0		sv

TestAmerica Laboratories
Worklist Report

Worklist Name: 40822_031417_14D
 Instrument Name: SV1
 Injection Volume: 1.000000
 Analysis Type: Semi VOA
 Batch Directory: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b
 Upload Directory: \\CORPTALSAPP12\320-WS-RawData\Organics\MS\SV1
 Run Reagent: MS8270IS_00016
 Amount Added: 5.000000, Units: uL
 Worklist Number: 40822
 Chrom Method: 1,4-Dioxane
 Units: ul

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Initial Vol/Wt	Vol/Wt Units	Dil Fact
320-0040822-001	# 1 primer 	MS14DL5_00010	Client	sv	1.000000	mL	1.000000
320-0040822-002	# 2 CCV 	MS14DL5_00010	CCV	sv	1.000000	mL	1.000000
320-0040822-003	# 3 MB 320-152910/1-A 		MB	sv	1.000000	mL	1.000000
320-0040822-004	# 4 LCS 320-152910/2-A 		LCS	sv	1.000000	mL	1.000000
320-0040822-005	# 5 LCSD 320-152910/3-A 		LCSD	sv	1.000000	mL	1.000000
320-0040822-006	# 6 320-26103-A-6-A 		Client	sv	1.000000	mL	1.000000
320-0040822-007	# 7 320-26103-C-7-A 		Client	sv	1.000000	mL	1.000000
320-0040822-008	# 8 320-26103-A-11-A 		Client	sv	1.000000	mL	1.000000
320-0040822-009	# 9 320-26103-D-12-A 		Client	sv	1.000000	mL	1.000000
320-0040822-010	# 10 320-26105-B-1-A 		Client	sv	1.000000	mL	1.000000
320-0040822-011	# 11 320-26105-A-2-A 		Client	sv	1.000000	mL	1.000000
320-0040822-012	# 12 320-26105-A-3-A 		Client	sv	1.000000	mL	1.000000
320-0040822-013	# 13 320-26105-A-3-B MS 		MS	sv	1.000000	mL	1.000000

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Initial Vol/Wt	Vol/Wt Units	Dil Fact
320-0040822-014	#14 320-26105-A-3-C MSD 		MSD	sv	1.000000	mL	1.000000
320-0040822-015	#15 320-26105-B-12-A 		Client	sv	1.000000	mL	1.000000
320-0040822-016	#16 320-26105-B-13-A 		Client	sv	1.000000	mL	1.000000
320-0040822-017	#17 320-26105-A-14-A 		Client	sv	1.000000	mL	1.000000
320-0040822-018	#18 MB 320-153806/1-A 		MB	sv	1.000000	mL	1.000000
320-0040822-019	#19 LCS 320-153806/2-A 		LCS	sv	1.000000	mL	1.000000
320-0040822-020	#20 LCSD 320-153806/3-A 		LCSD	sv	1.000000	mL	1.000000
320-0040822-021	#21 320-26273-A-1-A 		Client	sv	1.000000	mL	1.000000
320-0040822-022	#22 320-26273-B-2-A 		Client	sv	1.000000	mL	1.000000
320-0040822-023	#23 320-26273-B-3-A 		Client	sv	1.000000	mL	1.000000
320-0040822-024	#24 320-26273-A-4-A 		Client	sv	1.000000	mL	1.000000
320-0040822-025	#25 320-26273-B-5-A 		Client	sv	1.000000	mL	1.000000
320-0040822-026	#26 320-26273-B-6-A 		Client	sv	1.000000	mL	1.000000
320-0040822-027	#27 320-26324-D-5-A 		Client	sv	1.000000	mL	1.000000
320-0040822-028	#28 320-26324-C-6-A 		Client	sv	1.000000	mL	1.000000
320-0040822-029	#29 CCVC 	MS14DL5_00010	CCVC	sv	1.000000	mL	1.000000

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 40822_031417_14D
Instrument Name: SV1
Data Directory: \\ChromNA\Sacramento\ChromData\SV1\20170314-40822.b
QC Batching: Disabled

Worklist Number: 40822
Chrom Method: 1,4-Dioxane
Limit Group Batching: Enabled

QC Batch: 1	MSS - 8270SIM 14DX - ICAL Raw Batch: 154875
# 1 primer	# 1 primer
# 2 CCV	# 2 CCV
# 3 MB 320-152910/1-A	# 3 MB 320-152910/1-A
# 4 LCS 320-152910/2-A	# 4 LCS 320-152910/2-A
# 5 LCSD 320-152910/3-A	# 5 LCSD 320-152910/3-A
# 6 320-26103-A-6-A	# 6 320-26103-A-6-A
# 7 320-26103-C-7-A	# 7 320-26103-C-7-A
# 8 320-26103-A-11-A	# 8 320-26103-A-11-A
# 9 320-26103-D-12-A	# 9 320-26103-D-12-A
#10 320-26105-B-1-A	#10 320-26105-B-1-A
#11 320-26105-A-2-A	#11 320-26105-A-2-A
#12 320-26105-A-3-A	#12 320-26105-A-3-A
#13 320-26105-A-3-B MS	#13 320-26105-A-3-B MS
#14 320-26105-A-3-C MSD	#14 320-26105-A-3-C MSD
#15 320-26105-B-12-A	#15 320-26105-B-12-A
#16 320-26105-B-13-A	#16 320-26105-B-13-A
#17 320-26105-A-14-A	#17 320-26105-A-14-A
#18 MB 320-153806/1-A	#18 MB 320-153806/1-A
#19 LCS 320-153806/2-A	#19 LCS 320-153806/2-A
#20 LCSD 320-153806/3-A	#20 LCSD 320-153806/3-A
#21 320-26273-A-1-A	#21 320-26273-A-1-A
#22 320-26273-B-2-A	#22 320-26273-B-2-A
#23 320-26273-B-3-A	#23 320-26273-B-3-A
#24 320-26273-A-4-A	#24 320-26273-A-4-A
#25 320-26273-B-5-A	#25 320-26273-B-5-A
#26 320-26273-B-6-A	#26 320-26273-B-6-A
#27 320-26324-D-5-A	#27 320-26324-D-5-A
#28 320-26324-C-6-A	#28 320-26324-C-6-A
#29 CCVC	#29 CCVC

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152910

Analyst: Rafieefar, Sina

Batch Open: 3/2/2017 1:45:00PM

Method Code: 320-3510C_IVWT-320

Batch End:

Box # 0317 E

Liquid-Liquid Extraction (Separatory Funnel)

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Adj1 Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1 MB-320-152910/1 N/A	N/A		1000 mL 1.0 mL		N/A	N/A	N/A		MB 320-152910/1-A
2 LCS-320-152910/2 N/A	N/A		1000 mL 1.0 mL		N/A	N/A	N/A		LCS 320-152910/2-A
3 LCSD-320-152910/3 N/A	N/A		1000 mL 1.0 mL		N/A	N/A	N/A		LCSD 320-152910/3-A
4 320-26103-A-6 (8270_SIM_14DX)	N/A (320-26103-1)	578.6 g	1.0 mL		2/27/17	23_Days	4		320-26103-A-6-A
5 320-26103-C-7 (8270_SIM_14DX)	N/A (320-26103-1)	578.9 g	1.0 mL		2/27/17	23_Days	4		320-26103-C-7-A
6 320-26103-A-11 (8270_SIM_14DX)	N/A (320-26103-1)	549.9 g	1.0 mL		2/27/17	23_Days	4		320-26103-A-11-A
7 320-26103-D-12 (8270_SIM_14DX)	N/A (320-26103-1)	547.5 g	1.0 mL		2/27/17	23_Days	4		320-26103-D-12-A
8 320-26105-A-14 (8270_SIM_14DX)	N/A (320-26105-1)	555.1 g	1.0 mL		3/2/17	23_Days	4		320-26105-A-14-A
9 320-26079-D-4 (8270_SIM_14DX)	N/A (320-26078-1)	1470.4 g	1.0 mL		3/2/17	8_Days	2		320-26079-D-4-A
10 320-26079-E-6 (8270_SIM_14DX)	N/A (320-26078-1)	1530.4 g	1.0 mL		3/2/17	8_Days	2		320-26079-E-6-A

8 *8* *8* *7* *5* *7* *5* *7* *8* *8*
SR 03/04/17

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152910

Analyst: Rafeefar, Sina

Batch Open: 3/2/2017 1:45:00PM

Method Code: 320-3510C_IVWT-320

Batch End:

Line	Sample ID	Weight	Volume	SR	Instrument	Date	Days	Barcode
11	320-26079-E-7 (8270_SIM_14DX)	1501.3 g	1.0 mL	8	N/A (320-26078-1)	3/2/17	2	[Barcode]
12	320-26079-E-8 (8270_SIM_14DX)	1528.4 g	1.0 mL	8	N/A (320-26078-1)	3/2/17	2	[Barcode]
13	320-26095-G-1 (8270_SIM_14DX)	1473.6 g	1.0 mL	8	GWIM 2/17 Surface (320-26095-1)	3/3/17	2	[Barcode]
14	320-26105-B-1 (8270_SIM_14DX)	1561.7 g	1.0 mL	7	N/A (320-26105-1)	3/2/17	4	[Barcode]
15	320-26105-A-2 (8270_SIM_14DX)	1136.1 g	1.0 mL	7	N/A (320-26105-1)	3/2/17	4	dark brown water + particulates date 3/2/17 [Barcode]
16	320-26105-A-3 (8270_SIM_14DX)	1560.1 g	1.0 mL	7	N/A (320-26105-1)	3/2/17	4	[Barcode]
17	320-26105-A-3-MS (8270_SIM_14DX)	1566.4 g	1.0 mL	7	N/A (320-26105-1)	3/2/17	4	[Barcode]
18	320-26105-A-3-MSD (8270_SIM_14DX)	1568.6 g	1.0 mL	7	N/A (320-26105-1)	3/2/17	4	[Barcode]
19	320-26105-B-12 (8270_SIM_14DX)	1548.0 g	1.0 mL	7	N/A (320-26105-1)	3/2/17	4	[Barcode]
20	320-26105-B-13 (8270_SIM_14DX)	1559.4 g	1.0 mL	7	N/A (320-26105-1)	3/2/17	4	[Barcode]

SR
03/02/17

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152910

Analyst: Rafieefar, Sina

Batch Open: 3/2/2017 1:45:00PM

Method Code: 320-3510C_IVWT-320

Batch End:

	Batch Notes
Person's name who did the prep	SR/AAR 03/02/2017
Prep Solvent Name	DCM
Prep Solvent ID	0000164143
Prep Solvent Volume Used	180
Analyst ID - Reagent Drop	SR 03/02/17
Analyst ID - Reagent Drop Witness	QAR 3/2/17
Analyst ID - SU Reagent Drop	
Analyst ID - SU Reagent Drop Witness	
Acid used for pH adjustment	
Acid Used for pH Adjustment ID	
Base used for pH adjustment	
Base Used to Adjust pH ID	
Silica Gel ID	
Analyst ID - Concentration	
Exchange Solvent Name	
Exchange Solvent ID	
Concentration Start Time	
Concentration End Time	
Na2SO4 ID	
Water Bath ID	
Uncorrected Temperature	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152910

Analyst: Raffieefar, Sina

Batch Open: 3/2/2017 1:45:00PM

Method Code: 320-3510C_IVWT-320

Batch End:

Oven, Bath or Block Temperature 1	
Sufficient volume for MS/MSD?	
Analyst ID - Clean Up	
Florissil ID	
Acid used for Clean Up ID	
Sulfuric Acid ID	
TBA ID	
HPLC H2O ID	
NaCl ID	
Balance ID	QA-036
Florissil Solution Reagent ID	
Mercury ID	
Filter Paper ID	
Pipette ID	K35057E
Syringe ID	
N-evap ID	
N-evap Temperature	
Uncorrected N-evap Temperature	
pH Paper ID	
Thermometer ID	
Analyst ID - Spike Analyst	
Analyst ID - Spike Witness Analyst	
Vial ID	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152910

Analyst: Rafieefar, Sina

Batch Open: 3/2/2017 1:45:00PM

Method Code: 320-3510C_IVWT-320

Batch End:

Batch Comment

Comments

320-26079-D-4	Method Comments:	SEE QAS
320-26079-E-6	Method Comments:	SEE QAS
320-26079-E-7	Method Comments:	SEE QAS
320-26079-E-8	Method Comments:	SEE QAS
320-26095-G-1	Method Comments:	No BKK_ Must have LCSD and MS/MSD per Batch, NCM if not enough to do MS/MSD; historicals
320-26105-A-2	Method Comments:	limited volume

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152910

Analyst: Rafieefar, Sina

Batch Open: 3/2/2017 1:45:00PM

Method Code: 320-3510C_IVWT-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-152910/1	MS14DSU_00003	0.5 mL	1.0 mL		
LCS 320-152910/2	MS14DSP_00030	500 uL	1.0 mL		
LCS 320-152910/2	MS14DSU_00003	0.5 mL	1.0 mL		
LCSD 320-152910/3	MS14DSP_00030	500 uL	1.0 mL		
LCSD 320-152910/3	MS14DSU_00003	0.5 mL	1.0 mL		
320-26103-A-6	MS14DSU_00003	0.5 mL	1.0 mL		
320-26103-C-7	MS14DSU_00003	0.5 mL	1.0 mL		
320-26103-A-11	MS14DSU_00003	0.5 mL	1.0 mL		
320-26103-D-12	MS14DSU_00003	0.5 mL	1.0 mL		
320-26105-A-14	MS14DSU_00003	0.5 mL	1.0 mL		
320-26079-D-4	MS14DSU_00003	0.5 mL	1.0 mL		
320-26079-E-6	MS14DSU_00003	0.5 mL	1.0 mL		
320-26079-E-7	MS14DSU_00003	0.5 mL	1.0 mL		
320-26079-E-8	MS14DSU_00003	0.5 mL	1.0 mL		
320-26095-G-1	MS14DSU_00003	0.5 mL	1.0 mL		
320-26105-B-1	MS14DSU_00003	0.5 mL	1.0 mL		
320-26105-A-2	MS14DSU_00003	0.5 mL	1.0 mL		
320-26105-A-3	MS14DSU_00003	0.5 mL	1.0 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152910

Analyst: Rafieefar, Sina

Batch Open: 3/2/2017 1:45:00PM

Method Code: 320-3510C_IVWT-320

Batch End:

320-26105-A-3 MS	MS14DSP_00030	500 uL	1.0 mL	
320-26105-A-3 MS	MS14DSU_00003	0.5 mL	1.0 mL	
320-26105-A-3 MSD	MS14DSP_00030	500 uL	1.0 mL	
320-26105-A-3 MSD	MS14DSU_00003	0.5 mL	1.0 mL	
320-26105-B-12	MS14DSU_00003	0.5 mL	1.0 mL	
320-26105-B-13	MS14DSU_00003	0.5 mL	1.0 mL	

Reagent	Other Reagents:	Amount/Units	Lot#:

Preparation Batch Number(s): 152910

Test: 8270-14DX

Earliest Holding Time: 3/2/17

Sample List Tab		1 st Level Reviewer	2 nd Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		/	/
Method/sample/login/QAS checked and correct		/	/
Worksheet Tab		1 st Level Reviewer	2 nd 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 CI Check)		/	/
The pH is transcribed correctly in TALS		/	/
All additional information transcribed into TALS is correct and raw data is attached		/	/
Comments are transcribed correctly in TALS		/	/
Reagents Tab		1 st Level Reviewer	2 nd Level Reviewer
All necessary reagents not expired and entered into TALS		/	/
All spike amounts correct and added to necessary samples and QC		/	/
Batch Information		1 st Level Reviewer	2 nd Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1st Level Reviewer: _____ *NAU*

Date: 3/06/17

2nd Level Reviewer: J. Williams

Date: 3/10/17

Comments: _____

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Box 0317 H

Batch Number: 320-153806

Analyst: Rafieefar, Sina

Batch Open: 3/8/2017 8:41:00AM

Method Code: 320-3510C_IVWT-320

Batch End:

Liquid-Liquid Extraction (Separatory Funnel)

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	Rcvd	PHS		Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
					Adj1	Adj2					
1 MB-320-153806/1 N/A	N/A		1000 mL 1.0 mL	8			N/A	N/A	N/A		MB 320-153806/1-A
2 LCS-320-153806/2 N/A	N/A		1000 mL 1.0 mL	8			N/A	N/A	N/A		LCS 320-153806/2-A
3 LCS-D-320-153806/3 N/A	N/A		1000 mL 1.0 mL	8			N/A	N/A	N/A		LCS-D 320-153806/3-A
4 320-26273-A-1 (8270_SIM_14DX)	N/A (320-26273-1)	1556.1 g	1.0 mL	6			3/6/17	23_Days	4		320-26273-A-1-A
5 320-26273-B-2 (8270_SIM_14DX)	N/A (320-26273-1)	1547.4 g	1.0 mL	7			3/6/17	23_Days	4		320-26273-B-2-A
6 320-26273-B-3 (8270_SIM_14DX)	N/A (320-26273-1)	1553.7 g	1.0 mL	4		7	3/6/17	23_Days	4		320-26273-B-3-A
7 320-26273-A-4 (8270_SIM_14DX)	N/A (320-26273-1)	1557.1 g	1.0 mL	8			3/6/17	23_Days	4		320-26273-A-4-A
8 320-26273-B-5 (8270_SIM_14DX)	N/A (320-26273-1)	1546.5 g	1.0 mL	8			3/6/17	23_Days	4		320-26273-B-5-A
9 320-26273-B-6 (8270_SIM_14DX)	N/A (320-26273-1)	1555.9 g	1.0 mL	8			3/6/17	23_Days	4		320-26273-B-6-A
10 320-26324-D-5 (8270_SIM_14DX)	N/A (320-26324-1)	1393.4 g	1.0 mL	8			3/9/17	23_Days	4		320-26324-D-5-A

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

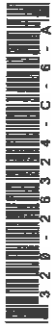
Batch Number: 320-153806

Analyst: Rafieefar, Sina

Batch Open: 3/8/2017 8:41:00AM

Method Code: 320-3510C_IVWT-320

Batch End:

320-26324-C-6 (8270_SIM_14DX)	N/A (320-26324-1)	445.1 g	1.0 mL	8	3/9/17	23_Days	4	 320-26324-C-6-A
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Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-153806

Analyst: Rafieefar, Sina

Batch Open: 3/8/2017 8:41:00AM

Method Code: 320-3510C_IVWT-320

Batch End:

	Batch Notes
Person's name who did the prep	SR/AAR 03/08/2017
Prep Solvent Name	DCM
Prep Solvent ID	0000164143
Prep Solvent Volume Used	180
Analyst ID - Reagent Drop	
Analyst ID - Reagent Drop Witness	
Analyst ID - SU Reagent Drop	
Analyst ID - SU Reagent Drop Witness	
Acid used for pH adjustment	
Acid Used for pH Adjustment ID	
Base used for pH adjustment	10N NaOH
Base Used to Adjust pH ID	153803
Silica Gel ID	
Analyst ID - Concentration	CVM 3/9/17
Exchange Solvent Name	
Exchange Solvent ID	
Concentration Start Time	
Concentration End Time	
Na2SO4 ID	SS_00347 and SS_00348
Water Bath ID	BT021
Uncorrected Temperature	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-153806

Analyst: Rafieefar, Sina

Batch Open: 3/8/2017 8:41:00AM

Method Code: 320-3510C_IVWT-320

Batch End:

Oven, Bath or Block Temperature 1	70-75°C
Sufficient volume for MS/MSD?	
Analyst ID - Clean Up	
Florisl ID	
Acid used for Clean Up ID	
Sulfuric Acid ID	
TBA ID	
HPLC H2O ID	
NaCl ID	
Balance ID	QA-036
Florisl Solution Reagent ID	
Mercury ID	
Filter Paper ID	
Pipette ID	K35057E
Syringe ID	
N-evap ID	
N-evap Temperature	
Uncorrected N-evap Temperature	
pH Paper ID	
Thermometer ID	
Analyst ID - Spike Analyst	SR 03/08/17
Analyst ID - Spike Witness Analyst	ACR 3/8/17
Vial ID	162 93 128

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-153806

Analyst: Raifeefar, Sina

Batch Open: 3/8/2017 8:41:00AM

Method Code: 320-3510C_IWWT-320

Batch End:

Batch Comment FU CRM 3/9/17

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-153806

Analyst: Rafeefar, Sina

Batch Open: 3/8/2017 8:41:00AM

Method Code: 320-3510C_IWWT-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-153806/1	MS14DSU_00003	0.5 mL	1.0 mL		
LCS 320-153806/2	MS14DSP_00030	500 uL	1.0 mL		
LCS 320-153806/2	MS14DSU_00003	0.5 mL	1.0 mL		
LCSD 320-153806/3	MS14DSP_00030	500 uL	1.0 mL		
LCSD 320-153806/3	MS14DSU_00003	0.5 mL	1.0 mL		
320-26273-A-1	MS14DSU_00003	0.5 mL	1.0 mL		
320-26273-B-2	MS14DSU_00003	0.5 mL	1.0 mL		
320-26273-B-3	MS14DSU_00003	0.5 mL	1.0 mL		
320-26273-A-4	MS14DSU_00003	0.5 mL	1.0 mL		
320-26273-B-5	MS14DSU_00003	0.5 mL	1.0 mL		
320-26273-B-6	MS14DSU_00003	0.5 mL	1.0 mL		
320-26324-D-5	MS14DSU_00003	0.5 mL	1.0 mL		
320-26324-C-6	MS14DSU_00003	0.5 mL	1.0 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-153806

Analyst: Rafieefar, Sina

Batch Open: 3/8/2017 8:41:00AM

Method Code: 320-3510C_IWWT-320

Batch End:

Reagent	Other Reagents:	Amount/Units	Lot#:

Preparation Batch Number(s): 153806 Test: 14DX

Earliest Holding Time: 3/8/17

Sample List Tab		1 st Level Reviewer	2 nd Level Reviewer
Samples identified to the correct method		✓	✓
All necessary NCMs filed (including holding time)		✓	✓
Method/sample/login/QAS checked and correct		✓	✓
Worksheet Tab		1 st Level Reviewer	2 nd 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 CI Check)		✓	✓
The pH is transcribed correctly in TALS		✓	✓
All additional information transcribed into TALS is correct and raw data is attached		✓	✓
Comments are transcribed correctly in TALS		✓	✓
Reagents Tab		1 st Level Reviewer	2 nd Level Reviewer
All necessary reagents not expired and entered into TALS		✓	✓
All spike amounts correct and added to necessary samples and QC		✓	✓
Batch Information		1 st Level Reviewer	2 nd Level Reviewer
Date and time accurate and entered into TALS correctly		✓	✓
All necessary 'batch information' complete and entered into TALS correctly		✓	✓

1st Level Reviewer: CRM

Date: 3/9/17

2nd Level Reviewer: J. N. Hunt

Date: 3/9/17

Comments: _____

Method PFC DOD

Perfluronated Hydrocarbons (LC/MS)
by Method PFC_DOD

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxS #	PFOA #	PFOS #
MEAFF-BLD002-SB01-0204	320-26105-4	93	100	58
MEAFF-BLD002-SB01-0001	320-26105-5	93	109	83
MEAFF-BLD002-SB02-0001	320-26105-6	92	95	61
MEAFF-BLD002-SB02-0204	320-26105-7	95	104	56
MEAFF-BLD192-SB03-0001	320-26105-8	100	107	72
MEAFF-BLD192-SB03-0204	320-26105-9	108	119	78
MEAFF-SWON-SB03-0001	320-26105-10	59	85	56
MEAFF-SWON-SB03-0001 DL	320-26105-10 DL	81	94 M	52
MEAFF-SWON-SB03-0204	320-26105-11	82	108	53
	MB 320-152961/1-A	113	122 M	99
	LCS 320-152961/2-A	108	113	100

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 II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxS #	PFOA #	PFOS #
MEAFF-08MW01D-0217	320-26105-1	127	88	125
MEAFF-08MW01-0217	320-26105-2	99	82	100
MEAFF-08MW01-0217 DL	320-26105-2 DL	104	105	98
MEAFF-MRD-1A14-021 7	320-26105-3	132	46	129
MEAFF-MRD-1A14-021 7 DL	320-26105-3 DL	141	48	120
MEAFF-08MW03-0217	320-26105-12	141	68	131
MEAFF-08MW06-0217	320-26105-13	128	59	120
MEAFF-FD02-0217	320-26105-14	132	65	124
MEAFF-MRD-IA01-021 7A	320-26105-15	107	79	115
MEAFF-FD03-0217	320-26105-16	124	83	133
	MB 320-152929/1-A	134	158	128
	LCS 320-152929/2-A	128	140	125
MEAFF-MRD-1A14-021 7 MS	320-26105-3 MS	115	57	113
MEAFF-MRD-1A14-021 7 MS DL	320-26105-3 MS DL	134	71	119
MEAFF-MRD-1A14-021 7 MSD	320-26105-3 MSD	122	54	122
MEAFF-MRD-1A14-021 7 MSD DL	320-26105-3 MSD DL	147	68	128

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.: 320-26105-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.03.04A_048.d
 Lab ID: LCS 320-152929/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	40.0	43.7	109	60-140	
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5	104	60-140	
13C4 PFOA	100	140	140	25-150	
13C4 PFOS	95.6	120	125	25-150	
Perfluorobutanesulfonic acid (PFBS)	35.4	44.5	126	50-150	
18O2 PFHxS	94.6	121	128	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.: 320-26105-1
 SDG No.: _____
 Matrix: Solid Level: Low Lab File ID: 2017.03.11C_030.d
 Lab ID: LCS 320-152961/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	4.00	4.25	106	60-140	
Perfluorooctanesulfonic acid (PFOS)	3.71	3.90	105	60-140	M
13C4 PFOA	10.0	11.3	113	25-150	
13C4 PFOS	9.56	9.54	100	25-150	
Perfluorobutanesulfonic acid (PFBS)	3.54	4.04	114	50-150	
18O2 PFHxS	9.46	10.2	108	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.: 320-26105-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.03.04A_053.d
 Lab ID: 320-26105-3 MS Client ID: MEAFF-MRD-1A14-0217 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	36.6	480	499	65	60-140	E 4
Perfluorooctanesulfonic acid (PFOS)	33.9	43	79.8	110	60-140	
13C4 PFOA	91.4	43	51.9	57	25-150	
13C4 PFOS	87.4	110	99.0	113	25-150	
Perfluorobutanesulfonic acid (PFBS)	32.3	2.8	43.3	125	50-150	
18O2 PFHxS	86.5	120	99.1	115	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.: 320-26105-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.03.08B_009.d
 Lab ID: 320-26105-3 MS DL Client ID: MEAFF-MRD-1A14-0217 MS DL

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	36.6	500	530	84	60-140	D M 4
Perfluorooctanesulfonic acid (PFOS)	33.9	24	78.7	162	60-140	D M J
13C4 PFOA	91.4	45	64.6	71	25-150	
13C4 PFOS	87.4	110	104	119	25-150	
Perfluorobutanesulfonic acid (PFBS)	32.3	9.3 U	42.7	132	50-150	D
18O2 PFHxS	86.5	120	116	134	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.: 320-26105-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.03.04A_054.d
 Lab ID: 320-26105-3 MSD Client ID: MEAFF-MRD-1A14-0217 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanoic acid (PFOA)	37.0	478	7	4	30	60-140	E 4
Perfluorooctanesulfonic acid (PFOS)	34.3	76.1	98	5	30	60-140	
13C4 PFOA	92.5	50.2	54			25-150	
13C4 PFOS	88.4	108	122			25-150	
Perfluorobutanesulfonic acid (PFBS)	32.7	41.3	118	5	30	50-150	
18O2 PFHxS	87.5	107	122			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.: 320-26105-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.03.08B_010.d
 Lab ID: 320-26105-3 MSD DL Client ID: MEAFF-MRD-1A14-0217 MSD DL

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanoic acid (PFOA)	37.0	504	12	5	30	60-140	D M 4
Perfluorooctanesulfonic acid (PFOS)	34.3	76.8	154	2	30	60-140	D M J
13C4 PFOA	92.5	63.2	68			25-150	
13C4 PFOS	88.4	113	128			25-150	
Perfluorobutanesulfonic acid (PFBS)	32.7	40.7	125	5	30	50-150	D
18O2 PFHxS	87.5	129	147			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.: 320-26105-1
 SDG No.: _____
 Lab File ID: 2017.03.04A_047.d Lab Sample ID: MB 320-152929/1-A
 Matrix: Water Date Extracted: 03/02/2017 14:24
 Instrument ID: A8_N Date Analyzed: 03/06/2017 01:49
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-152929/2-A	2017.03.04A 048.d	03/06/2017 01:56
MEAFF-08MW01D-0217	320-26105-1	2017.03.04A 050.d	03/06/2017 02:11
MEAFF-08MW01-0217	320-26105-2	2017.03.04A 051.d	03/06/2017 02:19
MEAFF-MRD-1A14-0217	320-26105-3	2017.03.04A 052.d	03/06/2017 02:26
MEAFF-MRD-1A14-0217 MS	320-26105-3 MS	2017.03.04A 053.d	03/06/2017 02:34
MEAFF-MRD-1A14-0217 MSD	320-26105-3 MSD	2017.03.04A 054.d	03/06/2017 02:41
MEAFF-08MW03-0217	320-26105-12	2017.03.04A 055.d	03/06/2017 02:49
MEAFF-08MW06-0217	320-26105-13	2017.03.04A 056.d	03/06/2017 02:56
MEAFF-FD02-0217	320-26105-14	2017.03.04A 058.d	03/06/2017 03:11
MEAFF-MRD-IA01-0217A	320-26105-15	2017.03.04A 059.d	03/06/2017 03:19
MEAFF-FD03-0217	320-26105-16	2017.03.04A 060.d	03/06/2017 03:26
MEAFF-08MW01-0217 DL	320-26105-2 DL	2017.03.08B 007.d	03/08/2017 20:17
MEAFF-MRD-1A14-0217 DL	320-26105-3 DL	2017.03.08B 008.d	03/08/2017 20:24
MEAFF-MRD-1A14-0217 MS DL	320-26105-3 MS DL	2017.03.08B 009.d	03/08/2017 20:32
MEAFF-MRD-1A14-0217 MSD DL	320-26105-3 MSD DL	2017.03.08B 010.d	03/08/2017 20:39

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab File ID: 2017.03.11C_029.d Lab Sample ID: MB 320-152961/1-A
 Matrix: Solid Date Extracted: 03/02/2017 17:04
 Instrument ID: A8_N Date Analyzed: 03/11/2017 15:42
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-152961/2-A	2017.03.11C 030.d	03/11/2017 15:50
MEAFF-BLD002-SB01-0204	320-26105-4	2017.03.11C 042.d	03/11/2017 17:20
MEAFF-BLD002-SB01-0001	320-26105-5	2017.03.11C 043.d	03/11/2017 17:27
MEAFF-BLD002-SB02-0001	320-26105-6	2017.03.11C 044.d	03/11/2017 17:35
MEAFF-BLD002-SB02-0204	320-26105-7	2017.03.11C 045.d	03/11/2017 17:42
MEAFF-BLD192-SB03-0001	320-26105-8	2017.03.11C 046.d	03/11/2017 17:50
MEAFF-BLD192-SB03-0204	320-26105-9	2017.03.11C 047.d	03/11/2017 17:57
MEAFF-SWON-SB03-0001	320-26105-10	2017.03.11C 048.d	03/11/2017 18:05
MEAFF-SWON-SB03-0204	320-26105-11	2017.03.11C 050.d	03/11/2017 18:20
MEAFF-SWON-SB03-0001 DL	320-26105-10 DL	2017.03.13A 046.d	03/13/2017 17:01

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01D-0217 Lab Sample ID: 320-26105-1
 Matrix: Water Lab File ID: 2017.03.04A_050.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 12:15
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 258.4 (mL) Date Analyzed: 03/06/2017 02:11
 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.: 153421 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	0.72
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.9	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.9	U	2.4	1.9	0.89

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	88		25-150
STL00991	13C4 PFOS	125		25-150
STL00994	18O2 PFHxS	127		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_050.d
 Lims ID: 320-26105-C-1-A
 Client ID: MEAFF-08MW01D-0217
 Sample Type: Client
 Inject. Date: 06-Mar-2017 02:11:42 ALS Bottle#: 39 Worklist Smp#: 50
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-c-1-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 10-Mar-2017 14:09:30 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 27-Mar-2017 13:22:29

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	2.462	2.464	-0.002	17491901	60.1		127	84676	
D 14 13C4 PFOA	417.00 > 372.00	2.820	2.814	0.006	9005429	43.9		87.9	3021295	
17 Perfluorooctane sulfonic acid	499.00 > 80.00	3.153	3.156	-0.003	42196	0.1425			598	
	499.00 > 99.00	2.789	3.156	-0.367	17355		2.43(0.90-1.10)		448	
D 18 13C4 PFOS	503.00 > 80.00	3.185	3.188	-0.003	14393035	59.6		125	4663165	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_050.d

Injection Date: 06-Mar-2017 02:11:42

Instrument ID: A8_N

Lims ID: 320-26105-C-1-A

Lab Sample ID: 320-26105-1

Client ID: MEAFF-08MW01D-0217

Operator ID: A8-PC\A8

ALS Bottle#: 39

Worklist Smp#: 50

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

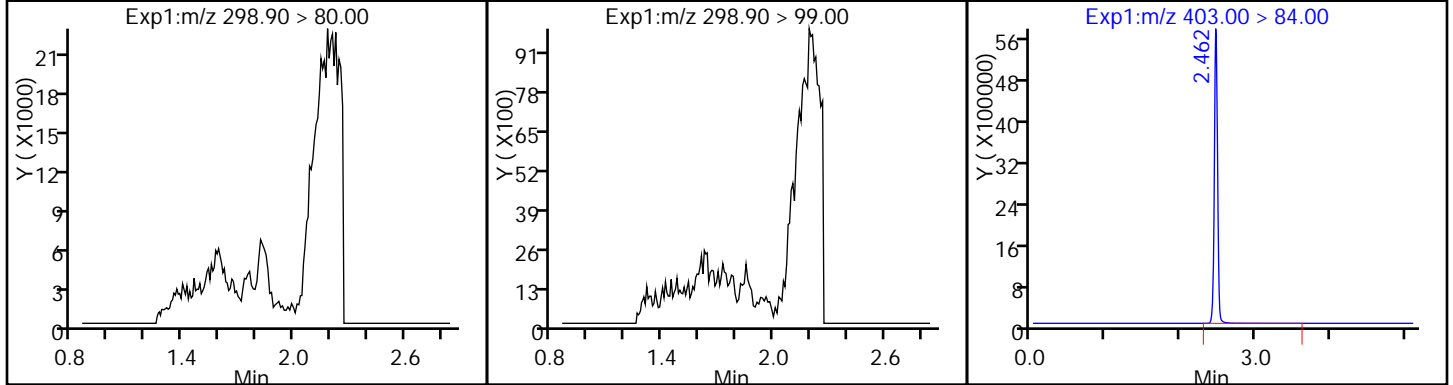
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid (ND)

5 Perfluorobutanesulfonic acid (ND)

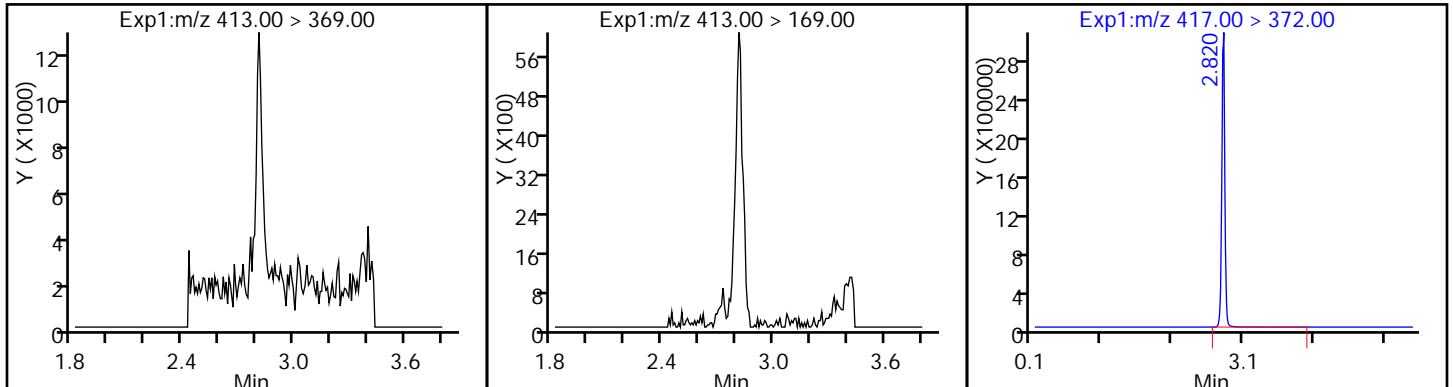
D 11 18O2 PFHxS



15 Perfluorooctanoic acid (ND)

15 Perfluorooctanoic acid (ND)

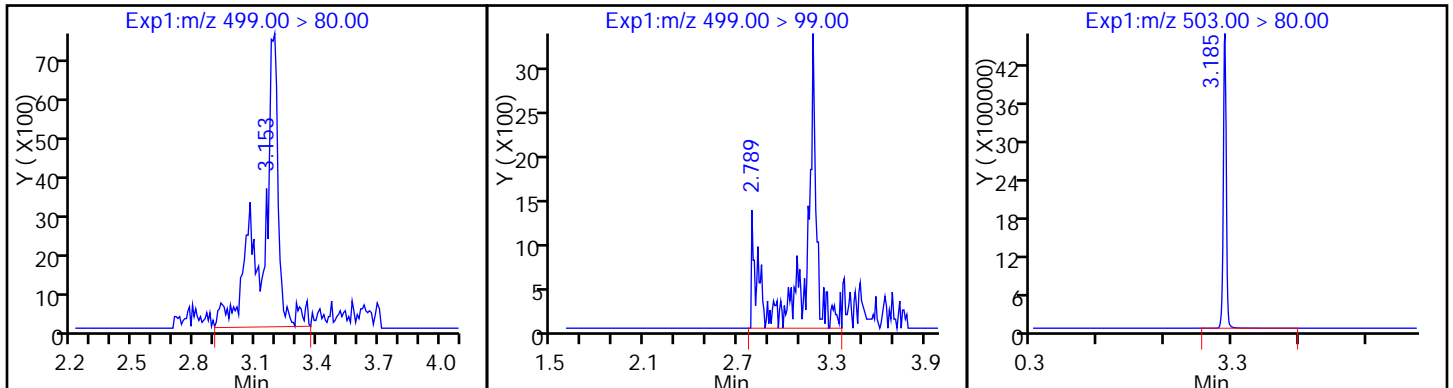
D 14 13C4 PFOA



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01-0217 Lab Sample ID: 320-26105-2
 Matrix: Water Lab File ID: 2017.03.04A_051.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 12:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 253.3 (mL) Date Analyzed: 03/06/2017 02:19
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	490	E	2.5	2.0	0.74
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	270		3.9	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	14	M	2.5	2.0	0.91

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	82		25-150
STL00991	13C4 PFOS	100		25-150
STL00994	18O2 PFHxS	99		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_051.d
 Lims ID: 320-26105-B-2-A
 Client ID: MEAFF-08MW01-0217
 Sample Type: Client
 Inject. Date: 06-Mar-2017 02:19:12 ALS Bottle#: 40 Worklist Smp#: 51
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-b-2-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 13:23:41 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 07-Mar-2017 14:42:19

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	1.831	1.851	-0.020	1.000	2869245	6.94				M
298.90 > 99.00	1.841	1.851	-0.010	1.005	1189169		2.41(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.443	2.464	-0.021		13658422	47.0		99.3	0.0	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.799	2.806	-0.007	1.000	42937873	249.4			0.0	E
413.00 > 169.00	2.799	2.806	-0.007	1.000	29620288		1.45(0.90-1.10)		0.0	E
D 14 13C4 PFOA										
417.00 > 372.00	2.799	2.814	-0.015		8426016	41.1		82.2	15144	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.142	3.156	-0.014	1.000	32490553	136.6			123034	
499.00 > 99.00	3.166	3.156	0.010	1.007	7776665		4.18(0.90-1.10)		0.0	
D 18 13C4 PFOS										
503.00 > 80.00	3.166	3.188	-0.022		11559020	47.8		100	73125	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_051.d

Injection Date: 06-Mar-2017 02:19:12

Instrument ID: A8_N

Lims ID: 320-26105-B-2-A

Lab Sample ID: 320-26105-2

Client ID: MEAFF-08MW01-0217

Operator ID: A8-PC\A8

ALS Bottle#: 40

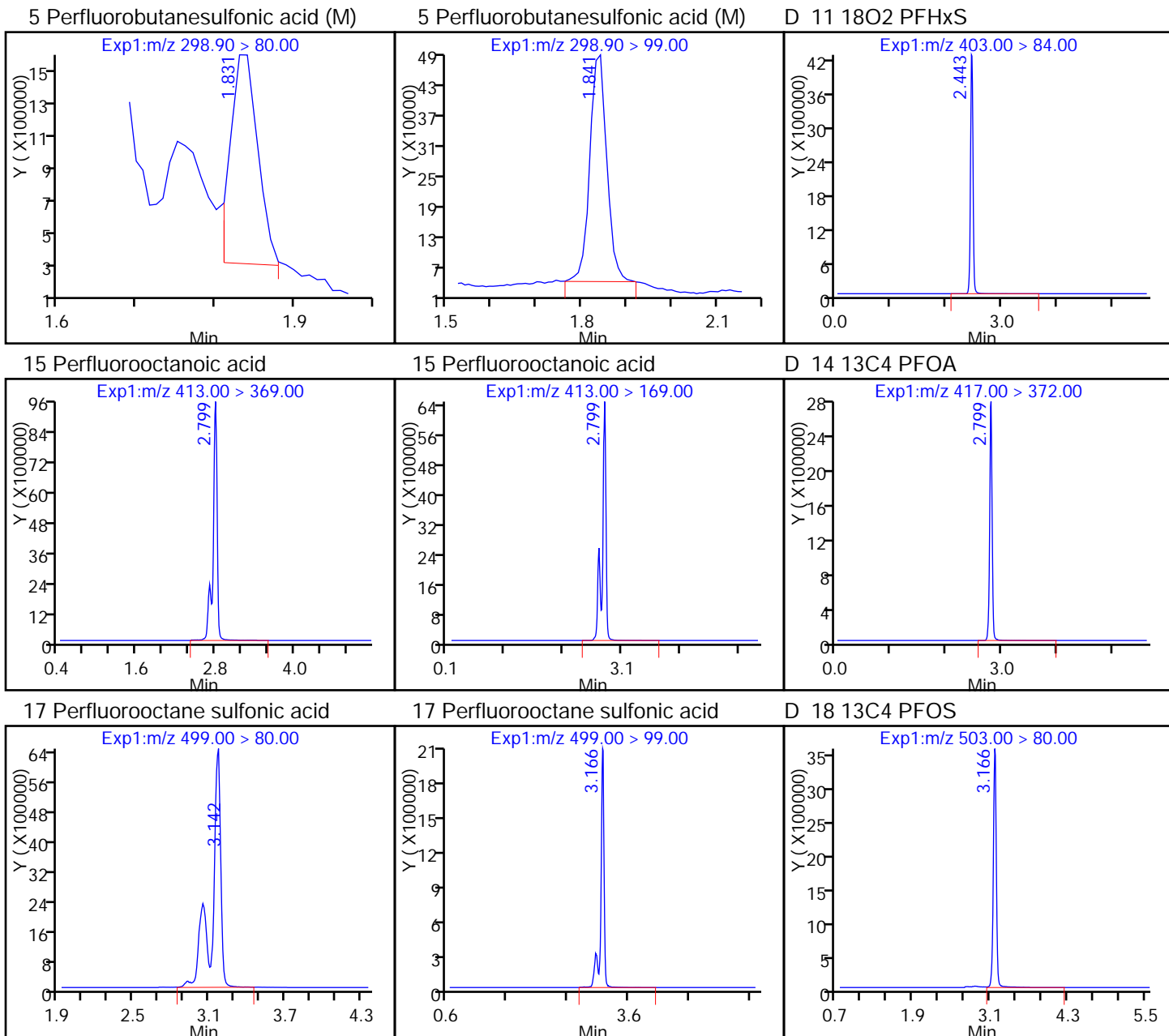
Worklist Smp#: 51

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC_DOD ICAL



TestAmerica Sacramento

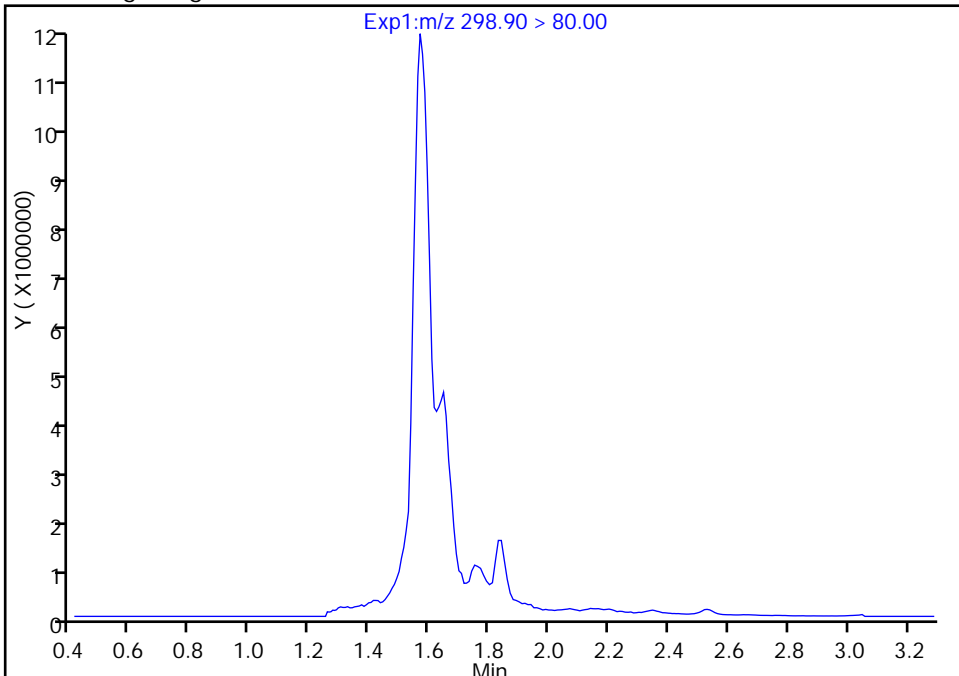
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Injection Date: 06-Mar-2017 02:19:12 Instrument ID: A8_N
Lims ID: 320-26105-B-2-A Lab Sample ID: 320-26105-2
Client ID: MEAFF-08MW01-0217
Operator ID: A8-PC\A8 ALS Bottle#: 40 Worklist Smp#: 51
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

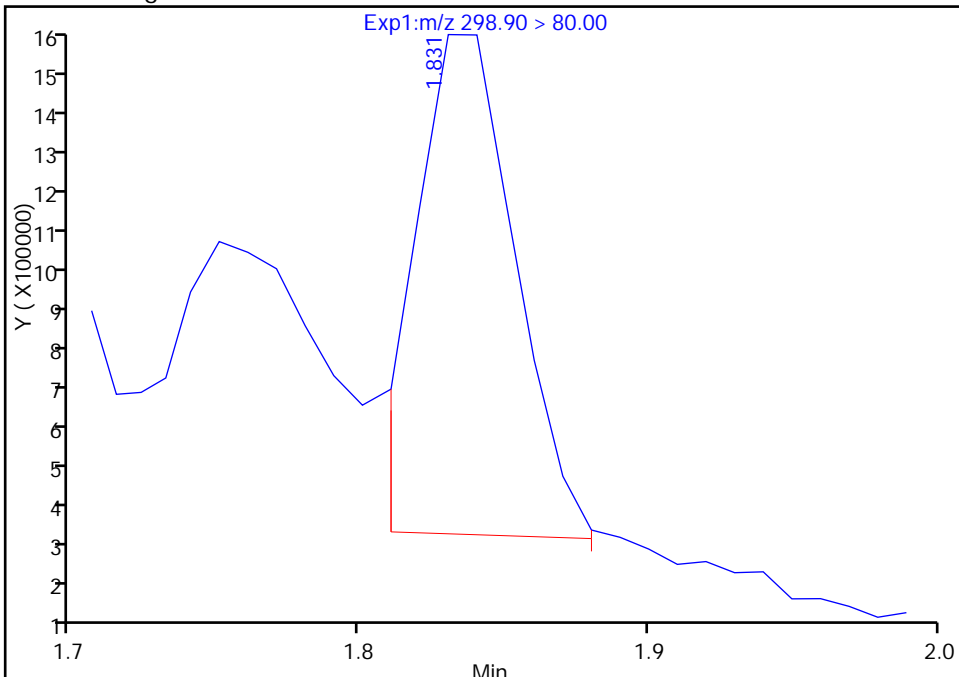
Not Detected
Expected RT: 1.85

Processing Integration Results



Manual Integration Results

RT: 1.83
Area: 2869245
Amount: 6.936362
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 13:23:30
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

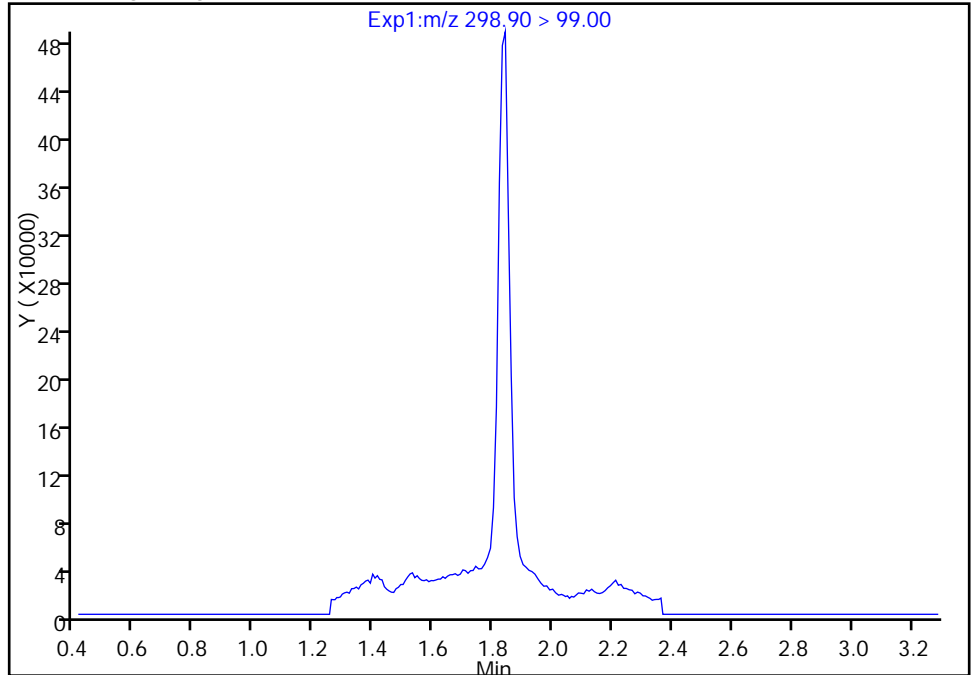
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Injection Date: 06-Mar-2017 02:19:12 Instrument ID: A8_N
Lims ID: 320-26105-B-2-A Lab Sample ID: 320-26105-2
Client ID: MEAFF-08MW01-0217
Operator ID: A8-PC\A8 ALS Bottle#: 40 Worklist Smp#: 51
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

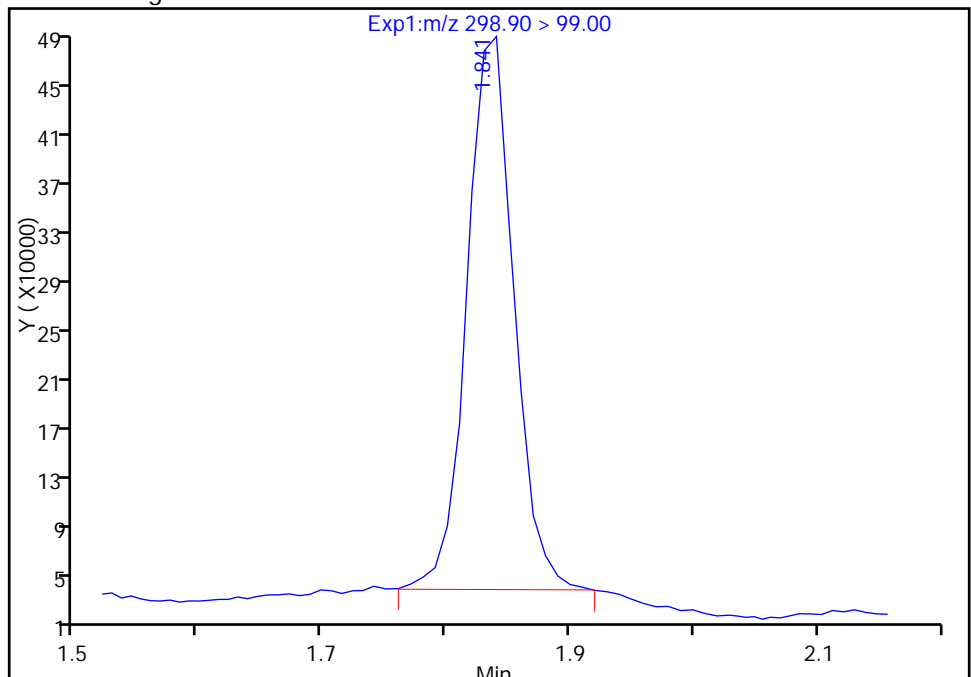
Not Detected
Expected RT: 1.85

Processing Integration Results



RT: 1.84
Area: 1189169
Amount: 6.936362
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01-0217 DL Lab Sample ID: 320-26105-2 DL
 Matrix: Water Lab File ID: 2017.03.08B_007.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 12:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 253.3(mL) Date Analyzed: 03/08/2017 20:17
 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.: 154016 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	520	D M	12	9.9	3.7
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	270	D M	20	15	6.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	16	D M	12	9.9	4.5

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	105		25-150
STL00991	13C4 PFOS	98		25-150
STL00994	18O2 PFHxS	104		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_007.d
 Lims ID: 320-26105-B-2-A
 Client ID: MEAFF-08MW01-0217
 Sample Type: Client
 Inject. Date: 08-Mar-2017 20:17:05 ALS Bottle#: 3 Worklist Smp#: 19
 Injection Vol: 2.0 ul Dil. Factor: 5.0000
 Sample Info: 320-26105-b-2-a 5X
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 13:37:18 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 27-Mar-2017 13:37:18

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	1.863	1.853	0.010	1.000	701442	1.62				M
298.90 > 99.00	1.863	1.853	0.010	1.000	250061		2.81(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.472	2.464	0.008		2851792	9.80		20.7	167398	
D 14 13C4 PFOA										
417.00 > 372.00	2.815	2.806	0.009		2161713	10.5		21.1	120249	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.822	2.799	0.023	1.000	11719170	53.1			70152	M
413.00 > 169.00	2.815	2.799	0.016	0.997	7797570		1.50(0.90-1.10)		224297	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.180	3.164	0.016	1.000	6302474	27.2			0.0	M
499.00 > 99.00	3.180	3.164	0.016	1.000	1425320		4.42(0.90-1.10)		204774	M
D 18 13C4 PFOS										
503.00 > 80.00	3.172	3.172	0.0		2255075	9.33		19.5	25163	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_007.d

Injection Date: 08-Mar-2017 20:17:05

Instrument ID: A8_N

Lims ID: 320-26105-B-2-A

Lab Sample ID: 320-26105-2

Client ID: MEAFF-08MW01-0217

Operator ID: A8-PC\A8

ALS Bottle#: 3

Worklist Smp#: 19

Injection Vol: 2.0 ul

Dil. Factor: 5.0000

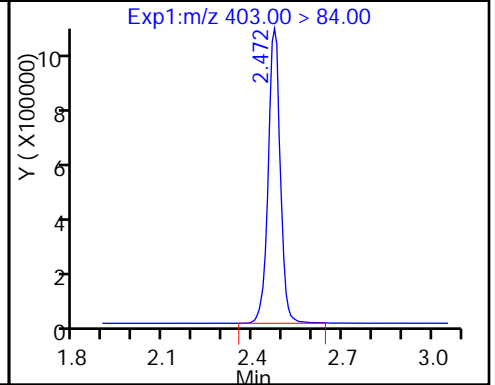
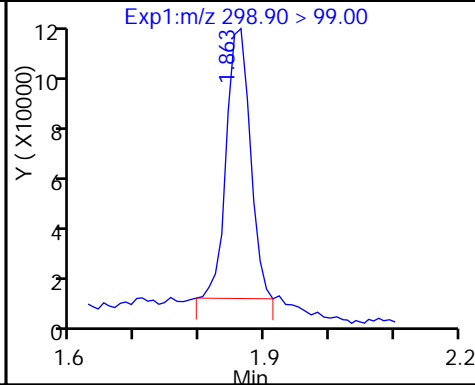
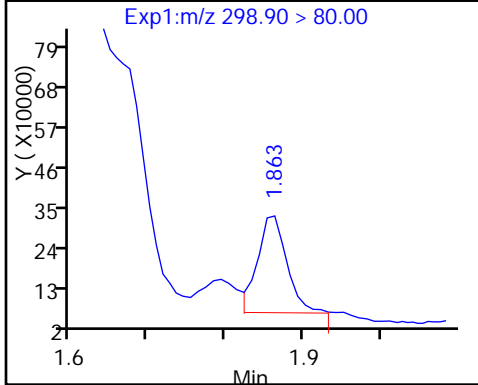
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

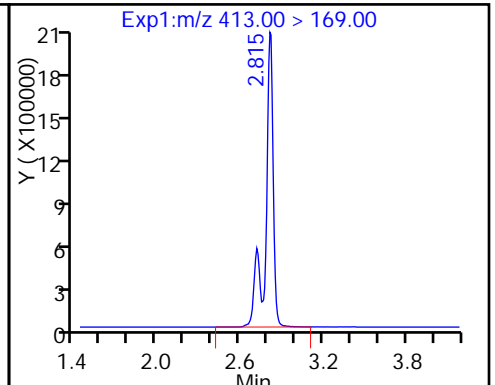
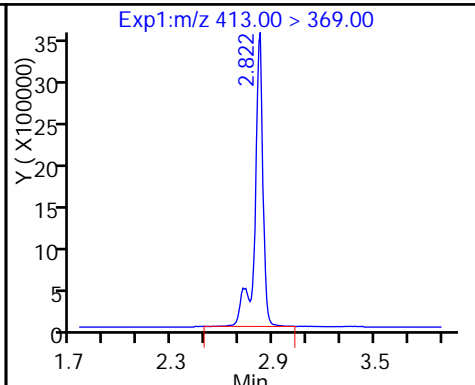
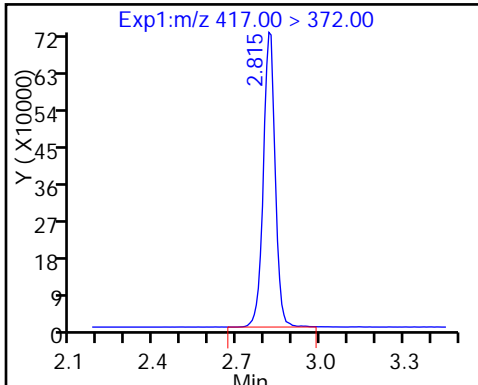
D 11 18O2 PFHxS



D 14 13C4 PFOA

15 Perfluorooctanoic acid (M)

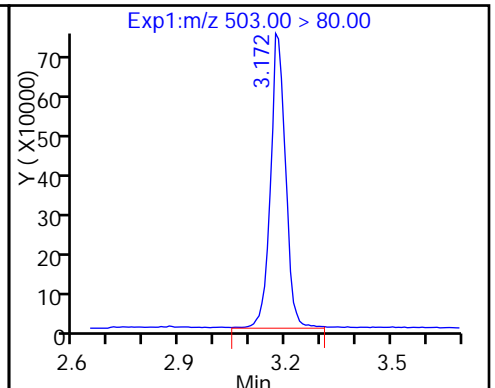
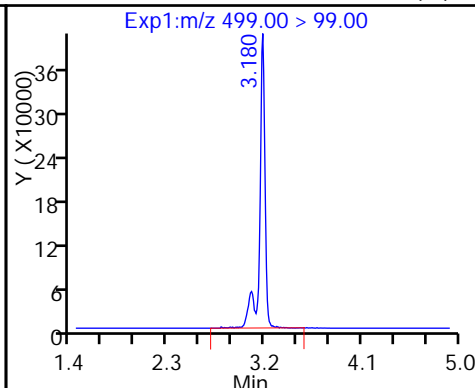
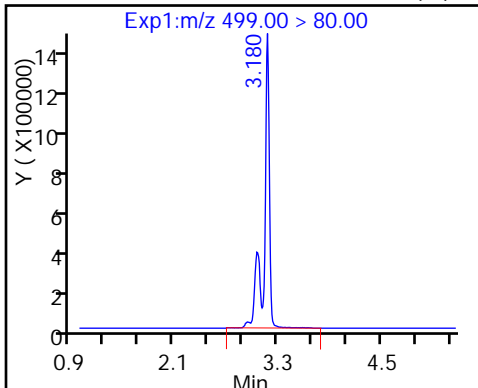
15 Perfluorooctanoic acid (M)



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

D 18 13C4 PFOS



TestAmerica Sacramento

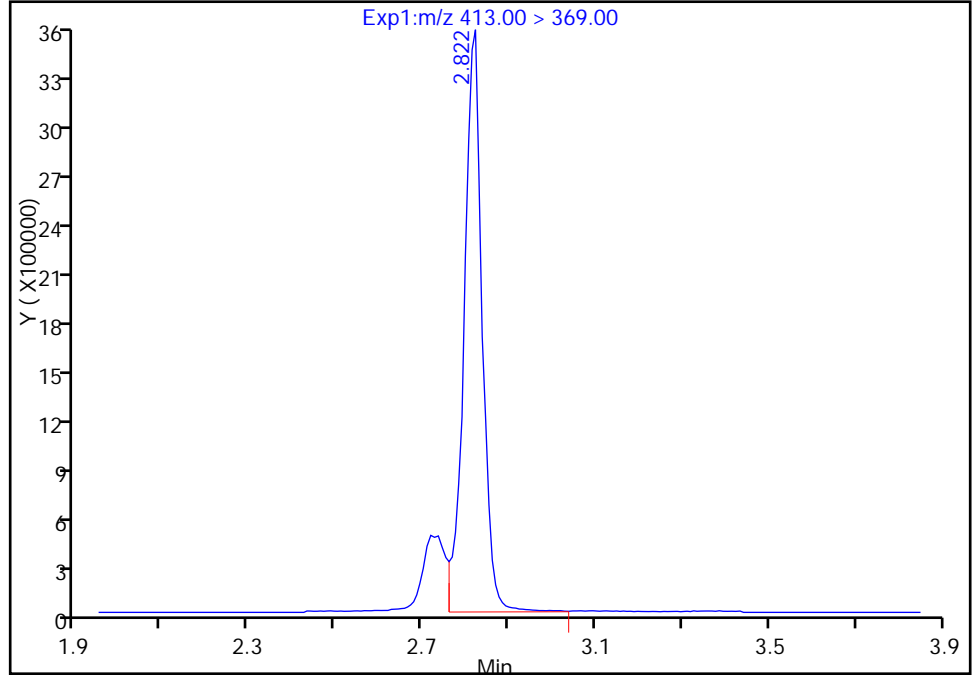
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_007.d
Injection Date: 08-Mar-2017 20:17:05 Instrument ID: A8_N
Lims ID: 320-26105-B-2-A Lab Sample ID: 320-26105-2
Client ID: MEAFF-08MW01-0217
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

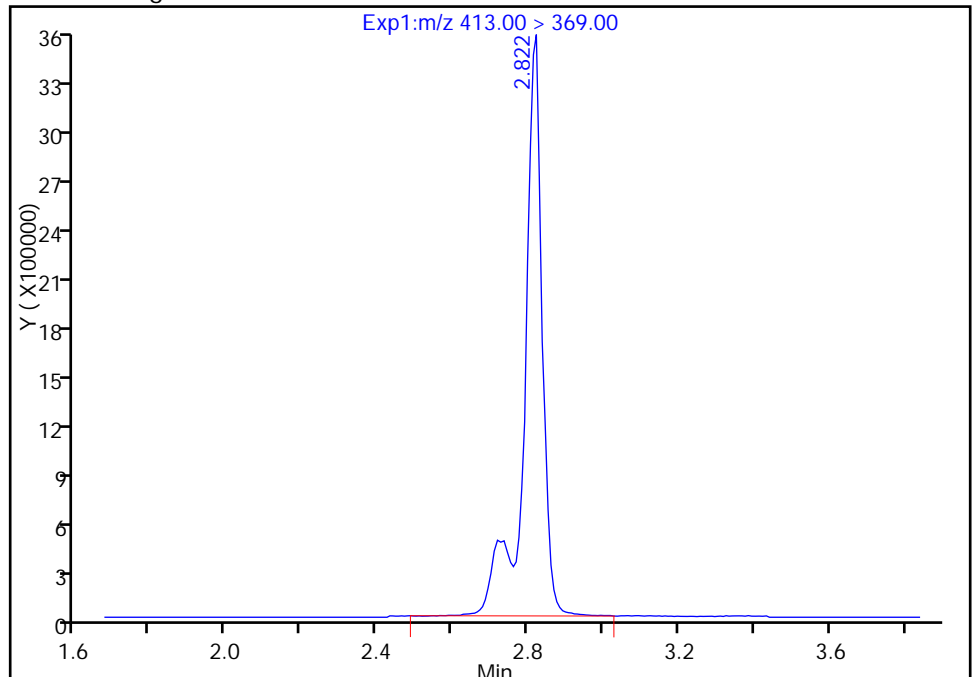
RT: 2.82
Area: 10140872
Amount: 45.916793
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 11719170
Amount: 53.063159
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 13:36:41
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

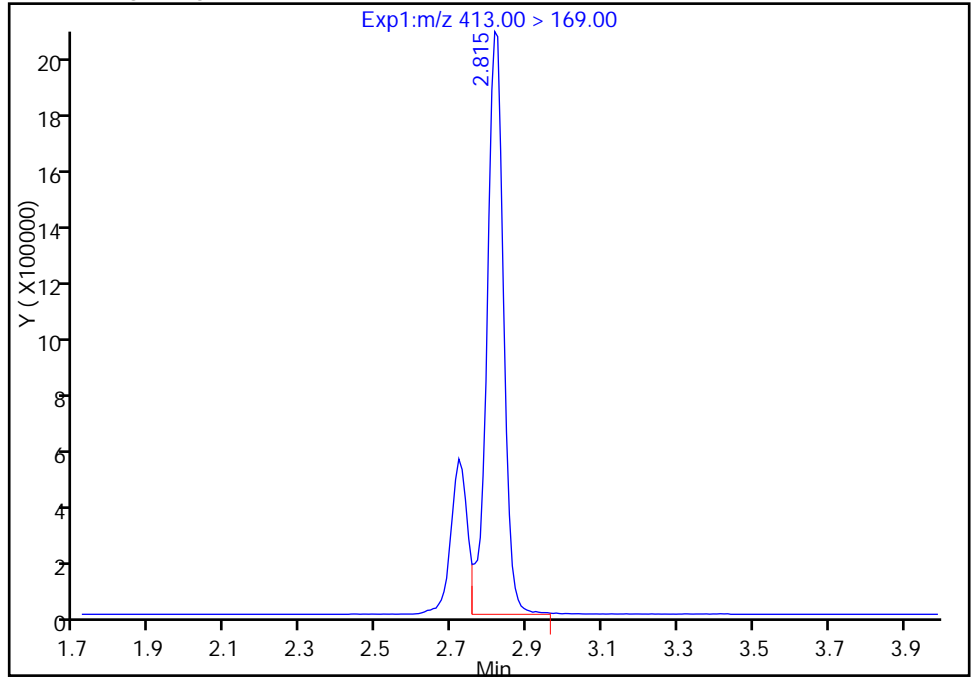
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_007.d
Injection Date: 08-Mar-2017 20:17:05 Instrument ID: A8_N
Lims ID: 320-26105-B-2-A Lab Sample ID: 320-26105-2
Client ID: MEAFF-08MW01-0217
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

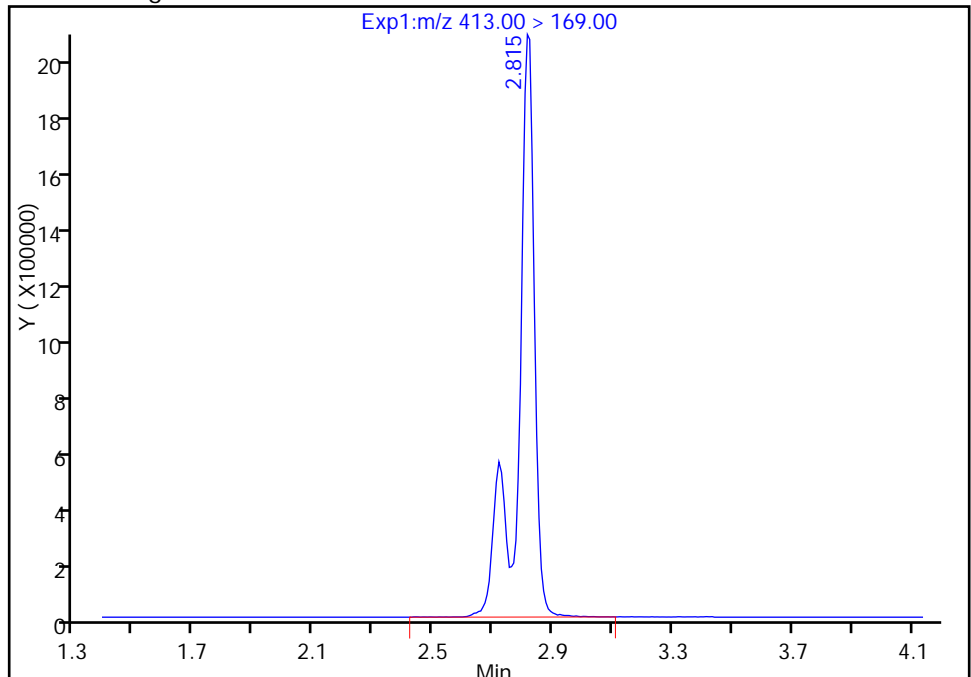
RT: 2.81
Area: 6183670
Amount: 45.916793
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 7797570
Amount: 53.063159
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 13:36:41

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

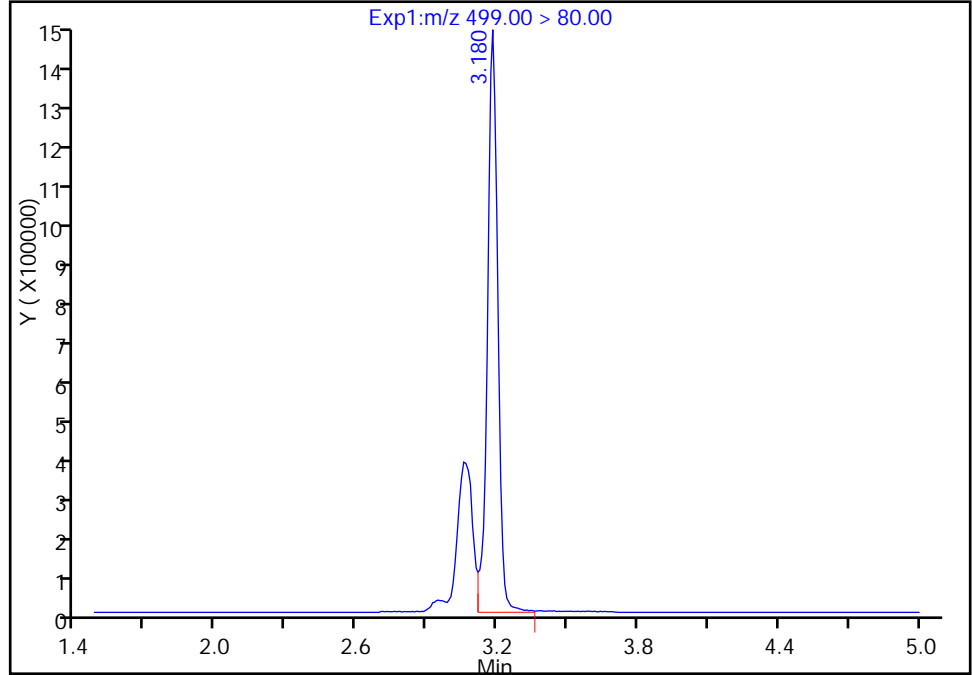
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_007.d
Injection Date: 08-Mar-2017 20:17:05 Instrument ID: A8_N
Lims ID: 320-26105-B-2-A Lab Sample ID: 320-26105-2
Client ID: MEAFF-08MW01-0217
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

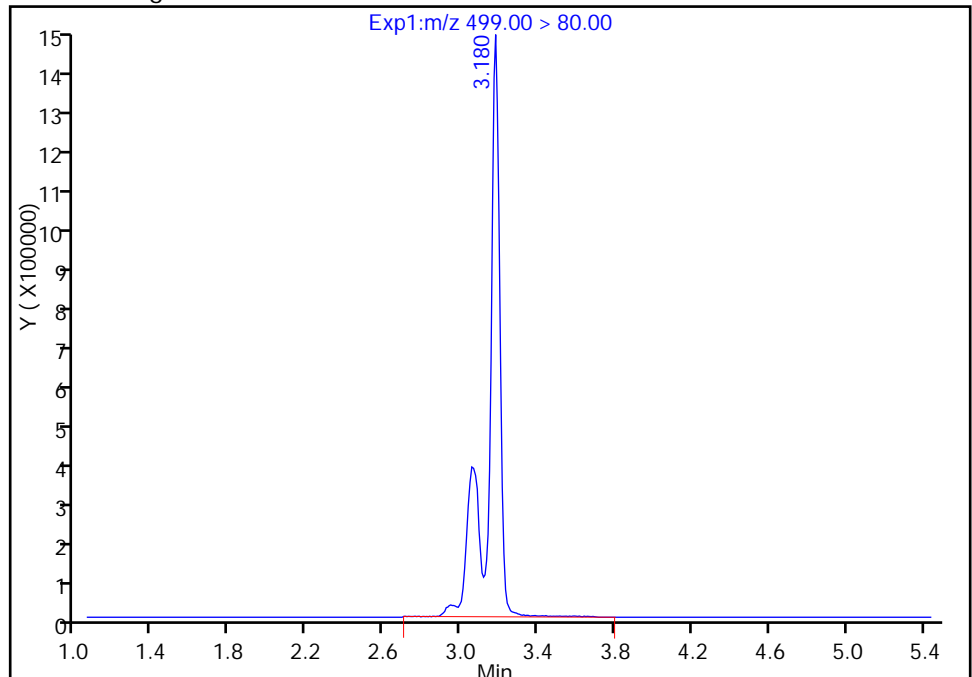
RT: 3.18
Area: 4483736
Amount: 19.327264
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 6302474
Amount: 27.166983
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 13:36:41
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

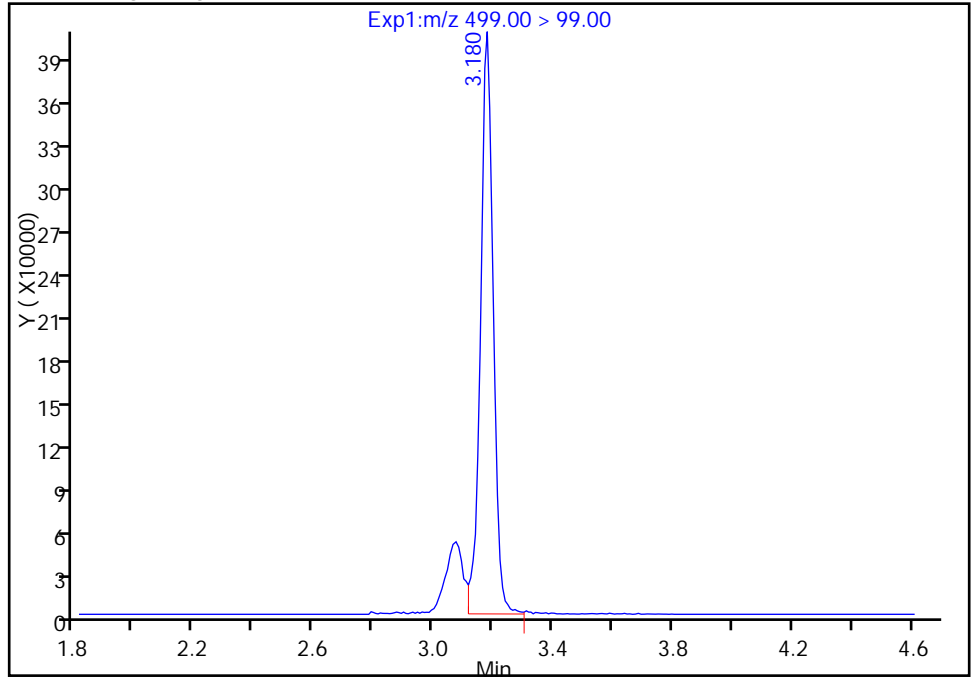
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_007.d
Injection Date: 08-Mar-2017 20:17:05 Instrument ID: A8_N
Lims ID: 320-26105-B-2-A Lab Sample ID: 320-26105-2
Client ID: MEAFF-08MW01-0217
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

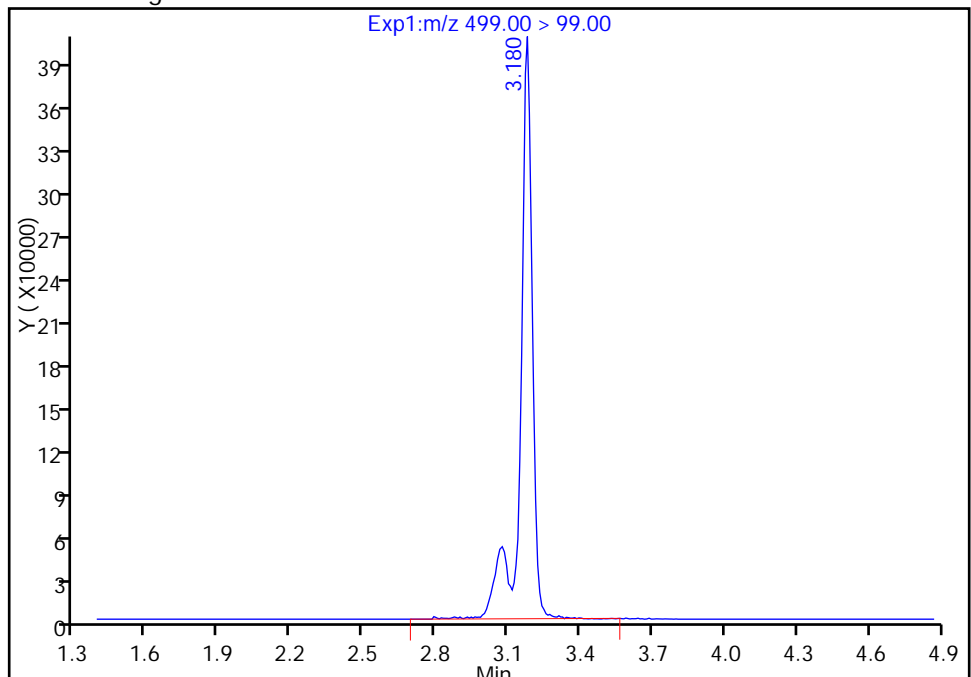
RT: 3.18
Area: 1206628
Amount: 19.327264
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 1425320
Amount: 27.166983
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

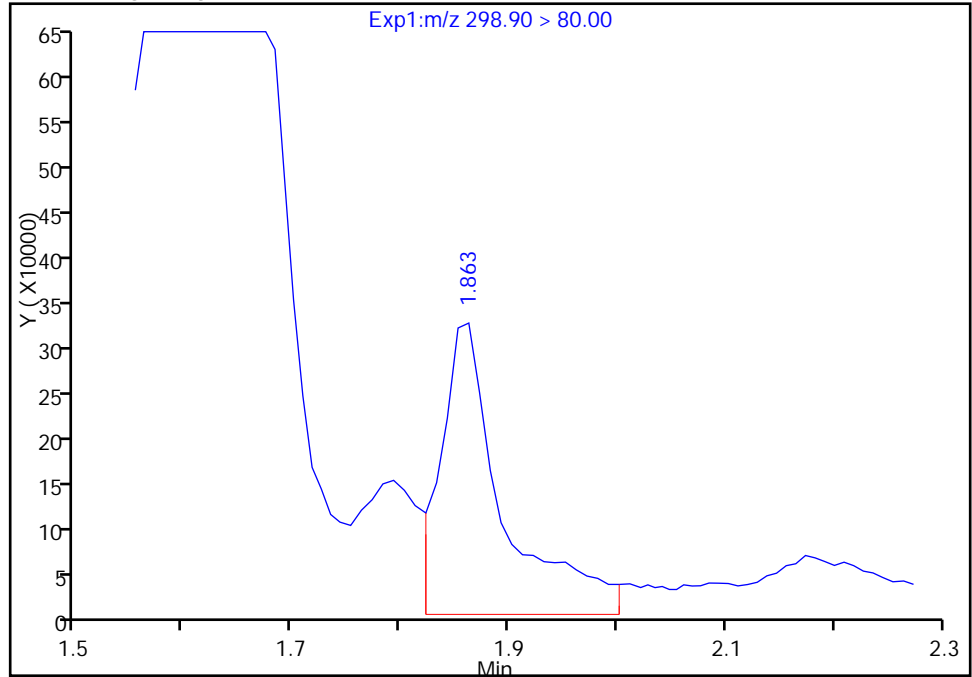
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_007.d
Injection Date: 08-Mar-2017 20:17:05 Instrument ID: A8_N
Lims ID: 320-26105-B-2-A Lab Sample ID: 320-26105-2
Client ID: MEAFF-08MW01-0217
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

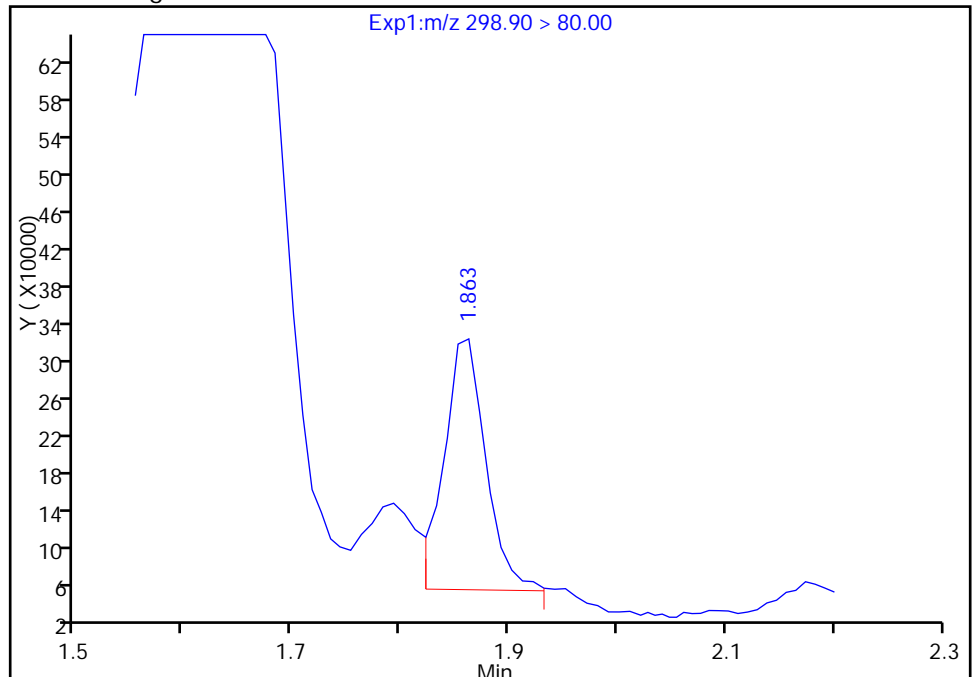
RT: 1.86
Area: 1263468
Amount: 2.925776
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 701442
Amount: 1.624309
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:36:59
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

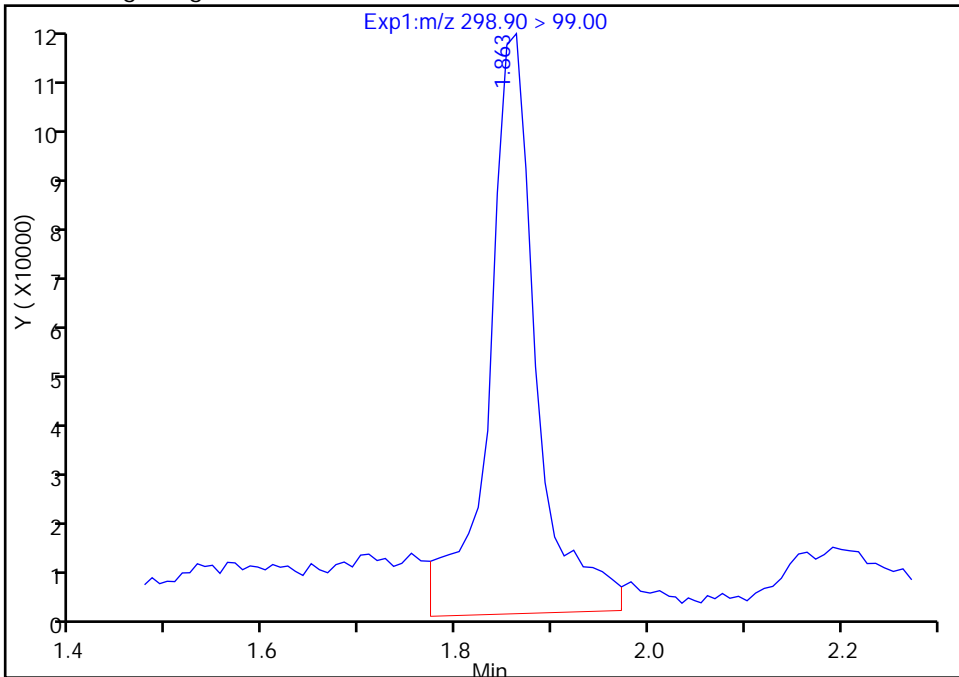
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_007.d
Injection Date: 08-Mar-2017 20:17:05 Instrument ID: A8_N
Lims ID: 320-26105-B-2-A Lab Sample ID: 320-26105-2
Client ID: MEAFF-08MW01-0217
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

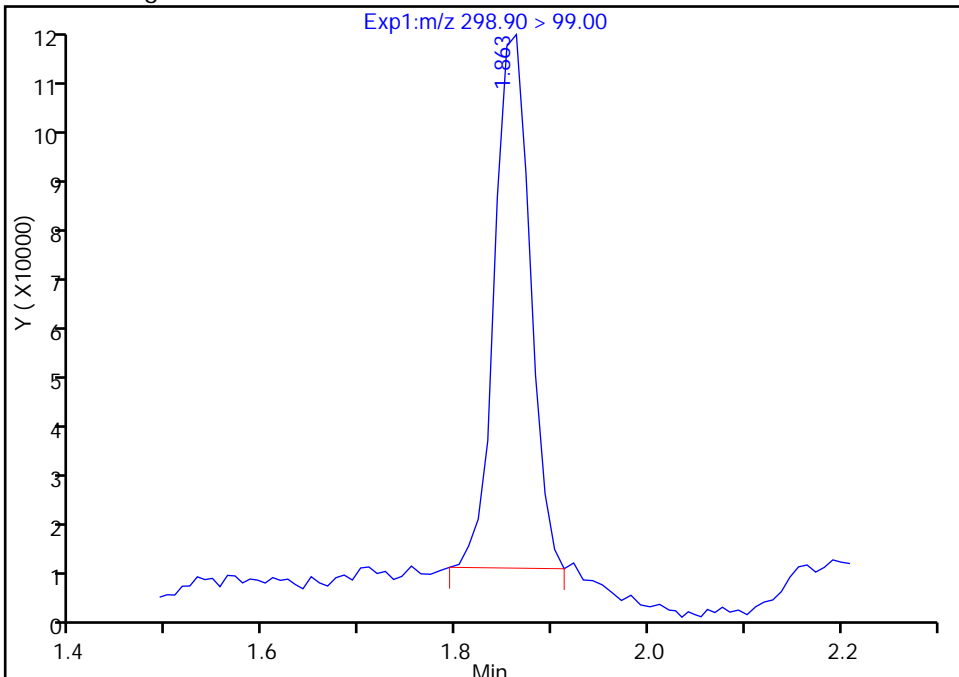
RT: 1.86
Area: 370110
Amount: 2.925776
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 250061
Amount: 1.624309
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 Lab Sample ID: 320-26105-3
 Matrix: Water Lab File ID: 2017.03.04A_052.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 269.3 (mL) Date Analyzed: 03/06/2017 02:26
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	480	E J	2.3	1.9	0.69
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	43		3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.8	M	2.3	1.9	0.85

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	46		25-150
STL00991	13C4 PFOS	129		25-150
STL00994	18O2 PFHxS	132		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_052.d
 Lims ID: 320-26105-D-3-A
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: Client
 Inject. Date: 06-Mar-2017 02:26:41 ALS Bottle#: 41 Worklist Smp#: 52
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-d-3-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 07-Mar-2017 14:47:44 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK017

First Level Reviewer: changnoit Date: 07-Mar-2017 14:47:44

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	1.530	1.530	0.0	6461901	22.1		44.2	1102294	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.538	1.538	0.0	1.000	54402	0.4968			370	M
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.811	0.0	9034966	38.9		77.8	876125	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.811	1.821	-0.010	1.000	275980	1.56			1737	M
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.851	1.851	0.0	1.000	840082	1.53				M
298.90 > 99.00	1.851	1.851	0.0	1.000	315484		2.66(0.00-0.00)			M
D 7 13C2 PFHxA	315.00 > 270.00	2.111	2.113	-0.002	7067661	33.5		67.0	27615	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.111	2.113	-0.002	1.000	950630	7.56			8636	M
D 9 13C4-PFHpA	367.00 > 322.00	2.448	2.448	0.0	6190455	32.1		64.2	29339	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.448	2.456	-0.008	1.000	762531	6.37			3113	M
D 11 18O2 PFHxS	403.00 > 84.00	2.464	2.464	0.0	18114009	62.3		132	66567	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.464	2.464	0.0	1.000	4547027	11.5				M
D 12 M2-6:2FTS	429.00 > 409.00	2.791	2.783	0.008	3439	0.0446		0.0		
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.783	2.783	0.0	1.000	55413	NR				

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.814	2.806	0.008	1.000	24622868	255.9			853992	E
413.00 > 169.00	2.791	2.806	-0.015	0.992	17166544		1.43(0.90-1.10)		165348	
D 14 13C4 PFOA										
417.00 > 372.00	2.822	2.814	0.008		4709728	23.0		46.0	1453662	
16 Perfluoroheptanesulfonic Acid										M
449.00 > 80.00	2.822	2.814	0.008	1.000	636694	1.98				M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	2.938	3.156	-0.218	1.000	7016782	22.9			12365	
499.00 > 99.00	3.084	3.156	-0.072	1.050	1038124		6.76(0.90-1.10)		19204	
20 Perfluorononanoic acid										M
463.00 > 419.00	3.196	3.188	0.008	1.000	11075	0.1612			102	M
D 19 13C5 PFNA										
468.00 > 423.00	3.196	3.188	0.008		3800790	21.4		42.7	13199	
D 18 13C4 PFOS										
503.00 > 80.00	3.188	3.188	0.0		14897504	61.7		129	682979	
D 21 13C8 FOSA										
506.00 > 78.00	3.536	3.538	-0.002		1142797	3.11		6.2	182170	
D 23 13C2 PFDA										
515.00 > 470.00	3.544	3.547	-0.003		3609884	21.7		43.3	245114	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.848	3.859	-0.011		12734	0.1565		0.0		
D 30 13C2 PFUnA										
565.00 > 520.00	3.865	3.867	-0.002		2907626	22.2		44.5	969835	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.865	3.867	-0.002	1.000	7135	0.1210			214	M
D 36 13C2 PFDaA										
615.00 > 570.00	4.151	4.152	-0.001		2835502	22.9		45.8	319438	
42 Perfluorotetradecanoic acid										M
712.50 > 668.90	4.692	4.641	0.051	1.000	109466	0.9816			1673	M
713.00 > 169.00	4.647	4.641	0.006	0.990	5386		20.32(0.00-0.00)		1706	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.647	4.651	-0.004		8625287	33.3		66.6	2710181	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.049	5.055	-0.006		5235978	41.9		83.7	272913	
45 Perfluorohexadecanoic acid										M
813.00 > 769.00	5.060	5.055	0.005	1.000	75729	1.06			193	M

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_052.d

Injection Date: 06-Mar-2017 02:26:41

Instrument ID: A8_N

Lims ID: 320-26105-D-3-A

Lab Sample ID: 320-26105-3

Client ID: MEAFF-MRD-1A14-0217

Operator ID: A8-PC\A8

ALS Bottle#: 41

Worklist Smp#: 52

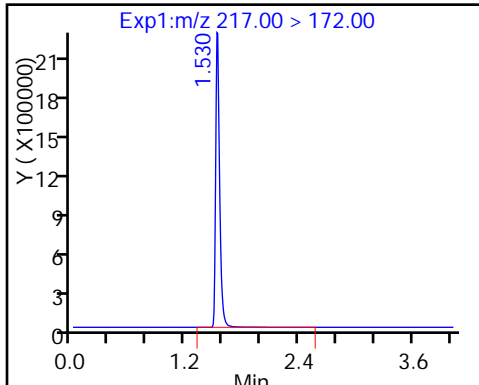
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

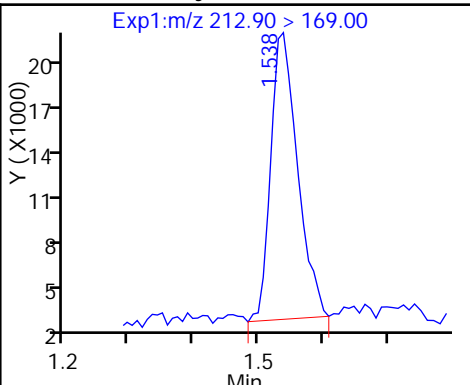
Method: A8_N

Limit Group: LC PFC_DOD ICAL

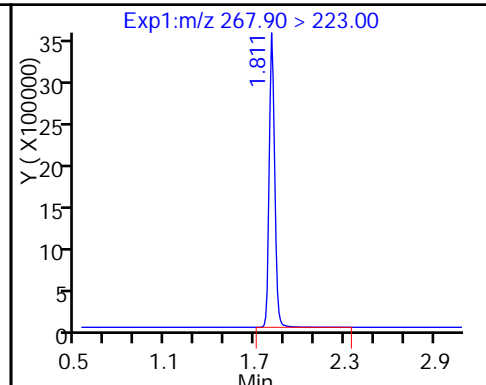
D 1 13C4 PFBA



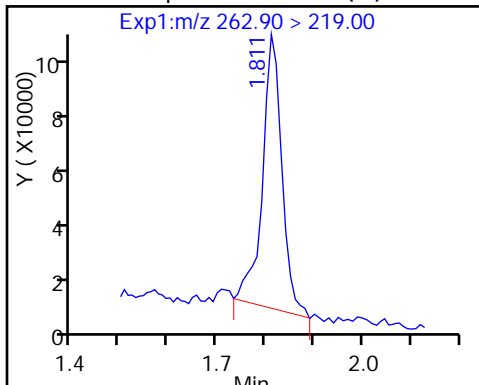
2 Perfluorobutyric acid (M)



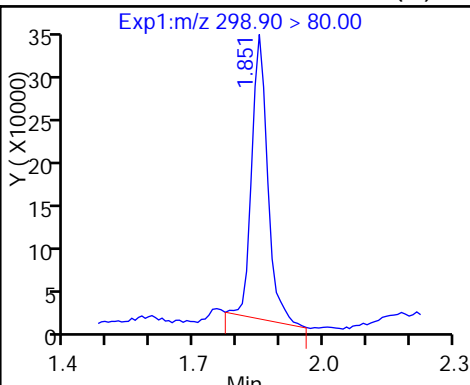
D 3 13C5-PFPeA



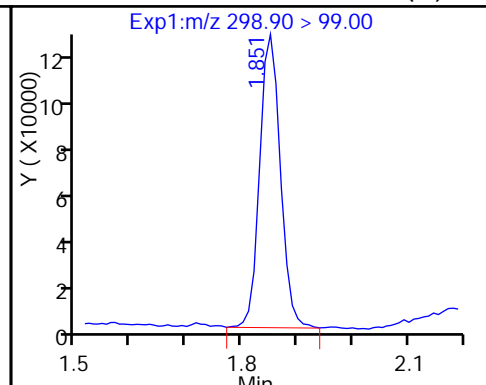
4 Perfluoropentanoic acid (M)



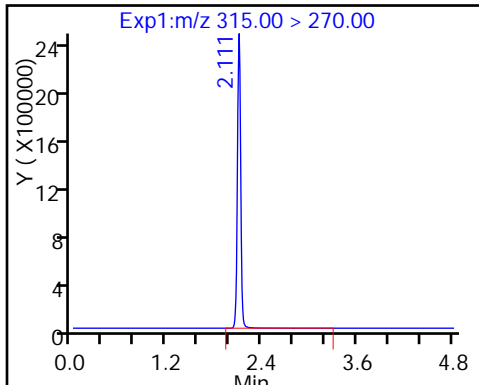
5 Perfluorobutanesulfonic acid (M)



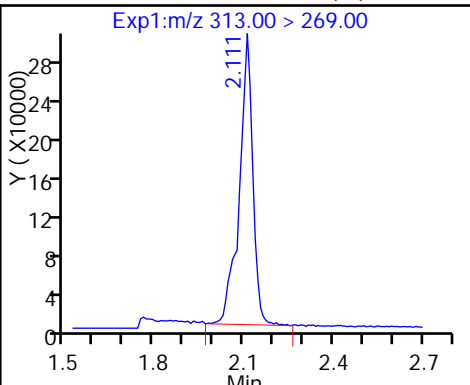
5 Perfluorobutanesulfonic acid (M)



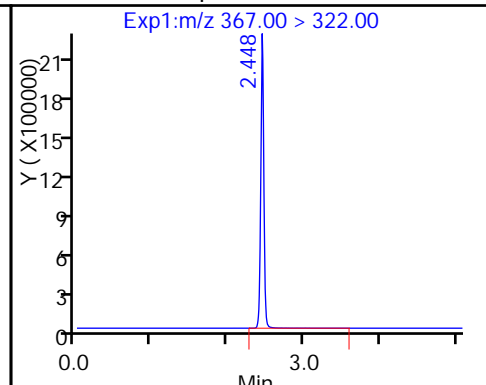
D 7 13C2 PFHxA



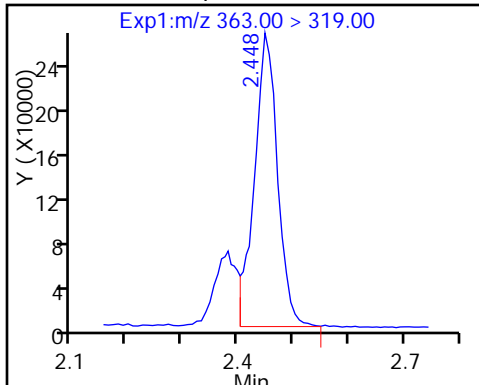
6 Perfluorohexanoic acid (M)



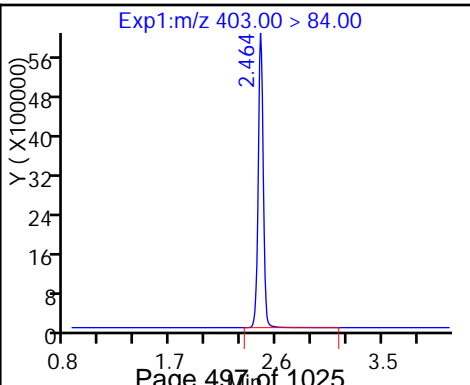
D 9 13C4-PFHpA



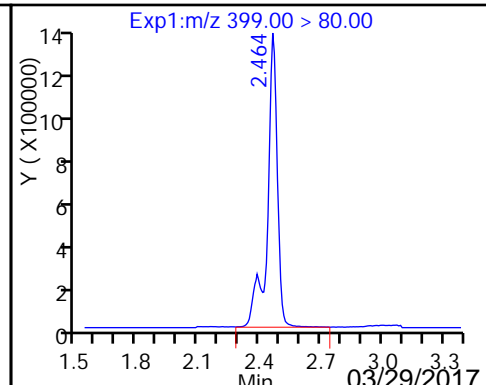
10 Perfluoroheptanoic acid (M)



D 11 18O2 PFHxS

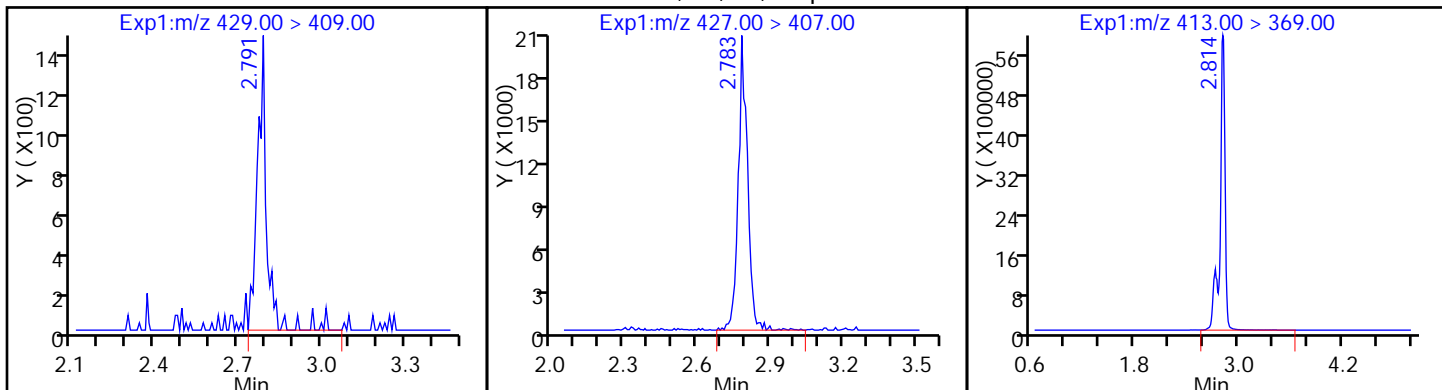


8 Perfluorohexanesulfonic acid (M)



D 12 M2-6:2FTS

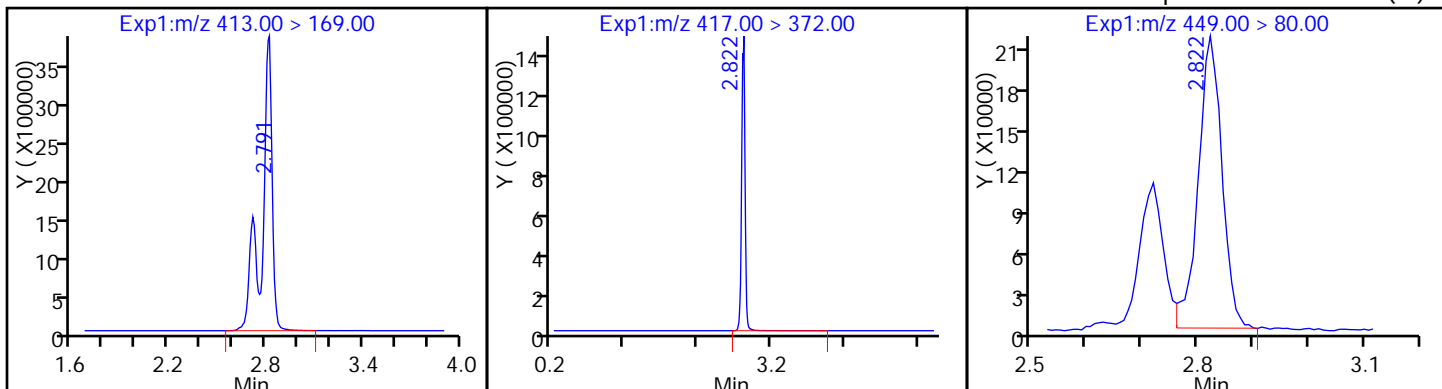
13 Sodium 1H,1H,2H,2H-perfluorooctane 5 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

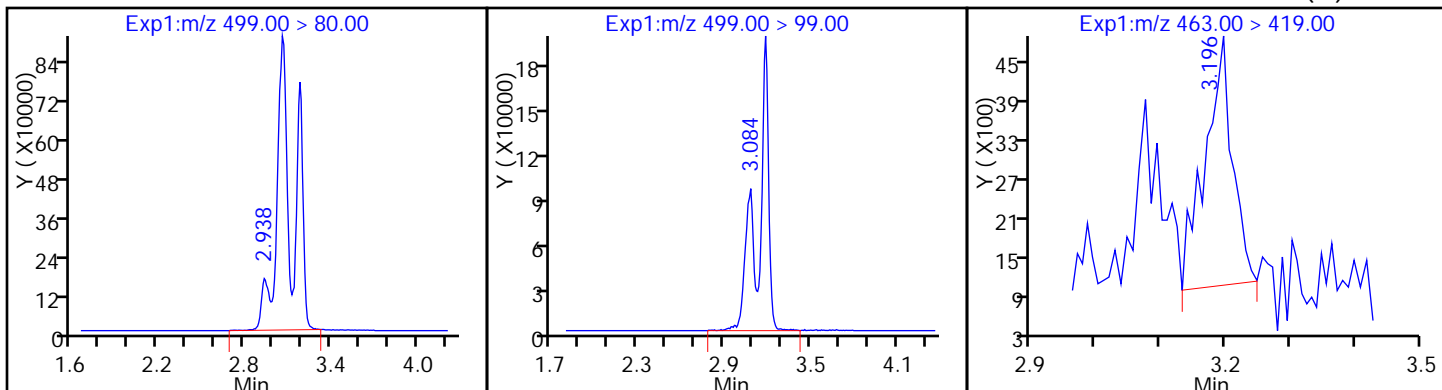
16 Perfluoroheptanesulfonic Acid (M)



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

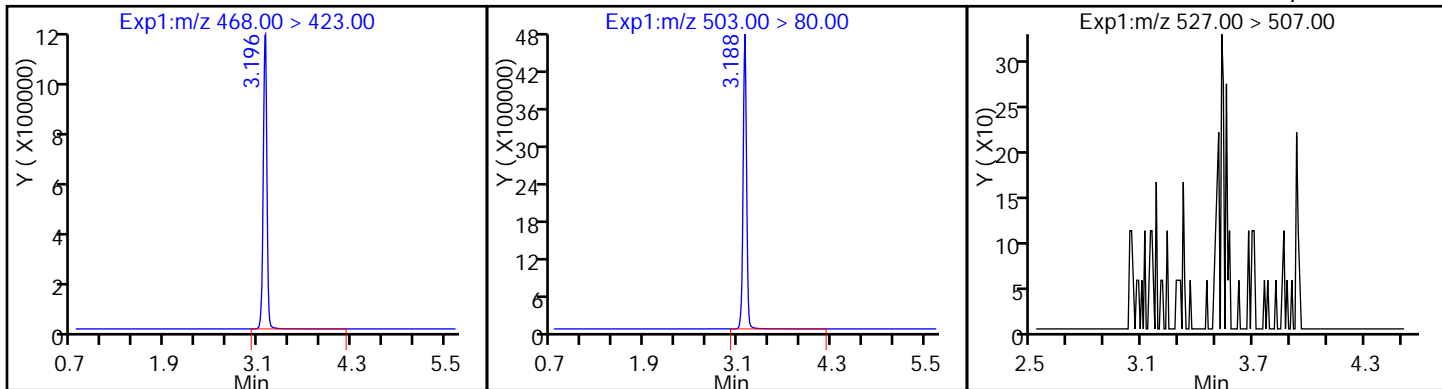
20 Perfluorononanoic acid (M)



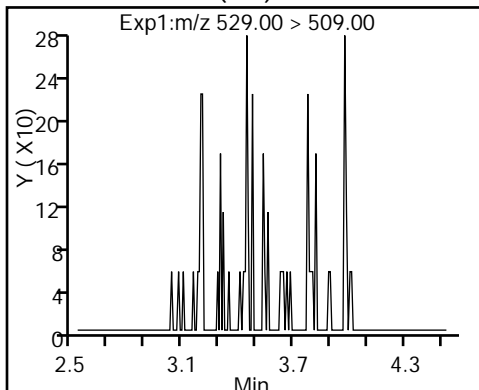
D 19 13C5 PFNA

D 18 13C4 PFOS

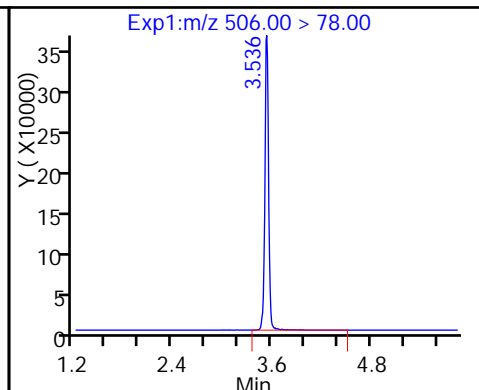
25 Sodium 1H,1H,2H,2H-perfluorooctane (ND)



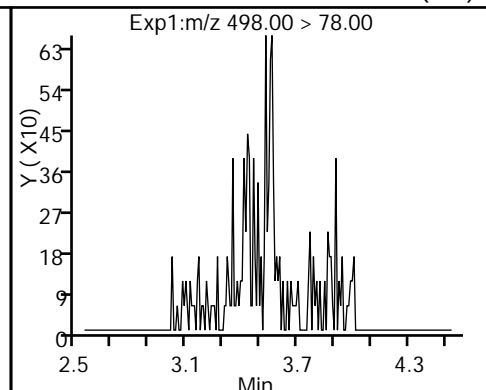
D 26 M2-8:2FTS (ND)



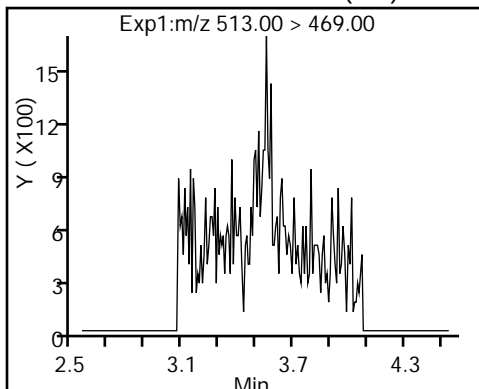
D 21 13C8 FOSA



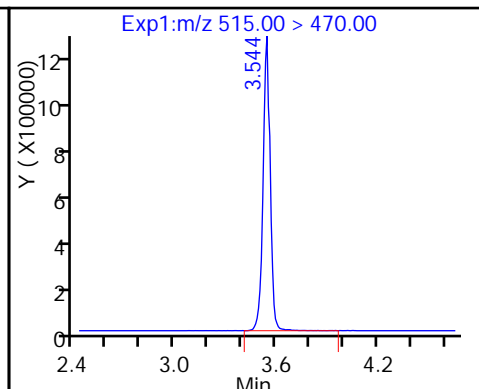
22 Perfluorooctane Sulfonamide (ND)



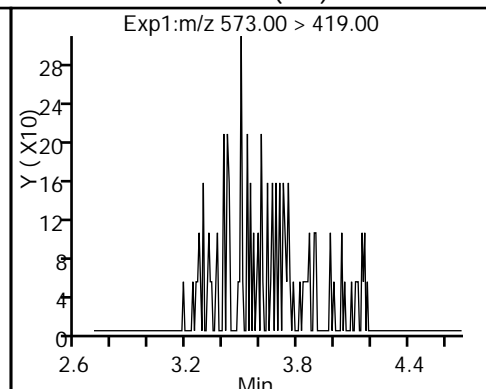
24 Perfluorodecanoic acid (ND)



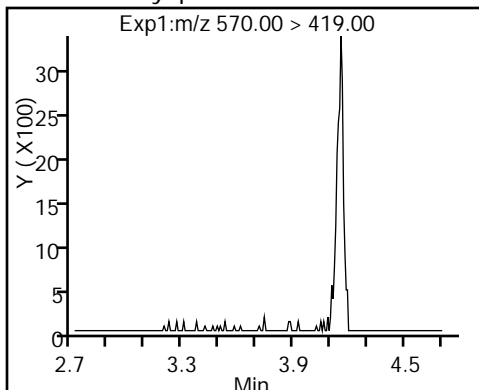
D 23 13C2 PFDA



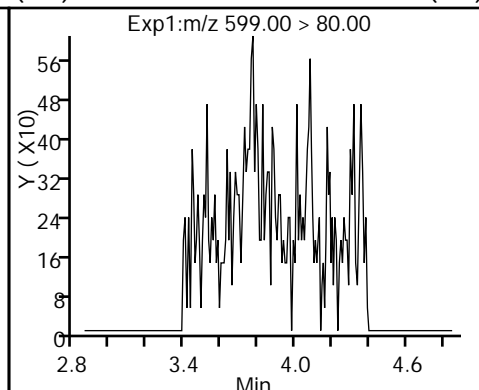
D 27 d3-NMeFOSAA (ND)



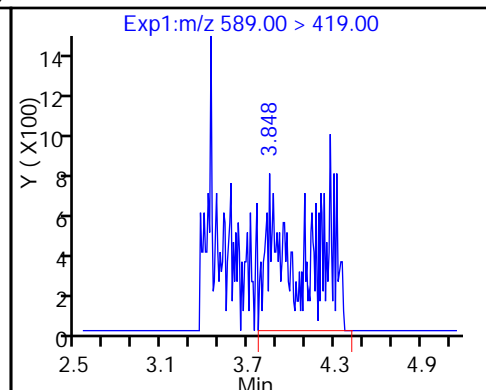
28 N-methyl perfluorooctane sulfonami



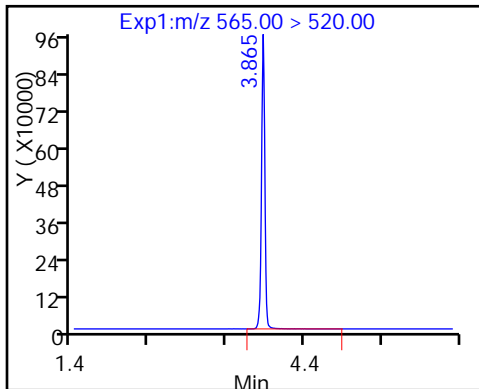
29 Perfluorodecane Sulfonic acid (ND)



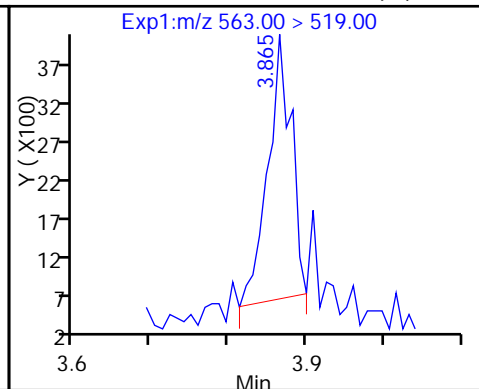
D 32 d5-NEtFOSAA



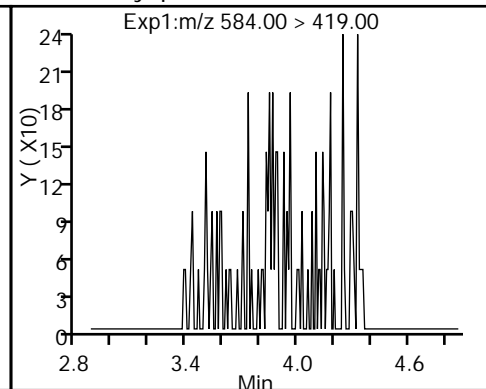
D 30 13C2 PFUnA



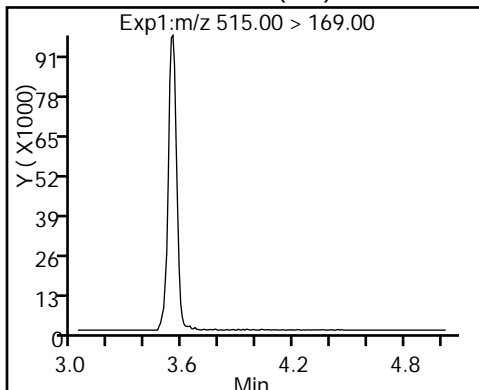
31 Perfluoroundecanoic acid (M)



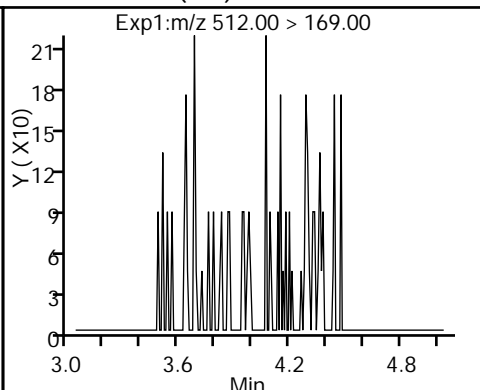
33 N-ethyl perfluorooctane sulfonamid (ND)



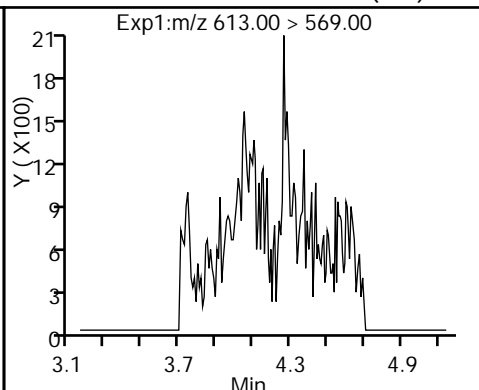
D 34 d-N-MeFOSA-M (ND)



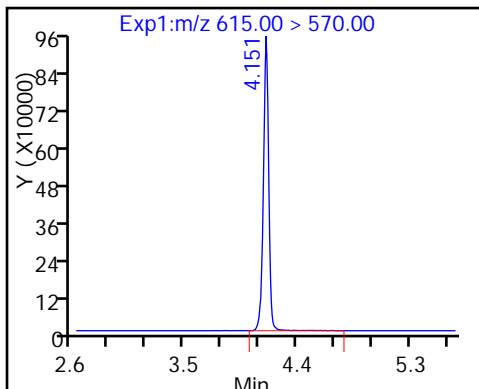
35 MeFOSA (ND)



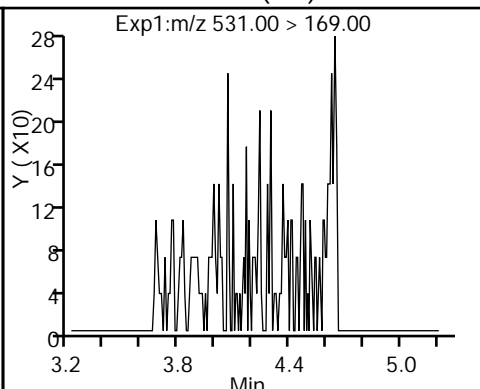
37 Perfluorododecanoic acid (ND)



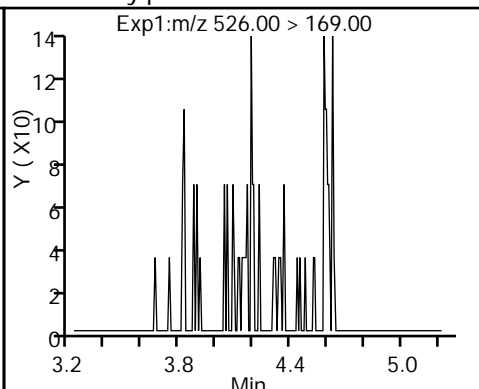
D 36 13C2 PFDaA



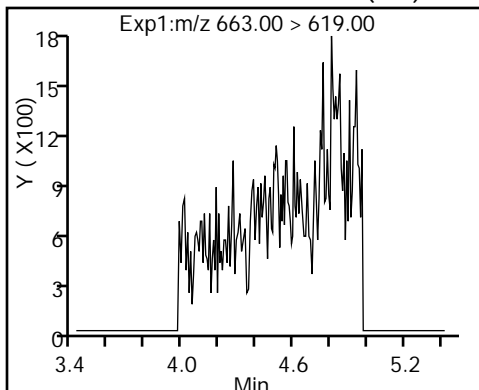
D 38 d-N-EtFOSA-M (ND)



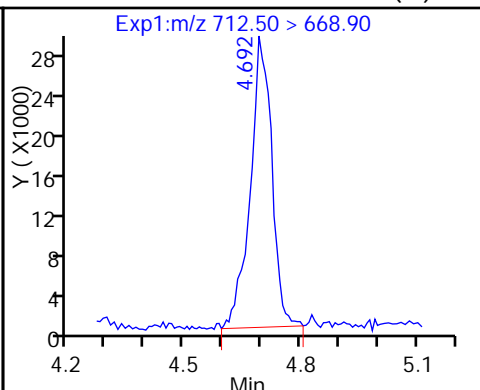
39 N-ethylperfluoro-1-octanesulfonami (ND)



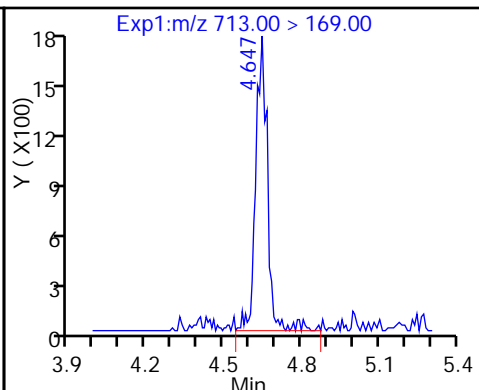
41 Perfluorotridecanoic acid (ND)



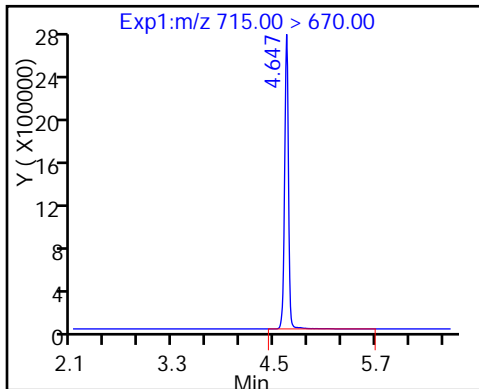
42 Perfluorotetradecanoic acid (M)



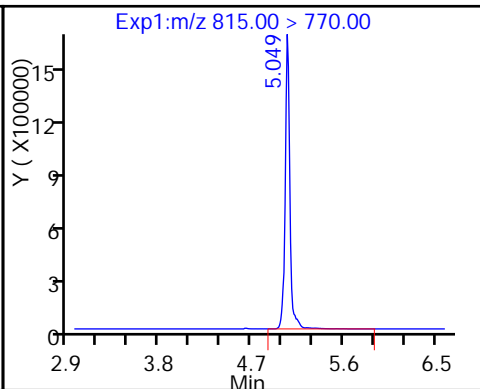
42 Perfluorotetradecanoic acid



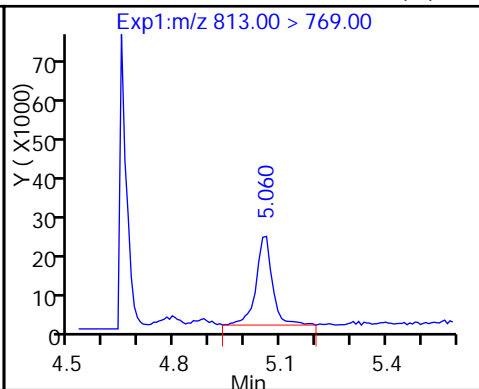
D 43 13C2-PFTeDA



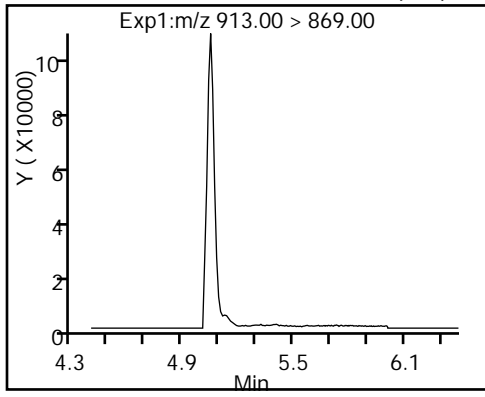
D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid (M)



46 Perfluorooctadecanoic acid (ND)



TestAmerica Sacramento

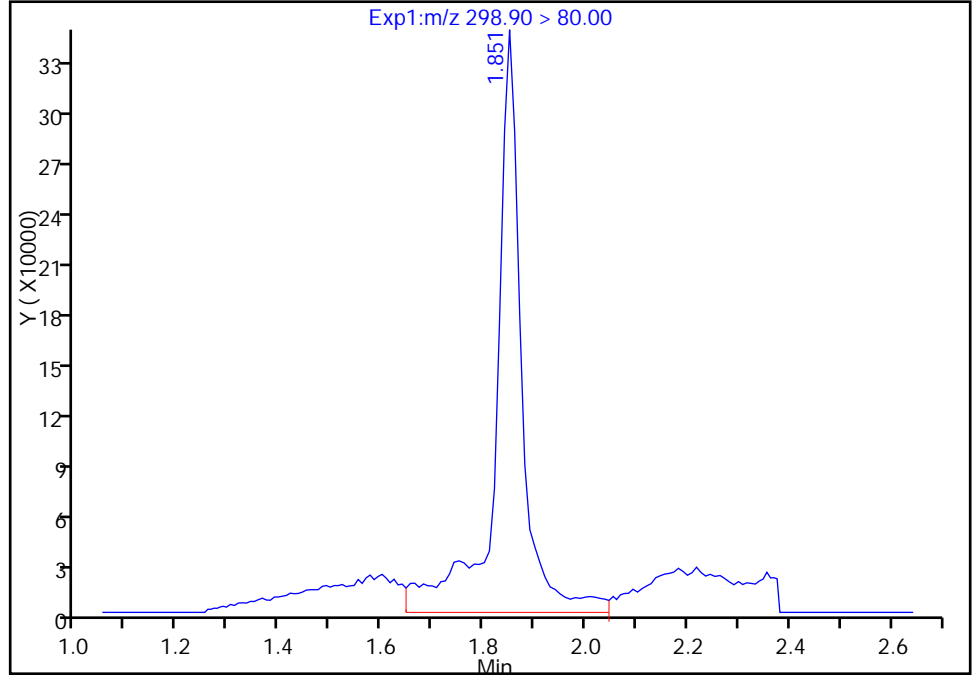
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_052.d
Injection Date: 06-Mar-2017 02:26:41 Instrument ID: A8_N
Lims ID: 320-26105-D-3-A Lab Sample ID: 320-26105-3
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 41 Worklist Smp#: 52
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

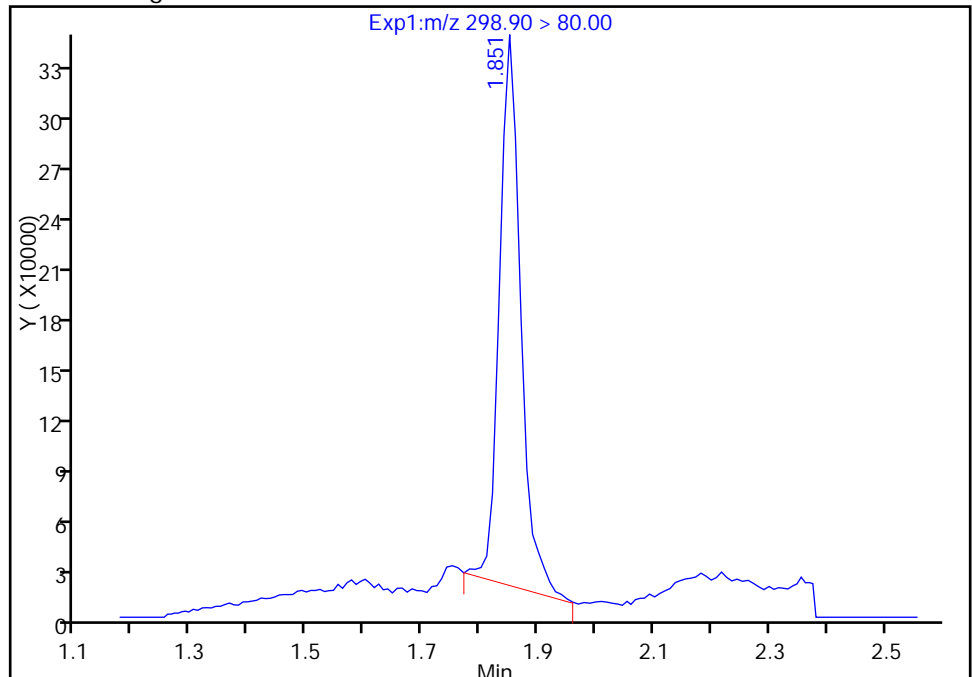
RT: 1.85
Area: 1231712
Amount: 2.245222
Amount Units: ng/ml

Processing Integration Results



RT: 1.85
Area: 840082
Amount: 1.531340
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 07-Mar-2017 14:43:13
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

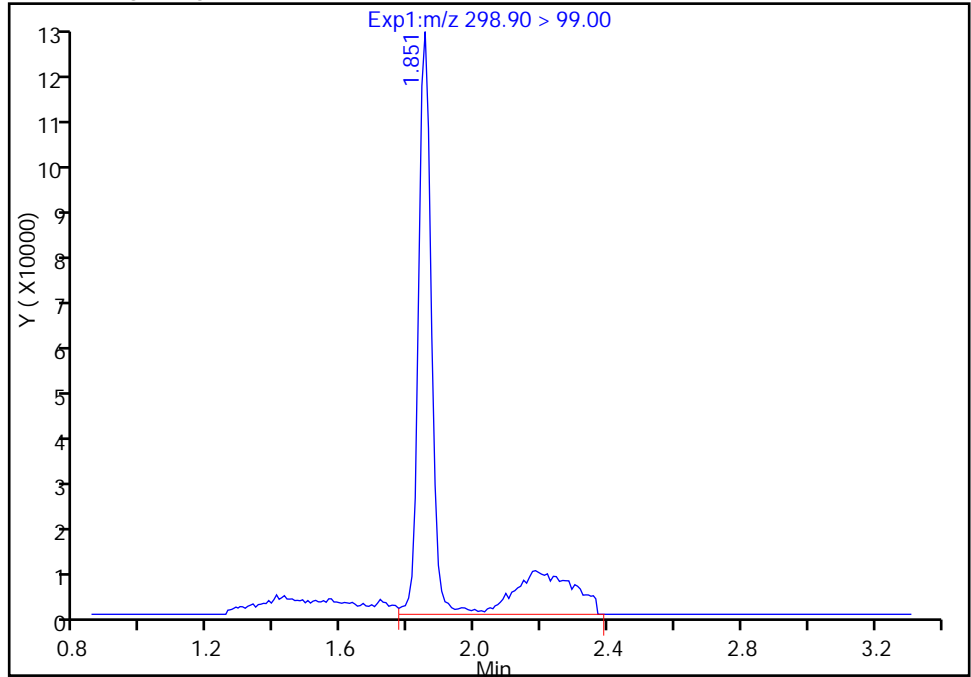
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_052.d
Injection Date: 06-Mar-2017 02:26:41 Instrument ID: A8_N
Lims ID: 320-26105-D-3-A Lab Sample ID: 320-26105-3
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 41 Worklist Smp#: 52
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

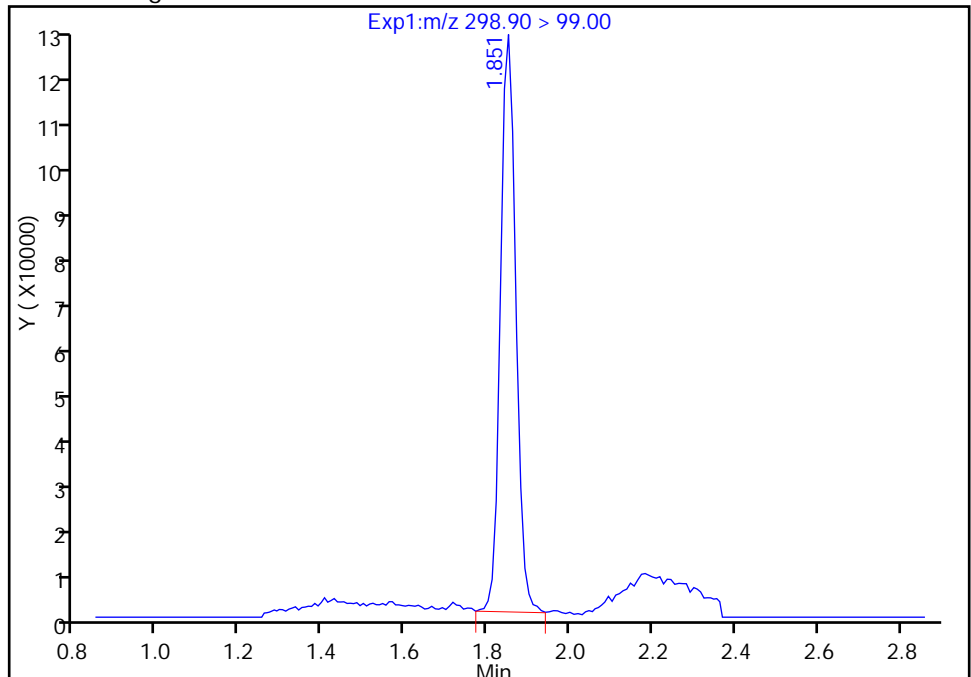
RT: 1.85
Area: 442707
Amount: 2.245222
Amount Units: ng/ml

Processing Integration Results



RT: 1.85
Area: 315484
Amount: 1.531340
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 07-Mar-2017 14:43:19

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 DL Lab Sample ID: 320-26105-3 DL
 Matrix: Water Lab File ID: 2017.03.08B_008.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 269.3 (mL) Date Analyzed: 03/08/2017 20:24
 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.: 154016 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	500	D M J	12	9.3	3.5
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	24	D M J	19	14	5.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	9.3	U M	12	9.3	4.3

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	48		25-150
STL00991	13C4 PFOS	120		25-150
STL00994	18O2 PFHxS	141		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_008.d
 Lims ID: 320-26105-D-3-A
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: Client
 Inject. Date: 08-Mar-2017 20:24:35 ALS Bottle#: 4 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 5.0000
 Sample Info: 320-26105-d-3-a 5X
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 09-Mar-2017 14:14:20 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK034

First Level Reviewer: westendorfc Date: 09-Mar-2017 08:17:21

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	1.539	1.539	0.0	2383548	8.16		16.3	197859	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.547	1.538	0.009	1.000	19503	0.0966			147	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.823	1.813	0.010	1.000	82748	0.3621			493	
D 3 13C5-PFPeA	267.90 > 223.00	1.823	1.813	0.010	2335465	10.1		20.1	180153	
D 47 13C3-PFBS	301.90 > 83.00	1.843	1.853	-0.010	389	NC				
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.863	1.853	0.010	1.000	162739	0.2771				M
298.90 > 99.00	1.863	1.853	0.010	1.000	67540		2.41(0.00-0.00)			M
D 7 13C2 PFHxA	315.00 > 270.00	2.120	2.108	0.012	1460403	6.93		13.9	84509	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.111	2.113	-0.002	1.000	203556	1.57			3132	
D 9 13C4-PFHpA	367.00 > 322.00	2.459	2.448	0.011	1183985	6.14		12.3	105243	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.475	2.456	0.019	1.000	897682	2.13				M
D 11 18O2 PFHxS	403.00 > 84.00	2.467	2.464	0.003	3878167	13.3		28.2	231116	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.459	2.449	0.010	1.000	141007	1.23			1229	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.802	2.776	0.026	1.000	26141	NR				
D 12 M2-6:2FTS	429.00 > 409.00	2.794	2.783	0.011	1369	0.0180		0.0		

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	2.817	2.806	0.011		990400	4.83		9.7	63570	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.817	2.799	0.018	1.000	5443338	53.8			89414	M
413.00 > 169.00	2.825	2.799	0.026	1.003	3591648		1.52(0.90-1.10)		148457	M
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.833	2.799	0.034	1.000	133712	0.4474				
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.069	3.164	-0.095	1.000	729593	2.56			85942	M
499.00 > 99.00	3.088	3.164	-0.076	1.006	69772		10.46(0.90-1.10)		5995	
D 18 13C4 PFOS										
503.00 > 80.00	3.183	3.172	0.011		2771184	11.5		24.0	81934	
D 19 13C5 PFNA										
468.00 > 423.00	3.192	3.172	0.020		795860	4.47		8.9	66412	
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.386	3.496	-0.110	0.961	491	NR				
D 26 M2-8:2FTS										
529.00 > 509.00	3.522	3.513	0.009		439	0.004741		0.0		
D 21 13C8 FOSA										
506.00 > 78.00	3.539	3.522	0.017		221298	0.6031		1.2	12172	
D 23 13C2 PFDA										
515.00 > 470.00	3.539	3.522	0.017		648029	3.89		7.8	18682	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.859	3.631	0.228	1.000	496	NR				
D 30 13C2 PFUnA										
565.00 > 520.00	3.867	3.841	0.026		512302	3.92		7.8	59506	
D 36 13C2 PFDoA										
615.00 > 570.00	4.154	4.127	0.027		503398	4.06		8.1	25009	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.632	4.617	0.015	1.000	1211	0.0122			40.6	
713.00 > 169.00	4.611	4.617	-0.006	0.995	424		2.86(0.00-0.00)		191	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.642	4.624	0.018		1397618	5.39		10.8	111641	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.039	0.018	1.000	11647	-0.1270			78.1	M
D 44 13C2-PFHxDA										
815.00 > 770.00	5.057	5.039	0.018		890925	7.12		14.2	50032	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.398	5.384	0.014	1.000	1717	0.0475			6.0	

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\20170309-40626.b\2017.03.08B_008.d

Injection Date: 08-Mar-2017 20:24:35

Instrument ID: A8_N

Lims ID: 320-26105-D-3-A

Lab Sample ID: 320-26105-3

Client ID: MEAFF-MRD-1A14-0217

Operator ID: A8-PC\A8

ALS Bottle#: 4

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 5.0000

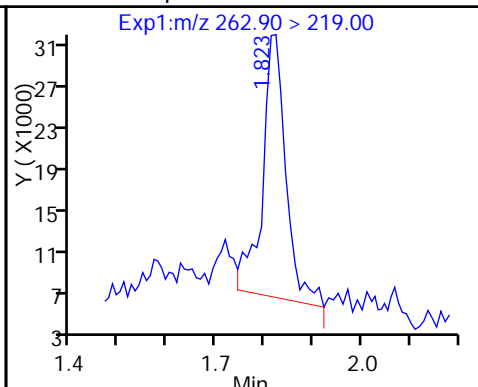
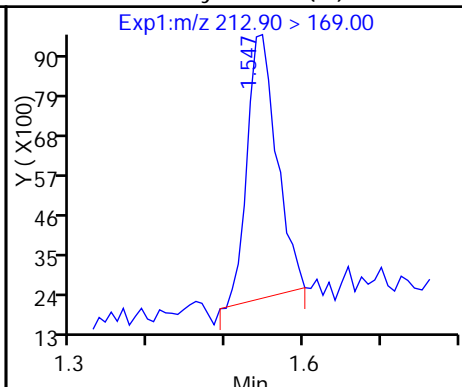
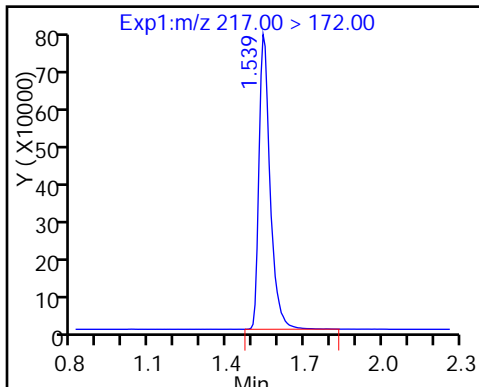
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

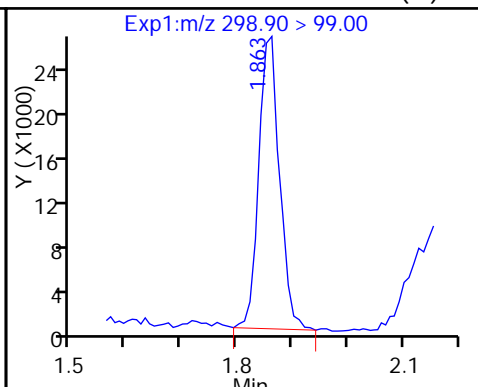
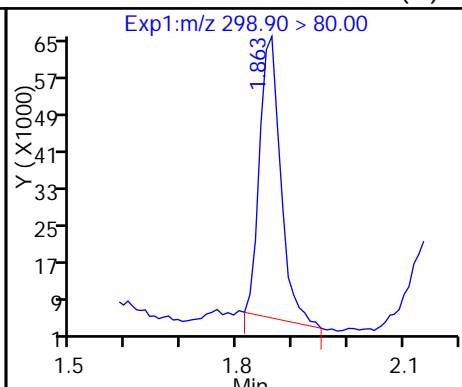
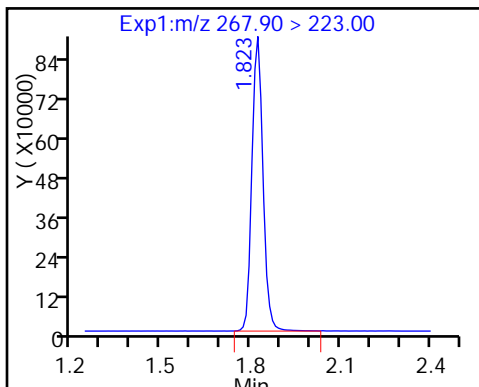
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid (M)

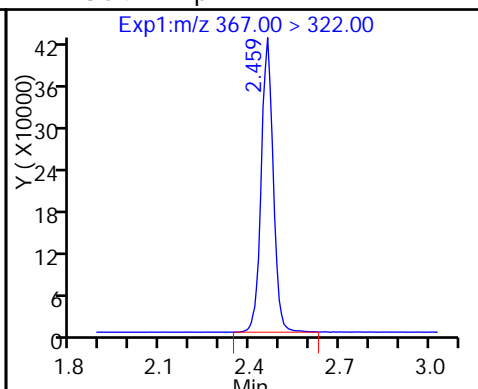
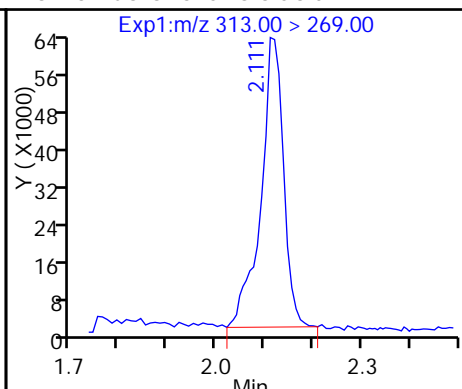
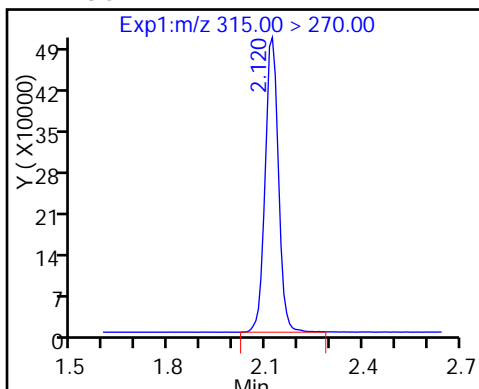
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

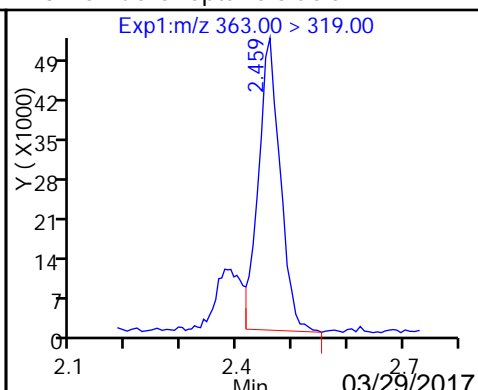
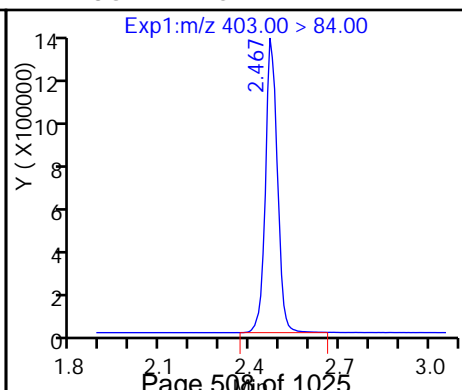
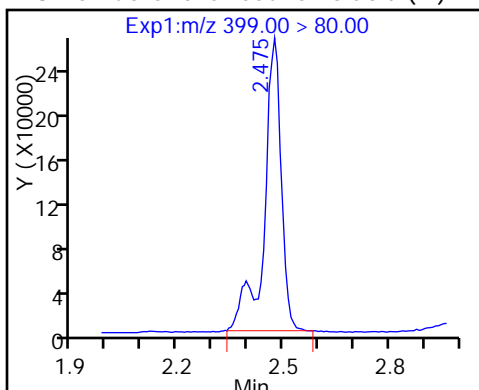
D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid (M)

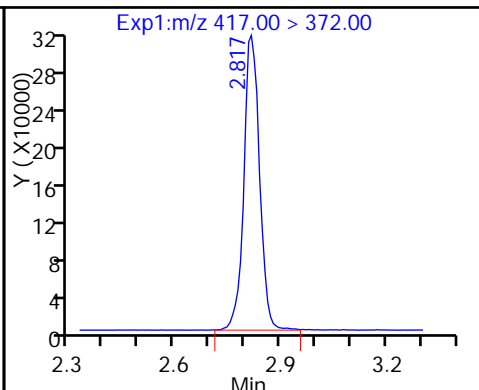
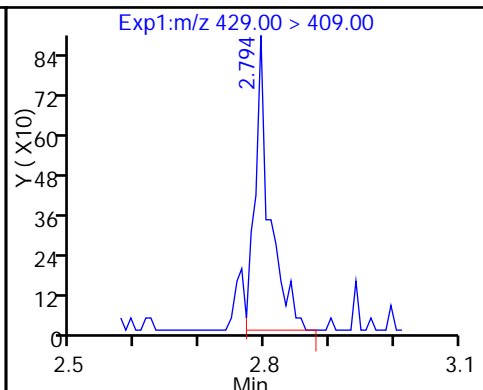
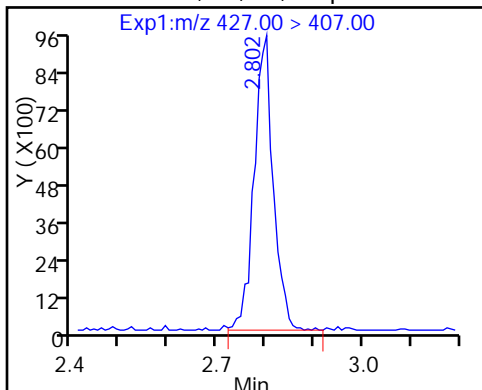
D 11 18O2 PFHxS

10 Perfluoroheptanoic acid



13 Sodium 1H,1H,2H,2H-perfluorooctane

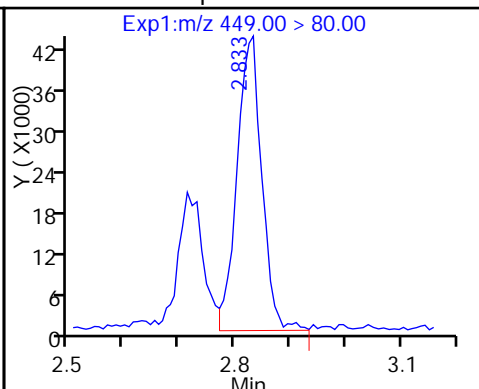
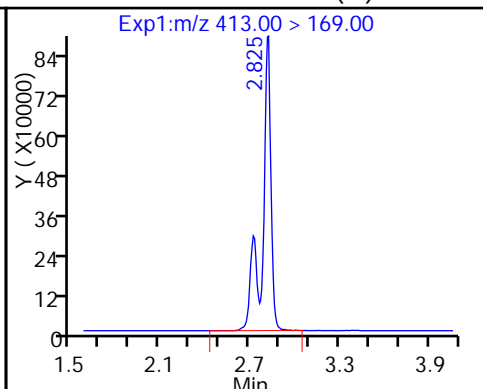
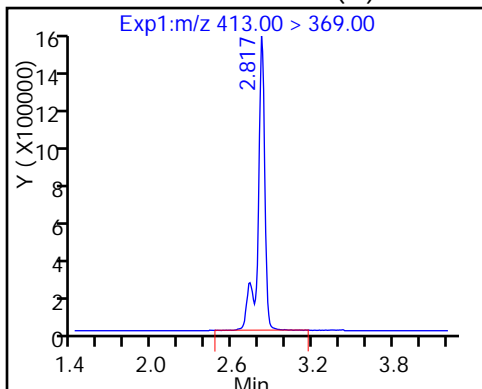
D 12 M2-6:2FTS



15 Perfluorooctanoic acid (M)

15 Perfluorooctanoic acid (M)

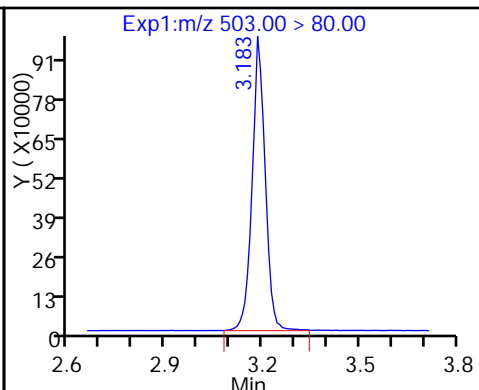
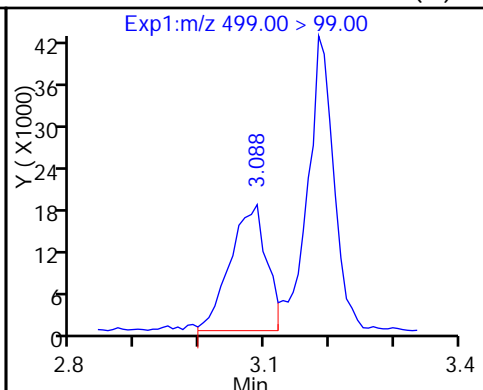
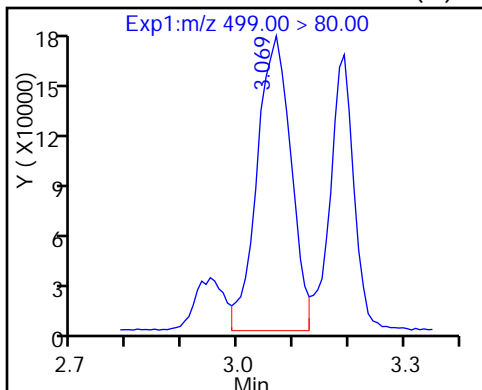
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

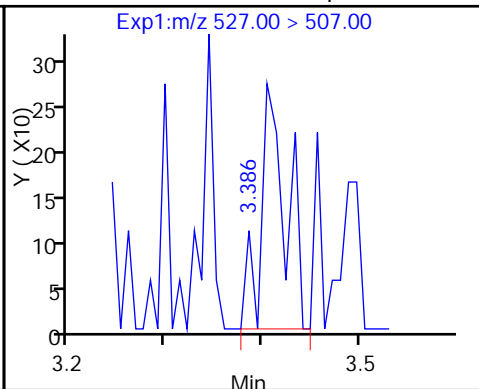
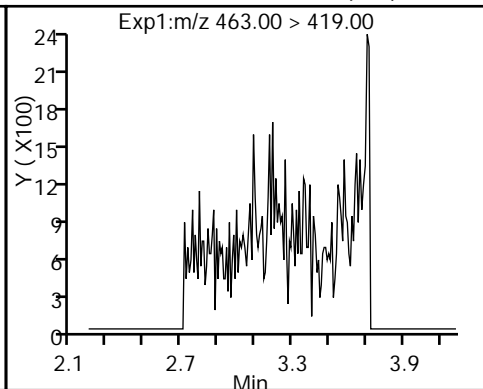
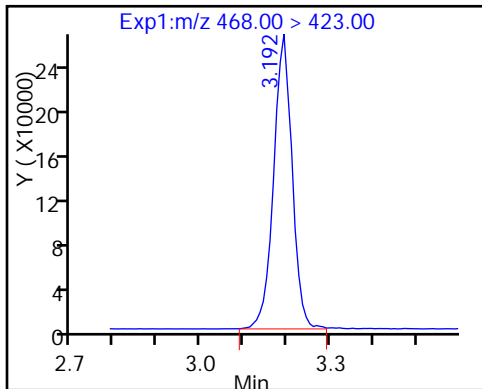
D 18 13C4 PFOS



D 19 13C5 PFNA

20 Perfluorononanoic acid (ND)

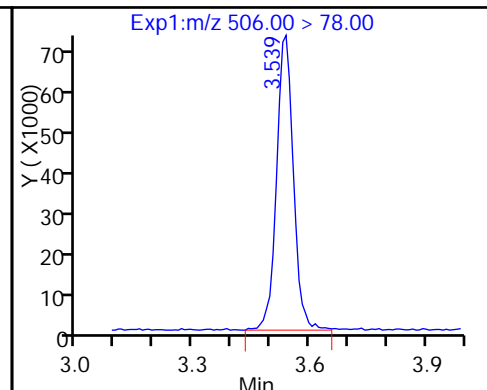
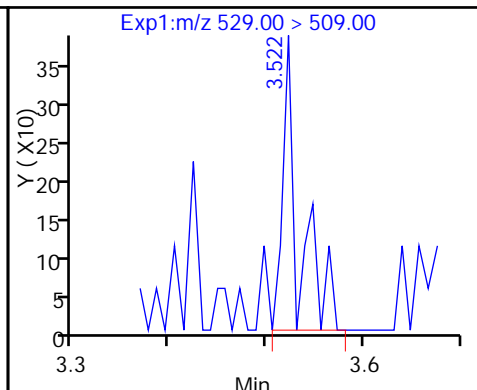
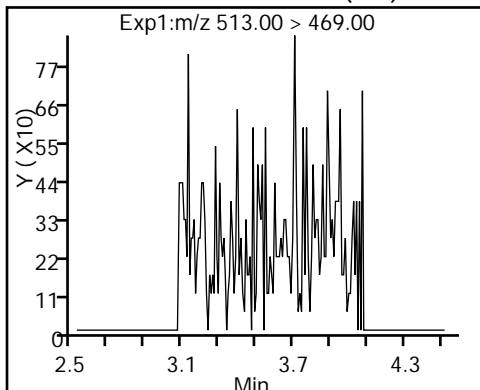
25 Sodium 1H,1H,2H,2H-perfluorooctane



24 Perfluorodecanoic acid (ND)

D 26 M2-8:2FTS

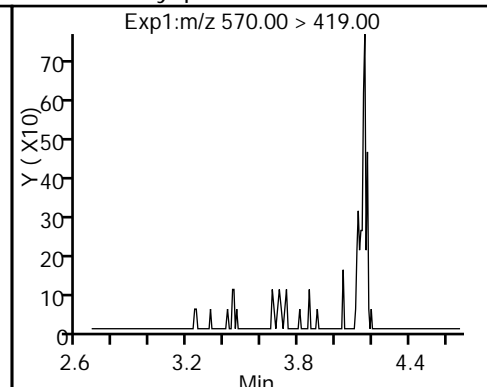
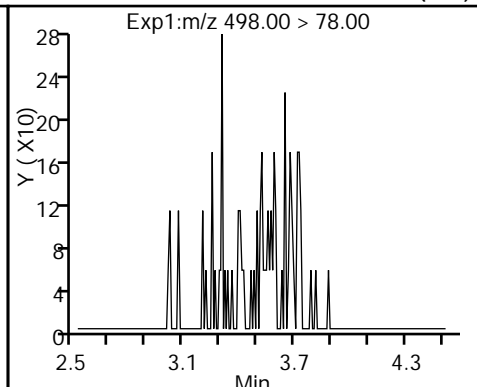
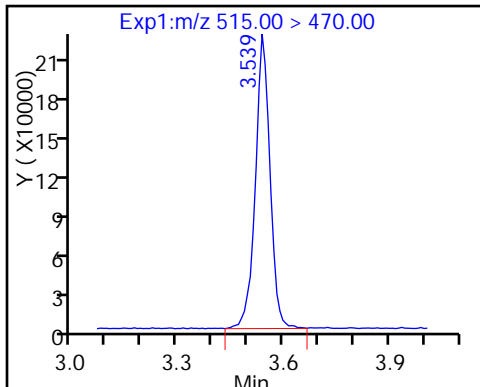
D 21 13C8 FOSA



D 23 13C2 PFDA

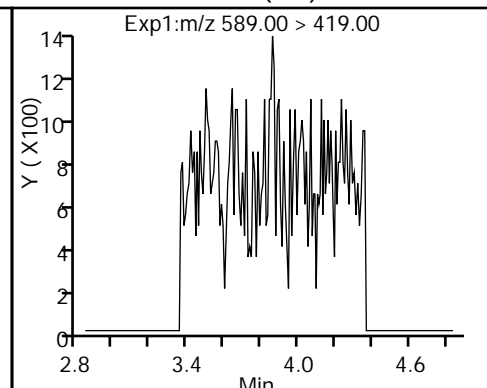
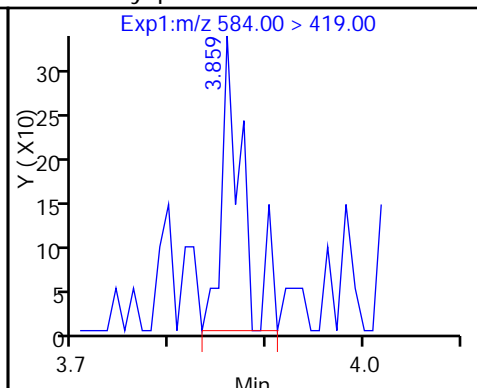
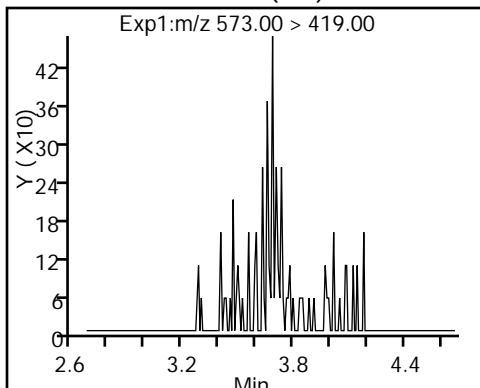
22 Perfluorooctane Sulfonamide (ND)

28 N-methyl perfluorooctane sulfonami (ND)



D 27 d3-NMeFOSAA (ND)

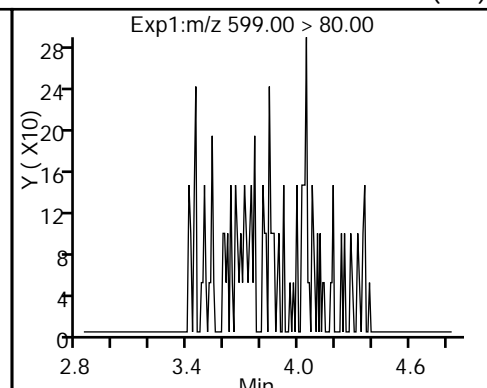
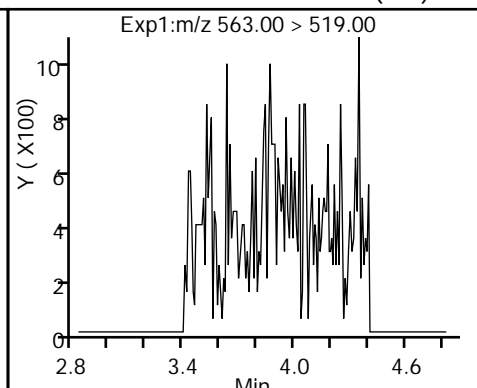
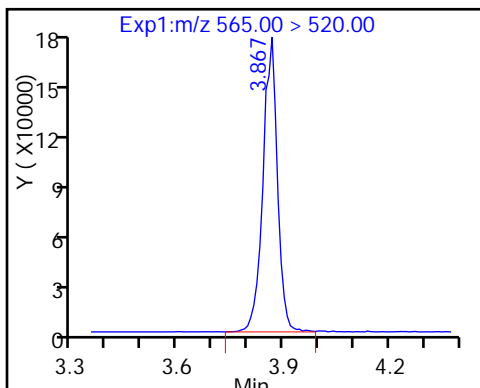
33 N-ethyl perfluorooctane sulfonamid D 32 d5-NEtFOSAA (ND)



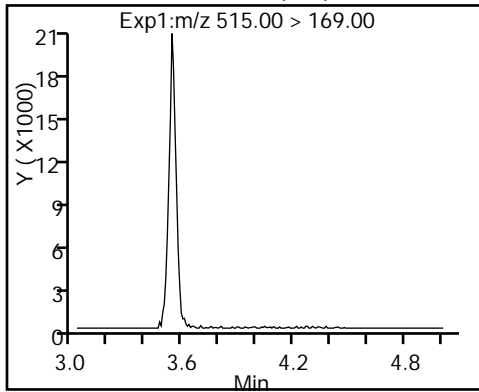
D 30 13C2 PFUnA

31 Perfluoroundecanoic acid (ND)

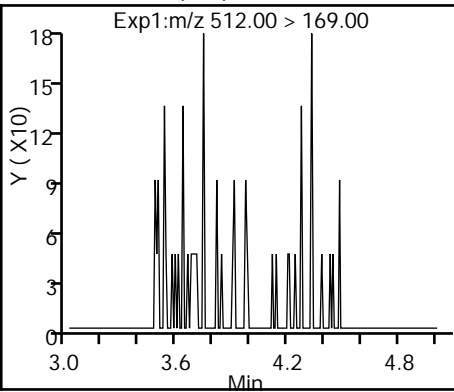
29 Perfluorodecane Sulfonic acid (ND)



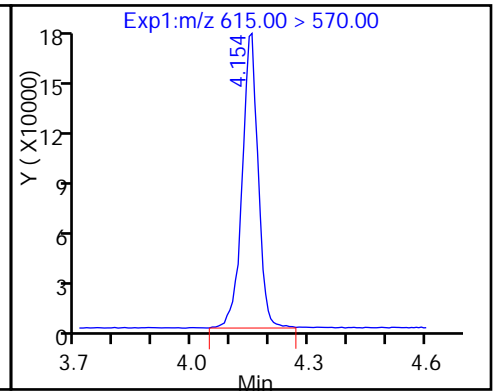
D 34 d-N-MeFOSA-M (ND)



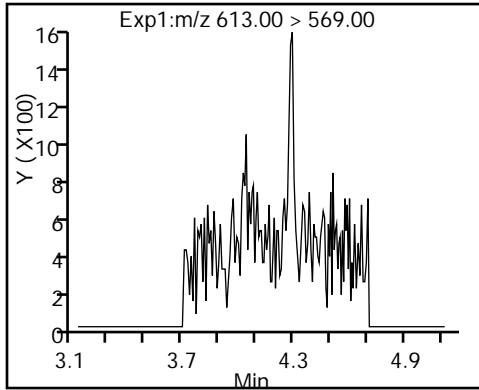
35 MeFOSA (ND)



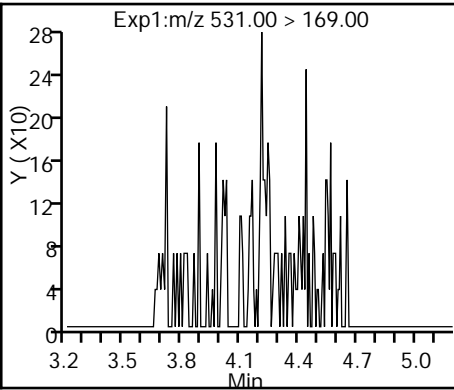
D 36 13C2 PFDaA



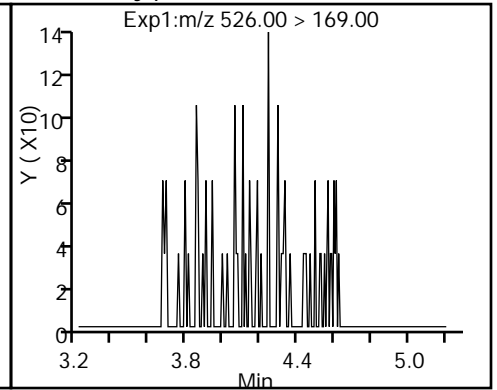
37 Perfluorododecanoic acid (ND)



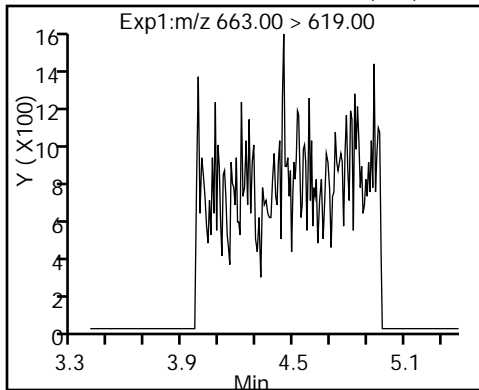
D 38 d-N-EtFOSA-M (ND)



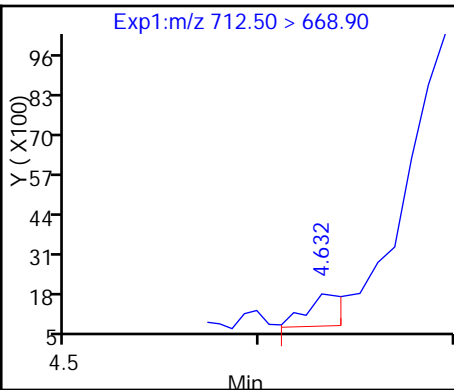
39 N-ethylperfluoro-1-octanesulfonami (ND)



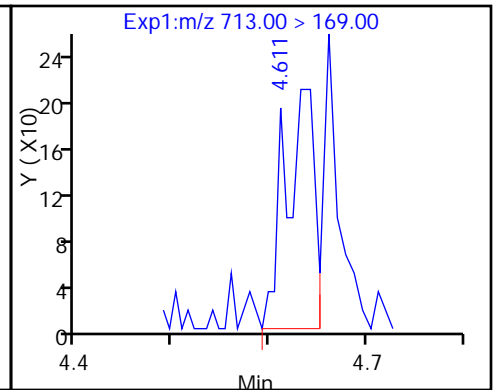
41 Perfluorotridecanoic acid (ND)



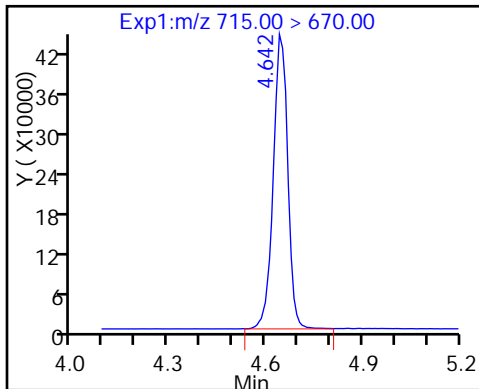
42 Perfluorotetradecanoic acid



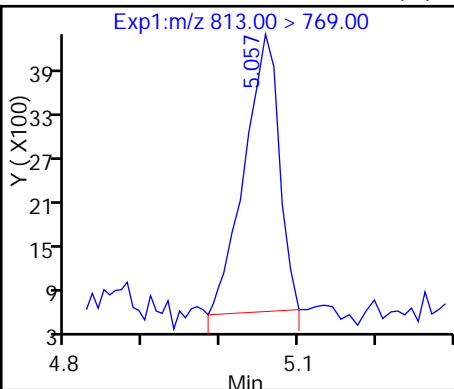
42 Perfluorotetradecanoic acid



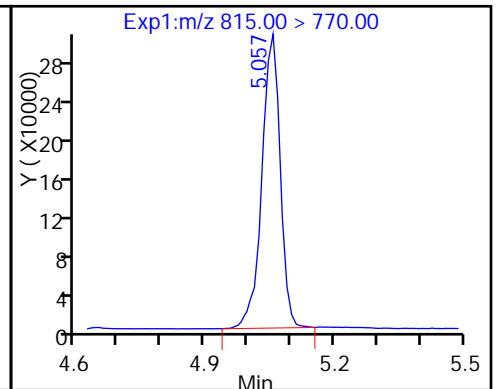
D 43 13C2-PFTeDA



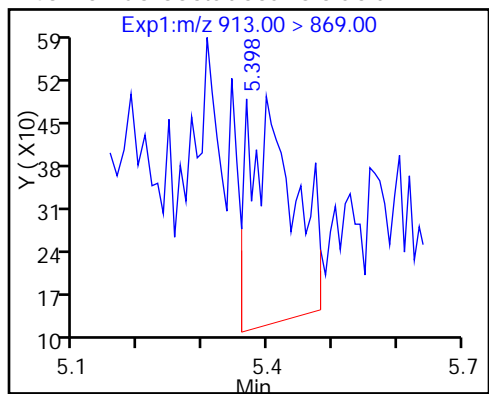
45 Perfluorohexadecanoic acid (M)



D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

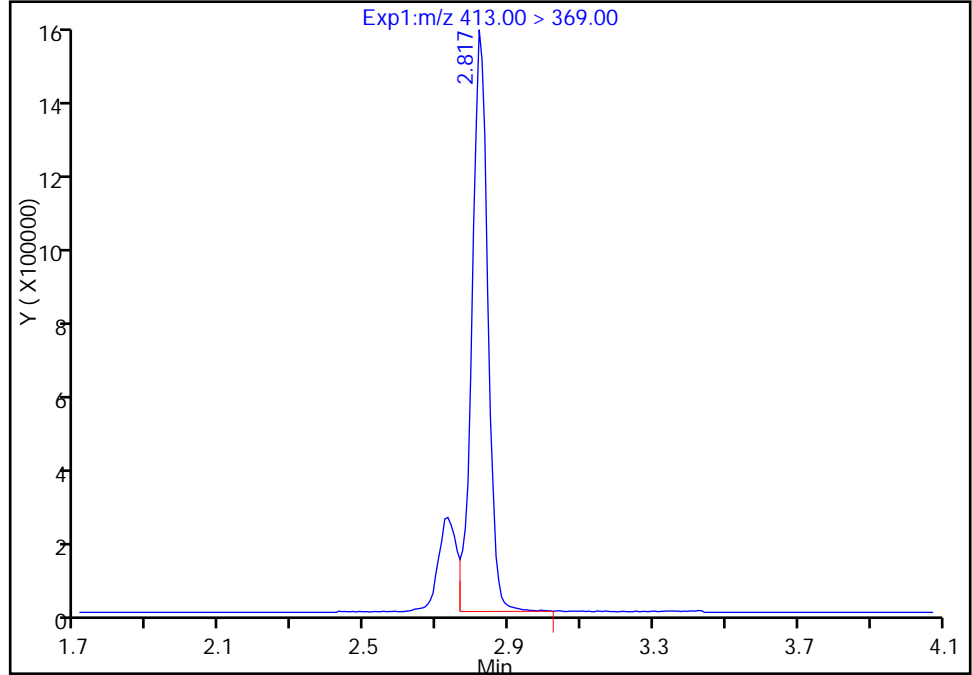
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_008.d
Injection Date: 08-Mar-2017 20:24:35 Instrument ID: A8_N
Lims ID: 320-26105-D-3-A Lab Sample ID: 320-26105-3
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

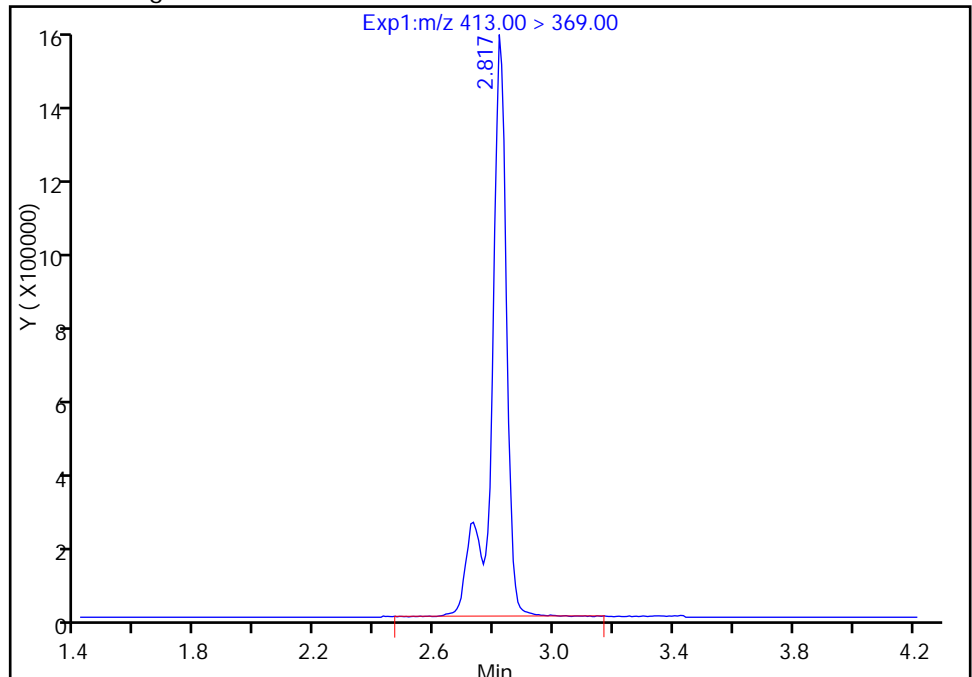
RT: 2.82
Area: 4616451
Amount: 228.1192
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 5443338
Amount: 53.795872
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 14:14:33
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

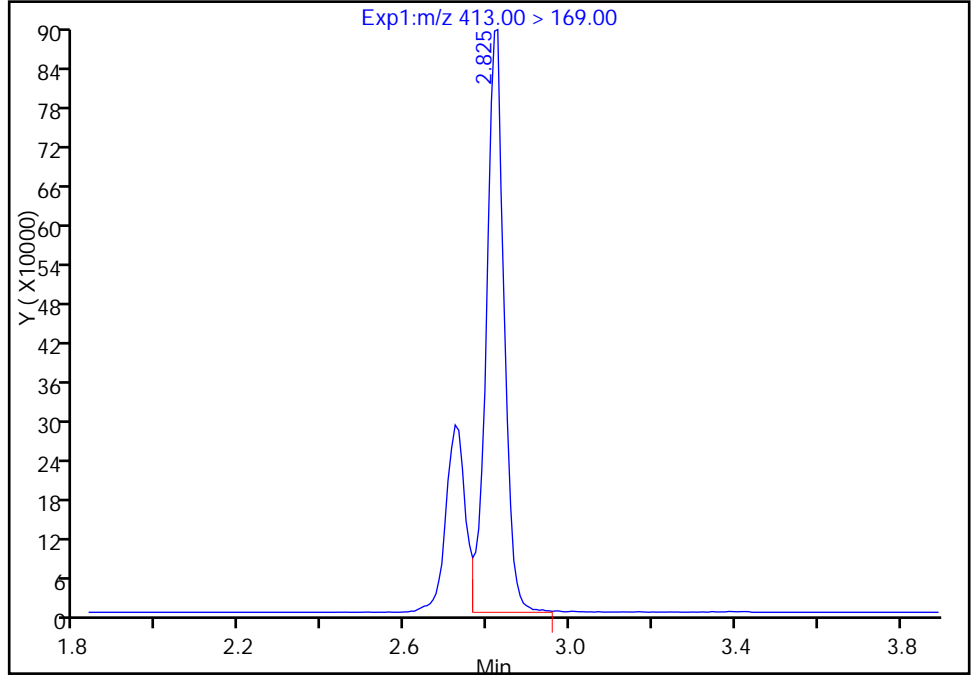
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_008.d
Injection Date: 08-Mar-2017 20:24:35 Instrument ID: A8_N
Lims ID: 320-26105-D-3-A Lab Sample ID: 320-26105-3
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

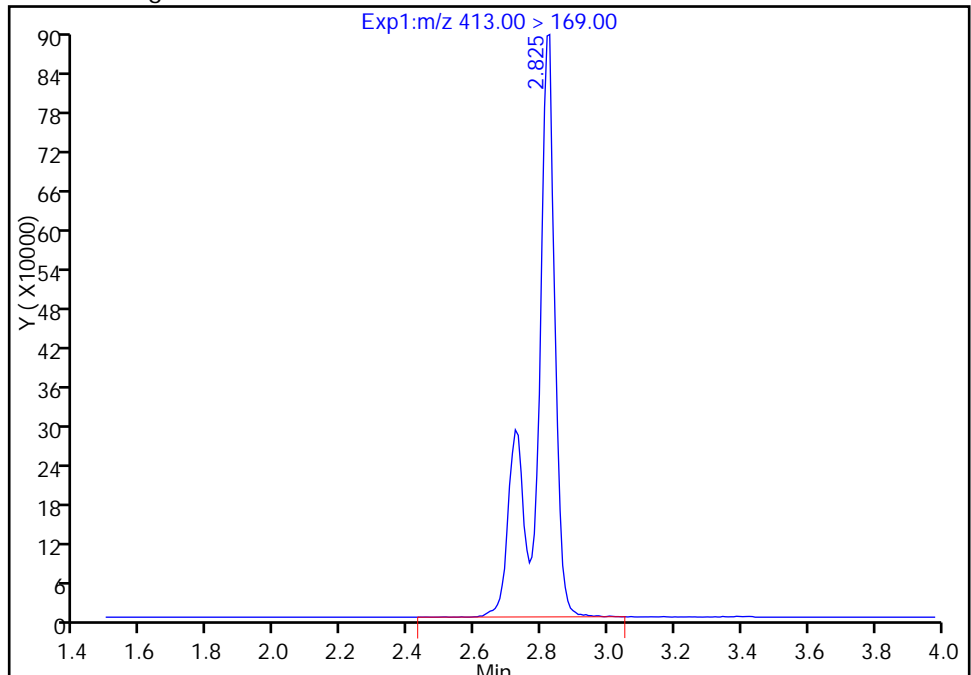
RT: 2.82
Area: 2659335
Amount: 228.1192
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 3591648
Amount: 53.795872
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 14:14:33

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

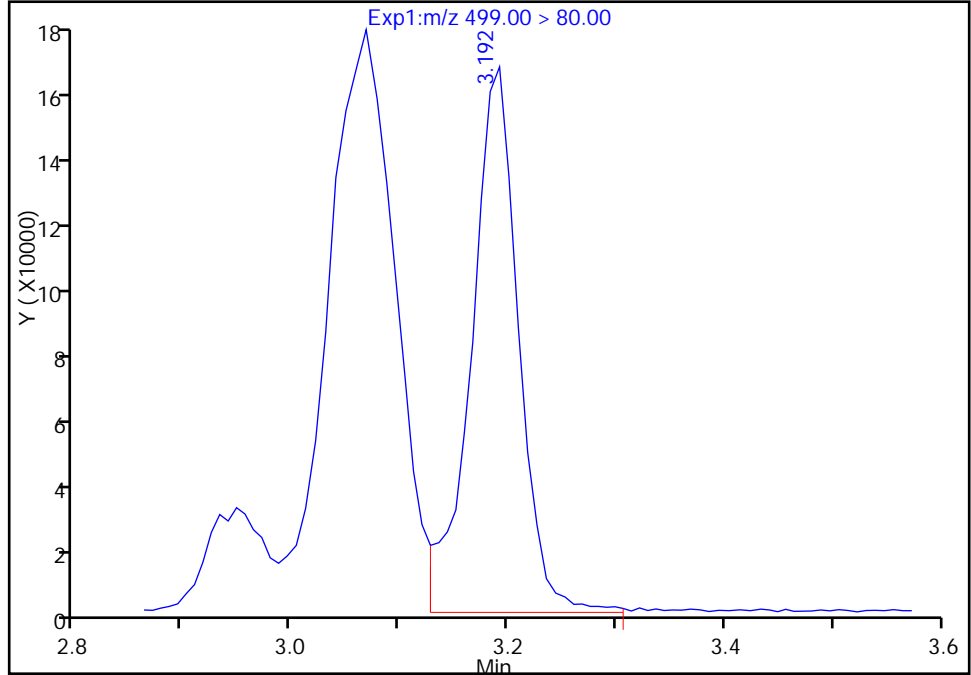
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Injection Date: 08-Mar-2017 20:24:35 Instrument ID: A8_N
Lims ID: 320-26105-D-3-A Lab Sample ID: 320-26105-3
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

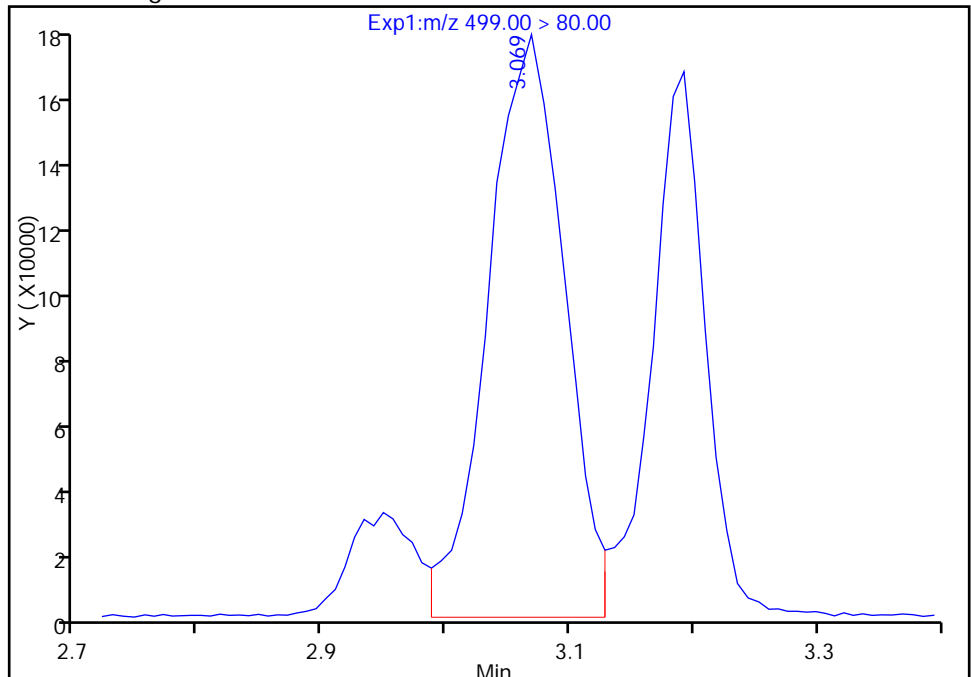
RT: 3.19
Area: 486222
Amount: 8.527674
Amount Units: ng/ml

Processing Integration Results



RT: 3.07
Area: 729593
Amount: 2.559214
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 14:14:33
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

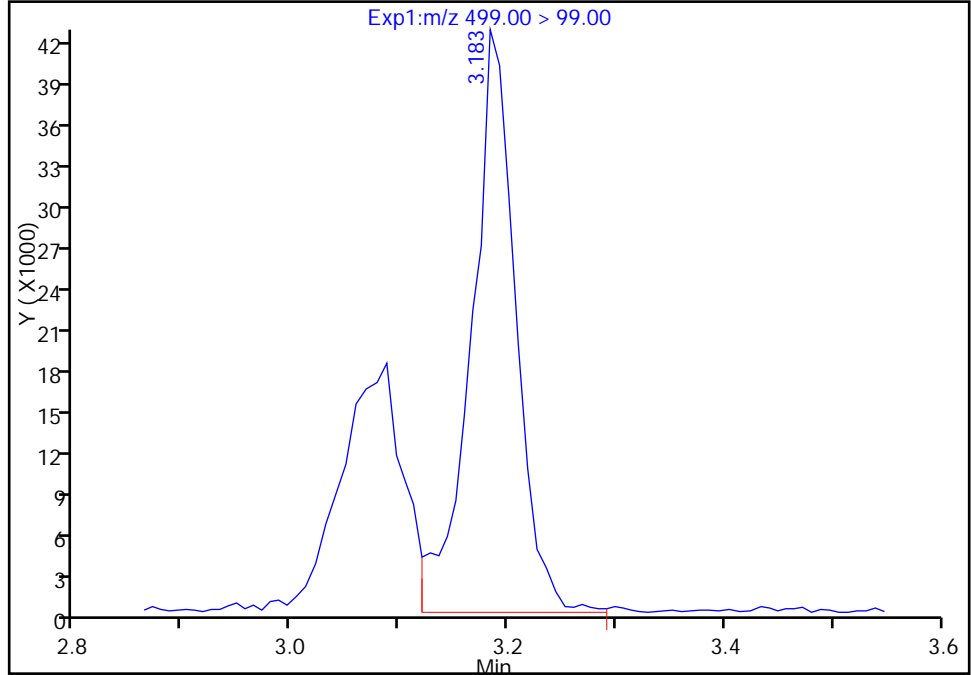
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_008.d
Injection Date: 08-Mar-2017 20:24:35 Instrument ID: A8_N
Lims ID: 320-26105-D-3-A Lab Sample ID: 320-26105-3
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

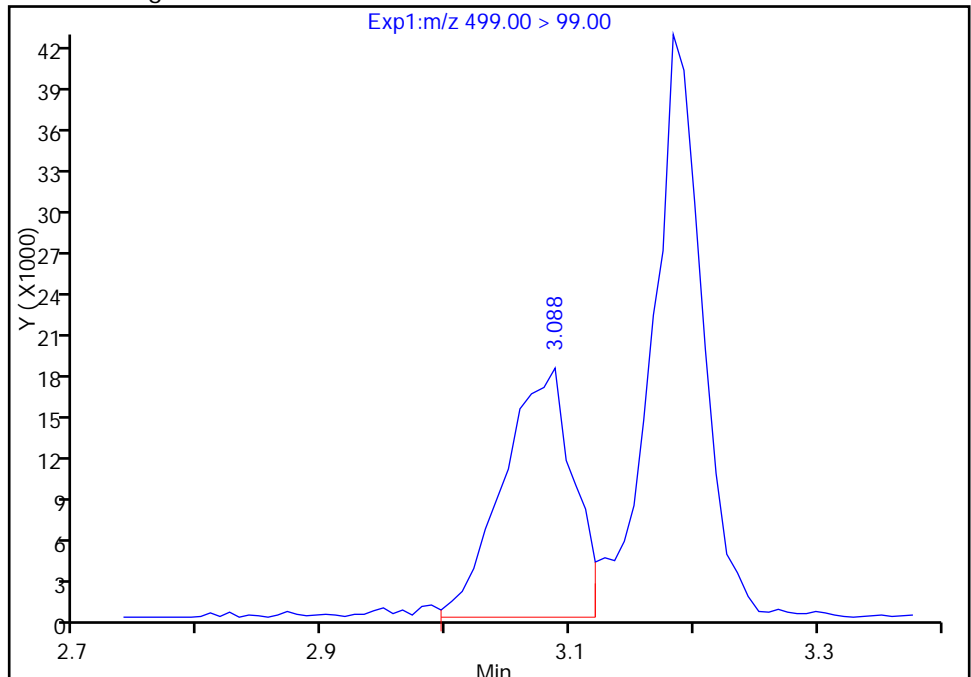
RT: 3.18
Area: 119442
Amount: 8.527674
Amount Units: ng/ml

Processing Integration Results



RT: 3.09
Area: 69772
Amount: 2.559214
Amount Units: ng/ml

Manual Integration Results



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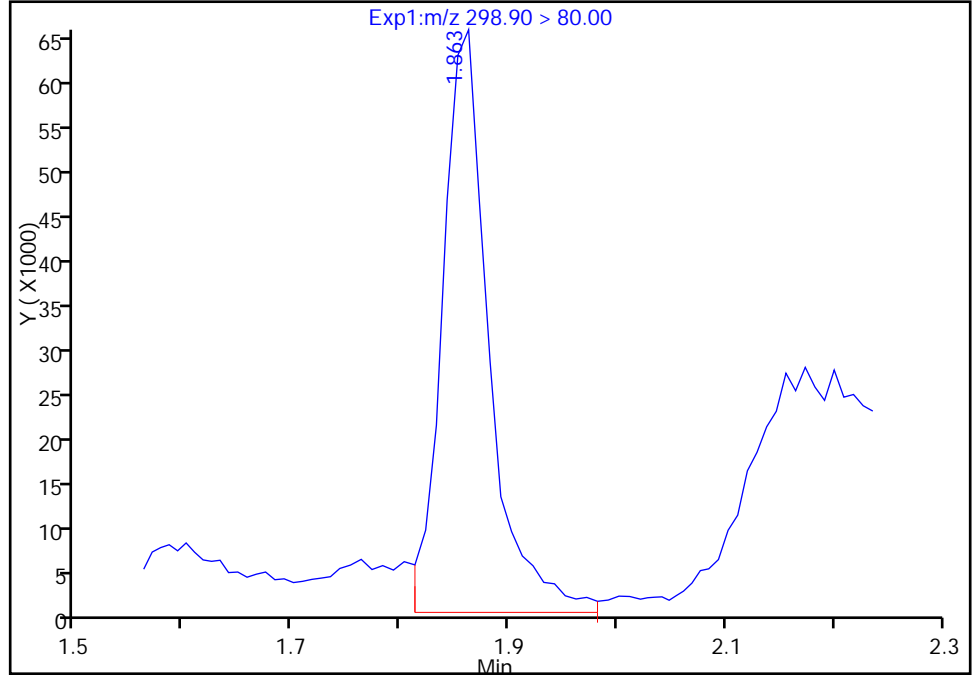
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_008.d
Injection Date: 08-Mar-2017 20:24:35 Instrument ID: A8_N
Lims ID: 320-26105-D-3-A Lab Sample ID: 320-26105-3
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

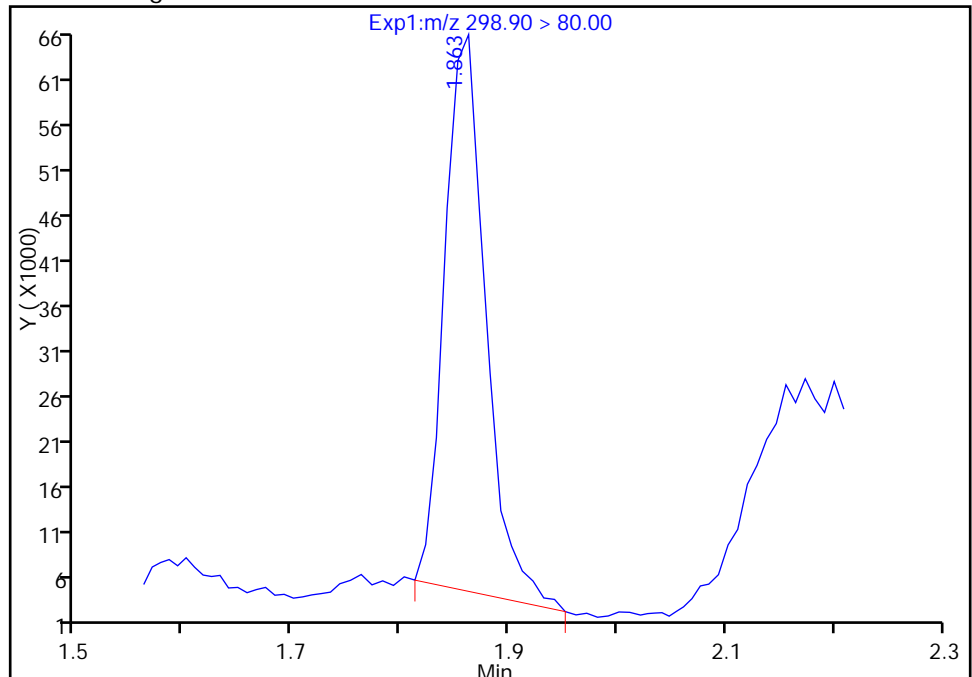
RT: 1.86
Area: 195665
Amount: 1.665909
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 162739
Amount: 0.277115
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 14:14:33
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

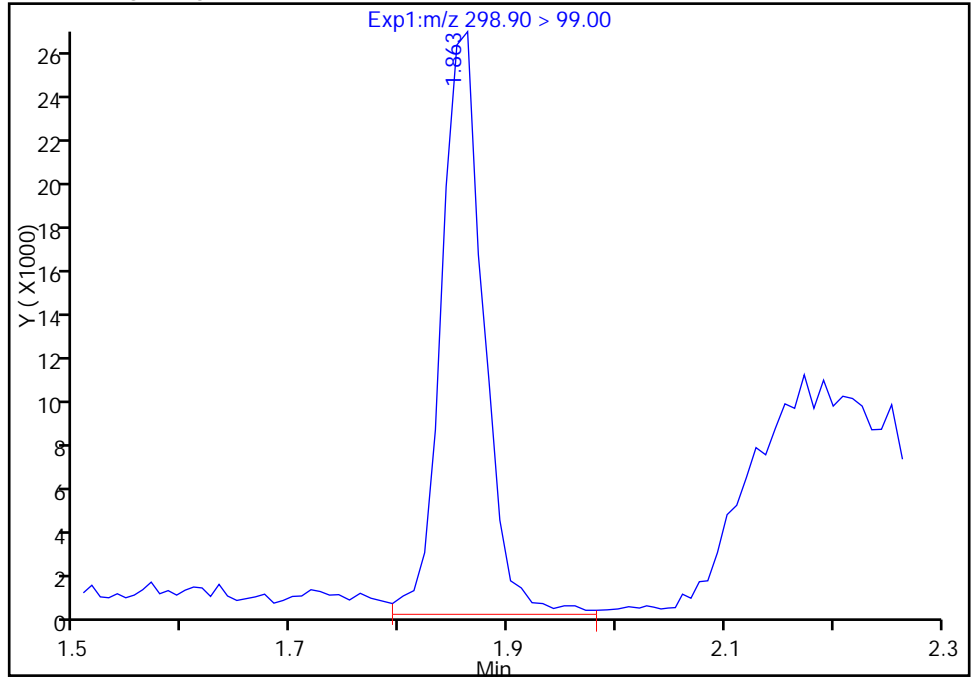
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_008.d
Injection Date: 08-Mar-2017 20:24:35 Instrument ID: A8_N
Lims ID: 320-26105-D-3-A Lab Sample ID: 320-26105-3
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

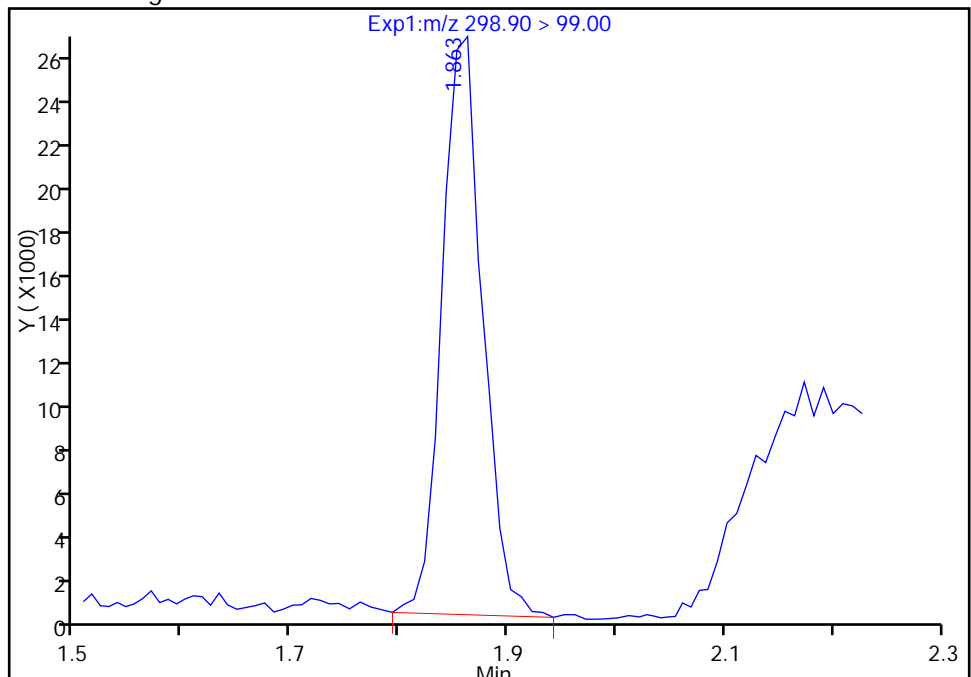
RT: 1.86
Area: 71559
Amount: 1.665909
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 67540
Amount: 0.277115
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD002-SB01-0204 Lab Sample ID: 320-26105-4
 Matrix: Solid Lab File ID: 2017.03.11C_042.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 09:00
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 4.95(g) Date Analyzed: 03/11/2017 17:20
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 17.5 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.37	U M	0.61	0.37	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.1	M	0.61	0.37	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.37	U M	0.49	0.37	0.13

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	100		25-150
STL00991	13C4 PFOS	58		25-150
STL00994	18O2 PFHxS	93		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_042.d
 Lims ID: 320-26105-A-4-A
 Client ID: MEAFF-BLD002-SB01-0204
 Sample Type: Client
 Inject. Date: 11-Mar-2017 17:20:05 ALS Bottle#: 33 Worklist Smp#: 39
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-4-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 11:26:35 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 13-Mar-2017 13:59:59

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	1.852	1.853	-0.001	1.000	92629	0.2397				M
298.90 > 99.00	1.852	1.853	-0.001	1.000	37733		2.45(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.463	2.467	-0.004		12758181	43.9		92.7	477330	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.809	0.005		10281439	50.2		100	406250	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.806	2.817	-0.011	1.000	80809	0.3847			651	M
413.00 > 169.00	2.822	2.817	0.005	1.006	52896		1.53(0.90-1.10)		2263	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.179	3.183	-0.004	1.000	1174506	8.57			36967	M
499.00 > 99.00	3.188	3.183	0.005	1.003	296612		3.96(0.90-1.10)		10458	M
D 18 13C4 PFOS										
503.00 > 80.00	3.188	3.183	0.005		6661748	27.6		57.7	244710	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_042.d

Injection Date: 11-Mar-2017 17:20:05

Instrument ID: A8_N

Lims ID: 320-26105-A-4-A

Lab Sample ID: 320-26105-4

Client ID: MEAFF-BLD002-SB01-0204

Operator ID: A8-PC\A8

ALS Bottle#: 33

Worklist Smp#: 39

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

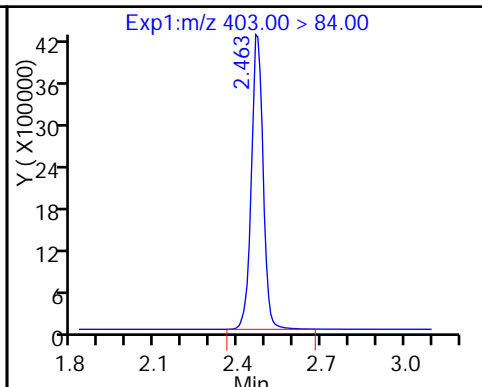
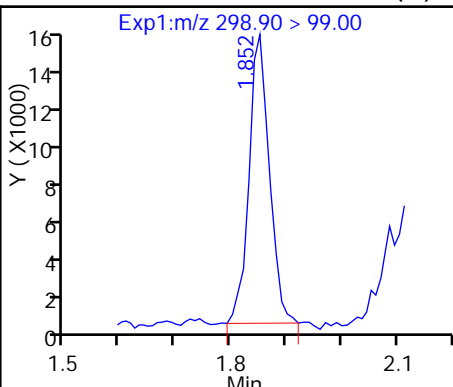
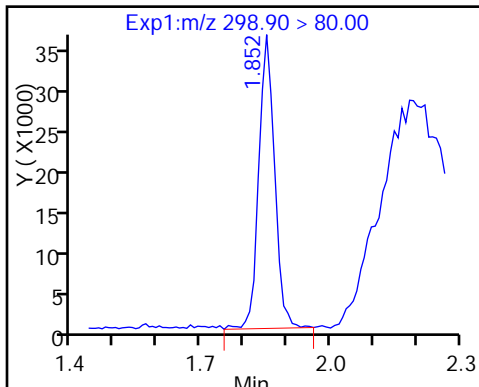
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid (M)

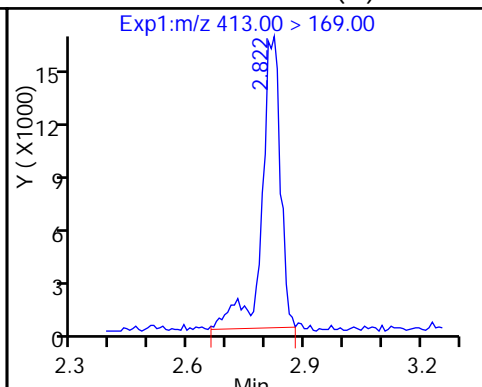
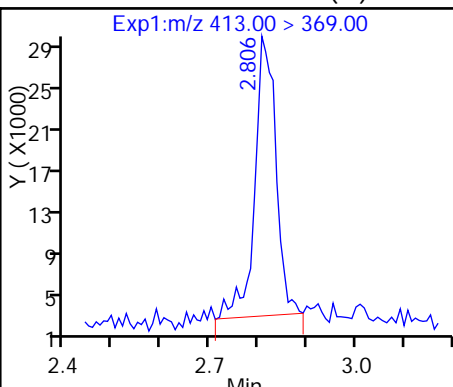
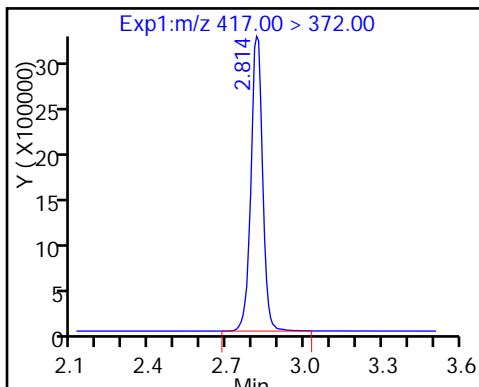
D 11 18O2 PFHxS



D 14 13C4 PFOA

15 Perfluorooctanoic acid (M)

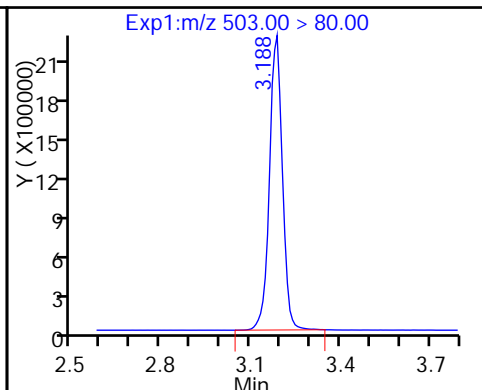
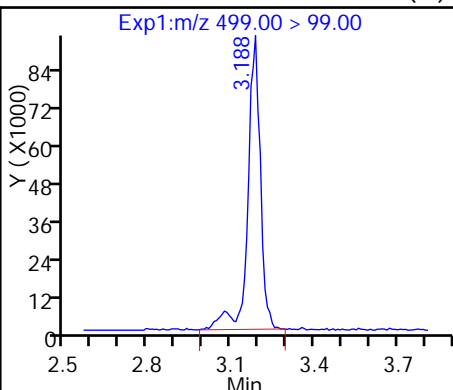
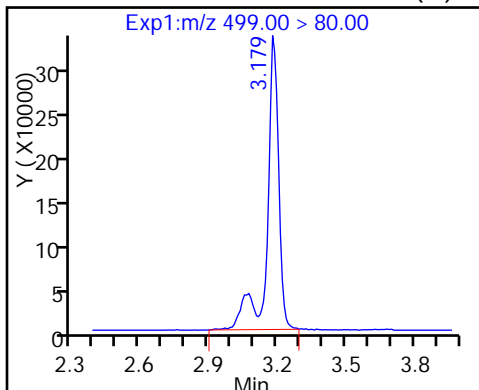
15 Perfluorooctanoic acid (M)



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

D 18 13C4 PFOS



TestAmerica Sacramento

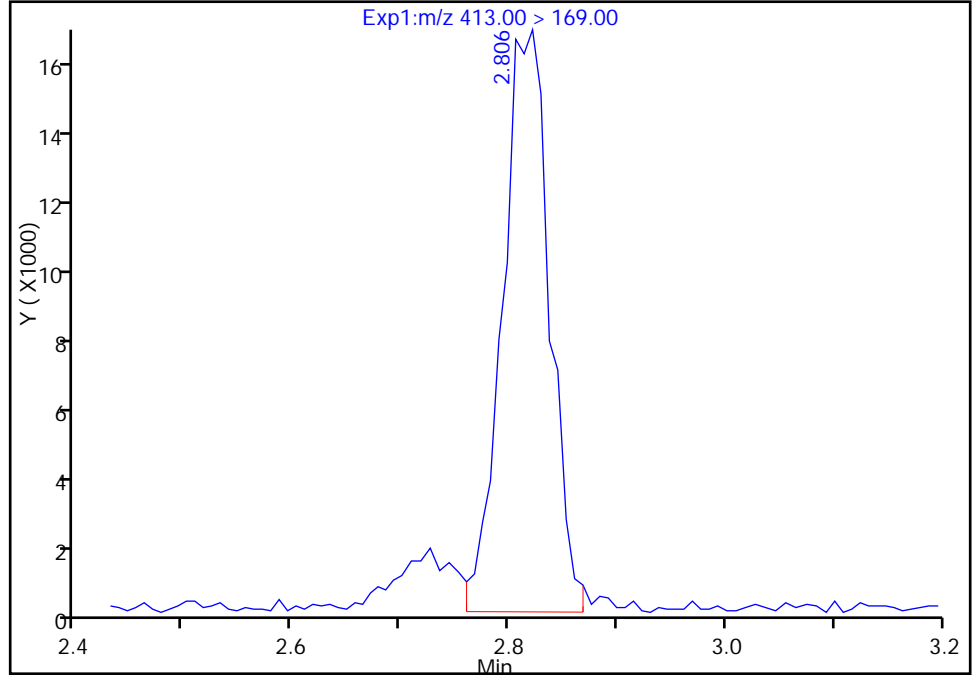
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_042.d
Injection Date: 11-Mar-2017 17:20:05 Instrument ID: A8_N
Lims ID: 320-26105-A-4-A Lab Sample ID: 320-26105-4
Client ID: MEAFF-BLD002-SB01-0204
Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 39
Injection Vol: 2.0 ul 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

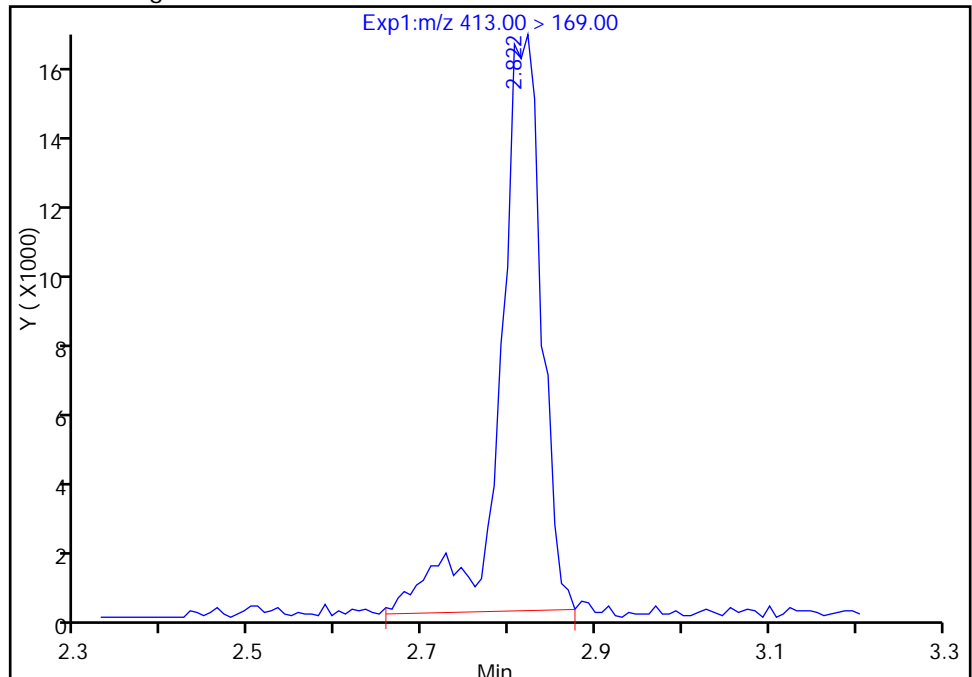
RT: 2.81
Area: 48288
Amount: 0.386672
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 52896
Amount: 0.384654
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:26:18
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

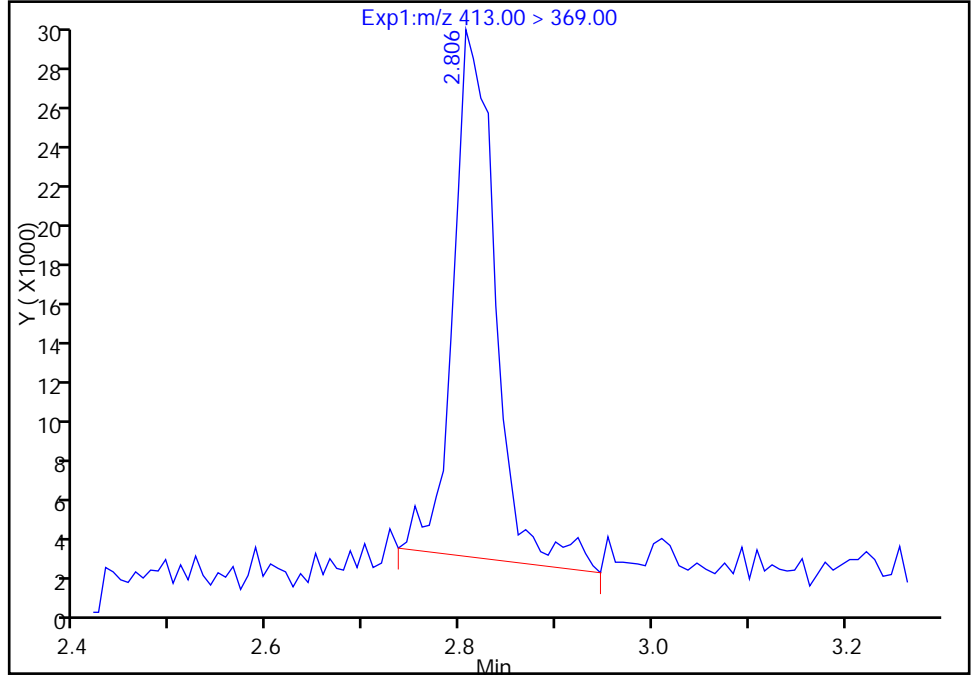
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Injection Date: 11-Mar-2017 17:20:05 Instrument ID: A8_N
Lims ID: 320-26105-A-4-A Lab Sample ID: 320-26105-4
Client ID: MEAFF-BLD002-SB01-0204
Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 39
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

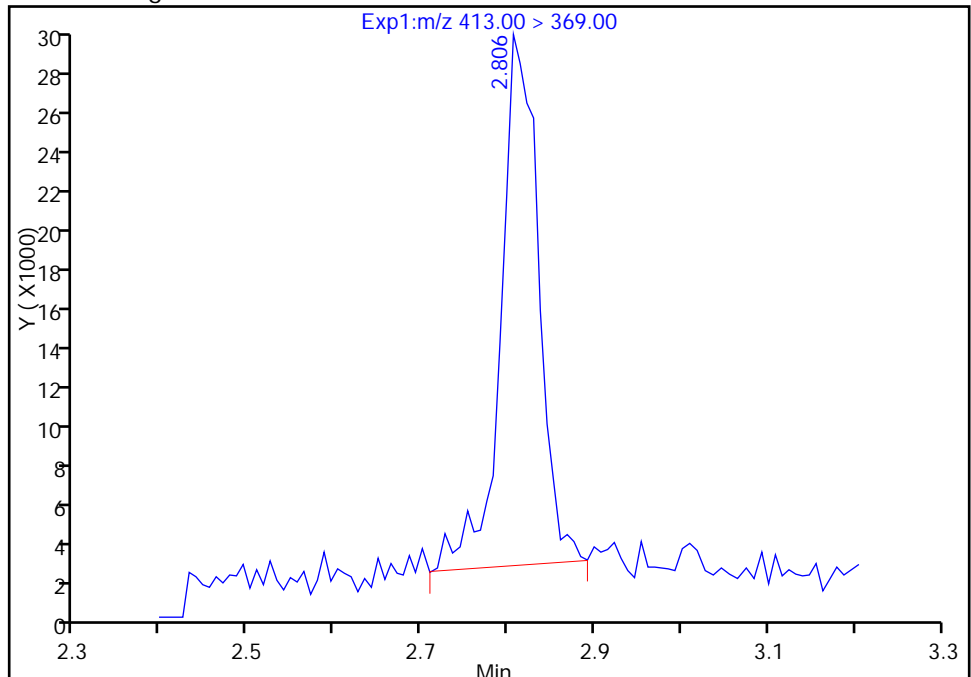
RT: 2.81
Area: 81233
Amount: 0.386672
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 80809
Amount: 0.384654
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:26:18

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

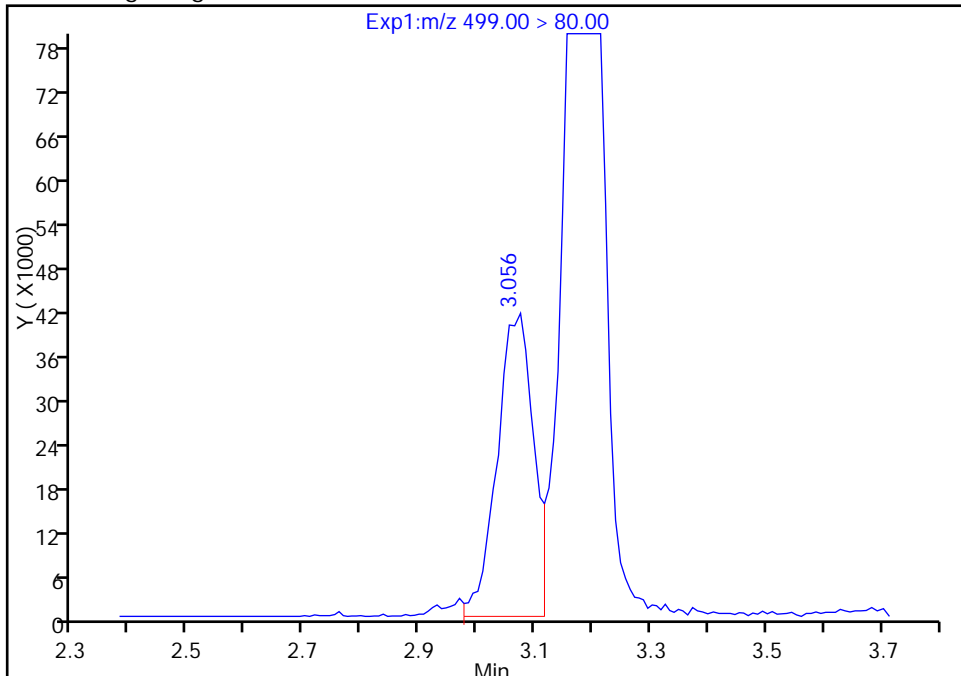
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_042.d
Injection Date: 11-Mar-2017 17:20:05 Instrument ID: A8_N
Lims ID: 320-26105-A-4-A Lab Sample ID: 320-26105-4
Client ID: MEAFF-BLD002-SB01-0204
Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 39
Injection Vol: 2.0 ul 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

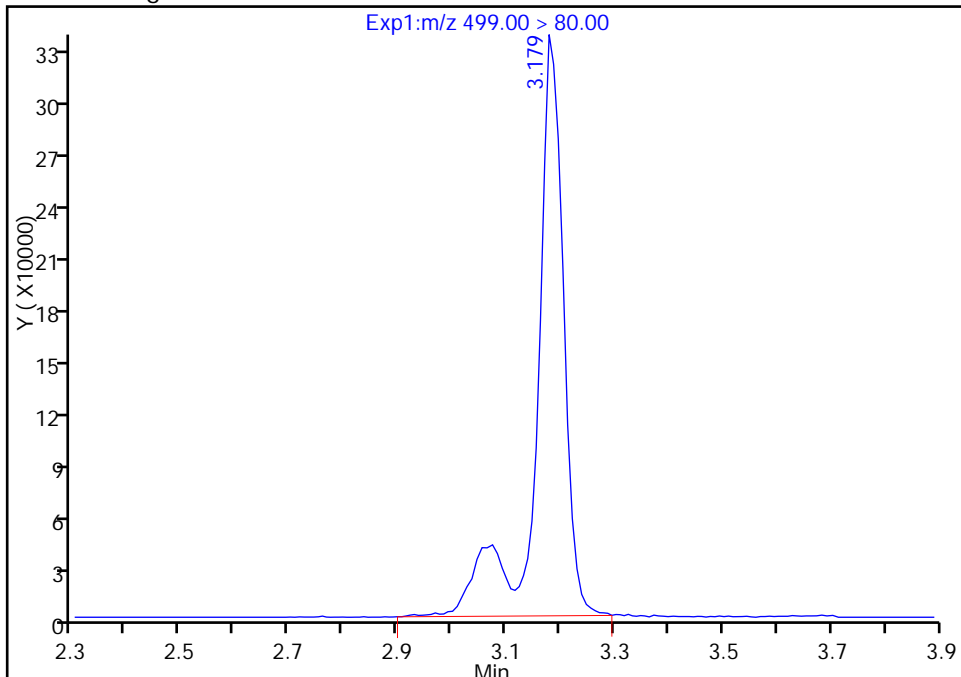
RT: 3.06
Area: 179148
Amount: 1.307029
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 1174506
Amount: 8.568965
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:26:18
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

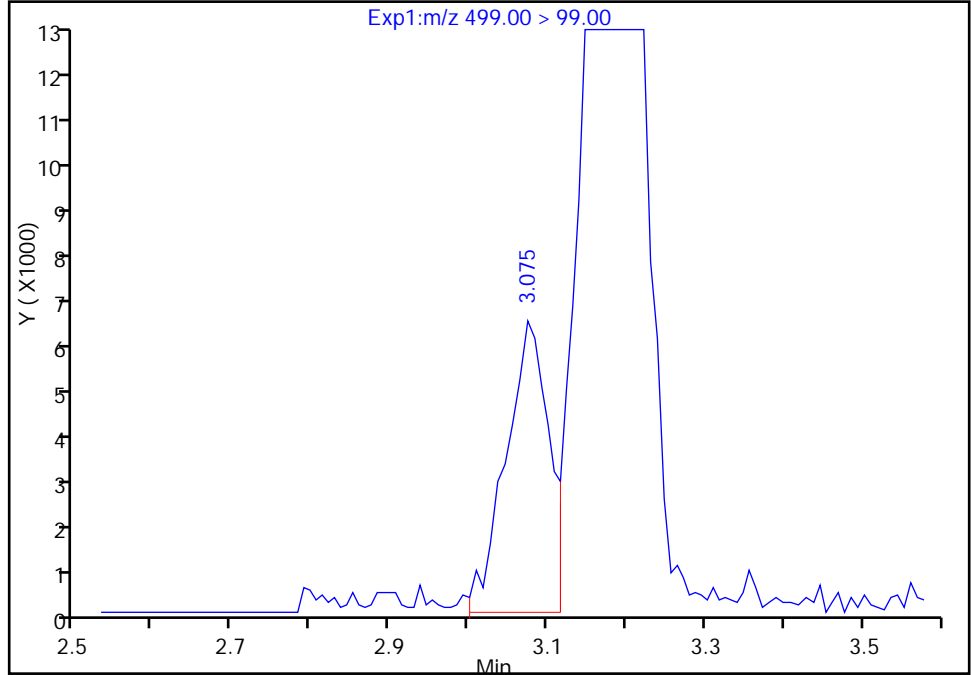
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_042.d
Injection Date: 11-Mar-2017 17:20:05 Instrument ID: A8_N
Lims ID: 320-26105-A-4-A Lab Sample ID: 320-26105-4
Client ID: MEAFF-BLD002-SB01-0204
Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 39
Injection Vol: 2.0 ul 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

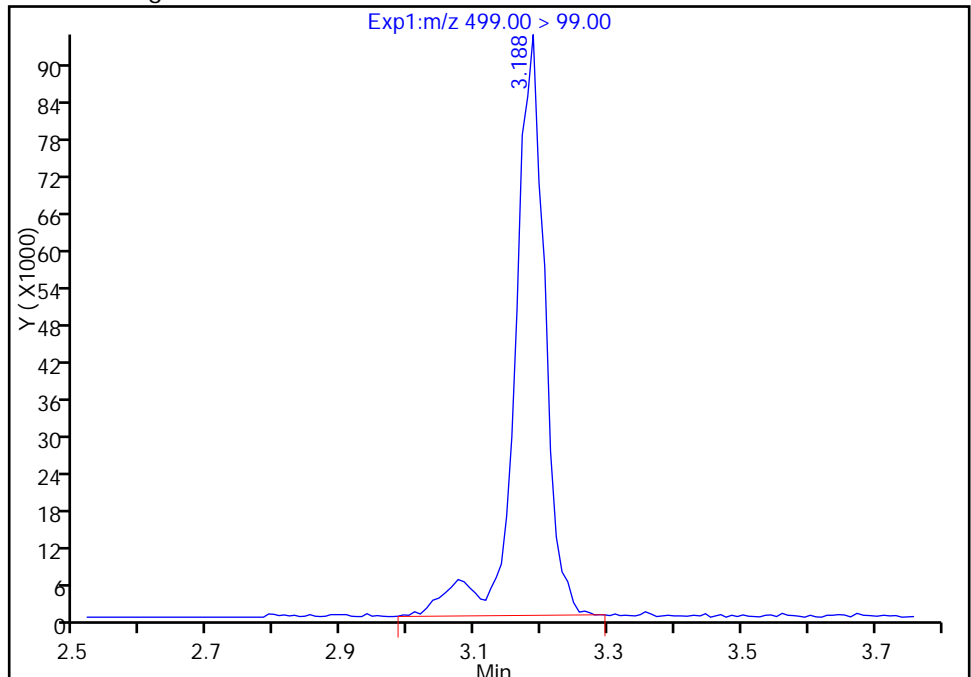
RT: 3.07
Area: 22745
Amount: 1.307029
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 296612
Amount: 8.568965
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:26:18

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

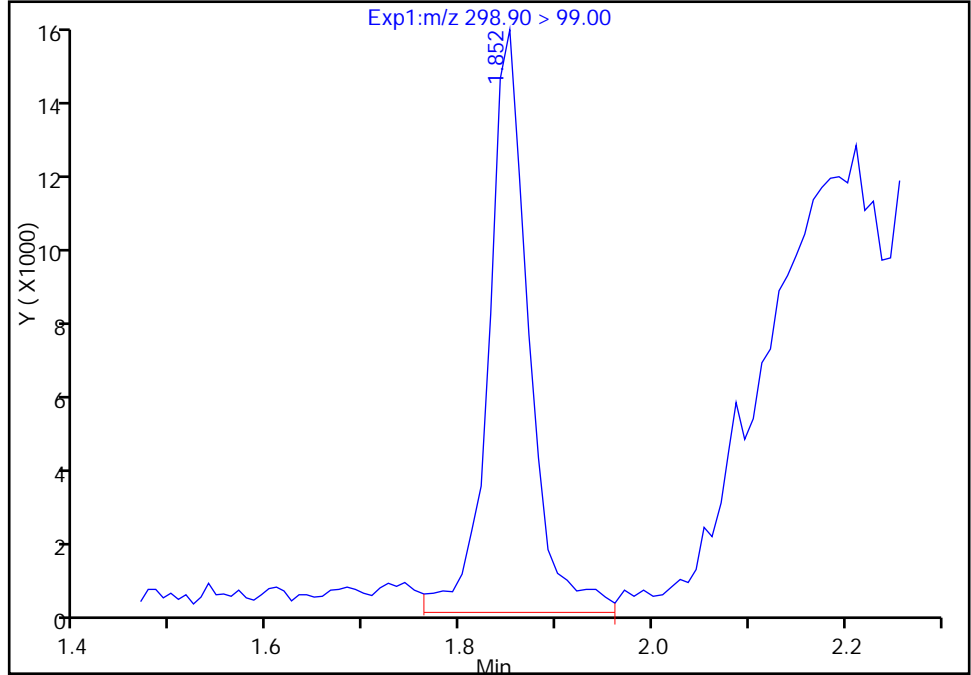
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_042.d
Injection Date: 11-Mar-2017 17:20:05 Instrument ID: A8_N
Lims ID: 320-26105-A-4-A Lab Sample ID: 320-26105-4
Client ID: MEAFF-BLD002-SB01-0204
Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 39
Injection Vol: 2.0 ul 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

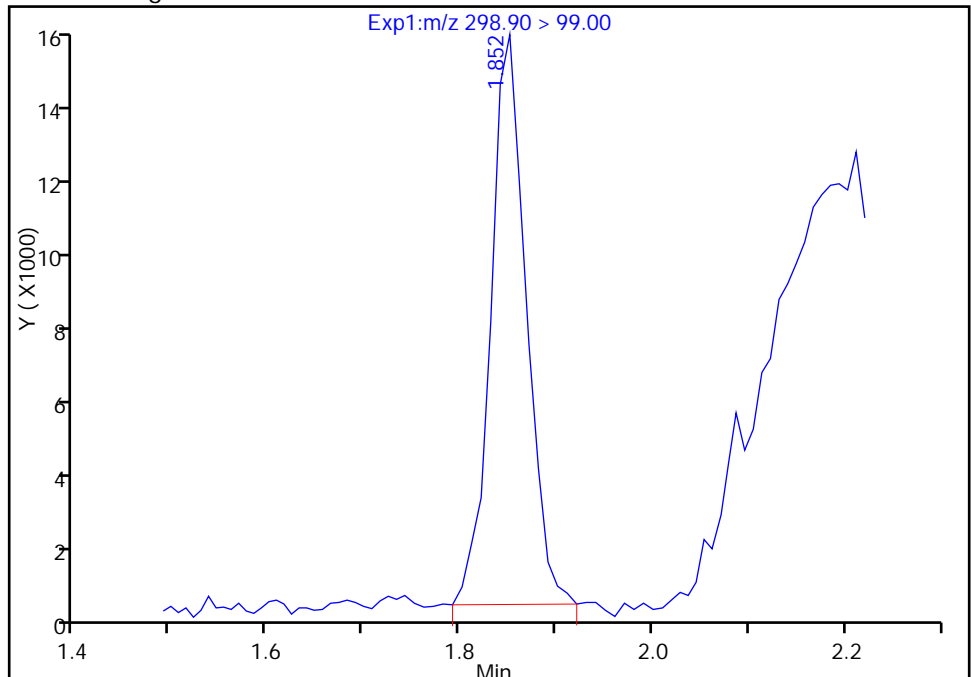
RT: 1.85
Area: 44152
Amount: 0.239730
Amount Units: ng/ml

Processing Integration Results



RT: 1.85
Area: 37733
Amount: 0.239730
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 11:26:31
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD002-SB01-0001 Lab Sample ID: 320-26105-5
 Matrix: Solid Lab File ID: 2017.03.11C_043.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 09:05
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.08(g) Date Analyzed: 03/11/2017 17:27
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 10.1 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.25	J M	0.55	0.33	0.11
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	19	M	0.55	0.33	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.33	U M	0.44	0.33	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	109		25-150
STL00991	13C4 PFOS	83		25-150
STL00994	18O2 PFHxS	93		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_043.d
 Lims ID: 320-26105-A-5-A
 Client ID: MEAFF-BLD002-SB01-0001
 Sample Type: Client
 Inject. Date: 11-Mar-2017 17:27:35 ALS Bottle#: 34 Worklist Smp#: 40
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-5-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 11:27:23 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 13-Mar-2017 14:00:41

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	1.853	1.853	0.0	1.000	27065	0.0701				M
298.90 > 99.00	1.843	1.853	-0.010	0.995	10843		2.50(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.465	2.467	-0.002		12744754	43.8		92.6	431325	
D 14 13C4 PFOA										
417.00 > 372.00	2.815	2.809	0.006		11214376	54.7		109	372954	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.815	2.817	-0.002	1.000	265261	1.16			1945	M
413.00 > 169.00	2.815	2.817	-0.002	1.000	165573		1.60(0.90-1.10)		5322	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.189	3.183	0.006	1.000	17528302	88.9			426475	M
499.00 > 99.00	3.189	3.183	0.006	1.000	4179039		4.19(0.90-1.10)		596962	M
D 18 13C4 PFOS										
503.00 > 80.00	3.180	3.183	-0.003		9586182	39.7		83.0	159976	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_043.d

Injection Date: 11-Mar-2017 17:27:35

Instrument ID: A8_N

Lims ID: 320-26105-A-5-A

Lab Sample ID: 320-26105-5

Client ID: MEAFF-BLD002-SB01-0001

Operator ID: A8-PC\A8

ALS Bottle#: 34

Worklist Smp#: 40

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

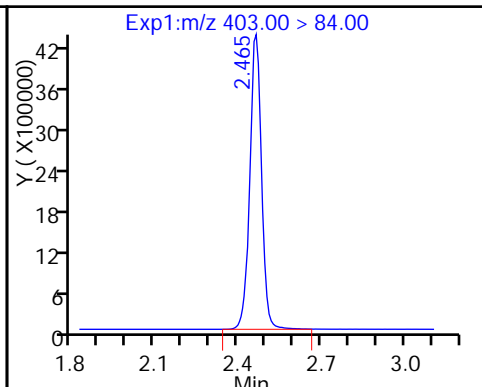
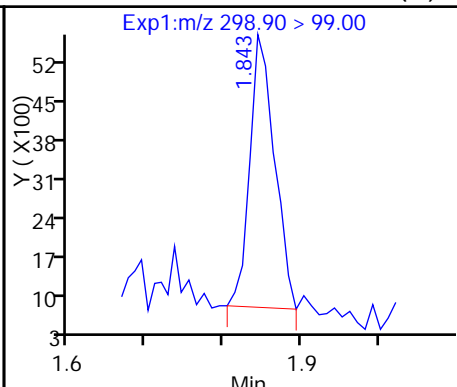
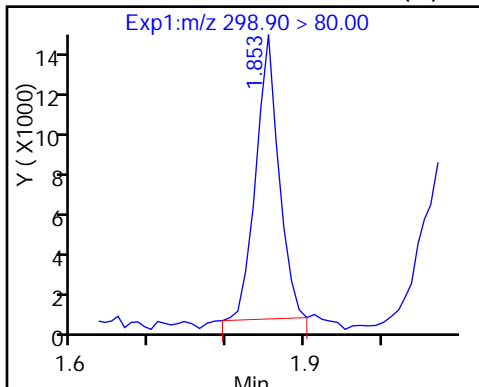
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

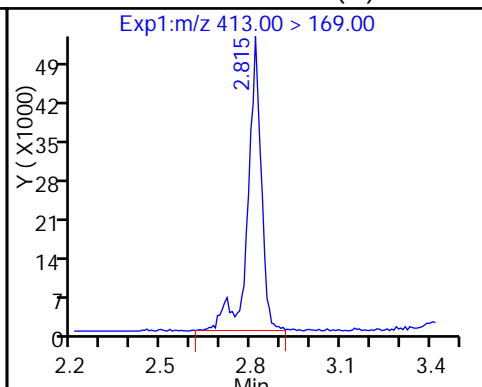
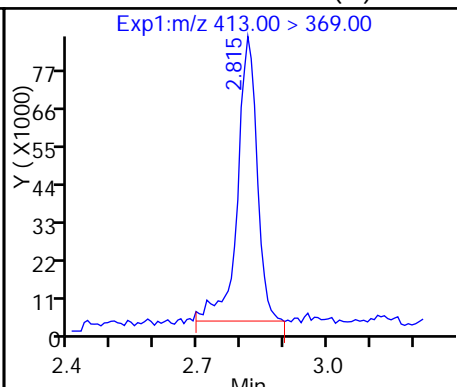
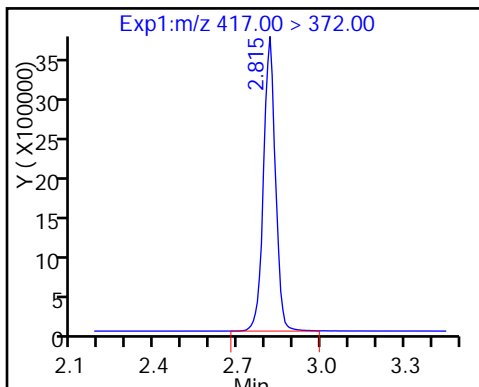
D 11 18O2 PFHxS



D 14 13C4 PFOA

15 Perfluorooctanoic acid (M)

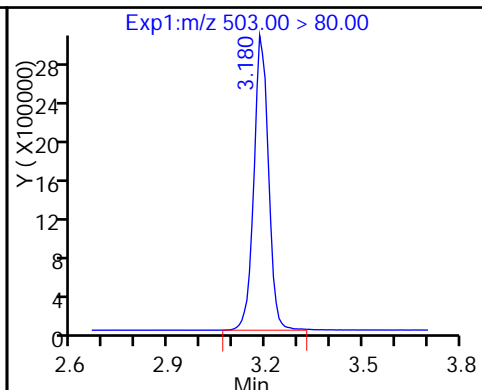
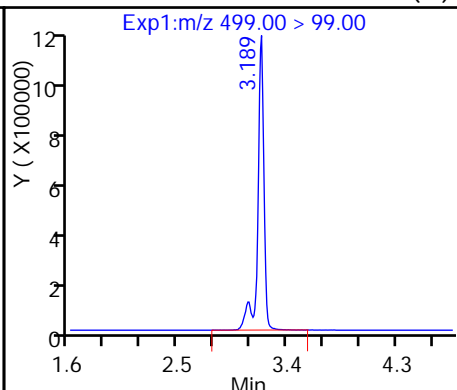
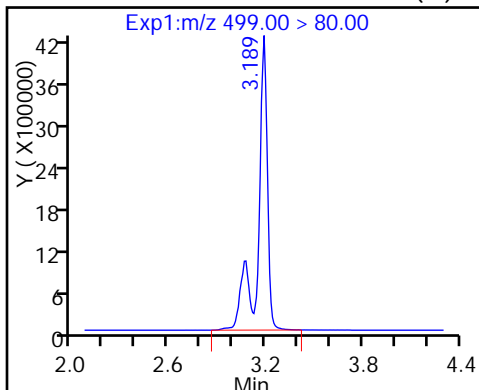
15 Perfluorooctanoic acid (M)



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

D 18 13C4 PFOS



TestAmerica Sacramento

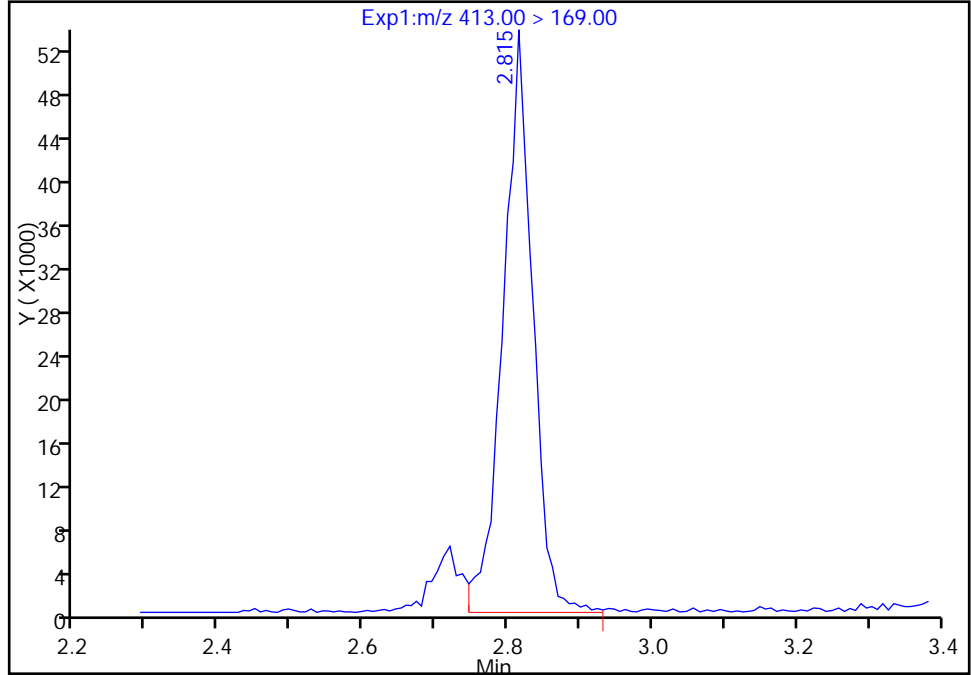
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_043.d
Injection Date: 11-Mar-2017 17:27:35 Instrument ID: A8_N
Lims ID: 320-26105-A-5-A Lab Sample ID: 320-26105-5
Client ID: MEAFF-BLD002-SB01-0001
Operator ID: A8-PC\A8 ALS Bottle#: 34 Worklist Smp#: 40
Injection Vol: 2.0 ul 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

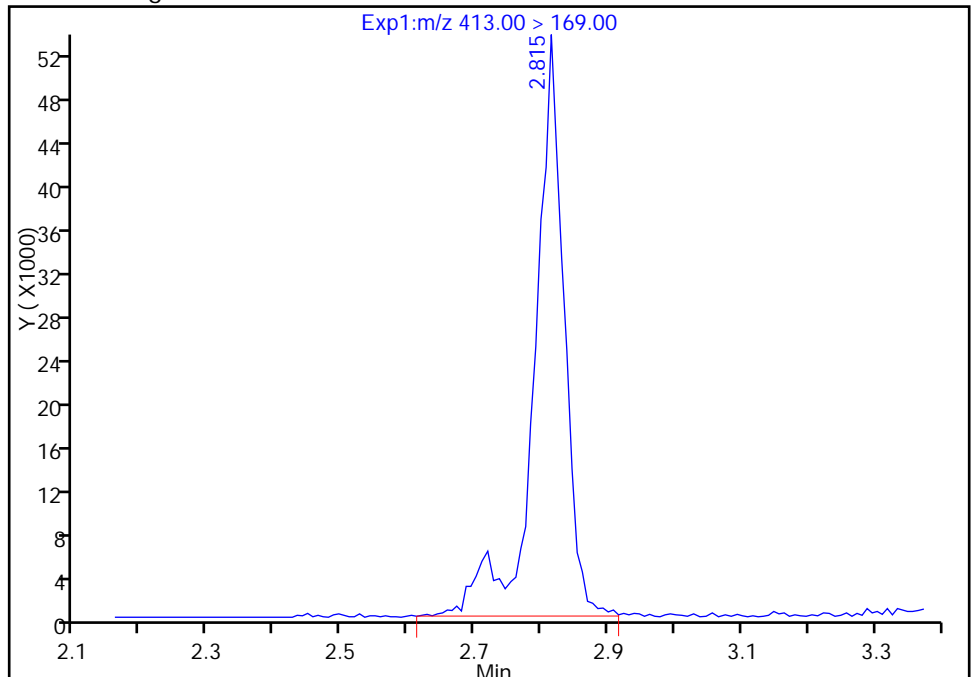
RT: 2.81
Area: 151512
Amount: 1.128424
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 165573
Amount: 1.157611
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:26:39
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

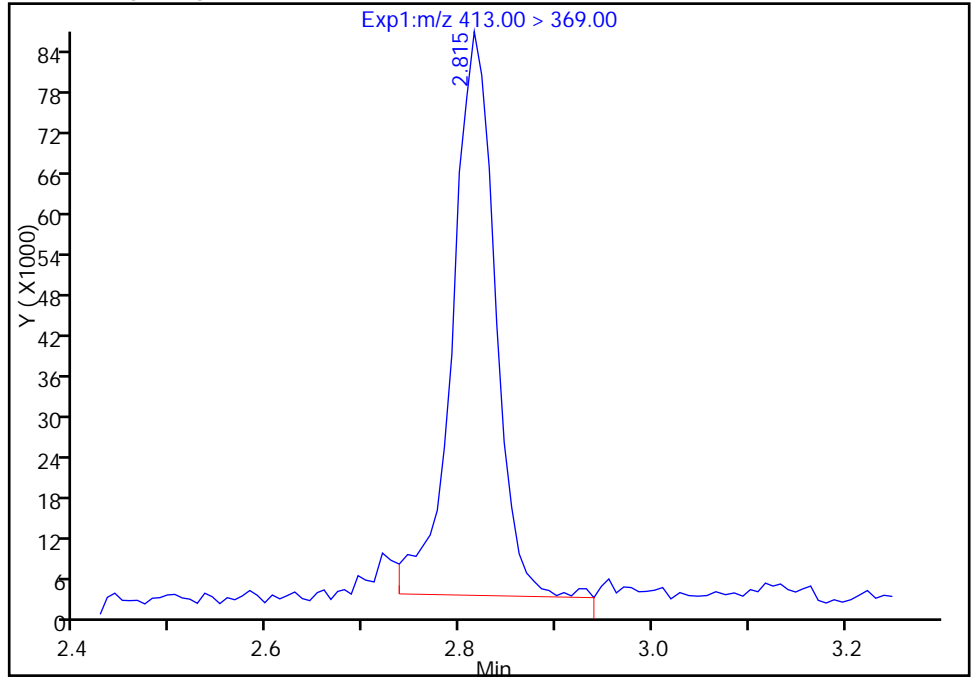
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_043.d
Injection Date: 11-Mar-2017 17:27:35 Instrument ID: A8_N
Lims ID: 320-26105-A-5-A Lab Sample ID: 320-26105-5
Client ID: MEAFF-BLD002-SB01-0001
Operator ID: A8-PC\A8 ALS Bottle#: 34 Worklist Smp#: 40
Injection Vol: 2.0 ul 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

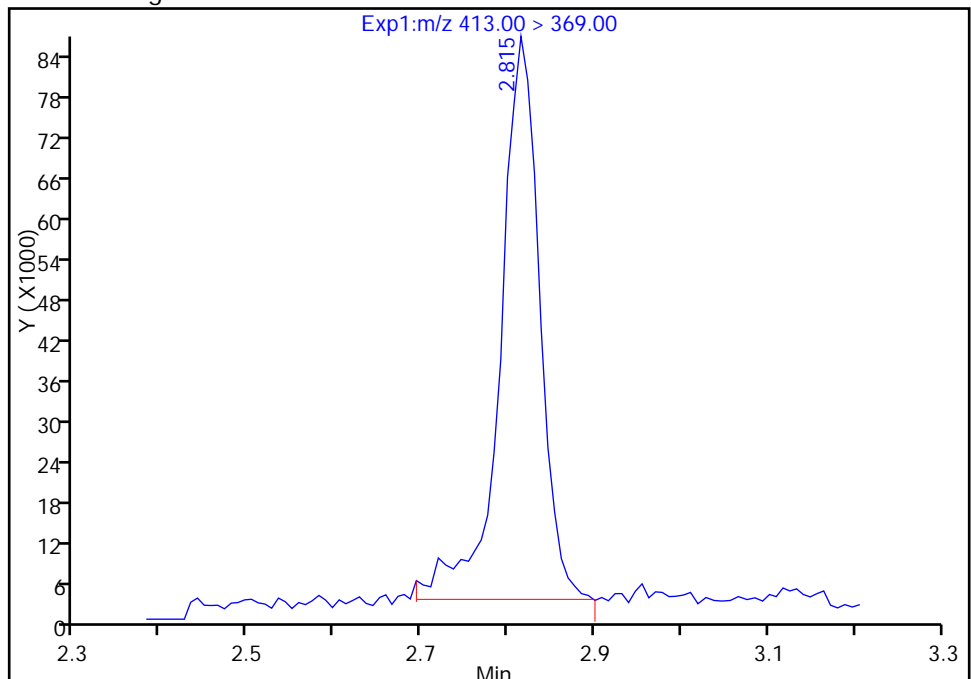
RT: 2.81
Area: 258573
Amount: 1.128424
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 265261
Amount: 1.157611
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:26:39

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

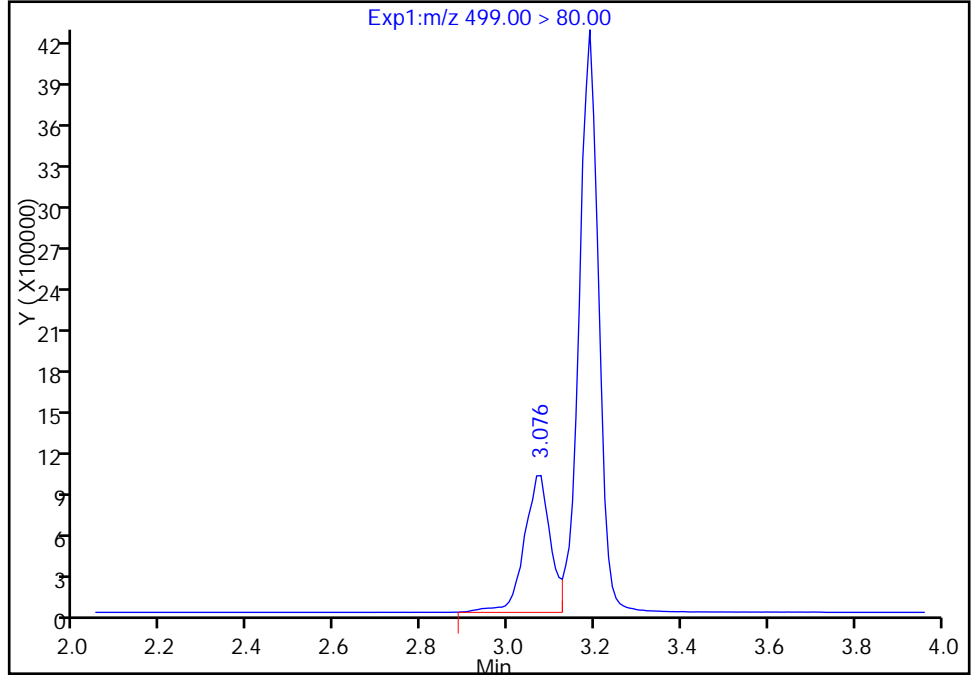
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_043.d
Injection Date: 11-Mar-2017 17:27:35 Instrument ID: A8_N
Lims ID: 320-26105-A-5-A Lab Sample ID: 320-26105-5
Client ID: MEAFF-BLD002-SB01-0001
Operator ID: A8-PC\A8 ALS Bottle#: 34 Worklist Smp#: 40
Injection Vol: 2.0 ul 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

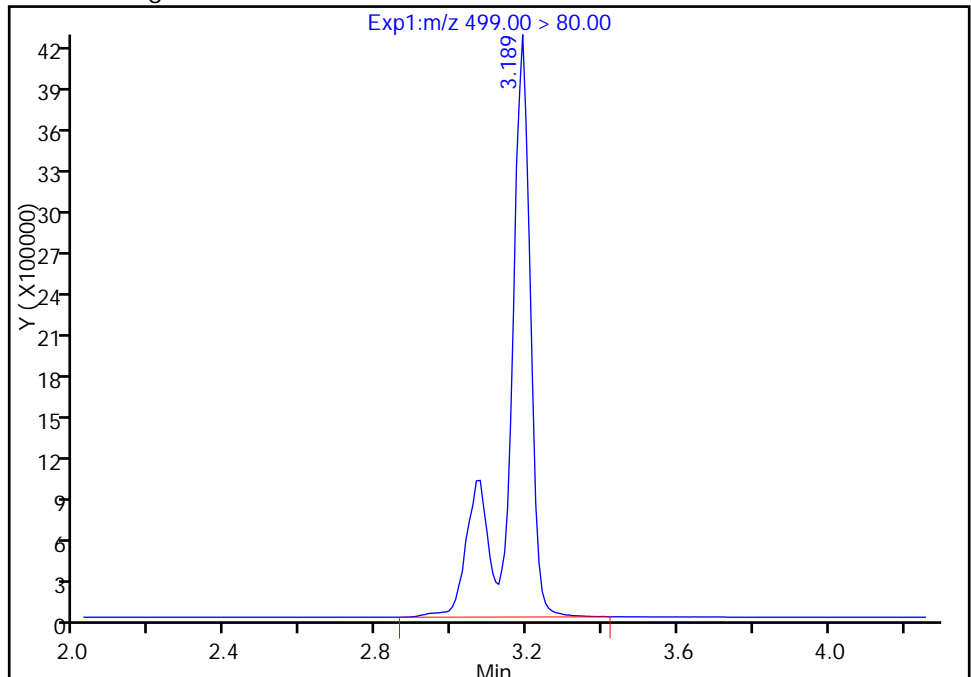
RT: 3.08
Area: 4195161
Amount: 21.269844
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 17528302
Amount: 88.870071
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:26:39
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

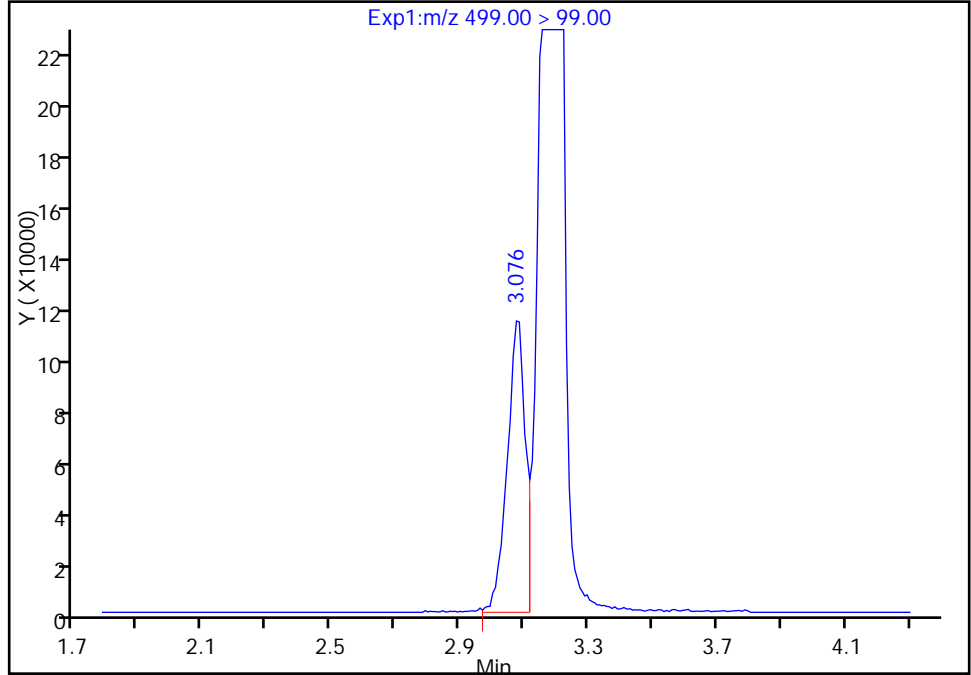
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_043.d
Injection Date: 11-Mar-2017 17:27:35 Instrument ID: A8_N
Lims ID: 320-26105-A-5-A Lab Sample ID: 320-26105-5
Client ID: MEAFF-BLD002-SB01-0001
Operator ID: A8-PC\A8 ALS Bottle#: 34 Worklist Smp#: 40
Injection Vol: 2.0 ul 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

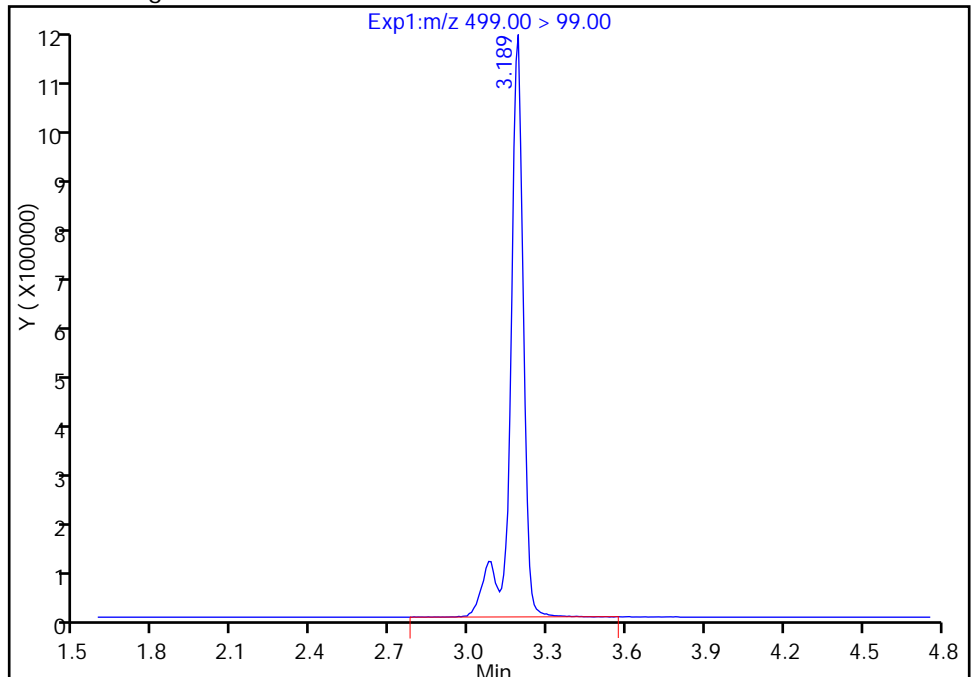
RT: 3.08
Area: 441281
Amount: 21.269844
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 4179039
Amount: 88.870071
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

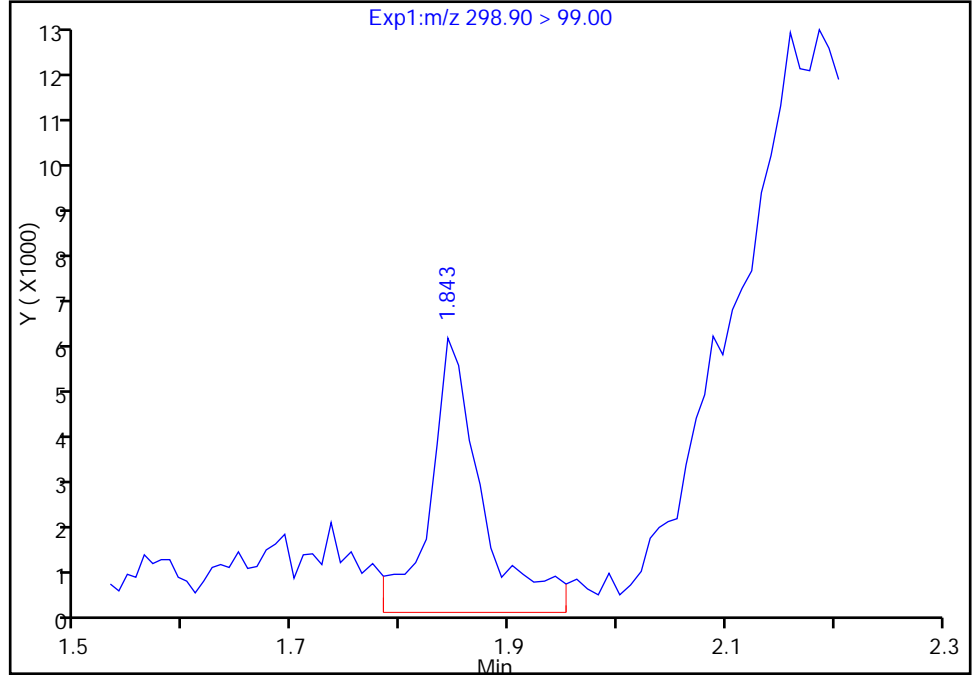
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_043.d
Injection Date: 11-Mar-2017 17:27:35 Instrument ID: A8_N
Lims ID: 320-26105-A-5-A Lab Sample ID: 320-26105-5
Client ID: MEAFF-BLD002-SB01-0001
Operator ID: A8-PC\A8 ALS Bottle#: 34 Worklist Smp#: 40
Injection Vol: 2.0 ul 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

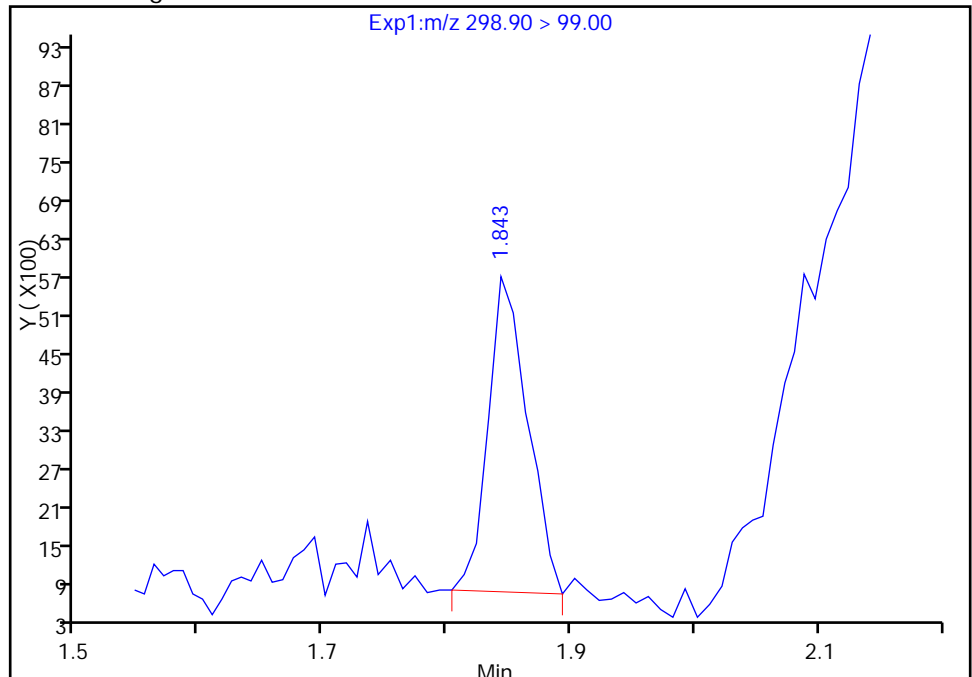
RT: 1.84
Area: 18440
Amount: 0.094585
Amount Units: ng/ml

Processing Integration Results



RT: 1.84
Area: 10843
Amount: 0.070120
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 11:26:56
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

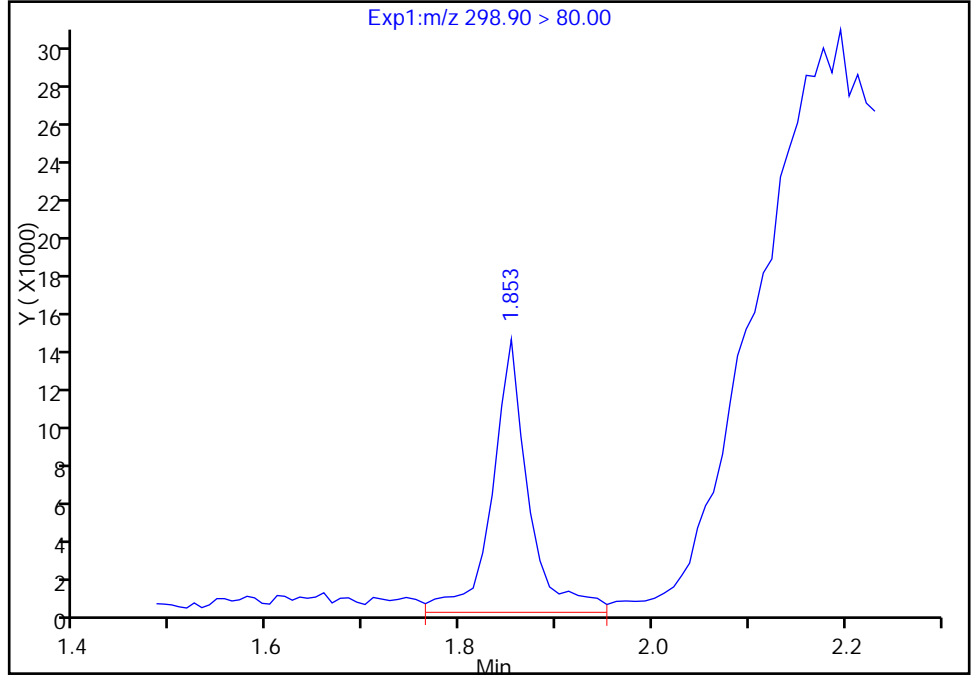
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_043.d
Injection Date: 11-Mar-2017 17:27:35 Instrument ID: A8_N
Lims ID: 320-26105-A-5-A Lab Sample ID: 320-26105-5
Client ID: MEAFF-BLD002-SB01-0001
Operator ID: A8-PC\A8 ALS Bottle#: 34 Worklist Smp#: 40
Injection Vol: 2.0 ul 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

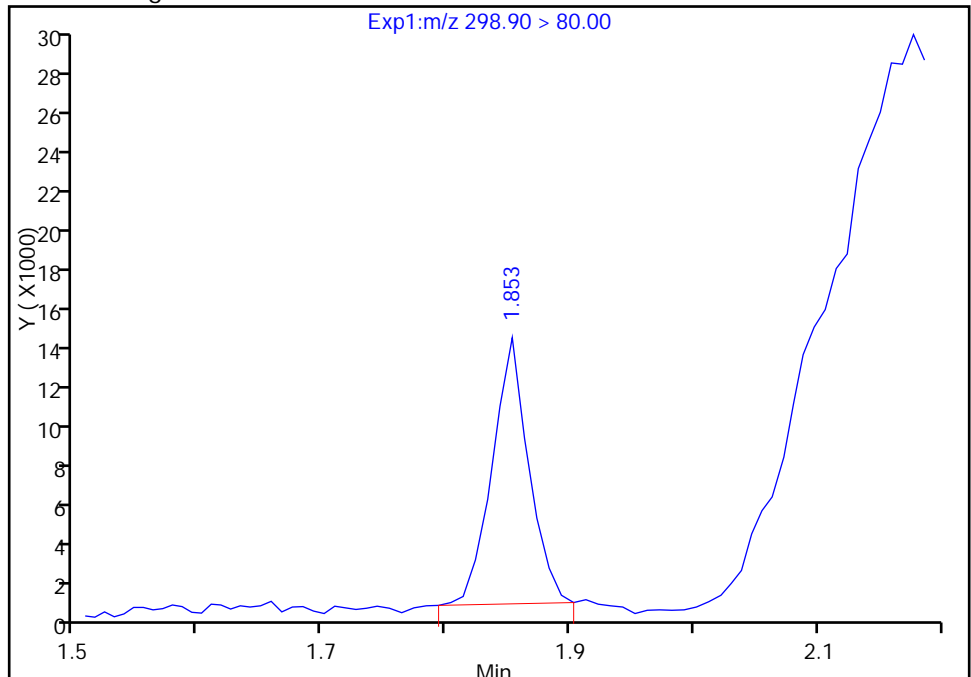
RT: 1.85
Area: 36508
Amount: 0.094585
Amount Units: ng/ml

Processing Integration Results



RT: 1.85
Area: 27065
Amount: 0.070120
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 11:27:17

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD002-SB02-0001 Lab Sample ID: 320-26105-6
 Matrix: Solid Lab File ID: 2017.03.11C_044.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 09:15
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 4.98(g) Date Analyzed: 03/11/2017 17:35
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 12.8 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	6.3	M	0.58	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	21	M	0.58	0.35	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.35	U M	0.46	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	95		25-150
STL00991	13C4 PFOS	61		25-150
STL00994	18O2 PFHxS	92		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_044.d
 Lims ID: 320-26105-A-6-A
 Client ID: MEAFF-BLD002-SB02-0001
 Sample Type: Client
 Inject. Date: 11-Mar-2017 17:35:05 ALS Bottle#: 35 Worklist Smp#: 41
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-6-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 11:27:45 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 13-Mar-2017 14:01:17

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	1.853	1.853	0.0	1.000	44553	0.1163				M
298.90 > 99.00	1.853	1.853	0.0	1.000	16572		2.69(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.472	2.467	0.005		12648603	43.5		91.9	488188	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.809	0.005		9744617	47.5		95.1	322169	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.814	2.817	-0.003	1.000	5456335	27.4			54901	M
413.00 > 169.00	2.814	2.817	-0.003	1.000	3335083		1.64(0.90-1.10)		87310	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.188	3.183	0.005	1.000	13393439	92.6			152212	M
499.00 > 99.00	3.188	3.183	0.005	1.000	2837623		4.72(0.90-1.10)		113828	M
D 18 13C4 PFOS										
503.00 > 80.00	3.188	3.183	0.005		7029131	29.1		60.9	101647	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_044.d

Injection Date: 11-Mar-2017 17:35:05

Instrument ID: A8_N

Lims ID: 320-26105-A-6-A

Lab Sample ID: 320-26105-6

Client ID: MEAFF-BLD002-SB02-0001

Operator ID: A8-PC\A8

ALS Bottle#: 35

Worklist Smp#: 41

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

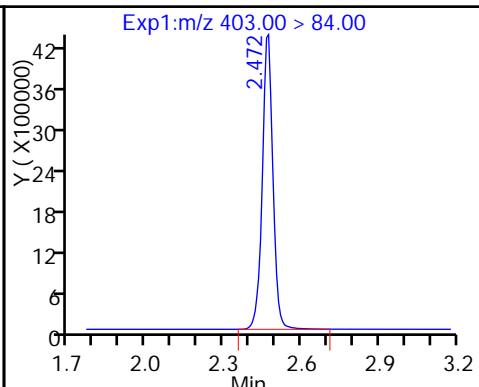
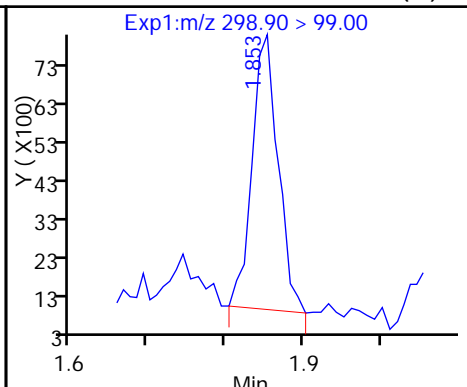
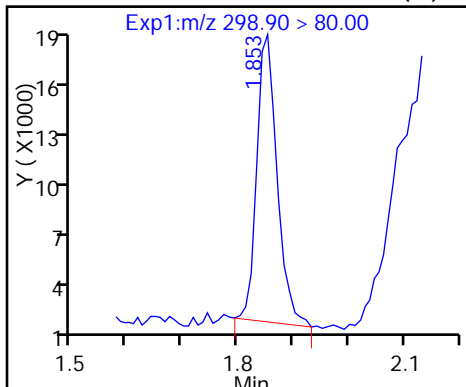
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

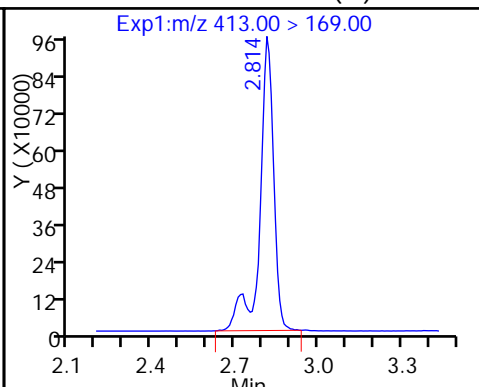
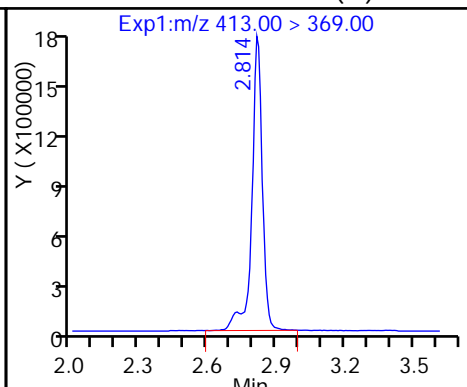
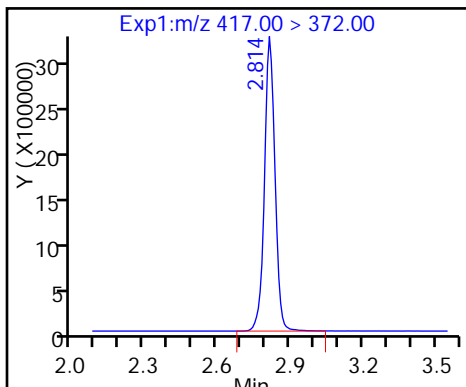
D 11 18O2 PFHxS



D 14 13C4 PFOA

15 Perfluorooctanoic acid (M)

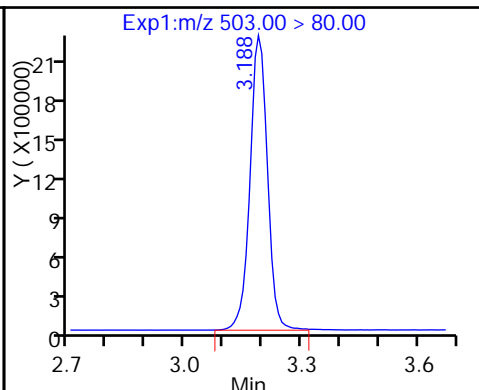
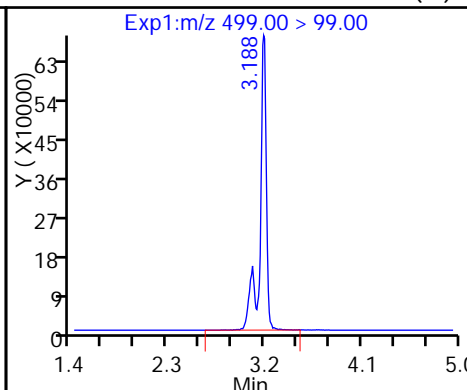
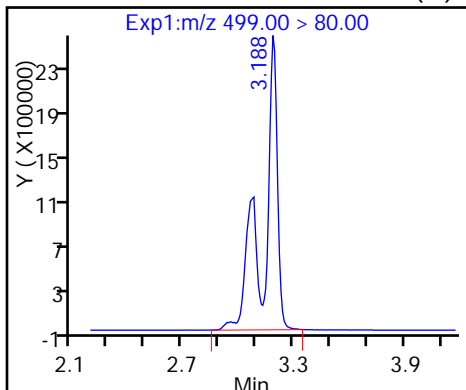
15 Perfluorooctanoic acid (M)



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

D 18 13C4 PFOS



TestAmerica Sacramento

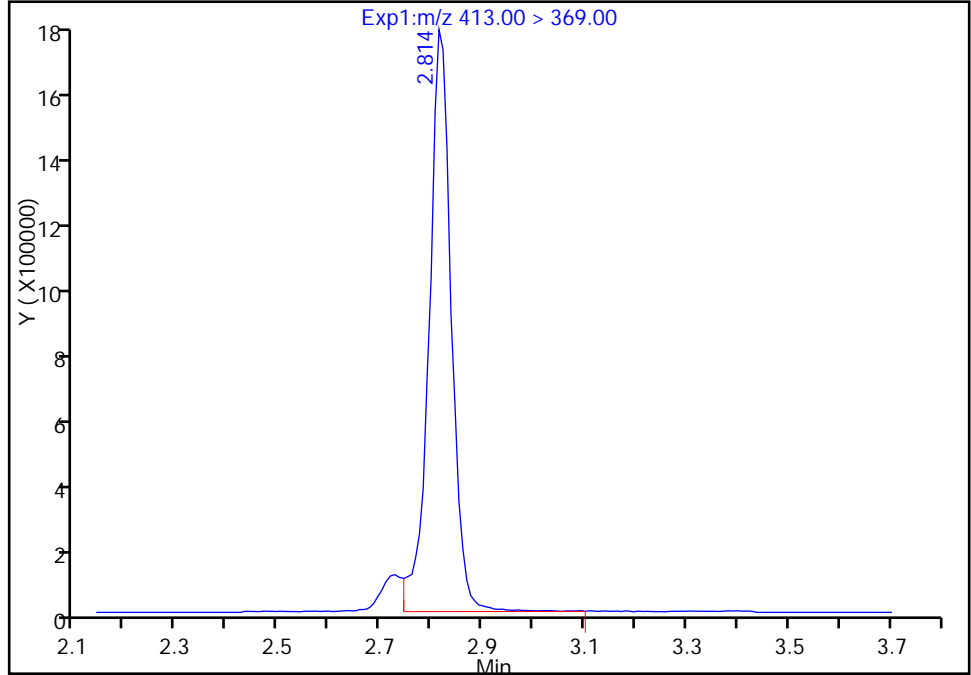
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_044.d
Injection Date: 11-Mar-2017 17:35:05 Instrument ID: A8_N
Lims ID: 320-26105-A-6-A Lab Sample ID: 320-26105-6
Client ID: MEAFF-BLD002-SB02-0001
Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 41
Injection Vol: 2.0 ul 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

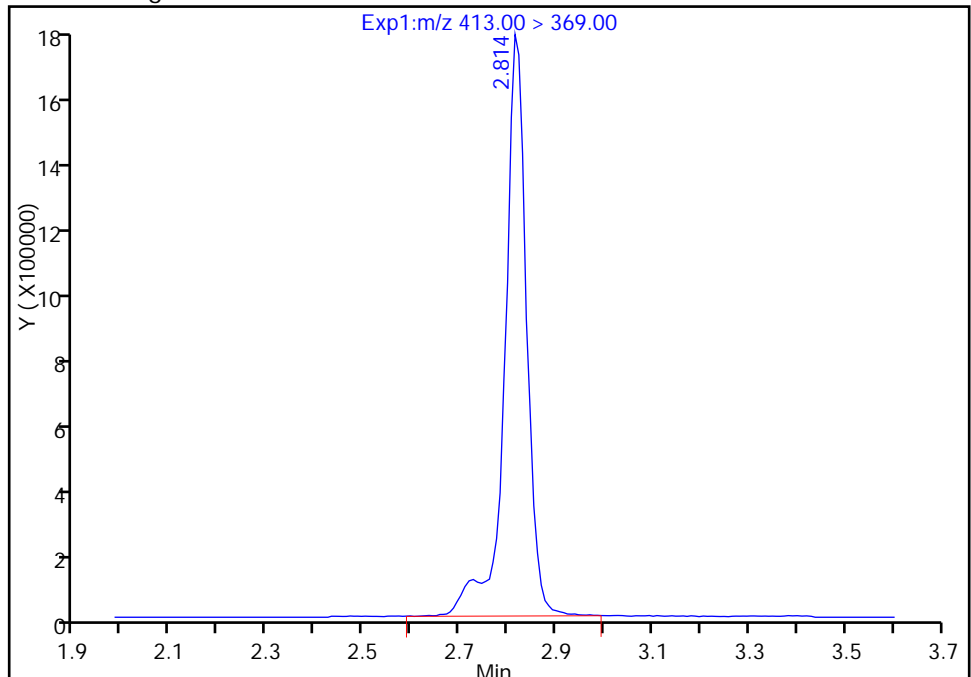
RT: 2.81
Area: 5178542
Amount: 26.008003
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 5456335
Amount: 27.403153
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:27:25
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

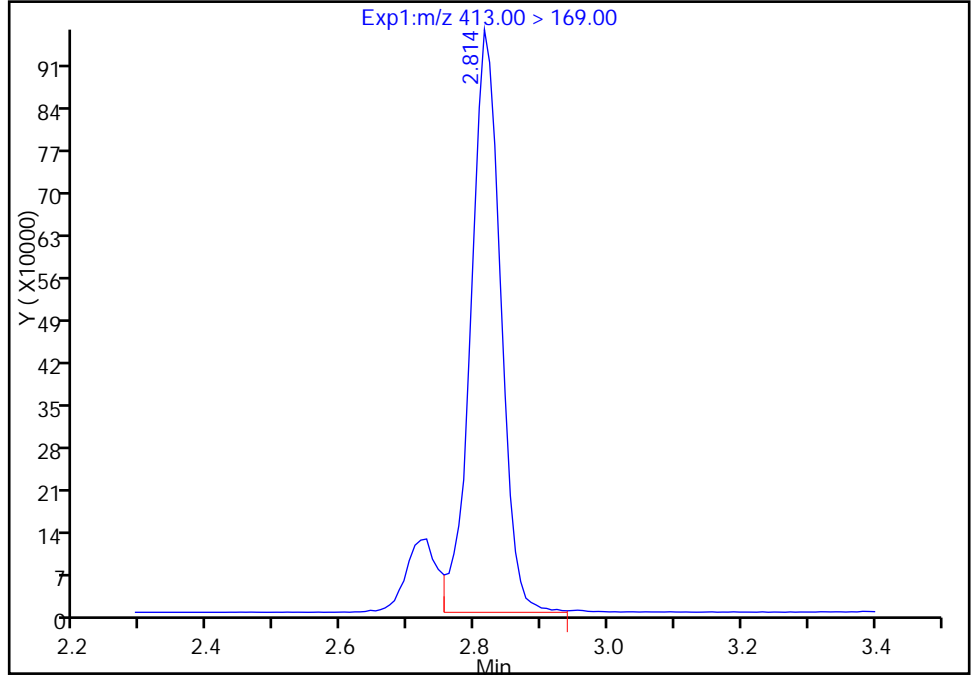
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_044.d
Injection Date: 11-Mar-2017 17:35:05 Instrument ID: A8_N
Lims ID: 320-26105-A-6-A Lab Sample ID: 320-26105-6
Client ID: MEAFF-BLD002-SB02-0001
Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 41
Injection Vol: 2.0 ul 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

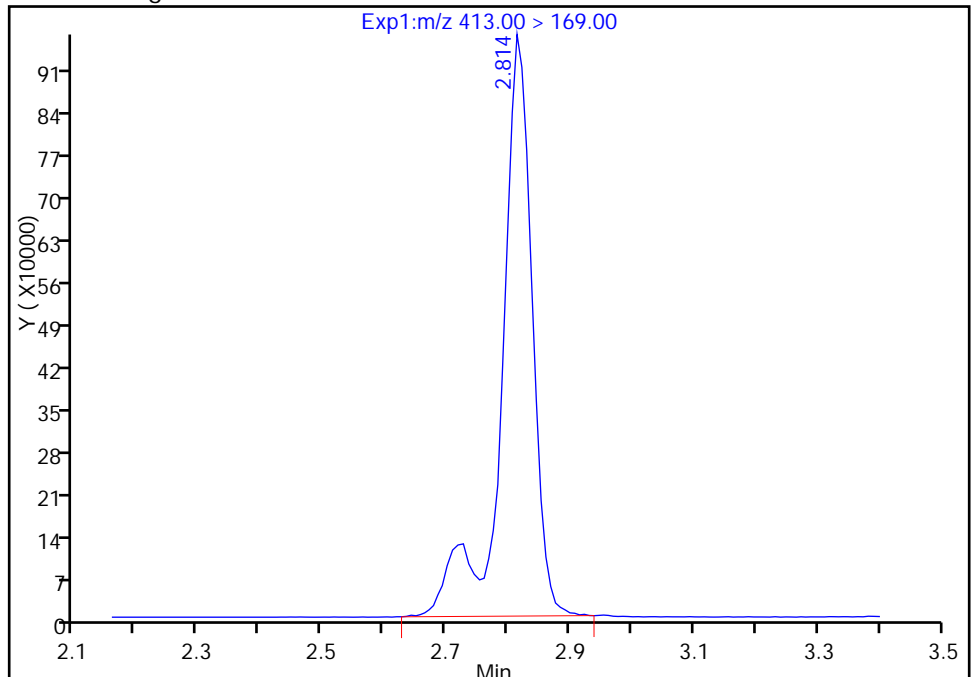
RT: 2.81
Area: 2980198
Amount: 26.008003
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 3335083
Amount: 27.403153
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:27:25

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

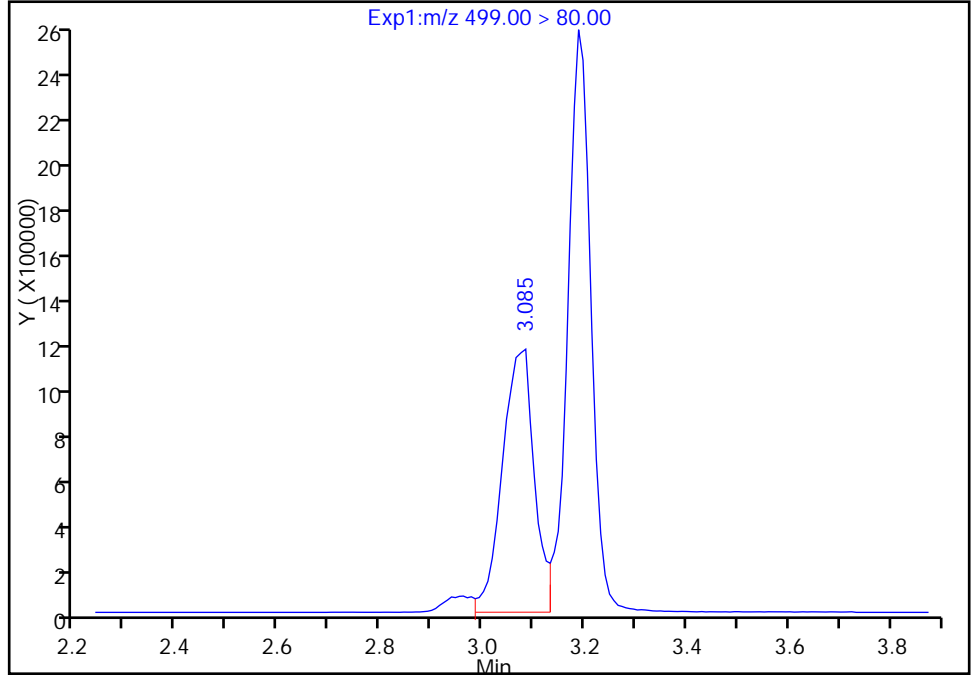
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_044.d
Injection Date: 11-Mar-2017 17:35:05 Instrument ID: A8_N
Lims ID: 320-26105-A-6-A Lab Sample ID: 320-26105-6
Client ID: MEAFF-BLD002-SB02-0001
Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 41
Injection Vol: 2.0 ul 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

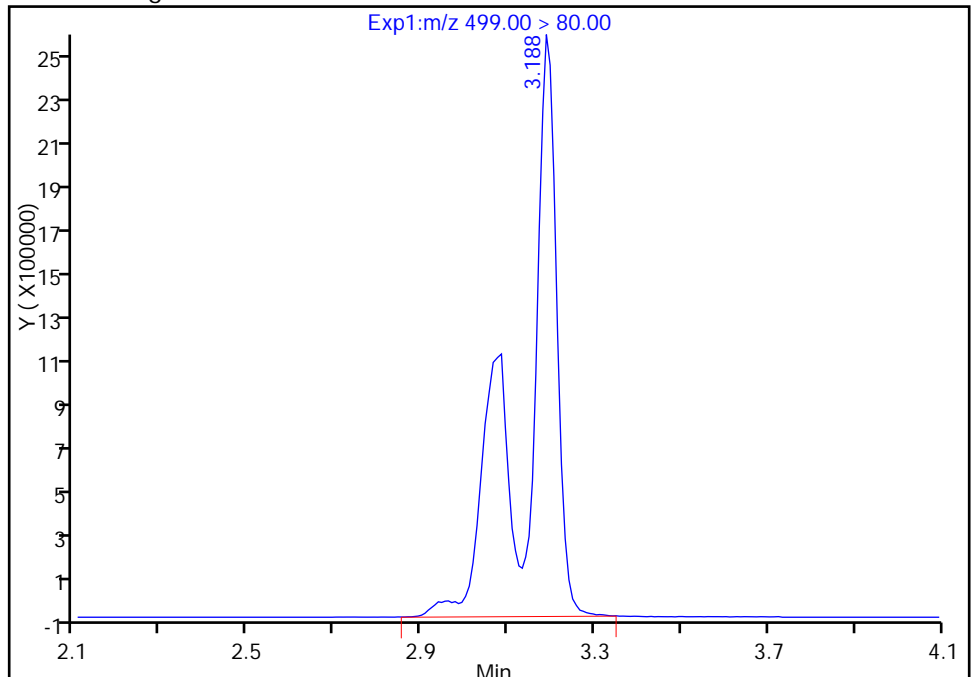
RT: 3.08
Area: 5055379
Amount: 34.955332
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 13393439
Amount: 92.608706
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:27:25
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

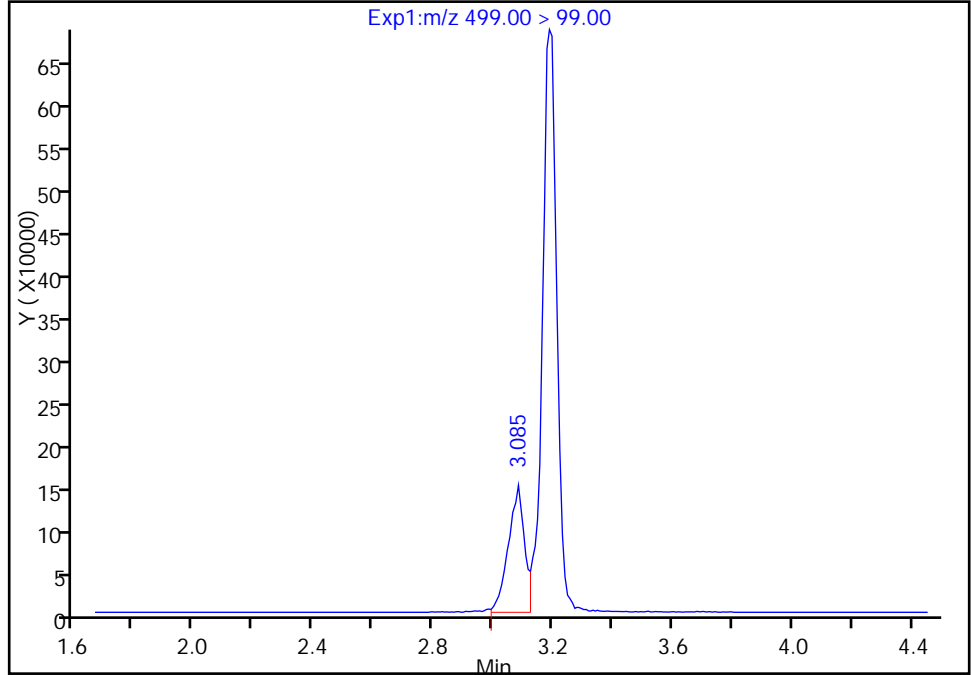
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_044.d
Injection Date: 11-Mar-2017 17:35:05 Instrument ID: A8_N
Lims ID: 320-26105-A-6-A Lab Sample ID: 320-26105-6
Client ID: MEAFF-BLD002-SB02-0001
Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 41
Injection Vol: 2.0 ul 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

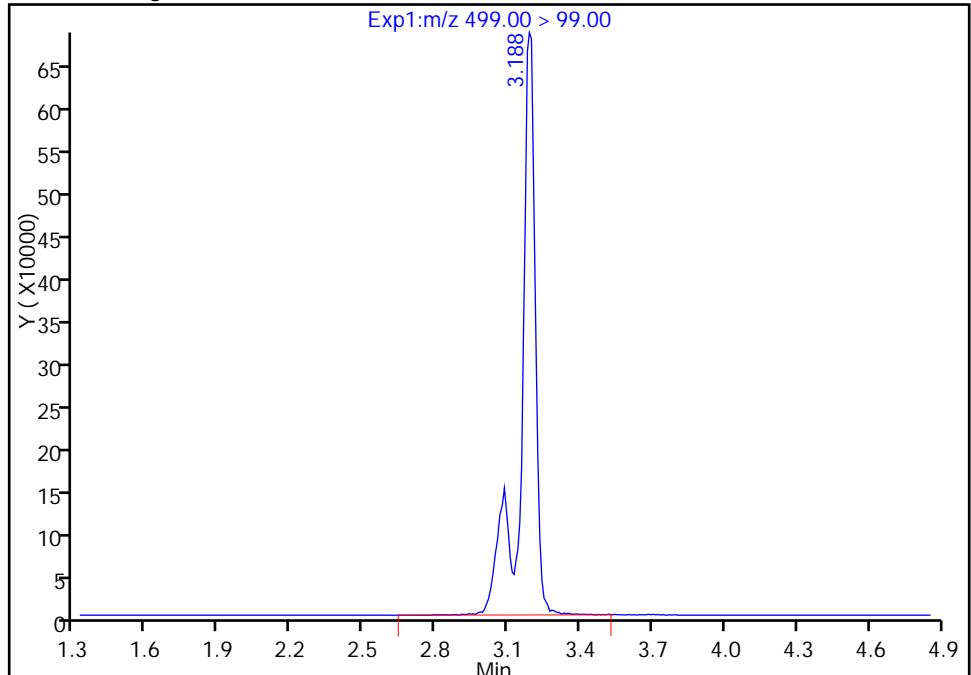
RT: 3.08
Area: 551348
Amount: 34.955332
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 2837623
Amount: 92.608706
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 11:27:25

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

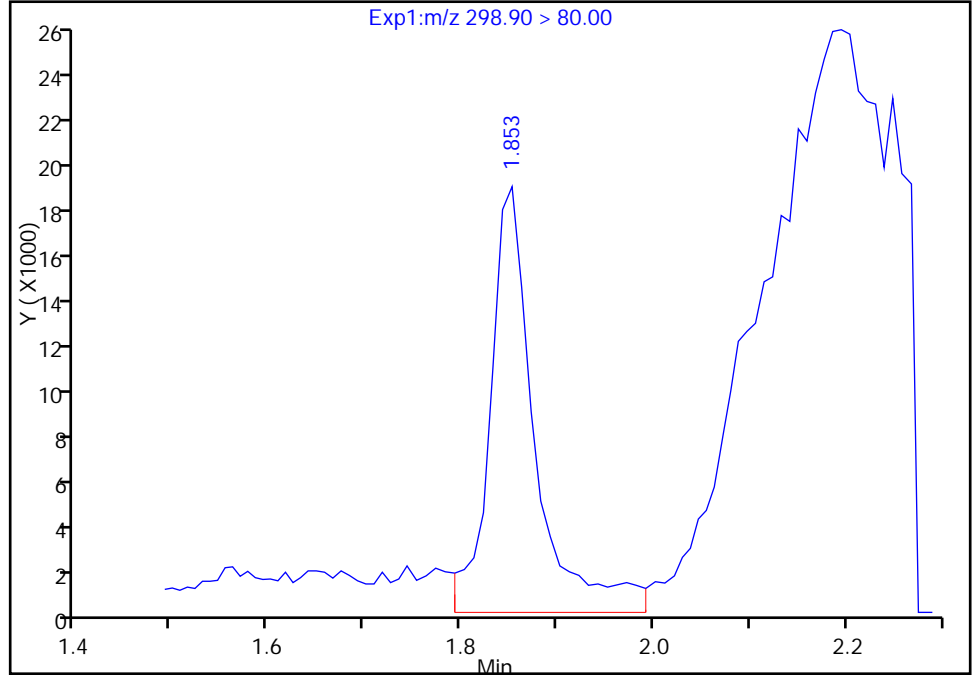
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_044.d
Injection Date: 11-Mar-2017 17:35:05 Instrument ID: A8_N
Lims ID: 320-26105-A-6-A Lab Sample ID: 320-26105-6
Client ID: MEAFF-BLD002-SB02-0001
Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 41
Injection Vol: 2.0 ul 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

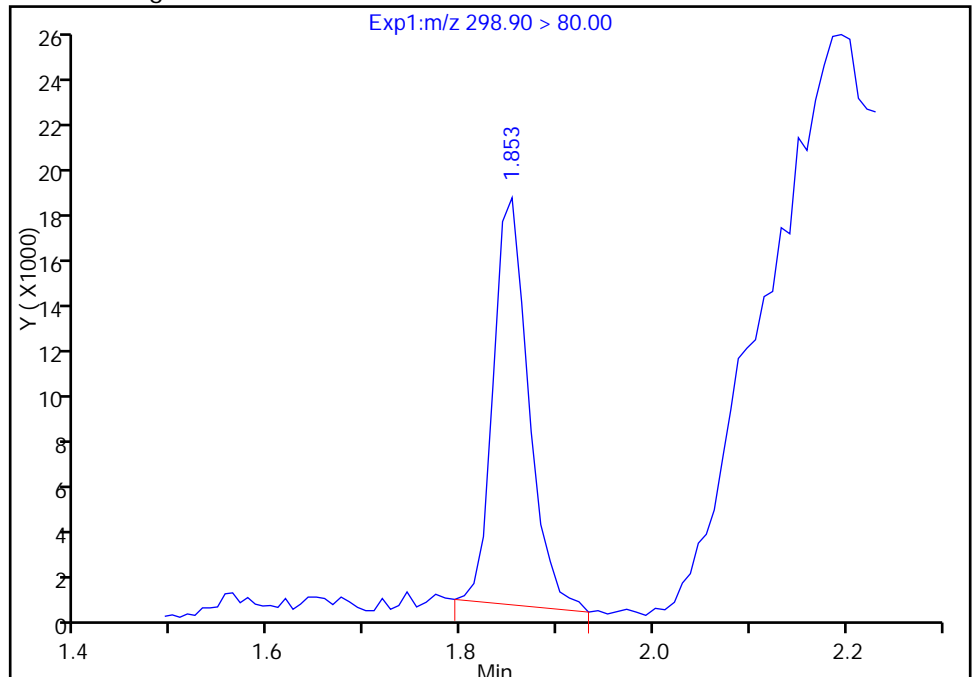
RT: 1.85
Area: 61224
Amount: 0.159825
Amount Units: ng/ml

Processing Integration Results



RT: 1.85
Area: 44553
Amount: 0.116305
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 11:27:34
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

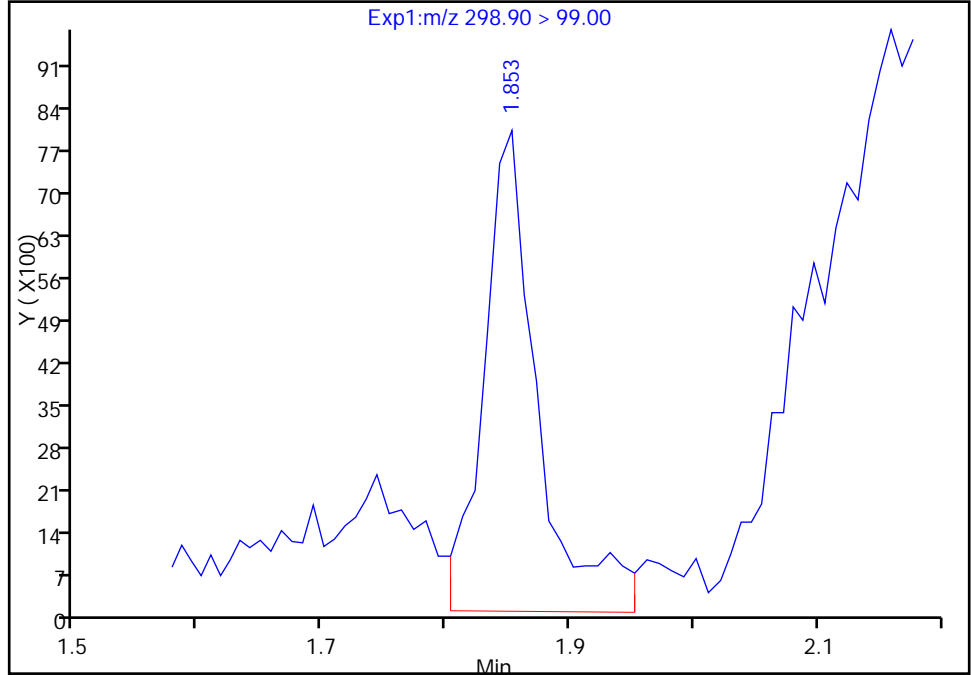
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_044.d
Injection Date: 11-Mar-2017 17:35:05 Instrument ID: A8_N
Lims ID: 320-26105-A-6-A Lab Sample ID: 320-26105-6
Client ID: MEAFF-BLD002-SB02-0001
Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 41
Injection Vol: 2.0 ul 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

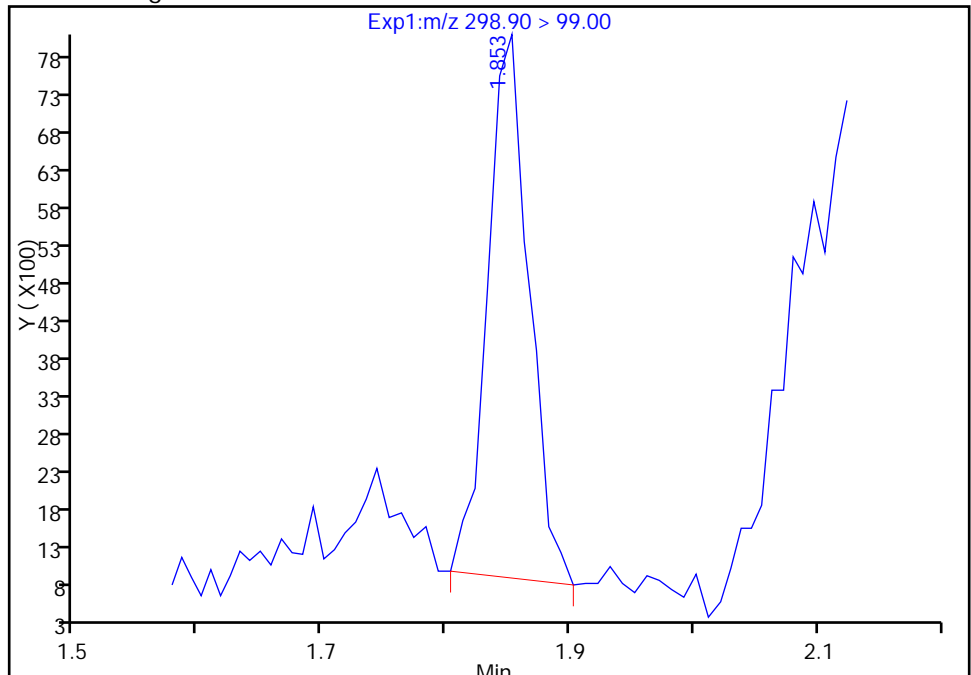
RT: 1.85
Area: 23823
Amount: 0.159825
Amount Units: ng/ml

Processing Integration Results



RT: 1.85
Area: 16572
Amount: 0.116305
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD002-SB02-0204 Lab Sample ID: 320-26105-7
 Matrix: Solid Lab File ID: 2017.03.11C_045.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 09:20
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.00(g) Date Analyzed: 03/11/2017 17:42
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 13.7 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.15	J M	0.58	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.35	U M	0.58	0.35	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.35	U	0.46	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	104		25-150
STL00991	13C4 PFOS	56		25-150
STL00994	18O2 PFHxS	95		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_045.d
 Lims ID: 320-26105-A-7-A
 Client ID: MEAFF-BLD002-SB02-0204
 Sample Type: Client
 Inject. Date: 11-Mar-2017 17:42:35 ALS Bottle#: 36 Worklist Smp#: 42
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-7-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 11:28:13 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 13-Mar-2017 14:02:16

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	1.863	1.853	0.010	1.000	14165	0.0357				
298.90 > 99.00	1.863	1.853	0.010	1.000	6038		2.35(0.00-0.00)			
D 11 18O2 PFHxS										
403.00 > 84.00	2.476	2.467	0.009		13086677	45.0		95.1	422342	
D 14 13C4 PFOA										
417.00 > 372.00	2.826	2.809	0.017		10648653	52.0		104	356022	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.826	2.817	0.009	1.000	140962	0.6478			1030	M
413.00 > 169.00	2.826	2.817	0.009	1.000	85423		1.65(0.90-1.10)		2580	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.193	3.183	0.010	1.000	50222	0.3792			983	M
499.00 > 99.00	3.193	3.183	0.010	1.000	14530		3.46(0.90-1.10)		539	M
D 18 13C4 PFOS										
503.00 > 80.00	3.202	3.183	0.019		6436993	26.6		55.7	168314	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_045.d

Injection Date: 11-Mar-2017 17:42:35

Instrument ID: A8_N

Lims ID: 320-26105-A-7-A

Lab Sample ID: 320-26105-7

Client ID: MEAFF-BLD002-SB02-0204

Operator ID: A8-PC\A8

ALS Bottle#: 36

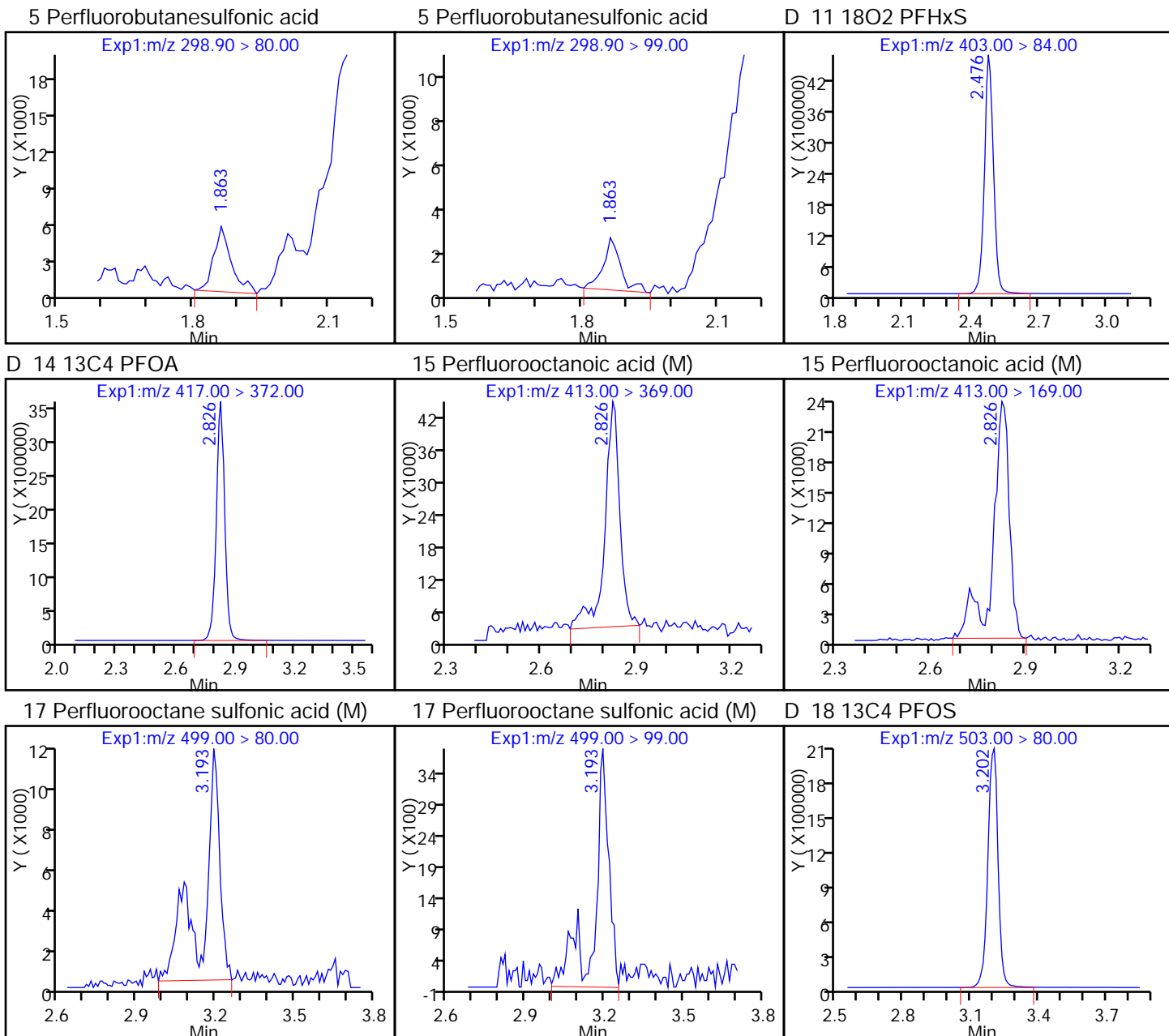
Worklist Smp#: 42

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC_DOD ICAL



TestAmerica Sacramento

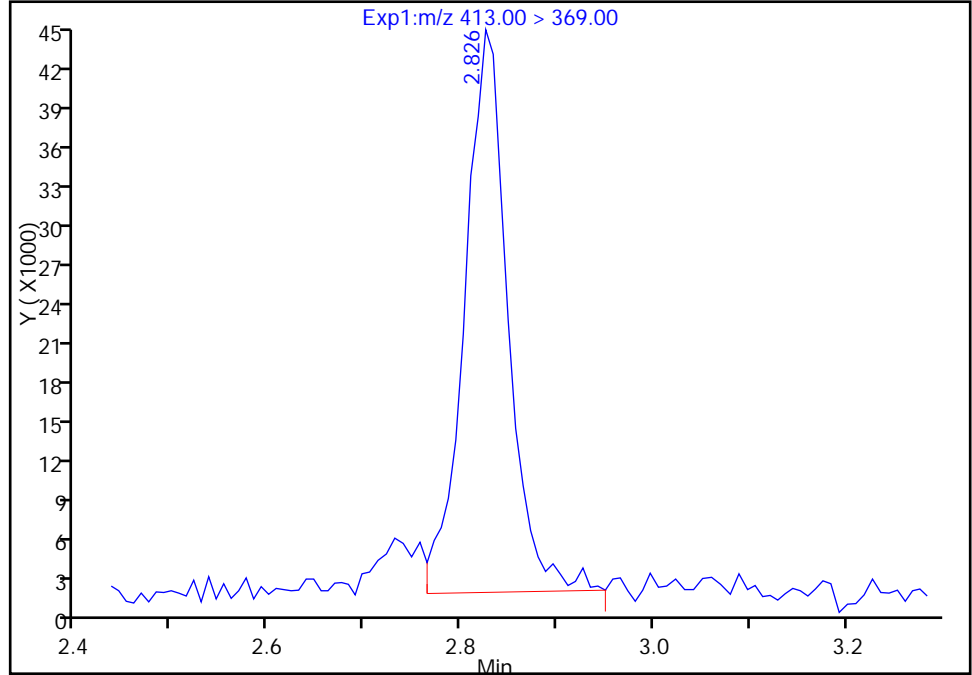
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_045.d
Injection Date: 11-Mar-2017 17:42:35 Instrument ID: A8_N
Lims ID: 320-26105-A-7-A Lab Sample ID: 320-26105-7
Client ID: MEAFF-BLD002-SB02-0204
Operator ID: A8-PC\A8 ALS Bottle#: 36 Worklist Smp#: 42
Injection Vol: 2.0 ul 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

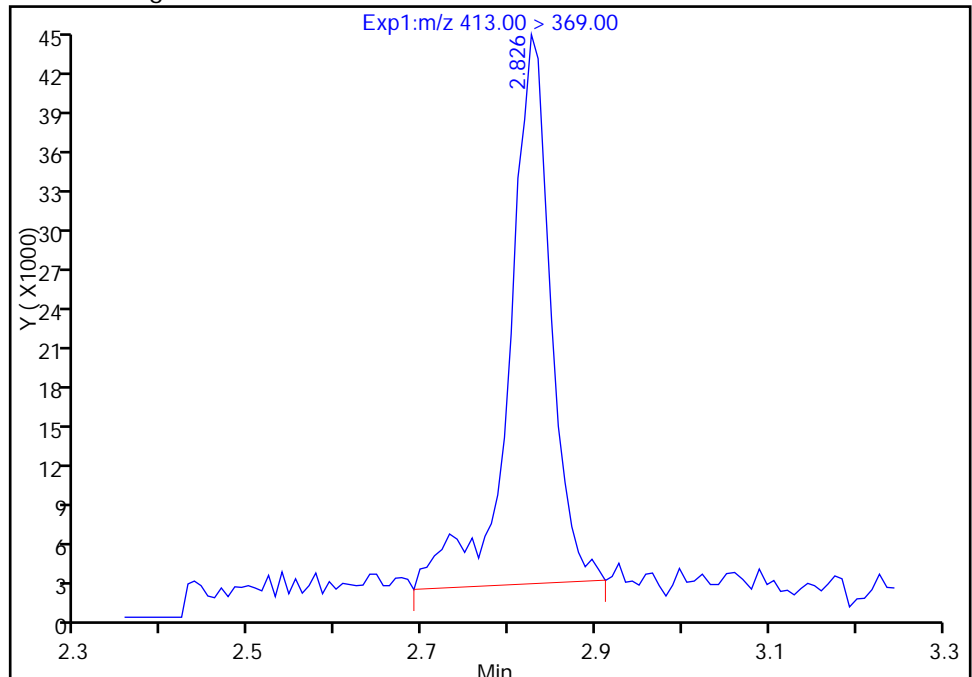
RT: 2.83
Area: 132911
Amount: 0.610844
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 140962
Amount: 0.647846
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:33:42
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

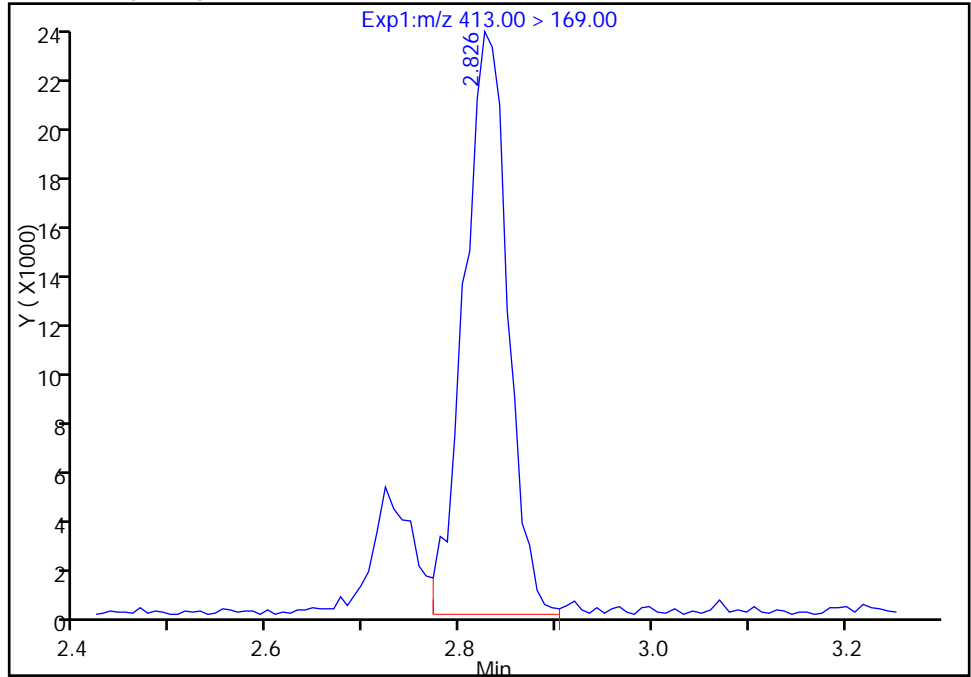
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_045.d
Injection Date: 11-Mar-2017 17:42:35 Instrument ID: A8_N
Lims ID: 320-26105-A-7-A Lab Sample ID: 320-26105-7
Client ID: MEAFF-BLD002-SB02-0204
Operator ID: A8-PC\A8 ALS Bottle#: 36 Worklist Smp#: 42
Injection Vol: 2.0 ul 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

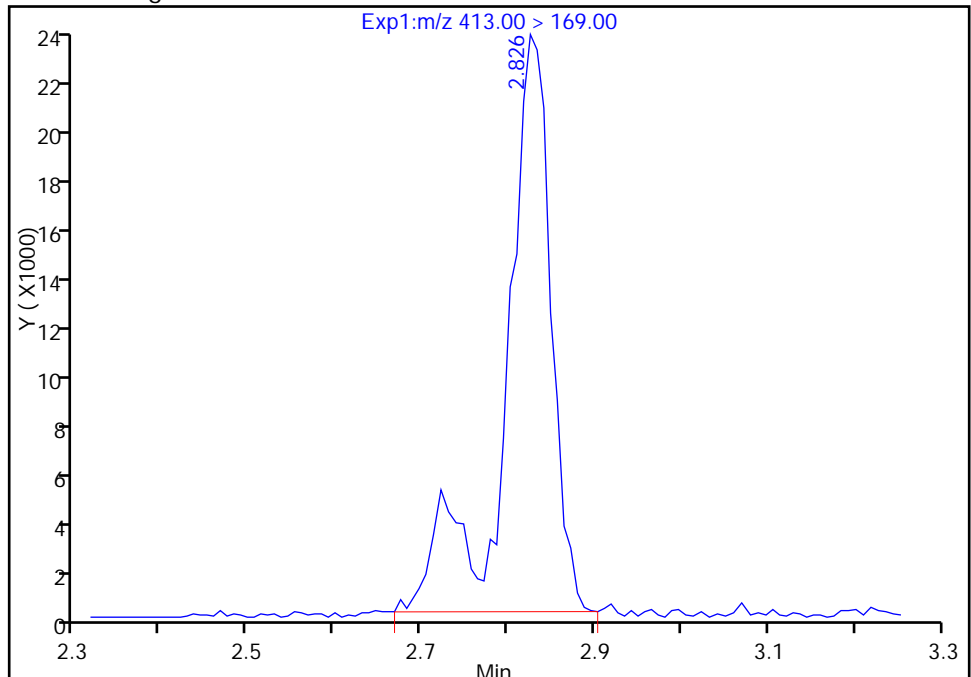
RT: 2.83
Area: 73785
Amount: 0.610844
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 85423
Amount: 0.647846
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

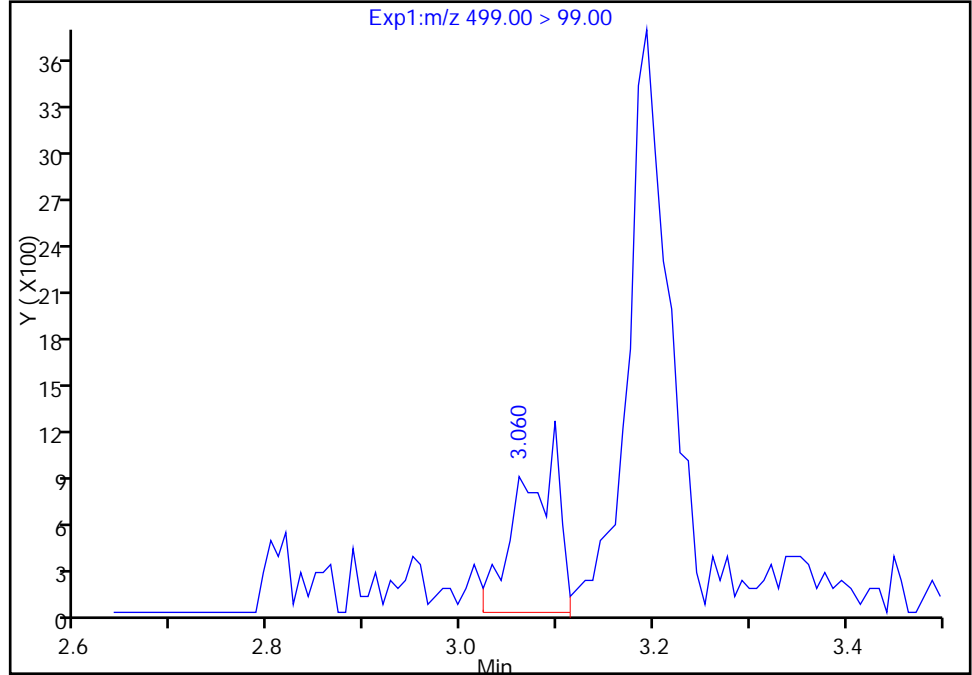
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_045.d
Injection Date: 11-Mar-2017 17:42:35 Instrument ID: A8_N
Lims ID: 320-26105-A-7-A Lab Sample ID: 320-26105-7
Client ID: MEAFF-BLD002-SB02-0204
Operator ID: A8-PC\A8 ALS Bottle#: 36 Worklist Smp#: 42
Injection Vol: 2.0 ul 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

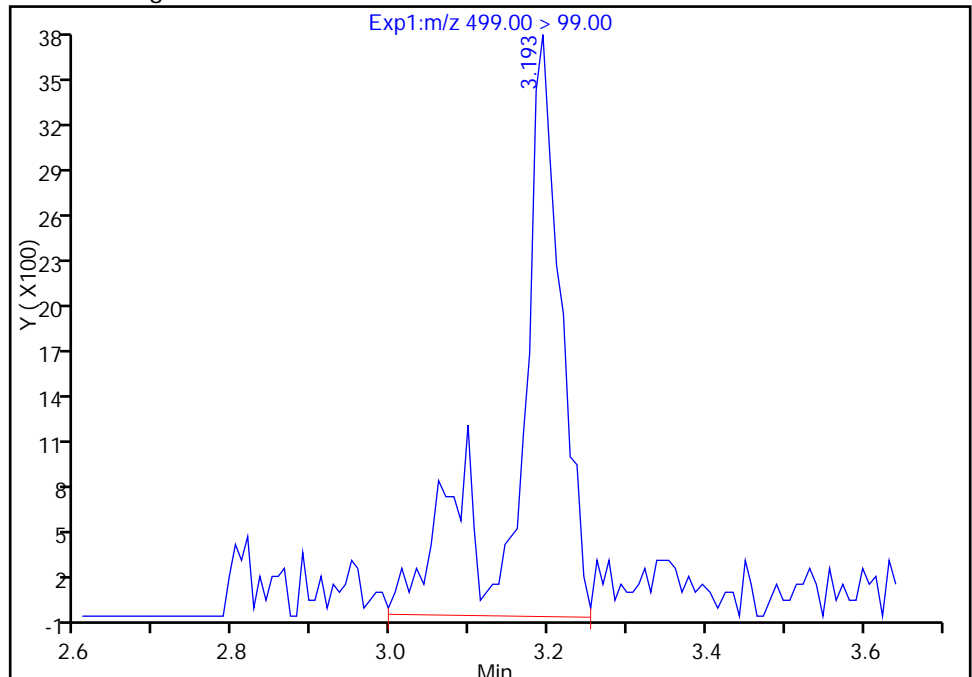
RT: 3.06
Area: 3232
Amount: 0.154265
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 14530
Amount: 0.379203
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:33:42
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

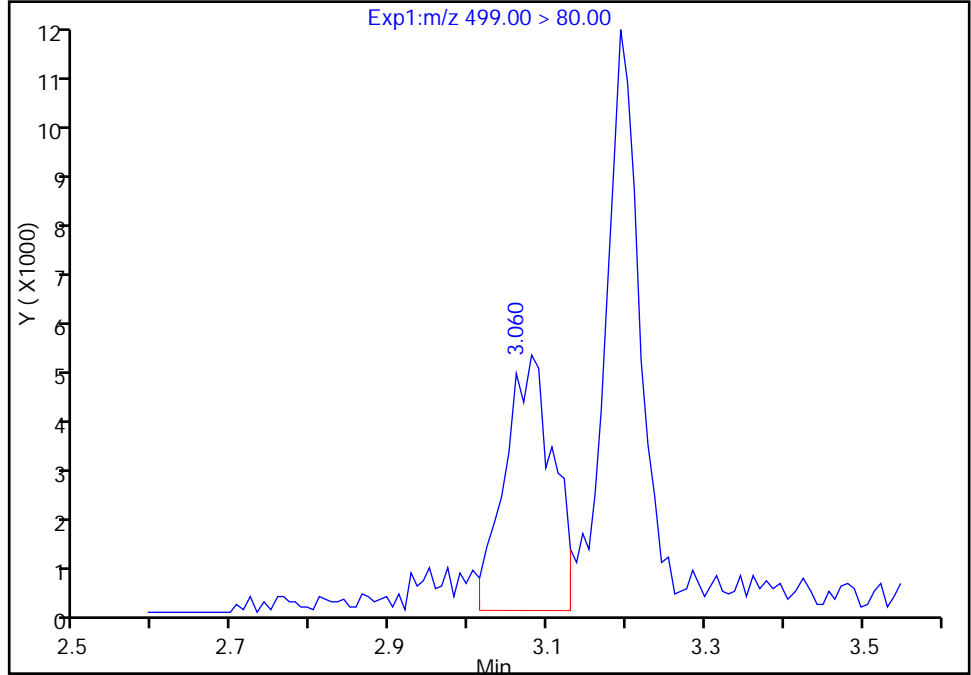
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_045.d
Injection Date: 11-Mar-2017 17:42:35 Instrument ID: A8_N
Lims ID: 320-26105-A-7-A Lab Sample ID: 320-26105-7
Client ID: MEAFF-BLD002-SB02-0204
Operator ID: A8-PC\A8 ALS Bottle#: 36 Worklist Smp#: 42
Injection Vol: 2.0 ul 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

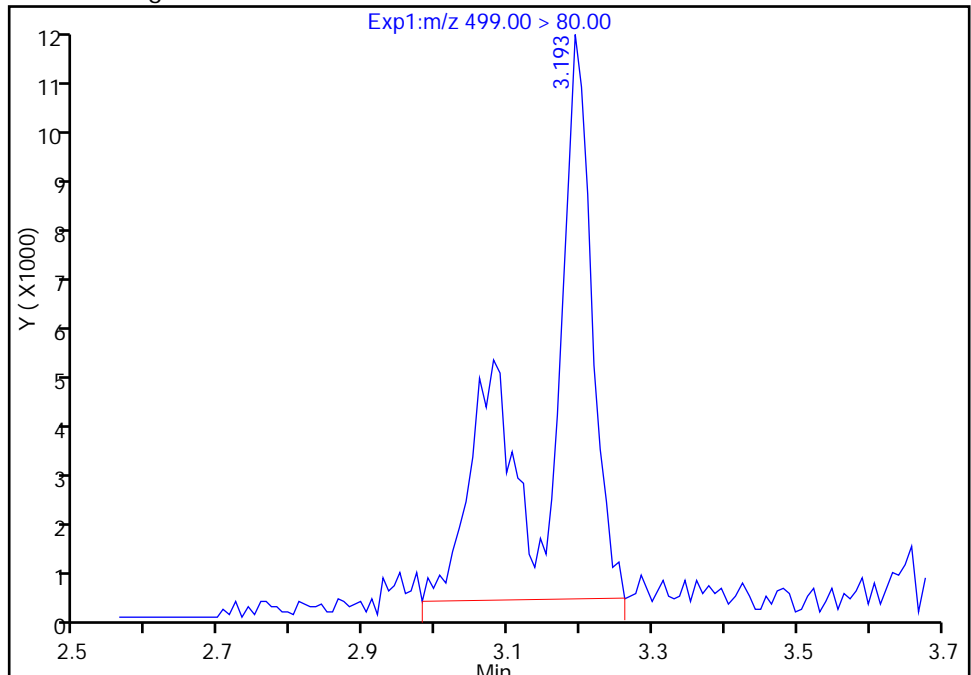
RT: 3.06
Area: 20431
Amount: 0.154265
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 50222
Amount: 0.379203
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:33:42

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD192-SB03-0001 Lab Sample ID: 320-26105-8
 Matrix: Solid Lab File ID: 2017.03.11C_046.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:10
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.03(g) Date Analyzed: 03/11/2017 17:50
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 16.7 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	5.1	M	0.60	0.36	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	M	0.60	0.36	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.36	U M	0.48	0.36	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	107		25-150
STL00991	13C4 PFOS	72		25-150
STL00994	18O2 PFHxS	100		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_046.d
 Lims ID: 320-26105-A-8-A
 Client ID: MEAFF-BLD192-SB03-0001
 Sample Type: Client
 Inject. Date: 11-Mar-2017 17:50:04 ALS Bottle#: 37 Worklist Smp#: 43
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-8-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 11:28:13 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 13-Mar-2017 14:03:19

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	1.872	1.853	0.019	1.000	41003	0.0986				M
298.90 > 99.00	1.862	1.853	0.009	0.995	14444		2.84(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.483	2.467	0.016		13728512	47.2		99.8	470133	
D 14 13C4 PFOA										
417.00 > 372.00	2.833	2.809	0.024		10951519	53.4		107	394776	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.833	2.817	0.016	1.000	4825186	21.6			45235	M
413.00 > 169.00	2.833	2.817	0.016	1.000	2979903		1.62(0.90-1.10)		89270	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.201	3.183	0.018	1.000	10789126	63.5			138885	M
499.00 > 99.00	3.210	3.183	0.027	1.003	2248618		4.80(0.90-1.10)		48246	M
D 18 13C4 PFOS										
503.00 > 80.00	3.210	3.183	0.027		8258430	34.2		71.5	137396	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_046.d

Injection Date: 11-Mar-2017 17:50:04

Instrument ID: A8_N

Lims ID: 320-26105-A-8-A

Lab Sample ID: 320-26105-8

Client ID: MEAFF-BLD192-SB03-0001

Operator ID: A8-PC\A8

ALS Bottle#: 37

Worklist Smp#: 43

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

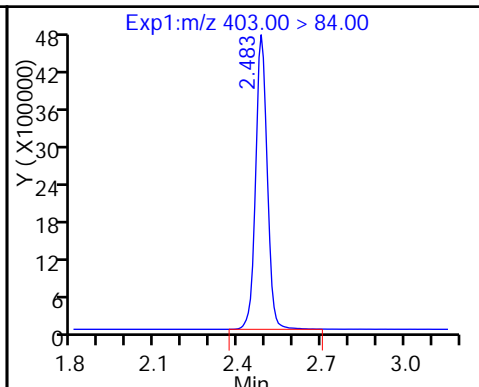
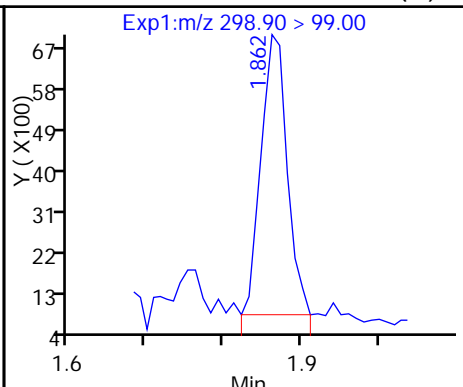
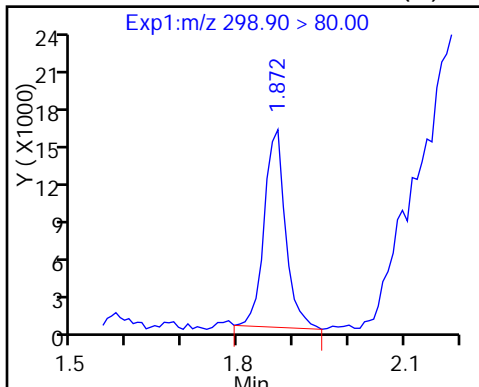
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

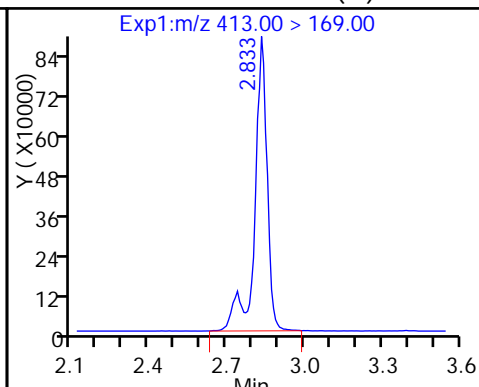
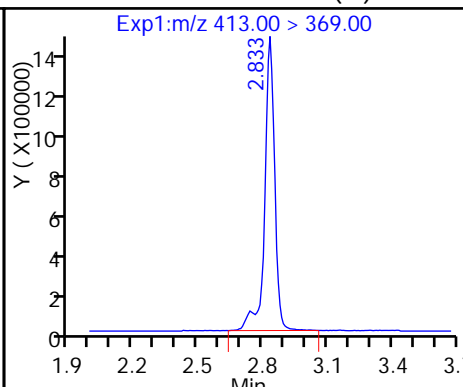
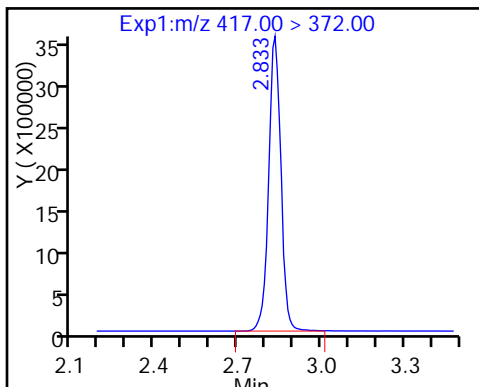
D 11 18O2 PFHxS



D 14 13C4 PFOA

15 Perfluorooctanoic acid (M)

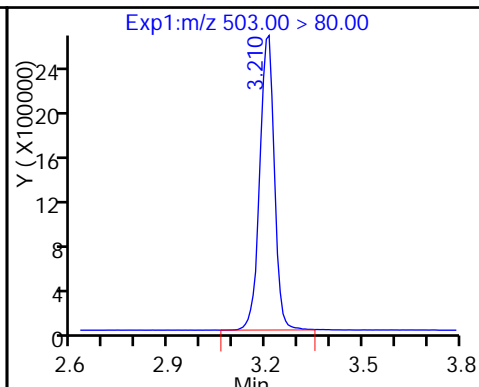
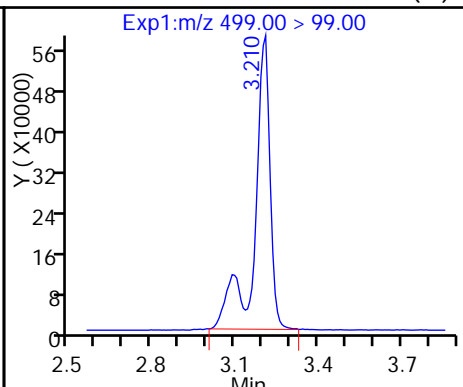
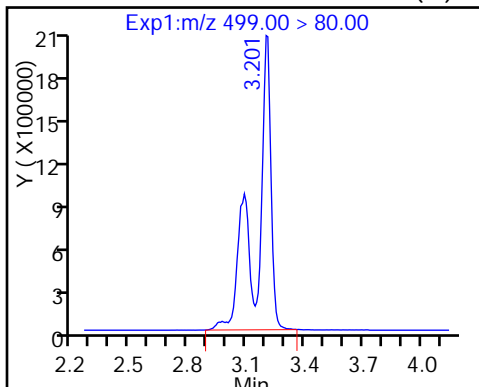
15 Perfluorooctanoic acid (M)



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

D 18 13C4 PFOS



TestAmerica Sacramento

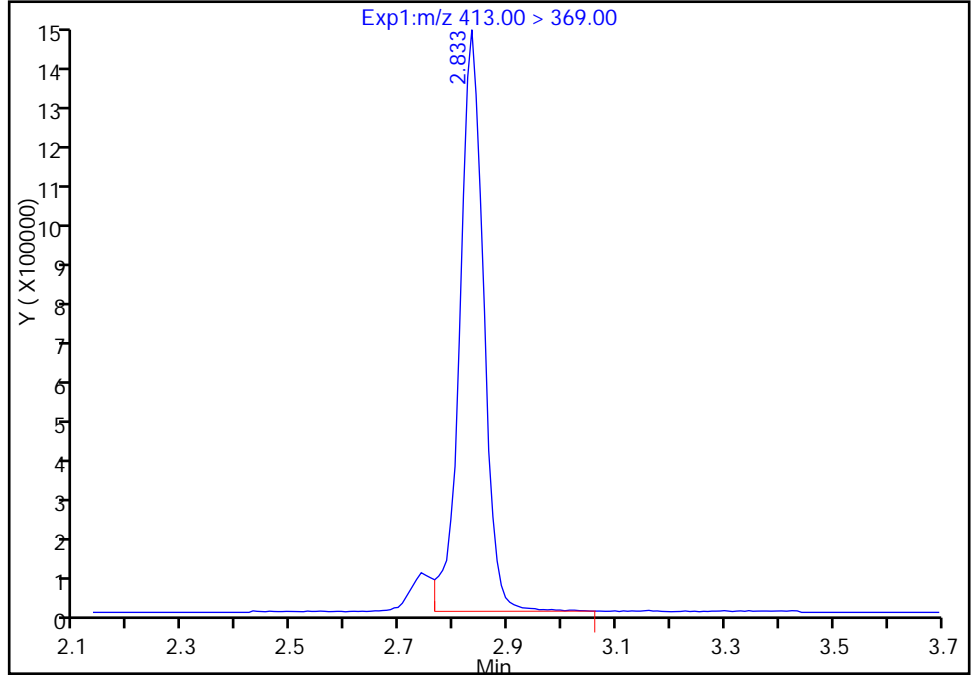
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_046.d
Injection Date: 11-Mar-2017 17:50:04 Instrument ID: A8_N
Lims ID: 320-26105-A-8-A Lab Sample ID: 320-26105-8
Client ID: MEAFF-BLD192-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 37 Worklist Smp#: 43
Injection Vol: 2.0 ul 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

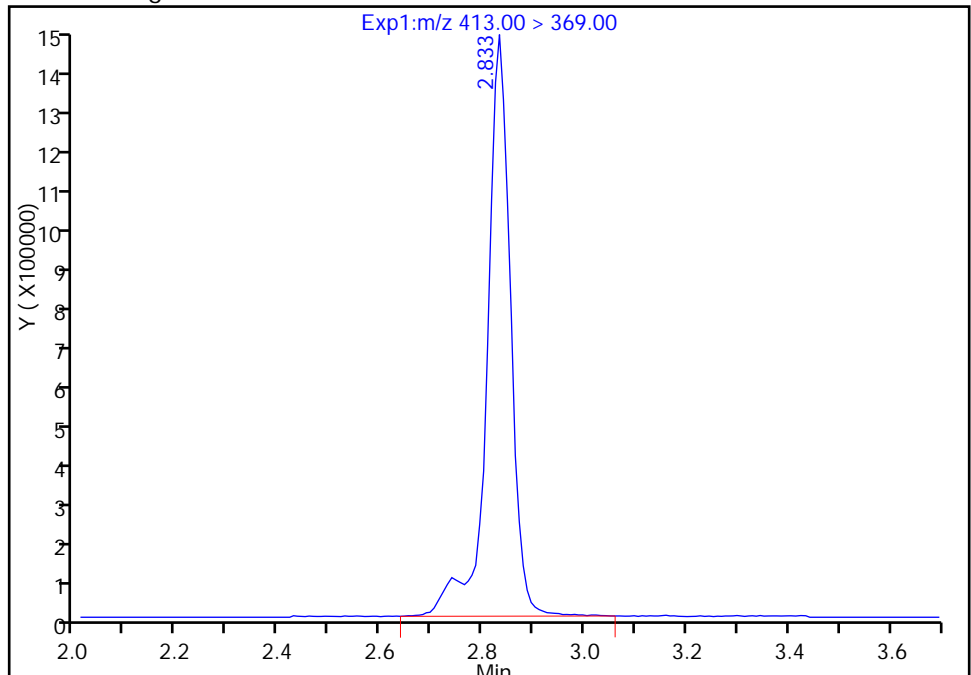
RT: 2.83
Area: 4544739
Amount: 20.309483
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 4825186
Amount: 21.562742
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:27:54

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

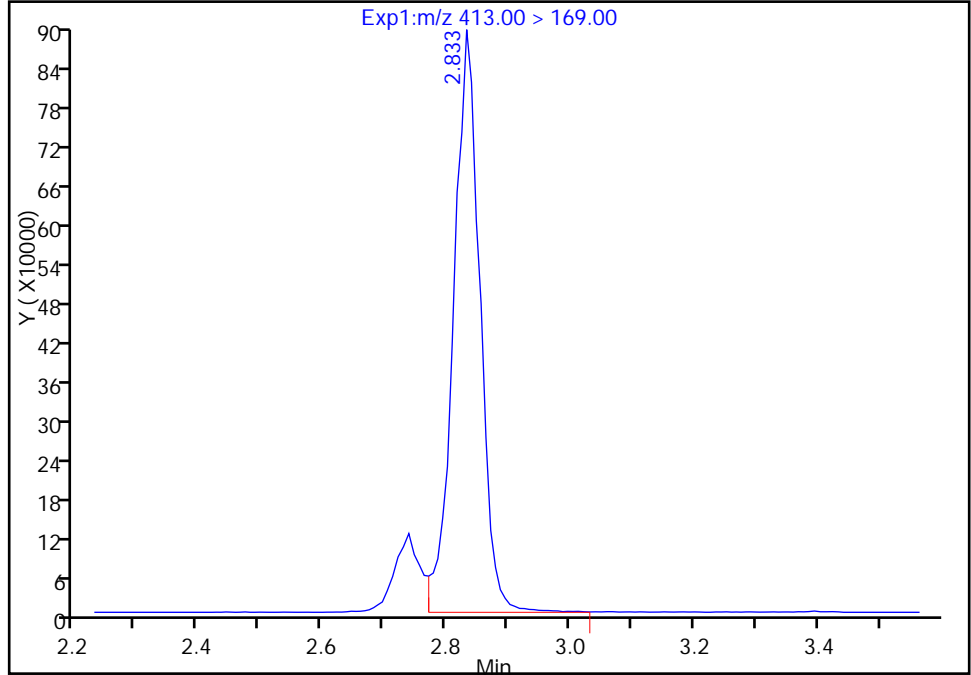
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Injection Date: 11-Mar-2017 17:50:04 Instrument ID: A8_N
Lims ID: 320-26105-A-8-A Lab Sample ID: 320-26105-8
Client ID: MEAFF-BLD192-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 37 Worklist Smp#: 43
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

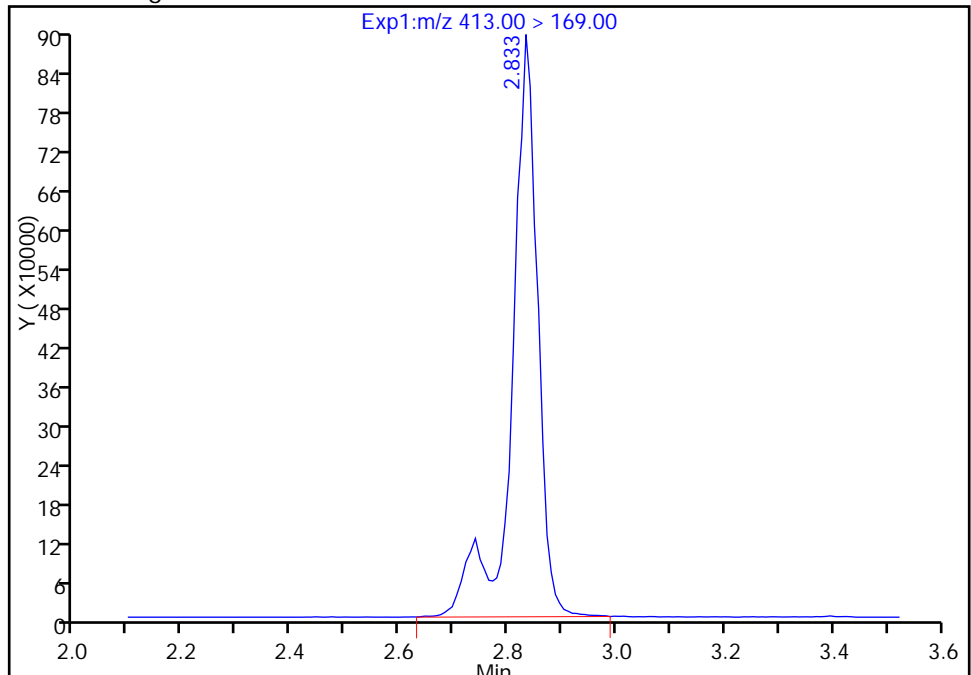
RT: 2.83
Area: 2650904
Amount: 20.309483
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 2979903
Amount: 21.562742
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

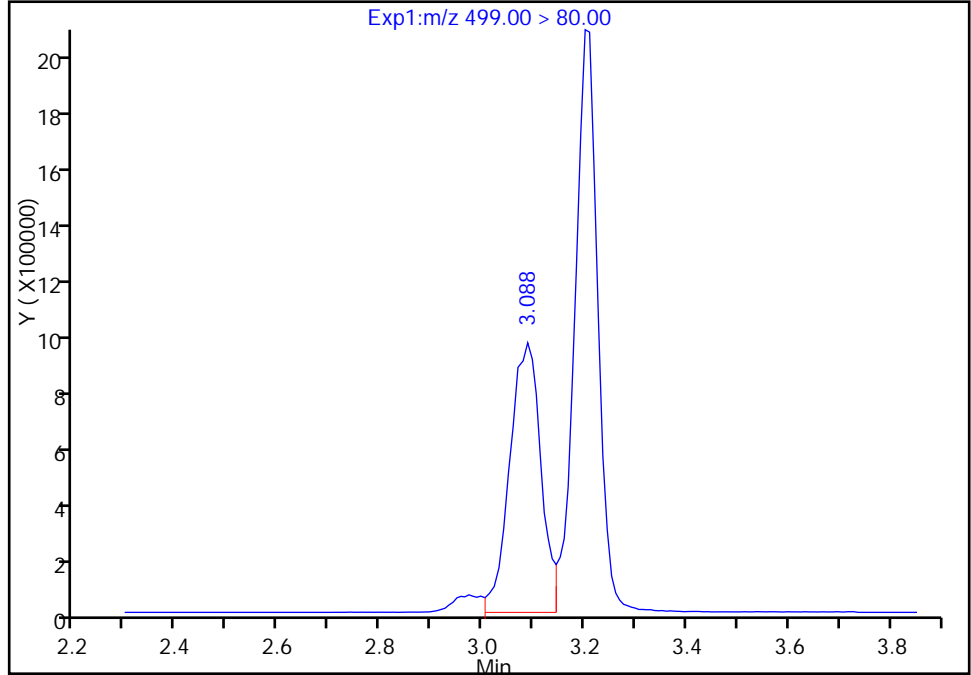
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_046.d
Injection Date: 11-Mar-2017 17:50:04 Instrument ID: A8_N
Lims ID: 320-26105-A-8-A Lab Sample ID: 320-26105-8
Client ID: MEAFF-BLD192-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 37 Worklist Smp#: 43
Injection Vol: 2.0 ul 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

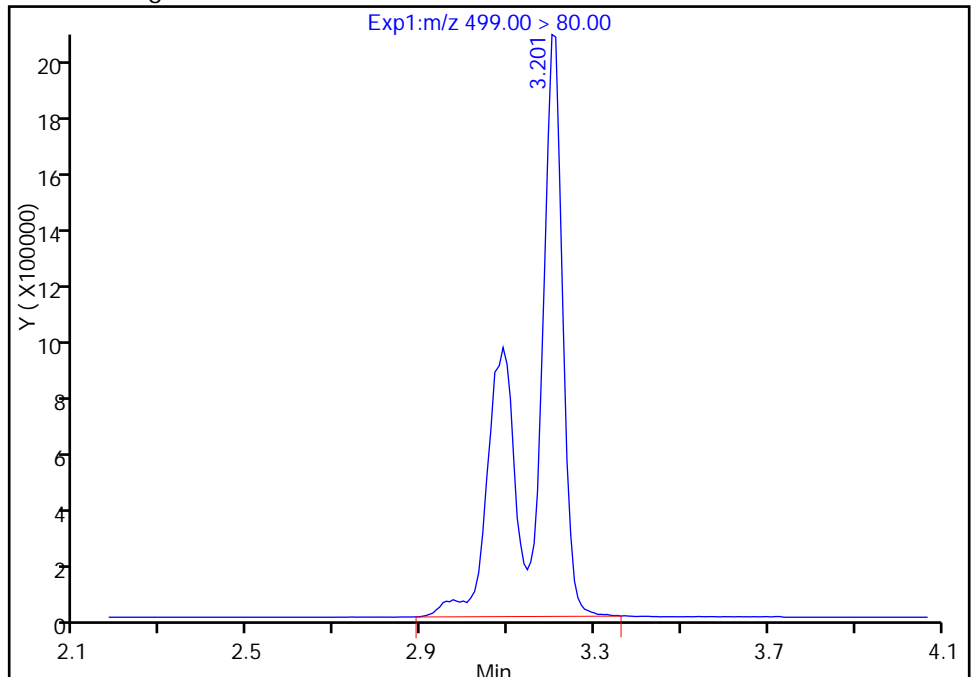
RT: 3.09
Area: 4071099
Amount: 23.959377
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 10789126
Amount: 63.496549
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:27:54
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

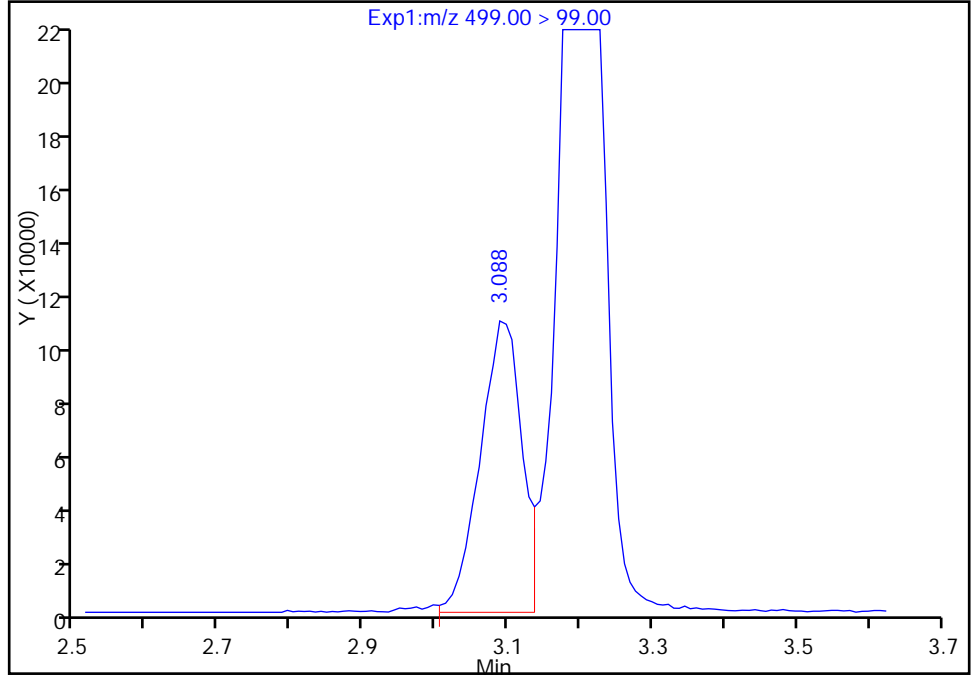
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_046.d
Injection Date: 11-Mar-2017 17:50:04 Instrument ID: A8_N
Lims ID: 320-26105-A-8-A Lab Sample ID: 320-26105-8
Client ID: MEAFF-BLD192-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 37 Worklist Smp#: 43
Injection Vol: 2.0 ul 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

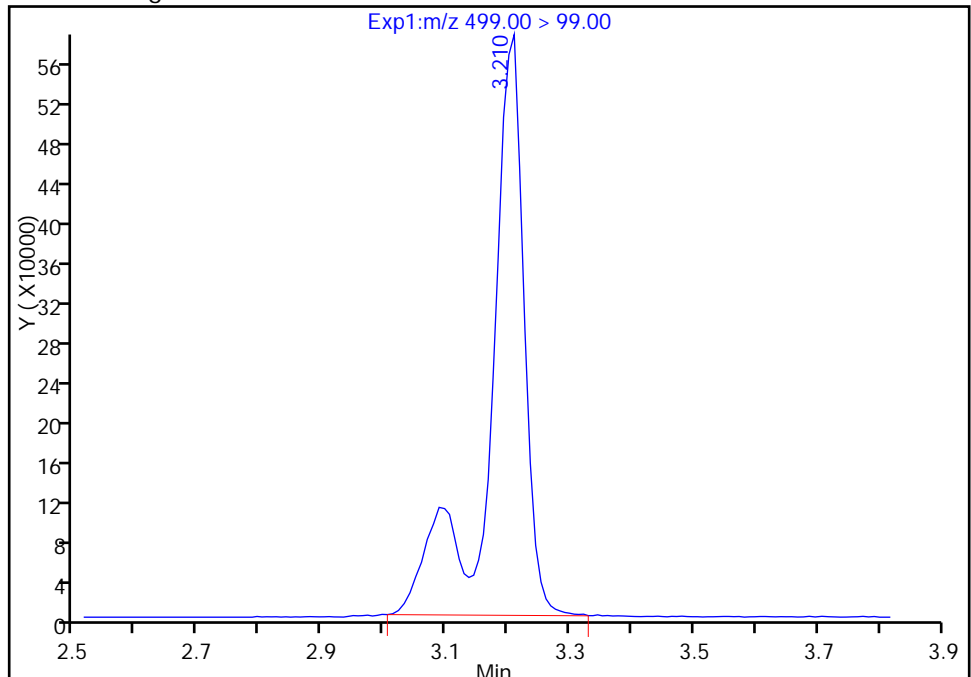
RT: 3.09
Area: 435637
Amount: 23.959377
Amount Units: ng/ml

Processing Integration Results



RT: 3.21
Area: 2248618
Amount: 63.496549
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:27:54

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

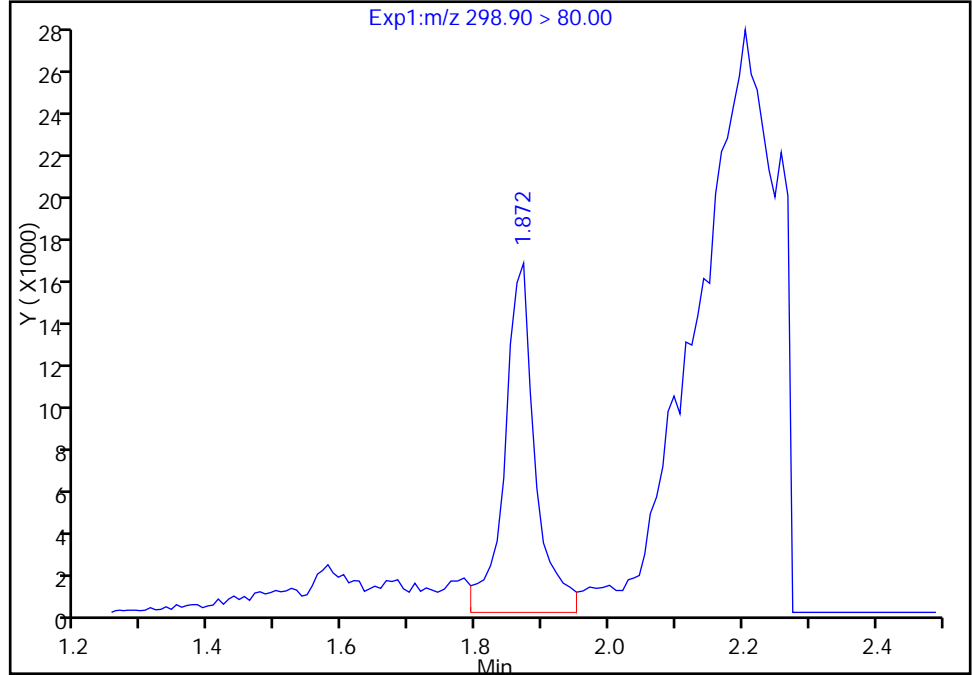
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_046.d
Injection Date: 11-Mar-2017 17:50:04 Instrument ID: A8_N
Lims ID: 320-26105-A-8-A Lab Sample ID: 320-26105-8
Client ID: MEAFF-BLD192-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 37 Worklist Smp#: 43
Injection Vol: 2.0 ul 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

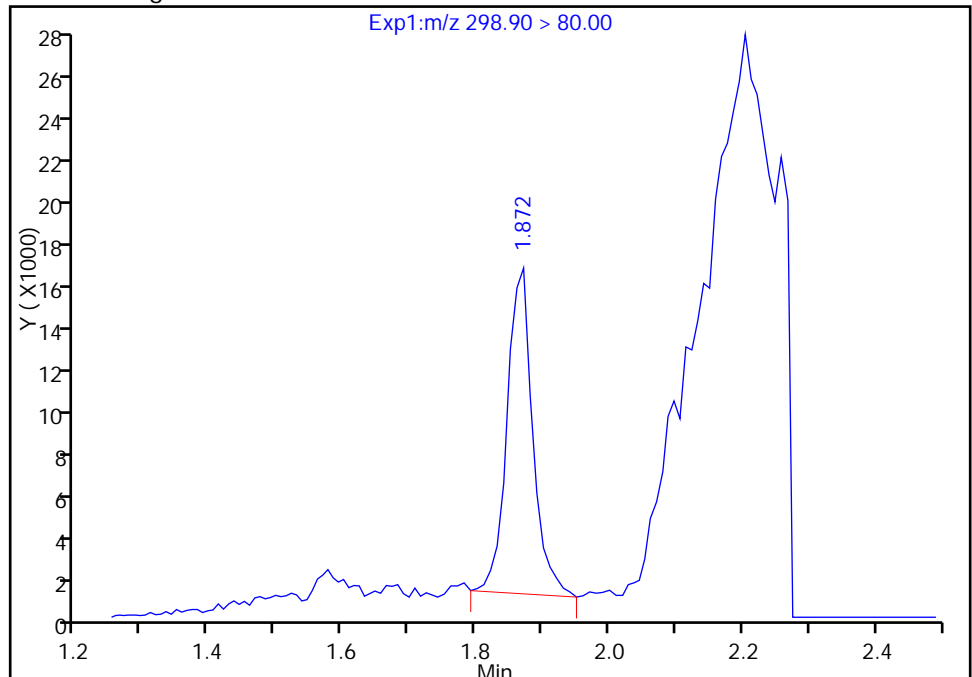
RT: 1.87
Area: 51451
Amount: 0.123747
Amount Units: ng/ml

Processing Integration Results



RT: 1.87
Area: 41003
Amount: 0.098618
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 11:28:03
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

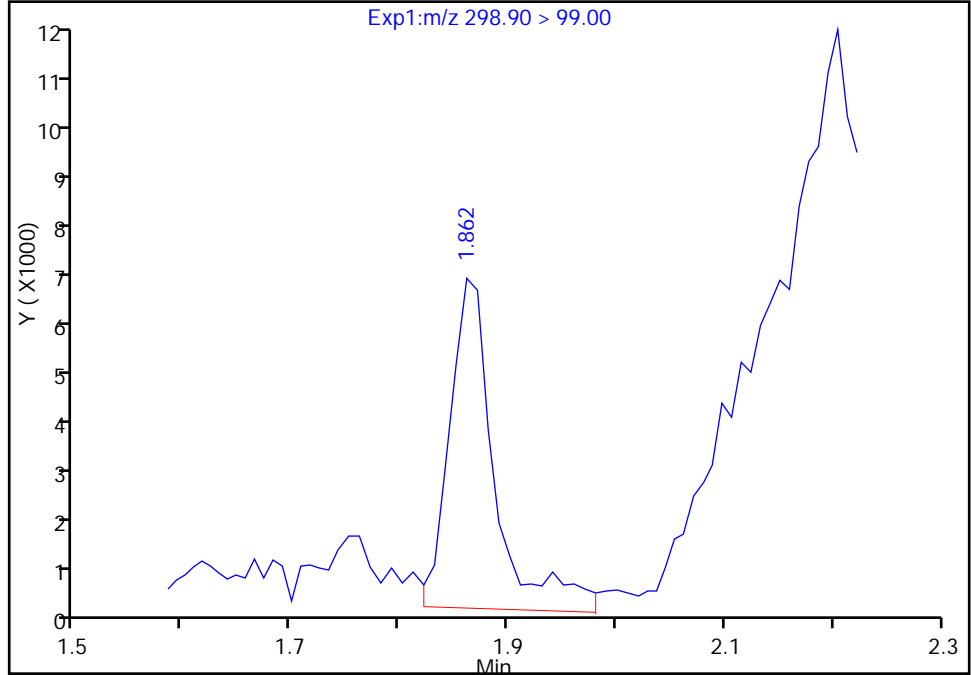
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_046.d
Injection Date: 11-Mar-2017 17:50:04 Instrument ID: A8_N
Lims ID: 320-26105-A-8-A Lab Sample ID: 320-26105-8
Client ID: MEAFF-BLD192-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 37 Worklist Smp#: 43
Injection Vol: 2.0 ul 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

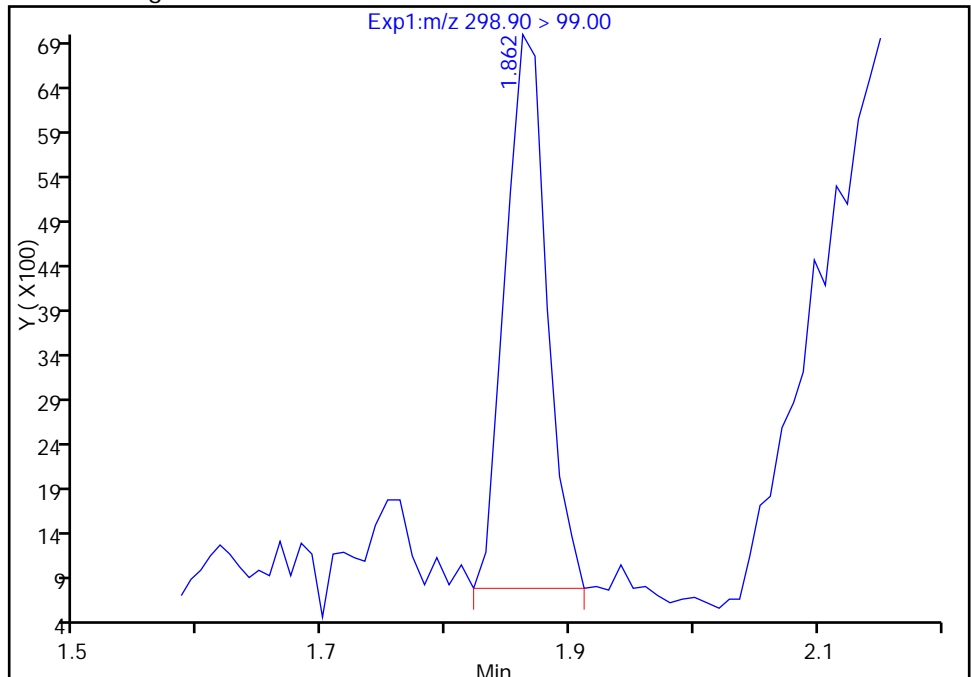
RT: 1.86
Area: 19211
Amount: 0.123747
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 14444
Amount: 0.098618
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 11:28:09

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD192-SB03-0204 Lab Sample ID: 320-26105-9
 Matrix: Solid Lab File ID: 2017.03.11C_047.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:15
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 4.95(g) Date Analyzed: 03/11/2017 17:57
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 20.7 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.28	J	0.64	0.38	0.13
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.40	J M	0.64	0.38	0.16
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.38	U	0.51	0.38	0.13

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	119		25-150
STL00991	13C4 PFOS	78		25-150
STL00994	18O2 PFHxS	108		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_047.d
 Lims ID: 320-26105-A-9-A
 Client ID: MEAFF-BLD192-SB03-0204
 Sample Type: Client
 Inject. Date: 11-Mar-2017 17:57:35 ALS Bottle#: 38 Worklist Smp#: 44
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-9-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 11:28:13 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 13-Mar-2017 14:04:19

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	1.851	1.853	-0.002	1.000	15740	0.0350				
298.90 > 99.00	1.861	1.853	0.008	1.005	5391		2.92(0.00-0.00)			
D 11 18O2 PFHxS										
403.00 > 84.00	2.464	2.467	-0.003		14829066	51.0		108	454284	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.809	0.005		12174159	59.4		119	439761	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.822	2.817	0.005	1.000	274876	1.10			2706	
413.00 > 169.00	2.822	2.817	0.005	1.000	160489		1.71(0.90-1.10)		4924	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.188	3.183	0.005	1.000	286682	1.55			9299	M
499.00 > 99.00	3.188	3.183	0.005	1.000	50253		5.70(0.90-1.10)		2030	M
D 18 13C4 PFOS										
503.00 > 80.00	3.188	3.183	0.005		8982019	37.2		77.8	282804	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_047.d

Injection Date: 11-Mar-2017 17:57:35

Instrument ID: A8_N

Lims ID: 320-26105-A-9-A

Lab Sample ID: 320-26105-9

Client ID: MEAFF-BLD192-SB03-0204

Operator ID: A8-PC\A8

ALS Bottle#: 38

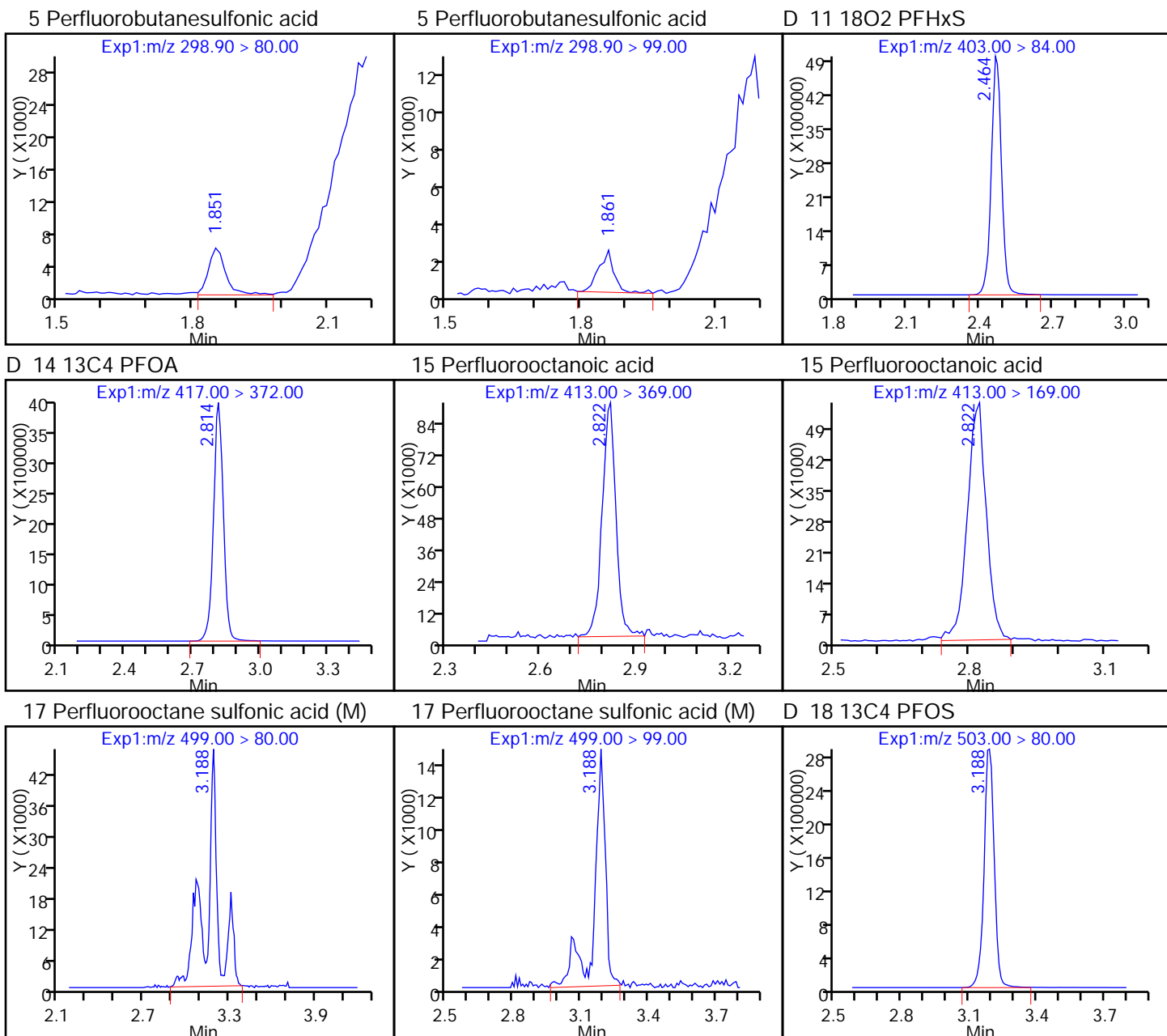
Worklist Smp#: 44

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC_DOD ICAL



TestAmerica Sacramento

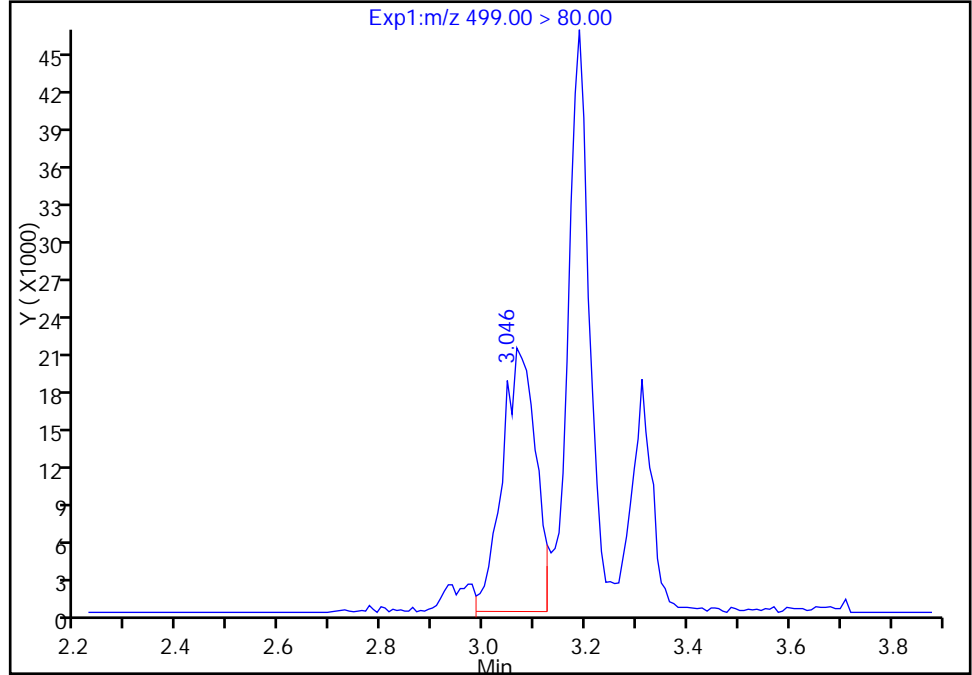
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_047.d
Injection Date: 11-Mar-2017 17:57:35 Instrument ID: A8_N
Lims ID: 320-26105-A-9-A Lab Sample ID: 320-26105-9
Client ID: MEAFF-BLD192-SB03-0204
Operator ID: A8-PC\A8 ALS Bottle#: 38 Worklist Smp#: 44
Injection Vol: 2.0 ul 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

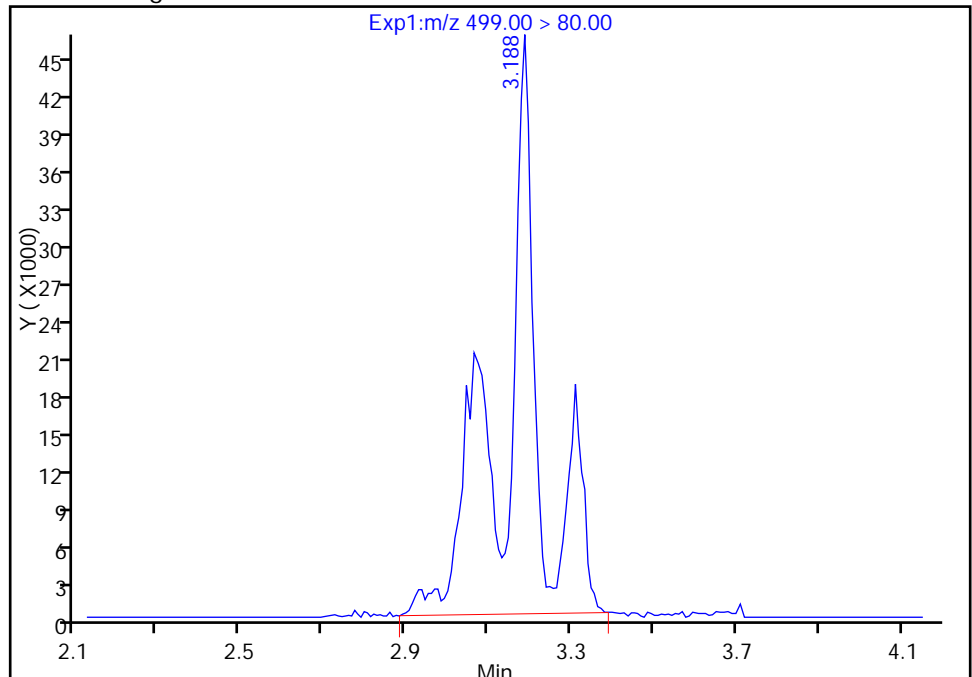
RT: 3.05
Area: 95303
Amount: 0.515696
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 286682
Amount: 1.551271
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:33:48
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

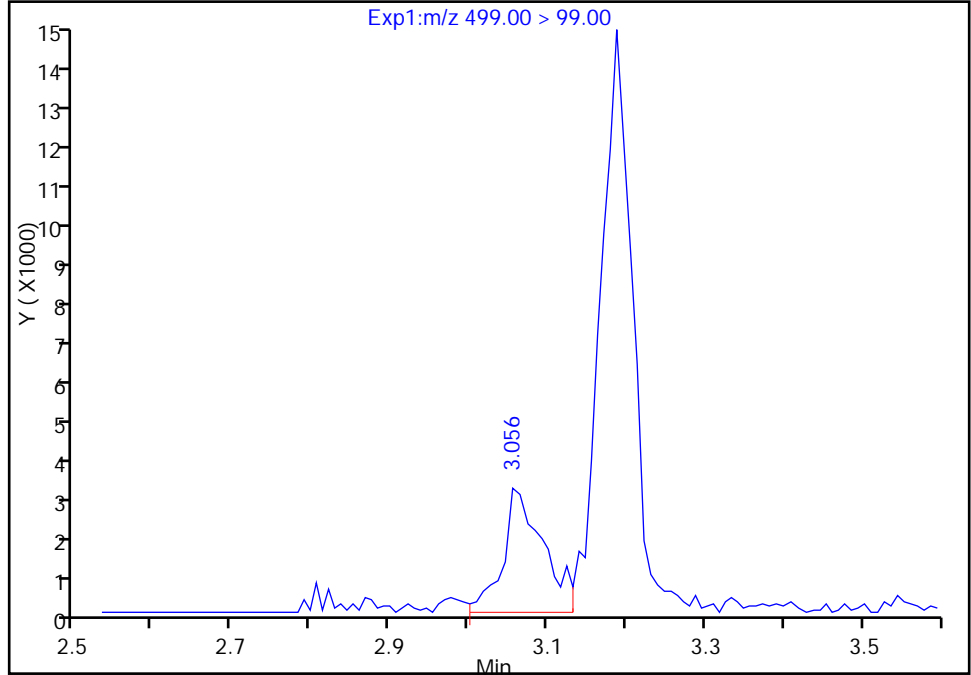
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Injection Date: 11-Mar-2017 17:57:35 Instrument ID: A8_N
Lims ID: 320-26105-A-9-A Lab Sample ID: 320-26105-9
Client ID: MEAFF-BLD192-SB03-0204
Operator ID: A8-PC\A8 ALS Bottle#: 38 Worklist Smp#: 44
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

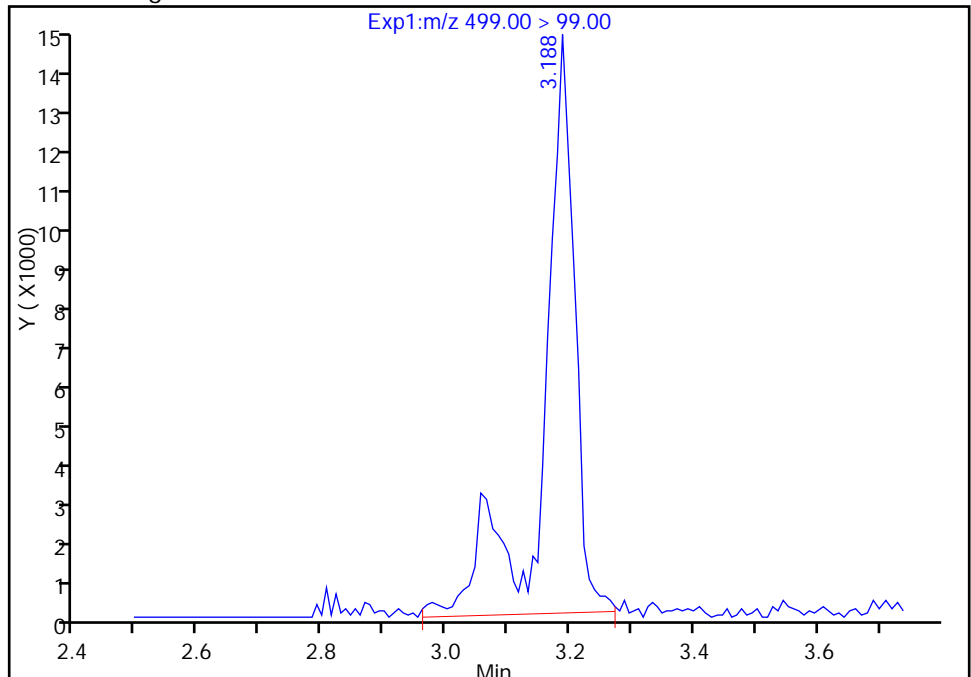
RT: 3.06
Area: 10712
Amount: 0.515696
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 50253
Amount: 1.551271
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-SWON-SB03-0001 Lab Sample ID: 320-26105-10
 Matrix: Solid Lab File ID: 2017.03.11C_048.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:35
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.02(g) Date Analyzed: 03/11/2017 18:05
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 13.9 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	38	M	0.58	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	65	E M	0.58	0.35	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.0		0.46	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	85		25-150
STL00991	13C4 PFOS	56		25-150
STL00994	18O2 PFHxS	59		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_048.d
 Lims ID: 320-26105-A-10-A
 Client ID: MEAFF-SWON-SB03-0001
 Sample Type: Client
 Inject. Date: 11-Mar-2017 18:05:05 ALS Bottle#: 39 Worklist Smp#: 45
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-10-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 11:28:13 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 13-Mar-2017 14:05:02

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	1.861	1.853	0.008	1.000	3138087	12.8				
298.90 > 99.00	1.861	1.853	0.008	1.000	1293675		2.43(0.00-0.00)			
D 11 18O2 PFHxS										
403.00 > 84.00	2.477	2.467	0.010		8087717	27.8		58.8	425453	
D 14 13C4 PFOA										
417.00 > 372.00	2.826	2.809	0.017		8756323	42.7		85.4	302904	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.826	2.817	0.009	1.000	29758554	166.3			128968	M
413.00 > 169.00	2.826	2.817	0.009	1.000	19675435		1.51(0.90-1.10)		266342	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.202	3.183	0.019	1.000	37251928	280.6			160289	EM
499.00 > 99.00	3.202	3.183	0.019	1.000	8718102		4.27(0.90-1.10)		184280	M
D 18 13C4 PFOS										
503.00 > 80.00	3.202	3.183	0.019		6452307	26.7		55.9	122102	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_048.d

Injection Date: 11-Mar-2017 18:05:05

Instrument ID: A8_N

Lims ID: 320-26105-A-10-A

Lab Sample ID: 320-26105-10

Client ID: MEAFF-SWON-SB03-0001

Operator ID: A8-PC\A8

ALS Bottle#: 39

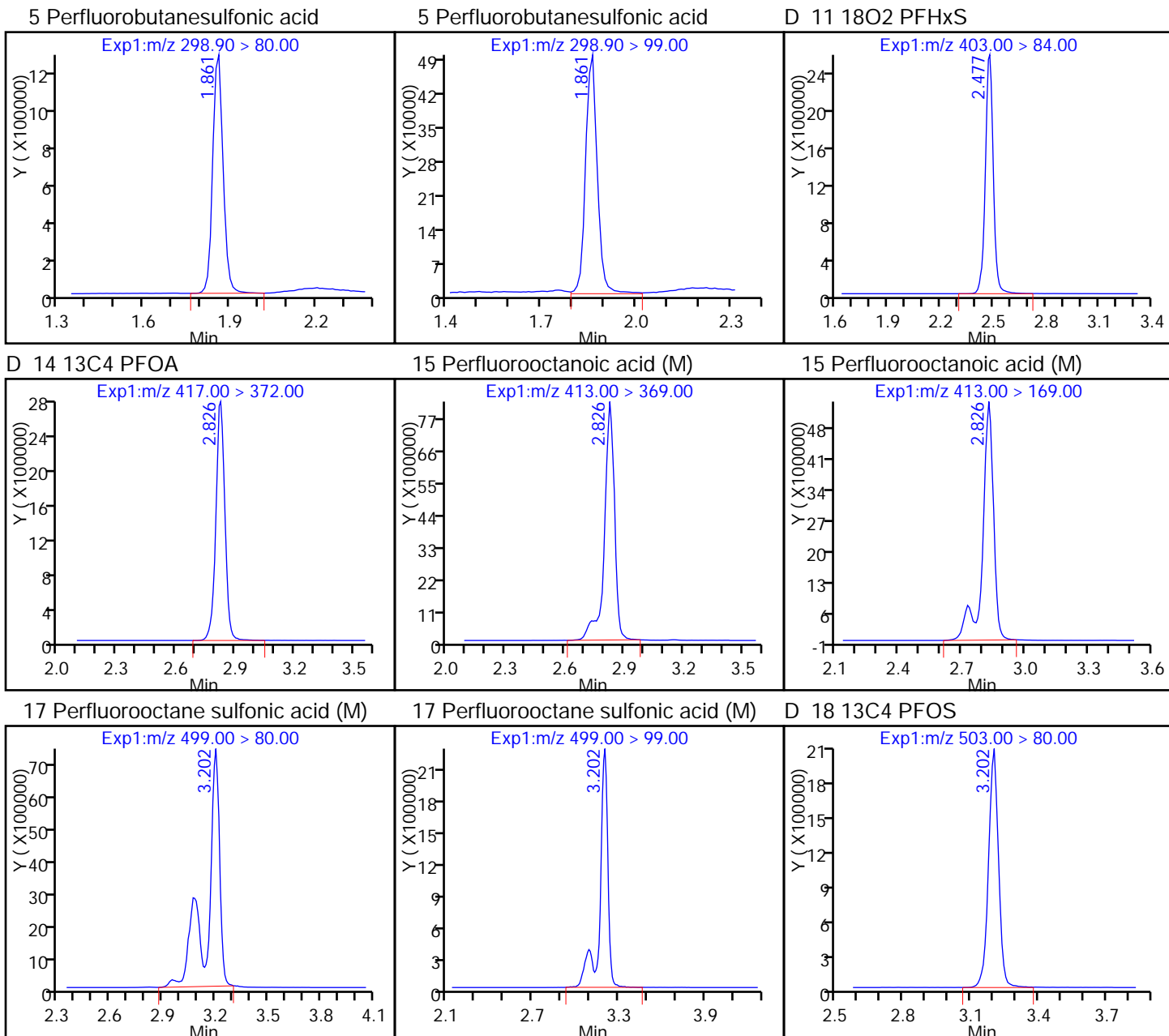
Worklist Smp#: 45

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC_DOD ICAL



TestAmerica Sacramento

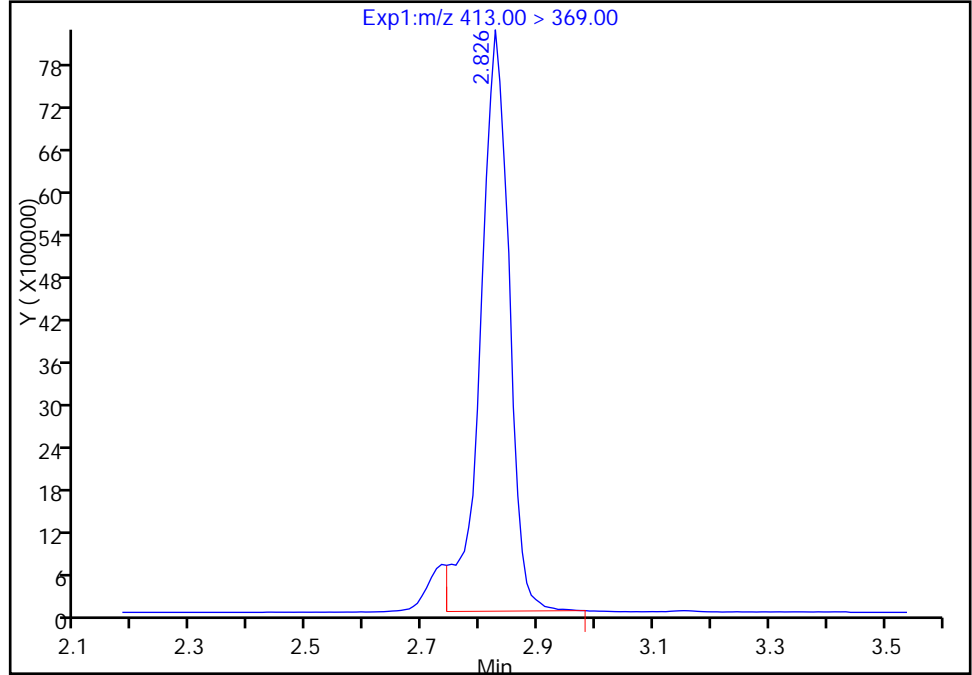
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_048.d
Injection Date: 11-Mar-2017 18:05:05 Instrument ID: A8_N
Lims ID: 320-26105-A-10-A Lab Sample ID: 320-26105-10
Client ID: MEAFF-SWON-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 39 Worklist Smp#: 45
Injection Vol: 2.0 ul 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

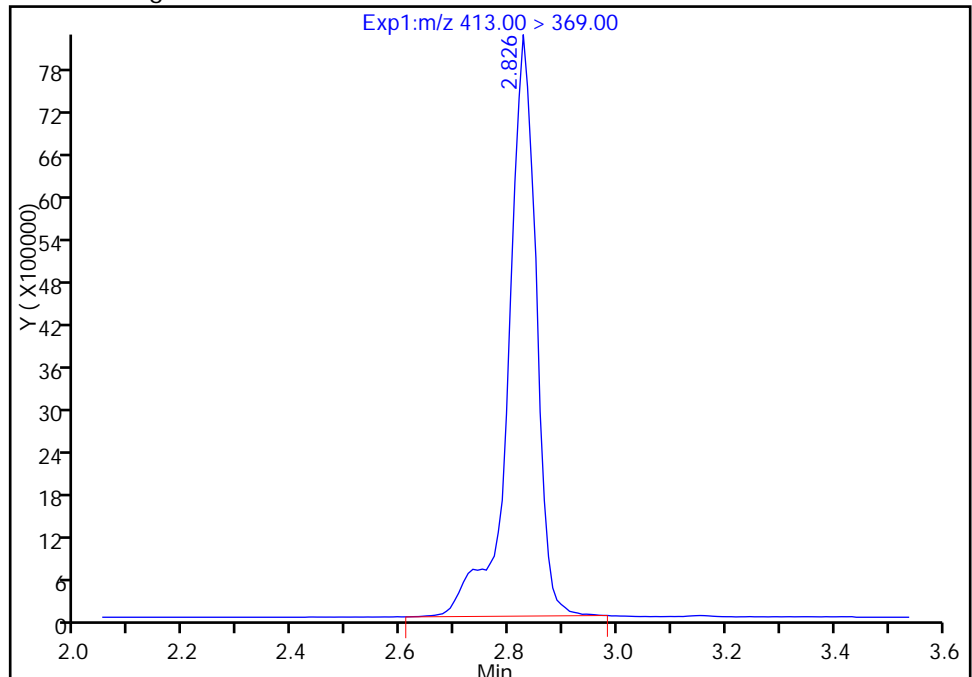
RT: 2.83
Area: 28233283
Amount: 157.7989
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 29758554
Amount: 166.3238
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:33:51
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

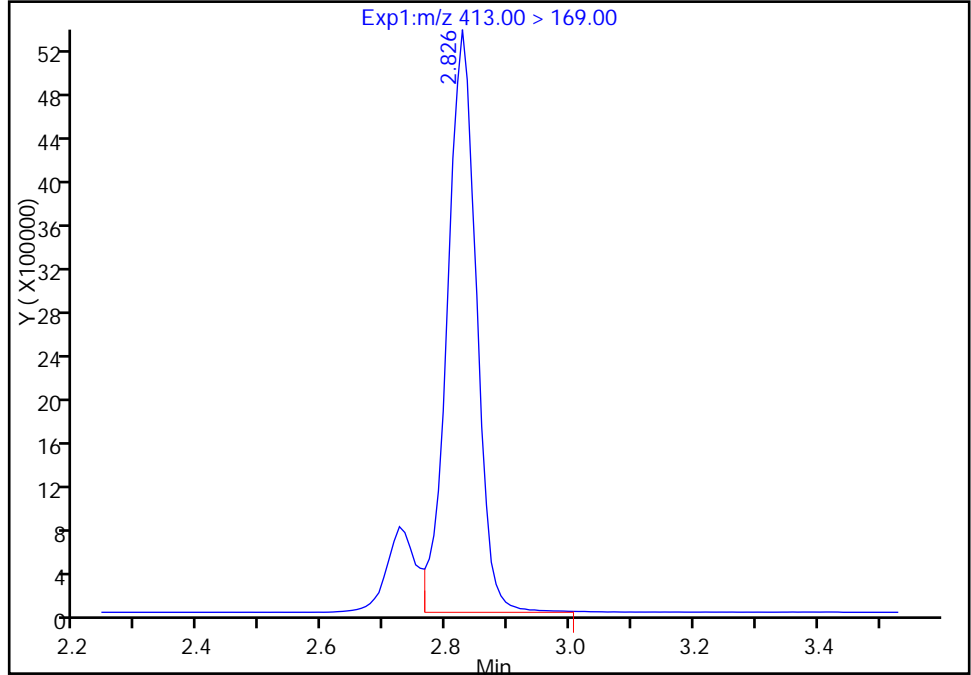
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_048.d
Injection Date: 11-Mar-2017 18:05:05 Instrument ID: A8_N
Lims ID: 320-26105-A-10-A Lab Sample ID: 320-26105-10
Client ID: MEAFF-SWON-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 39 Worklist Smp#: 45
Injection Vol: 2.0 ul 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

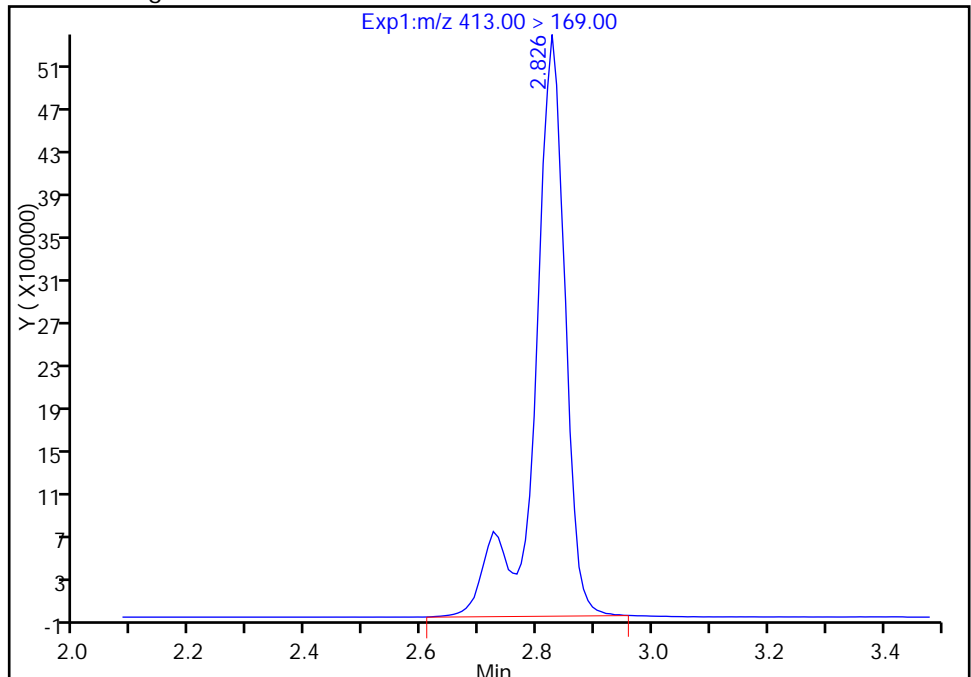
RT: 2.83
Area: 17306068
Amount: 157.7989
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 19675435
Amount: 166.3238
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

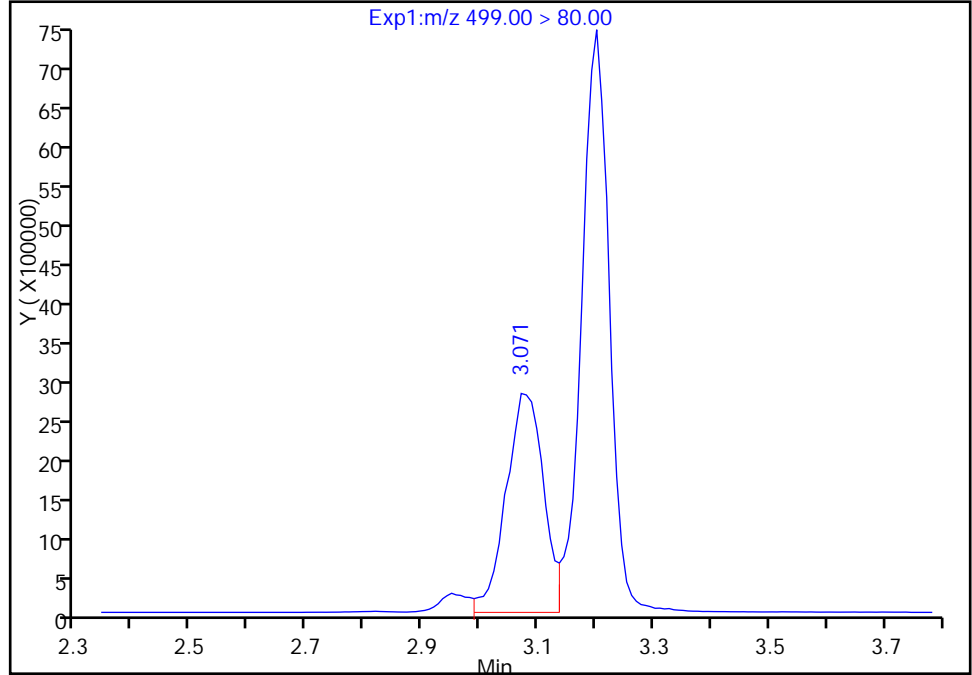
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_048.d
Injection Date: 11-Mar-2017 18:05:05 Instrument ID: A8_N
Lims ID: 320-26105-A-10-A Lab Sample ID: 320-26105-10
Client ID: MEAFF-SWON-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 39 Worklist Smp#: 45
Injection Vol: 2.0 ul 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

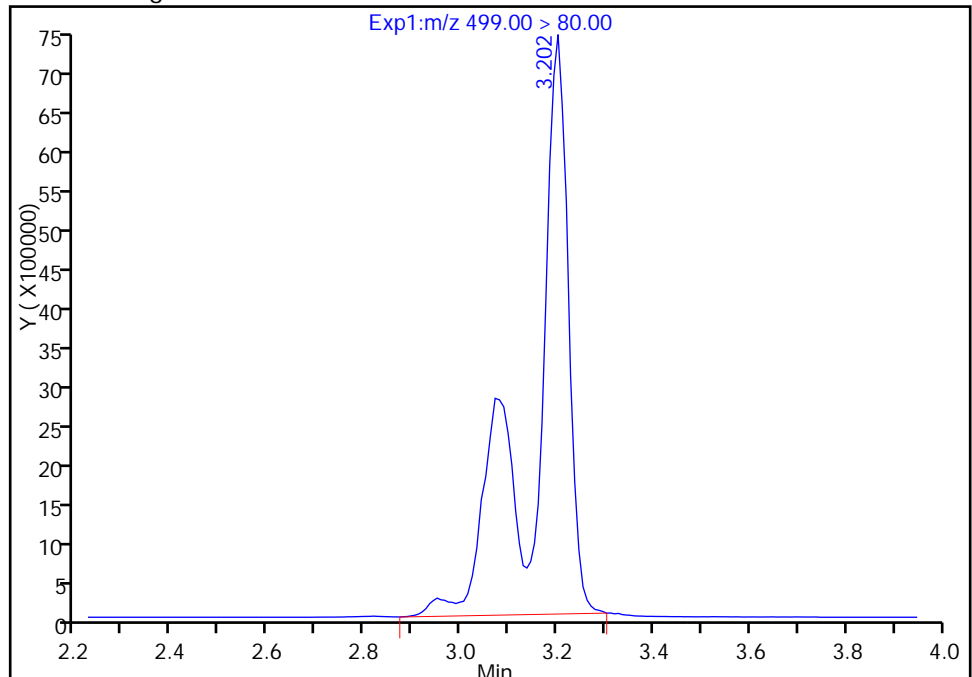
RT: 3.07
Area: 12515455
Amount: 94.274225
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 37251928
Amount: 280.6048
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:33:51
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

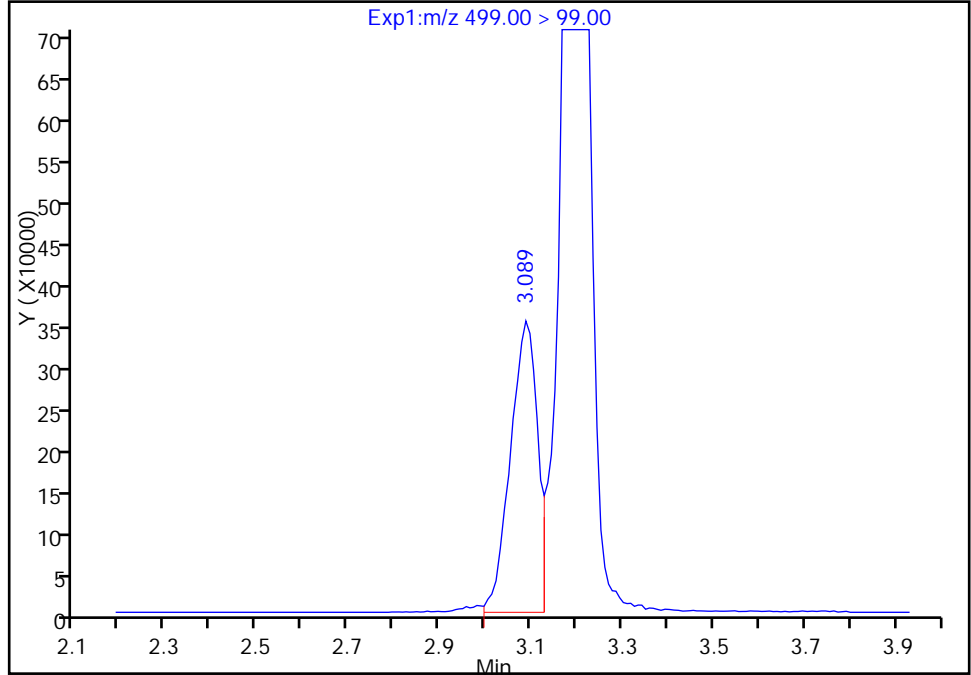
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_048.d
Injection Date: 11-Mar-2017 18:05:05 Instrument ID: A8_N
Lims ID: 320-26105-A-10-A Lab Sample ID: 320-26105-10
Client ID: MEAFF-SWON-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 39 Worklist Smp#: 45
Injection Vol: 2.0 ul 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

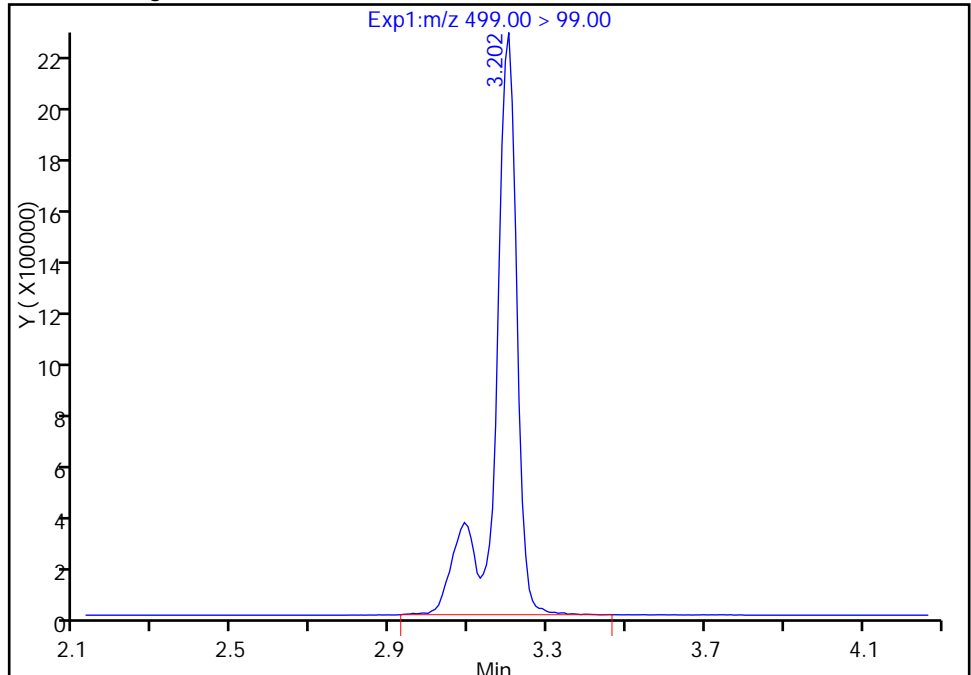
RT: 3.09
Area: 1436887
Amount: 94.274225
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 8718102
Amount: 280.6048
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 11:33:51

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-SWON-SB03-0001 DL Lab Sample ID: 320-26105-10 DL
 Matrix: Solid Lab File ID: 2017.03.13A_046.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:35
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.02(g) Date Analyzed: 03/13/2017 17:01
 Con. Extract Vol.: 1(mL) Dilution Factor: 10
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 13.9 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154808 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	<i>Perfluorooctanoic acid (PFOA)</i>	42	D M	5.8	3.5	1.2
1763-23-1	<i>Perfluorooctanesulfonic acid (PFOS)</i>	64	D M	5.8	3.5	1.5
375-73-5	<i>Perfluorobutanesulfonic acid (PFBS)</i>	1.8	J D	4.6	3.5	1.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	94	M	25-150
STL00991	13C4 PFOS	52		25-150
STL00994	18O2 PFHxS	81		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_046.d
 Lims ID: 320-26105-A-10-A
 Client ID: MEAFF-SWON-SB03-0001
 Sample Type: Client
 Inject. Date: 13-Mar-2017 17:01:07 ALS Bottle#: 30 Worklist Smp#: 10
 Injection Vol: 2.0 ul Dil. Factor: 10.0000
 Sample Info: 320-26105-a-10-a 10X
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 15-Mar-2017 11:40:35 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 27-Mar-2017 12:22:00

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	1.863	1.861	0.002	1.000	263640	0.7785				
298.90 > 99.00	1.853	1.861	-0.008	0.995	110434		2.39(0.00-0.00)			
D 11 18O2 PFHxS										
403.00 > 84.00	2.479	2.469	0.010		1118210	3.84		8.1	76535	
D 14 13C4 PFOA										
417.00 > 372.00	2.830	2.819	0.011		963275	4.70		9.4	79309	M
15 Perfluorooctanoic acid										
413.00 > 369.00	2.822	2.819	0.003	1.000	3570820	18.1			35252	M
413.00 > 169.00	2.830	2.819	0.011	1.003	2136678		1.67(0.90-1.10)		80846	M
D 18 13C4 PFOS										
503.00 > 80.00	3.196	3.185	0.011		601515	2.49		5.2	24773	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.196	3.194	0.002	1.000	3443268	27.8			93705	M
499.00 > 99.00	3.196	3.194	0.002	1.000	786900		4.38(0.90-1.10)		1007	M

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_046.d

Injection Date: 13-Mar-2017 17:01:07

Instrument ID: A8_N

Lims ID: 320-26105-A-10-A

Lab Sample ID: 320-26105-10

Client ID: MEAFF-SWON-SB03-0001

Operator ID: A8-PC\A8

ALS Bottle#: 30

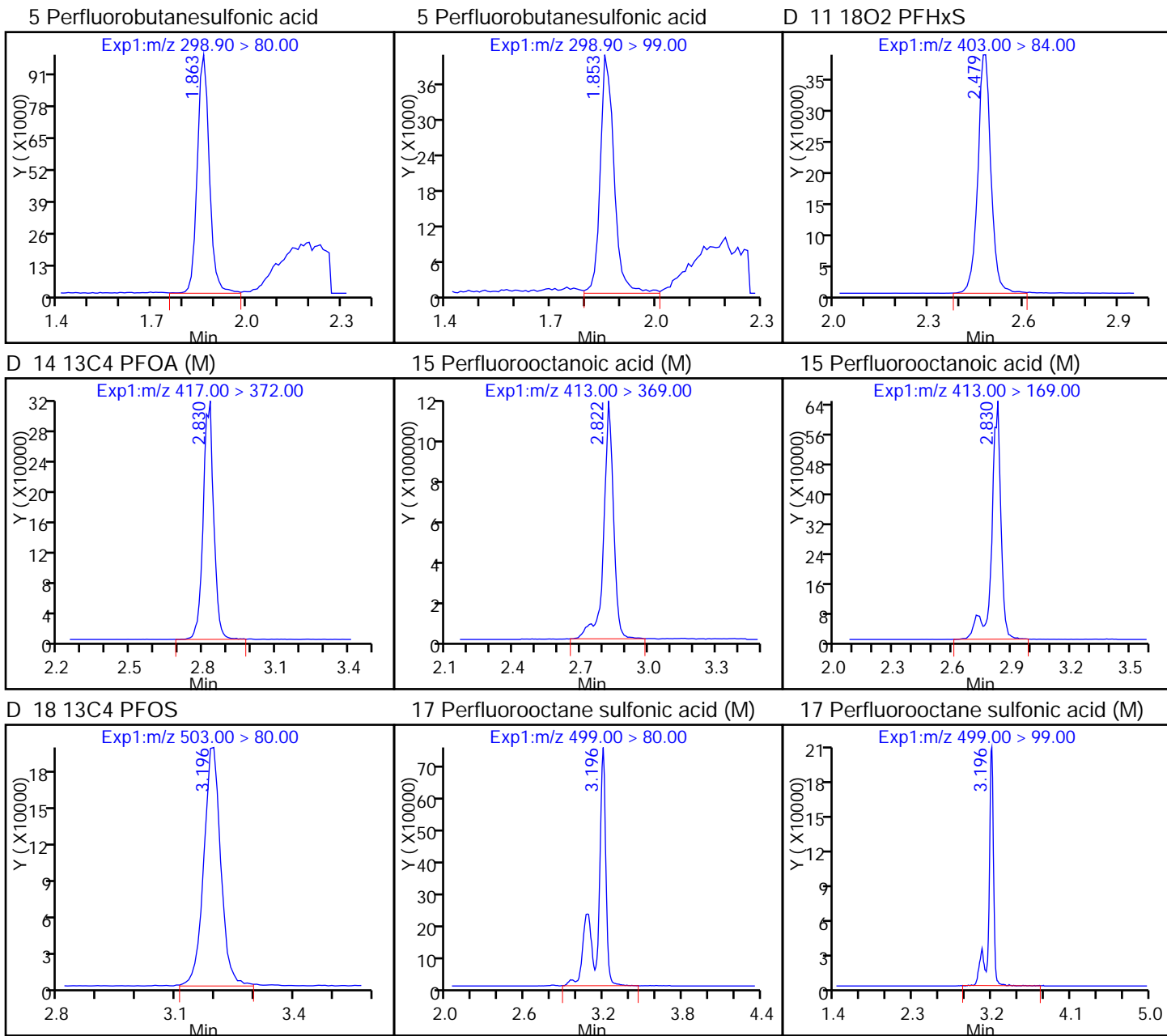
Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 10.0000

Method: A8_N

Limit Group: LC PFC_DOD ICAL



TestAmerica Sacramento

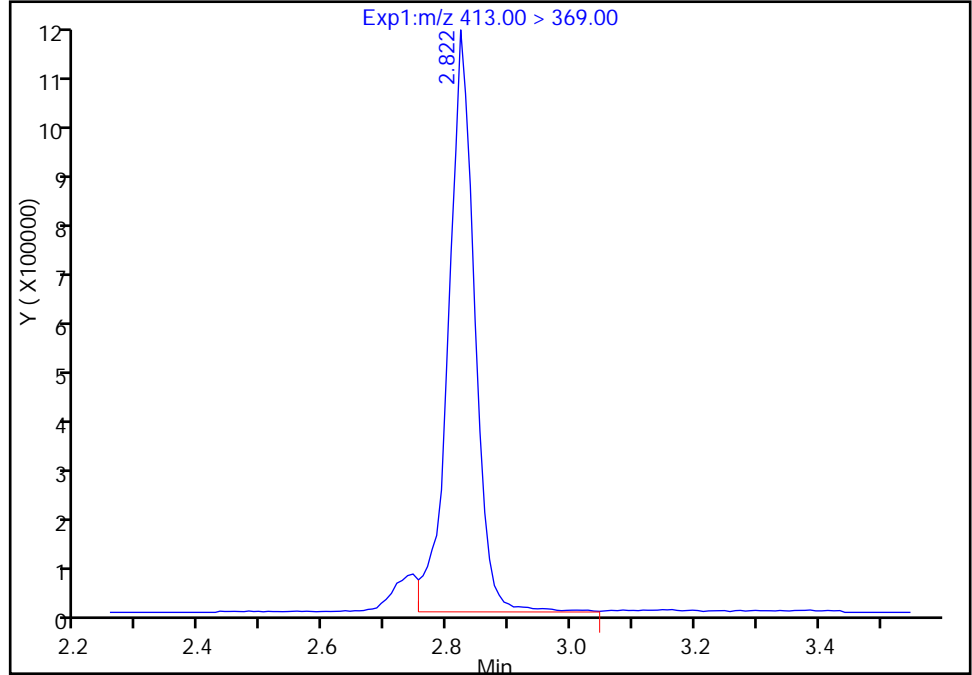
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_046.d
Injection Date: 13-Mar-2017 17:01:07 Instrument ID: A8_N
Lims ID: 320-26105-A-10-A Lab Sample ID: 320-26105-10
Client ID: MEAFF-SWON-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

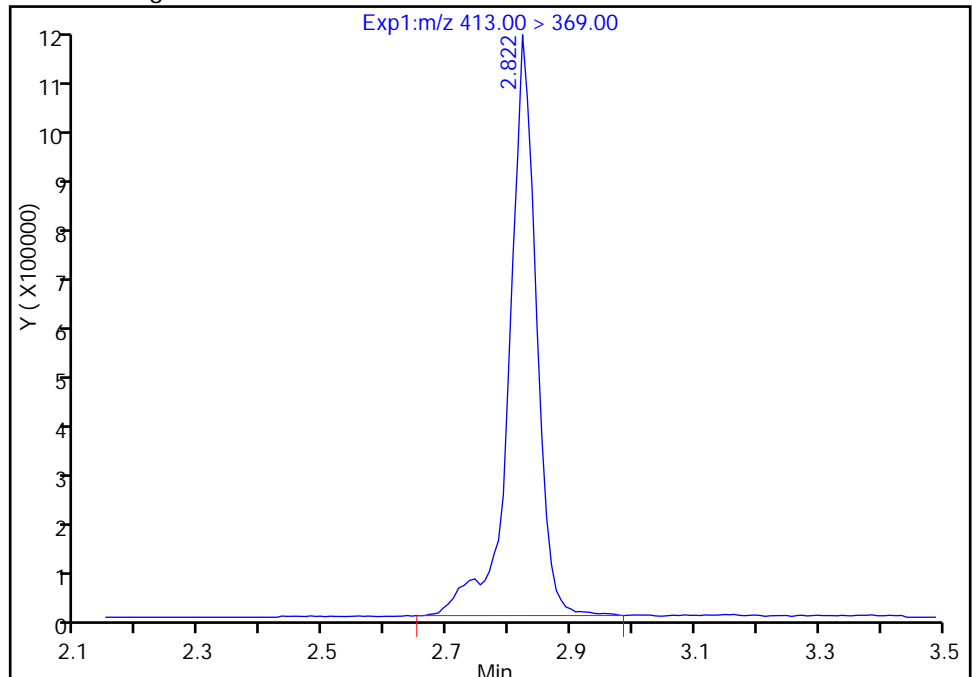
RT: 2.82
Area: 3423984
Amount: 17.395853
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 3570820
Amount: 18.141866
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 12:21:18
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

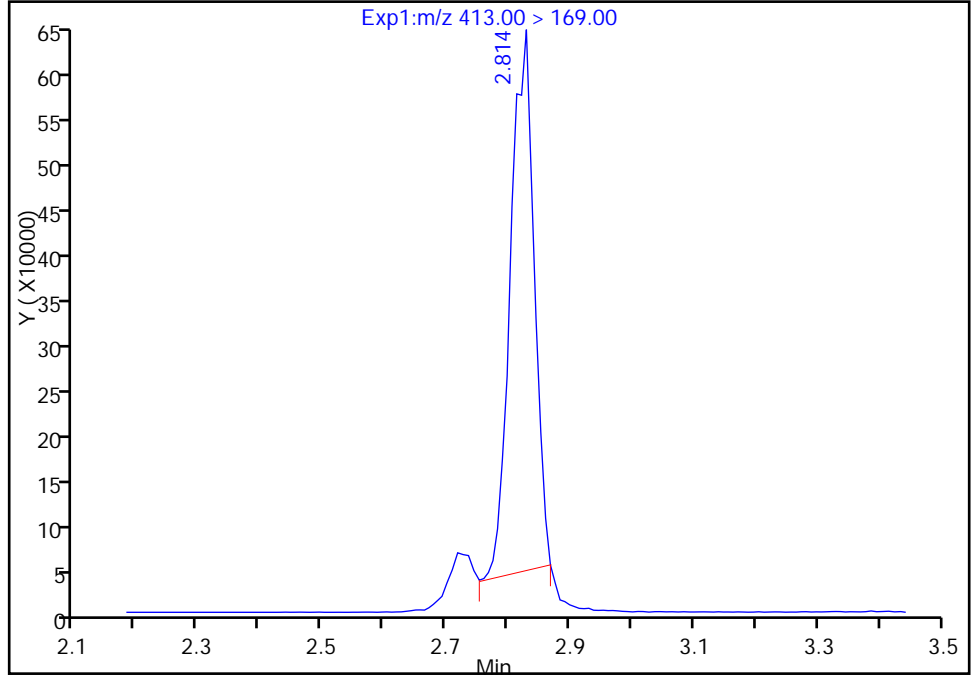
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_046.d
Injection Date: 13-Mar-2017 17:01:07 Instrument ID: A8_N
Lims ID: 320-26105-A-10-A Lab Sample ID: 320-26105-10
Client ID: MEAFF-SWON-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

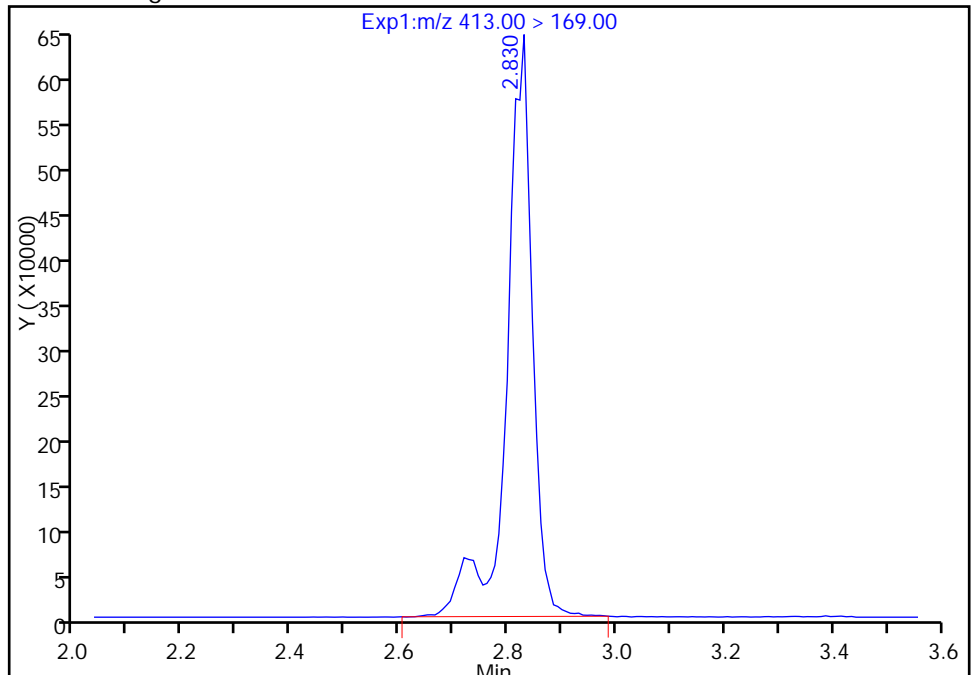
RT: 2.81
Area: 1595613
Amount: 17.395853
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 2136678
Amount: 18.141866
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 12:21:18

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

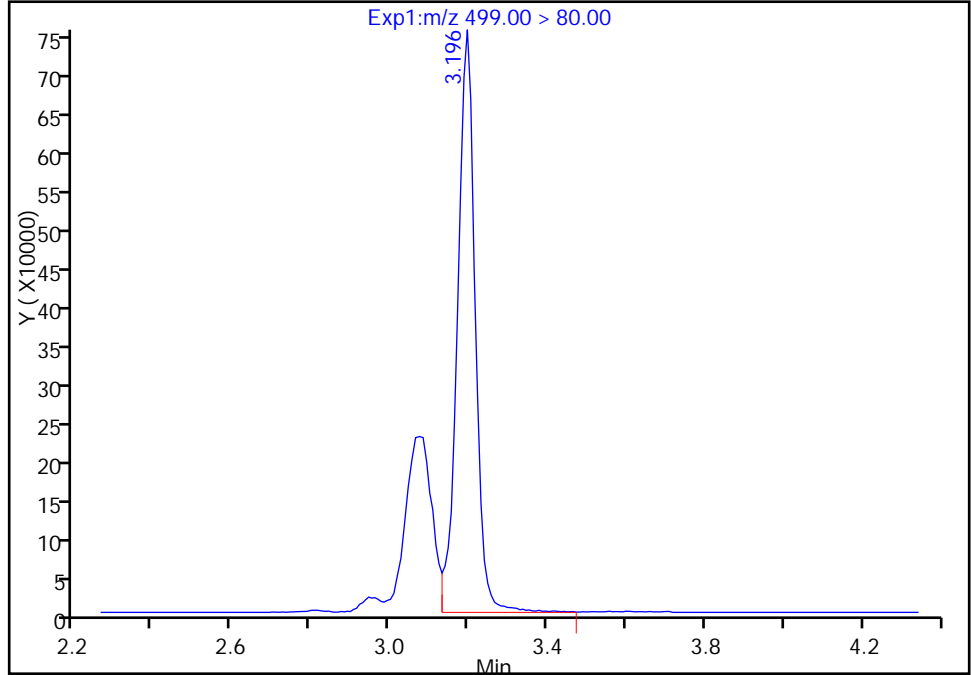
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_046.d
Injection Date: 13-Mar-2017 17:01:07 Instrument ID: A8_N
Lims ID: 320-26105-A-10-A Lab Sample ID: 320-26105-10
Client ID: MEAFF-SWON-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

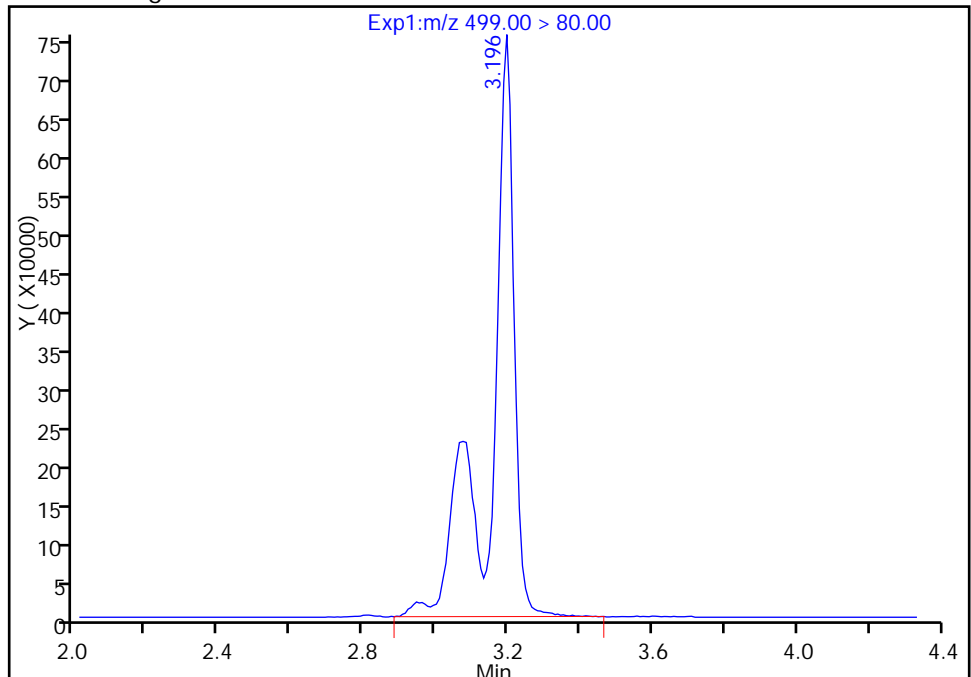
RT: 3.20
Area: 2348639
Amount: 18.977157
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 3443268
Amount: 27.821831
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 12:21:18
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

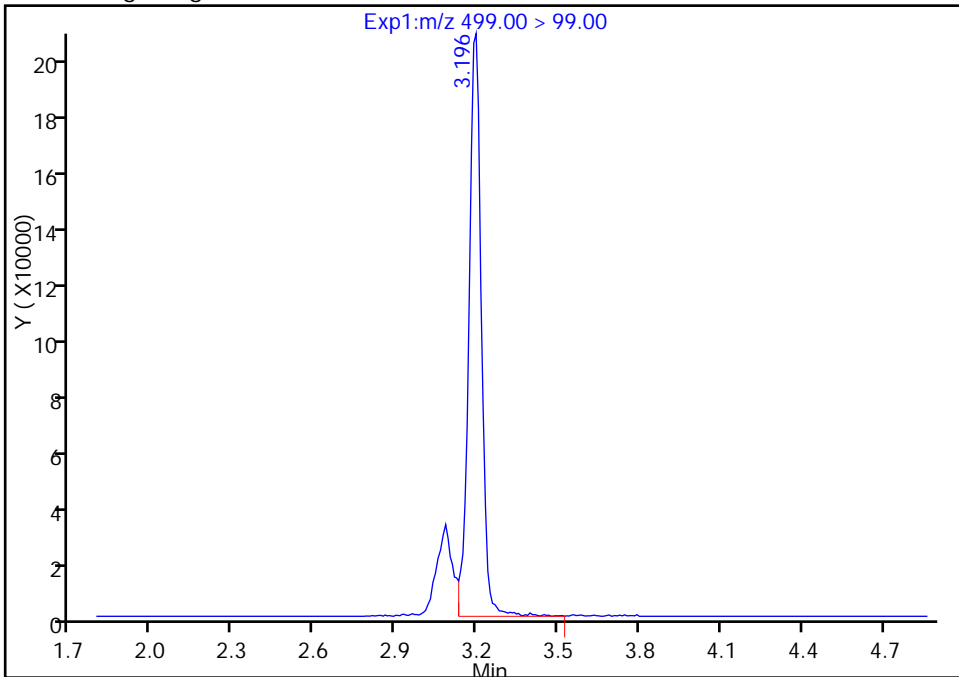
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_046.d
Injection Date: 13-Mar-2017 17:01:07 Instrument ID: A8_N
Lims ID: 320-26105-A-10-A Lab Sample ID: 320-26105-10
Client ID: MEAFF-SWON-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

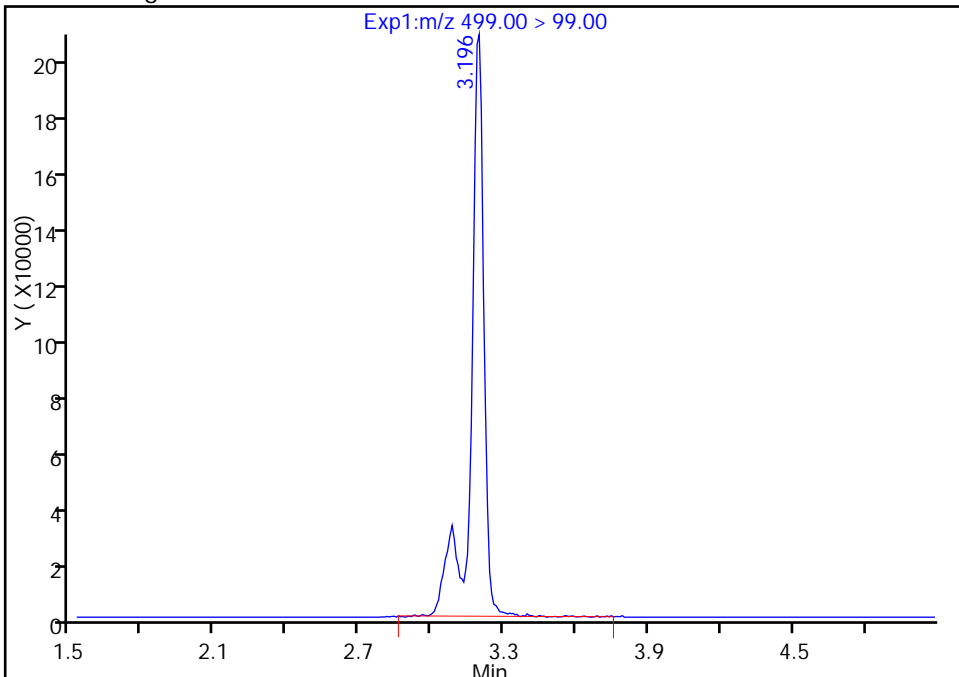
RT: 3.20
Area: 665450
Amount: 18.977157
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 786900
Amount: 27.821831
Amount Units: ng/ml

Manual Integration Results



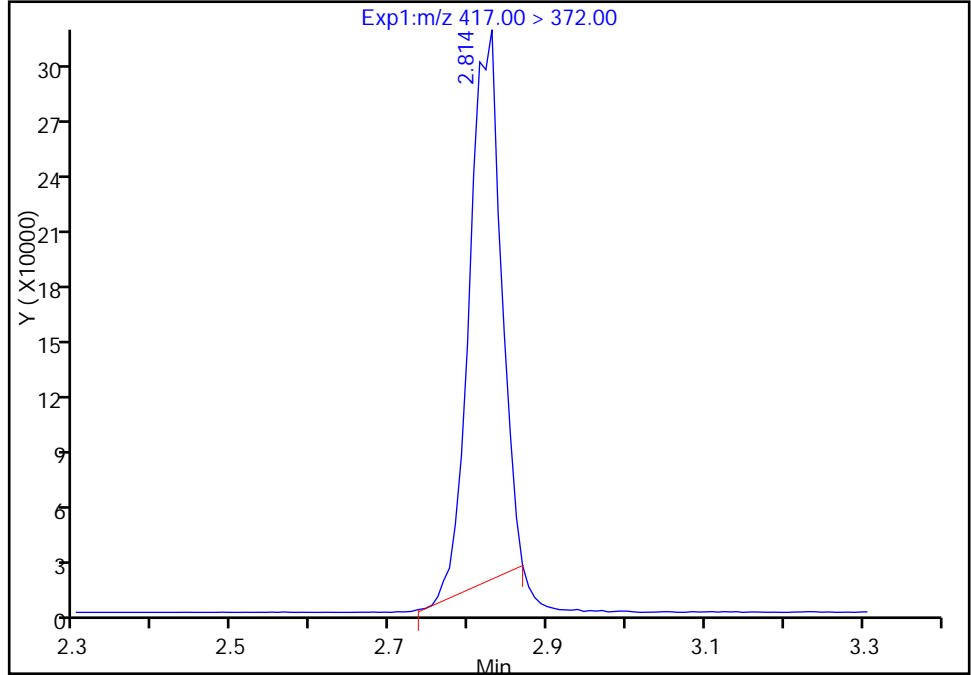
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_046.d
Injection Date: 13-Mar-2017 17:01:07 Instrument ID: A8_N
Lims ID: 320-26105-A-10-A Lab Sample ID: 320-26105-10
Client ID: MEAFF-SWON-SB03-0001
Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

D 14 13C4 PFOA, CAS: STL00990
Signal: 1

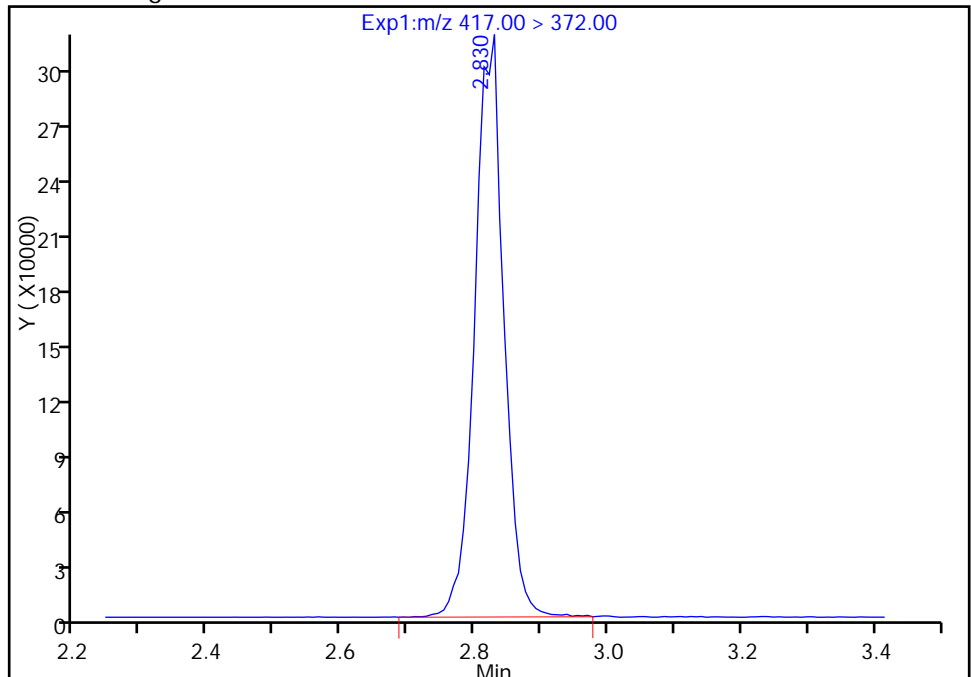
RT: 2.81
Area: 836974
Amount: 4.083736
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 963275
Amount: 4.699980
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 12:21:18
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-SWON-SB03-0204 Lab Sample ID: 320-26105-11
 Matrix: Solid Lab File ID: 2017.03.11C_050.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:40
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 4.94(g) Date Analyzed: 03/11/2017 18:20
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 13.6 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	8.3	M	0.59	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	8.3	M	0.59	0.35	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6		0.47	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	108		25-150
STL00991	13C4 PFOS	53		25-150
STL00994	18O2 PFHxS	82		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_050.d
 Lims ID: 320-26105-A-11-A
 Client ID: MEAFF-SWON-SB03-0204
 Sample Type: Client
 Inject. Date: 11-Mar-2017 18:20:05 ALS Bottle#: 40 Worklist Smp#: 47
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-11-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 11:28:13 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 13-Mar-2017 14:07:57

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	1.851	1.861	-0.010	1.000	2277213	6.68				
298.90 > 99.00	1.851	1.861	-0.010	1.000	902735		2.52(0.00-0.00)			
D 11 18O2 PFHxS										
403.00 > 84.00	2.472	2.471	0.001		11251671	38.7		81.8	356402	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.813	0.001		11024489	53.8		108	362921	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.814	2.821	-0.007	1.000	8005849	35.5			63700	M
413.00 > 169.00	2.814	2.821	-0.007	1.000	4899110		1.63(0.90-1.10)		135190	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.188	3.195	-0.007	1.000	4442783	35.5			56436	M
499.00 > 99.00	3.188	3.195	-0.007	1.000	1053016		4.22(0.90-1.10)		47863	M
D 18 13C4 PFOS										
503.00 > 80.00	3.188	3.195	-0.007		6086752	25.2		52.7	172216	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_050.d

Injection Date: 11-Mar-2017 18:20:05

Instrument ID: A8_N

Lims ID: 320-26105-A-11-A

Lab Sample ID: 320-26105-11

Client ID: MEAFF-SWON-SB03-0204

Operator ID: A8-PC\A8

ALS Bottle#: 40

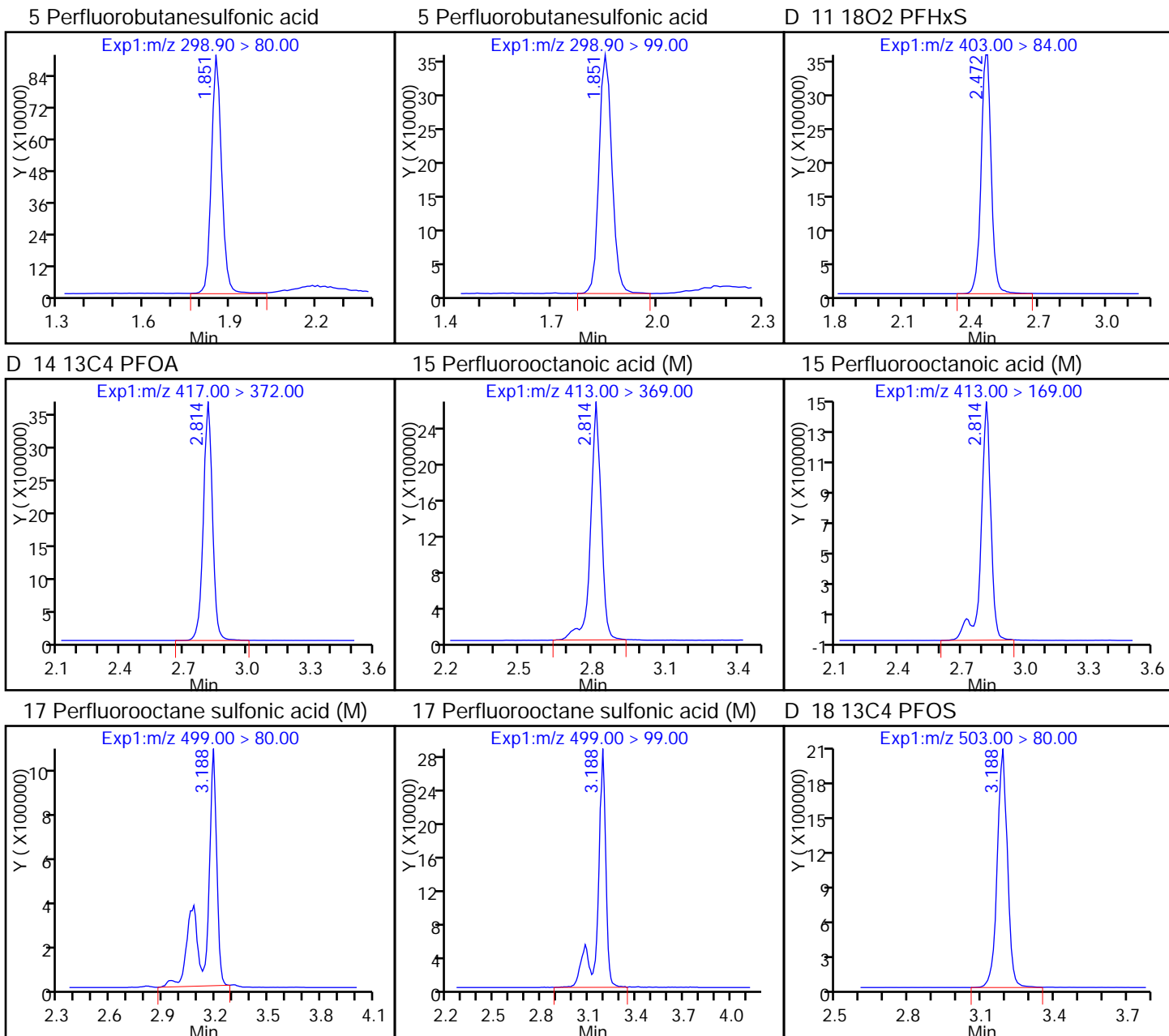
Worklist Smp#: 47

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC_DOD ICAL



TestAmerica Sacramento

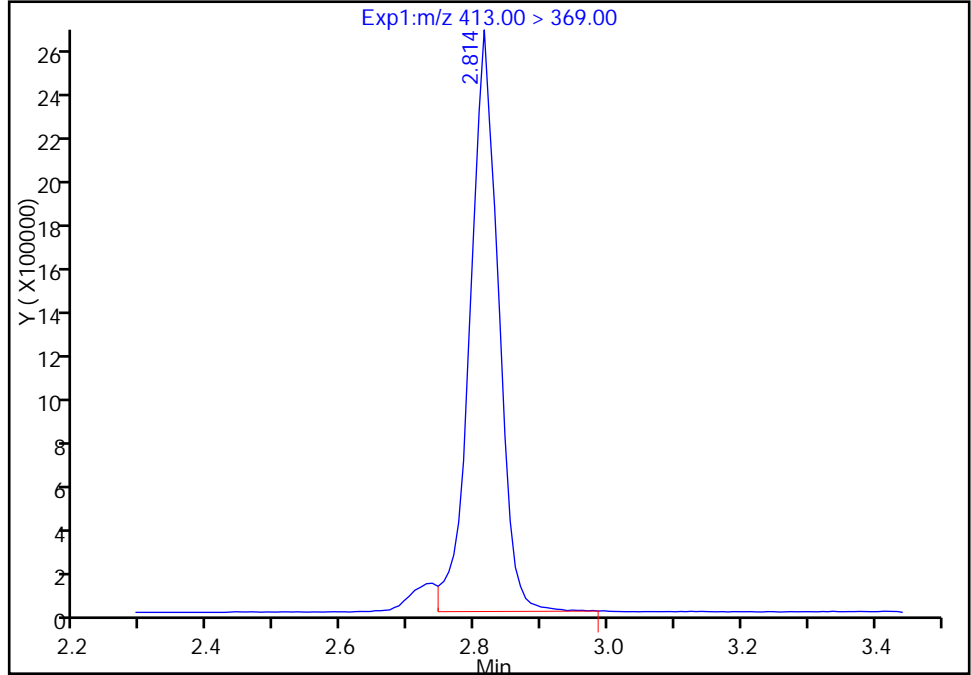
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_050.d
Injection Date: 11-Mar-2017 18:20:05 Instrument ID: A8_N
Lims ID: 320-26105-A-11-A Lab Sample ID: 320-26105-11
Client ID: MEAFF-SWON-SB03-0204
Operator ID: A8-PC\A8 ALS Bottle#: 40 Worklist Smp#: 47
Injection Vol: 2.0 ul 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

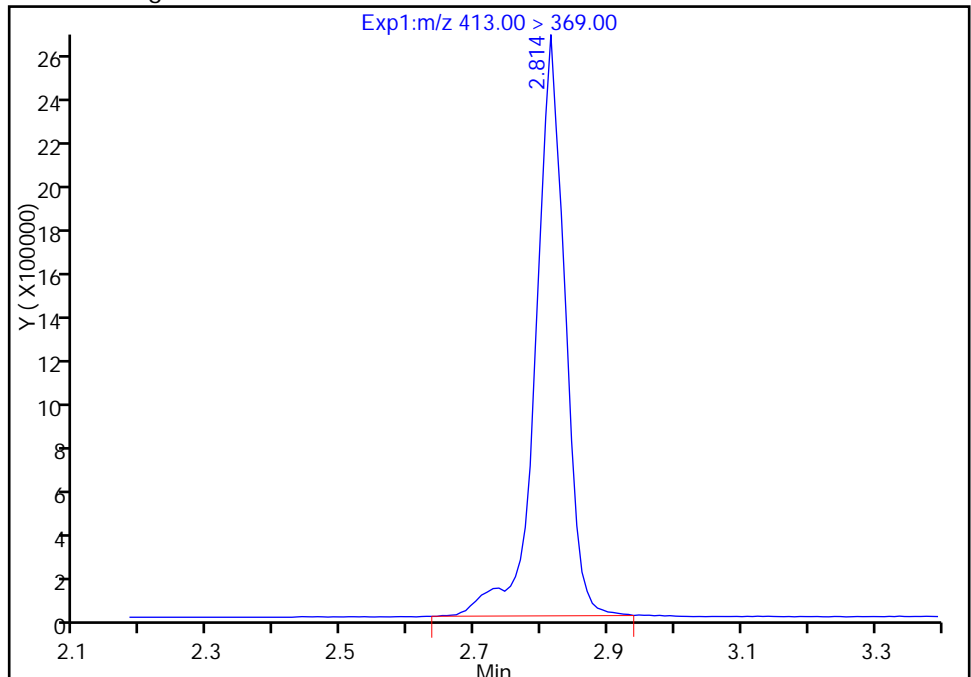
RT: 2.81
Area: 7697135
Amount: 34.169208
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 8005849
Amount: 35.539655
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

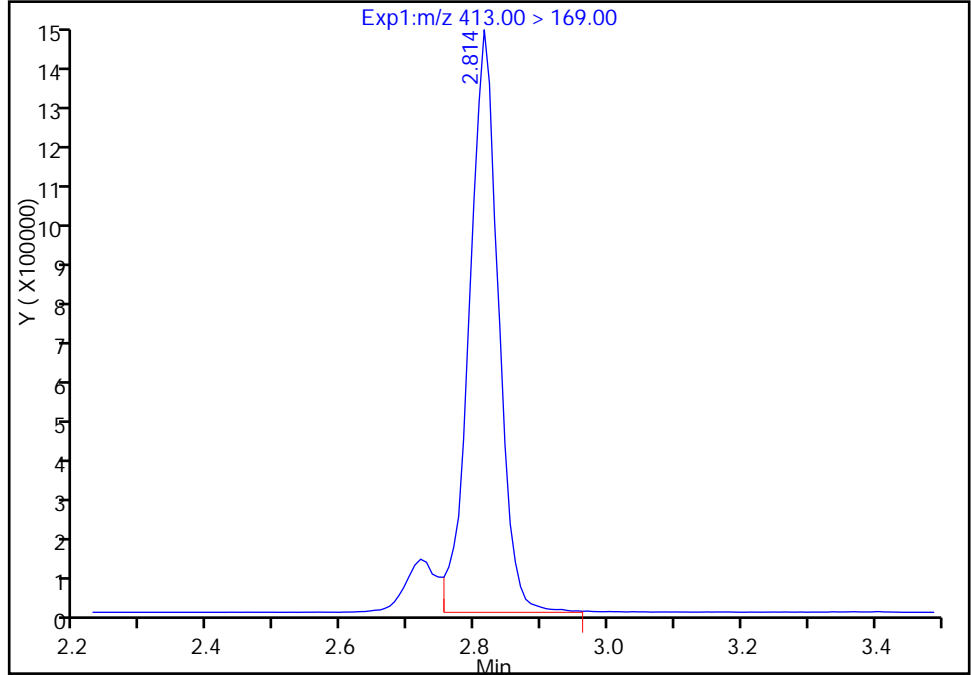
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_050.d
Injection Date: 11-Mar-2017 18:20:05 Instrument ID: A8_N
Lims ID: 320-26105-A-11-A Lab Sample ID: 320-26105-11
Client ID: MEAFF-SWON-SB03-0204
Operator ID: A8-PC\A8 ALS Bottle#: 40 Worklist Smp#: 47
Injection Vol: 2.0 ul 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

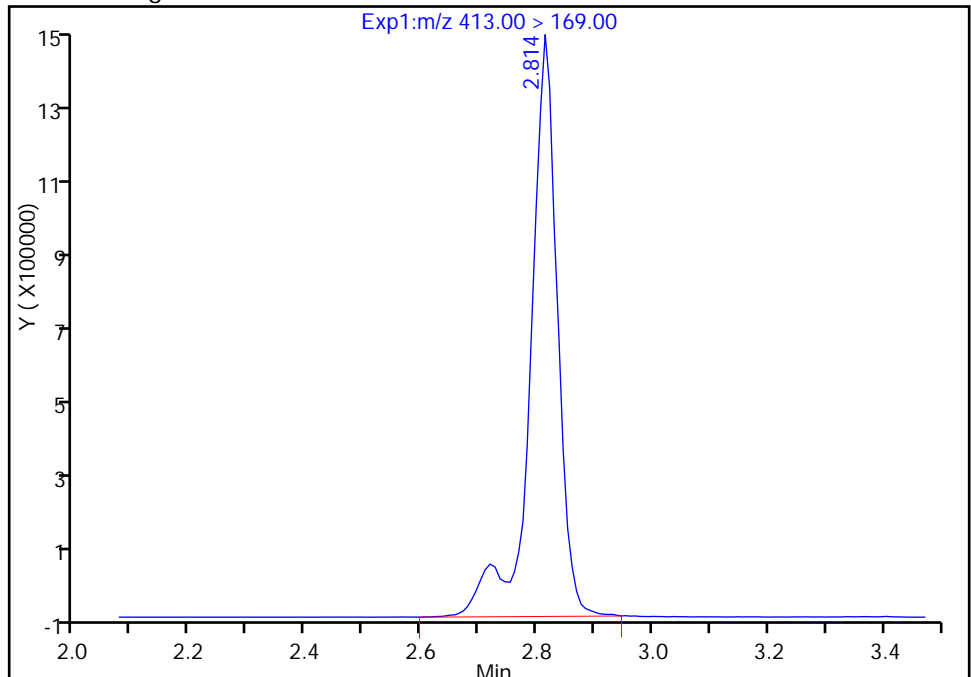
RT: 2.81
Area: 4487253
Amount: 34.169208
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 4899110
Amount: 35.539655
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

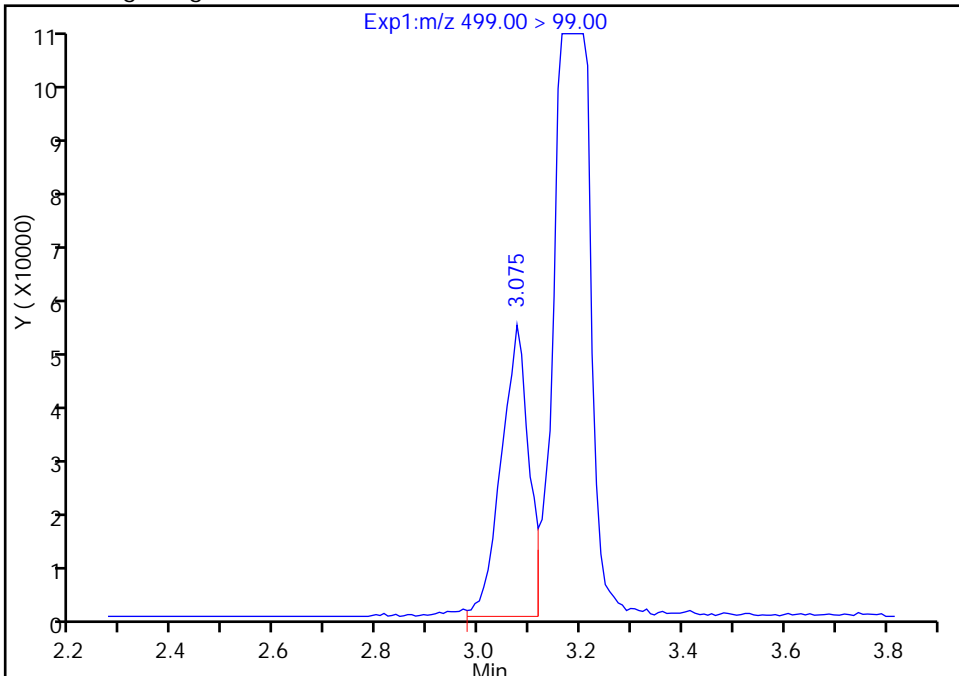
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_050.d
Injection Date: 11-Mar-2017 18:20:05 Instrument ID: A8_N
Lims ID: 320-26105-A-11-A Lab Sample ID: 320-26105-11
Client ID: MEAFF-SWON-SB03-0204
Operator ID: A8-PC\A8 ALS Bottle#: 40 Worklist Smp#: 47
Injection Vol: 2.0 ul 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

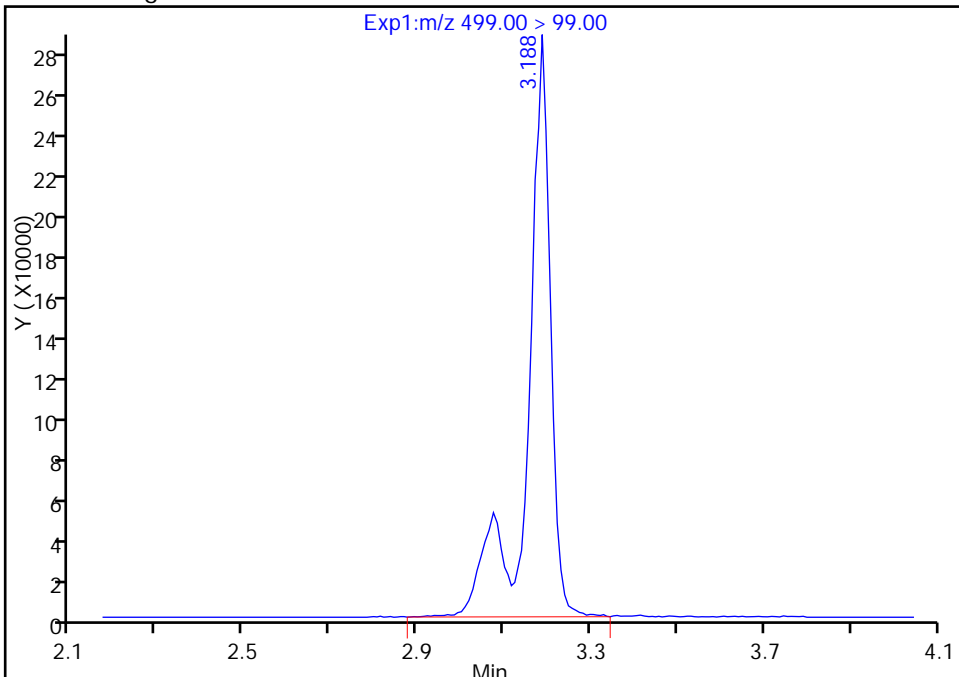
RT: 3.08
Area: 190127
Amount: 11.728454
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 1053016
Amount: 35.475689
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 11:33:55
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

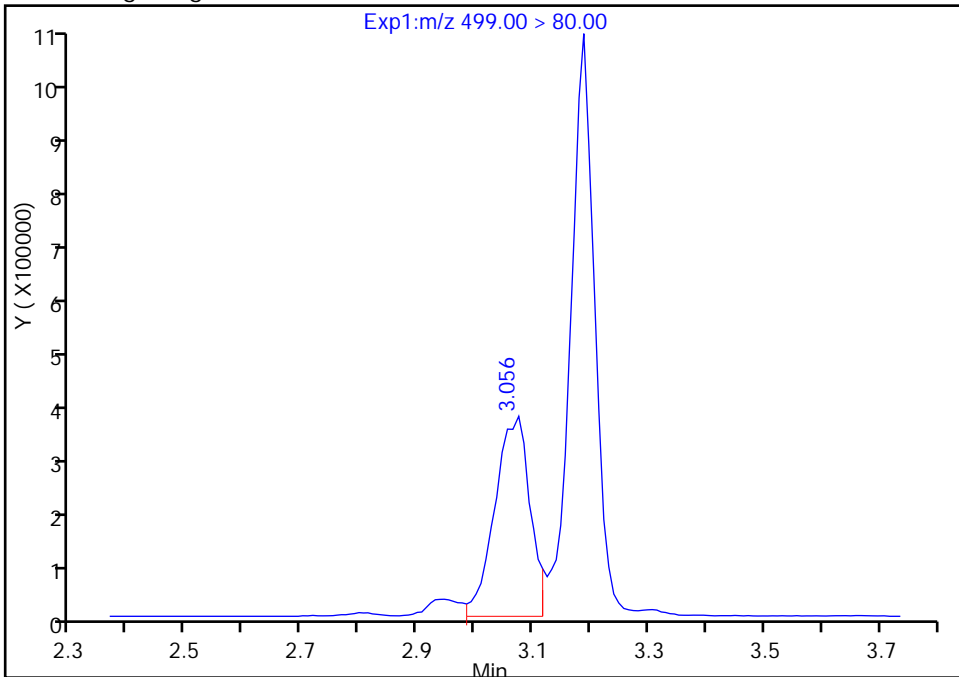
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_050.d
Injection Date: 11-Mar-2017 18:20:05 Instrument ID: A8_N
Lims ID: 320-26105-A-11-A Lab Sample ID: 320-26105-11
Client ID: MEAFF-SWON-SB03-0204
Operator ID: A8-PC\A8 ALS Bottle#: 40 Worklist Smp#: 47
Injection Vol: 2.0 ul 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

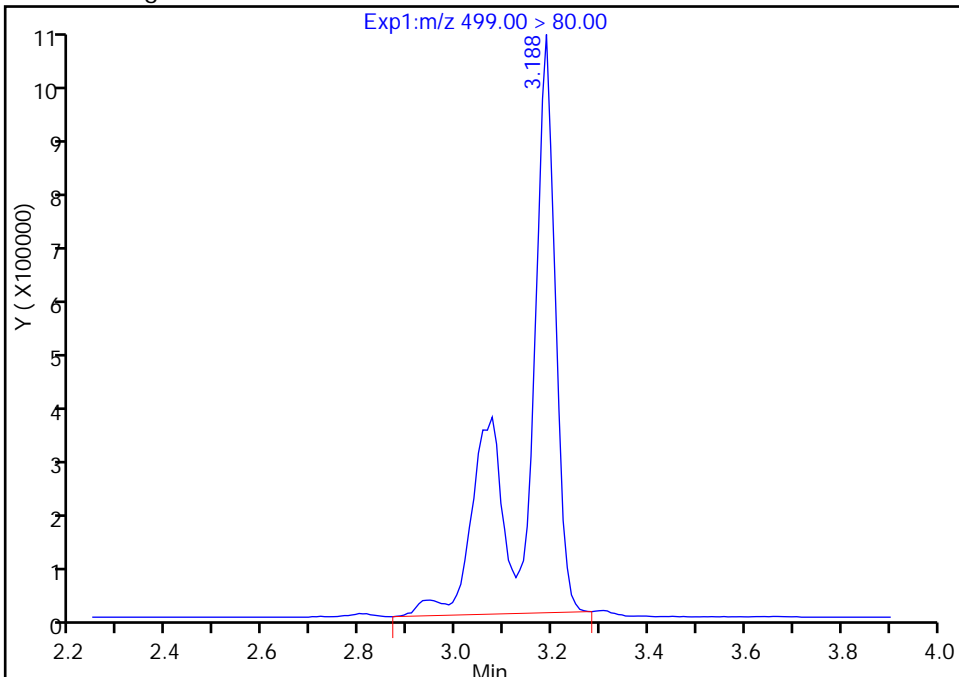
RT: 3.06
Area: 1468808
Amount: 11.728454
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 4442783
Amount: 35.475689
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW03-0217 Lab Sample ID: 320-26105-12
 Matrix: Water Lab File ID: 2017.03.04A_055.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:30
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 278.5 (mL) Date Analyzed: 03/06/2017 02:49
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	3.9	M	2.2	1.8	0.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U M	3.6	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	5.5	M	2.2	1.8	0.82

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	68		25-150
STL00991	13C4 PFOS	131		25-150
STL00994	18O2 PFHxS	141		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_055.d
 Lims ID: 320-26105-D-12-A
 Client ID: MEAFF-08MW03-0217
 Sample Type: Client
 Inject. Date: 06-Mar-2017 02:49:10 ALS Bottle#: 44 Worklist Smp#: 55
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-d-12-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 13:24:10 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 07-Mar-2017 14:52:50

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	1.851	1.851	0.0	1.000	1820436	3.09				M
298.90 > 99.00	1.851	1.851	0.0	1.000	749730		2.43(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.459	2.464	-0.005		19457546	66.9		141	113007	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.810	2.806	0.004	1.000	312564	2.18			2806	M
413.00 > 169.00	2.713	2.806	-0.093	0.966	231783		1.35(0.90-1.10)		6242	
D 14 13C4 PFOA										
417.00 > 372.00	2.810	2.814	-0.004		7018305	34.2		68.5	420545	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.156	-0.106	1.000	63926	0.2055			1458	
499.00 > 99.00	3.192	3.156	0.036	1.047	15905		4.02(0.90-1.10)		741	M
D 18 13C4 PFOS										
503.00 > 80.00	3.184	3.188	-0.004		15121540	62.6		131	1603505	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_055.d

Injection Date: 06-Mar-2017 02:49:10

Instrument ID: A8_N

Lims ID: 320-26105-D-12-A

Lab Sample ID: 320-26105-12

Client ID: MEAFF-08MW03-0217

Operator ID: A8-PC\A8

ALS Bottle#: 44

Worklist Smp#: 55

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

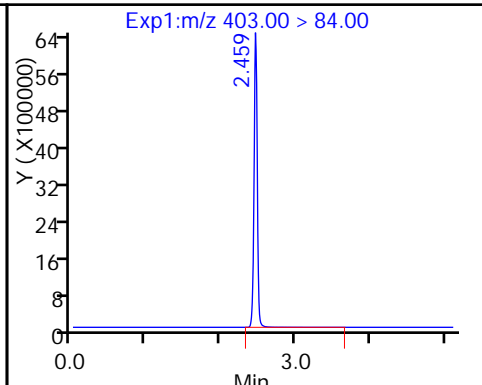
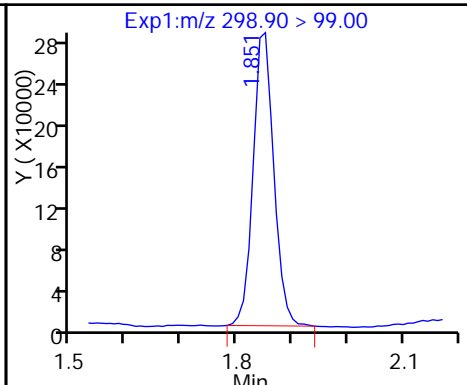
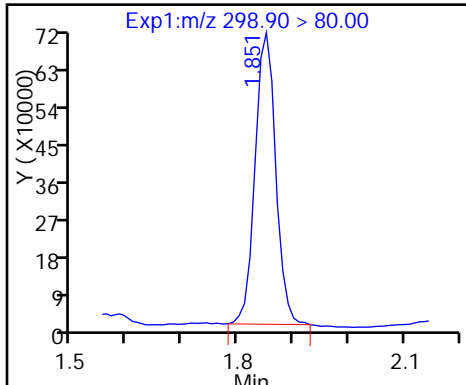
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

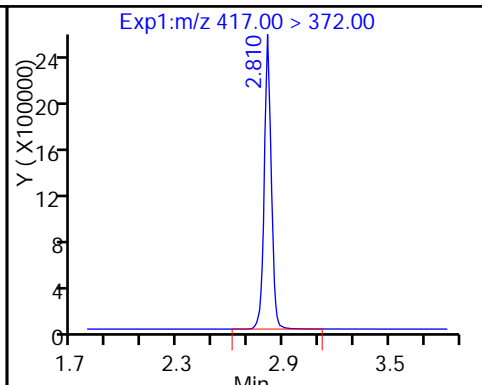
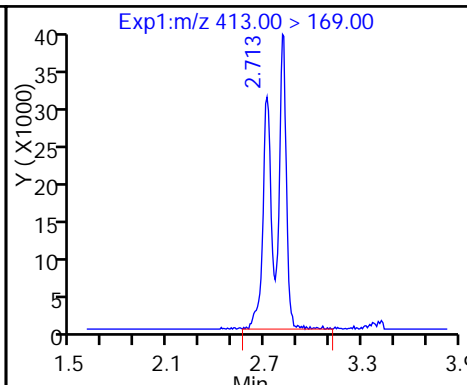
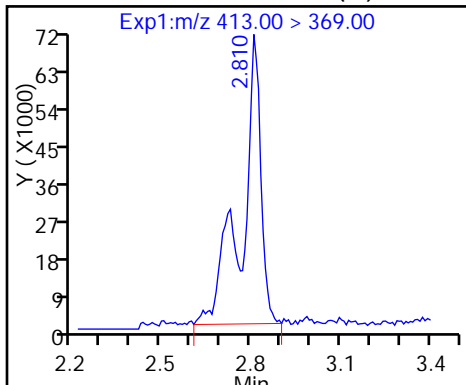
D 11 18O2 PFHxS



15 Perfluorooctanoic acid (M)

15 Perfluorooctanoic acid

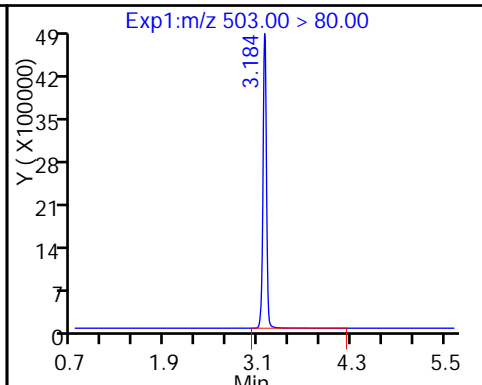
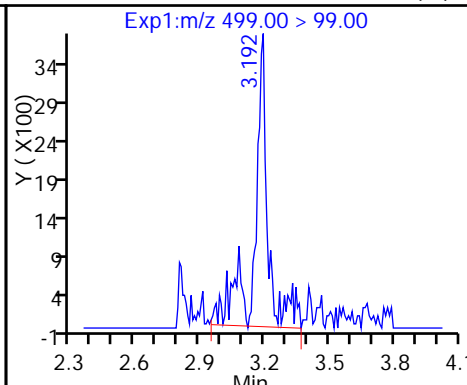
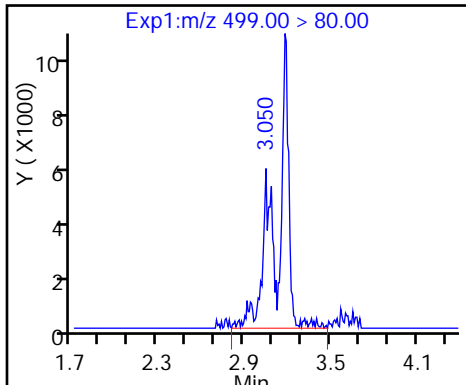
D 14 13C4 PFOA



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid (M)

D 18 13C4 PFOS



TestAmerica Sacramento

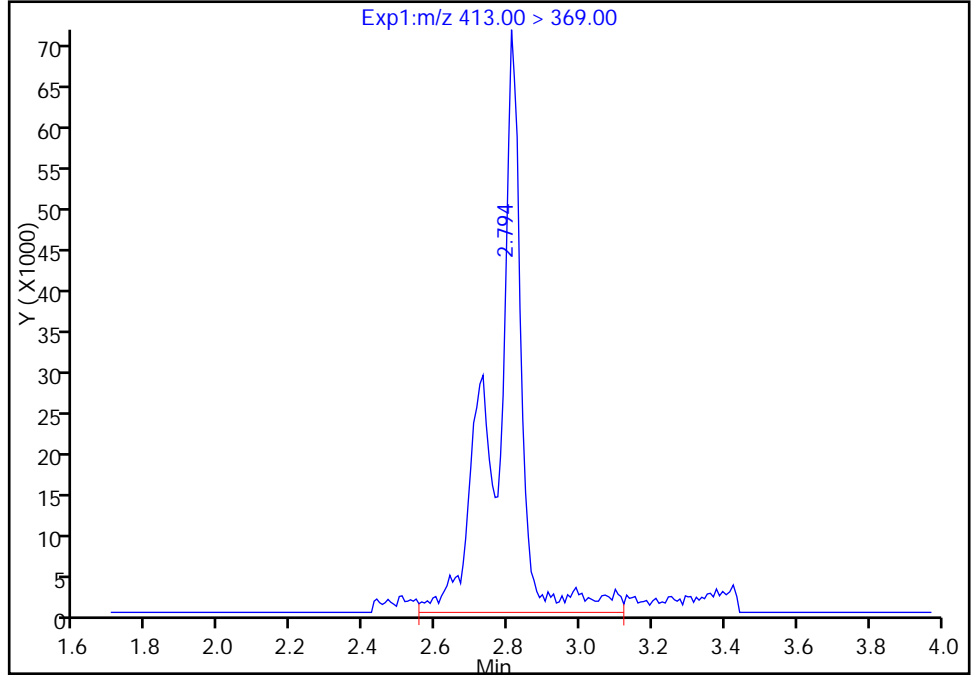
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_055.d
Injection Date: 06-Mar-2017 02:49:10 Instrument ID: A8_N
Lims ID: 320-26105-D-12-A Lab Sample ID: 320-26105-12
Client ID: MEAFF-08MW03-0217
Operator ID: A8-PC\A8 ALS Bottle#: 44 Worklist Smp#: 55
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

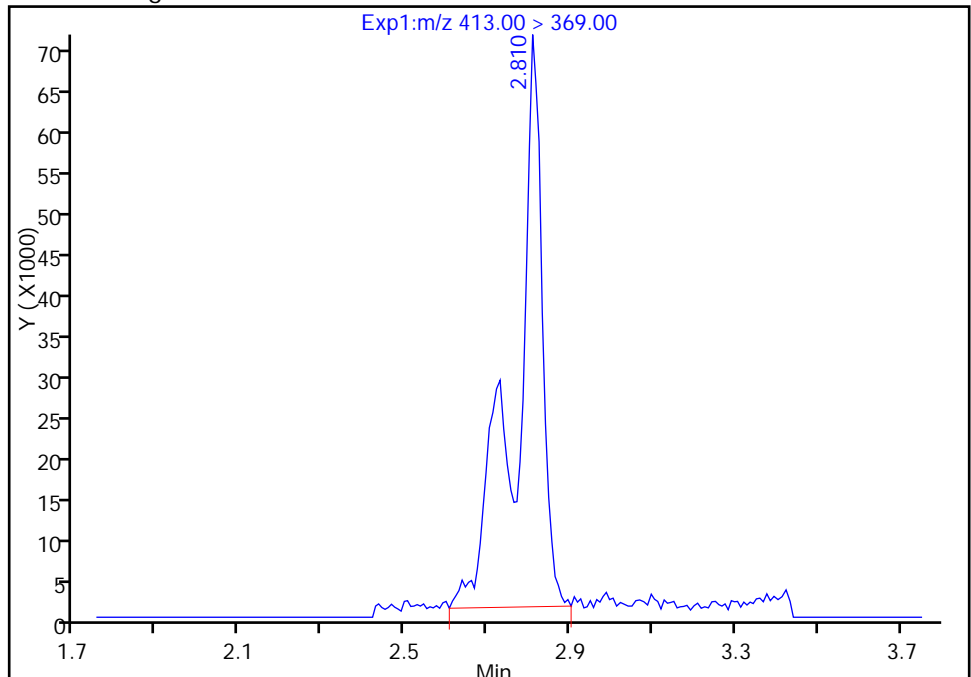
RT: 2.79
Area: 363858
Amount: 2.537254
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 312564
Amount: 2.179571
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 13:23:42
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

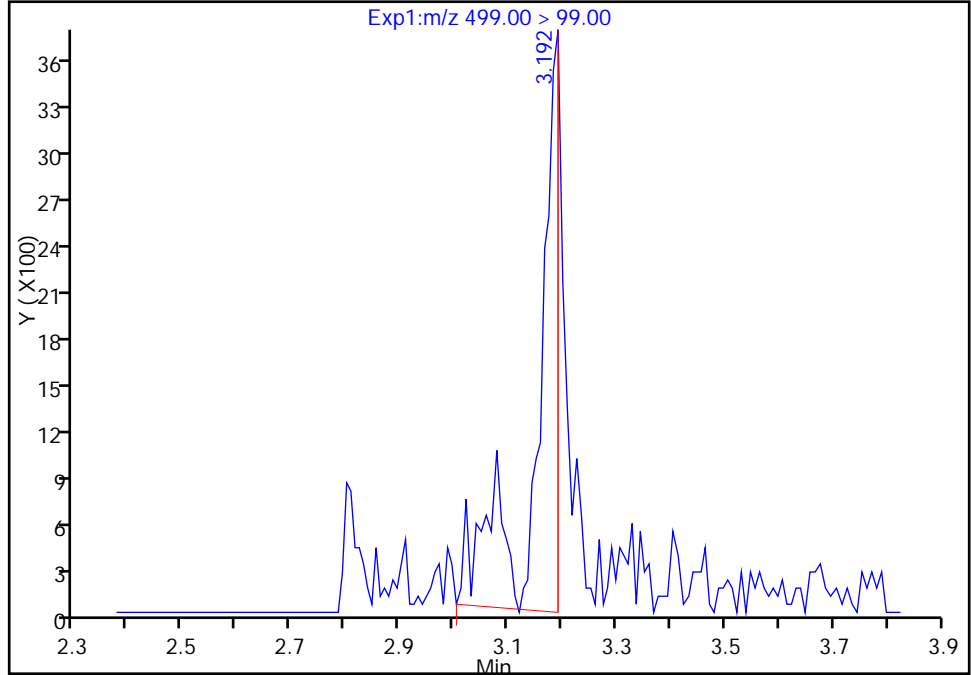
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_055.d
Injection Date: 06-Mar-2017 02:49:10 Instrument ID: A8_N
Lims ID: 320-26105-D-12-A Lab Sample ID: 320-26105-12
Client ID: MEAFF-08MW03-0217
Operator ID: A8-PC\A8 ALS Bottle#: 44 Worklist Smp#: 55
Injection Vol: 2.0 ul Dil. 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

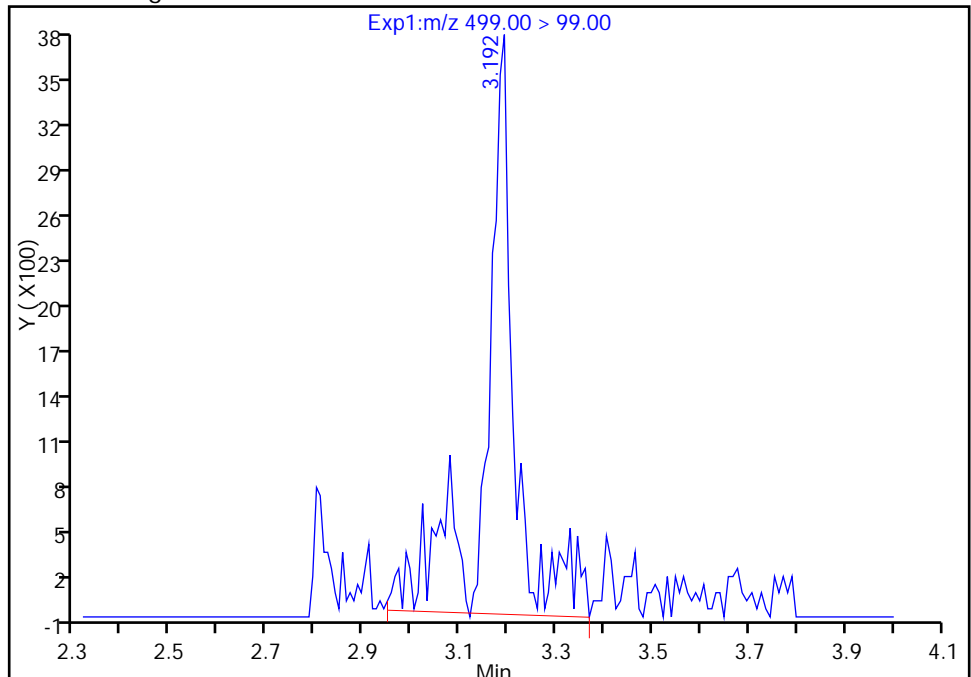
RT: 3.19
Area: 9435
Amount: 0.205467
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 15905
Amount: 0.205467
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 13:23:42
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

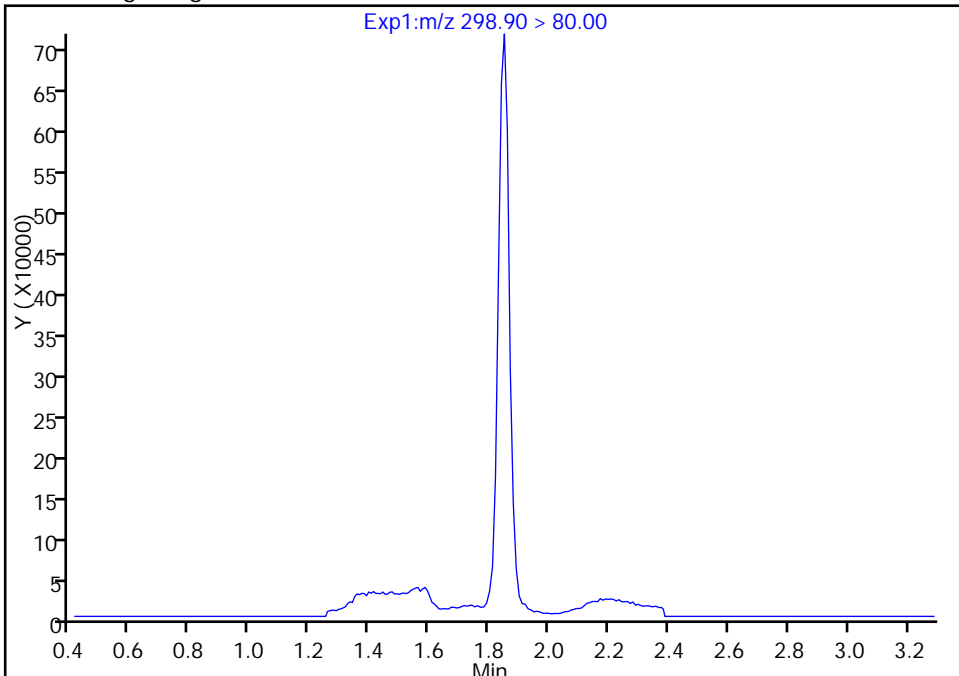
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_055.d
Injection Date: 06-Mar-2017 02:49:10 Instrument ID: A8_N
Lims ID: 320-26105-D-12-A Lab Sample ID: 320-26105-12
Client ID: MEAFF-08MW03-0217
Operator ID: A8-PC\A8 ALS Bottle#: 44 Worklist Smp#: 55
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

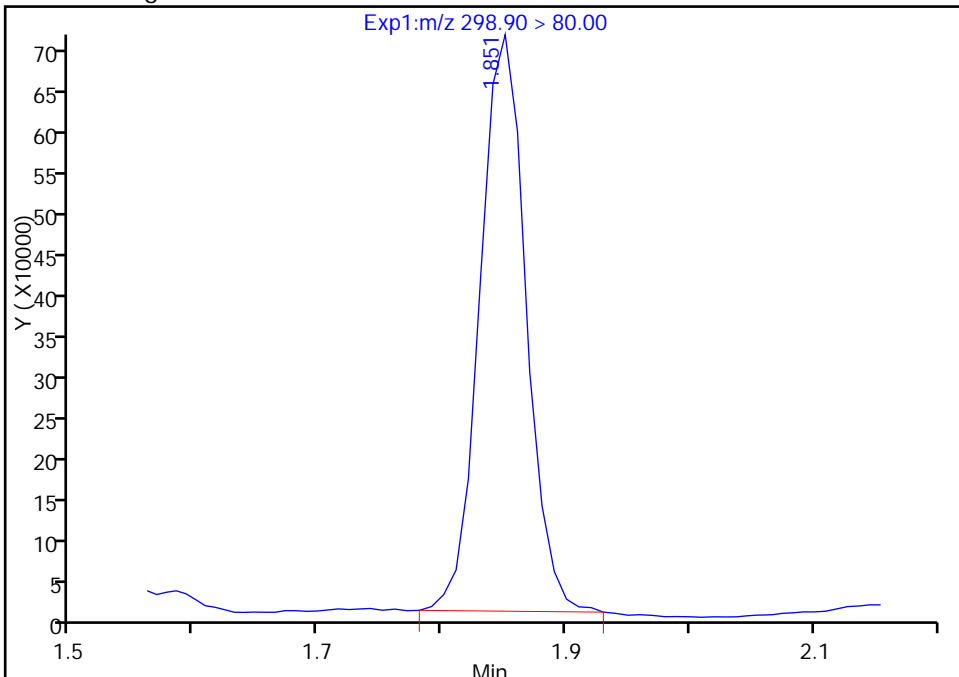
Not Detected
Expected RT: 1.85

Processing Integration Results



RT: 1.85
Area: 1820436
Amount: 3.089243
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:23:48
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

TestAmerica Sacramento

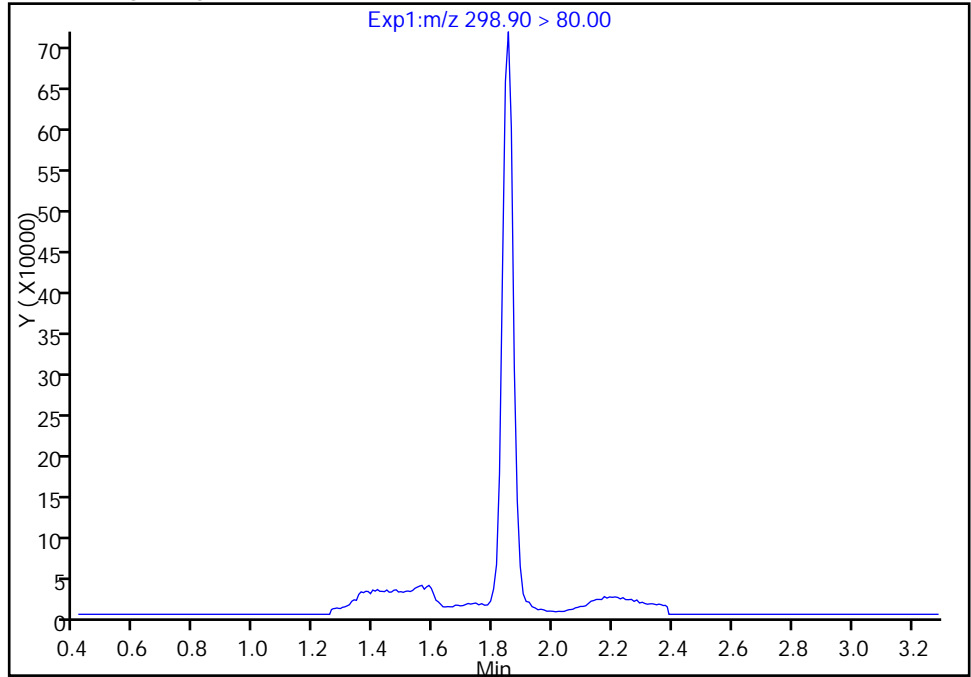
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_055.d
Injection Date: 06-Mar-2017 02:49:10 Instrument ID: A8_N
Lims ID: 320-26105-D-12-A Lab Sample ID: 320-26105-12
Client ID: MEAFF-08MW03-0217
Operator ID: A8-PC\A8 ALS Bottle#: 44 Worklist Smp#: 55
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

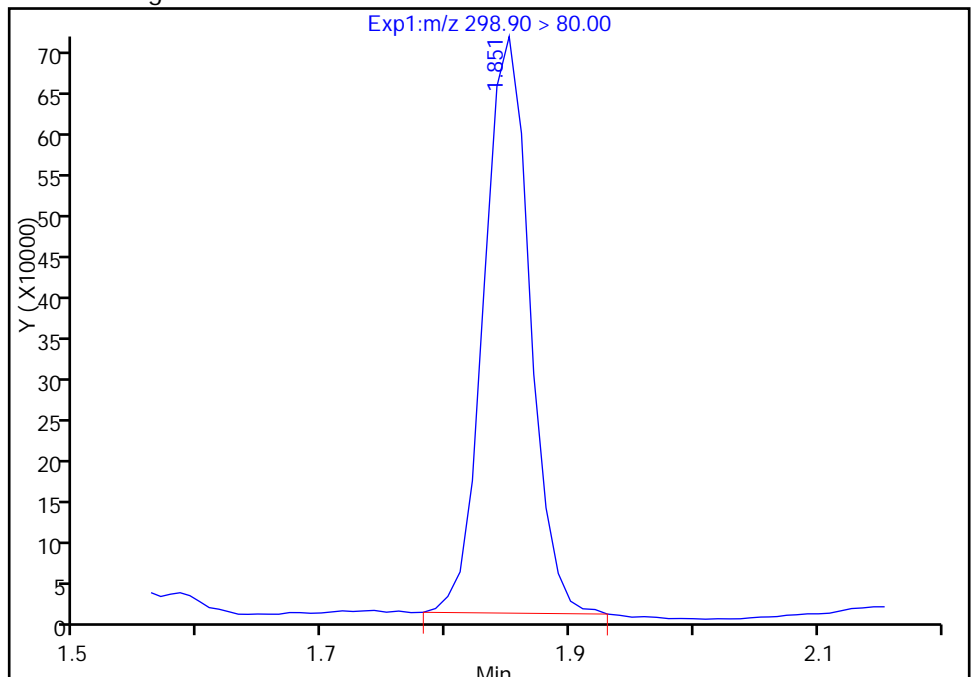
Not Detected
Expected RT: 1.85

Processing Integration Results



RT: 1.85
Area: 1820436
Amount: 3.089243
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:23:57

Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

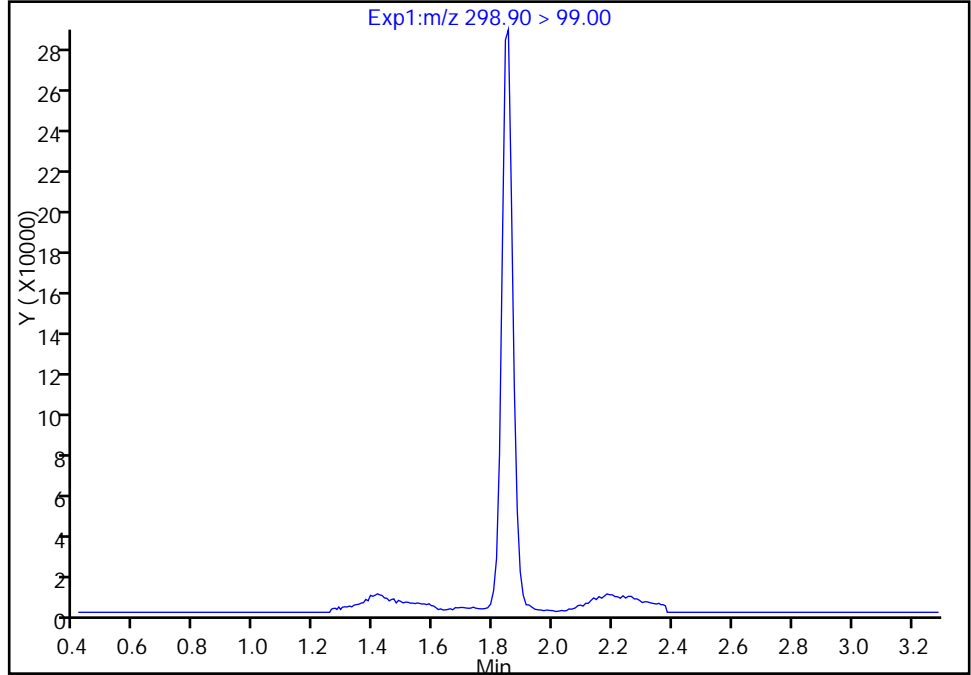
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_055.d
Injection Date: 06-Mar-2017 02:49:10 Instrument ID: A8_N
Lims ID: 320-26105-D-12-A Lab Sample ID: 320-26105-12
Client ID: MEAFF-08MW03-0217
Operator ID: A8-PC\A8 ALS Bottle#: 44 Worklist Smp#: 55
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

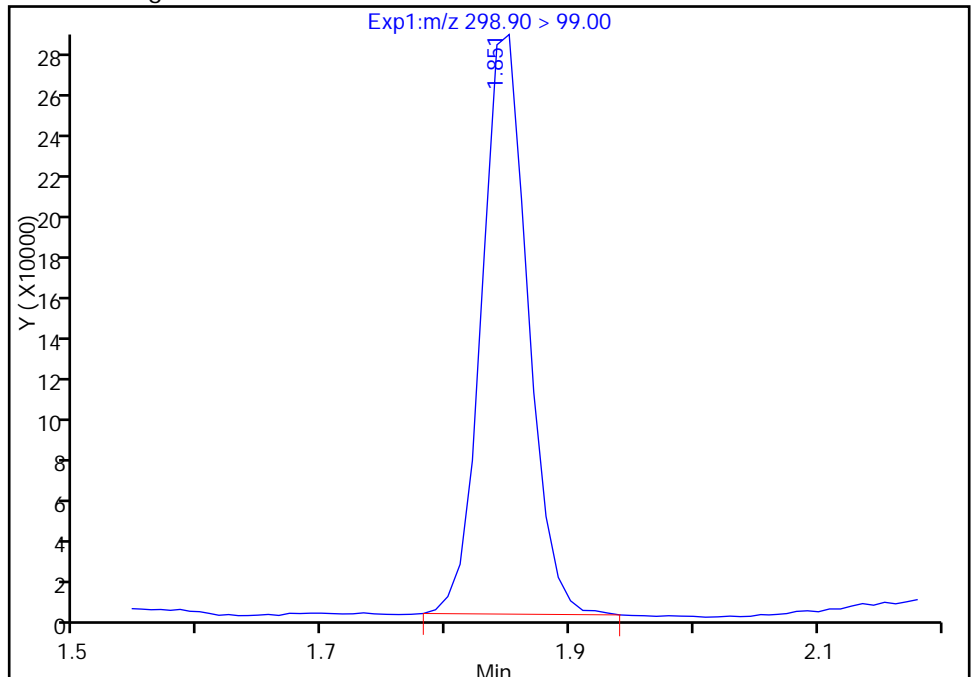
Not Detected
Expected RT: 1.85

Processing Integration Results



Manual Integration Results

RT: 1.85
Area: 749730
Amount: 3.089243
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 13:24:03

Audit Action: Manually Integrated

Audit Reason: Assign Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW06-0217 Lab Sample ID: 320-26105-13
 Matrix: Water Lab File ID: 2017.03.04A_056.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 13:15
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 270.5 (mL) Date Analyzed: 03/06/2017 02:56
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	130		2.3	1.8	0.69
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	55		3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	22	M	2.3	1.8	0.85

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	59		25-150
STL00991	13C4 PFOS	120		25-150
STL00994	18O2 PFHxS	128		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_056.d
 Lims ID: 320-26105-D-13-A
 Client ID: MEAFF-08MW06-0217
 Sample Type: Client
 Inject. Date: 06-Mar-2017 02:56:40 ALS Bottle#: 45 Worklist Smp#: 56
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-d-13-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 13:24:34 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 07-Mar-2017 14:52:59

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	1.841	1.851	-0.010	1.000	6265833	11.7				M
298.90 > 99.00	1.851	1.851	0.0	1.005	2596216		2.41(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.453	2.464	-0.011		17674052	60.8		128	72289	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.810	2.806	0.004	1.000	8731377	70.8			0.0	
413.00 > 169.00	2.810	2.806	0.004	1.000	5557365		1.57(0.90-1.10)		6730	
D 14 13C4 PFOA										
417.00 > 372.00	2.803	2.814	-0.011		6038649	29.5		58.9	1001656	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.070	3.156	-0.086	1.000	8538222	29.9			206957	
499.00 > 99.00	3.152	3.156	-0.004	1.027	1743551		4.90(0.90-1.10)		58349	
D 18 13C4 PFOS										
503.00 > 80.00	3.175	3.188	-0.013		13879826	57.4		120	901865	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_056.d

Injection Date: 06-Mar-2017 02:56:40

Instrument ID: A8_N

Lims ID: 320-26105-D-13-A

Lab Sample ID: 320-26105-13

Client ID: MEAFF-08MW06-0217

Operator ID: A8-PC\A8

ALS Bottle#: 45

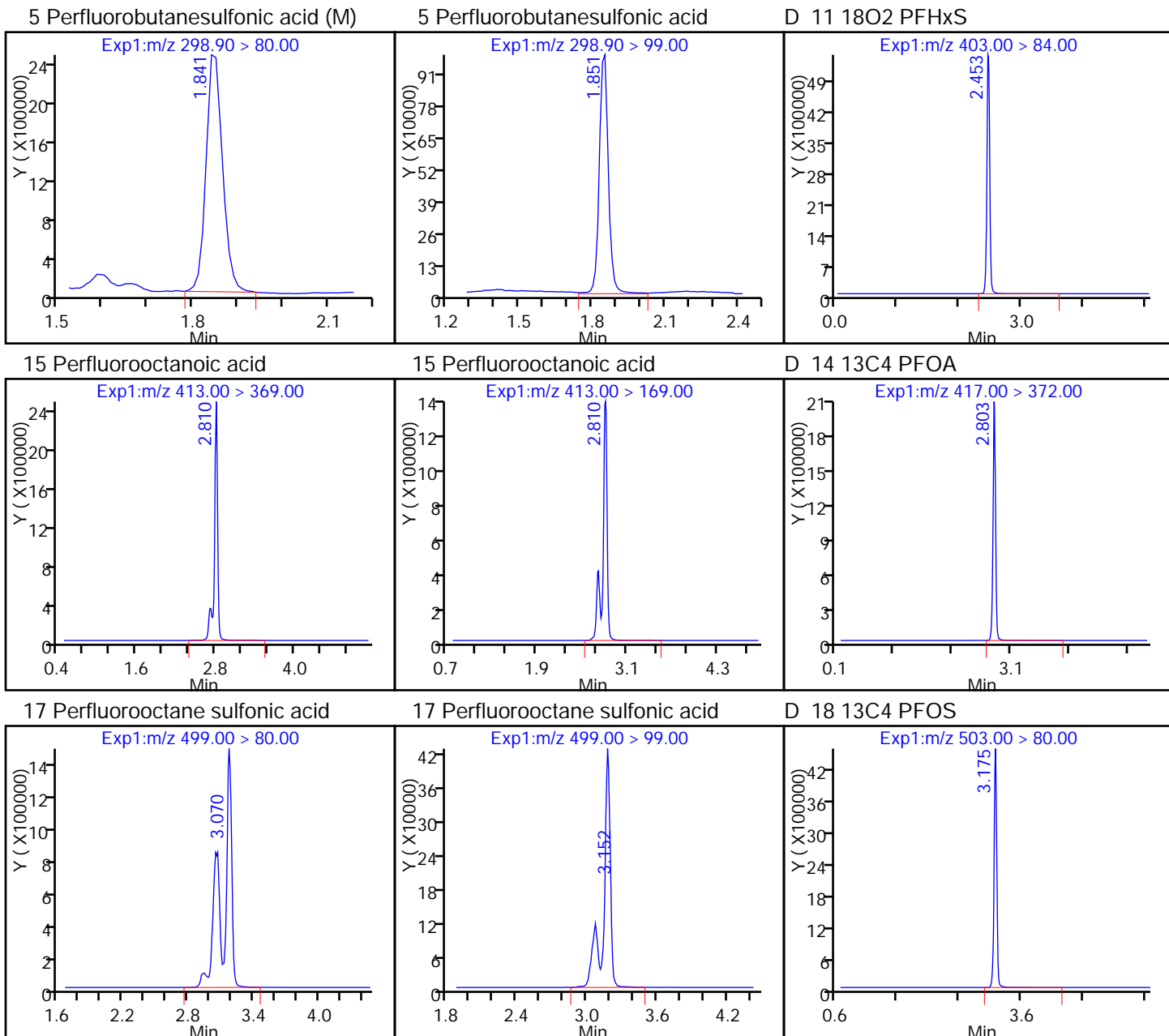
Worklist Smp#: 56

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC_DOD ICAL



TestAmerica Sacramento

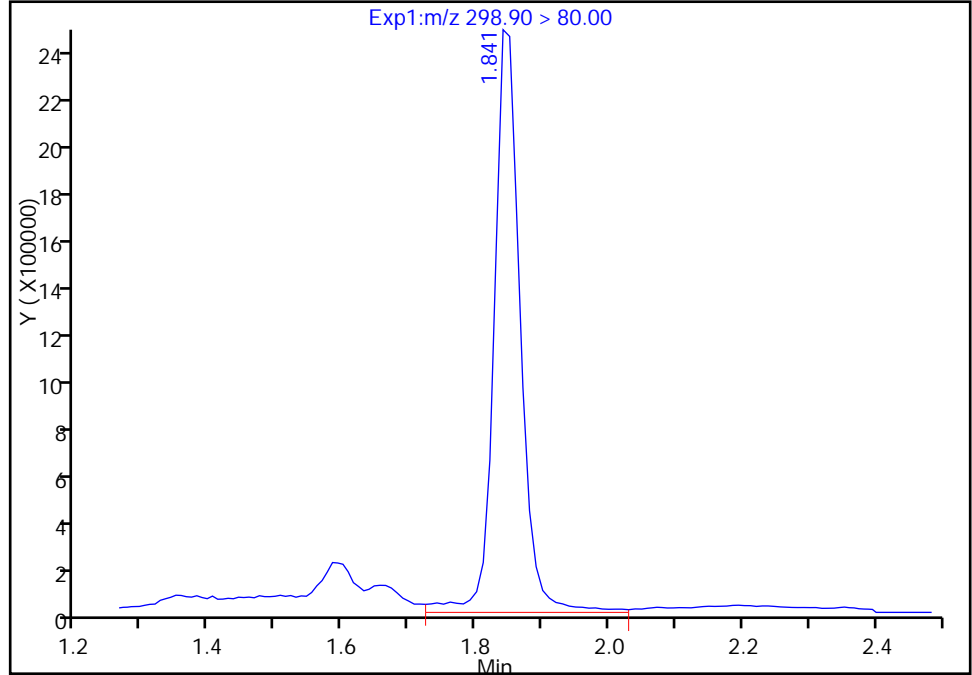
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_056.d
Injection Date: 06-Mar-2017 02:56:40 Instrument ID: A8_N
Lims ID: 320-26105-D-13-A Lab Sample ID: 320-26105-13
Client ID: MEAFF-08MW06-0217
Operator ID: A8-PC\A8 ALS Bottle#: 45 Worklist Smp#: 56
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

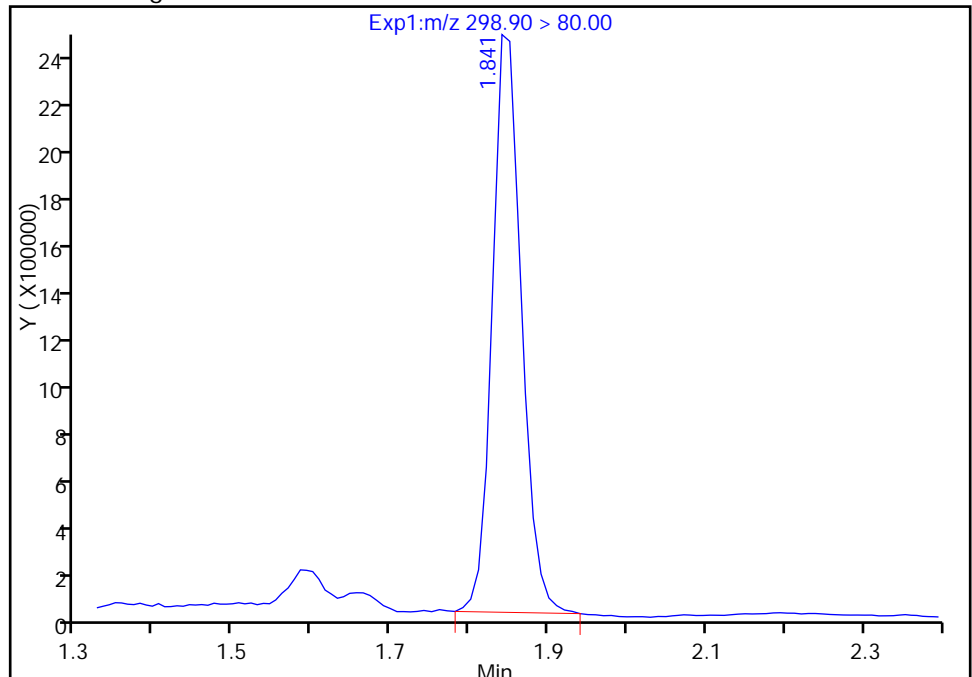
RT: 1.84
Area: 6783024
Amount: 12.672196
Amount Units: ng/ml

Processing Integration Results



RT: 1.84
Area: 6265833
Amount: 11.705968
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:24:23

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-FD02-0217 Lab Sample ID: 320-26105-14
 Matrix: Water Lab File ID: 2017.03.04A_058.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 00:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 298.8 (mL) Date Analyzed: 03/06/2017 03:11
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	130		2.1	1.7	0.63
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	54		3.3	2.5	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	20	M	2.1	1.7	0.77

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	65		25-150
STL00991	13C4 PFOS	124		25-150
STL00994	18O2 PFHxS	132		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_058.d
 Lims ID: 320-26105-D-14-A
 Client ID: MEAFF-FD02-0217
 Sample Type: Client
 Inject. Date: 06-Mar-2017 03:11:39 ALS Bottle#: 46 Worklist Smp#: 58
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-d-14-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 13:24:58 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 07-Mar-2017 14:54:37

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	1.841	1.841	0.0	1.000	6596512	12.0				M
298.90 > 99.00	1.841	1.841	0.0	1.000	2672490		2.47(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.453	2.452	0.001		18119732	62.3		132	71165	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.803	2.787	0.016	1.000	10125318	74.7			348806	
413.00 > 169.00	2.795	2.787	0.008	0.997	6807129		1.49(0.90-1.10)		0.0	
D 14 13C4 PFOA										
417.00 > 372.00	2.795	2.802	-0.007		6630988	32.4		64.7	2299167	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.052	3.168	-0.116	1.000	9549807	32.4			162845	
499.00 > 99.00	3.161	3.168	-0.007	1.036	2007981		4.76(0.90-1.10)		0.0	
D 18 13C4 PFOS										
503.00 > 80.00	3.161	3.168	-0.007		14340674	59.3		124	1126579	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_058.d

Injection Date: 06-Mar-2017 03:11:39

Instrument ID: A8_N

Lims ID: 320-26105-D-14-A

Lab Sample ID: 320-26105-14

Client ID: MEAFF-FD02-0217

Operator ID: A8-PC\A8

ALS Bottle#: 46

Worklist Smp#: 58

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

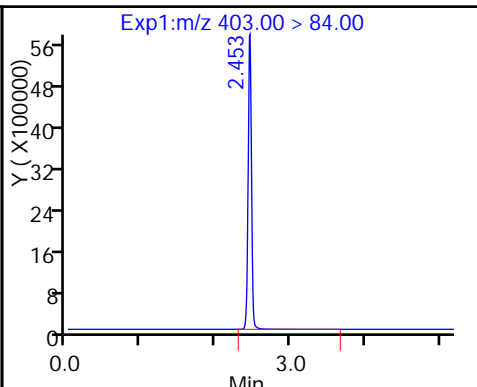
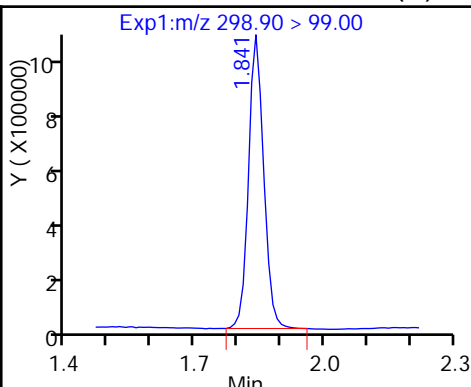
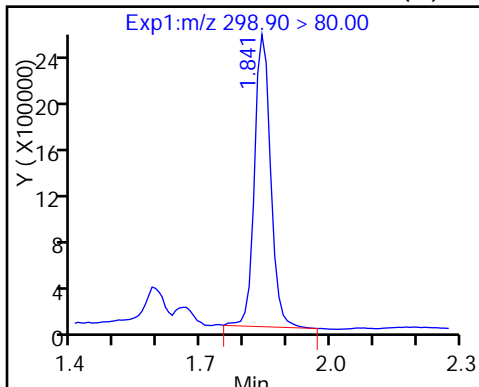
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

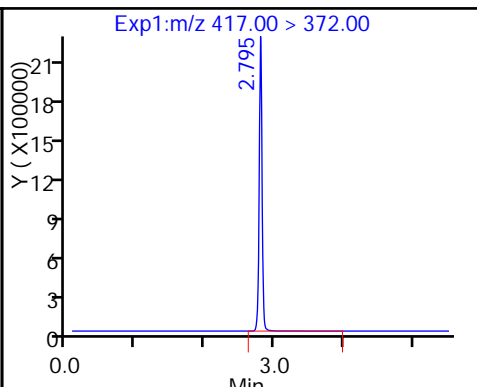
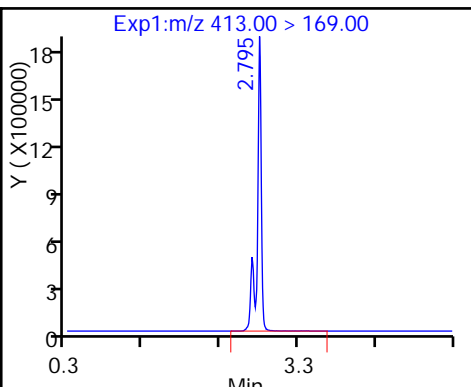
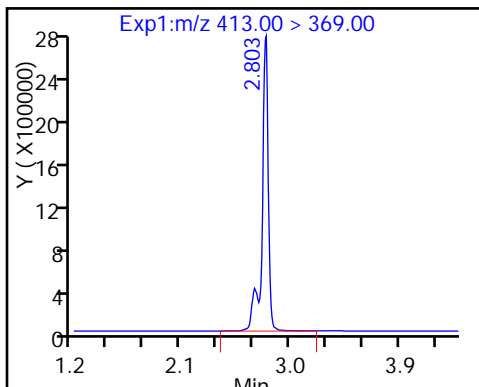
D 11 18O2 PFHxS



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

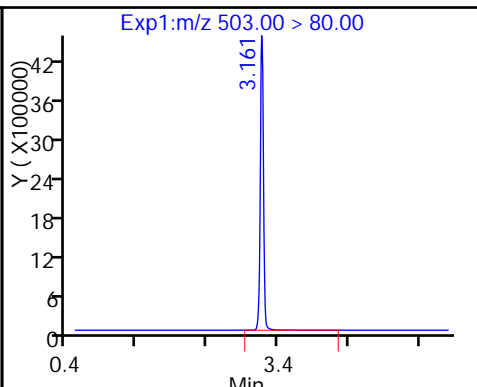
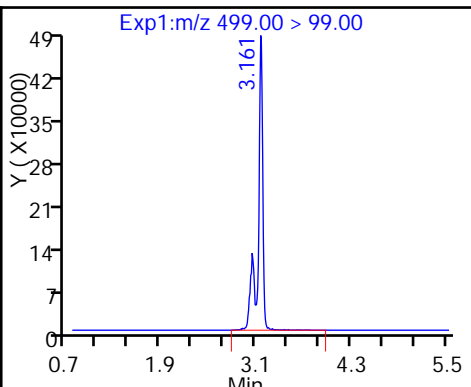
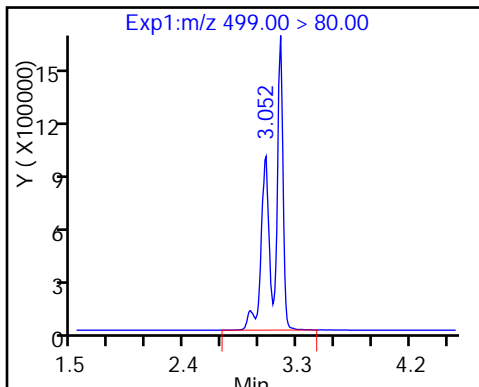
D 14 13C4 PFOA



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS



TestAmerica Sacramento

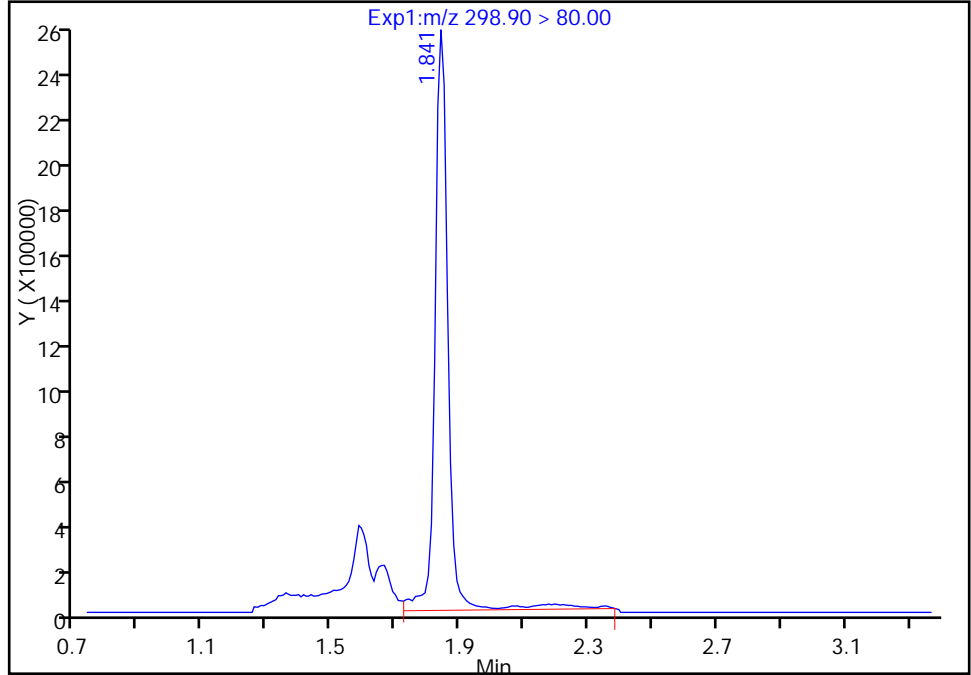
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_058.d
Injection Date: 06-Mar-2017 03:11:39 Instrument ID: A8_N
Lims ID: 320-26105-D-14-A Lab Sample ID: 320-26105-14
Client ID: MEAFF-FD02-0217
Operator ID: A8-PC\A8 ALS Bottle#: 46 Worklist Smp#: 58
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

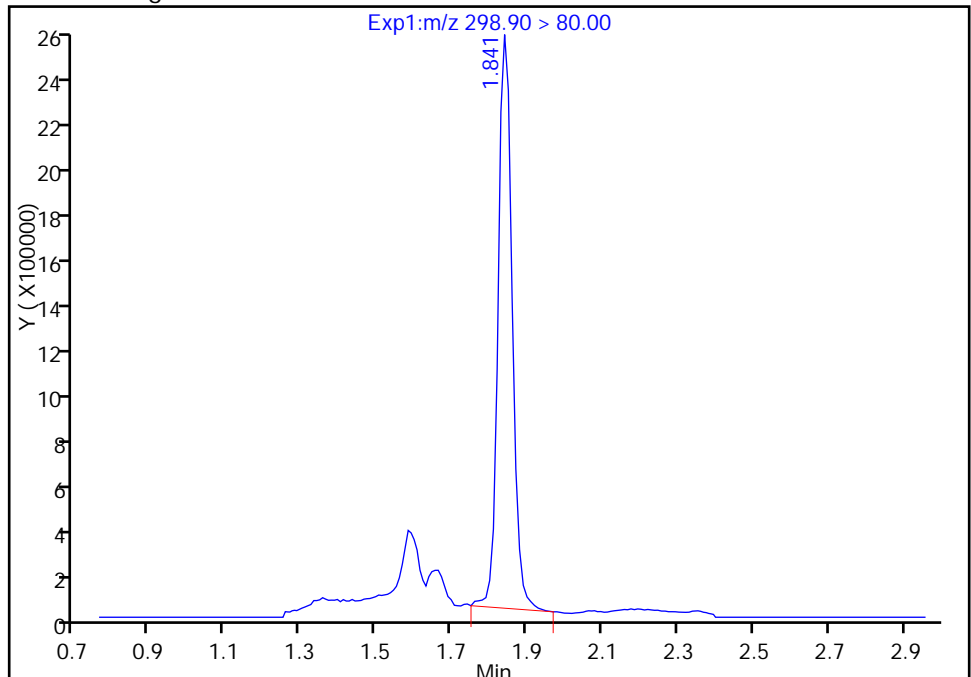
RT: 1.84
Area: 7351697
Amount: 13.396782
Amount Units: ng/ml

Processing Integration Results



RT: 1.84
Area: 6596512
Amount: 12.020630
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:24:47
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

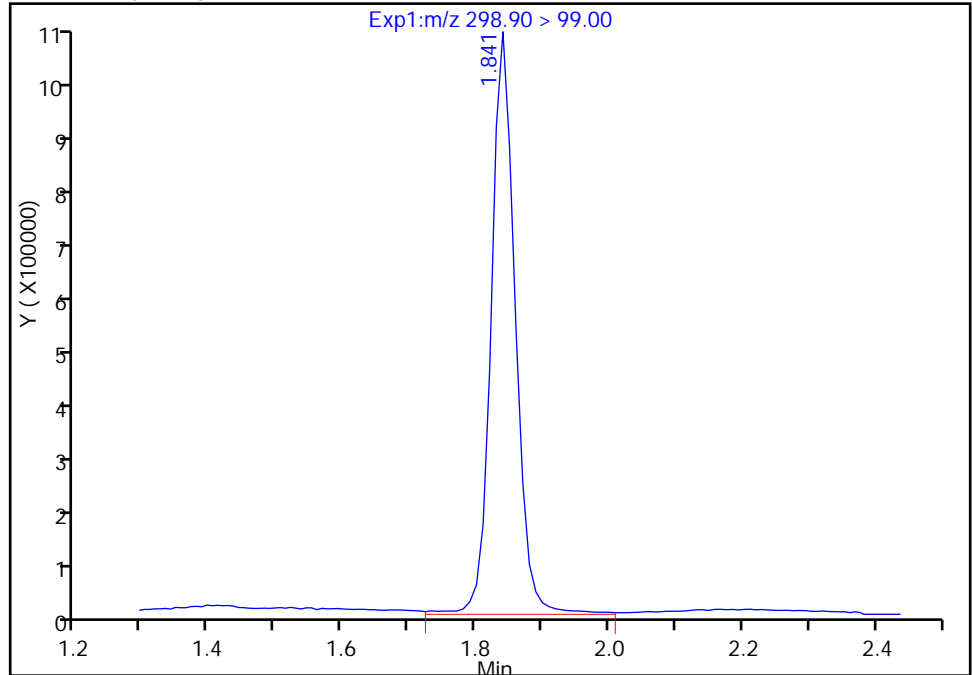
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_058.d
Injection Date: 06-Mar-2017 03:11:39 Instrument ID: A8_N
Lims ID: 320-26105-D-14-A Lab Sample ID: 320-26105-14
Client ID: MEAFF-FD02-0217
Operator ID: A8-PC\A8 ALS Bottle#: 46 Worklist Smp#: 58
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

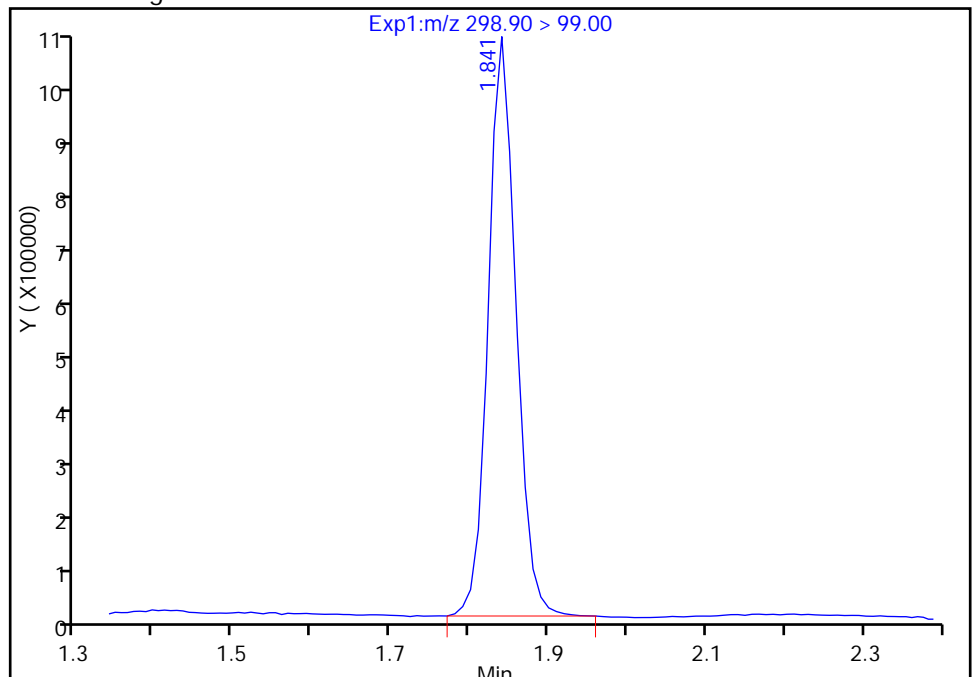
RT: 1.84
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Amount: 13.396782
Amount Units: ng/ml

Processing Integration Results



RT: 1.84
Area: 2672490
Amount: 12.020630
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:24:53

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-IA01-0217A Lab Sample ID: 320-26105-15
 Matrix: Water Lab File ID: 2017.03.04A_059.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:30
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 264.6(mL) Date Analyzed: 03/06/2017 03:19
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	120		2.4	1.9	0.71
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	6.9	M	2.4	1.9	0.87

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	79		25-150
STL00991	13C4 PFOS	115		25-150
STL00994	18O2 PFHxS	107		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_059.d
 Lims ID: 320-26105-A-15-A
 Client ID: MEAFF-MRD-IA01-0217A
 Sample Type: Client
 Inject. Date: 06-Mar-2017 03:19:10 ALS Bottle#: 47 Worklist Smp#: 59
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-15-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 13:25:34 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 07-Mar-2017 14:55:11

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	1.841	1.841	0.0	1.000	1635681	3.65				M
298.90 > 99.00	1.851	1.841	0.010	1.005	503391		3.25(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.462	2.452	0.010		14780585	50.8		107	4900336	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.789	2.787	0.002	1.000	10338799	62.6			70556	
413.00 > 169.00	2.708	2.787	-0.079	0.971	7739285		1.34(0.90-1.10)		119938	
D 14 13C4 PFOA										
417.00 > 372.00	2.804	2.802	0.002		8079648	39.4		78.8	2563312	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.062	3.168	-0.106	1.000	429805	1.57			1780	M
499.00 > 99.00	3.176	3.168	0.008	1.037	70522		6.09(0.90-1.10)		2998	M
D 18 13C4 PFOS										
503.00 > 80.00	3.185	3.168	0.017		13269151	54.9		115	300023	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_059.d

Injection Date: 06-Mar-2017 03:19:10

Instrument ID: A8_N

Lims ID: 320-26105-A-15-A

Lab Sample ID: 320-26105-15

Client ID: MEAFF-MRD-IA01-0217A

Operator ID: A8-PC\A8

ALS Bottle#: 47

Worklist Smp#: 59

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

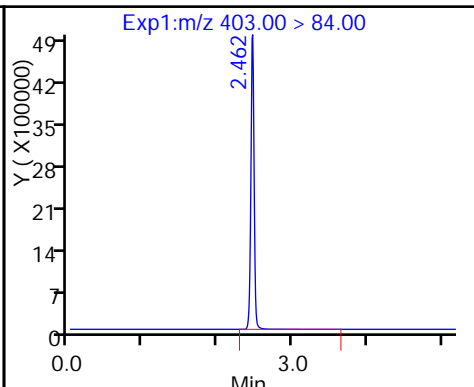
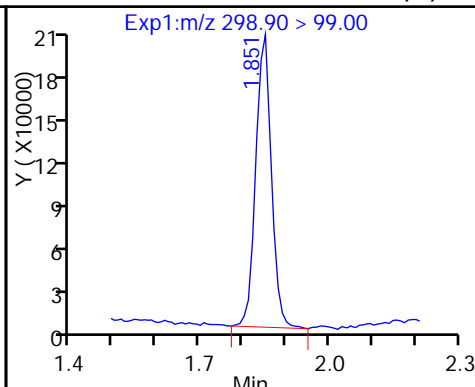
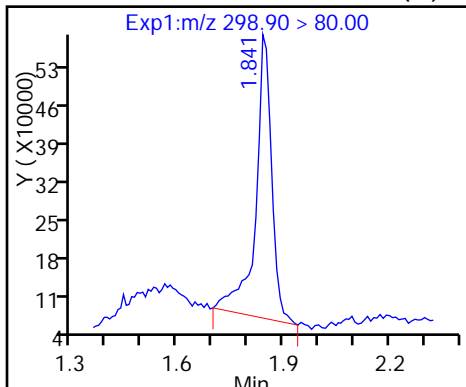
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

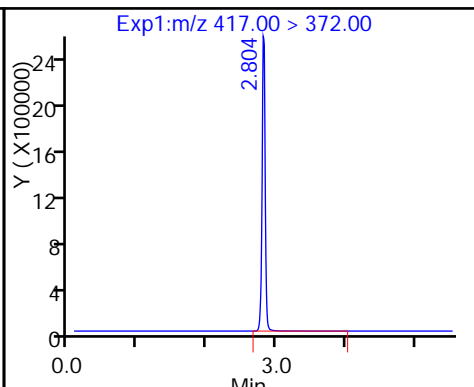
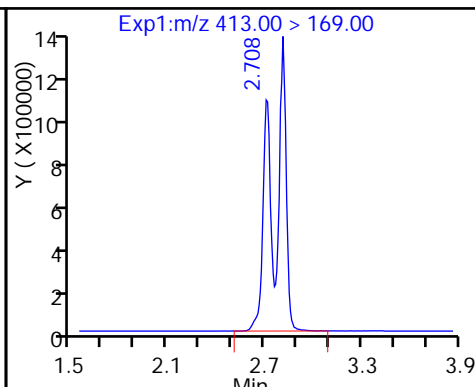
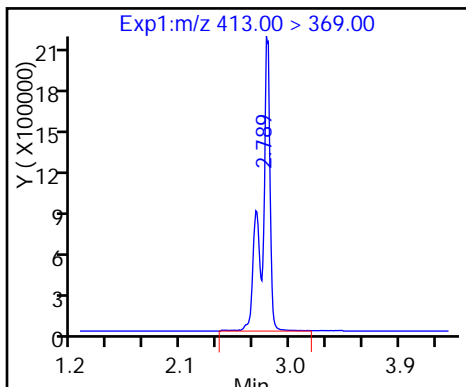
D 11 18O2 PFHxS



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

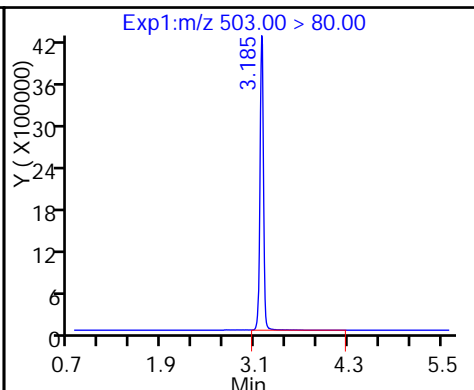
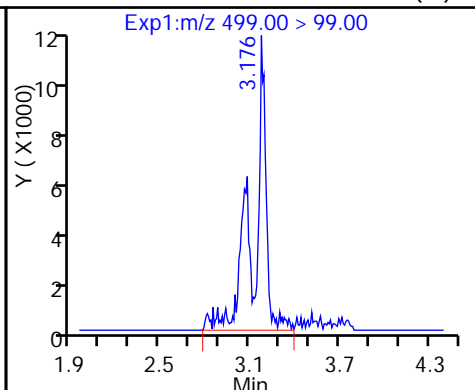
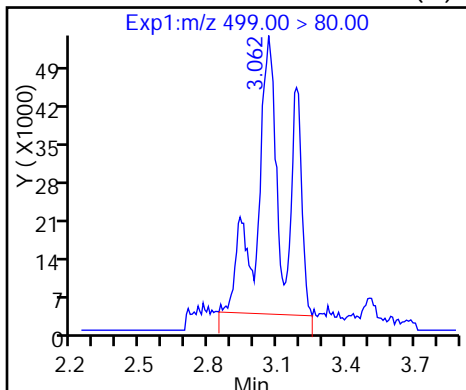
D 14 13C4 PFOA



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

D 18 13C4 PFOS



TestAmerica Sacramento

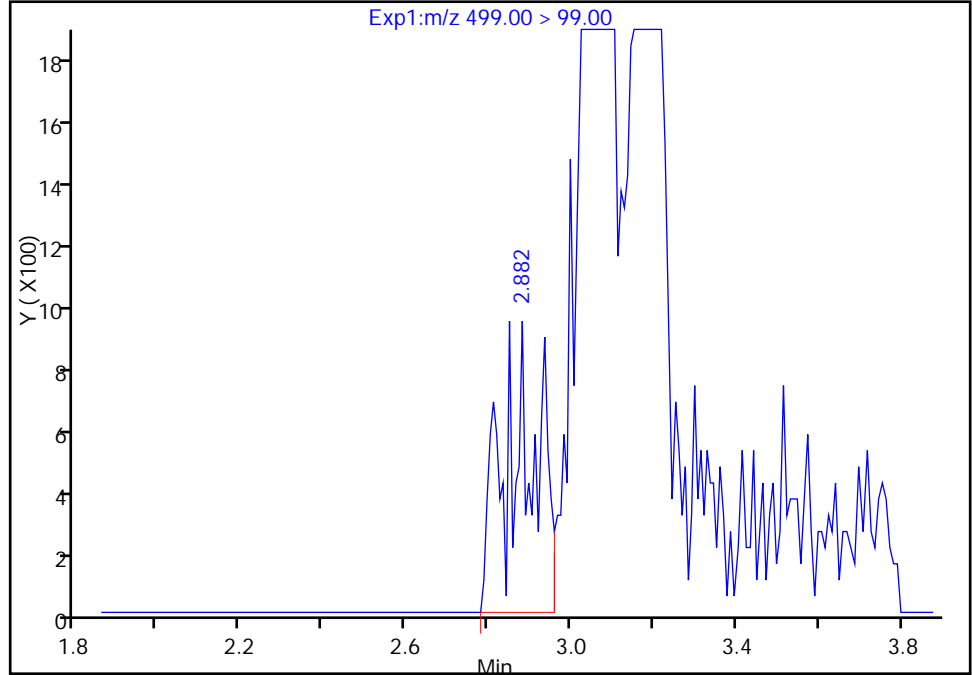
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_059.d
Injection Date: 06-Mar-2017 03:19:10 Instrument ID: A8_N
Lims ID: 320-26105-A-15-A Lab Sample ID: 320-26105-15
Client ID: MEAFF-MRD-IA01-0217A
Operator ID: A8-PC\A8 ALS Bottle#: 47 Worklist Smp#: 59
Injection Vol: 2.0 ul 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

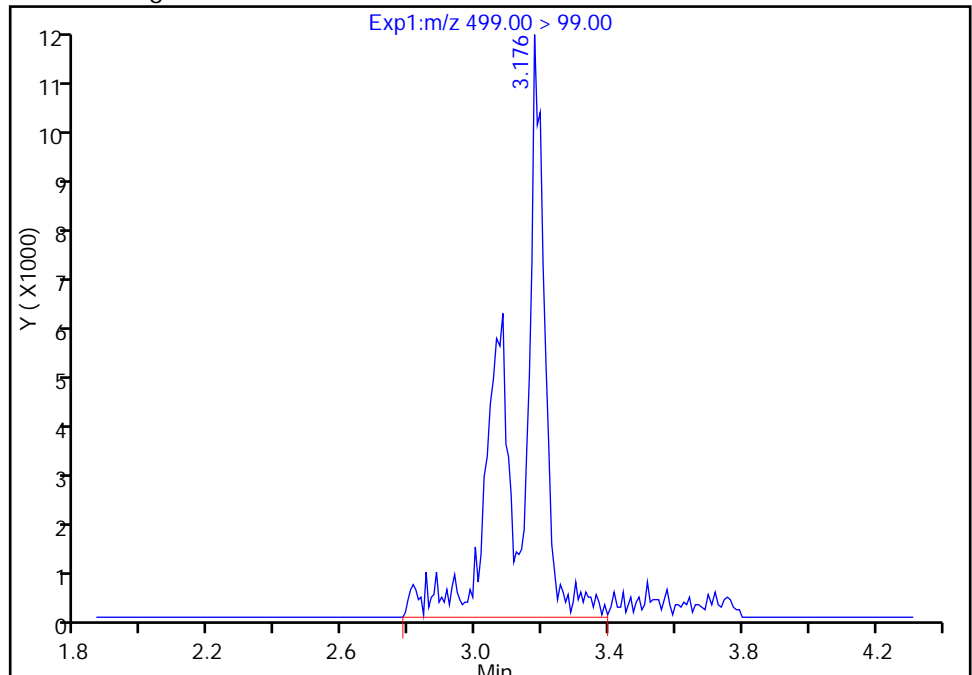
RT: 2.88
Area: 4852
Amount: 1.958646
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 70522
Amount: 1.574308
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 27-Mar-2017 13:25:00
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

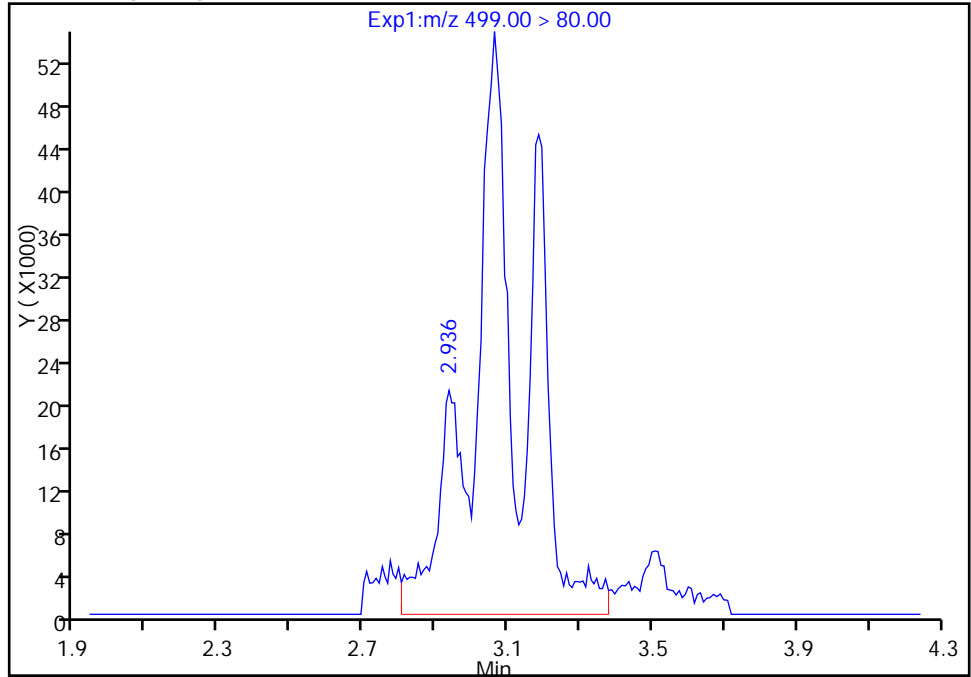
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_059.d
Injection Date: 06-Mar-2017 03:19:10 Instrument ID: A8_N
Lims ID: 320-26105-A-15-A Lab Sample ID: 320-26105-15
Client ID: MEAFF-MRD-IA01-0217A
Operator ID: A8-PC\A8 ALS Bottle#: 47 Worklist Smp#: 59
Injection Vol: 2.0 ul 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

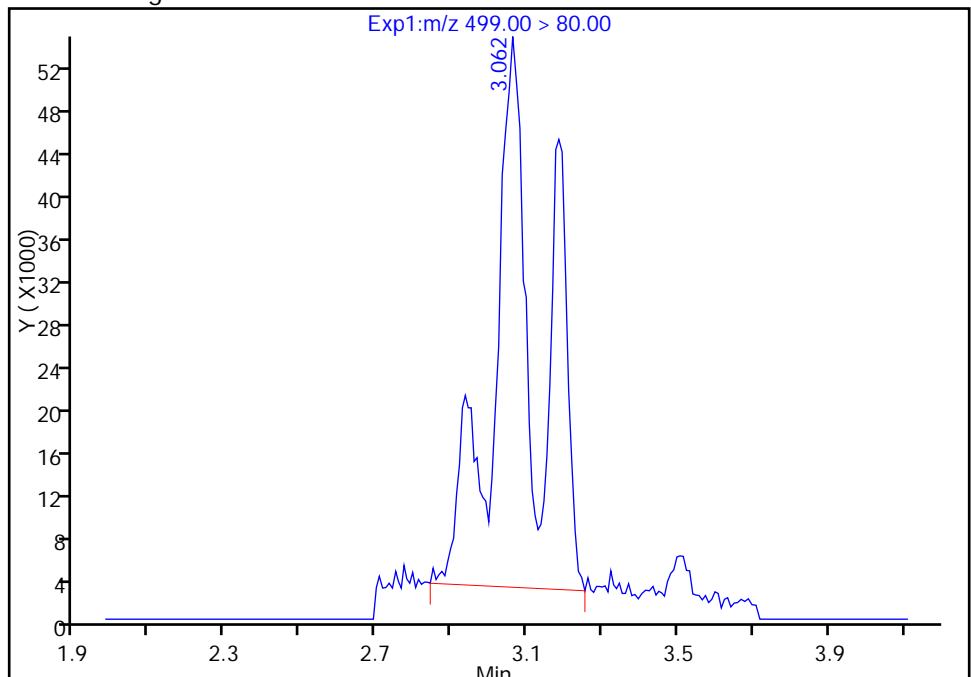
RT: 2.94
Area: 534734
Amount: 1.958646
Amount Units: ng/ml

Processing Integration Results



RT: 3.06
Area: 429805
Amount: 1.574308
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 13:25:00

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

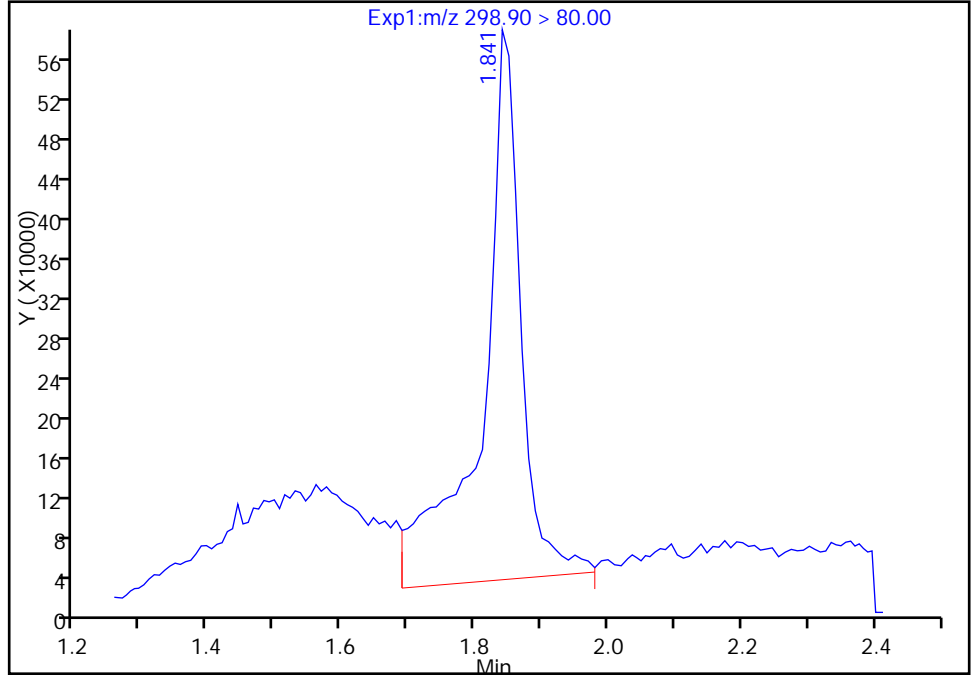
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_059.d
Injection Date: 06-Mar-2017 03:19:10 Instrument ID: A8_N
Lims ID: 320-26105-A-15-A Lab Sample ID: 320-26105-15
Client ID: MEAFF-MRD-IA01-0217A
Operator ID: A8-PC\A8 ALS Bottle#: 47 Worklist Smp#: 59
Injection Vol: 2.0 ul 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

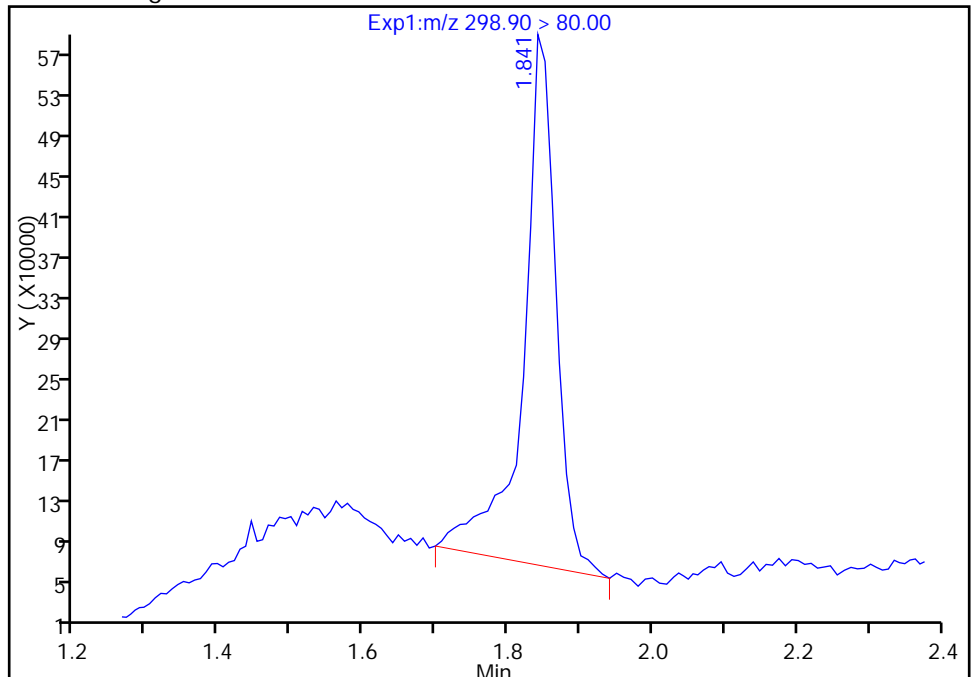
RT: 1.84
Area: 2226528
Amount: 4.973948
Amount Units: ng/ml

Processing Integration Results



RT: 1.84
Area: 1635681
Amount: 3.654026
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:25:22
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

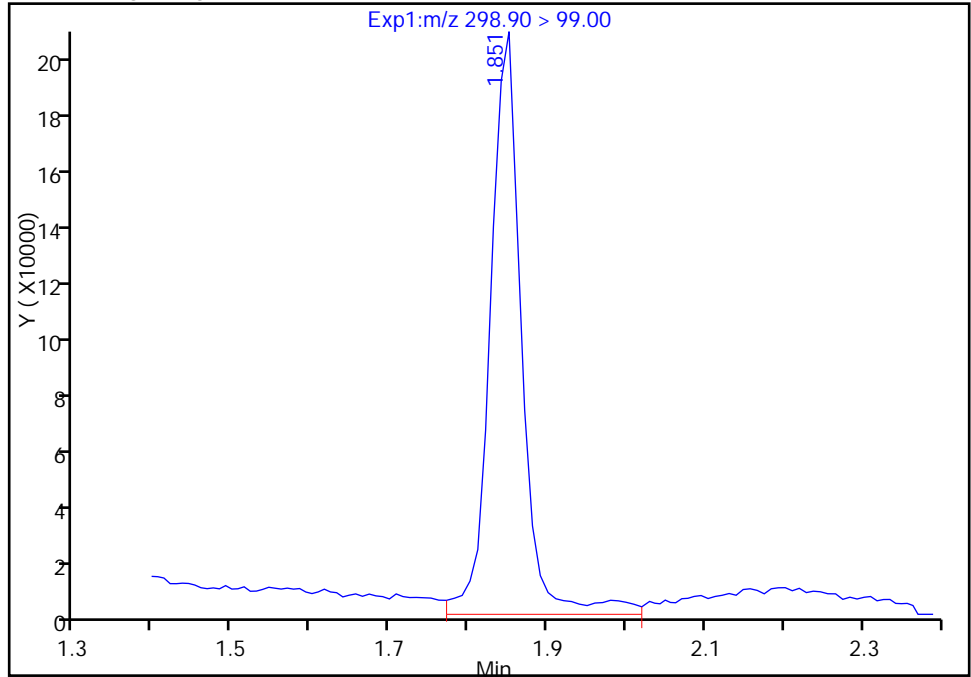
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_059.d
Injection Date: 06-Mar-2017 03:19:10 Instrument ID: A8_N
Lims ID: 320-26105-A-15-A Lab Sample ID: 320-26105-15
Client ID: MEAFF-MRD-IA01-0217A
Operator ID: A8-PC\A8 ALS Bottle#: 47 Worklist Smp#: 59
Injection Vol: 2.0 ul 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

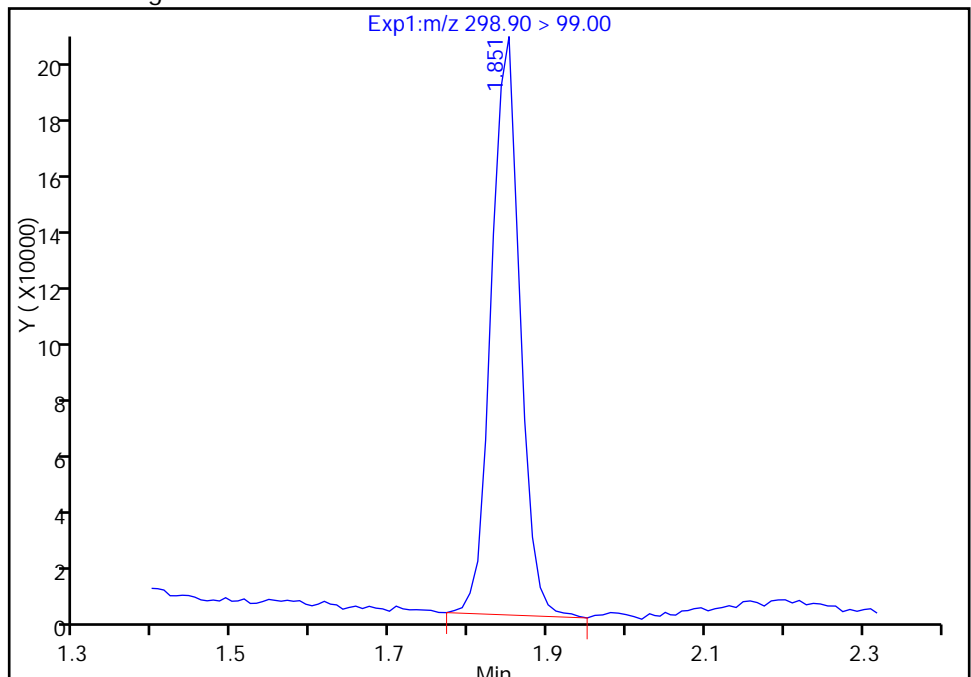
RT: 1.85
Area: 562464
Amount: 4.973948
Amount Units: ng/ml

Processing Integration Results



RT: 1.85
Area: 503391
Amount: 3.654026
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:25:29

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-FD03-0217 Lab Sample ID: 320-26105-16
 Matrix: Water Lab File ID: 2017.03.04A_060.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 00:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 260.4 (mL) Date Analyzed: 03/06/2017 03:26
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	120		2.4	1.9	0.72
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	5.2	M	2.4	1.9	0.88

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	83		25-150
STL00991	13C4 PFOS	133		25-150
STL00994	18O2 PFHxS	124		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_060.d
 Lims ID: 320-26105-A-16-A
 Client ID: MEAFF-FD03-0217
 Sample Type: Client
 Inject. Date: 06-Mar-2017 03:26:41 ALS Bottle#: 48 Worklist Smp#: 60
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-a-16-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 27-Mar-2017 13:26:26 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK006

First Level Reviewer: changnoit Date: 07-Mar-2017 14:55:23

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	1.841	1.841	0.0	1.000	1392140	2.70				M
298.90 > 99.00	1.841	1.841	0.0	1.000	531843		2.62(0.00-0.00)			M
D 11 18O2 PFHxS										
403.00 > 84.00	2.455	2.452	0.003		16994622	58.4		124	64250	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.805	2.787	0.018	1.000	11033340	63.7			232168	
413.00 > 169.00	2.708	2.787	-0.079	0.966	8230104		1.34(0.90-1.10)		128987	
D 14 13C4 PFOA										
417.00 > 372.00	2.805	2.802	0.003		8480426	41.4		82.8	2881054	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.054	3.168	-0.114	1.000	498225	1.58			2407	M
499.00 > 99.00	3.036	3.168	-0.132	0.994	76760		6.49(0.90-1.10)		2171	
D 18 13C4 PFOS										
503.00 > 80.00	3.186	3.168	0.018		15372908	63.6		133	1184859	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_060.d

Injection Date: 06-Mar-2017 03:26:41

Instrument ID: A8_N

Lims ID: 320-26105-A-16-A

Lab Sample ID: 320-26105-16

Client ID: MEAFF-FD03-0217

Operator ID: A8-PC\A8

ALS Bottle#: 48

Worklist Smp#: 60

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

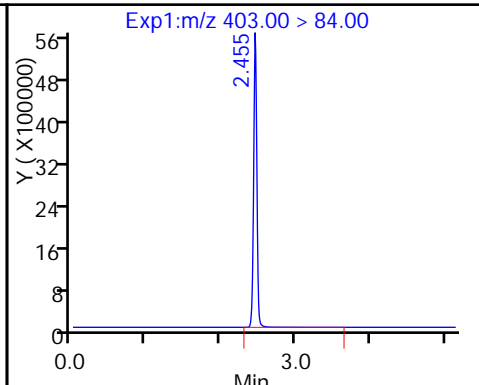
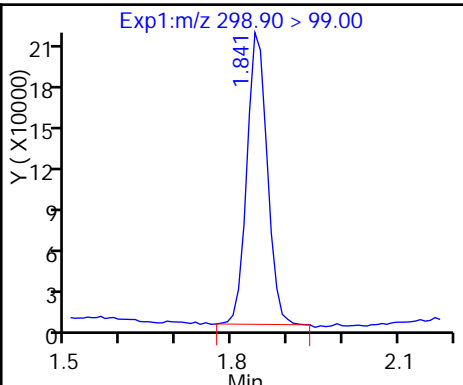
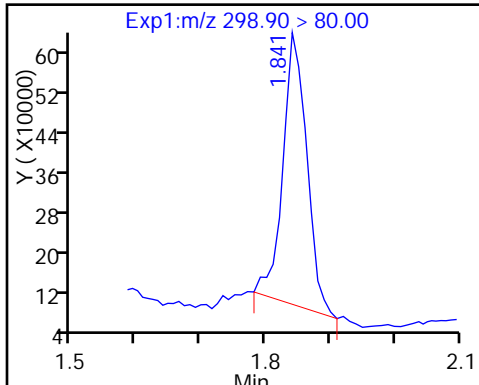
Method: A8_N

Limit Group: LC PFC_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

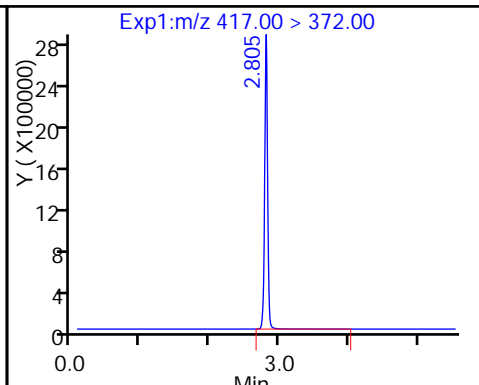
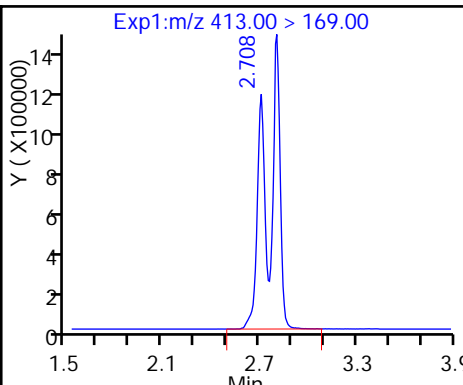
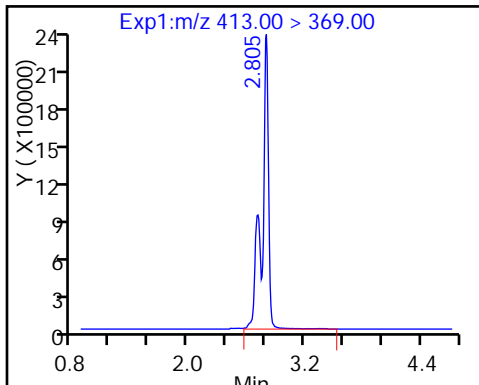
D 11 18O2 PFHxS



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

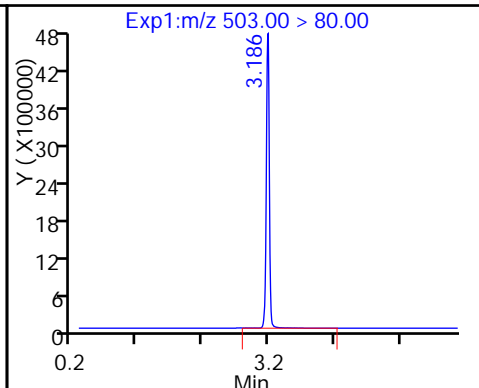
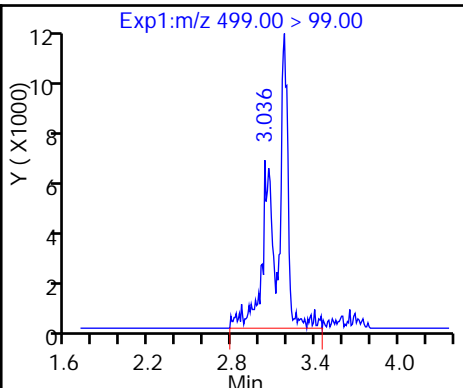
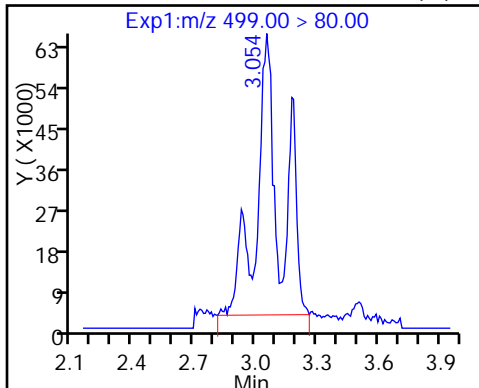
D 14 13C4 PFOA



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS



TestAmerica Sacramento

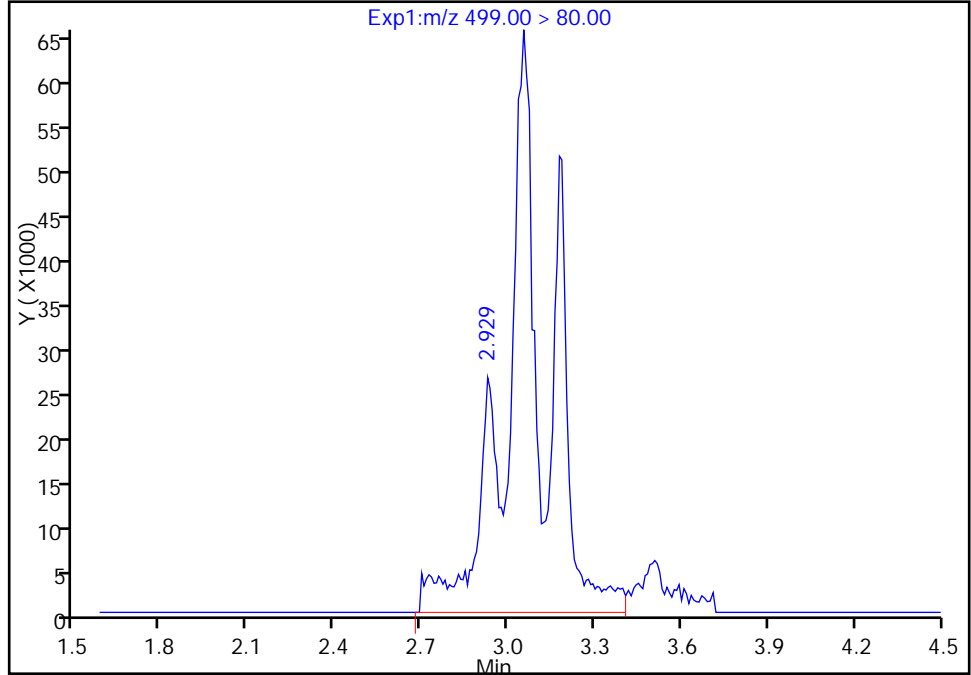
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Injection Date: 06-Mar-2017 03:26:41 Instrument ID: A8_N
Lims ID: 320-26105-A-16-A Lab Sample ID: 320-26105-16
Client ID: MEAFF-FD03-0217
Operator ID: A8-PC\A8 ALS Bottle#: 48 Worklist Smp#: 60
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

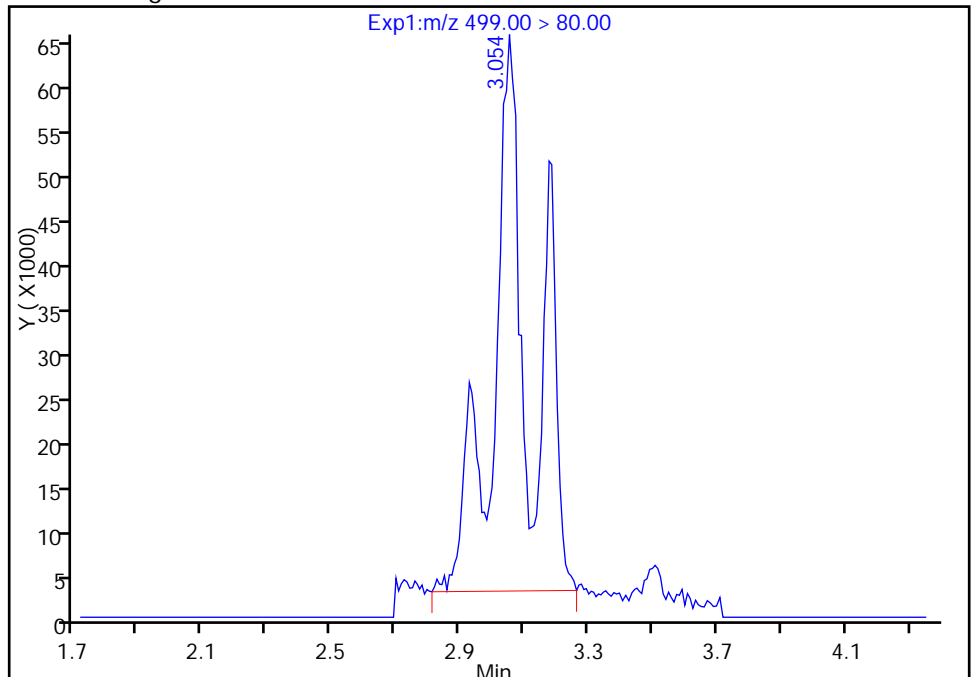
RT: 2.93
Area: 626253
Amount: 1.979954
Amount Units: ng/ml

Processing Integration Results



RT: 3.05
Area: 498225
Amount: 1.575182
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 27-Mar-2017 13:25:35
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

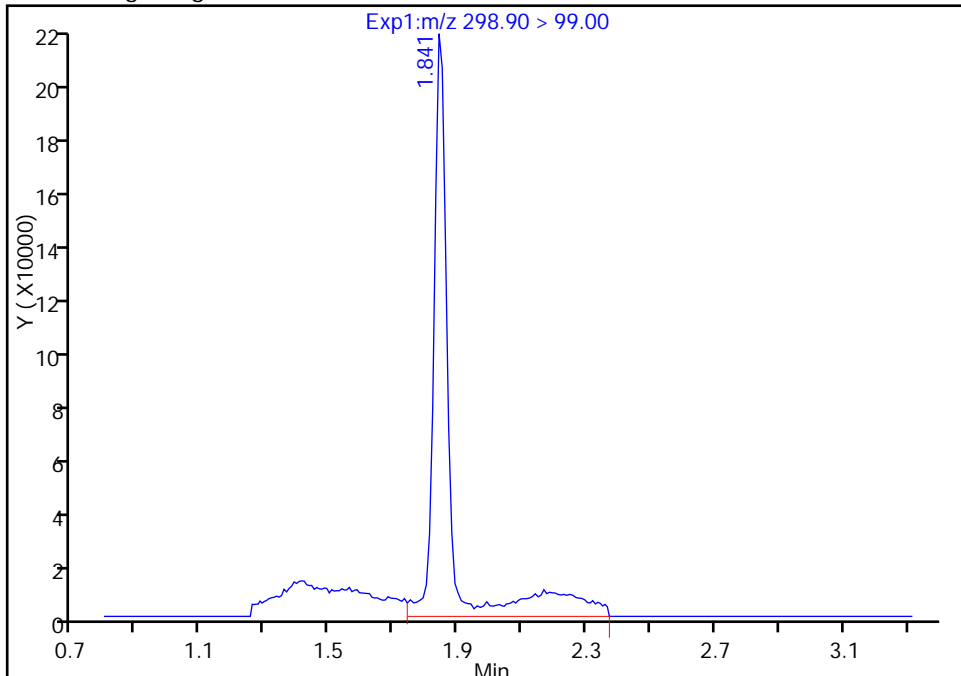
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_060.d
Injection Date: 06-Mar-2017 03:26:41 Instrument ID: A8_N
Lims ID: 320-26105-A-16-A Lab Sample ID: 320-26105-16
Client ID: MEAFF-FD03-0217
Operator ID: A8-PC\A8 ALS Bottle#: 48 Worklist Smp#: 60
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

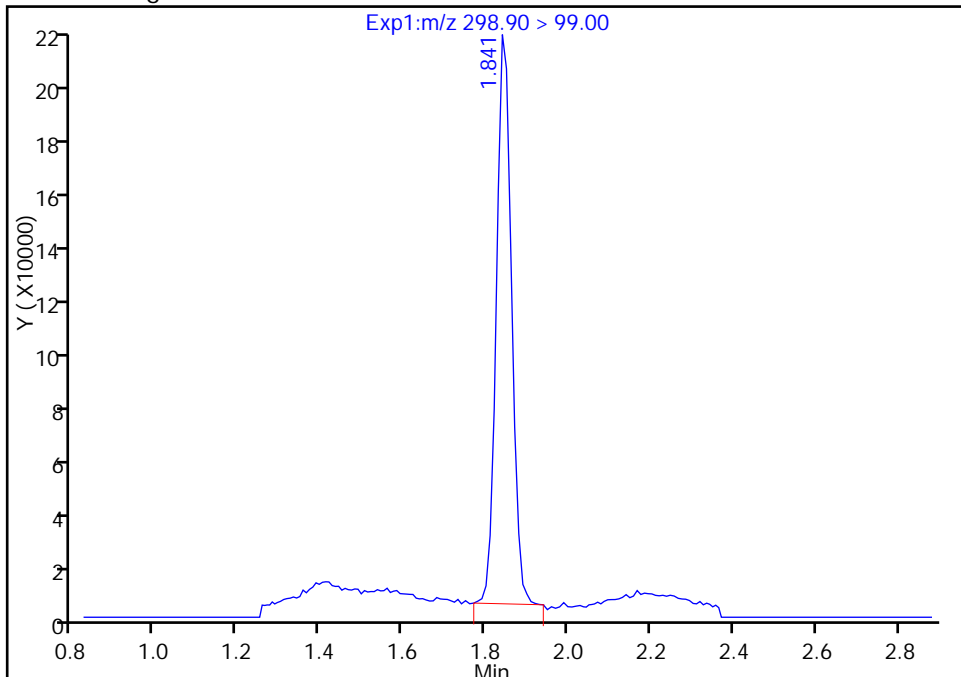
RT: 1.84
Area: 742400
Amount: 5.228549
Amount Units: ng/ml

Processing Integration Results



RT: 1.84
Area: 531843
Amount: 2.704806
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:26:05
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

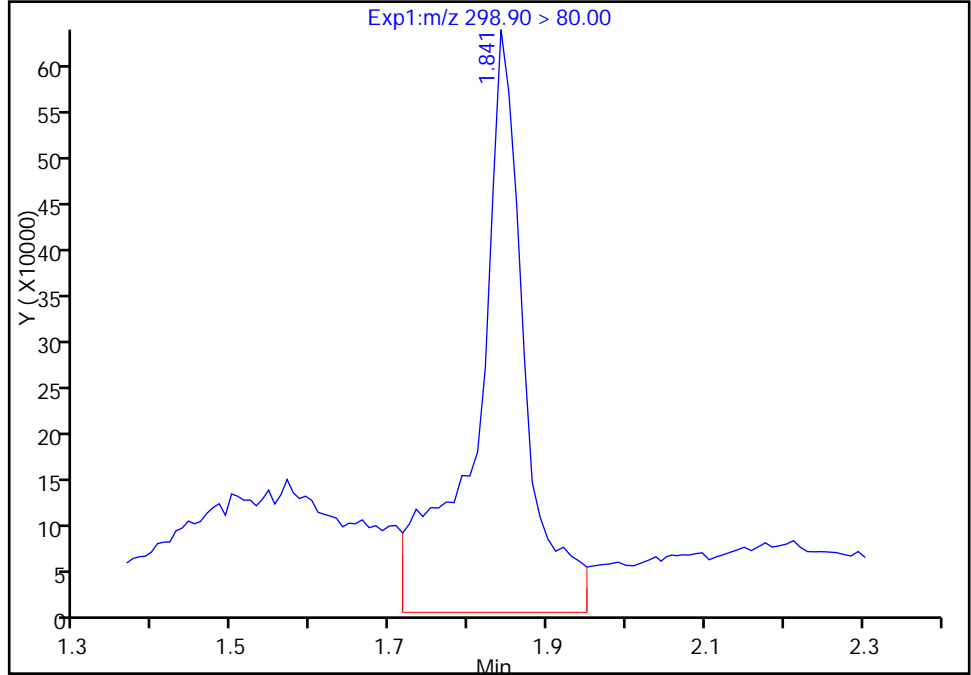
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_060.d
Injection Date: 06-Mar-2017 03:26:41 Instrument ID: A8_N
Lims ID: 320-26105-A-16-A Lab Sample ID: 320-26105-16
Client ID: MEAFF-FD03-0217
Operator ID: A8-PC\A8 ALS Bottle#: 48 Worklist Smp#: 60
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

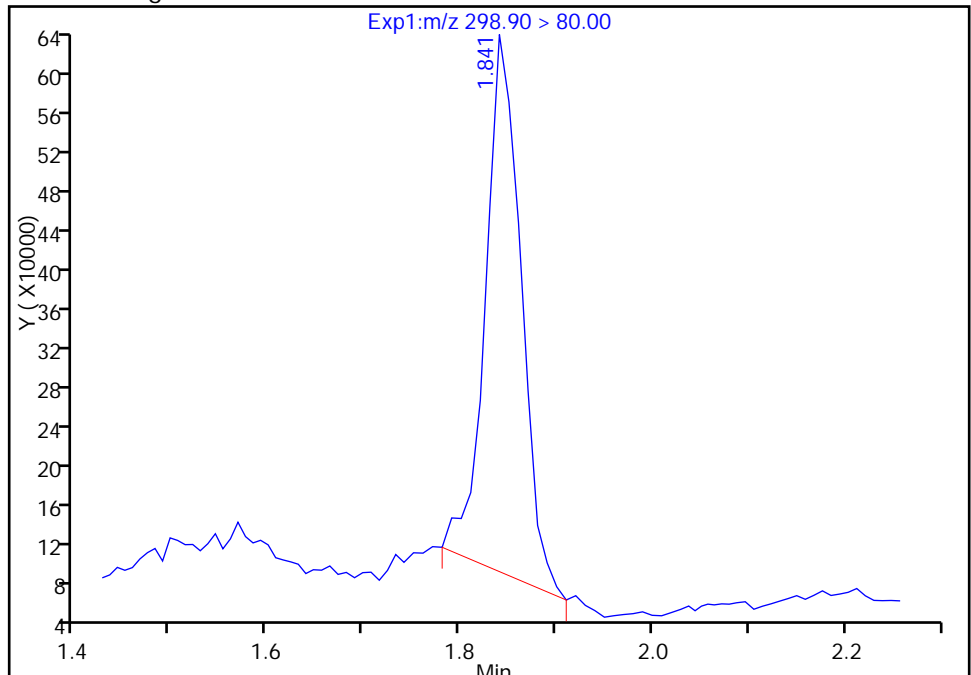
RT: 1.84
Area: 2691089
Amount: 5.228549
Amount Units: ng/ml

Processing Integration Results



RT: 1.84
Area: 1392140
Amount: 2.704806
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 13:26:23

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26105-1

Analy Batch No.: 152681

SDG No.: _____

Instrument ID: A8_N

GC Column: GeminiC18 3 ID: 3 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 03/01/2017 11:08

Calibration End Date: 03/01/2017 11:46

Calibration ID: 28659

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-152681/2	2017.03.01CURVE_003.d
Level 2	IC 320-152681/3	2017.03.01CURVE_004.d
Level 3	IC 320-152681/4	2017.03.01CURVE_005.d
Level 4	IC 320-152681/5	2017.03.01CURVE_006.d
Level 5	IC 320-152681/6	2017.03.01CURVE_007.d
Level 6	IC 320-152681/7	2017.03.01CURVE_008.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6				RT WINDOW	AVG RT
Perfluorobutanoic acid (PFBA)	1.563	1.562	1.555	1.562	1.554	1.554				1.308 - 1.808	1.558
Perfluoropentanoic acid (PFPeA)	1.843	1.842	1.833	1.841	1.831	1.822				1.585 - 2.085	1.835
Perfluorobutanesulfonic acid (PFBS)	1.883	1.872	1.873	1.871	1.871	1.861				1.692 - 2.052	1.872
Perfluorohexanoic acid (PFHxA)	2.139	2.145	2.129	2.134	2.127	2.122				1.883 - 2.383	2.133
Perfluoroheptanoic acid (PFHpA)	2.491	2.484	2.471	2.471	2.466	2.461				2.224 - 2.724	2.474
Perfluorohehexanesulfonic acid (PFHxS)	++++	2.500	2.456	2.487	2.481	2.478				2.235 - 2.735	2.480
6:2FTS	2.833	2.818	2.798	2.806	2.793	2.797				2.557 - 3.057	2.808
Perfluorooctanoic acid (PFOA)	++++	2.841	2.829	2.837	2.824	2.820				2.585 - 3.085	2.830
Perfluoroheptanesulfonic Acid (PFHpS)	2.856	2.857	2.845	2.837	2.831	2.828				2.592 - 3.092	2.842
Perfluorooctanesulfonic acid (PFOS)	3.227	3.105	3.171	3.093	3.087	3.186				2.895 - 3.395	3.145
Perfluorononanoic acid (PFNA)	3.218	3.209	3.205	3.205	3.191	3.186				2.952 - 3.452	3.202
8:2FTS	3.569	3.561	3.539	3.539	3.543	3.523				3.296 - 3.796	3.546
Perfluorodecanoic acid (PFDA)	3.578	3.569	3.556	3.556	3.552	3.548				3.310 - 3.810	3.560
Perfluorooctane Sulfonamide (FOSA)	3.569	3.561	3.556	3.565	3.560	3.557				3.311 - 3.811	3.561
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.723	3.723	3.707	3.717	3.702	3.707				3.463 - 3.963	3.713
Perfluorodecanesulfonic acid (PFDS)	3.886	3.876	3.861	3.862	3.859	3.853				3.616 - 4.116	3.866
Perfluoroundecanoic acid (PFUnA)	3.894	3.885	3.878	3.879	3.867	3.862				3.628 - 4.128	3.878
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	3.903	3.885	3.878	3.888	3.876	3.871				3.633 - 4.133	3.884
MeFOSA	4.055	4.064	4.056	4.059	4.058	4.051				3.807 - 4.307	4.057
Perfluorododecanoic acid (PFDoA)	4.176	4.175	4.161	4.165	4.157	4.138				3.912 - 4.412	4.162
N-EtFOSA-M	4.247	4.246	4.237	4.249	4.241	4.236				3.992 - 4.492	4.243
Perfluorotridecanoic Acid (PFTriA)	4.447	4.430	4.421	4.418	4.418	4.407				4.174 - 4.674	4.424
Perfluorotetradecanoic acid (PFTeA)	4.679	4.667	4.655	4.652	4.651	4.635				4.407 - 4.907	4.657
Perfluoro-n-hexadecanoic acid (PFHxDA)	++++	5.070	5.057	5.057	5.049	5.046				4.809 - 5.309	5.056
Perfluoro-n-octadecanoic acid (PFODA)	5.428	5.414	5.398	5.398	5.383	5.375				5.149 - 5.649	5.399
13C4 PFBA	1.563	1.554	1.555	1.554	1.546	1.546				1.303 - 1.803	1.553
13C5-PFPeA	1.843	1.842	1.833	1.832	1.821	1.822				1.582 - 2.082	1.832
13C2 PFHxA	2.147	2.136	2.138	2.134	2.127	2.122				1.884 - 2.384	2.134
13C4-PFHpA	2.491	2.484	2.471	2.479	2.466	2.461				2.225 - 2.725	2.475
18O2 PFHxS	2.498	2.500	2.487	2.487	2.481	2.478				2.239 - 2.739	2.489
M2-6:2FTS	2.817	2.810	2.806	2.814	2.793	2.789				2.555 - 3.055	2.805
13C4 PFOA	2.848	2.849	2.829	2.837	2.824	2.820				2.585 - 3.085	2.835
13C4 PFOS	3.218	3.218	3.196	3.205	3.199	3.186				2.954 - 3.454	3.204

FORM VI
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
 RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1 Analy Batch No.: 152681
 SDG No.: _____
 Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N
 Calibration Start Date: 03/01/2017 11:08 Calibration End Date: 03/01/2017 11:46 Calibration ID: 28659

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6					RT WINDOW	AVG RT
13C5 PFNA	3.218	3.218	3.205	3.214	3.199	3.195					2.958 - 3.458	3.208
M2-8:2FTS	3.569	3.553	3.548	3.539	3.535	3.523					3.295 - 3.795	3.545
13C8 FOSA	3.561	3.561	3.556	3.565	3.560	3.548					3.309 - 3.809	3.559
13C2 PFDA	3.569	3.569	3.556	3.565	3.552	3.548					3.310 - 3.810	3.560
d3-NMeFOSAA	3.723	3.723	3.707	3.707	3.702	3.696					3.460 - 3.960	3.710
d5-NEtFOSAA	3.894	3.885	3.869	3.870	3.867	3.862					3.625 - 4.125	3.875
13C2 PFUnA	3.894	3.885	3.869	3.879	3.867	3.862					3.626 - 4.126	3.876
d-N-MeFOSA-M	4.055	4.055	4.047	4.050	4.048	4.042					3.800 - 4.300	4.050
13C2 PFDoA	4.176	4.175	4.161	4.165	4.157	4.152					3.914 - 4.414	4.164
d-N-EtFOSA-M	4.238	4.237	4.228	4.240	4.241	4.227					3.985 - 4.485	4.235
13C2-PFTeDA	4.679	4.667	4.655	4.652	4.641	4.635					4.405 - 4.905	4.655
13C2-PFHxDA	5.077	5.070	5.057	5.057	5.049	5.035					4.807 - 5.307	5.058

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1 Analy Batch No.: 152681

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/01/2017 11:08 Calibration End Date: 03/01/2017 11:46 Calibration ID: 28659

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-152681/2	2017.03.01CURVE_003.d
Level 2	IC 320-152681/3	2017.03.01CURVE_004.d
Level 3	IC 320-152681/4	2017.03.01CURVE_005.d
Level 4	IC 320-152681/5	2017.03.01CURVE_006.d
Level 5	IC 320-152681/6	2017.03.01CURVE_007.d
Level 6	IC 320-152681/7	2017.03.01CURVE_008.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 4		B	M1	M2								
13C4 PFBA	295570 298823	282103 245371	289131	342453	Ave		292241.860			10.7			50.0			
13C5-PFPeA	243840 228800	230536 186413	230743	272822	Ave		232192.393			12.0			50.0			
13C2 PFHxA	216513 214399	203387 180899	205221	244884	Ave		210883.903			9.9			50.0			
13C4-PFHpA	196625 198881	194053 153158	196340	218699	Ave		192959.403			11.1			50.0			
18O2 PFHxS	303886 295000	286708 235682	287749	336370	Ave		290899.232			11.2			50.0			
M2-6:2FTS	77170 76852	74128 71775	76996	86146	Ave		77177.6947			6.3			50.0			
13C4 PFOA	218643 200396	211258 153770	209474	236176	Ave		204953.003			13.6			50.0			
13C4 PFOS	248546 248262	230373 208908	237852	275881	Ave		241637.026			9.2			50.0			
13C5 PFNA	187340 178740	181023 139672	176430	203992	Ave		177866.177			11.9			50.0			
M2-8:2FTS	96352 91038	94980 76400	95104	101739	Ave		92601.9868			9.3			50.0			
13C8 FOSA	389836 371174	361792 303762	377175	397768	Ave		366917.947			9.1			50.0			
13C2 PFDA	175335 161485	171862 124531	173776	193236	Ave		166704.327			13.8			50.0			
d3-NMeFOSAA	80206 88198	79979 82300	85034	95399	Ave		85185.7867			6.9			50.0			
d5-NEtFOSAA	85322 82165	81954 62458	86013	90318	Ave		81371.4600			12.0			50.0			
13C2 PFUnA	144662 128397	134819 95431	134602	146921	Ave		130805.323			14.3			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.: 320-26105-1 Analy Batch No.: 152681

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/01/2017 11:08 Calibration End Date: 03/01/2017 11:46 Calibration ID: 28659

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 4		B	M1	M2								
d-N-MeFOSA-M	86833 90989	81090 88671	88728	91589	Ave		87983.4500			4.3		50.0				
13C2 PFDoA	134509 123176	120646 106418	126789	132125	Ave		123944.073			8.1		50.0				
d-N-EtFOSA-M	83930 87690	78408 88518	85474	87472	Ave		85248.5033			4.4		50.0				
13C2-PFTeDA	274175 265148	246188 227078	269935	272468	Ave		259165.203			7.2		50.0				
13C2-PFHxDA	131614 132135	114843 117588	127568	126617	Ave		125060.687			5.8		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.: 320-26105-1 Analy Batch No.: 152681
 SDG No.: _____
 Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
 Calibration Start Date: 03/01/2017 11:08 Calibration End Date: 03/01/2017 11:46 Calibration ID: 28659

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.8141 0.7696	0.8385	0.8902	0.8682	0.9030	AveID		0.8473			5.9		35.0				
Perfluoropentanoic acid (PFPeA)	1.0168 0.8556	1.0140	1.0095	0.9684	1.0070	AveID		0.9785			6.4		35.0				
Perfluorobutanesulfonic acid (PFBS)	1.4512 1.1477	1.4372	1.5643	1.5194	1.4753	AveID		1.4325			10.3		50.0				
Perfluorohexanoic acid (PFHxA)	0.8937 0.8394	0.9003	0.9420	0.8558	0.9058	AveID		0.8895			4.1		35.0				
Perfluoroheptanoic acid (PFHpA)	1.0535 0.9266	0.9536	0.9588	0.9499	0.9613	AveID		0.9673			4.5		35.0				
Perfluorohexanesulfonic acid (PFHxS)	++++ 0.9823	1.1299	1.0303	0.9734	1.0264	AveID		1.0284			6.0		35.0				
6:2FTS	1.1310 0.8276	1.0222	0.9530	0.9038	0.8939	L2ID	0.1204	0.8859						0.9980		0.9900	
Perfluorooctanoic acid (PFOA)	++++ 0.9671	1.0714	1.0527	0.9847	1.0323	AveID		1.0217			4.3		35.0				
Perfluoroheptanesulfonic Acid (PFHpS)	0.9372 0.9122	1.0436	1.1203	1.0793	1.0932	AveID		1.0310			8.4		50.0				
Perfluorooctanesulfonic acid (PFOS)	0.9378 1.0254	0.9696	0.9901	0.9549	1.0231	AveID		0.9835			3.7		35.0				
Perfluorononanoic acid (PFNA)	0.8479 0.9328	0.8440	0.9730	0.8905	0.9356	AveID		0.9040			5.8		35.0				
8:2FTS	1.0958 0.8348	0.9785	0.9767	0.9909	0.9344	L2ID	0.0783	0.9239						0.9960		0.9900	
Perfluorodecanoic acid (PFDA)	0.8578 0.9743	0.8868	0.9034	0.8481	0.9635	AveID		0.9057			5.8		35.0				
Perfluorooctane Sulfonamide (FOSA)	0.8943 0.7850	0.9384	0.9267	0.9035	0.9430	AveID		0.8985			6.5		35.0				
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.0472 0.9897	0.9816	0.9980	0.8887	0.9213	AveID		0.9711			5.9		35.0				
Perfluorodecanesulfonic acid (PFDS)	0.5889 0.6126	0.5647	0.6260	0.5646	0.6173	AveID		0.5957			4.5		50.0				
Perfluoroundecanoic acid (PFUnA)	1.1887 0.9783	1.0233	1.0049	0.8914	0.9951	AveID		1.0136			9.6		35.0				
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.9144 0.9531	0.9405	0.8966	0.8892	0.8680	AveID		0.9103			3.5		35.0				
MeFOSA	1.0035 0.9709	0.9265	0.9122	0.9123	0.8877	AveID		0.9355			4.6		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.: 320-26105-1 Analy Batch No.: 152681

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/01/2017 11:08 Calibration End Date: 03/01/2017 11:46 Calibration ID: 28659

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorododecanoic acid (PFDoA)	0.8688 0.9119	0.9386	0.9128	0.8906	0.9644	AveID		0.9145			3.7		35.0				
N-EtFOSA-M	1.0272 0.9831	1.0085	0.9951	0.9583	0.9298	AveID		0.9837			3.6		35.0				
Perfluorotridecanoic Acid (PFTriA)	0.8807 0.8636	0.8542	0.8873	0.8354	0.9194	AveID		0.8734			3.3		50.0				
Perfluorotetradecanoic acid (PFTeA)	1.9494 1.8544	1.9776	2.0893	1.8773	2.0509	AveID		1.9665			4.7		50.0				
Perfluoro-n-hexadecanoic acid (PFHxDA)	++++ 0.9462	1.4217	1.0035	0.7837	0.9248	L1ID	0.3491	0.9270						0.9970		0.9900	
Perfluoro-n-octadecanoic acid (PFODA)	0.6950 0.8378	0.6764	0.7116	0.6387	0.7456	AveID		0.7175			9.6		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.: 320-26105-1 Analy Batch No.: 152681

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/01/2017 11:08 Calibration End Date: 03/01/2017 11:46 Calibration ID: 28659

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-152681/2	2017.03.01CURVE_003.d
Level 2	IC 320-152681/3	2017.03.01CURVE_004.d
Level 3	IC 320-152681/4	2017.03.01CURVE_005.d
Level 4	IC 320-152681/5	2017.03.01CURVE_006.d
Level 5	IC 320-152681/6	2017.03.01CURVE_007.d
Level 6	IC 320-152681/7	2017.03.01CURVE_008.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
13C4 PFBA	Ave	14778495 12268568	14105138	14456536	17122661	14941160	50.0 50.0	50.0	50.0	50.0	50.0
13C5-PFPeA	Ave	12192014 9320645	11526786	11537165	13641103	11440005	50.0 50.0	50.0	50.0	50.0	50.0
13C2 PFHxA	Ave	10825655 9044966	10169363	10261028	12244217	10719942	50.0 50.0	50.0	50.0	50.0	50.0
13C4-PFHpA	Ave	9831264 7657909	9702633	9817002	10934944	9944069	50.0 50.0	50.0	50.0	50.0	50.0
18O2 PFHxS	Ave	14373798 11147782	13561303	13610529	15910284	13953506	47.3 47.3	47.3	47.3	47.3	47.3
M2-6:2FTS	Ave	3665572 3409307	3521088	3657293	4091935	3650448	47.5 47.5	47.5	47.5	47.5	47.5
13C4 PFOA	Ave	10932126 7688496	10562914	10473721	11808824	10019820	50.0 50.0	50.0	50.0	50.0	50.0
13C4 PFOS	Ave	11880498 9985826	11011810	11369327	13187105	11866933	47.8 47.8	47.8	47.8	47.8	47.8
13C5 PFNA	Ave	9367003 6983620	9051156	8821496	10199601	8936977	50.0 50.0	50.0	50.0	50.0	50.0
M2-8:2FTS	Ave	4615245 3659550	4549526	4555474	4873285	4360731	47.9 47.9	47.9	47.9	47.9	47.9
13C8 FOSA	Ave	19491823 15188110	18089578	18858766	19888389	18558718	50.0 50.0	50.0	50.0	50.0	50.0
13C2 PFDA	Ave	8766735 6226569	8593124	8688810	9661817	8074243	50.0 50.0	50.0	50.0	50.0	50.0
d3-NMeFOSAA	Ave	4010288 4115011	3998931	4251681	4769931	4409894	50.0 50.0	50.0	50.0	50.0	50.0
d5-NETfOSAA	Ave	4266080 3122900	4097675	4300641	4515915	4108227	50.0 50.0	50.0	50.0	50.0	50.0
13C2 PFUnA	Ave	7233118 4771549	6740958	6730080	7346047	6419845	50.0 50.0	50.0	50.0	50.0	50.0
d-N-MeFOSA-M	Ave	4341649 4433562	4054503	4436424	4579449	4549448	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.: 320-26105-1 Analy Batch No.: 152681

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/01/2017 11:08 Calibration End Date: 03/01/2017 11:46 Calibration ID: 28659

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
13C2 PFDoA	Ave	6725474 5320903	6032319	6339474	6606261	6158791	50.0 50.0	50.0	50.0	50.0	50.0
d-N-EtFOSA-M	Ave	4196476 4425922	3920378	4273681	4373613	4384481	50.0 50.0	50.0	50.0	50.0	50.0
13C2-PFTeDA	Ave	13708730 11353892	12309406	13496732	13623388	13257413	50.0 50.0	50.0	50.0	50.0	50.0
13C2-PFHxDA	Ave	6580685 5879424	5742128	6378393	6330845	6606731	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.: 320-26105-1 Analy Batch No.: 152681

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/01/2017 11:08 Calibration End Date: 03/01/2017 11:46 Calibration ID: 28659

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-152681/2	2017.03.01CURVE_003.d
Level 2	IC 320-152681/3	2017.03.01CURVE_004.d
Level 3	IC 320-152681/4	2017.03.01CURVE_005.d
Level 4	IC 320-152681/5	2017.03.01CURVE_006.d
Level 5	IC 320-152681/6	2017.03.01CURVE_007.d
Level 6	IC 320-152681/7	2017.03.01CURVE_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	120309 37767596	236552	1286888	5946494	13491384	0.500 200	1.00	5.00	20.0	50.0
Perfluoropentanoic acid (PFPeA)		AveID	123967 31900088	233761	1164625	5283919	11520213	0.500 200	1.00	5.00	20.0	50.0
Perfluorobutanesulfonic acid (PFBS)		AveID	194922 47824719	364249	1989498	9035699	19236596	0.442 177	0.884	4.42	17.7	44.2
Perfluoroheptanoic acid (PFHxA)		AveID	96748 30367858	183108	966638	4191655	9710439	0.500 200	1.00	5.00	20.0	50.0
Perfluoroheptanoic acid (PFHpA)		AveID	103569 28382869	185040	941301	4154809	9559143	0.500 200	1.00	5.00	20.0	50.0
Perfluoroheptanesulfonic acid (PFHxS)		AveID	++++ 42133990	294799	1348890	5958886	13776740	++++ 182	0.910	4.55	18.2	45.5
6:2FTS		L2ID	41369 11262289	71833	347809	1476276	3256270	0.474 190	0.948	4.74	19.0	47.4
Perfluorooctanoic acid (PFOA)		AveID	++++ 29743583	226350	1102619	4651144	10343315	++++ 200	1.00	5.00	20.0	50.0
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	110873 36282267	228885	1268398	5669268	12919018	0.476 190	0.952	4.76	19.0	47.6
Perfluorooctanesulfonic acid (PFOS)		AveID	108156 39756569	207277	1092724	4889351	11786011	0.464 186	0.928	4.64	18.6	46.4
Perfluorononanoic acid (PFNA)		AveID	79419 26057481	152789	858327	3633207	8361339	0.500 200	1.00	5.00	20.0	50.0
8:2FTS		L2ID	50574 12220206	89032	444929	1931499	4074481	0.479 192	0.958	4.79	19.2	47.9
Perfluorodecanoic acid (PFDA)		AveID	75200 24265114	152408	784974	3277760	7779706	0.500 200	1.00	5.00	20.0	50.0
Perfluorooctane Sulfonamide (FOSA)		AveID	174325 47690261	339522	1747629	7187955	17500489	0.500 200	1.00	5.00	20.0	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	41996 16290792	78506	424299	1695690	4062831	0.500 200	1.00	5.00	20.0	50.0
Perfluorodecanesulfonic acid (PFDS)		AveID	70554 24675284	125403	717648	3002868	7386234	0.482 193	0.964	4.82	19.3	48.2

FORM VI
 LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1 Analy Batch No.: 152681

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/01/2017 11:08 Calibration End Date: 03/01/2017 11:46 Calibration ID: 28659

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Perfluoroundecanoic acid (PFUnA)		AveID	85977 18672321	137967	676308	2619295	6388091	0.500 200	1.00	5.00	20.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	39009 11906031	77078	385576	1606146	3565748	0.500 200	1.00	5.00	20.0	50.0
MeFOSA		AveID	43568 17219029	75129	404698	1671133	4038740	0.500 200	1.00	5.00	20.0	50.0
Perfluorododecanoic acid (PFDoA)		AveID	58428 19408225	113238	578671	2353395	5939325	0.500 200	1.00	5.00	20.0	50.0
N-EtFOSA-M		AveID	43107 17404238	79073	425282	1676481	4076562	0.500 200	1.00	5.00	20.0	50.0
Perfluorotridecanoic Acid (PFTriA)		AveID	59233 18379771	103052	562473	2207561	5662375	0.500 200	1.00	5.00	20.0	50.0
Perfluorotetradecanoic acid (PFTeA)		AveID	131104 39468467	238596	1324493	4960846	12631200	0.500 200	1.00	5.00	20.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)		L1ID	++++ 20137749	171523	636153	2071027	5695645	++++ 200	1.00	5.00	20.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)		AveID	46744 17831844	81601	451116	1687895	4591929	0.500 200	1.00	5.00	20.0	50.0

Curve Type Legend:

AveID = Average isotope dilution L1ID = Linear 1/conc IsoDil L2ID = Linear 1/conc^2 IsoDil
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TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 01-Mar-2017 11:08:52 ALS Bottle#: 28 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L1-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub15
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 01-Mar-2017 15:43:05 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:00:05

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	1.563	1.553	0.010	14778495	50.6		101	654817	
2 Perfluorobutyric acid	212.90 > 169.00	1.563	1.558	0.005	120309	0.4804		96.1	1068	
D 3 13C5-PFPeA	267.90 > 223.00	1.843	1.832	0.011	12192014	52.5		105	525740	
4 Perfluoropentanoic acid	262.90 > 219.00	1.843	1.835	0.008	123967	0.5195		104	1065	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.883	1.872	0.011	194922	0.4478		101		
	298.90 > 99.00	1.883	1.872	0.011	77860		2.50(0.00-0.00)	101		
6 Perfluorohexanoic acid	313.00 > 269.00	2.139	2.133	0.006	96748	0.5024		100	3614	
D 7 13C2 PFHxA	315.00 > 270.00	2.147	2.134	0.013	10825655	51.3		103	238427	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.491	2.474	0.017	103569	0.5446		109	891	
D 9 13C4-PFHpA	367.00 > 322.00	2.491	2.475	0.016	9831264	50.9		102	345749	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.506	2.485	0.021	182218	0.5830		128		M
										M
D 11 18O2 PFHxS	403.00 > 84.00	2.498	2.489	0.009	14373798	49.4		104	411887	
D 12 M2-6:2FTS	429.00 > 409.00	2.817	2.805	0.012	3665572	47.5		100.0		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.833	2.807	0.026	41369	0.4692		99.0		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.856	2.835	0.021	1.000	120388	0.5389		108	1162	
413.00 > 169.00	2.848	2.835	0.013	0.997	71985		1.67(0.90-1.10)	108	2853	M
D 14 13C4 PFOA										
417.00 > 372.00	2.848	2.835	0.013		10932126	53.3		107	336385	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.856	2.842	0.014	1.000	110873	0.4327		90.9		
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.227	3.145	0.082	1.000	108156	0.4425		95.4	8683	M
499.00 > 99.00	3.218	3.145	0.073	0.997	27348		3.95(0.90-1.10)	95.4	2308	
20 Perfluorononanoic acid										
463.00 > 419.00	3.218	3.202	0.016	1.000	79419	0.4690		93.8	1607	
D 18 13C4 PFOS										
503.00 > 80.00	3.218	3.204	0.014		11880498	49.2		103	335475	
D 19 13C5 PFNA										
468.00 > 423.00	3.218	3.208	0.010		9367003	52.7		105	245715	
D 26 M2-8:2FTS										
529.00 > 509.00	3.569	3.545	0.024		4615245	49.8		104		
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.569	3.546	0.023	1.000	50574	0.4834		101		
D 21 13C8 FOSA										
506.00 > 78.00	3.561	3.559	0.002		19491823	53.1		106	285934	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.578	3.560	0.018	1.000	75200	0.4736		94.7	2610	
D 23 13C2 PFDA										
515.00 > 470.00	3.569	3.560	0.009		8766735	52.6		105	186190	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.569	3.561	0.008	1.000	174325	0.4977		99.5	18811	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.723	3.710	0.013		4010288	47.1		94.2		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.723	3.713	0.010	1.000	41996	0.5392		108		
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.886	3.866	0.020	1.000	70554	0.4765		98.9		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.894	3.875	0.019		4266080	52.4		105		
D 30 13C2 PFUnA										
565.00 > 520.00	3.894	3.876	0.018		7233118	55.3		111	181410	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.894	3.878	0.016	1.000	85977	0.5863		117	2231	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.903	3.883	0.020	1.002	39009	0.5023		100		
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.055	4.050	0.005		4341649	49.3		98.7		
35 MeFOSA										
512.00 > 169.00	4.055	4.057	-0.002	1.000	43568	0.5363		107		
37 Perfluorododecanoic acid										
613.00 > 569.00	4.176	4.162	0.014	1.000	58428	0.4750		95.0	471	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA	615.00 > 570.00	4.176	4.164	0.012	6725474	54.3		109	175924	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.238	4.235	0.003	4196476	49.2		98.5		
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.247	4.242	0.005	43107	0.5221		104		
41 Perfluorotridecanoic acid	663.00 > 619.00	4.447	4.424	0.023	59233	0.5042		101	1171	
D 43 13C2-PFTeDA	715.00 > 670.00	4.679	4.655	0.024	13708730	52.9		106	527093	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.679	4.657	0.022	131104	0.4956		99.1	372	
	713.00 > 169.00	4.670	4.657	0.013	21850		6.00(0.00-0.00)	99.1	7867	
D 44 13C2-PFHxDA	815.00 > 770.00	5.077	5.057	0.020	6580685	52.6		105	118608	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.077	5.059	0.018	146592	0.7991		160	190	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.428	5.399	0.029	46744	0.4843		96.9	91.5	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L1_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d

Injection Date: 01-Mar-2017 11:08:52

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 28

Worklist Smp#: 2

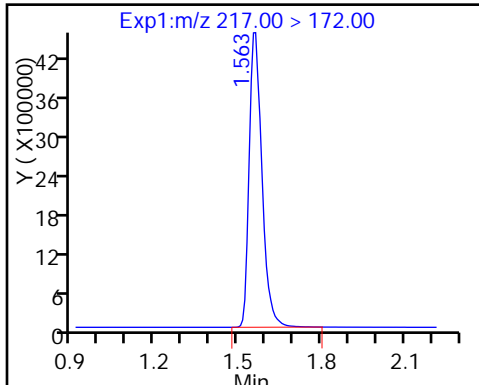
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

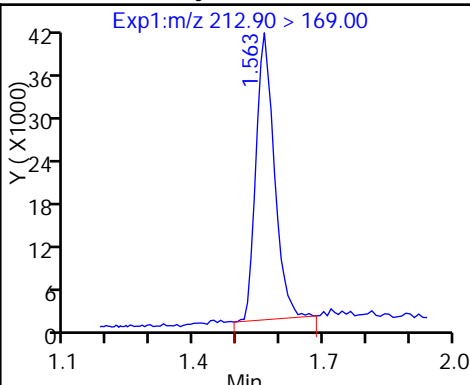
Method: A8_N

Limit Group: LC PFC_DOD ICAL

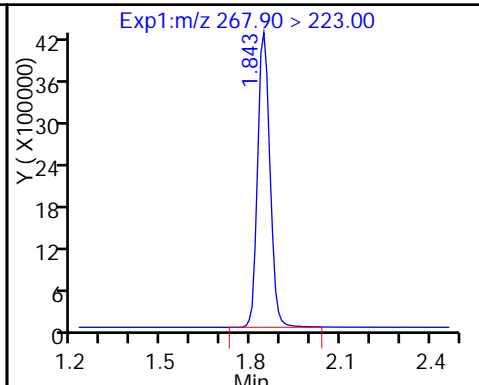
D 1 13C4 PFBA



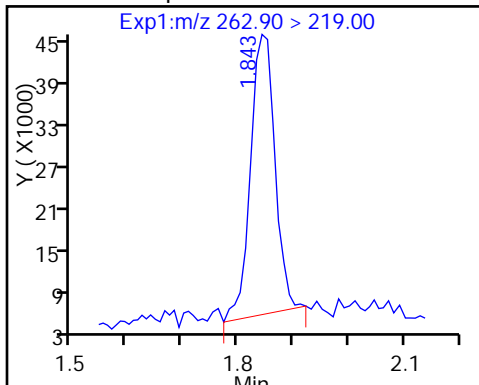
2 Perfluorobutyric acid



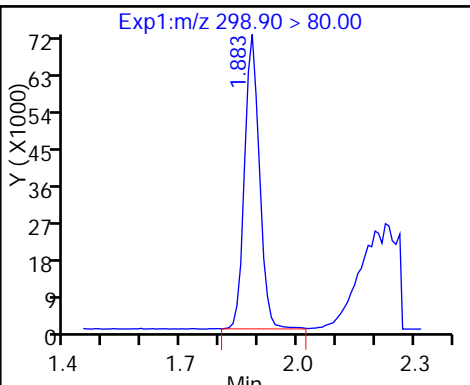
D 3 13C5-PFPeA



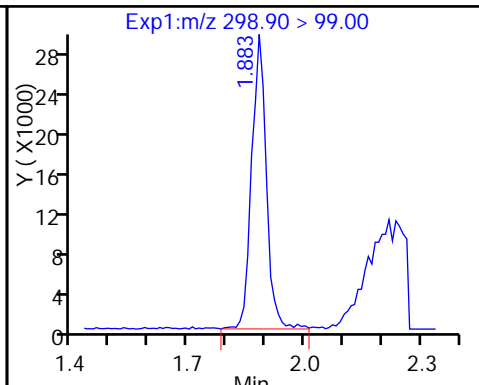
4 Perfluoropentanoic acid



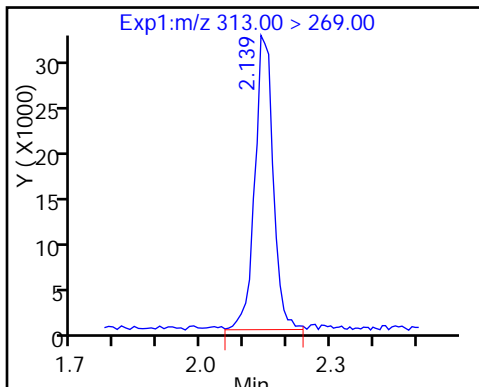
5 Perfluorobutanesulfonic acid



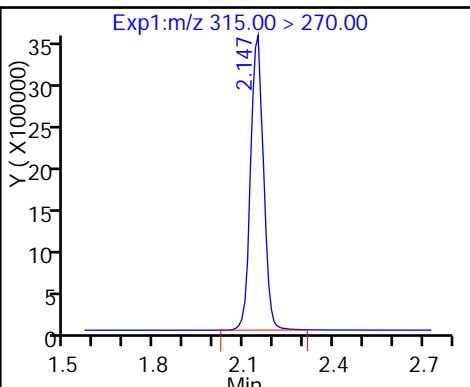
5 Perfluorobutanesulfonic acid



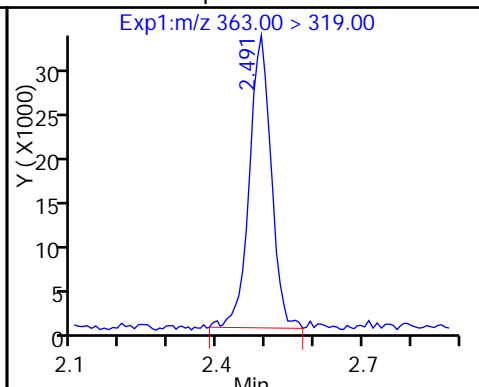
6 Perfluorohexanoic acid



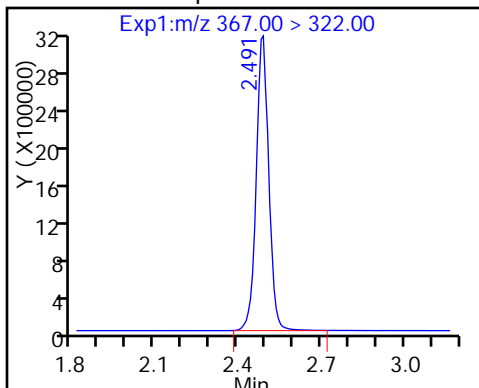
D 7 13C2 PFHxA



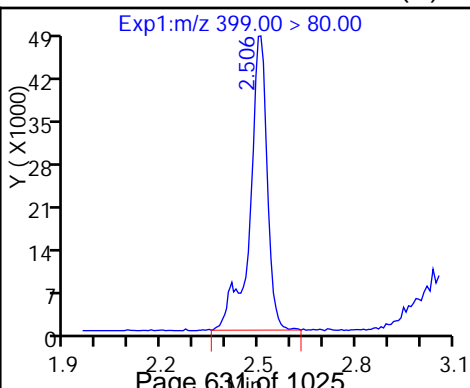
10 Perfluoroheptanoic acid



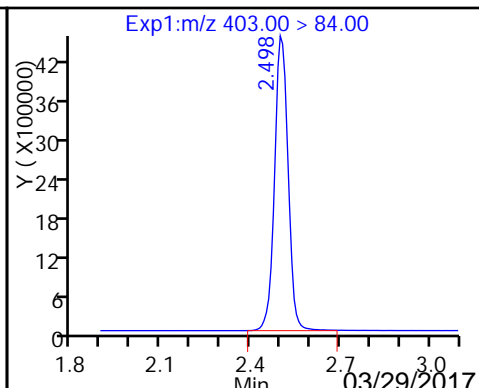
D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid (M)

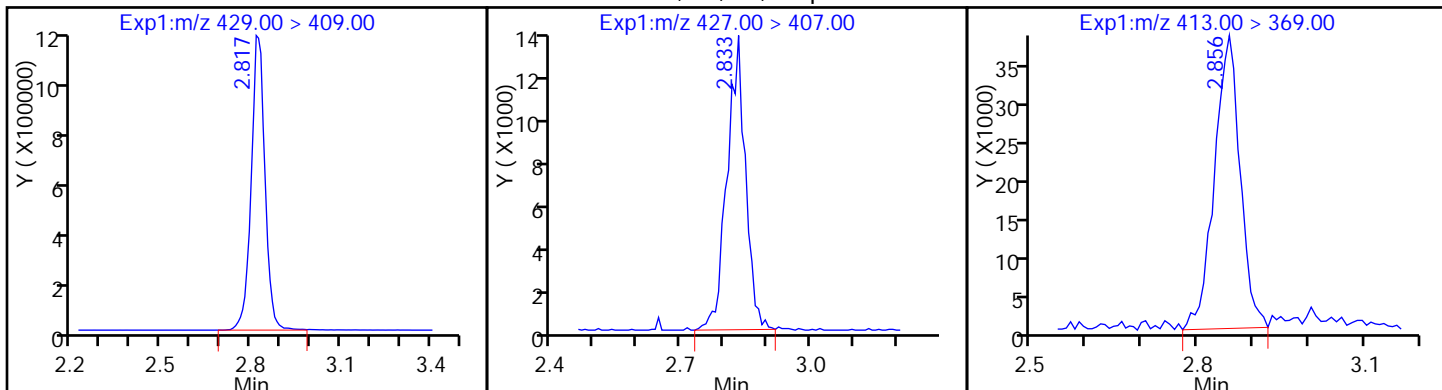


D 11 18O2 PFHxS



D 12 M2-6:2FTS

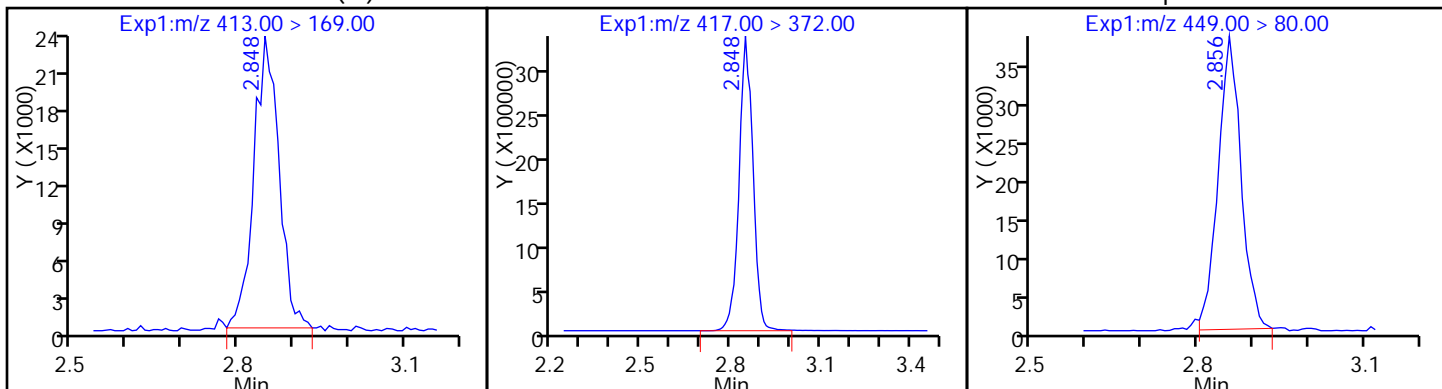
13 Sodium 1H,1H,2H,2H-perfluorooctane15 Perfluorooctanoic acid



15 Perfluorooctanoic acid (M)

D 14 13C4 PFOA

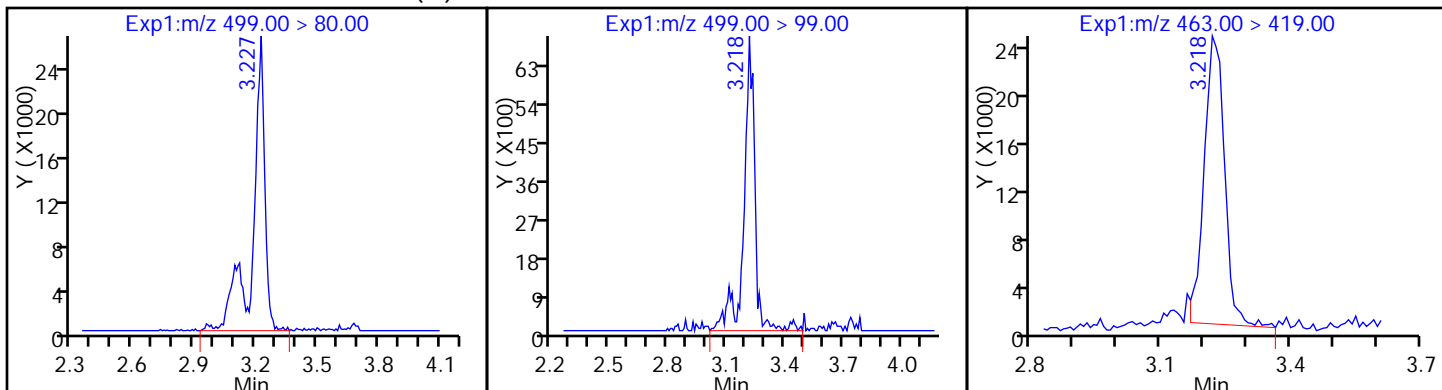
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid

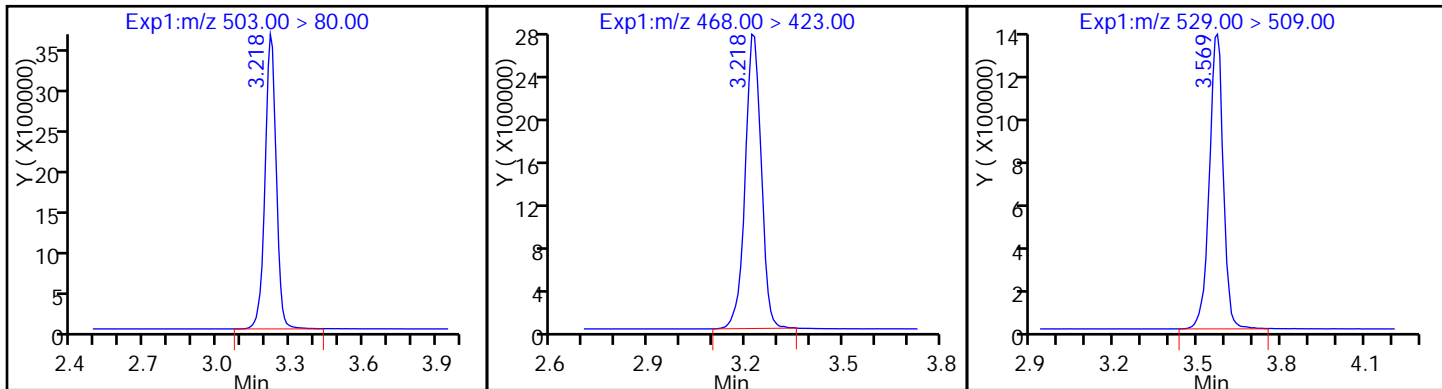
20 Perfluorononanoic acid



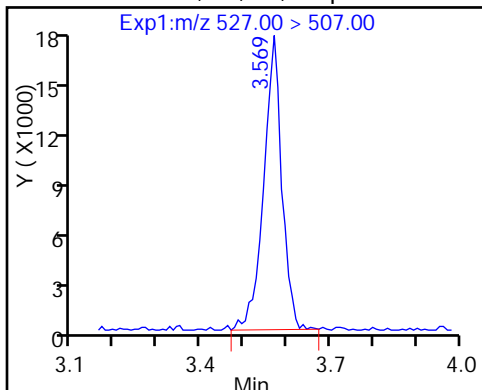
D 18 13C4 PFOS

D 19 13C5 PFNA

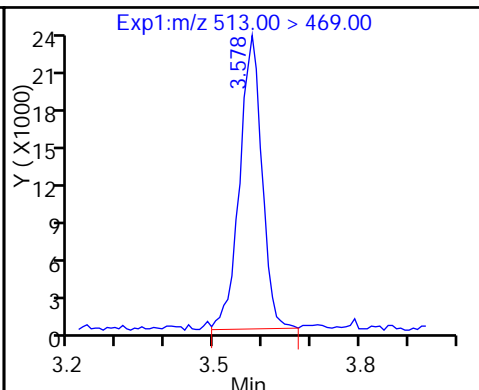
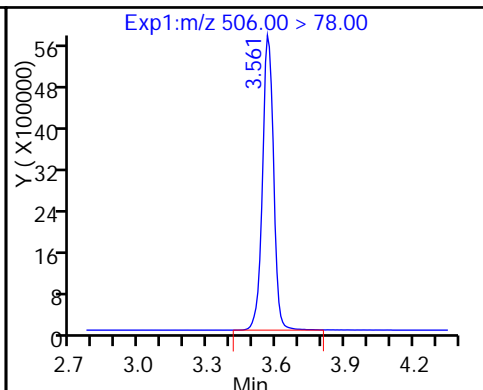
D 26 M2-8:2FTS



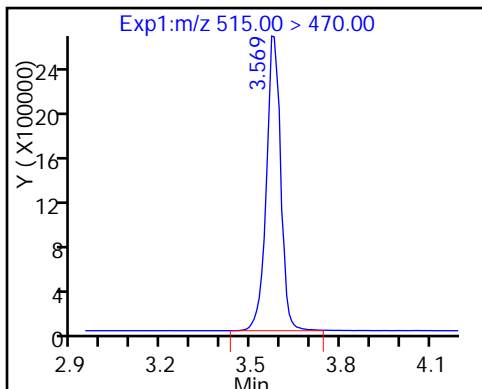
25 Sodium 1H,1H,2H,2H-perfluorooctanoate



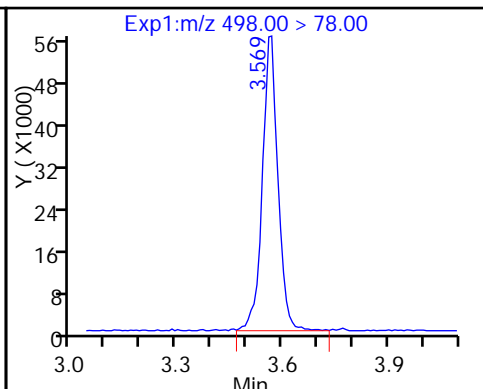
24 Perfluorodecanoic acid



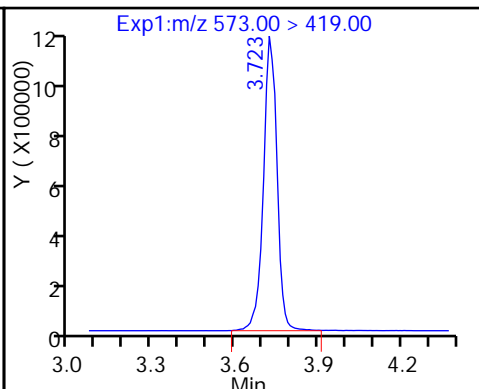
D 23 13C2 PFDA



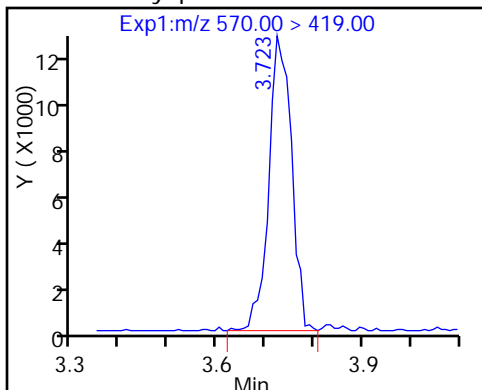
22 Perfluorooctane Sulfonamide



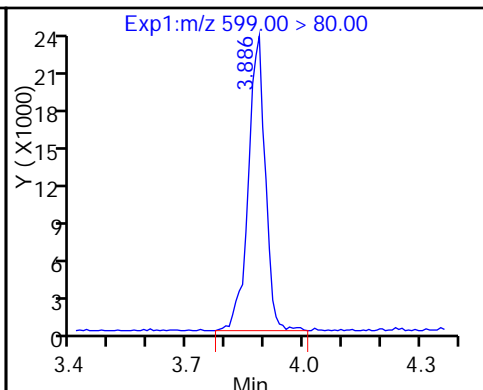
D 27 d3-NMeFOSAA



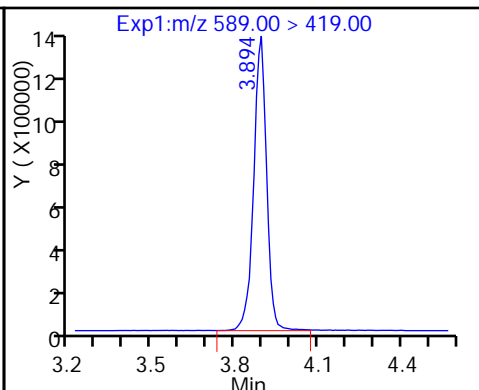
28 N-methyl perfluorooctane sulfonami



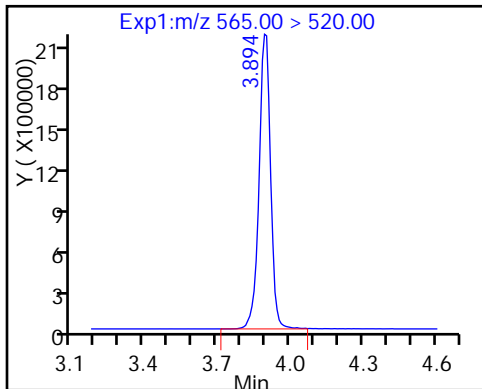
29 Perfluorodecane Sulfonic acid



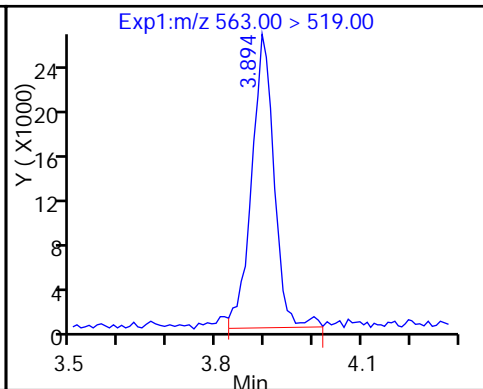
D 32 d5-NEtFOSAA



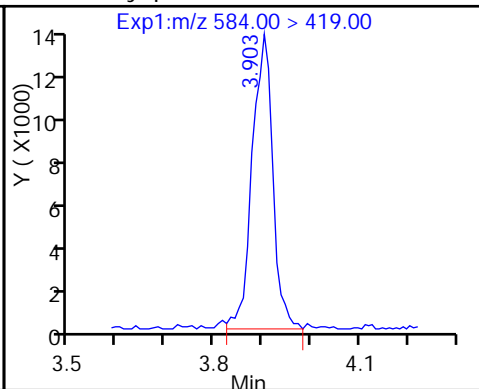
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid



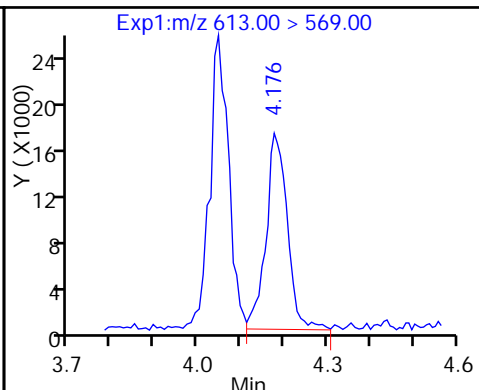
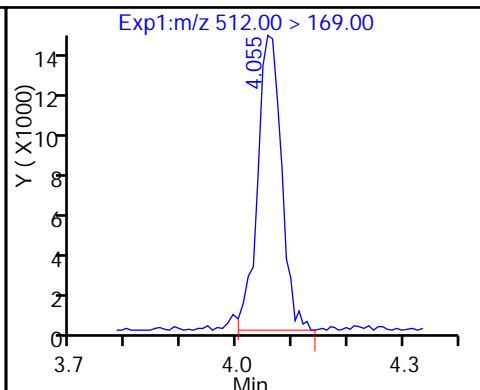
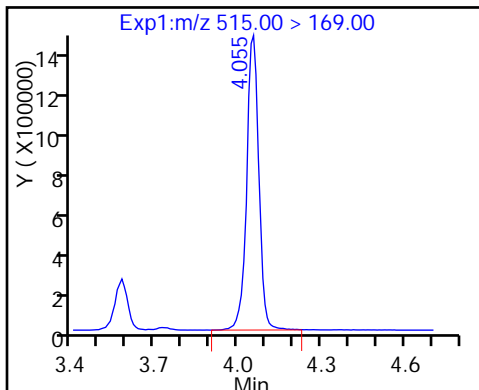
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

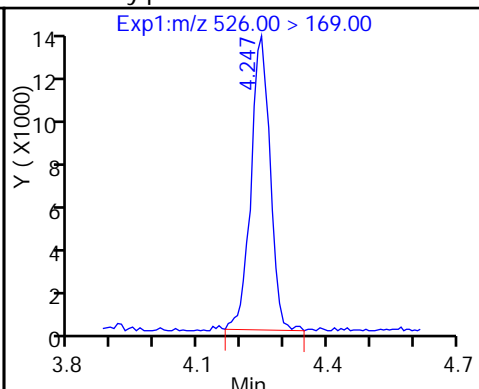
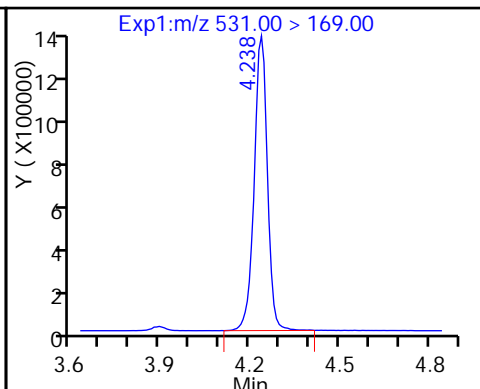
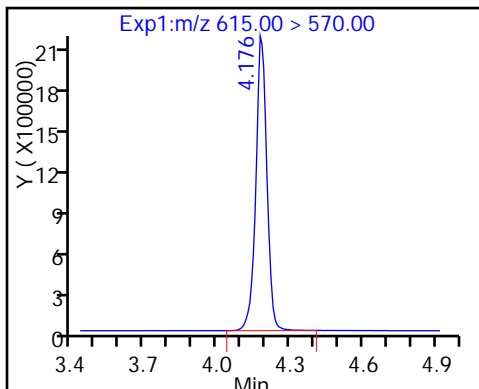
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

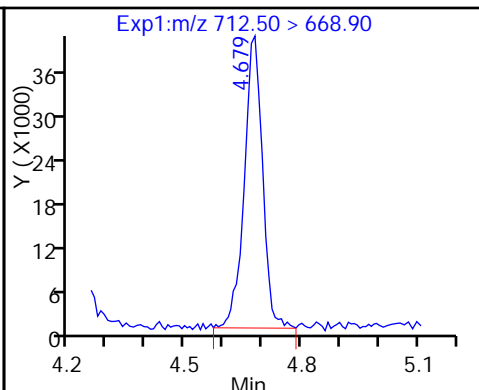
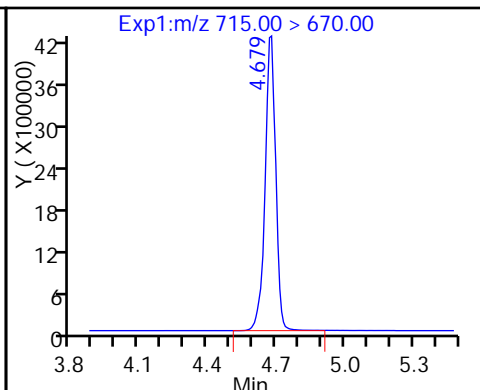
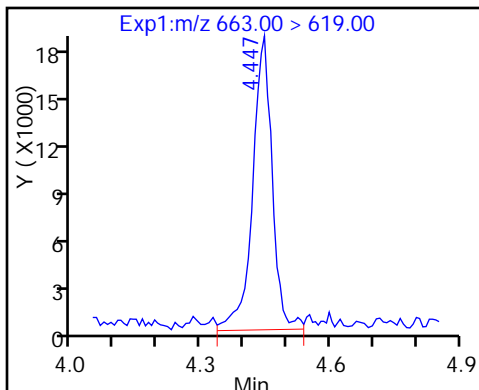
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

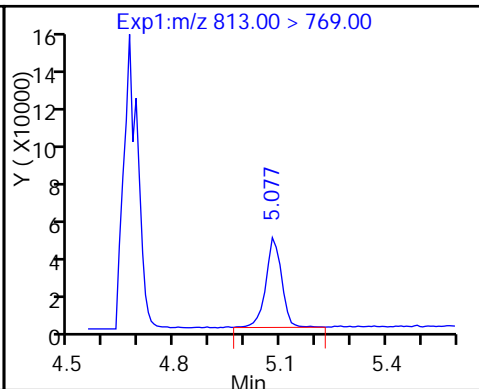
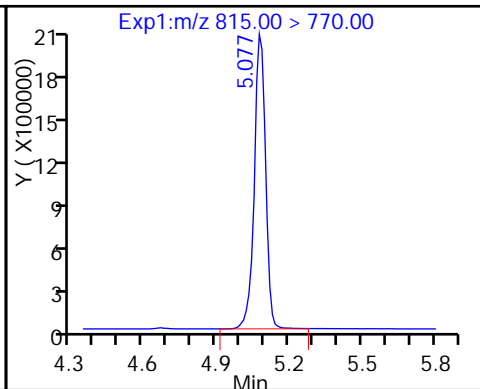
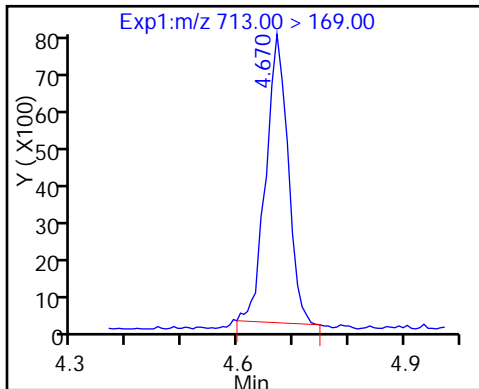
42 Perfluorotetradecanoic acid



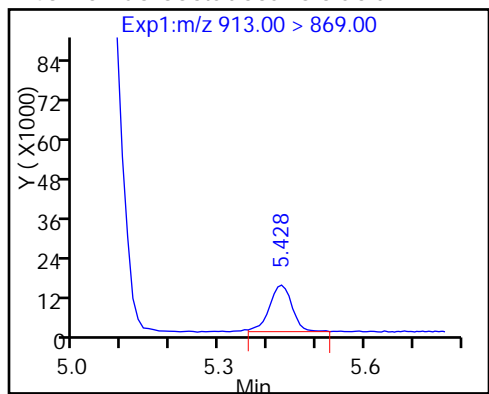
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

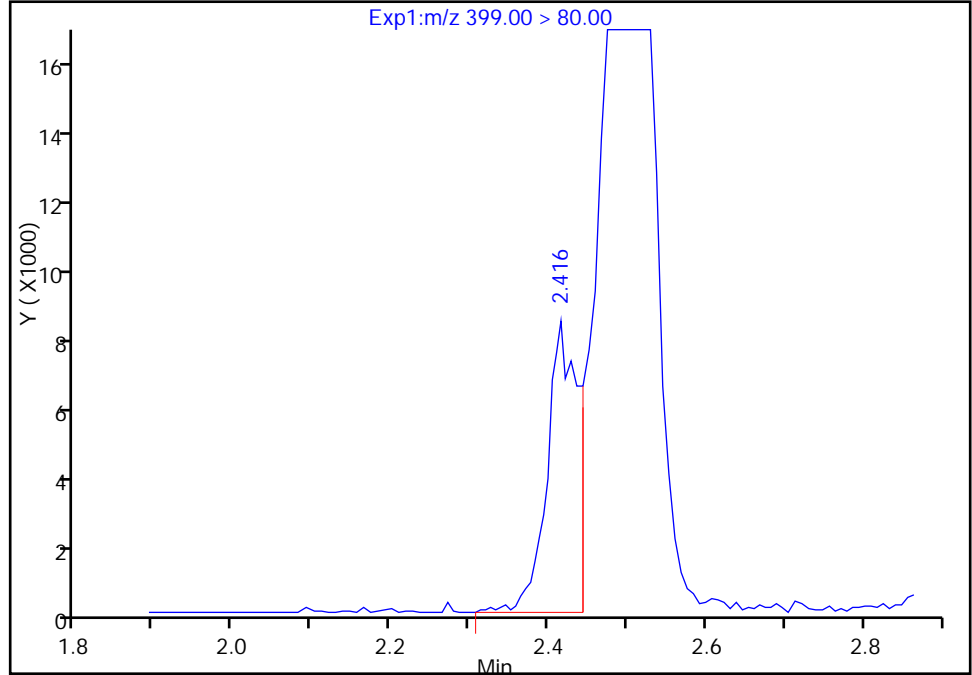
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Injection Date: 01-Mar-2017 11:08:52 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 28 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

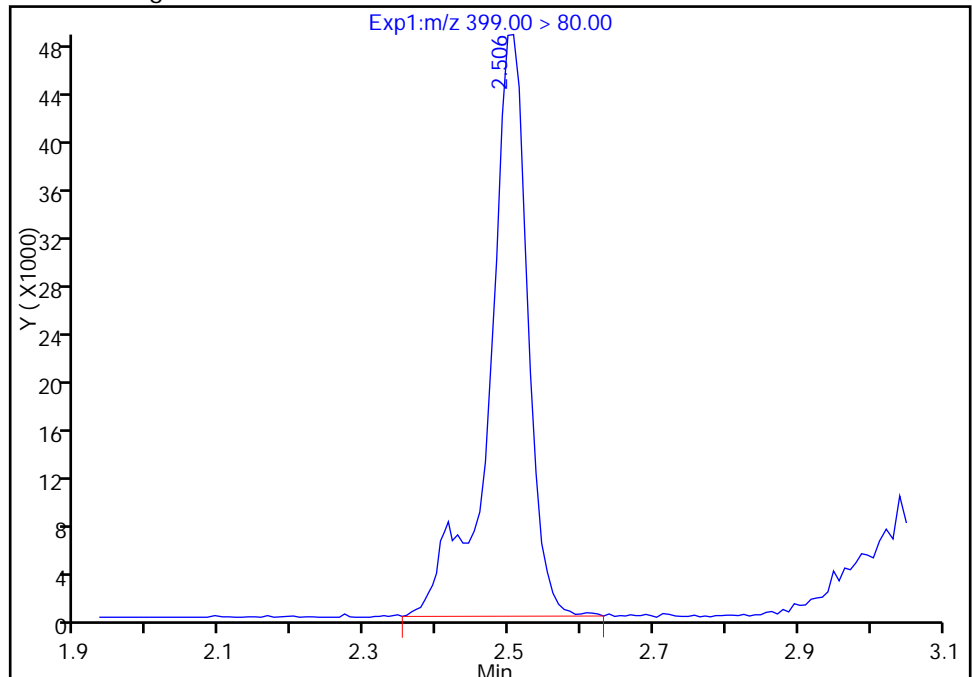
RT: 2.42
Area: 21187
Amount: 0.082505
Amount Units: ng/ml

Processing Integration Results



RT: 2.51
Area: 182218
Amount: 0.583043
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:05
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

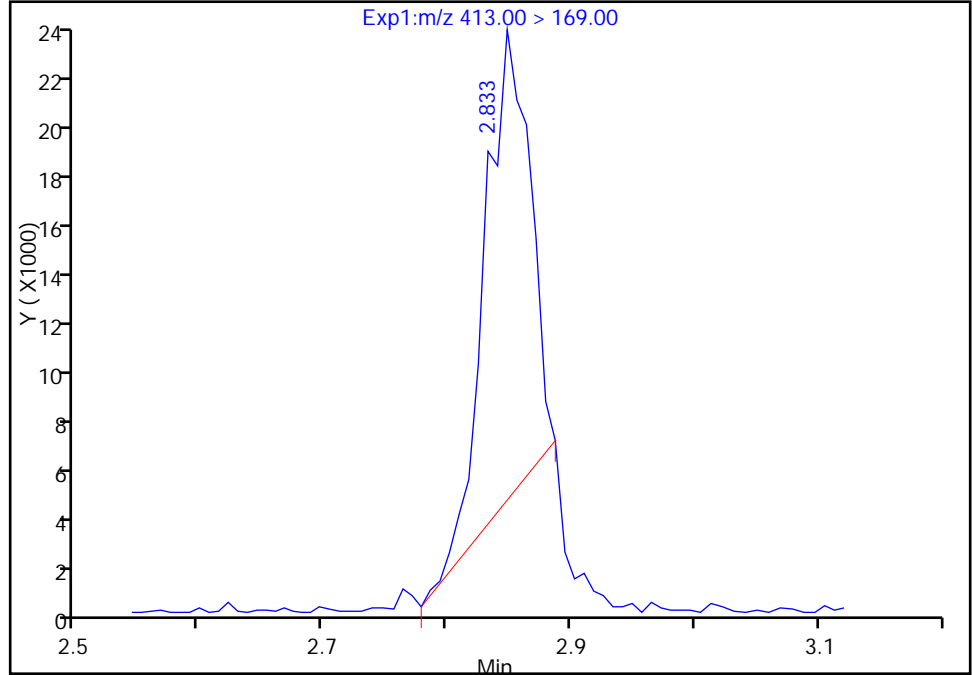
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d
Injection Date: 01-Mar-2017 11:08:52 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 28 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

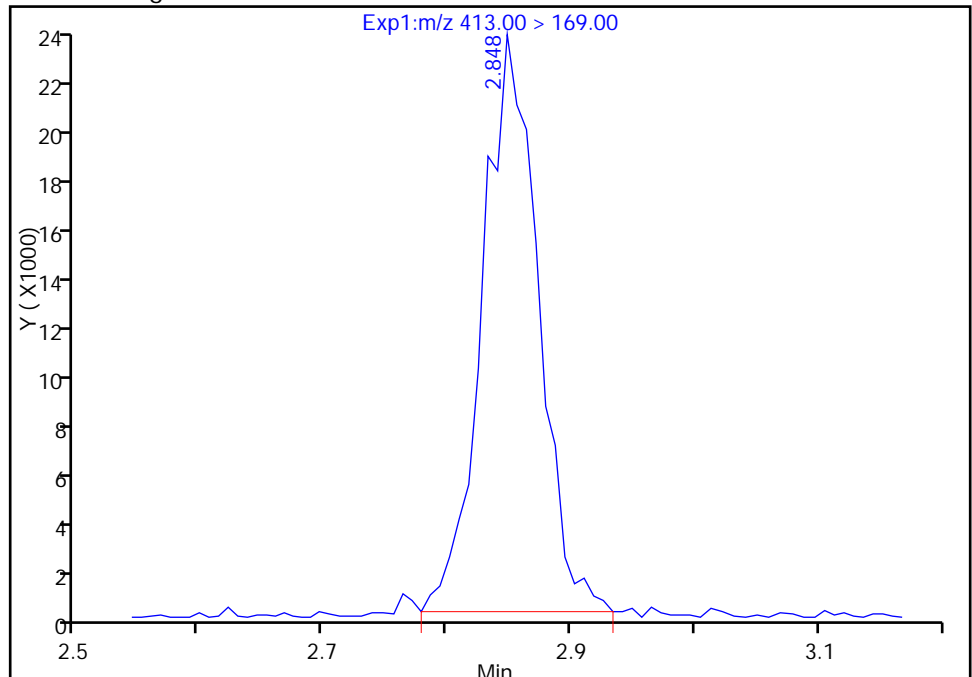
RT: 2.83
Area: 46440
Amount: 0.535520
Amount Units: ng/ml

Processing Integration Results



RT: 2.85
Area: 71985
Amount: 0.538943
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:05
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

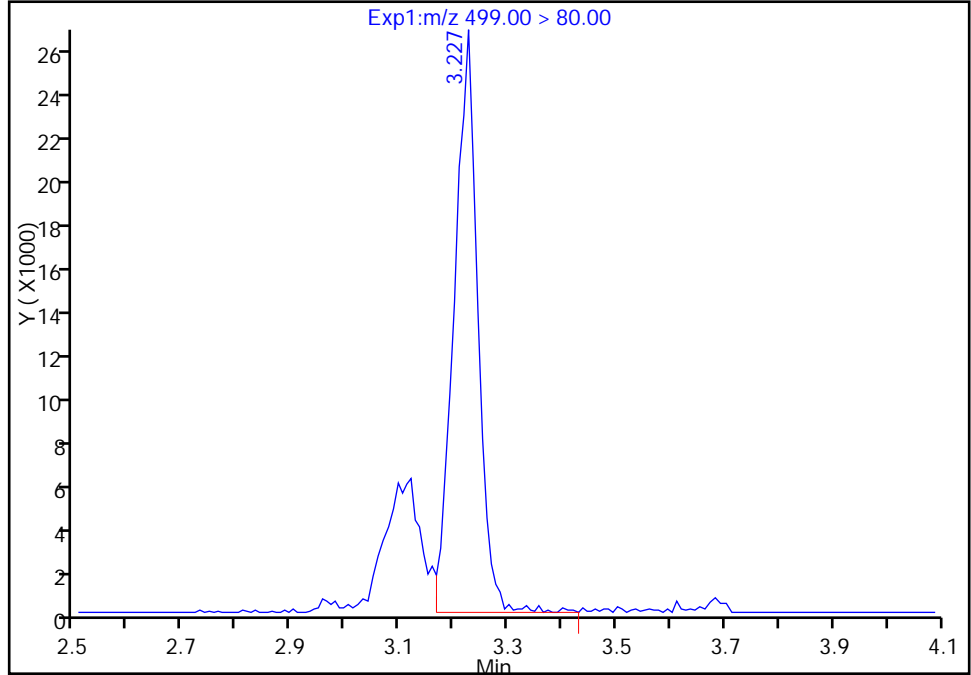
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Injection Date: 01-Mar-2017 11:08:52 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 28 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

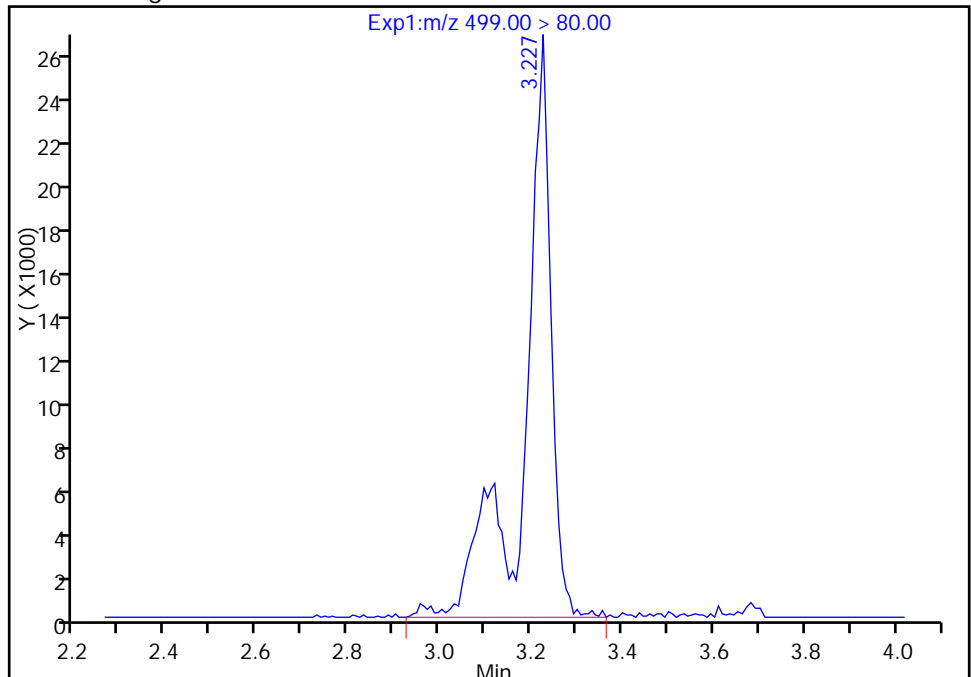
RT: 3.23
Area: 79141
Amount: 0.356104
Amount Units: ng/ml

Processing Integration Results



RT: 3.23
Area: 108156
Amount: 0.442463
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:05
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_004.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 01-Mar-2017 11:16:22 ALS Bottle#: 29 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L2-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub15
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 01-Mar-2017 15:43:08 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:00:43

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	1.554	1.553	0.001	14105138	48.3		96.5	750485	
2 Perfluorobutyric acid	212.90 > 169.00	1.562	1.558	0.004	1.000	236552	0.9897	99.0	2199	
D 3 13C5-PFPeA	267.90 > 223.00	1.842	1.832	0.010	11526786	49.6		99.3	662915	
4 Perfluoropentanoic acid	262.90 > 219.00	1.842	1.835	0.007	1.000	233761	1.04	104	2126	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.872	1.872	0.0	1.000	364249	0.8869	100		
	298.90 > 99.00	1.881	1.872	0.009	1.005	152095	2.39(0.00-0.00)	100		
6 Perfluorohexanoic acid	313.00 > 269.00	2.145	2.133	0.012	1.000	183108	1.01	101	6537	
D 7 13C2 PFHxA	315.00 > 270.00	2.136	2.134	0.002	10169363	48.2		96.4	286031	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.484	2.474	0.010	1.000	185040	0.9858	98.6	1690	
D 9 13C4-PFHpA	367.00 > 322.00	2.484	2.475	0.009	9702633	50.3		101	436206	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.500	2.485	0.015	1.000	294799	1.00	110		
D 11 18O2 PFHxS	403.00 > 84.00	2.500	2.489	0.011	13561303	46.6		98.6	442791	
D 12 M2-6:2FTS	429.00 > 409.00	2.810	2.805	0.005	3521088	45.6		96.0		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.818	2.807	0.011	1.000	71833	0.9579	101		

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	2.849	2.835	0.014		10562914	51.5		103	412762	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.841	2.835	0.006	1.000	226350	1.05		105	2696	
413.00 > 169.00	2.849	2.835	0.014	1.003	125043		1.81(0.90-1.10)	105	5452	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.857	2.842	0.015	1.000	228885	0.9637		101		
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.105	3.145	-0.040	1.000	207277	0.9149		98.6	3256	
499.00 > 99.00	3.105	3.145	-0.040	1.000	49944		4.15(0.90-1.10)	98.6	444	
20 Perfluorononanoic acid										
463.00 > 419.00	3.209	3.202	0.007	1.000	152789	0.9337		93.4	2607	
D 18 13C4 PFOS										
503.00 > 80.00	3.218	3.204	0.014		11011810	45.6		95.3	389996	
D 19 13C5 PFNA										
468.00 > 423.00	3.218	3.208	0.010		9051156	50.9		102	347551	
D 26 M2-8:2FTS										
529.00 > 509.00	3.553	3.545	0.008		4549526	49.1		103		
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.561	3.546	0.015	1.002	89032	0.9299		97.1		
D 21 13C8 FOSA										
506.00 > 78.00	3.561	3.559	0.002		18089578	49.3		98.6	237400	
D 23 13C2 PFDA										
515.00 > 470.00	3.569	3.560	0.009		8593124	51.5		103	177955	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.569	3.560	0.009	1.000	152408	0.9792		97.9	5902	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.561	3.561	0.0	1.000	339522	1.04		104	20364	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.723	3.710	0.013		3998931	46.9		93.9		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.723	3.713	0.010	1.000	78506	1.01		101		
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.876	3.866	0.010	1.000	125403	0.9138		94.8		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.885	3.875	0.010		4097675	50.4		101		
D 30 13C2 PFUnA										
565.00 > 520.00	3.885	3.876	0.009		6740958	51.5		103	252062	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.885	3.878	0.007	1.000	137967	1.01		101	3114	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.885	3.883	0.002	1.000	77078	1.03		103		
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.055	4.050	0.005		4054503	46.1		92.2		
35 MeFOSA										
512.00 > 169.00	4.064	4.057	0.007	1.000	75129	0.99		99.0		
37 Perfluorododecanoic acid										
613.00 > 569.00	4.175	4.162	0.013	1.000	113238	1.03		103	1051	

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	4.175	4.164	0.011		6032319	48.7		97.3	172379	
D 38 d-N-EtFOSA-M										
531.00 > 169.00	4.237	4.235	0.002		3920378	46.0		92.0		
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.246	4.242	0.004	1.000	79073	1.03		103		
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.430	4.424	0.006	1.000	103052	0.9780		97.8	2577	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.667	4.655	0.012		12309406	47.5		95.0	383508	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.667	4.657	0.010	1.000	238596	1.01		101	1077	
713.00 > 169.00	4.667	4.657	0.010	1.000	36141		6.60(0.00-0.00)	101	11217	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.070	5.057	0.013		5742128	45.9		91.8	84169	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.070	5.059	0.011	1.000	171523	1.16		116	217	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.414	5.399	0.015	1.000	81601	0.9426		94.3	179	

Reagents:

LCPFC_FULL-L2_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_004.d

Injection Date: 01-Mar-2017 11:16:22

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 29

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

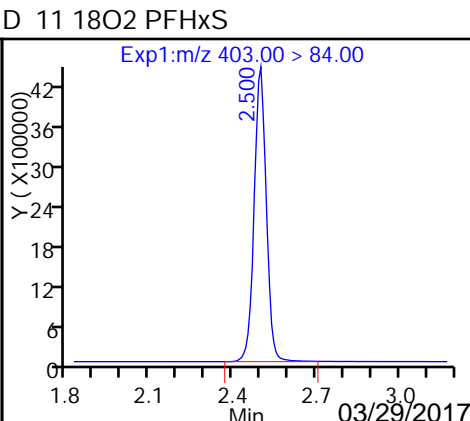
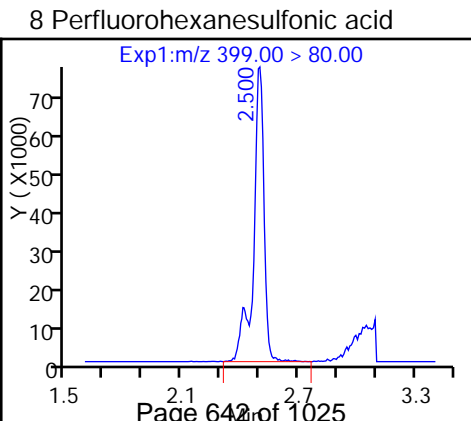
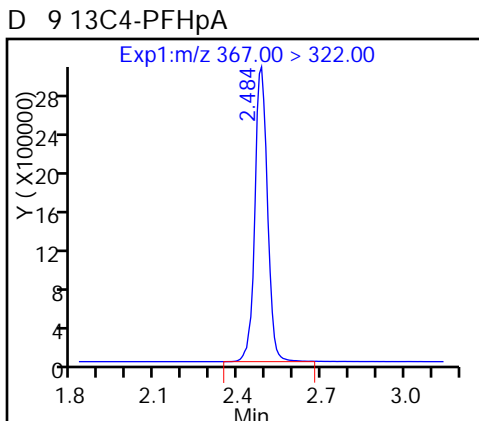
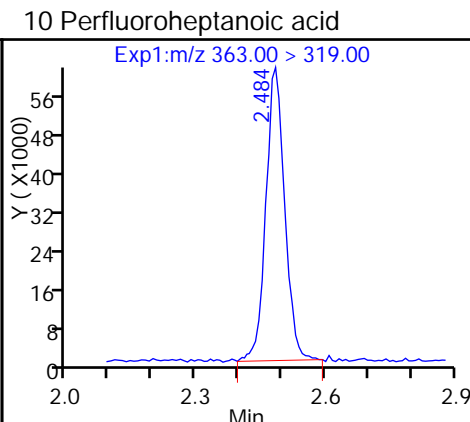
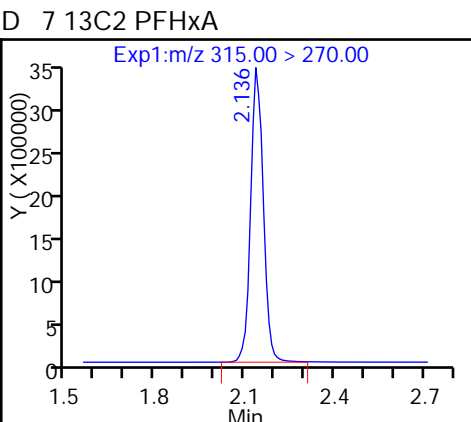
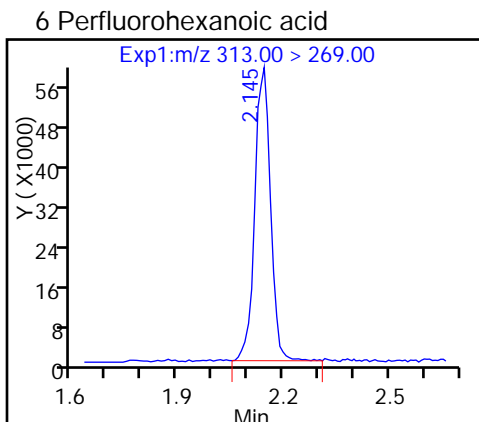
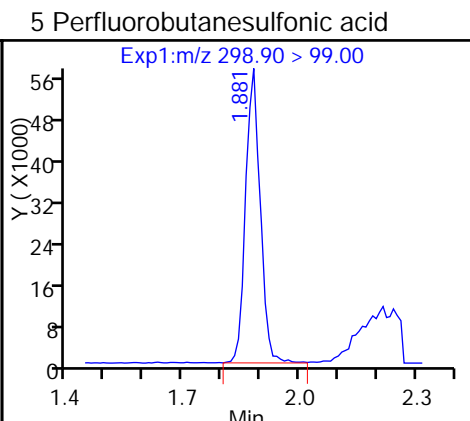
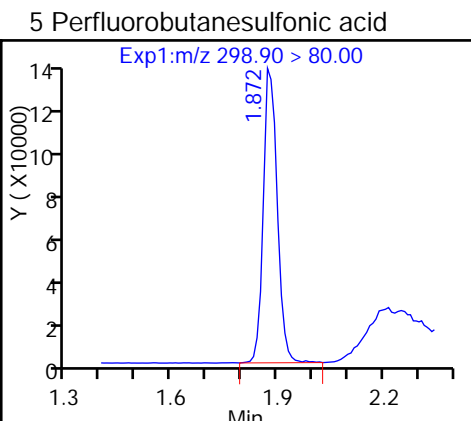
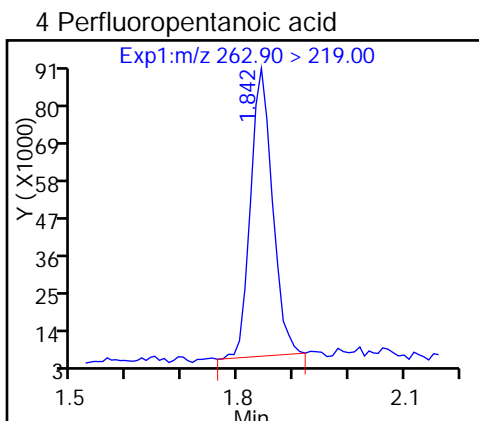
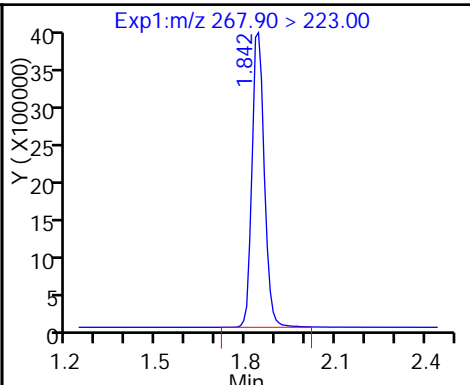
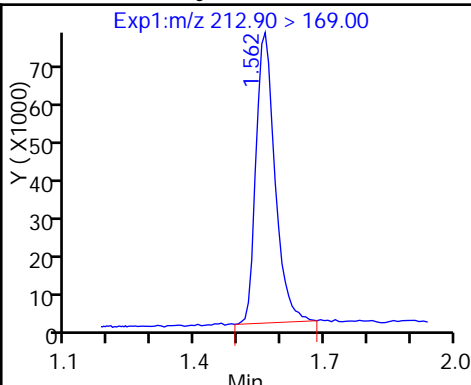
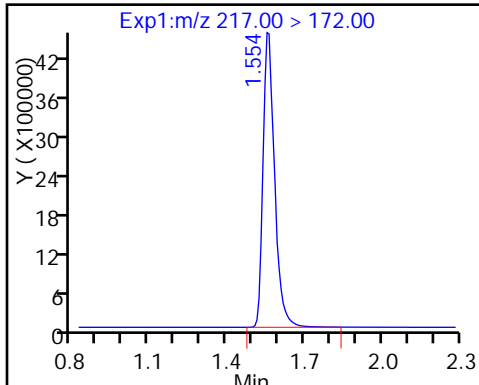
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

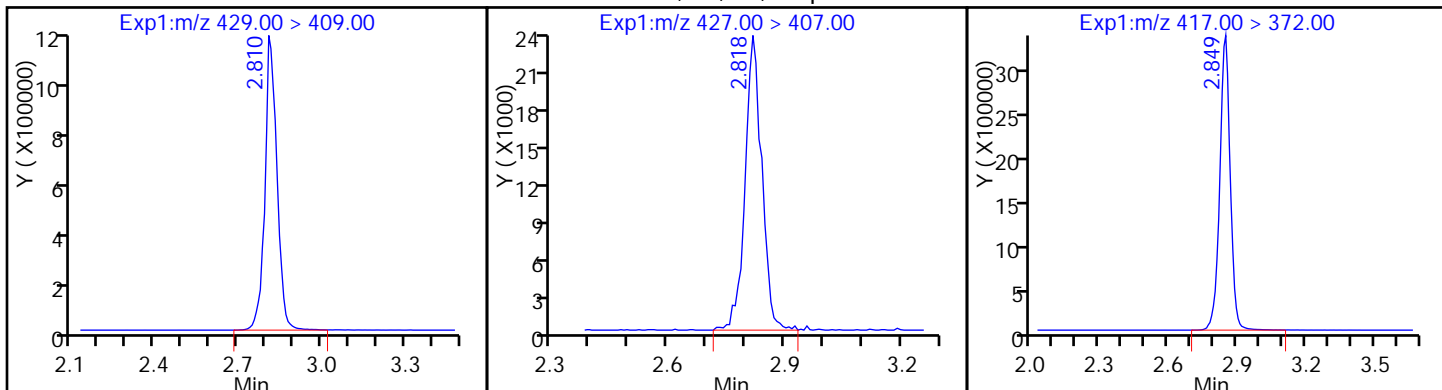
D 3 13C5-PFPeA



D 12 M2-6:2FTS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

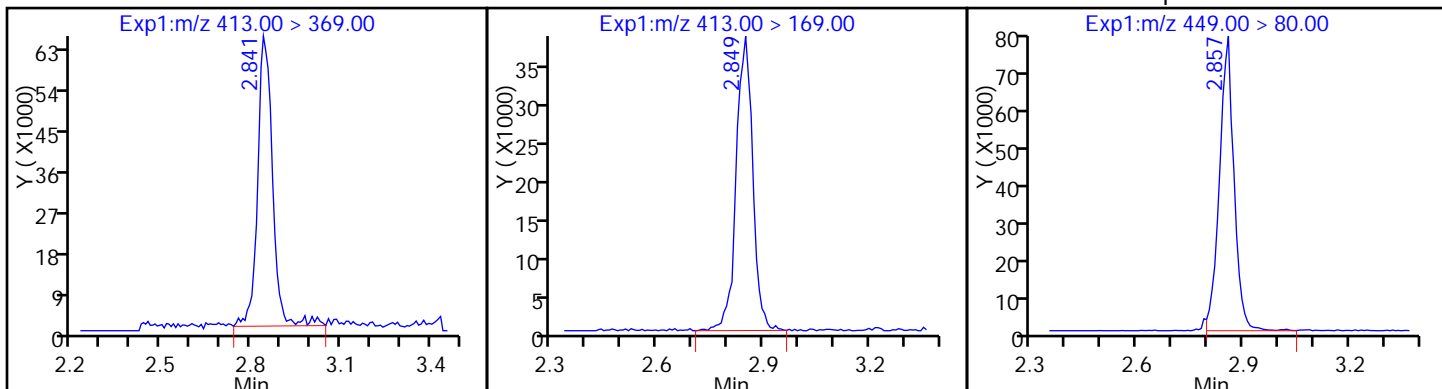
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

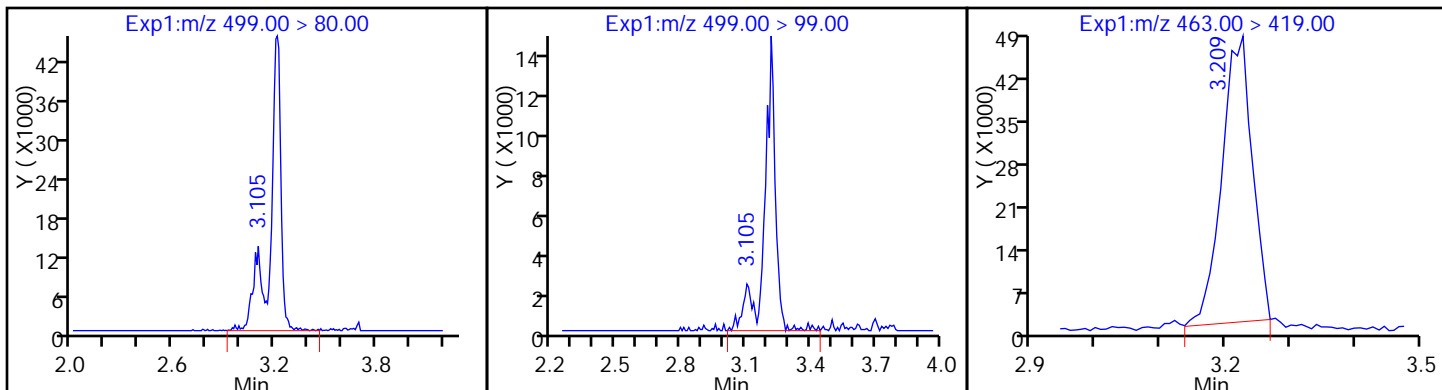
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

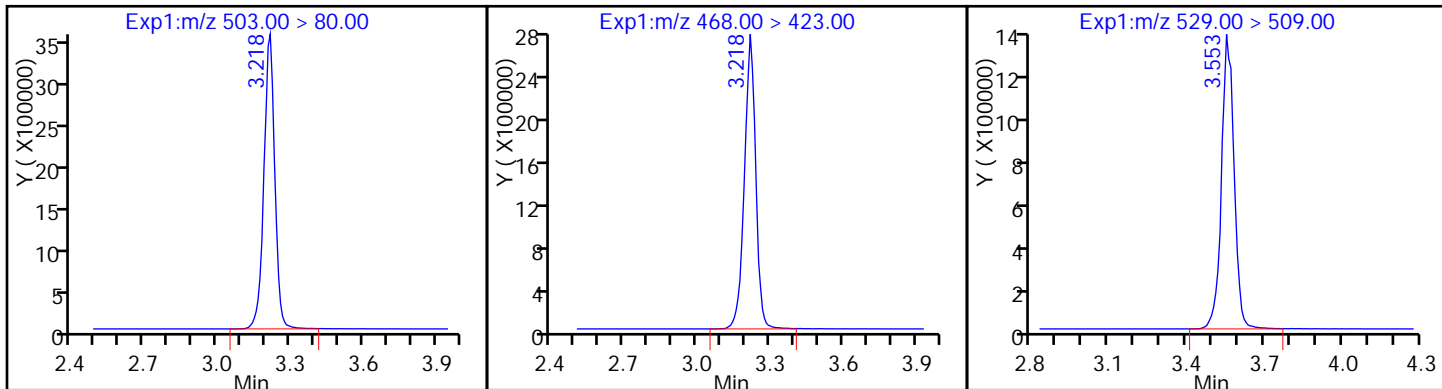
20 Perfluorononanoic acid



D 18 13C4 PFOS

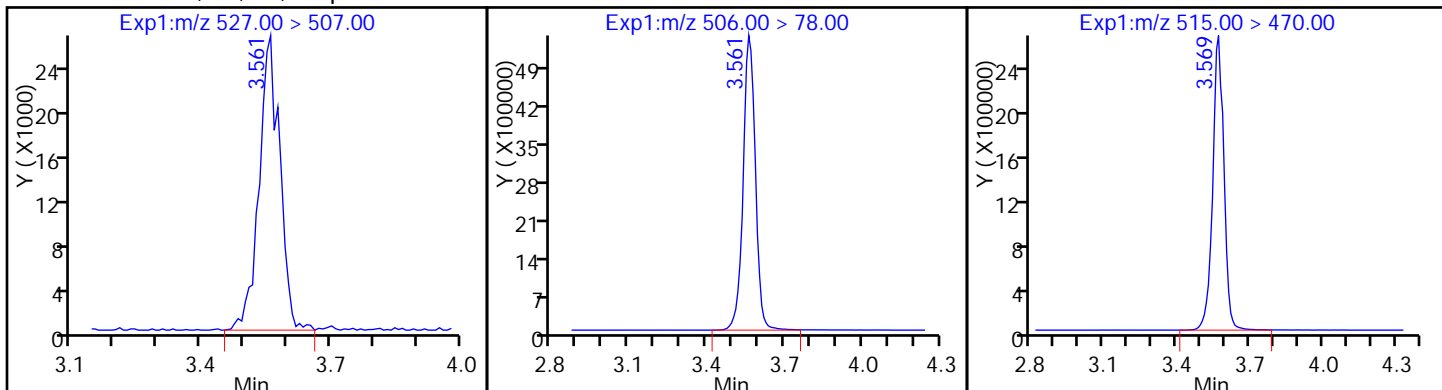
D 19 13C5 PFNA

D 26 M2-8:2FTS



25 Sodium 1H,1H,2H,2H-perfluorooctanoate

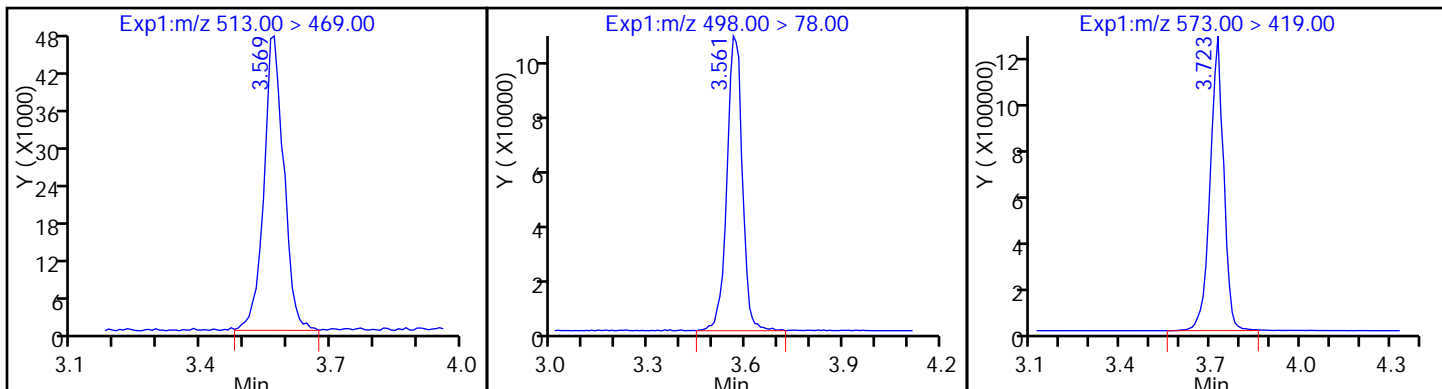
D 23 13C2 PFDA



24 Perfluorodecanoic acid

22 Perfluorooctane Sulfonamide

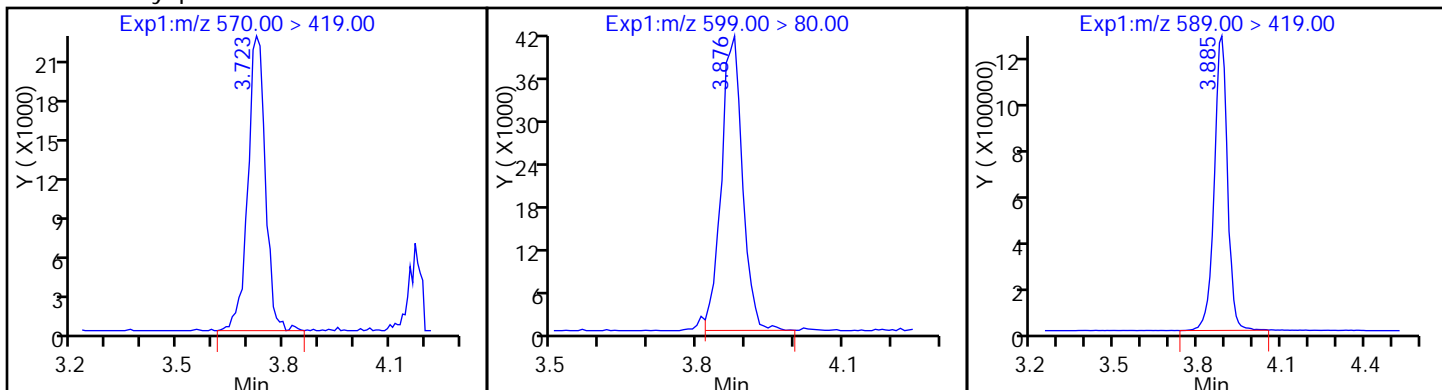
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

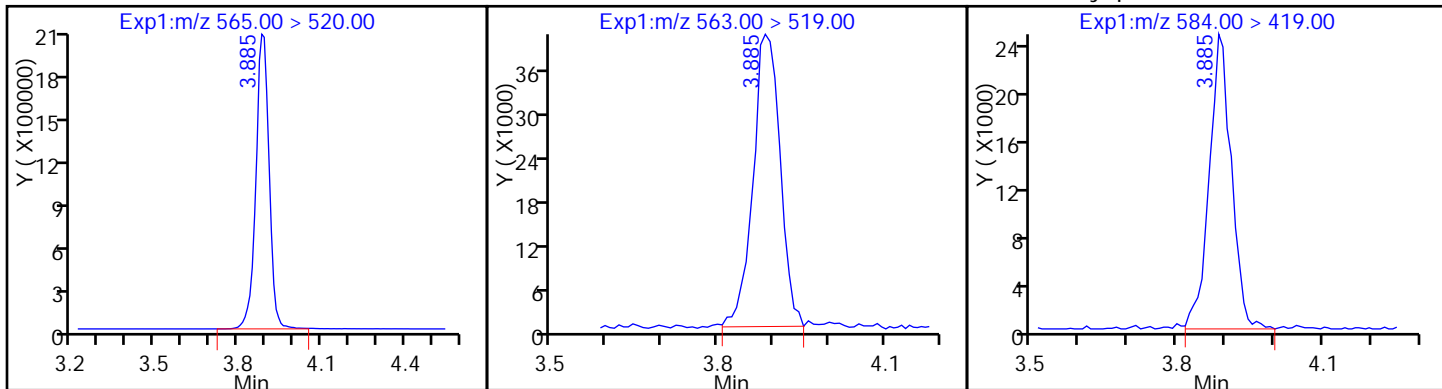
D 32 d5-NEtFOSAA



D 30 13C2 PFUnA

31 Perfluoroundecanoic acid

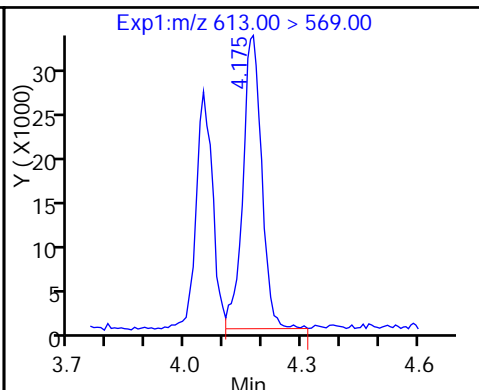
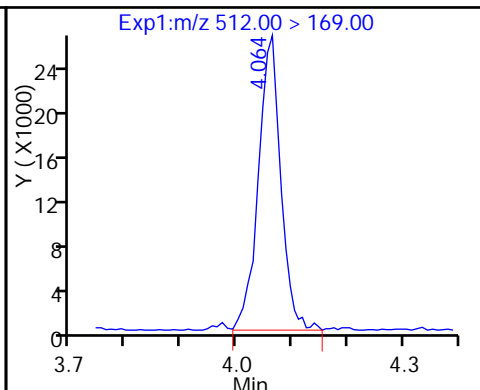
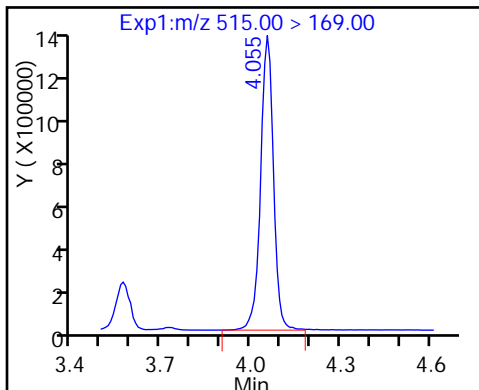
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

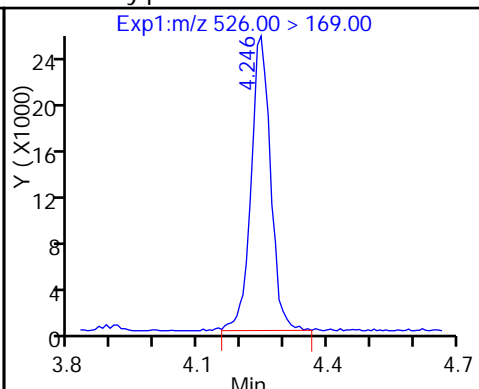
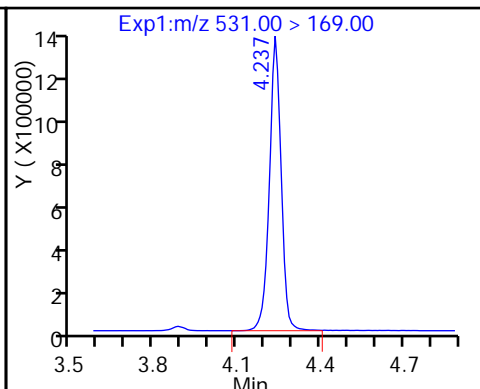
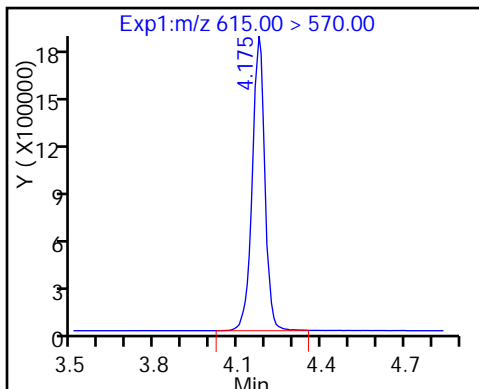
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

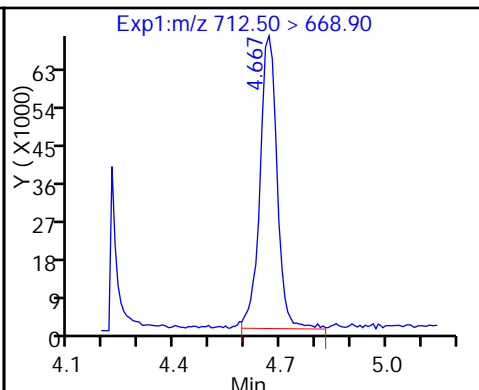
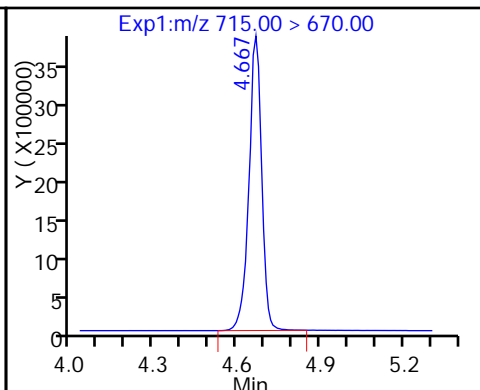
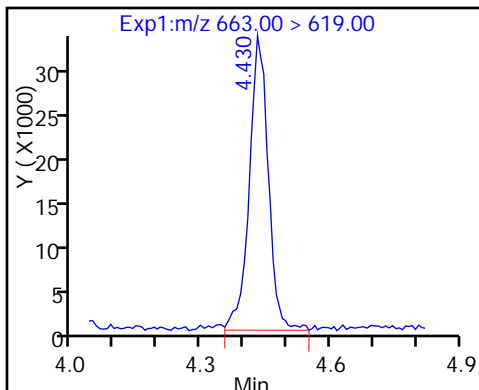
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

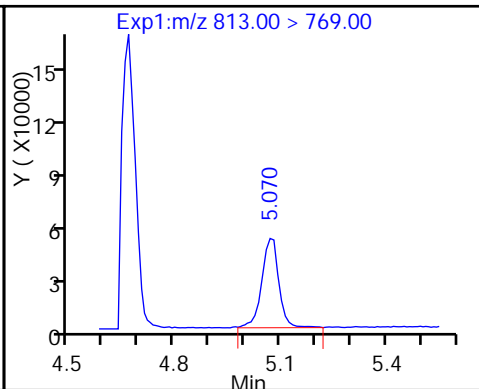
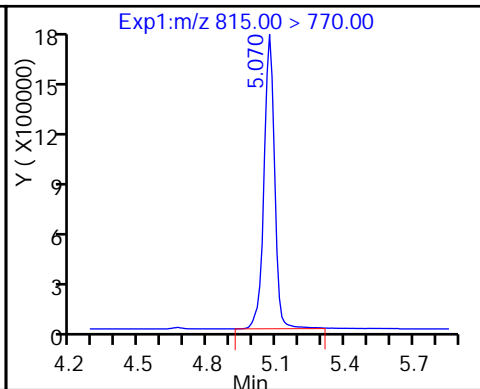
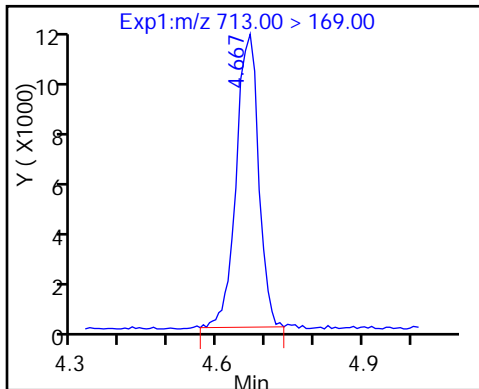
42 Perfluorotetradecanoic acid



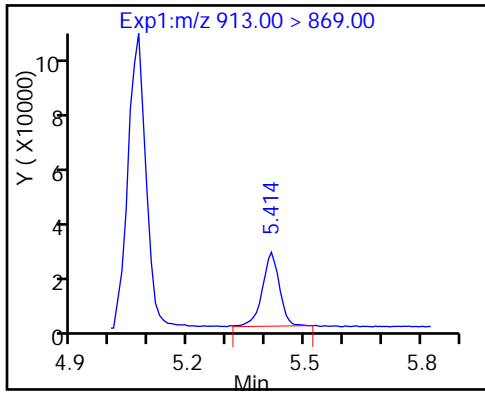
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDa

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_005.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 01-Mar-2017 11:23:51 ALS Bottle#: 30 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L3-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub15
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 01-Mar-2017 15:43:10 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:01:48

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	1.555	1.553	0.002	14456536	49.5		98.9	922551	
2 Perfluorobutyric acid	212.90 > 169.00	1.555	1.558	-0.003	1286888	5.25		105	14254	
D 3 13C5-PFPeA	267.90 > 223.00	1.833	1.832	0.001	11537165	49.7		99.4	809835	
4 Perfluoropentanoic acid	262.90 > 219.00	1.833	1.835	-0.002	1164625	5.16		103	11285	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.873	1.872	0.001	1989498	4.83		109		
	298.90 > 99.00	1.873	1.872	0.001	781702		2.55(0.00-0.00)	109		
6 Perfluorohexanoic acid	313.00 > 269.00	2.129	2.133	-0.004	966638	5.30		106	49503	
D 7 13C2 PFHxA	315.00 > 270.00	2.138	2.134	0.004	10261028	48.7		97.3	342136	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.471	2.474	-0.003	941301	4.96		99.1	8016	
D 9 13C4-PFHpA	367.00 > 322.00	2.471	2.475	-0.004	9817002	50.9		102	288379	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.456	2.485	-0.029	1348890	4.56		100		
D 11 18O2 PFHxS	403.00 > 84.00	2.487	2.489	-0.002	13610529	46.8		98.9	351937	
D 12 M2-6:2FTS	429.00 > 409.00	2.806	2.805	0.001	3657293	47.4		99.8		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.798	2.807	-0.009	347809	4.96		105		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.829	2.835	-0.006	1.000	1102619	5.15		103	10643	M
413.00 > 169.00	2.829	2.835	-0.006	1.000	620161		1.78(0.90-1.10)	103	22054	M
D 14 13C4 PFOA										
417.00 > 372.00	2.829	2.835	-0.006		10473721	51.1		102	311740	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.845	2.842	0.003	1.000	1268398	5.17		109		
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.171	3.145	0.026	1.000	1092724	4.67		101	18758	
499.00 > 99.00	3.196	3.145	0.051	1.008	254615		4.29(0.90-1.10)	101	16421	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.205	3.202	0.003	1.000	858327	5.38		108	23748	
D 18 13C4 PFOS										
503.00 > 80.00	3.196	3.204	-0.008		11369327	47.1		98.4	321748	
D 19 13C5 PFNA										
468.00 > 423.00	3.205	3.208	-0.003		8821496	49.6		99.2	242559	
D 26 M2-8:2FTS										
529.00 > 509.00	3.548	3.545	0.003		4555474	49.2		103		
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.539	3.546	-0.007	0.998	444929	4.98		104		
D 21 13C8 FOSA										
506.00 > 78.00	3.556	3.559	-0.003		18858766	51.4		103	371997	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.556	3.560	-0.004	1.000	784974	4.99		99.8	29400	
D 23 13C2 PFDA										
515.00 > 470.00	3.556	3.560	-0.004		8688810	52.1		104	216415	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.556	3.561	-0.005	1.000	1747629	5.16		103	92835	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.707	3.710	-0.003		4251681	49.9		99.8		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.707	3.713	-0.006	1.000	424299	5.14		103		
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.861	3.866	-0.005	1.000	717648	5.07		105		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.875	-0.006		4300641	52.9		106		
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.876	-0.007		6730080	51.5		103	147236	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.878	3.878	0.0	1.000	676308	4.96		99.1	20230	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.878	3.883	-0.005	1.002	385576	4.92		98.5		
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.047	4.050	-0.003		4436424	50.4		101		
35 MeFOSA										
512.00 > 169.00	4.056	4.057	-0.001	1.000	404698	4.88		97.5		
37 Perfluorododecanoic acid										
613.00 > 569.00	4.161	4.162	-0.001	1.000	578671	4.99		99.8	4705	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA	615.00 > 570.00	4.161	4.164	-0.003		6339474	51.1	102	145230	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.228	4.235	-0.007		4273681	50.1	100		
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.237	4.242	-0.005	1.000	425282	5.06	101		
41 Perfluorotridecanoic acid	663.00 > 619.00	4.421	4.424	-0.003	1.000	562473	5.08	102	11889	
D 43 13C2-PFTeDA	715.00 > 670.00	4.655	4.655	0.0		13496732	52.1	104	332789	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.655	4.657	-0.002	1.000	1324493	5.31	106	11007	
	713.00 > 169.00	4.645	4.657	-0.012	0.998	177791		7.45(0.00-0.00)	106	28707
D 44 13C2-PFHxDA	815.00 > 770.00	5.057	5.057	0.0		6378393	51.0	102	93636	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.057	5.059	-0.002	1.000	636153	5.04	101	676	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.398	5.399	-0.001	1.000	451116	4.96	99.2	634	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L3_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_005.d

Injection Date: 01-Mar-2017 11:23:51

Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 30

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

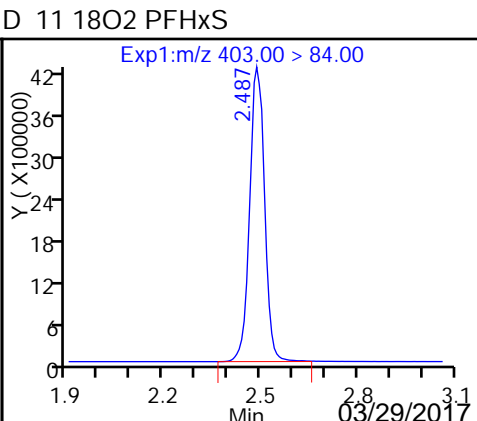
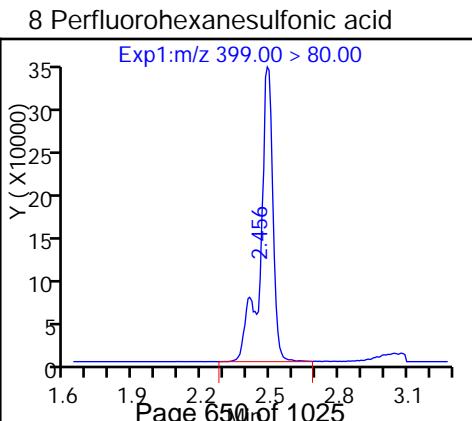
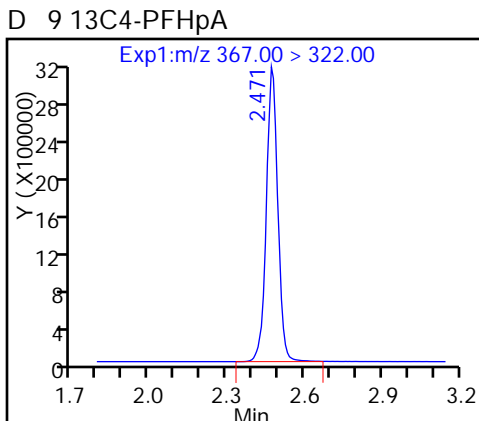
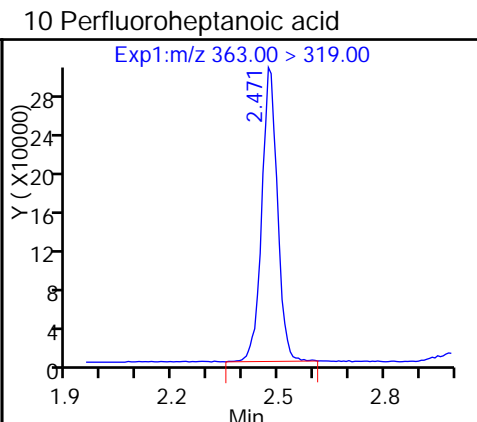
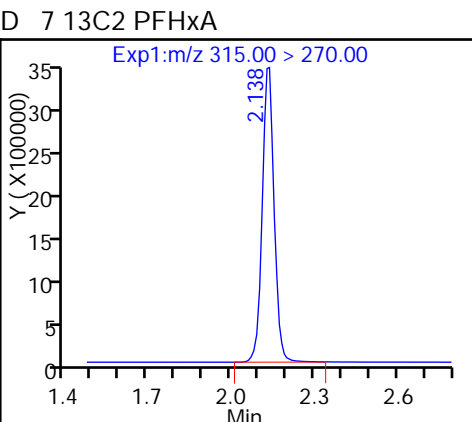
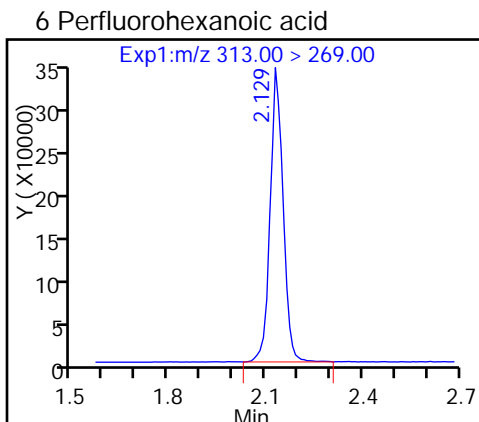
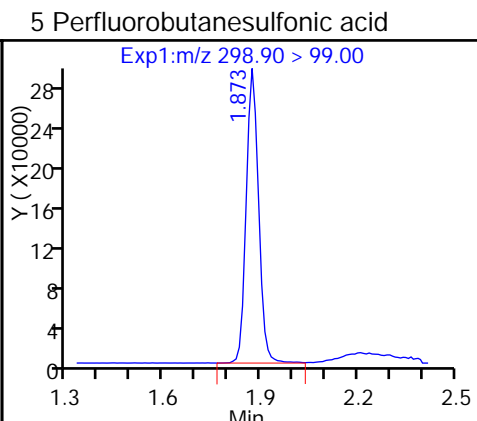
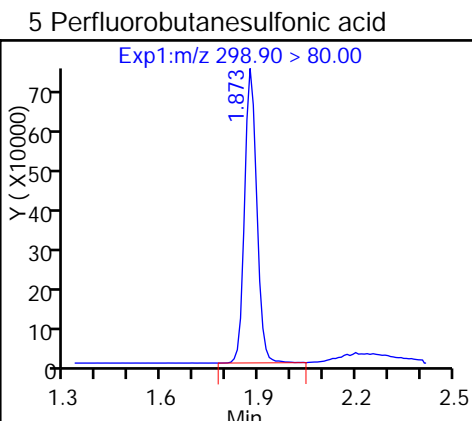
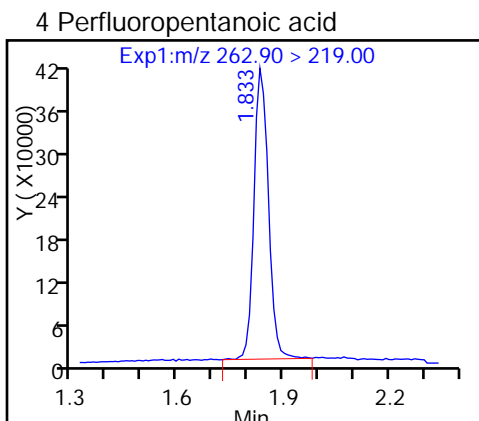
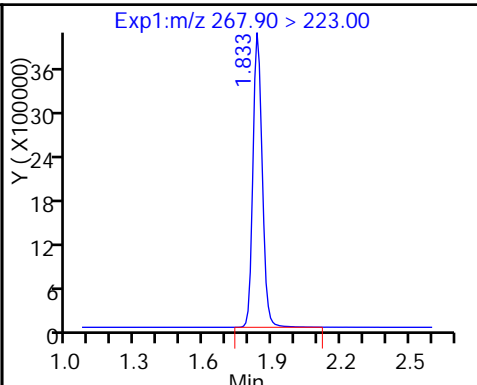
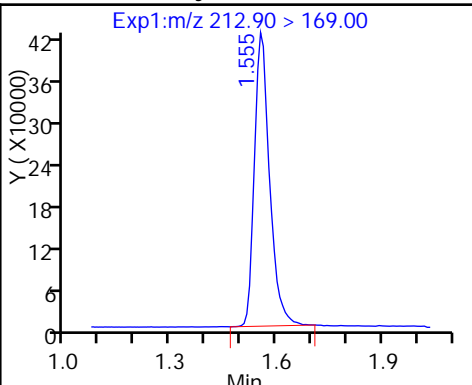
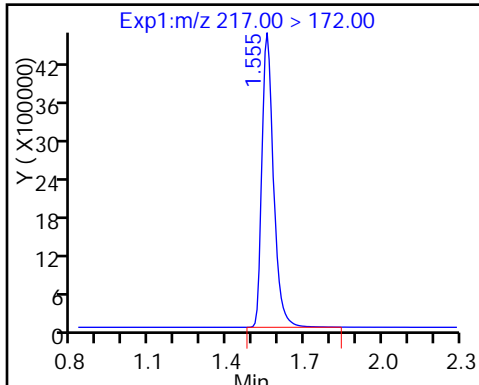
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

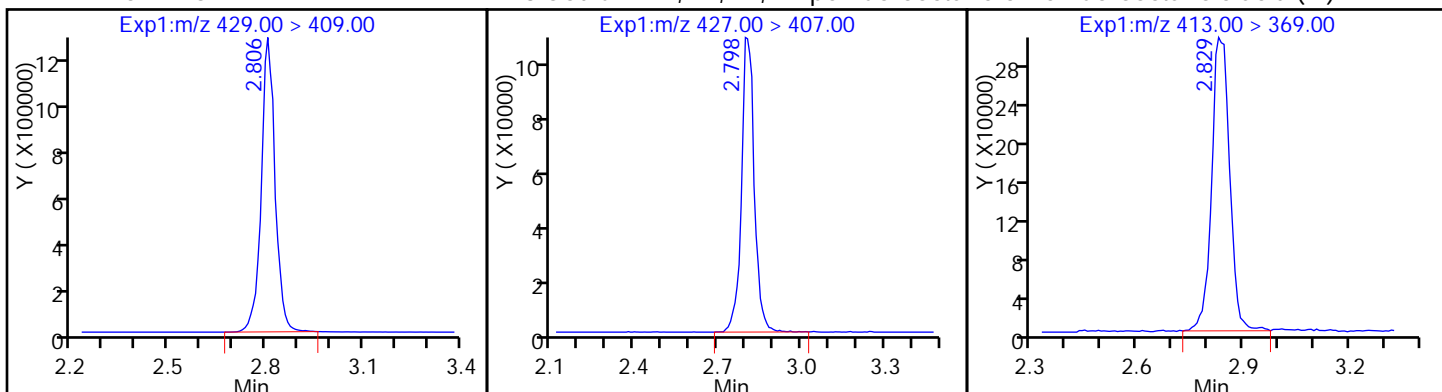
2 Perfluorobutyric acid

D 3 13C5-PFPeA



D 12 M2-6:2FTS

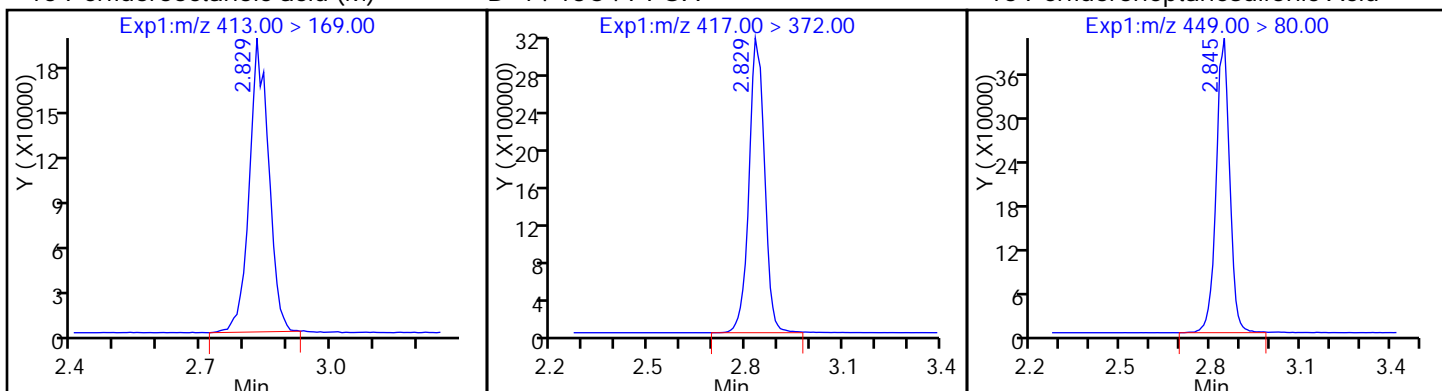
13 Sodium 1H,1H,2H,2H-perfluorooctane15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid (M)

D 14 13C4 PFOA

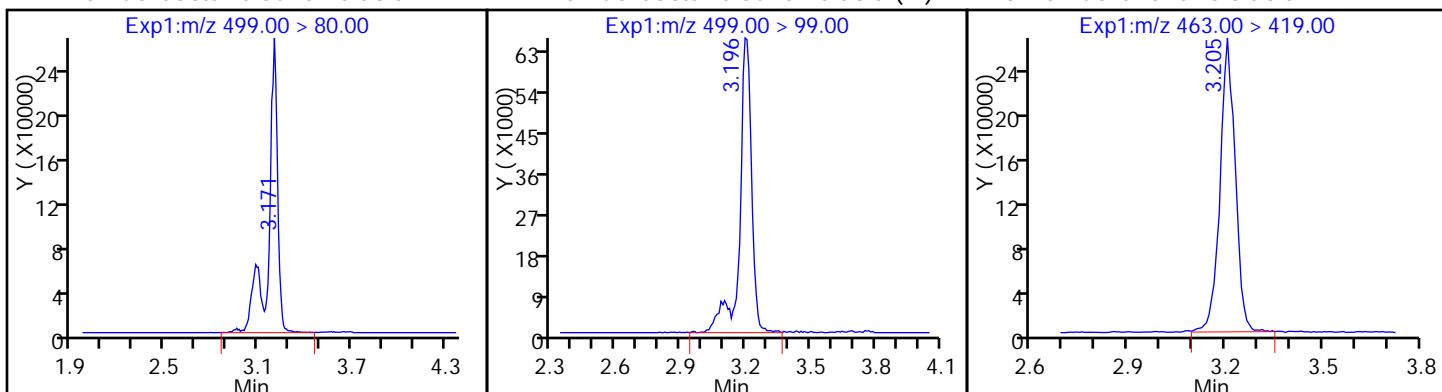
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid (M)

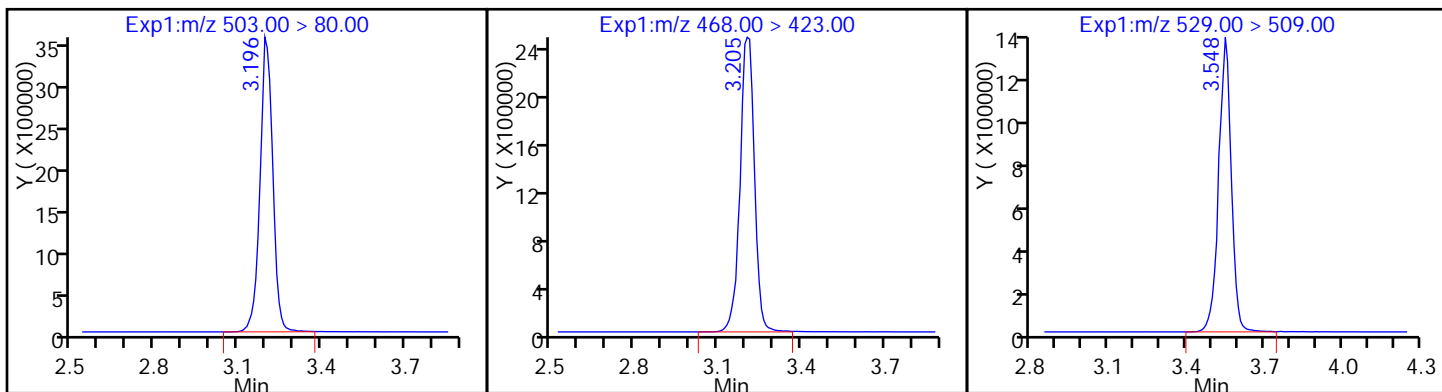
20 Perfluorononanoic acid



D 18 13C4 PFOS

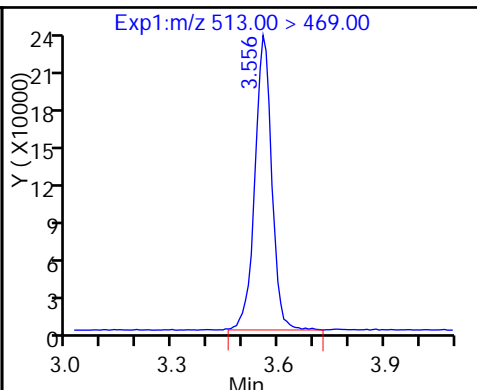
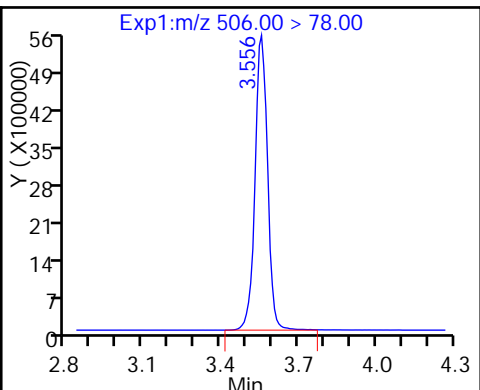
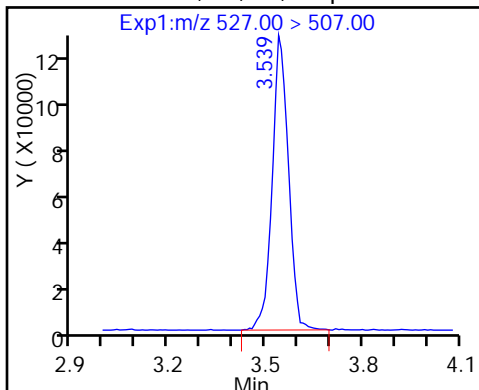
D 19 13C5 PFNA

D 26 M2-8:2FTS



25 Sodium 1H,1H,2H,2H-perfluorooctanoate

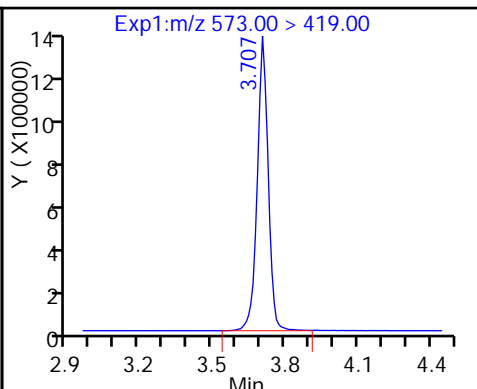
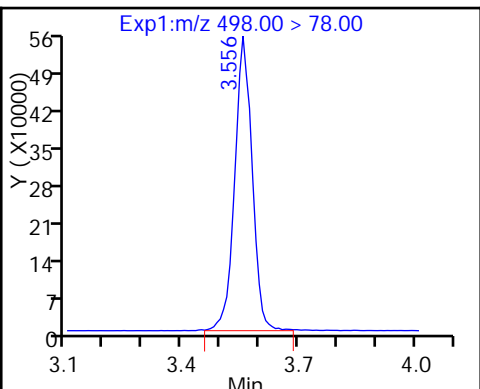
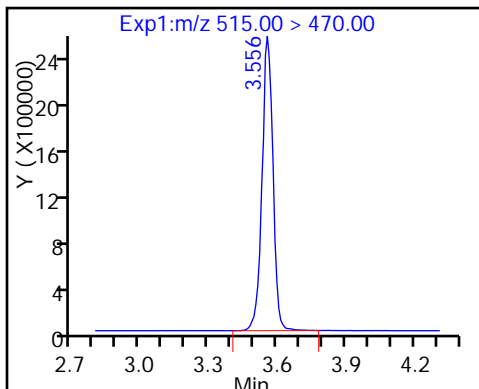
24 Perfluorodecanoic acid



D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

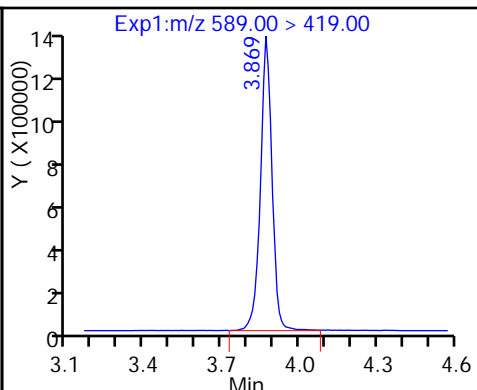
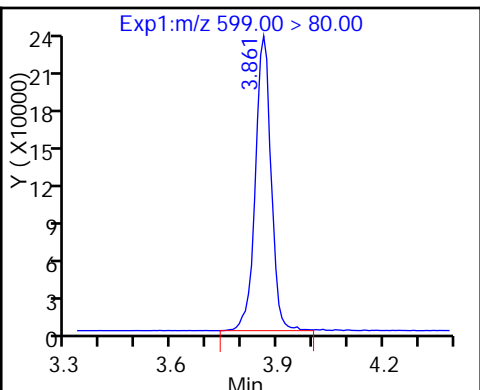
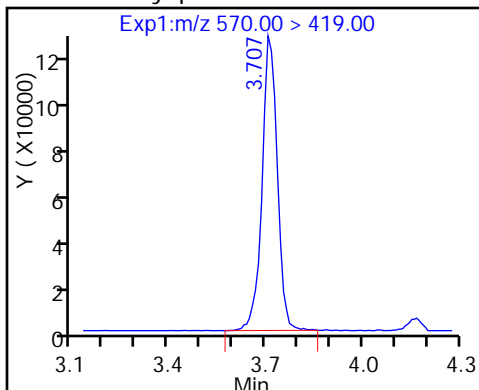
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

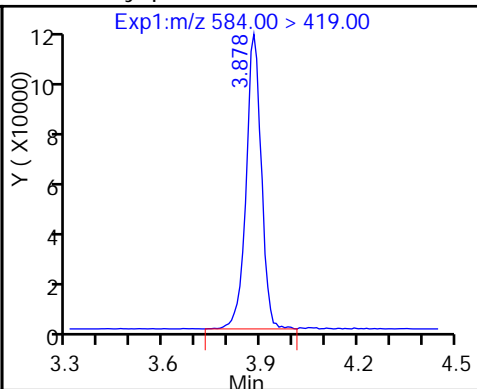
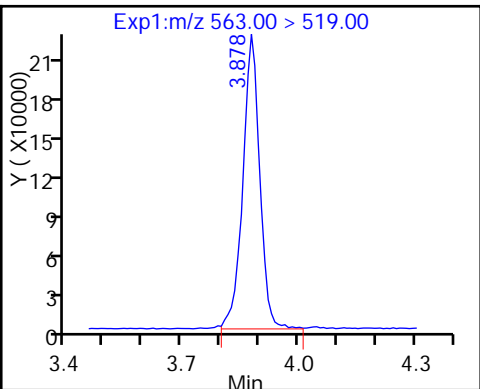
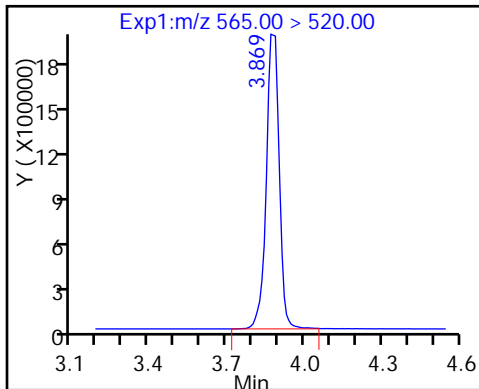
D 32 d5-NEtFOSAA



D 30 13C2 PFUnA

31 Perfluoroundecanoic acid

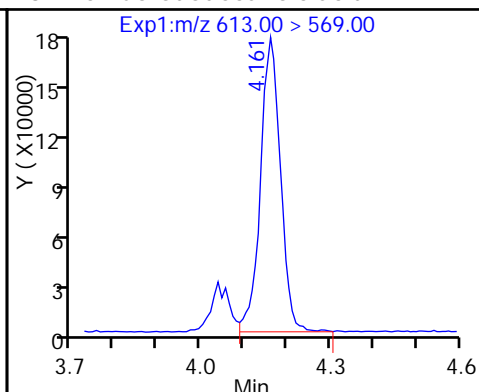
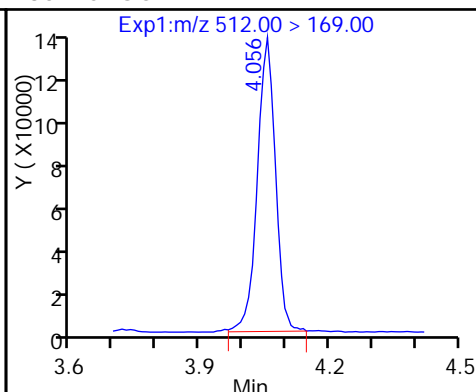
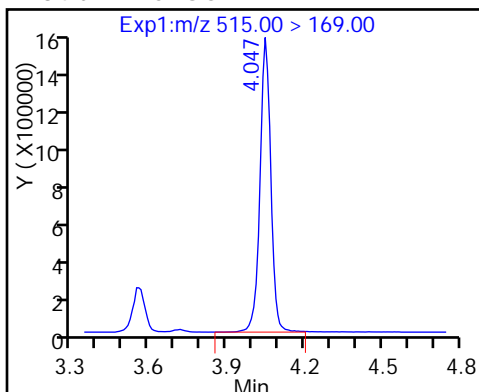
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

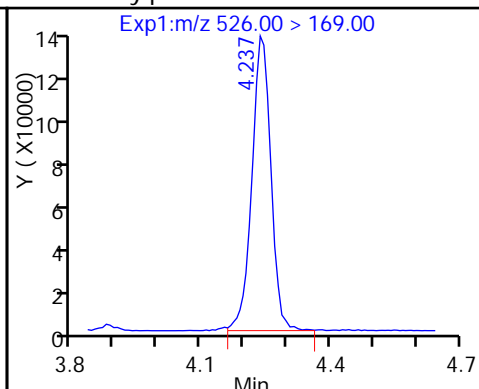
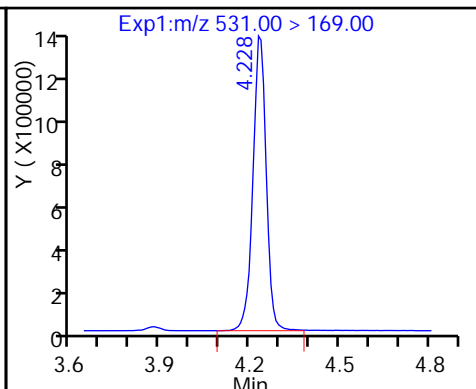
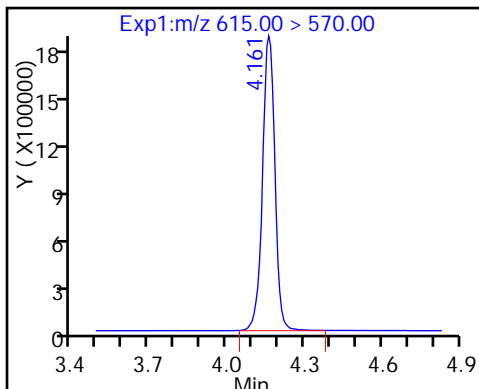
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

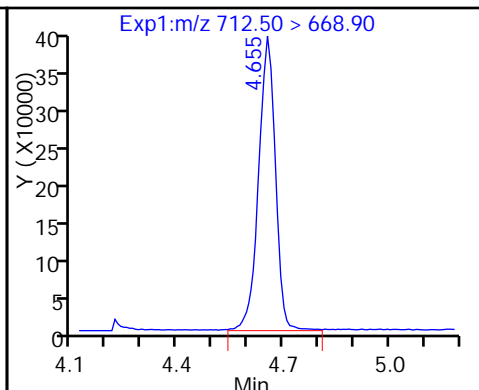
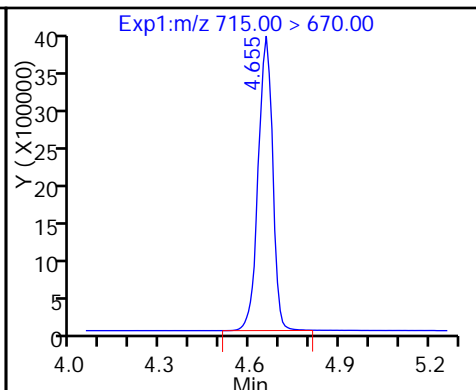
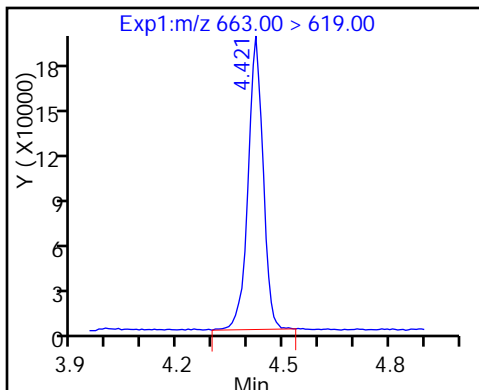
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

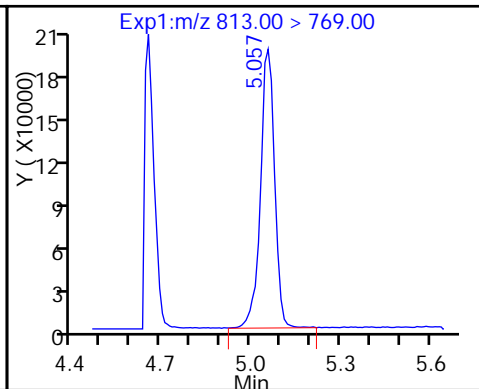
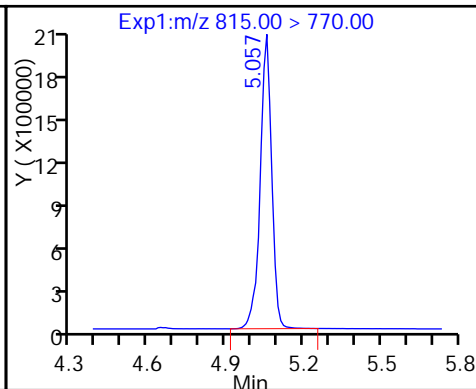
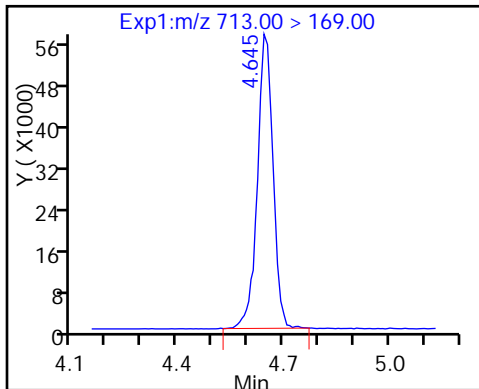
42 Perfluorotetradecanoic acid



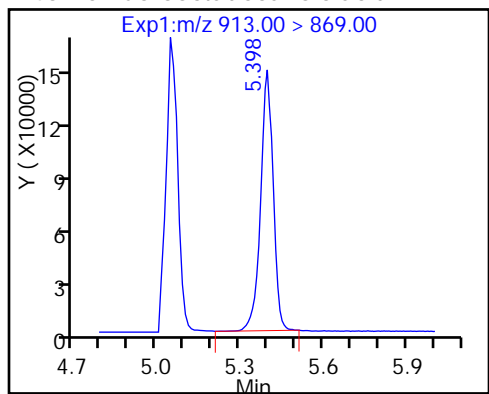
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



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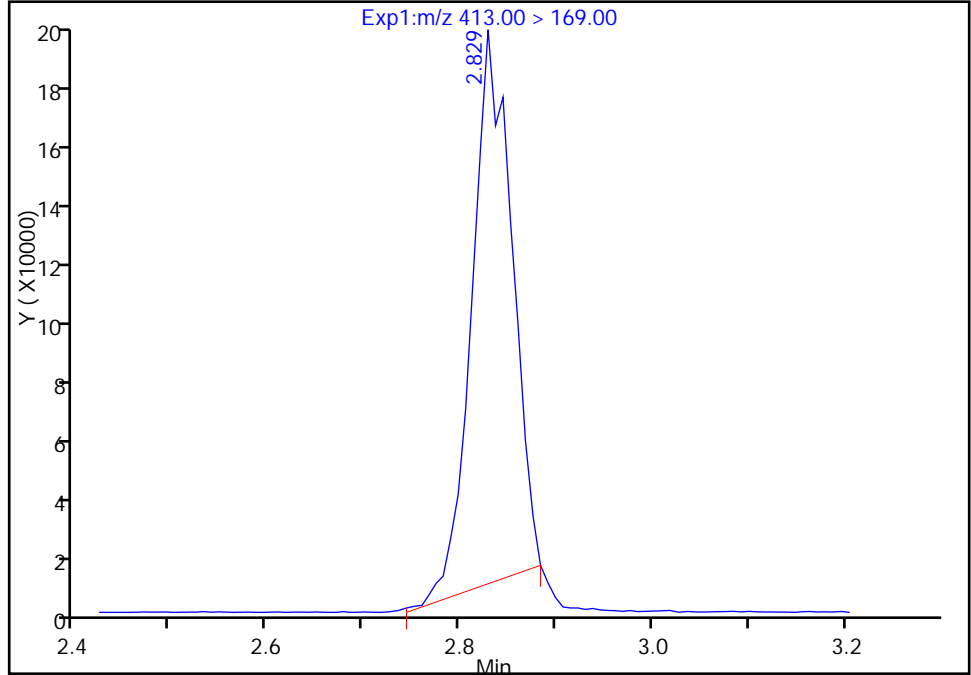
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Injection Date: 01-Mar-2017 11:23:51 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

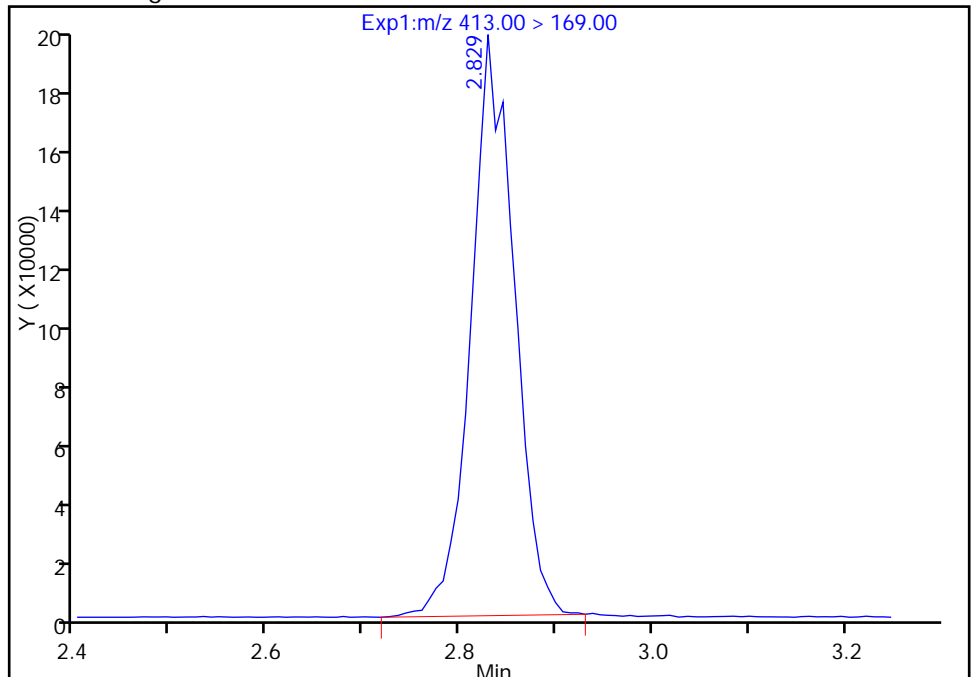
RT: 2.83
Area: 545337
Amount: 5.278222
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 620161
Amount: 5.152153
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:10
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

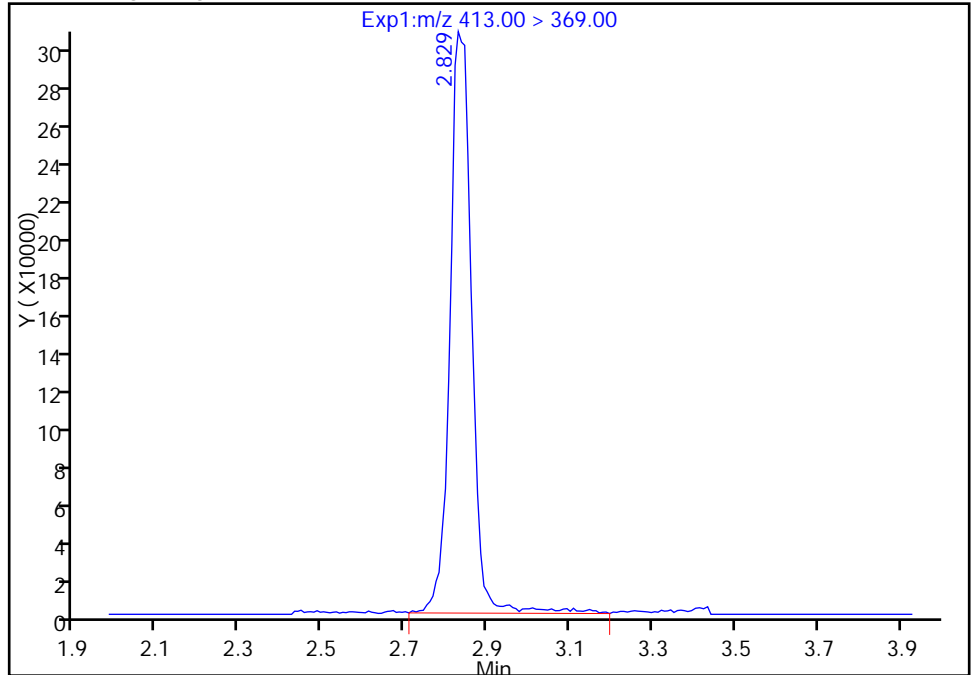
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Injection Date: 01-Mar-2017 11:23:51 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

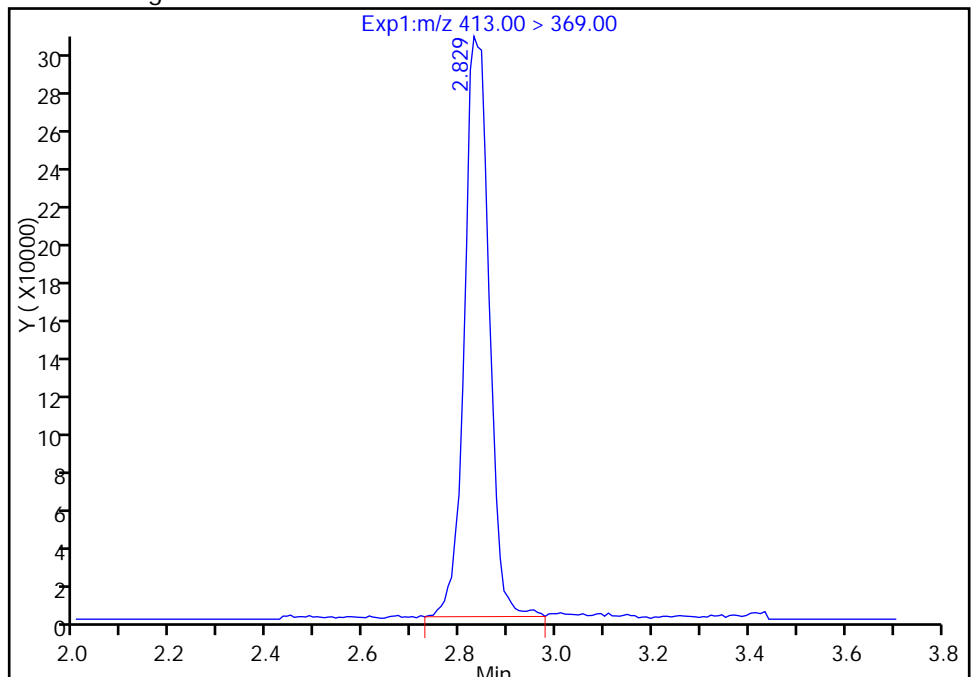
RT: 2.83
Area: 1136820
Amount: 5.278222
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 1102619
Amount: 5.152153
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:10

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

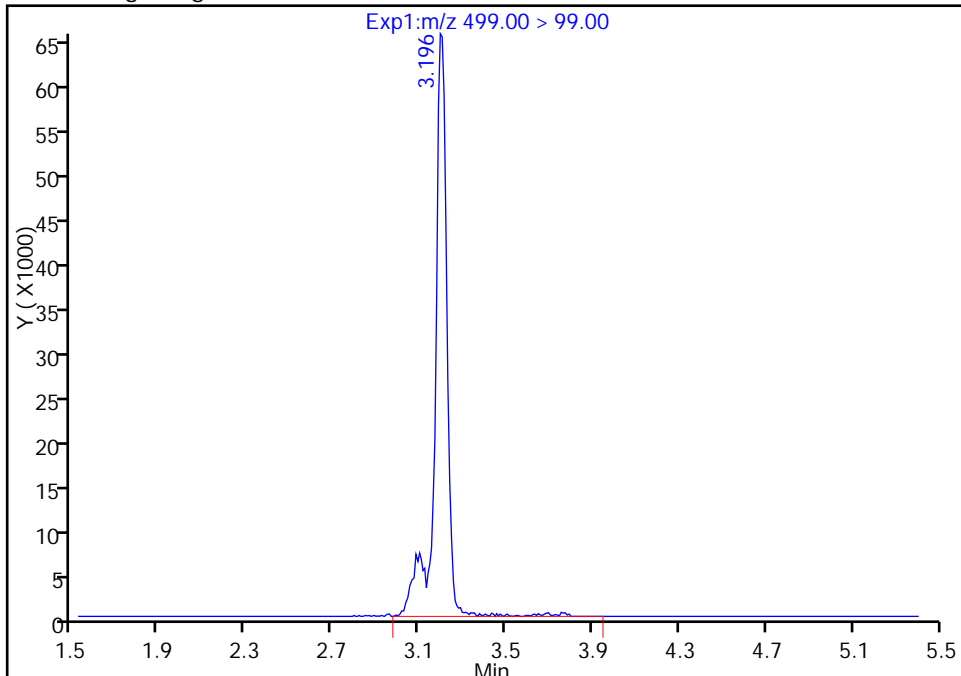
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Lims ID: IC L3 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

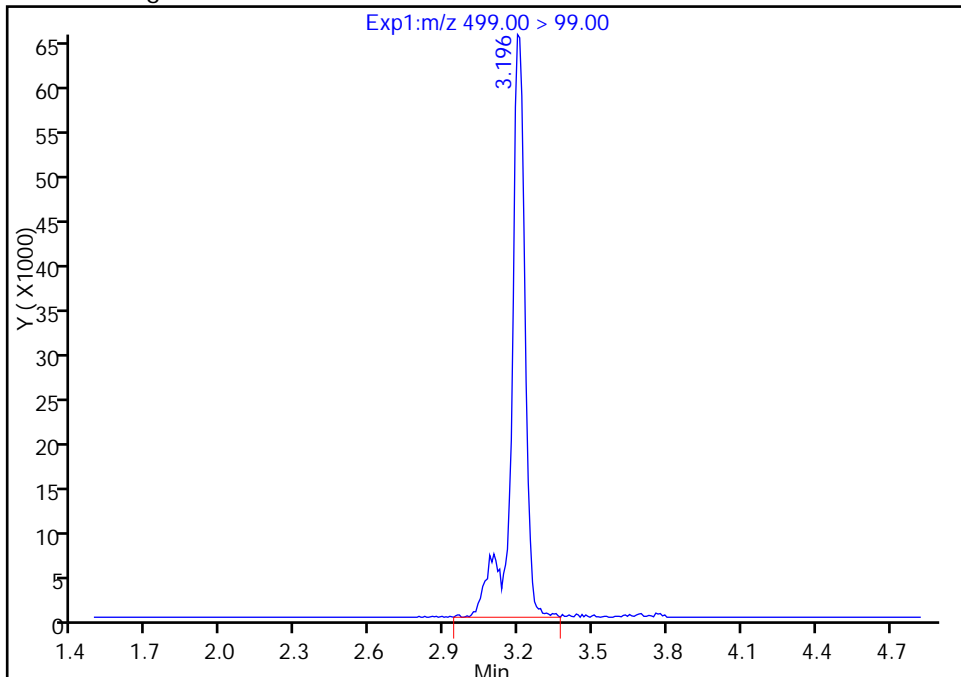
RT: 3.20
Area: 258504
Amount: 4.907745
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 254615
Amount: 4.671293
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:10
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_006.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 01-Mar-2017 11:31:20 ALS Bottle#: 31 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L4-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub15
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 01-Mar-2017 15:43:13 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 11:58:53

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	1.554	1.553	0.001	17122661	58.6		117	1074272	
2 Perfluorobutyric acid	212.90 > 169.00	1.562	1.558	0.004	5946494	20.5		102	65761	
D 3 13C5-PFPeA	267.90 > 223.00	1.832	1.832	0.0	13641103	58.7		117	917353	
4 Perfluoropentanoic acid	262.90 > 219.00	1.841	1.835	0.006	5283919	19.8		99.0	51812	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.871	1.872	-0.001	9035699	18.8		106		
	298.90 > 99.00	1.871	1.872	-0.001	3688779		2.45(0.00-0.00)	106		
6 Perfluorohexanoic acid	313.00 > 269.00	2.134	2.133	0.001	4191655	19.2		96.2	152557	
D 7 13C2 PFHxA	315.00 > 270.00	2.134	2.134	0.0	12244217	58.1		116	400533	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.471	2.474	-0.003	4154809	19.6		98.2	36084	
D 9 13C4-PFHpA	367.00 > 322.00	2.479	2.475	0.004	10934944	56.7		113	304443	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.487	2.485	0.002	5958886	17.2		94.6		M
										M
D 11 18O2 PFHxS	403.00 > 84.00	2.487	2.489	-0.002	15910284	54.7		116	422002	
D 12 M2-6:2FTS	429.00 > 409.00	2.814	2.805	0.009	4091935	53.0		112		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.806	2.807	-0.001	1476276	19.2		101		

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	2.837	2.835	0.002		11808824	57.6		115	419758	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.837	2.835	0.002	1.000	4651144	19.3		96.4	85963	
413.00 > 169.00	2.837	2.835	0.002	1.000	2647754		1.76(0.90-1.10)	96.4	107757	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.837	2.842	-0.005	1.000	5669268	19.9		105		
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.093	3.145	-0.052	1.000	4889351	18.0		97.1	37486	
499.00 > 99.00	3.163	3.145	0.018	1.023	1125132		4.35(0.90-1.10)	97.1	16340	
20 Perfluorononanoic acid										
463.00 > 419.00	3.205	3.202	0.003	1.000	3633207	19.7		98.5	58134	
D 18 13C4 PFOS										
503.00 > 80.00	3.205	3.204	0.001		13187105	54.6		114	308342	
D 19 13C5 PFNA										
468.00 > 423.00	3.214	3.208	0.006		10199601	57.3		115	340360	
D 26 M2-8:2FTS										
529.00 > 509.00	3.539	3.545	-0.006		4873285	52.6		110		
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.539	3.546	-0.007	1.000	1931499	20.5		107		
D 21 13C8 FOSA										
506.00 > 78.00	3.565	3.559	0.006		19888389	54.2		108	344996	
D 23 13C2 PFDA										
515.00 > 470.00	3.565	3.560	0.005		9661817	58.0		116	234911	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.556	3.560	-0.004	1.000	3277760	18.7		93.6	124974	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.565	3.561	0.004	1.000	7187955	20.1		101	199090	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.707	3.710	-0.003		4769931	56.0		112		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.717	3.713	0.004	1.003	1695690	18.3		91.5		
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.862	3.866	-0.004	1.000	3002868	18.3		94.8		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.870	3.875	-0.005		4515915	55.5		111		
D 30 13C2 PFUnA										
565.00 > 520.00	3.879	3.876	0.003		7346047	56.2		112	177174	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.879	3.878	0.001	1.000	2619295	17.6		87.9	88246	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.888	3.883	0.005	1.004	1606146	19.5		97.7		
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.050	4.050	0.0		4579449	52.0		104		
35 MeFOSA										
512.00 > 169.00	4.059	4.057	0.002	1.000	1671133	19.5		97.5		
37 Perfluorododecanoic acid										
613.00 > 569.00	4.165	4.162	0.003	1.000	2353395	19.5		97.4	29732	

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	4.165	4.164	0.001	6606261	53.3		107	130372	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.240	4.235	0.005	4373613	51.3		103		
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.249	4.242	0.007	1.000	1676481		97.4		
41 Perfluorotridecanoic acid	663.00 > 619.00	4.418	4.424	-0.006	1.000	2207561		95.6	38950	
D 43 13C2-PFTeDA	715.00 > 670.00	4.652	4.655	-0.003	13623388	52.6		105	303779	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.652	4.657	-0.005	1.000	4960846		95.5	38169	
	713.00 > 169.00	4.652	4.657	-0.005	1.000	658342	7.54(0.00-0.00)	95.5	69558	
D 44 13C2-PFHxDA	815.00 > 770.00	5.057	5.057	0.0	6330845	50.6		101	91907	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.057	5.059	-0.002	1.000	2071027		82.7	2327	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.398	5.399	-0.001	1.000	1687895		89.0	2245	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULLL-L4_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_006.d

Injection Date: 01-Mar-2017 11:31:20

Instrument ID: A8_N

Lims ID: IC L4 Full

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 31

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

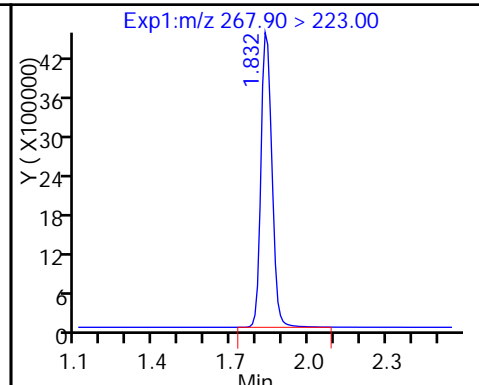
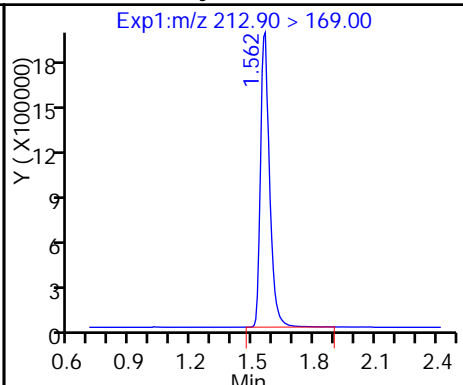
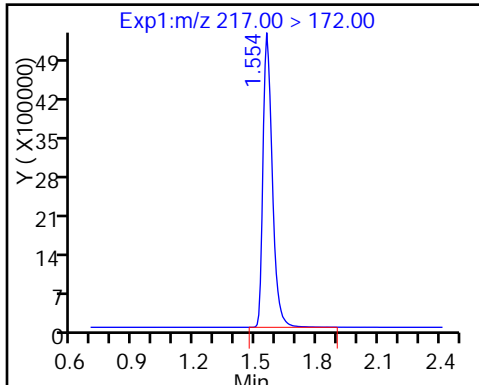
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

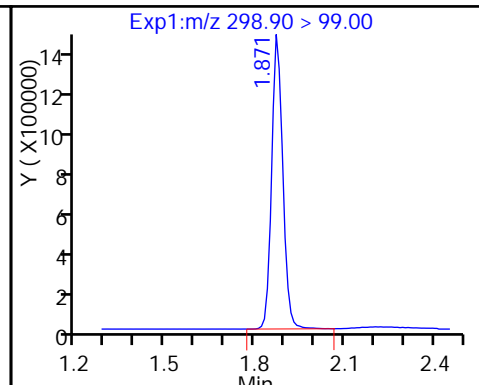
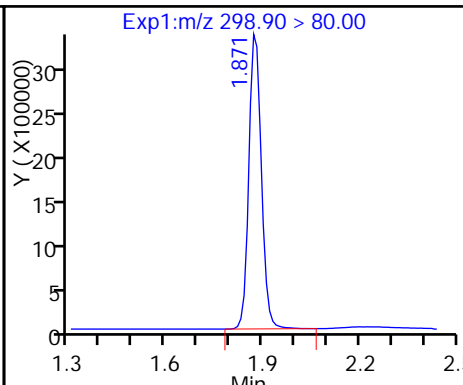
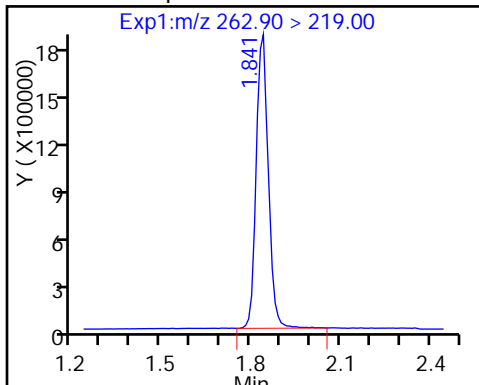
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

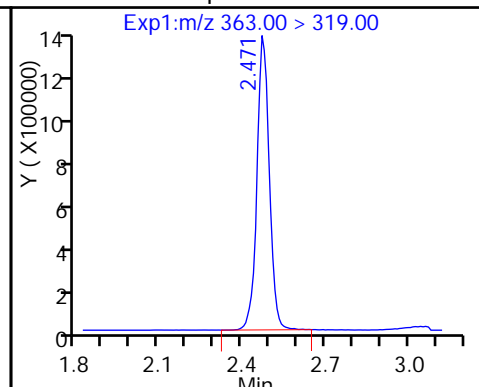
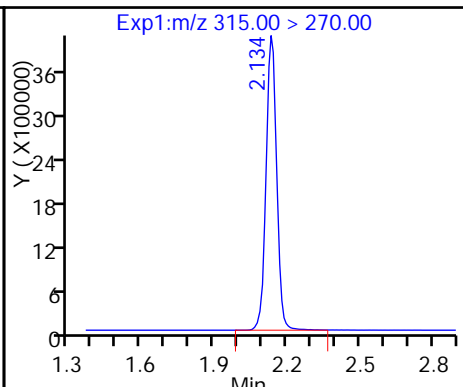
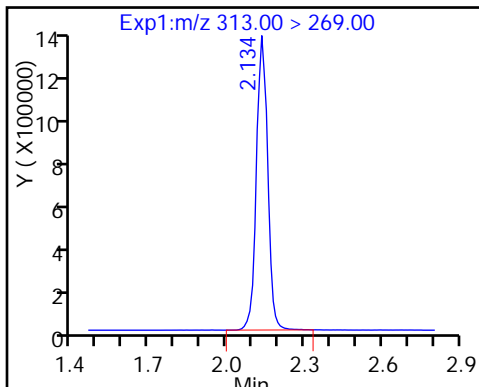
5 Perfluorobutanesulfonic acid



6 Perfluorohexanoic acid

D 7 13C2 PFHxA

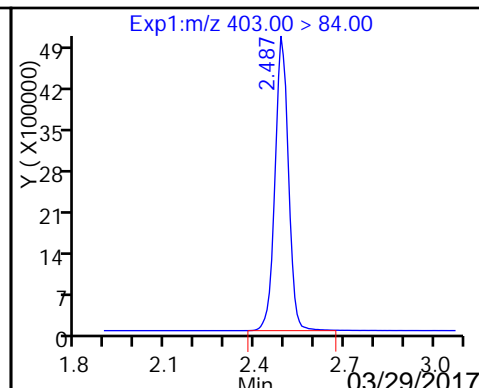
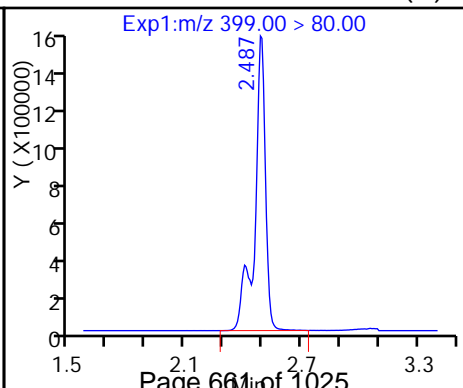
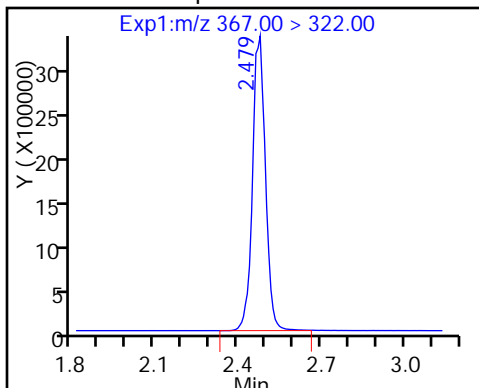
10 Perfluoroheptanoic acid



D 9 13C4-PFHpA

8 Perfluorohexanesulfonic acid (M)

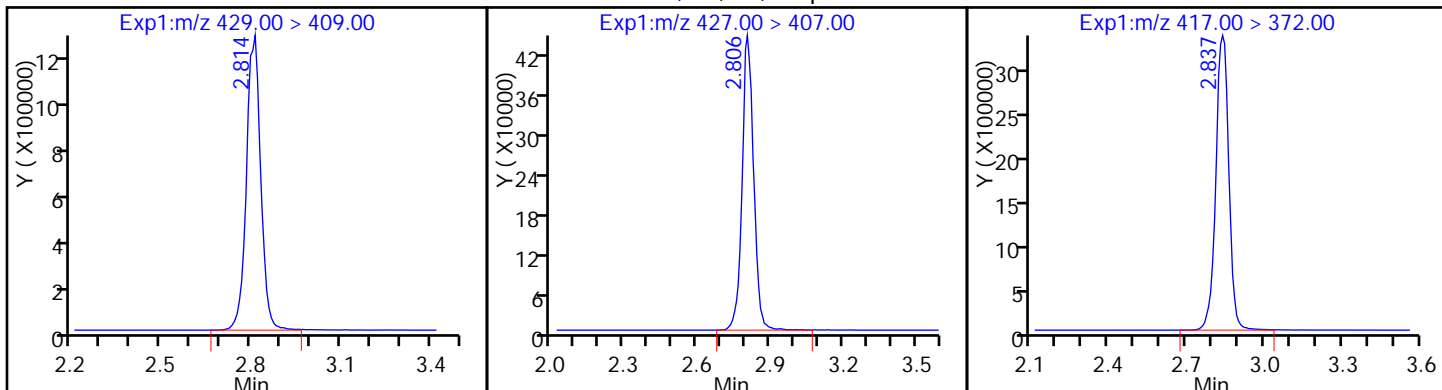
D 11 18O2 PFHxS



D 12 M2-6:2FTS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

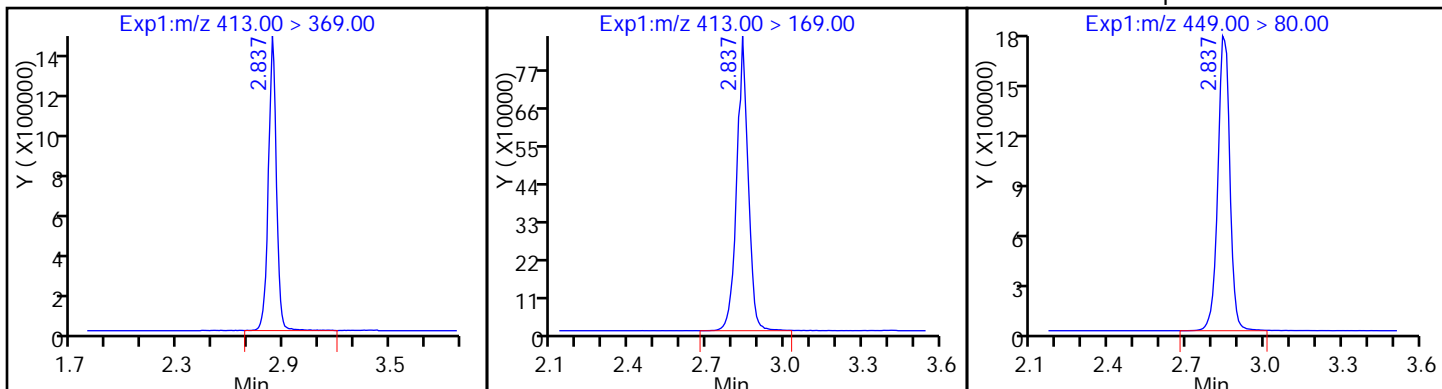
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

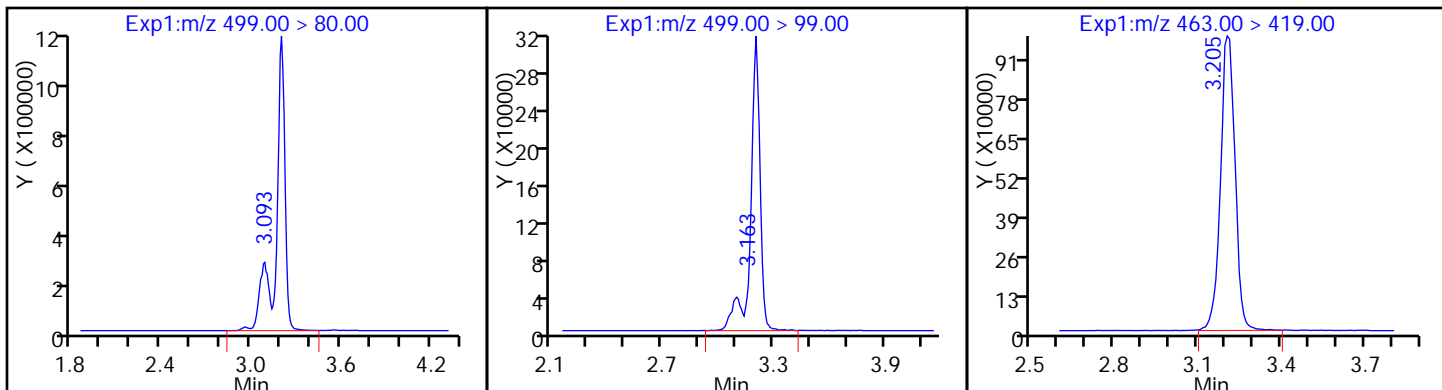
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

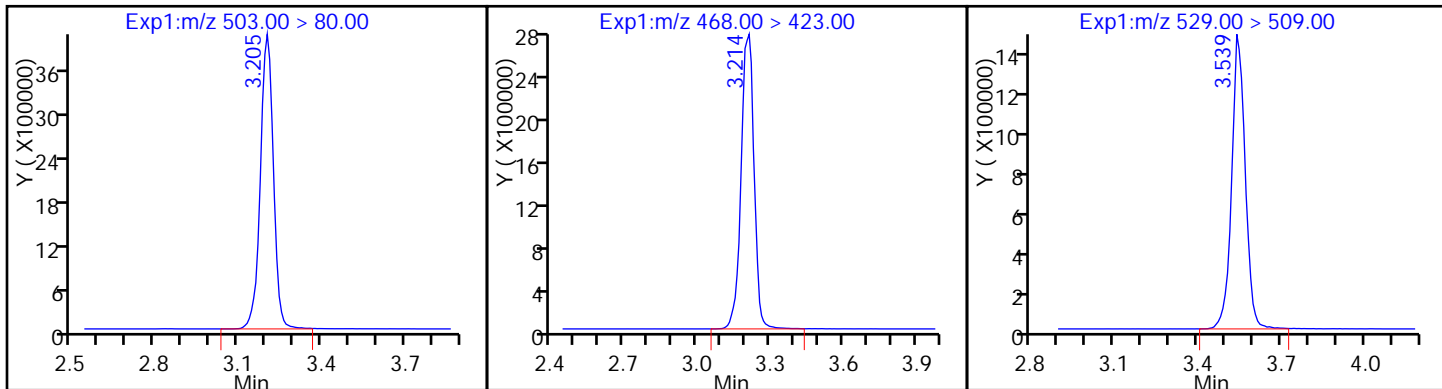
20 Perfluorononanoic acid



D 18 13C4 PFOS

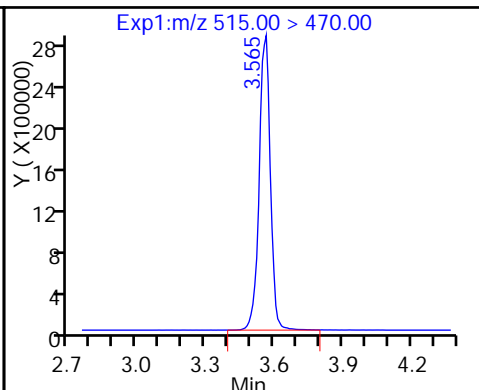
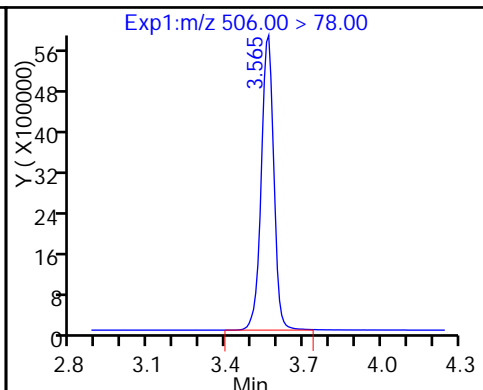
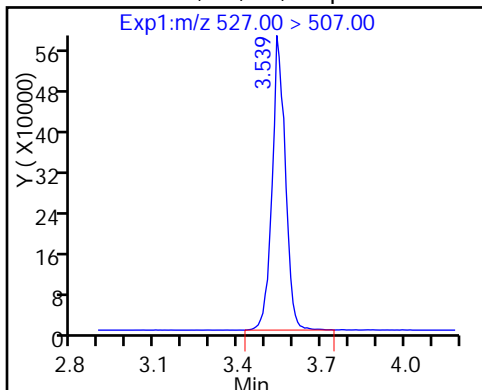
D 19 13C5 PFNA

D 26 M2-8:2FTS



25 Sodium 1H,1H,2H,2H-perfluorooctanoate

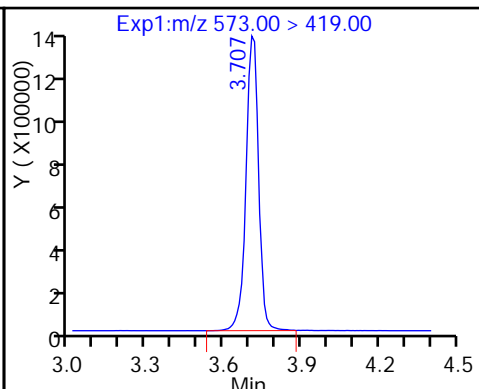
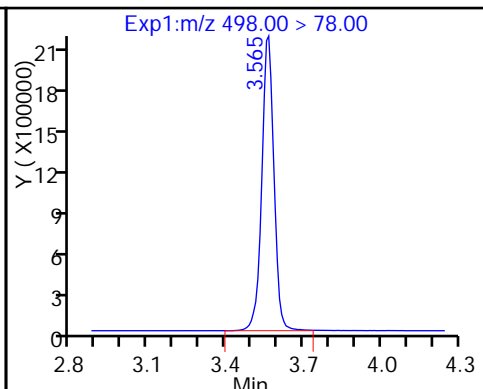
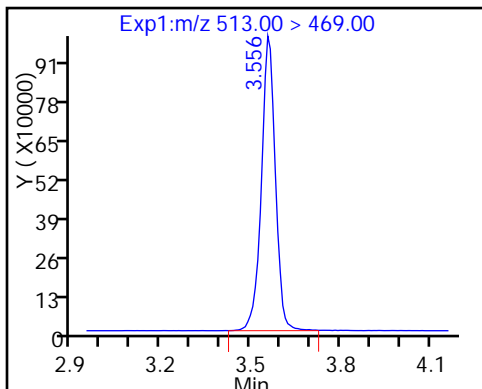
D 23 13C2 PFDA



24 Perfluorodecanoic acid

22 Perfluorooctane Sulfonamide

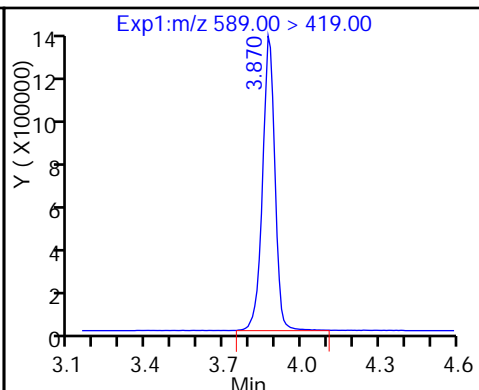
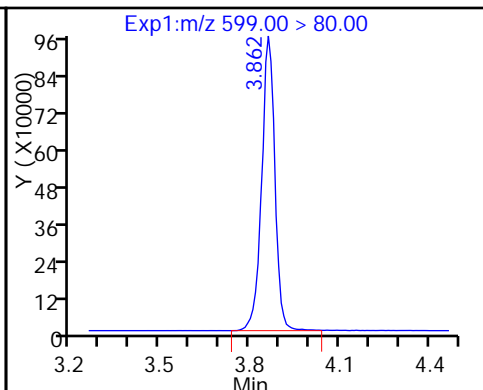
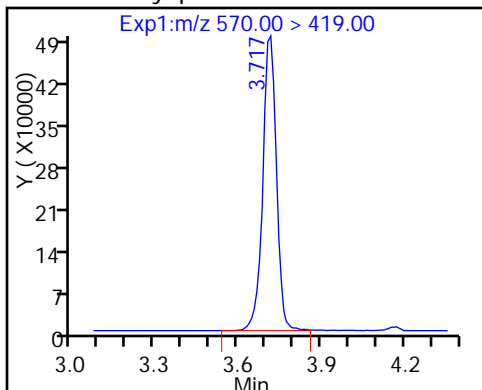
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonamide

29 Perfluorodecane Sulfonic acid

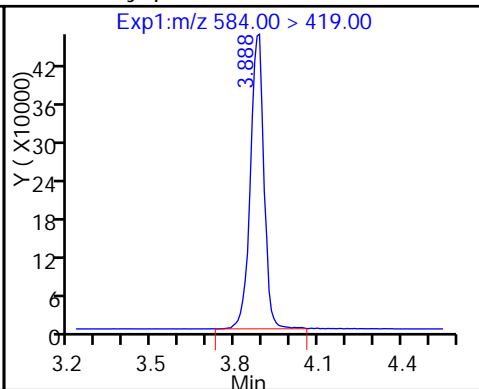
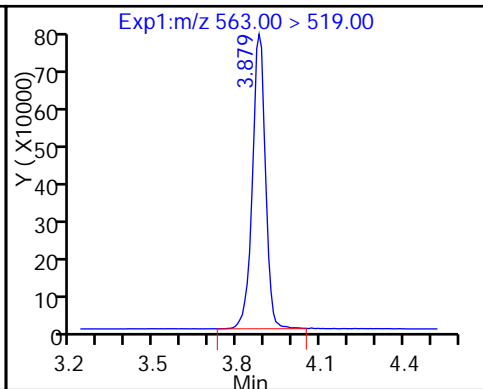
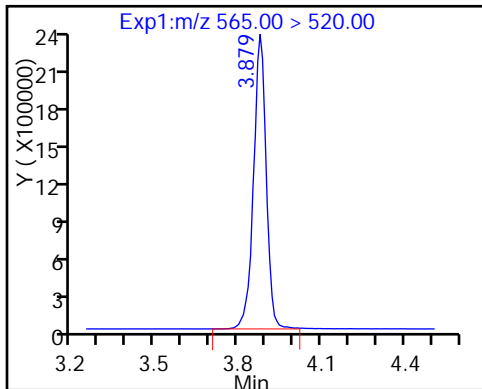
D 32 d5-NEtFOSAA



D 30 13C2 PFUnA

31 Perfluoroundecanoic acid

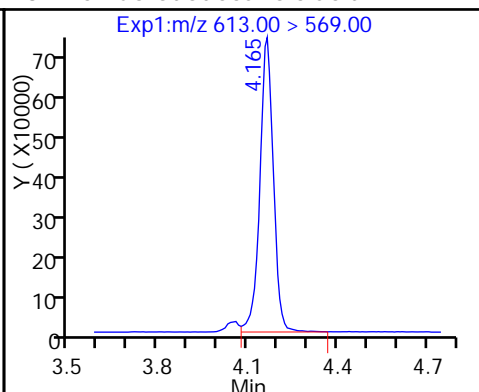
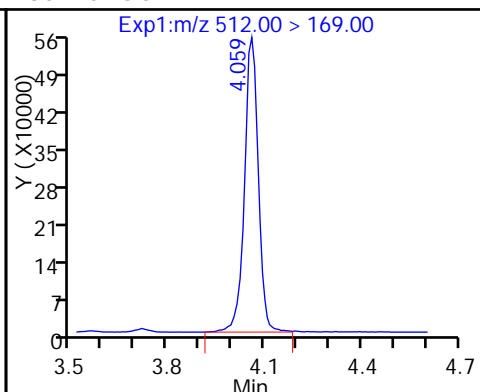
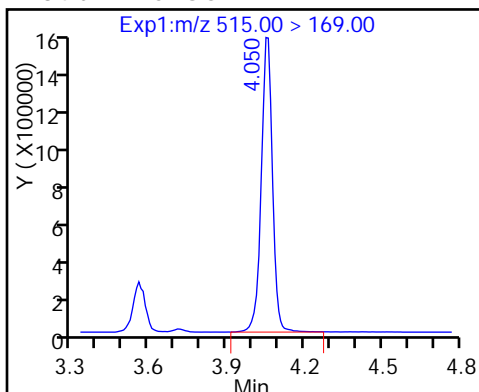
33 N-ethyl perfluorooctane sulfonamide



D 34 d-N-MeFOSA-M

35 MeFOSA

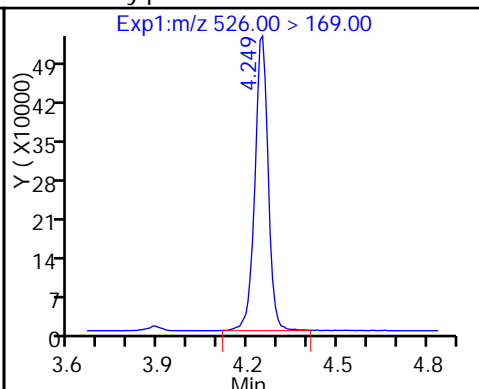
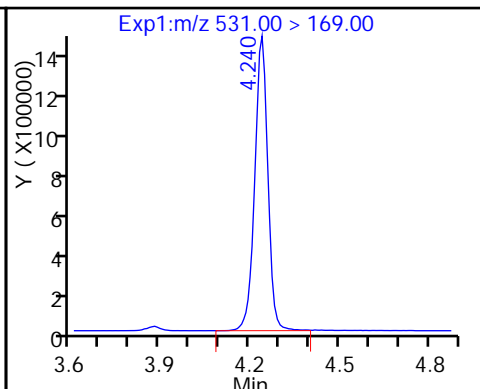
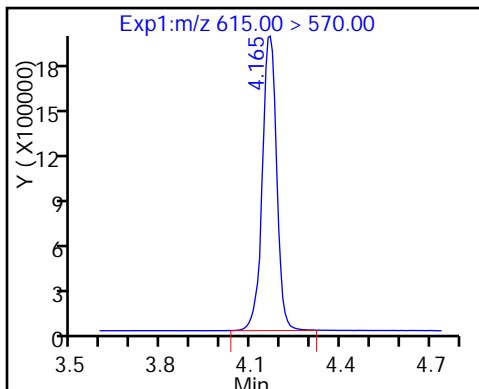
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

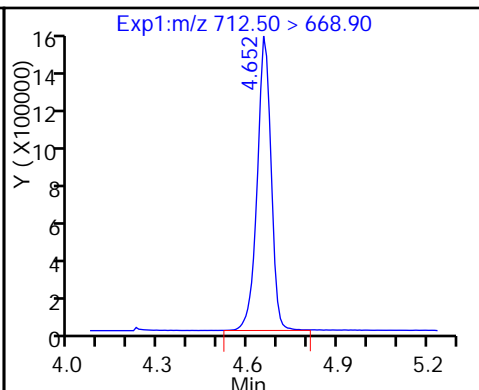
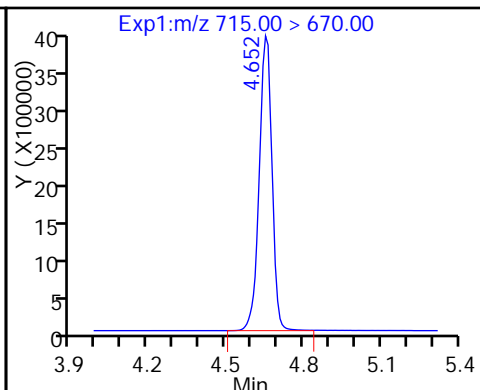
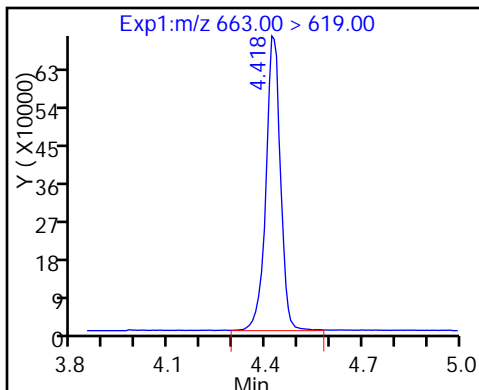
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

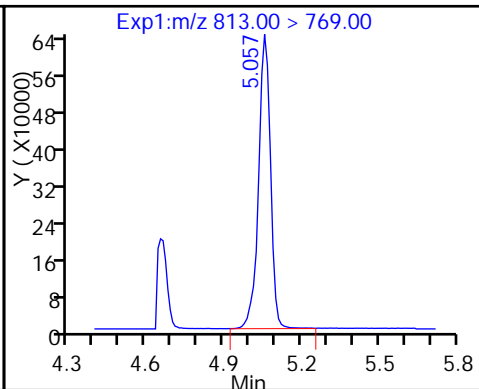
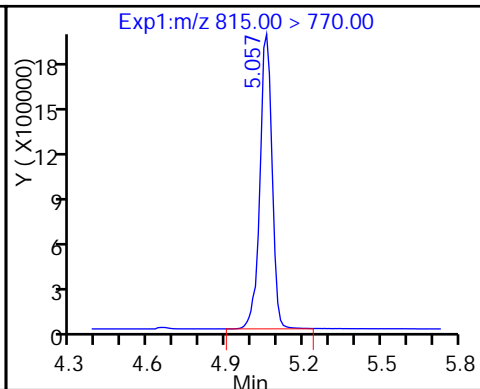
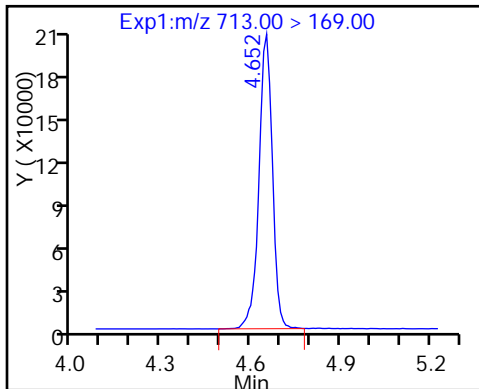
42 Perfluorotetradecanoic acid



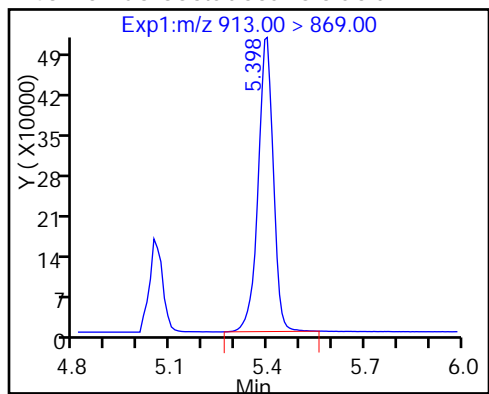
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

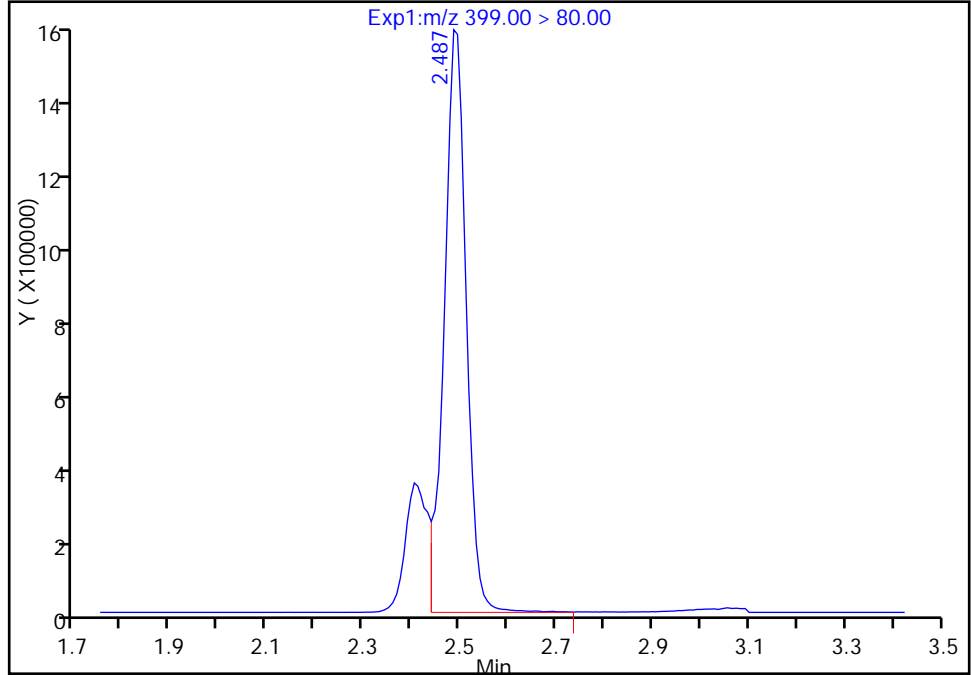
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Injection Date: 01-Mar-2017 11:31:20 Instrument ID: A8_N
Lims ID: IC L4 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

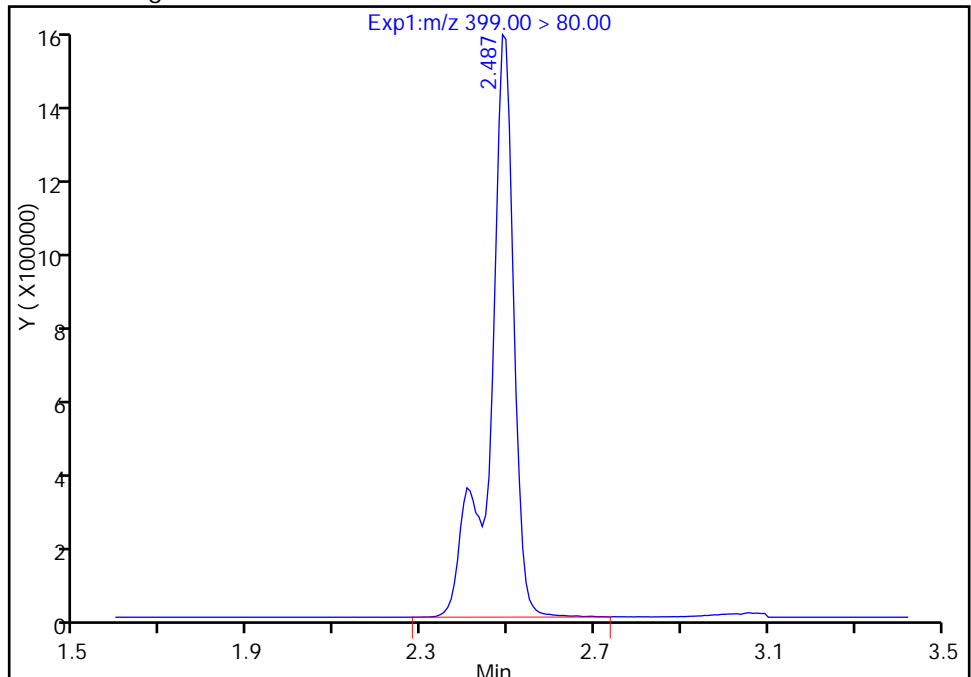
RT: 2.49
Area: 4875110
Amount: 17.771425
Amount Units: ng/ml

Processing Integration Results



RT: 2.49
Area: 5958886
Amount: 17.225343
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:13
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_007.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 01-Mar-2017 11:38:49 ALS Bottle#: 32 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L5-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub15
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 01-Mar-2017 15:43:16 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:02:47

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	1.553	-0.007	14941160	51.1		102	667479	
2 Perfluorobutyric acid	212.90 > 169.00	1.554	1.558	-0.004	13491384	53.3		107	127406	
D 3 13C5-PFPeA	267.90 > 223.00	1.821	1.832	-0.011	11440005	49.3		98.5	626699	
4 Perfluoropentanoic acid	262.90 > 219.00	1.831	1.835	-0.004	11520213	51.5		103	120087	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.871	1.872	-0.001	19236596	45.5		103		
	298.90 > 99.00	1.871	1.872	-0.001	8170789		2.35(0.00-0.00)	103		
6 Perfluorohexanoic acid	313.00 > 269.00	2.127	2.133	-0.006	9710439	50.9		102	233505	
D 7 13C2 PFHxA	315.00 > 270.00	2.127	2.134	-0.007	10719942	50.8		102	387004	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.466	2.474	-0.008	9559143	49.7		99.4	84389	
D 9 13C4-PFHpA	367.00 > 322.00	2.466	2.475	-0.009	9944069	51.5		103	332028	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.481	2.485	-0.004	13776740	45.4		99.8		M
										M
D 11 18O2 PFHxS	403.00 > 84.00	2.481	2.489	-0.008	13953506	48.0		101	272613	
D 12 M2-6:2FTS	429.00 > 409.00	2.793	2.805	-0.012	3650448	47.3		99.6		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.793	2.807	-0.014	3256270	47.7		101		

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	2.824	2.835	-0.011	1.000	10343315	50.5		101	113108	
413.00 > 169.00	2.824	2.835	-0.011	1.000	6136507		1.69(0.90-1.10)	101	139975	
D 14 13C4 PFOA										
417.00 > 372.00	2.824	2.835	-0.011		10019820	48.9		97.8	414712	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.831	2.842	-0.011	1.000	12919018	50.5		106		
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.087	3.145	-0.058	1.000	11786011	48.3		104	66281	
499.00 > 99.00	3.199	3.145	0.054	1.037	2666087		4.42(0.90-1.10)	104	7715	
20 Perfluorononanoic acid										
463.00 > 419.00	3.191	3.202	-0.011	1.000	8361339	51.7		103	164244	
D 18 13C4 PFOS										
503.00 > 80.00	3.199	3.204	-0.005		11866933	49.1		103	197438	
D 19 13C5 PFNA										
468.00 > 423.00	3.199	3.208	-0.009		8936977	50.2		100	263744	
D 26 M2-8:2FTS										
529.00 > 509.00	3.535	3.545	-0.010		4360731	47.1		98.3		
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.543	3.546	-0.003	1.002	4074481	48.4		101		
D 21 13C8 FOSA										
506.00 > 78.00	3.560	3.559	0.001		18558718	50.6		101	247034	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.552	3.560	-0.008	1.000	7779706	53.2		106	168568	
D 23 13C2 PFDA										
515.00 > 470.00	3.552	3.560	-0.008		8074243	48.4		96.9	187283	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.560	3.561	-0.001	1.000	17500489	52.5		105	422956	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.702	3.710	-0.008		4409894	51.8		104		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.702	3.713	-0.011	1.000	4062831	47.4		94.9		
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.859	3.866	-0.007	1.000	7386234	49.9		104		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.867	3.875	-0.008		4108227	50.5		101		
D 30 13C2 PFUnA										
565.00 > 520.00	3.867	3.876	-0.009		6419845	49.1		98.2	215302	M
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.867	3.878	-0.011	1.000	6388091	49.1		98.2	145481	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.876	3.883	-0.007	1.002	3565748	47.7		95.3		
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.048	4.050	-0.002		4549448	51.7		103		
35 MeFOSA										
512.00 > 169.00	4.058	4.057	0.001	1.000	4038740	47.4		94.9		
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.162	-0.005	1.000	5939325	52.7		105	93610	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA	615.00 > 570.00	4.157	4.164	-0.007		6158791	49.7	99.4	157158	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.241	4.235	0.006		4384481	51.4	103		
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.241	4.242	-0.001	1.000	4076562	47.3	94.5		
41 Perfluorotridecanoic acid	663.00 > 619.00	4.418	4.424	-0.006	1.000	5662375	52.6	105	111159	
D 43 13C2-PFTeDA	715.00 > 670.00	4.641	4.655	-0.014		13257413	51.2	102	430727	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.651	4.657	-0.006	1.000	12631200	52.1	104	118223	
	713.00 > 169.00	4.651	4.657	-0.006	1.000	1664503	7.59(0.00-0.00)	104	123601	
D 44 13C2-PFHxDA	815.00 > 770.00	5.049	5.057	-0.008		6606731	52.8	106	93567	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.049	5.059	-0.010	1.000	5695645	49.5	99.0	5357	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.383	5.399	-0.016	1.000	4591929	52.0	104	6139	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULLL-L5_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_007.d

Injection Date: 01-Mar-2017 11:38:49

Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 32

Worklist Smp#: 6

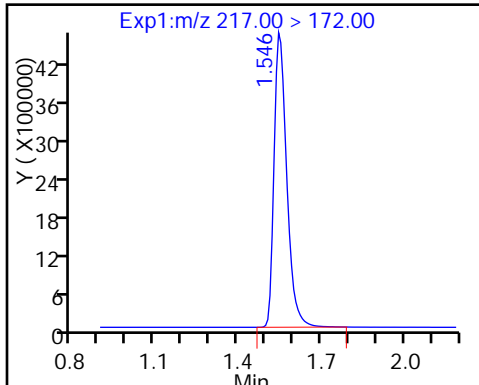
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

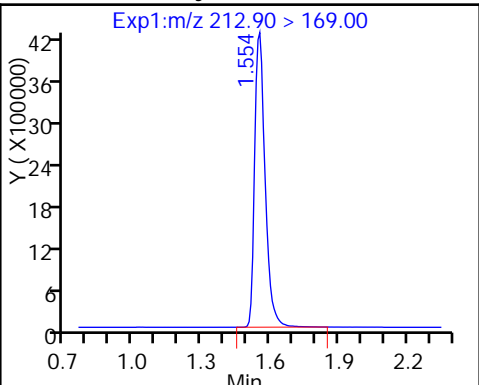
Method: A8_N

Limit Group: LC PFC_DOD ICAL

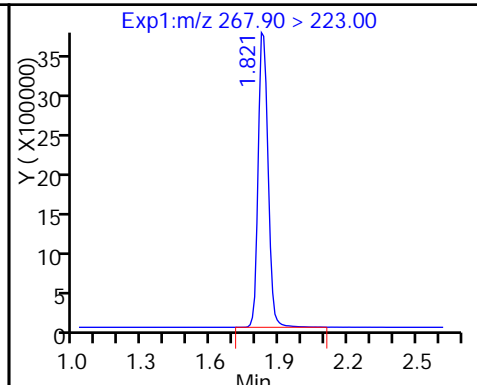
D 1 13C4 PFBA



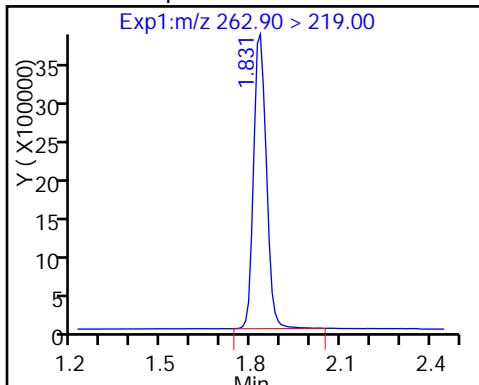
2 Perfluorobutyric acid



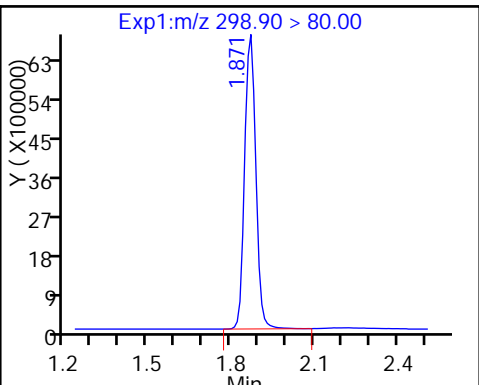
D 3 13C5-PFPeA



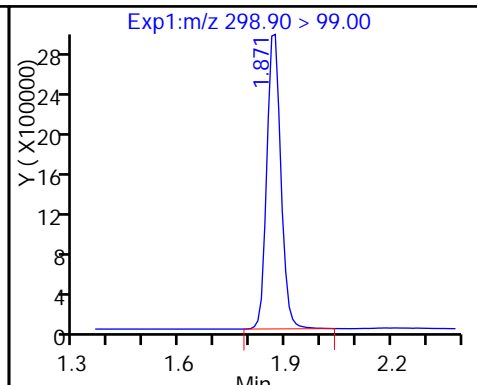
4 Perfluoropentanoic acid



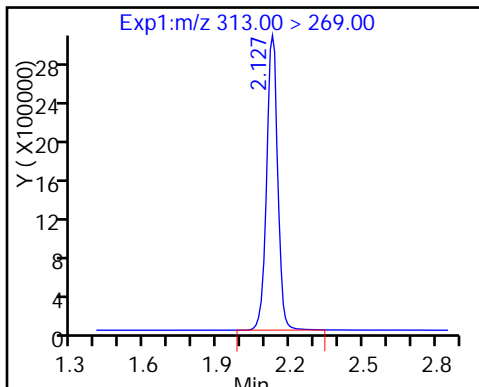
5 Perfluorobutanesulfonic acid



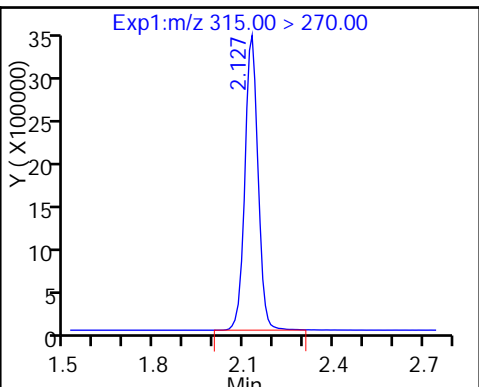
5 Perfluorobutanesulfonic acid



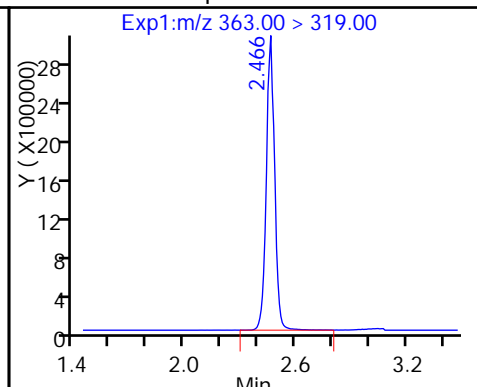
6 Perfluorohexanoic acid



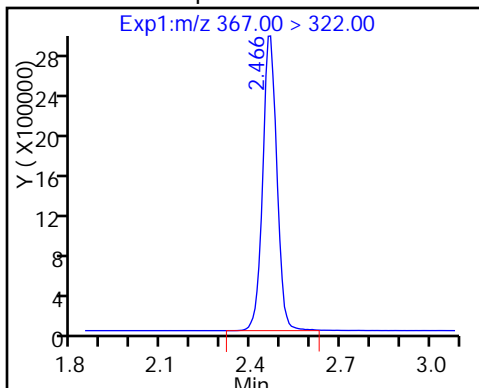
D 7 13C2 PFHxA



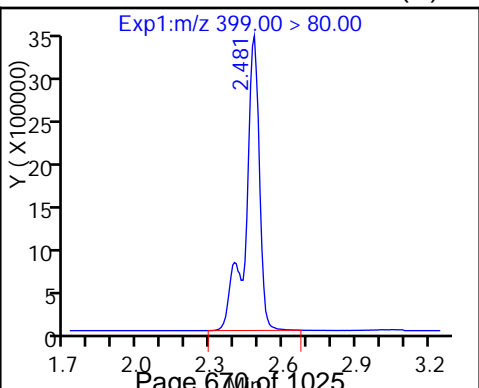
10 Perfluoroheptanoic acid



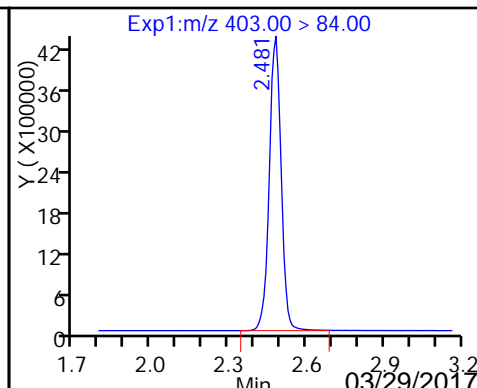
D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid (M)

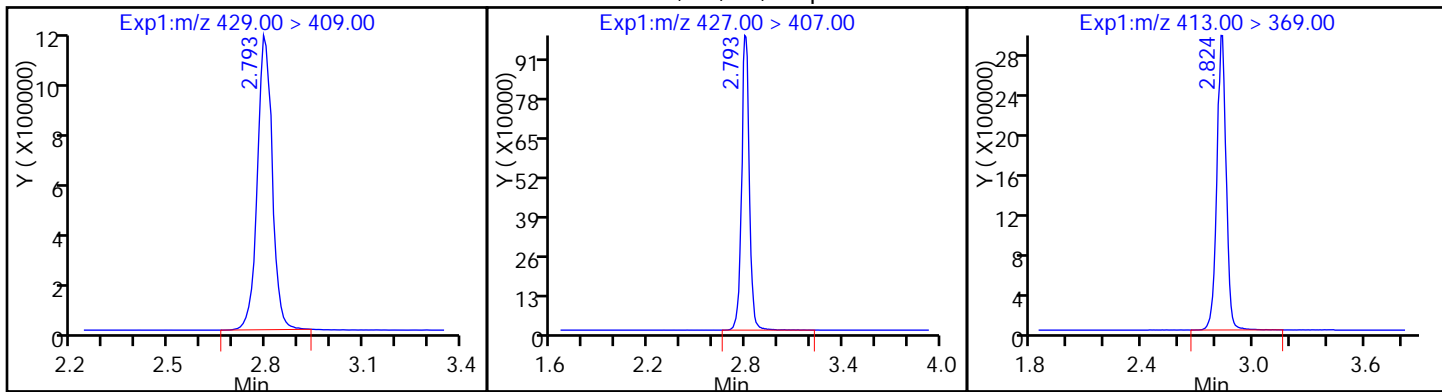


D 11 18O2 PFHxS



D 12 M2-6:2FTS

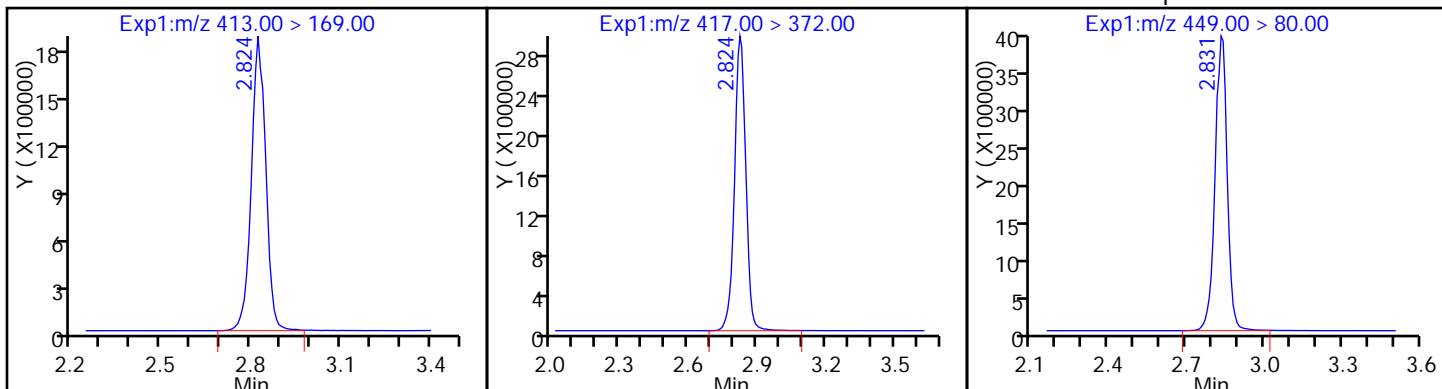
13 Sodium 1H,1H,2H,2H-perfluorooctane15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

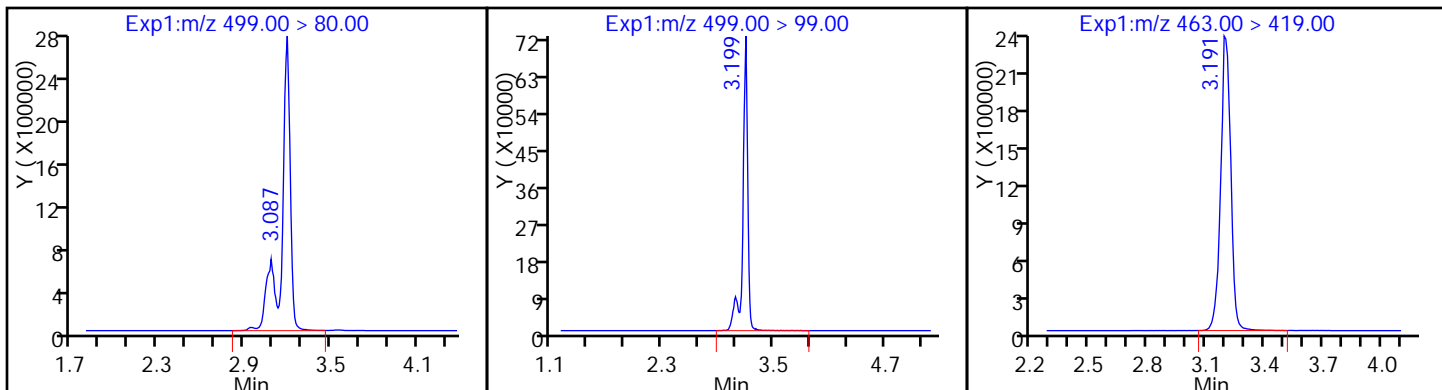
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

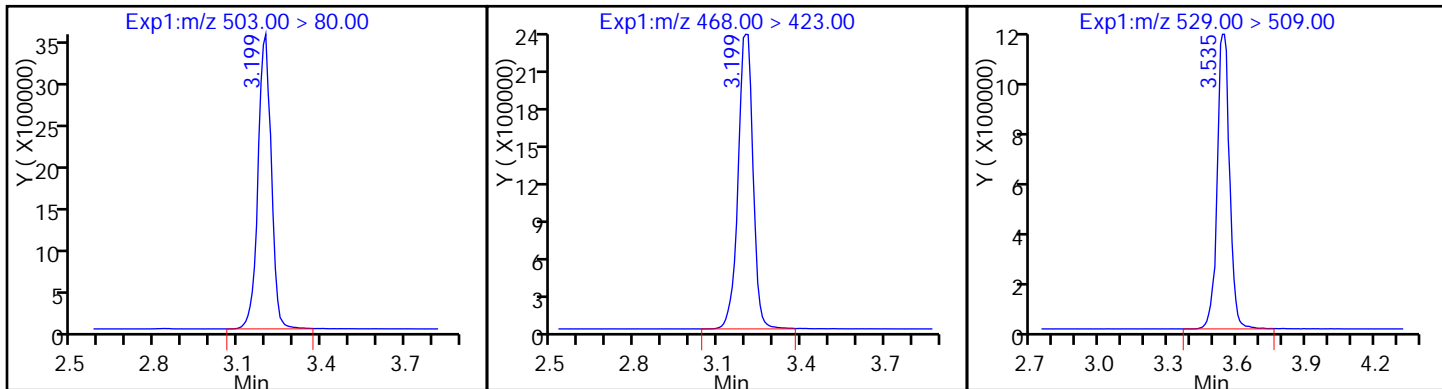
20 Perfluorononanoic acid



D 18 13C4 PFOS

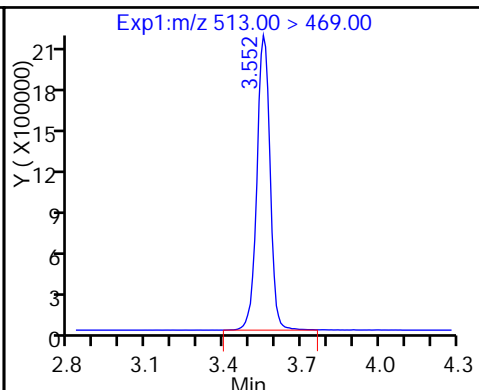
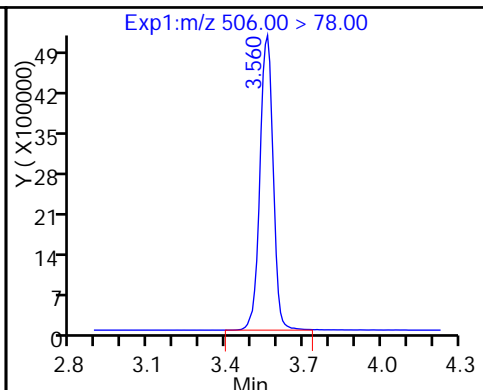
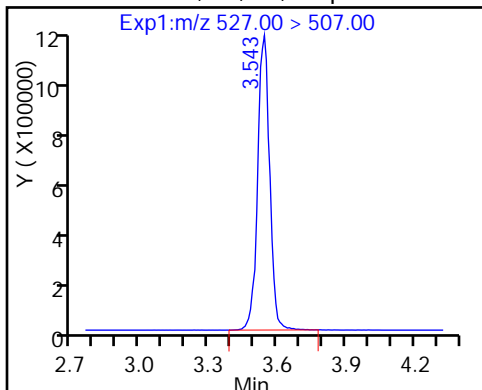
D 19 13C5 PFNA

D 26 M2-8:2FTS



25 Sodium 1H,1H,2H,2H-perfluorooctanoate

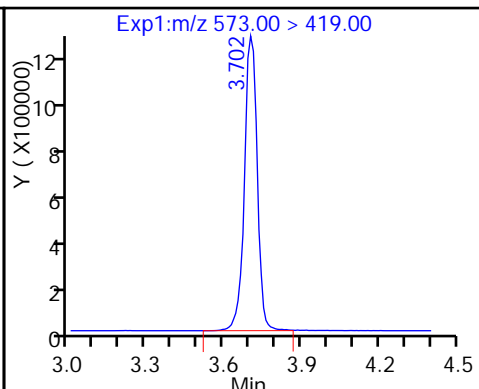
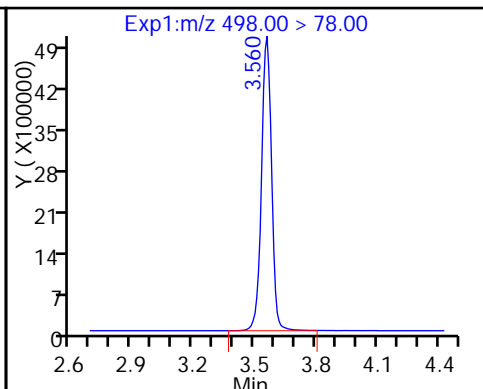
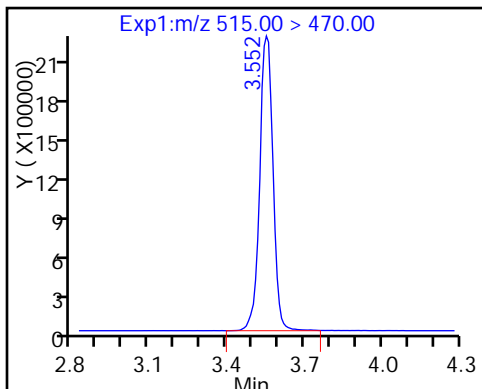
24 Perfluorodecanoic acid



D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

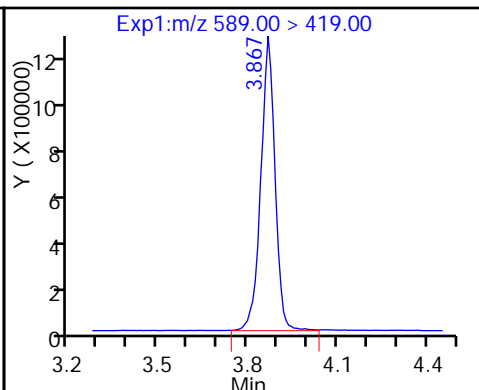
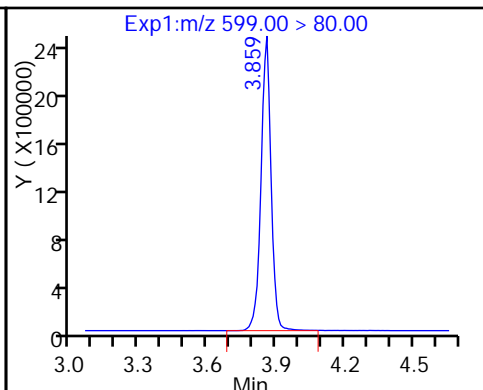
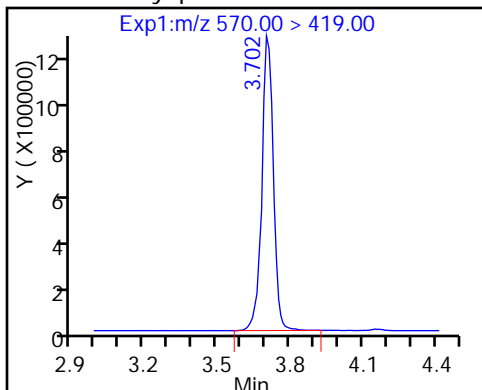
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

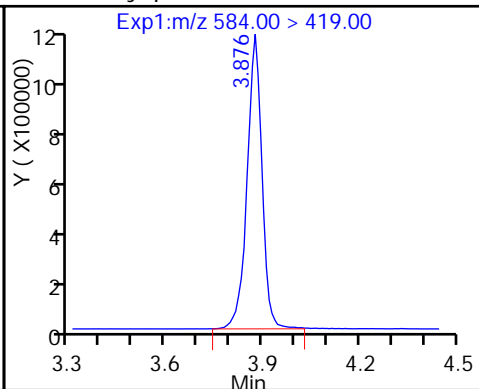
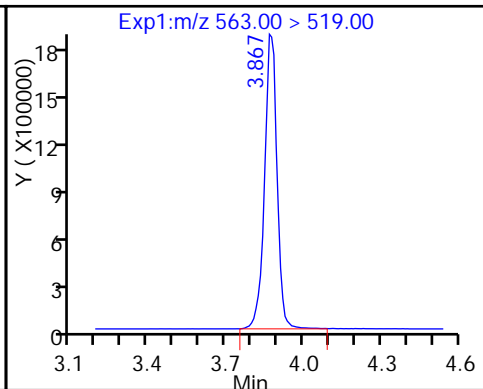
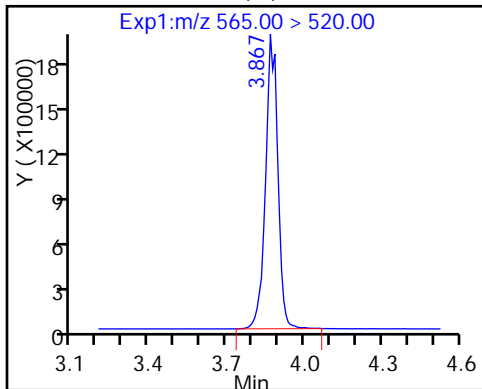
D 32 d5-NEtFOSAA



D 30 13C2 PFUnA (M)

31 Perfluoroundecanoic acid

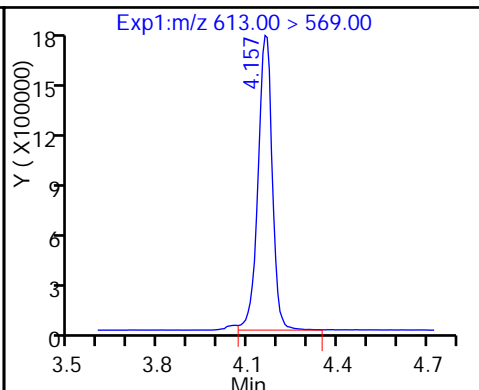
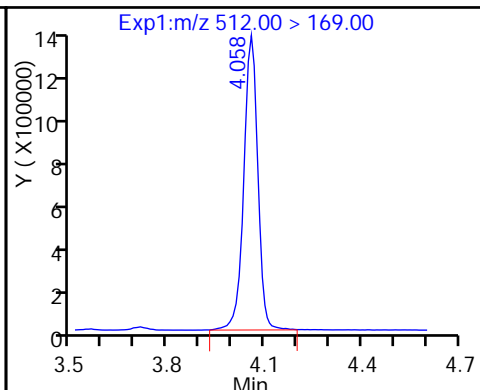
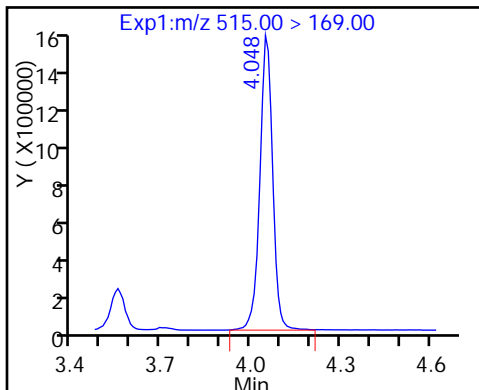
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

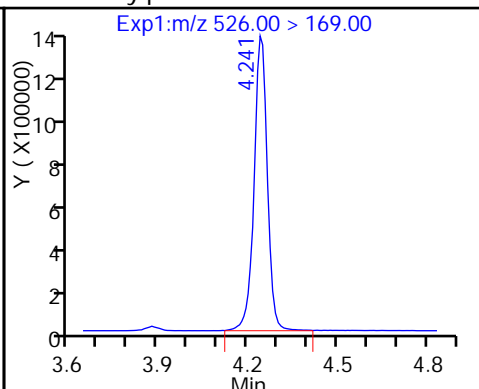
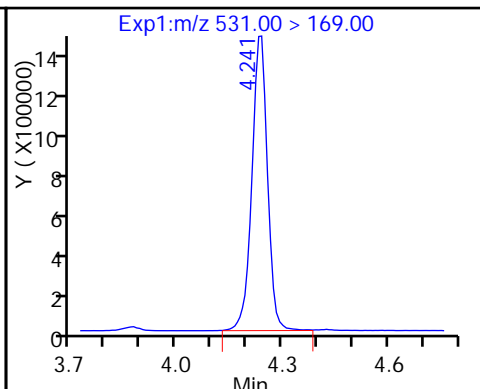
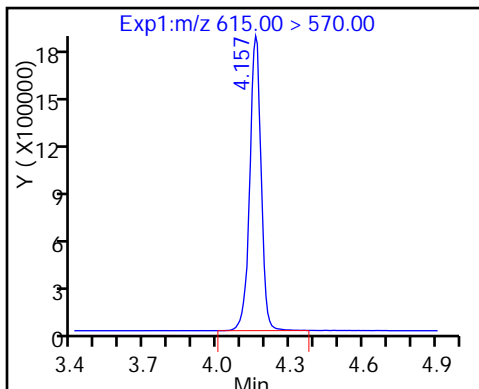
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

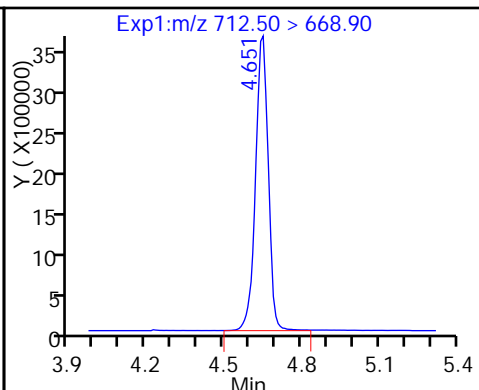
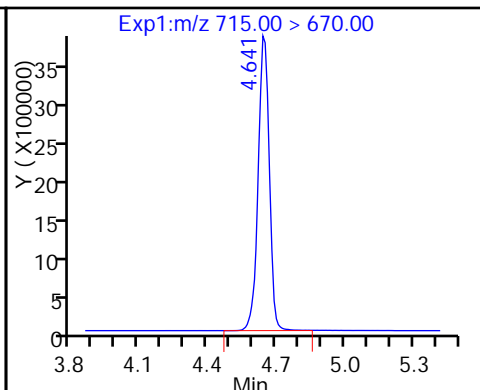
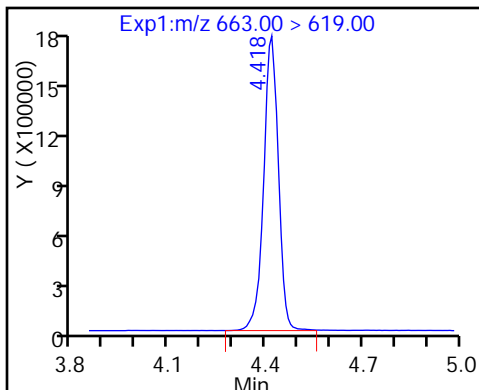
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

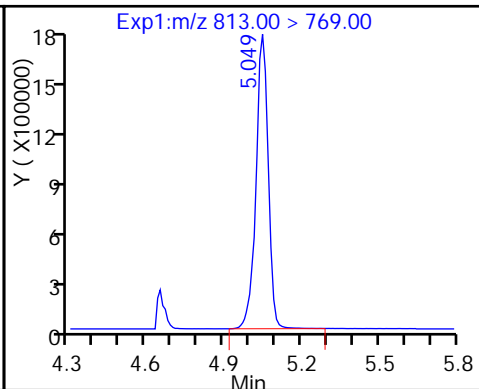
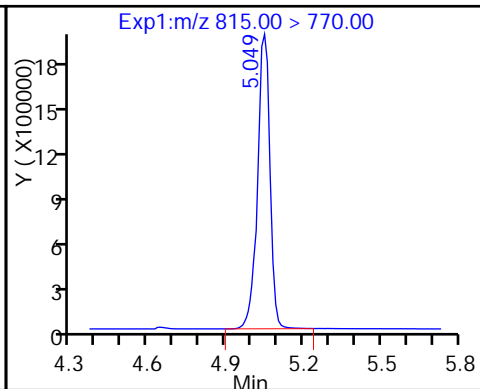
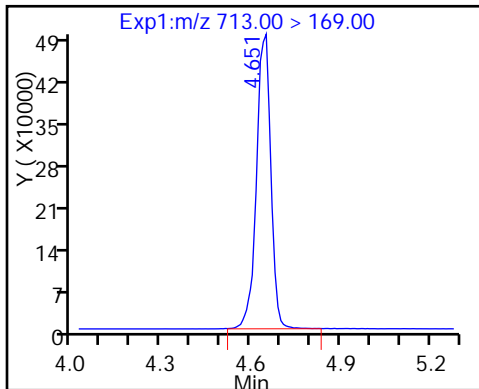
42 Perfluorotetradecanoic acid



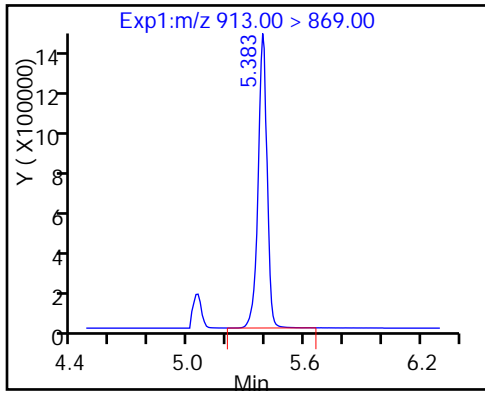
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

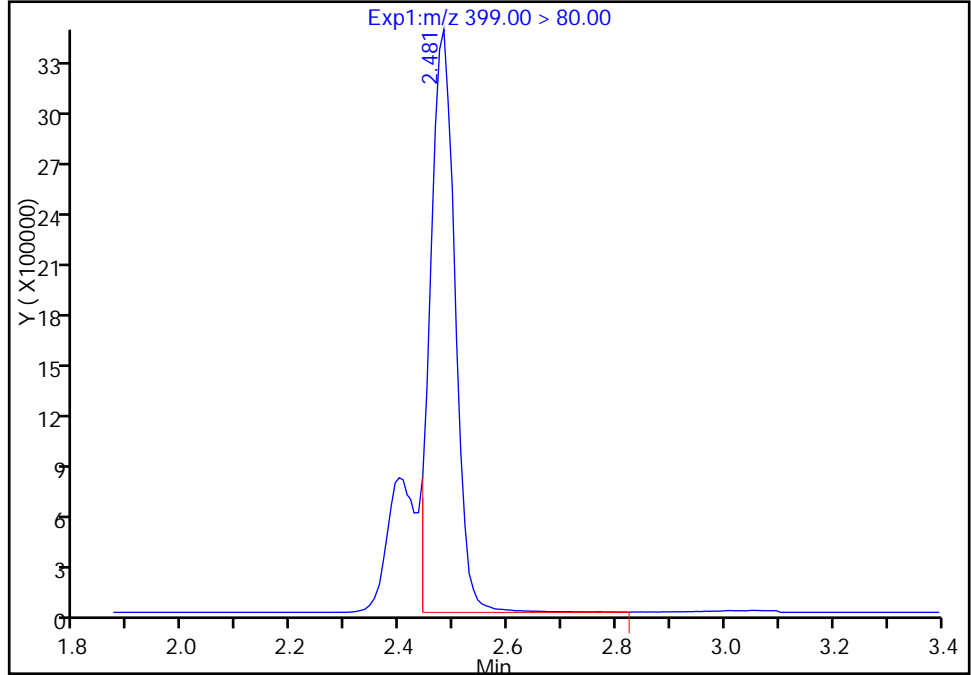
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_007.d
Injection Date: 01-Mar-2017 11:38:49 Instrument ID: A8_N
Lims ID: IC L5 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

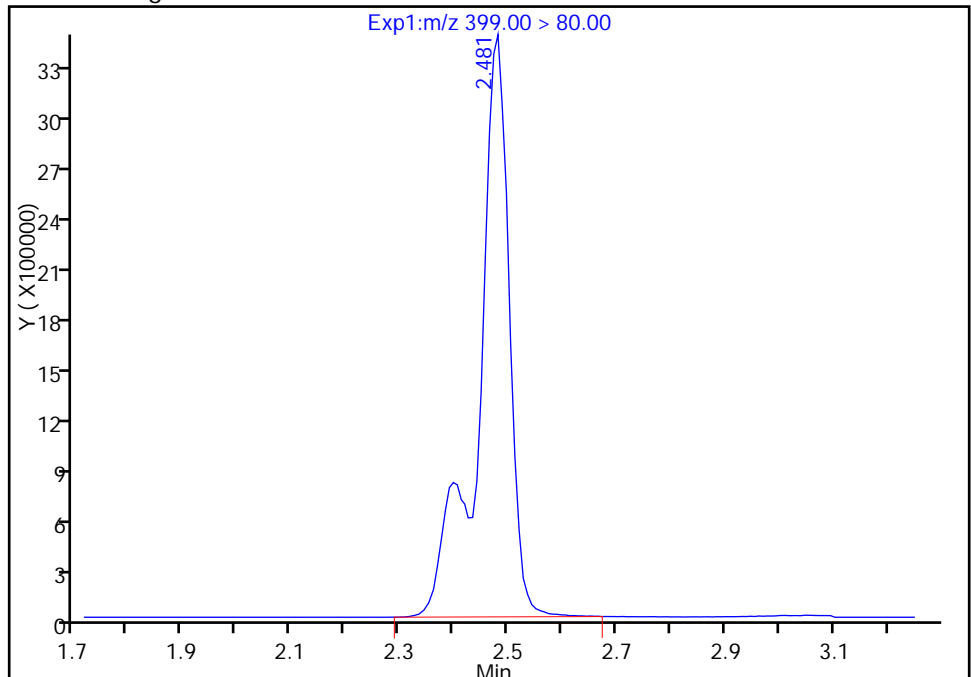
RT: 2.48
Area: 10754320
Amount: 35.081839
Amount Units: ng/ml

Processing Integration Results



RT: 2.48
Area: 13776740
Amount: 45.409199
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:15
Audit Action: Manually Integrated

Audit Reason: Isomers

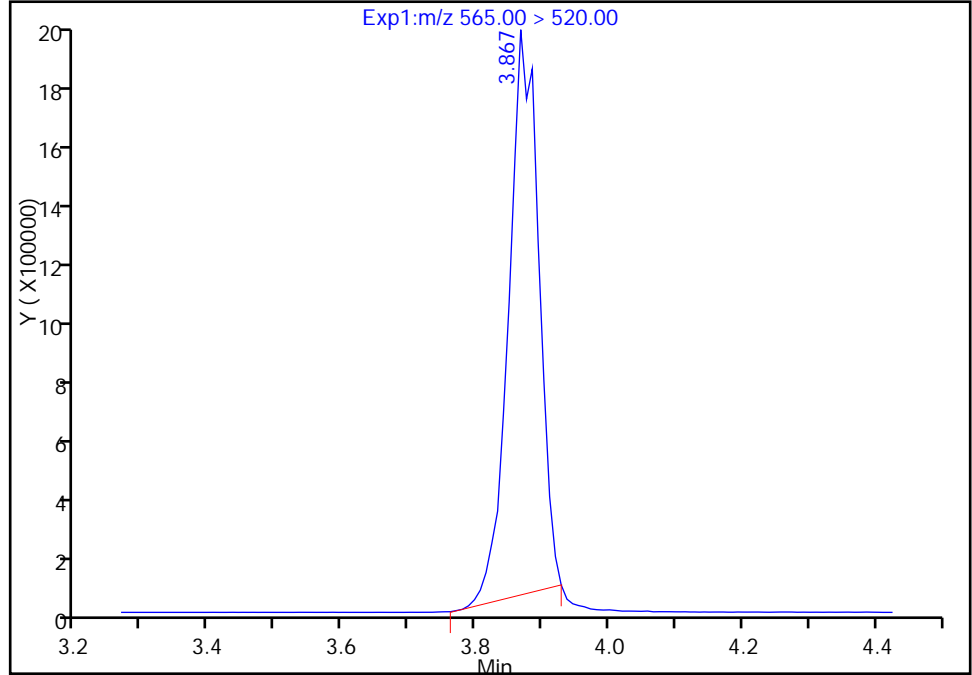
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_007.d
Injection Date: 01-Mar-2017 11:38:49 Instrument ID: A8_N
Lims ID: IC L5 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

D 30 13C2 PFUnA, CAS: STL00997
Signal: 1

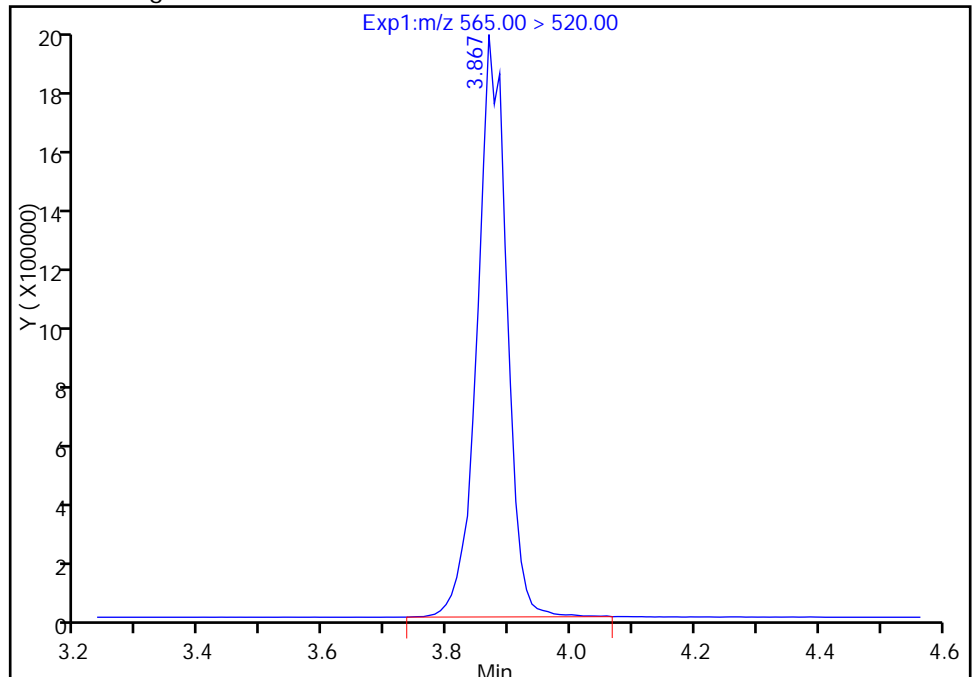
RT: 3.87
Area: 5863845
Amount: 45.473087
Amount Units: ng/ml

Processing Integration Results



RT: 3.87
Area: 6419845
Amount: 49.079386
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:15
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 01-Mar-2017 11:46:18 ALS Bottle#: 33 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L6-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub15
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 01-Mar-2017 15:43:18 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:04:21

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	1.546	1.553	-0.007	12268568	42.0		84.0	717990	
2 Perfluorobutyric acid	212.90 > 169.00	1.554	1.558	-0.004	37767596	181.7		90.8	312656	
D 3 13C5-PFPeA	267.90 > 223.00	1.822	1.832	-0.010	9320645	40.1		80.3	792870	
4 Perfluoropentanoic acid	262.90 > 219.00	1.822	1.835	-0.013	31900088	174.9		87.4	249960	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.861	1.872	-0.011	47824719	141.7		80.1		
	298.90 > 99.00	1.861	1.872	-0.011	24392241		1.96(0.00-0.00)	80.1		
6 Perfluorohexanoic acid	313.00 > 269.00	2.122	2.133	-0.011	30367858	188.7		94.4	703737	
D 7 13C2 PFHxA	315.00 > 270.00	2.122	2.134	-0.012	9044966	42.9		85.8	272049	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.461	2.474	-0.013	28382869	191.6		95.8	225664	
D 9 13C4-PFHpA	367.00 > 322.00	2.461	2.475	-0.014	7657909	39.7		79.4	207490	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.478	2.485	-0.007	42133990	173.8		95.5		
D 11 18O2 PFHxS	403.00 > 84.00	2.478	2.489	-0.011	11147782	38.3		81.0	329095	
D 12 M2-6:2FTS	429.00 > 409.00	2.789	2.805	-0.016	3409307	44.2		93.0		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.797	2.807	-0.010	11262289	177.0		93.3		

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	2.820	2.835	-0.015		7688496	37.5		75.0	192123	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.820	2.835	-0.015	1.000	29743583	189.3		94.7	342015	
413.00 > 169.00	2.813	2.835	-0.022	0.997	18781119		1.58(0.90-1.10)	94.7	380819	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.828	2.842	-0.014	1.000	36282267	168.5		88.5		
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.186	3.145	0.041	1.000	39756569	193.5		104	230631	M
499.00 > 99.00	3.195	3.145	0.050	1.003	9596909		4.14(0.90-1.10)	104	294050	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.186	3.202	-0.016	1.000	26057481	206.4		103	338058	
D 18 13C4 PFOS										
503.00 > 80.00	3.186	3.204	-0.018		9985826	41.3		86.5	102426	
D 19 13C5 PFNA										
468.00 > 423.00	3.195	3.208	-0.013		6983620	39.3		78.5	207659	
D 26 M2-8:2FTS										
529.00 > 509.00	3.523	3.545	-0.022		3659550	39.5		82.5		M
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.523	3.546	-0.023	1.000	12220206	173.0		90.3		
D 21 13C8 FOSA										
506.00 > 78.00	3.548	3.559	-0.011		15188110	41.4		82.8	281288	
D 23 13C2 PFDA										
515.00 > 470.00	3.548	3.560	-0.012		6226569	37.4		74.7	124238	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.548	3.560	-0.012	1.000	24265114	215.2		108	364832	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.557	3.561	-0.004	1.000	47690261	174.7		87.4	485165	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.696	3.710	-0.014		4115011	48.3		96.6		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.707	3.713	-0.006	1.003	16290792	203.8		102		
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.853	3.866	-0.013	1.000	24675284	198.3		103		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.862	3.875	-0.013		3122900	38.4		76.8		
D 30 13C2 PFUnA										
565.00 > 520.00	3.862	3.876	-0.014		4771549	36.5		73.0	166160	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.862	3.878	-0.016	1.000	18672321	193.0		96.5	304259	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.871	3.883	-0.012	1.002	11906031	209.4		105		
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.042	4.050	-0.008		4433562	50.4		101		
35 MeFOSA										
512.00 > 169.00	4.051	4.057	-0.006	1.000	17219029	207.6		104		
37 Perfluorododecanoic acid										
613.00 > 569.00	4.138	4.162	-0.024	1.000	19408225	199.4		99.7	328427	

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	4.152	4.164	-0.012	5320903	42.9	85.9	133785	M
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.227	4.235	-0.008	4425922	51.9	104		
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.236	4.242	-0.006	1.000	17404238	199.9	99.9	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.407	4.424	-0.017	1.000	18379771	197.7	98.9	284610
D 43 13C2-PFTeDA	715.00	> 670.00	4.635	4.655	-0.020		11353892	43.8	87.6	278458
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.635	4.657	-0.022	1.000	39468467	188.6	94.3	283243
	713.00	> 169.00	4.635	4.657	-0.022	1.000	6001611	6.58(0.00-0.00)	94.3	215597
D 44 13C2-PFHxDA	815.00	> 770.00	5.035	5.057	-0.022		5879424	47.0	94.0	81025
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.046	5.059	-0.013	1.000	20137749	203.8	102	23053
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.375	5.399	-0.024	1.000	17831844	233.5	117	22435

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L6_00002

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d

Injection Date: 01-Mar-2017 11:46:18

Instrument ID: A8_N

Lims ID: IC L6 Full

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 33

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

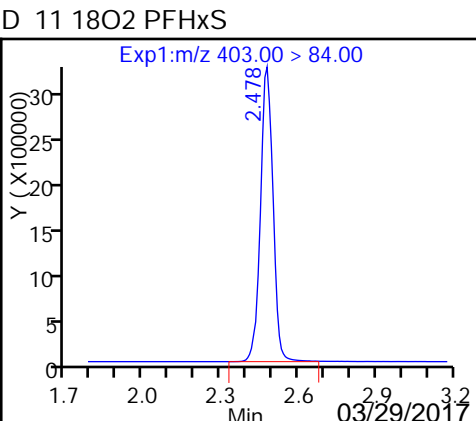
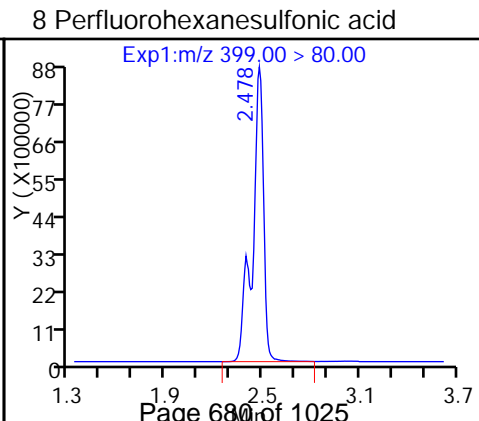
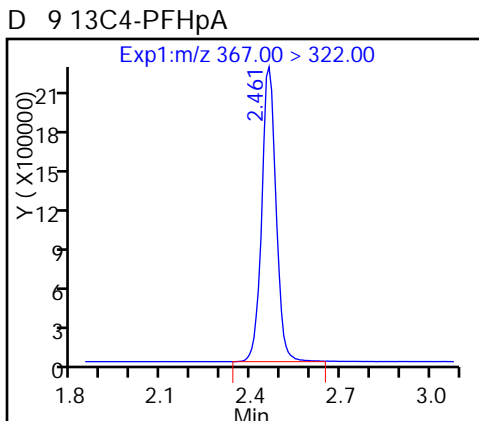
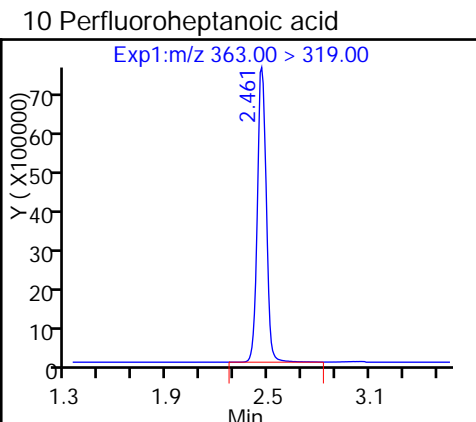
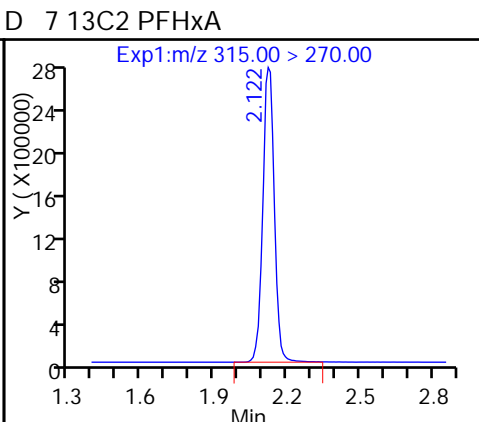
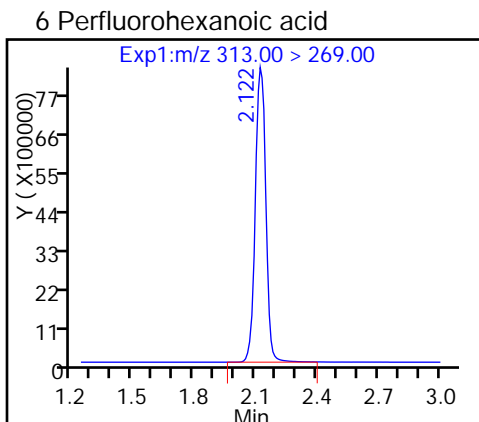
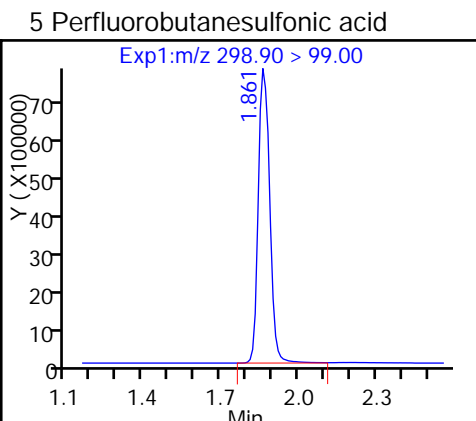
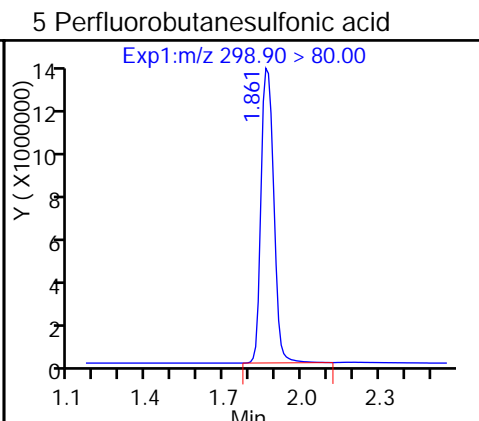
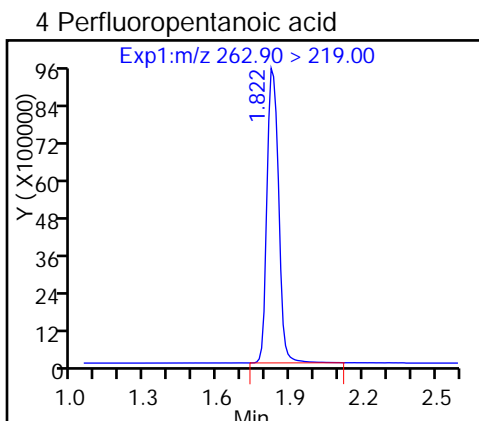
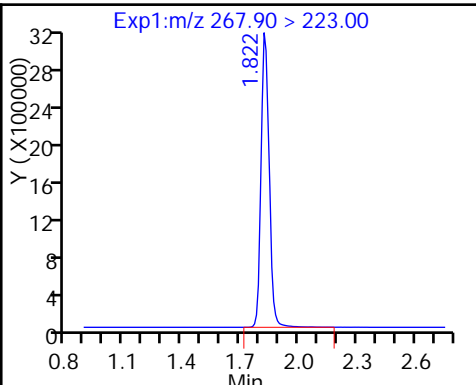
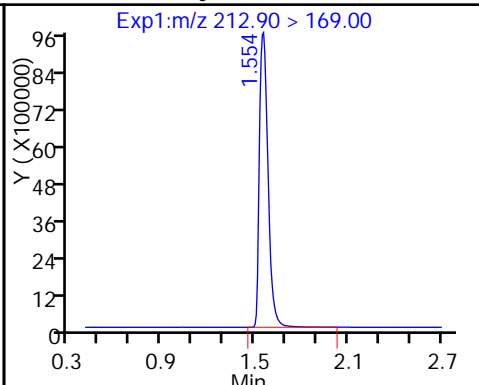
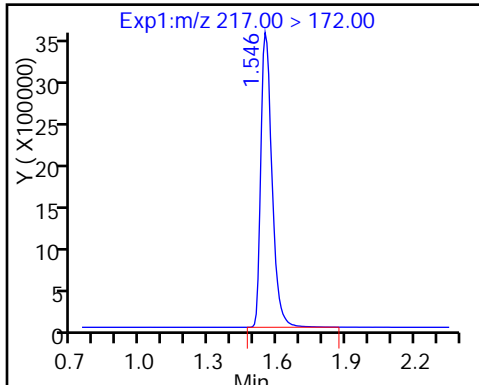
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

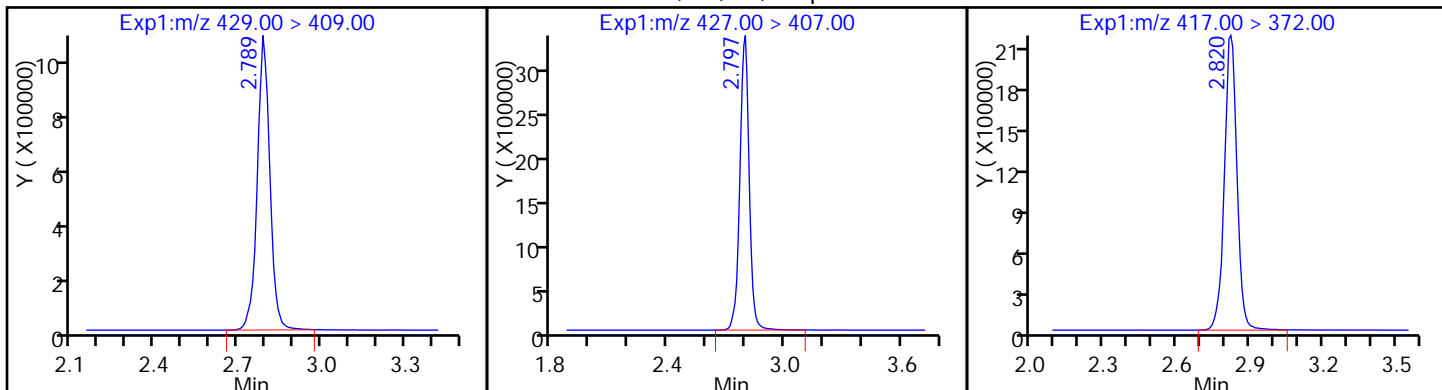
D 3 13C5-PFPeA



D 12 M2-6:2FTS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

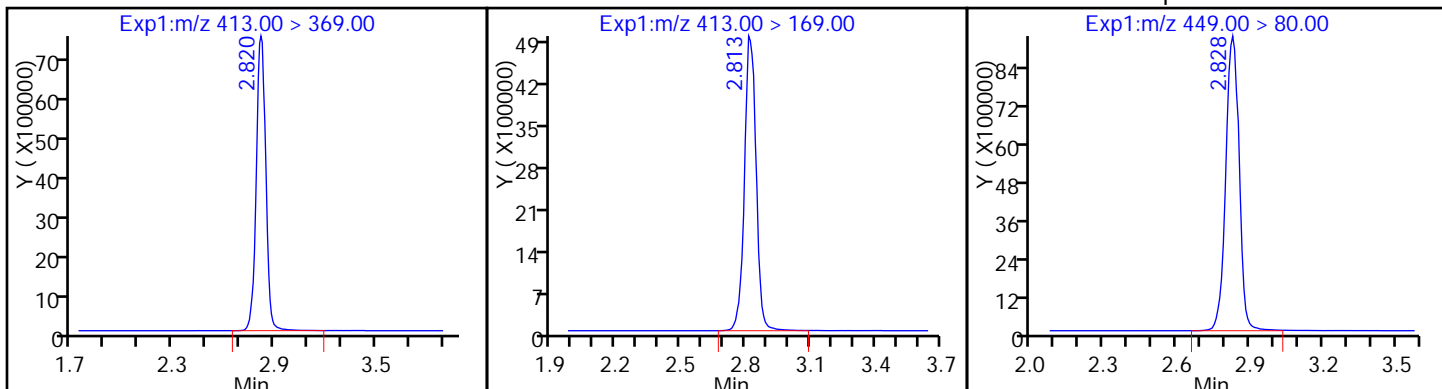
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

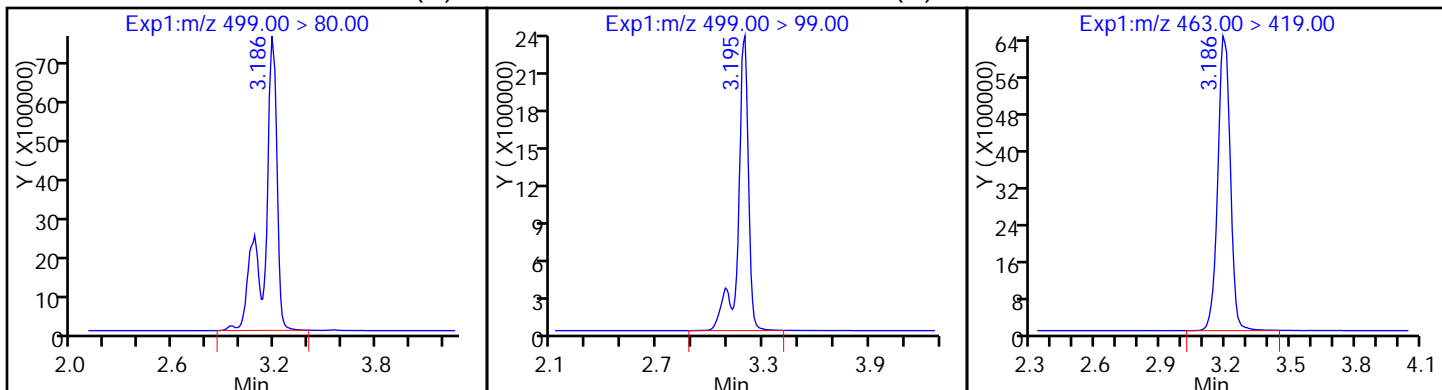
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

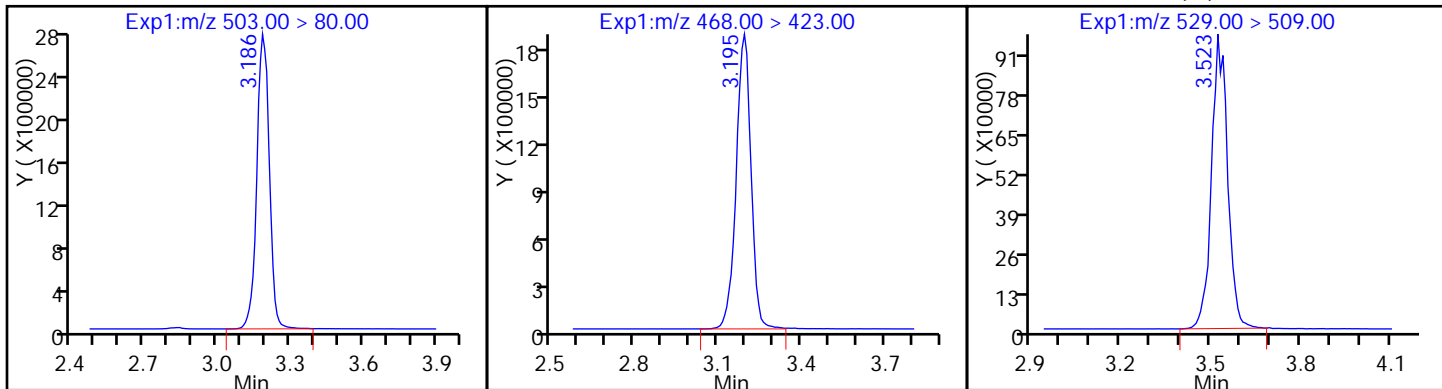
20 Perfluorononanoic acid



D 18 13C4 PFOS

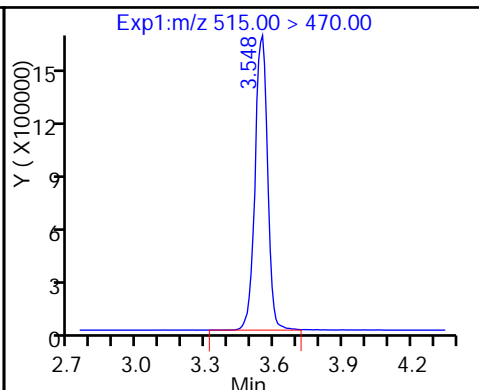
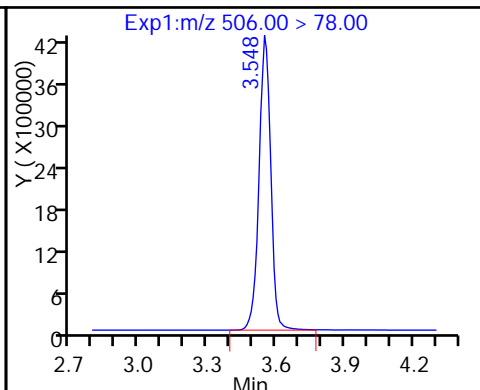
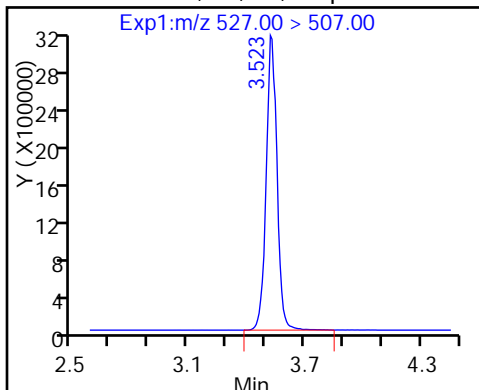
D 19 13C5 PFNA

D 26 M2-8:2FTS (M)



25 Sodium 1H,1H,2H,2H-perfluorooctanoate

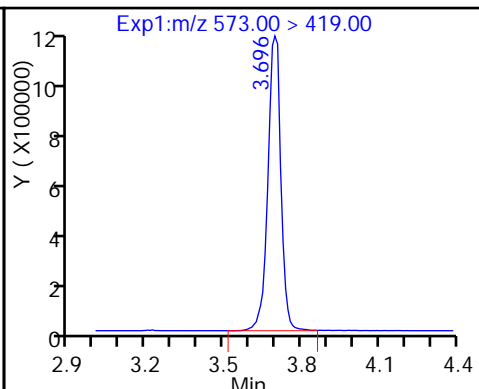
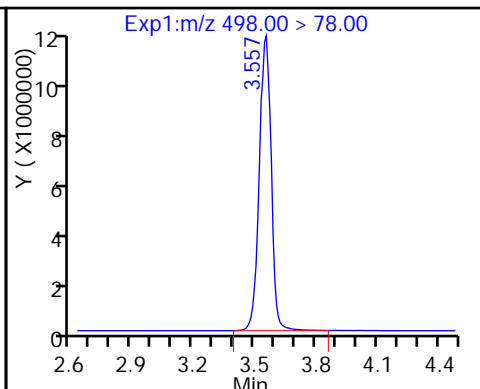
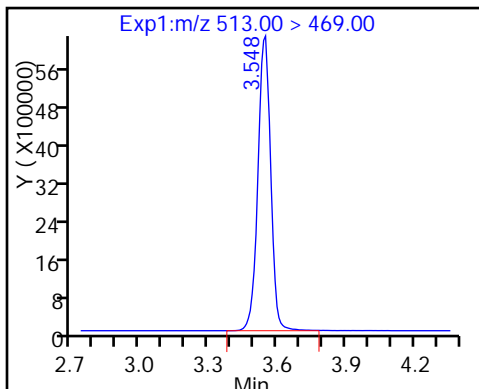
D 23 13C2 PFDA



24 Perfluorodecanoic acid

22 Perfluorooctane Sulfonamide

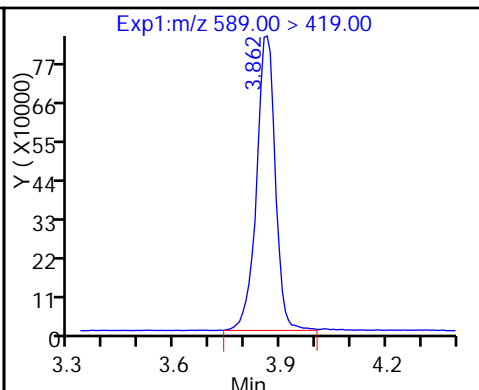
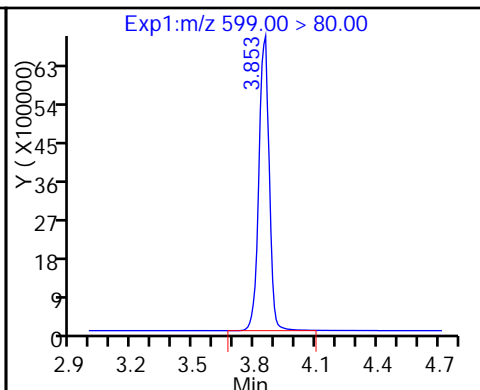
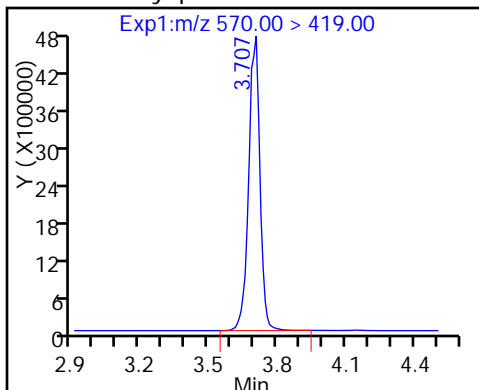
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonamide

29 Perfluorodecane Sulfonic acid

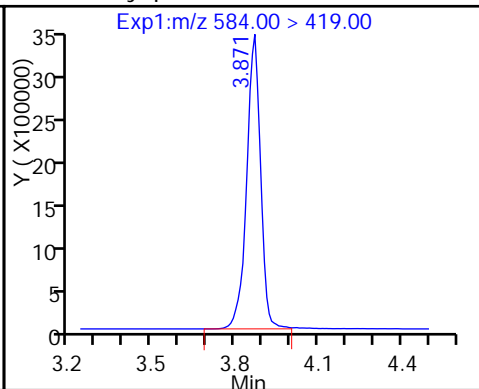
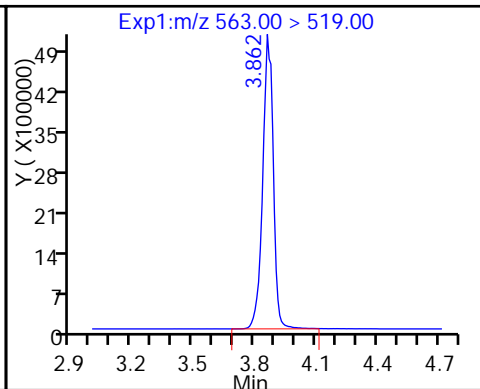
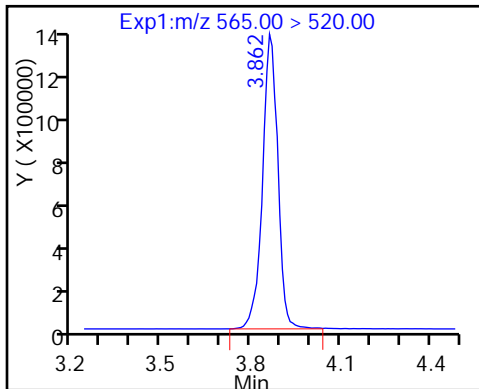
D 32 d5-NEtFOSAA



D 30 13C2 PFUnA

31 Perfluoroundecanoic acid

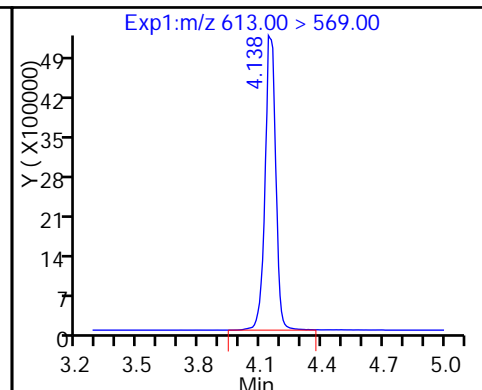
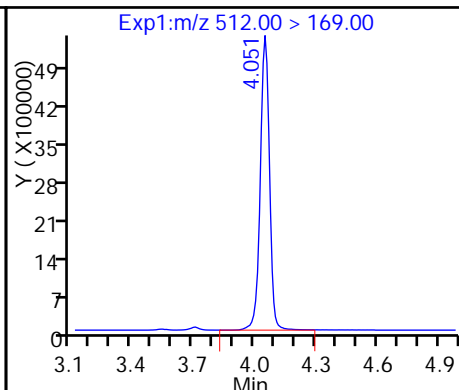
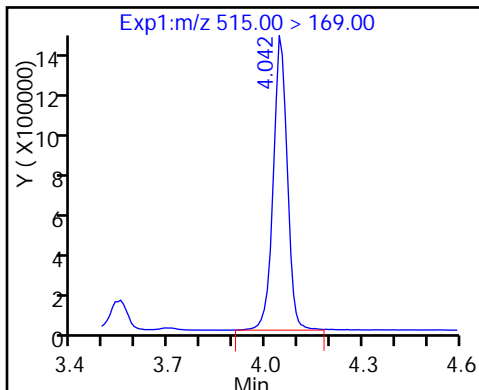
33 N-ethyl perfluorooctane sulfonamide



D 34 d-N-MeFOSA-M

35 MeFOSA

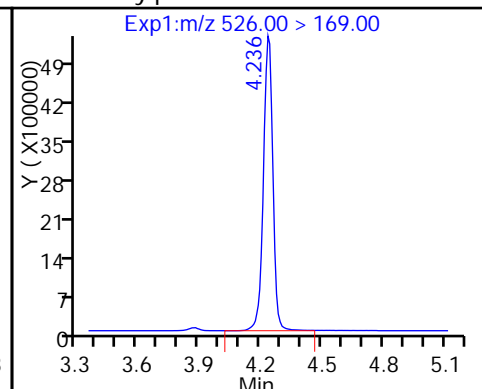
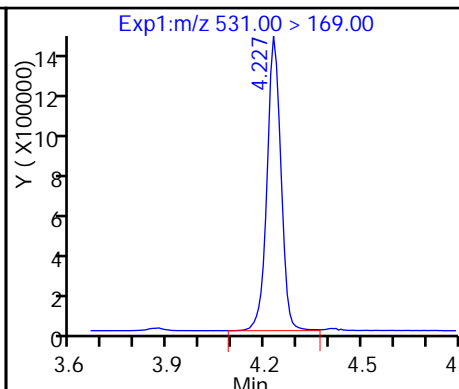
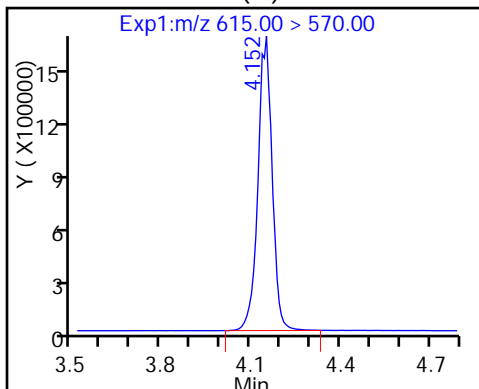
37 Perfluorododecanoic acid



D 36 13C2 PFDa (M)

D 38 d-N-EtFOSA-M

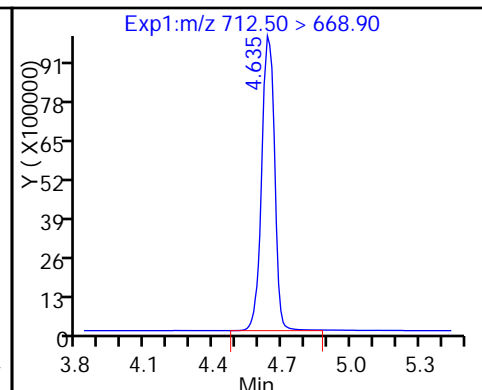
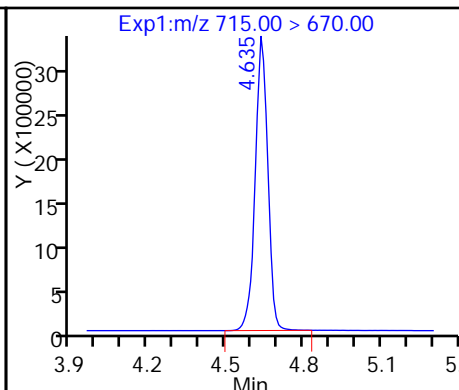
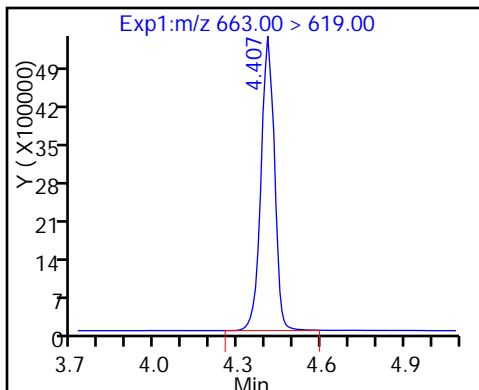
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

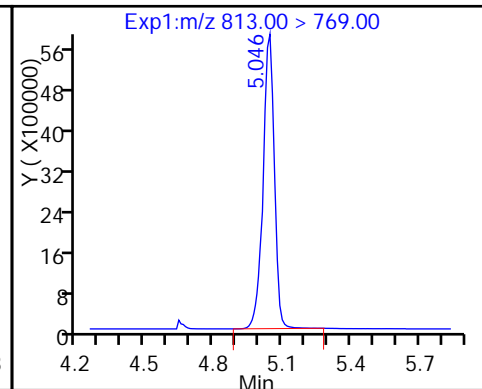
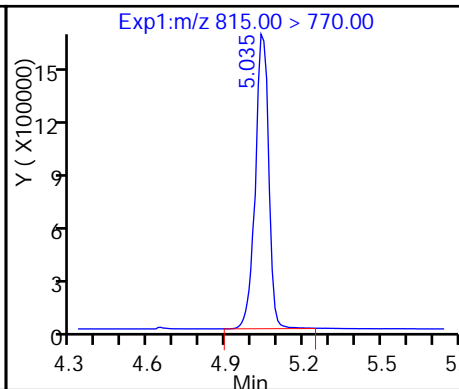
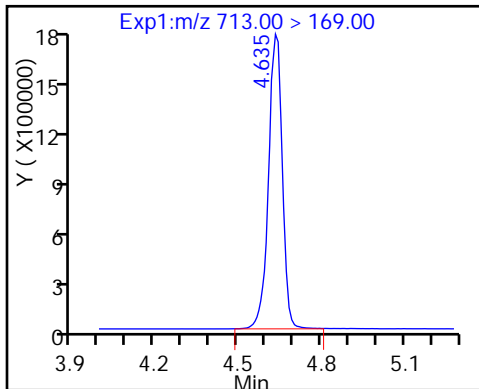
42 Perfluorotetradecanoic acid



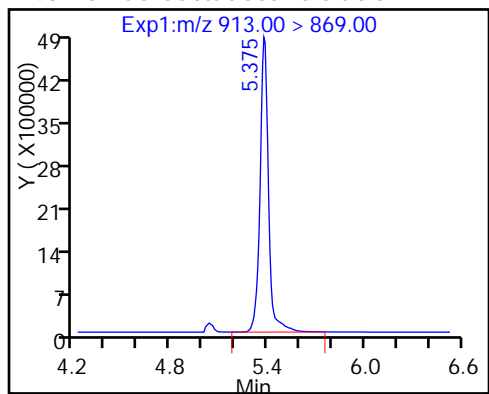
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

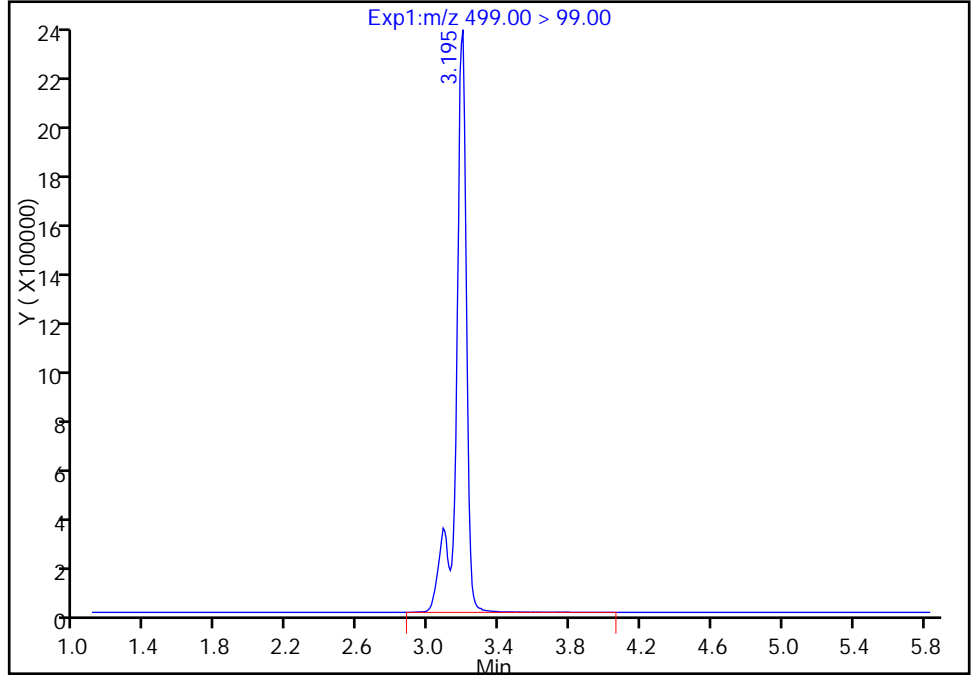
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Injection Date: 01-Mar-2017 11:46:18 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

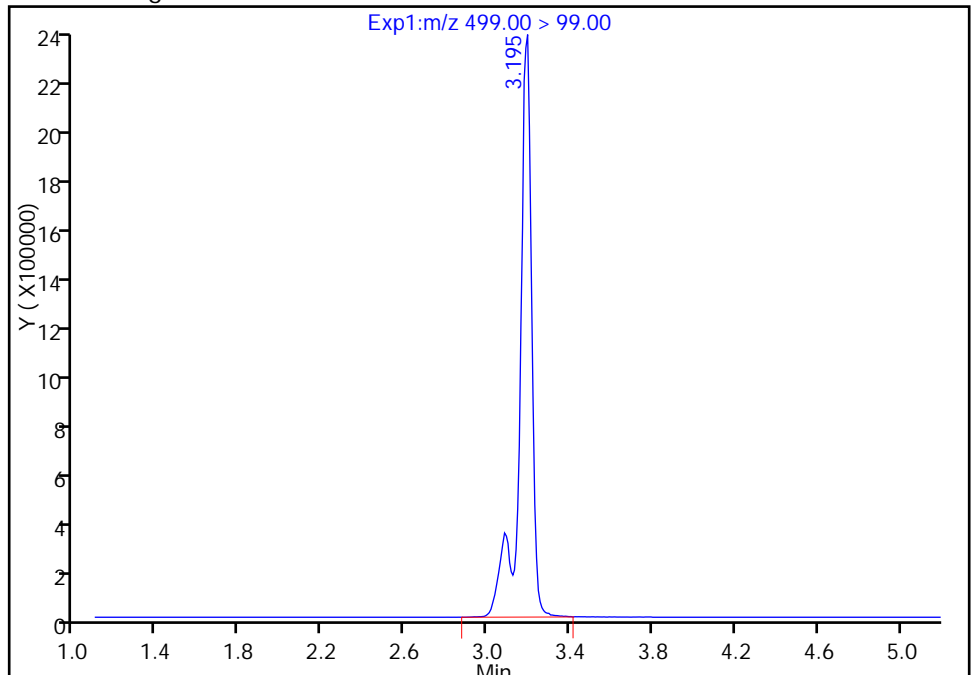
RT: 3.19
Area: 9641533
Amount: 146.9287
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 9596909
Amount: 193.5024
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:18
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

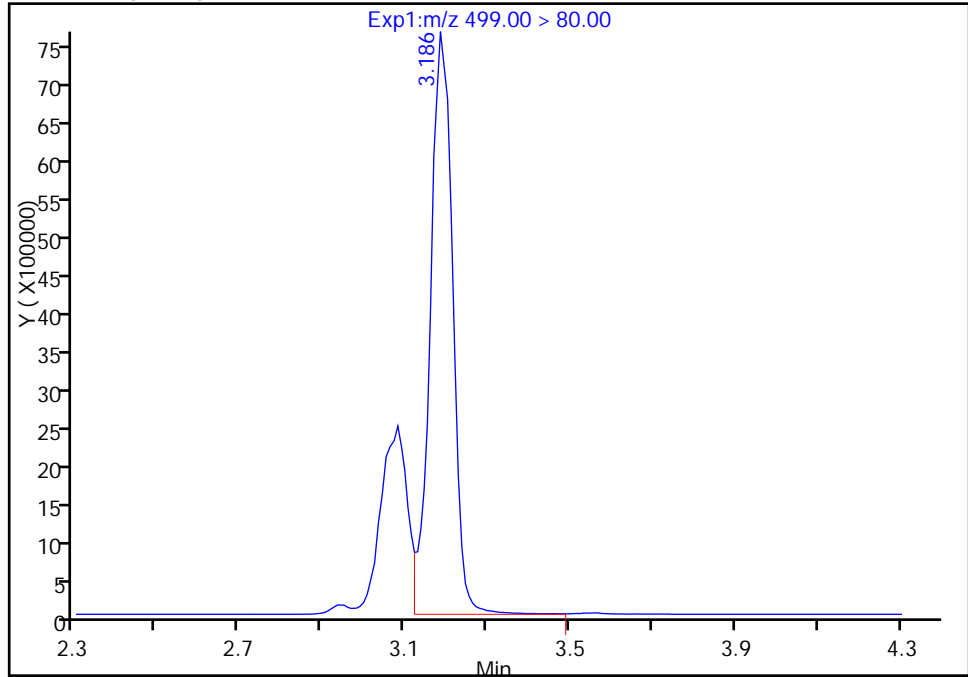
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Injection Date: 01-Mar-2017 11:46:18 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

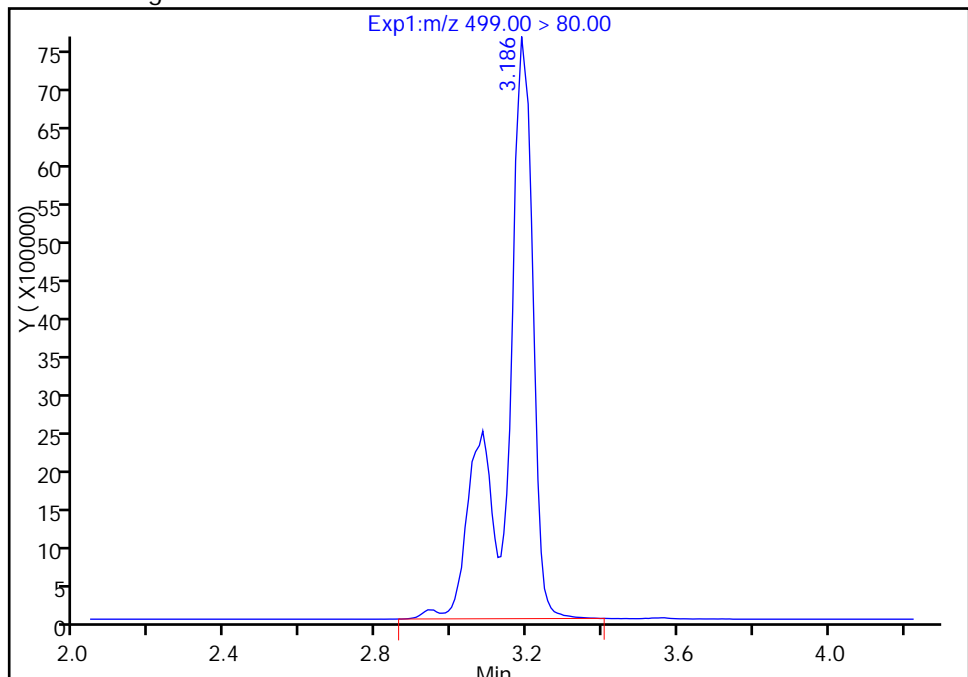
RT: 3.19
Area: 28733218
Amount: 146.9287
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 39756569
Amount: 193.5024
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:18

Audit Action: Manually Integrated

Audit Reason: Baseline

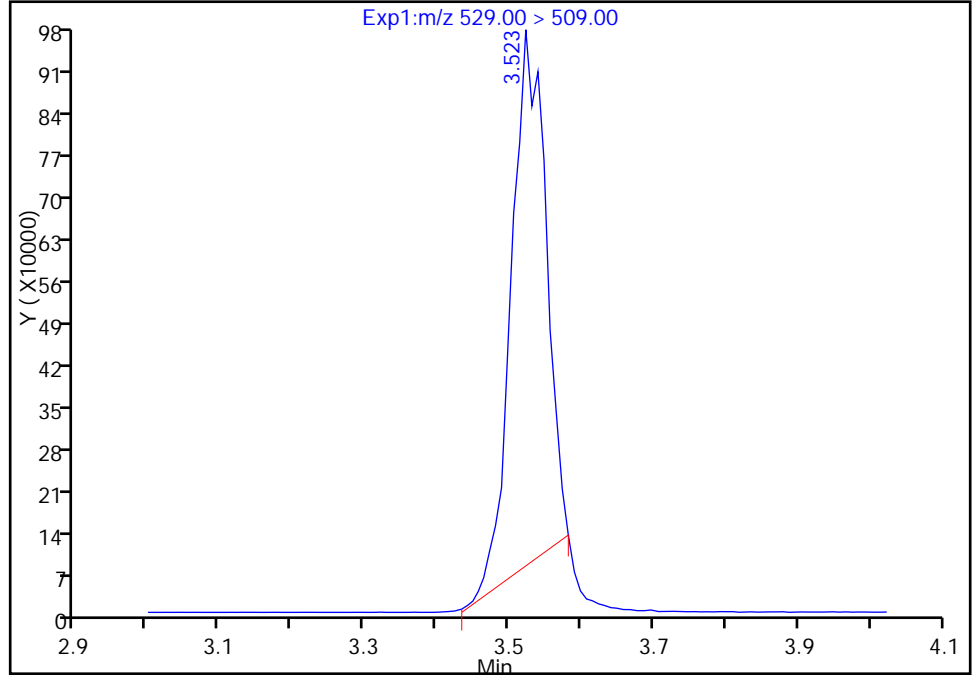
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d
Injection Date: 01-Mar-2017 11:46:18 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

D 26 M2-8:2FTS, CAS: STL02280
Signal: 1

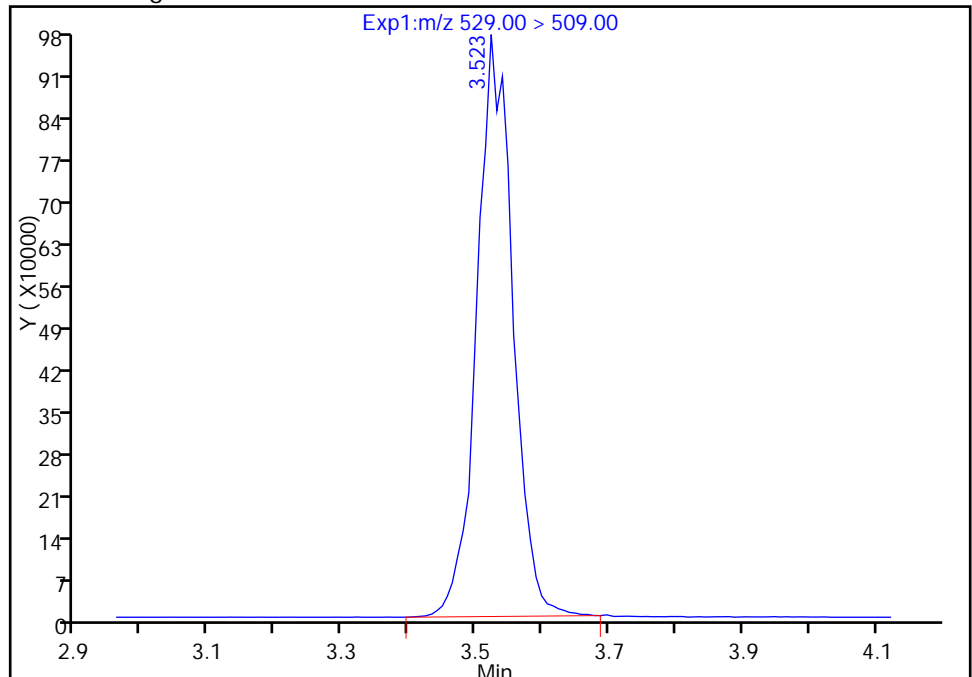
RT: 3.52
Area: 2972144
Amount: 32.946881
Amount Units: ng/ml

Processing Integration Results



RT: 3.52
Area: 3659550
Amount: 39.519130
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:18
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

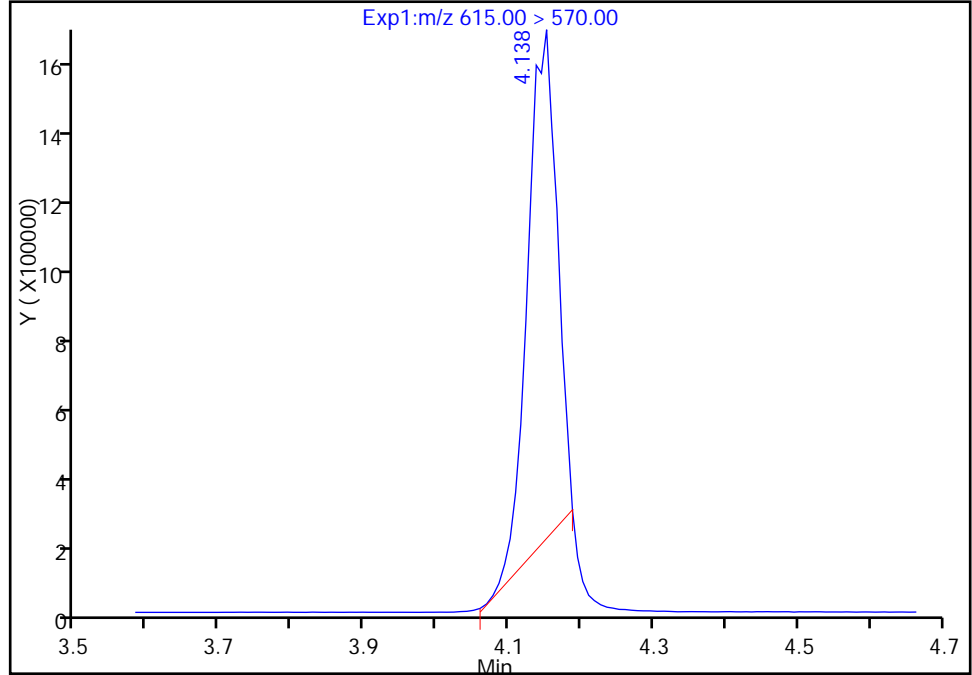
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d
Injection Date: 01-Mar-2017 11:46:18 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

D 36 13C2 PFD_oA, CAS: STL00998
Signal: 1

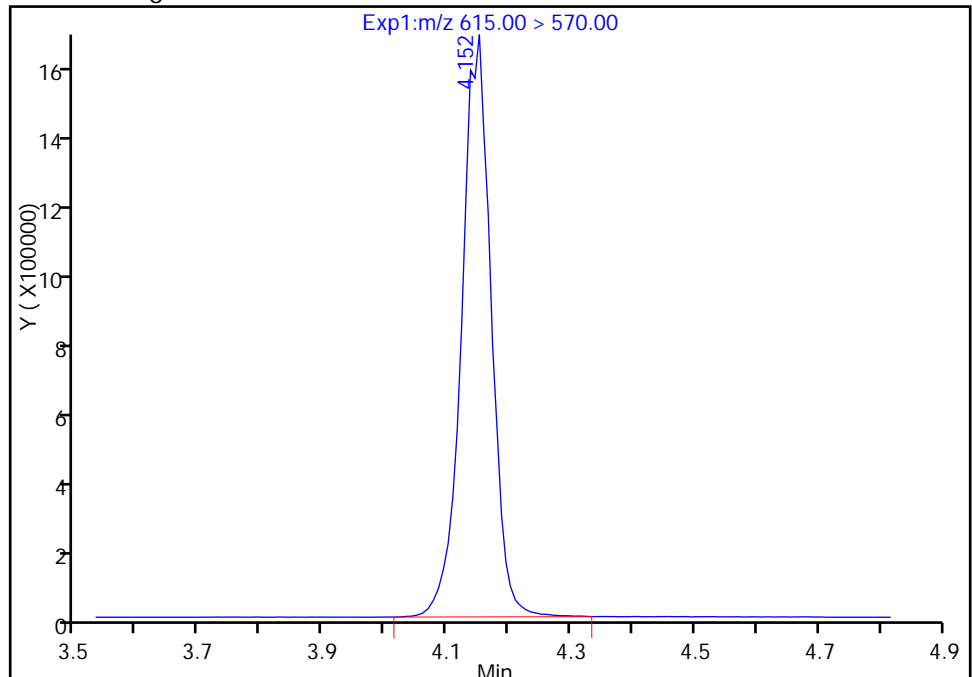
RT: 4.14
Area: 3992056
Amount: 33.402250
Amount Units: ng/ml

Processing Integration Results



RT: 4.15
Area: 5320903
Amount: 42.929870
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 01-Mar-2017 15:43:18
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: ICV 320-152681/13 Calibration Date: 03/01/2017 12:31
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.01CURVE_014.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.9133		53.9	50.0	7.8	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.035		52.9	50.0	5.7	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.526		47.1	44.3	6.5	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9703		54.5	50.0	9.1	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	1.045		54.0	50.0	8.0	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.022		47.0	47.3	-0.6	25.0
6:2FTS	L2ID		0.9688		51.7	47.4	9.1	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.089		50.3	47.6	5.6	25.0
Perfluorooctanoic acid (FOA)	AveID	1.022	1.032		50.5	50.0	1.0	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	1.016		56.2	50.0	12.4	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9166		44.5	47.8	-6.8	25.0
8:2FTS	L2ID		0.9785		50.6	47.9	5.7	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9538		52.7	50.0	5.3	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9140		50.9	50.0	1.7	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	1.014		52.2	50.0	4.4	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6364		51.6	48.3	6.8	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9789		48.3	50.0	-3.4	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.998		54.8	50.0	9.7	25.0
MeFOSA	AveID	0.9355	0.9755		52.1	50.0	4.3	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9493		51.9	50.0	3.8	25.0
N-EtFOSA-M	AveID	0.9837	1.027		52.2	50.0	4.4	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9439		54.0	50.0	8.1	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	2.200		55.9	50.0	11.9	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9762		52.3	50.0	4.6	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.8478		59.1	50.0	18.2	25.0
13C4 PFBA	Ave	292242	262151		44.9	50.0	-10.3	50.0
13C5-PFPeA	Ave	232192	201954		43.5	50.0	-13.0	50.0
13C2 PFHxA	Ave	210884	190101		45.1	50.0	-9.9	50.0
13C4-PFHpA	Ave	192959	172560		44.7	50.0	-10.6	50.0
18O2 PFHxS	Ave	290899	261134		42.5	47.3	-10.2	50.0
M2-6:2FTS	Ave	77178	67962		41.8	47.5	-11.9	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: ICV 320-152681/13 Calibration Date: 03/01/2017 12:31
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.01CURVE_014.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	183068		44.7	50.0	-10.7	50.0
13C4 PFOS	Ave	241637	218953		43.3	47.8	-9.4	50.0
13C5 PFNA	Ave	177866	156812		44.1	50.0	-11.8	50.0
M2-8:2FTS	Ave	92602	84040		43.5	47.9	-9.2	50.0
13C2 PFDA	Ave	166704	144616		43.4	50.0	-13.3	50.0
13C8 FOSA	Ave	366918	337473		46.0	50.0	-8.0	50.0
d3-NMeFOSAA	Ave	85186	77141		45.3	50.0	-9.4	50.0
d5-NEtFOSAA	Ave	81371	71203		43.8	50.0	-12.5	50.0
13C2 PFUnA	Ave	130805	114237		43.7	50.0	-12.7	50.0
d-N-MeFOSA-M	Ave	87983	80006		45.5	50.0	-9.1	50.0
13C2 PFDoA	Ave	123944	108741		43.9	50.0	-12.3	50.0
d-N-EtFOSA-M	Ave	85249	76986		45.2	50.0	-9.7	50.0
13C2-PFTEtDA	Ave	259165	236701		45.7	50.0	-8.7	50.0
13C2-PFHxDA	Ave	125061	112974		45.2	50.0	-9.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_014.d
 Lims ID: ICV Full
 Client ID:
 Sample Type: ICV
 Inject. Date: 01-Mar-2017 12:31:14 ALS Bottle#: 36 Worklist Smp#: 13
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist:
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 01-Mar-2017 15:43:02 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 14:14:09

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	1.555	1.553	0.002	13107554	44.9		89.7	571827	
2 Perfluorobutyric acid	212.90 > 169.00	1.555	1.558	-0.003	11971584	53.9			121786	
D 3 13C5-PFPeA	267.90 > 223.00	1.833	1.832	0.001	10097715	43.5		87.0	496223	
4 Perfluoropentanoic acid	262.90 > 219.00	1.833	1.835	-0.002	10448730	52.9			87028	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.873	1.872	0.001	17632155	47.1				
	298.90 > 99.00	1.873	1.872	0.001	7534911		2.34(0.00-0.00)			
6 Perfluorohexanoic acid	313.00 > 269.00	2.131	2.133	-0.002	9222580	54.5			268407	
D 7 13C2 PFHxA	315.00 > 270.00	2.131	2.134	-0.003	9505049	45.1		90.1	530814	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.472	2.474	-0.002	9017371	54.0			66655	
D 9 13C4-PFHpA	367.00 > 322.00	2.472	2.475	-0.003	8627993	44.7		89.4	271737	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.487	2.485	0.002	12611730	47.0				
D 11 18O2 PFHxS	403.00 > 84.00	2.487	2.489	-0.002	12351647	42.5		89.8	385748	
D 12 M2-6:2FTS	429.00 > 409.00	2.806	2.805	0.001	3228217	41.8		88.1		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.814	2.807	0.007	3120919	51.7				

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	2.837	2.835	0.002	1.000	9449558	50.5			213564	
413.00 > 169.00	2.837	2.835	0.002	1.000	5623231		1.68(0.90-1.10)		140434	
D 14 13C4 PFOA										
417.00 > 372.00	2.837	2.835	0.002		9153420	44.7		89.3	333609	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.837	2.842	-0.005	1.000	11351727	50.3				
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.205	3.145	0.060	1.000	9582813	44.5			334324	
499.00 > 99.00	3.205	3.145	0.060	1.000	2425871		3.95(0.90-1.10)		705291	
20 Perfluorononanoic acid										
463.00 > 419.00	3.205	3.202	0.003	1.000	7968593	56.2			153203	
D 18 13C4 PFOS										
503.00 > 80.00	3.196	3.204	-0.008		10465937	43.3		90.6	197571	
D 19 13C5 PFNA										
468.00 > 423.00	3.205	3.208	-0.003		7840582	44.1		88.2	207818	
D 26 M2-8:2FTS										
529.00 > 509.00	3.539	3.545	-0.006		4025496	43.5		90.8		
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.539	3.546	-0.007	1.000	3938788	50.6				
D 21 13C8 FOSA										
506.00 > 78.00	3.573	3.559	0.014		16873653	46.0		92.0	313140	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.556	3.560	-0.004	1.000	6896912	52.7			187300	
D 23 13C2 PFDA										
515.00 > 470.00	3.556	3.560	-0.004		7230800	43.4		86.8	175077	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.573	3.561	0.012	1.000	15422698	50.9			322048	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.706	3.710	-0.004		3857056	45.3		90.6		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.706	3.713	-0.007	1.000	3910569	52.2				
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.862	3.866	-0.004	1.000	6723491	51.6				
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.871	3.875	-0.004		3560139	43.8		87.5		
D 30 13C2 PFUnA										
565.00 > 520.00	3.880	3.876	0.004		5711825	43.7		87.3	216355	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.871	3.878	-0.007	1.000	5591035	48.3			127404	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.880	3.883	-0.003	1.002	3554390	54.8				
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.062	4.050	0.012		4000304	45.5		90.9		
35 MeFOSA										
512.00 > 169.00	4.070	4.057	0.013	1.000	3902092	52.1				
37 Perfluorododecanoic acid										
613.00 > 569.00	4.155	4.162	-0.007	1.000	5161221	51.9			95672	

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	4.155	4.164	-0.009		5437061	43.9	87.7	128920	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.247	4.235	0.012		3849308	45.2	90.3		
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.256	4.242	0.014	1.000	3953838	52.2			
41 Perfluorotridecanoic acid	663.00 > 619.00	4.417	4.424	-0.007	1.000	5131863	54.0		76799	
D 43 13C2-PFTeDA	715.00 > 670.00	4.651	4.655	-0.004		11835060	45.7	91.3	267097	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.651	4.657	-0.006	1.000	11961738	55.9		110355	
	713.00 > 169.00	4.641	4.657	-0.016	0.998	1569975		7.62(0.00-0.00)	118035	
D 44 13C2-PFHxDA	815.00 > 770.00	5.049	5.057	-0.008		5648694	45.2	90.3	81356	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.049	5.059	-0.010	1.000	5307447	52.3		5849	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.384	5.399	-0.015	1.000	4609565	59.1		5082	

Reagents:

LCPFCIC_FULL_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_014.d

Injection Date: 01-Mar-2017 12:31:14

Instrument ID: A8_N

Lims ID: ICV Full

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 36

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

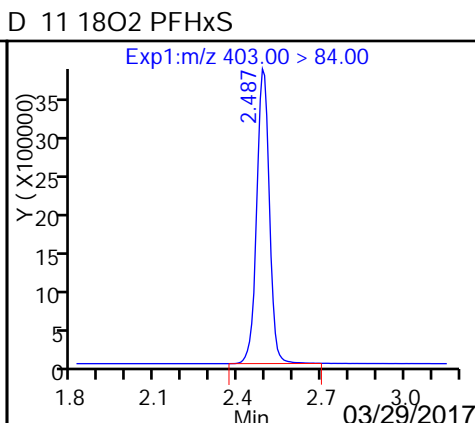
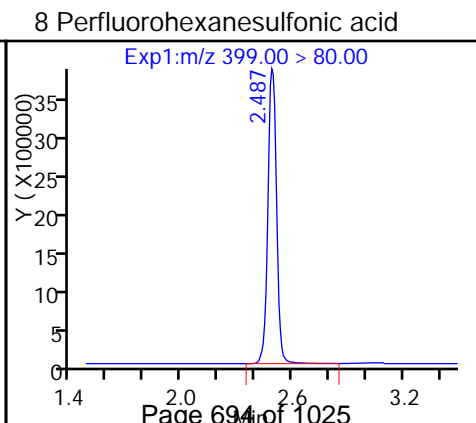
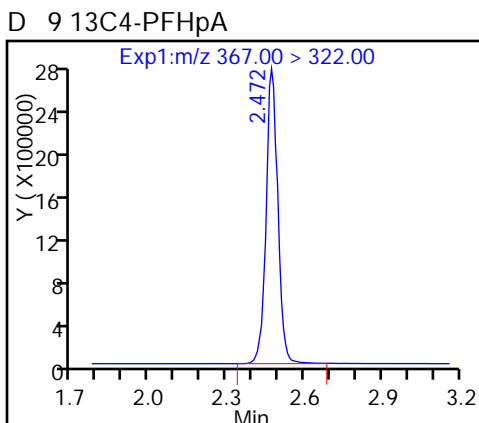
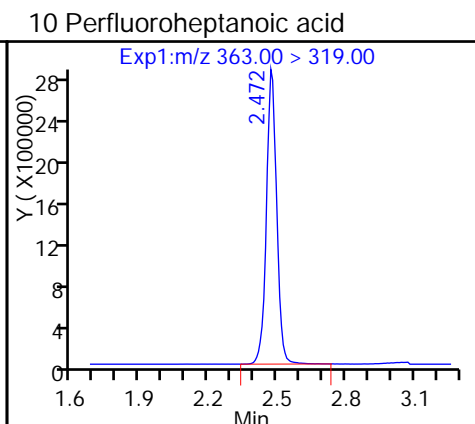
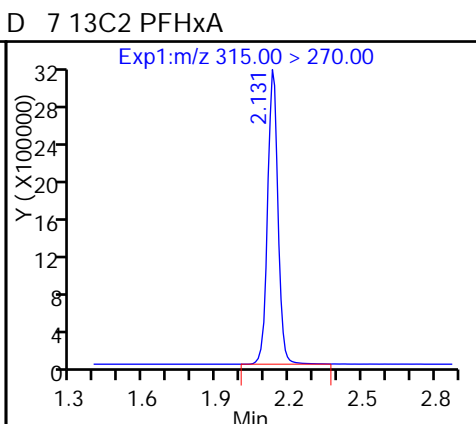
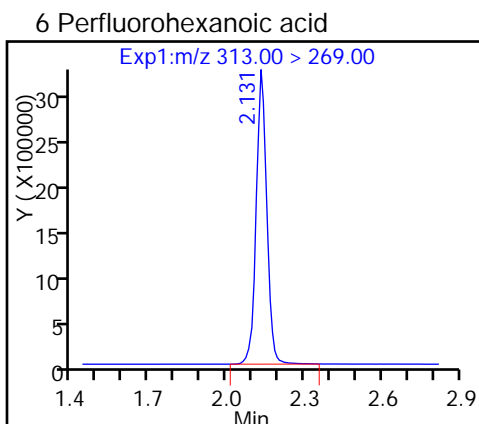
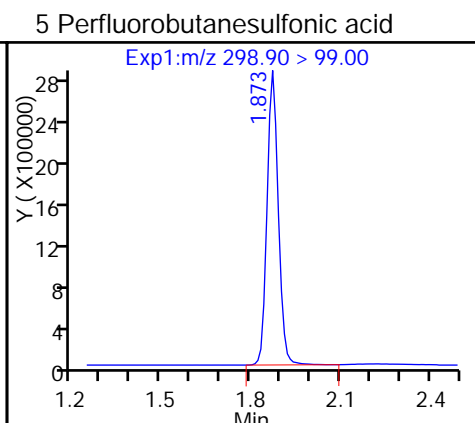
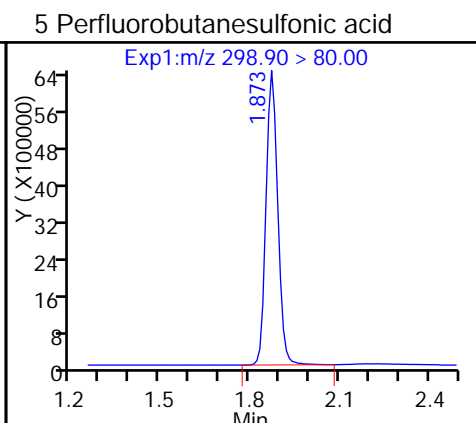
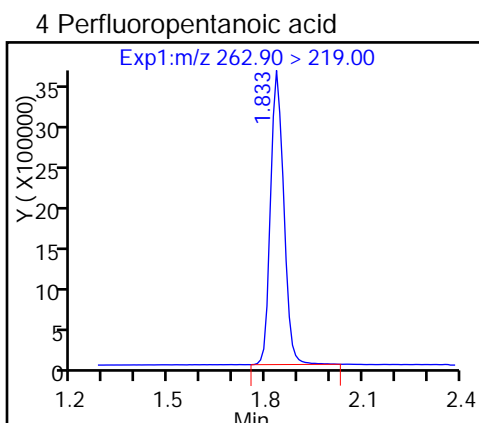
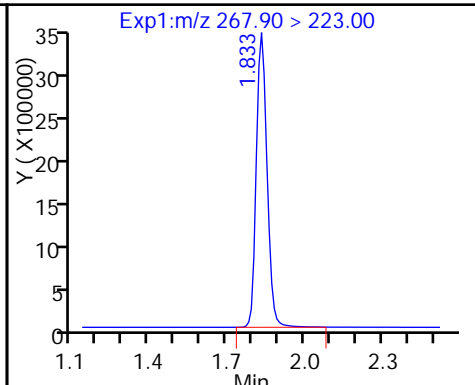
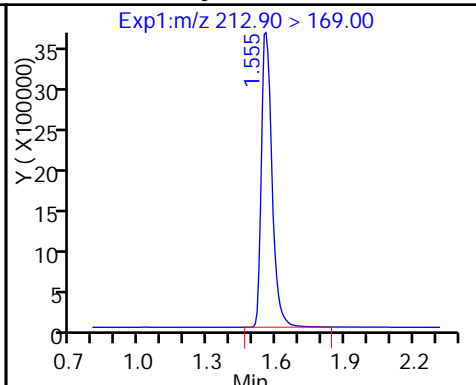
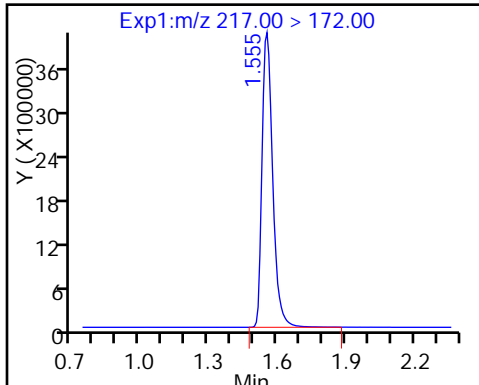
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

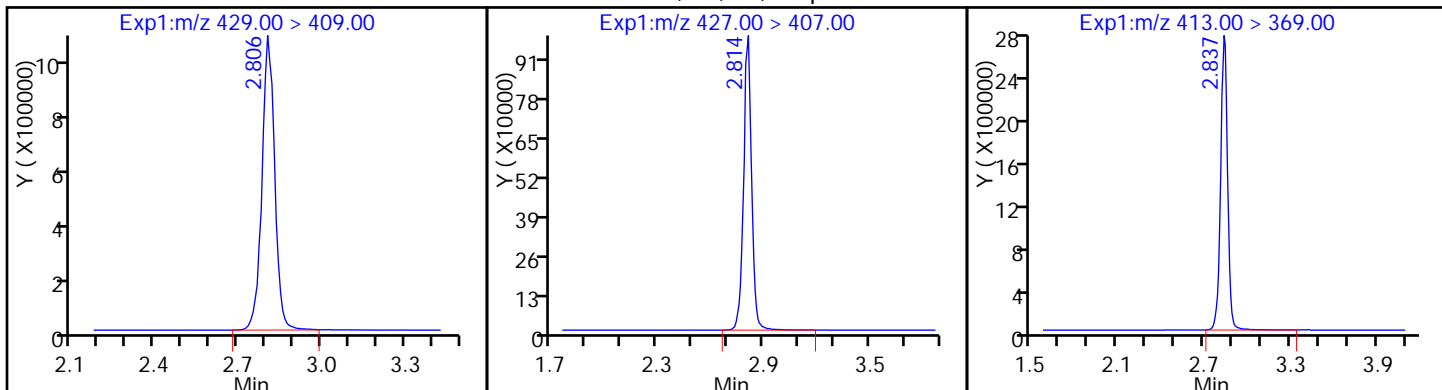
2 Perfluorobutyric acid

D 3 13C5-PFPeA



D 12 M2-6:2FTS

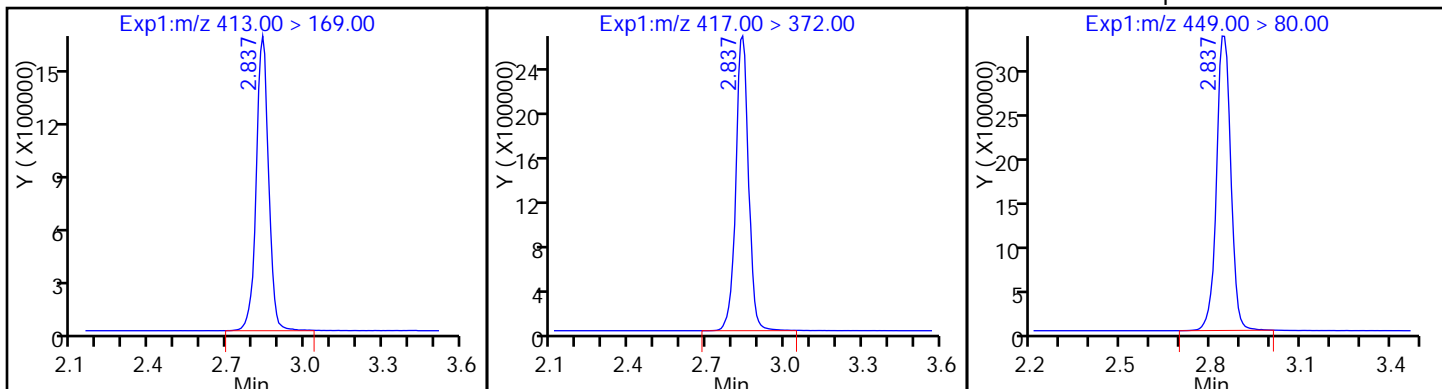
13 Sodium 1H,1H,2H,2H-perfluorooctane15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

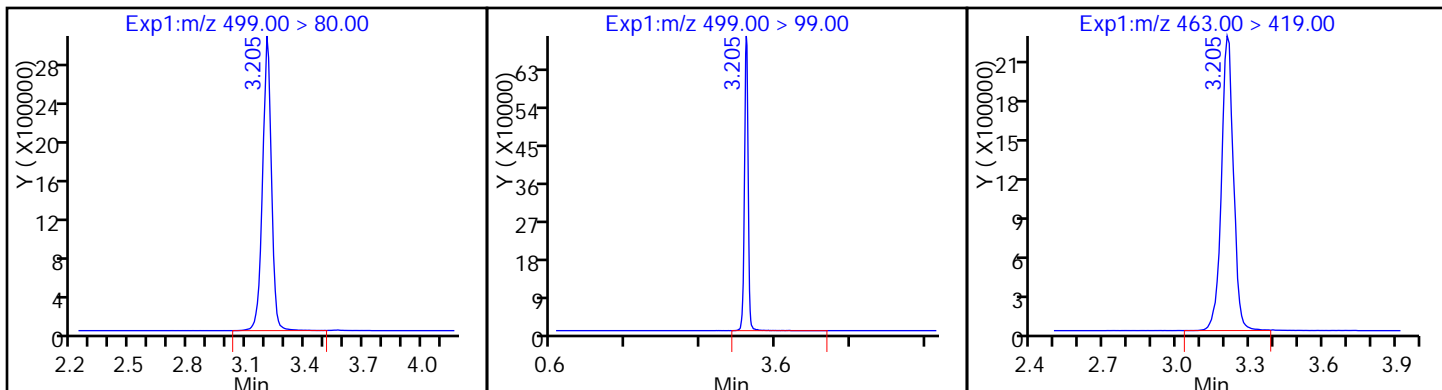
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

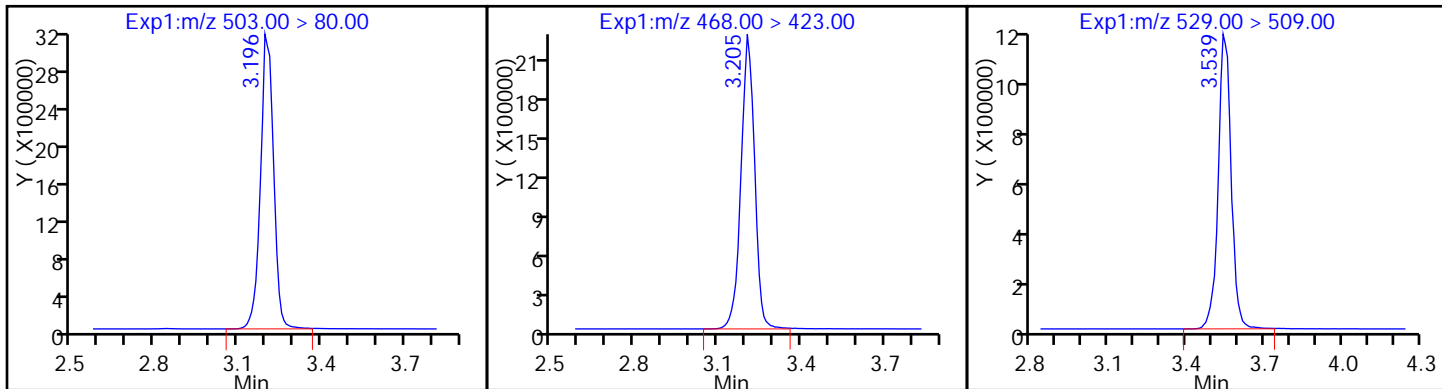
20 Perfluorononanoic acid



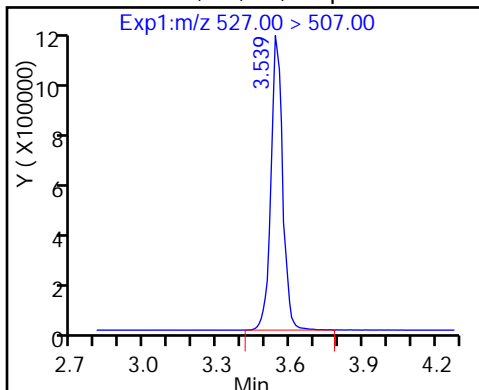
D 18 13C4 PFOS

D 19 13C5 PFNA

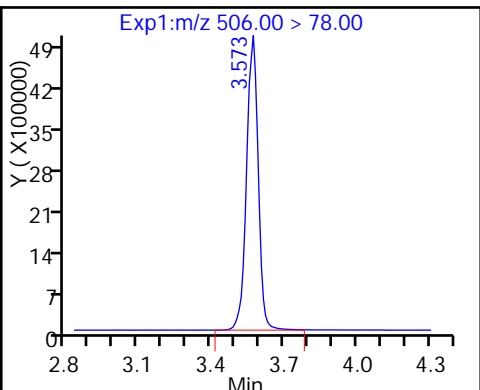
D 26 M2-8:2FTS



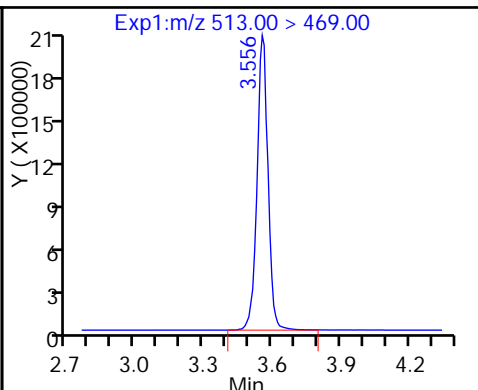
25 Sodium 1H,1H,2H,2H-perfluorooctanoate



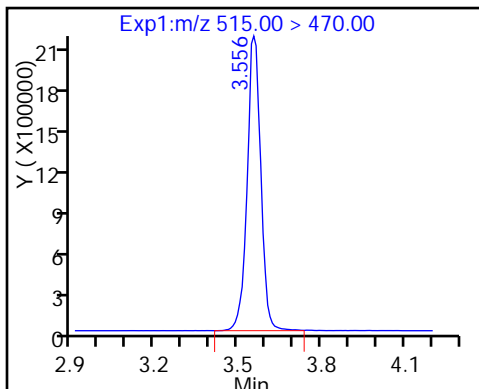
21 13C8 FOSA



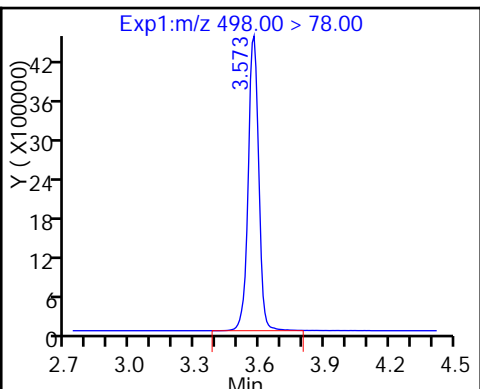
24 Perfluorodecanoic acid



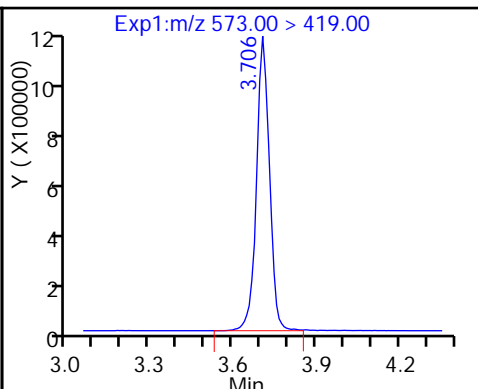
D 23 13C2 PFDA



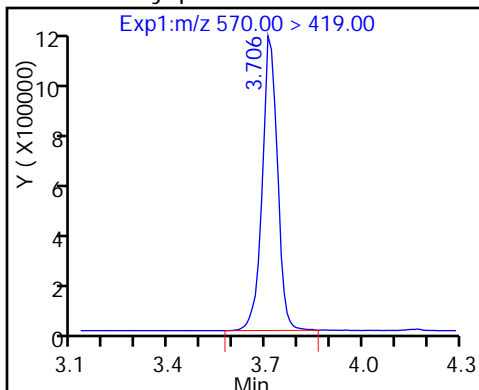
22 Perfluorooctane Sulfonamide



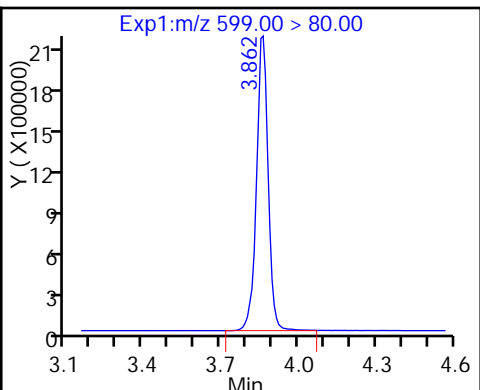
D 27 d3-NMeFOSAA



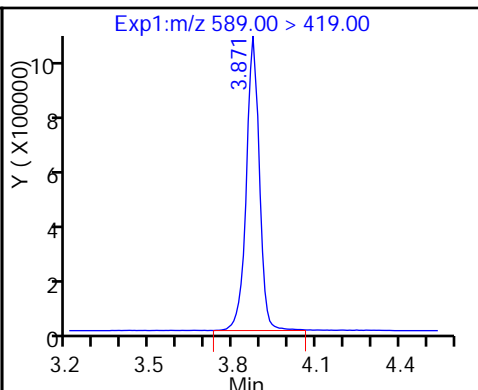
28 N-methyl perfluorooctane sulfonami



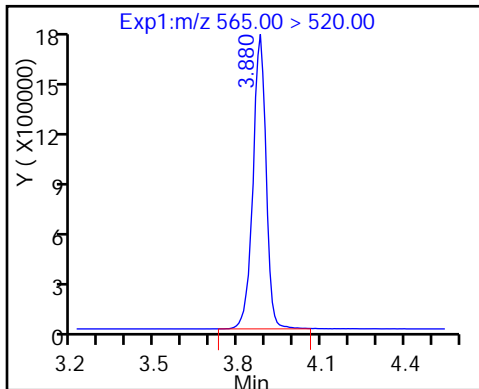
29 Perfluorodecane Sulfonic acid



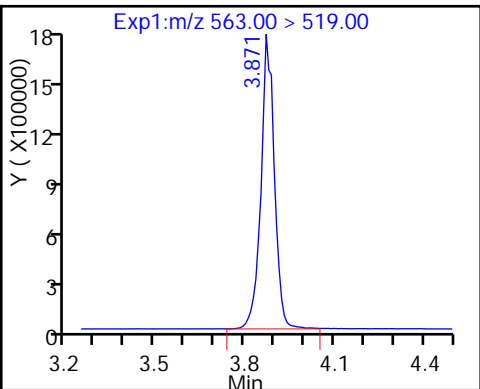
D 32 d5-NEtFOSAA



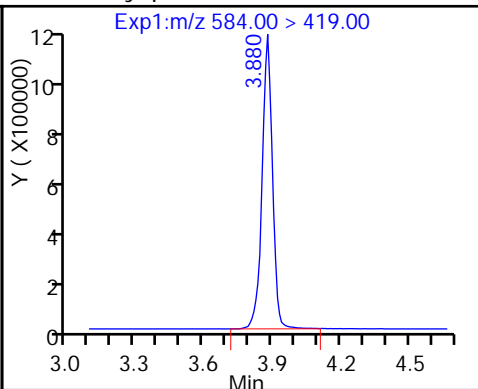
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid



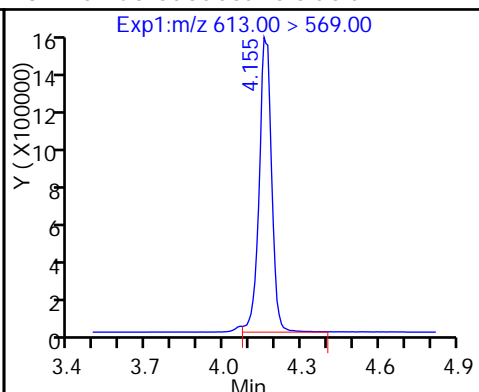
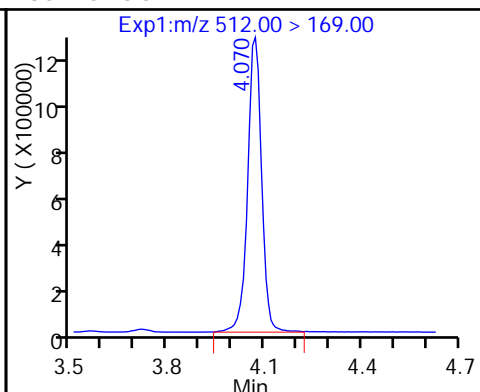
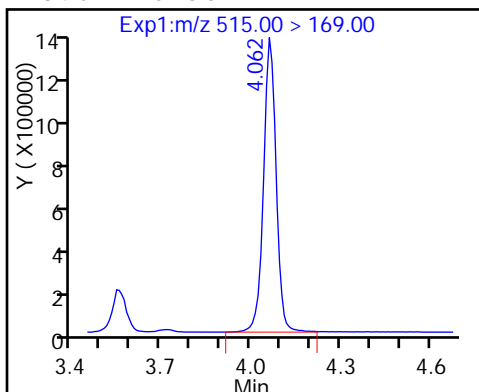
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

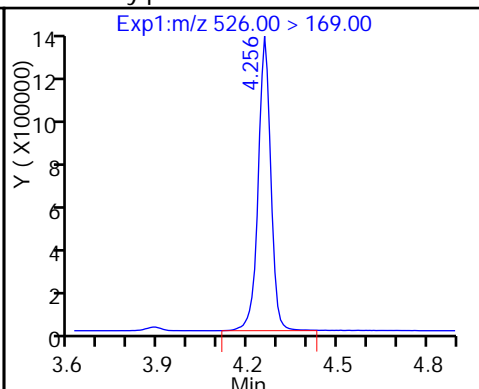
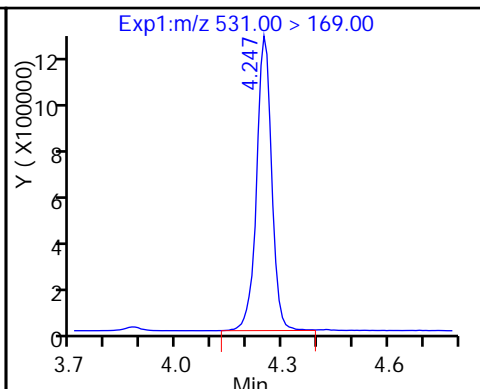
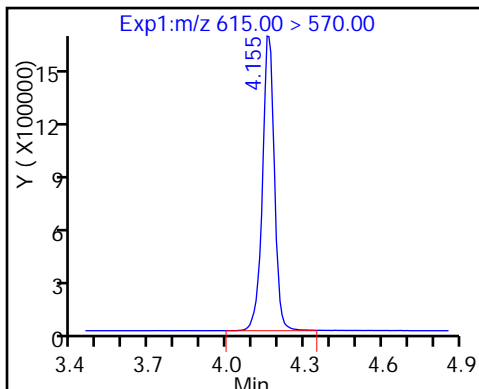
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

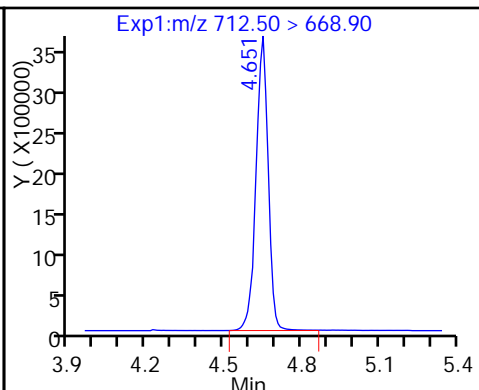
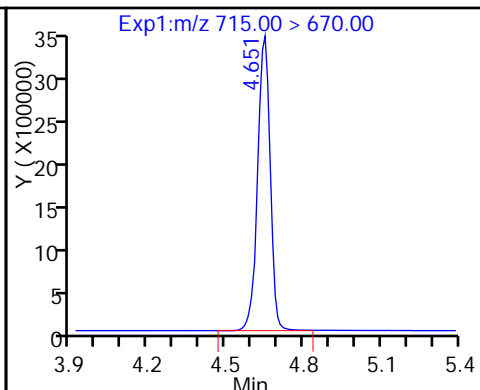
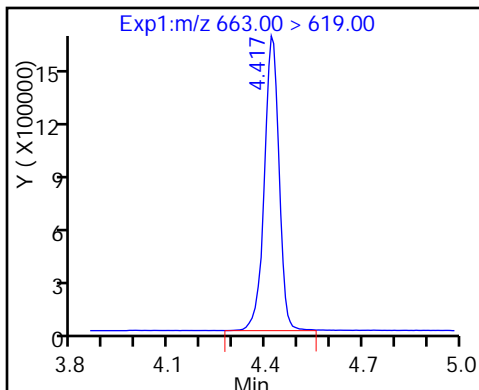
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

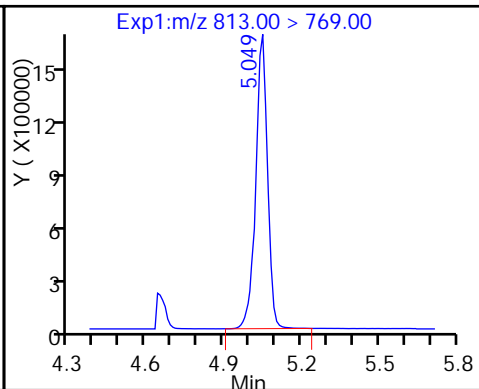
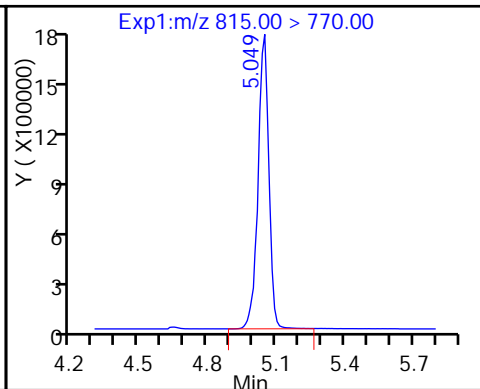
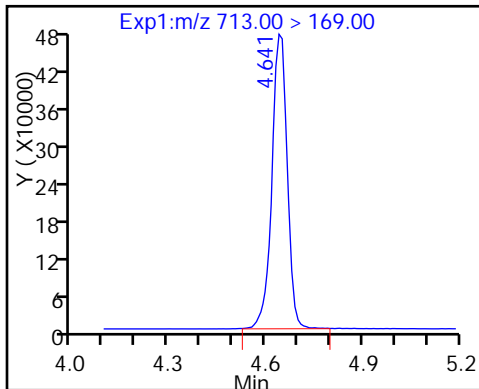
42 Perfluorotetradecanoic acid



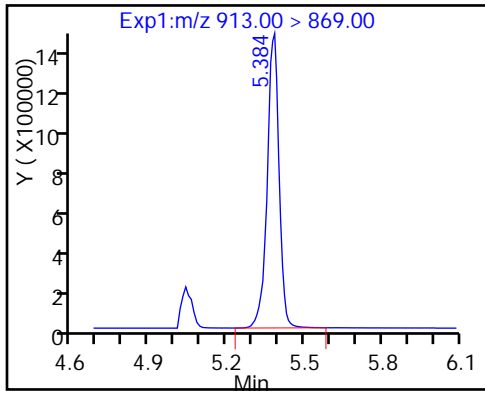
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-153421/46 Calibration Date: 03/06/2017 01:41
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.04A_046.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8826		20.8	20.0	4.2	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9824		20.1	20.0	0.4	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.551		19.1	17.7	8.3	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8310		18.7	20.0	-6.6	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9236		19.1	20.0	-4.5	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	0.9807		17.4	18.2	-4.6	25.0
6:2FTS	L2ID		0.9355		19.9	19.0	4.9	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.9771		19.1	20.0	-4.4	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.058		19.5	19.0	2.6	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9587		18.1	18.6	-2.5	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9028		20.0	20.0	-0.1	25.0
8:2FTS	L2ID		1.029		21.2	19.2	10.9	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.8886		19.8	20.0	-1.1	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8853		19.6	20.0	-2.2	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	1.004		20.7	20.0	3.4	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6146		19.9	19.3	3.2	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9125		18.0	20.0	-10.0	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.9002		19.8	20.0	-1.1	25.0
MeFOSA	AveID	0.9355	0.9105		19.5	20.0	-2.7	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.8667		19.0	20.0	-5.2	25.0
N-EtFOSA-M	AveID	0.9837	0.9528		19.4	20.0	-3.1	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8858		20.3	20.0	1.4	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.776		18.1	20.0	-9.7	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.7957		16.8	20.0	-16.0	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6128		17.1	20.0	-14.6	25.0
13C4 PFBA	Ave	292242	357609		61.2	50.0	22.4	50.0
13C5-PFPeA	Ave	232192	277335		59.7	50.0	19.4	50.0
13C2 PFHxA	Ave	210884	256357		60.8	50.0	21.6	50.0
13C4-PFHpA	Ave	192959	241030		62.5	50.0	24.9	50.0
18O2 PFHxS	Ave	290899	337438		54.9	47.3	16.0	50.0
M2-6:2FTS	Ave	77178	102261		62.9	47.5	32.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-153421/46 Calibration Date: 03/06/2017 01:41
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.04A_046.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	239793		58.5	50.0	17.0	50.0
13C4 PFOS	Ave	241637	271008		53.6	47.8	12.2	50.0
13C5 PFNA	Ave	177866	213237		59.9	50.0	19.9	50.0
M2-8:2FTS	Ave	92602	131189		67.9	47.9	41.7	50.0
13C8 FOSA	Ave	366918	401345		54.7	50.0	9.4	50.0
13C2 PFDA	Ave	166704	193711		58.1	50.0	16.2	50.0
d3-NMeFOSAA	Ave	85186	101074		59.3	50.0	18.7	50.0
d5-NEtFOSAA	Ave	81371	97702		60.0	50.0	20.1	50.0
13C2 PFUnA	Ave	130805	159461		61.0	50.0	21.9	50.0
d-N-MeFOSA-M	Ave	87983	94673		53.8	50.0	7.6	50.0
13C2 PFDoA	Ave	123944	146751		59.2	50.0	18.4	50.0
d-N-EtFOSA-M	Ave	85249	92677		54.4	50.0	8.7	50.0
13C2-PFTeDA	Ave	259165	286921		55.4	50.0	10.7	50.0
13C2-PFHxDA	Ave	125061	136342		54.5	50.0	9.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_046.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 06-Mar-2017 01:41:43 ALS Bottle#: 31 Worklist Smp#: 46
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 07-Mar-2017 14:32:47 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK017

First Level Reviewer: changnoit Date: 07-Mar-2017 14:32:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA	217.00 > 172.00	1.530	1.530	0.0	17880440	61.2		122	1815570	
2 Perfluorobutyric acid	212.90 > 169.00	1.538	1.538	0.0	1.000	6312708	20.8	104	49322	
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.811	0.0	13866766	59.7		119	5204471	
4 Perfluoropentanoic acid	262.90 > 219.00	1.821	1.821	0.0	1.000	5449287	20.1	100	63670	
D 47 13C3-PFBS	301.90 > 83.00	1.851	1.851	0.0	347980	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.851	1.851	0.0	1.000	9254935	19.1	108		
	298.90 > 99.00	1.851	1.851	0.0	1.000	3695248	2.50(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.113	2.113	0.0	12817850	60.8		122	60350	
6 Perfluorohexanoic acid	313.00 > 269.00	2.113	2.113	0.0	1.000	4260588	18.7	93.4	1472777	
D 9 13C4-PFHpA	367.00 > 322.00	2.448	2.448	0.0	12051524	62.5		125	67331	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.456	2.456	0.0	1.000	4452490	19.1	95.5	63120	
D 11 18O2 PFHxS	403.00 > 84.00	2.464	2.464	0.0	15960823	54.9		116	132943	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.464	2.464	0.0	1.000	6022728	17.4	95.4		
D 12 M2-6:2FTS	429.00 > 409.00	2.783	2.783	0.0	4857382	62.9		133		

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	2.783	2.783	0.0	1.000	1813705	19.9	105	
15 Perfluorooctanoic acid	413.00	> 369.00	2.806	2.806	0.0	1.000	4686240	19.1	95.6	177062
	413.00	> 169.00	2.814	2.806	0.008	1.003	2712881		1.73(0.90-1.10)	174195
D 14 13C4 PFOA	417.00	> 372.00	2.814	2.814	0.0		11989661	58.5	117	51354
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.814	2.814	0.0	1.000	5456732	19.5	103	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.156	3.156	0.0	1.000	4822144	18.1	97.5	37967
	499.00	> 99.00	3.188	3.156	0.032	1.010	1088508		4.43(0.90-1.10)	103169
20 Perfluorononanoic acid	463.00	> 419.00	3.188	3.188	0.0	1.000	3850174	20.0	99.9	368723
D 19 13C5 PFNA	468.00	> 423.00	3.188	3.188	0.0		10661867	59.9	120	3136140
D 18 13C4 PFOS	503.00	> 80.00	3.188	3.188	0.0		12954205	53.6	112	818092
D 26 M2-8:2FTS	529.00	> 509.00	3.530	3.530	0.0		6283959	67.9	142	
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.522	3.522	0.0	0.998	2585800	21.2	111	
D 21 13C8 FOSA	506.00	> 78.00	3.538	3.538	0.0		20067261	54.7	109	6049470
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.538	3.538	0.0	1.000	7132939	19.8	98.9	724767
24 Perfluorodecanoic acid	513.00	> 469.00	3.547	3.547	0.0	1.000	3429795	19.6	97.8	337776
D 23 13C2 PFDA	515.00	> 470.00	3.547	3.547	0.0		9685538	58.1	116	744843
D 27 d3-NMeFOSAA	573.00	> 419.00	3.695	3.695	0.0		5053721	59.3	119	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.706	3.706	0.0	1.003	2029929	20.7	103	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.850	3.850	0.0	1.000	3211160	19.9	103	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.876	3.876	0.0	1.004	1759056	19.8	98.9	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.867	3.867	0.0	1.000	2910243	18.0	90.0	45777
D 32 d5-NEtFOSAA	589.00	> 419.00	3.859	3.859	0.0		4885123	60.0	120	
D 30 13C2 PFUnA	565.00	> 520.00	3.867	3.867	0.0		7973035	61.0	122	31433
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.029	4.029	0.0		4733642	53.8	108	
35 MeFOSA	512.00	> 169.00	4.038	4.038	0.0	1.000	1723986	19.5	97.3	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
37 Perfluorododecanoic acid	613.00	> 569.00	4.152	4.152	0.0	1.000	2543725	19.0	94.8	15951	M
D 36 13C2 PFDaA	615.00	> 570.00	4.152	4.152	0.0		7337558	59.2	118	0.0	
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.217	4.217	0.0		4633846	54.4	109		
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.225	4.225	0.0	1.000	1766111	19.4	96.9		
41 Perfluorotridecanoic acid	663.00	> 619.00	4.419	4.419	0.0	1.000	2599970	20.3	101	0.0	
D 43 13C2-PFTeDA	715.00	> 670.00	4.651	4.651	0.0		14346034	55.4	111	47870	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.641	4.641	0.0	1.000	5213253	18.1	90.3	268349	
	713.00	> 169.00	4.641	4.641	0.0	1.000	690629		7.55(0.00-0.00)	3476	
D 44 13C2-PFHxDA	815.00	> 770.00	5.055	5.055	0.0		6817094	54.5	109	290011	
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.055	5.055	0.0	1.000	2335310	16.8	84.0	4438	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.397	5.397	0.0	1.000	1798551	17.1	85.4	3916	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L4_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_046.d

Injection Date: 06-Mar-2017 01:41:43

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 31

Worklist Smp#: 46

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

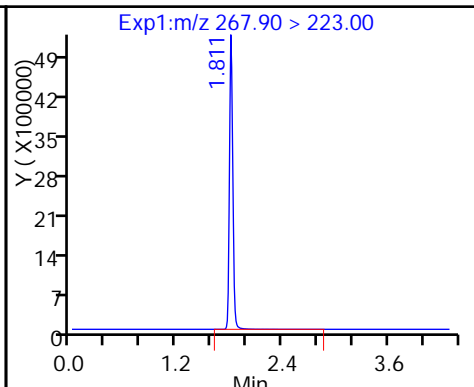
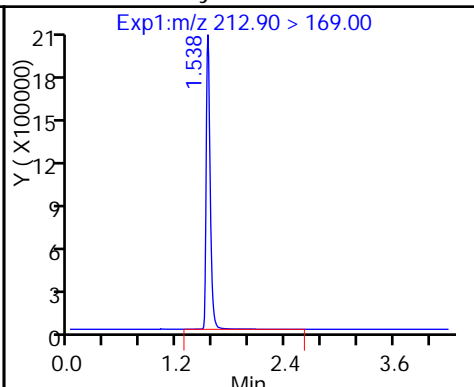
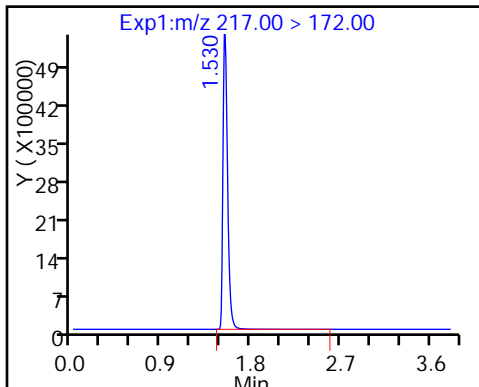
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

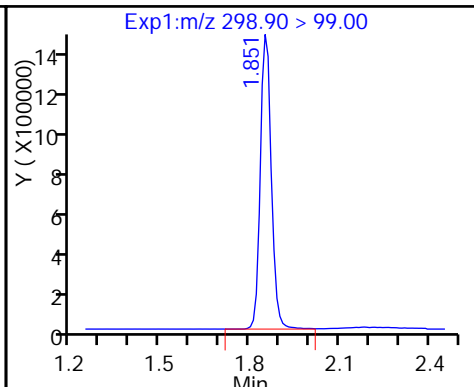
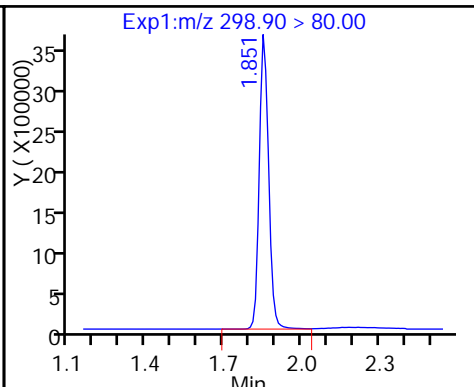
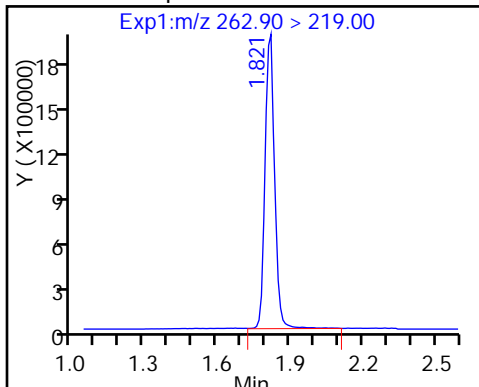
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

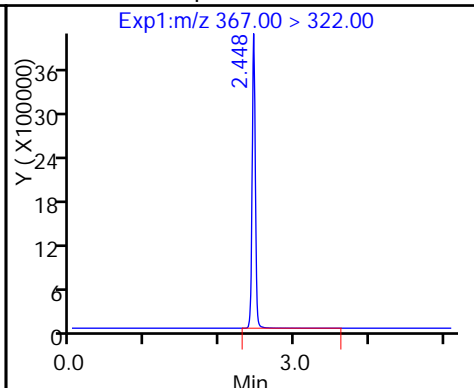
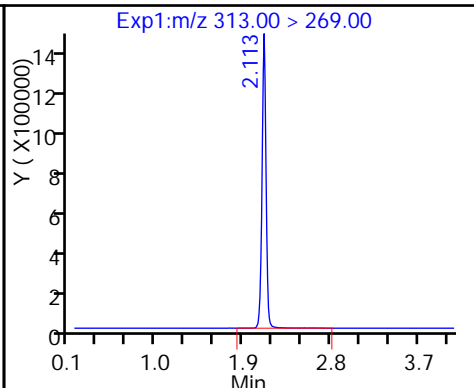
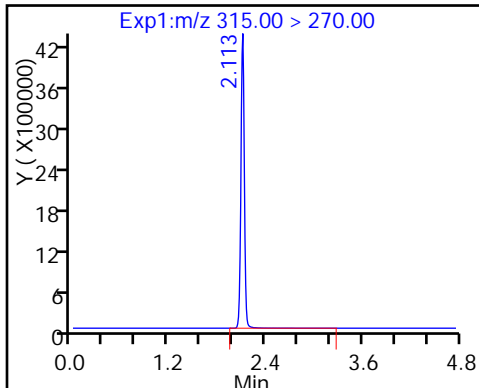
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

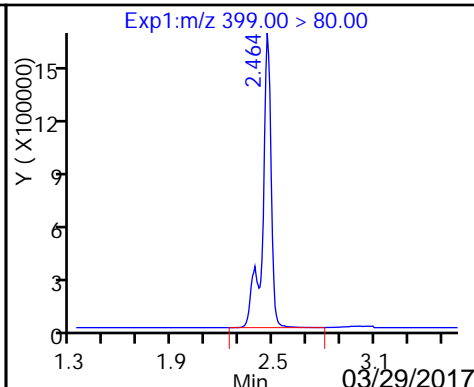
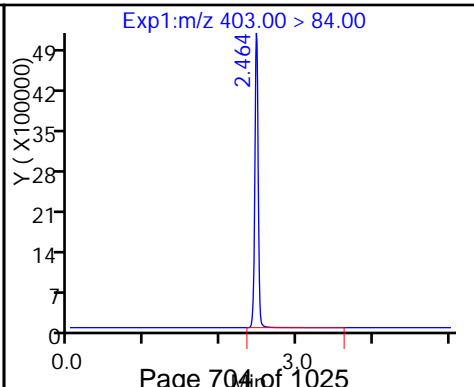
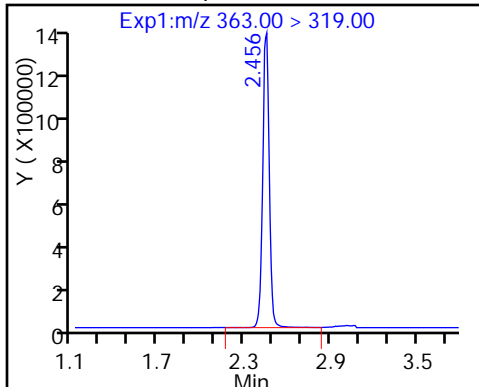
D 9 13C4-PFHpA



10 Perfluoroheptanoic acid

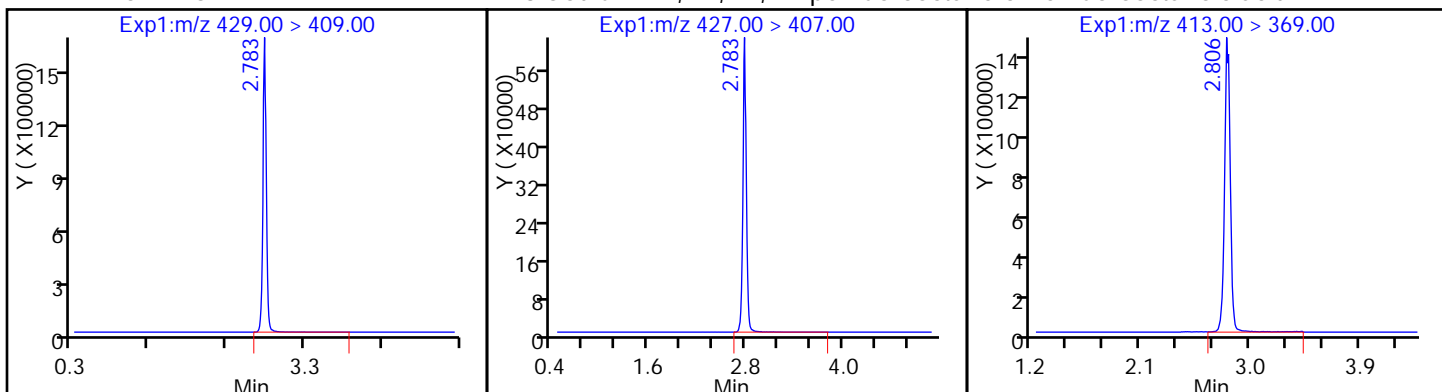
D 11 18O2 PFHxS

8 Perfluorohexanesulfonic acid



D 12 M2-6:2FTS

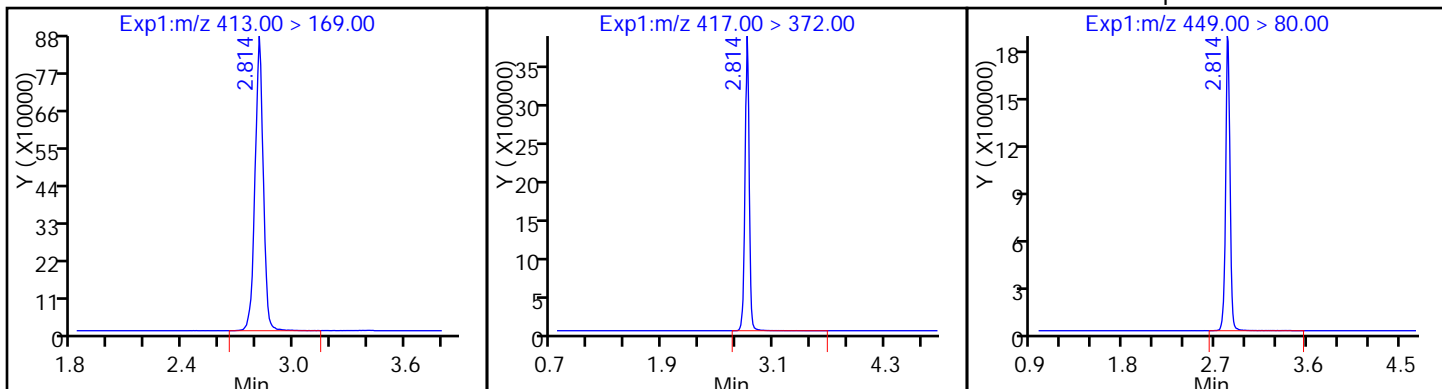
13 Sodium 1H,1H,2H,2H-perfluorooctane15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

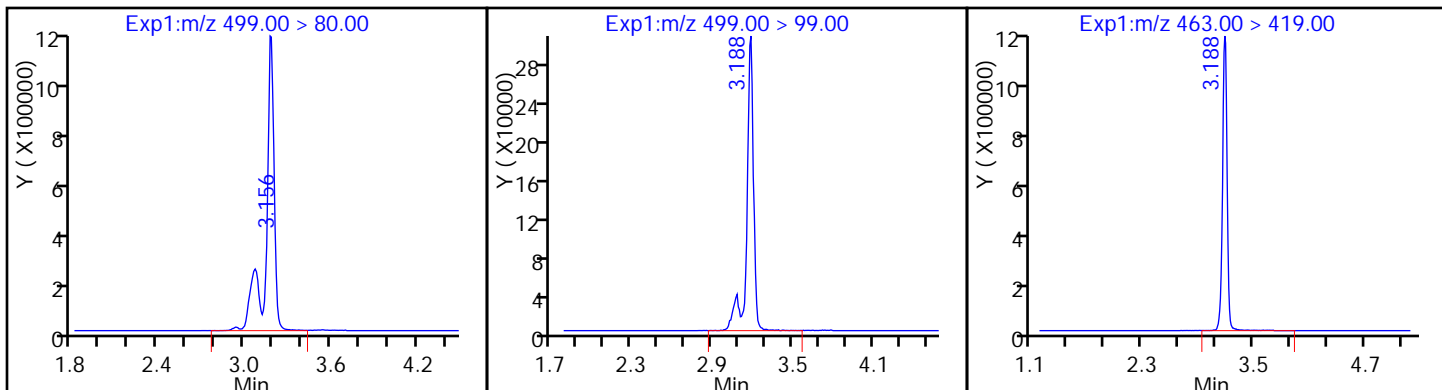
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

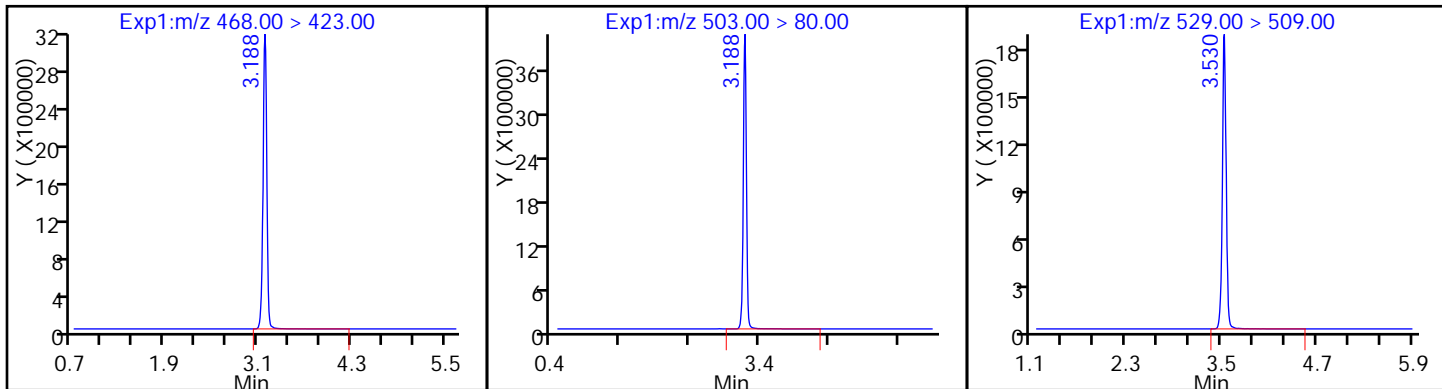
20 Perfluorononanoic acid



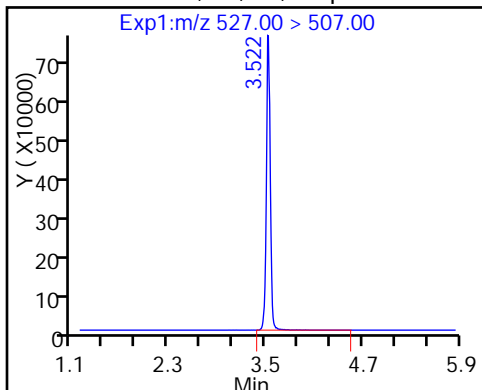
D 19 13C5 PFNA

D 18 13C4 PFOS

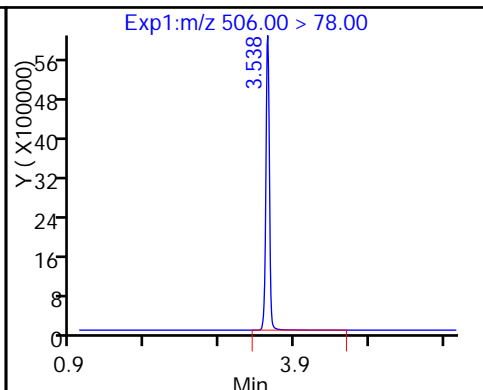
D 26 M2-8:2FTS



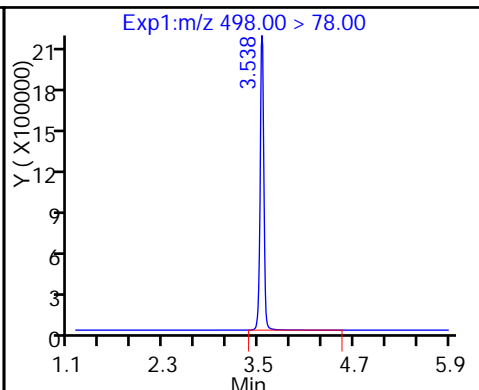
25 Sodium 1H,1H,2H,2H-perfluorooctanoate



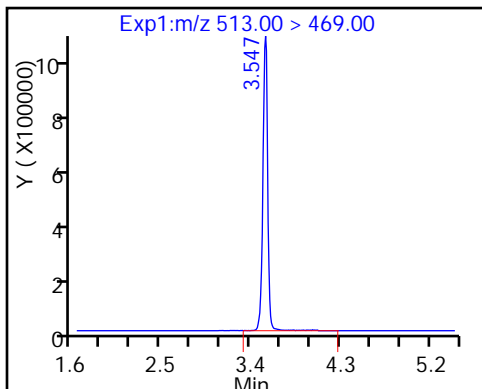
D 21 13C8 FOSA



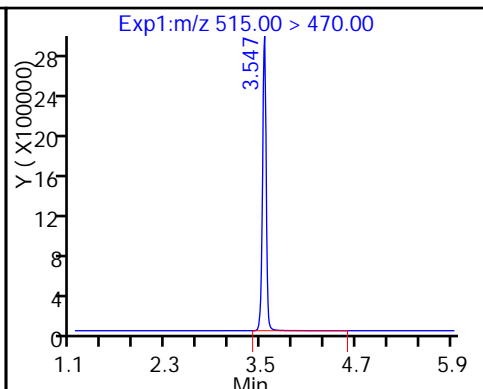
22 Perfluorooctane Sulfonamide



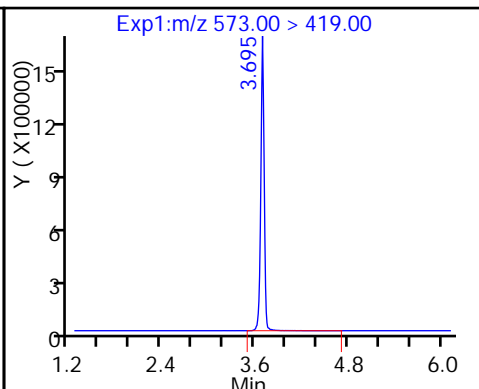
24 Perfluorodecanoic acid



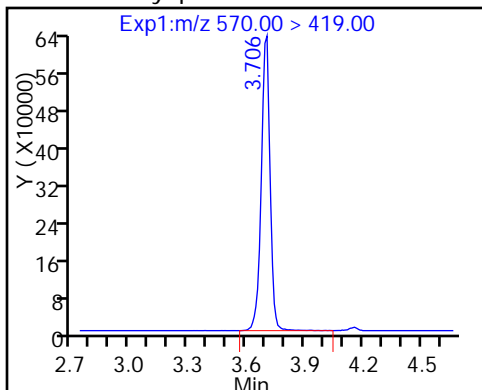
D 23 13C2 PFDA



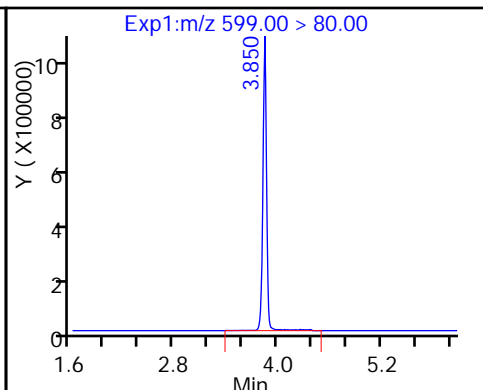
D 27 d3-NMeFOSAA



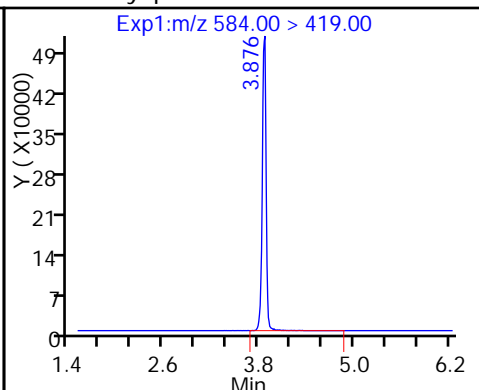
28 N-methyl perfluorooctane sulfonamide



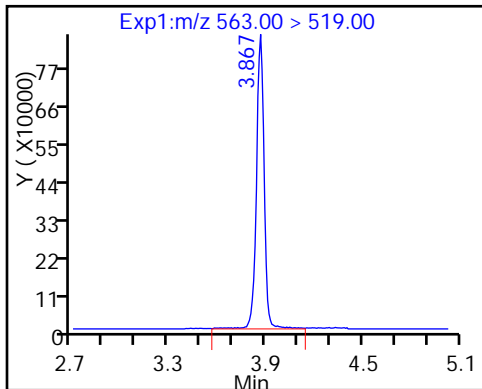
29 Perfluorodecane Sulfonic acid



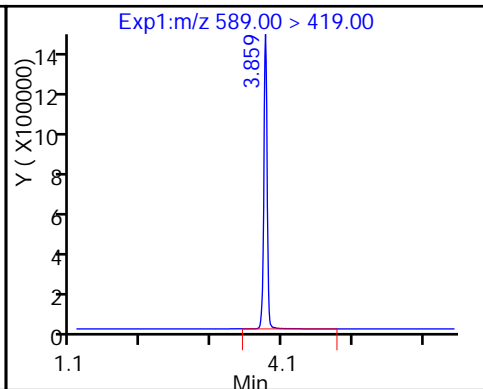
33 N-ethyl perfluorooctane sulfonamide



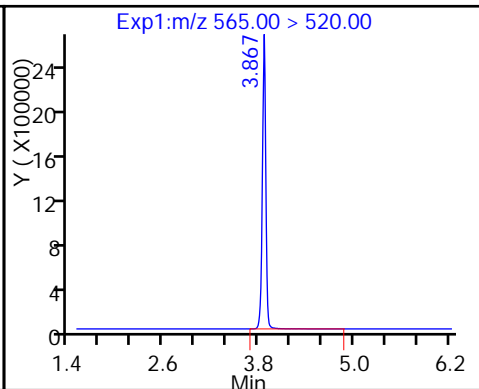
31 Perfluoroundecanoic acid



D 32 d5-NEtFOSAA



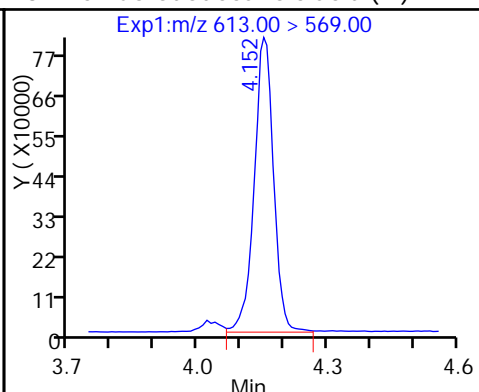
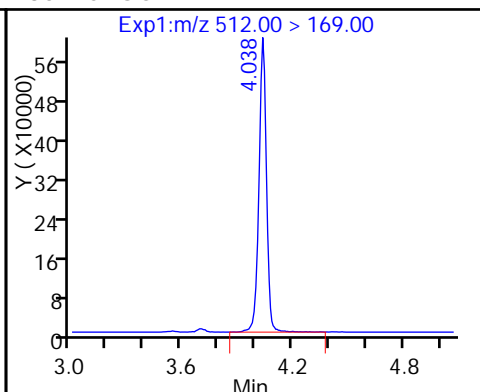
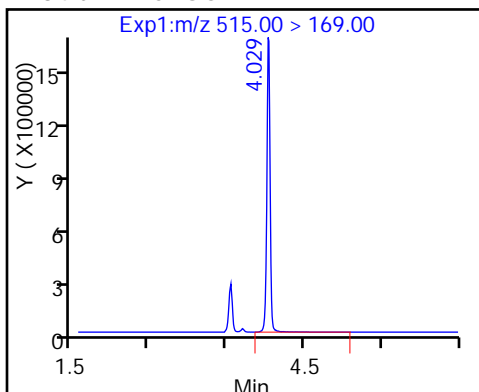
D 30 13C2 PFUnA



D 34 d-N-MeFOSA-M

35 MeFOSA

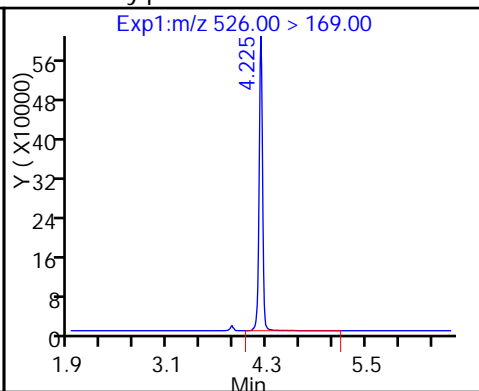
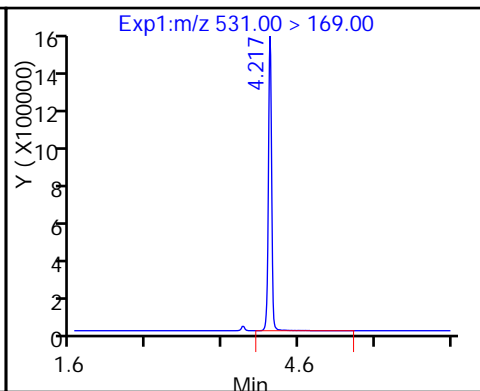
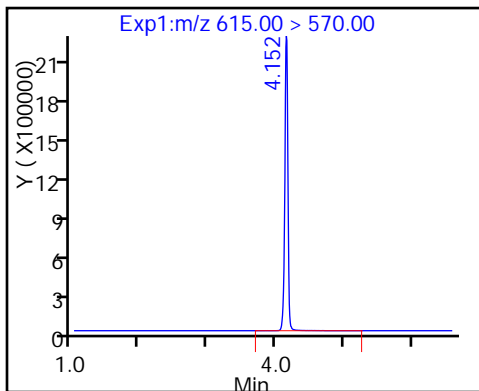
37 Perfluorododecanoic acid (M)



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

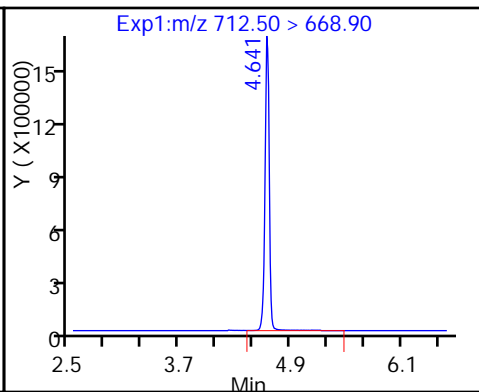
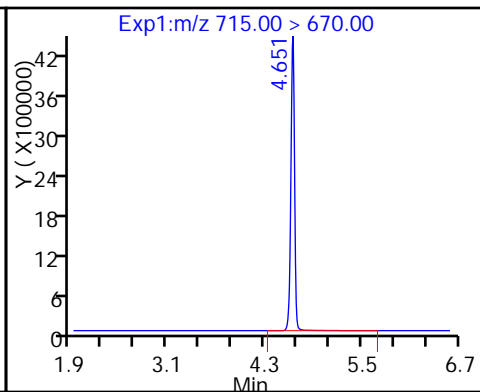
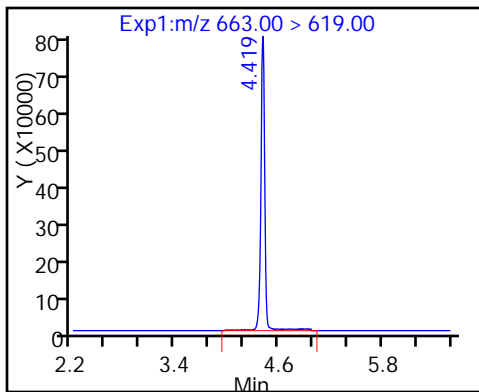
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

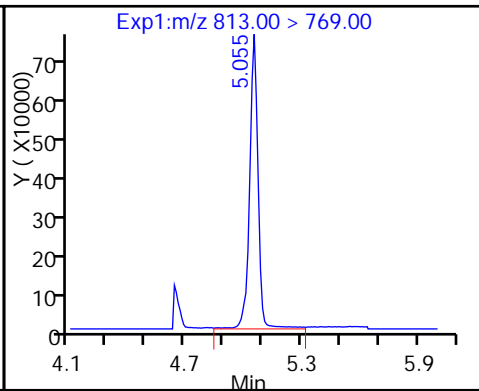
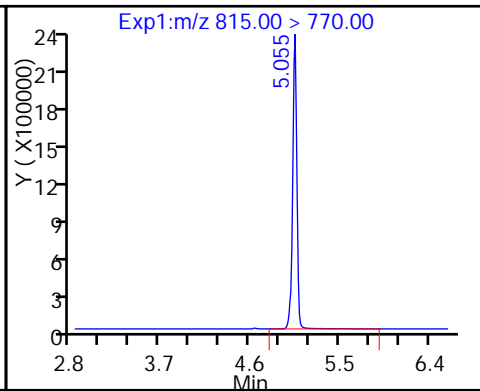
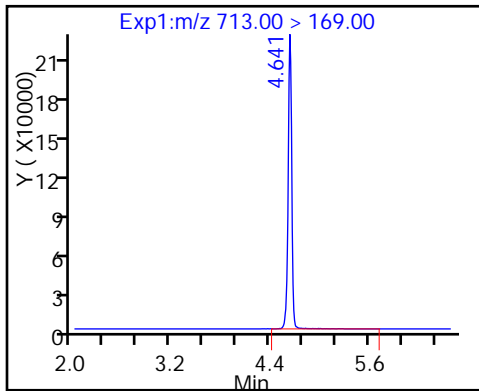
42 Perfluorotetradecanoic acid



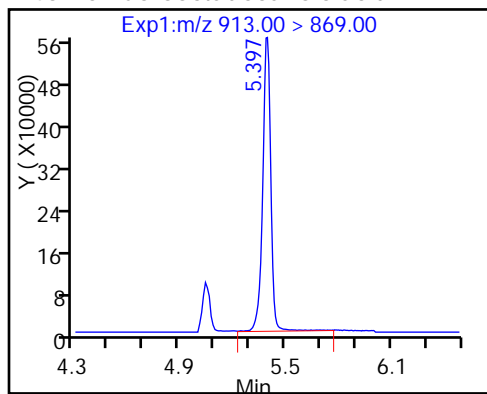
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

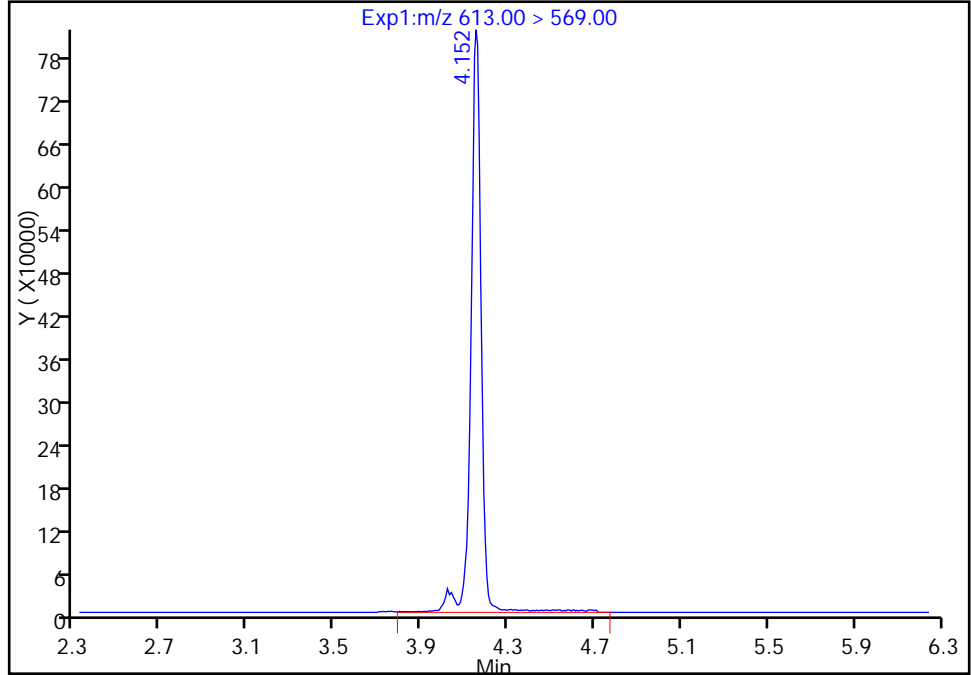
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_046.d
Injection Date: 06-Mar-2017 01:41:43 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 46
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

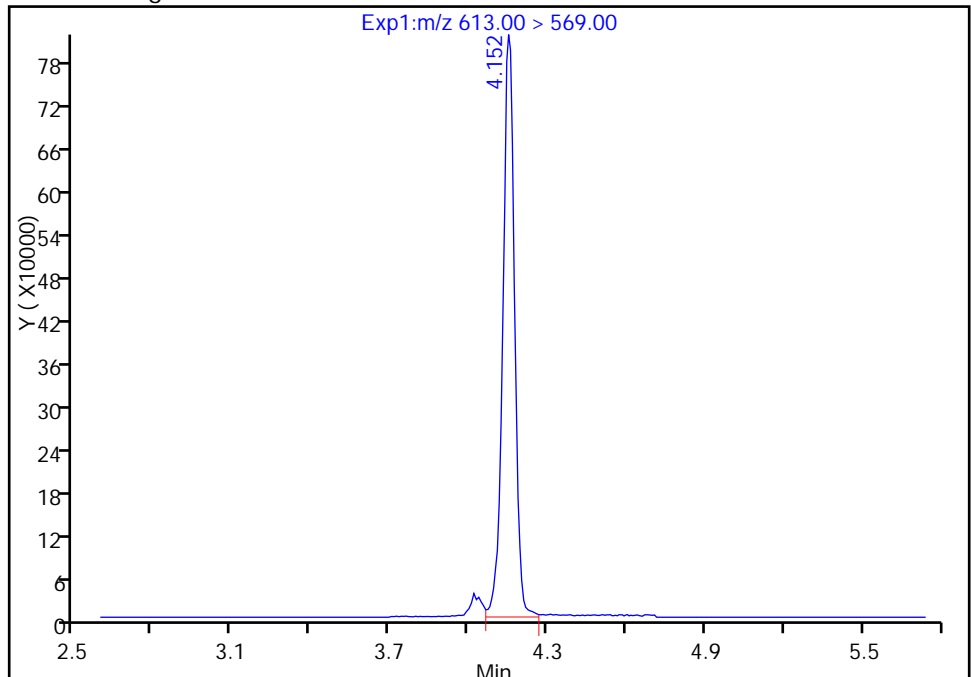
RT: 4.15
Area: 2736431
Amount: 20.390092
Amount Units: ng/ml

Processing Integration Results



RT: 4.15
Area: 2543725
Amount: 18.954173
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 07-Mar-2017 14:32:26
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-153421/57 Calibration Date: 03/06/2017 03:04
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.04A_057.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.9116		53.8	50.0	7.6	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.019		52.1	50.0	4.1	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.441		44.5	44.2	0.6	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9100		51.2	50.0	2.3	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9743		50.4	50.0	0.7	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.039		46.0	45.5	1.1	25.0
6:2FTS	L2ID		0.8678		46.3	47.4	-2.3	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.036		50.7	50.0	1.4	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.103		50.9	47.6	6.9	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9628		53.3	50.0	6.5	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.020		48.1	46.4	3.7	25.0
8:2FTS	L2ID		0.8982		46.5	47.9	-3.0	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9363		52.1	50.0	4.2	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9399		51.9	50.0	3.8	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9314		48.0	50.0	-4.1	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6143		49.7	48.2	3.1	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8396		46.1	50.0	-7.8	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9550		47.1	50.0	-5.8	25.0
MeFOSA	AveID	0.9355	0.8889		47.5	50.0	-5.0	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9372		51.2	50.0	2.5	25.0
N-EtFOSA-M	AveID	0.9837	0.9347		47.5	50.0	-5.0	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9210		52.7	50.0	5.5	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	2.116		53.8	50.0	7.6	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9606		51.4	50.0	2.9	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6815		47.5	50.0	-5.0	25.0
13C4 PFBA	Ave	292242	349401		59.8	50.0	19.6	50.0
13C5-PFPeA	Ave	232192	261239		56.3	50.0	12.5	50.0
13C2 PFHxA	Ave	210884	263411		62.5	50.0	24.9	50.0
13C4-PFHpA	Ave	192959	225590		58.5	50.0	16.9	50.0
18O2 PFHxS	Ave	290899	331239		53.9	47.3	13.9	50.0
M2-6:2FTS	Ave	77178	93546		57.6	47.5	21.2	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-153421/57 Calibration Date: 03/06/2017 03:04
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.04A_057.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	226247		55.2	50.0	10.4	50.0
13C4 PFOS	Ave	241637	275555		54.5	47.8	14.0	50.0
13C5 PFNA	Ave	177866	195409		54.9	50.0	9.9	50.0
13C8 FOSA	Ave	366918	399979		54.5	50.0	9.0	50.0
M2-8:2FTS	Ave	92602	103797		53.7	47.9	12.1	50.0
13C2 PFDA	Ave	166704	180343		54.1	50.0	8.2	50.0
d3-NMeFOSAA	Ave	85186	97037		57.0	50.0	13.9	50.0
13C2 PFUnA	Ave	130805	143458		54.8	50.0	9.7	50.0
d5-NEtFOSAA	Ave	81371	89872		55.2	50.0	10.4	50.0
d-N-MeFOSA-M	Ave	87983	100294		57.0	50.0	14.0	50.0
13C2 PFDoA	Ave	123944	136317		55.0	50.0	10.0	50.0
d-N-EtFOSA-M	Ave	85249	94682		55.5	50.0	11.1	50.0
13C2-PFTeDA	Ave	259165	302432		58.3	50.0	16.7	50.0
13C2-PFHxDA	Ave	125061	151368		60.5	50.0	21.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_057.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 06-Mar-2017 03:04:09 ALS Bottle#: 32 Worklist Smp#: 57
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 07-Mar-2017 14:54:21 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK017

First Level Reviewer: changnoit Date: 07-Mar-2017 14:54:21

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	1.522	1.522	0.0	17470048	59.8		120	1826230	
2 Perfluorobutyric acid	212.90 > 169.00	1.522	1.522	0.0	15926407	53.8		108	160673	
D 3 13C5-PFPeA	267.90 > 223.00	1.802	1.802	0.0	13061974	56.3		113	4788626	
4 Perfluoropentanoic acid	262.90 > 219.00	1.802	1.802	0.0	13310851	52.1		104	206437	
D 47 13C3-PFBS	301.90 > 83.00	1.831	1.831	0.0	345868	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.841	1.841	0.0	21093787	44.5		101		
	298.90 > 99.00	1.841	1.841	0.0	9478290		2.23(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.097	2.097	0.0	13170532	62.5		125	48306	
6 Perfluorohexanoic acid	313.00 > 269.00	2.088	2.088	0.0	11984816	51.2		102	0.0	
D 9 13C4-PFHpA	367.00 > 322.00	2.429	2.429	0.0	11279508	58.5		117	40861	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.437	2.437	0.0	10989125	50.4		101	1687401	
D 11 18O2 PFHxS	403.00 > 84.00	2.452	2.452	0.0	15667583	53.9		114	90875	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.452	2.452	0.0	15663130	46.0		101		
D 12 M2-6:2FTS	429.00 > 409.00	2.765	2.765	0.0	4443456	57.6		121		

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	2.765	2.765	0.0	1.000	3847813	46.3	97.7	
15 Perfluorooctanoic acid	413.00	> 369.00	2.787	2.787	0.0	1.000	11722482	50.7	101	684923
	413.00	> 169.00	2.795	2.787	0.008	1.003	7040447		1.67(0.90-1.10)	545921
D 14 13C4 PFOA	417.00	> 372.00	2.802	2.802	0.0		11312325	55.2	110	51075
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.802	2.802	0.0	1.000	14461555	50.9	107	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.168	3.168	0.0	1.000	13040090	48.1	104	219674
	499.00	> 99.00	3.168	3.168	0.0	1.000	2969086		4.39(0.90-1.10)	0.0
20 Perfluorononanoic acid	463.00	> 419.00	3.168	3.168	0.0	1.000	9407263	53.3	107	2661538
D 19 13C5 PFNA	468.00	> 423.00	3.168	3.168	0.0		9770442	54.9	110	2963216
D 18 13C4 PFOS	503.00	> 80.00	3.168	3.168	0.0		13171533	54.5	114	339973
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.510	3.510	0.0	0.998	4465730	46.5	97.0	
D 26 M2-8:2FTS	529.00	> 509.00	3.518	3.518	0.0		4971865	53.7	112	
D 21 13C8 FOSA	506.00	> 78.00	3.518	3.518	0.0		19998941	54.5	109	2962780
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.518	3.518	0.0	1.000	18724267	52.1	104	5728534
24 Perfluorodecanoic acid	513.00	> 469.00	3.527	3.527	0.0	1.000	8475074	51.9	104	13424
D 23 13C2 PFDA	515.00	> 470.00	3.535	3.535	0.0		9017134	54.1	108	2826179
D 27 d3-NMeFOSAA	573.00	> 419.00	3.682	3.682	0.0		4851834	57.0	114	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.682	3.682	0.0	1.000	4518919	48.0	95.9	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.835	3.835	0.0	1.000	8158329	49.7	103	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.844	3.844	0.0		4493586	55.2	110	
D 30 13C2 PFUnA	565.00	> 520.00	3.844	3.844	0.0		7172904	54.8	110	26594
31 Perfluoroundecanoic acid	563.00	> 519.00	3.852	3.852	0.0	1.000	6850324	47.1	94.2	543277
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.844	3.844	0.0	1.000	3772793	46.1	92.2	
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.013	4.013	0.0		5014685	57.0	114	
35 MeFOSA	512.00	> 169.00	4.022	4.022	0.0	1.000	4457398	47.5	95.0	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
37 Perfluorododecanoic acid	613.00	> 569.00	4.138	4.138	0.0	1.000	6387545	51.2	102	82297	M
D 36 13C2 PFDaA	615.00	> 570.00	4.138	4.138	0.0		6815870	55.0	110	2210974	
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.202	4.202	0.0		4734078	55.5	111		
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.209	4.209	0.0	1.000	4424984	47.5	95.0		
41 Perfluorotridecanoic acid	663.00	> 619.00	4.395	4.395	0.0	1.000	6277721	52.7	105	414620	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.633	4.633	0.0	1.000	14423821	53.8	108	545565	
	713.00	> 169.00	4.625	4.633	-0.008	0.998	1951561		7.39(0.00-0.00)	34611	
D 43 13C2-PFTeDA	715.00	> 670.00	4.633	4.633	0.0		15121609	58.3	117	99259	
D 44 13C2-PFHxDA	815.00	> 770.00	5.046	5.046	0.0		7568390	60.5	121	121278	
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.046	5.046	0.0	1.000	6547270	51.4	103	6606	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.390	5.390	0.0	1.000	4645030	47.5	95.0	4879	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L5_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_057.d

Injection Date: 06-Mar-2017 03:04:09

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 32

Worklist Smp#: 57

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

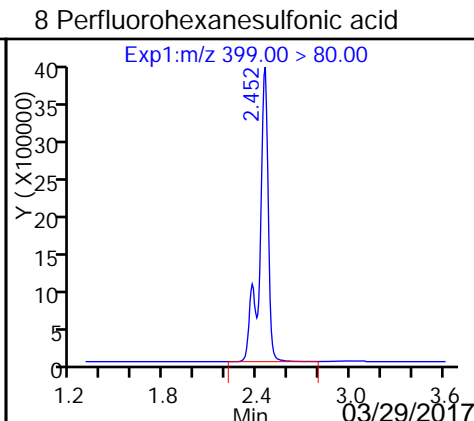
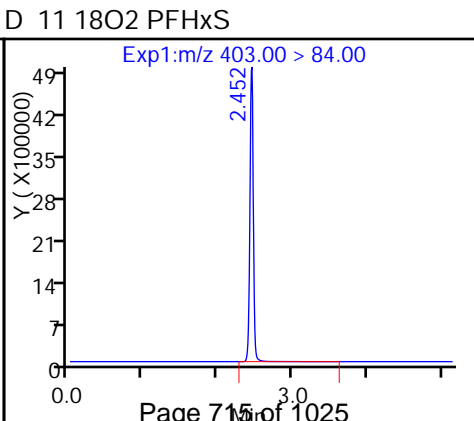
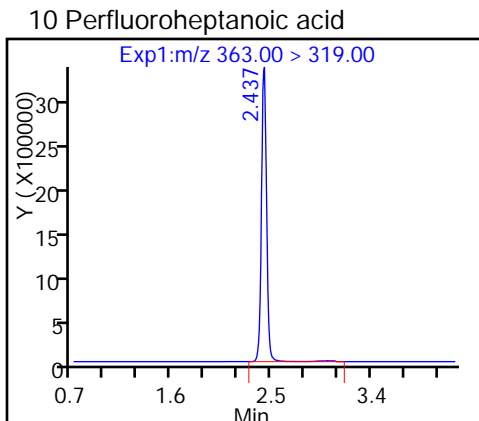
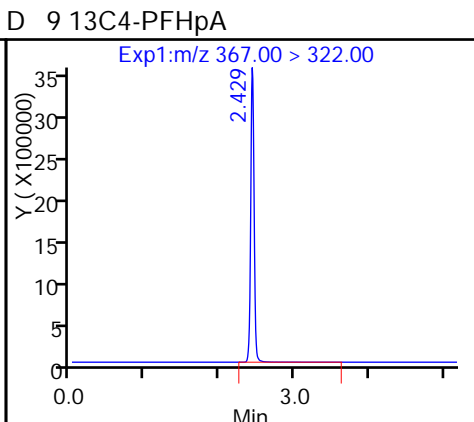
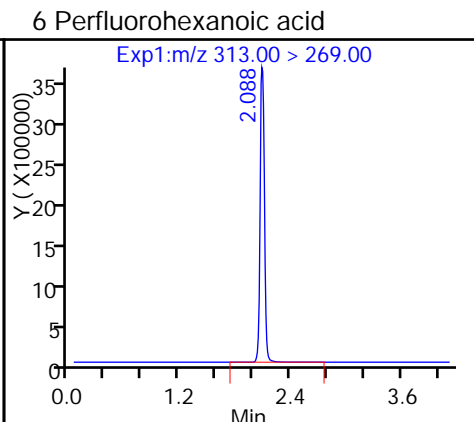
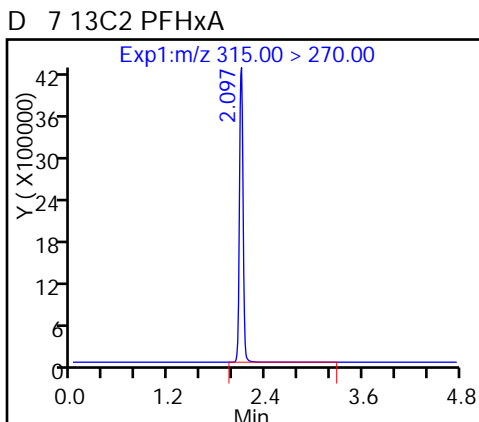
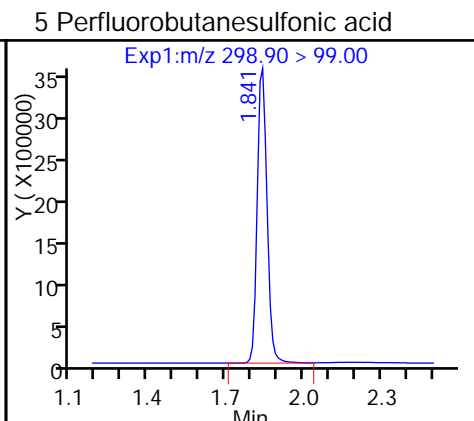
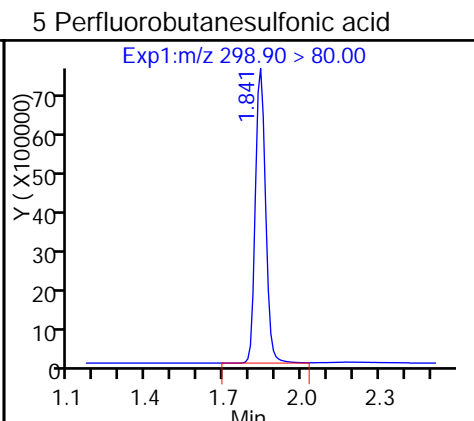
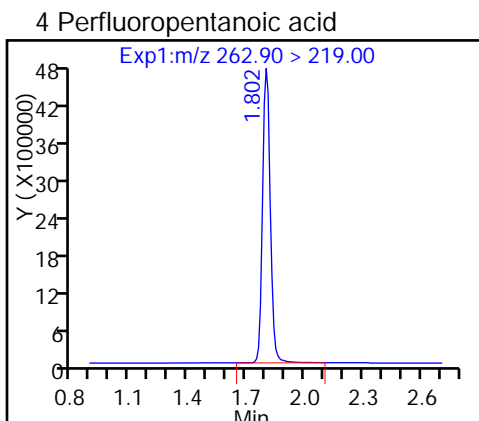
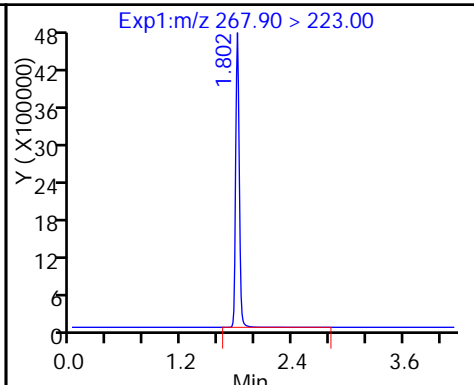
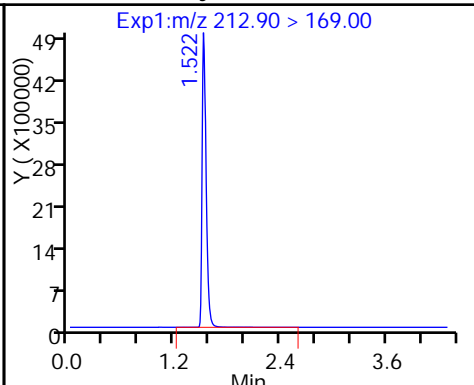
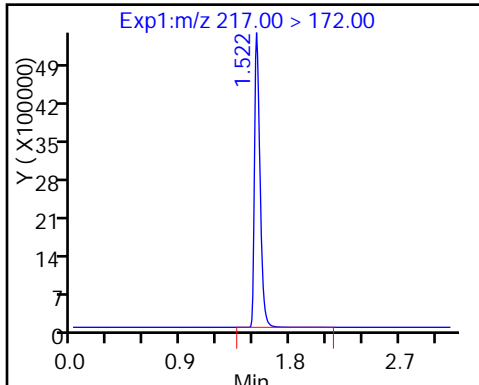
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

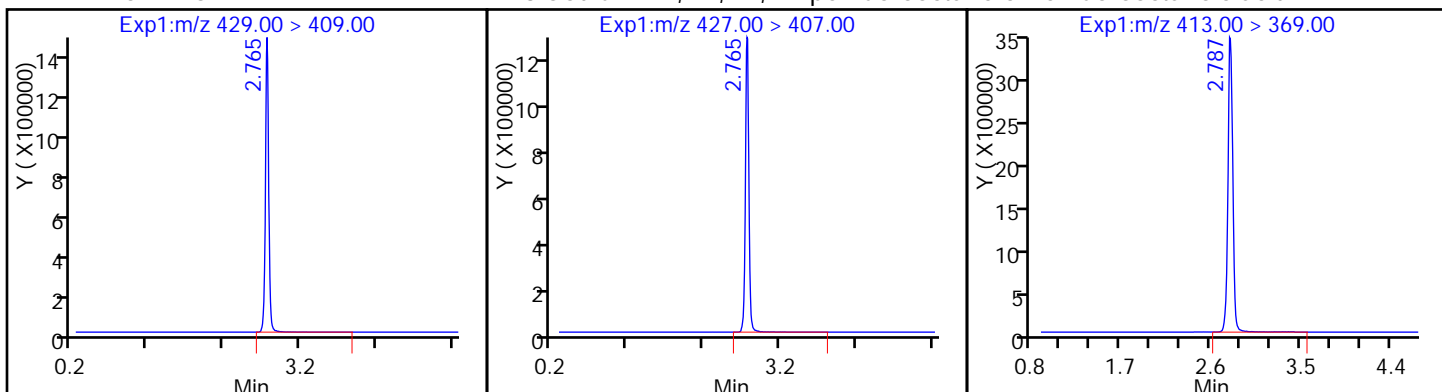
2 Perfluorobutyric acid

D 3 13C5-PFPeA



D 12 M2-6:2FTS

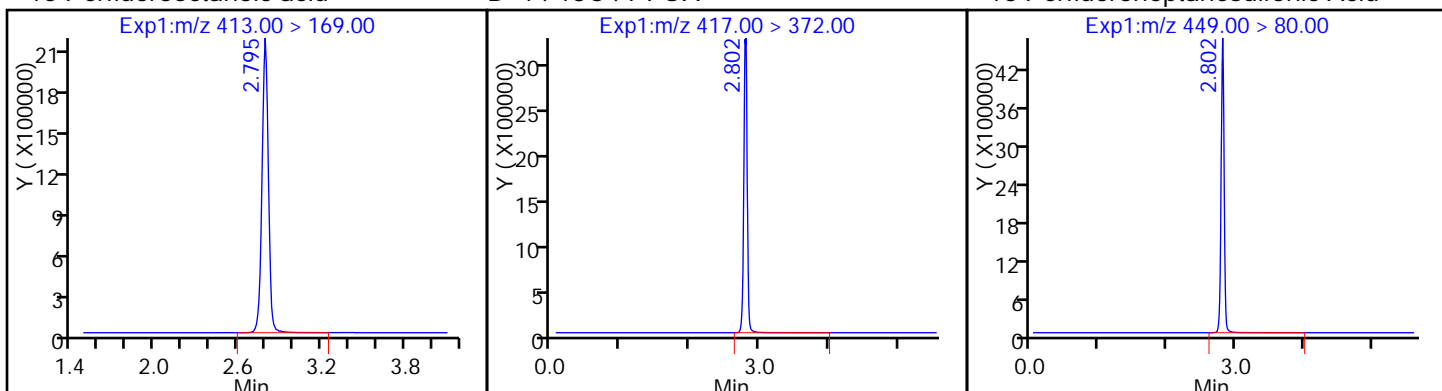
13 Sodium 1H,1H,2H,2H-perfluorooctane 5 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

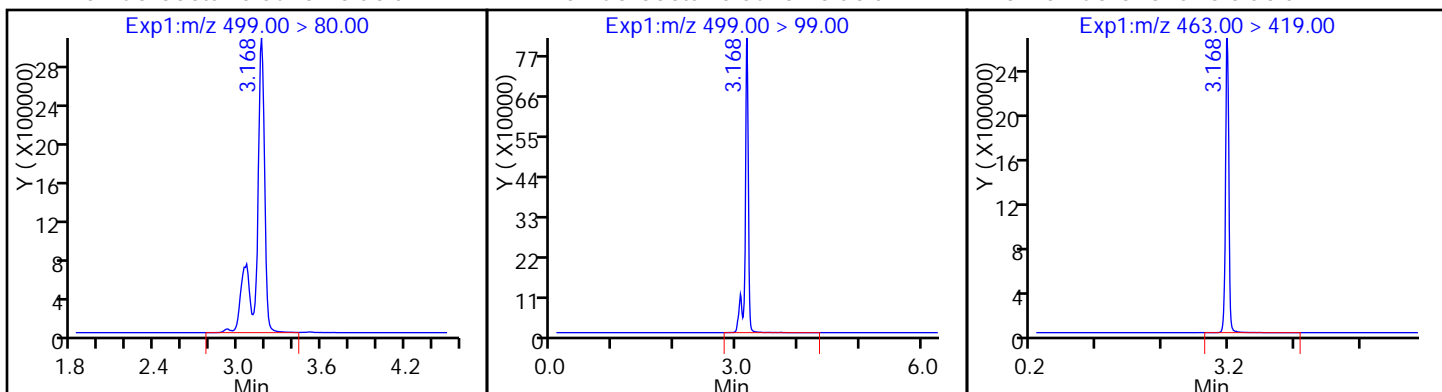
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

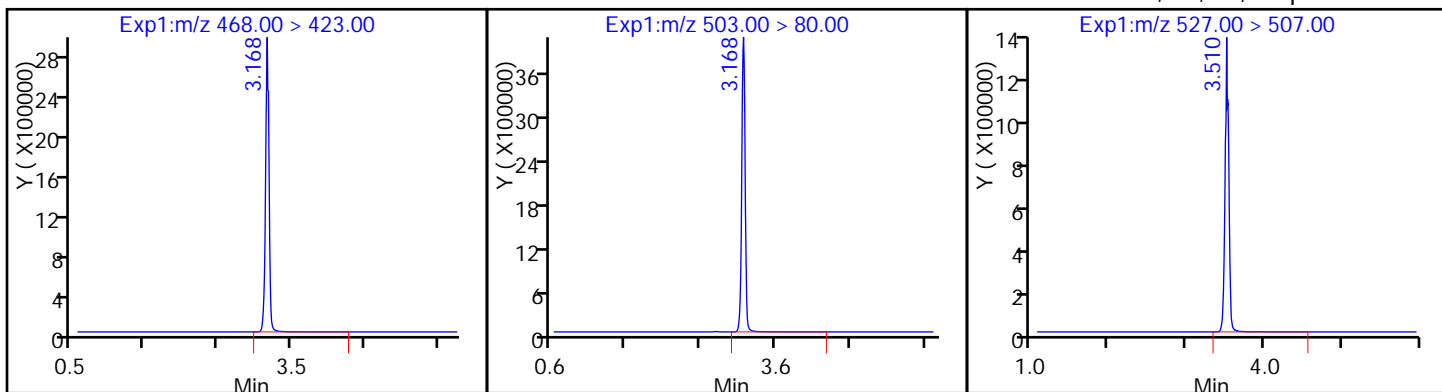
20 Perfluorononanoic acid



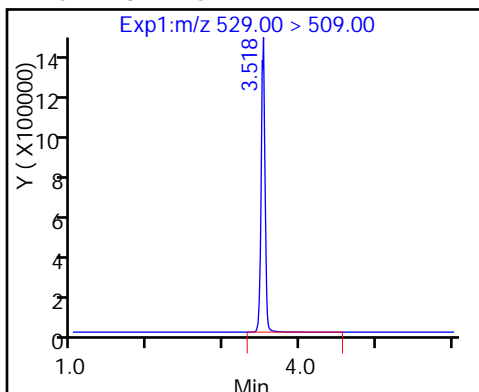
D 19 13C5 PFNA

D 18 13C4 PFOS

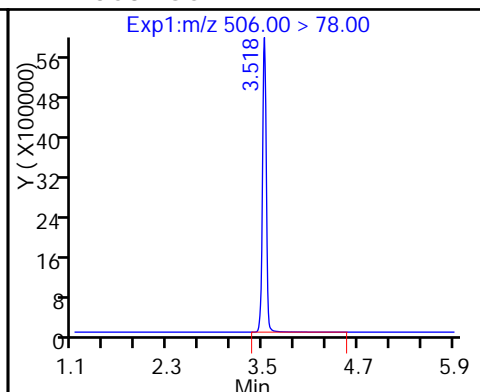
25 Sodium 1H,1H,2H,2H-perfluorooctane



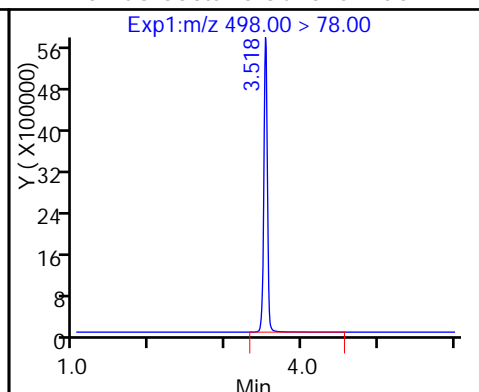
D 26 M2-8:2FTS



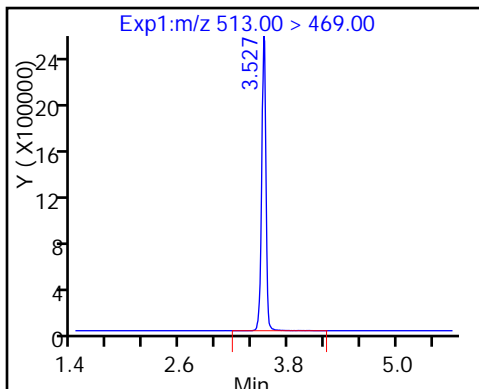
D 21 13C8 FOSA



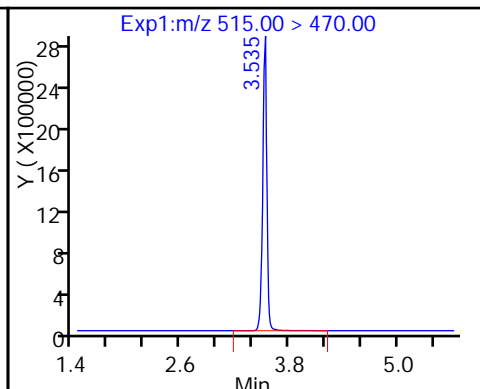
22 Perfluorooctane Sulfonamide



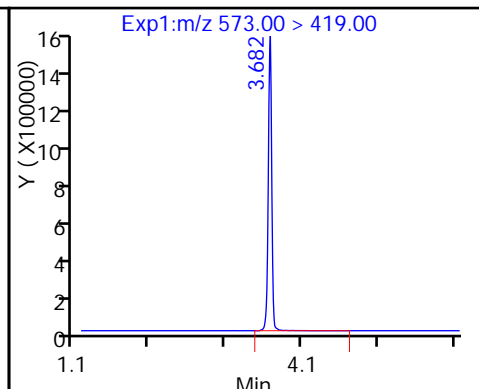
24 Perfluorodecanoic acid



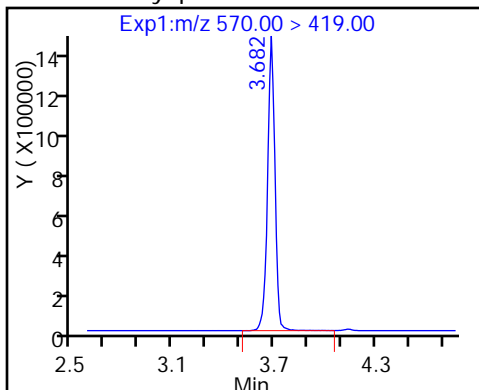
D 23 13C2 PFDA



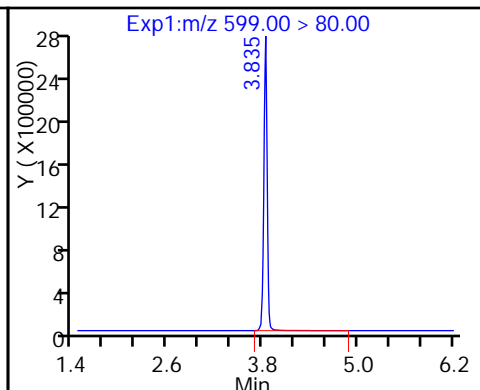
D 27 d3-NMeFOSAA



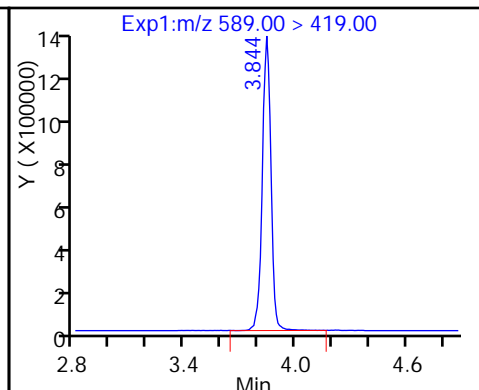
28 N-methyl perfluorooctane sulfonami



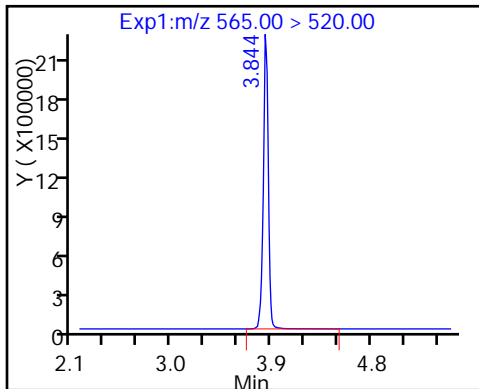
29 Perfluorodecane Sulfonic acid



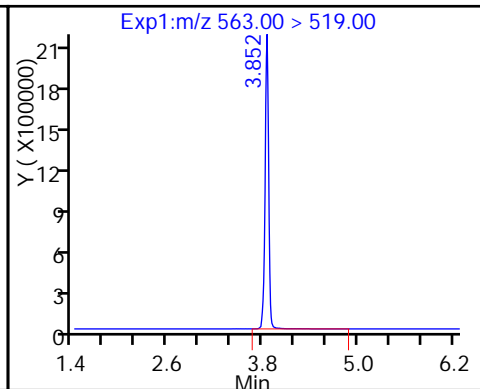
D 32 d5-NEtFOSAA



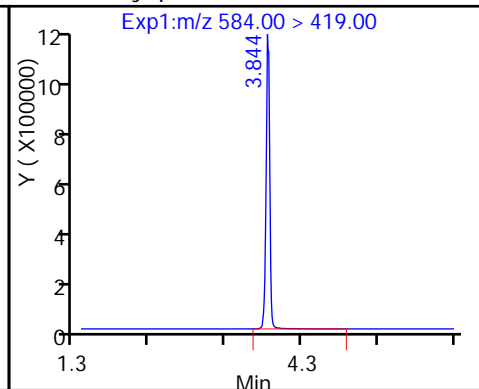
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid



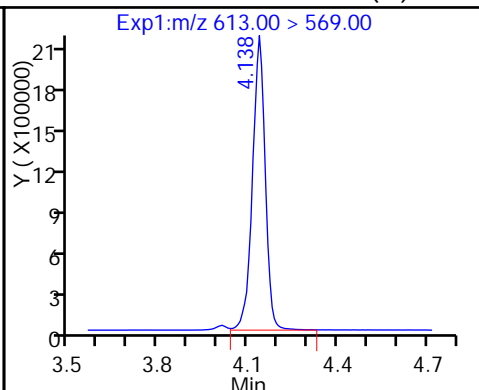
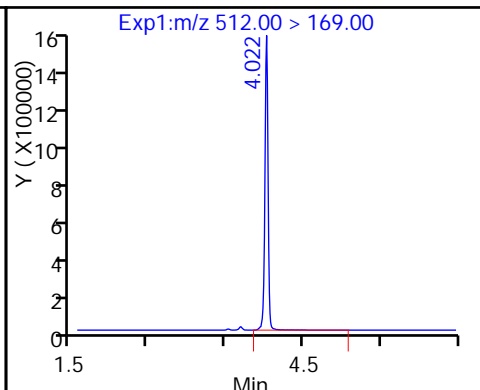
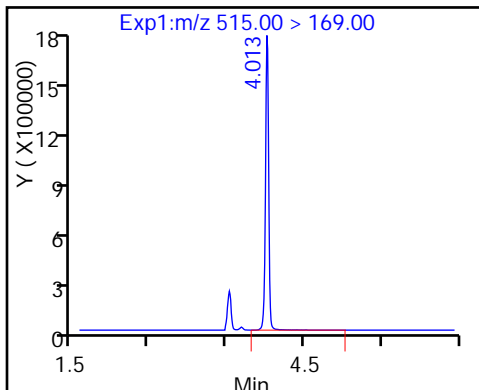
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

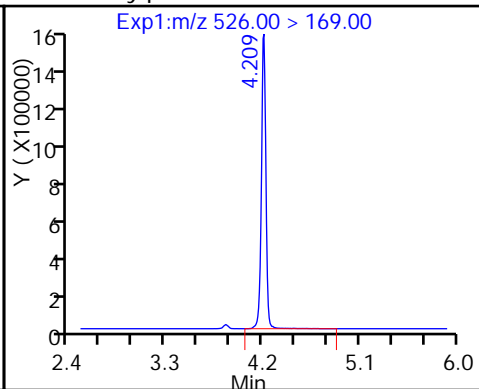
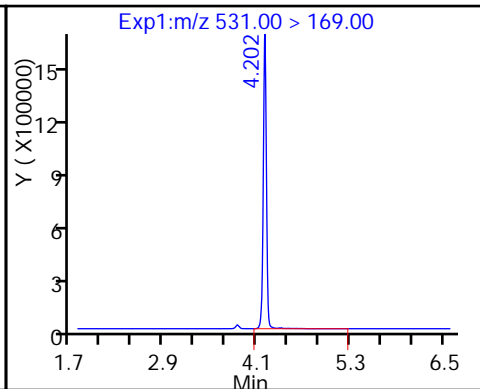
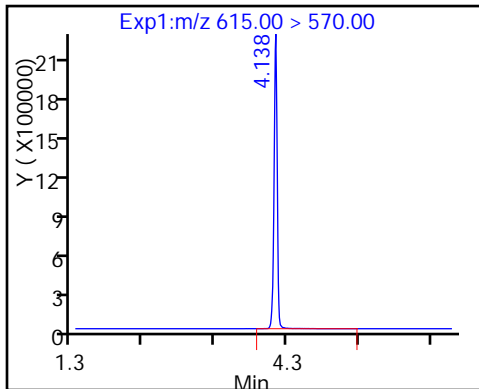
37 Perfluorododecanoic acid (M)



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

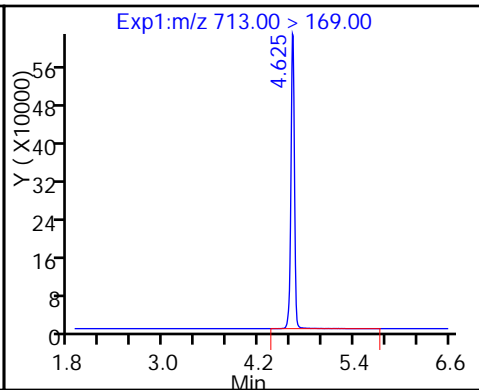
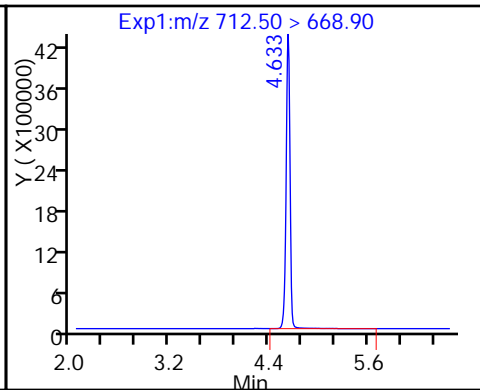
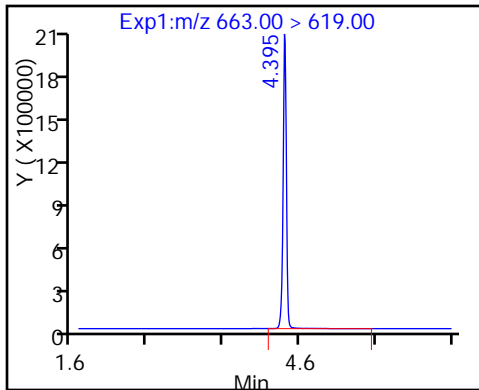
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

42 Perfluorotetradecanoic acid

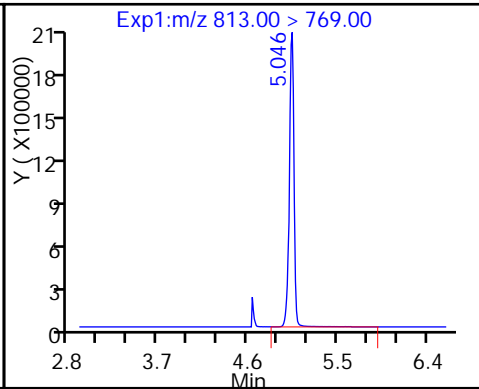
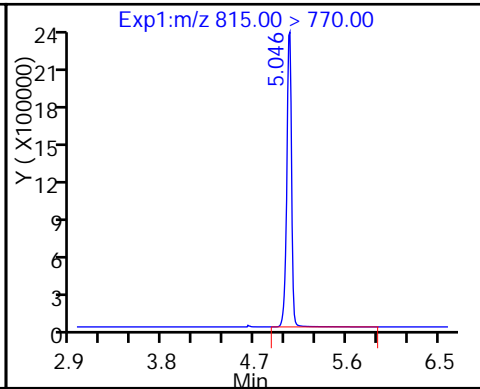
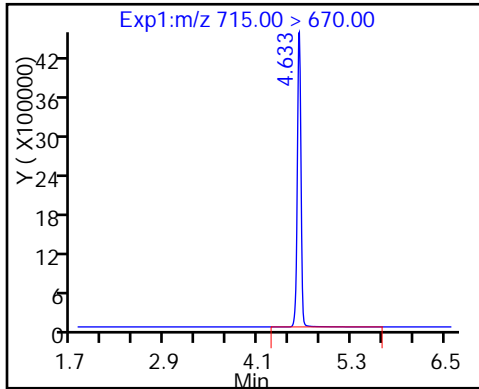
42 Perfluorotetradecanoic acid



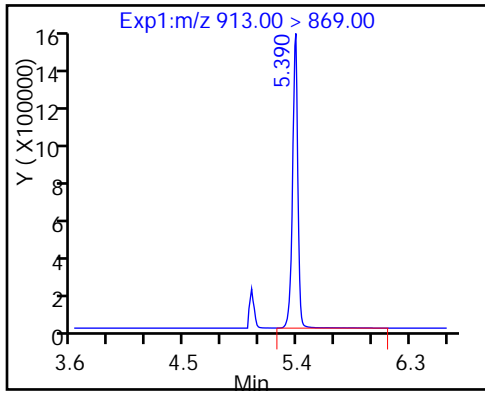
D 43 13C2-PFTeDA

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

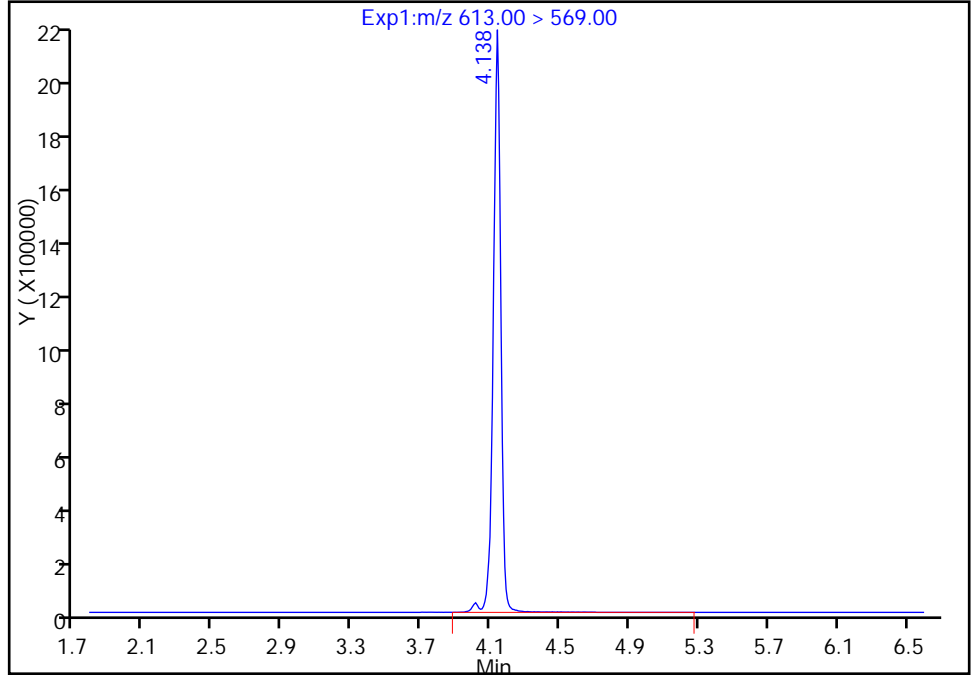
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_057.d
Injection Date: 06-Mar-2017 03:04:09 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 57
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

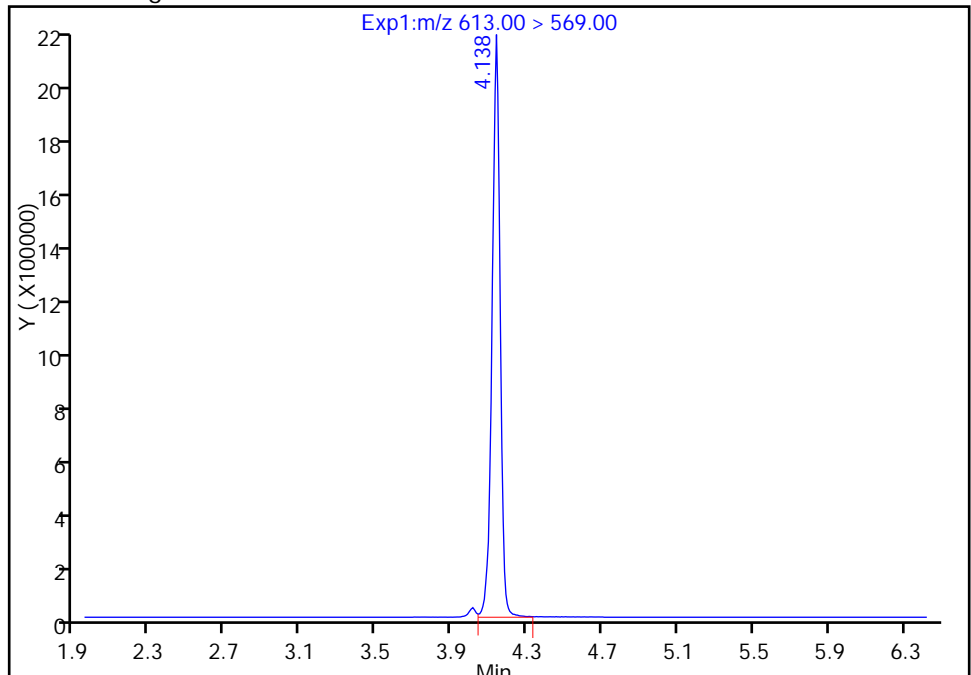
RT: 4.14
Area: 6508997
Amount: 52.213043
Amount Units: ng/ml

Processing Integration Results



RT: 4.14
Area: 6387545
Amount: 51.238795
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 07-Mar-2017 14:54:05
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-153421/62 Calibration Date: 03/06/2017 03:41
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.04A_062.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8704		20.5	20.0	2.7	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.007		20.6	20.0	2.9	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.472		18.2	17.7	2.8	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8811		19.8	20.0	-0.9	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9419		19.5	20.0	-2.6	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	0.9773		17.3	18.2	-5.0	25.0
6:2FTS	L2ID		0.8828		18.8	19.0	-1.1	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.9527		18.6	20.0	-6.8	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.046		19.3	19.0	1.5	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9483		17.9	18.6	-3.6	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9027		20.0	20.0	-0.1	25.0
8:2FTS	L2ID		0.9869		20.4	19.2	6.4	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9074		20.2	20.0	1.0	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9293		20.5	20.0	2.6	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9536		19.6	20.0	-1.8	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5878		19.0	19.3	-1.3	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.9152		20.1	20.0	0.5	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.8713		17.2	20.0	-14.0	25.0
MeFOSA	AveID	0.9355	0.8961		19.2	20.0	-4.2	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.8677		19.0	20.0	-5.1	25.0
N-EtFOSA-M	AveID	0.9837	0.9451		19.2	20.0	-3.9	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8525		19.5	20.0	-2.4	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.976		20.1	20.0	0.5	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9101		19.3	20.0	-3.7	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6969		19.4	20.0	-2.9	25.0
13C4 PFBA	Ave	292242	360646		61.7	50.0	23.4	50.0
13C5-PFPeA	Ave	232192	275366		59.3	50.0	18.6	50.0
13C2 PFHxA	Ave	210884	250691		59.4	50.0	18.9	50.0
13C4-PFHpA	Ave	192959	225266		58.4	50.0	16.7	50.0
18O2 PFHxS	Ave	290899	341371		55.5	47.3	17.4	50.0
M2-6:2FTS	Ave	77178	99454		61.2	47.5	28.9	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-153421/62 Calibration Date: 03/06/2017 03:41
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.04A_062.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	240275		58.6	50.0	17.2	50.0
13C4 PFOS	Ave	241637	282611		55.9	47.8	17.0	50.0
13C5 PFNA	Ave	177866	207377		58.3	50.0	16.6	50.0
13C8 FOSA	Ave	366918	409702		55.8	50.0	11.7	50.0
M2-8:2FTS	Ave	92602	127699		66.1	47.9	37.9	50.0
13C2 PFDA	Ave	166704	190672		57.2	50.0	14.4	50.0
d3-NMeFOSAA	Ave	85186	99944		58.7	50.0	17.3	50.0
d5-NEtFOSAA	Ave	81371	95413		58.6	50.0	17.3	50.0
13C2 PFUnA	Ave	130805	162746		62.2	50.0	24.4	50.0
d-N-MeFOSA-M	Ave	87983	99163		56.4	50.0	12.7	50.0
13C2 PFDoA	Ave	123944	146511		59.1	50.0	18.2	50.0
d-N-EtFOSA-M	Ave	85249	95303		55.9	50.0	11.8	50.0
13C2-PFTeDA	Ave	259165	316704		61.1	50.0	22.2	50.0
13C2-PFHxDA	Ave	125061	155198		62.0	50.0	24.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_062.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 06-Mar-2017 03:41:41 ALS Bottle#: 31 Worklist Smp#: 62
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 07-Mar-2017 14:59:22 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK017

First Level Reviewer: changnoit Date: 07-Mar-2017 14:59:22

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	1.530	1.530	0.0	18032295	61.7		123	2822190	
2 Perfluorobutyric acid	212.90 > 169.00	1.538	1.538	0.0	1.000	6277793	20.5	103	41549	
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.811	0.0	13768311	59.3		119	2487147	
4 Perfluoropentanoic acid	262.90 > 219.00	1.811	1.811	0.0	1.000	5546007	20.6	103	343704	
D 47 13C3-PFBS	301.90 > 83.00	1.851	1.851	0.0	346359	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.851	1.851	0.0	1.000	8886057	18.2	103		
	298.90 > 99.00	1.851	1.851	0.0	1.000	3835157	2.32(0.00-0.00)			
6 Perfluorohexanoic acid	313.00 > 269.00	2.113	2.113	0.0	1.000	4417887	19.8	99.1	0.0	
D 7 13C2 PFHxA	315.00 > 270.00	2.104	2.104	0.0	12534561	59.4		119	48417	
D 9 13C4-PFHpA	367.00 > 322.00	2.443	2.443	0.0	11263312	58.4		117	51514	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.451	2.451	0.0	1.000	4243323	19.5	97.4	65696	
D 11 18O2 PFHxS	403.00 > 84.00	2.467	2.467	0.0	16146851	55.5		117	94817	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.467	2.467	0.0	1.000	6071734	17.3	95.0		M
D 12 M2-6:2FTS	429.00 > 409.00	2.786	2.786	0.0	4724077	61.2		129		M

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	2.786	2.786	0.0	1.000	1664708	18.8	98.9	
15 Perfluorooctanoic acid	413.00	> 369.00	2.809	2.809	0.0	1.000	4577967	18.6	93.2	75471
	413.00	> 169.00	2.817	2.809	0.008	1.003	2762997		1.66(0.90-1.10)	445529
D 14 13C4 PFOA	417.00	> 372.00	2.817	2.817	0.0		12013740	58.6	117	43457
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.817	2.817	0.0	1.000	5629759	19.3	101	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.159	3.159	0.0	1.000	4973879	17.9	96.4	60765
	499.00	> 99.00	3.183	3.159	0.024	1.008	1129566		4.40(0.90-1.10)	2198
20 Perfluorononanoic acid	463.00	> 419.00	3.183	3.183	0.0	1.000	3744017	20.0	99.9	1119814
D 19 13C5 PFNA	468.00	> 423.00	3.192	3.192	0.0		10368849	58.3	117	2974329
D 18 13C4 PFOS	503.00	> 80.00	3.183	3.183	0.0		13508793	55.9	117	894199
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.533	3.533	0.0	1.000	2414636	20.4	106	
D 26 M2-8:2FTS	529.00	> 509.00	3.533	3.533	0.0		6116800	66.1	138	
D 21 13C8 FOSA	506.00	> 78.00	3.533	3.533	0.0		20485112	55.8	112	3111379
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.533	3.533	0.0	1.000	7435487	20.2	101	1197332
24 Perfluorodecanoic acid	513.00	> 469.00	3.542	3.542	0.0	1.000	3543859	20.5	103	7025
D 23 13C2 PFDA	515.00	> 470.00	3.542	3.542	0.0		9533608	57.2	114	720304
D 27 d3-NMeFOSAA	573.00	> 419.00	3.690	3.690	0.0		4997215	58.7	117	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.700	3.700	0.0	1.003	1906158	19.6	98.2	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.845	3.845	0.0	1.000	3202484	19.0	98.7	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.854	3.854	0.0		4770636	58.6	117	
D 30 13C2 PFUnA	565.00	> 520.00	3.862	3.862	0.0		8137309	62.2	124	31109
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.862	3.862	0.0	1.002	1746503	20.1	101	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.871	3.871	0.0	1.000	2836134	17.2	86.0	105748
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.023	4.023	0.0		4958163	56.4	113	
35 MeFOSA	512.00	> 169.00	4.033	4.033	0.0	1.000	1777286	19.2	95.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
37 Perfluorododecanoic acid	613.00	> 569.00	4.147	4.147	0.0	1.000	2542408	19.0	94.9	21829	M
D 36 13C2 PFDaA	615.00	> 570.00	4.147	4.147	0.0		7325552	59.1	118	7464	
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.212	4.212	0.0		4765146	55.9	112		
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.220	4.220	0.0	1.000	1801471	19.2	96.1		
41 Perfluorotridecanoic acid	663.00	> 619.00	4.414	4.414	0.0	1.000	2497916	19.5	97.6	826012	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.643	4.643	0.0	1.000	5790054	20.1	100	223763	
	713.00	> 169.00	4.643	4.643	0.0	1.000	742875		7.79(0.00-0.00)	246384	
D 43 13C2-PFTeDA	715.00	> 670.00	4.643	4.643	0.0		15835208	61.1	122	71804	
D 44 13C2-PFHxDA	815.00	> 770.00	5.051	5.051	0.0		7759882	62.0	124	201022	
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.051	5.051	0.0	1.000	2666755	19.3	96.3	3430	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.393	5.393	0.0	1.000	2041984	19.4	97.1	3814	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L4_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_062.d

Injection Date: 06-Mar-2017 03:41:41

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 31

Worklist Smp#: 62

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

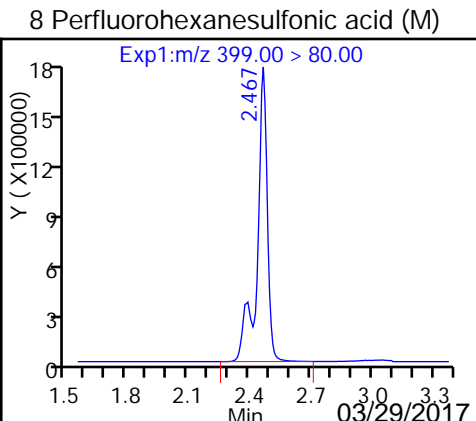
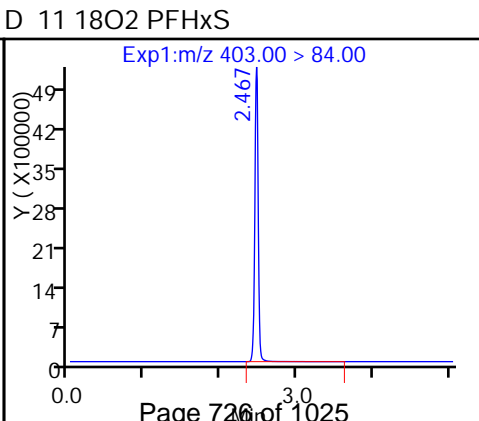
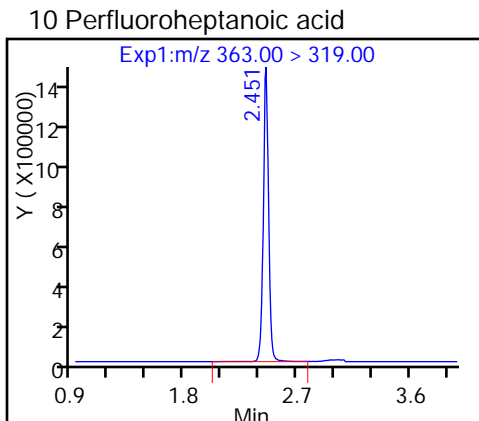
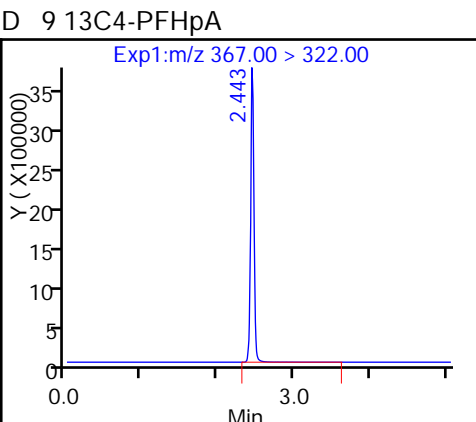
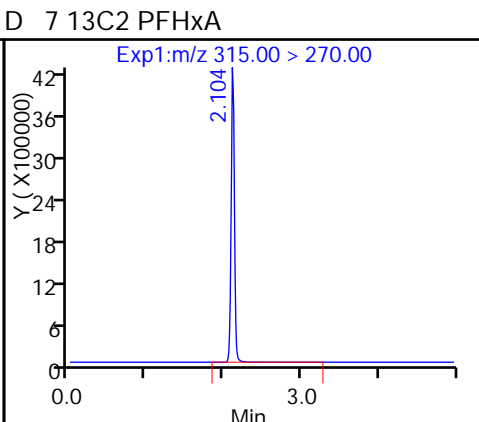
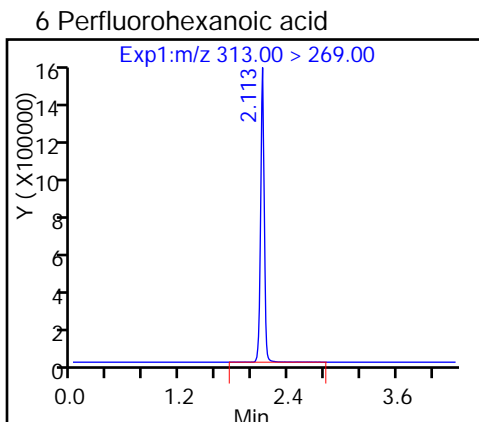
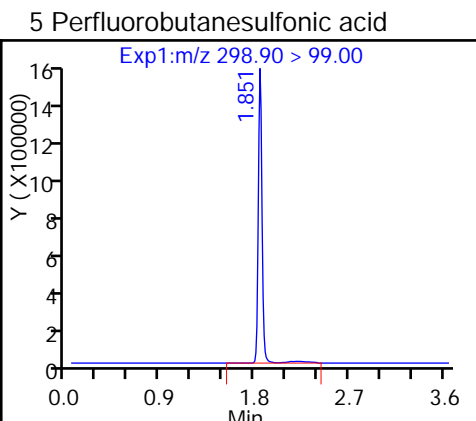
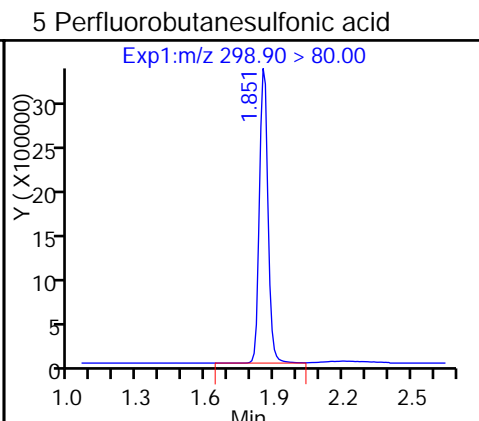
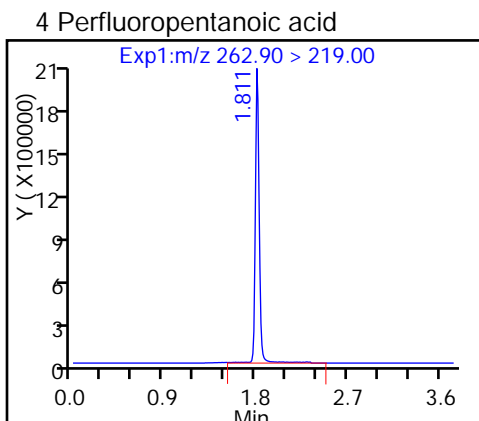
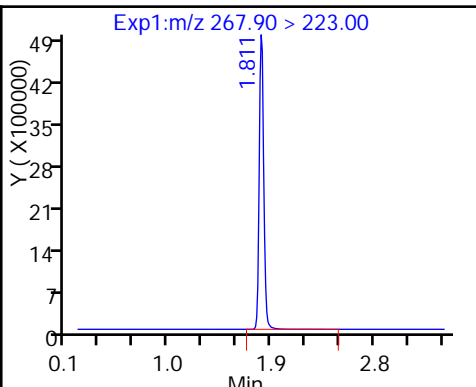
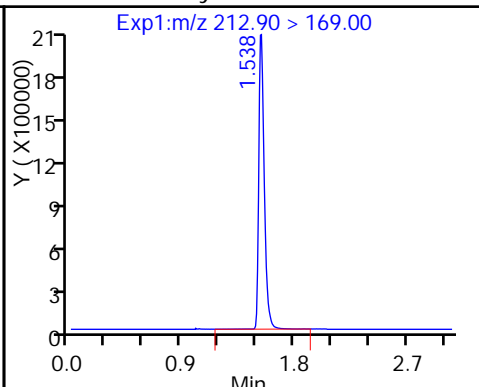
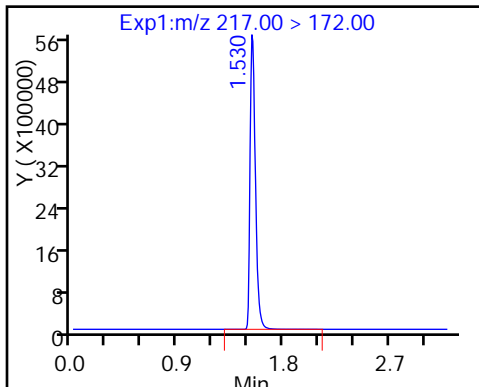
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

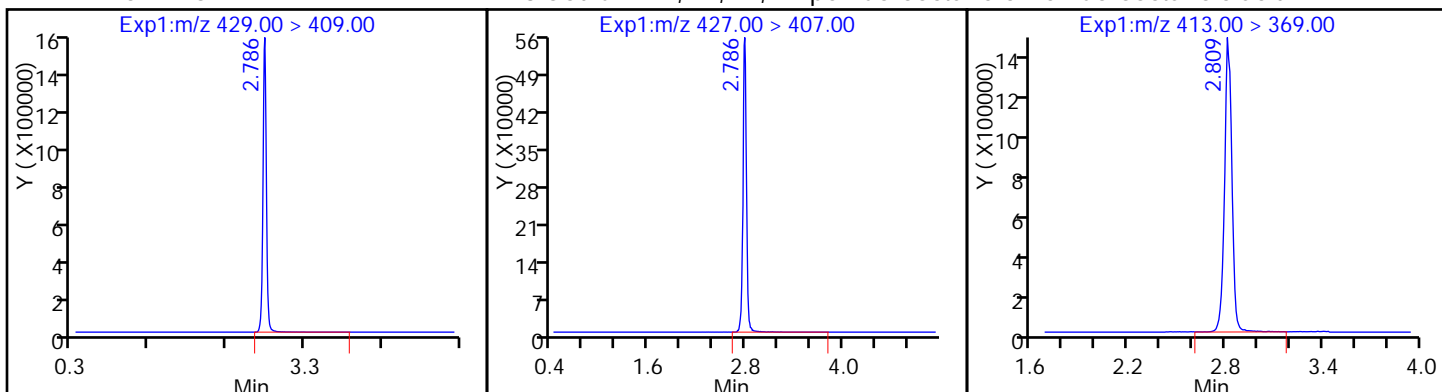
2 Perfluorobutyric acid

D 3 13C5-PFPeA



D 12 M2-6:2FTS

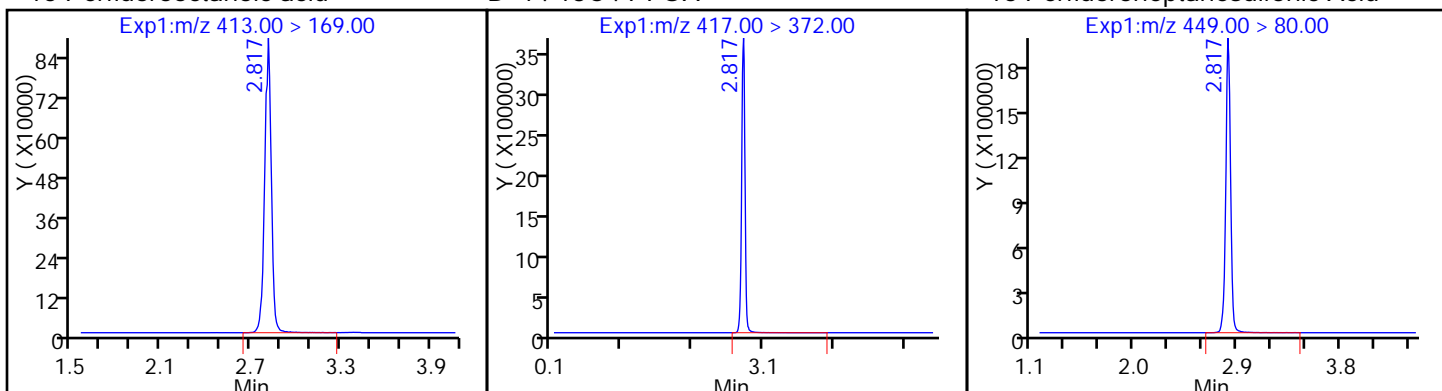
13 Sodium 1H,1H,2H,2H-perfluorooctane 5 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

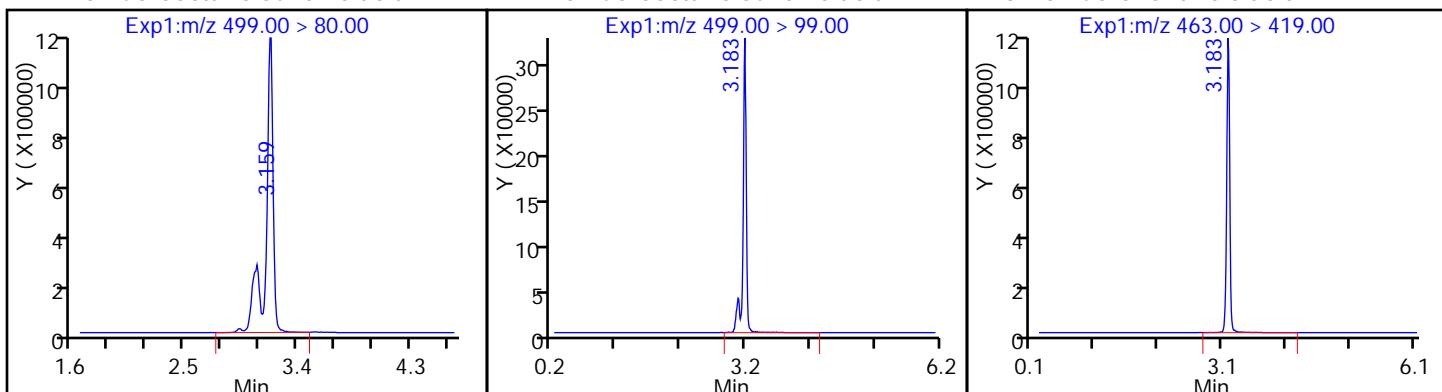
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

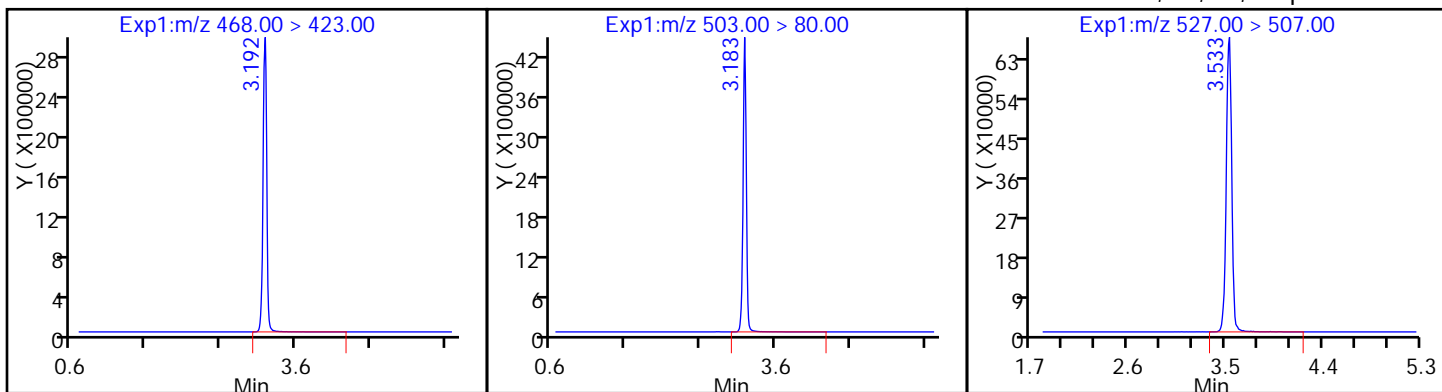
20 Perfluorononanoic acid



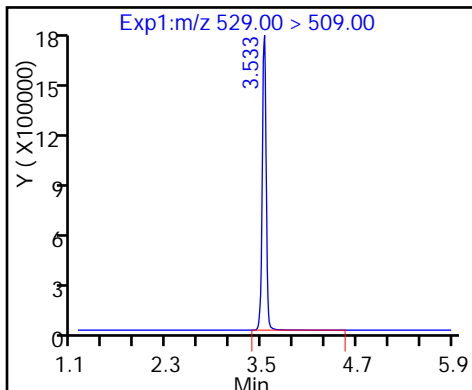
D 19 13C5 PFNA

D 18 13C4 PFOS

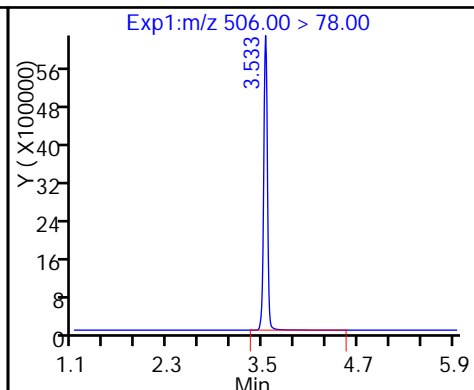
25 Sodium 1H,1H,2H,2H-perfluorooctane



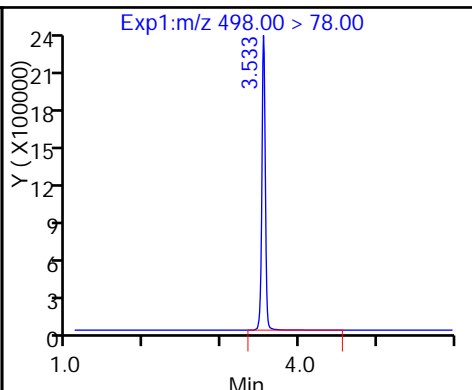
D 26 M2-8:2FTS



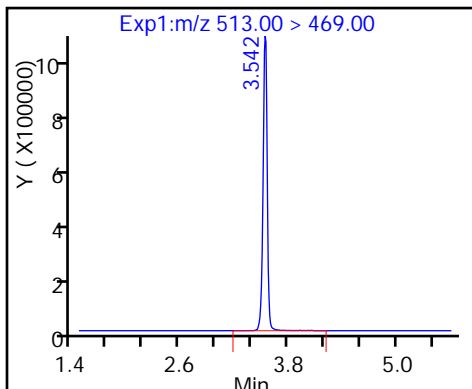
D 21 13C8 FOSA



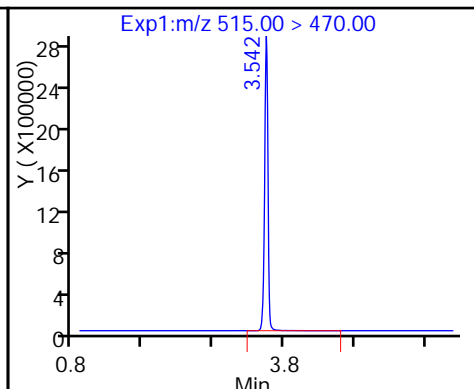
22 Perfluorooctane Sulfonamide



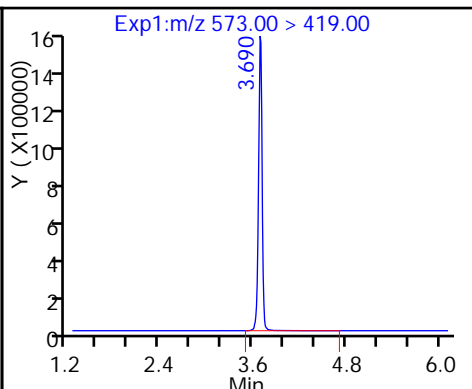
24 Perfluorodecanoic acid



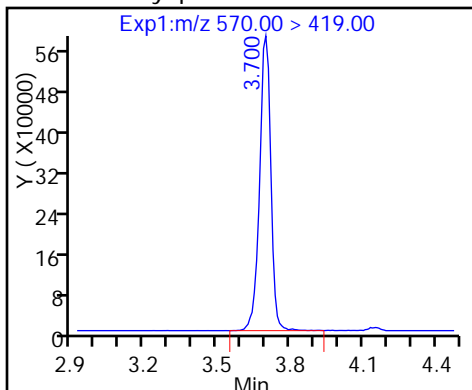
D 23 13C2 PFDA



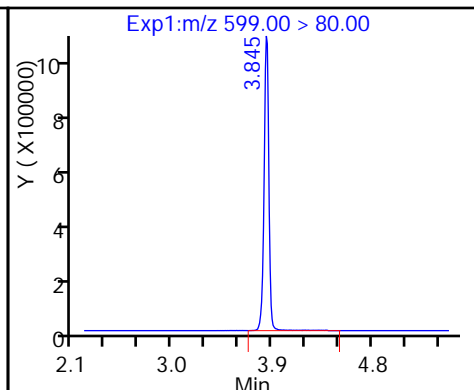
D 27 d3-NMeFOSAA



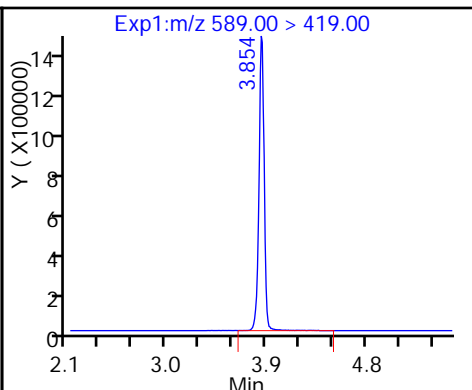
28 N-methyl perfluorooctane sulfonami



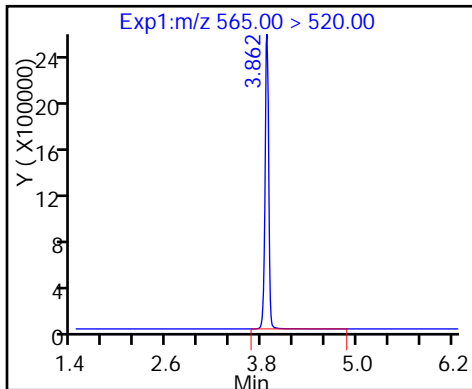
29 Perfluorodecane Sulfonic acid



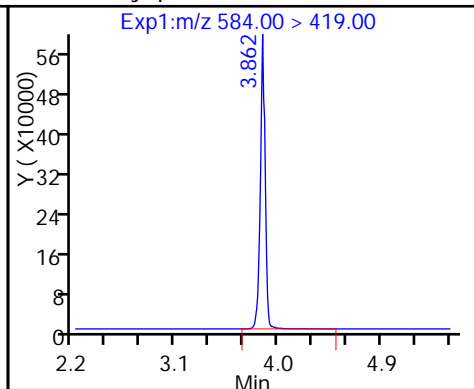
D 32 d5-NEtFOSAA



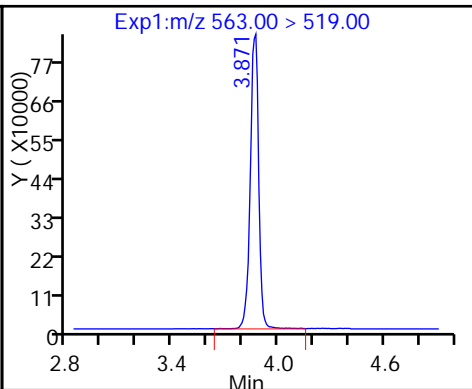
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid



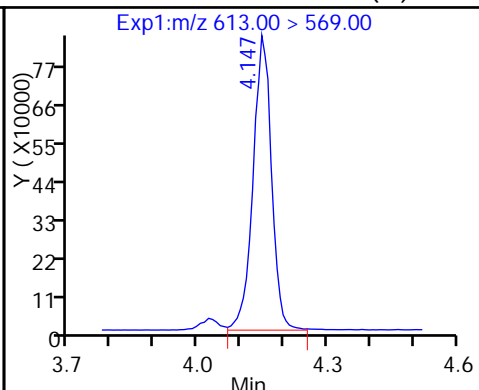
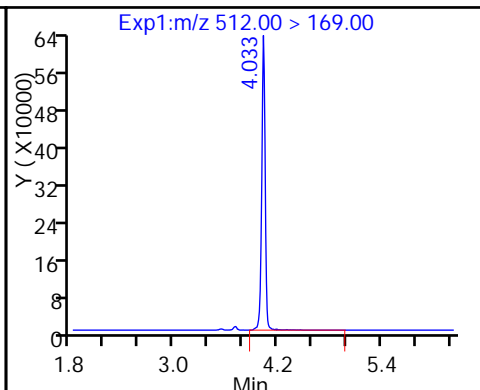
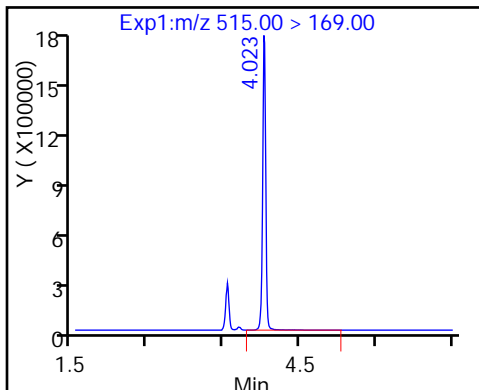
31 Perfluoroundecanoic acid



D 34 d-N-MeFOSA-M

35 MeFOSA

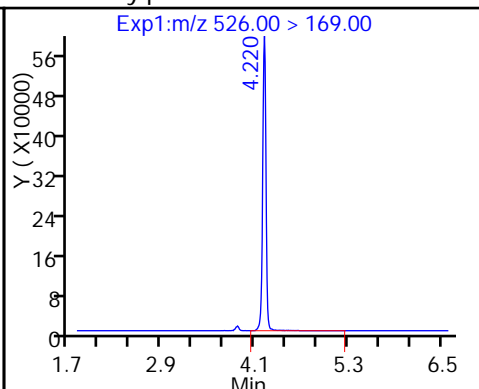
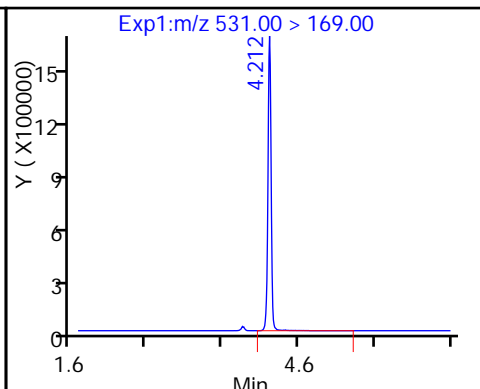
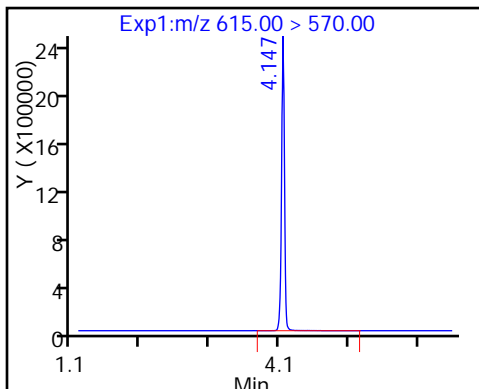
37 Perfluorododecanoic acid (M)



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

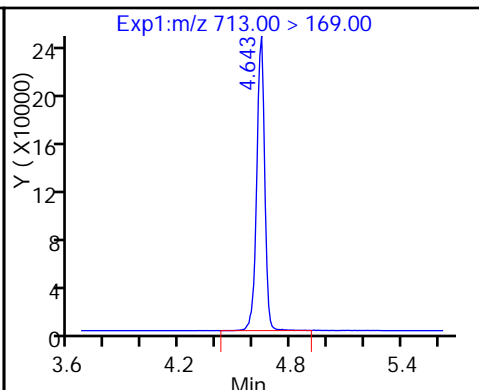
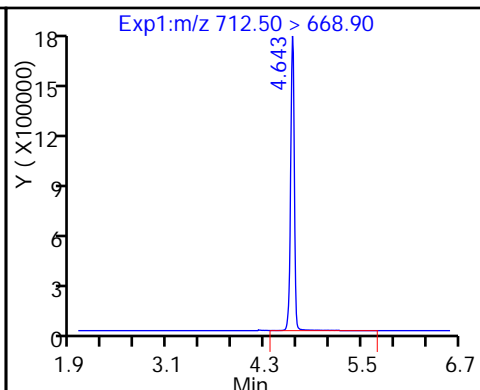
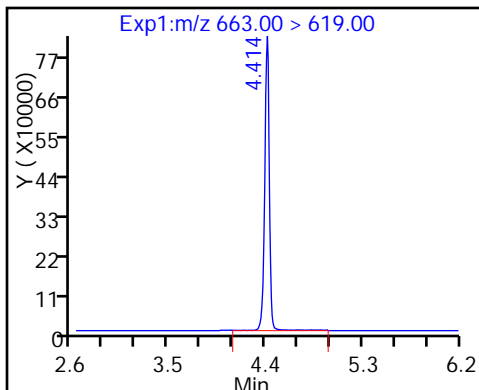
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

42 Perfluorotetradecanoic acid

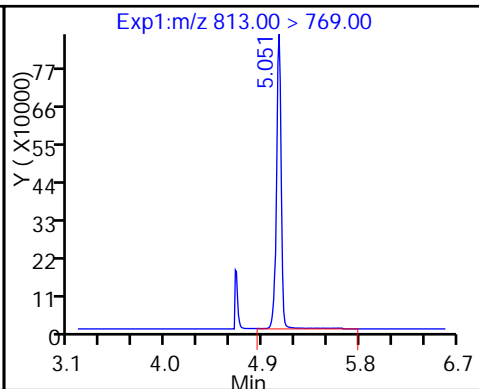
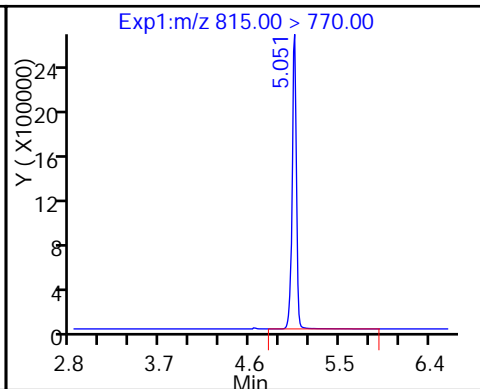
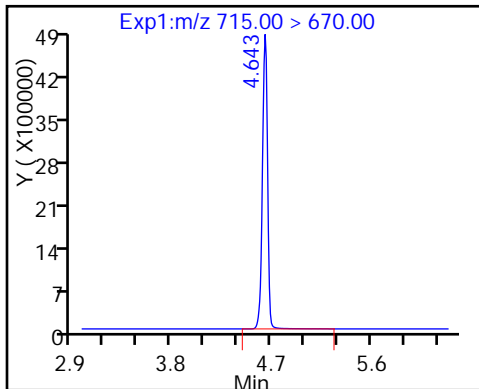
42 Perfluorotetradecanoic acid



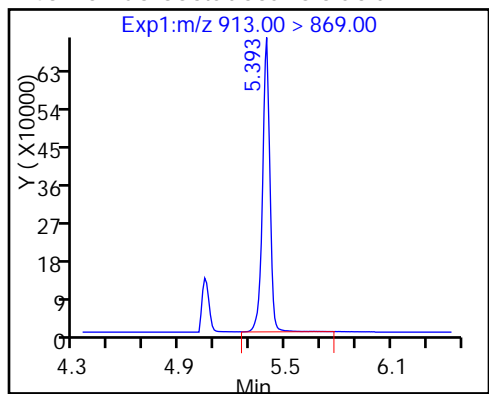
D 43 13C2-PFTeDA

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

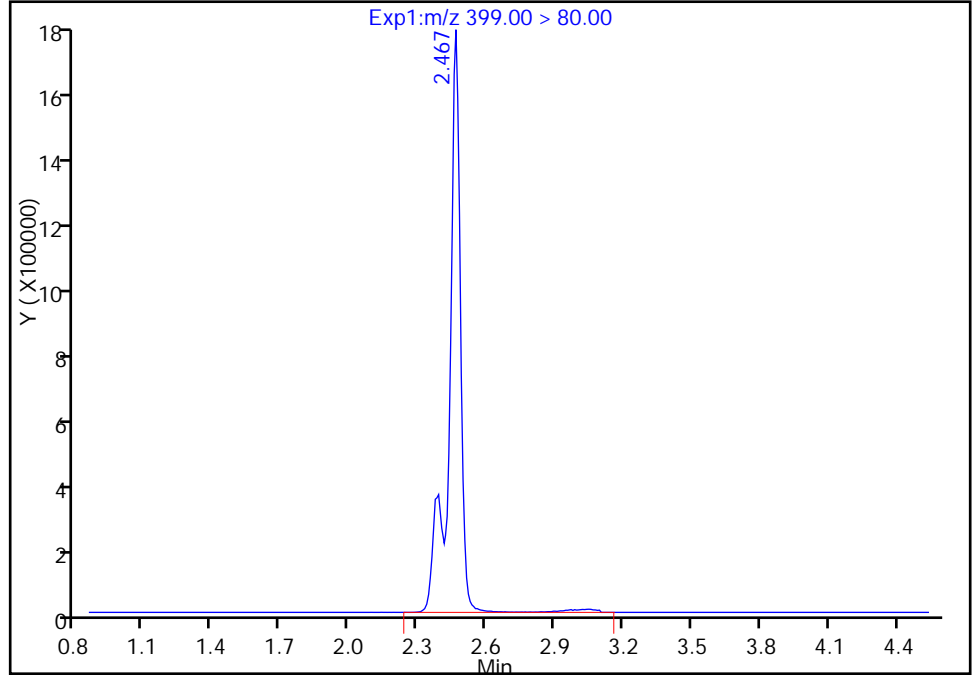
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_062.d
Injection Date: 06-Mar-2017 03:41:41 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 62
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

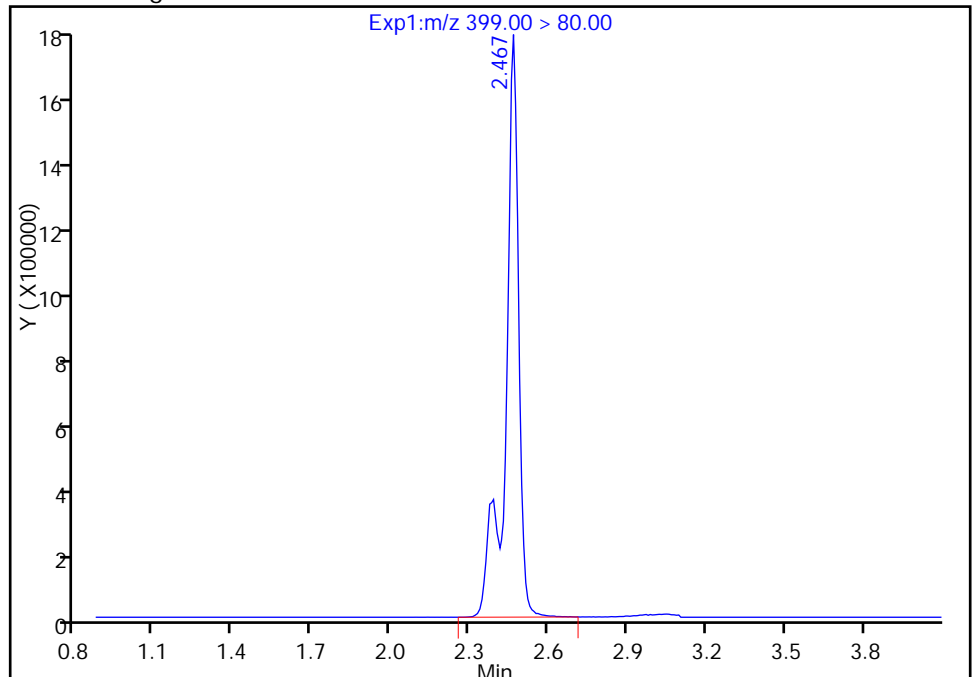
RT: 2.47
Area: 6180652
Amount: 17.604641
Amount Units: ng/ml

Processing Integration Results



RT: 2.47
Area: 6071734
Amount: 17.294405
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 07-Mar-2017 14:57:41
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

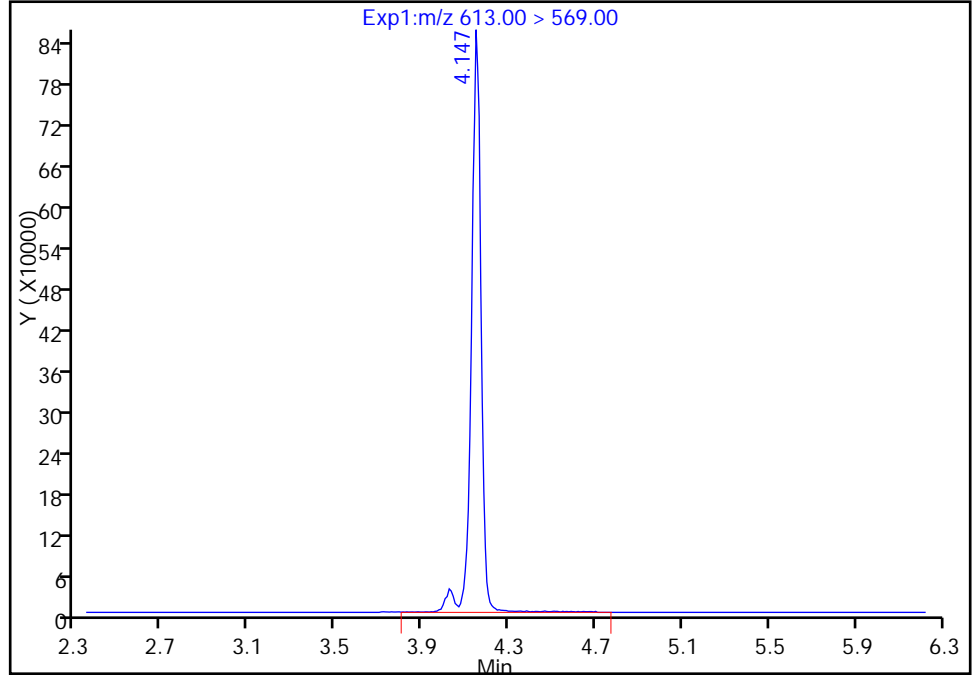
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_062.d
Injection Date: 06-Mar-2017 03:41:41 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 62
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

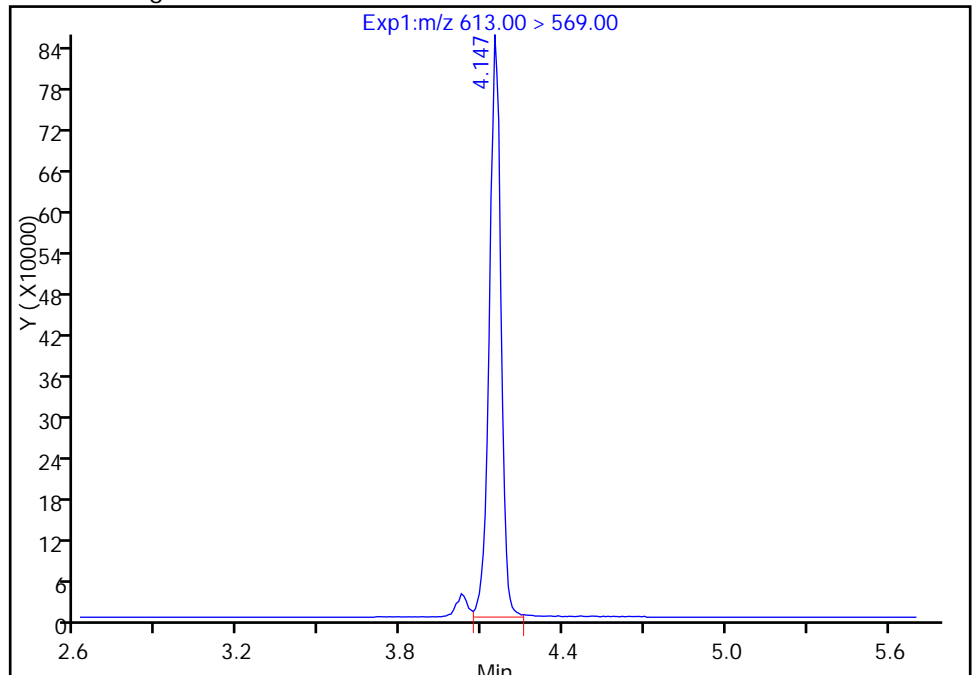
RT: 4.15
Area: 2689420
Amount: 20.072640
Amount Units: ng/ml

Processing Integration Results



RT: 4.15
Area: 2542408
Amount: 18.975408
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 07-Mar-2017 14:58:52
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-153421/64 Calibration Date: 03/06/2017 03:56
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.04A_064.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.9122		53.8	50.0	7.7	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9885		50.5	50.0	1.0	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.476		45.6	44.2	3.1	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8909		50.1	50.0	0.2	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	1.009		52.1	50.0	4.3	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.046		46.3	45.5	1.7	25.0
6:2FTS	L2ID		0.8496		45.3	47.4	-4.4	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.020		49.9	50.0	-0.2	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.120		51.7	47.6	8.6	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.037		48.9	46.4	5.4	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9662		53.4	50.0	6.9	25.0
8:2FTS	L2ID		0.9518		49.3	47.9	2.8	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9291		51.3	50.0	2.6	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9393		52.3	50.0	4.5	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9457		48.7	50.0	-2.6	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6509		52.7	48.2	9.3	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8604		47.3	50.0	-5.5	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9857		48.6	50.0	-2.8	25.0
MeFOSA	AveID	0.9355	0.8921		47.7	50.0	-4.6	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9220		50.4	50.0	0.8	25.0
N-EtFOSA-M	AveID	0.9837	0.9330		47.4	50.0	-5.2	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9328		53.4	50.0	6.8	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	2.166		55.1	50.0	10.2	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.004		53.8	50.0	7.6	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6925		48.3	50.0	-3.5	25.0
13C4 PFBA	Ave	292242	342276		58.6	50.0	17.1	50.0
13C5-PFPeA	Ave	232192	263369		56.7	50.0	13.4	50.0
13C2 PFHxA	Ave	210884	240680		57.1	50.0	14.1	50.0
13C4-PFHpA	Ave	192959	212943		55.2	50.0	10.4	50.0
18O2 PFHxS	Ave	290899	324284		52.7	47.3	11.5	50.0
M2-6:2FTS	Ave	77178	92911		57.2	47.5	20.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-153421/64 Calibration Date: 03/06/2017 03:56
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.04A_064.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	220272		53.7	50.0	7.5	50.0
13C4 PFOS	Ave	241637	269460		53.3	47.8	11.5	50.0
13C5 PFNA	Ave	177866	190481		53.5	50.0	7.1	50.0
M2-8:2FTS	Ave	92602	104974		54.3	47.9	13.4	50.0
13C8 FOSA	Ave	366918	394867		53.8	50.0	7.6	50.0
13C2 PFDA	Ave	166704	174748		52.4	50.0	4.8	50.0
d3-NMeFOSAA	Ave	85186	97122		57.0	50.0	14.0	50.0
d5-NEtFOSAA	Ave	81371	86644		53.2	50.0	6.5	50.0
13C2 PFUnA	Ave	130805	137665		52.6	50.0	5.2	50.0
d-N-MeFOSA-M	Ave	87983	99007		56.3	50.0	12.5	50.0
13C2 PFDoA	Ave	123944	137175		55.3	50.0	10.7	50.0
d-N-EtFOSA-M	Ave	85249	94006		55.1	50.0	10.3	50.0
13C2-PFTeDA	Ave	259165	310305		59.9	50.0	19.7	50.0
13C2-PFHxDA	Ave	125061	152702		61.1	50.0	22.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_064.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 06-Mar-2017 03:56:42 ALS Bottle#: 32 Worklist Smp#: 64
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 07-Mar-2017 15:02:30 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK017

First Level Reviewer: changnoit Date: 07-Mar-2017 15:02:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA	217.00 > 172.00	1.530	1.530	0.0	17113818	58.6		117	2671438	
2 Perfluorobutyric acid	212.90 > 169.00	1.538	1.538	0.0	1.000	15611029	53.8	108	167902	
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.811	0.0	13168431	56.7		113	4838131	
4 Perfluoropentanoic acid	262.90 > 219.00	1.811	1.811	0.0	1.000	13016271	50.5	101	222714	
D 47 13C3-PFBS	301.90 > 83.00	1.851	1.851	0.0	330874	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.851	1.851	0.0	1.000	21162346	45.6	103		
	298.90 > 99.00	1.851	1.851	0.0	1.000	9280867	2.28(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.115	2.115	0.0	12033988	57.1		114	47911	
6 Perfluorohexanoic acid	313.00 > 269.00	2.115	2.115	0.0	1.000	10720546	50.1	100	467702	
D 9 13C4-PFHpA	367.00 > 322.00	2.457	2.457	0.0	10647144	55.2		110	40693	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.457	2.457	0.0	1.000	10739549	52.1	104	1159298	
D 11 18O2 PFHxS	403.00 > 84.00	2.472	2.472	0.0	15338655	52.7		111	64483	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.472	2.472	0.0	1.000	15432954	46.3	102		
D 12 M2-6:2FTS	429.00 > 409.00	2.784	2.784	0.0	4413259	57.2		120		

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	2.784	2.784	0.0	1.000	3741568	45.3	95.6	
15 Perfluorooctanoic acid	413.00	> 369.00	2.815	2.815	0.0	1.000	11234253	49.9	99.8	169038
	413.00	> 169.00	2.815	2.815	0.0	1.000	6748317		1.66(0.90-1.10)	25643
D 14 13C4 PFOA	417.00	> 372.00	2.815	2.815	0.0		11013623	53.7	107	38152
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.822	2.822	0.0	1.000	14364430	51.7	109	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.164	3.164	0.0	1.000	12965766	48.9	105	83332
	499.00	> 99.00	3.189	3.164	0.024	1.008	2954143		4.39(0.90-1.10)	6935
20 Perfluorononanoic acid	463.00	> 419.00	3.197	3.197	0.0	1.000	9201831	53.4	107	2597420
D 18 13C4 PFOS	503.00	> 80.00	3.180	3.180	0.0		12880192	53.3	112	398808
D 19 13C5 PFNA	468.00	> 423.00	3.189	3.189	0.0		9524032	53.5	107	2703752
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.525	3.525	0.0	1.000	4786047	49.3	103	
D 26 M2-8:2FTS	529.00	> 509.00	3.525	3.525	0.0		5028272	54.3	113	
D 21 13C8 FOSA	506.00	> 78.00	3.533	3.533	0.0		19743339	53.8	108	2005729
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.541	3.541	0.0	1.000	18544718	52.3	105	5765511
24 Perfluorodecanoic acid	513.00	> 469.00	3.541	3.541	0.0	1.000	8117705	51.3	103	811876
D 23 13C2 PFDA	515.00	> 470.00	3.550	3.550	0.0		8737418	52.4	105	350994
D 27 d3-NMeFOSAA	573.00	> 419.00	3.690	3.690	0.0		4856107	57.0	114	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.699	3.699	0.0	1.003	4592610	48.7	97.4	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.854	3.854	0.0	1.000	8454121	52.7	109	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.863	3.863	0.0		4332213	53.2	106	
D 30 13C2 PFUnA	565.00	> 520.00	3.871	3.871	0.0		6883253	52.6	105	31675
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.863	3.863	0.0	1.000	3727220	47.3	94.5	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.863	3.863	0.0	1.000	6784502	48.6	97.2	1041940
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.033	4.033	0.0		4950345	56.3	113	
35 MeFOSA	512.00	> 169.00	4.033	4.033	0.0	1.000	4416279	47.7	95.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
37 Perfluorododecanoic acid	613.00	> 569.00	4.156	4.156	0.0	1.000	6323873	50.4	101	66731	M
D 36 13C2 PFDaA	615.00	> 570.00	4.149	4.149	0.0		6858761	55.3	111	2298301	
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.215	4.215	0.0		4700281	55.1	110		
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.223	4.223	0.0	1.000	4385186	47.4	94.8		
41 Perfluorotridecanoic acid	663.00	> 619.00	4.417	4.417	0.0	1.000	6397634	53.4	107	428088	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.644	4.644	0.0	1.000	14856966	55.1	110	336030	
	713.00	> 169.00	4.644	4.644	0.0	1.000	2031631		7.31(0.00-0.00)	4034	
D 43 13C2-PFTeDA	715.00	> 670.00	4.644	4.644	0.0		15515271	59.9	120	57228	
D 44 13C2-PFHxDA	815.00	> 770.00	5.048	5.048	0.0		7635078	61.1	122	120335	
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.048	5.048	0.0	1.000	6888867	53.8	108	6742	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.397	5.397	0.0	1.000	4749454	48.3	96.5	5743	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L5_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_064.d

Injection Date: 06-Mar-2017 03:56:42

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 32

Worklist Smp#: 64

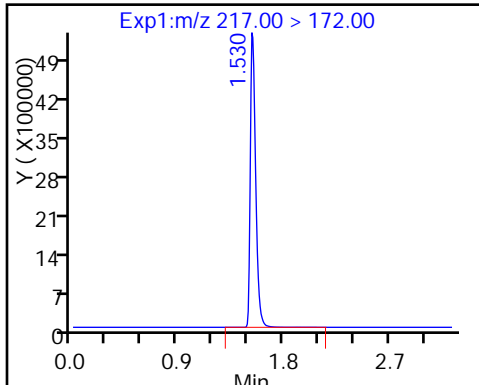
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

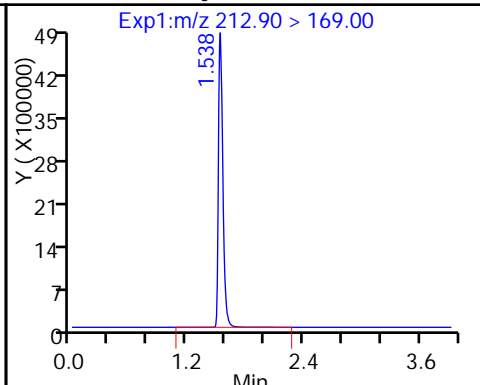
Method: A8_N

Limit Group: LC PFC_DOD ICAL

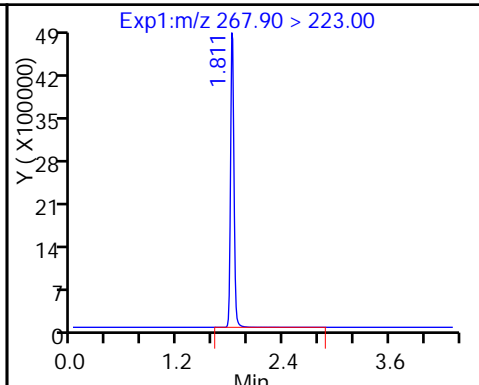
D 1 13C4 PFBA



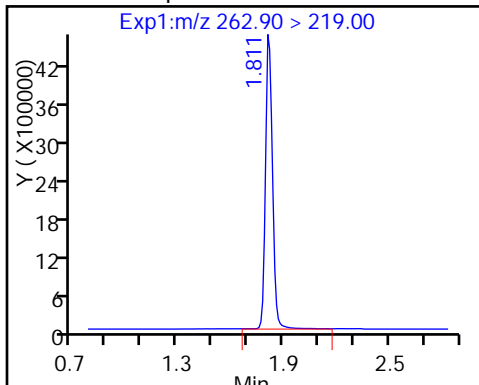
2 Perfluorobutyric acid



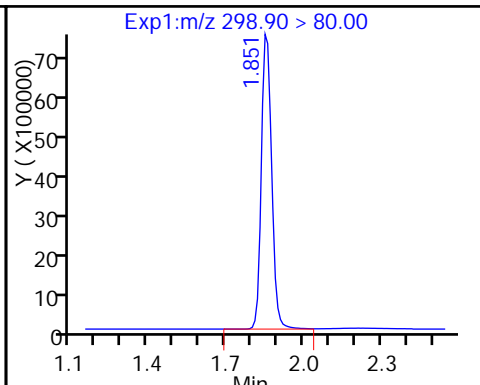
D 3 13C5-PFPeA



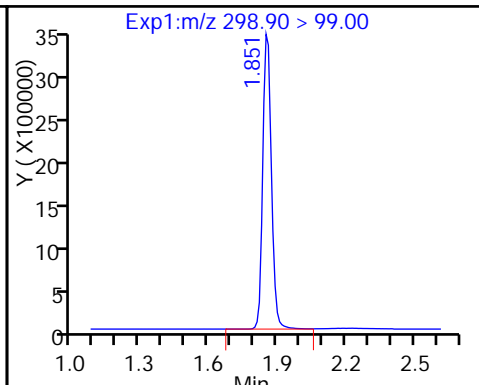
4 Perfluoropentanoic acid



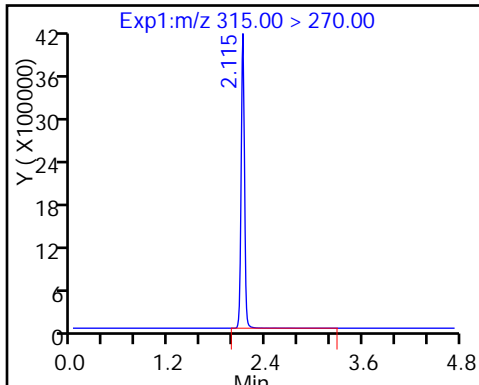
5 Perfluorobutanesulfonic acid



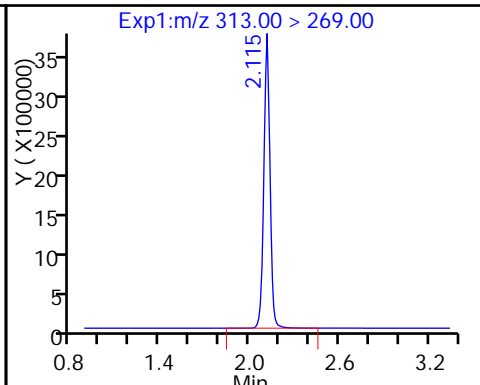
5 Perfluorobutanesulfonic acid



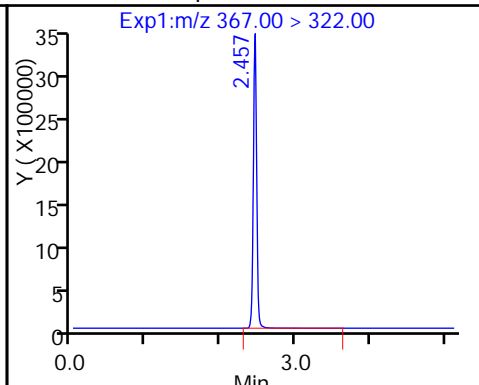
D 7 13C2 PFHxA



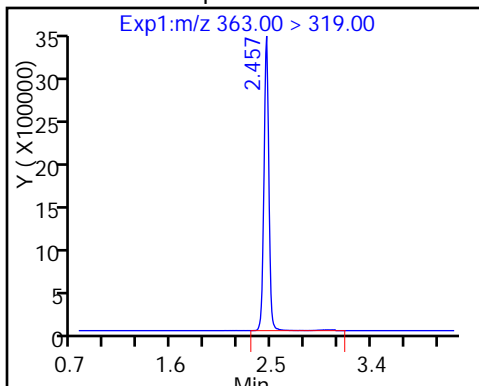
6 Perfluorohexanoic acid



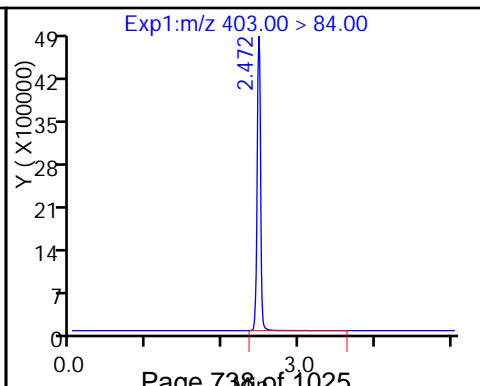
D 9 13C4-PFHpA



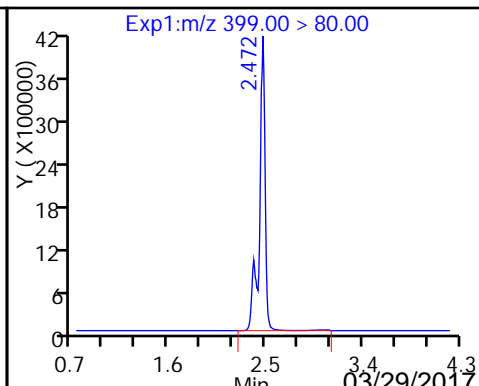
10 Perfluoroheptanoic acid



D 11 18O2 PFHxS

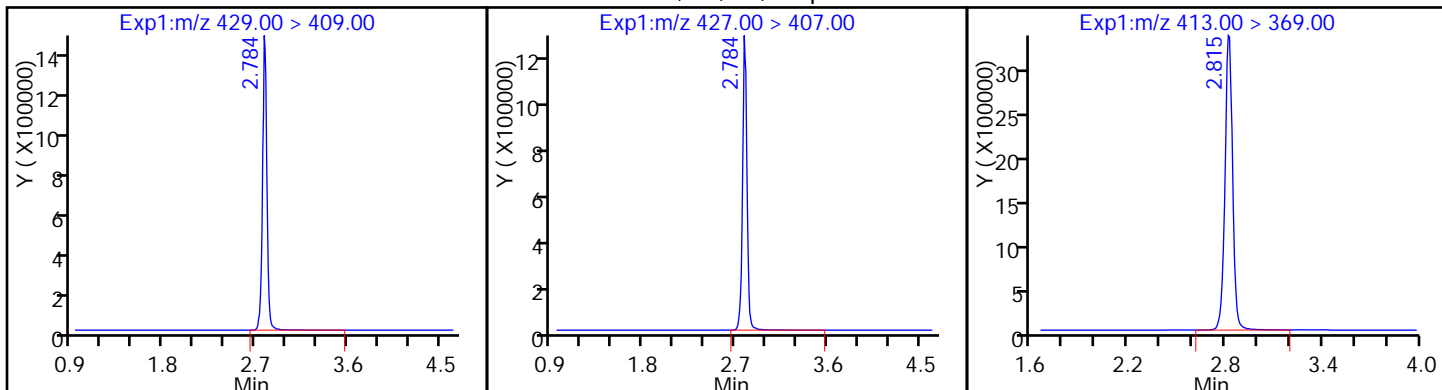


8 Perfluorohexanesulfonic acid



D 12 M2-6:2FTS

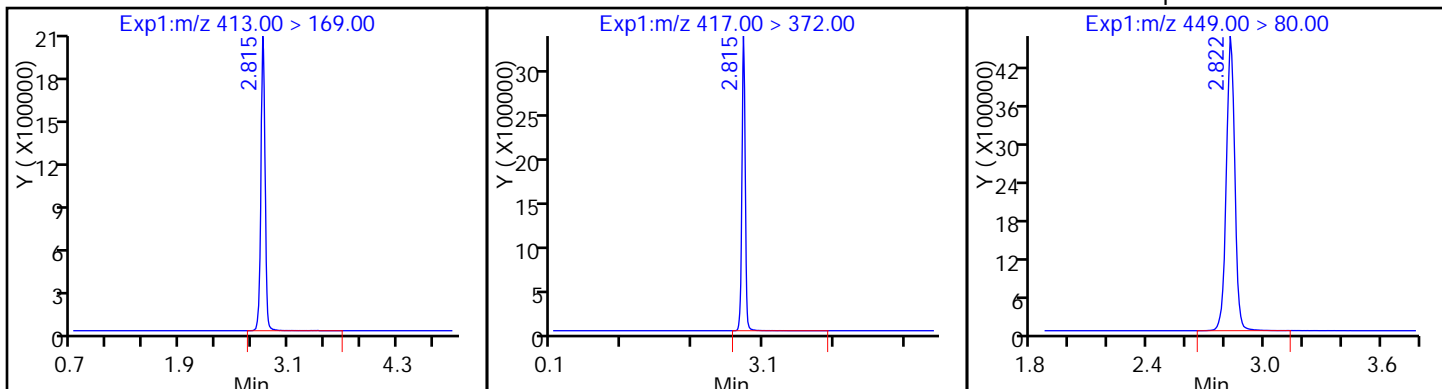
13 Sodium 1H,1H,2H,2H-perfluorooctane 5 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

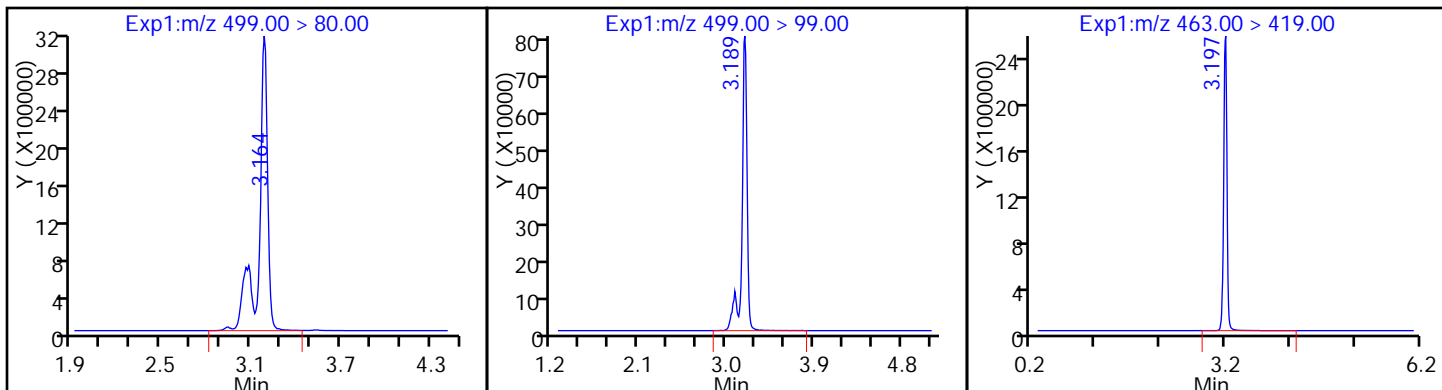
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

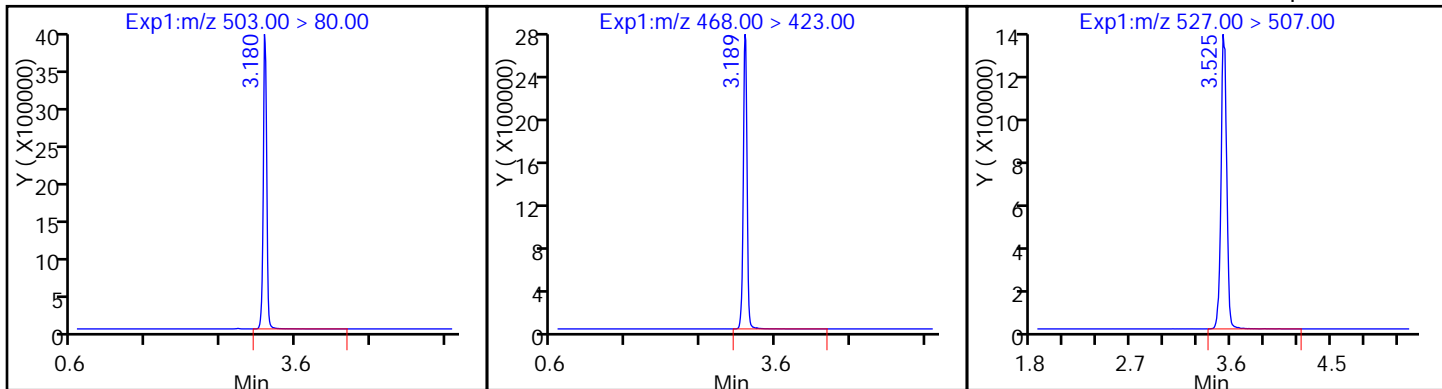
20 Perfluorononanoic acid



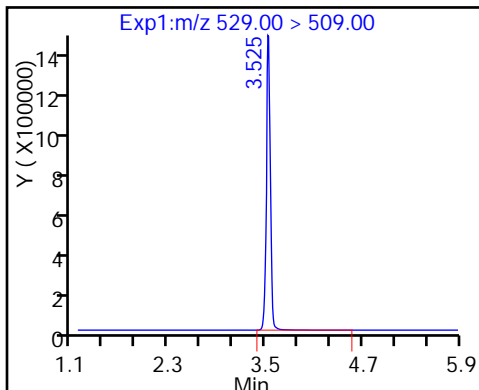
D 18 13C4 PFOS

D 19 13C5 PFNA

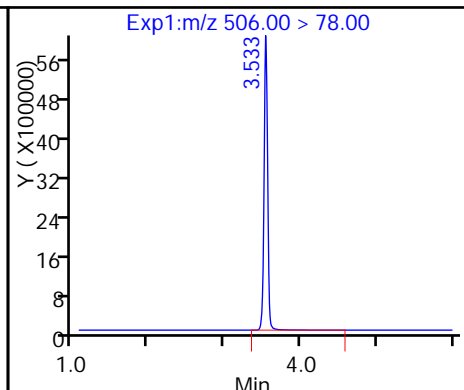
25 Sodium 1H,1H,2H,2H-perfluorooctane



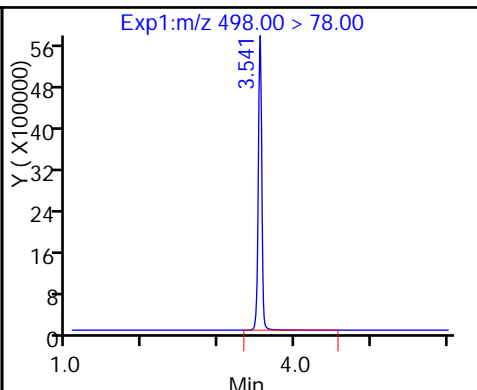
D 26 M2-8:2FTS



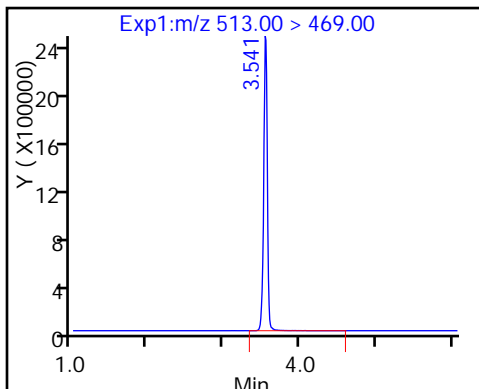
D 21 13C8 FOSA



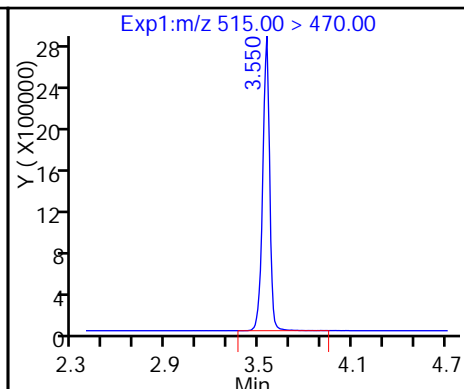
22 Perfluorooctane Sulfonamide



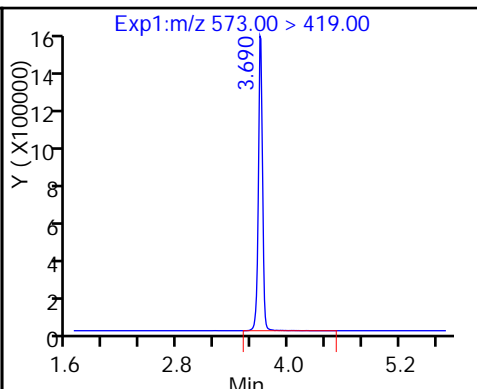
24 Perfluorodecanoic acid



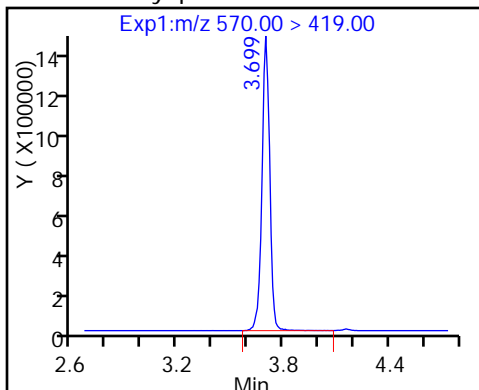
D 23 13C2 PFDA



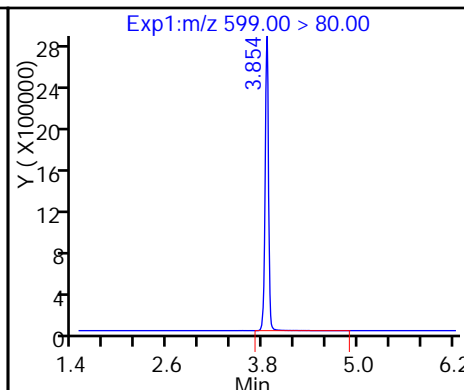
D 27 d3-NMeFOSAA



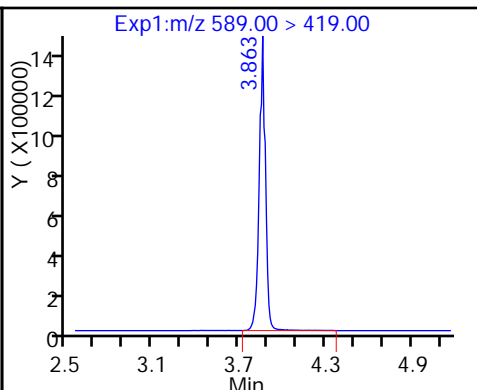
28 N-methyl perfluorooctane sulfonami



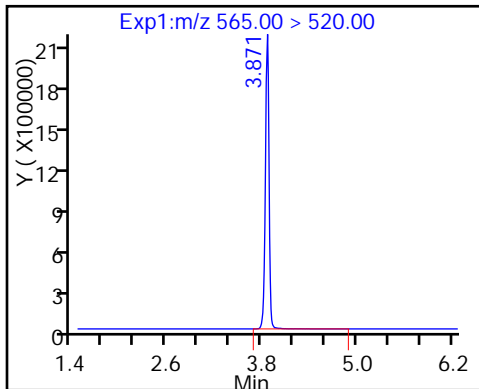
29 Perfluorodecane Sulfonic acid



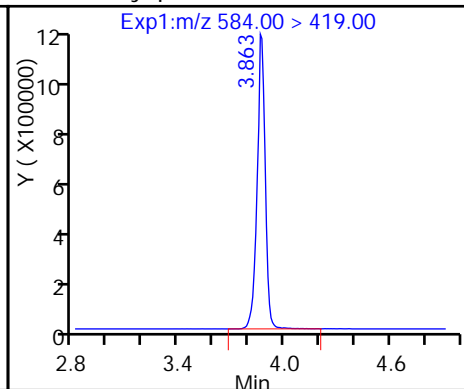
D 32 d5-NEtFOSAA



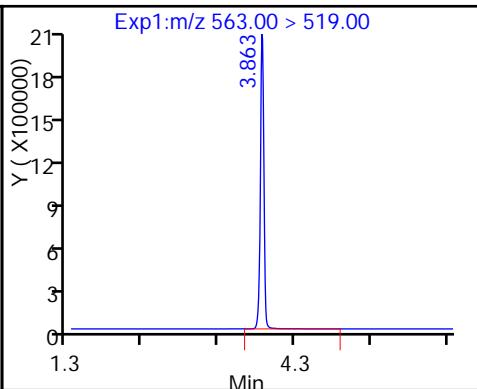
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid



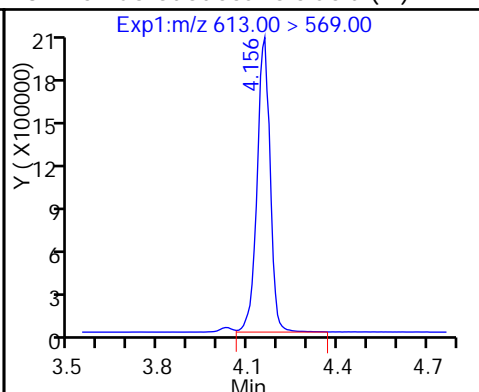
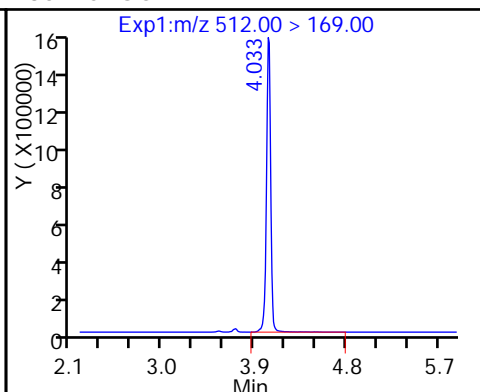
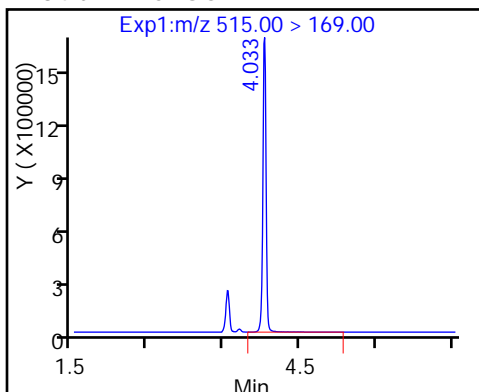
31 Perfluoroundecanoic acid



D 34 d-N-MeFOSA-M

35 MeFOSA

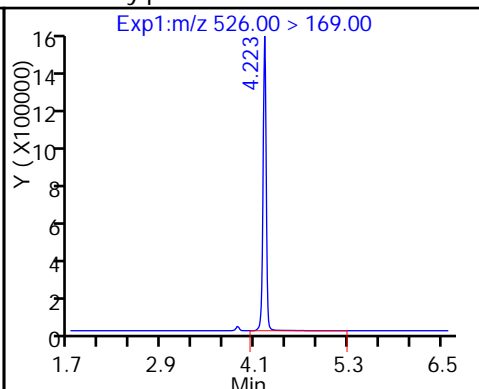
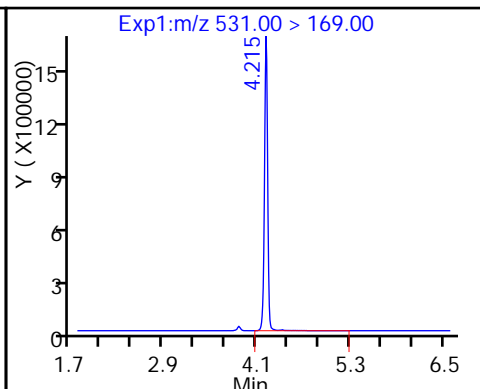
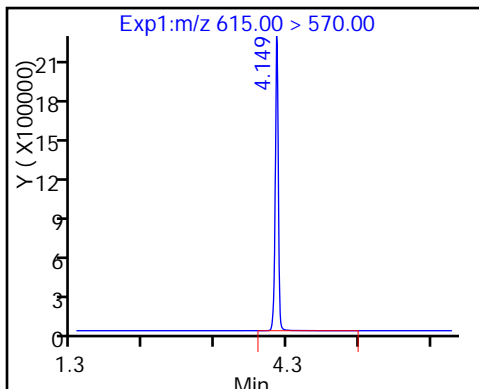
37 Perfluorododecanoic acid (M)



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

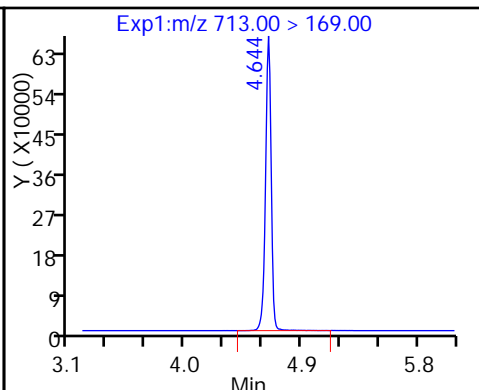
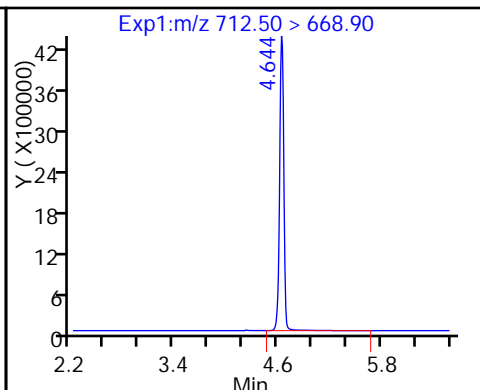
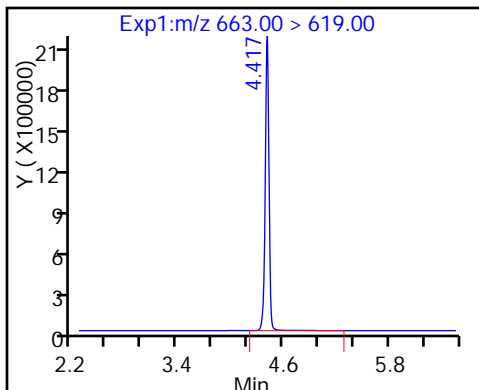
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

42 Perfluorotetradecanoic acid

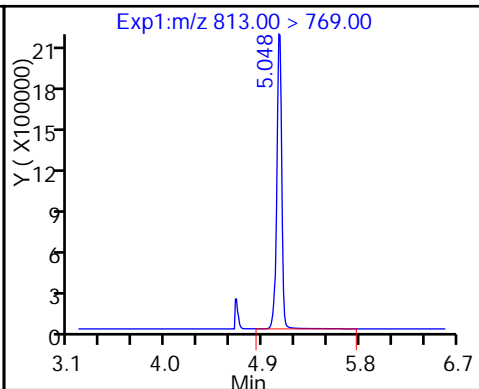
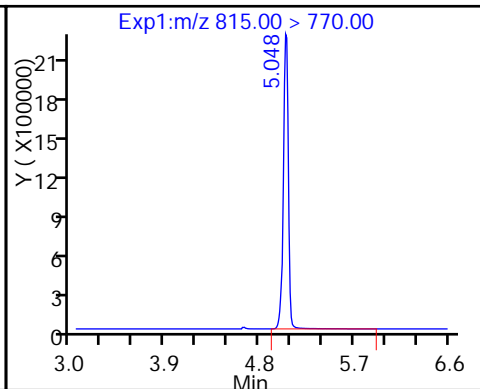
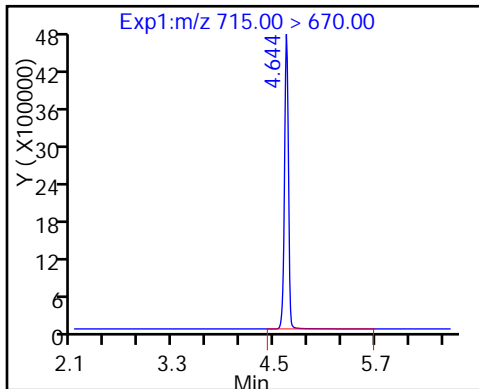
42 Perfluorotetradecanoic acid



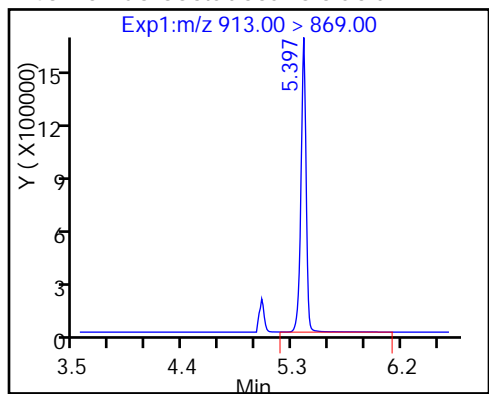
D 43 13C2-PFTeDA

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

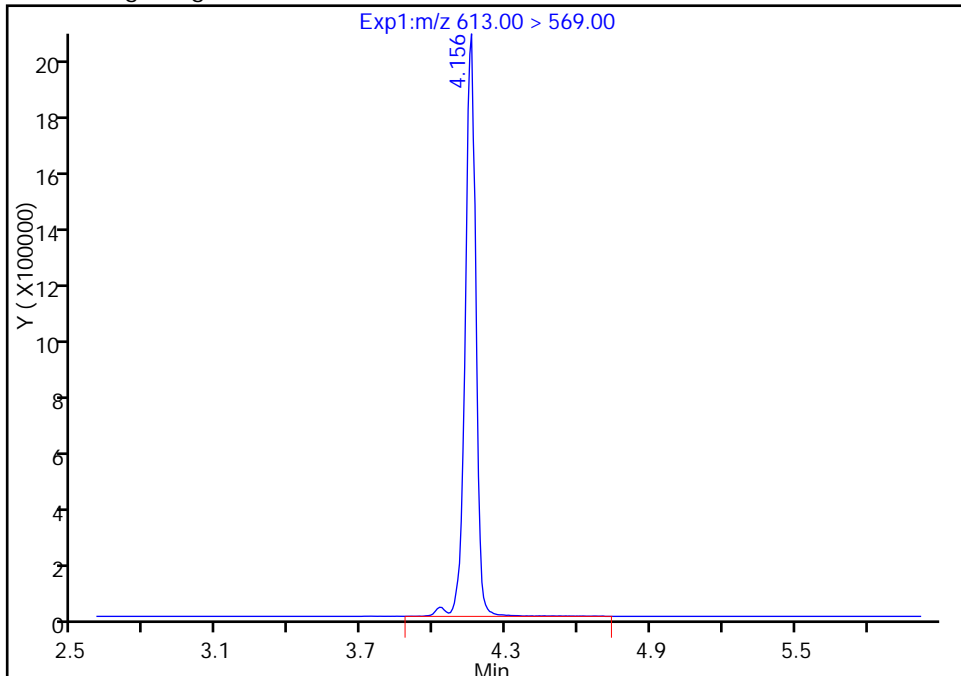
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Injection Date: 06-Mar-2017 03:56:42 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 64
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

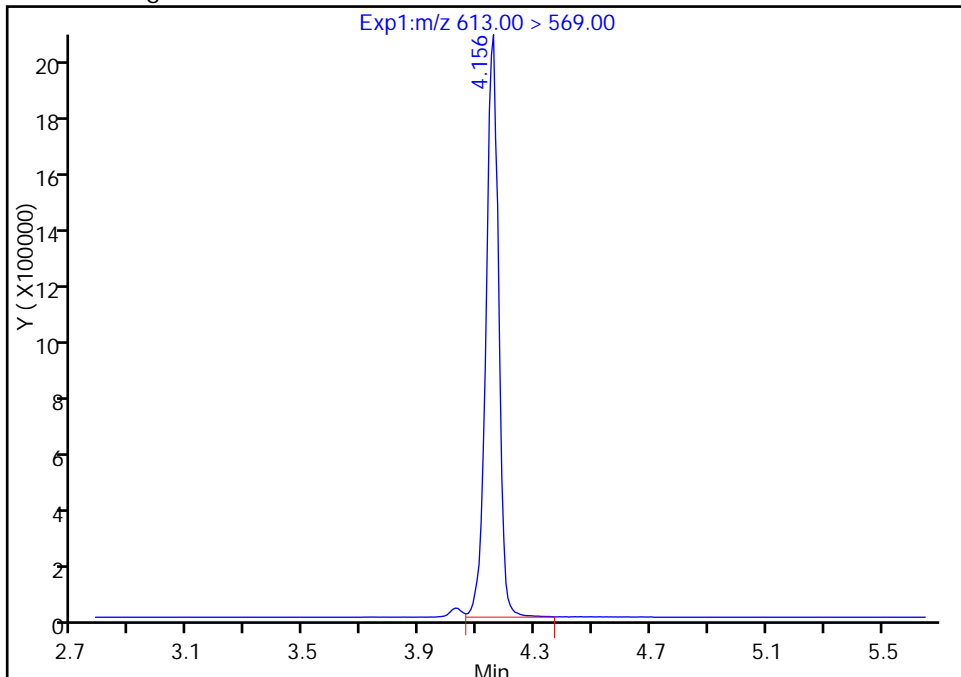
RT: 4.16
Area: 6452486
Amount: 51.436053
Amount Units: ng/ml

Processing Integration Results



RT: 4.16
Area: 6323873
Amount: 50.410813
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 07-Mar-2017 15:02:15
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154016/3 Calibration Date: 03/08/2017 19:39
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.08B_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8309		0.981	1.00	-1.9	50.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.063		1.09	1.00	8.6	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.470		0.907	0.884	2.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9057		1.02	1.00	1.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9726		1.01	1.00	0.5	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.124		0.995	0.910	9.3	50.0
6:2FTS	L2ID		1.044		0.981	0.948	3.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.038		1.02	1.00	1.6	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.081		0.998	0.952	4.8	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9450		0.892	0.928	-3.9	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9027		0.999	1.00	-0.1	50.0
8:2FTS	L2ID		1.025		0.978	0.958	2.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8994		0.993	1.00	-0.7	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9336		1.04	1.00	3.9	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9790		1.01	1.00	0.8	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5380		0.871	0.964	-9.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8703		0.956	1.00	-4.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	1.034		1.02	1.00	2.0	50.0
MeFOSA	AveID	0.9355	0.9125		0.975	1.00	-2.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9338		1.02	1.00	2.1	50.0
N-EtFOSA-M	AveID	0.9837	1.019		1.04	1.00	3.6	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8801		1.01	1.00	0.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.778		0.904	1.00	-9.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.260		0.982	1.00	-1.8	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6689		0.932	1.00	-6.8	50.0
13C4 PFBA	Ave	292242	343330		58.7	50.0	17.5	50.0
13C5-PFPeA	Ave	232192	263877		56.8	50.0	13.6	50.0
13C2 PFHxA	Ave	210884	240092		56.9	50.0	13.9	50.0
13C4-PFHpA	Ave	192959	234623		60.8	50.0	21.6	50.0
18O2 PFHxS	Ave	290899	335635		54.6	47.3	15.4	50.0
M2-6:2FTS	Ave	77178	91761		56.5	47.5	18.9	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154016/3 Calibration Date: 03/08/2017 19:39
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.08B_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	241405		58.9	50.0	17.8	50.0
13C4 PFOS	Ave	241637	265960		52.6	47.8	10.1	50.0
13C5 PFNA	Ave	177866	206753		58.1	50.0	16.2	50.0
M2-8:2FTS	Ave	92602	109520		56.7	47.9	18.3	50.0
13C2 PFDA	Ave	166704	186844		56.0	50.0	12.1	50.0
13C8 FOSA	Ave	366918	400283		54.5	50.0	9.1	50.0
d3-NMeFOSAA	Ave	85186	91587		53.8	50.0	7.5	50.0
d5-NEtFOSAA	Ave	81371	93771		57.6	50.0	15.2	50.0
13C2 PFUnA	Ave	130805	146926		56.2	50.0	12.3	50.0
d-N-MeFOSA-M	Ave	87983	87042		49.5	50.0	-1.1	50.0
13C2 PFDoA	Ave	123944	126901		51.2	50.0	2.4	50.0
d-N-EtFOSA-M	Ave	85249	84085		49.3	50.0	-1.4	50.0
13C2-PFTeDA	Ave	259165	249090		48.1	50.0	-3.9	50.0
13C2-PFHxDA	Ave	125061	113888		45.5	50.0	-8.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_002.d
 Lims ID: CCV L2
 Client ID:
 Sample Type: CCVL
 Inject. Date: 08-Mar-2017 19:39:32 ALS Bottle#: 29 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 10-Mar-2017 13:57:47 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK002

First Level Reviewer: westendorfc Date: 09-Mar-2017 08:18:20

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	1.530	1.530	0.0	17166515	58.7		117	791243	
2 Perfluorobutyric acid	212.90 > 169.00	1.538	1.538	0.0	1.000	285273	0.9807	98.1	2200	
4 Perfluoropentanoic acid	262.90 > 219.00	1.811	1.811	0.0	1.000	280473	1.09	109	2970	
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.811	0.0		13193864	56.8	114	818915	
D 47 13C3-PFBS	301.90 > 83.00	1.851	1.851	0.0		316902	NC			
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.851	1.851	0.0	1.000	436201	0.9072	103		
	298.90 > 99.00	1.851	1.851	0.0	1.000	171609	2.54(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.108	2.108	0.0		12004588	56.9	114	384768	
6 Perfluorohexanoic acid	313.00 > 269.00	2.099	2.099	0.0	1.000	217446	1.02	102	9897	
D 9 13C4-PFHpA	367.00 > 322.00	2.448	2.448	0.0		11731165	60.8	122	404638	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.456	2.456	0.0	1.000	343370	0.99	109		M
D 11 18O2 PFHxS	403.00 > 84.00	2.448	2.448	0.0		15875532	54.6	115	340419	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.448	2.448	0.0	1.000	228189	1.01	101	2352	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.776	2.776	0.0	1.000	90796	0.9810	103		M

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	2.776	2.776	0.0	4358641	56.5	119		
D 14 13C4 PFOA	417.00	> 372.00	2.799	2.799	0.0	12070257	58.9	118	540941	
15 Perfluorooctanoic acid	413.00	> 369.00	2.799	2.799	0.0	1.000	250553	1.02	102	2042
	413.00	> 169.00	2.799	2.799	0.0	1.000	145527	1.72(0.90-1.10)		5185
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.806	2.806	0.0	1.000	273686	1.00	105	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.164	3.164	0.0	1.000	233237	0.8917	96.1	10090 M
	499.00	> 99.00	3.171	3.164	0.007	1.002	52202	4.47(0.90-1.10)		3550 M
D 18 13C4 PFOS	503.00	> 80.00	3.164	3.164	0.0	12712900	52.6	110	521281	
D 19 13C5 PFNA	468.00	> 423.00	3.171	3.171	0.0	10337660	58.1	116	316943	
20 Perfluorononanoic acid	463.00	> 419.00	3.171	3.171	0.0	1.000	186644	1.00	99.9	4367
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.503	3.503	0.0	1.000	107501	0.9777	102	
24 Perfluorodecanoic acid	513.00	> 469.00	3.520	3.520	0.0	1.000	168042	0.99	99.3	5360
D 26 M2-8:2FTS	529.00	> 509.00	3.503	3.503	0.0	5245986	56.7	118		
D 21 13C8 FOSA	506.00	> 78.00	3.520	3.520	0.0	20014167	54.5	109	435267	
D 23 13C2 PFDA	515.00	> 470.00	3.520	3.520	0.0	9342186	56.0	112	147596	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.520	3.520	0.0	1.000	373693	1.04	104	31237
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.674	3.674	0.0	1.000	89659	1.01	101	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.674	3.674	0.0	4579366	53.8	108		
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.839	3.839	0.0	1.002	81612	0.9561	95.6	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.830	3.830	0.0	4688527	57.6	115		
31 Perfluoroundecanoic acid	563.00	> 519.00	3.839	3.839	0.0	1.000	151923	1.02	102	4165
D 30 13C2 PFUnA	565.00	> 520.00	3.839	3.839	0.0	7346288	56.2	112	234655	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.822	3.822	0.0	1.000	137933	0.8707	90.3	
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.016	4.016	0.0	4352112	49.5	98.9		
35 MeFOSA	512.00	> 169.00	4.016	4.016	0.0	1.000	79426	0.9754	97.5	

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	4.132	4.132	0.0		6345042	51.2		102	162138	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.132	4.132	0.0	1.000	118502	1.02		102	1199	
D 38 d-N-EtFOSA-M										
531.00 > 169.00	4.202	4.202	0.0		4204271	49.3		98.6		
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.210	4.210	0.0	1.000	85704	1.04		104		
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.386	4.386	0.0	1.000	111682	1.01		101	2487	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.621	4.621	0.0	1.000	225626	0.9041		90.4	3649	
713.00 > 169.00	4.615	4.621	-0.006	0.999	31213		7.23(0.00-0.00)		6057	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.621	4.621	0.0		12454521	48.1		96.1	360616	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.036	5.036	0.0	1.000	159864	0.9824		98.2	269	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.036	5.036	0.0		5694387	45.5		91.1	80643	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.375	5.375	0.0	1.000	84882	0.9322		93.2	75.3	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L2_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_002.d

Injection Date: 08-Mar-2017 19:39:32

Instrument ID: A8_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 29

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

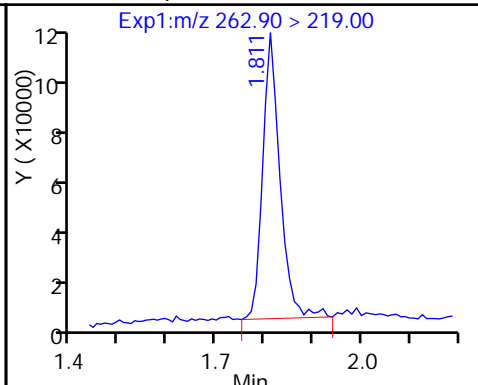
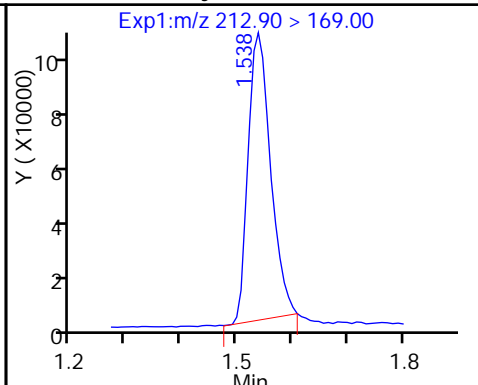
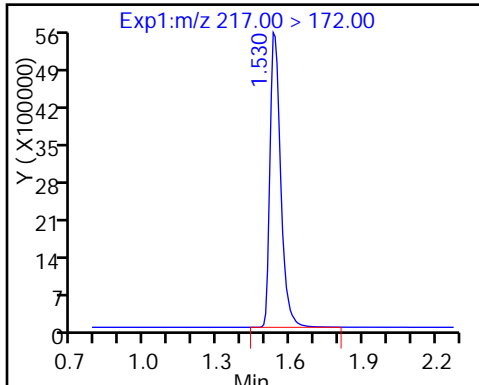
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

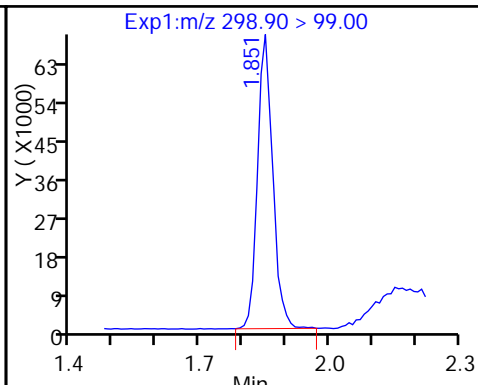
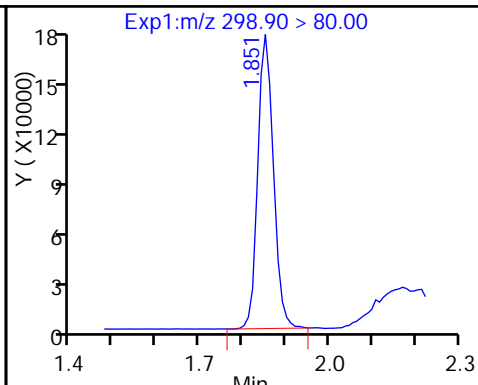
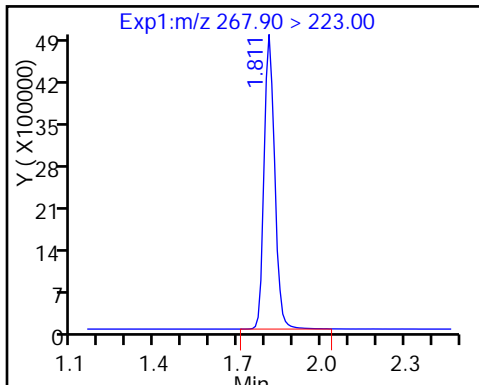
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

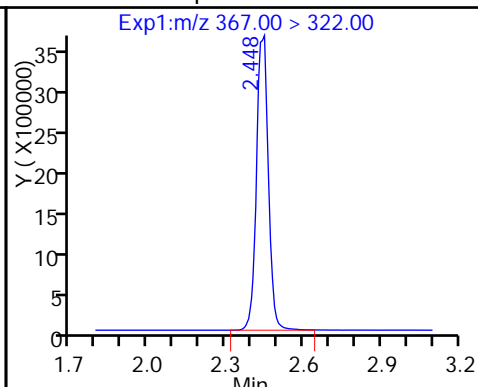
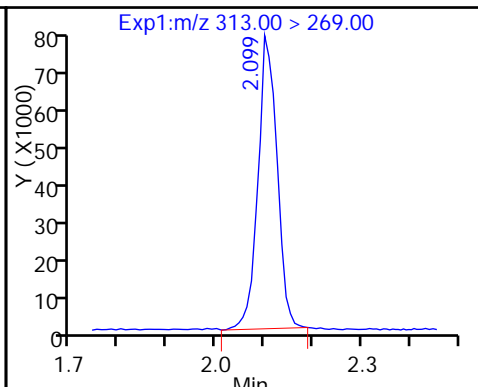
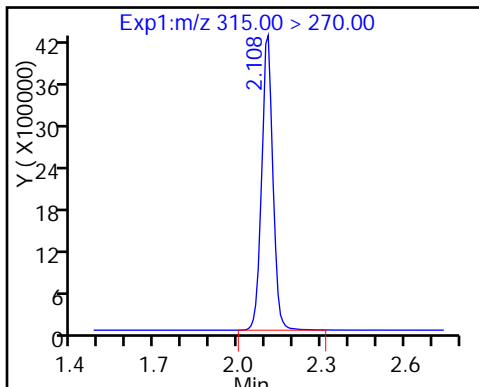
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

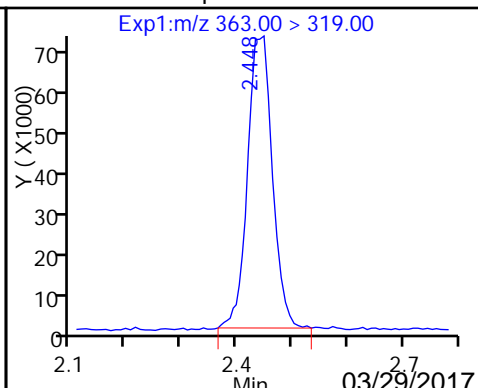
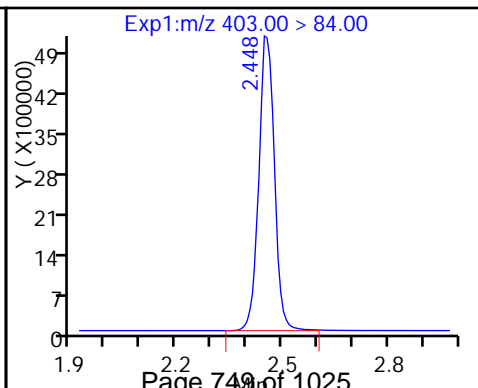
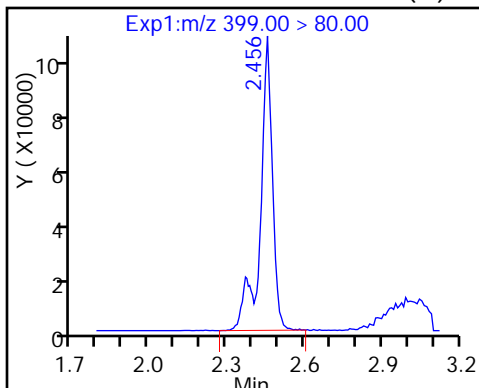
D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid (M)

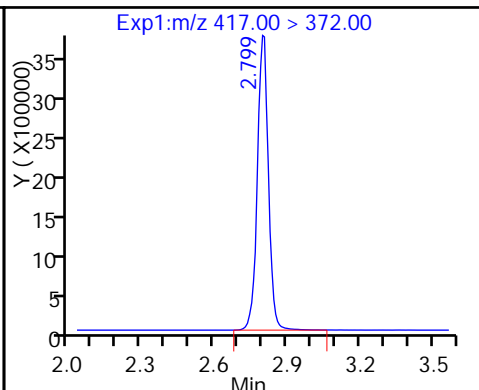
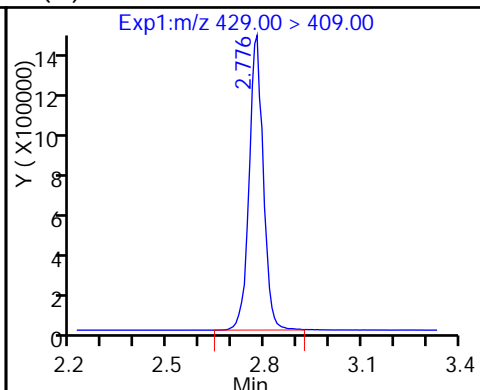
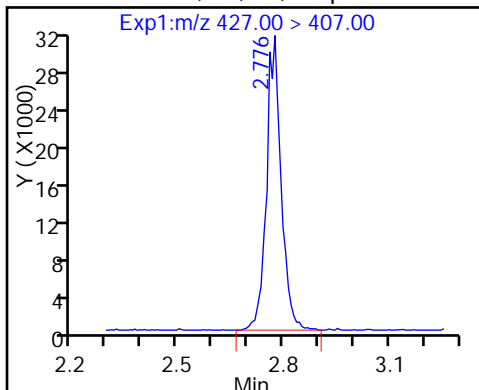
D 11 18O2 PFHxS

10 Perfluoroheptanoic acid



13 Sodium 1H,1H,2H,2H-perfluorooctane (M) M2-6:2FTS

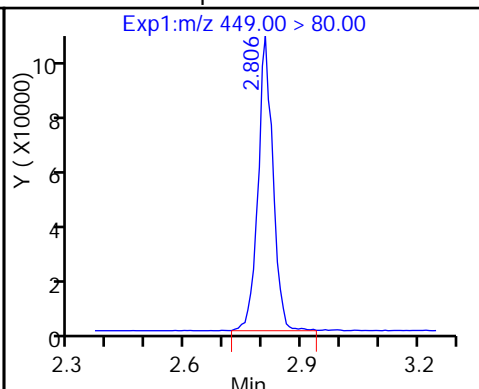
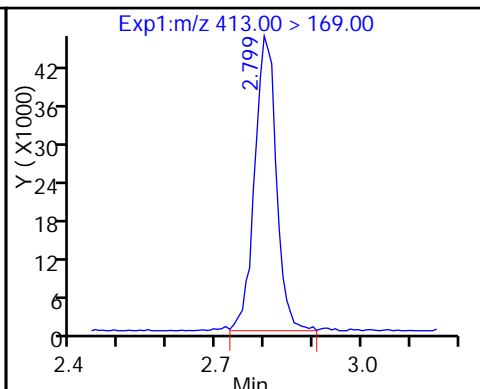
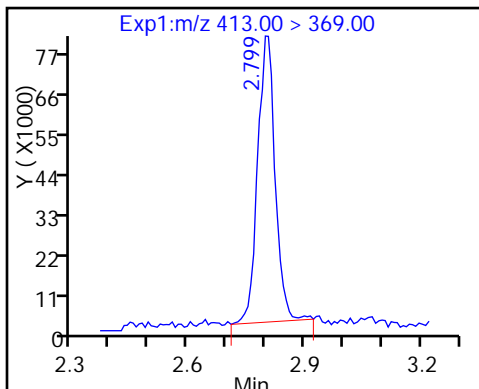
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

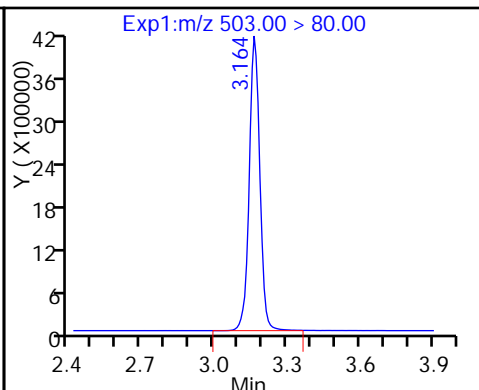
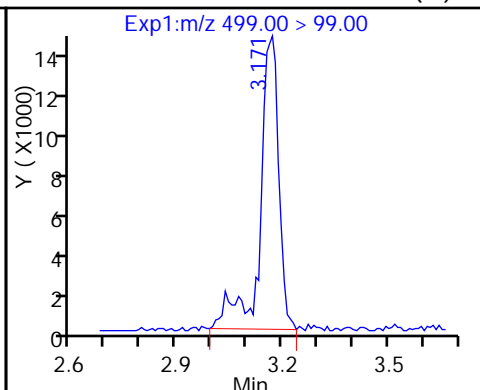
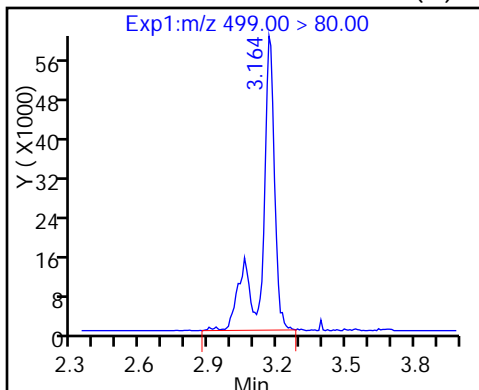
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

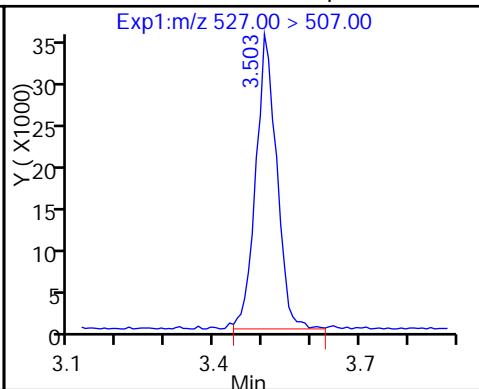
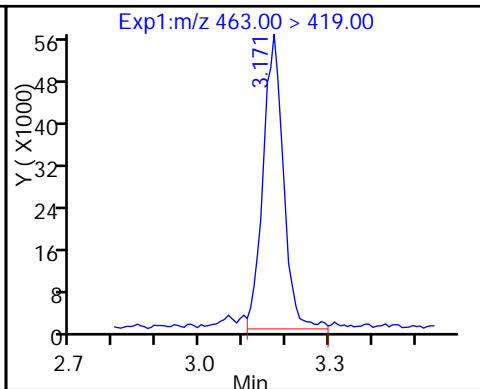
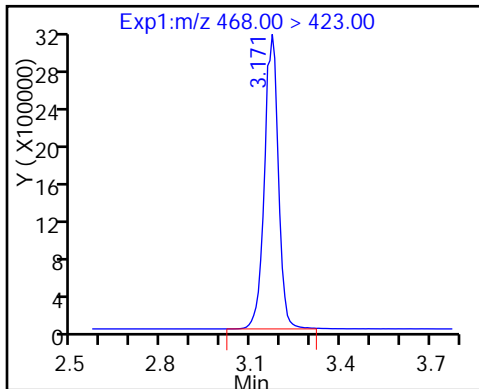
D 18 13C4 PFOS



D 19 13C5 PFNA

20 Perfluorononanoic acid

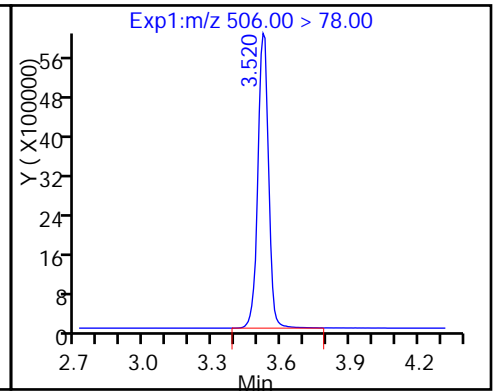
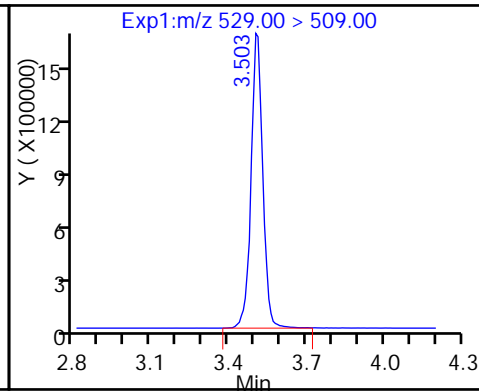
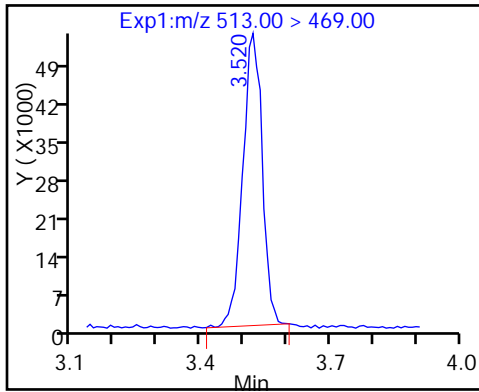
25 Sodium 1H,1H,2H,2H-perfluorooctane



24 Perfluorodecanoic acid

D 26 M2-8:2FTS

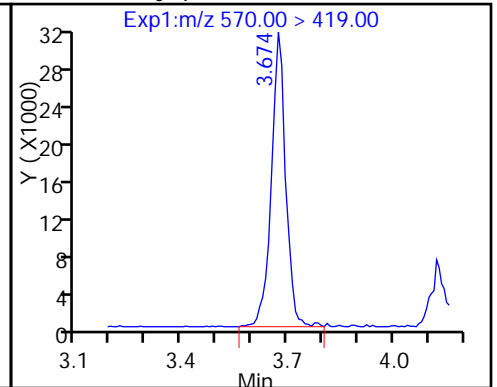
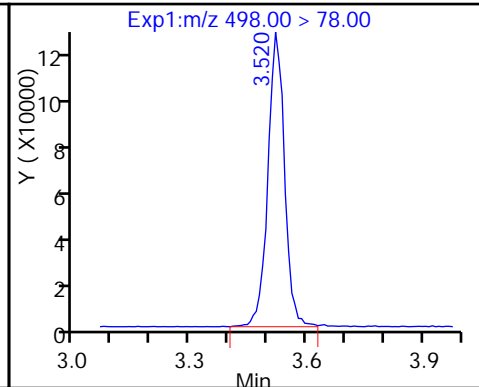
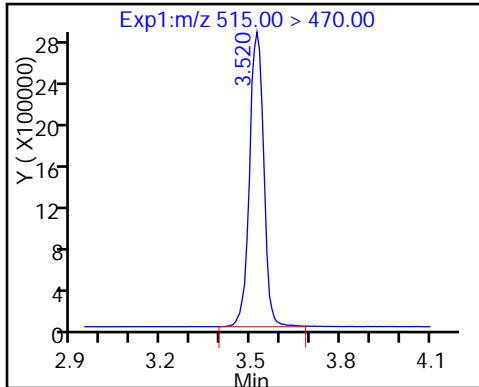
D 21 13C8 FOSA



D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

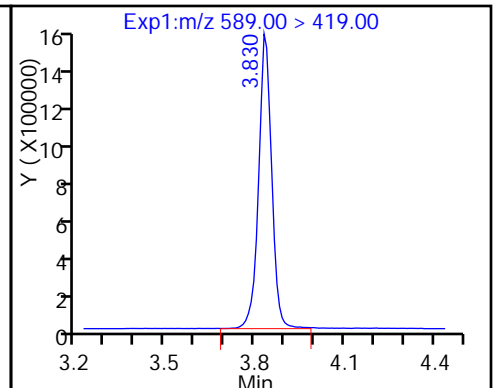
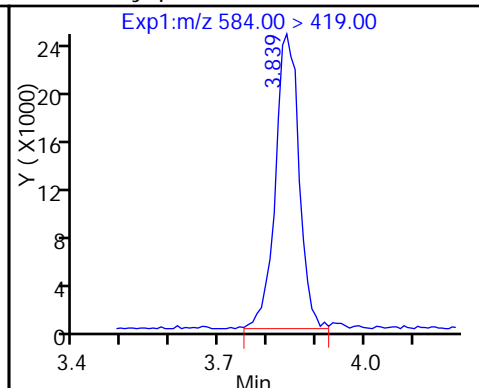
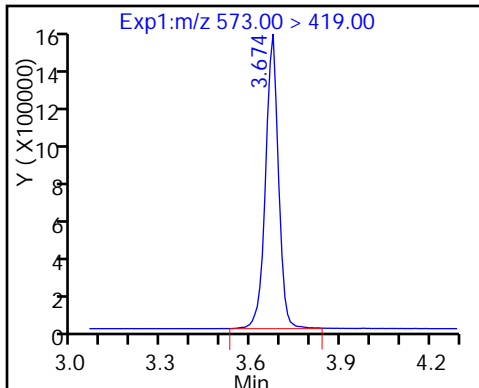
28 N-methyl perfluorooctane sulfonami



D 27 d3-NMeFOSAA

33 N-ethyl perfluorooctane sulfonamid

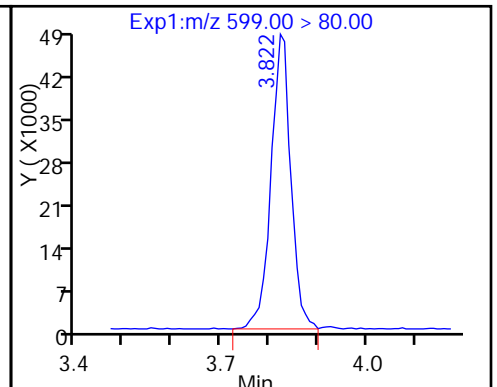
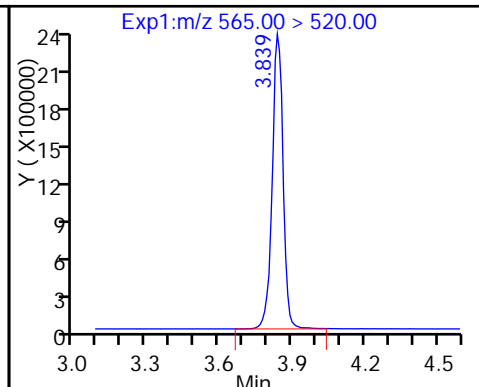
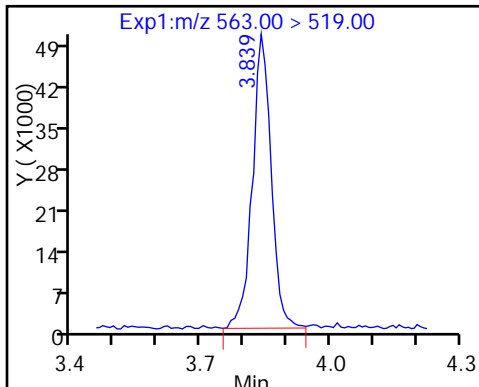
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

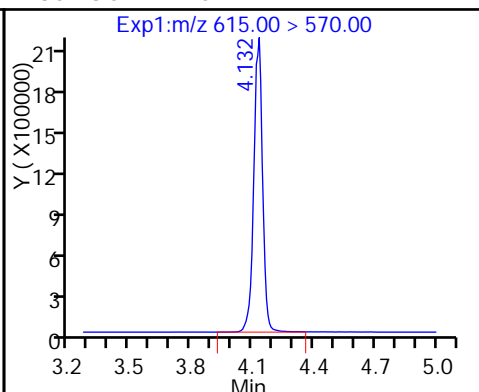
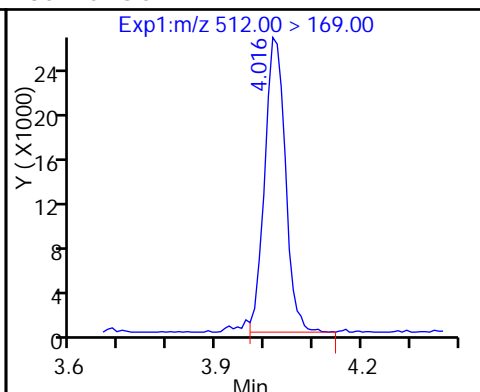
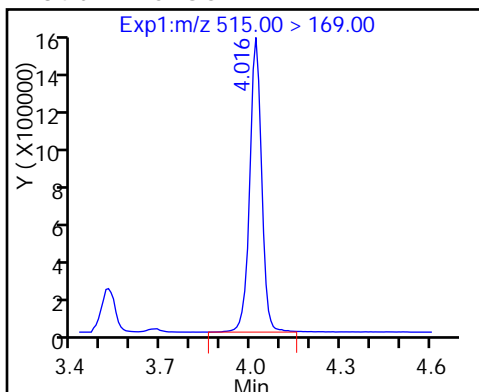
29 Perfluorodecane Sulfonic acid



D 34 d-N-MeFOSA-M

35 MeFOSA

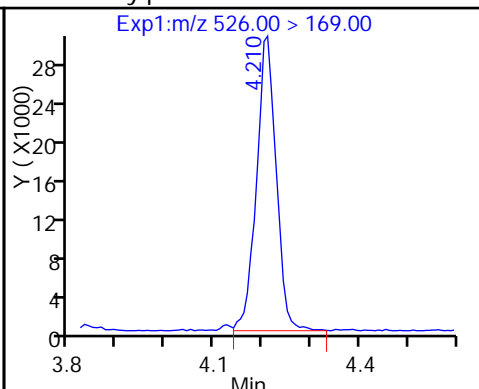
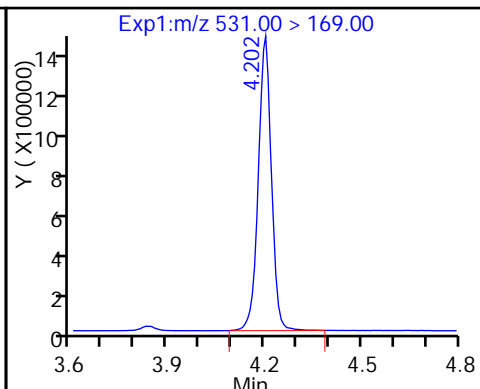
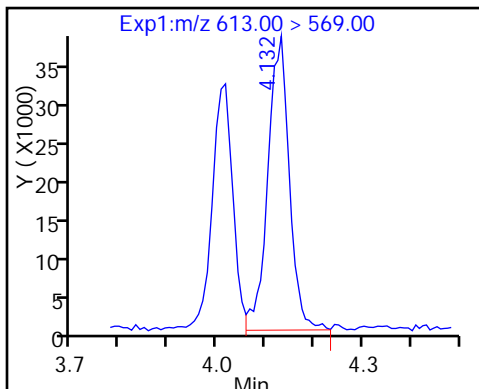
D 36 13C2 PFDoA



37 Perfluorododecanoic acid

D 38 d-N-EtFOSA-M

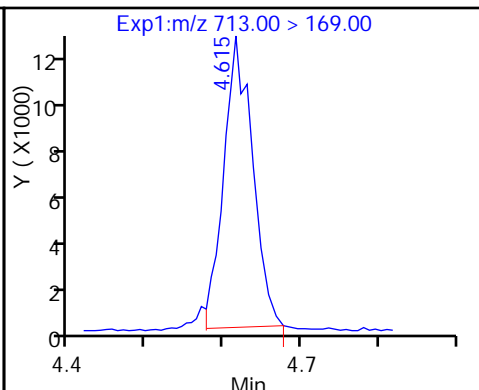
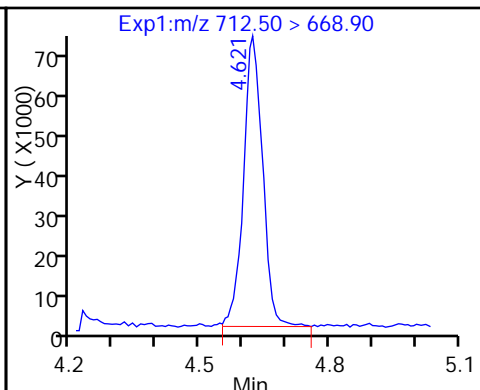
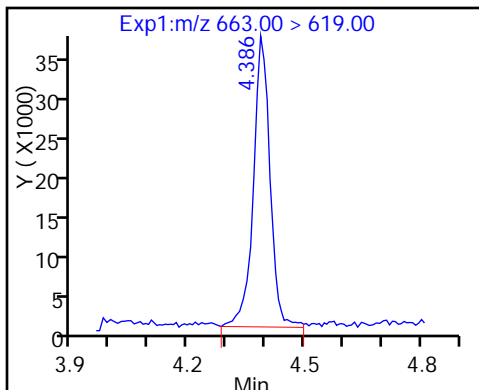
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

42 Perfluorotetradecanoic acid

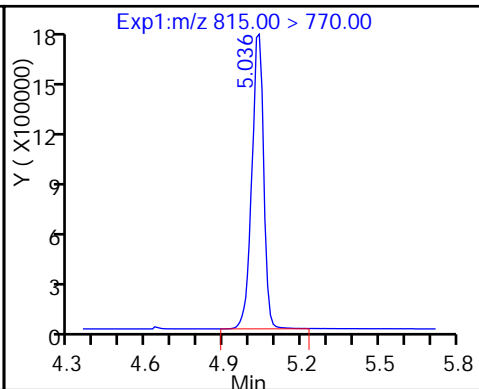
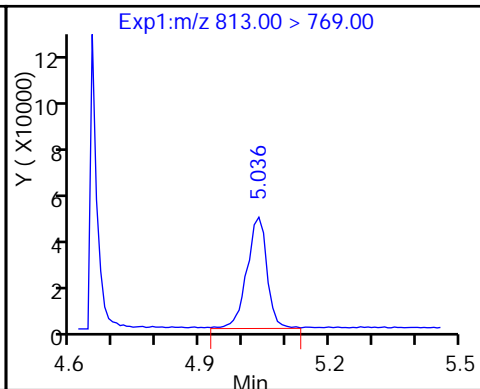
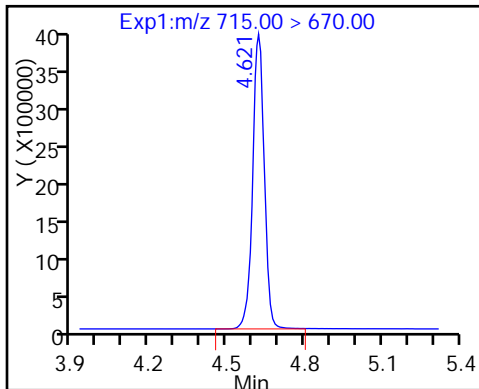
42 Perfluorotetradecanoic acid



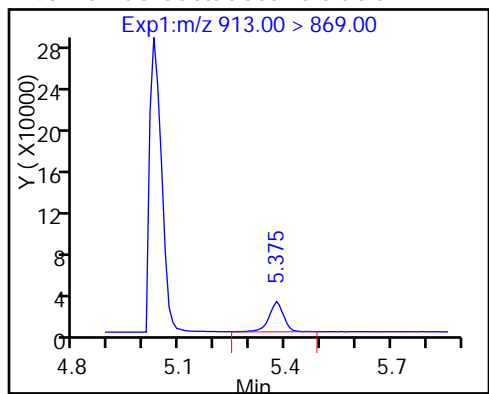
D 43 13C2-PFTeDA

45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

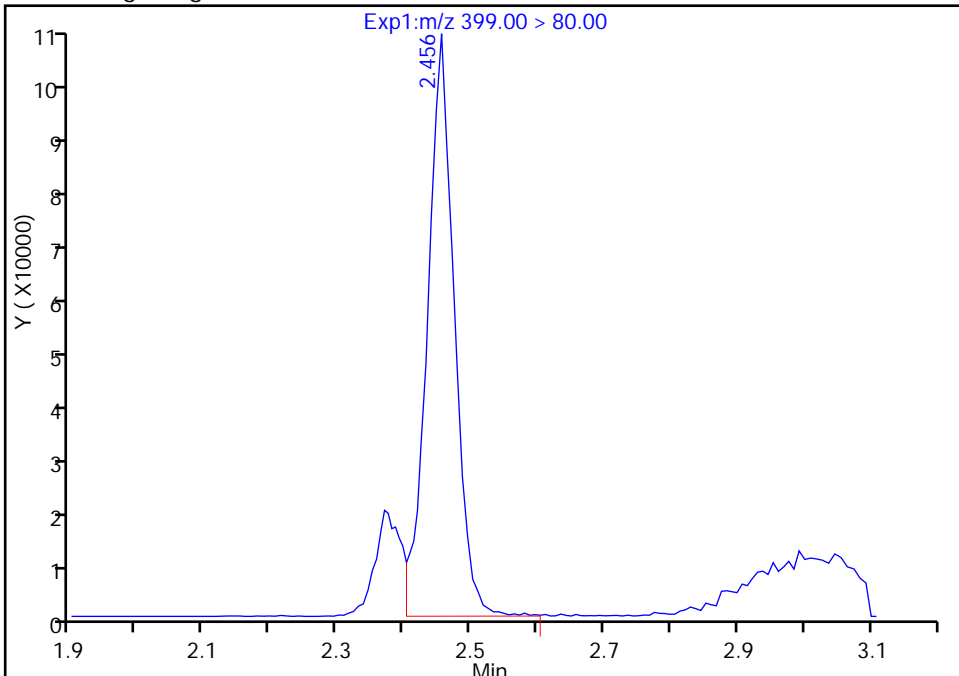
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Injection Date: 08-Mar-2017 19:39:32 Instrument ID: A8_N
Lims ID: CCV L2
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

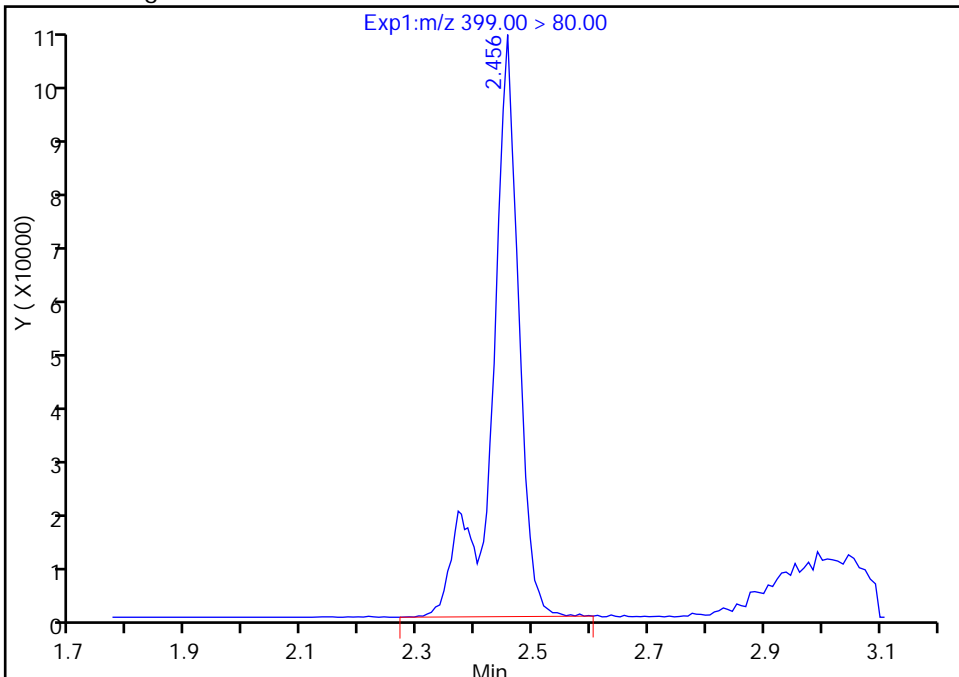
RT: 2.46
Area: 294102
Amount: 0.852021
Amount Units: ng/ml

Processing Integration Results



RT: 2.46
Area: 343370
Amount: 0.994752
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 10-Mar-2017 13:57:02
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

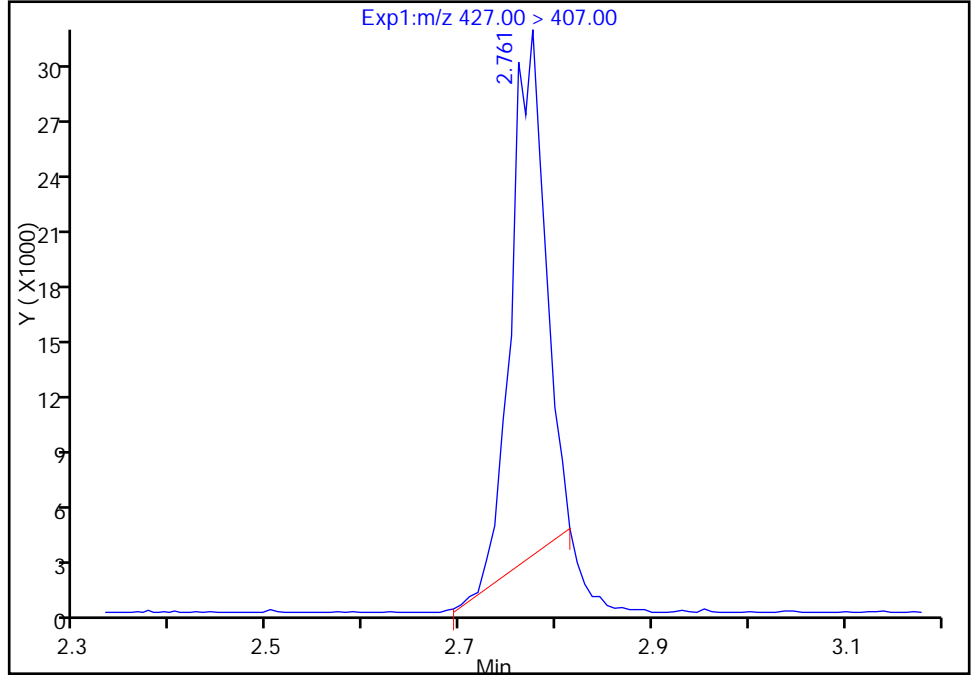
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_002.d
Injection Date: 08-Mar-2017 19:39:32 Instrument ID: A8_N
Lims ID: CCV L2
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate, CAS: 27619-97-2

Signal: 1

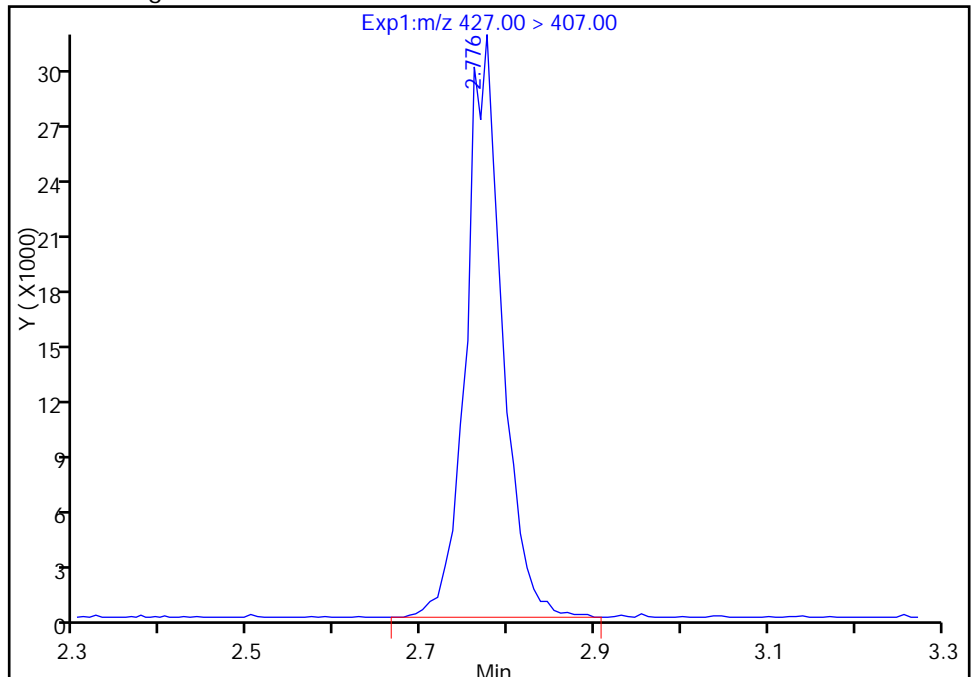
RT: 2.76
Area: 69851
Amount: 0.723334
Amount Units: ng/ml

Processing Integration Results



RT: 2.78
Area: 90796
Amount: 0.980983
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 10-Mar-2017 13:57:13

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

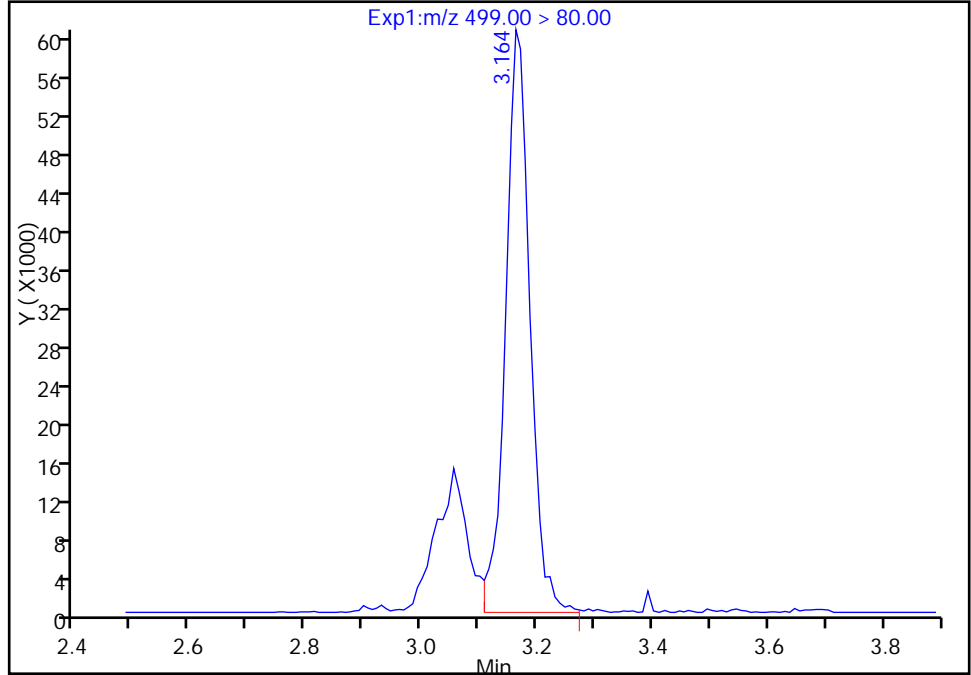
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Injection Date: 08-Mar-2017 19:39:32 Instrument ID: A8_N
Lims ID: CCV L2
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

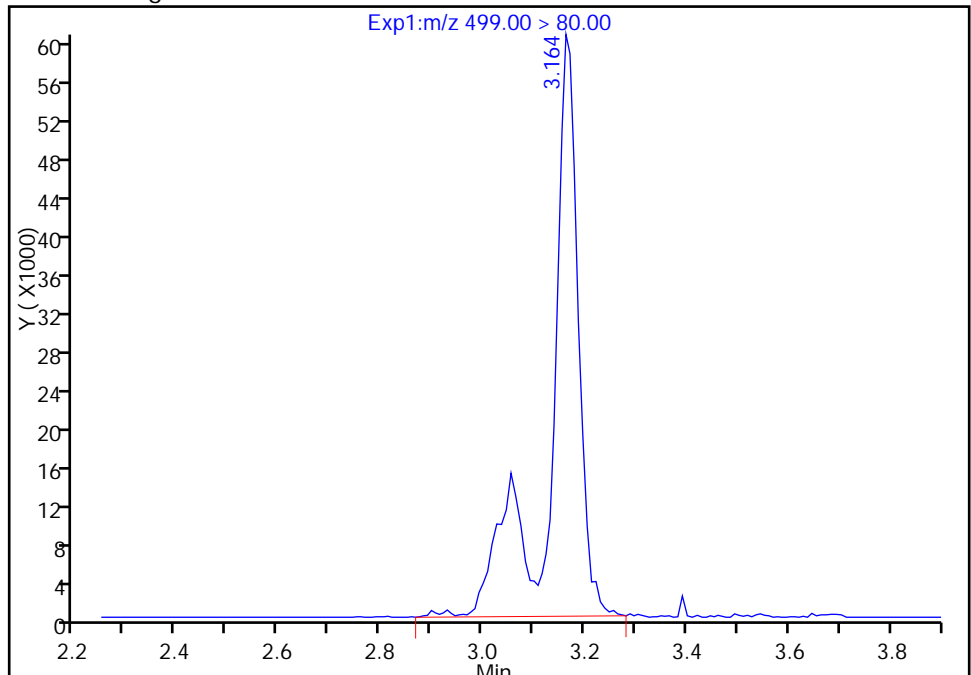
RT: 3.16
Area: 176808
Amount: 0.675956
Amount Units: ng/ml

Processing Integration Results



RT: 3.16
Area: 233237
Amount: 0.891691
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 10-Mar-2017 13:56:52
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

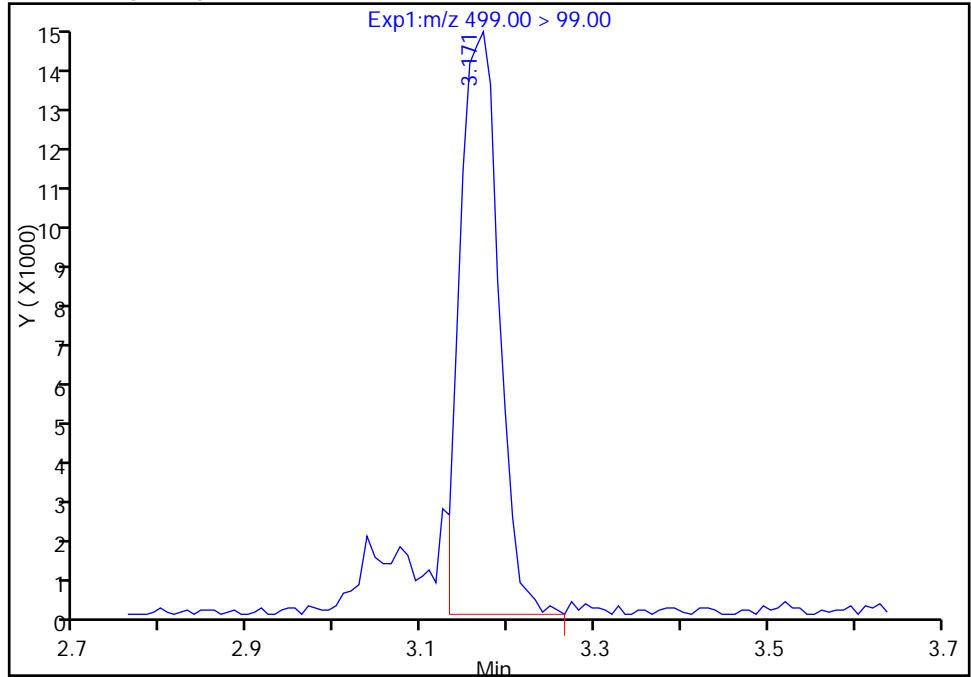
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Injection Date: 08-Mar-2017 19:39:32 Instrument ID: A8_N
Lims ID: CCV L2
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

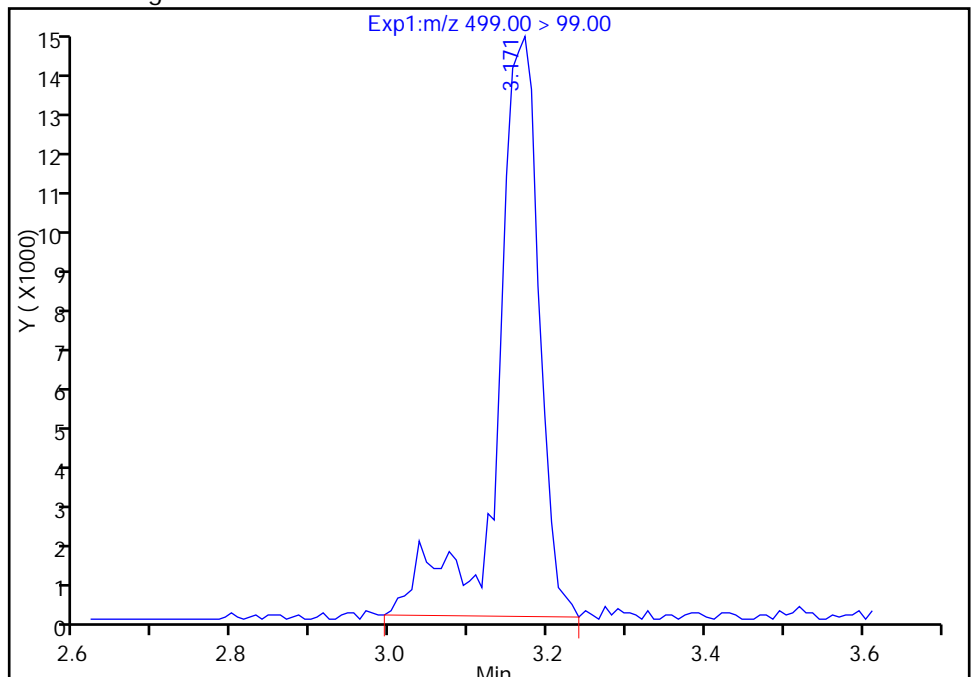
RT: 3.17
Area: 43909
Amount: 0.675956
Amount Units: ng/ml

Processing Integration Results



RT: 3.17
Area: 52202
Amount: 0.891691
Amount Units: ng/ml

Manual Integration Results



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154016/4 Calibration Date: 03/08/2017 19:47
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.08B_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	0.8473	0.8570		20.2	20.0	1.2	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9482		19.4	20.0	-3.1	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.477		18.2	17.7	3.1	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8553		19.2	20.0	-3.8	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9442		19.5	20.0	-2.4	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	0.9881		17.5	18.2	-3.9	25.0
6:2FTS	L2ID		0.9386		20.0	19.0	5.2	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.9874		19.3	20.0	-3.3	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.064		19.7	19.0	3.2	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9529		18.0	18.6	-3.1	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.8997		19.9	20.0	-0.5	25.0
8:2FTS	L2ID		0.9601		19.8	19.2	3.5	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8947		19.8	20.0	-1.2	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9087		20.2	20.0	1.1	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9791		20.2	20.0	0.8	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5793		18.8	19.3	-2.7	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8693		19.1	20.0	-4.5	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.8896		17.6	20.0	-12.2	25.0
MeFOSA	AveID	0.9355	0.9353		20.0	20.0	-0.0	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.8659		18.9	20.0	-5.3	25.0
N-EtFOSA-M	AveID	0.9837	0.9380		19.1	20.0	-4.6	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8383		19.2	20.0	-4.0	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.699		17.3	20.0	-13.6	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.7599		16.0	20.0	-19.9	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.5818		16.2	20.0	-18.9	25.0
13C4 PFBA	Ave	292242	341790		58.5	50.0	17.0	50.0
13C5-PFPeA	Ave	232192	264272		56.9	50.0	13.8	50.0
13C2 PFHxA	Ave	210884	248985		59.0	50.0	18.1	50.0
13C4-PFHpA	Ave	192959	228502		59.2	50.0	18.4	50.0
18O2 PFHxS	Ave	290899	326816		53.1	47.3	12.3	50.0
M2-6:2FTS	Ave	77178	91543		56.3	47.5	18.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154016/4 Calibration Date: 03/08/2017 19:47
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.08B_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	234851		57.3	50.0	14.6	50.0
13C4 PFOS	Ave	241637	274493		54.3	47.8	13.6	50.0
13C5 PFNA	Ave	177866	198930		55.9	50.0	11.8	50.0
M2-8:2FTS	Ave	92602	111068		57.5	47.9	19.9	50.0
13C2 PFDA	Ave	166704	186167		55.8	50.0	11.7	50.0
13C8 FOSA	Ave	366918	401585		54.7	50.0	9.4	50.0
d3-NMeFOSAA	Ave	85186	95577		56.1	50.0	12.2	50.0
d5-NEtFOSAA	Ave	81371	93798		57.6	50.0	15.3	50.0
13C2 PFUnA	Ave	130805	143341		54.8	50.0	9.6	50.0
d-N-MeFOSA-M	Ave	87983	90066		51.2	50.0	2.4	50.0
13C2 PFDoA	Ave	123944	131580		53.1	50.0	6.2	50.0
d-N-EtFOSA-M	Ave	85249	87501		51.3	50.0	2.6	50.0
13C2-PFTEtDA	Ave	259165	262549		50.7	50.0	1.3	50.0
13C2-PFHxDA	Ave	125061	121037		48.4	50.0	-3.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_003.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 08-Mar-2017 19:47:04 ALS Bottle#: 31 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 10-Mar-2017 13:59:52 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK002

First Level Reviewer: westendorfc Date: 10-Mar-2017 13:59:51

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	1.538	1.538	0.0	17089498	58.5		117	759739	
2 Perfluorobutyric acid	212.90 > 169.00	1.538	1.538	0.0	1.000	5858364	20.2	101	42804	
4 Perfluoropentanoic acid	262.90 > 219.00	1.812	1.812	0.0	1.000	5011666	19.4	96.9	55100	
D 3 13C5-PFPeA	267.90 > 223.00	1.812	1.812	0.0		13213616	56.9	114	592423	
D 47 13C3-PFBS	301.90 > 83.00	1.851	1.851	0.0		331511	NC			
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.851	1.851	0.0	1.000	8532979	18.2	103		
	298.90 > 99.00	1.851	1.851	0.0	1.000	3447482	2.48(0.00-0.00)			
6 Perfluorohexanoic acid	313.00 > 269.00	2.113	2.113	0.0	1.000	4259188	19.2	96.2	132671	
D 7 13C2 PFHxA	315.00 > 270.00	2.104	2.104	0.0		12449247	59.0	118	383801	
D 9 13C4-PFHpA	367.00 > 322.00	2.449	2.449	0.0		11425075	59.2	118	337118	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.449	2.449	0.0	1.000	4315220	19.5	97.6	48060	
D 11 18O2 PFHxS	403.00 > 84.00	2.464	2.464	0.0		15458395	53.1	112	521060	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.464	2.464	0.0	1.000	5877135	17.5	96.1		M
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.783	2.783	0.0	1.000	1629122	20.0	105		M

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	2.776	2.776	0.0	4348311	56.3	119		
D 14 13C4 PFOA	417.00	> 372.00	2.807	2.807	0.0	11742540	57.3	115	237365	
15 Perfluorooctanoic acid	413.00	> 369.00	2.807	2.807	0.0	1.000	4638029	19.3	96.7	45442
	413.00	> 169.00	2.807	2.807	0.0	1.000	2663950	1.74(0.90-1.10)		112152
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.814	2.814	0.0	1.000	5562304	19.7	103	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.172	3.172	0.0	1.000	4854541	18.0	96.9	1150896M
	499.00	> 99.00	3.172	3.172	0.0	1.000	1094901	4.43(0.90-1.10)		0.0 M
D 18 13C4 PFOS	503.00	> 80.00	3.172	3.172	0.0	13120781	54.3	114	292256	
D 19 13C5 PFNA	468.00	> 423.00	3.180	3.180	0.0	9946519	55.9	112	321054	
20 Perfluorononanoic acid	463.00	> 419.00	3.180	3.180	0.0	1.000	3579672	19.9	99.5	69617
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.522	3.522	0.0	1.000	2043128	19.8	103	
D 26 M2-8:2FTS	529.00	> 509.00	3.522	3.522	0.0	5320150	57.5	120		
24 Perfluorodecanoic acid	513.00	> 469.00	3.539	3.539	0.0	1.000	3331420	19.8	98.8	81614
D 21 13C8 FOSA	506.00	> 78.00	3.539	3.539	0.0	20079272	54.7	109	333761	
D 23 13C2 PFDA	515.00	> 470.00	3.539	3.539	0.0	9308349	55.8	112	209797	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.539	3.539	0.0	1.000	7298703	20.2	101	240829
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.695	3.695	0.0	1.003	1871495	20.2	101	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.686	3.686	0.0	4778838	56.1	112		
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.841	3.841	0.0	1.000	3065776	18.8	97.3	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.850	3.850	0.0	4689911	57.6	115		
31 Perfluoroundecanoic acid	563.00	> 519.00	3.858	3.858	0.0	1.000	2550331	17.6	87.8	67371
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.858	3.858	0.0	1.002	1630858	19.1	95.5	
D 30 13C2 PFUnA	565.00	> 520.00	3.867	3.867	0.0	7167035	54.8	110	204550	
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.029	4.029	0.0	4503311	51.2	102		
35 MeFOSA	512.00	> 169.00	4.038	4.038	0.0	1.000	1684783	20.0	100.0	

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	4.144	4.144	0.0		6578979	53.1		106	240226	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.144	4.144	0.0	1.000	2278604	18.9		94.7	22427	
D 38 d-N-EtFOSA-M										
531.00 > 169.00	4.216	4.216	0.0		4375052	51.3		103		
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.225	4.225	0.0	1.000	1641515	19.1		95.4		
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.418	4.418	0.0	1.000	2205979	19.2		96.0	66351	M
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.641	4.641	0.0	1.000	4471938	17.3		86.4	58368	
713.00 > 169.00	4.641	4.641	0.0	1.000	607434		7.36(0.00-0.00)		68477	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.641	4.641	0.0		13127425	50.7		101	322223	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.050	5.050	0.0	1.000	1999783	16.0		80.1	1548	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.050	5.050	0.0		6051843	48.4		96.8	75356	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.393	5.393	0.0	1.000	1531084	16.2		81.1	1637	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L4_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_003.d

Injection Date: 08-Mar-2017 19:47:04

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 31

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

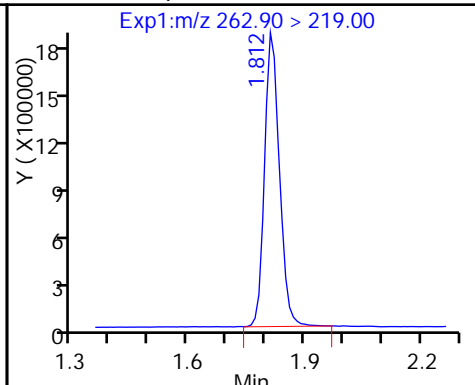
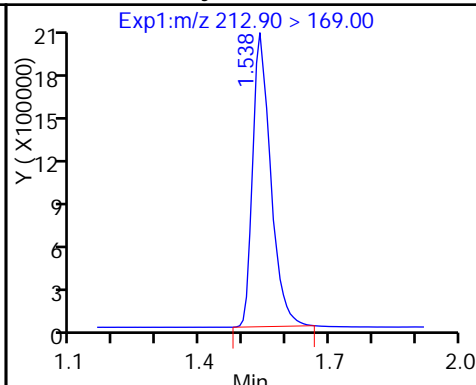
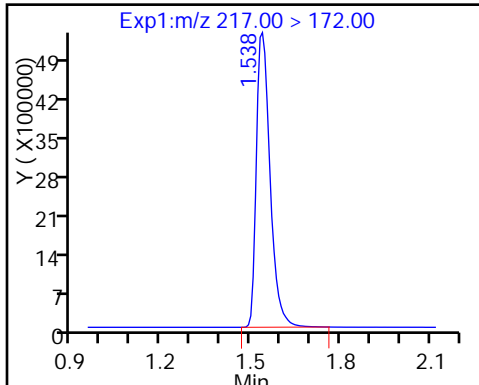
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

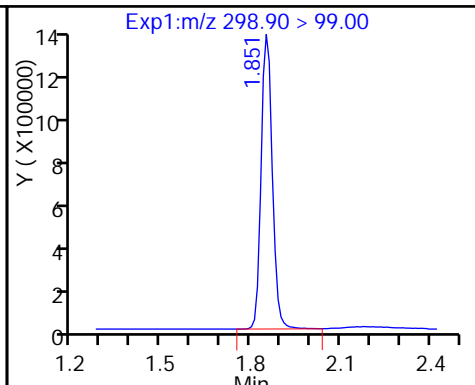
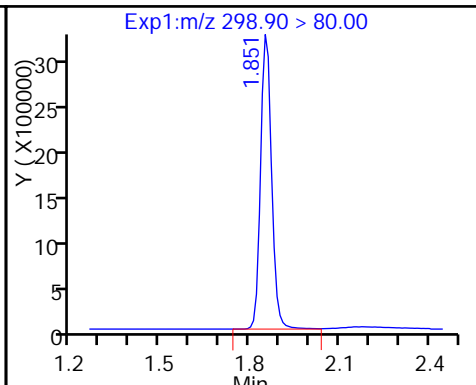
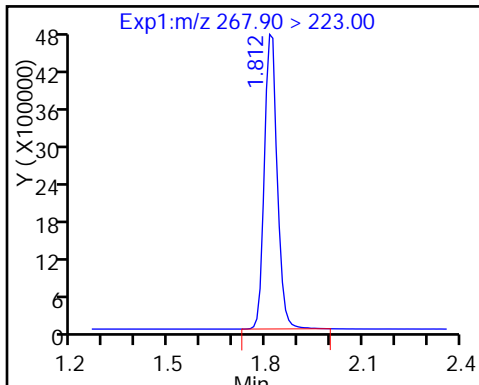
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

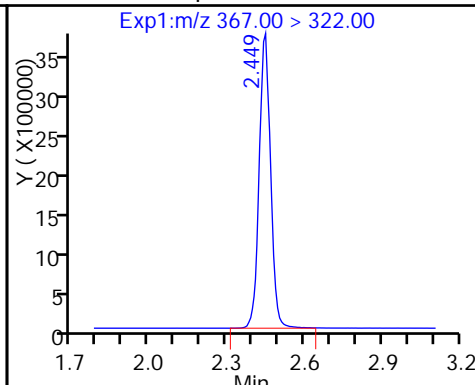
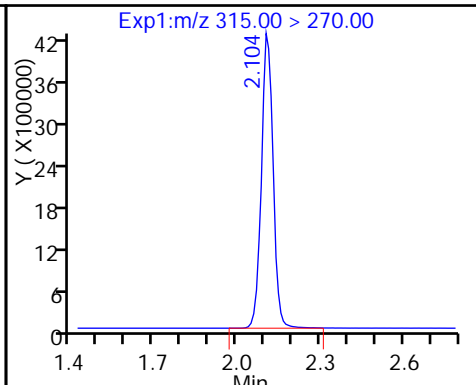
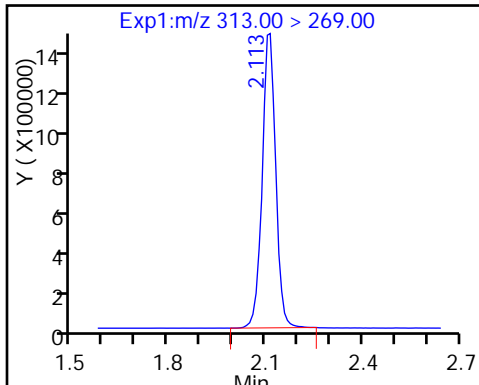
5 Perfluorobutanesulfonic acid



6 Perfluorohexanoic acid

D 7 13C2 PFHxA

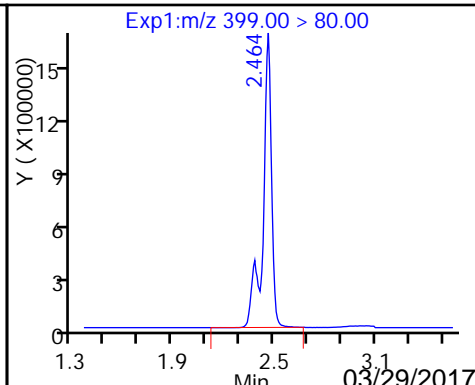
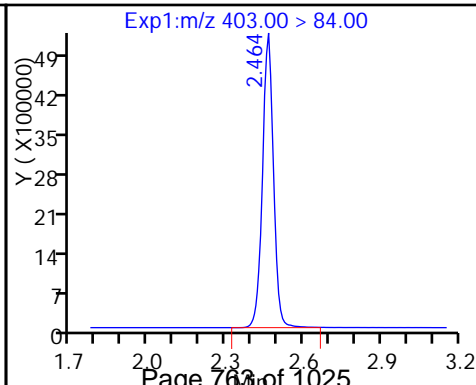
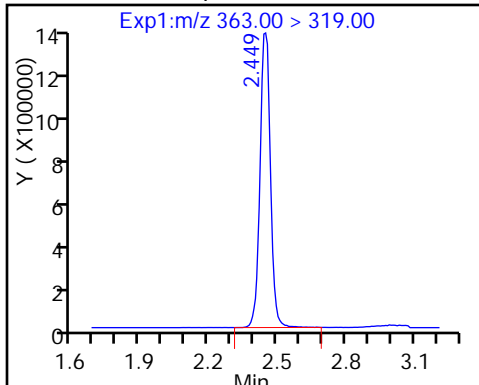
D 9 13C4-PFHpA



10 Perfluoroheptanoic acid

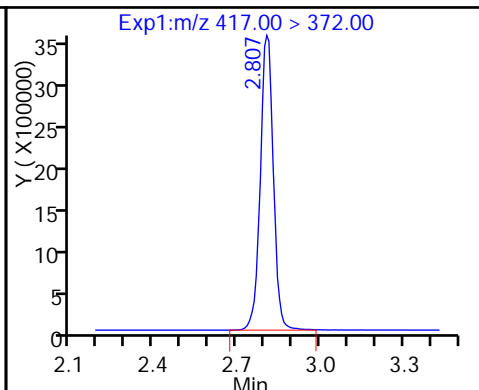
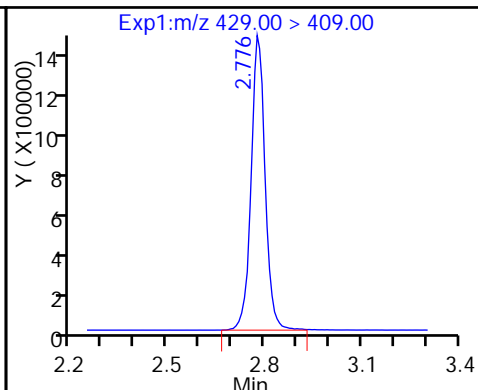
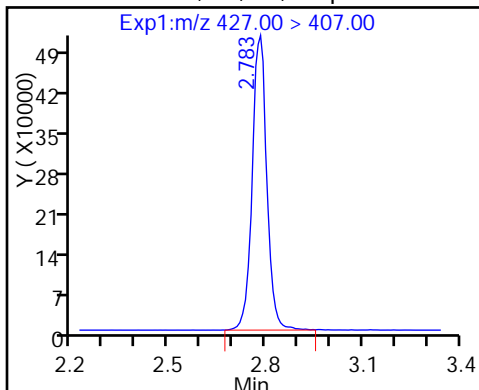
D 11 18O2 PFHxS

8 Perfluorohexanesulfonic acid (M)



13 Sodium 1H,1H,2H,2H-perfluorooctane

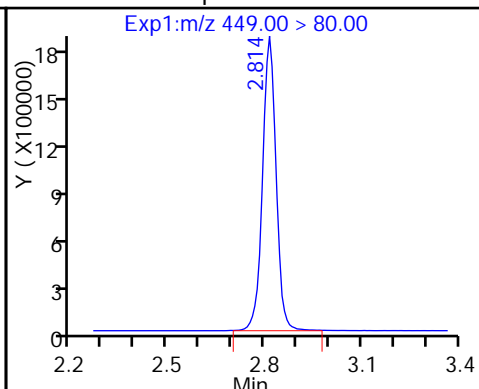
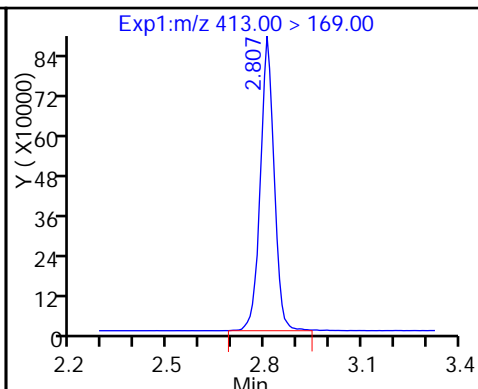
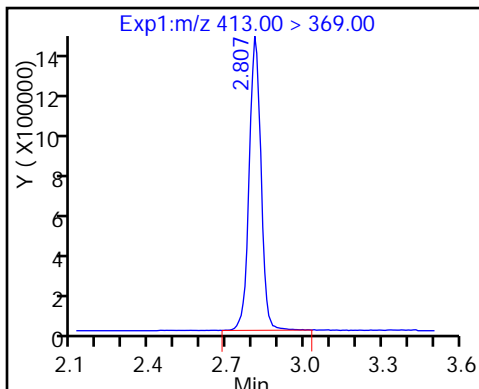
D 12 M2-6:2FTS



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

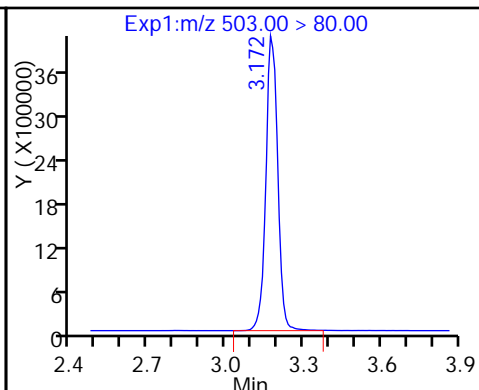
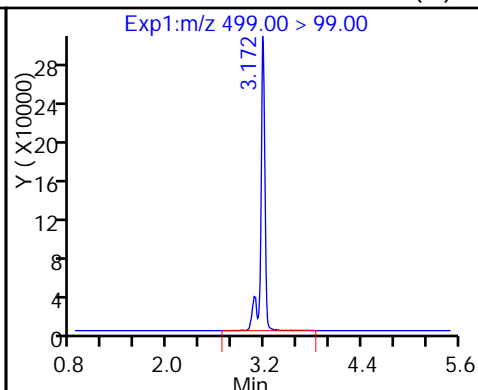
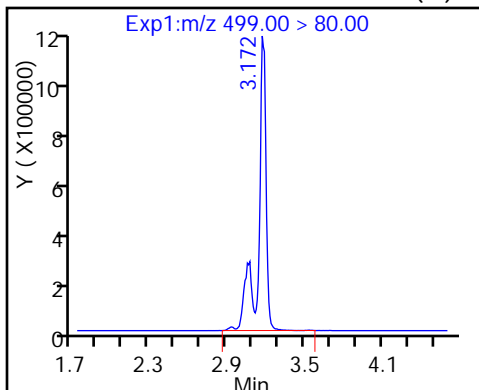
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

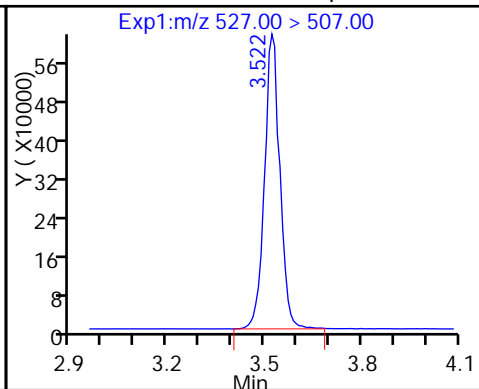
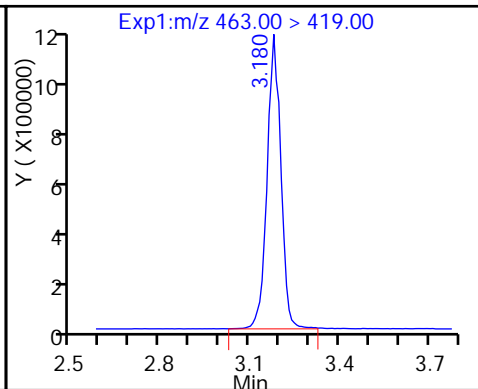
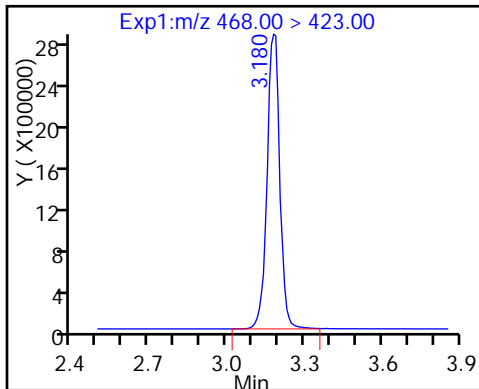
D 18 13C4 PFOS



D 19 13C5 PFNA

20 Perfluorononanoic acid

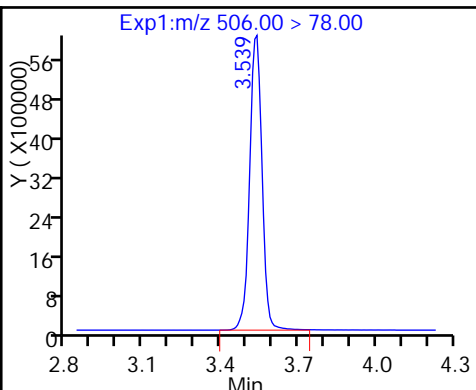
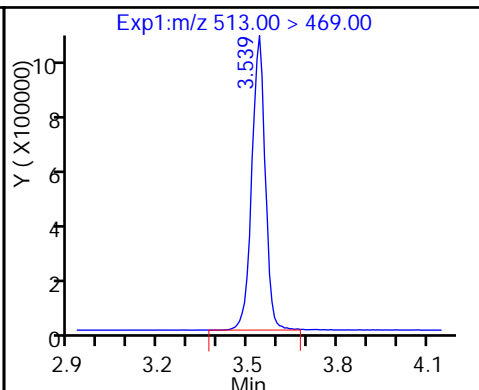
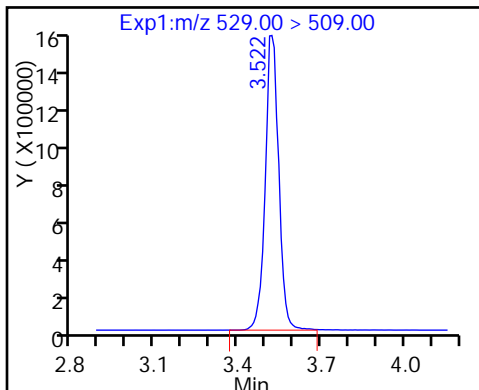
25 Sodium 1H,1H,2H,2H-perfluorooctane



D 26 M2-8:2FTS

24 Perfluorodecanoic acid

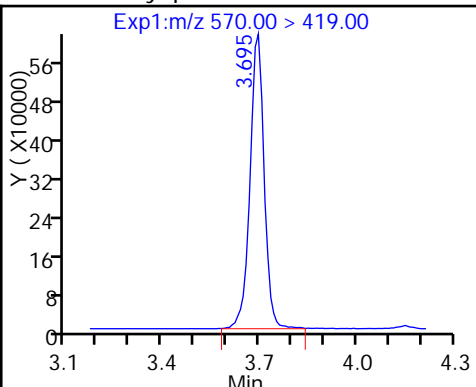
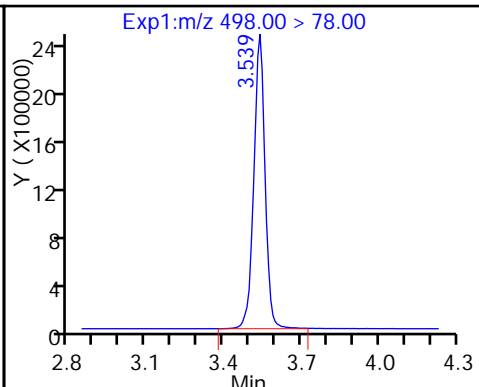
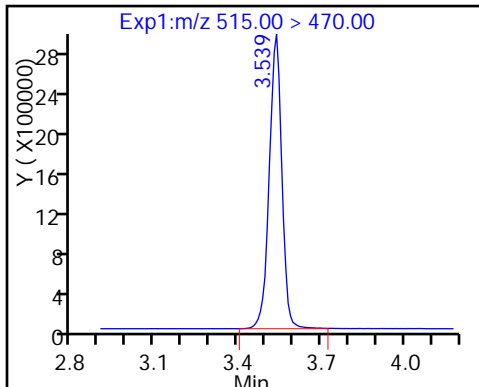
D 21 13C8 FOSA



D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

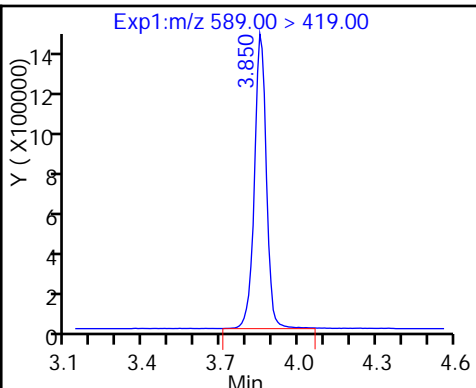
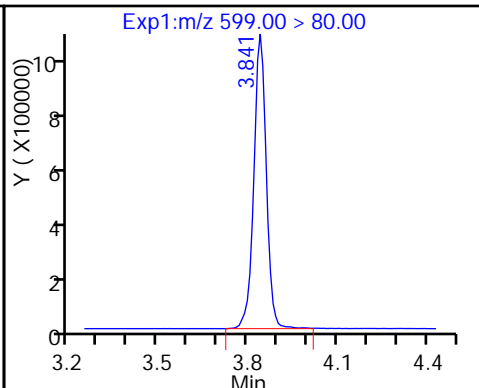
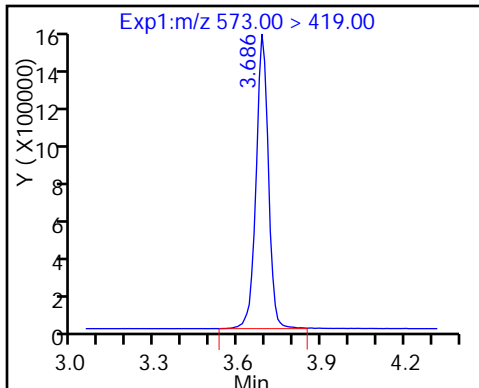
28 N-methyl perfluorooctane sulfonami



D 27 d3-NMeFOSAA

29 Perfluorodecane Sulfonic acid

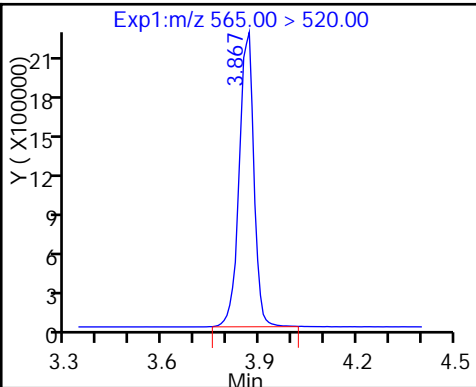
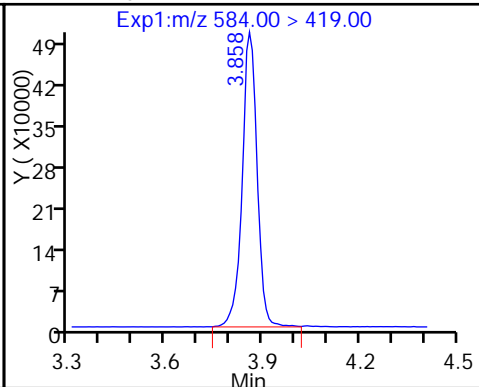
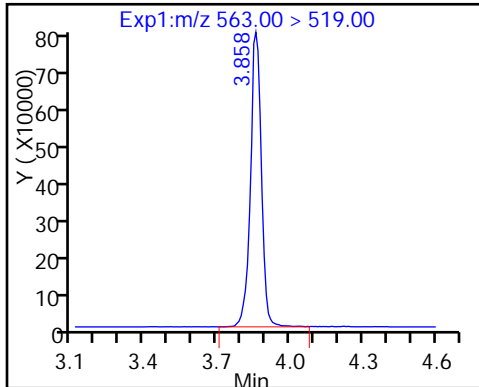
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid

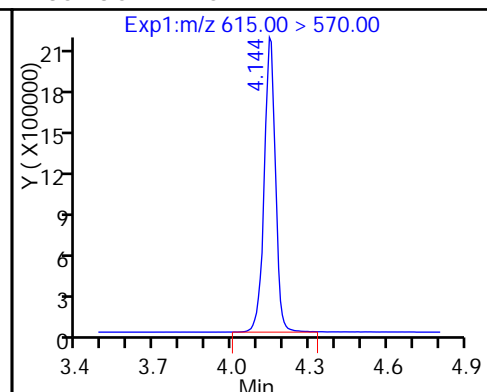
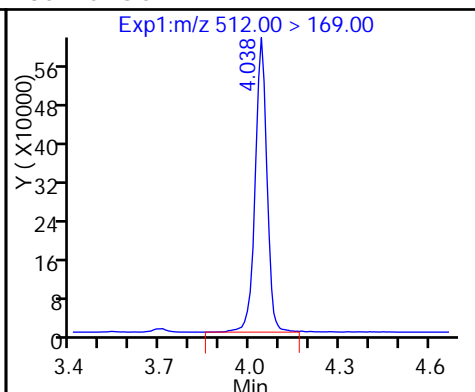
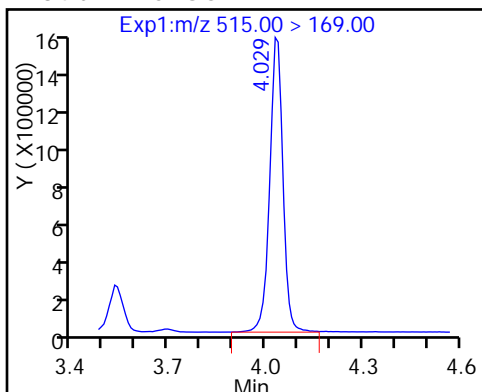
D 30 13C2 PFUnA



D 34 d-N-MeFOSA-M

35 MeFOSA

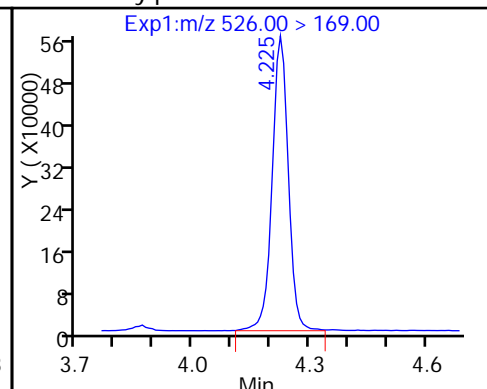
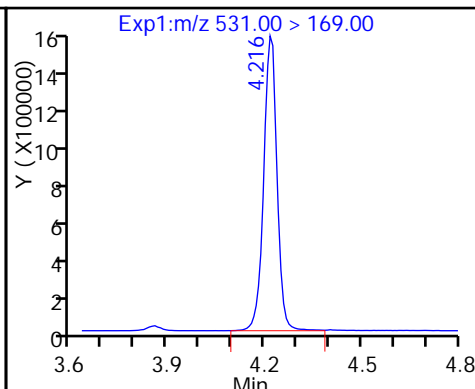
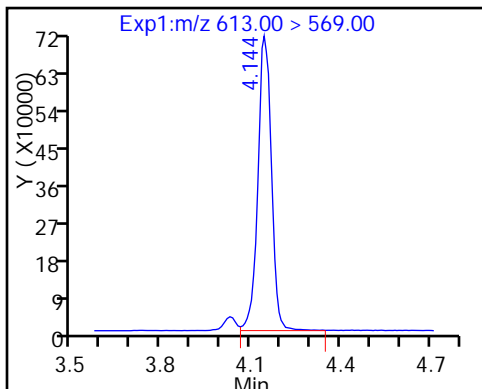
D 36 13C2 PFDoA



37 Perfluorododecanoic acid

D 38 d-N-EtFOSA-M

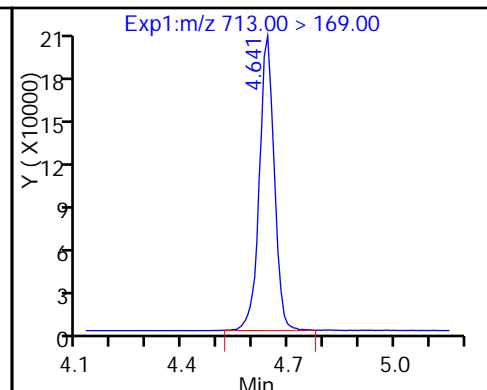
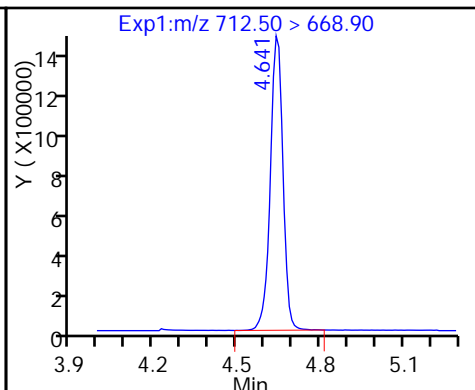
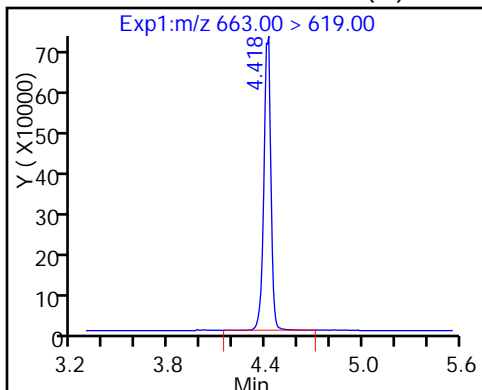
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid (M)

42 Perfluorotetradecanoic acid

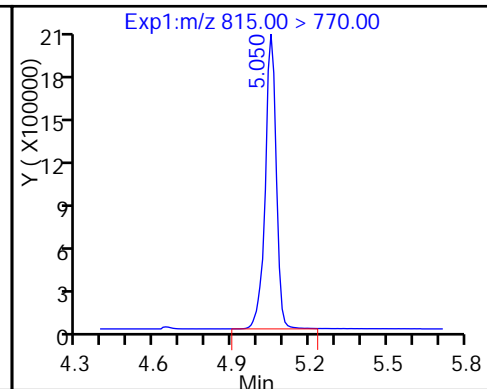
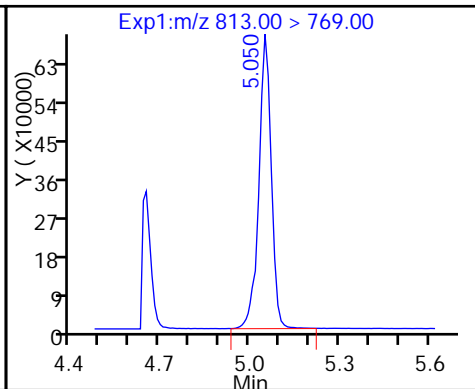
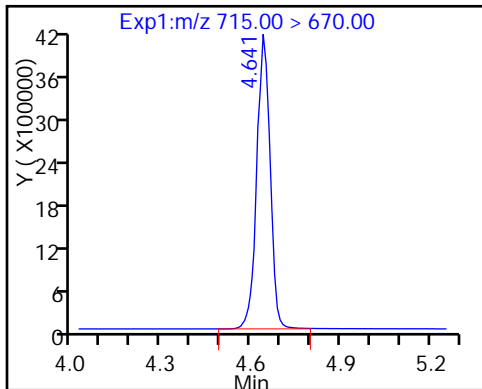
42 Perfluorotetradecanoic acid



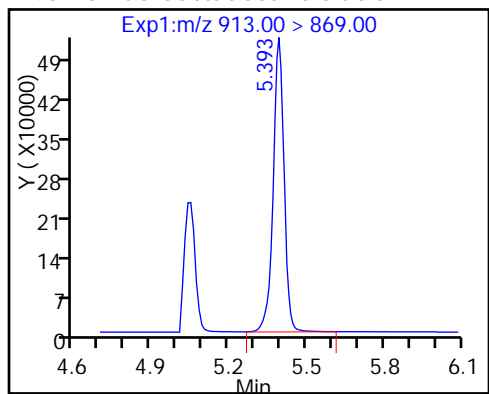
D 43 13C2-PFTeDA

45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



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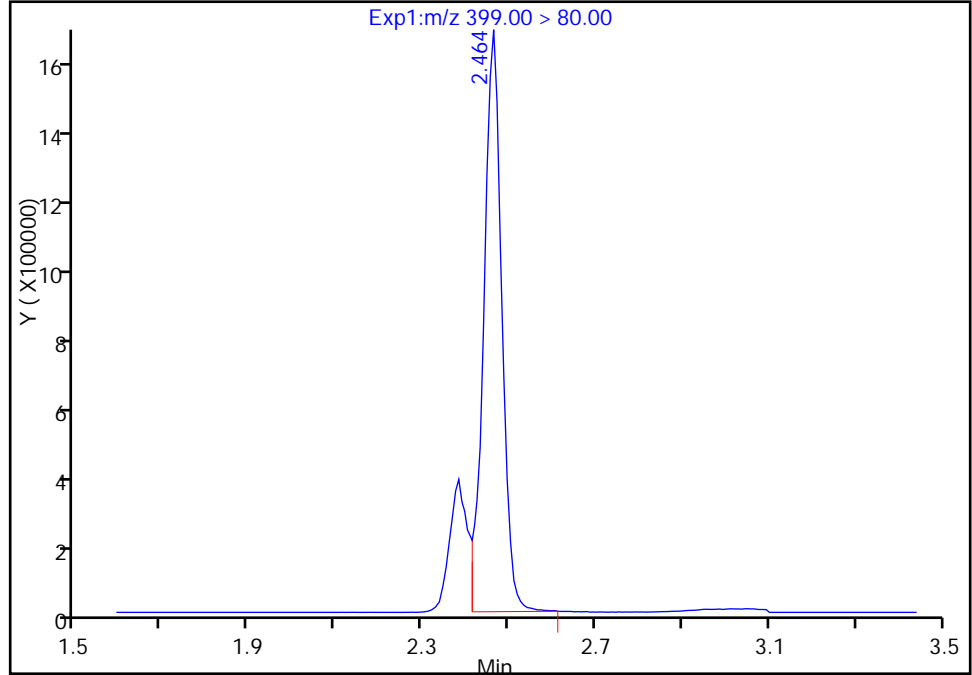
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_003.d
Injection Date: 08-Mar-2017 19:47:04 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

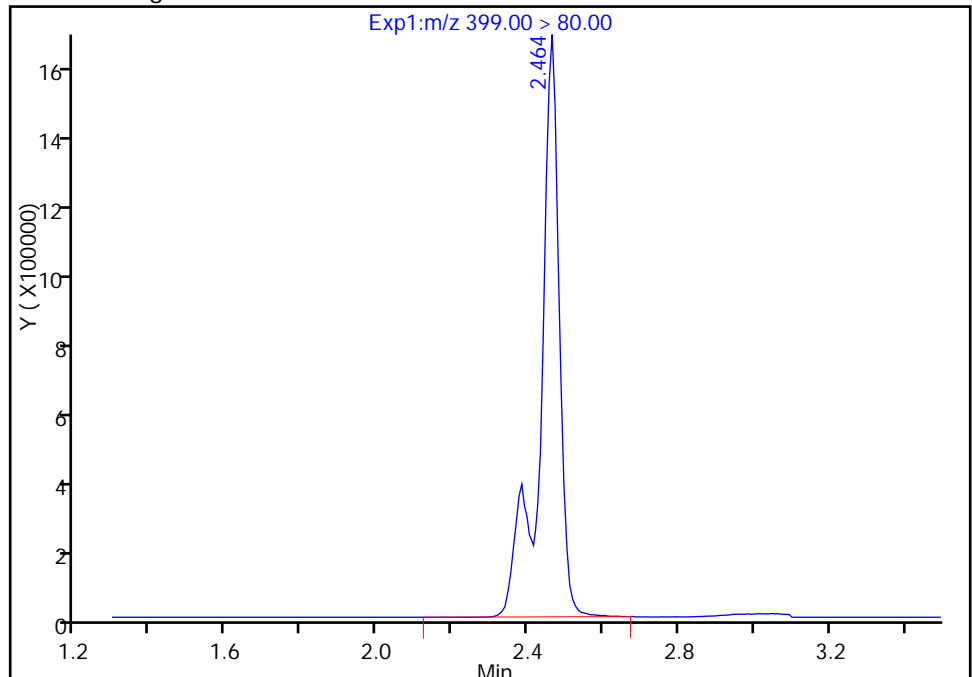
RT: 2.46
Area: 4787004
Amount: 14.242300
Amount Units: ng/ml

Processing Integration Results



RT: 2.46
Area: 5877135
Amount: 17.485658
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 10-Mar-2017 13:58:43
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

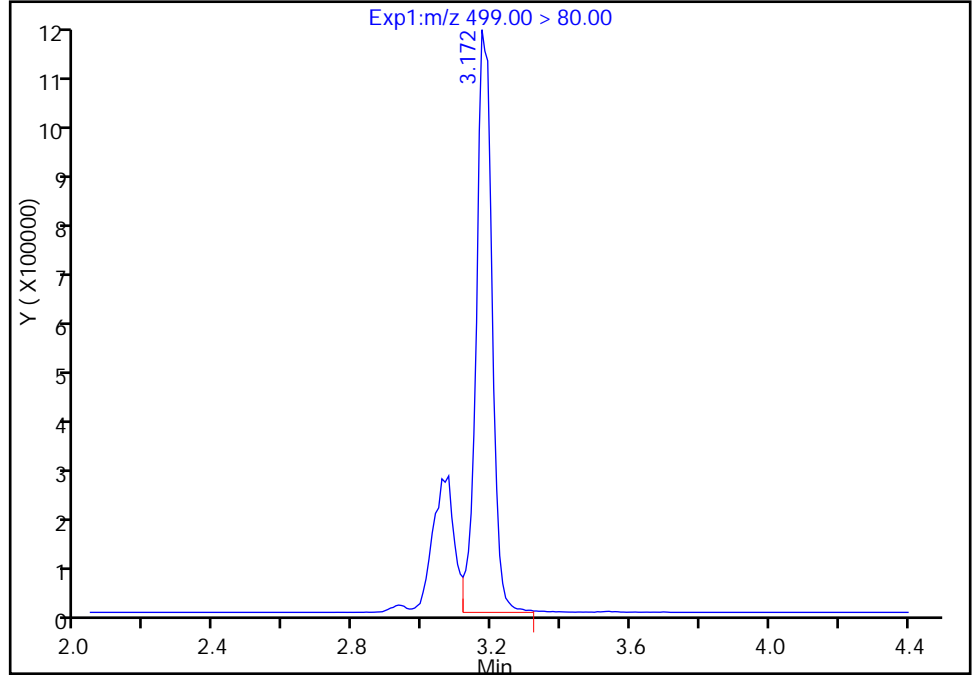
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_003.d
Injection Date: 08-Mar-2017 19:47:04 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

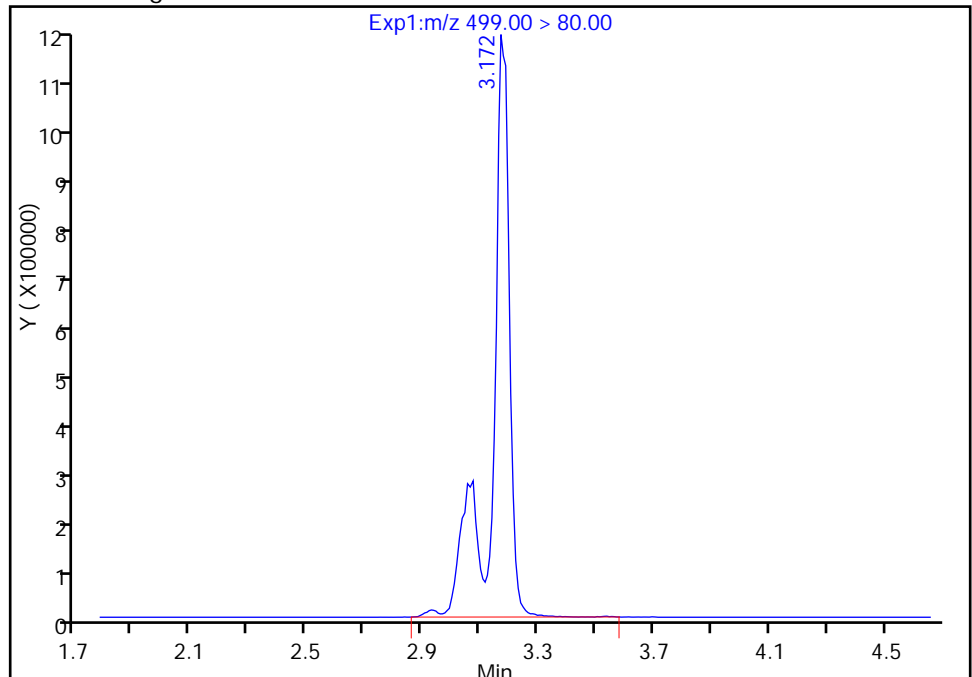
RT: 3.17
Area: 3646291
Amount: 13.506816
Amount Units: ng/ml

Processing Integration Results



RT: 3.17
Area: 4854541
Amount: 17.982490
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 10-Mar-2017 13:58:43
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

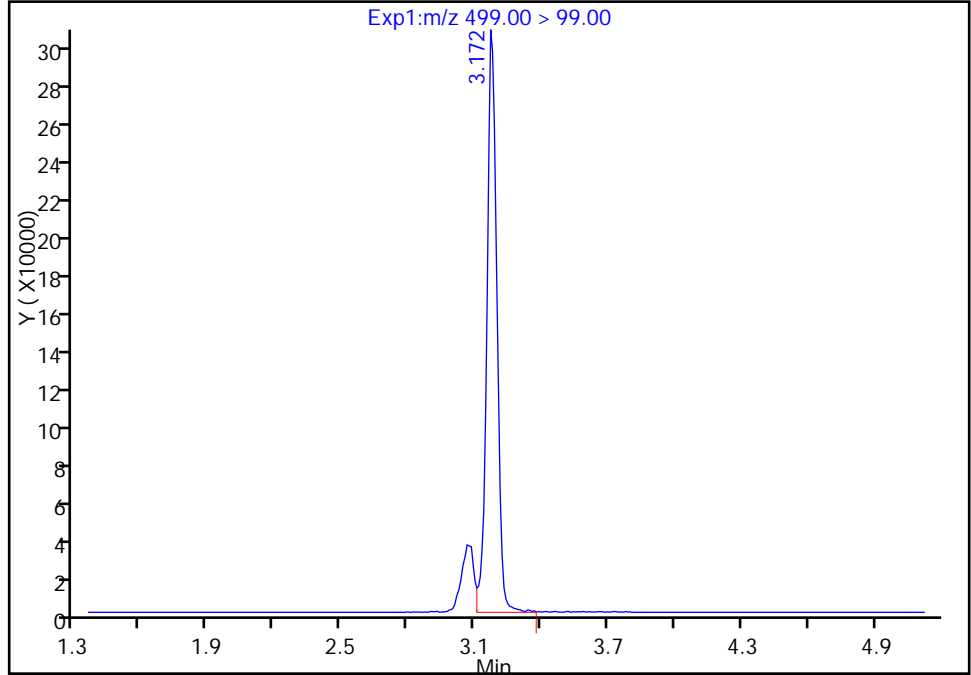
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_003.d
Injection Date: 08-Mar-2017 19:47:04 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

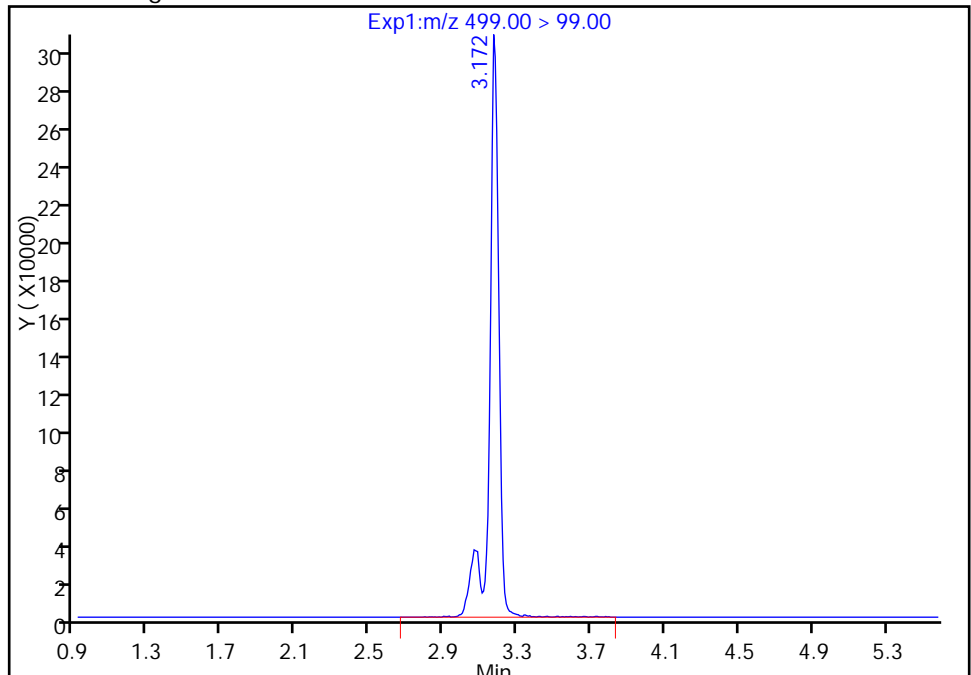
RT: 3.17
Area: 950431
Amount: 13.506816
Amount Units: ng/ml

Processing Integration Results



RT: 3.17
Area: 1094901
Amount: 17.982490
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 10-Mar-2017 13:58:43

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

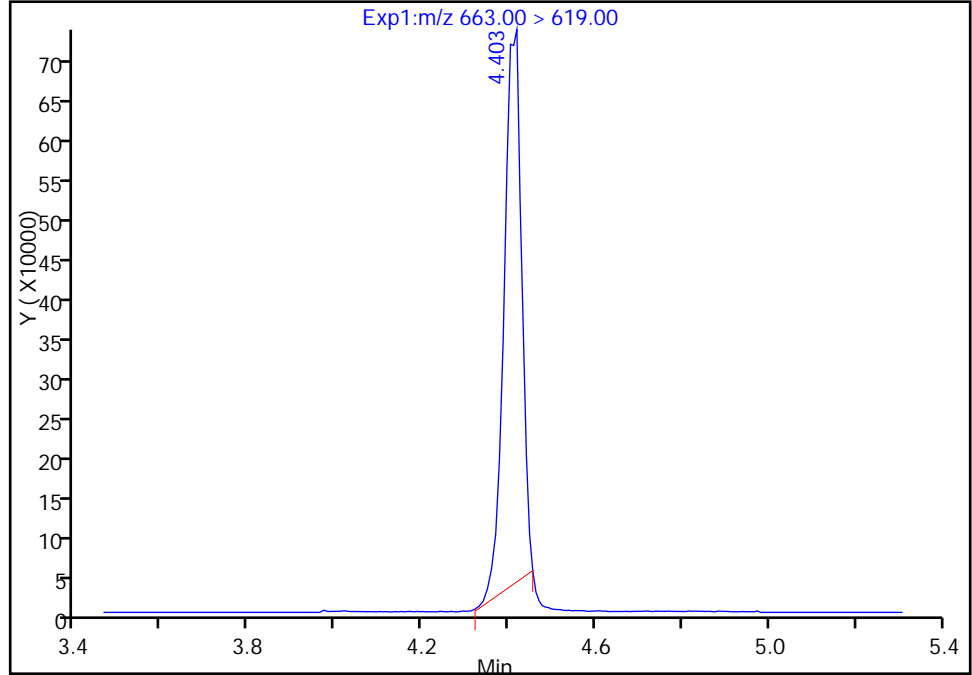
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_003.d
Injection Date: 08-Mar-2017 19:47:04 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

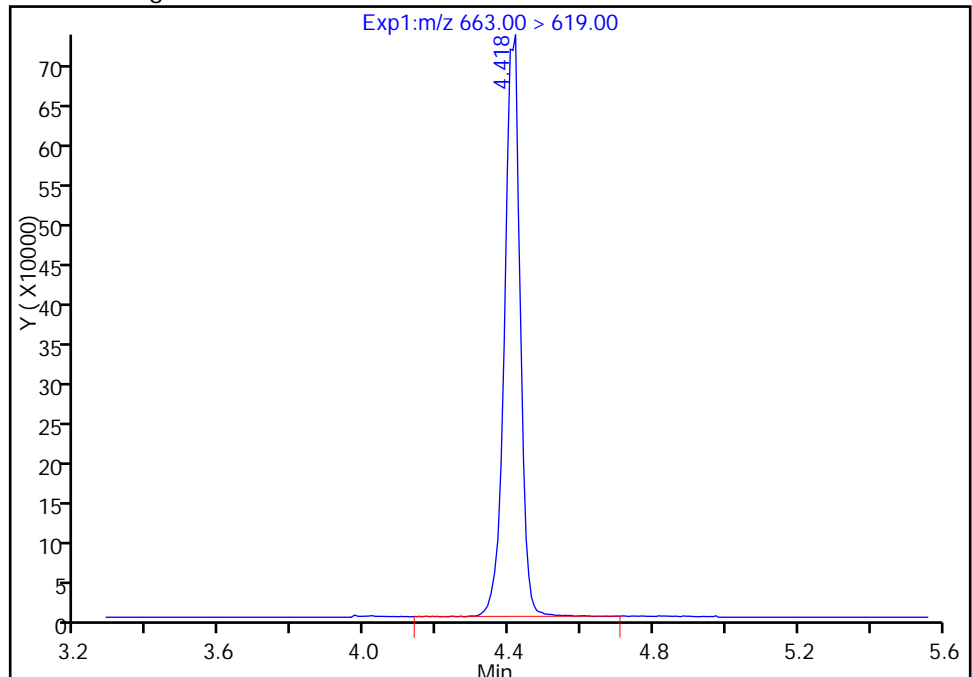
RT: 4.40
Area: 1955568
Amount: 17.016172
Amount Units: ng/ml

Processing Integration Results



RT: 4.42
Area: 2205979
Amount: 19.195097
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 10-Mar-2017 13:59:33
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154016/13 Calibration Date: 03/08/2017 21:02
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.08B_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	0.8473	0.8947		52.8	50.0	5.6	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9688		49.5	50.0	-1.0	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.454		44.9	44.2	1.5	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9161		51.5	50.0	3.0	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9767		50.5	50.0	1.0	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.043		46.1	45.5	1.4	25.0
6:2FTS	L2ID		0.9091		48.5	47.4	2.3	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.9899		48.4	50.0	-3.1	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.120		51.7	47.6	8.6	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.035		48.8	46.4	5.3	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9786		54.1	50.0	8.3	25.0
8:2FTS	L2ID		0.9368		48.5	47.9	1.2	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9590		52.9	50.0	5.9	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9287		51.7	50.0	3.4	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9121		47.0	50.0	-6.1	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6200		50.2	48.2	4.1	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8717		47.9	50.0	-4.2	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9340		46.1	50.0	-7.9	25.0
MeFOSA	AveID	0.9355	0.8993		48.1	50.0	-3.9	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9313		50.9	50.0	1.8	25.0
N-EtFOSA-M	AveID	0.9837	0.9493		48.3	50.0	-3.5	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9014		51.6	50.0	3.2	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.826		46.4	50.0	-7.1	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9528		51.0	50.0	2.0	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6462		45.0	50.0	-9.9	25.0
13C4 PFBA	Ave	292242	336278		57.5	50.0	15.1	50.0
13C5-PFPeA	Ave	232192	255978		55.1	50.0	10.2	50.0
13C2 PFHxA	Ave	210884	254686		60.4	50.0	20.8	50.0
13C4-PFHpA	Ave	192959	225424		58.4	50.0	16.8	50.0
18O2 PFHxS	Ave	290899	331944		54.0	47.3	14.1	50.0
M2-6:2FTS	Ave	77178	106313		65.4	47.5	37.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154016/13 Calibration Date: 03/08/2017 21:02
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.08B_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	225736		55.1	50.0	10.1	50.0
13C4 PFOS	Ave	241637	269109		53.2	47.8	11.4	50.0
13C5 PFNA	Ave	177866	190440		53.5	50.0	7.1	50.0
M2-8:2FTS	Ave	92602	100600		52.0	47.9	8.6	50.0
13C8 FOSA	Ave	366918	383720		52.3	50.0	4.6	50.0
13C2 PFDA	Ave	166704	157547		47.3	50.0	-5.5	50.0
d3-NMeFOSAA	Ave	85186	82960		48.7	50.0	-2.6	50.0
13C2 PFUnA	Ave	130805	128967		49.3	50.0	-1.4	50.0
d5-NEtFOSAA	Ave	81371	73935		45.4	50.0	-9.1	50.0
d-N-MeFOSA-M	Ave	87983	91857		52.2	50.0	4.4	50.0
13C2 PFDoA	Ave	123944	120545		48.6	50.0	-2.7	50.0
d-N-EtFOSA-M	Ave	85249	86587		50.8	50.0	1.6	50.0
13C2-PFTeDA	Ave	259165	242055		46.7	50.0	-6.6	50.0
13C2-PFHxDA	Ave	125061	124510		49.8	50.0	-0.4	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_013.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 08-Mar-2017 21:02:08 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: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 09-Mar-2017 08:55:17 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK034

First Level Reviewer: westendorfc Date: 09-Mar-2017 08:22:53

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	1.531	1.531	0.0	16813896	57.5		115	1310393	
2 Perfluorobutyric acid	212.90 > 169.00	1.539	1.539	0.0	15043473	52.8		106	112203	
4 Perfluoropentanoic acid	262.90 > 219.00	1.813	1.813	0.0	12399606	49.5		99.0	139204	
D 3 13C5-PFPeA	267.90 > 223.00	1.813	1.813	0.0	12798919	55.1		110	885393	
D 47 13C3-PFBS	301.90 > 83.00	1.853	1.853	0.0	335205	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.853	1.853	0.0	21333015	44.9		102		
	298.90 > 99.00	1.853	1.853	0.0	9392678		2.27(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.110	2.110	0.0	12734299	60.4		121	618215	
6 Perfluorohexanoic acid	313.00 > 269.00	2.101	2.101	0.0	11666399	51.5		103	270988	
D 9 13C4-PFHpA	367.00 > 322.00	2.438	2.438	0.0	11271185	58.4		117	295942	
D 11 18O2 PFHxS	403.00 > 84.00	2.453	2.453	0.0	15700964	54.0		114	493960	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.453	2.453	0.0	15752588	46.1		101		M
10 Perfluoroheptanoic acid	363.00 > 319.00	2.438	2.438	0.0	11007993	50.5		101	104289	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.773	2.773	0.0	4581244	48.5		102		

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	2.765	2.765	0.0	5049844	65.4	138		
D 14 13C4 PFOA	417.00	> 372.00	2.803	2.803	0.0	11286786	55.1	110	332192	
15 Perfluorooctanoic acid	413.00	> 369.00	2.803	2.803	0.0	11172211	48.4	96.9	81657	
	413.00	> 169.00	2.795	2.803	-0.008	6579958	1.70(0.90-1.10)		141084	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.811	2.811	0.0	14342604	51.7	109		
D 18 13C4 PFOS	503.00	> 80.00	3.168	3.168	0.0	12863425	53.2	111	215895	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.168	3.168	0.0	12927982	48.8	105	3163436	M
	499.00	> 99.00	3.168	3.168	0.0	2908678	4.44(0.90-1.10)		281794	M
D 19 13C5 PFNA	468.00	> 423.00	3.168	3.168	0.0	9522007	53.5	107	233196	
20 Perfluorononanoic acid	463.00	> 419.00	3.176	3.176	0.0	9318553	54.1	108	205529	
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.512	3.512	0.0	4513963	48.5	101		
24 Perfluorodecanoic acid	513.00	> 469.00	3.521	3.521	0.0	7554289	52.9	106	196167	
D 26 M2-8:2FTS	529.00	> 509.00	3.512	3.512	0.0	4818735	52.0	109		
D 21 13C8 FOSA	506.00	> 78.00	3.521	3.521	0.0	19186023	52.3	105	364440	
D 23 13C2 PFDA	515.00	> 470.00	3.529	3.529	0.0	7877359	47.3	94.5	126586	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.521	3.521	0.0	17817140	51.7	103	343771	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.684	3.684	0.0	3783332	47.0	93.9		
D 27 d3-NMeFOSAA	573.00	> 419.00	3.675	3.675	0.0	4148002	48.7	97.4		
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.848	3.848	0.0	3222335	47.9	95.8		
D 32 d5-NEtFOSAA	589.00	> 419.00	3.848	3.848	0.0	3696764	45.4	90.9		
31 Perfluoroundecanoic acid	563.00	> 519.00	3.848	3.848	0.0	6022687	46.1	92.1	116921	
D 30 13C2 PFUnA	565.00	> 520.00	3.848	3.848	0.0	6448343	49.3	98.6	242676	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.831	3.831	0.0	8042075	50.2	104		
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.018	4.018	0.0	4592836	52.2	104		
35 MeFOSA	512.00	> 169.00	4.018	4.018	0.0	4130290	48.1	96.1		

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	4.135	4.135	0.0		6027270	48.6		97.3	145736	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.135	4.135	0.0	1.000	5613145	50.9		102	66155	
D 38 d-N-EtFOSA-M										
531.00 > 169.00	4.205	4.205	0.0		4329349	50.8		102		
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.205	4.205	0.0	1.000	4109767	48.3		96.5		
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.398	4.398	0.0	1.000	5432680	51.6		103	103739	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.627	4.627	0.0		12102738	46.7		93.4	375242	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.645	4.645	0.0	1.000	11006734	46.4		92.9	124952	
713.00 > 169.00	4.635	4.645	-0.010	0.998	1524274		7.22(0.00-0.00)		124570	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.048	5.048	0.0	1.000	5742661	51.0		102	5497	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.048	5.048	0.0		6225514	49.8		99.6	104773	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.390	5.390	0.0	1.000	3894798	45.0		90.1	4295	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L5_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_013.d

Injection Date: 08-Mar-2017 21:02:08

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 32

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

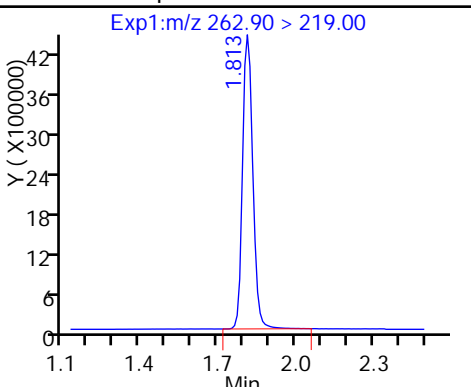
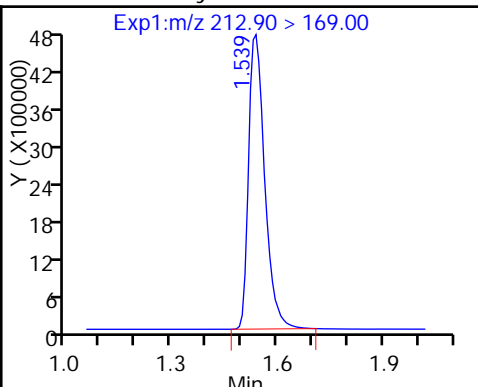
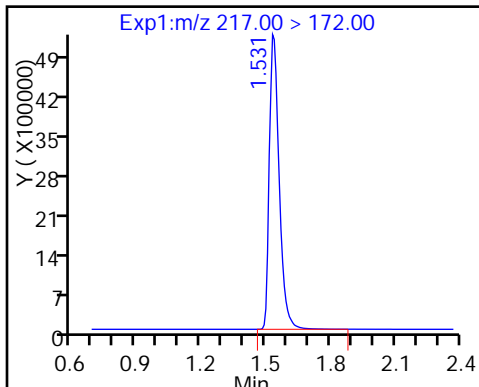
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

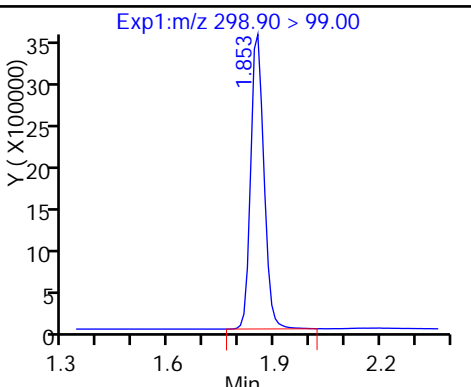
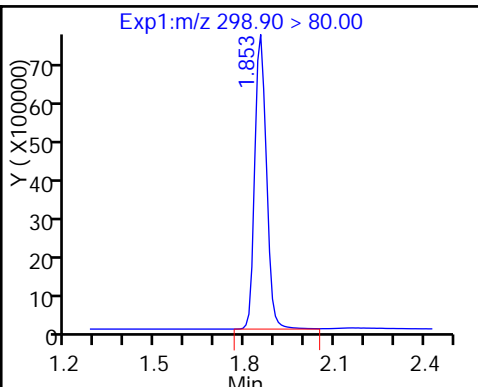
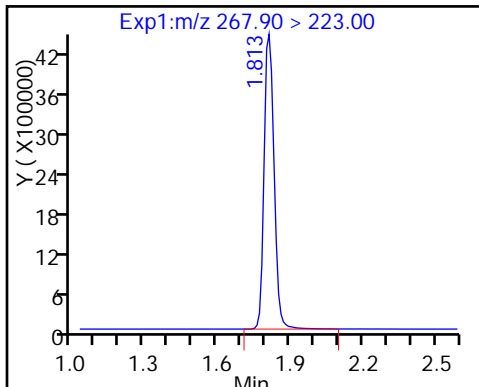
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

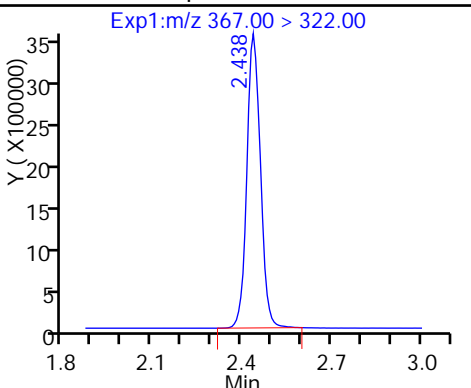
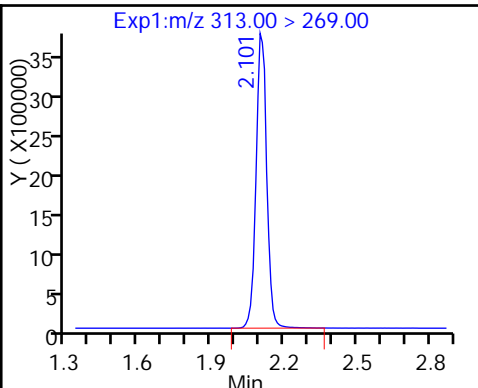
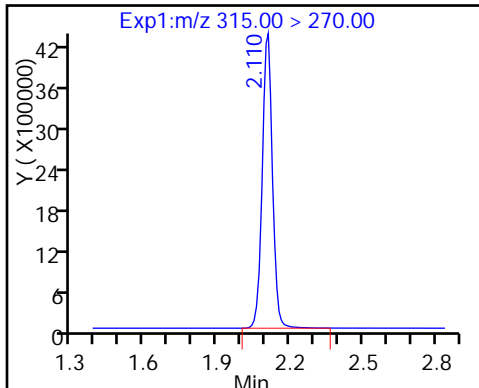
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

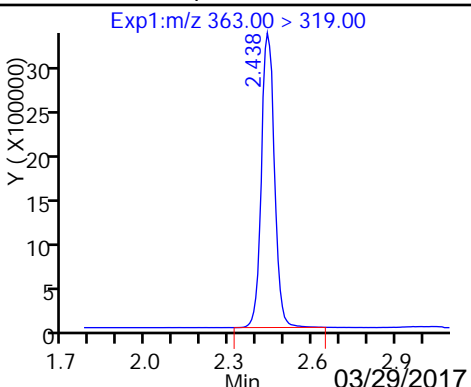
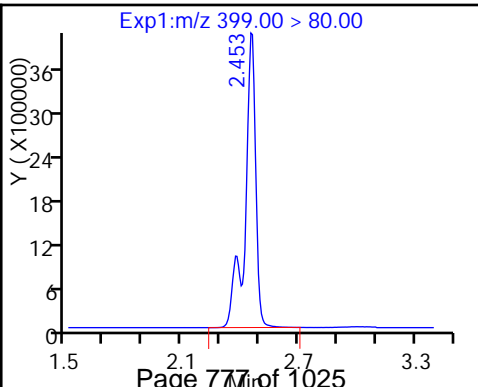
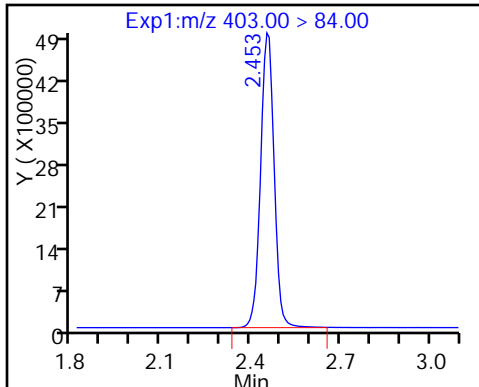
D 9 13C4-PFHpA



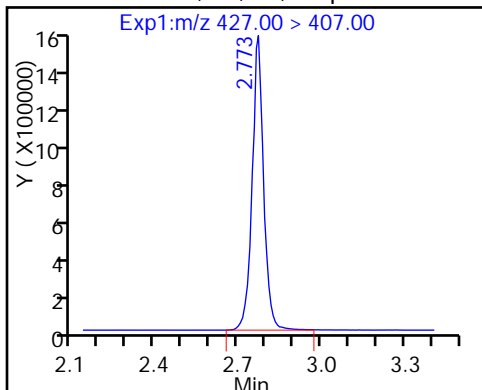
D 11 18O2 PFHxS

8 Perfluorohexanesulfonic acid (M)

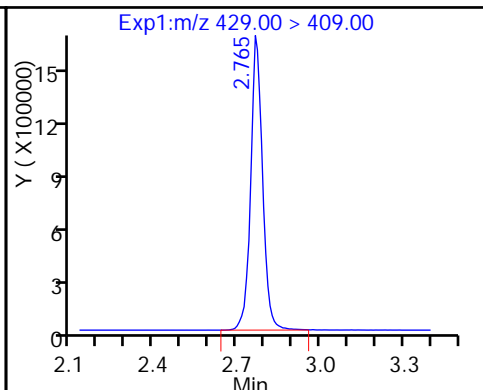
10 Perfluoroheptanoic acid



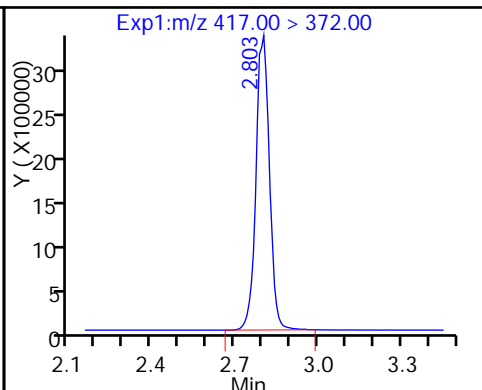
13 Sodium 1H,1H,2H,2H-perfluorooctane



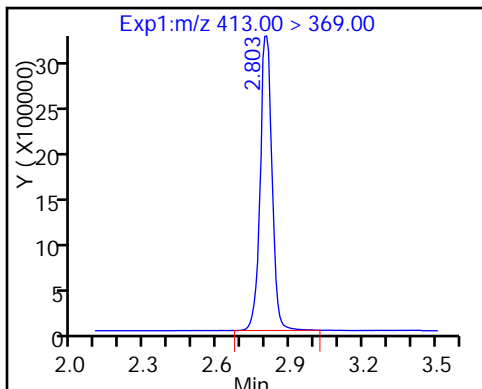
D 12 M2-6:2FTS



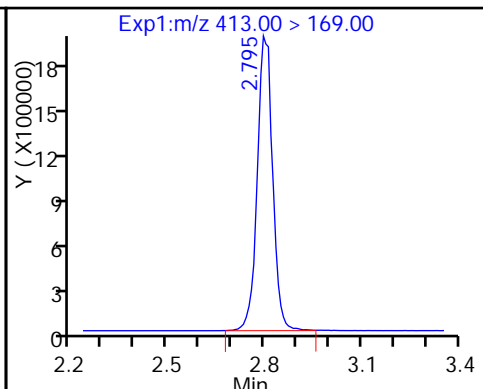
D 14 13C4 PFOA



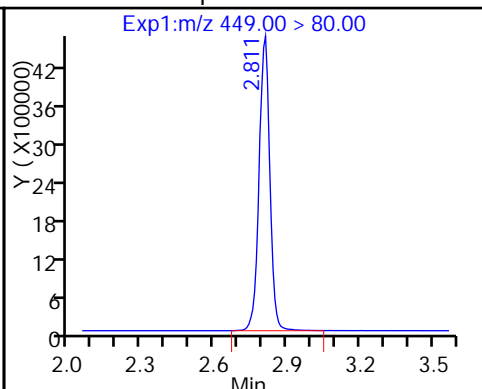
15 Perfluorooctanoic acid



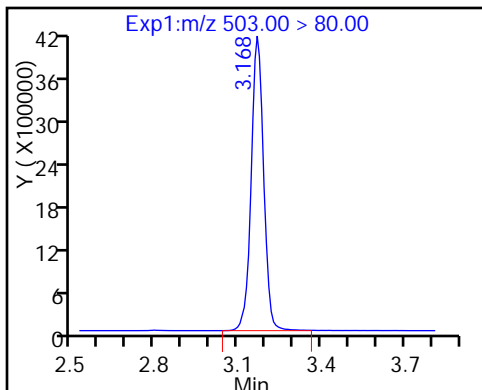
15 Perfluorooctanoic acid



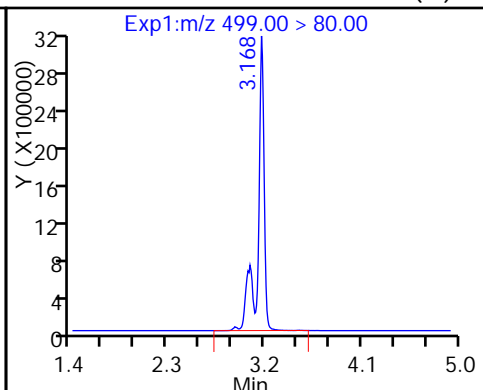
16 Perfluoroheptanesulfonic Acid



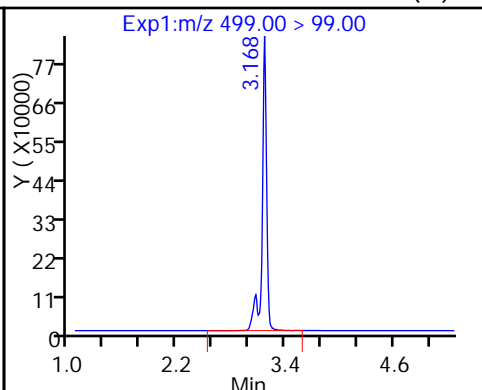
D 18 13C4 PFOS



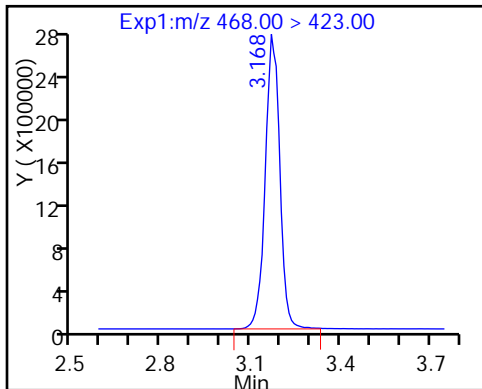
17 Perfluorooctane sulfonic acid (M)



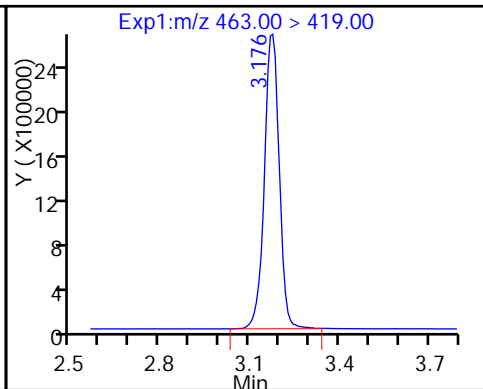
17 Perfluorooctane sulfonic acid (M)



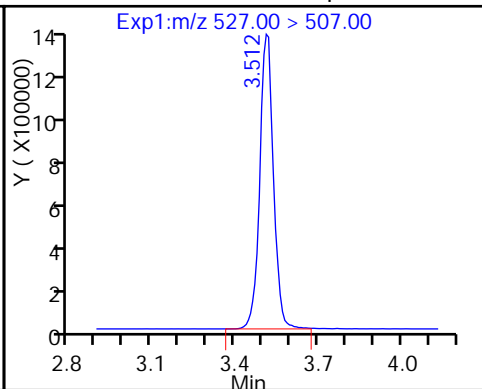
D 19 13C5 PFNA



20 Perfluorononanoic acid



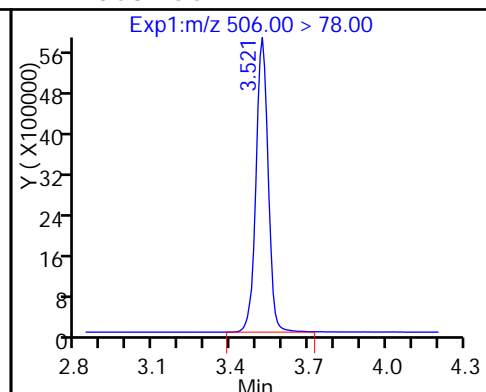
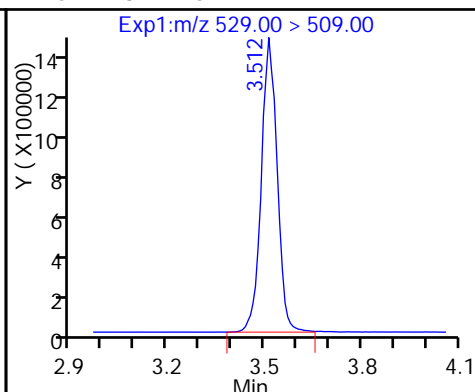
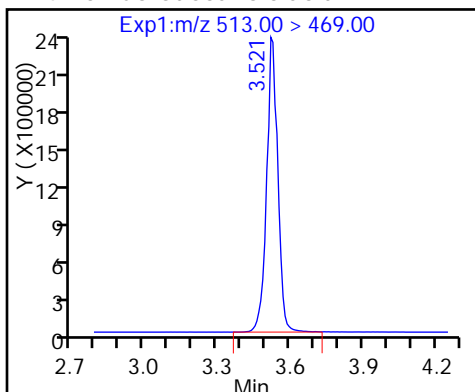
25 Sodium 1H,1H,2H,2H-perfluorooctane



24 Perfluorodecanoic acid

D 26 M2-8:2FTS

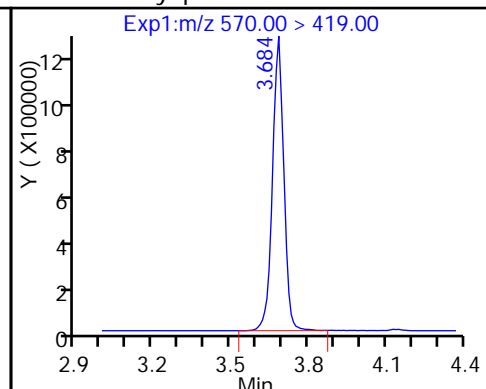
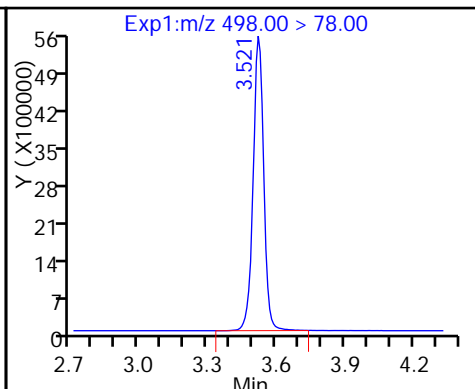
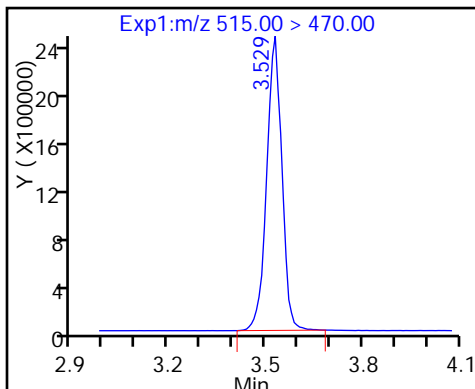
D 21 13C8 FOSA



D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

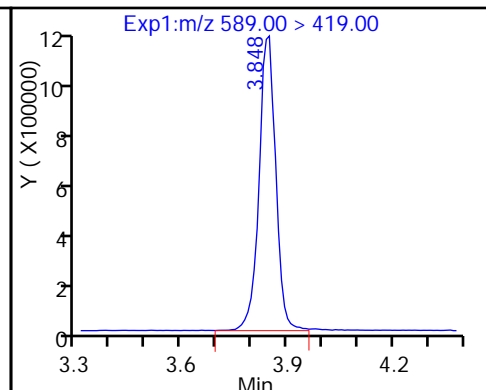
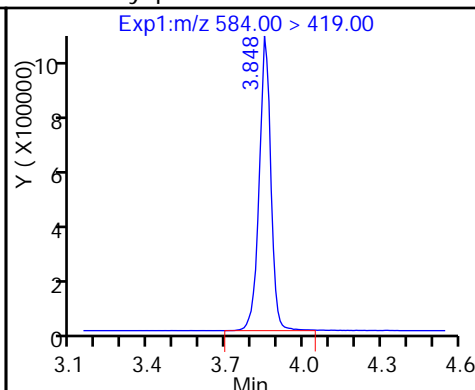
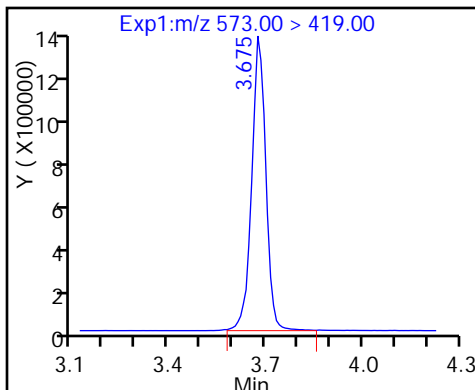
28 N-methyl perfluorooctane sulfonami



D 27 d3-NMeFOSAA

33 N-ethyl perfluorooctane sulfonamid

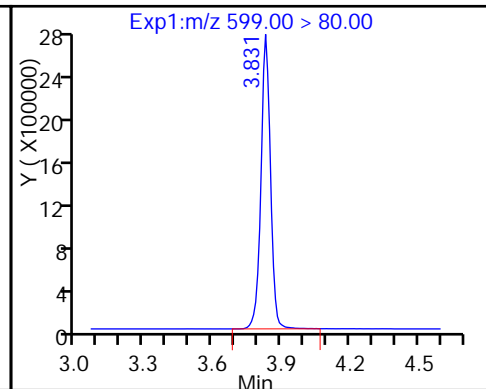
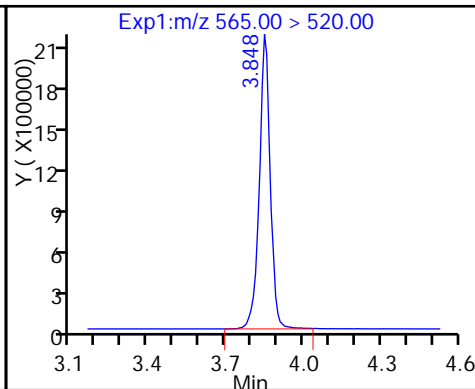
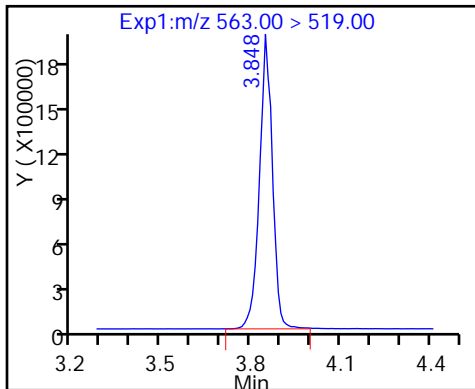
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

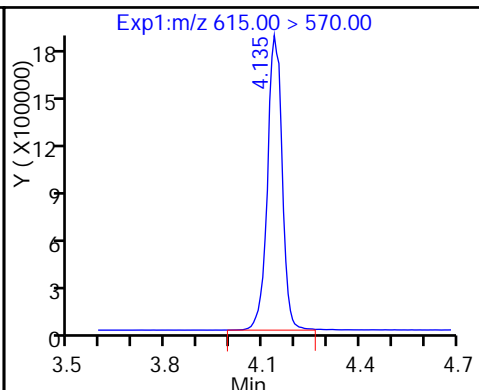
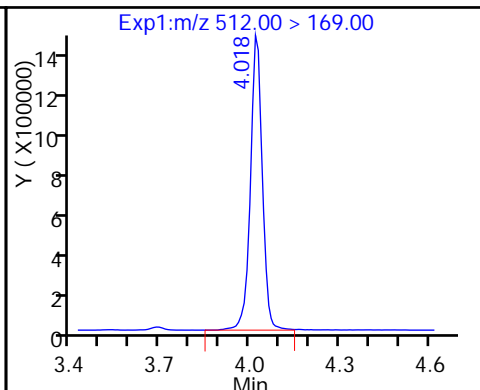
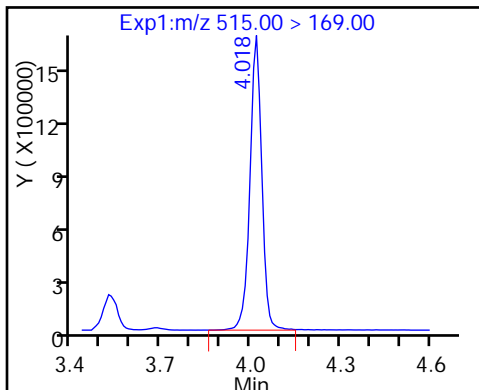
29 Perfluorodecane Sulfonic acid



D 34 d-N-MeFOSA-M

35 MeFOSA

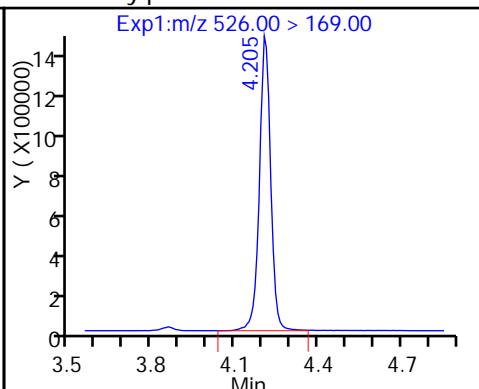
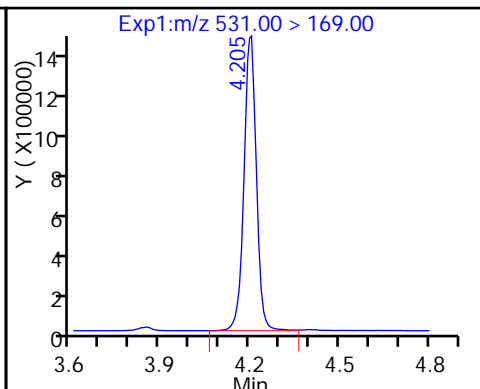
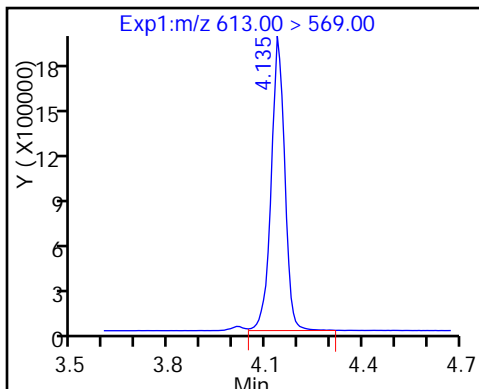
D 36 13C2 PFDoA



37 Perfluorododecanoic acid

D 38 d-N-EtFOSA-M

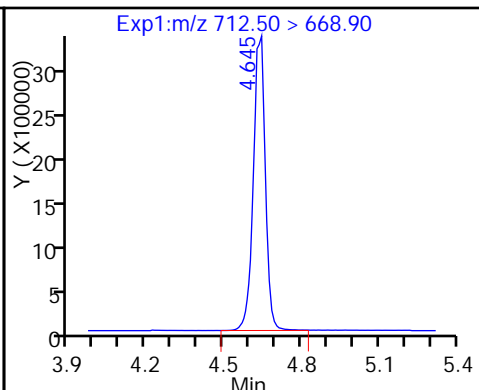
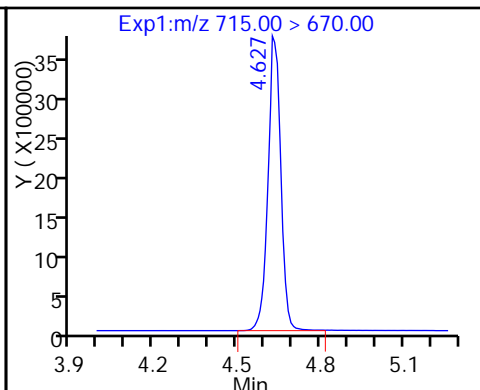
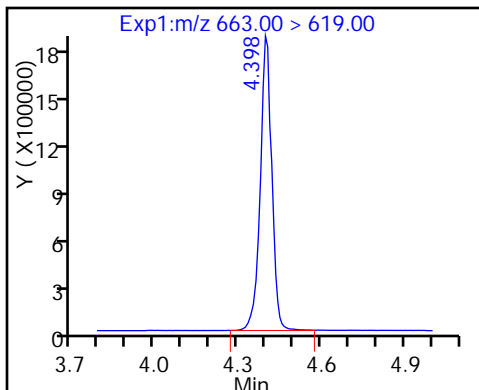
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

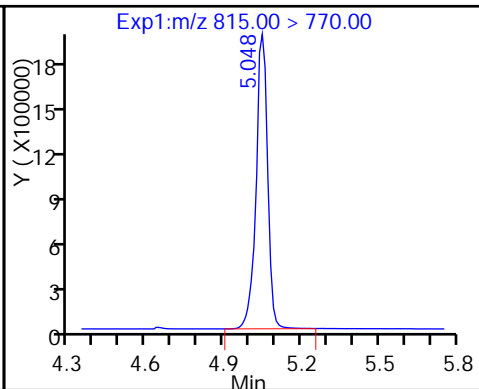
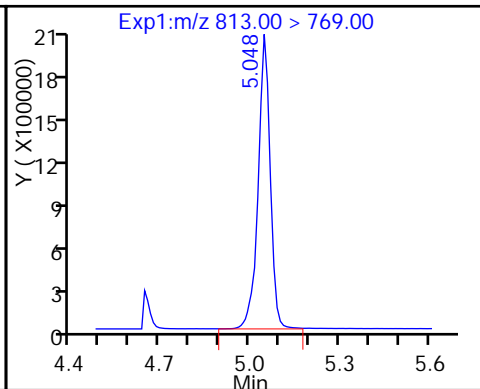
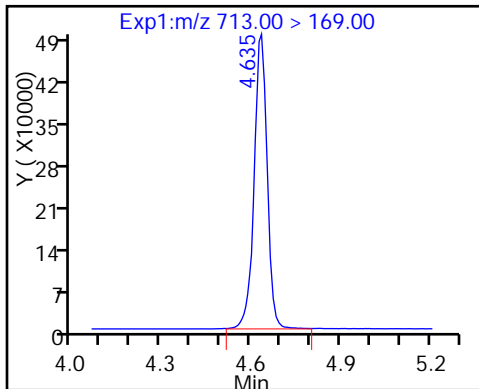
42 Perfluorotetradecanoic acid



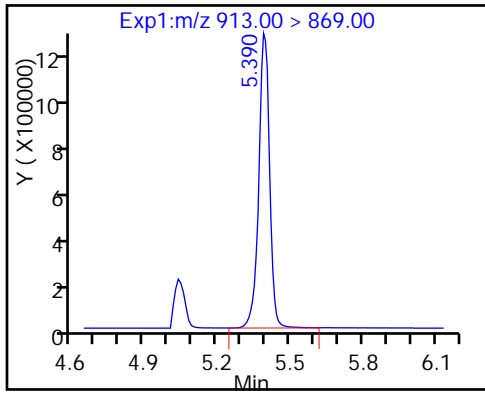
42 Perfluorotetradecanoic acid

45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

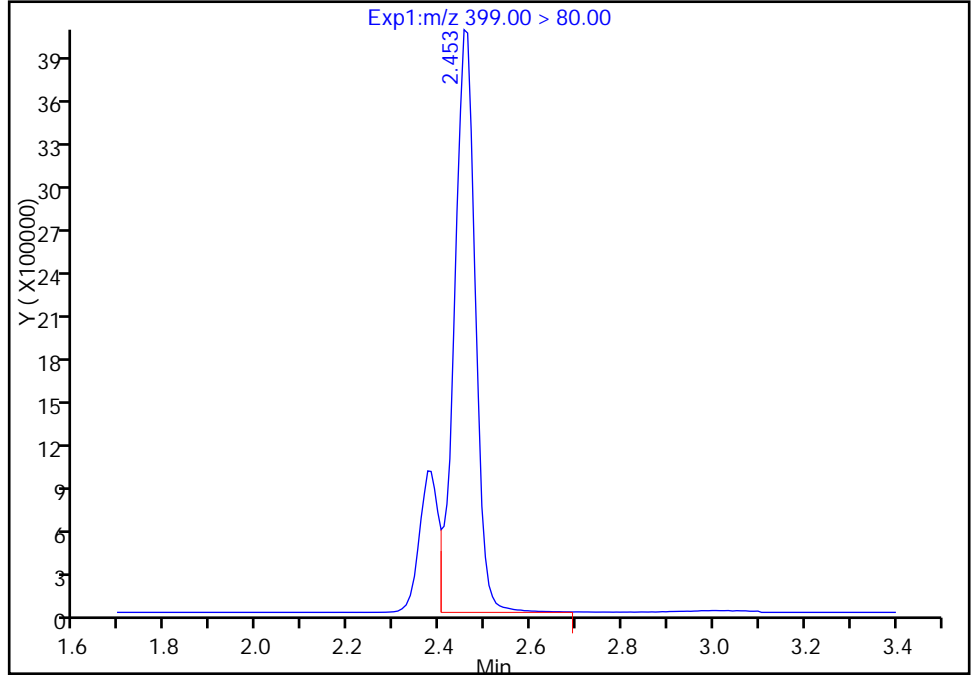
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Injection Date: 08-Mar-2017 21:02:08 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

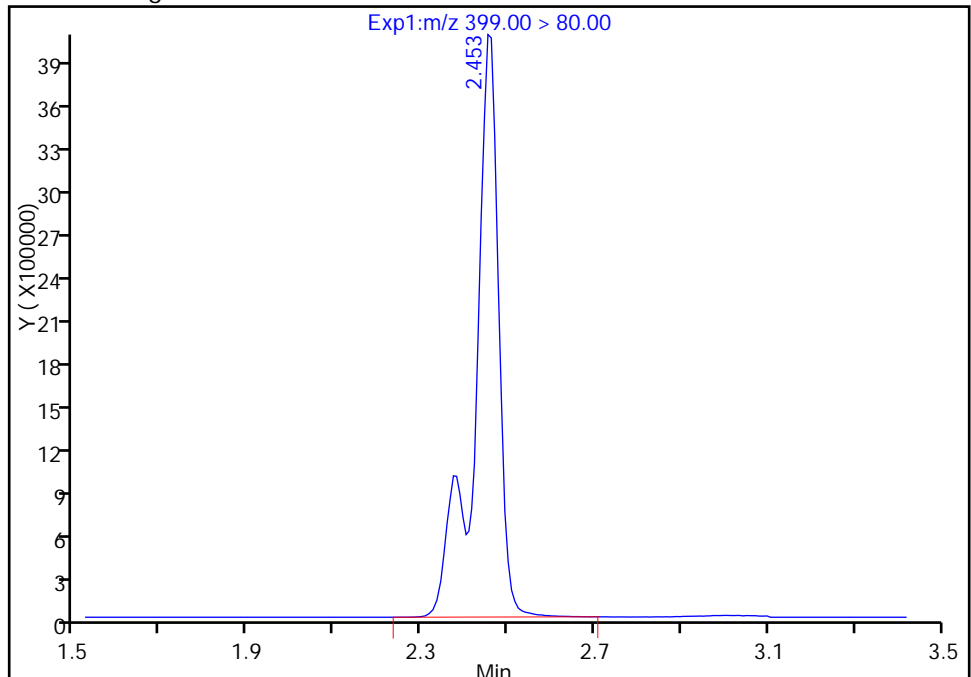
RT: 2.45
Area: 13020299
Amount: 38.139532
Amount Units: ng/ml

Processing Integration Results



RT: 2.45
Area: 15752588
Amount: 46.143053
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 08:55:16
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

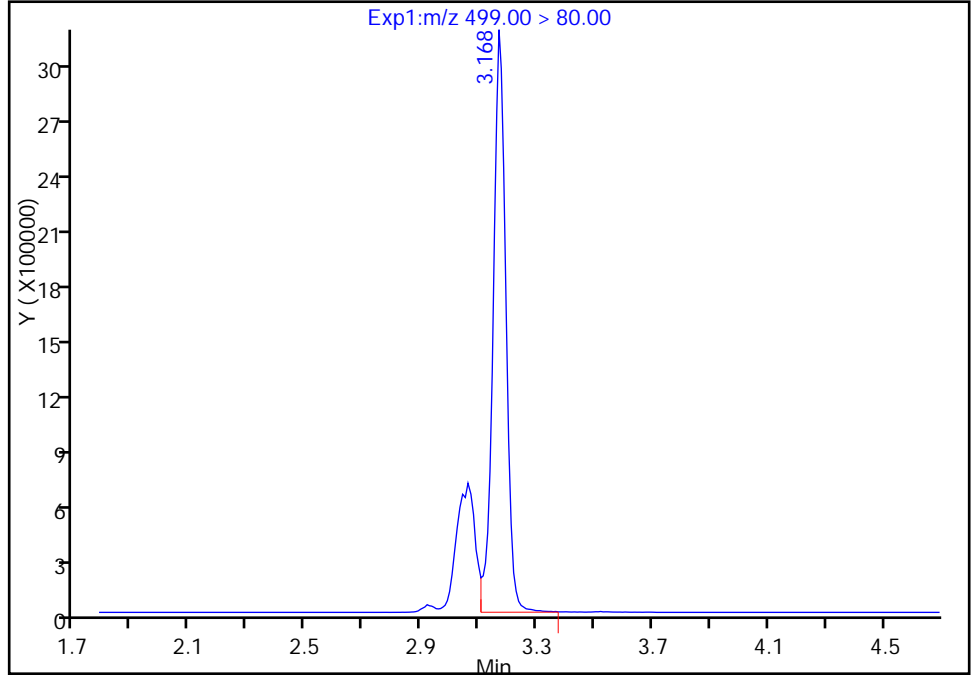
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Injection Date: 08-Mar-2017 21:02:08 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

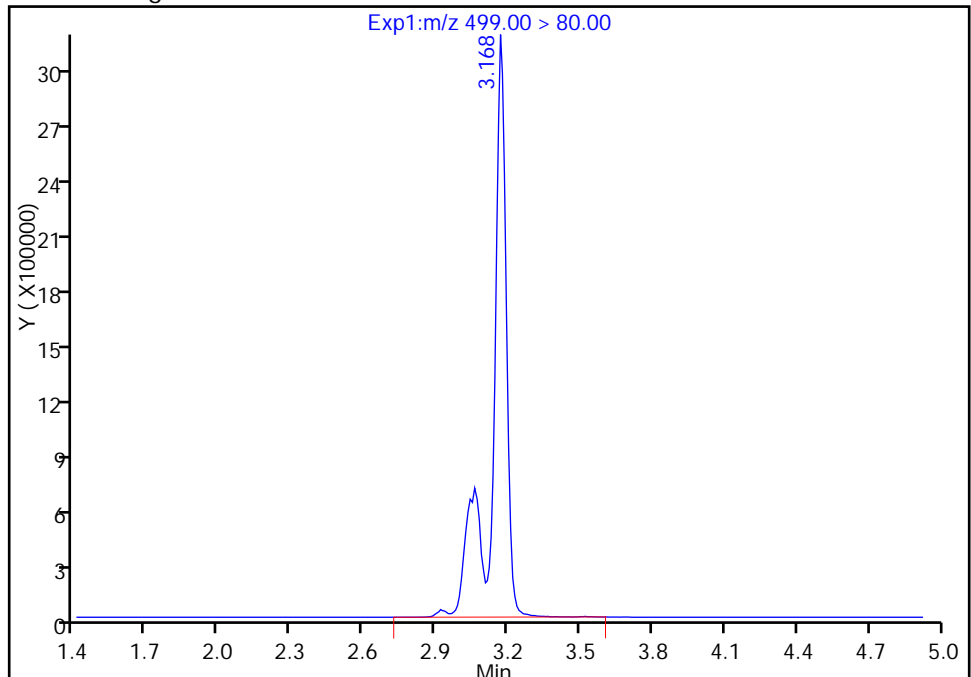
RT: 3.17
Area: 9695477
Amount: 36.633120
Amount Units: ng/ml

Processing Integration Results



RT: 3.17
Area: 12927982
Amount: 48.846727
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 08:55:16
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

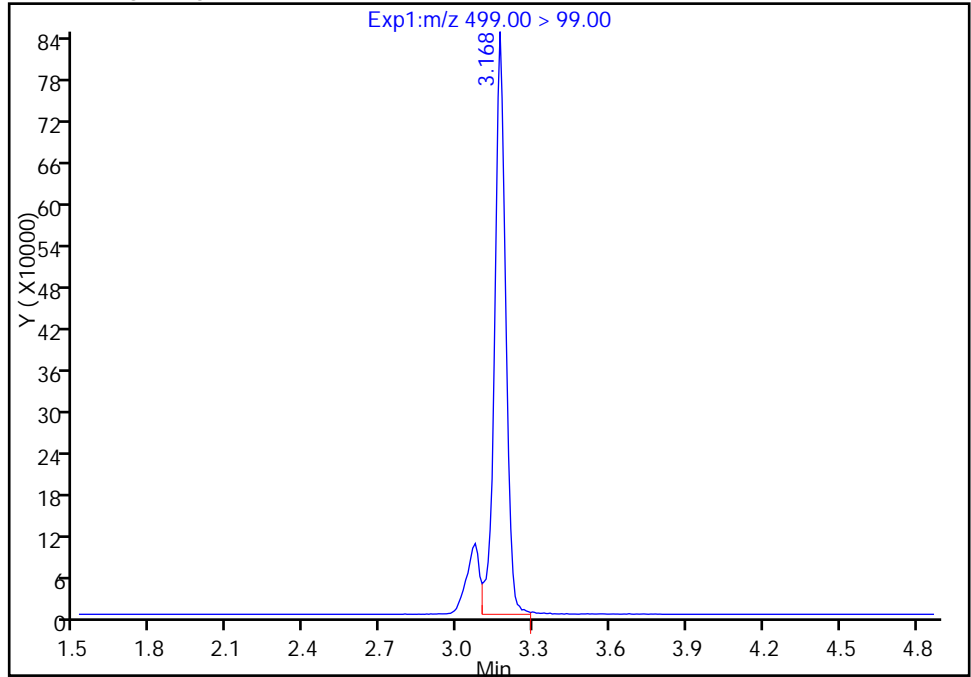
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Injection Date: 08-Mar-2017 21:02:08 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

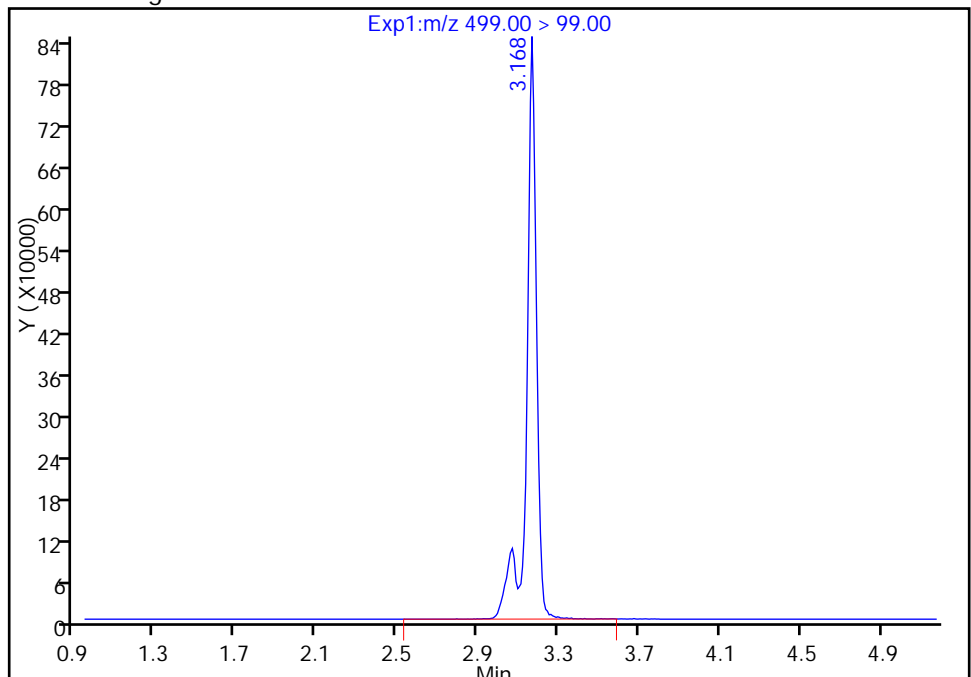
RT: 3.17
Area: 2539315
Amount: 36.633120
Amount Units: ng/ml

Processing Integration Results



RT: 3.17
Area: 2908678
Amount: 48.846727
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 08:55:16

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/1 Calibration Date: 03/11/2017 12:34
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8603		1.02	1.00	1.5	50.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.106		1.13	1.00	13.1	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.529		0.944	0.884	6.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9177		1.03	1.00	3.2	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9703		1.00	1.00	0.3	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.189		1.05	0.910	15.6	50.0
6:2FTS	L2ID		1.215		1.16	0.948	22.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.077		1.05	1.00	5.4	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.065		0.983	0.952	3.3	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.046		0.987	0.928	6.3	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9180		1.02	1.00	1.5	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.8981		1.00	1.00	-0.0	50.0
8:2FTS	L2ID		0.9772		0.929	0.958	-3.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9010		0.995	1.00	-0.5	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9874		1.02	1.00	1.7	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5682		0.920	0.964	-4.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	1.029		1.02	1.00	1.5	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.9191		1.01	1.00	1.0	50.0
MeFOSA	AveID	0.9355	0.9718		1.04	1.00	3.9	50.0
N-EtFOSA-M	AveID	0.9837	0.9816		0.998	1.00	-0.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.8999		0.984	1.00	-1.6	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8744		1.00	1.00	0.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.464		0.745	1.00	-25.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.281		1.01	1.00	0.6	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.5790		0.807	1.00	-19.3	50.0
13C4 PFBA	Ave	292242	324941		55.6	50.0	11.2	50.0
13C5-PFPeA	Ave	232192	253826		54.7	50.0	9.3	50.0
13C2 PFHxA	Ave	210884	239481		56.8	50.0	13.6	50.0
13C4-PFHpA	Ave	192959	218030		56.5	50.0	13.0	50.0
18O2 PFHxS	Ave	290899	331233		53.9	47.3	13.9	50.0
M2-6:2FTS	Ave	77178	95744		58.9	47.5	24.1	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/1 Calibration Date: 03/11/2017 12:34
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	230925		56.3	50.0	12.7	50.0
13C4 PFOS	Ave	241637	262439		51.9	47.8	8.6	50.0
13C5 PFNA	Ave	177866	190511		53.6	50.0	7.1	50.0
13C8 FOSA	Ave	366918	412048		56.1	50.0	12.3	50.0
M2-8:2FTS	Ave	92602	102811		53.2	47.9	11.0	50.0
13C2 PFDA	Ave	166704	176211		52.9	50.0	5.7	50.0
d3-NMeFOSAA	Ave	85186	77543		45.5	50.0	-9.0	50.0
13C2 PFUnA	Ave	130805	133960		51.2	50.0	2.4	50.0
d5-NEtFOSAA	Ave	81371	80643		49.6	50.0	-0.9	50.0
d-N-MeFOSA-M	Ave	87983	83824		47.6	50.0	-4.7	50.0
d-N-EtFOSA-M	Ave	85249	80383		47.1	50.0	-5.7	50.0
13C2 PFDoA	Ave	123944	117054		47.2	50.0	-5.6	50.0
13C2-PFTeDA	Ave	259165	218619		42.2	50.0	-15.6	50.0
13C2-PFHxDA	Ave	125061	98970		39.6	50.0	-20.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_004.d
 Lims ID: CCV L2
 Client ID:
 Sample Type: CCVL
 Inject. Date: 11-Mar-2017 12:34:59 ALS Bottle#: 29 Worklist Smp#: 1
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 13-Mar-2017 11:41:36 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: changnoit Date: 13-Mar-2017 11:41:36

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	1.555	1.555	0.0	1.000	279561	1.02	102	2519	M
D 1 13C4 PFBA	217.00 > 172.00	1.555	1.555	0.0		16247054	55.6	111	1051483	
D 3 13C5-PFPeA	267.90 > 223.00	1.843	1.843	0.0		12691275	54.7	109	774167	
4 Perfluoropentanoic acid	262.90 > 219.00	1.843	1.843	0.0	1.000	280803	1.13	113	2501	
D 47 13C3-PFBS	301.90 > 83.00	1.873	1.873	0.0		326416	NC			
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.883	1.883	0.0	1.000	447832	0.9438	107		
	298.90 > 99.00	1.883	1.883	0.0	1.000	181715	2.46(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.147	2.147	0.0		11974057	56.8	114	427406	
6 Perfluorohexanoic acid	313.00 > 269.00	2.147	2.147	0.0	1.000	219759	1.03	103	6402	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.518	2.518	0.0	1.000	358301	1.05	116		M
D 9 13C4-PFHpA	367.00 > 322.00	2.503	2.503	0.0		10901517	56.5	113	411772	M
10 Perfluoroheptanoic acid	363.00 > 319.00	2.495	2.495	0.0	1.000	211550	1.00	100	2594	
D 11 18O2 PFHxS	403.00 > 84.00	2.518	2.518	0.0		15667334	53.9	114	589222	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.845	2.845	0.0	1.000	110320	1.16	123		

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	2.845	2.845	0.0		4547840	58.9		124		
15 Perfluorooctanoic acid										
413.00 > 369.00	2.876	2.876	0.0	1.000	248749	1.05		105	2321	
413.00 > 169.00	2.876	2.876	0.0	1.000	143209		1.74(0.90-1.10)		6480	
D 14 13C4 PFOA										
417.00 > 372.00	2.876	2.876	0.0		11546259	56.3		113	467397	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.884	2.884	0.0	1.000	265961	0.9830		103		
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.248	3.248	0.0	1.000	254636	0.9866		106	15097	M
499.00 > 99.00	3.257	3.248	0.009	1.003	59515		4.28(0.90-1.10)		3930	M
D 18 13C4 PFOS										
503.00 > 80.00	3.257	3.257	0.0		12544575	51.9		109	446124	
D 19 13C5 PFNA										
468.00 > 423.00	3.257	3.257	0.0		9525540	53.6		107	346179	
20 Perfluorononanoic acid										
463.00 > 419.00	3.265	3.265	0.0	1.000	174880	1.02		102	3039	
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.542	0.0		20602398	56.1		112	732701	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.542	3.542	0.0	1.000	370071	1.00		100.0	25059	
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.609	3.609	0.0	1.000	96246	0.9285		96.9		
D 26 M2-8:2FTS										
529.00 > 509.00	3.609	3.609	0.0		4924634	53.2		111		
24 Perfluorodecanoic acid										
513.00 > 469.00	3.618	3.618	0.0	1.000	158763	0.99		99.5	5454	
D 23 13C2 PFDA										
515.00 > 470.00	3.618	3.618	0.0		8810537	52.9		106	167928	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.770	3.770	0.0		3877141	45.5		91.0		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.780	3.780	0.0	1.003	76562	1.02		102		
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.929	3.929	0.0	1.000	143760	0.9196		95.4		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.946	3.946	0.0		4032138	49.6		99.1		
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.946	3.946	0.0	1.000	137871	1.02		102	3348	
D 30 13C2 PFUnA										
565.00 > 520.00	3.946	3.946	0.0		6697996	51.2		102	240531	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.955	3.955	0.0	1.002	74121	1.01		101		
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.020	4.020	0.0		4191181	47.6		95.3		
35 MeFOSA										
512.00 > 169.00	4.029	4.029	0.0	1.000	81458	1.04		104		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.207	4.207	0.0	4019167	47.1	94.3		
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.215	4.215	0.0	1.000	78903	1.00	99.8	
37 Perfluorododecanoic acid	613.00	> 569.00	4.250	4.250	0.0	1.000	105335	0.9840	98.4	744
D 36 13C2 PFDaA	615.00	> 570.00	4.241	4.241	0.0		5852720	47.2	94.4	190789
41 Perfluorotridecanoic acid	663.00	> 619.00	4.520	4.520	0.0	1.000	102353	1.00	100	353
D 43 13C2-PFTeDA	715.00	> 670.00	4.749	4.749	0.0		10930969	42.2	84.4	290330
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.749	4.749	0.0	1.000	171423	0.7447	74.5	73.1
	713.00	> 169.00	4.749	4.749	0.0	1.000	32769	5.23(0.00-0.00)		10329
D 44 13C2-PFHxDA	815.00	> 770.00	5.188	5.188	0.0		4948492	39.6	79.1	85212
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.188	5.188	0.0	1.000	149969	1.01	101	146
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.567	5.567	0.0	1.000	67771	0.8069	80.7	86.5

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L2_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_004.d

Injection Date: 11-Mar-2017 12:34:59

Instrument ID: A8_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 29

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

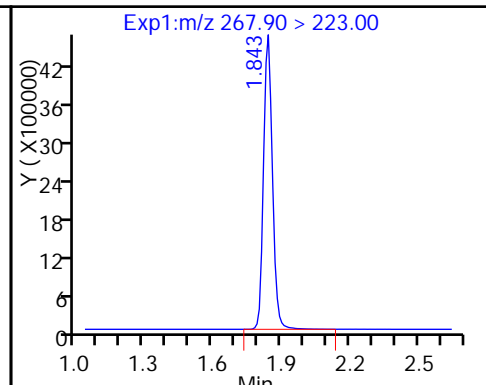
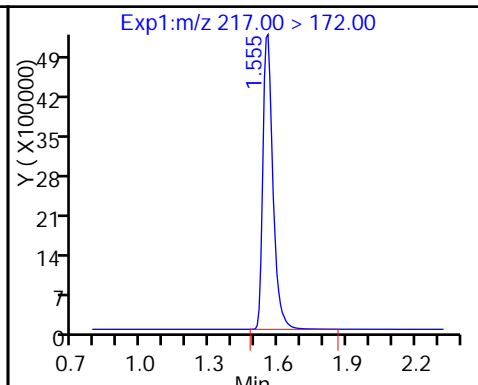
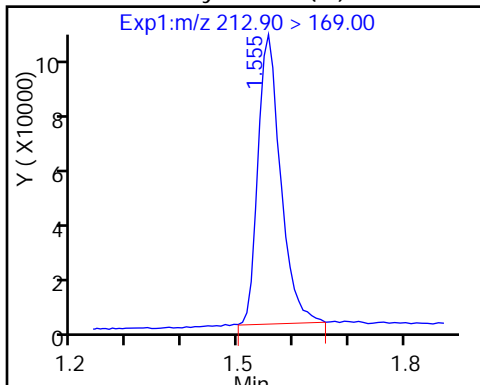
Method: A8_N

Limit Group: LC PFC_DOD ICAL

2 Perfluorobutyric acid (M)

D 1 13C4 PFBA

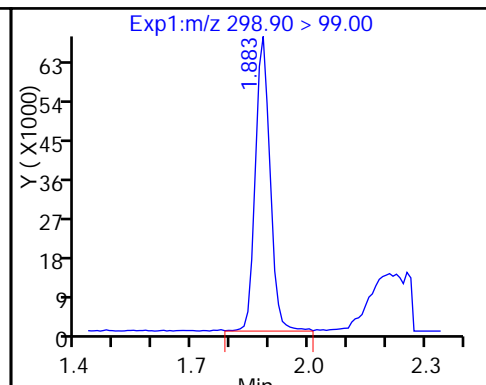
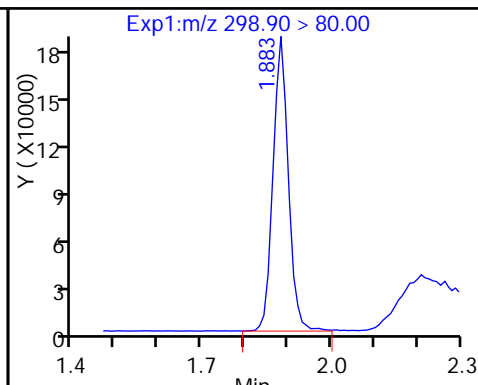
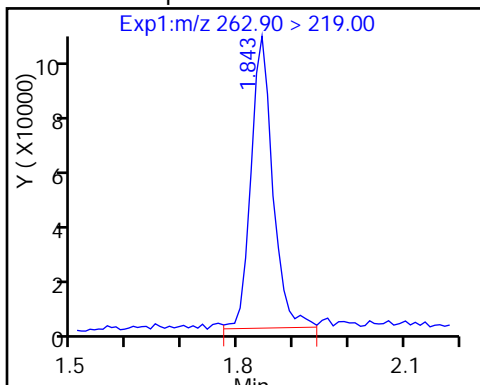
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

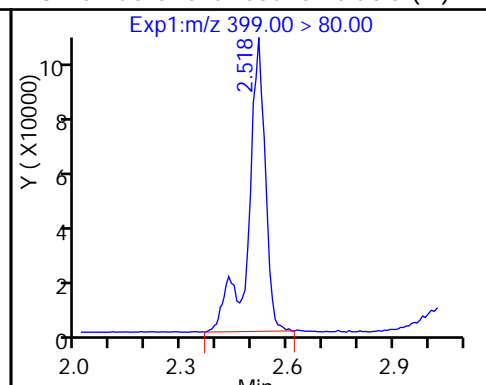
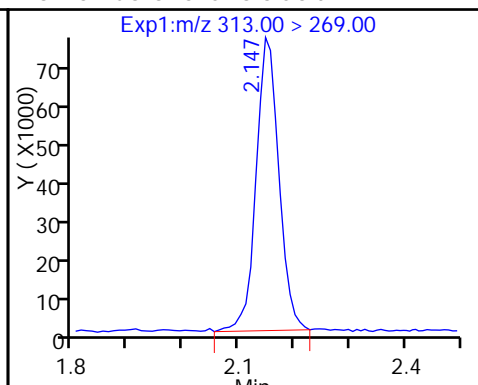
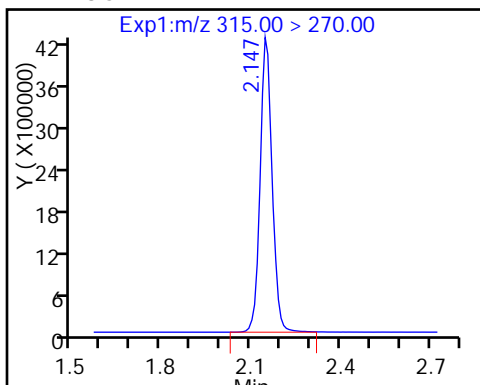
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

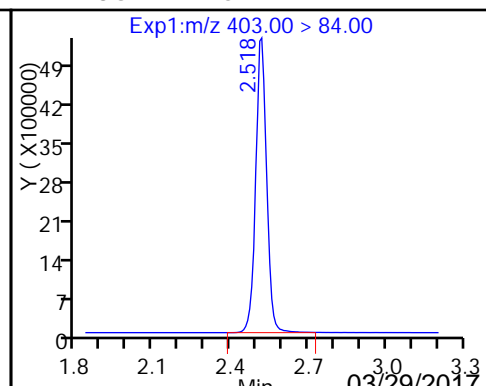
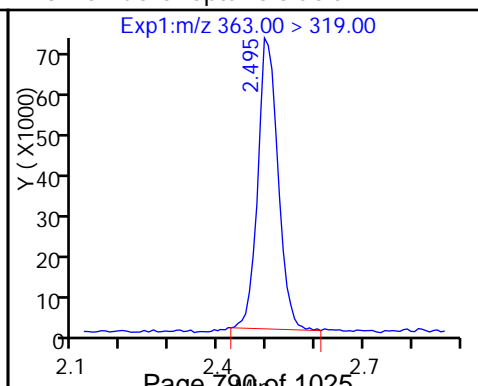
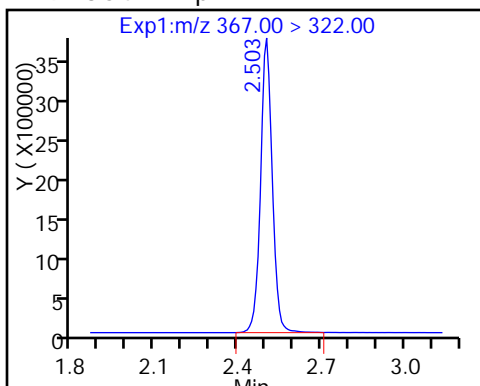
8 Perfluorohexanesulfonic acid (M)



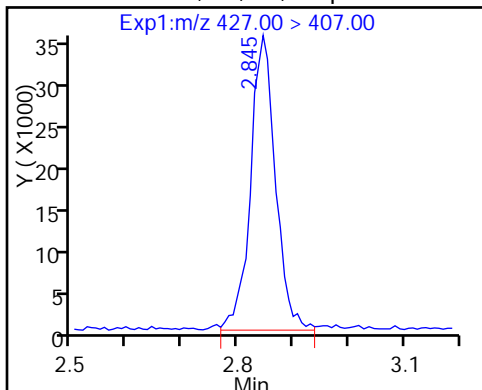
D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

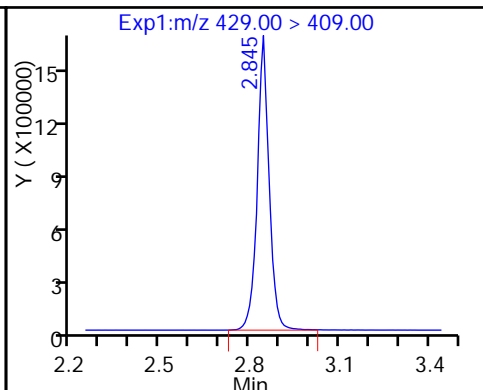
D 11 18O2 PFHxS



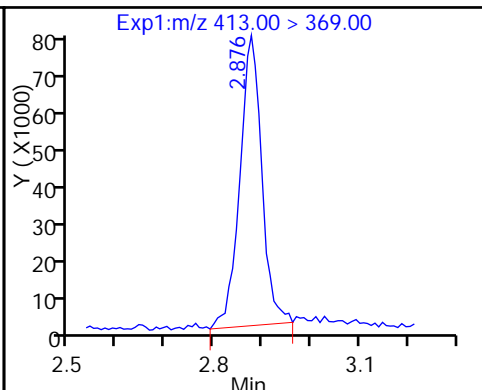
13 Sodium 1H,1H,2H,2H-perfluorooctanoate



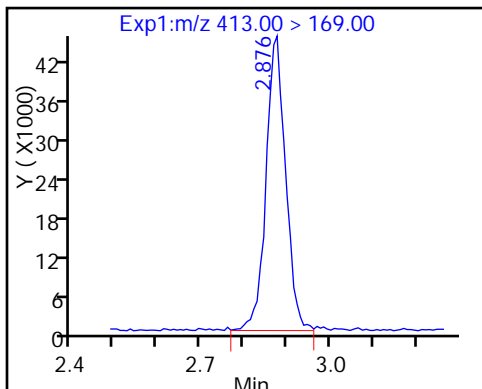
D 12 M2-6:2FTS



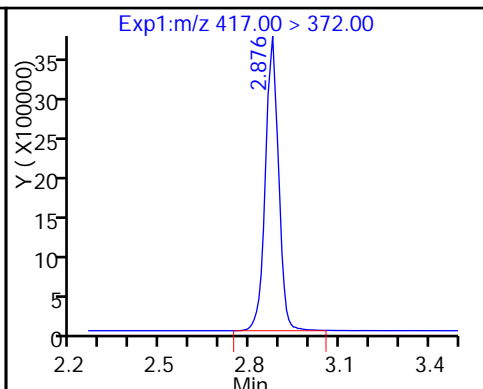
15 Perfluorooctanoic acid



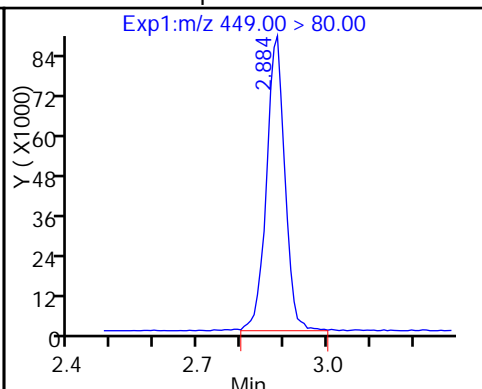
15 Perfluorooctanoic acid



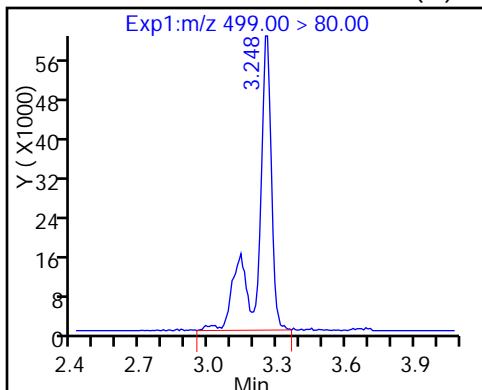
D 14 13C4 PFOA



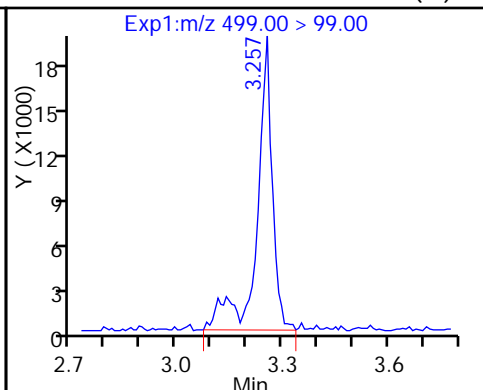
16 Perfluoroheptanesulfonic Acid



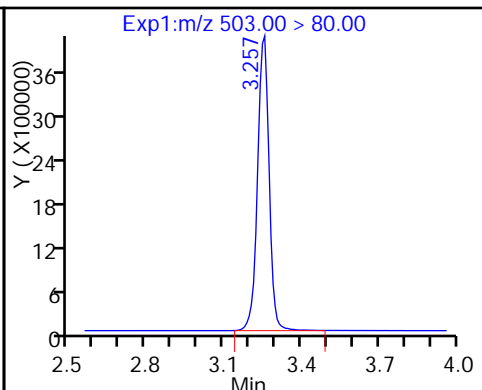
17 Perfluorooctane sulfonic acid (M)



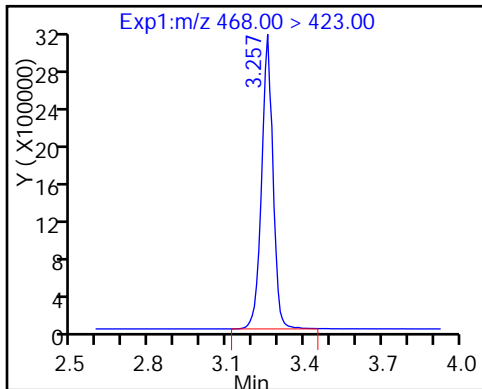
17 Perfluorooctane sulfonic acid (M)



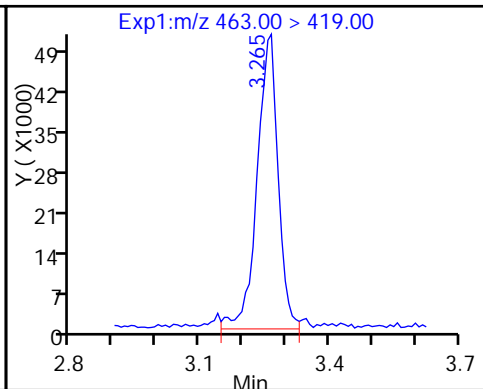
D 18 13C4 PFOS



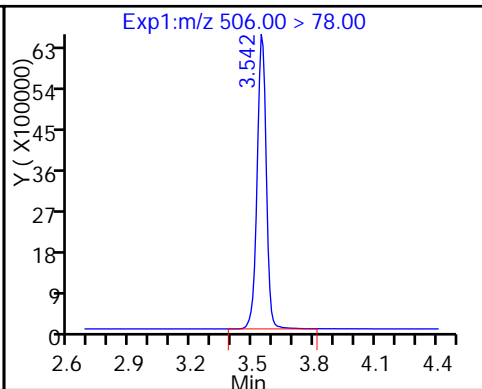
D 19 13C5 PFNA



20 Perfluorononanoic acid



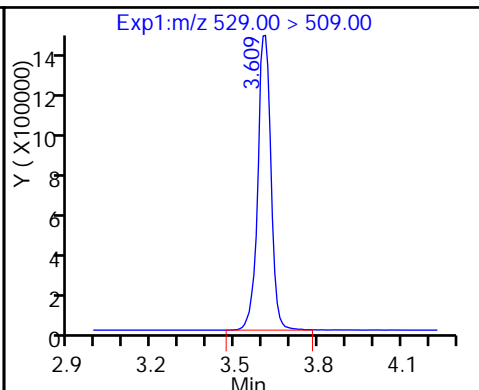
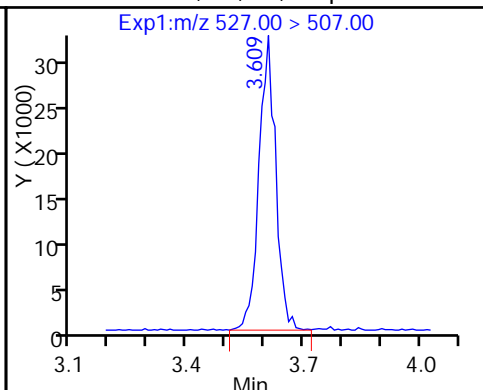
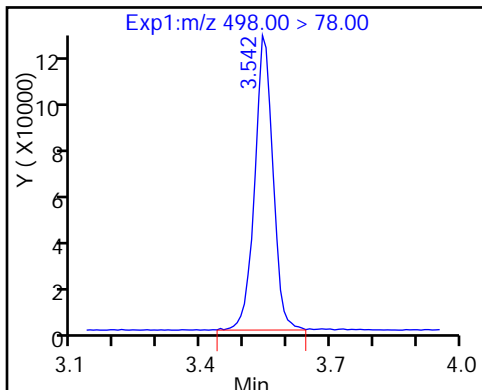
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

25 Sodium 1H,1H,2H,2H-perfluorooctane

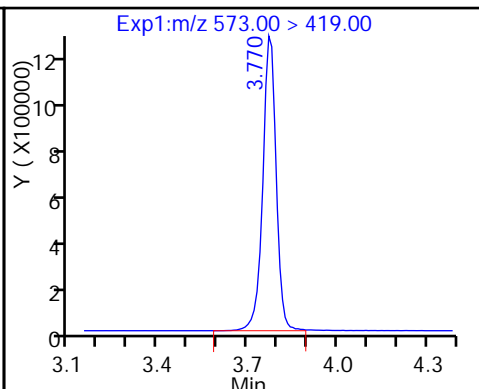
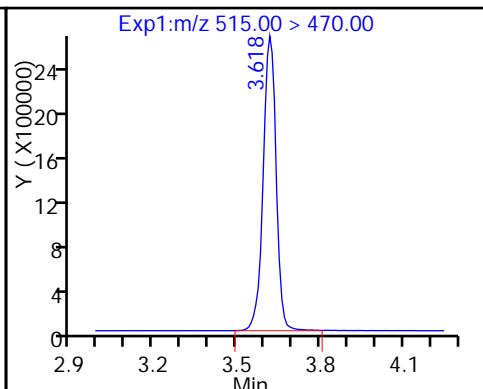
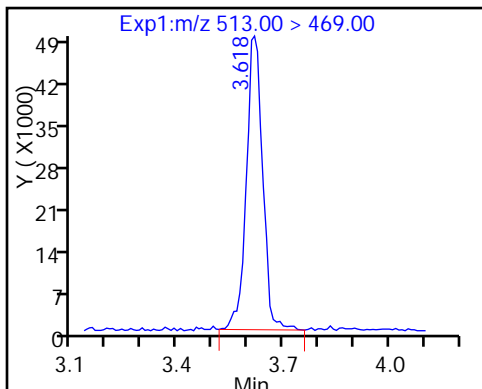
D 26 M2-8:2FTS



24 Perfluorodecanoic acid

D 23 13C2 PFDA

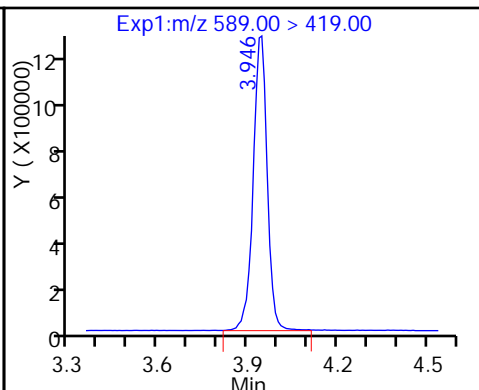
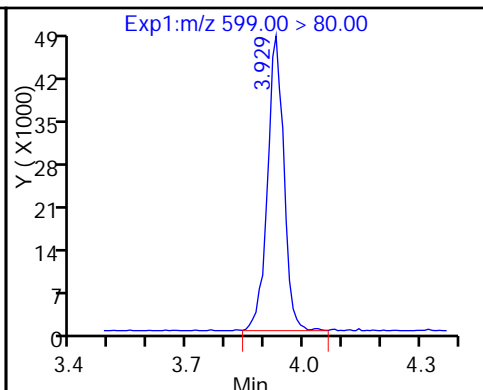
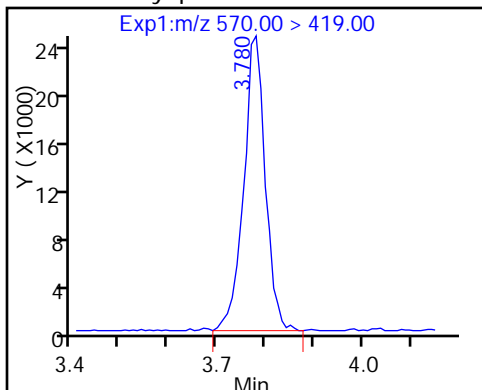
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

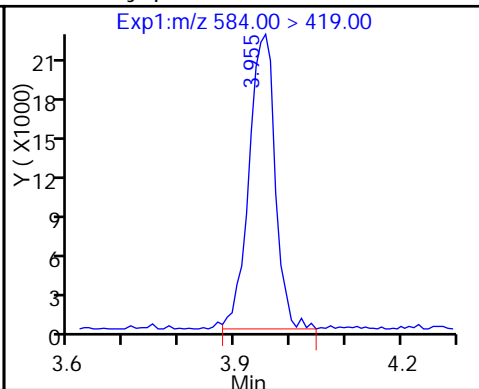
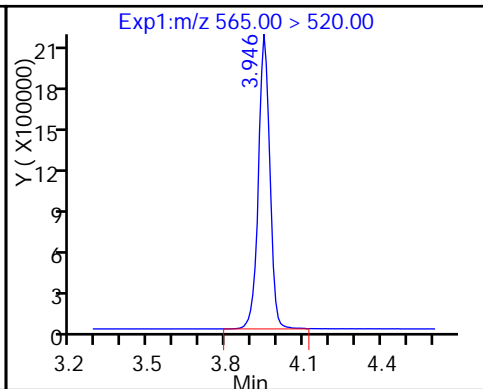
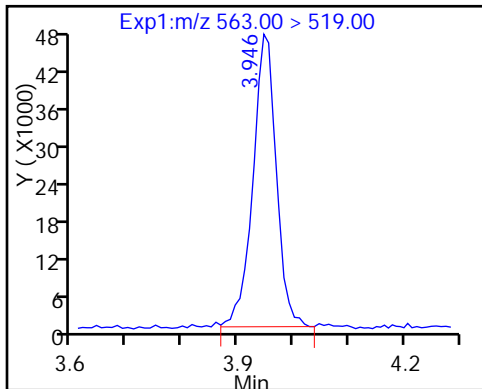
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

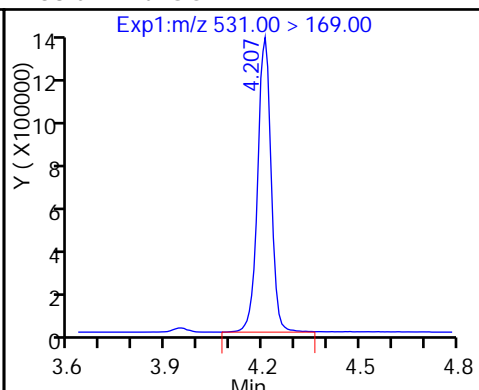
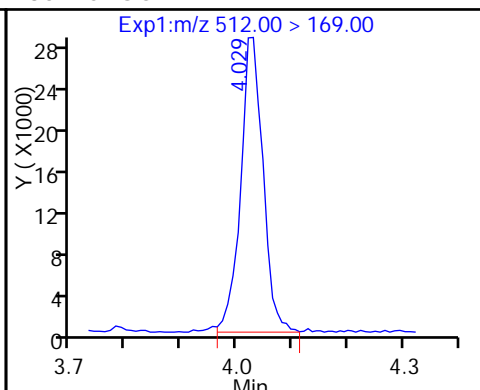
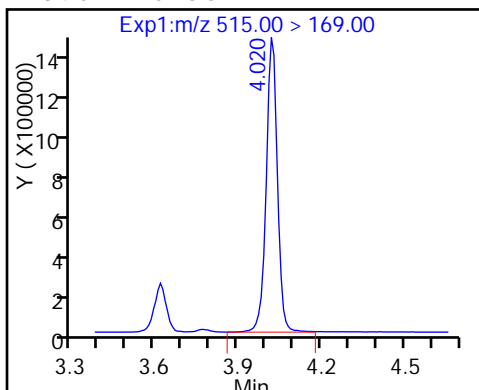
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

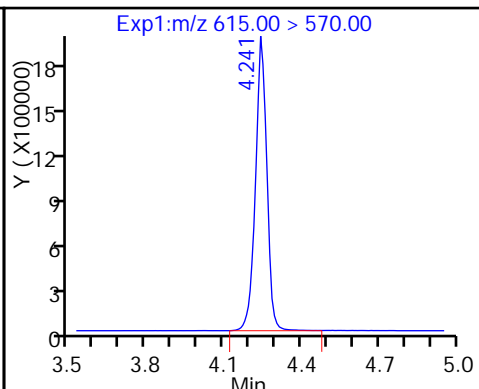
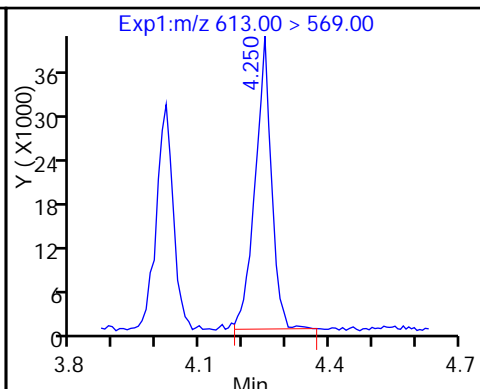
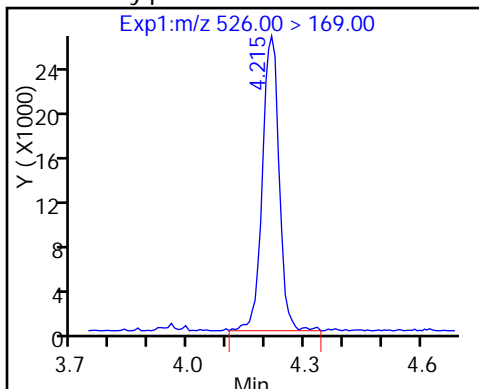
D 38 d-N-EtFOSA-M



39 N-ethylperfluoro-1-octanesulfonami

37 Perfluorododecanoic acid

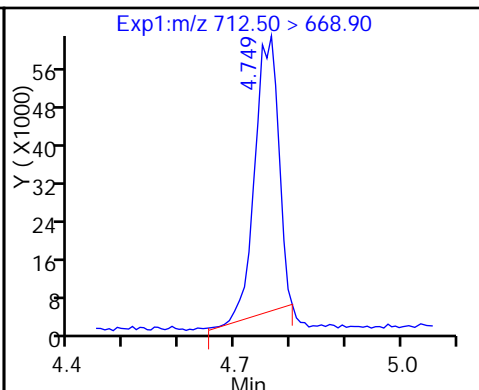
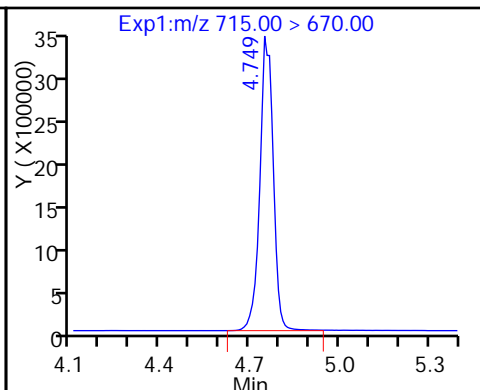
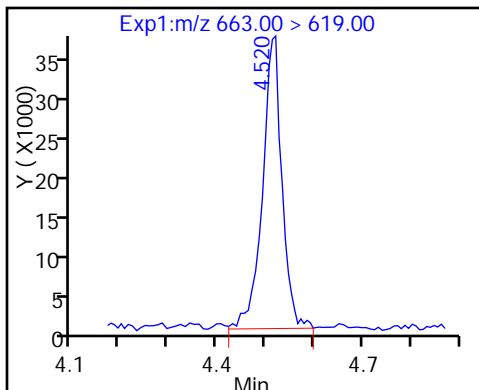
D 36 13C2 PFDaA



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

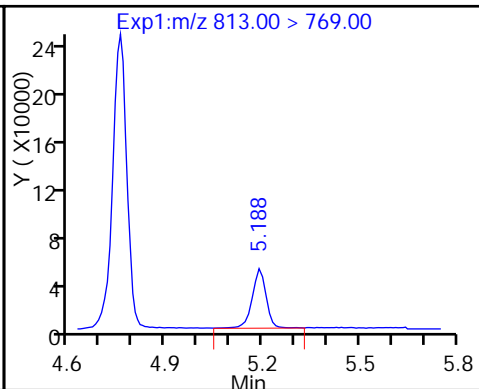
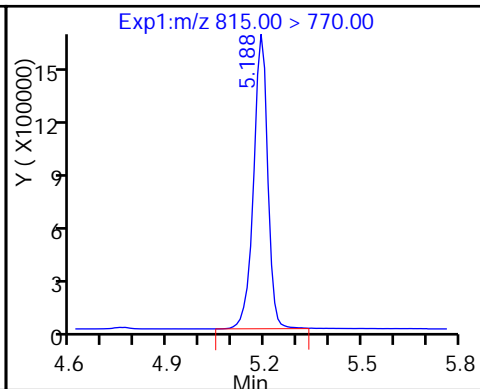
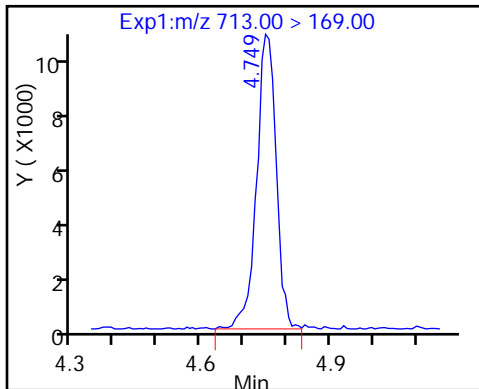
42 Perfluorotetradecanoic acid



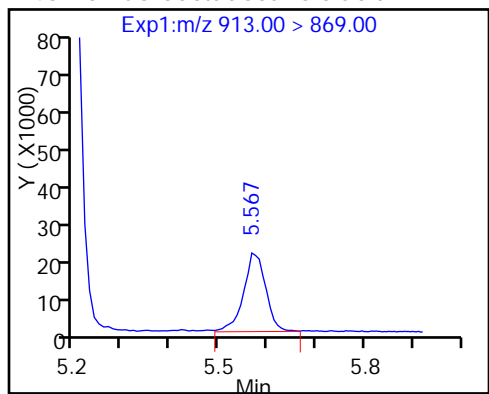
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



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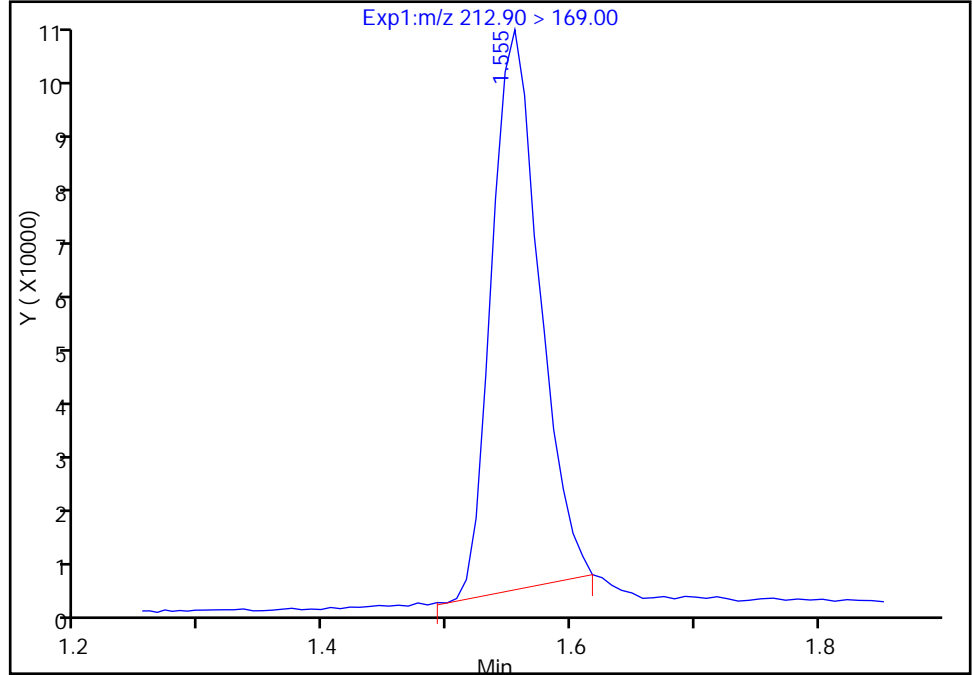
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_004.d
Injection Date: 11-Mar-2017 12:34:59 Instrument ID: A8_N
Lims ID: CCV L2
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

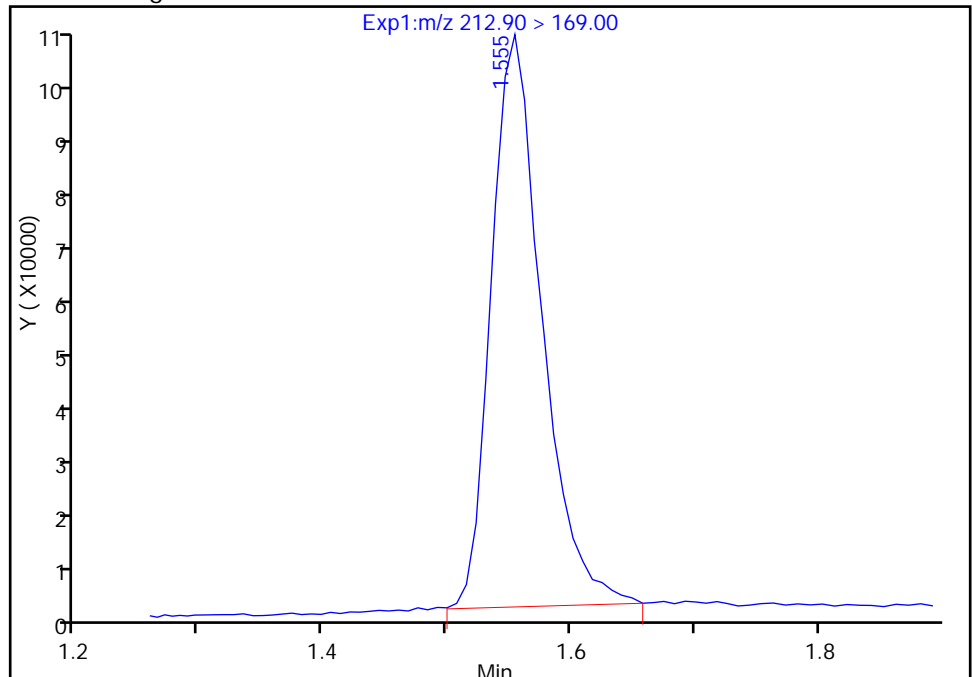
RT: 1.55
Area: 258682
Amount: 0.939601
Amount Units: ng/ml

Processing Integration Results



RT: 1.55
Area: 279561
Amount: 1.015439
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 13-Mar-2017 11:37:42
Audit Action: Manually Integrated

Audit Reason: Baseline

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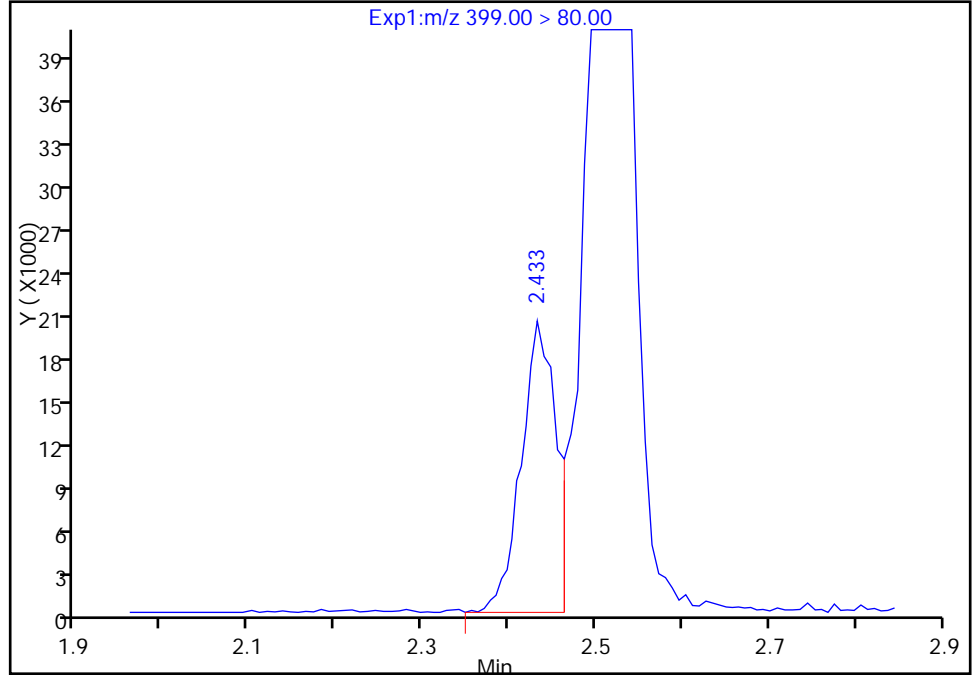
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Injection Date: 11-Mar-2017 12:34:59 Instrument ID: A8_N
Lims ID: CCV L2
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

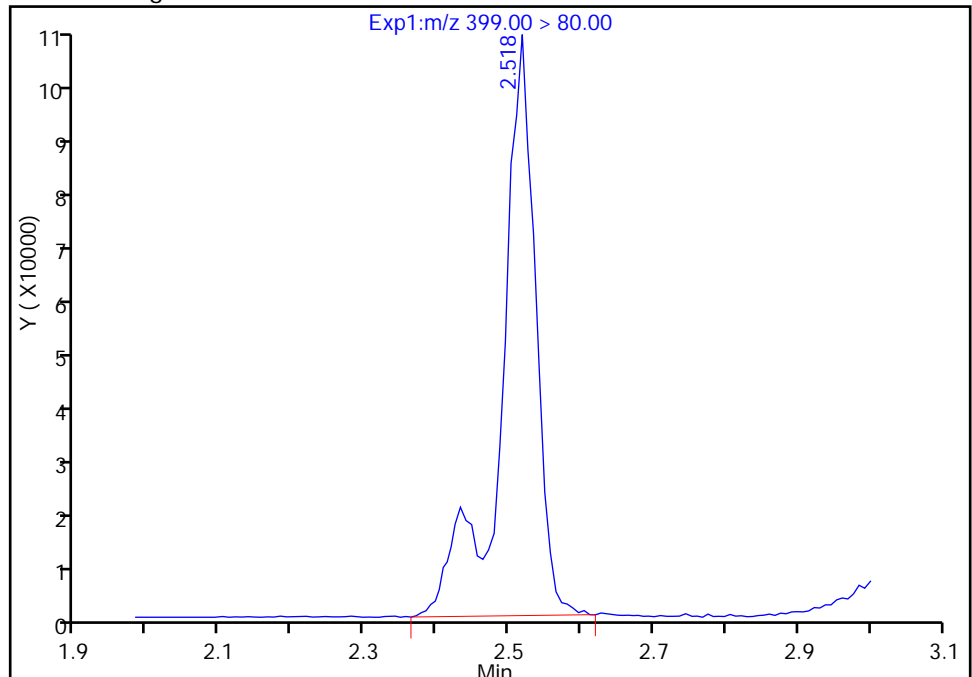
RT: 2.43
Area: 55666
Amount: 0.163409
Amount Units: ng/ml

Processing Integration Results



RT: 2.52
Area: 358301
Amount: 1.051801
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 13-Mar-2017 11:38:11
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

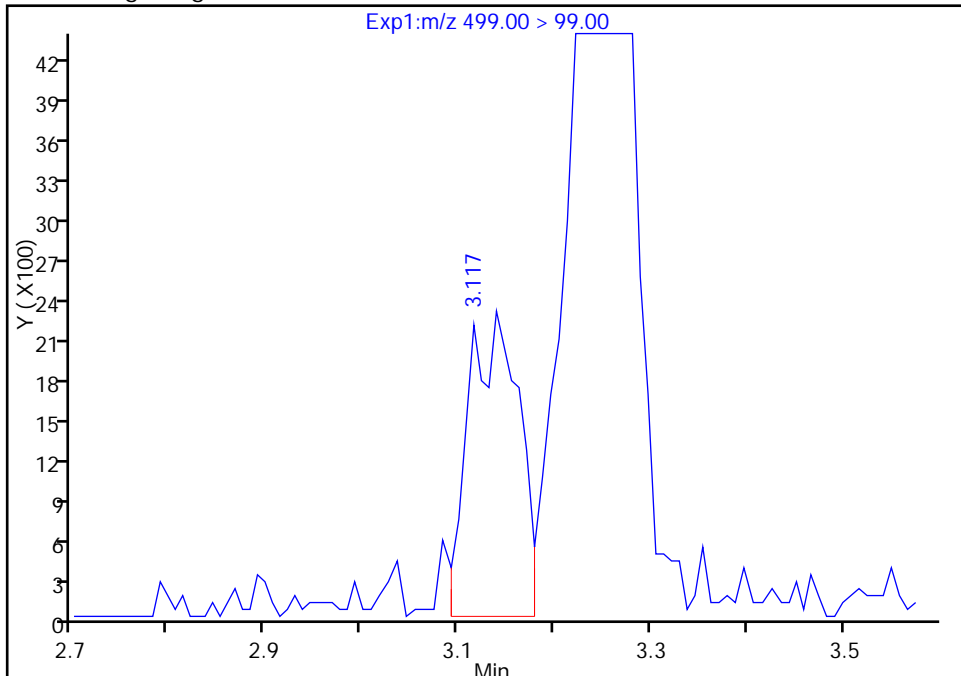
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Injection Date: 11-Mar-2017 12:34:59 Instrument ID: A8_N
Lims ID: CCV L2
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

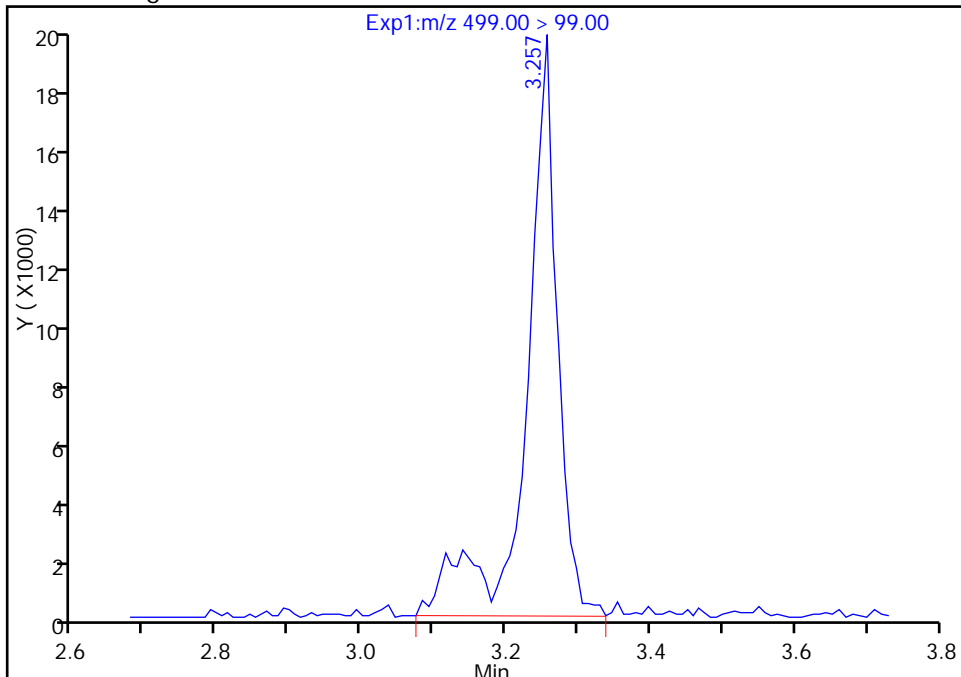
RT: 3.12
Area: 8120
Amount: 4980.4771
Amount Units: ng/ml

Processing Integration Results



RT: 3.26
Area: 59515
Amount: 0.986564
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

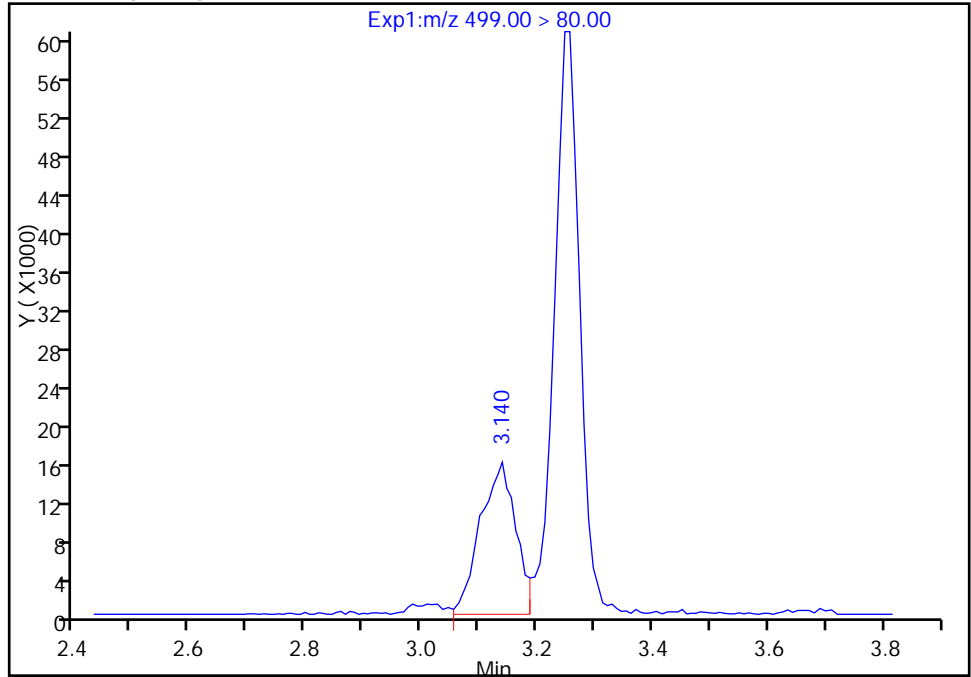
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_004.d
Injection Date: 11-Mar-2017 12:34:59 Instrument ID: A8_N
Lims ID: CCV L2
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

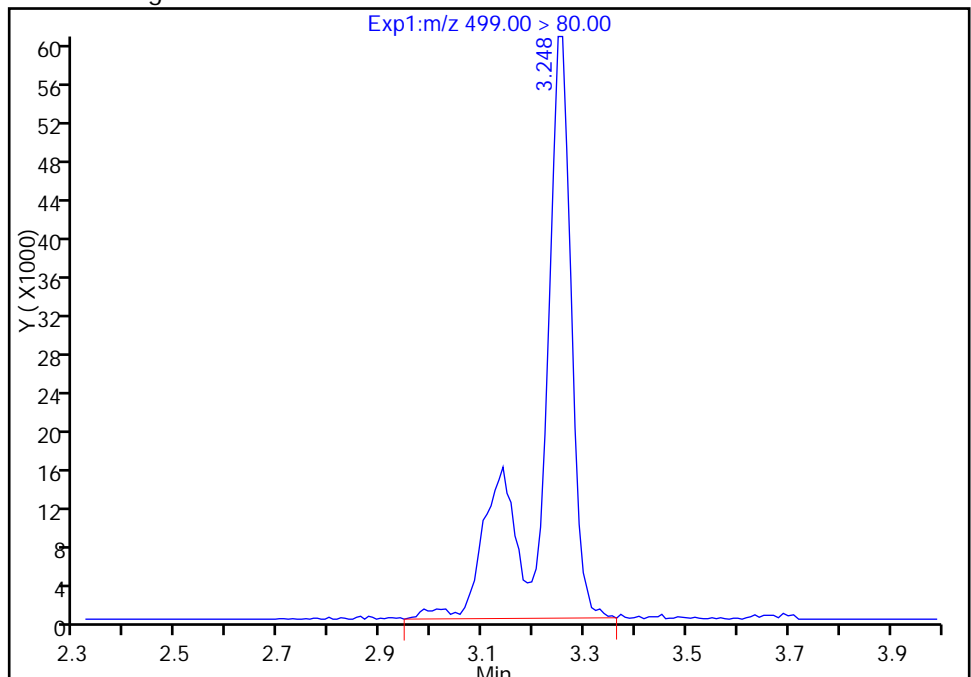
RT: 3.14
Area: 66505
Amount: 4980.4771
Amount Units: ng/ml

Processing Integration Results



RT: 3.25
Area: 254636
Amount: 0.986564
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 13-Mar-2017 11:38:55

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/24 Calibration Date: 03/11/2017 15:27
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_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	0.8473	0.8910		52.6	50.0	5.2	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9831		50.2	50.0	0.5	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.458		45.0	44.2	1.8	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9283		52.2	50.0	4.4	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9855		50.9	50.0	1.9	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.031		45.6	45.5	0.3	25.0
6:2FTS	L2ID		0.8797		46.9	47.4	-1.0	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.023		50.1	50.0	0.1	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.092		50.4	47.6	5.9	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9656		53.4	50.0	6.8	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.016		47.9	46.4	3.3	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9348		52.0	50.0	4.0	25.0
8:2FTS	L2ID		0.9598		49.7	47.9	3.7	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9098		50.2	50.0	0.5	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9259		47.7	50.0	-4.6	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6122		49.5	48.2	2.8	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9702		47.9	50.0	-4.3	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8748		48.0	50.0	-3.9	25.0
MeFOSA	AveID	0.9355	0.9018		48.2	50.0	-3.6	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9134		49.9	50.0	-0.1	25.0
N-EtFOSA-M	AveID	0.9837	0.9497		48.3	50.0	-3.4	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8945		51.2	50.0	2.4	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.797		45.7	50.0	-8.6	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9372		50.2	50.0	0.4	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6281		43.8	50.0	-12.5	25.0
13C4 PFBA	Ave	292242	334698		57.3	50.0	14.5	50.0
13C5-PFPeA	Ave	232192	249419		53.7	50.0	7.4	50.0
13C2 PFHxA	Ave	210884	231983		55.0	50.0	10.0	50.0
13C4-PFHpA	Ave	192959	211349		54.8	50.0	9.5	50.0
18O2 PFHxS	Ave	290899	323365		52.6	47.3	11.2	50.0
M2-6:2FTS	Ave	77178	94670		58.3	47.5	22.7	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/24 Calibration Date: 03/11/2017 15:27
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_027.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	212565		51.9	50.0	3.7	50.0
13C4 PFOS	Ave	241637	266622		52.7	47.8	10.3	50.0
13C5 PFNA	Ave	177866	180487		50.7	50.0	1.5	50.0
13C8 FOSA	Ave	366918	385459		52.5	50.0	5.1	50.0
M2-8:2FTS	Ave	92602	96840		50.1	47.9	4.6	50.0
13C2 PFDA	Ave	166704	163722		49.1	50.0	-1.8	50.0
d3-NMeFOSAA	Ave	85186	79926		46.9	50.0	-6.2	50.0
d5-NEtFOSAA	Ave	81371	77027		47.3	50.0	-5.3	50.0
13C2 PFUnA	Ave	130805	121858		46.6	50.0	-6.8	50.0
d-N-MeFOSA-M	Ave	87983	86591		49.2	50.0	-1.6	50.0
13C2 PFDoA	Ave	123944	117490		47.4	50.0	-5.2	50.0
d-N-EtFOSA-M	Ave	85249	77951		45.7	50.0	-8.6	50.0
13C2-PFTeDA	Ave	259165	239018		46.1	50.0	-7.8	50.0
13C2-PFHxDA	Ave	125061	127195		50.9	50.0	1.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_027.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 11-Mar-2017 15:27:39 ALS Bottle#: 32 Worklist Smp#: 24
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 16-Mar-2017 08:04:38 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK016

First Level Reviewer: changnoit Date: 13-Mar-2017 13:35:41

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	1.539	1.539	0.0	1.000	14910369	52.6	105	78397	
D 1 13C4 PFBA	217.00 > 172.00	1.539	1.539	0.0		16734916	57.3	115	892635	
D 3 13C5-PFPeA	267.90 > 223.00	1.822	1.822	0.0		12470956	53.7	107	866114	
4 Perfluoropentanoic acid	262.90 > 219.00	1.822	1.822	0.0	1.000	12260206	50.2	100	116415	
D 47 13C3-PFBS	301.90 > 83.00	1.852	1.852	0.0		328436	NC			
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.862	1.862	0.0	1.000	20833423	45.0	102		
	298.90 > 99.00	1.852	1.862	-0.010	0.995	9226149	2.26(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.117	2.117	0.0		11599146	55.0	110	470674	
6 Perfluorohexanoic acid	313.00 > 269.00	2.117	2.117	0.0	1.000	10767973	52.2	104	218759	
D 9 13C4-PFHpA	367.00 > 322.00	2.452	2.452	0.0		10567439	54.8	110	351287	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.452	2.452	0.0	1.000	10414373	50.9	102	88885	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.476	2.476	0.0	1.000	15176061	45.6	100		M
										M
D 11 18O2 PFHxS	403.00 > 84.00	2.468	2.468	0.0		15295148	52.6	111	543488	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.787	2.787	0.0	1.000	3947461	46.9	99.0		

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	2.787	2.787	0.0		4496802	58.3		123		
15 Perfluorooctanoic acid										
413.00 > 369.00	2.818	2.818	0.0	1.000	10869724	50.1		100	96631	
413.00 > 169.00	2.826	2.818	0.008	1.003	6616902		1.64(0.90-1.10)		168818	
D 14 13C4 PFOA										
417.00 > 372.00	2.818	2.818	0.0		10628251	51.9		104	297403	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.826	2.826	0.0	1.000	13862444	50.4		106		
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.192	3.184	0.008	1.000	12569351	47.9		103	248549	M
499.00 > 99.00	3.192	3.184	0.008	1.000	2860282		4.39(0.90-1.10)		396474	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.192	3.192	0.0	1.000	8713468	53.4		107	126453	
D 18 13C4 PFOS										
503.00 > 80.00	3.192	3.192	0.0		12744553	52.7		110	217816	
D 19 13C5 PFNA										
468.00 > 423.00	3.201	3.201	0.0		9024341	50.7		101	224794	
D 21 13C8 FOSA										
506.00 > 78.00	3.519	3.519	0.0		19272931	52.5		105	405597	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.519	3.519	0.0	1.000	18016154	52.0		104	446101	
D 26 M2-8:2FTS										
529.00 > 509.00	3.536	3.536	0.0		4638616	50.1		105		
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.536	3.536	0.0	1.000	4451926	49.7		104		
24 Perfluorodecanoic acid										
513.00 > 469.00	3.544	3.544	0.0	1.000	7447723	50.2		100	231581	
D 23 13C2 PFDA										
515.00 > 470.00	3.544	3.544	0.0		8186090	49.1		98.2	190868	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.693	3.693	0.0		3996301	46.9		93.8		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.703	3.703	0.0	1.003	3700350	47.7		95.4		
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.858	3.858	0.0	1.000	7867360	49.5		103		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.867	3.867	0.0		3851350	47.3		94.7		
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.867	3.867	0.0	1.000	5911422	47.9		95.7	123992	
D 30 13C2 PFUnA										
565.00 > 520.00	3.876	3.876	0.0		6092903	46.6		93.2	238425	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.876	3.874	0.002	1.002	3369048	48.0		96.1		
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.010	4.010	0.0		4329544	49.2		98.4		
35 MeFOSA										
512.00 > 169.00	4.010	4.010	0.0	1.000	3904554	48.2		96.4		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid	613.00	> 569.00	4.159	4.159	0.0	1.000	5365867	49.9	99.9	47002
D 36 13C2 PFDaA	615.00	> 570.00	4.159	4.163	-0.004		5874480	47.4	94.8	124355
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.195	4.195	0.0		3897527	45.7	91.4	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.202	4.202	0.0	1.000	3701599	48.3	96.6	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.428	4.428	0.0	1.000	5254526	51.2	102	114316
D 43 13C2-PFTeDA	715.00	> 670.00	4.663	4.663	0.0		11950896	46.1	92.2	319497
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.663	4.663	0.0	1.000	10556187	45.7	91.4	101616
	713.00	> 169.00	4.663	4.663	0.0	1.000	1586698		6.65(0.00-0.00)	103194
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.078	5.082	-0.004	1.000	5505697	50.2	100	5035
D 44 13C2-PFHxDA	815.00	> 770.00	5.078	5.078	0.0		6359746	50.9	102	94786
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.429	5.438	-0.009	1.000	3689915	43.8	87.5	4021

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L5_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_027.d

Injection Date: 11-Mar-2017 15:27:39

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 32

Worklist Smp#: 24

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

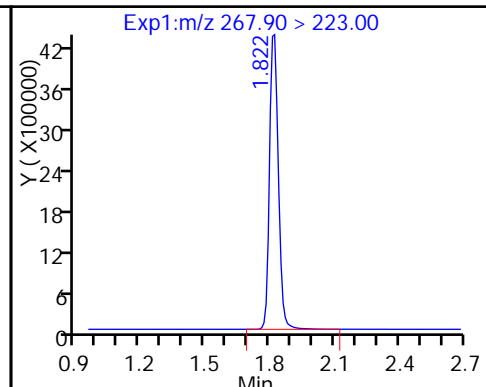
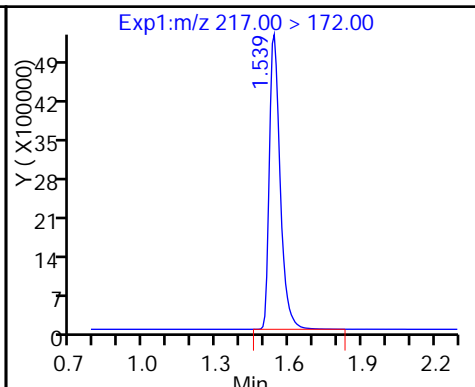
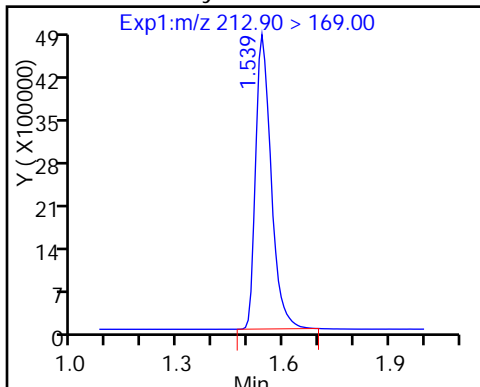
Method: A8_N

Limit Group: LC PFC_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

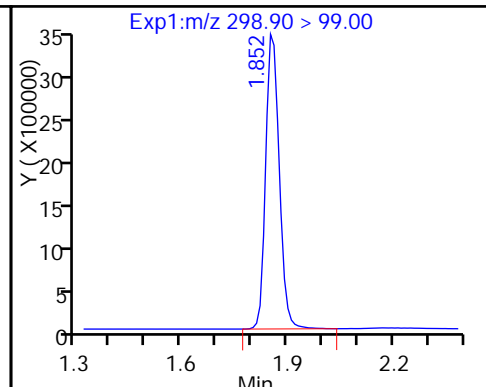
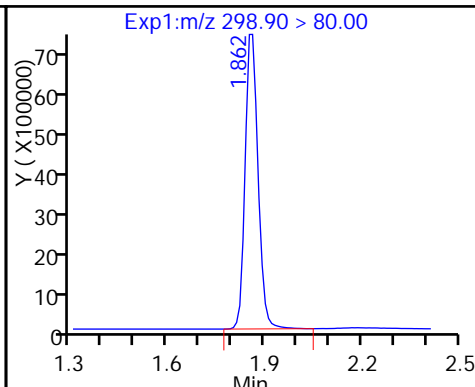
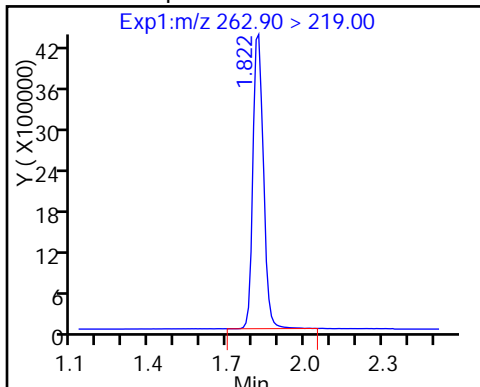
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

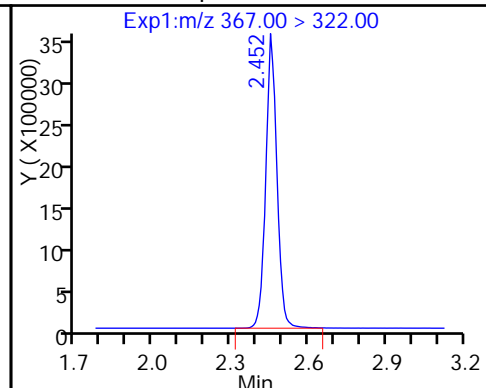
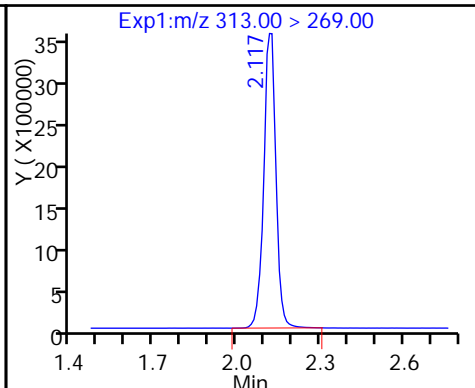
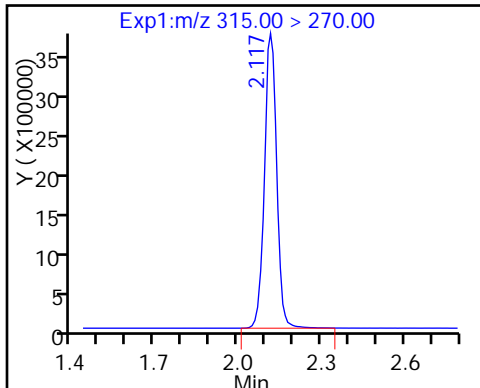
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

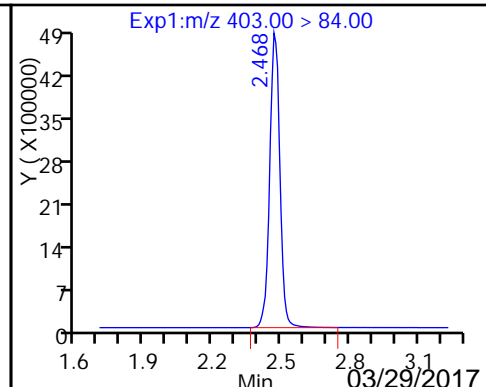
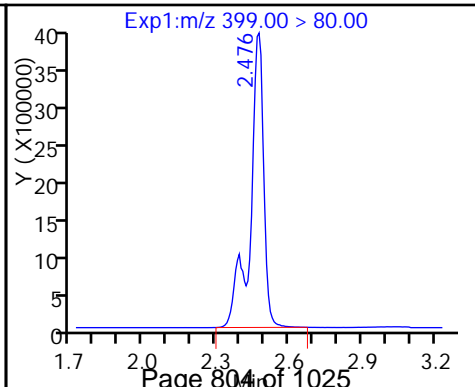
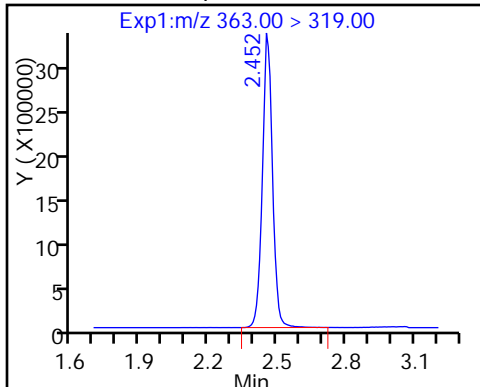
D 9 13C4-PFHpA



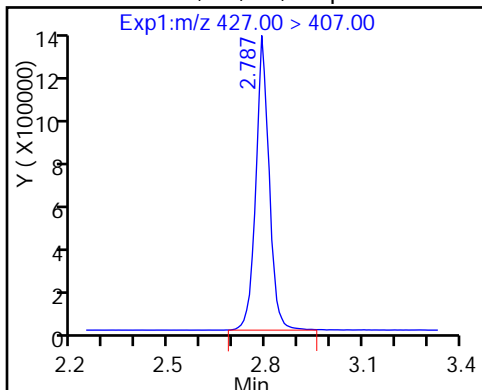
10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid (M)

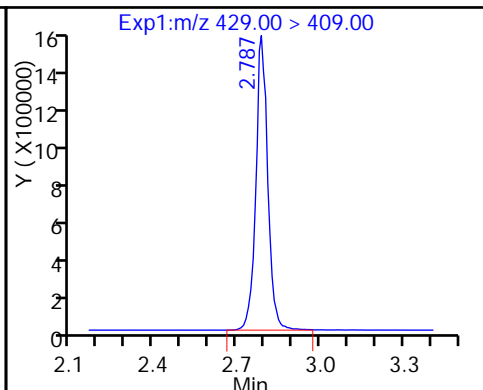
D 11 18O2 PFHxS



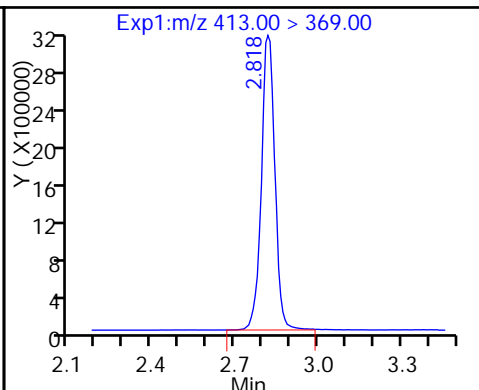
13 Sodium 1H,1H,2H,2H-perfluorooctanoate



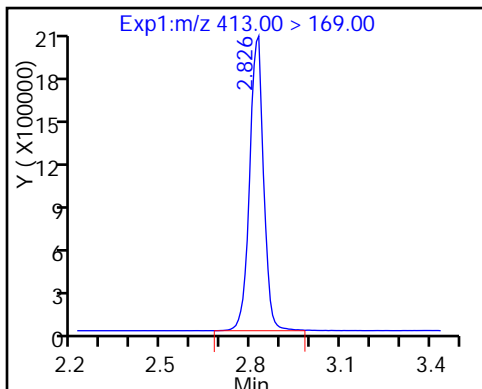
D 12 M2-6:2FTS



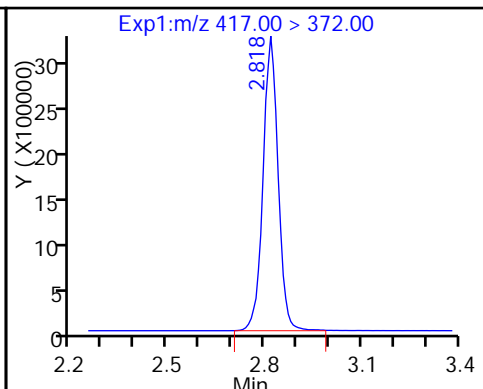
15 Perfluorooctanoic acid



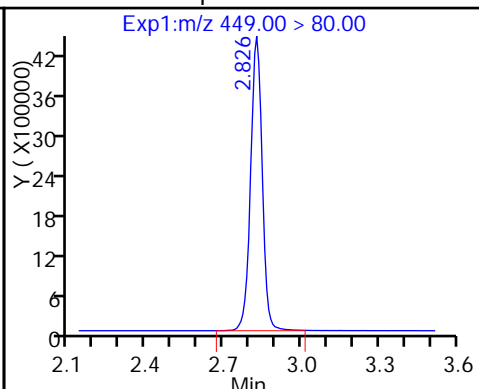
15 Perfluorooctanoic acid



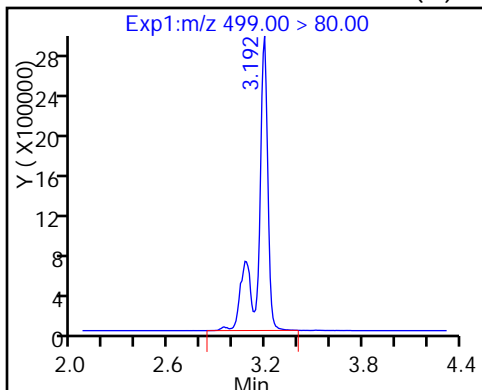
D 14 13C4 PFOA



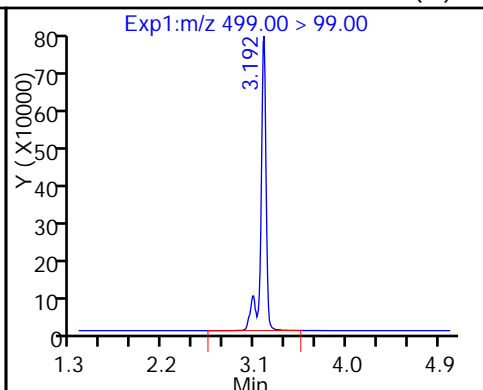
16 Perfluoroheptanesulfonic Acid



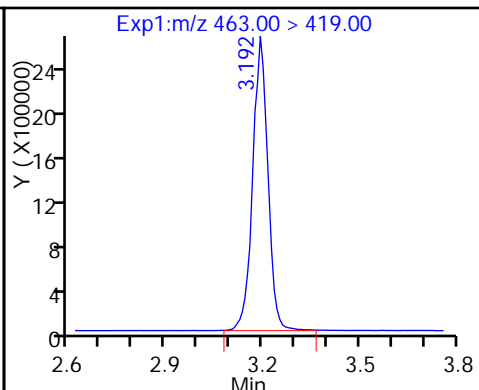
17 Perfluorooctane sulfonic acid (M)



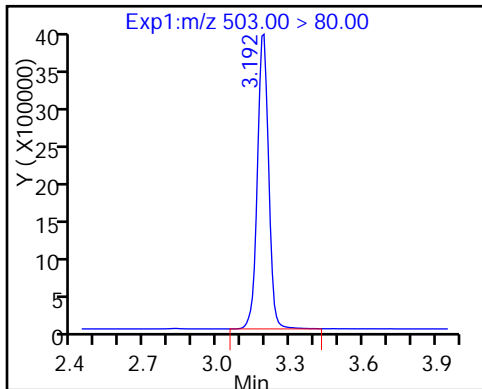
17 Perfluorooctane sulfonic acid (M)



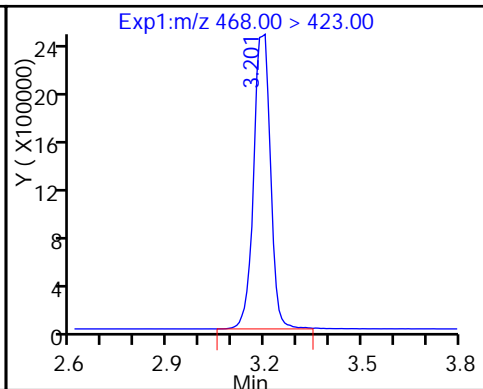
20 Perfluorononanoic acid



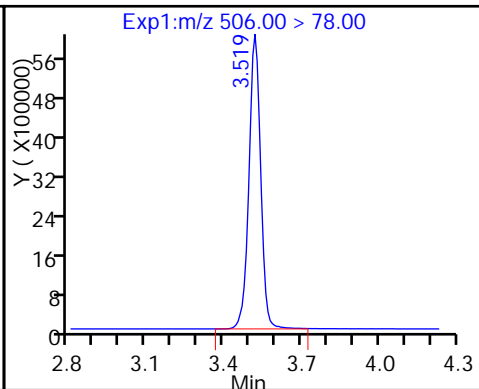
D 18 13C4 PFOS



D 19 13C5 PFNA



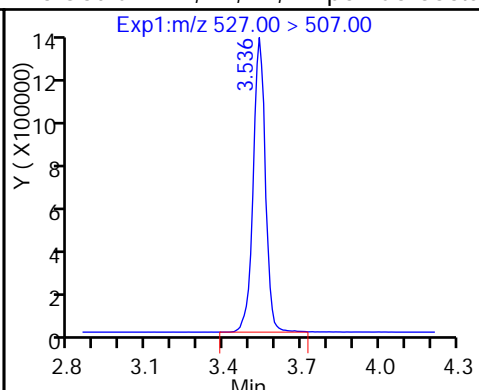
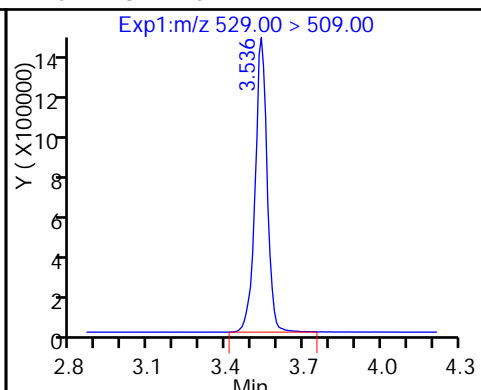
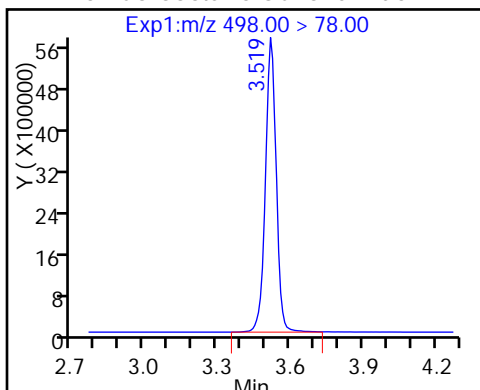
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

D 26 M2-8:2FTS

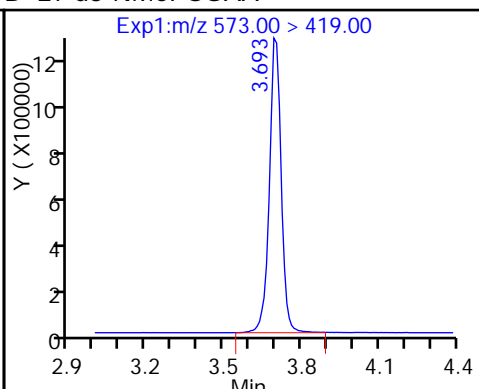
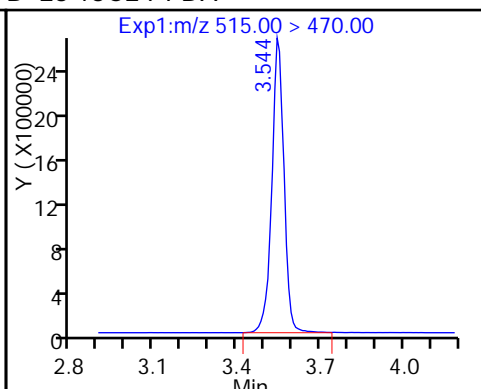
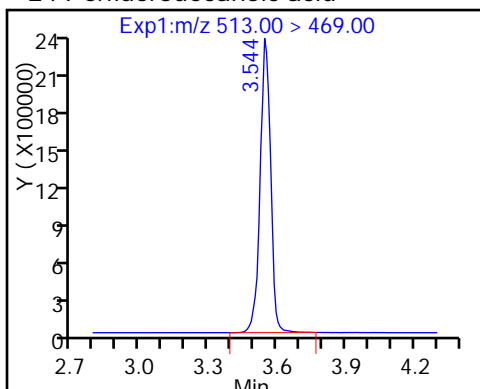
25 Sodium 1H,1H,2H,2H-perfluorooctane



24 Perfluorodecanoic acid

D 23 13C2 PFDA

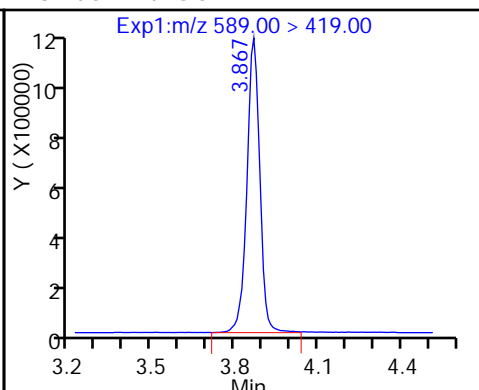
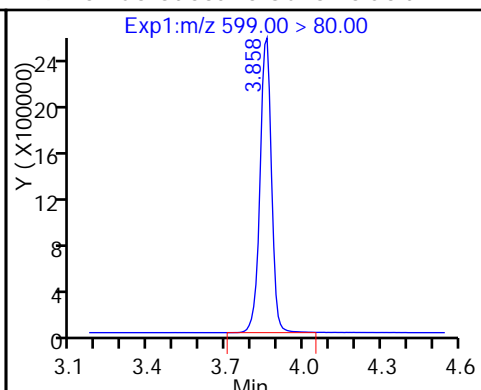
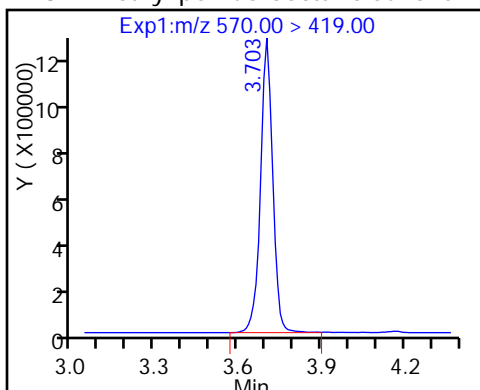
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

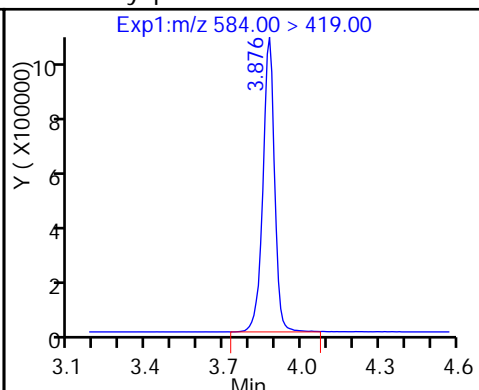
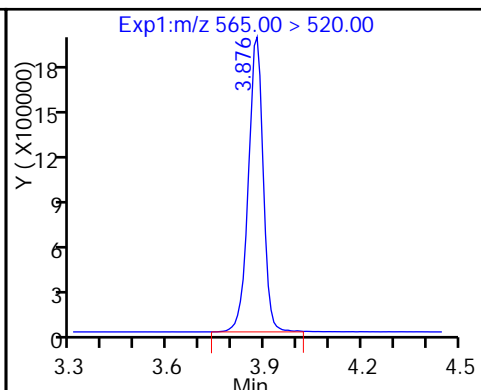
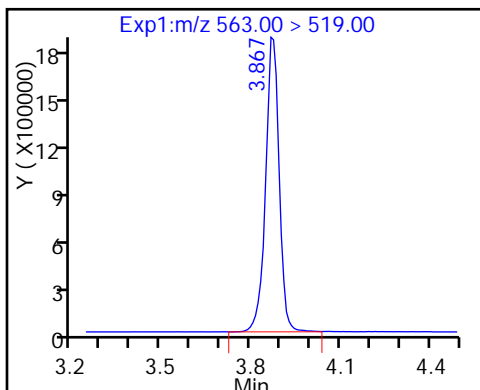
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

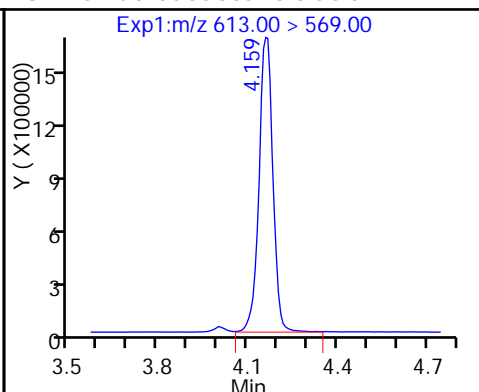
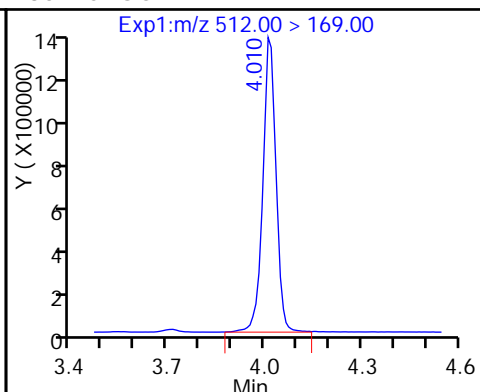
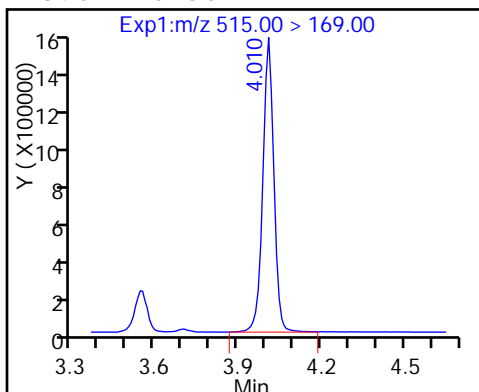
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

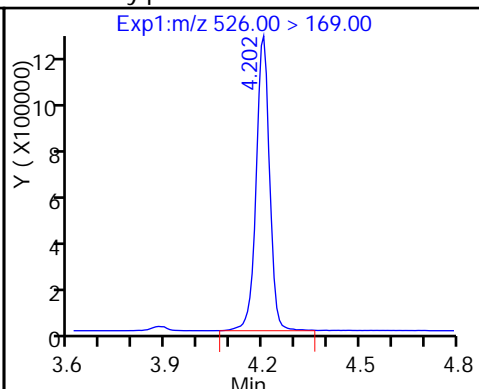
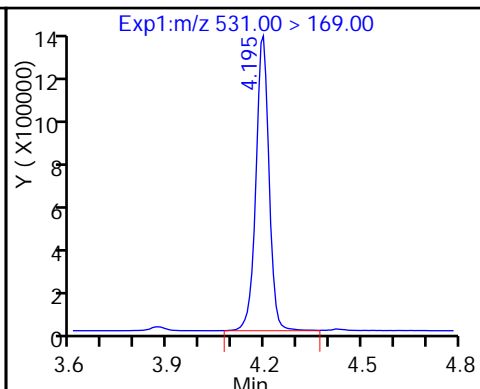
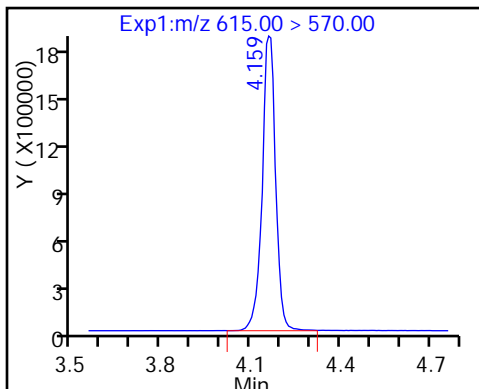
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

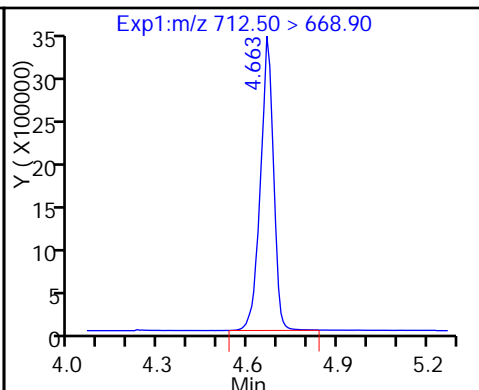
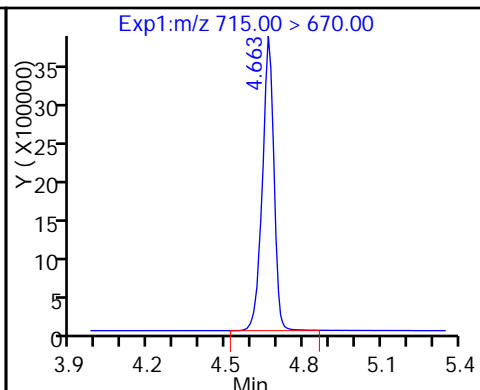
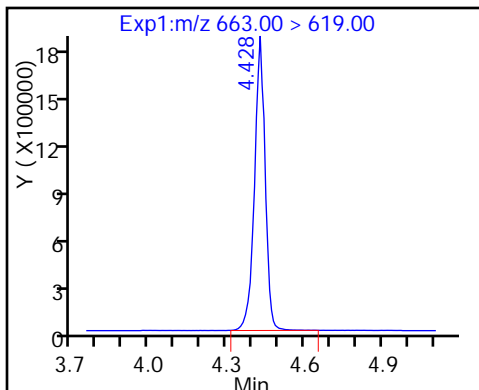
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

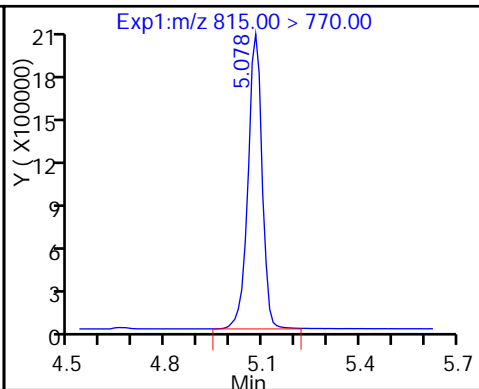
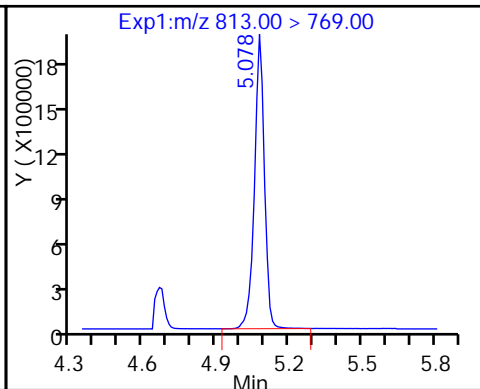
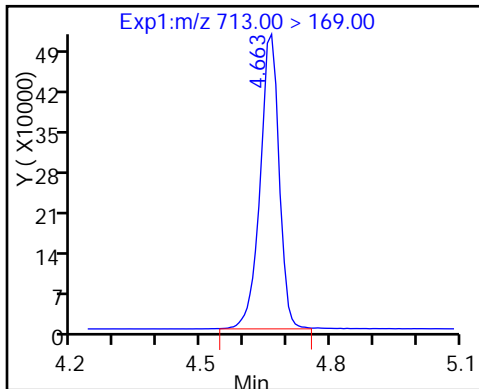
42 Perfluorotetradecanoic acid



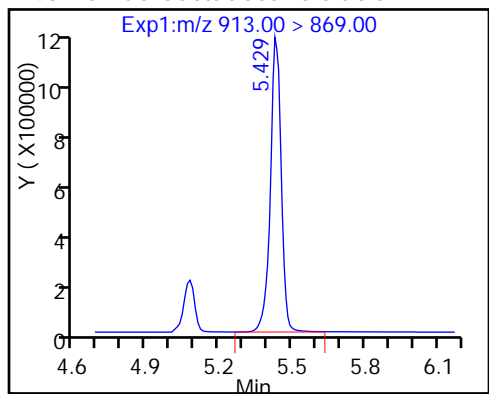
42 Perfluorotetradecanoic acid

45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

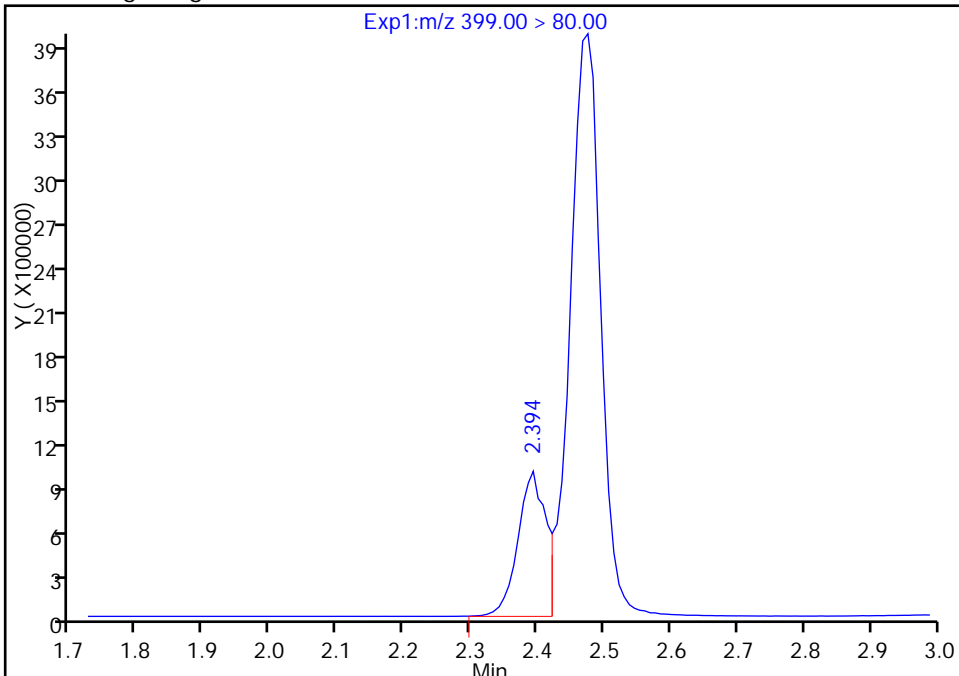
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_027.d
Injection Date: 11-Mar-2017 15:27:39 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

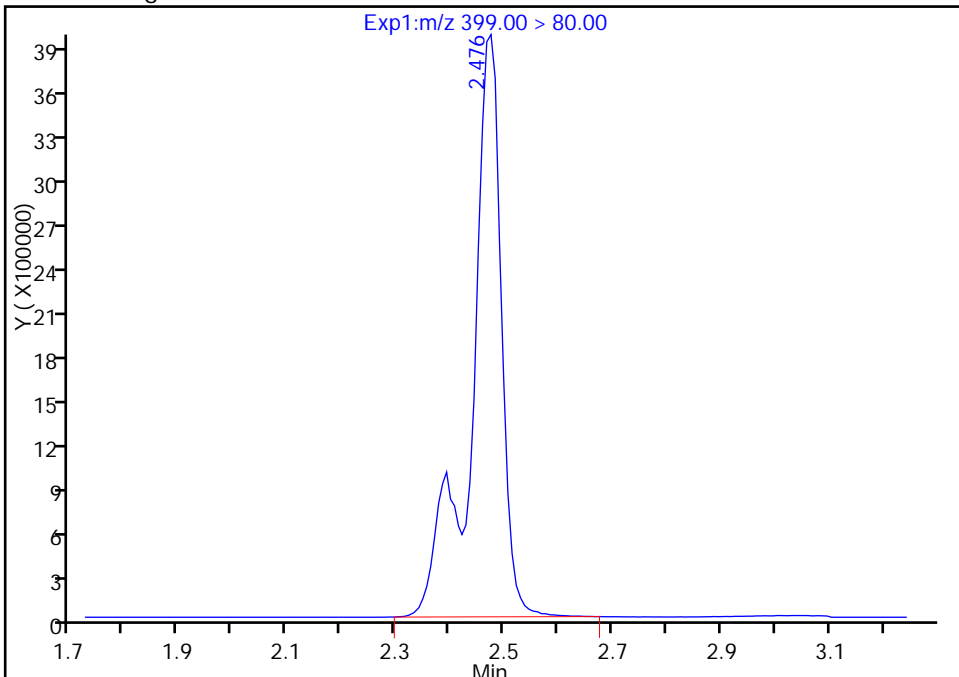
RT: 2.39
Area: 2808826
Amount: 8.446016
Amount Units: ng/ml

Processing Integration Results



RT: 2.48
Area: 15176061
Amount: 45.633744
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

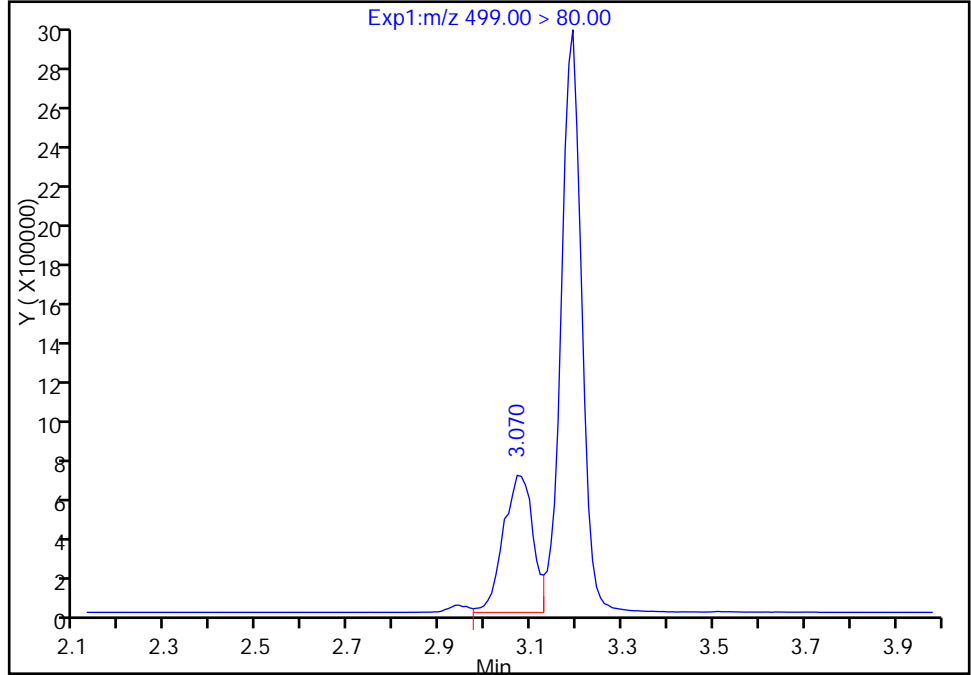
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_027.d
Injection Date: 11-Mar-2017 15:27:39 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

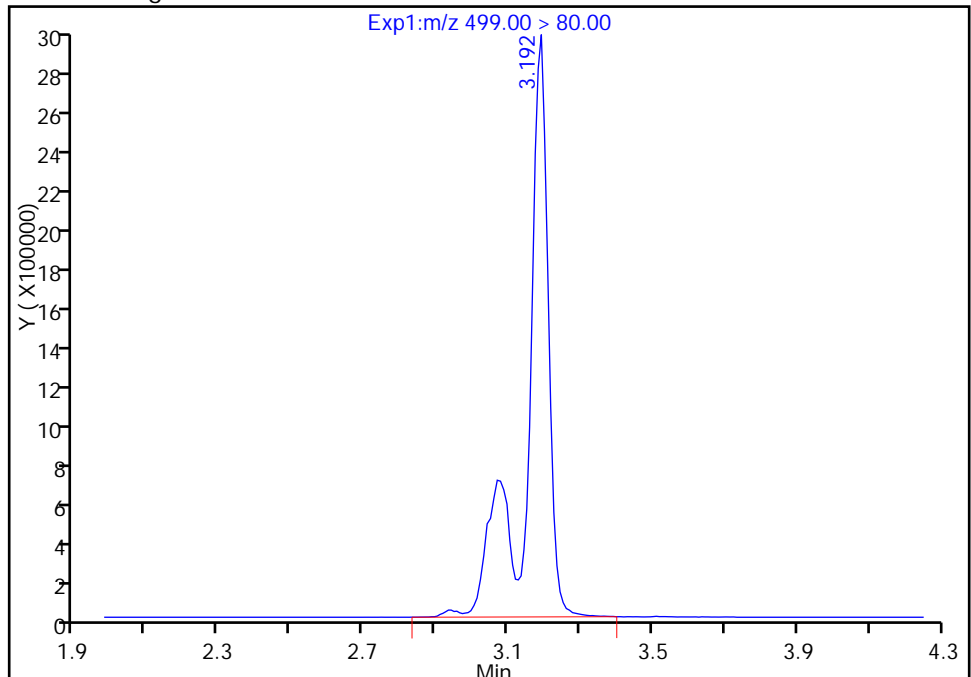
RT: 3.07
Area: 3154491
Amount: 12.030011
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 12569351
Amount: 47.934654
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 16-Mar-2017 08:04:01

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

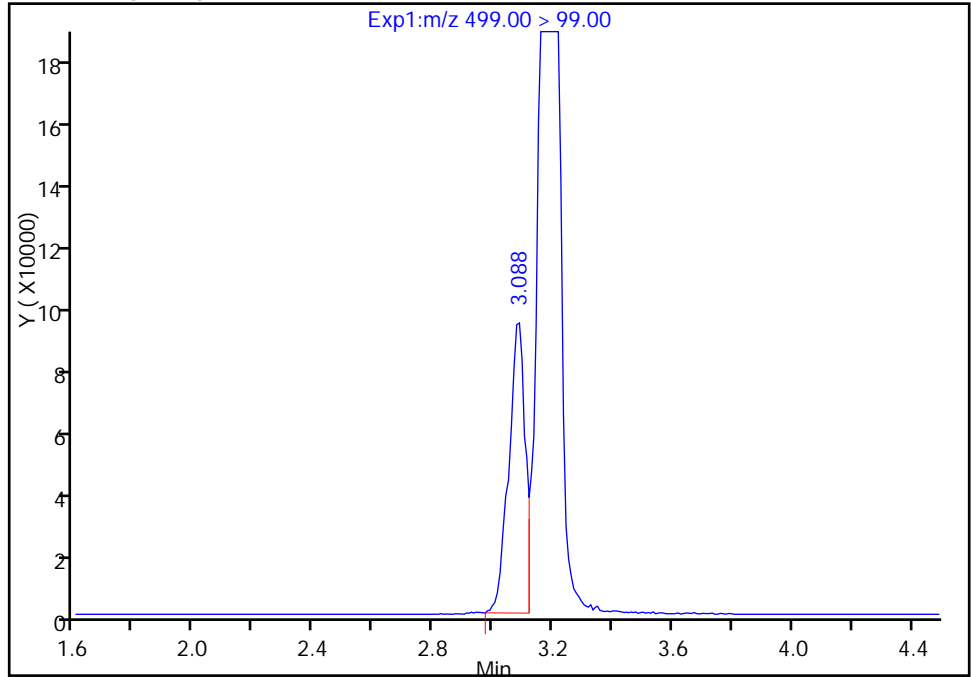
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_027.d
Injection Date: 11-Mar-2017 15:27:39 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

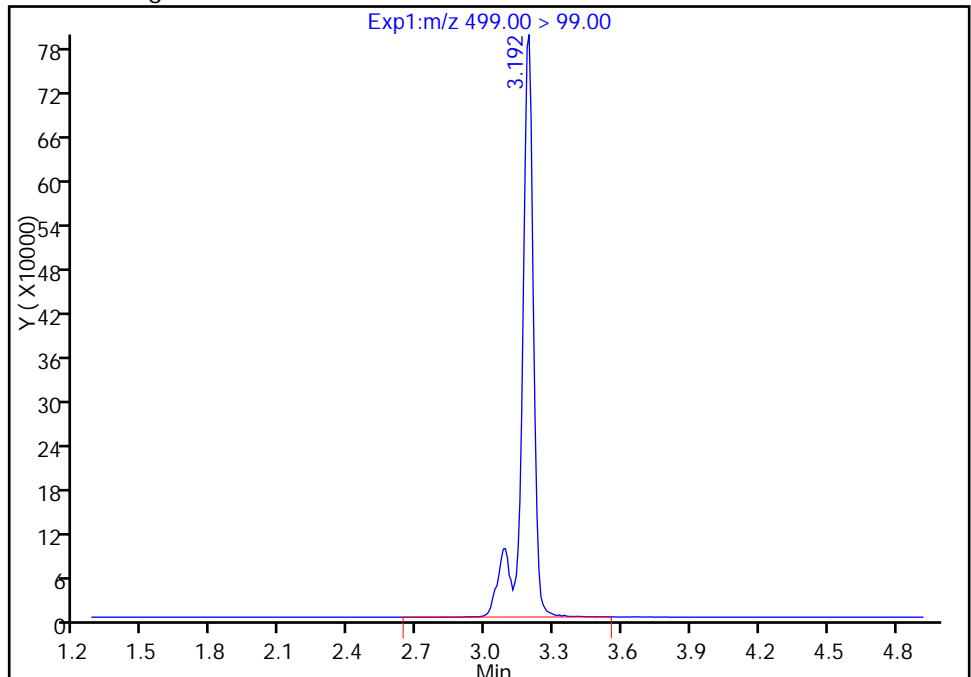
Processing Integration Results

RT: 3.09
Area: 349225
Amount: 12.030011
Amount Units: ng/ml



Manual Integration Results

RT: 3.19
Area: 2860282
Amount: 47.934654
Amount Units: ng/ml



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/35 Calibration Date: 03/11/2017 16:50
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_038.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8480		20.0	20.0	0.0	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9552		19.5	20.0	-2.4	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.458		18.0	17.7	1.8	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8725		19.6	20.0	-1.9	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9131		18.9	20.0	-5.6	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	0.9642		17.1	18.2	-6.2	25.0
6:2FTS	L2ID		0.9483		20.2	19.0	6.3	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.063		19.6	19.0	3.1	25.0
Perfluorooctanoic acid (FOA)	AveID	1.022	0.9562		18.7	20.0	-6.4	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9060		20.0	20.0	0.2	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9390		17.7	18.6	-4.5	25.0
Perfluorooctane Sulfonamide (FOA)	AveID	0.8985	0.9217		20.5	20.0	2.6	25.0
8:2FTS	L2ID		0.9740		20.1	19.2	5.0	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8995		19.9	20.0	-0.7	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9425		19.4	20.0	-2.9	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5851		18.9	19.3	-1.8	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8768		19.3	20.0	-3.7	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9142		18.0	20.0	-9.8	25.0
MeFOA	AveID	0.9355	0.9199		19.7	20.0	-1.7	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.8583		18.8	20.0	-6.2	25.0
N-EtFOA-M	AveID	0.9837	0.9729		19.8	20.0	-1.1	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8644		19.8	20.0	-1.0	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.594		16.2	20.0	-18.9	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.7046		14.8	20.0	-25.9*	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.5409		15.1	20.0	-24.6	25.0
13C4 PFBA	Ave	292242	330501		56.5	50.0	13.1	50.0
13C5-PFPeA	Ave	232192	252592		54.4	50.0	8.8	50.0
13C2 PFHxA	Ave	210884	239334		56.7	50.0	13.5	50.0
13C4-PFHpA	Ave	192959	226035		58.6	50.0	17.1	50.0
18O2 PFHxS	Ave	290899	331249		53.9	47.3	13.9	50.0
M2-6:2FTS	Ave	77178	98651		60.7	47.5	27.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/35 Calibration Date: 03/11/2017 16:50
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_038.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	231953		56.6	50.0	13.2	50.0
13C4 PFOS	Ave	241637	262788		52.0	47.8	8.8	50.0
13C5 PFNA	Ave	177866	194643		54.7	50.0	9.4	50.0
13C8 FOSA	Ave	366918	388660		53.0	50.0	5.9	50.0
M2-8:2FTS	Ave	92602	114765		59.4	47.9	23.9	50.0
13C2 PFDA	Ave	166704	172934		51.9	50.0	3.7	50.0
d3-NMeFOSAA	Ave	85186	83348		48.9	50.0	-2.2	50.0
d5-NEtFOSAA	Ave	81371	83814		51.5	50.0	3.0	50.0
13C2 PFUnA	Ave	130805	131883		50.4	50.0	0.8	50.0
d-N-MeFOSA-M	Ave	87983	84768		48.2	50.0	-3.7	50.0
13C2 PFDoA	Ave	123944	126158		50.9	50.0	1.8	50.0
d-N-EtFOSA-M	Ave	85249	77750		45.6	50.0	-8.8	50.0
13C2-PFTeDA	Ave	259165	255750		49.3	50.0	-1.3	50.0
13C2-PFHxDA	Ave	125061	108462		43.4	50.0	-13.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_038.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 11-Mar-2017 16:50:07 ALS Bottle#: 31 Worklist Smp#: 35
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 16-Mar-2017 08:12:14 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK016

First Level Reviewer: changnoit Date: 13-Mar-2017 13:56:00

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	1.531	1.531	0.0	1.000	5605330	20.0	100	38388	
D 1 13C4 PFBA	217.00 > 172.00	1.531	1.531	0.0		16525036	56.5	113	1095302	
D 3 13C5-PFPeA	267.90 > 223.00	1.813	1.813	0.0		12629612	54.4	109	763869	
4 Perfluoropentanoic acid	262.90 > 219.00	1.813	1.813	0.0	1.000	4825402	19.5	97.6	56009	
D 47 13C3-PFBS	301.90 > 83.00	1.843	1.843	0.0		322394	NC			
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.853	1.853	0.0	1.000	8538899	18.0	102		
	298.90 > 99.00	1.853	1.853	0.0	1.000	3418951	2.50(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.113	2.113	0.0		11966695	56.7	113	334737	
6 Perfluorohexanoic acid	313.00 > 269.00	2.113	2.113	0.0	1.000	4176253	19.6	98.1	100301	
D 9 13C4-PFHpA	367.00 > 322.00	2.451	2.451	0.0		11301748	58.6	117	420262	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.451	2.451	0.0	1.000	4128002	18.9	94.4	43806	
D 11 18O2 PFHxS	403.00 > 84.00	2.467	2.467	0.0		15668075	53.9	114	474307	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.459	2.459	0.0	1.000	5812875	17.1	93.8		M
										M
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.786	2.786	0.0	1.000	1773657	20.2	106		

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	2.786	2.786	0.0		4685944	60.7		128		
15 Perfluorooctanoic acid										
413.00 > 369.00	2.817	2.817	0.0	1.000	4435886	18.7		93.6	46415	
413.00 > 169.00	2.809	2.817	-0.008	0.997	2576148		1.72(0.90-1.10)		57064	
D 14 13C4 PFOA										
417.00 > 372.00	2.809	2.809	0.0		11597637	56.6		113	394697	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.817	2.817	0.0	1.000	5318756	19.6		103		
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.183	3.183	0.0	1.000	4579580	17.7		95.5	140172	M
499.00 > 99.00	3.175	3.183	-0.008	0.997	1020527		4.49(0.90-1.10)		70930	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.183	3.183	0.0	1.000	3526978	20.0		100	63630	
D 18 13C4 PFOS										
503.00 > 80.00	3.183	3.183	0.0		12561288	52.0		109	309068	
D 19 13C5 PFNA										
468.00 > 423.00	3.183	3.183	0.0		9732141	54.7		109	353270	
D 21 13C8 FOSA										
506.00 > 78.00	3.517	3.517	0.0		19432977	53.0		106	324855	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.517	3.517	0.0	1.000	7164335	20.5		103	223185	
D 26 M2-8:2FTS										
529.00 > 509.00	3.525	3.525	0.0		5497244	59.4		124		
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.533	3.533	0.0	1.002	2141795	20.1		105		
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.542	0.0	1.000	3111008	19.9		99.3	54981	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.542	0.0		8646698	51.9		104	206130	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.690	3.690	0.0		4167379	48.9		97.8		
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.699	3.699	0.0	1.003	1571046	19.4		97.1		
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.844	3.844	0.0	1.000	2964645	18.9		98.2		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.853	3.853	0.0		4190722	51.5		103		
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.861	3.861	0.0	1.000	2411346	18.0		90.2	46116	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.861	3.876	-0.015	1.002	1469744	19.3		96.3		
D 30 13C2 PFUnA										
565.00 > 520.00	3.861	3.861	0.0		6594158	50.4		101	151194	
D 34 d-N-MeFOSA-M										
515.00 > 169.00	4.004	4.004	0.0		4238405	48.2		96.3		
35 MeFOSA										
512.00 > 169.00	4.013	4.013	0.0	1.000	1559574	19.7		98.3		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid	613.00 > 569.00	4.153	4.153	0.0	1.000	2165514	18.8	93.8	19586	
D 36 13C2 PFDaA	615.00 > 570.00	4.153	4.153	0.0		6307880	50.9	102	178064	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.188	4.188	0.0		3887482	45.6	91.2		
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.195	4.195	0.0	1.000	1512799	19.8	98.9		
41 Perfluorotridecanoic acid	663.00 > 619.00	4.419	4.419	0.0	1.000	2180983	19.8	99.0	41085	
D 43 13C2-PFTeDA	715.00 > 670.00	4.657	4.657	0.0		12787501	49.3	98.7	425012	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.657	4.657	0.0	1.000	4022026	16.2	81.1	52360	
	713.00 > 169.00	4.657	4.657	0.0	1.000	618186		6.51(0.00-0.00)	67782	
D 44 13C2-PFHxDA	815.00 > 770.00	5.068	5.068	0.0		5423093	43.4	86.7	93424	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.068	5.068	0.0	1.000	1777868	14.8	74.1	1979	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.429	5.429	0.0	1.000	1364844	15.1	75.4	2027	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L4_00001

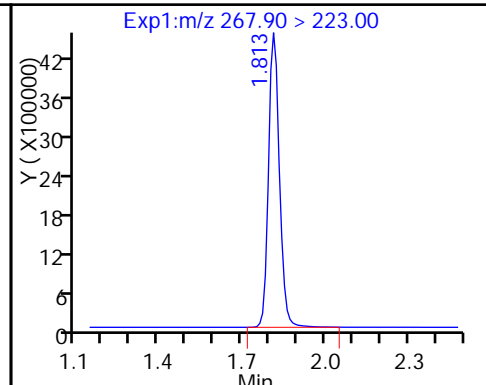
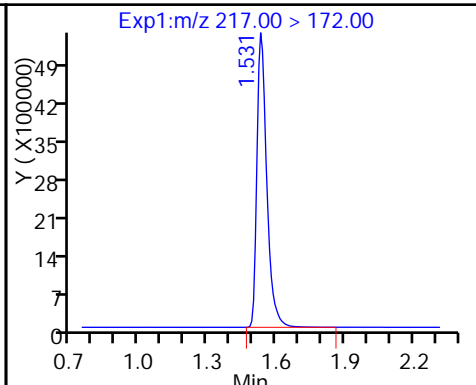
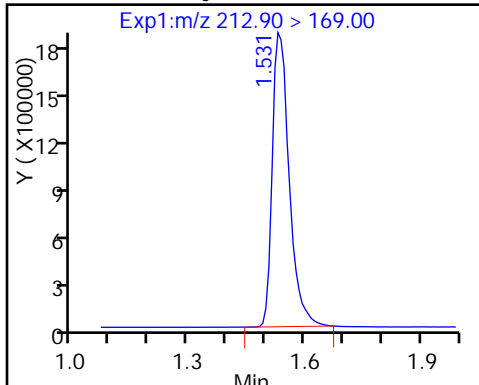
Amount Added: 1.00

Units: mL

2 Perfluorobutyric acid

D 1 13C4 PFBA

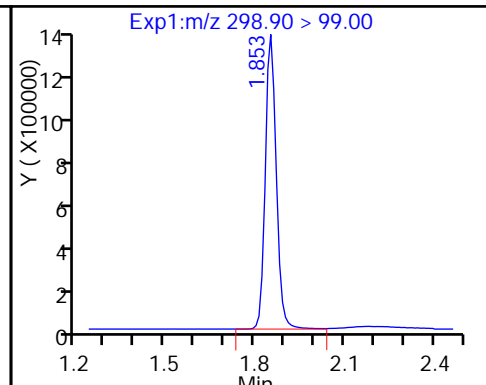
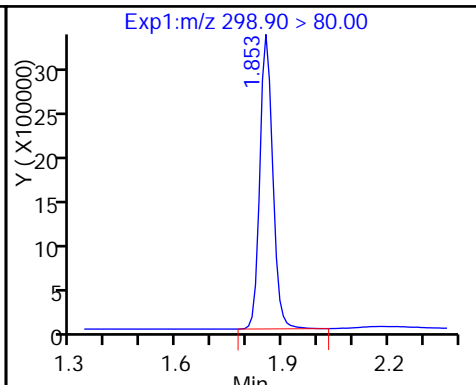
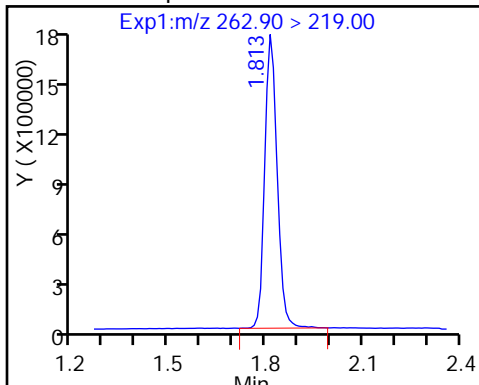
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

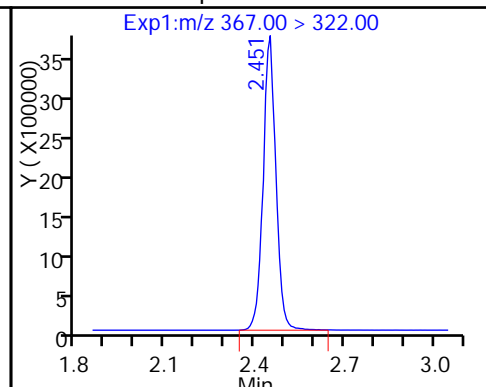
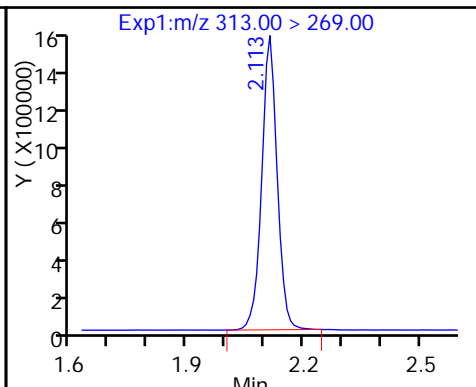
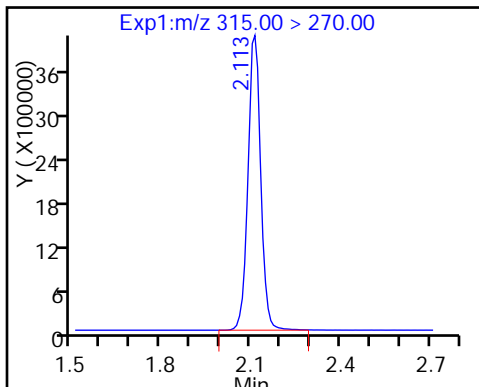
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

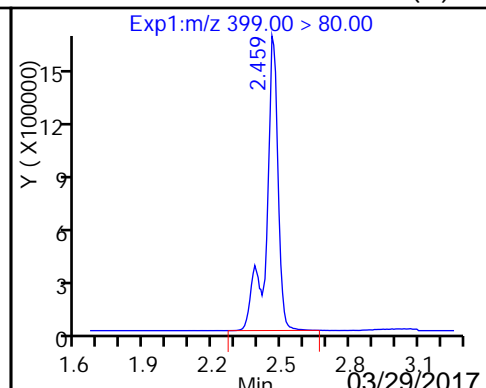
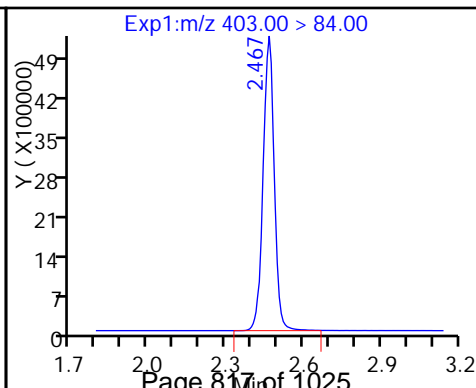
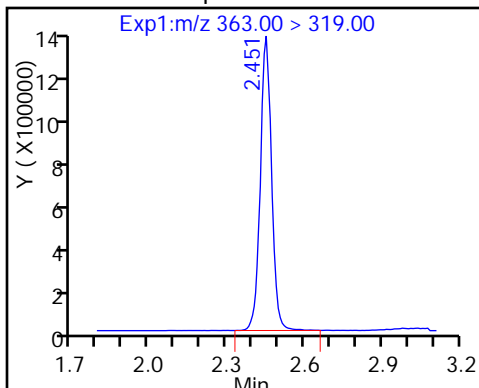
D 9 13C4-PFHpA



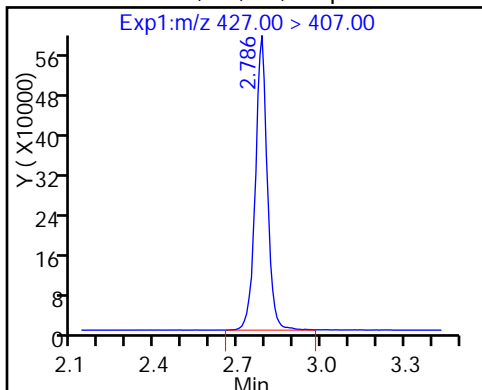
10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

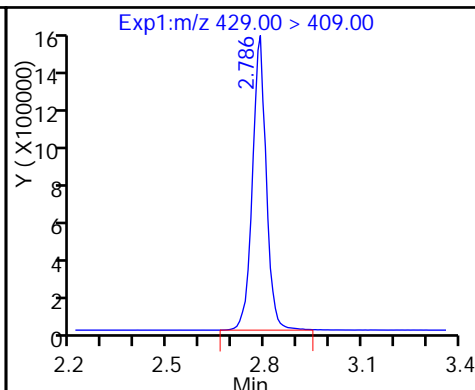
8 Perfluorohexanesulfonic acid (M)



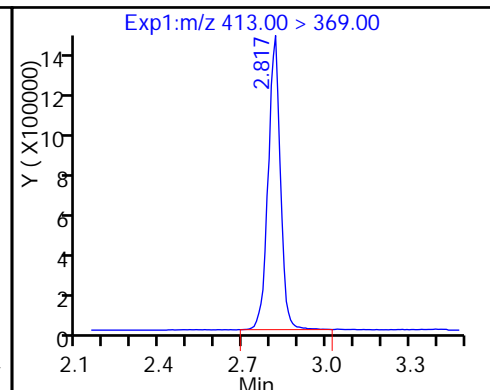
13 Sodium 1H,1H,2H,2H-perfluorooctanoate



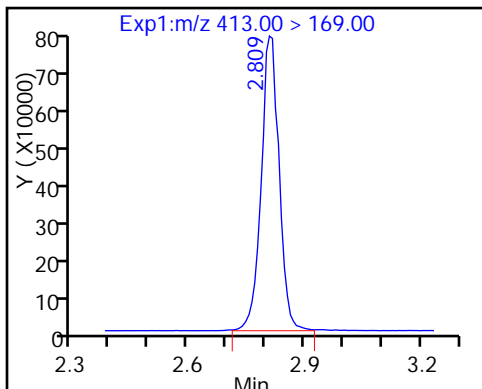
D 12 M2-6:2FTS



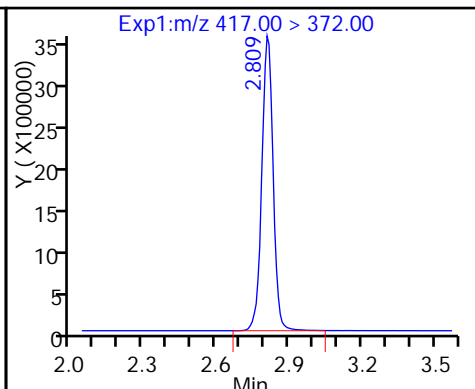
15 Perfluorooctanoic acid



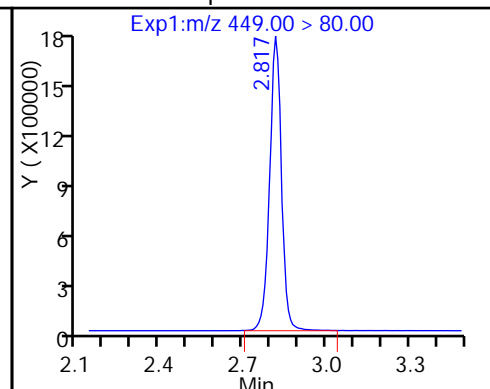
15 Perfluorooctanoic acid



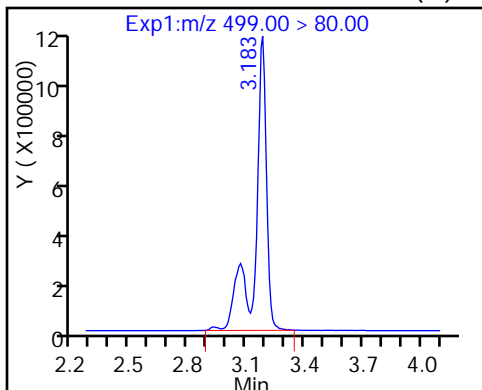
D 14 13C4 PFOA



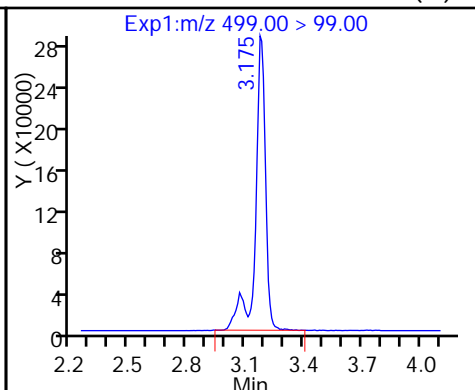
16 Perfluoroheptanesulfonic Acid



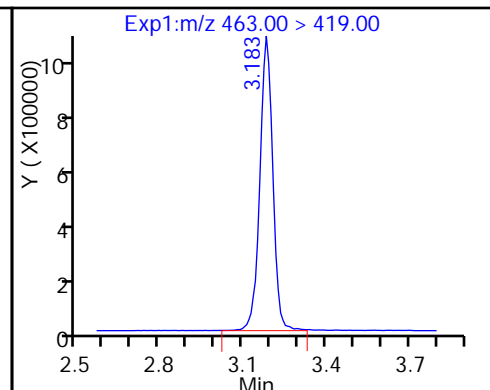
17 Perfluorooctane sulfonic acid (M)



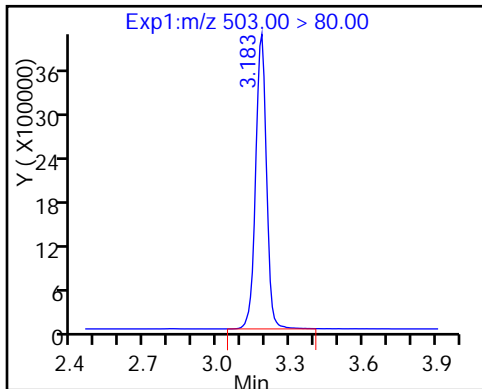
17 Perfluorooctane sulfonic acid (M)



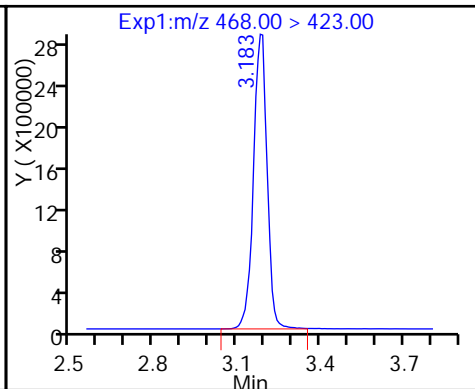
20 Perfluorononanoic acid



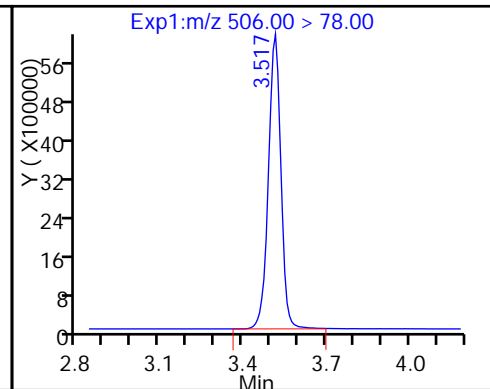
D 18 13C4 PFOS



D 19 13C5 PFNA



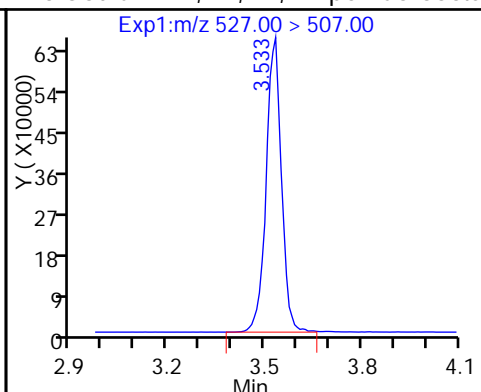
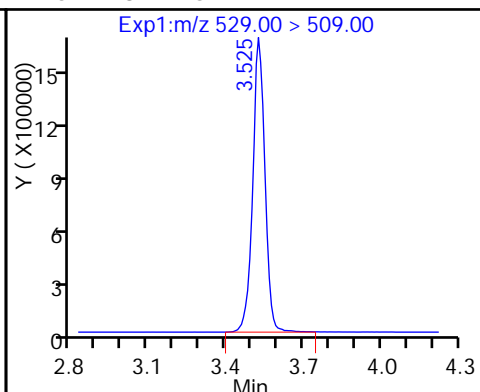
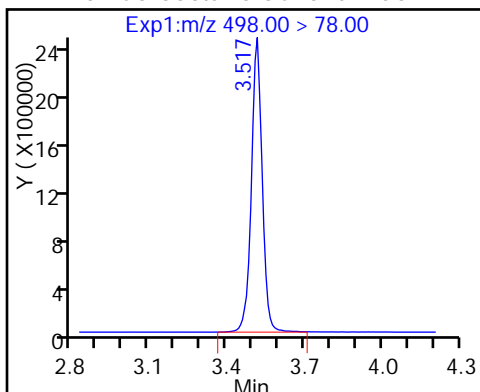
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

D 26 M2-8:2FTS

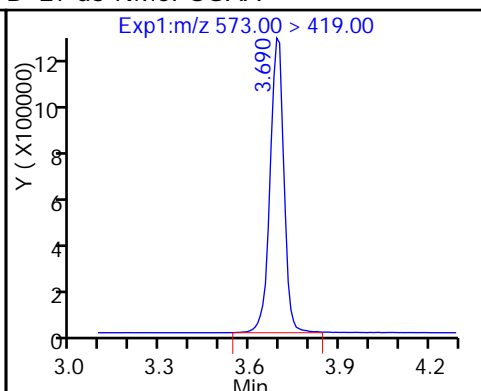
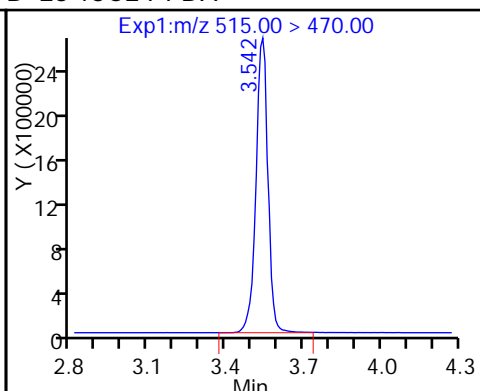
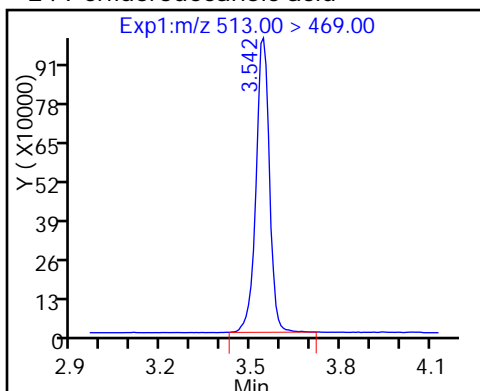
25 Sodium 1H,1H,2H,2H-perfluorooctane



24 Perfluorodecanoic acid

D 23 13C2 PFDA

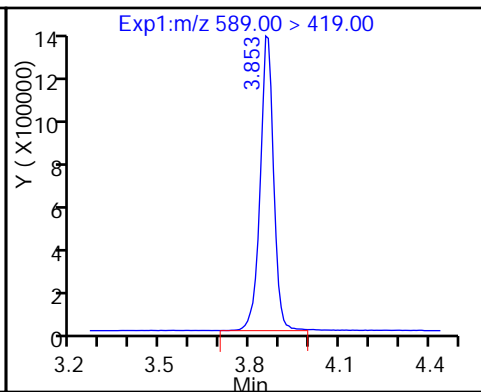
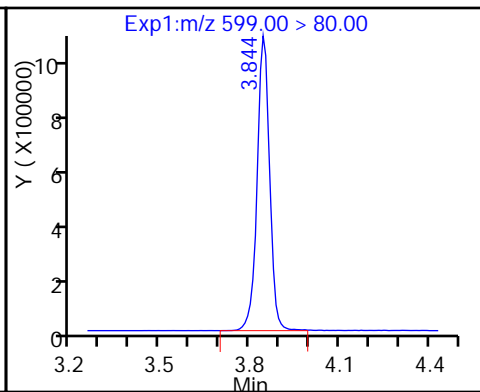
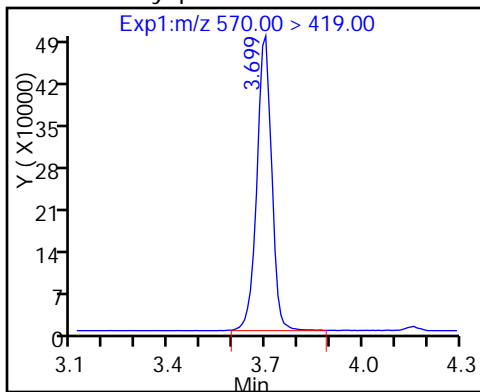
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

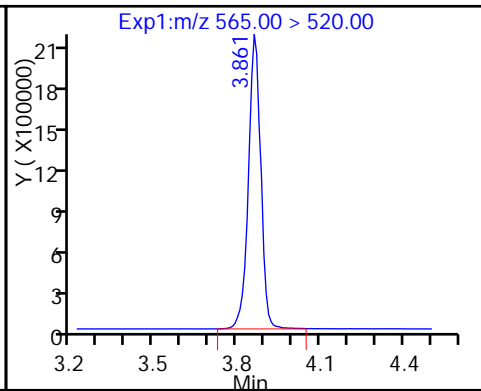
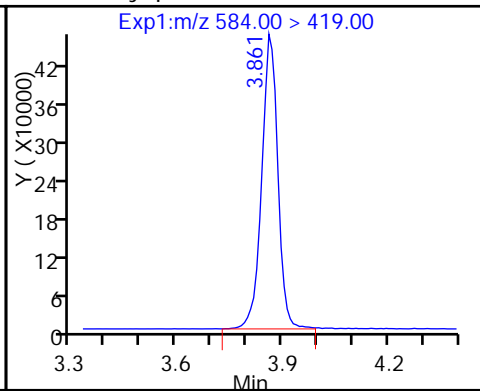
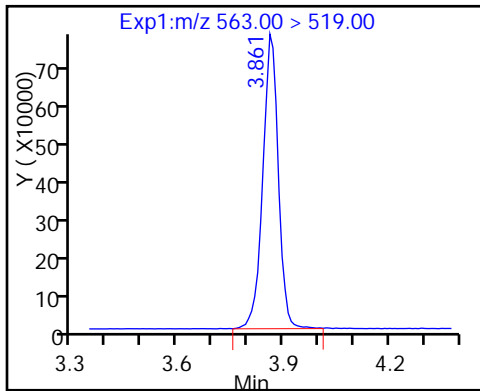
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid

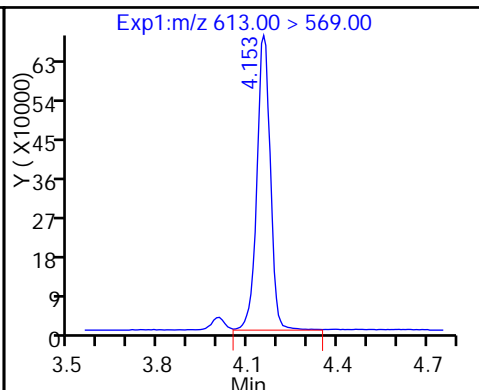
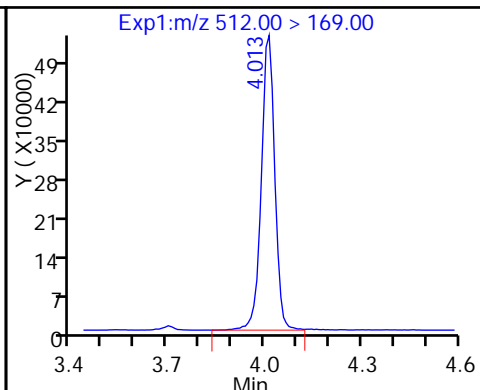
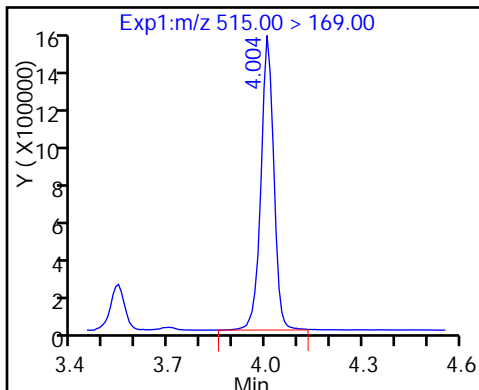
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D 34 d-N-MeFOSA-M

35 MeFOSA

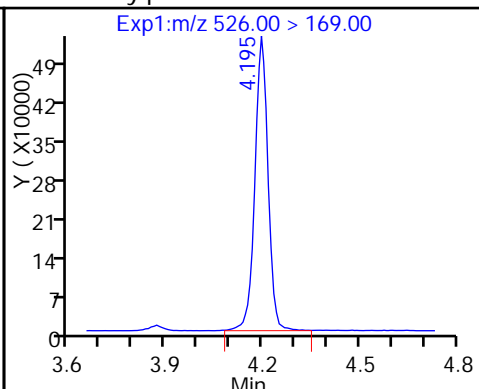
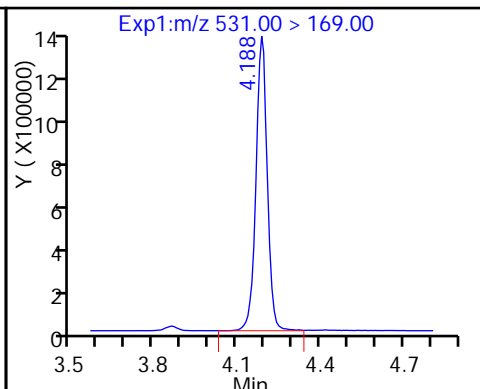
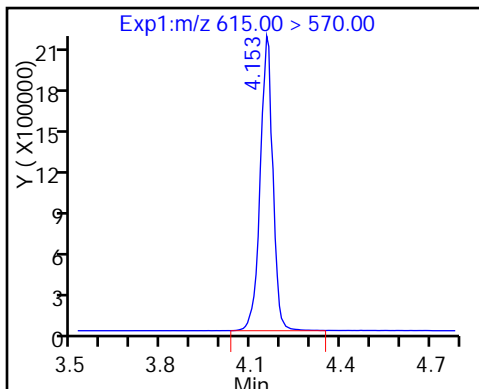
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

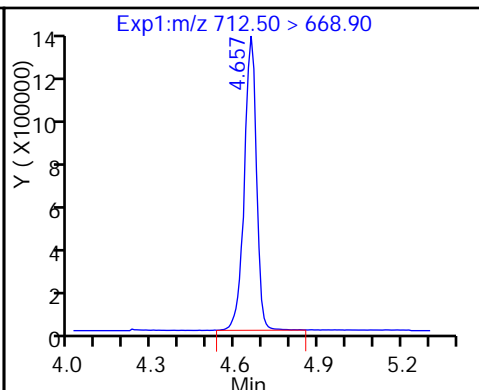
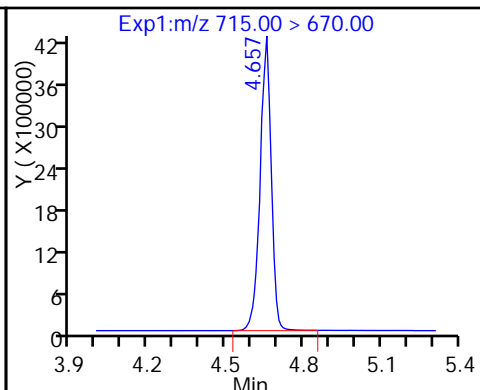
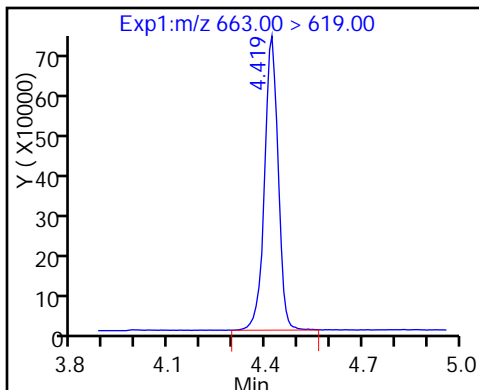
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

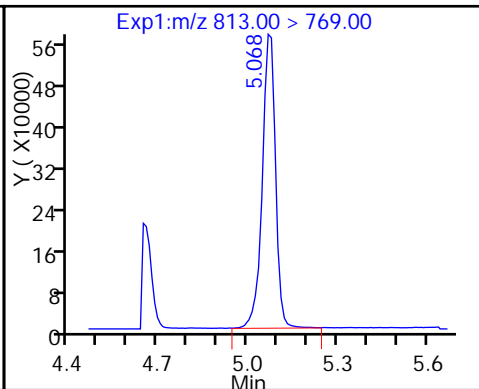
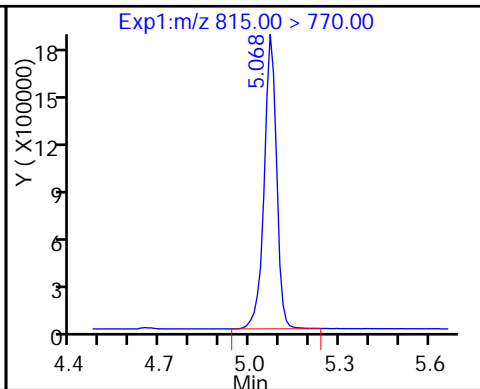
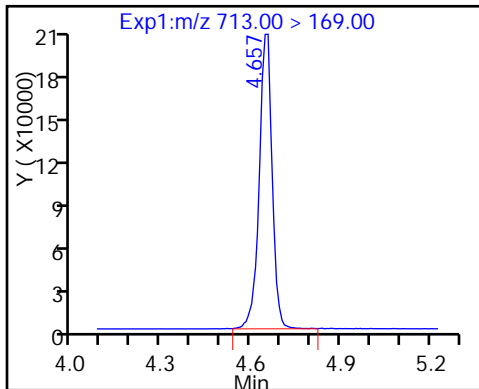
42 Perfluorotetradecanoic acid



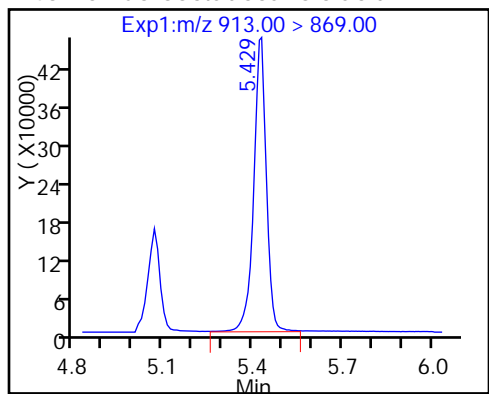
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

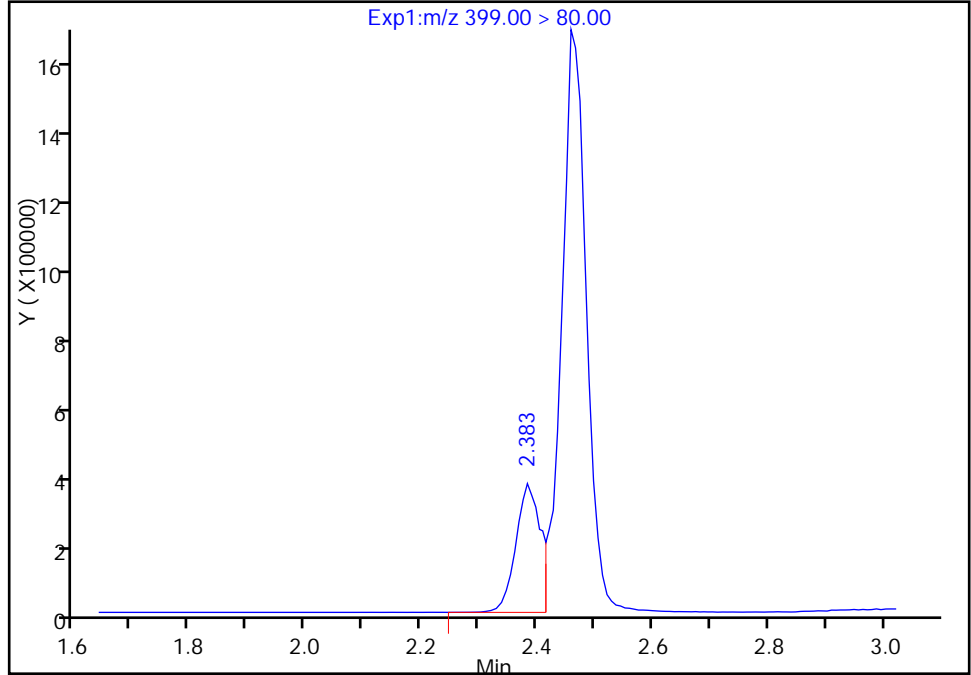
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_038.d
Injection Date: 11-Mar-2017 16:50:07 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 35
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

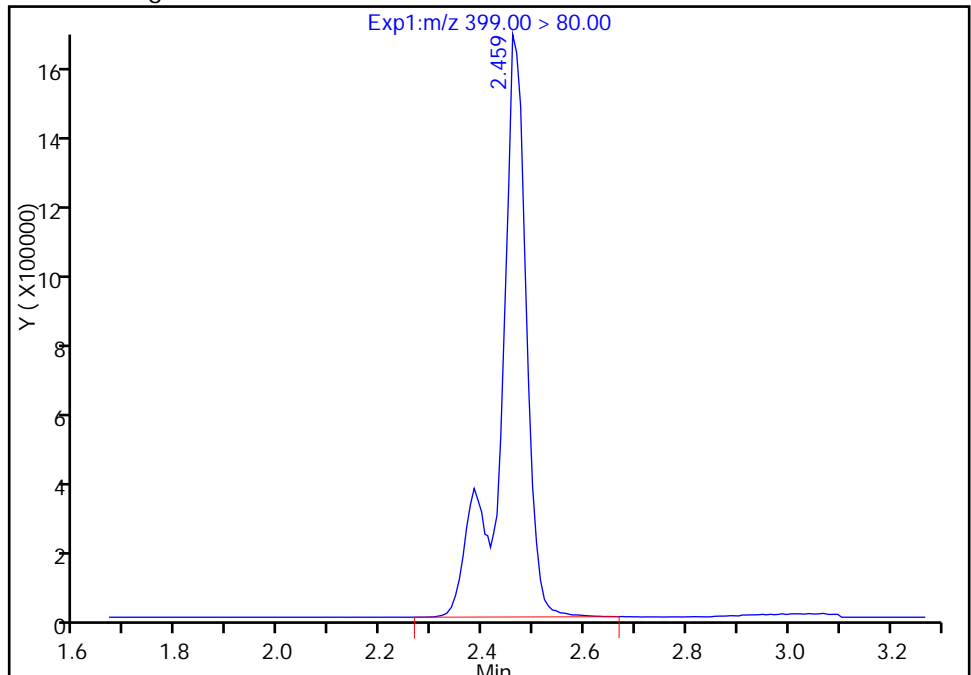
RT: 2.38
Area: 1036246
Amount: 3.041781
Amount Units: ng/ml

Processing Integration Results



RT: 2.46
Area: 5812875
Amount: 17.063027
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 16-Mar-2017 08:12:03
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

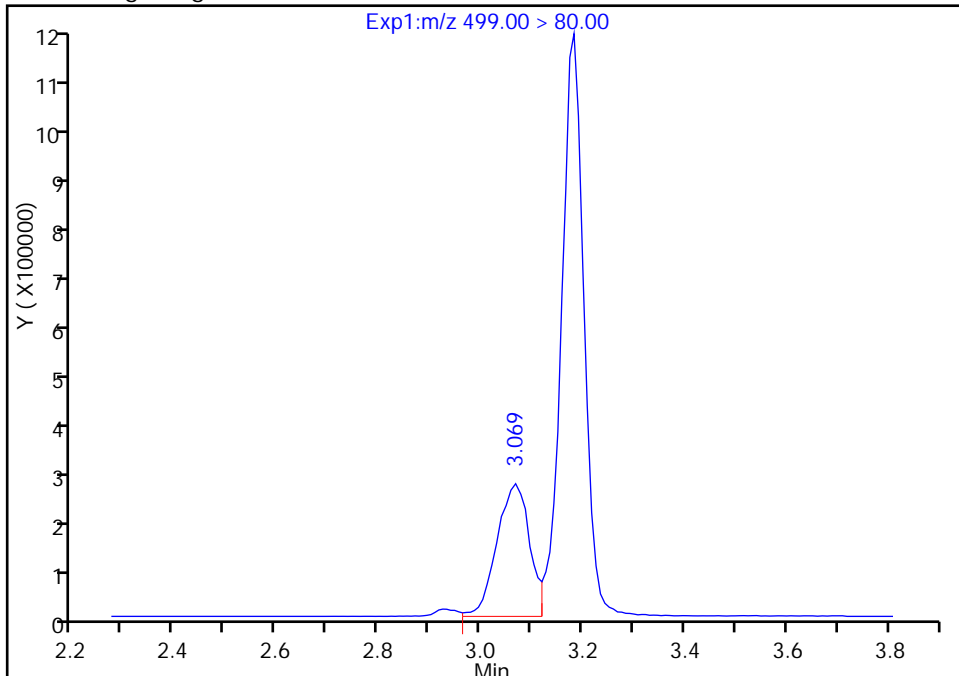
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_038.d
Injection Date: 11-Mar-2017 16:50:07 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 35
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

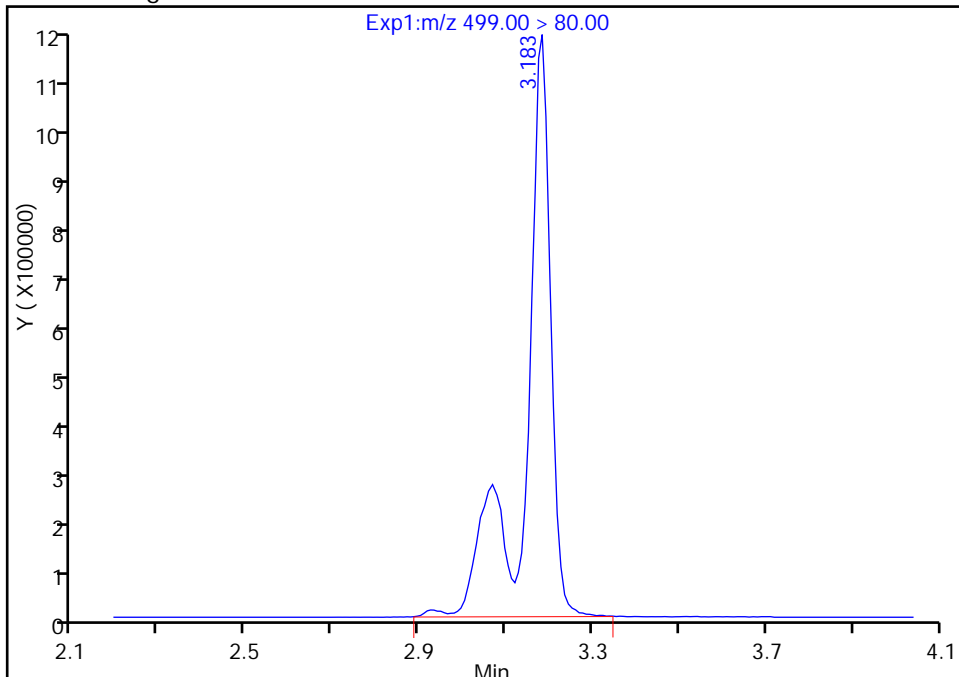
RT: 3.07
Area: 1130152
Amount: 4.372845
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 4579580
Amount: 17.719556
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

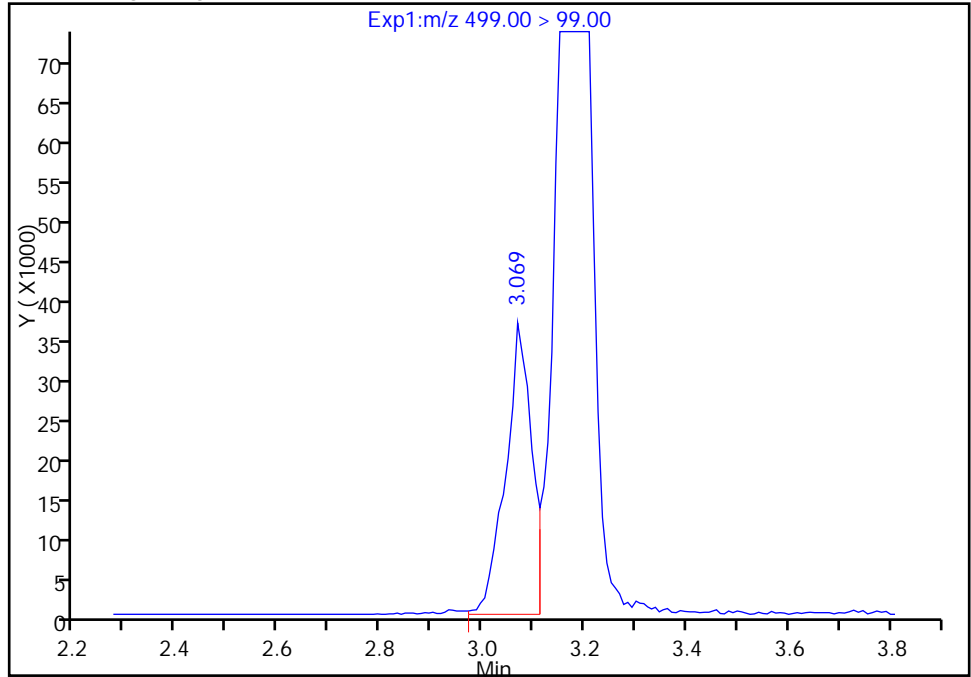
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Injection Date: 11-Mar-2017 16:50:07 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 35
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

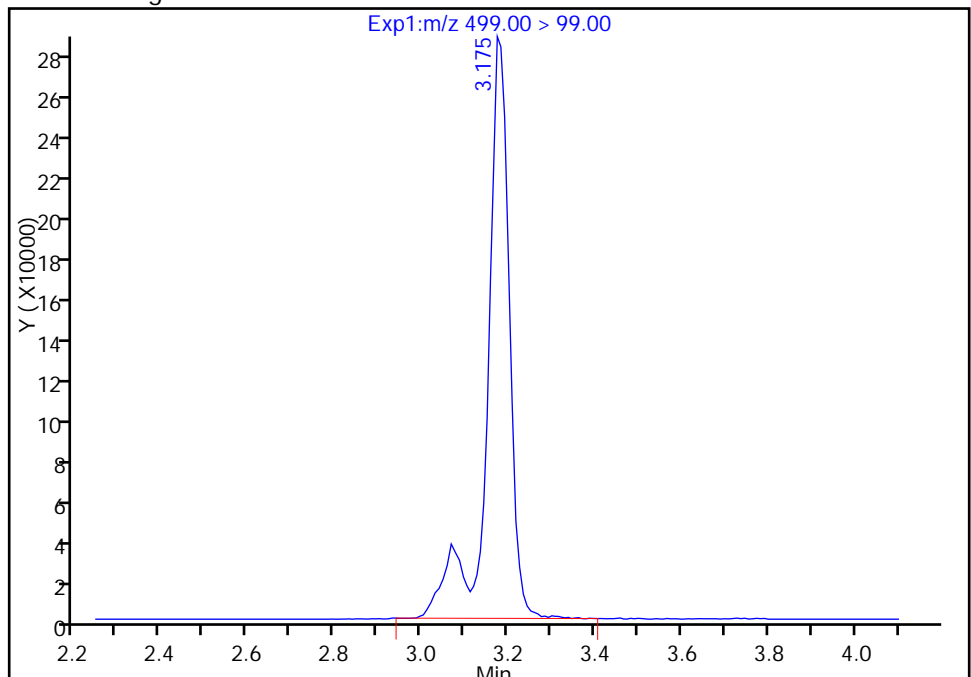
RT: 3.07
Area: 127361
Amount: 4.372845
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 1020527
Amount: 17.719556
Amount Units: ng/ml

Manual Integration Results



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/46 Calibration Date: 03/11/2017 18:12
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_049.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8950		52.8	50.0	5.6	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9933		50.8	50.0	1.5	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.467		45.3	44.2	2.4	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9047		50.9	50.0	1.7	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9903		51.2	50.0	2.4	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.045		46.2	45.5	1.6	25.0
6:2FTS	L2ID		0.8794		46.9	47.4	-1.0	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.022		50.0	50.0	0.0	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.113		51.4	47.6	7.9	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9538		52.8	50.0	5.5	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.014		47.8	46.4	3.1	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9240		51.4	50.0	2.8	25.0
8:2FTS	L2ID		0.9201		47.6	47.9	-0.6	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9315		51.4	50.0	2.9	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9425		48.5	50.0	-2.9	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6164		49.9	48.2	3.5	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9560		47.2	50.0	-5.7	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8753		48.1	50.0	-3.8	25.0
MeFOSA	AveID	0.9355	0.8983		48.0	50.0	-4.0	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9256		50.6	50.0	1.2	25.0
N-EtFOSA-M	AveID	0.9837	0.9613		48.9	50.0	-2.3	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9068		51.9	50.0	3.8	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.705		43.3	50.0	-13.3	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8895		47.6	50.0	-4.8	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.5940		41.4	50.0	-17.2	25.0
13C4 PFBA	Ave	292242	323579		55.4	50.0	10.7	50.0
13C5-PFPeA	Ave	232192	250487		53.9	50.0	7.9	50.0
13C2 PFHxA	Ave	210884	235375		55.8	50.0	11.6	50.0
13C4-PFHpA	Ave	192959	209699		54.3	50.0	8.7	50.0
18O2 PFHxS	Ave	290899	318974		51.9	47.3	9.7	50.0
M2-6:2FTS	Ave	77178	97253		59.9	47.5	26.0	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/46 Calibration Date: 03/11/2017 18:12
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_049.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	215734		52.6	50.0	5.3	50.0
13C4 PFOS	Ave	241637	261638		51.8	47.8	8.3	50.0
13C5 PFNA	Ave	177866	181142		50.9	50.0	1.8	50.0
13C8 FOSA	Ave	366918	381351		52.0	50.0	3.9	50.0
M2-8:2FTS	Ave	92602	102385		53.0	47.9	10.6	50.0
13C2 PFDA	Ave	166704	167134		50.1	50.0	0.3	50.0
d3-NMeFOSAA	Ave	85186	81303		47.7	50.0	-4.6	50.0
d5-NEtFOSAA	Ave	81371	77220		47.4	50.0	-5.1	50.0
13C2 PFUnA	Ave	130805	124389		47.5	50.0	-4.9	50.0
d-N-MeFOSA-M	Ave	87983	85967		48.9	50.0	-2.3	50.0
13C2 PFDoA	Ave	123944	120887		48.8	50.0	-2.5	50.0
d-N-EtFOSA-M	Ave	85249	78766		46.2	50.0	-7.6	50.0
13C2-PFTeDA	Ave	259165	239540		46.2	50.0	-7.6	50.0
13C2-PFHxDA	Ave	125061	127116		50.8	50.0	1.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_049.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 11-Mar-2017 18:12:36 ALS Bottle#: 32 Worklist Smp#: 46
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 16-Mar-2017 08:15:06 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK016

First Level Reviewer: changnoit Date: 13-Mar-2017 14:06:44

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	1.538	1.538	0.0	1.000	14480082	52.8	106	98974	
D 1 13C4 PFBA	217.00 > 172.00	1.530	1.530	0.0		16178930	55.4	111	716813	
D 3 13C5-PFPeA	267.90 > 223.00	1.821	1.821	0.0		12524332	53.9	108	882720	
4 Perfluoropentanoic acid	262.90 > 219.00	1.821	1.821	0.0	1.000	12440697	50.8	102	108144	
D 47 13C3-PFBS	301.90 > 83.00	1.851	1.851	0.0		320506	NC			
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.861	1.861	0.0	1.000	20685205	45.3	102		
	298.90 > 99.00	1.851	1.861	-0.010	0.995	9034478	2.29(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.124	2.124	0.0		11768761	55.8	112	383206	
6 Perfluorohexanoic acid	313.00 > 269.00	2.124	2.124	0.0	1.000	10647225	50.9	102	394334	
D 9 13C4-PFHpA	367.00 > 322.00	2.455	2.455	0.0		10484957	54.3	109	371138	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.455	2.455	0.0	1.000	10383147	51.2	102	129092	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.478	2.478	0.0	1.000	15165760	46.2	102		M M
D 11 18O2 PFHxS	403.00 > 84.00	2.471	2.471	0.0		15087465	51.9	110	538634	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.790	2.790	0.0	1.000	4053755	46.9	99.0		

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	2.790	2.790	0.0	4619527	59.9	126		
D 14 13C4 PFOA	417.00	> 372.00	2.813	2.813	0.0	10786676	52.6	105	309055	
15 Perfluorooctanoic acid	413.00	> 369.00	2.821	2.821	0.0	11023103	50.0	100	109447	
	413.00	> 169.00	2.821	2.821	0.0	6536018	1.69(0.90-1.10)	218890		
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.828	2.828	0.0	13856715	51.4	108		
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.195	3.195	0.0	12309827	47.8	103	228883	M
	499.00	> 99.00	3.195	3.195	0.0	2761246	4.46(0.90-1.10)	184739		M
20 Perfluorononanoic acid	463.00	> 419.00	3.195	3.195	0.0	8638324	52.8	106	155349	
D 18 13C4 PFOS	503.00	> 80.00	3.195	3.195	0.0	12506303	51.8	108	233709	
D 19 13C5 PFNA	468.00	> 423.00	3.203	3.203	0.0	9057093	50.9	102	264161	
D 21 13C8 FOSA	506.00	> 78.00	3.523	3.523	0.0	19067547	52.0	104	493463	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.532	3.532	0.0	17619043	51.4	103	443227	
D 26 M2-8:2FTS	529.00	> 509.00	3.549	3.549	0.0	4904239	53.0	111		
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.540	3.540	0.0	0.998 4512198	47.6	99.4		
24 Perfluorodecanoic acid	513.00	> 469.00	3.557	3.557	0.0	1.000 7784008	51.4	103	178451	
D 23 13C2 PFDA	515.00	> 470.00	3.557	3.557	0.0	8356702	50.1	100	152231	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.697	3.697	0.0	4065137	47.7	95.4		
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.708	3.708	0.0	1.003 3831261	48.5	97.1		
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.854	3.854	0.0	1.000 7772939	49.9	103		
D 32 d5-NEtFOSAA	589.00	> 419.00	3.871	3.871	0.0	3860981	47.4	94.9		
31 Perfluoroundecanoic acid	563.00	> 519.00	3.871	3.871	0.0	1.000 5945620	47.2	94.3	100547	
D 30 13C2 PFUnA	565.00	> 520.00	3.880	3.880	0.0	6219436	47.5	95.1	397245	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.880	3.880	0.0	1.002 3379522	48.1	96.2		
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.024	4.024	0.0	4298327	48.9	97.7		
35 MeFOSA	512.00	> 169.00	4.024	4.024	0.0	1.000 3861027	48.0	96.0		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid	613.00	> 569.00	4.164	4.164	0.0	1.000	5594923	50.6	101	55678
D 36 13C2 PFDaA	615.00	> 570.00	4.164	4.164	0.0		6044358	48.8	97.5	157355
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.200	4.200	0.0		3938306	46.2	92.4	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.207	4.207	0.0	1.000	3785993	48.9	97.7	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.426	4.426	0.0	1.000	5480980	51.9	104	117522
D 43 13C2-PFTeDA	715.00	> 670.00	4.663	4.663	0.0		11977002	46.2	92.4	311448
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.673	4.673	0.0	1.000	10303863	43.3	86.7	83254
	713.00	> 169.00	4.663	4.673	-0.010	0.998	1527209	6.75(0.00-0.00)		128796
D 44 13C2-PFHxDA	815.00	> 770.00	5.079	5.079	0.0		6355789	50.8	102	104467
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.079	5.079	0.0	1.000	5376384	47.6	95.2	4879
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.428	5.428	0.0	1.000	3590438	41.4	82.8	4716

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L5_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_049.d

Injection Date: 11-Mar-2017 18:12:36

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 32

Worklist Smp#: 46

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

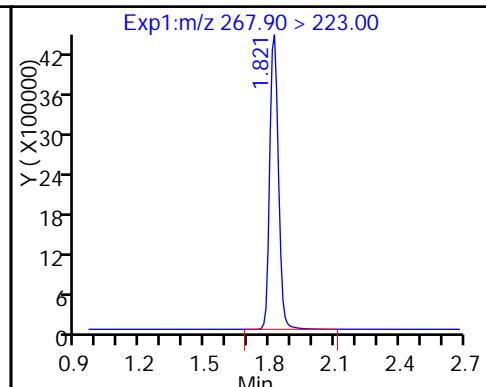
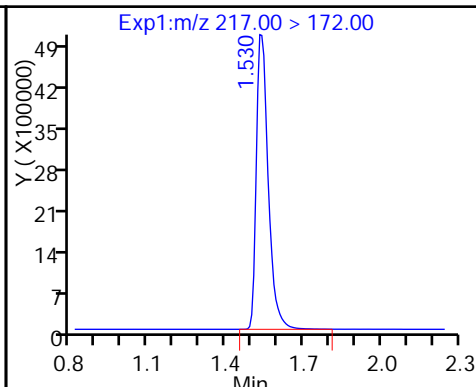
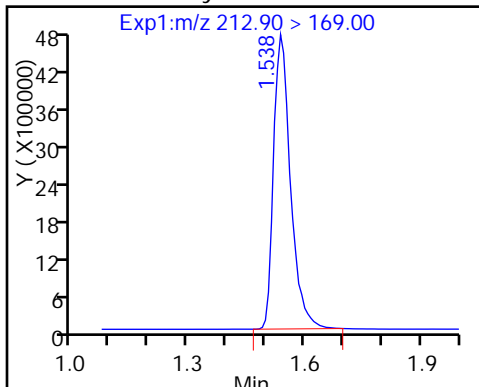
Method: A8_N

Limit Group: LC PFC_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

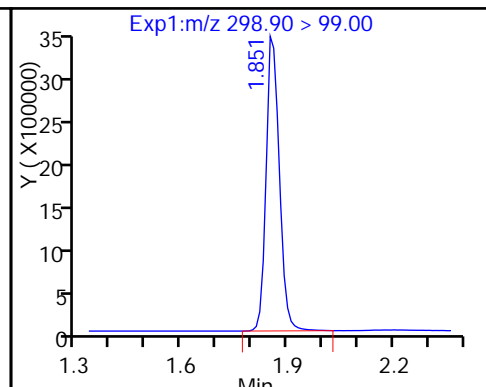
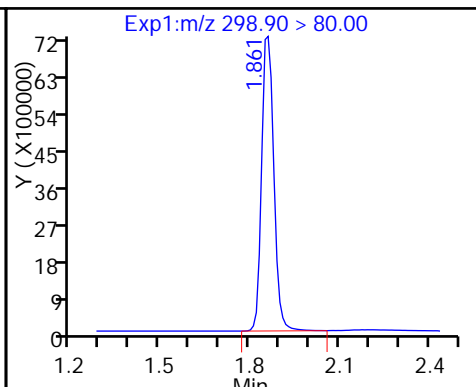
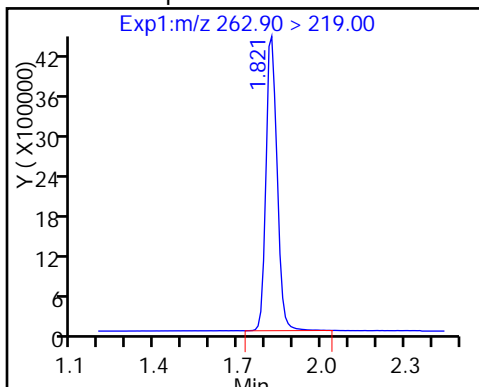
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

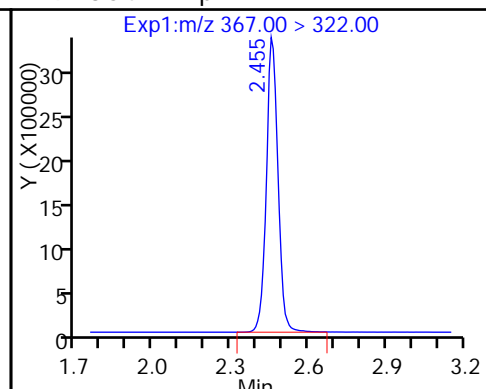
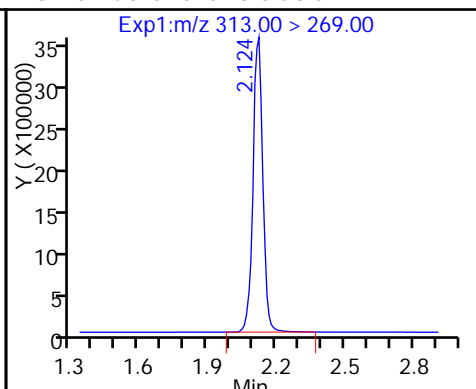
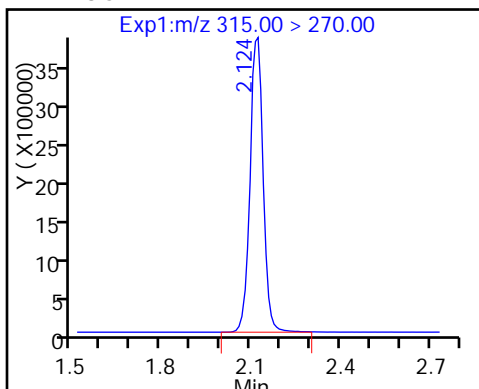
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

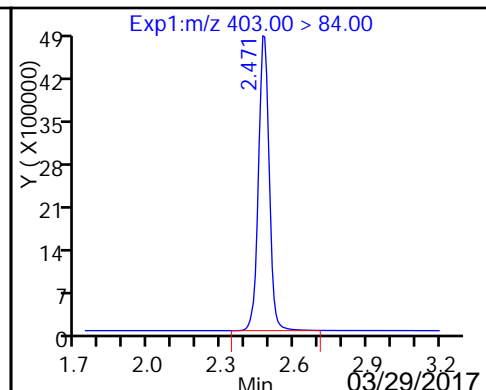
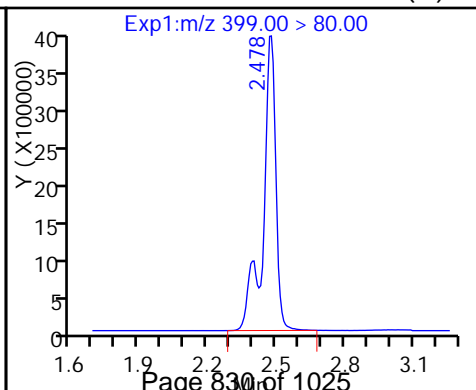
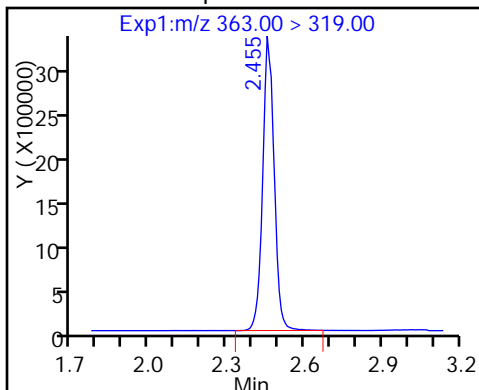
D 9 13C4-PFHpA



10 Perfluoroheptanoic acid

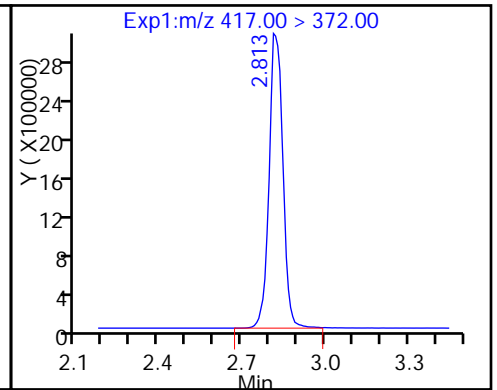
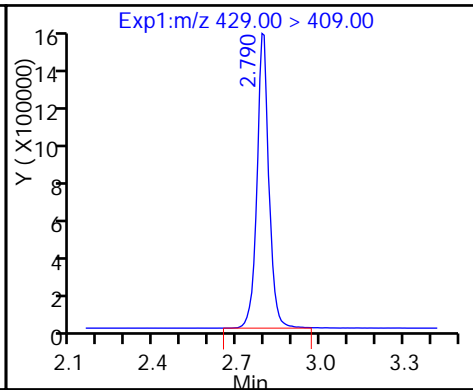
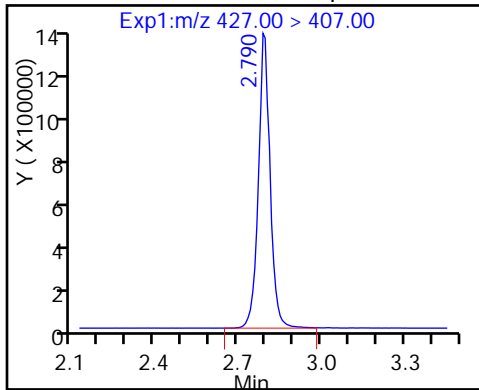
8 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS



13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

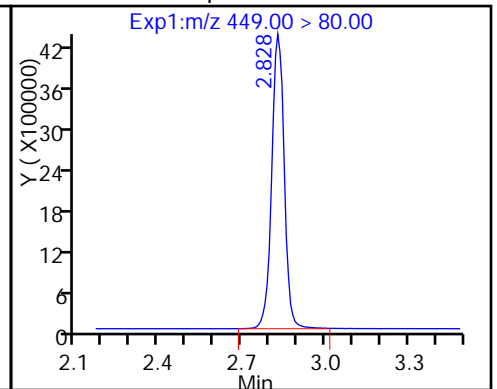
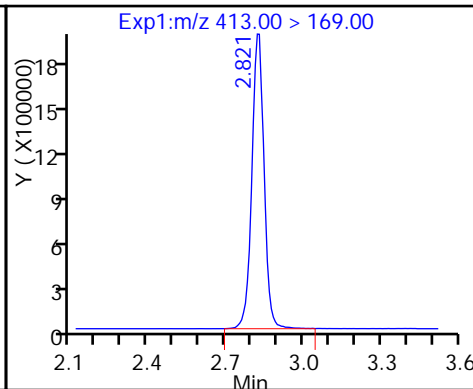
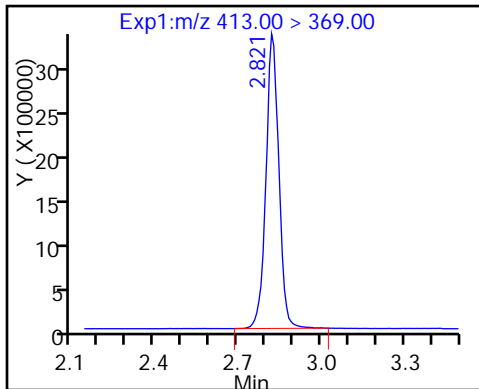
D 12 M2-6:2FTS



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

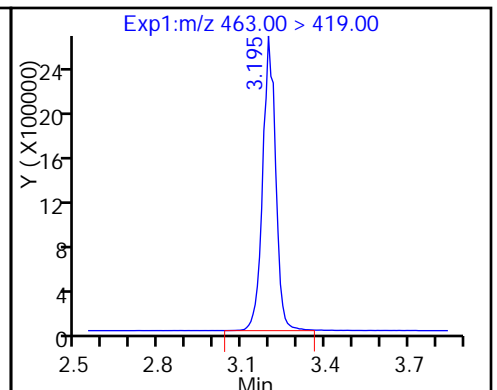
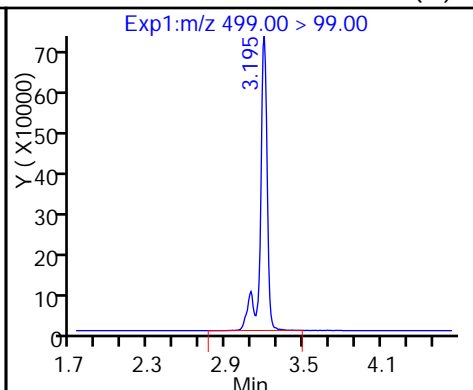
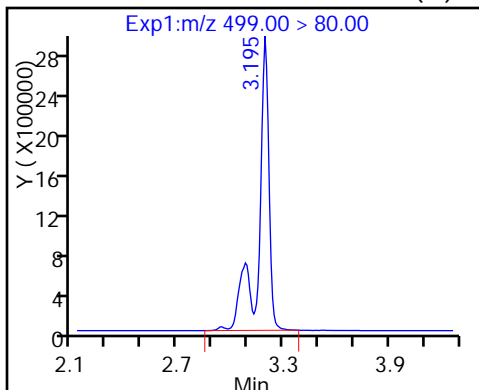
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

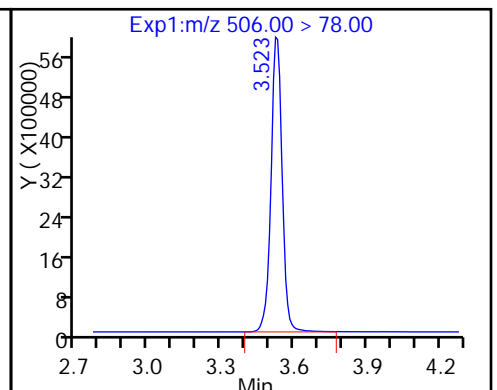
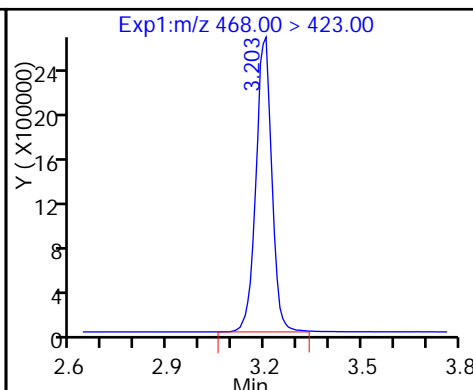
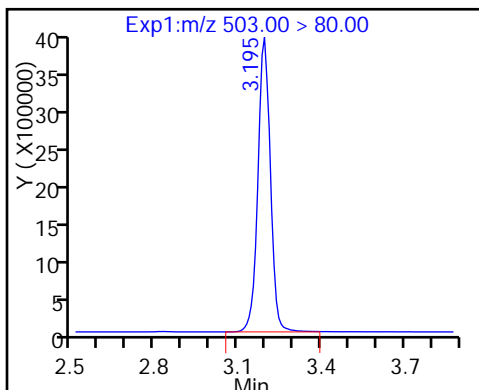
20 Perfluorononanoic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

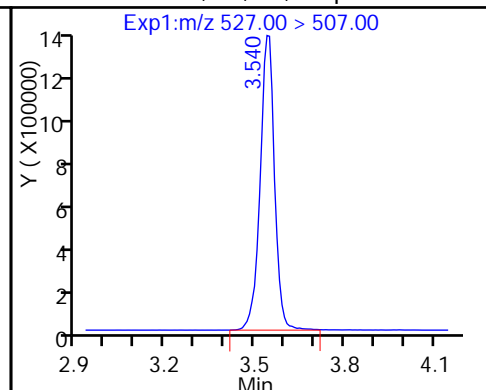
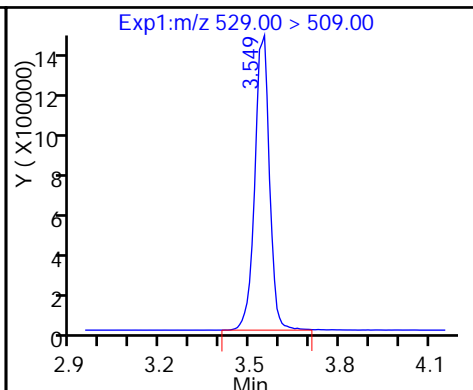
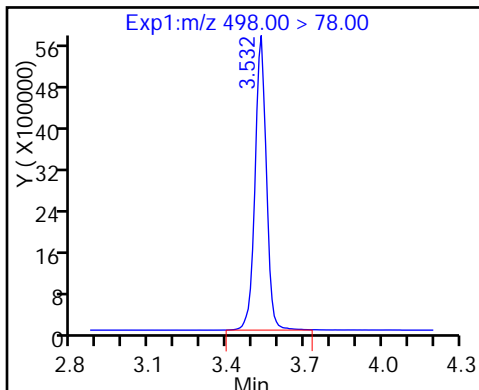
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

D 26 M2-8:2FTS

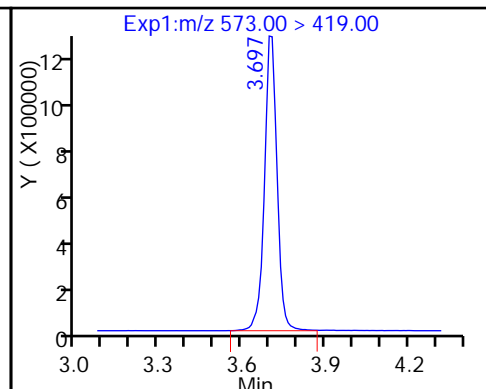
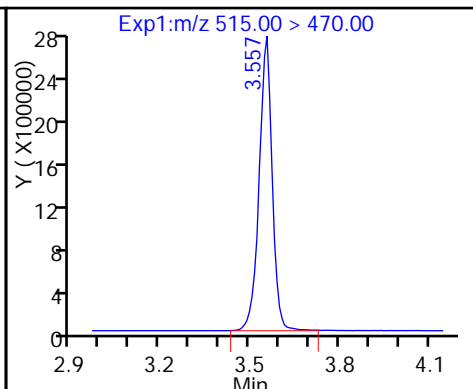
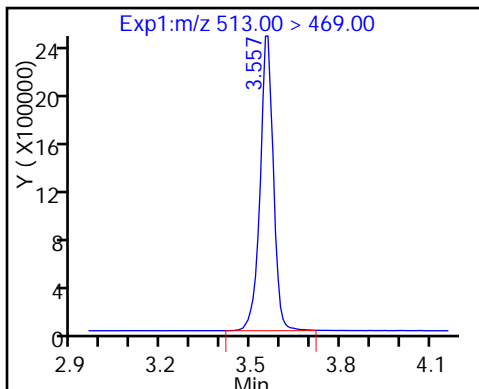
25 Sodium 1H,1H,2H,2H-perfluorooctane



24 Perfluorodecanoic acid

D 23 13C2 PFDA

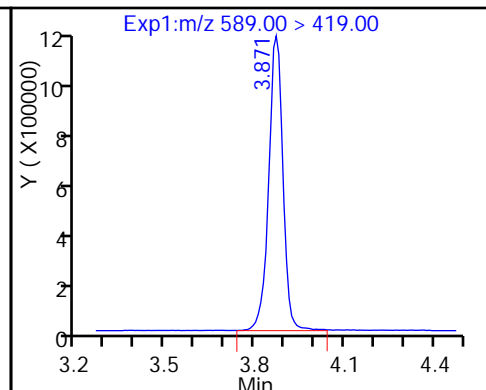
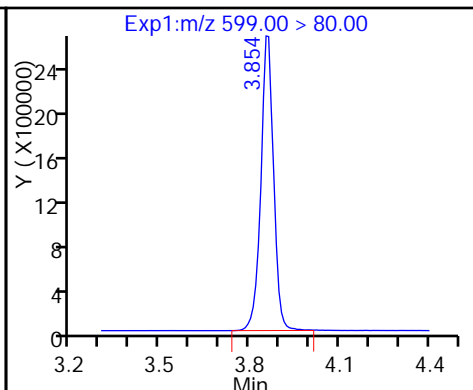
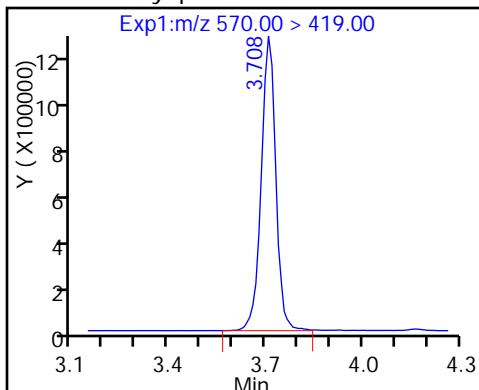
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

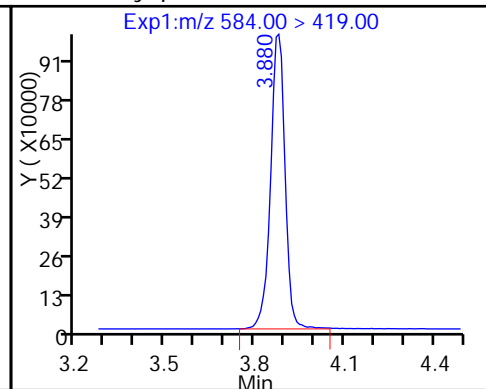
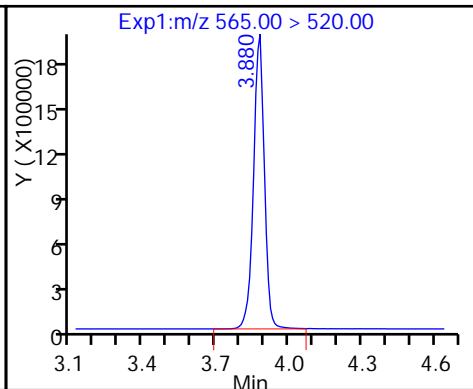
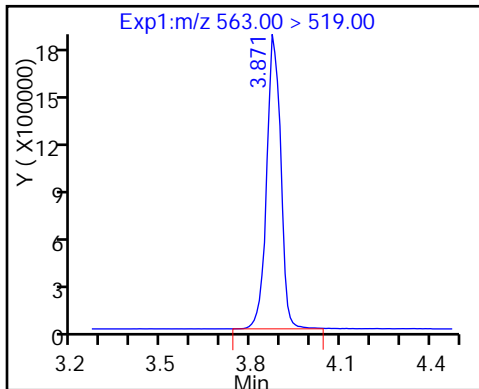
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

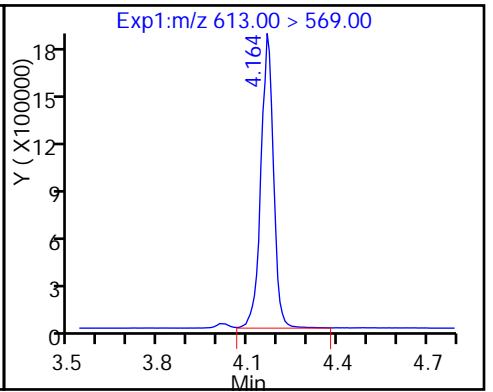
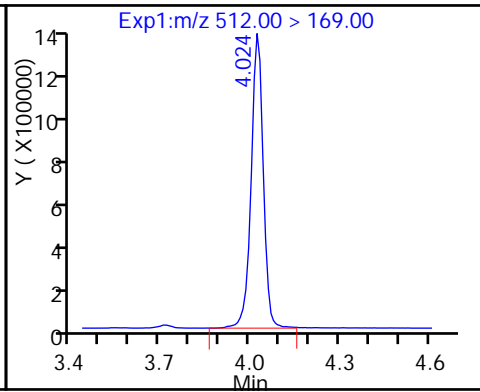
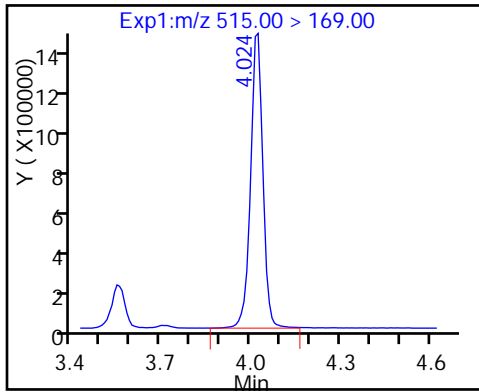
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

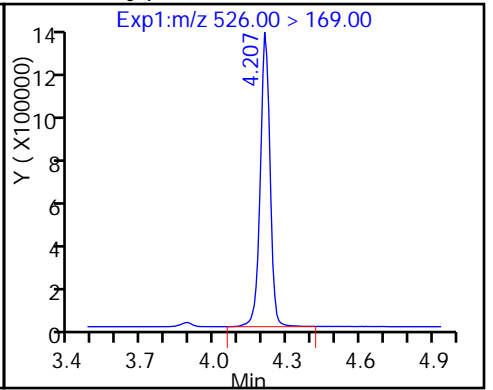
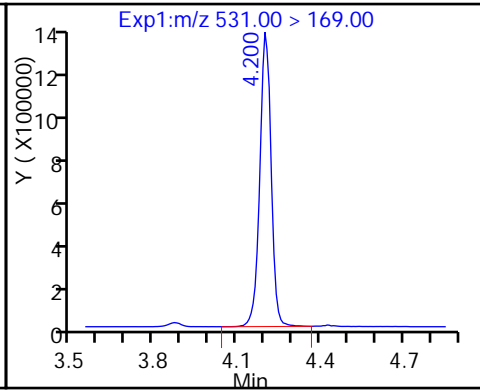
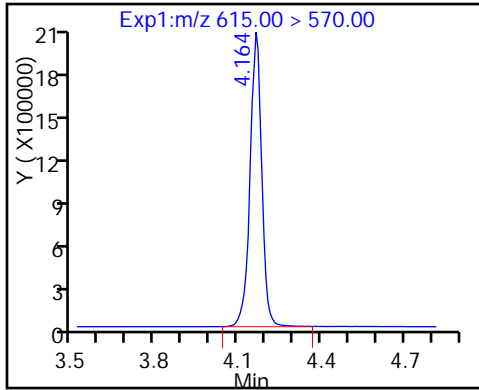
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

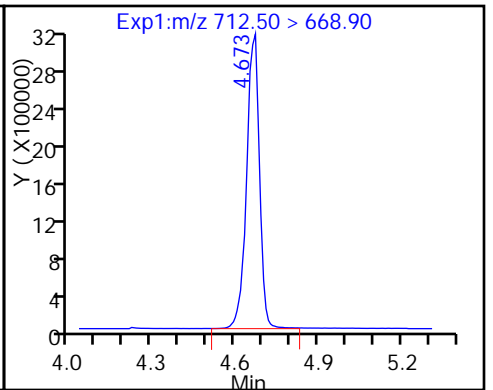
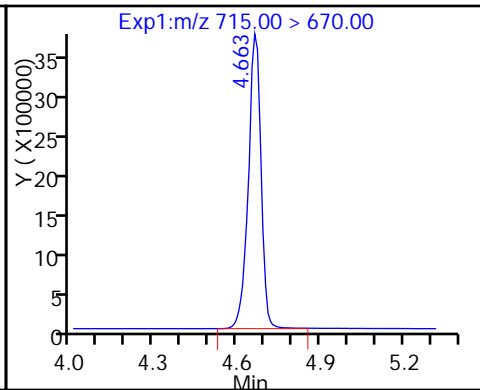
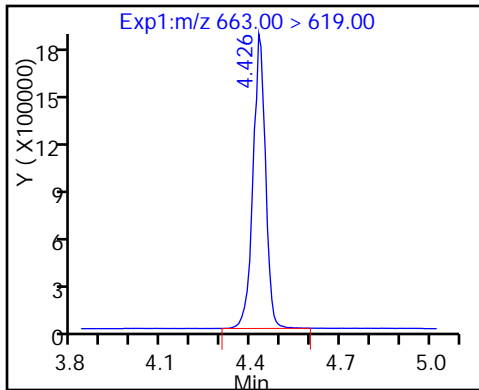
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

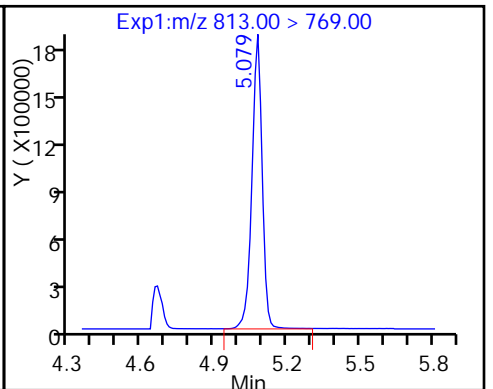
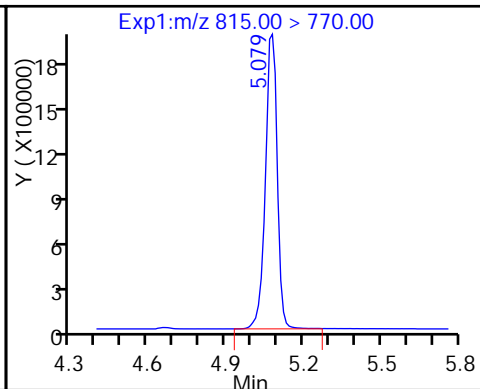
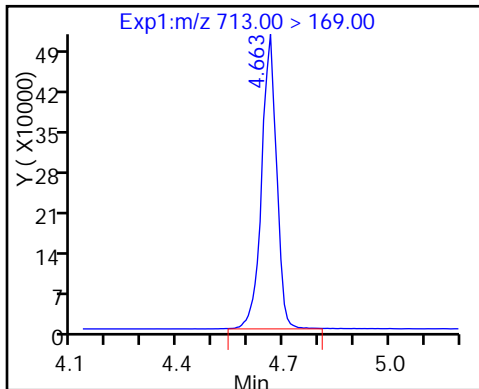
42 Perfluorotetradecanoic acid



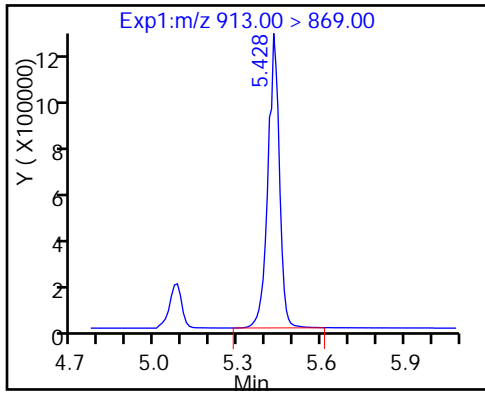
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

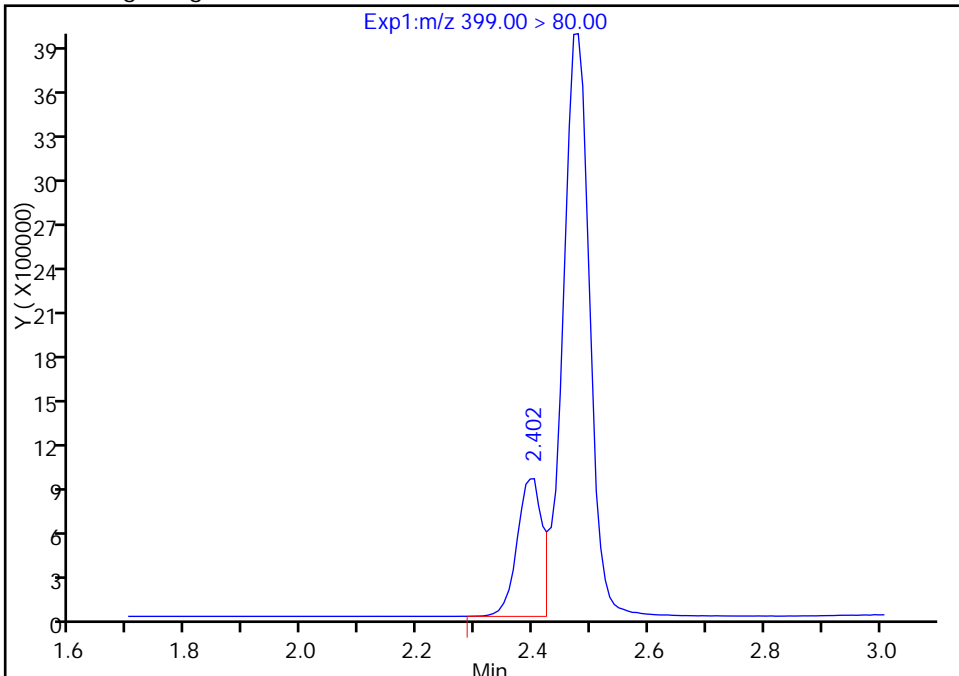
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_049.d
Injection Date: 11-Mar-2017 18:12:36 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 46
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

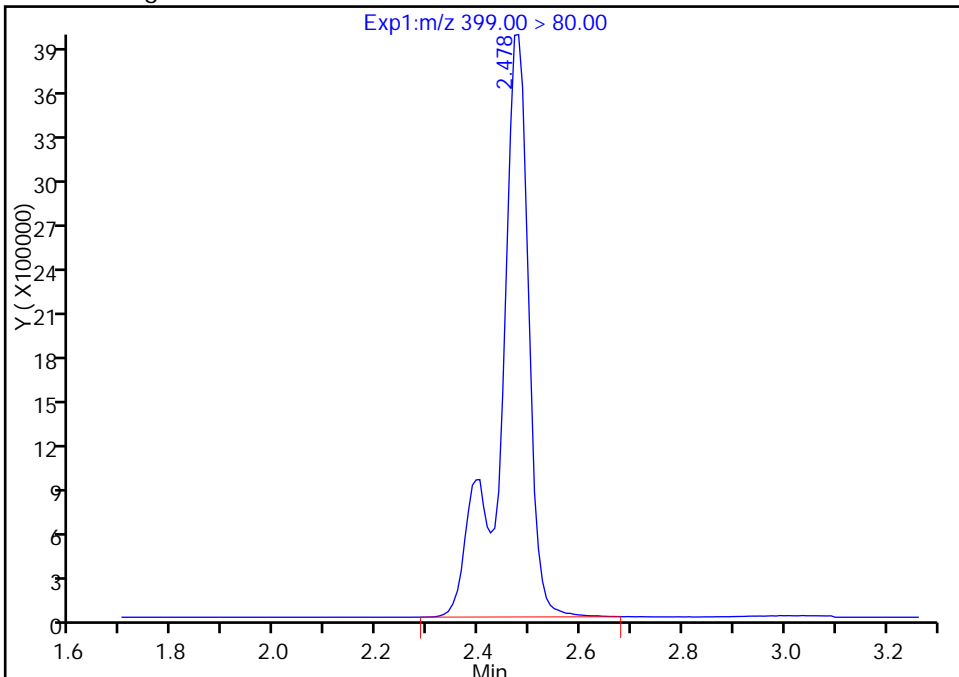
RT: 2.40
Area: 2752655
Amount: 8.391049
Amount Units: ng/ml

Processing Integration Results



RT: 2.48
Area: 15165760
Amount: 46.230504
Amount Units: ng/ml

Manual Integration Results



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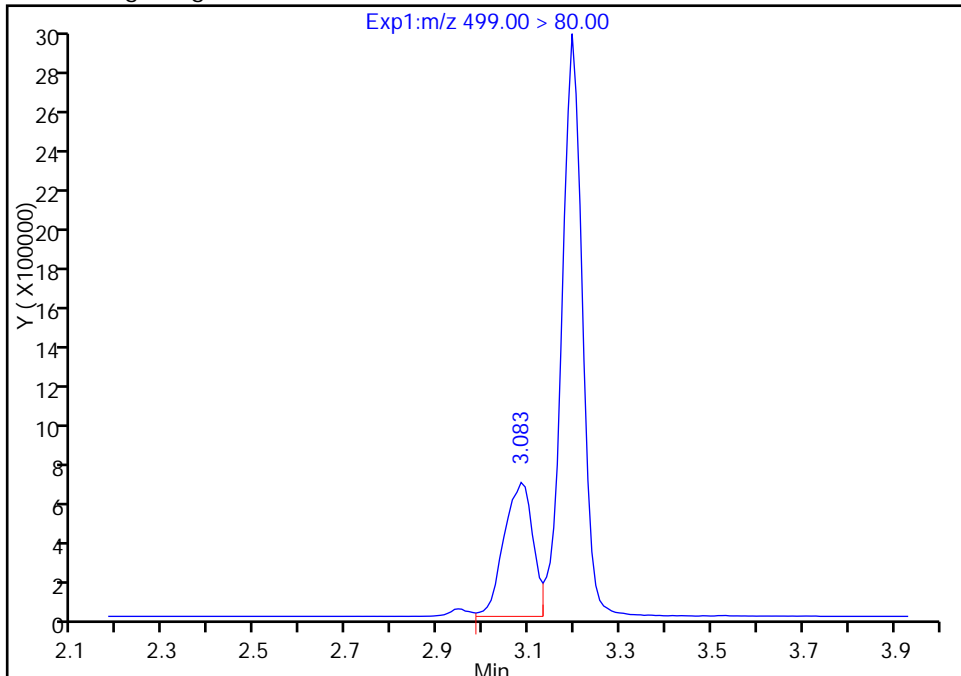
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_049.d
Injection Date: 11-Mar-2017 18:12:36 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 46
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

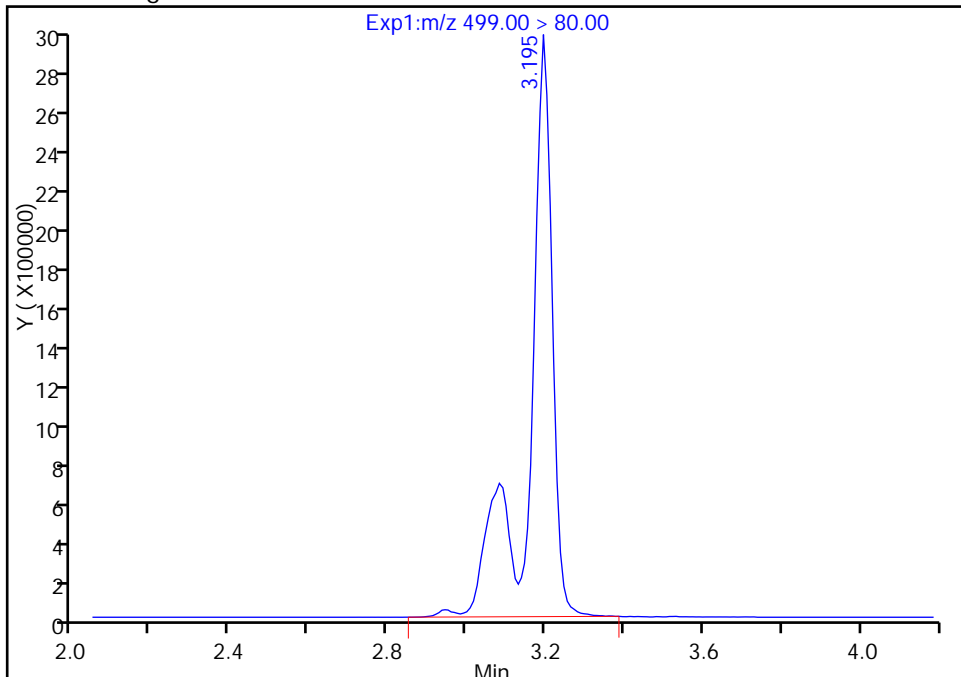
RT: 3.08
Area: 3018693
Amount: 11.731441
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 12309827
Amount: 47.839249
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 16-Mar-2017 08:14:49
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

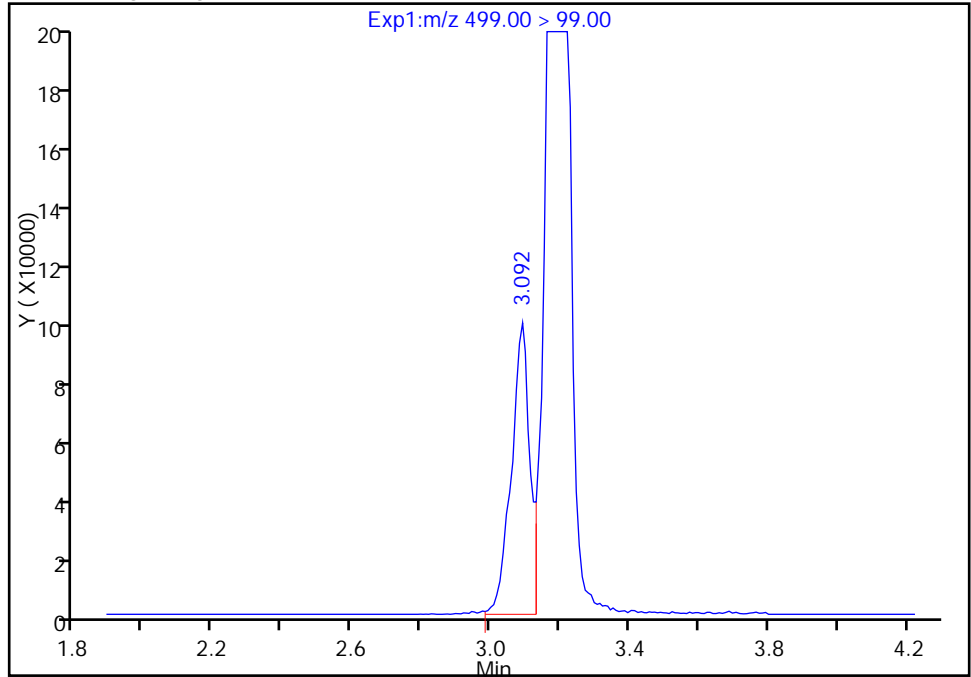
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_049.d
Injection Date: 11-Mar-2017 18:12:36 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 46
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

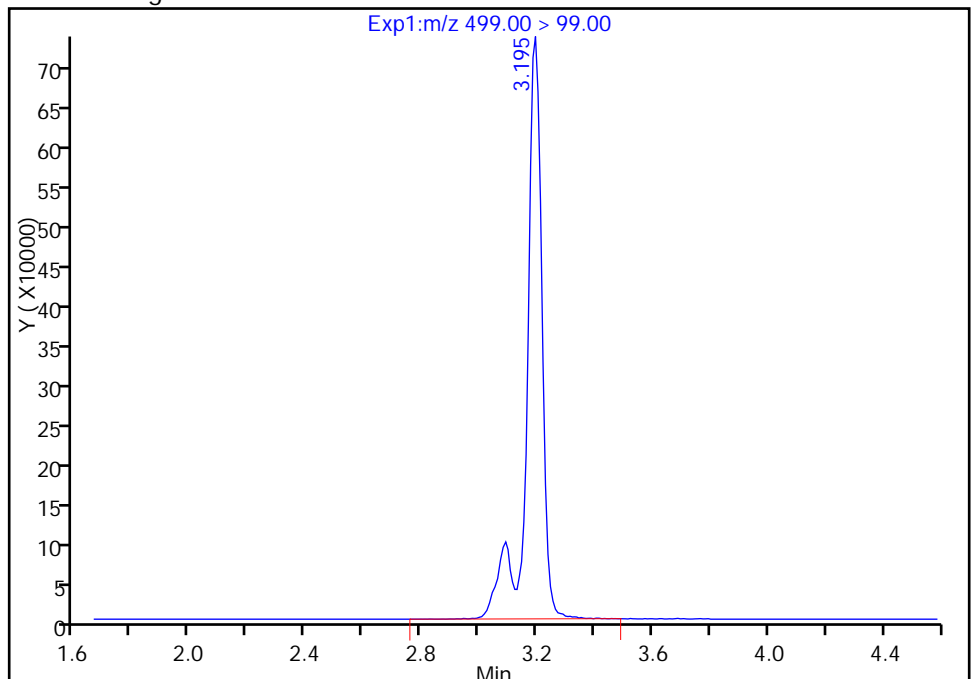
RT: 3.09
Area: 358091
Amount: 11.731441
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 2761246
Amount: 47.839249
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Mar-2017 08:15:02

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/48 Calibration Date: 03/11/2017 18:27
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8627		20.4	20.0	1.8	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9605		19.6	20.0	-1.8	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.453		17.9	17.7	1.4	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8613		19.4	20.0	-3.2	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9200		19.0	20.0	-4.9	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	0.9695		17.2	18.2	-5.7	25.0
6:2FTS	L2ID		0.9200		19.6	19.0	3.1	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.9795		19.2	20.0	-4.1	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.049		19.4	19.0	1.7	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.8736		19.3	20.0	-3.4	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9354		17.7	18.6	-4.9	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.8951		19.9	20.0	-0.4	25.0
8:2FTS	L2ID		0.9878		20.4	19.2	6.5	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8824		19.5	20.0	-2.6	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9544		19.7	20.0	-1.7	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5738		18.6	19.3	-3.7	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8734		19.2	20.0	-4.1	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.8990		17.7	20.0	-11.3	25.0
MeFOSA	AveID	0.9355	0.9051		19.4	20.0	-3.2	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	1.034		22.6	20.0	13.0	25.0
N-EtFOSA-M	AveID	0.9837	0.9682		19.7	20.0	-1.6	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9773		22.4	20.0	11.9	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.773		18.0	20.0	-9.8	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8501		18.0	20.0	-10.2	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6289		17.5	20.0	-12.3	25.0
13C4 PFBA	Ave	292242	326315		55.8	50.0	11.7	50.0
13C5-PFPeA	Ave	232192	254406		54.8	50.0	9.6	50.0
13C2 PFHxA	Ave	210884	240622		57.1	50.0	14.1	50.0
13C4-PFHpA	Ave	192959	221447		57.4	50.0	14.8	50.0
18O2 PFHxS	Ave	290899	327526		53.3	47.3	12.6	50.0
M2-6:2FTS	Ave	77178	99495		61.2	47.5	28.9	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154503/48 Calibration Date: 03/11/2017 18:27
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.11C_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	227140		55.4	50.0	10.8	50.0
13C4 PFOS	Ave	241637	263301		52.1	47.8	9.0	50.0
13C5 PFNA	Ave	177866	196825		55.3	50.0	10.7	50.0
13C8 FOSA	Ave	366918	388891		53.0	50.0	6.0	50.0
M2-8:2FTS	Ave	92602	104785		54.2	47.9	13.2	50.0
13C2 PFDA	Ave	166704	177784		53.3	50.0	6.6	50.0
d3-NMeFOSAA	Ave	85186	80737		47.4	50.0	-5.2	50.0
13C2 PFUnA	Ave	130805	131116		50.1	50.0	0.2	50.0
d5-NEtFOSAA	Ave	81371	82739		50.8	50.0	1.7	50.0
d-N-MeFOSA-M	Ave	87983	86538		49.2	50.0	-1.6	50.0
13C2 PFDoA	Ave	123944	102463		41.3	50.0	-17.3	50.0
d-N-EtFOSA-M	Ave	85249	79935		46.9	50.0	-6.2	50.0
13C2-PFTeDA	Ave	259165	228078		44.0	50.0	-12.0	50.0
13C2-PFHxDA	Ave	125061	102252		40.9	50.0	-18.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_051.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 11-Mar-2017 18:27:35 ALS Bottle#: 31 Worklist Smp#: 48
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 16-Mar-2017 08:15:38 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK016

First Level Reviewer: changnoit Date: 13-Mar-2017 14:09:28

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	1.530	1.530	0.0	16315760	55.8		112	869370	
2 Perfluorobutyric acid	212.90 > 169.00	1.530	1.530	0.0	1.000	5630322	20.4	102	41701	
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.811	0.0	12720297	54.8		110	696187	
4 Perfluoropentanoic acid	262.90 > 219.00	1.811	1.811	0.0	1.000	4886962	19.6	98.2	47383	
D 47 13C3-PFBS	301.90 > 83.00	1.841	1.841	0.0	318530	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.851	1.851	0.0	1.000	8412764	17.9	101		
	298.90 > 99.00	1.851	1.851	0.0	1.000	3402449	2.47(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.103	2.103	0.0	12031079	57.1		114	459650	
6 Perfluorohexanoic acid	313.00 > 269.00	2.103	2.103	0.0	1.000	4145141	19.4	96.8	108171	
D 9 13C4-PFHpA	367.00 > 322.00	2.446	2.446	0.0	11072325	57.4		115	267399	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.446	2.446	0.0	1.000	4074590	19.0	95.1	38487	
D 11 18O2 PFHxS	403.00 > 84.00	2.461	2.461	0.0	15491968	53.3		113	364861	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.461	2.461	0.0	1.000	5779405	17.2	94.3		M
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.773	2.773	0.0	1.000	1735445	19.6	103		M

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	2.773	2.773	0.0	4725997	61.2	129		
D 14 13C4 PFOA	417.00	> 372.00	2.811	2.811	0.0	11356995	55.4	111	369988	
15 Perfluorooctanoic acid	413.00	> 369.00	2.803	2.803	0.0	1.000	4449599	19.2	95.9	47431
	413.00	> 169.00	2.803	2.803	0.0	1.000	2601030	1.71(0.90-1.10)		102429
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.811	2.811	0.0	1.000	5257749	19.4	102	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.185	3.185	0.0	1.000	4571087	17.7	95.1	78089 M
	499.00	> 99.00	3.185	3.185	0.0	1.000	1035039	4.42(0.90-1.10)		97229 M
20 Perfluorononanoic acid	463.00	> 419.00	3.185	3.185	0.0	1.000	3438755	19.3	96.6	59921
D 18 13C4 PFOS	503.00	> 80.00	3.176	3.176	0.0		12585771	52.1	109	286123
D 19 13C5 PFNA	468.00	> 423.00	3.185	3.185	0.0		9841239	55.3	111	305694
D 21 13C8 FOSA	506.00	> 78.00	3.519	3.519	0.0		19444564	53.0	106	549908
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.527	3.527	0.0	1.000	6962259	19.9	99.6	215638
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.536	3.536	0.0	1.000	1983193	20.4	106	
D 26 M2-8:2FTS	529.00	> 509.00	3.536	3.536	0.0		5019191	54.2	113	
24 Perfluorodecanoic acid	513.00	> 469.00	3.544	3.544	0.0	1.000	3137522	19.5	97.4	110573
D 23 13C2 PFDA	515.00	> 470.00	3.544	3.544	0.0		8889183	53.3	107	189426
D 27 d3-NMeFOSAA	573.00	> 419.00	3.703	3.703	0.0		4036827	47.4	94.8	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.703	3.703	0.0	1.000	1541115	19.7	98.3	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.856	3.856	0.0	1.000	2912987	18.6	96.3	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.873	3.873	0.0		4136950	50.8	102	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.882	3.882	0.0	1.000	2357494	17.7	88.7	72997
D 30 13C2 PFUnA	565.00	> 520.00	3.873	3.873	0.0		6555820	50.1	100	208596
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.873	3.880	-0.007	1.000	1445302	19.2	95.9	
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.025	4.025	0.0		4326901	49.2	98.4	
35 MeFOSA	512.00	> 169.00	4.025	4.025	0.0	1.000	1566576	19.4	96.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid	613.00 > 569.00	4.170	4.170	0.0	1.000	2118480	22.6	113	21171	
D 36 13C2 PFDaA	615.00 > 570.00	4.163	4.164	-0.001		5123148	41.3	82.7	68706	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.205	4.205	0.0		3996743	46.9	93.8		
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.213	4.213	0.0	1.000	1547922	19.7	98.4		
41 Perfluorotridecanoic acid	663.00 > 619.00	4.437	4.437	0.0	1.000	2002794	22.4	112	37644	
D 43 13C2-PFTeDA	715.00 > 670.00	4.672	4.672	0.0		11403919	44.0	88.0	295948	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.672	4.672	0.0	1.000	3634103	18.0	90.2	24238	
	713.00 > 169.00	4.663	4.672	-0.009	0.998	573172		6.34(0.00-0.00)	65566	
D 44 13C2-PFHxDA	815.00 > 770.00	5.083	5.083	0.0		5112590	40.9	81.8	87432	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.083	5.083	0.0	1.000	1742068	18.0	89.8	1491	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.439	5.439	0.0	1.000	1288832	17.5	87.7	1679	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L4_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_051.d

Injection Date: 11-Mar-2017 18:27:35

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 31

Worklist Smp#: 48

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

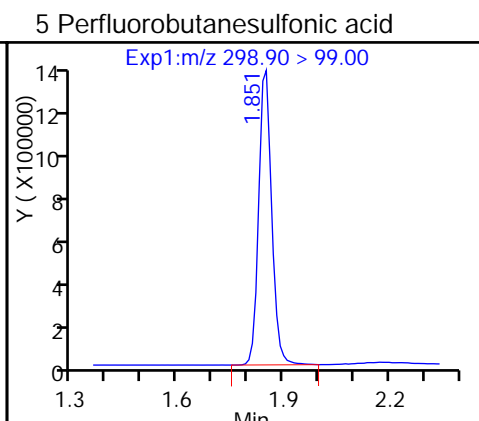
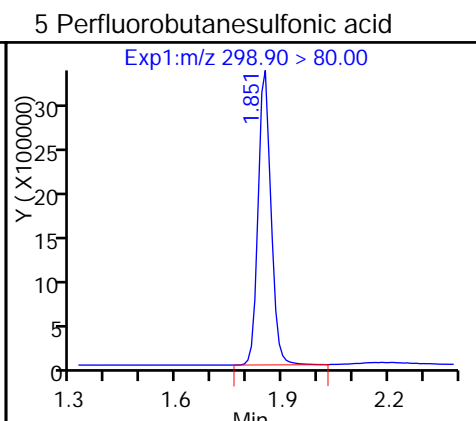
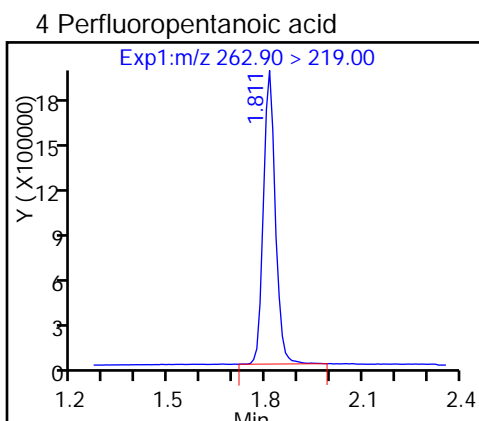
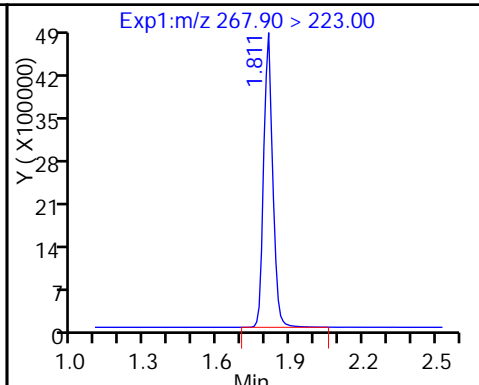
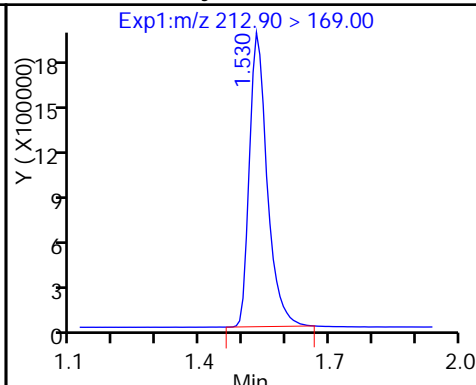
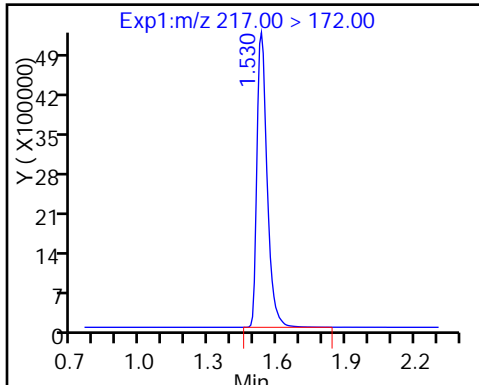
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

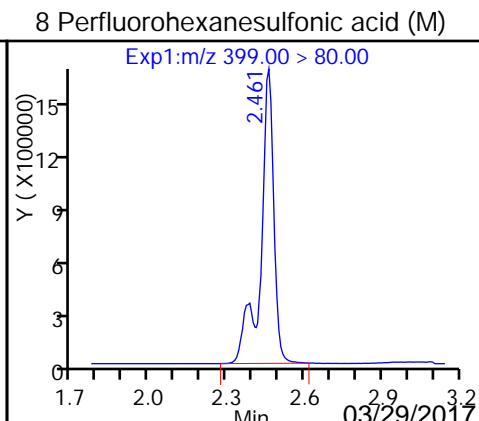
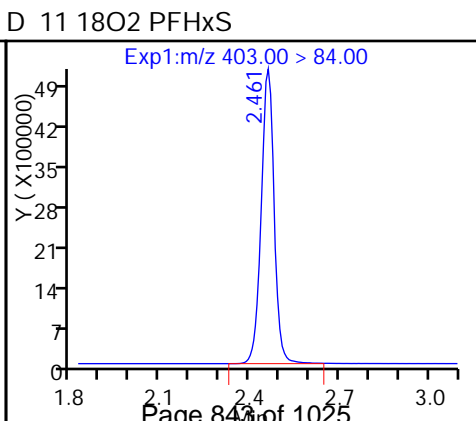
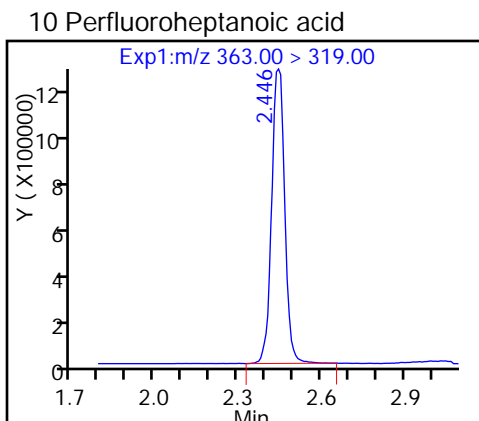
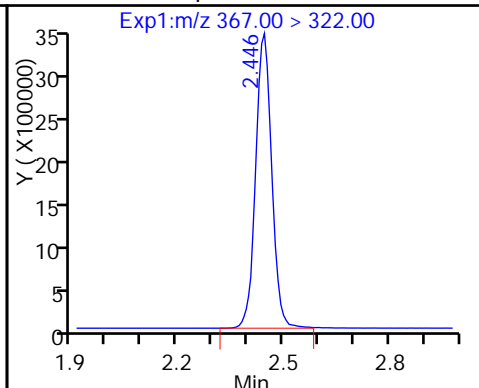
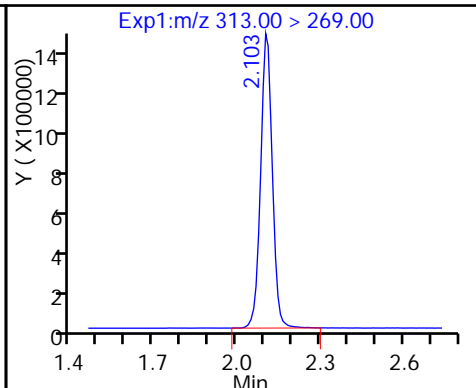
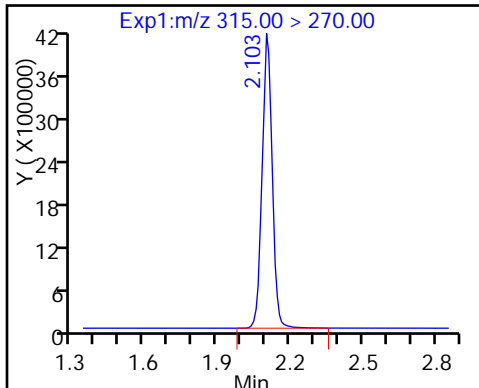
D 3 13C5-PFPeA



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

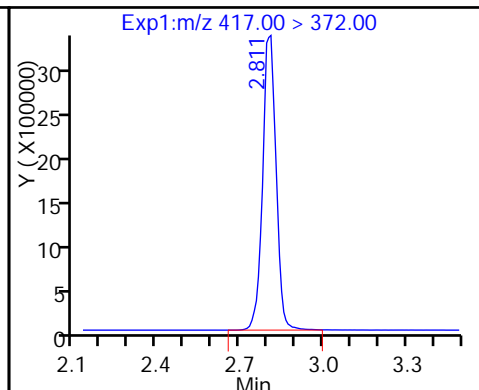
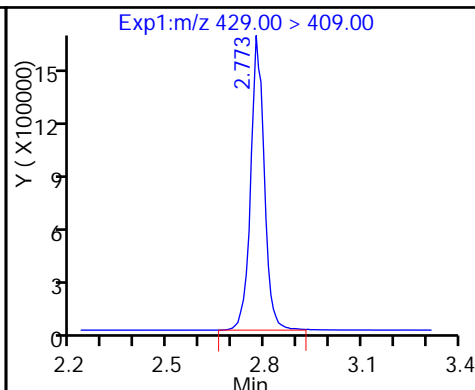
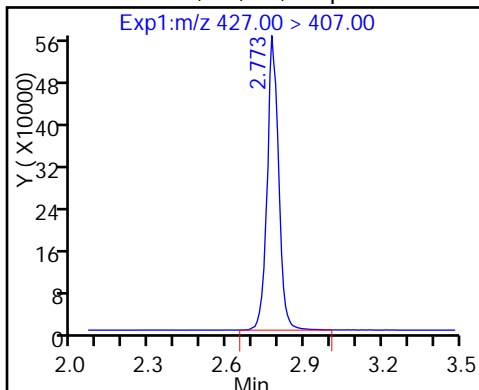
D 9 13C4-PFHpA



13 Sodium 1H,1H,2H,2H-perfluorooctanoate

D 12 M2-6:2FTS

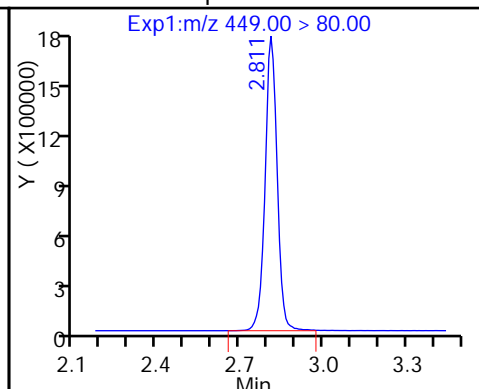
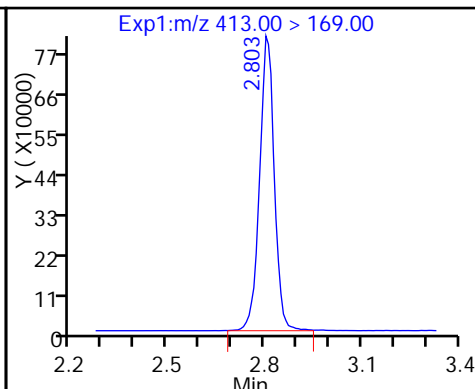
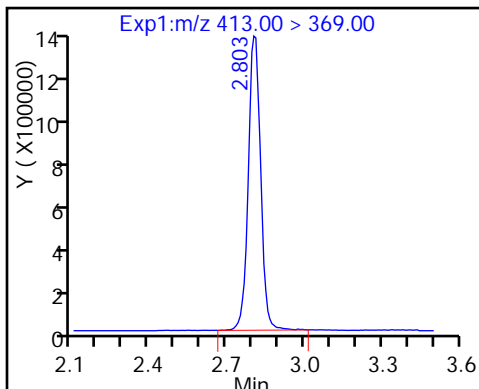
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

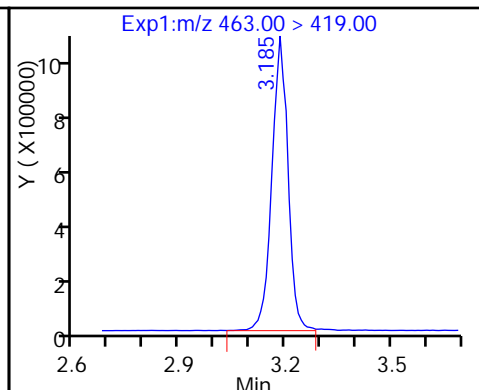
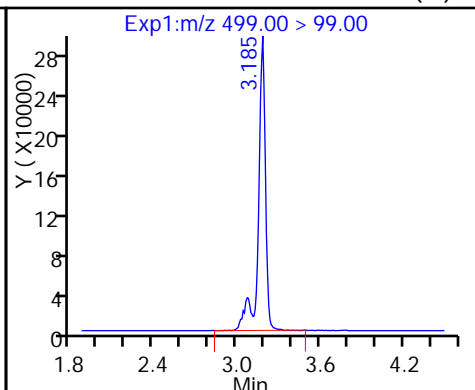
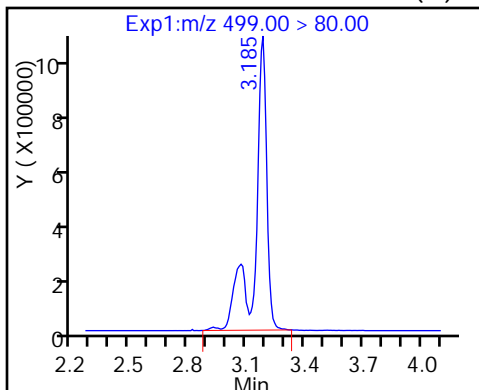
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

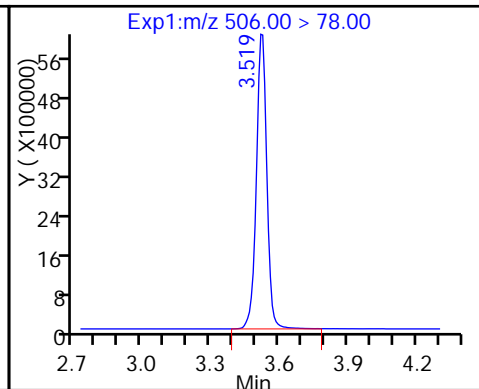
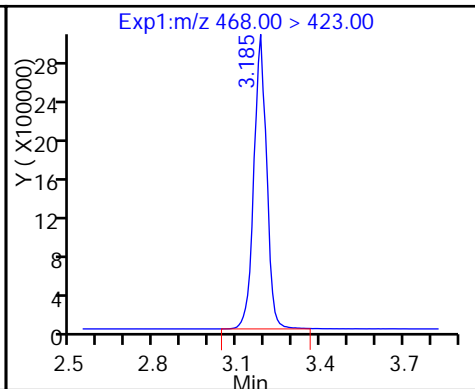
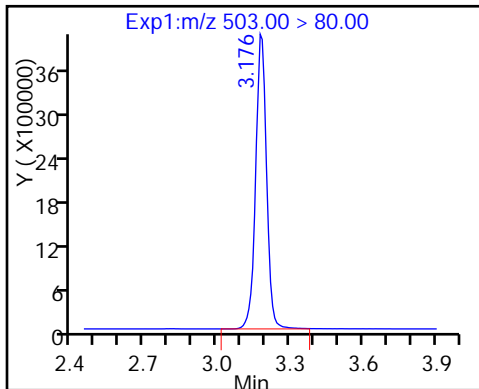
20 Perfluorononanoic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

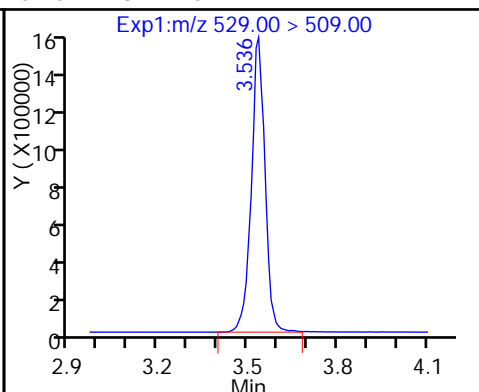
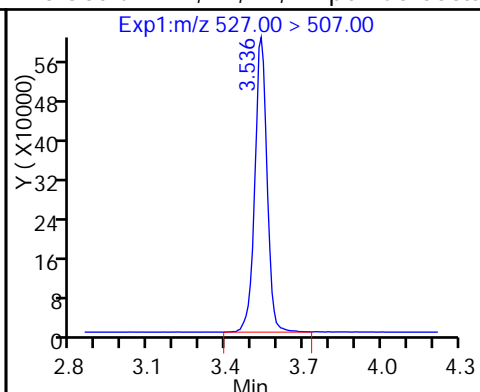
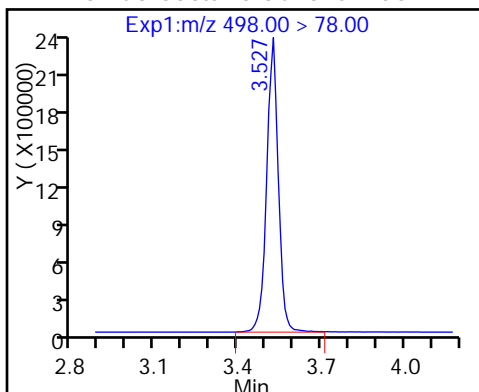
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

25 Sodium 1H,1H,2H,2H-perfluorooctane

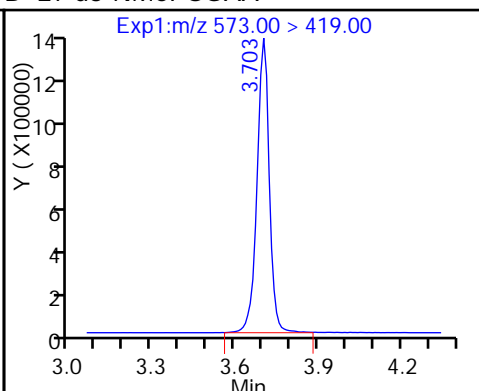
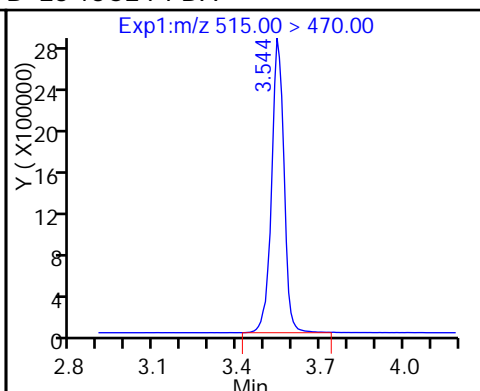
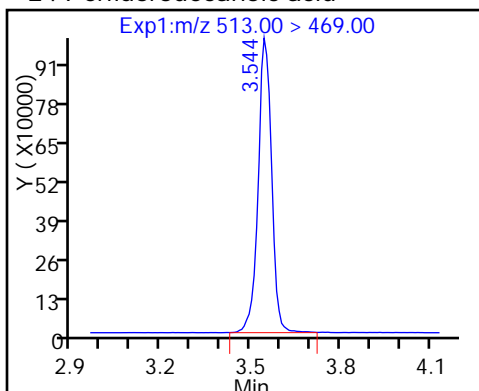
D 26 M2-8:2FTS



24 Perfluorodecanoic acid

D 23 13C2 PFDA

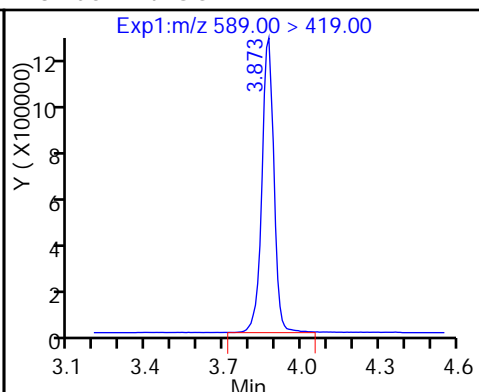
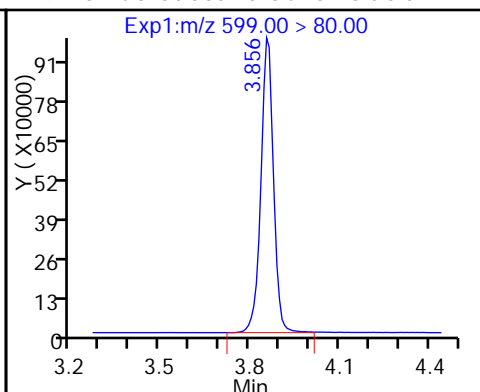
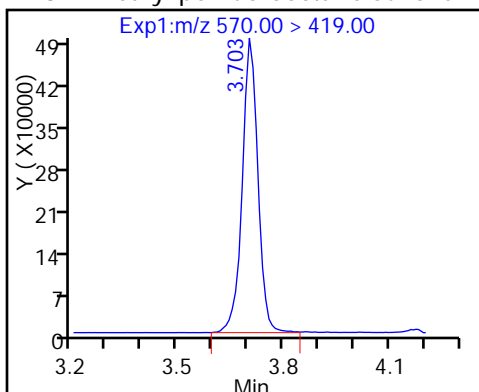
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

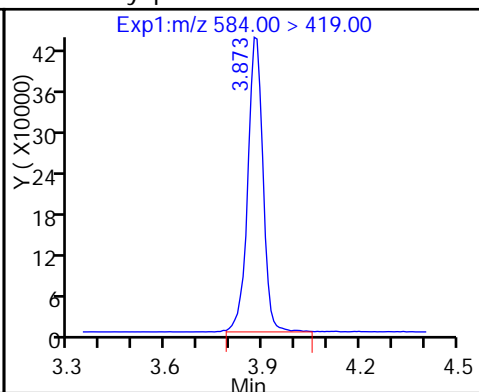
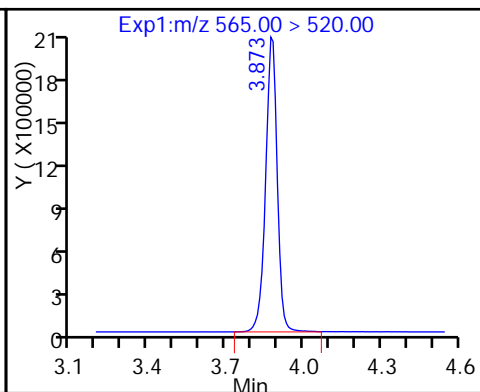
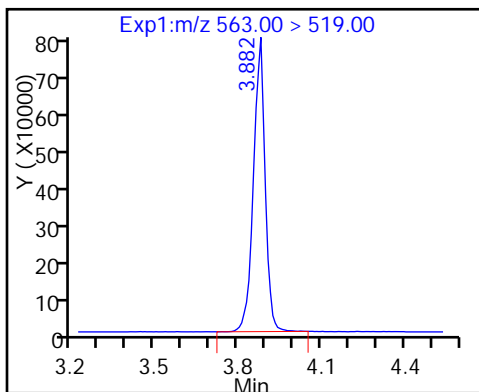
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

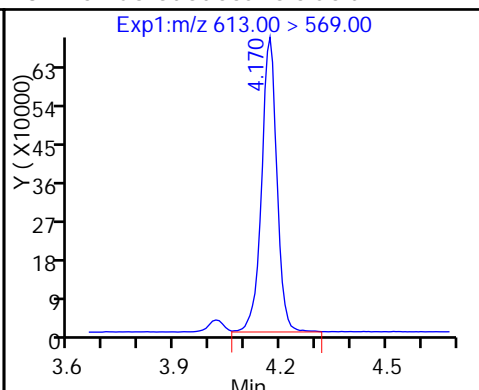
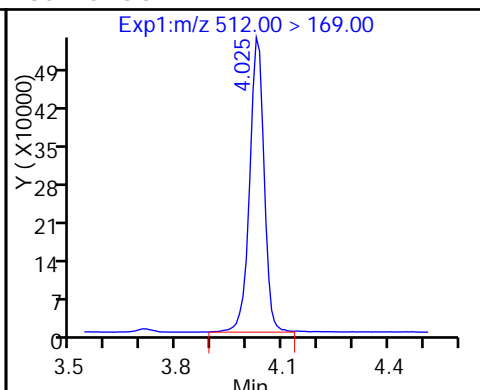
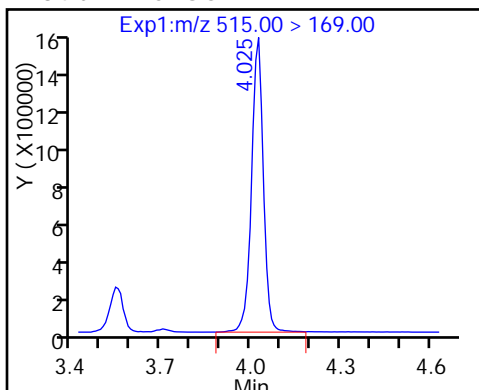
33 N-ethyl perfluorooctane sulfonamid



D 34 d-N-MeFOSA-M

35 MeFOSA

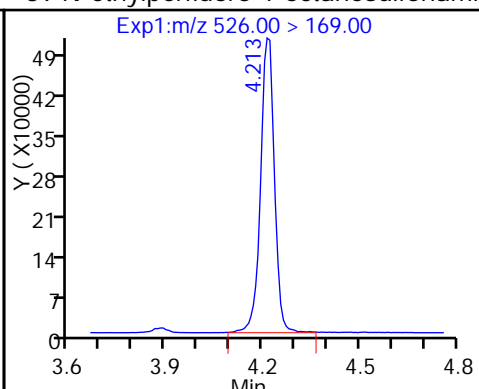
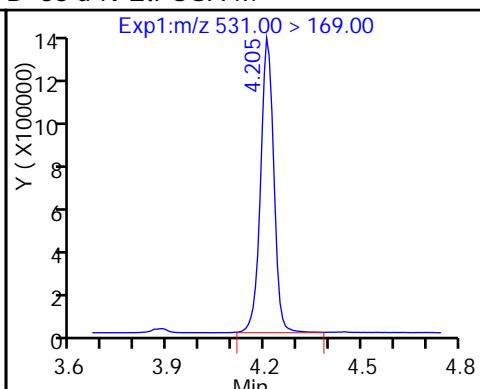
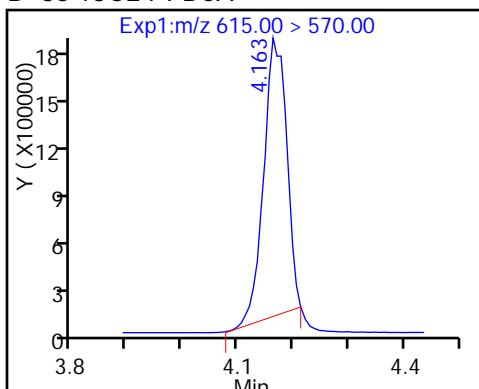
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

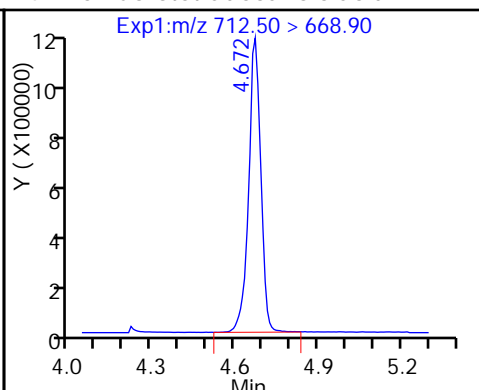
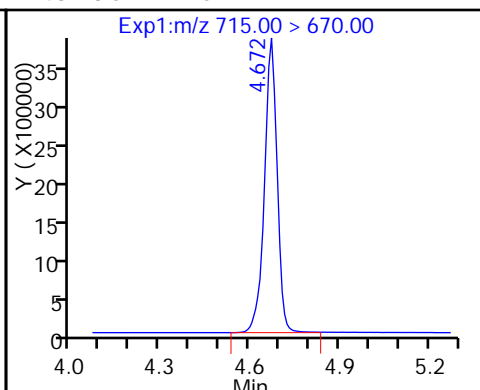
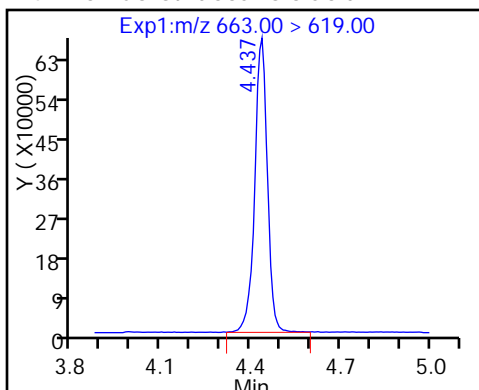
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

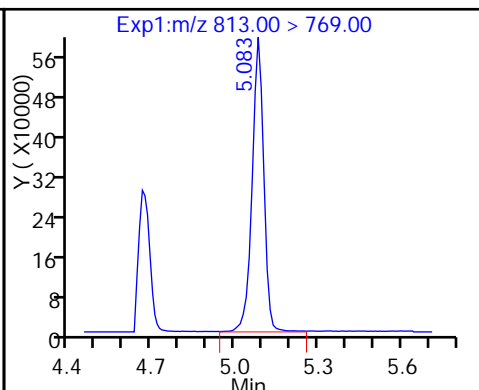
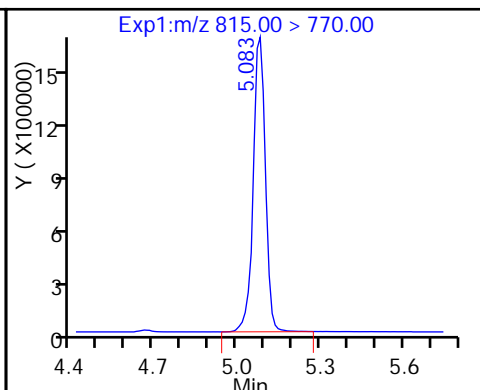
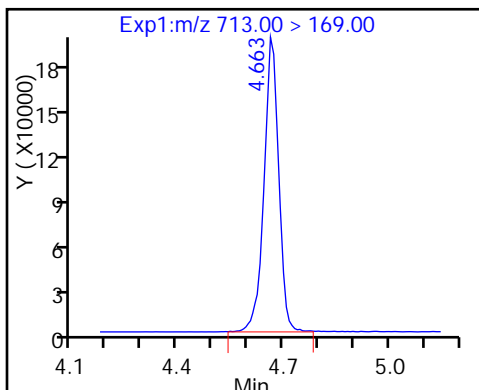
42 Perfluorotetradecanoic acid



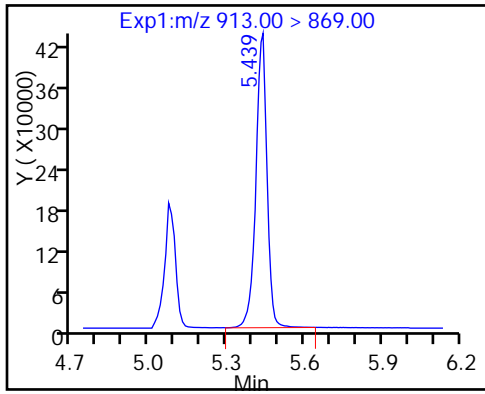
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

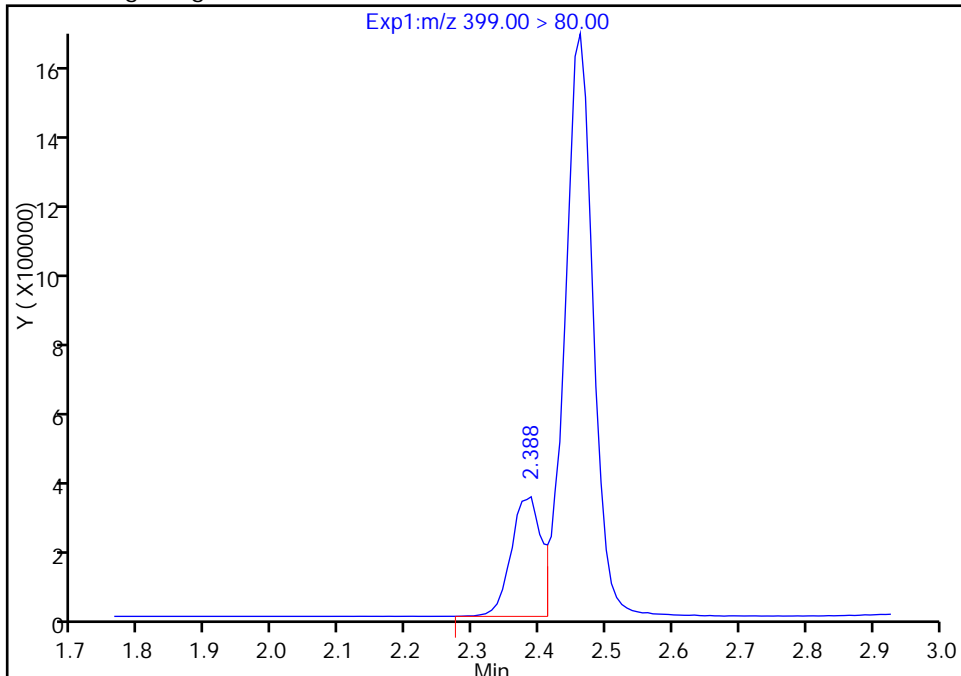
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Injection Date: 11-Mar-2017 18:27:35 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 48
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

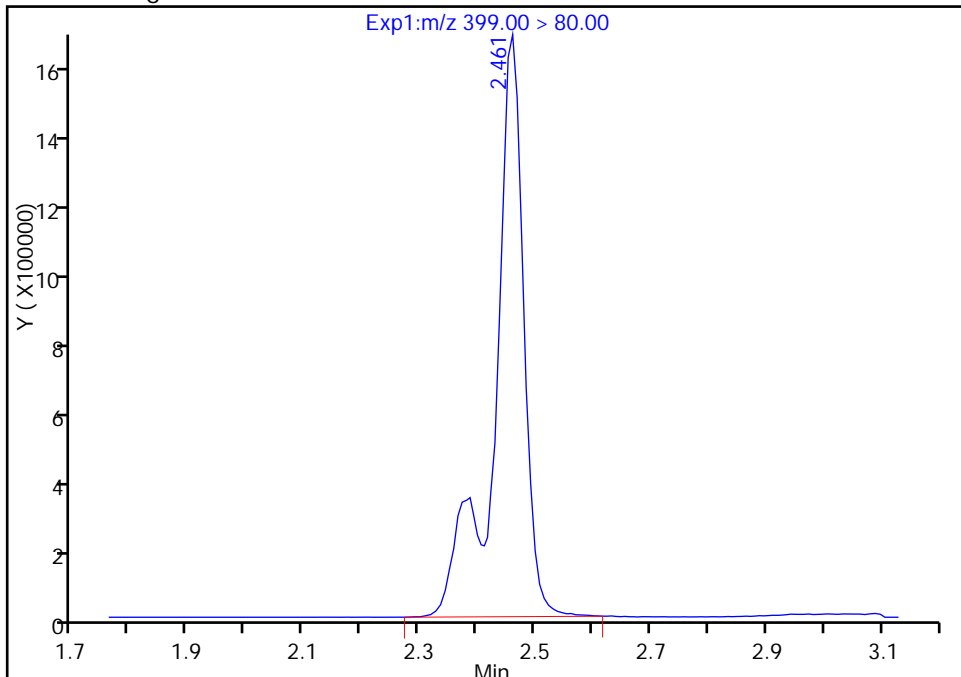
RT: 2.39
Area: 1046503
Amount: 3.106809
Amount Units: ng/ml

Processing Integration Results



RT: 2.46
Area: 5779405
Amount: 17.157629
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 16-Mar-2017 08:15:22
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

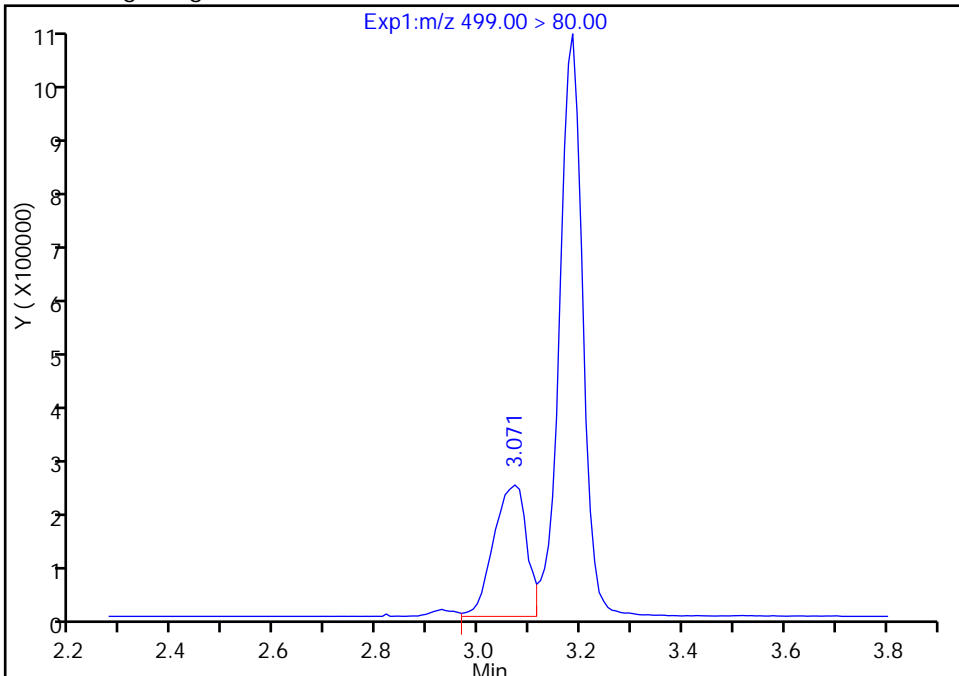
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Injection Date: 11-Mar-2017 18:27:35 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 48
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

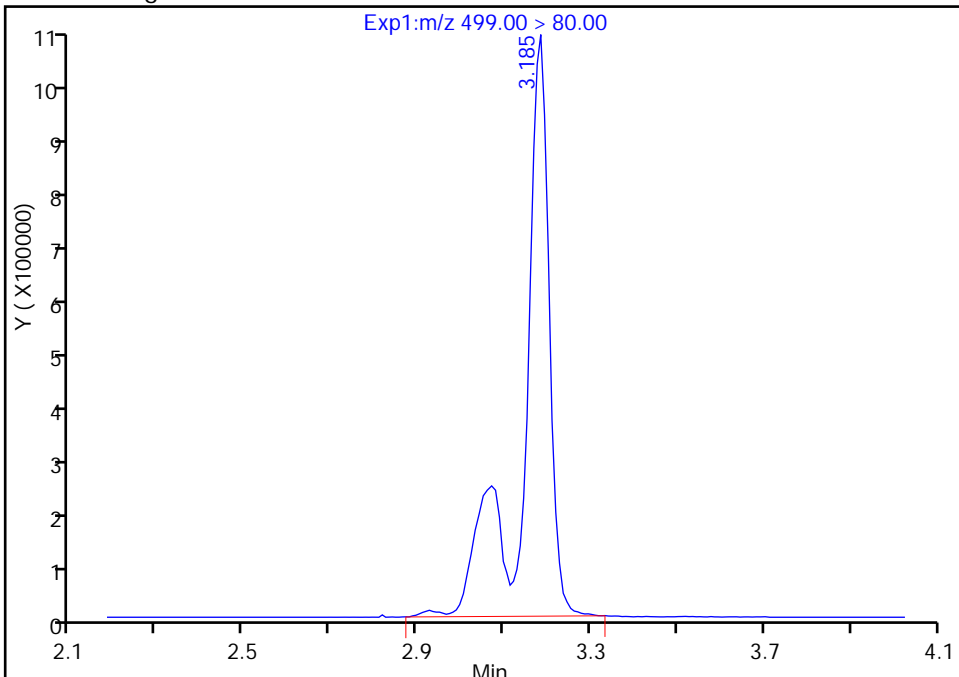
RT: 3.07
Area: 1104329
Amount: 4.264617
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 4571087
Amount: 17.652288
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 16-Mar-2017 08:15:22
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

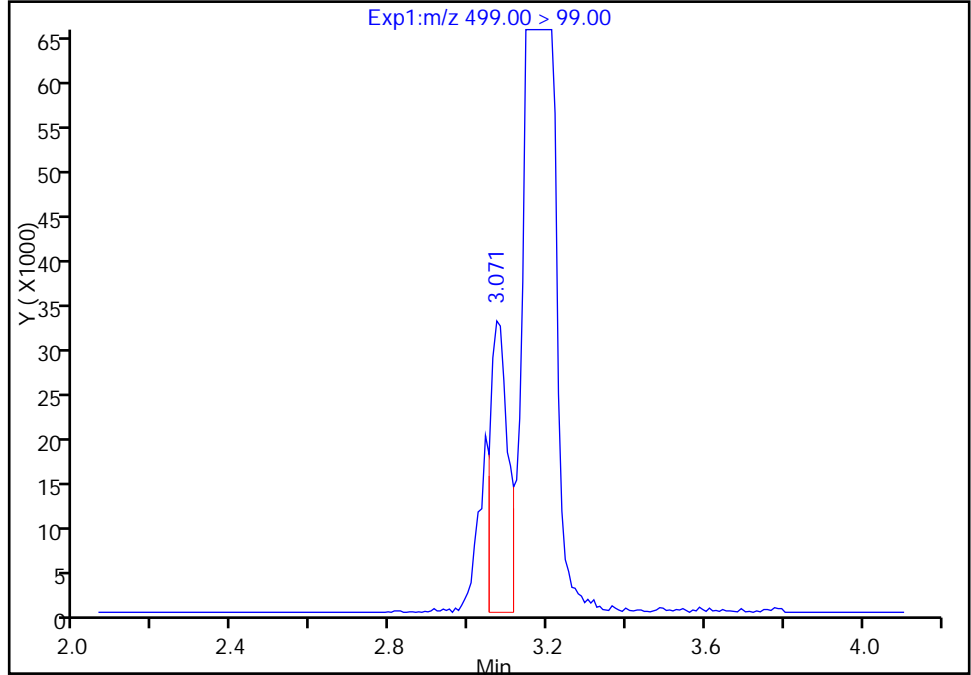
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Injection Date: 11-Mar-2017 18:27:35 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 48
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

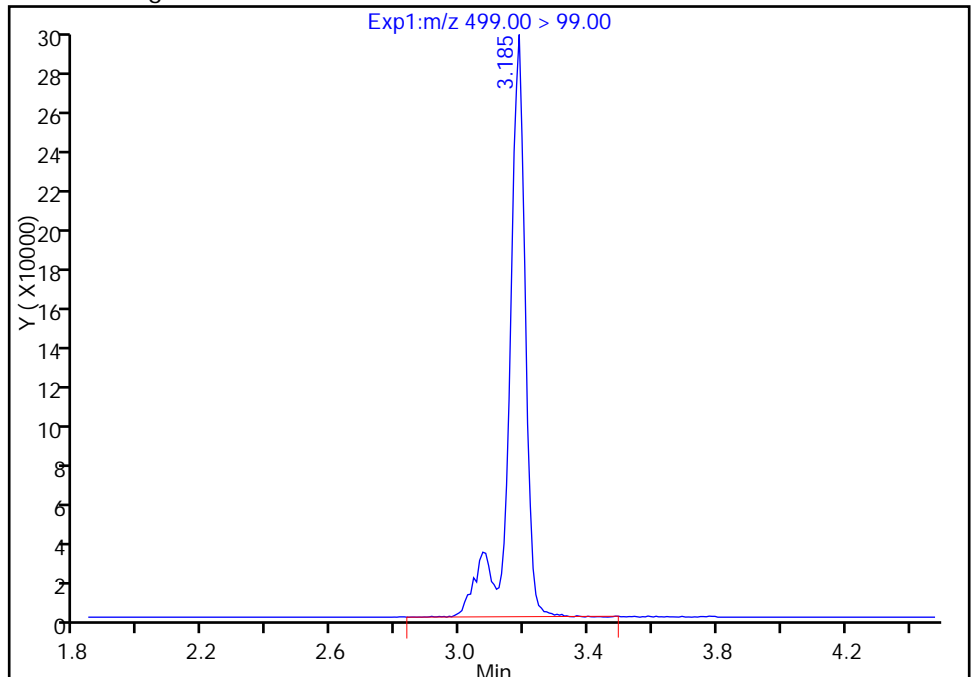
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Amount: 4.264617
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 1035039
Amount: 17.652288
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Mar-2017 08:15:27

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154721/1 Calibration Date: 03/13/2017 11:39
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.13A_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8548		1.01	1.00	0.9	50.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9878		1.01	1.00	0.9	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.428		0.881	0.884	-0.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8835		0.993	1.00	-0.7	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.139		1.01	0.910	10.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9326		0.964	1.00	-3.6	50.0
6:2FTS	L2ID		1.110		1.05	0.948	10.9	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.080		0.997	0.952	4.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.060		1.04	1.00	3.8	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9680		0.913	0.928	-1.6	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9701		1.07	1.00	7.3	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9296		1.03	1.00	3.5	50.0
8:2FTS	L2ID		0.995		0.947	0.958	-1.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8631		0.953	1.00	-4.7	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9686		0.997	1.00	-0.3	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5616		0.909	0.964	-5.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8721		0.958	1.00	-4.2	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	1.013		0.999	1.00	-0.0	50.0
MeFOSA	AveID	0.9355	0.9062		0.969	1.00	-3.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9118		0.997	1.00	-0.3	50.0
N-EtFOSA-M	AveID	0.9837	1.007		1.02	1.00	2.4	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8365		0.958	1.00	-4.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.570		0.799	1.00	-20.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.210		0.929	1.00	-7.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.5659		0.789	1.00	-21.1	50.0
13C4 PFBA	Ave	292242	326619		55.9	50.0	11.8	50.0
13C5-PFPeA	Ave	232192	251482		54.2	50.0	8.3	50.0
13C2 PFHxA	Ave	210884	231453		54.9	50.0	9.8	50.0
13C4-PFHpA	Ave	192959	218978		56.7	50.0	13.5	50.0
18O2 PFHxS	Ave	290899	323162		52.5	47.3	11.1	50.0
M2-6:2FTS	Ave	77178	81021		49.9	47.5	5.0	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154721/1 Calibration Date: 03/13/2017 11:39
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.13A_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	226607		55.3	50.0	10.6	50.0
13C4 PFOS	Ave	241637	255512		50.5	47.8	5.7	50.0
13C5 PFNA	Ave	177866	189926		53.4	50.0	6.8	50.0
13C8 FOSA	Ave	366918	394670		53.8	50.0	7.6	50.0
M2-8:2FTS	Ave	92602	98350		50.9	47.9	6.2	50.0
13C2 PFDA	Ave	166704	181034		54.3	50.0	8.6	50.0
d3-NMeFOSAA	Ave	85186	83564		49.0	50.0	-1.9	50.0
13C2 PFUnA	Ave	130805	135858		51.9	50.0	3.9	50.0
d5-NEtFOSAA	Ave	81371	89142		54.8	50.0	9.5	50.0
d-N-MeFOSA-M	Ave	87983	80229		45.6	50.0	-8.8	50.0
13C2 PFDoA	Ave	123944	123129		49.7	50.0	-0.7	50.0
d-N-EtFOSA-M	Ave	85249	77508		45.5	50.0	-9.1	50.0
13C2-PFTeDA	Ave	259165	218064		42.1	50.0	-15.9	50.0
13C2-PFHxDA	Ave	125061	99184		39.7	50.0	-20.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170313-40786.b\2017.03.13A_004.d
 Lims ID: CCV L2
 Client ID:
 Sample Type: CCVL
 Inject. Date: 13-Mar-2017 11:39:35 ALS Bottle#: 29 Worklist Smp#: 1
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170313-40786.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 14-Mar-2017 11:32:00 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK022

First Level Reviewer: changnoit Date: 14-Mar-2017 11:31:59

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	1.547	1.547	0.0	1.000	279192	1.01	101	2099	M
D 1 13C4 PFBA	217.00 > 172.00	1.547	1.547	0.0		16330941	55.9	112	1082790	
D 3 13C5-PFPeA	267.90 > 223.00	1.832	1.832	0.0		12574084	54.2	108	657450	
4 Perfluoropentanoic acid	262.90 > 219.00	1.832	1.832	0.0	1.000	248420	1.01	101	2075	
D 47 13C3-PFBS	301.90 > 83.00	1.862	1.862	0.0		305623	NC			
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.872	1.872	0.0	1.000	407930	0.8812	99.7		
	298.90 > 99.00	1.872	1.872	0.0	1.000	162983	2.50(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.130	2.130	0.0		11572666	54.9	110	425565	
6 Perfluorohexanoic acid	313.00 > 269.00	2.130	2.130	0.0	1.000	204483	0.99	99.3	6524	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.459	2.459	0.0	1.000	335008	1.01	111		
10 Perfluoroheptanoic acid	363.00 > 319.00	2.475	2.475	0.0	1.000	204210	0.9641	96.4	2318	
D 9 13C4-PFHpA	367.00 > 322.00	2.475	2.475	0.0		10948919	56.7	113	415467	
D 11 18O2 PFHxS	403.00 > 84.00	2.491	2.491	0.0		15285545	52.5	111	389699	
D 12 M2-6:2FTS	429.00 > 409.00	2.809	2.809	0.0		3848509	49.9	105		

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	2.817	2.817	0.0	1.000	85220	1.05	111	
D 14 13C4 PFOA	417.00	> 372.00	2.833	2.833	0.0		11330340	55.3	111	357830
15 Perfluorooctanoic acid	413.00	> 369.00	2.848	2.848	0.0	1.000	240252	1.04	104	2533
	413.00	> 169.00	2.841	2.848	-0.007	0.997	137909	1.74(0.90-1.10)		5302
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.848	2.848	0.0	1.000	262614	1.00	105	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.097	3.097	0.0	1.000	229521	0.9134	98.4	4073
	499.00	> 99.00	3.175	3.097	0.078	1.025	52265	4.39(0.90-1.10)		724
D 18 13C4 PFOS	503.00	> 80.00	3.218	3.218	0.0		12213466	50.5	106	552911
20 Perfluorononanoic acid	463.00	> 419.00	3.218	3.218	0.0	1.000	184245	1.07	107	3213
D 19 13C5 PFNA	468.00	> 423.00	3.218	3.218	0.0		9496306	53.4	107	314093
D 21 13C8 FOSA	506.00	> 78.00	3.536	3.536	0.0		19733497	53.8	108	495915
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.536	3.536	0.0	1.000	366901	1.03	103	32339
D 26 M2-8:2FTS	529.00	> 509.00	3.570	3.570	0.0		4710980	50.9	106	
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.561	3.561	0.0	0.998	93765	0.9472	98.9	
D 23 13C2 PFDA	515.00	> 470.00	3.578	3.578	0.0		9051703	54.3	109	178590
24 Perfluorodecanoic acid	513.00	> 469.00	3.570	3.570	0.0	1.000	156257	0.9531	95.3	4666
D 27 d3-NMeFOSAA	573.00	> 419.00	3.734	3.734	0.0		4178185	49.0	98.1	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.734	3.734	0.0	1.000	80943	1.00	99.7	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.886	3.886	0.0	1.000	138317	0.9088	94.3	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.903	3.903	0.0		4457105	54.8	110	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.903	3.903	0.0	1.000	137580	1.00	99.9	4518
D 30 13C2 PFUnA	565.00	> 520.00	3.903	3.903	0.0		6792880	51.9	104	173802
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.020	4.020	0.0		4011460	45.6	91.2	
35 MeFOSA	512.00	> 169.00	4.029	4.029	0.0	1.000	72701	0.9686	96.9	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.903	3.903	0.0	1.000	77738	0.9580	95.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.197	4.197	0.0		6156425	49.7		99.3	149202	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.197	4.197	0.0	1.000	112273	1.00		99.7	679	
D 38 d-N-EtFOSA-M										
531.00 > 169.00	4.203	4.203	0.0		3875386	45.5		90.9		
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.211	4.211	0.0	1.000	78075	1.02		102		
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.469	4.469	0.0	1.000	103001	0.9578		95.8	1595	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.713	4.713	0.0		10903199	42.1		84.1	268289	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.713	4.713	0.0	1.000	193351	0.7985		79.9	134	
713.00 > 169.00	4.705	4.713	-0.008	0.998	31882		6.06(0.00-0.00)		10983	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.134	5.134	0.0		4959213	39.7		79.3	83565	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.134	5.134	0.0	1.000	149004	0.9289		92.9	152	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.500	5.500	0.0	1.000	69680	0.7887		78.9	80.0	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L2_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170313-40786.b\2017.03.13A_004.d

Injection Date: 13-Mar-2017 11:39:35

Instrument ID: A8_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 29

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

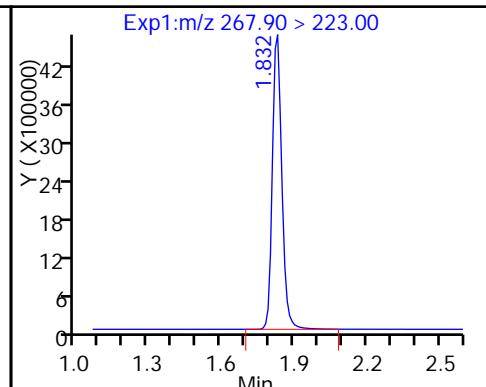
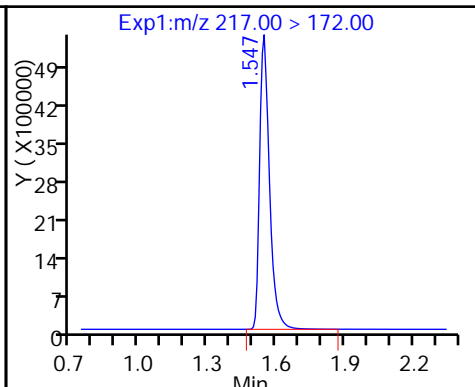
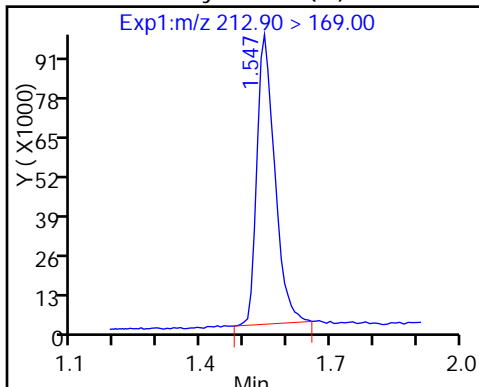
Method: A8_N

Limit Group: LC PFC_DOD ICAL

2 Perfluorobutyric acid (M)

D 1 13C4 PFBA

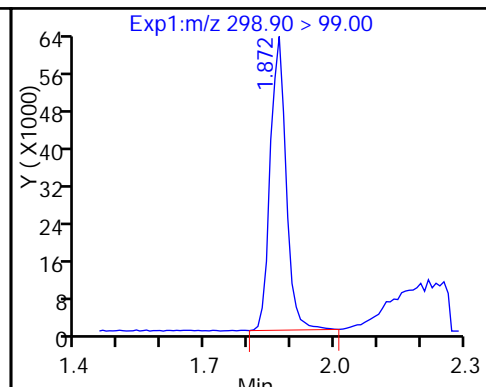
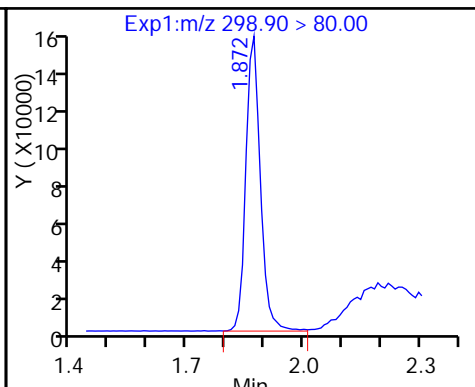
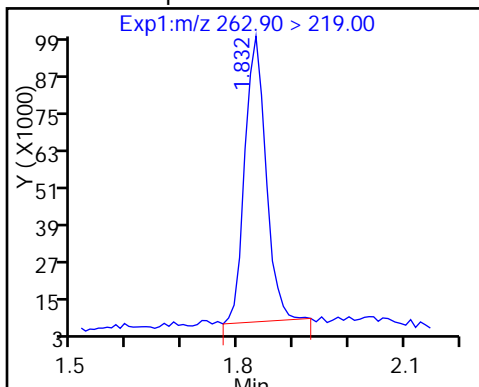
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

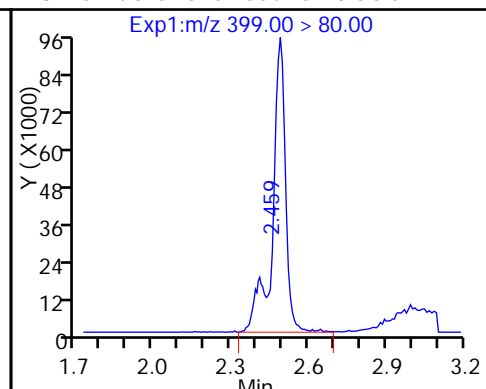
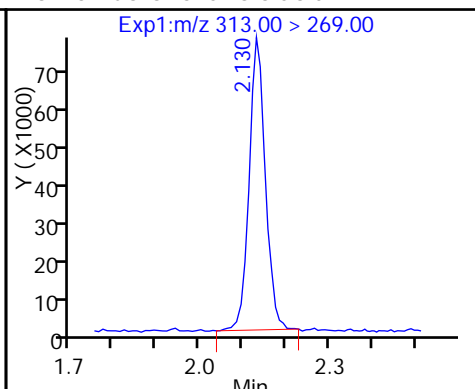
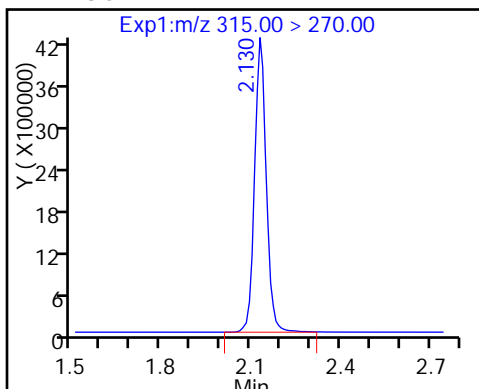
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

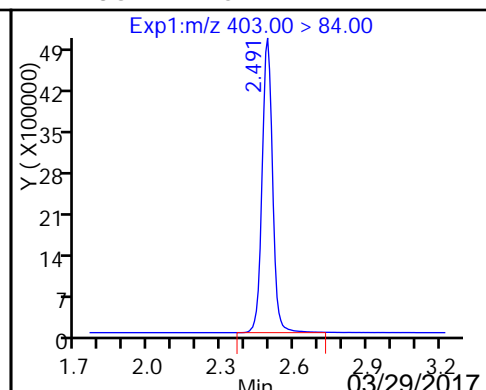
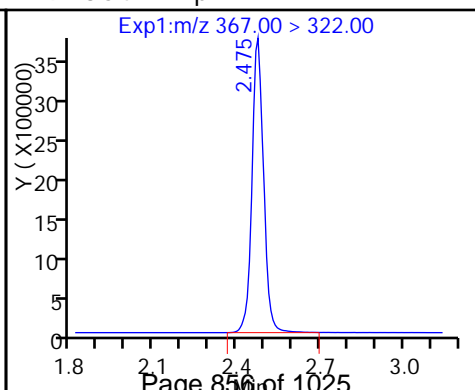
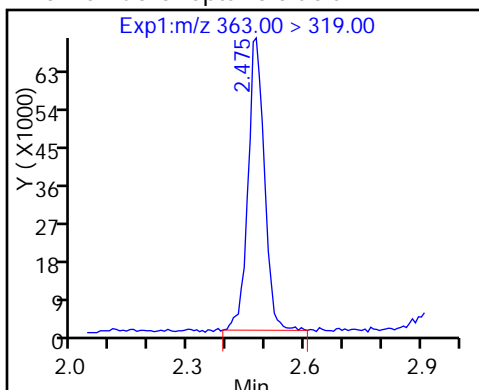
8 Perfluorohexanesulfonic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

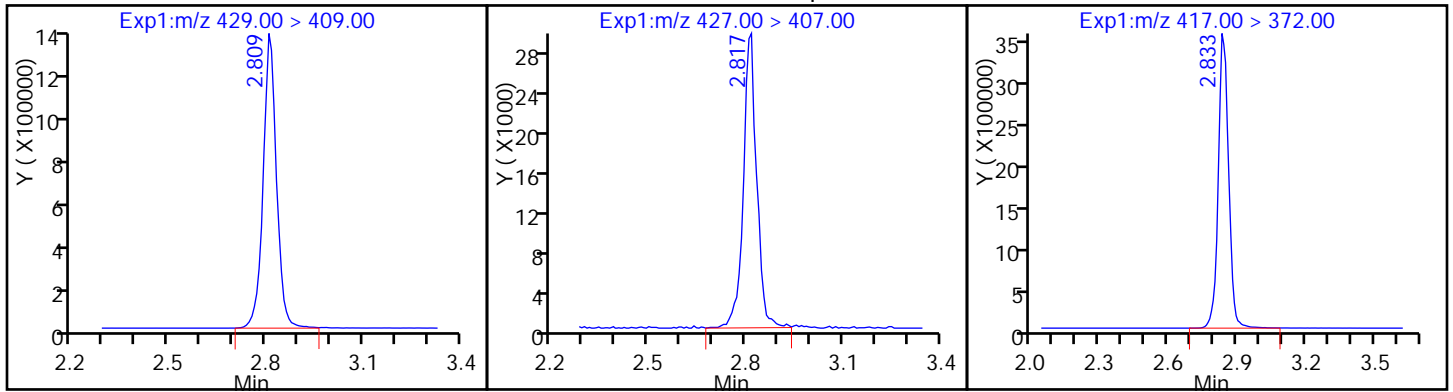
D 11 18O2 PFHxS



D 12 M2-6:2FTS

13 Sodium 1H,1H,2H,2H-perfluorooctanoate

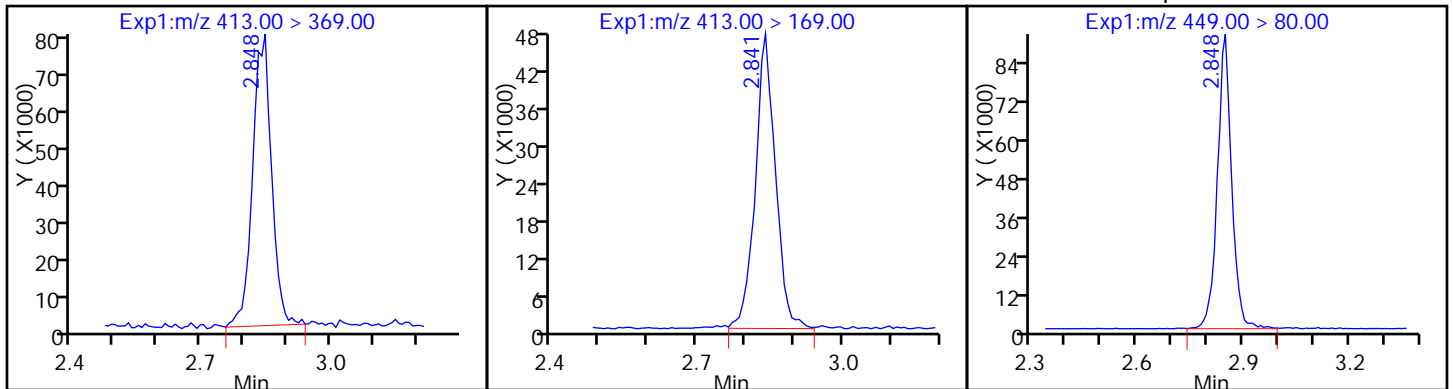
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

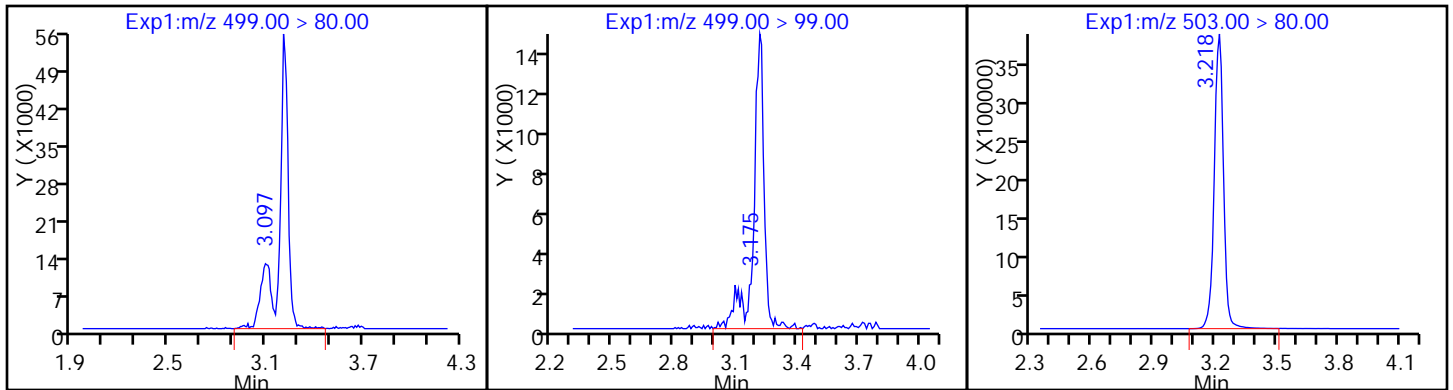
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

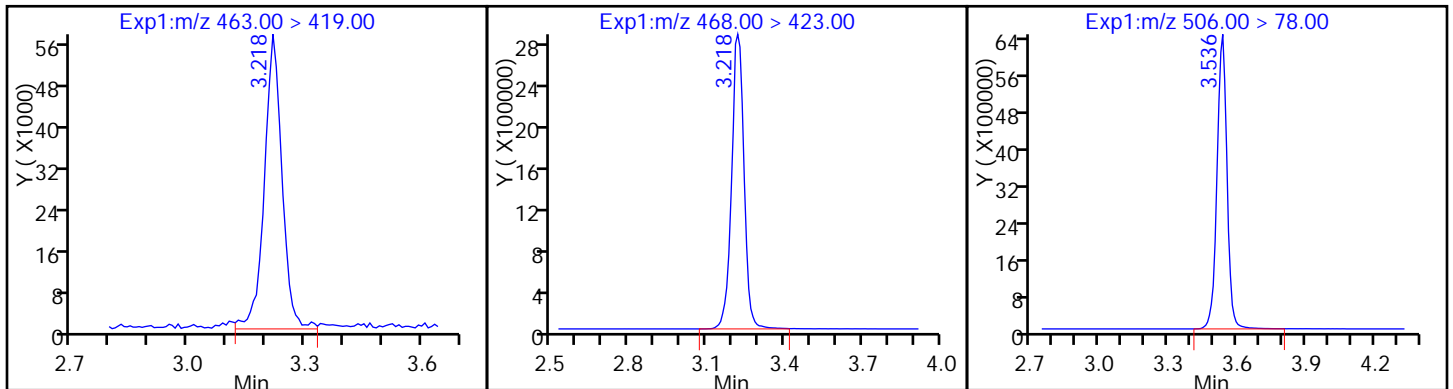
D 18 13C4 PFOS



20 Perfluorononanoic acid

D 19 13C5 PFNA

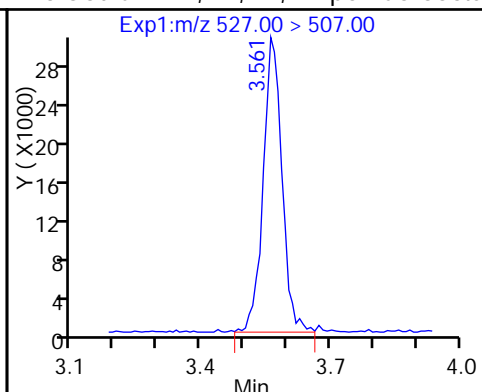
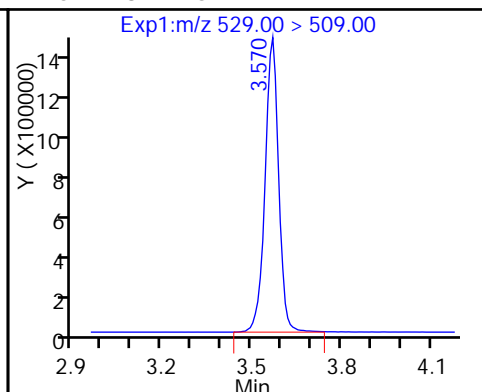
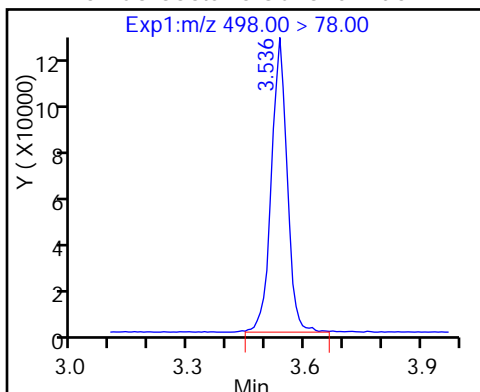
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

D 26 M2-8:2FTS

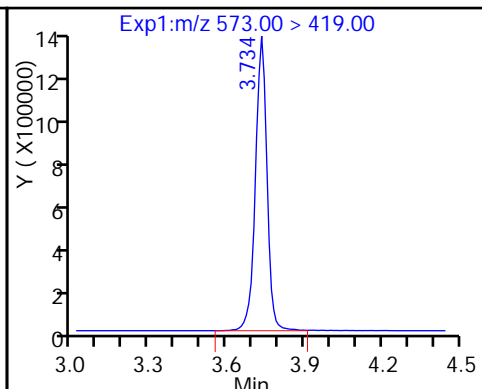
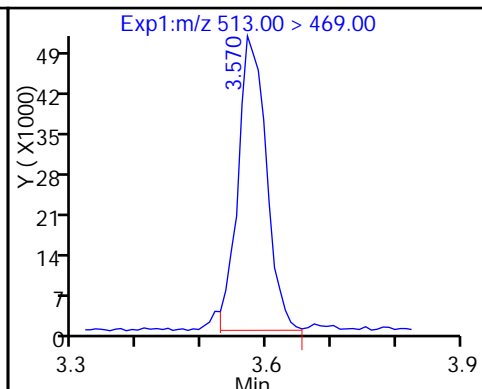
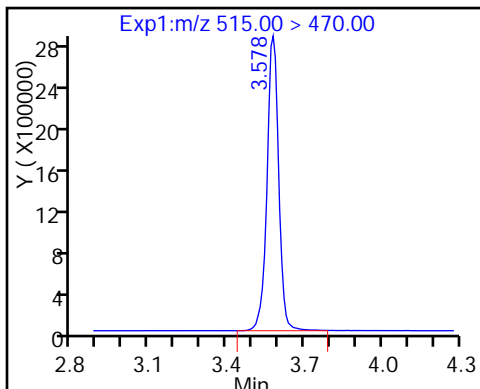
25 Sodium 1H,1H,2H,2H-perfluorooctane



D 23 13C2 PFDA

24 Perfluorodecanoic acid

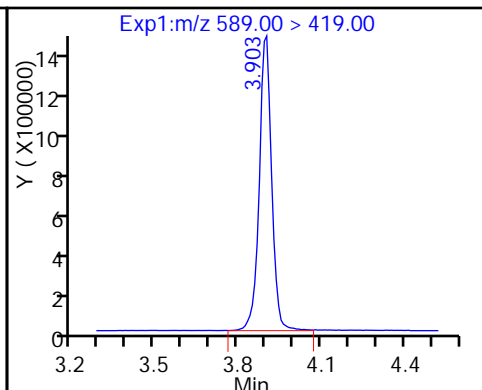
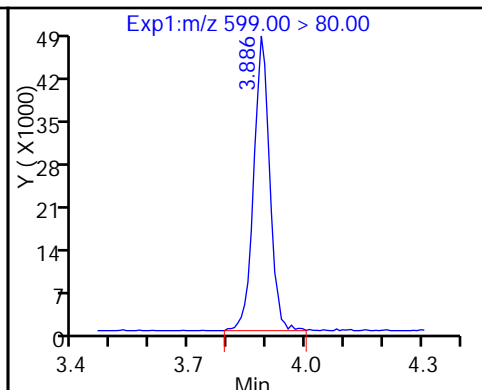
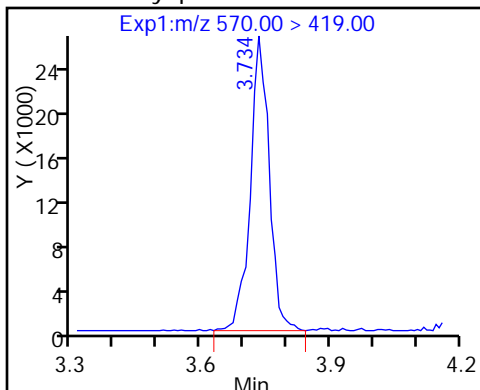
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

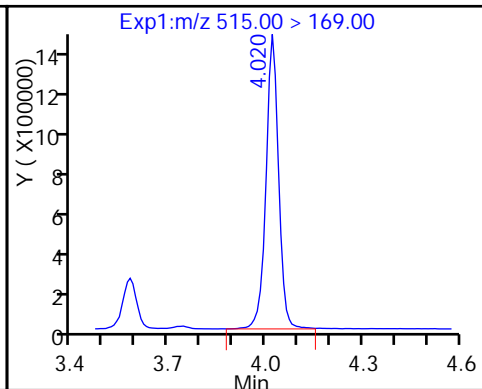
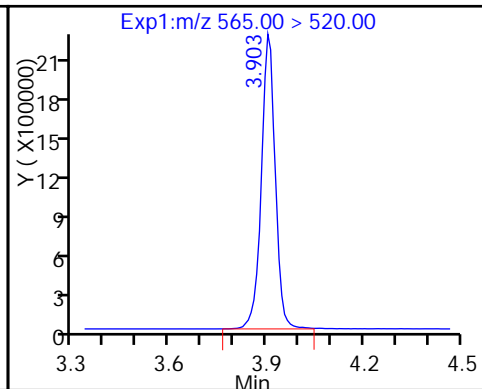
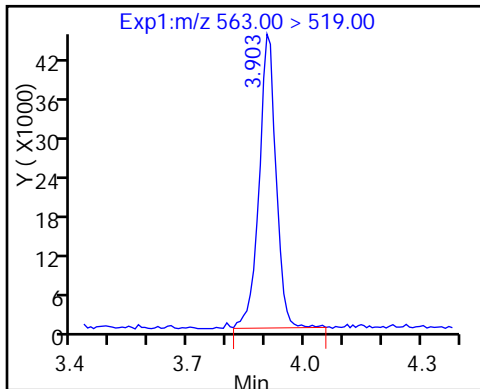
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

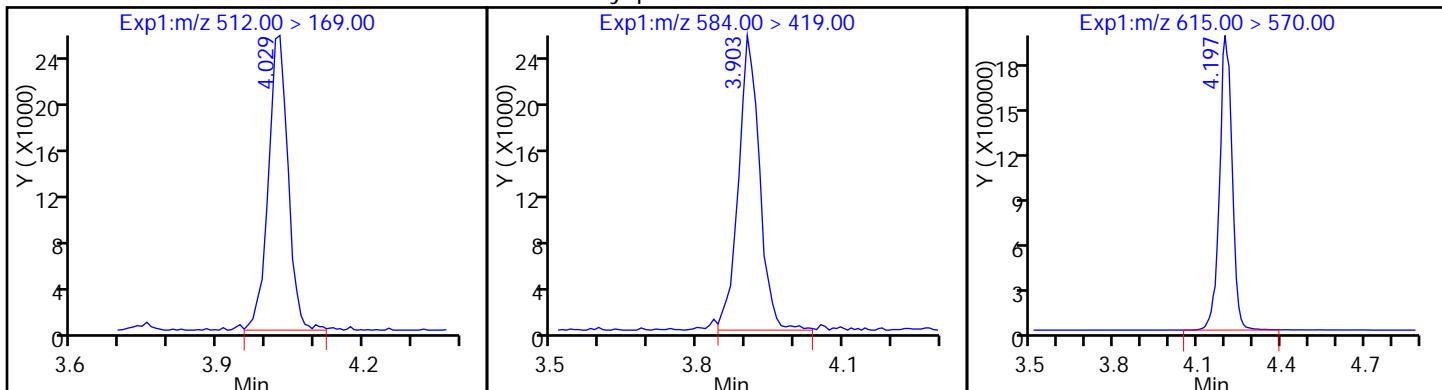
D 30 13C2 PFUnA

D 34 d-N-MeFOSA-M



35 MeFOSA

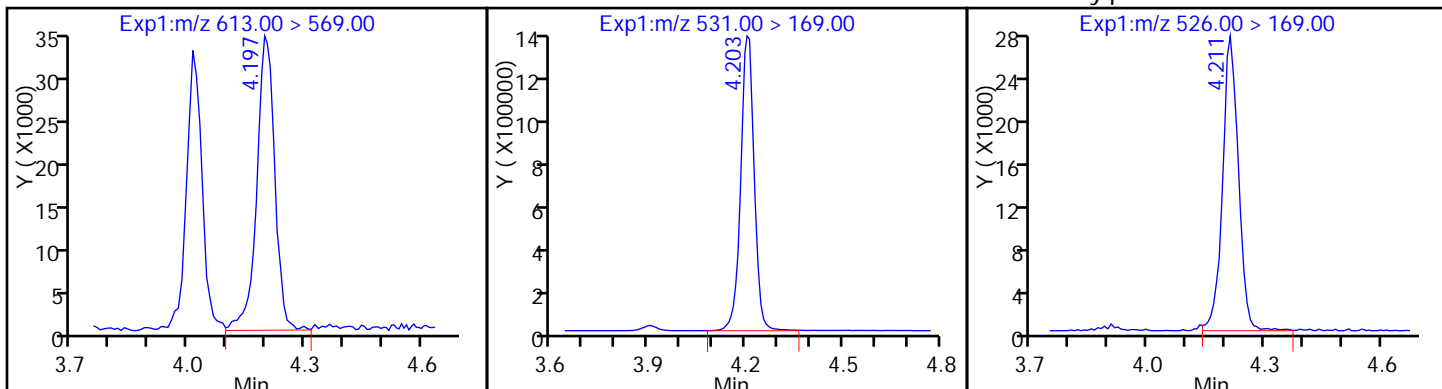
33 N-ethyl perfluorooctane sulfonamid D 36 13C2 PFDaA



37 Perfluorododecanoic acid

D 38 d-N-EtFOSA-M

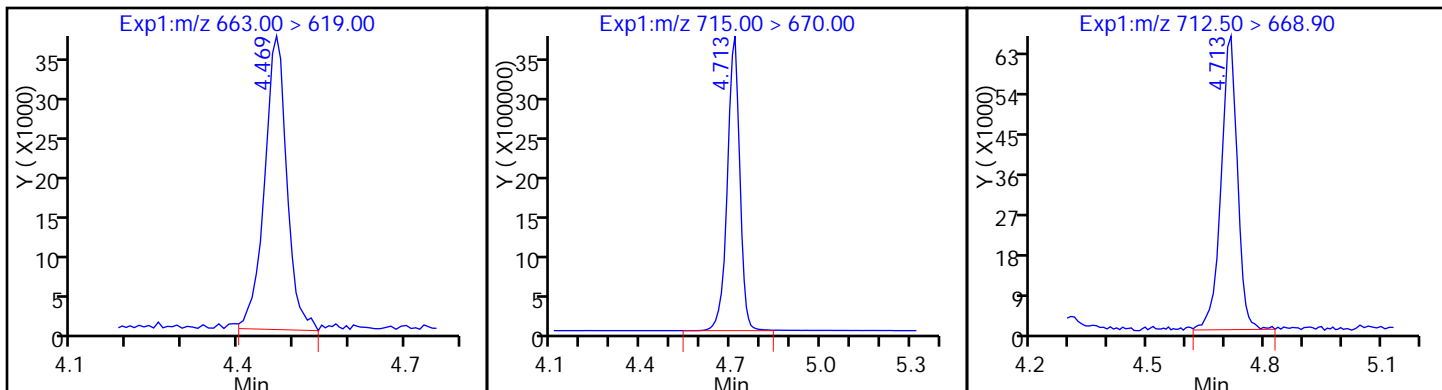
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

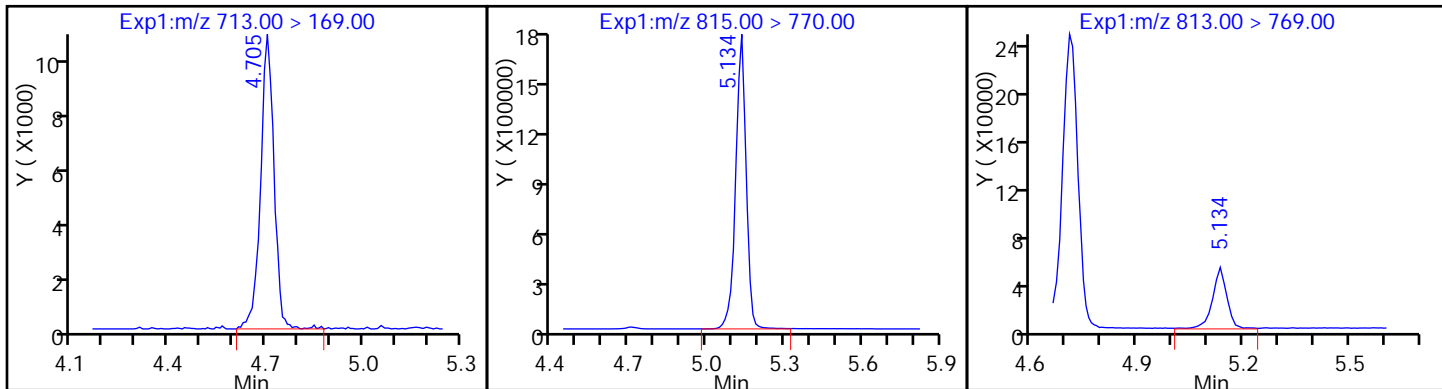
42 Perfluorotetradecanoic acid



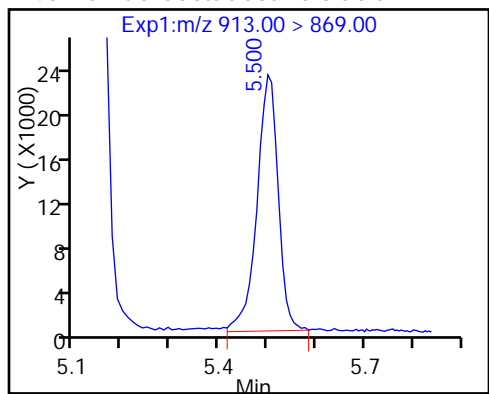
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

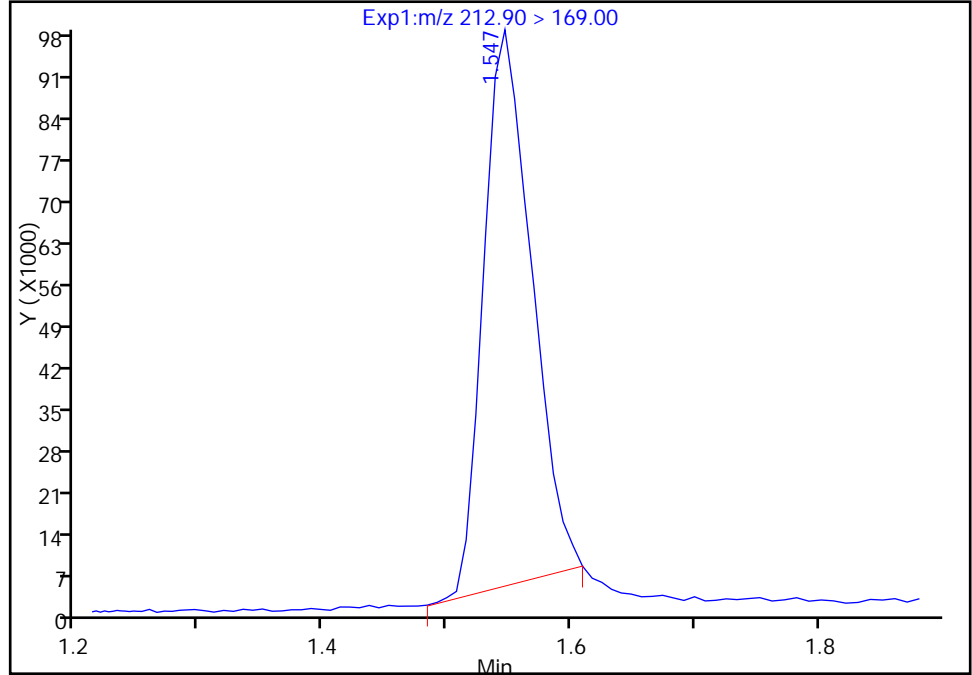
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170313-40786.b\2017.03.13A_004.d
Injection Date: 13-Mar-2017 11:39:35 Instrument ID: A8_N
Lims ID: CCV L2
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

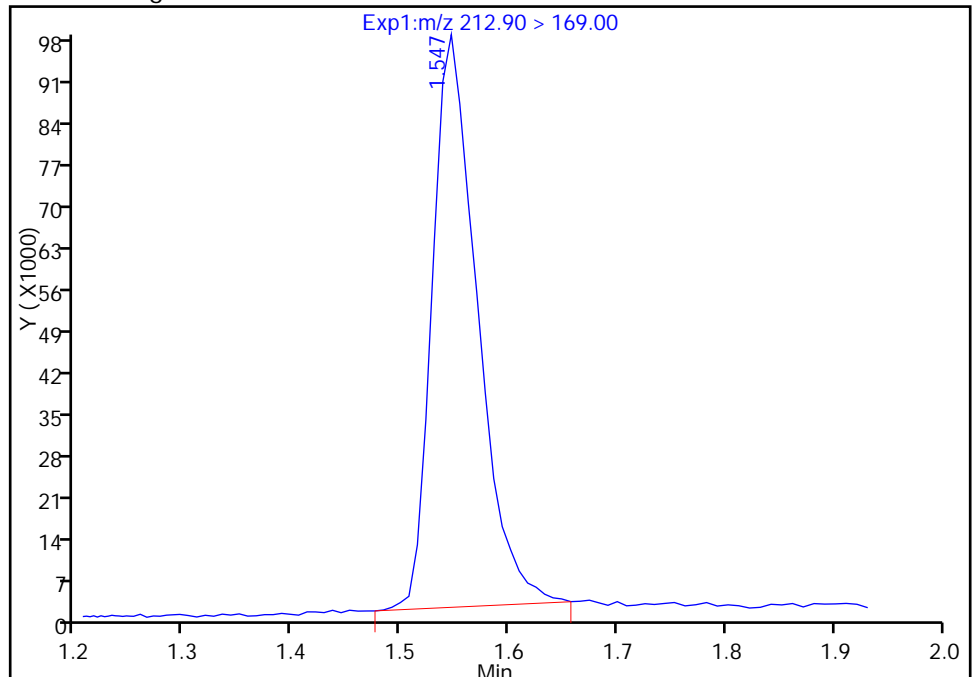
RT: 1.55
Area: 252857
Amount: 0.913725
Amount Units: ng/ml

Processing Integration Results



RT: 1.55
Area: 279192
Amount: 1.008889
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 14-Mar-2017 11:30:33

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154808/1 Calibration Date: 03/13/2017 15:52
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.13A_037.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8573		20.2	20.0	1.2	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9223		18.9	20.0	-5.7	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.452		17.9	17.7	1.4	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8593		19.3	20.0	-3.4	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9153		18.9	20.0	-5.4	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	0.9848		17.4	18.2	-4.2	25.0
6:2FTS	L2ID		0.9178		19.5	19.0	2.9	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.9625		18.8	20.0	-5.8	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.054		19.5	19.0	2.2	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.8881		19.6	20.0	-1.8	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9457		17.8	18.6	-3.8	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.8895		19.8	20.0	-1.0	25.0
8:2FTS	L2ID		0.9690		20.0	19.2	4.4	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8672		19.2	20.0	-4.2	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9596		19.8	20.0	-1.2	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5634		18.2	19.3	-5.4	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8917		19.6	20.0	-2.0	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.8939		17.6	20.0	-11.8	25.0
MeFOSA	AveID	0.9355	0.9131		19.5	20.0	-2.4	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.8853		19.4	20.0	-3.2	25.0
N-EtFOSA-M	AveID	0.9837	0.9685		19.7	20.0	-1.5	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8280		19.0	20.0	-5.2	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.728		17.6	20.0	-12.1	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8497		18.0	20.0	-10.2	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.7396		20.6	20.0	3.1	25.0
13C4 PFBA	Ave	292242	299687		51.3	50.0	2.5	50.0
13C5-PFPeA	Ave	232192	240425		51.8	50.0	3.5	50.0
13C2 PFHxA	Ave	210884	216109		51.2	50.0	2.5	50.0
13C4-PFHpA	Ave	192959	197698		51.2	50.0	2.5	50.0
18O2 PFHxS	Ave	290899	292253		47.5	47.3	0.5	50.0
M2-6:2FTS	Ave	77178	77787		47.9	47.5	0.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154808/1 Calibration Date: 03/13/2017 15:52
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.13A_037.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	205731		50.2	50.0	0.4	50.0
13C4 PFOS	Ave	241637	241999		47.9	47.8	0.1	50.0
13C5 PFNA	Ave	177866	181174		50.9	50.0	1.9	50.0
13C8 FOSA	Ave	366918	371236		50.6	50.0	1.2	50.0
M2-8:2FTS	Ave	92602	90448		46.8	47.9	-2.3	50.0
13C2 PFDA	Ave	166704	159218		47.8	50.0	-4.5	50.0
d3-NMeFOSAA	Ave	85186	81856		48.0	50.0	-3.9	50.0
d5-NEtFOSAA	Ave	81371	81460		50.1	50.0	0.1	50.0
13C2 PFUnA	Ave	130805	124332		47.5	50.0	-4.9	50.0
d-N-MeFOSA-M	Ave	87983	83339		47.4	50.0	-5.3	50.0
13C2 PFDoA	Ave	123944	112461		45.4	50.0	-9.3	50.0
d-N-EtFOSA-M	Ave	85249	77687		45.6	50.0	-8.9	50.0
13C2-PFTeDA	Ave	259165	232504		44.9	50.0	-10.3	50.0
13C2-PFHxDA	Ave	125061	116691		46.7	50.0	-6.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_037.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 13-Mar-2017 15:52:37 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: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 14-Mar-2017 13:29:30 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK019

First Level Reviewer: westendorfc Date: 14-Mar-2017 12:54:08

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	1.538	1.538	0.0	14984351	51.3		103	958224	
2 Perfluorobutyric acid	212.90 > 169.00	1.538	1.538	0.0	1.000	5138270	20.2	101	29156	
D 3 13C5-PFPeA	267.90 > 223.00	1.822	1.822	0.0	12021229	51.8		104	720740	
4 Perfluoropentanoic acid	262.90 > 219.00	1.822	1.822	0.0	1.000	4435026	18.9	94.3	43101	
D 47 13C3-PFBS	301.90 > 83.00	1.851	1.851	0.0	289972	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.861	1.861	0.0	1.000	7502474	17.9	101		
	298.90 > 99.00	1.861	1.861	0.0	1.000	3017401	2.49(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.114	2.114	0.0	10805439	51.2		102	475031	
6 Perfluorohexanoic acid	313.00 > 269.00	2.114	2.114	0.0	1.000	3713940	19.3	96.6	84231	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.461	2.461	0.0	1.000	3618893	18.9	94.6	60101	
D 9 13C4-PFHpA	367.00 > 322.00	2.453	2.453	0.0	9884920	51.2		102	369166	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.469	2.469	0.0	1.000	5238045	17.4	95.8		
D 11 18O2 PFHxS	403.00 > 84.00	2.469	2.469	0.0	13823553	47.5		100	348177	
D 12 M2-6:2FTS	429.00 > 409.00	2.788	2.788	0.0	3694881	47.9		101		

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	2.796	2.796	0.0	1.000	1353562	19.5	103	
D 14 13C4 PFOA	417.00	> 372.00	2.819	2.819	0.0		10286559	50.2	100	292725
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.827	2.827	0.0	1.000	4854413	19.5	102	
15 Perfluorooctanoic acid	413.00	> 369.00	2.819	2.819	0.0	1.000	3960427	18.8	94.2	62611
	413.00	> 169.00	2.819	2.819	0.0	1.000	2308507		1.72(0.90-1.10)	74927
D 18 13C4 PFOS	503.00	> 80.00	3.185	3.185	0.0		11567566	47.9	100	242932
20 Perfluorononanoic acid	463.00	> 419.00	3.194	3.194	0.0	1.000	3218143	19.6	98.2	77770
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.194	3.194	0.0	1.000	4247631	17.8	96.2	353019 M
	499.00	> 99.00	3.194	3.194	0.0	1.000	974159		4.36(0.90-1.10)	270697
D 19 13C5 PFNA	468.00	> 423.00	3.194	3.194	0.0		9058709	50.9	102	193806
D 21 13C8 FOSA	506.00	> 78.00	3.520	3.520	0.0		18561780	50.6	101	405320
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.528	3.528	0.0	1.000	6604194	19.8	99.0	219525
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.536	3.536	0.0	0.998	1679267	20.0	104	
D 26 M2-8:2FTS	529.00	> 509.00	3.545	3.545	0.0		4332479	46.8	97.7	M M
24 Perfluorodecanoic acid	513.00	> 469.00	3.553	3.553	0.0	1.000	2761607	19.2	95.8	97703
D 23 13C2 PFDA	515.00	> 470.00	3.553	3.553	0.0		7960902	47.8	95.5	143763
D 27 d3-NMeFOSAA	573.00	> 419.00	3.704	3.704	0.0		4092792	48.0	96.1	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.704	3.704	0.0	1.000	1570991	19.8	98.8	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.857	3.857	0.0	1.000	2628753	18.2	94.6	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.866	3.866	0.0		4073018	50.1	100	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.875	3.875	0.0	1.000	2222841	17.6	88.2	58948
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.875	3.875	0.0	1.002	1452697	19.6	98.0	
D 30 13C2 PFUnA	565.00	> 520.00	3.875	3.875	0.0		6216619	47.5	95.1	214621
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.009	4.009	0.0		4166966	47.4	94.7	
35 MeFOSA	512.00	> 169.00	4.019	4.019	0.0	1.000	1521901	19.5	97.6	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid	613.00	> 569.00	4.157	4.157	0.0	1.000	1991275	19.4	96.8	15637
D 36 13C2 PFDaA	615.00	> 570.00	4.157	4.157	0.0		5623053	45.4	90.7	178362
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.193	4.193	0.0		3884326	45.6	91.1	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.199	4.199	0.0	1.000	1504823	19.7	98.5	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.431	4.431	0.0	1.000	1862340	19.0	94.8	44086
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.664	4.664	0.0	1.000	3886827	17.6	87.9	40864
	713.00	> 169.00	4.664	4.664	0.0	1.000	568627		6.84(0.00-0.00)	97360
D 43 13C2-PFTeDA	715.00	> 670.00	4.664	4.664	0.0		11625184	44.9	89.7	351961
D 44 13C2-PFHxDA	815.00	> 770.00	5.072	5.072	0.0		5834570	46.7	93.3	89817
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.083	5.083	0.0	1.000	1911163	18.0	89.8	1711
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.439	5.439	0.0	1.000	1663583	20.6	103	1632

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L4_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_037.d

Injection Date: 13-Mar-2017 15:52:37

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 31

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

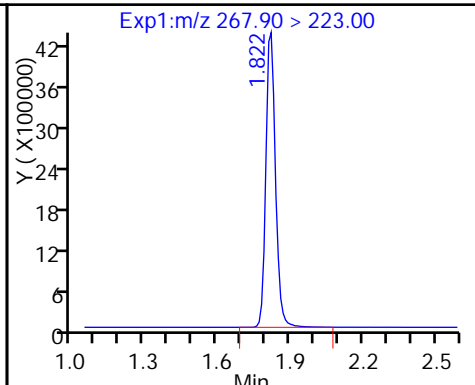
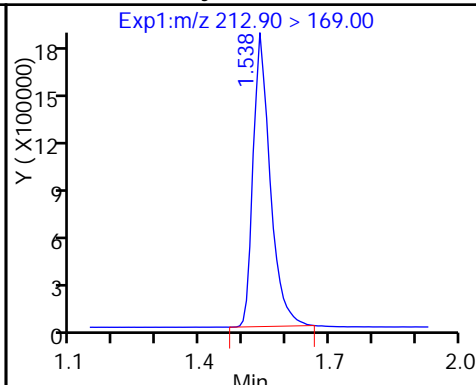
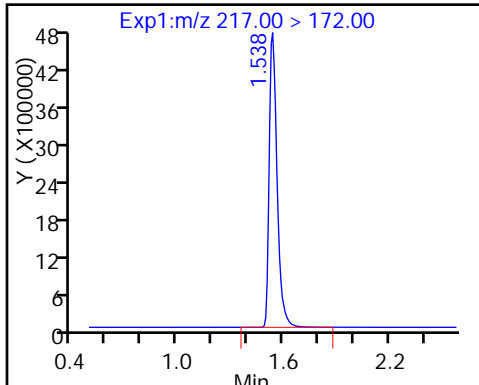
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

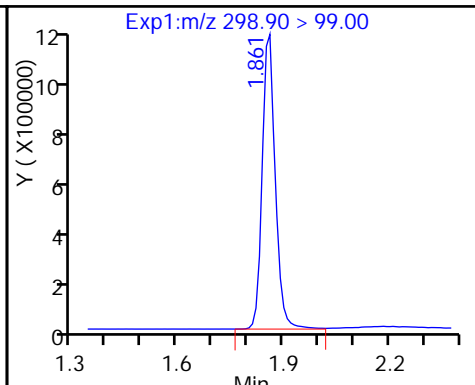
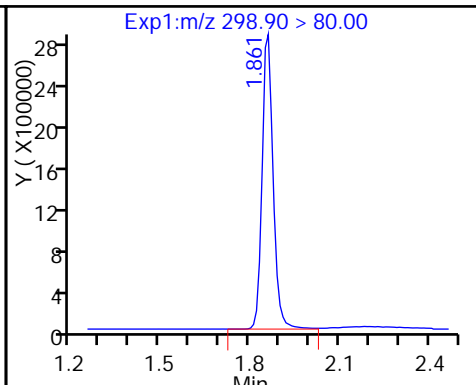
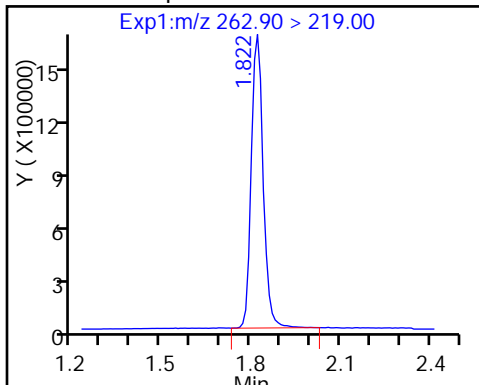
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

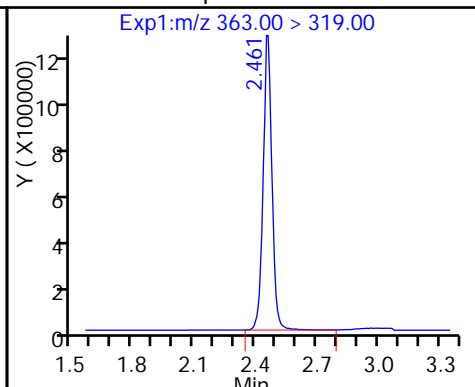
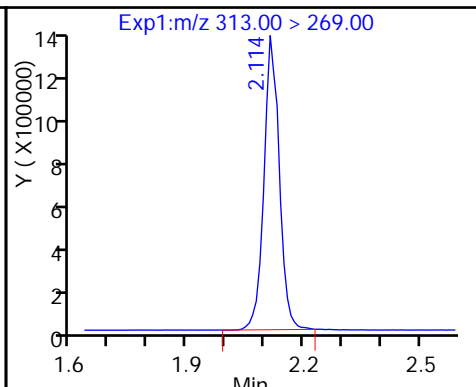
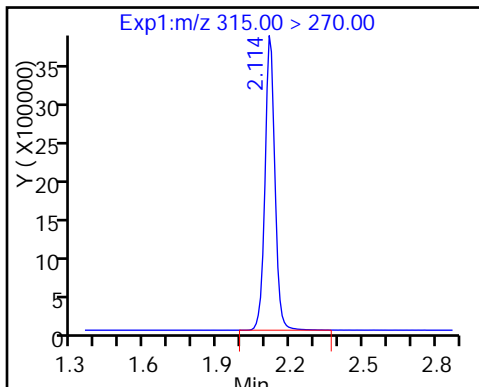
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

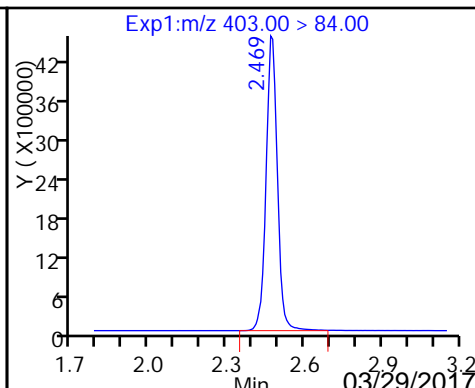
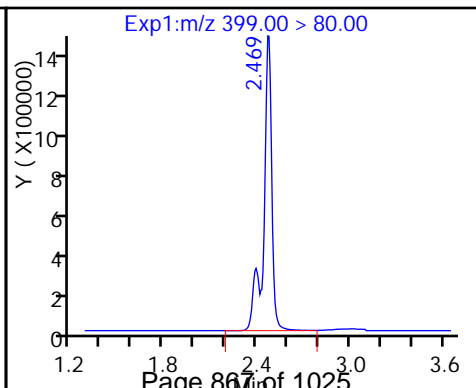
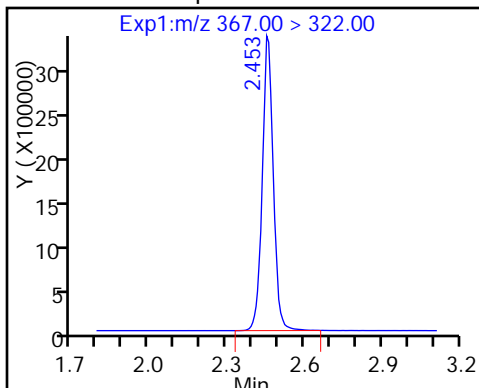
10 Perfluoroheptanoic acid



D 9 13C4-PFHpA

8 Perfluorohexanesulfonic acid

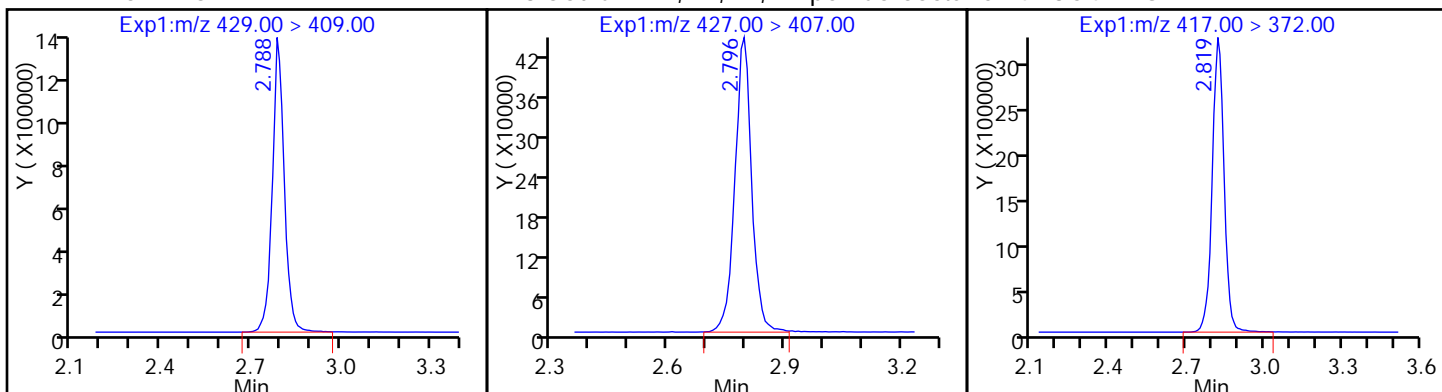
D 11 18O2 PFHxS



D 12 M2-6:2FTS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

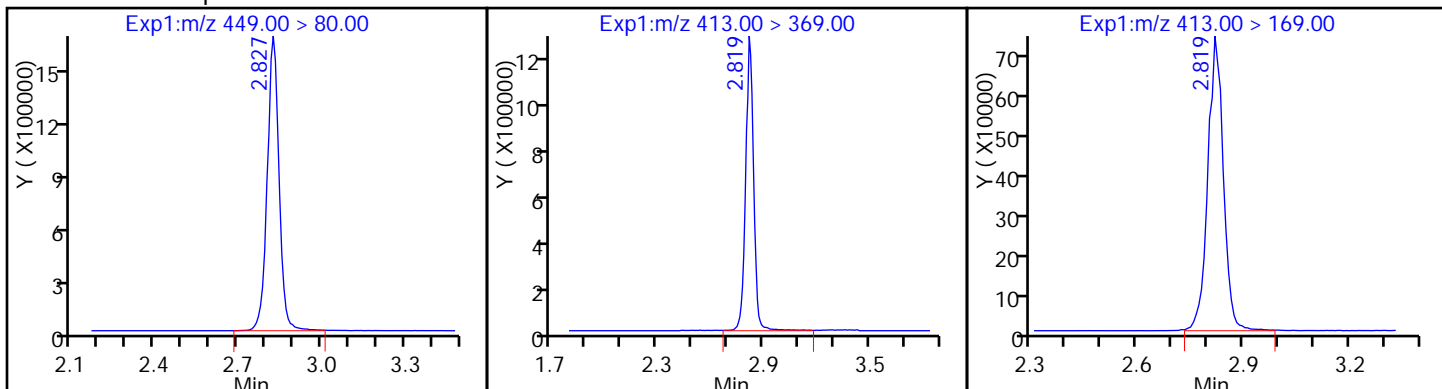
D 14 13C4 PFOA



16 Perfluoroheptanesulfonic Acid

15 Perfluorooctanoic acid

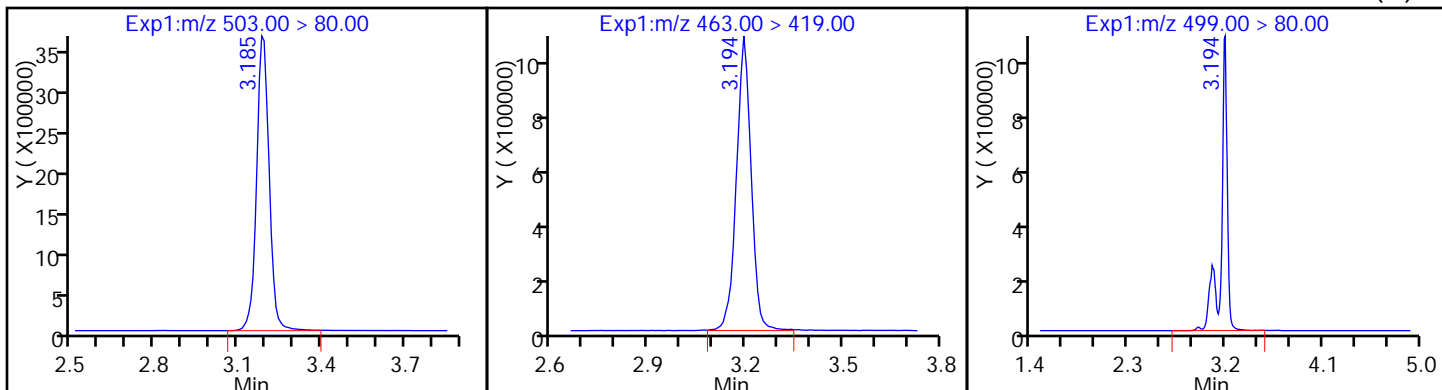
15 Perfluorooctanoic acid



D 18 13C4 PFOS

20 Perfluorononanoic acid

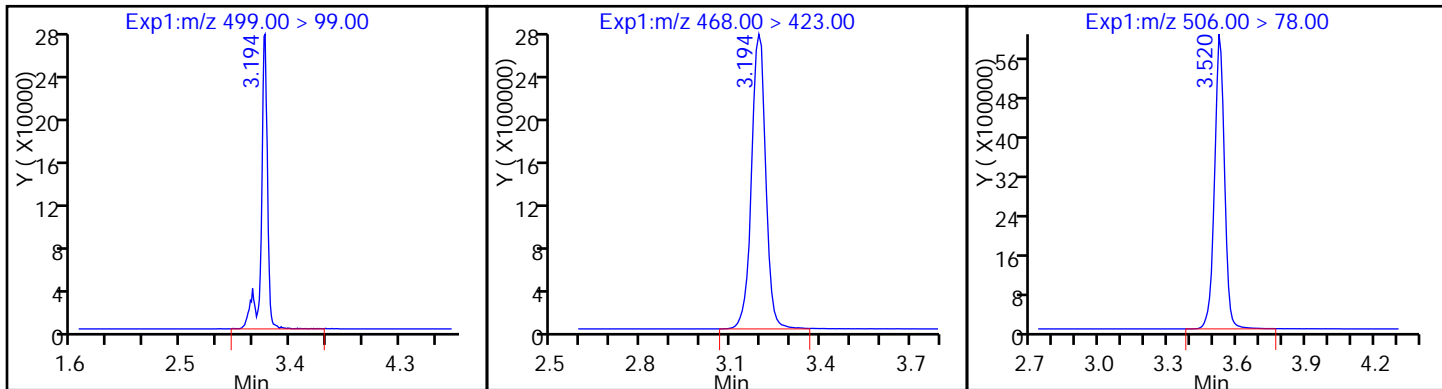
17 Perfluorooctane sulfonic acid (M)



17 Perfluorooctane sulfonic acid

D 19 13C5 PFNA

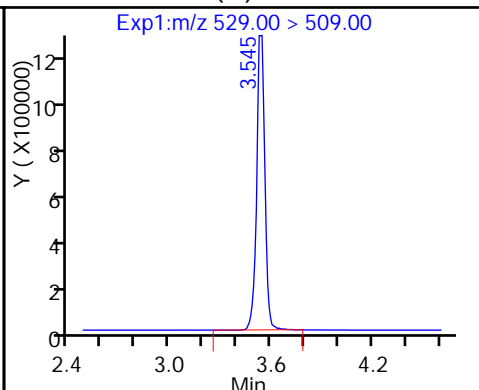
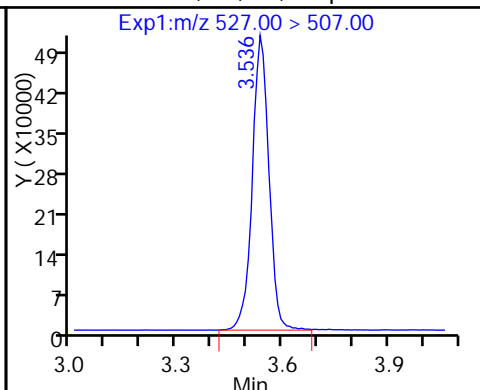
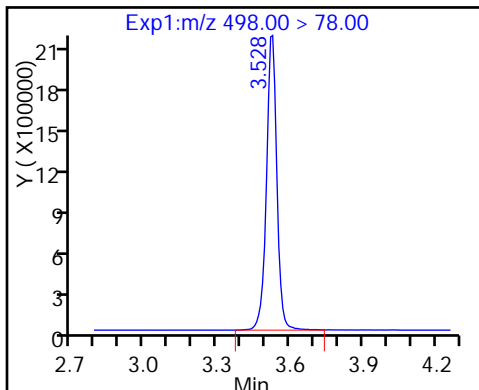
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

25 Sodium 1H,1H,2H,2H-perfluorooctane

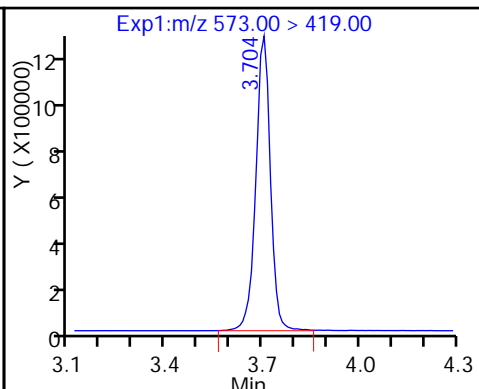
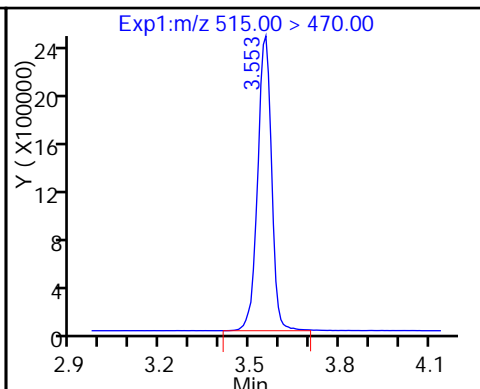
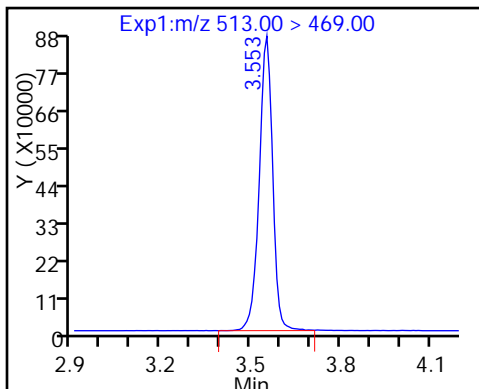
D 26 M2-8:2FTS (M)



24 Perfluorodecanoic acid

D 23 13C2 PFDA

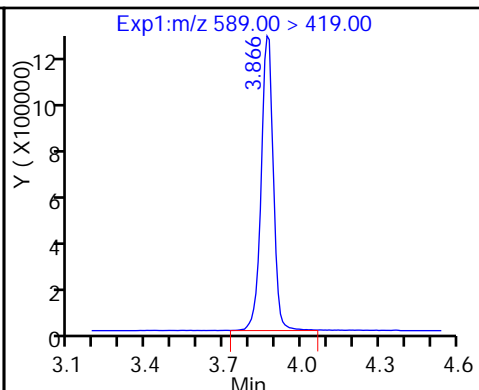
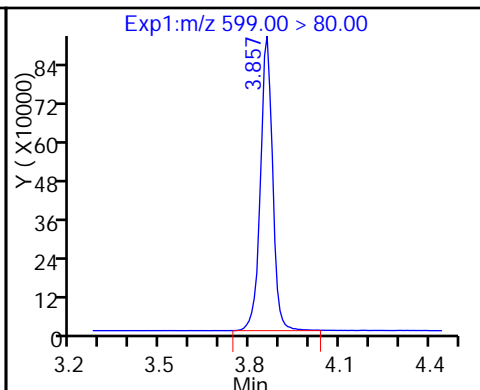
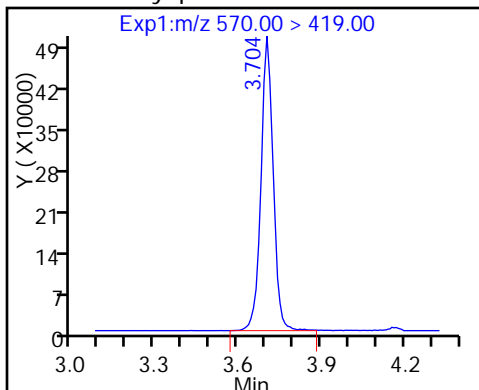
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonamid

29 Perfluorodecane Sulfonic acid

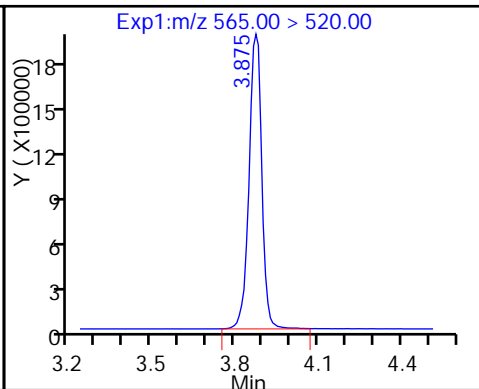
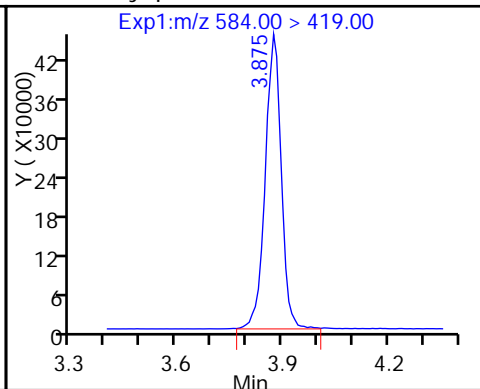
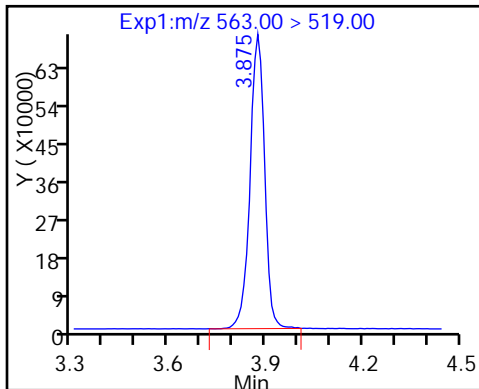
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid

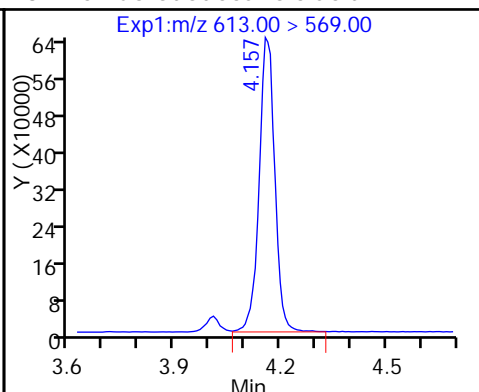
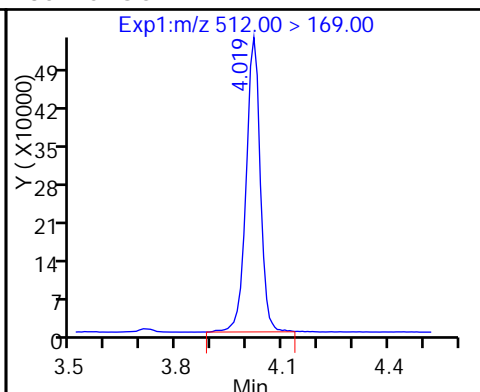
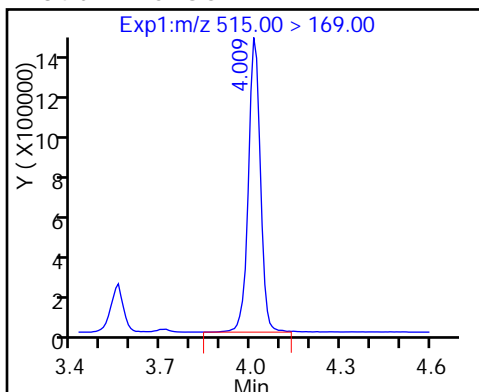
D 30 13C2 PFUnA



D 34 d-N-MeFOSA-M

35 MeFOSA

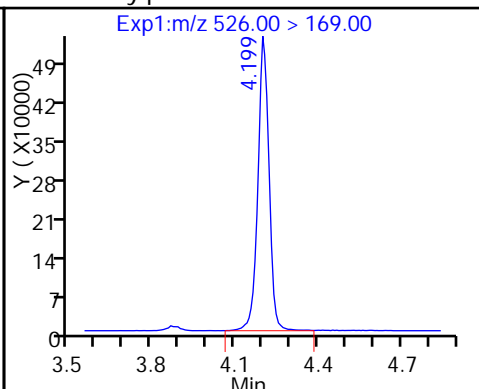
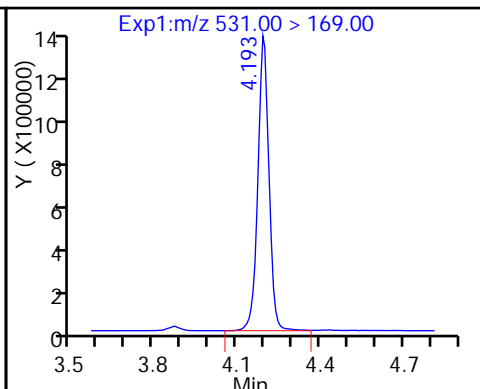
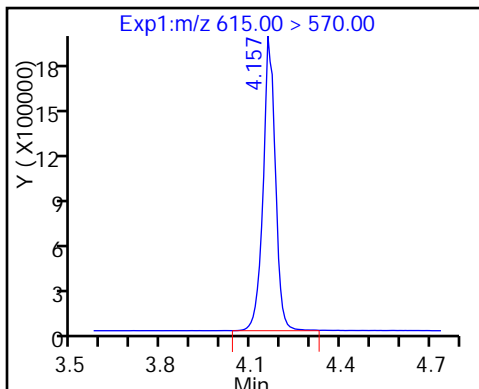
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

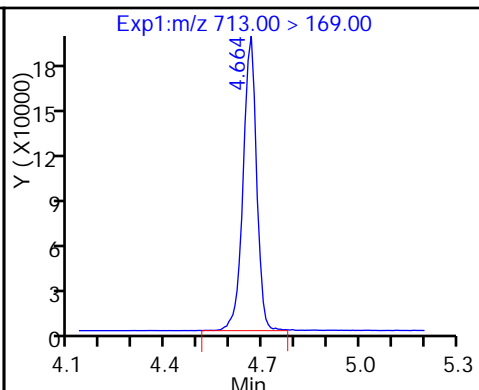
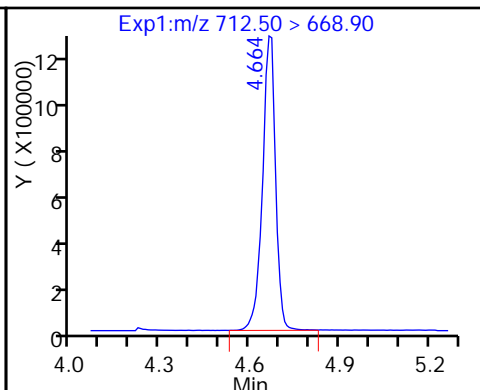
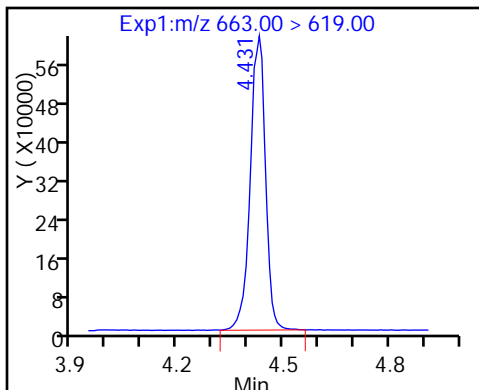
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

42 Perfluorotetradecanoic acid

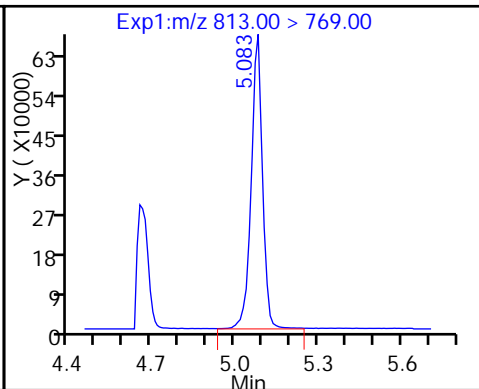
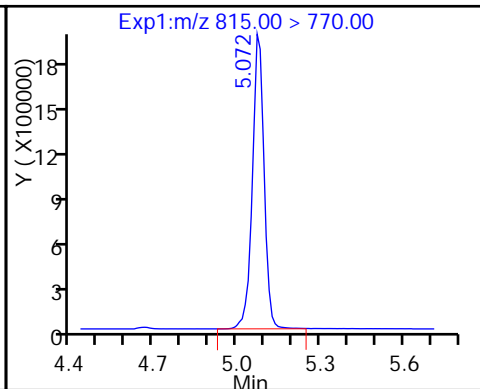
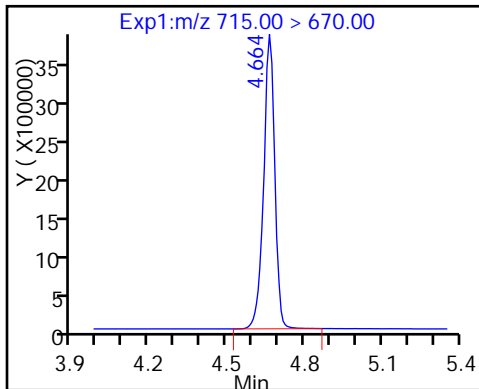
42 Perfluorotetradecanoic acid



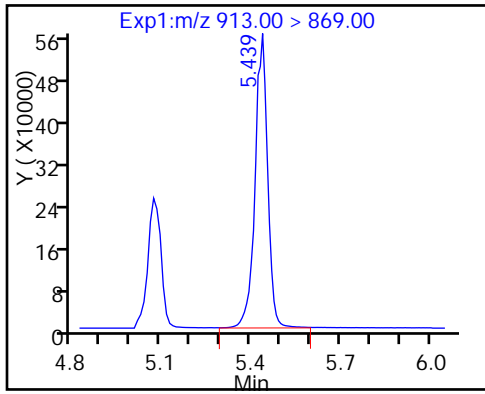
D 43 13C2-PFTeDA

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

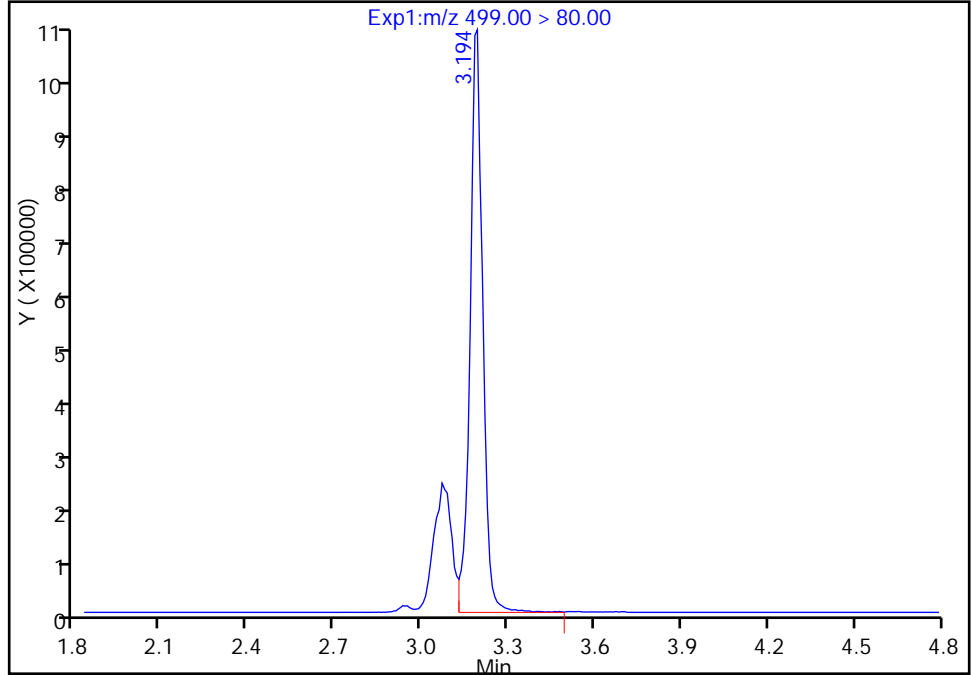
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_037.d
Injection Date: 13-Mar-2017 15:52:37 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

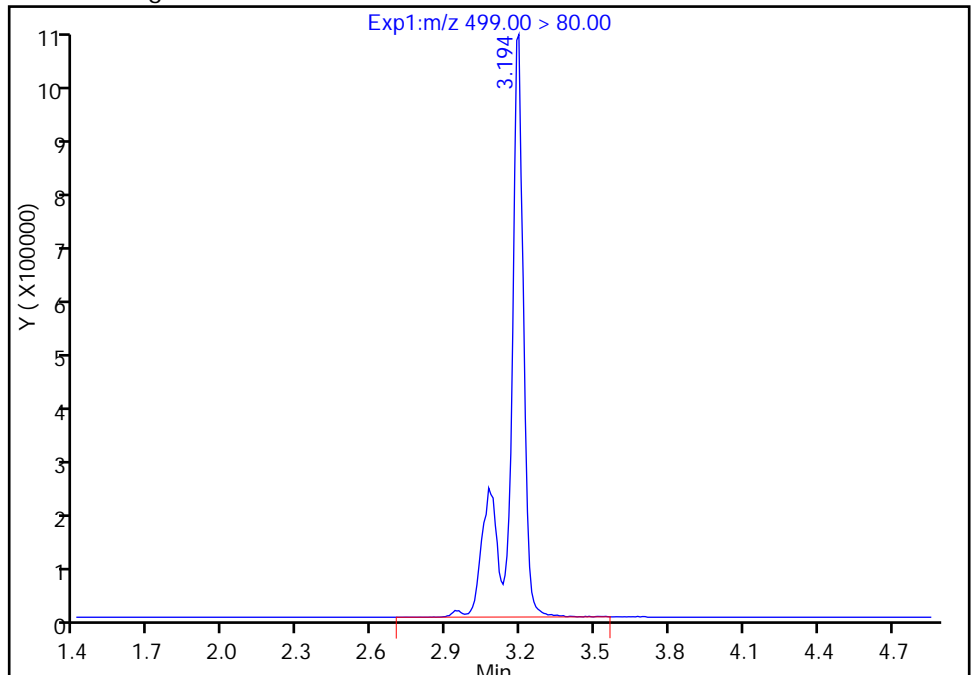
RT: 3.19
Area: 3211048
Amount: 13.491684
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 4247631
Amount: 17.847038
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 14-Mar-2017 13:29:29
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

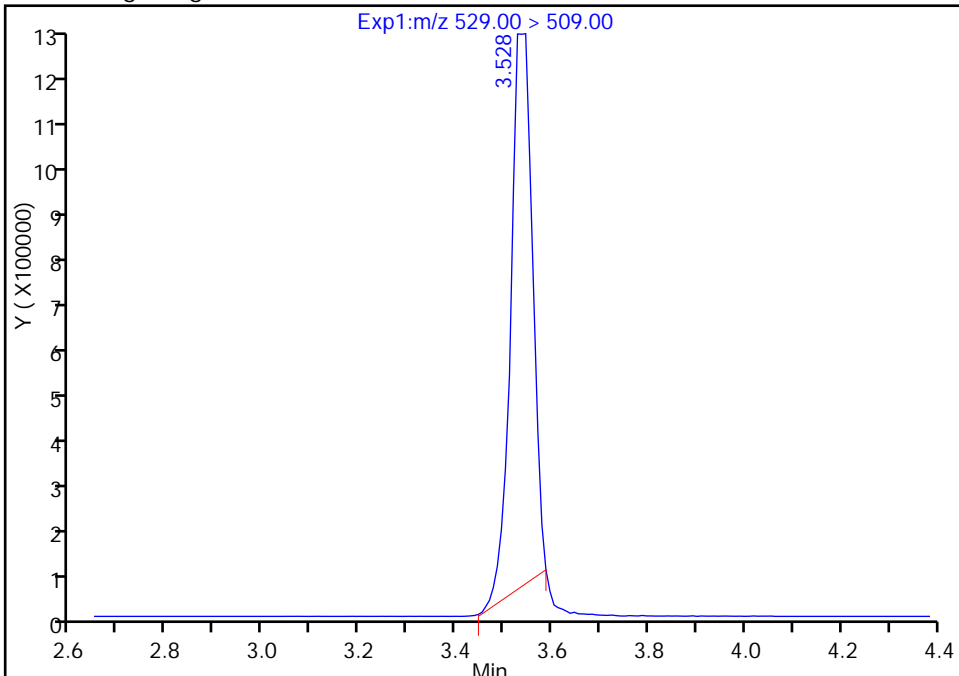
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_037.d
Injection Date: 13-Mar-2017 15:52:37 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

D 26 M2-8:2FTS, CAS: STL02280

Signal: 1

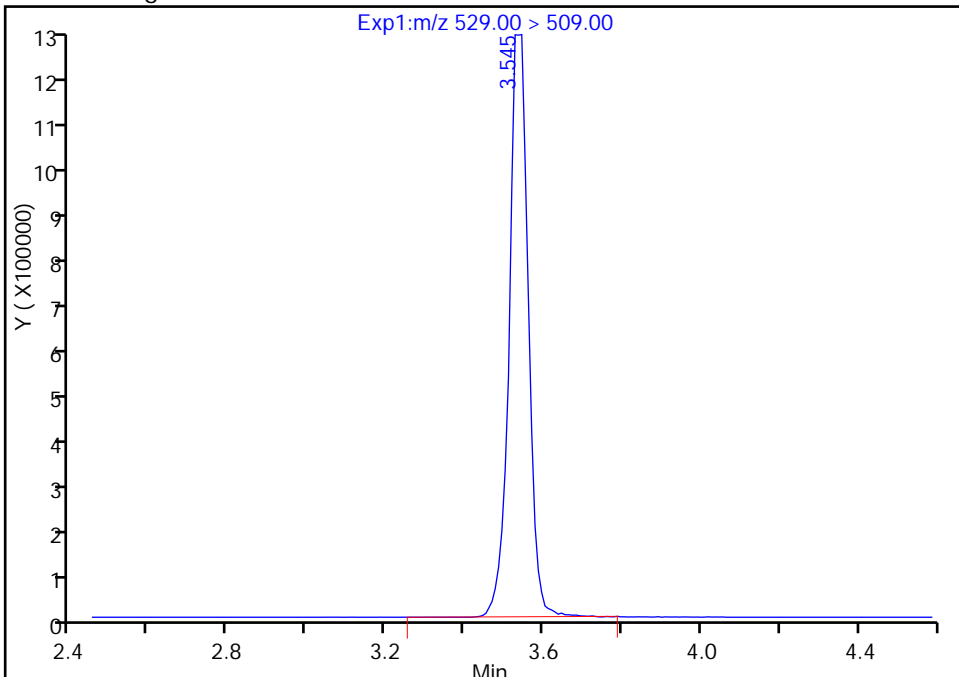
RT: 3.53
Area: 3811322
Amount: 41.158102
Amount Units: ng/ml

Processing Integration Results



RT: 3.54
Area: 4332479
Amount: 46.786026
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 14-Mar-2017 13:29:29

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154808/11 Calibration Date: 03/13/2017 17:08
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.13A_047.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8967		52.9	50.0	5.8	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.998		51.0	50.0	2.0	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.489		45.9	44.2	3.9	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9279		52.2	50.0	4.3	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9870		51.0	50.0	2.0	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.028		45.5	45.5	-0.0	25.0
6:2FTS	L2ID		0.8949		47.7	47.4	0.7	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.029		50.4	50.0	0.7	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.115		51.5	47.6	8.1	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9486		52.5	50.0	4.9	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.027		48.4	46.4	4.4	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9415		52.4	50.0	4.8	25.0
8:2FTS	L2ID		0.9577		49.6	47.9	3.5	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9479		52.3	50.0	4.7	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9228		47.5	50.0	-5.0	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6391		51.7	48.2	7.3	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8738		48.0	50.0	-4.0	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9661		47.7	50.0	-4.7	25.0
MeFOSA	AveID	0.9355	0.8926		47.7	50.0	-4.6	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9321		51.0	50.0	1.9	25.0
N-EtFOSA-M	AveID	0.9837	0.9417		47.9	50.0	-4.3	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9371		53.6	50.0	7.3	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.723		43.8	50.0	-12.4	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9678		51.8	50.0	3.7	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.7574		52.8	50.0	5.6	25.0
13C4 PFBA	Ave	292242	309050		52.9	50.0	5.8	50.0
13C5-PFPeA	Ave	232192	242148		52.1	50.0	4.3	50.0
13C2 PFHxA	Ave	210884	228784		54.2	50.0	8.5	50.0
13C4-PFHpA	Ave	192959	203194		52.7	50.0	5.3	50.0
18O2 PFHxS	Ave	290899	314947		51.2	47.3	8.3	50.0
M2-6:2FTS	Ave	77178	104880		64.5	47.5	35.9	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Lab Sample ID: CCV 320-154808/11 Calibration Date: 03/13/2017 17:08
 Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46
 Lab File ID: 2017.03.13A_047.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	202929		49.5	50.0	-1.0	50.0
13C4 PFOS	Ave	241637	246892		48.8	47.8	2.2	50.0
13C5 PFNA	Ave	177866	169387		47.6	50.0	-4.8	50.0
13C8 FOSA	Ave	366918	366578		50.0	50.0	-0.0	50.0
M2-8:2FTS	Ave	92602	91736		47.5	47.9	-0.9	50.0
13C2 PFDA	Ave	166704	150691		45.2	50.0	-9.6	50.0
d3-NMeFOSAA	Ave	85186	69595		40.8	50.0	-18.3	50.0
13C2 PFUnA	Ave	130805	113904		43.5	50.0	-12.9	50.0
d5-NEtFOSAA	Ave	81371	63787		39.2	50.0	-21.6	50.0
d-N-MeFOSA-M	Ave	87983	88104		50.1	50.0	0.1	50.0
13C2 PFDoA	Ave	123944	108874		43.9	50.0	-12.2	50.0
d-N-EtFOSA-M	Ave	85249	79850		46.8	50.0	-6.3	50.0
13C2-PFTeDA	Ave	259165	218344		42.1	50.0	-15.8	50.0
13C2-PFHxDA	Ave	125061	122229		48.9	50.0	-2.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_047.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 13-Mar-2017 17:08:37 ALS Bottle#: 32 Worklist Smp#: 11
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub14
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 14-Mar-2017 13:30:27 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK019

First Level Reviewer: westendorfc Date: 14-Mar-2017 13:25:50

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	1.540	1.540	0.0	15452482	52.9		106	997450	
2 Perfluorobutyric acid	212.90 > 169.00	1.548	1.548	0.0	13856752	52.9		106	97933	
D 3 13C5-PFPeA	267.90 > 223.00	1.824	1.824	0.0	12107401	52.1		104	726281	
4 Perfluoropentanoic acid	262.90 > 219.00	1.824	1.824	0.0	12083263	51.0		102	116539	
D 47 13C3-PFBS	301.90 > 83.00	1.853	1.853	0.0	318338	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.863	1.863	0.0	20722636	45.9		104		
	298.90 > 99.00	1.863	1.863	0.0	8992401		2.30(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.114	2.114	0.0	11439211	54.2		108	542139	
6 Perfluorohexanoic acid	313.00 > 269.00	2.123	2.123	0.0	10614390	52.2		104	271358	
D 9 13C4-PFHpA	367.00 > 322.00	2.464	2.464	0.0	10159685	52.7		105	395765	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.456	2.456	0.0	10027949	51.0		102	98011	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.480	2.480	0.0	14735744	45.5		100.0		
D 11 18O2 PFHxS	403.00 > 84.00	2.480	2.480	0.0	14896982	51.2		108	480567	
D 12 M2-6:2FTS	429.00 > 409.00	2.799	2.799	0.0	4981801	64.5		136		

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	2.799	2.799	0.0	1.000	4449007	47.7	101	
D 14 13C4 PFOA	417.00	> 372.00	2.822	2.822	0.0		10146464	49.5	99.0	304384
15 Perfluorooctanoic acid	413.00	> 369.00	2.822	2.822	0.0	1.000	10443097	50.4	101	153416
	413.00	> 169.00	2.822	2.822	0.0	1.000	6214376		1.68(0.90-1.10)	147333
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.830	2.830	0.0	1.000	13102121	51.5	108	
D 18 13C4 PFOS	503.00	> 80.00	3.188	3.188	0.0		11801442	48.8	102	188222
20 Perfluorononanoic acid	463.00	> 419.00	3.197	3.197	0.0	1.000	8034156	52.5	105	129920
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.197	3.197	0.0	1.000	11759508	48.4	104	2766869M
	499.00	> 99.00	3.197	3.197	0.0	1.000	2575871		4.57(0.90-1.10)	234407 M
D 19 13C5 PFNA	468.00	> 423.00	3.197	3.197	0.0		8469352	47.6	95.2	359482
D 21 13C8 FOSA	506.00	> 78.00	3.534	3.534	0.0		18328903	50.0	99.9	366408
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.534	3.534	0.0	1.000	17256464	52.4	105	386932
25 Sodium 1H,1H,2H,2H-perfluorooctane	527.00	> 507.00	3.551	3.551	0.0	1.000	4208415	49.6	103	
D 26 M2-8:2FTS	529.00	> 509.00	3.551	3.551	0.0		4394164	47.5	99.1	
24 Perfluorodecanoic acid	513.00	> 469.00	3.559	3.559	0.0	1.000	7141579	52.3	105	258645
D 23 13C2 PFDA	515.00	> 470.00	3.559	3.559	0.0		7534536	45.2	90.4	190131
D 27 d3-NMeFOSAA	573.00	> 419.00	3.711	3.711	0.0		3479759	40.8	81.7	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.711	3.711	0.0	1.000	3211030	47.5	95.0	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.865	3.865	0.0	1.000	7605801	51.7	107	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.883	3.883	0.0		3189343	39.2	78.4	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.883	3.883	0.0	1.000	5502307	47.7	95.3	97815
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.883	3.883	0.0	1.000	2786799	48.0	96.0	
D 30 13C2 PFUnA	565.00	> 520.00	3.883	3.883	0.0		5695179	43.5	87.1	205085
D 34 d-N-MeFOSA-M	515.00	> 169.00	4.027	4.027	0.0		4405207	50.1	100	
35 MeFOSA	512.00	> 169.00	4.037	4.037	0.0	1.000	3932183	47.7	95.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid	613.00	> 569.00	4.175	4.175	0.0	1.000	5074326	51.0	102	54573
D 36 13C2 PFDaA	615.00	> 570.00	4.175	4.175	0.0		5443717	43.9	87.8	136300
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.212	4.212	0.0		3992480	46.8	93.7	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.220	4.220	0.0	1.000	3759742	47.9	95.7	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.443	4.443	0.0	1.000	5101140	53.6	107	114258
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.670	4.670	0.0	1.000	9381591	43.8	87.6	41395
	713.00	> 169.00	4.670	4.670	0.0	1.000	1483069		6.33(0.00-0.00)	163624
D 43 13C2-PFTeDA	715.00	> 670.00	4.670	4.670	0.0		10917206	42.1	84.2	354469
D 44 13C2-PFHxDA	815.00	> 770.00	5.079	5.079	0.0		6111460	48.9	97.7	107800
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.090	5.090	0.0	1.000	5268497	51.8	104	5197
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.444	5.444	0.0	1.000	4123073	52.8	106	5520

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_FULL-L5_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_047.d

Injection Date: 13-Mar-2017 17:08:37

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 32

Worklist Smp#: 11

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

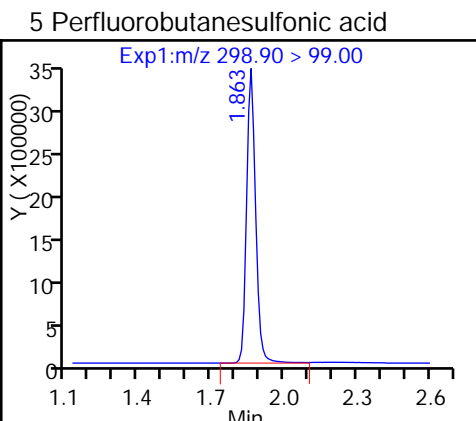
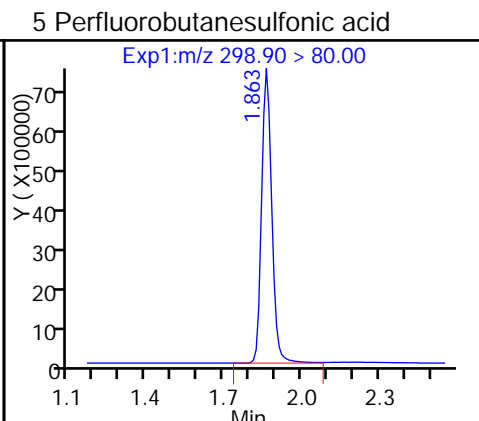
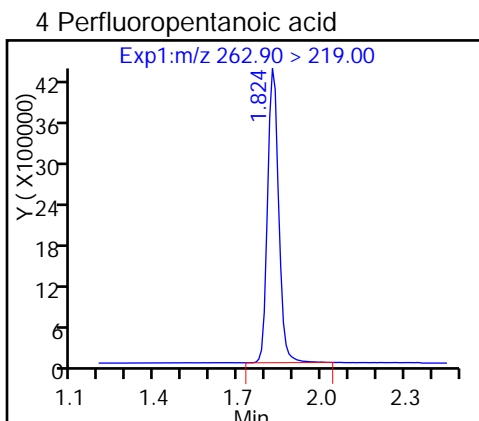
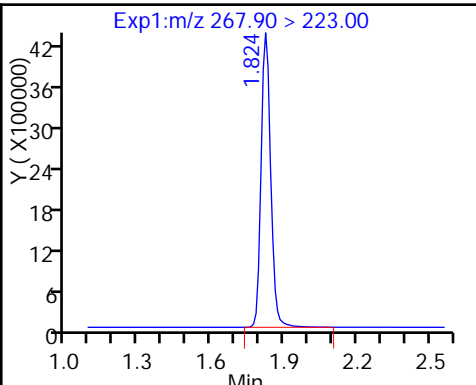
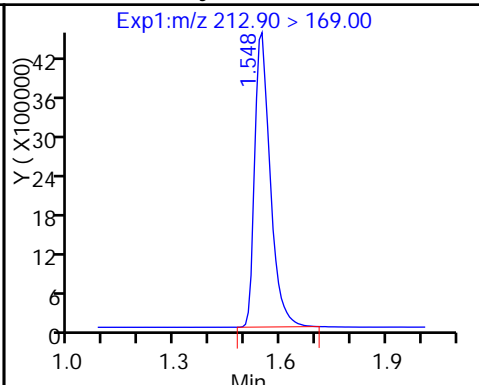
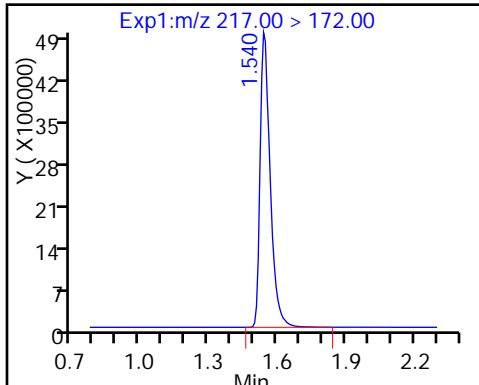
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

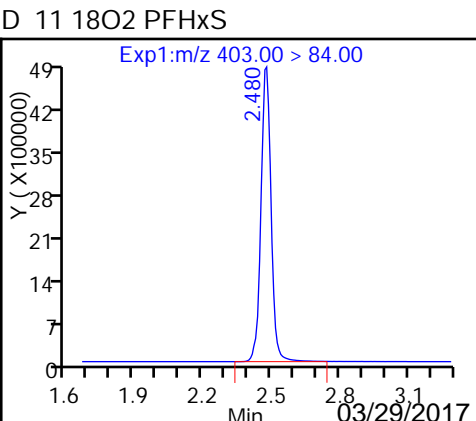
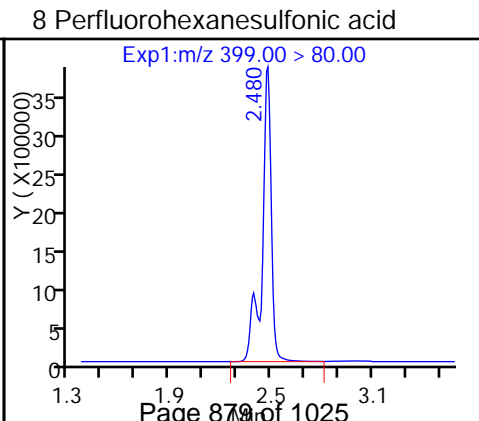
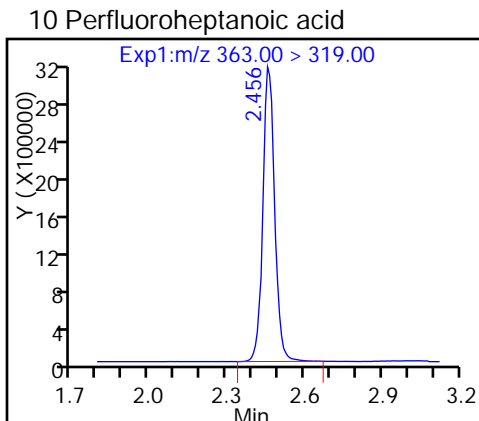
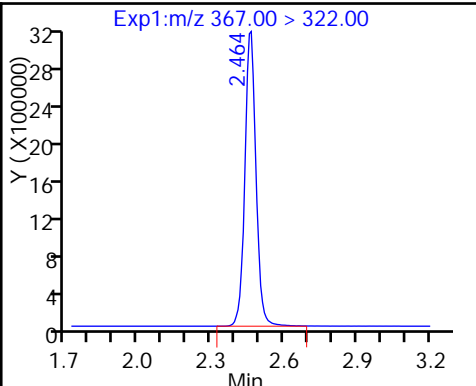
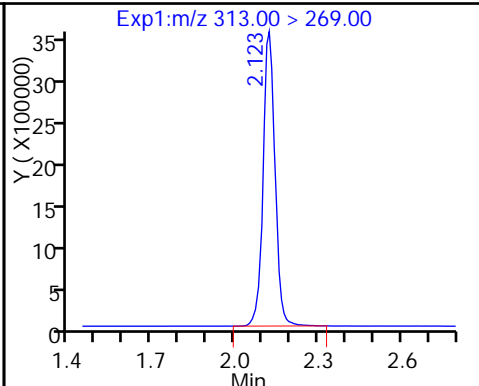
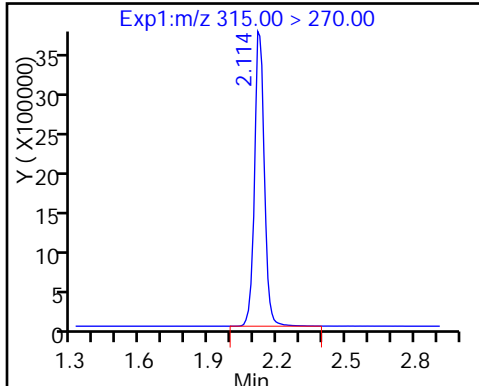
D 3 13C5-PFPeA



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

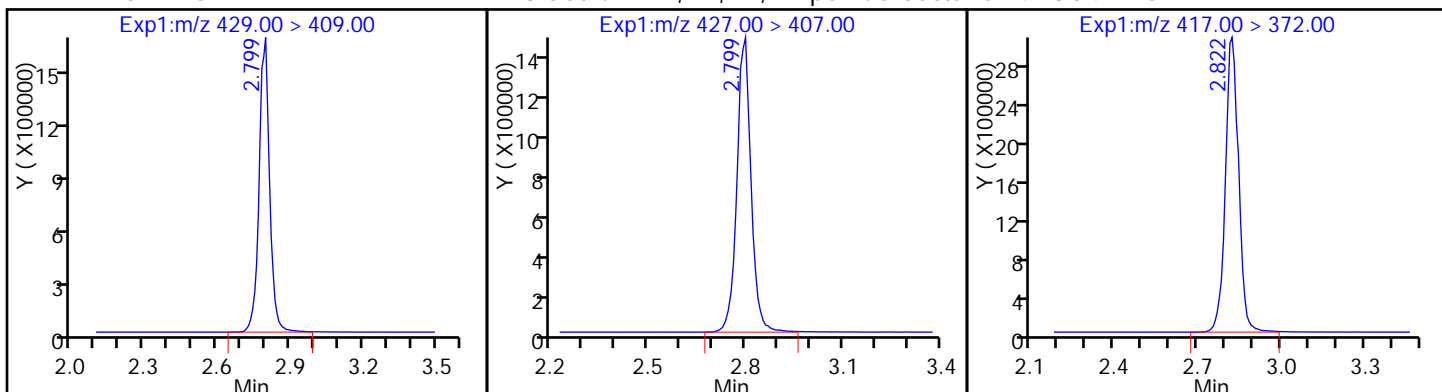
D 9 13C4-PFHpA



D 12 M2-6:2FTS

13 Sodium 1H,1H,2H,2H-perfluorooctanoate

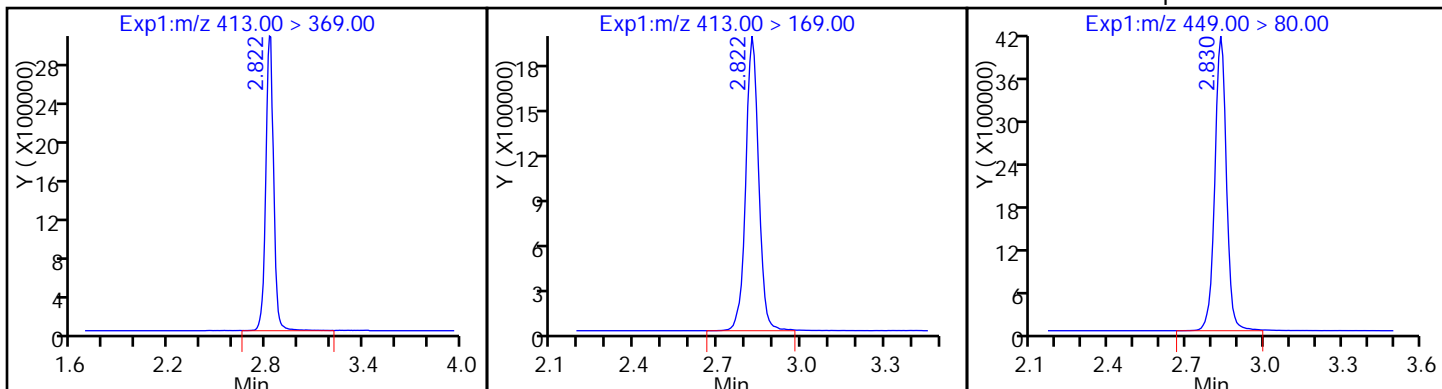
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

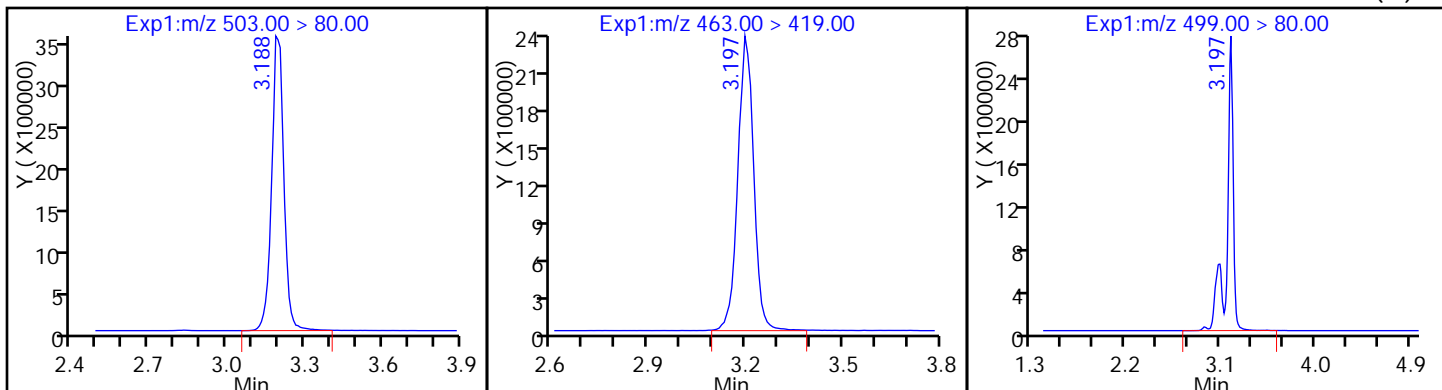
16 Perfluoroheptanesulfonic Acid



D 18 13C4 PFOS

20 Perfluorononanoic acid

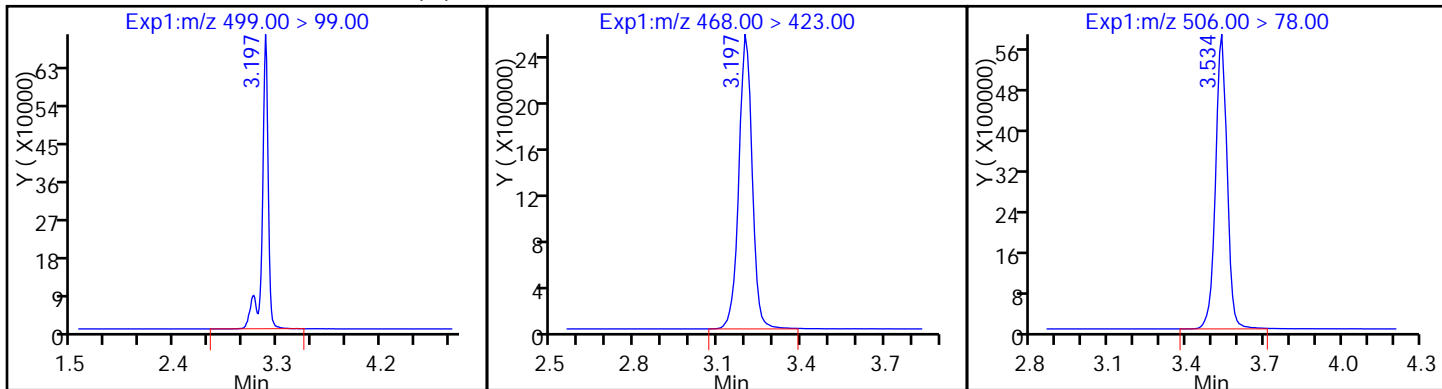
17 Perfluorooctane sulfonic acid (M)



17 Perfluorooctane sulfonic acid (M)

D 19 13C5 PFNA

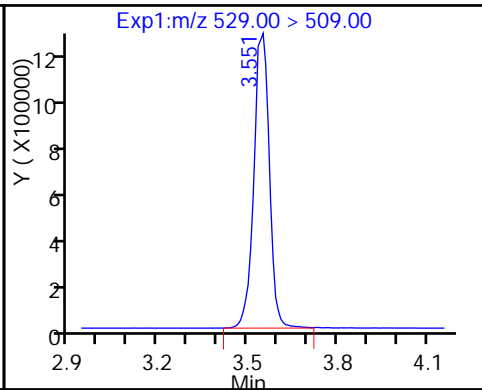
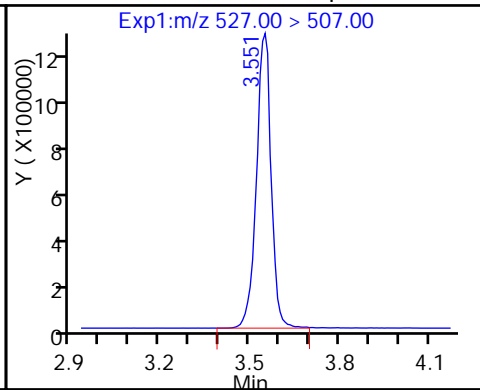
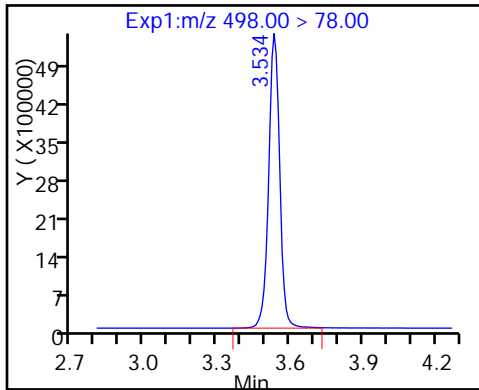
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

25 Sodium 1H,1H,2H,2H-perfluorooctane

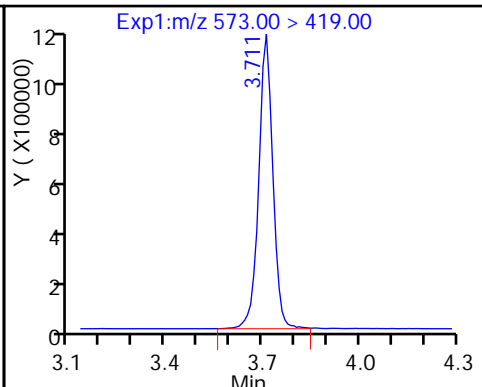
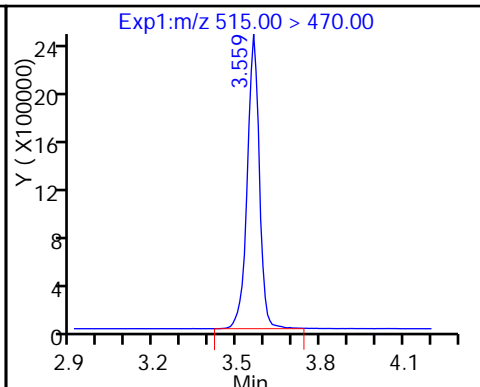
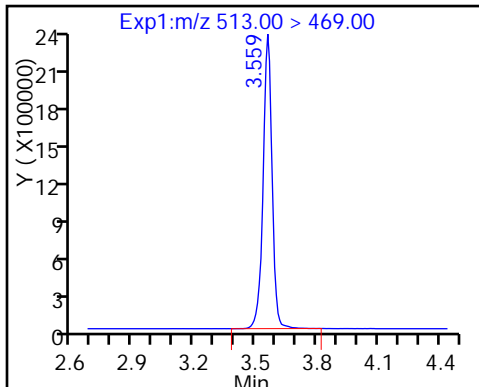
D 26 M2-8:2FTS



24 Perfluorodecanoic acid

D 23 13C2 PFDA

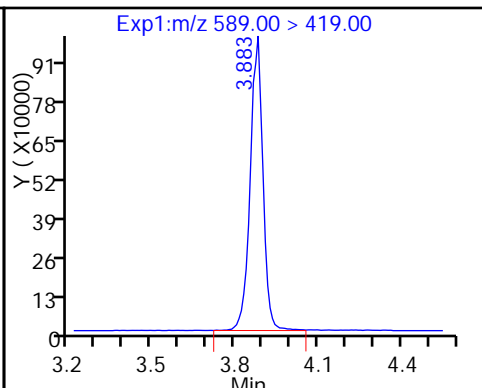
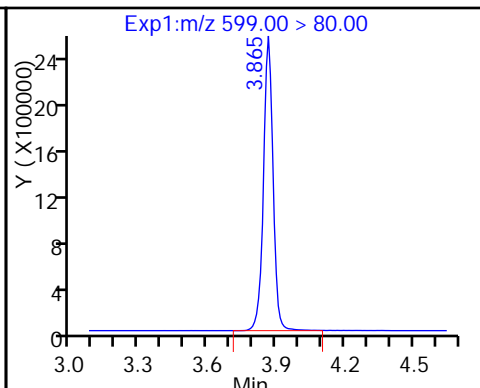
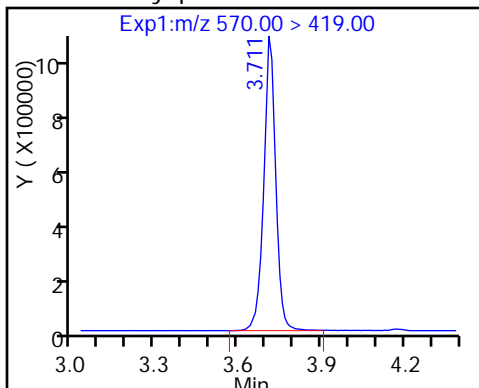
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonamid

29 Perfluorodecane Sulfonic acid

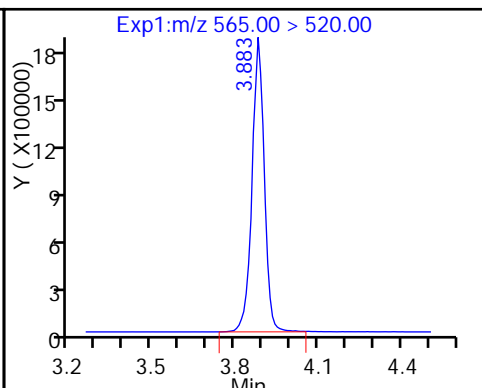
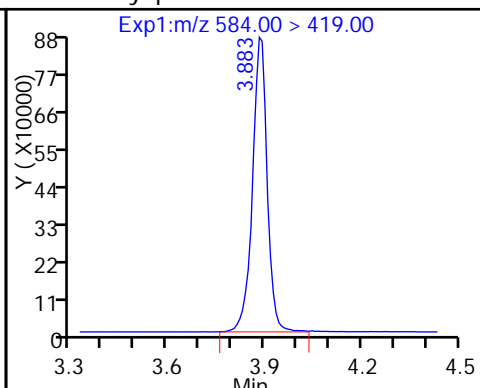
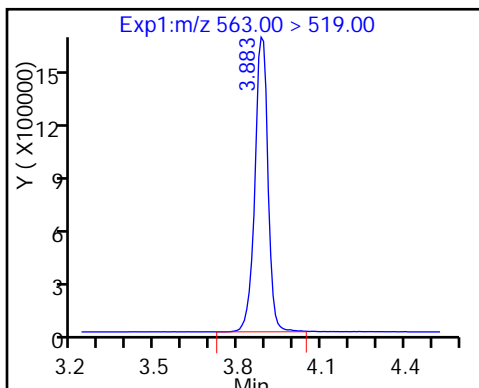
D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid

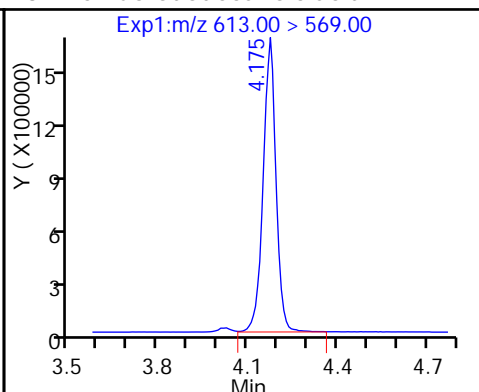
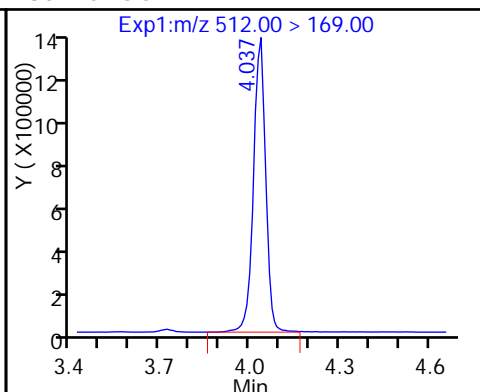
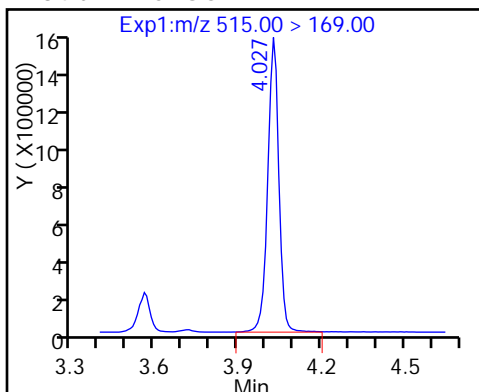
D 30 13C2 PFUnA



D 34 d-N-MeFOSA-M

35 MeFOSA

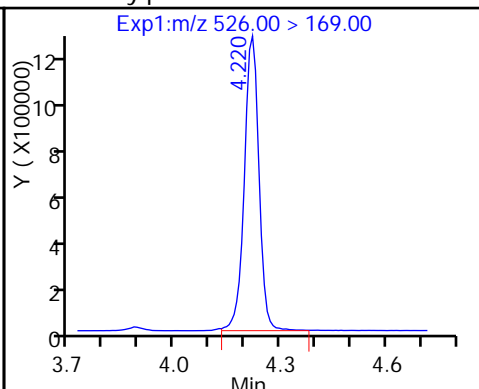
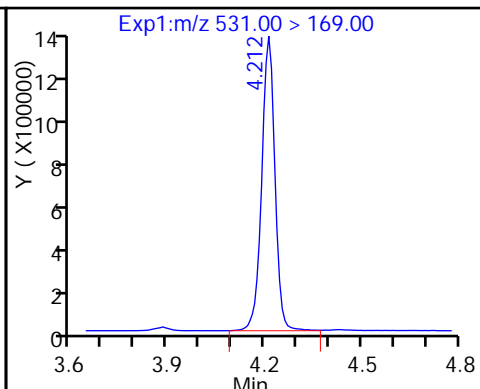
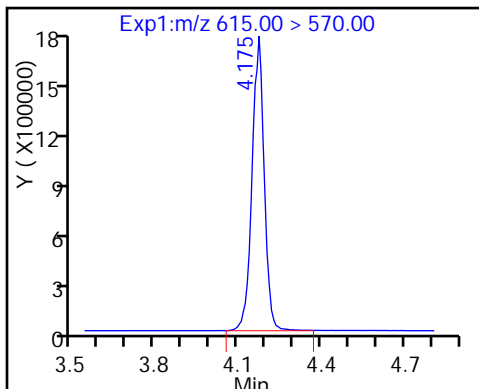
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

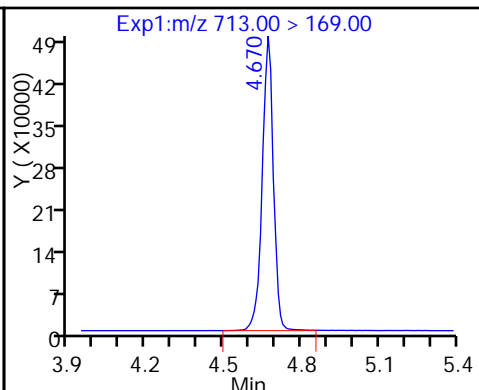
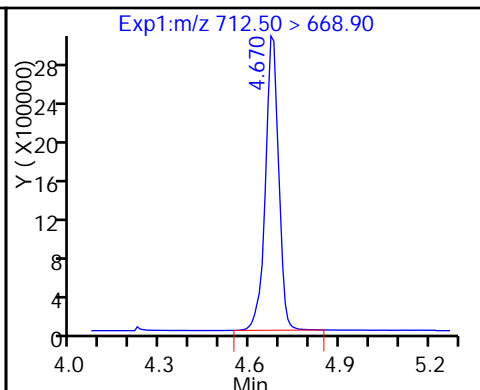
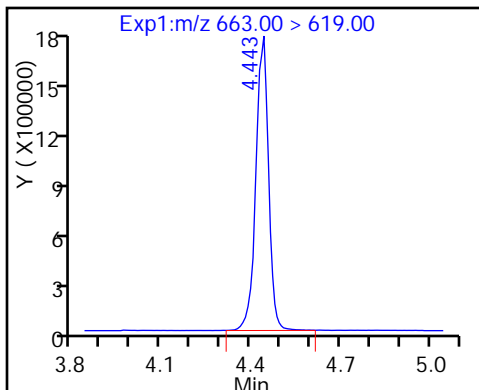
39 N-ethylperfluoro-1-octanesulfonami



41 Perfluorotridecanoic acid

42 Perfluorotetradecanoic acid

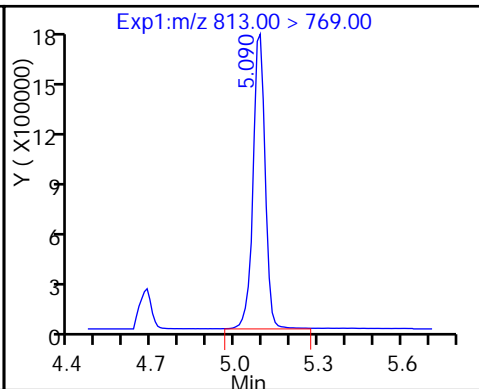
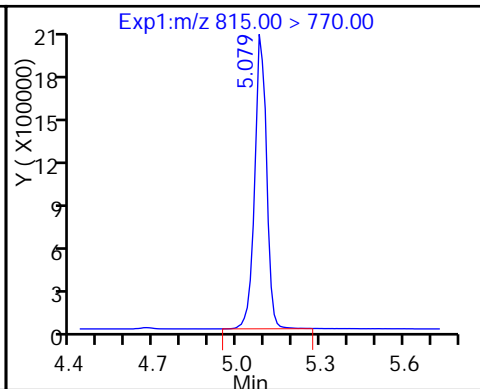
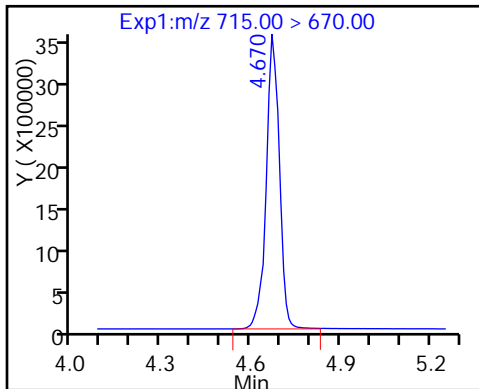
42 Perfluorotetradecanoic acid



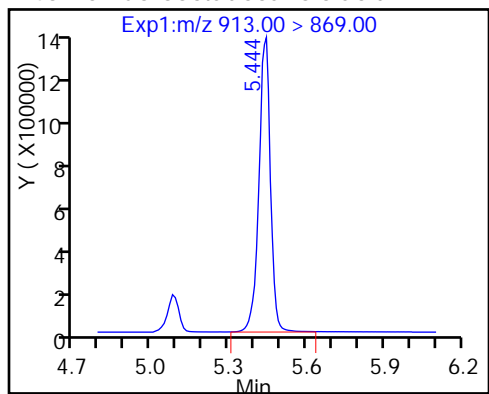
D 43 13C2-PFTeDA

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

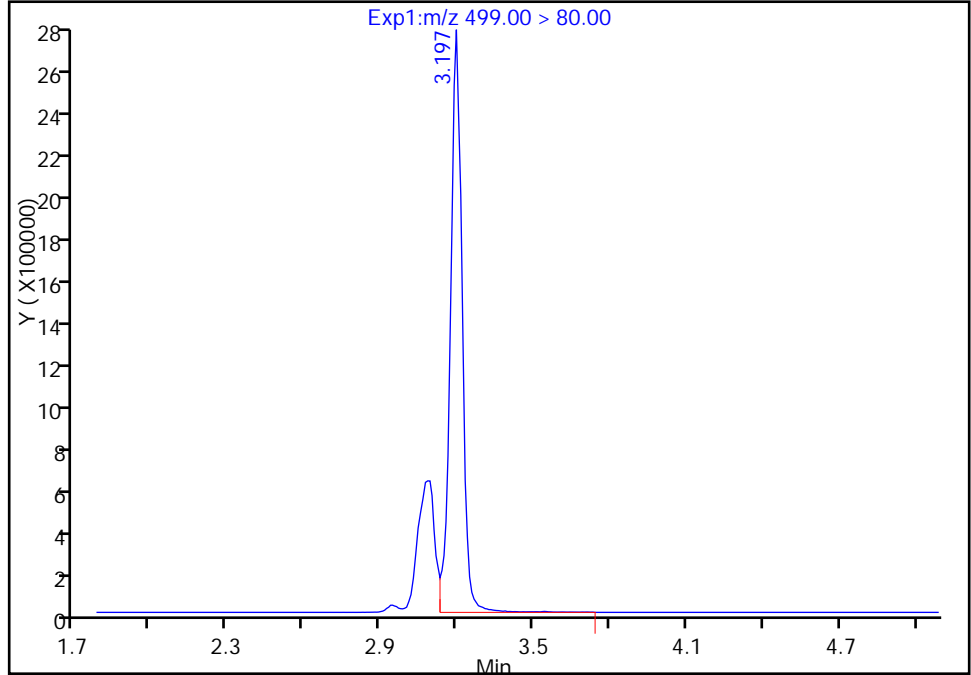
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_047.d
Injection Date: 13-Mar-2017 17:08:37 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

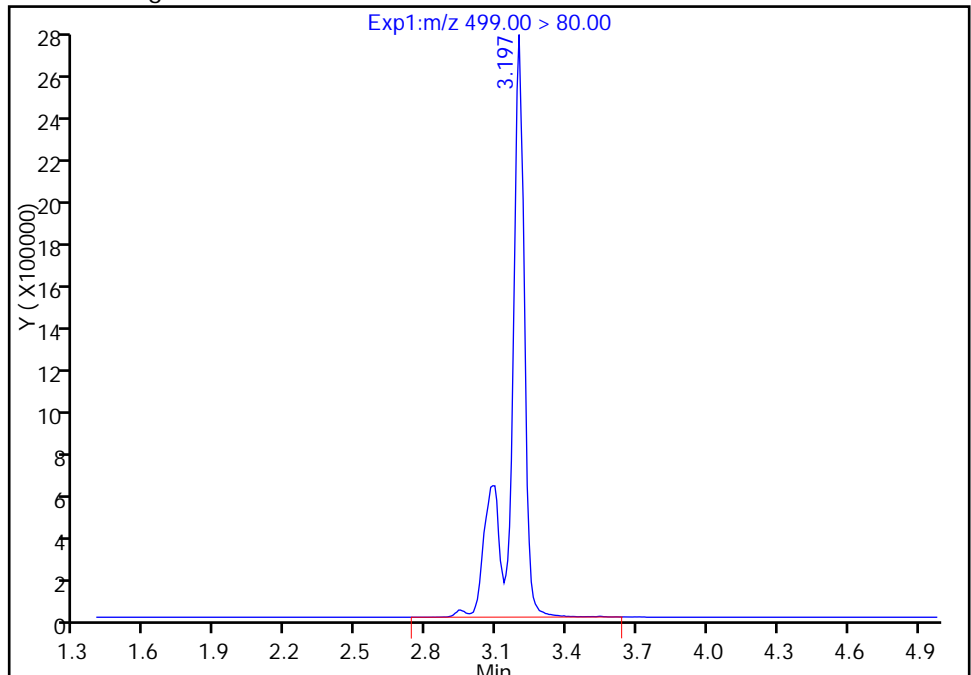
RT: 3.20
Area: 8825465
Amount: 36.346607
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 11759508
Amount: 48.430107
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 14-Mar-2017 13:30:26
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

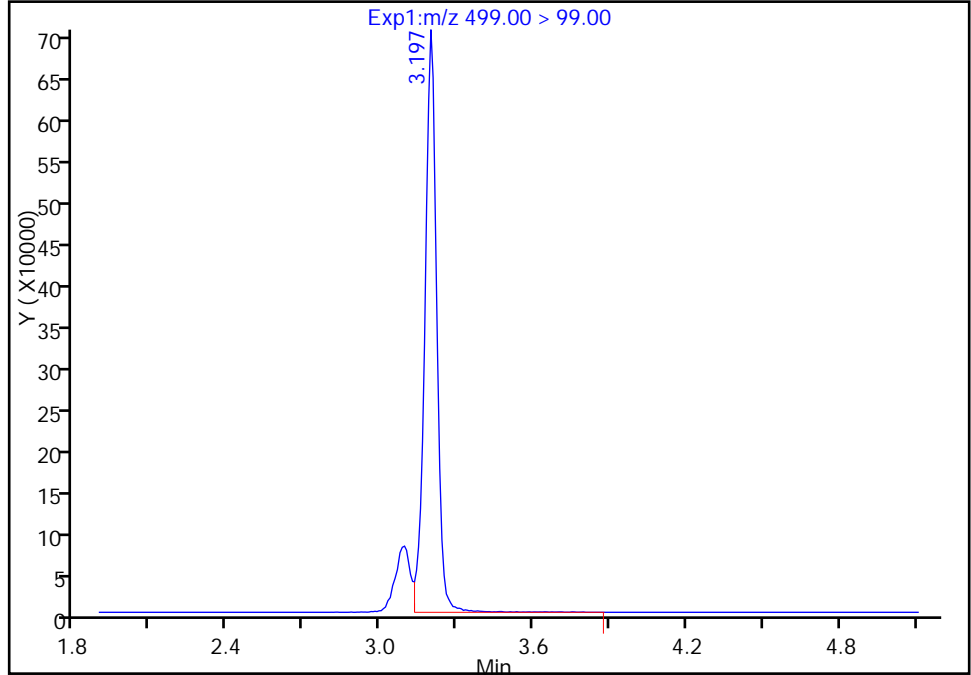
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170314-40808.b\2017.03.13A_047.d
Injection Date: 13-Mar-2017 17:08:37 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

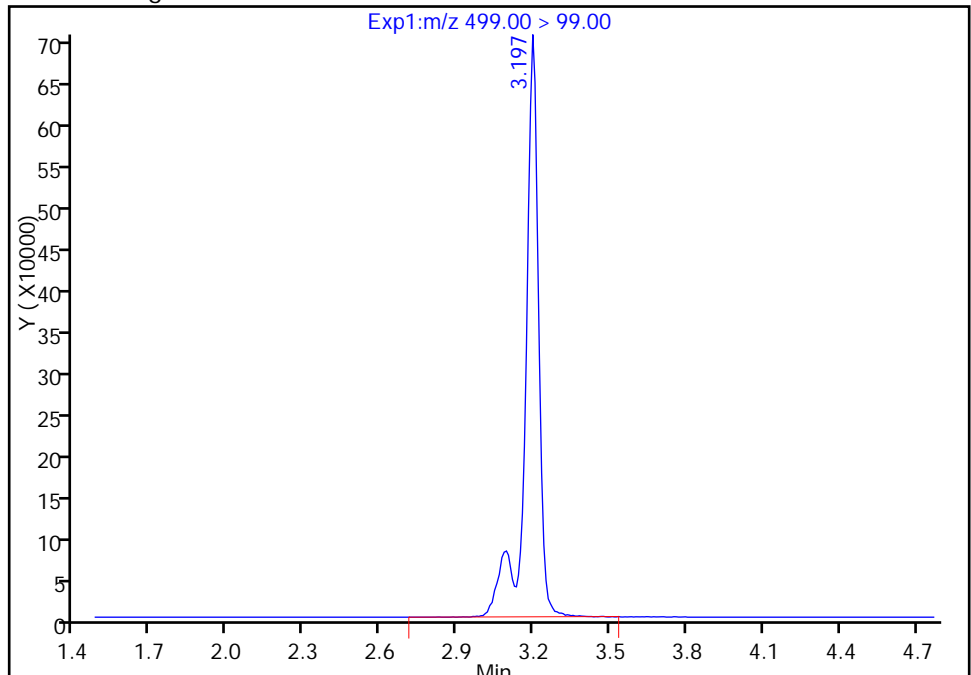
RT: 3.20
Area: 2266426
Amount: 36.346607
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 2575871
Amount: 48.430107
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-152929/1-A
 Matrix: Water Lab File ID: 2017.03.04A_047.d
 Analysis Method: 537 (Modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 250.00 (mL) Date Analyzed: 03/06/2017 01:49
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	2.0	U M	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	158	Q	25-150
STL00991	13C4 PFOS	128		25-150
STL00994	18O2 PFHxS	134		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_047.d
 Lims ID: MB 320-152929/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 06-Mar-2017 01:49:12 ALS Bottle#: 36 Worklist Smp#: 47
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-152929/1-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 07-Mar-2017 15:02:46 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK021

First Level Reviewer: changnoit Date: 07-Mar-2017 14:36:03

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	1.538	1.530	0.008	20548095	70.3		141	3269700	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.546	1.538	0.008	1.000	67119	0.1928		422	M	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.821	1.821	0.0	1.000	30020	0.0893		229	M	
D 3 13C5-PFPeA	267.90 > 223.00	1.821	1.811	0.010	17168506	73.9		148	2982278	
D 7 13C2 PFHxA	315.00 > 270.00	2.110	2.113	-0.003	14650482	69.5		139	68583	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.110	2.113	-0.003	1.000	13720	0.0526		258	M	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.461	2.456	0.005	1.000	11994	0.0389		103	M	
D 9 13C4-PFHpA	367.00 > 322.00	2.453	2.448	0.005	15931556	82.6		165	78638	
D 11 18O2 PFHxS	403.00 > 84.00	2.469	2.464	0.005	18473970	63.5		134	100309	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.461	2.464	-0.003	1.000	67184	0.1673				
D 12 M2-6:2FTS	429.00 > 409.00	2.803	2.783	0.020	1566	0.0203		0.0		
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.795	2.783	0.012	1.000	7196	NR				
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.826	2.806	0.020	1.000	27243	0.0821		239	M	
413.00 > 169.00	2.803	2.806	-0.003	0.992	27088		1.01(0.90-1.10)	5606		
D 14 13C4 PFOA	417.00 > 372.00	2.819	2.814	0.005	1624844	79.2		158	2514297	

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	3.193	3.188	0.005	14836742	61.4	128	2335128	
D 19 13C5 PFNA	468.00	> 423.00	3.185	3.188	-0.003	12794600	71.9	144	4066397	
D 26 M2-8:2FTS	529.00	> 509.00	3.549	3.530	0.019	3806	0.0411	0.0		
D 21 13C8 FOSA	506.00	> 78.00	3.532	3.538	-0.006	14642012	39.9	79.8	1553302	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.540	3.538	0.002	1.000	24319	0.0924		6258
D 23 13C2 PFDA	515.00	> 470.00	3.540	3.547	-0.007	11789590	70.7	141	905371	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.697	3.695	0.002	15520	0.1822	0.0		
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.688	3.706	-0.018	0.997	5548	NR		
D 32 d5-NEtFOSAA	589.00	> 419.00	3.852	3.859	-0.007	53343	0.6555	0.0		
31 Perfluoroundecanoic acid	563.00	> 519.00	3.861	3.867	-0.006	1.000	42353	0.2235		1161
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.870	3.876	-0.006	1.004	10643	NR		
D 30 13C2 PFUnA	565.00	> 520.00	3.861	3.867	-0.006	9347782	71.5	143	37970	
D 36 13C2 PFDaA	615.00	> 570.00	4.150	4.152	-0.002	8235337	66.4	133	1354973	
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.199	4.217	-0.018	4429	0.0520	0.0		
41 Perfluorotridecanoic acid	663.00	> 619.00	4.422	4.419	0.003	1.000	15578	0.1083		150
D 43 13C2-PFTeDA	715.00	> 670.00	4.645	4.651	-0.006	17809960	68.7	137	5293765	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.699	4.641	0.058	1.000	122582	0.3785		M
	713.00	> 169.00	4.645	4.641	0.004	0.988	11524	10.64(0.00-0.00)		M
D 44 13C2-PFHxDA	815.00	> 770.00	5.048	5.055	-0.007	8474048	67.8	136	255397	
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.048	5.055	-0.007	1.000	137644	0.5250		211
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.391	5.397	-0.006	1.000	8988	0.0761		M

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_047.d

Injection Date: 06-Mar-2017 01:49:12

Instrument ID: A8_N

Lims ID: MB 320-152929/1-A

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 36

Worklist Smp#: 47

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

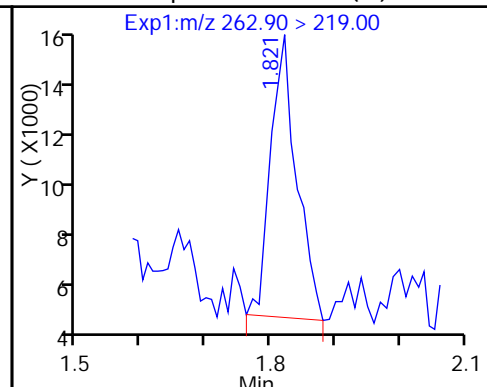
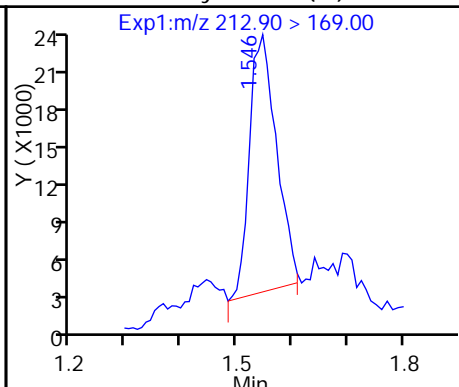
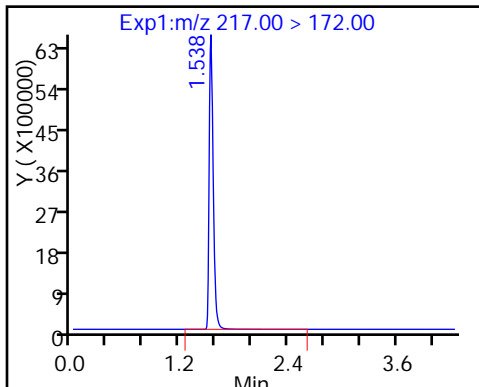
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

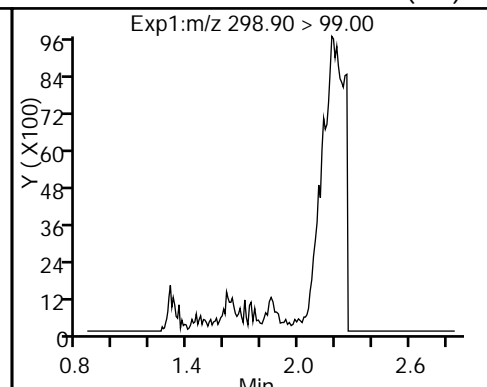
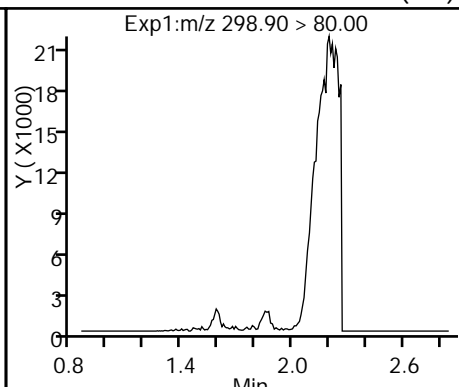
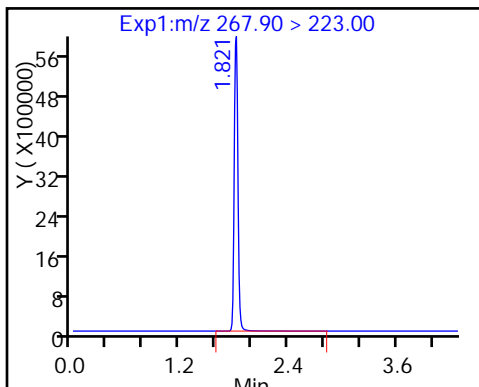
4 Perfluoropentanoic acid (M)



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid (ND)

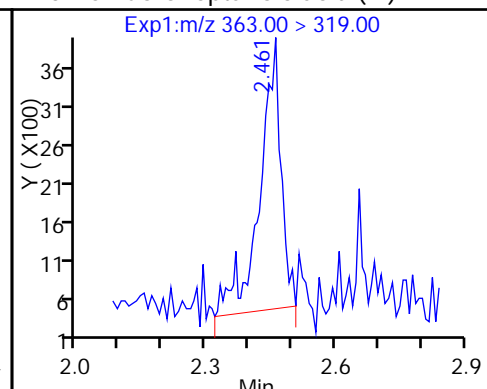
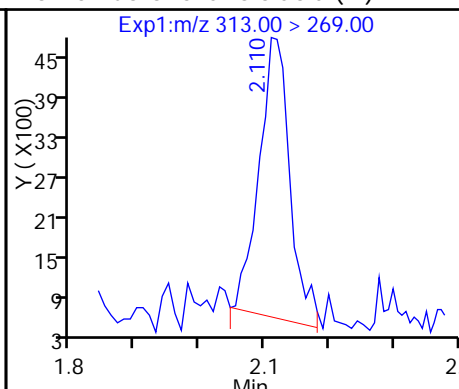
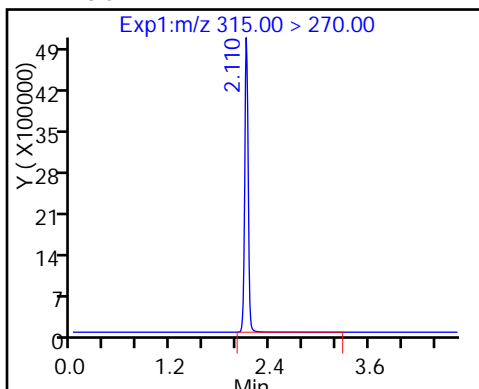
5 Perfluorobutanesulfonic acid (ND)



D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

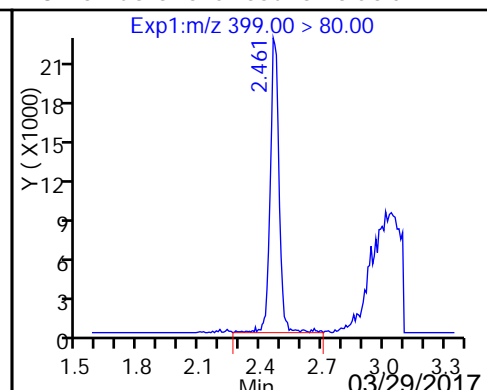
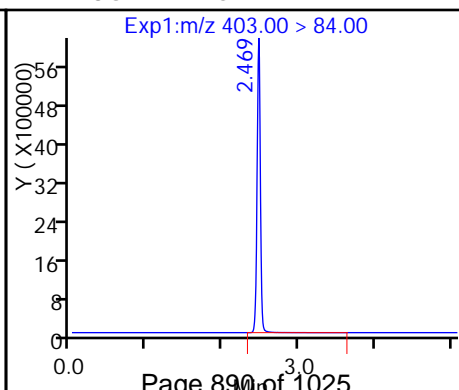
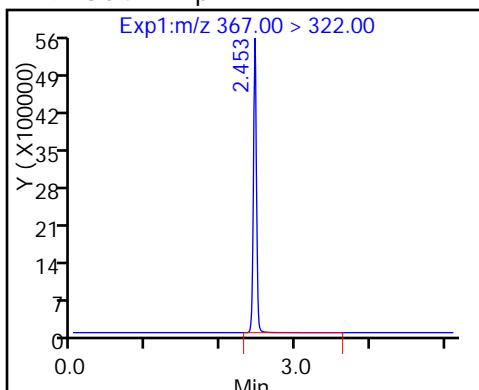
10 Perfluoroheptanoic acid (M)



D 9 13C4-PFHpA

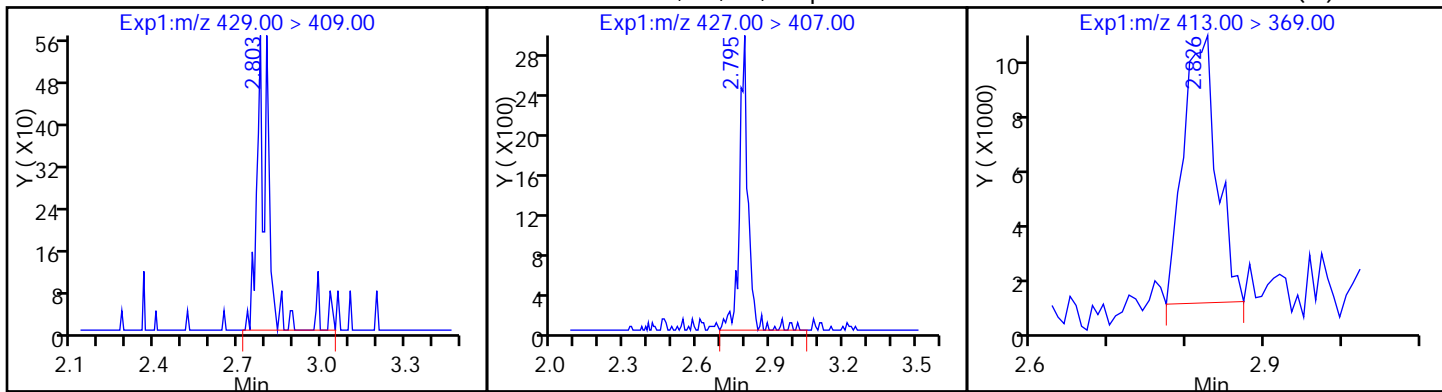
D 11 18O2 PFHxS

8 Perfluorohexanesulfonic acid



D 12 M2-6:2FTS

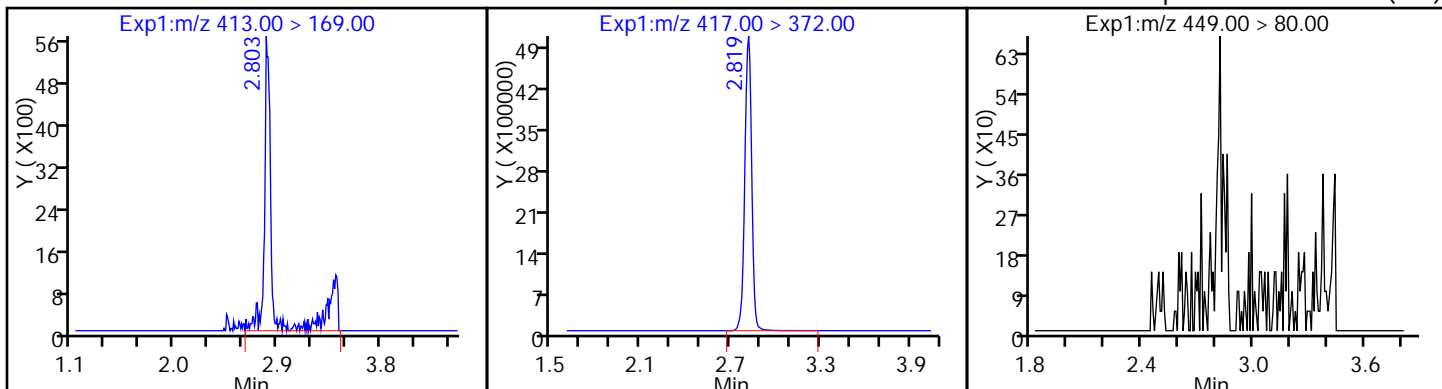
13 Sodium 1H,1H,2H,2H-perfluorooctane15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid

D 14 13C4 PFOA

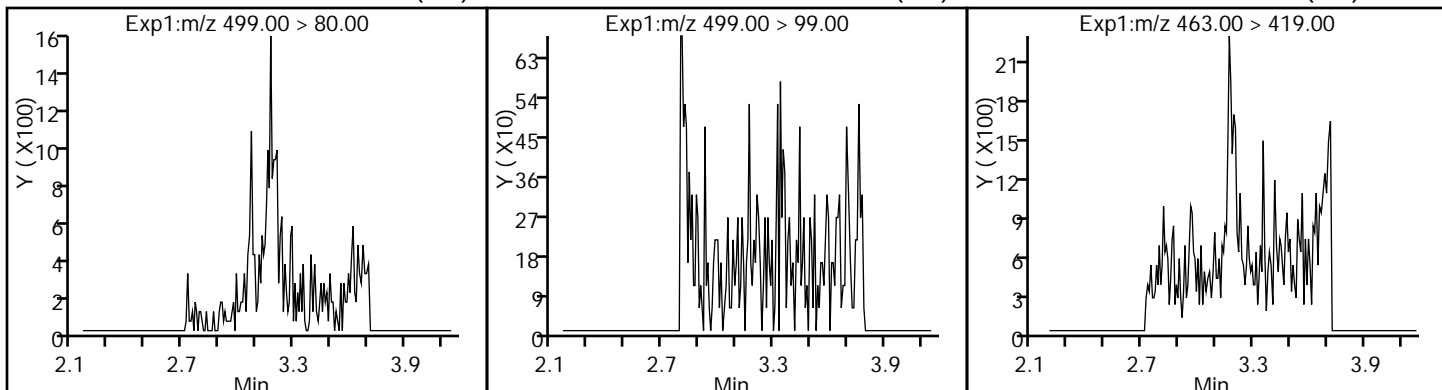
16 Perfluoroheptanesulfonic Acid (ND)



17 Perfluorooctane sulfonic acid (ND)

17 Perfluorooctane sulfonic acid (ND)

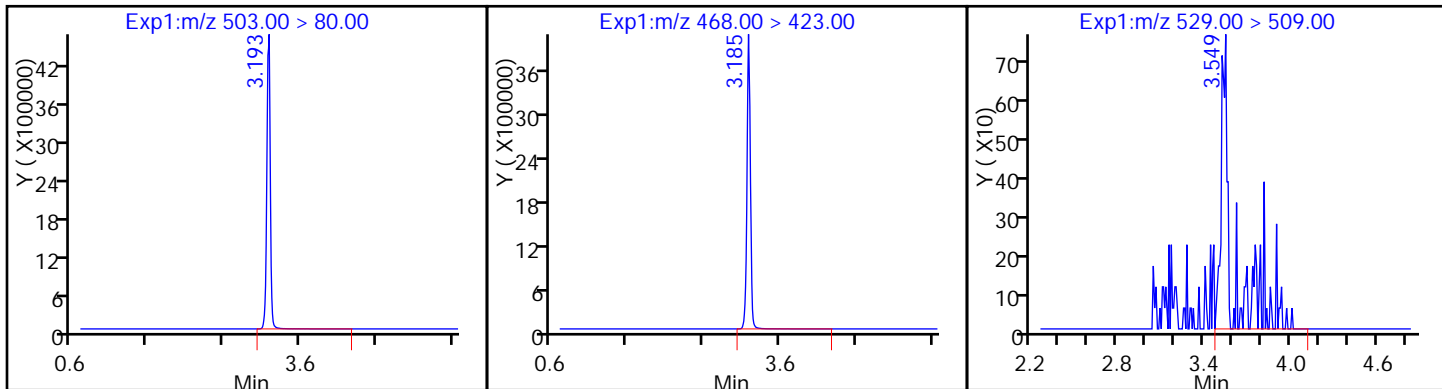
20 Perfluorononanoic acid (ND)



D 18 13C4 PFOS

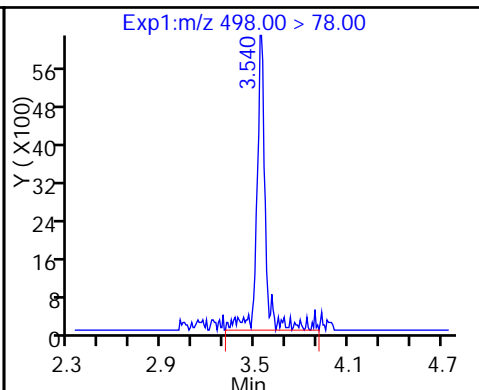
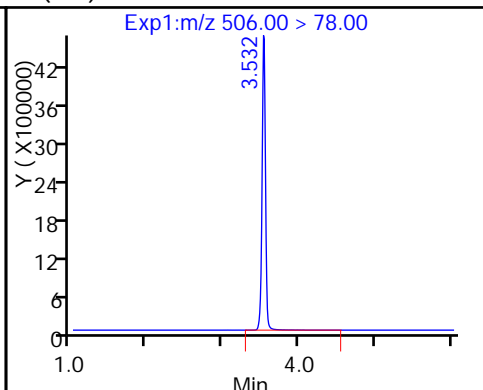
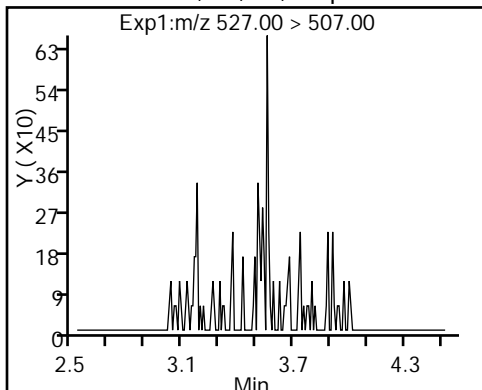
D 19 13C5 PFNA

D 26 M2-8:2FTS



25 Sodium 1H,1H,2H,2H-perfluorooctane Sulfonamide (ND) D 13C8 FOSA

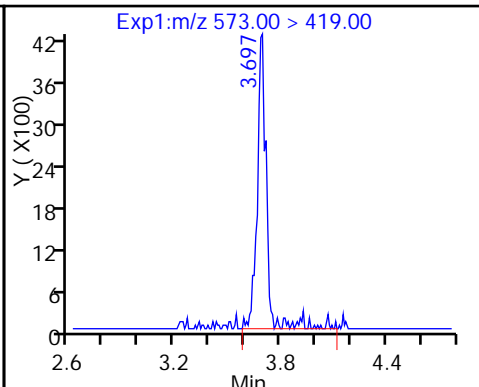
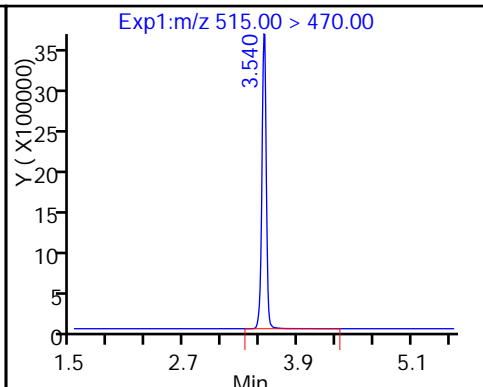
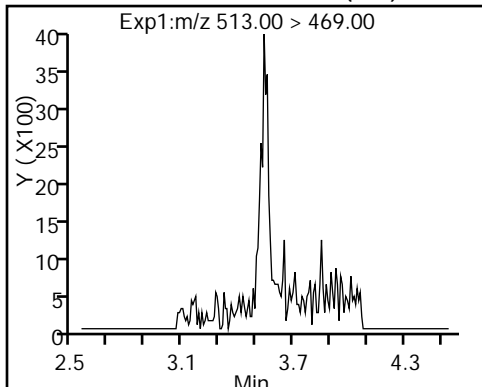
22 Perfluorooctane Sulfonamide



24 Perfluorodecanoic acid (ND)

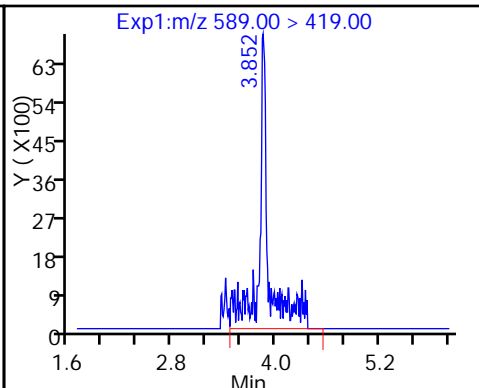
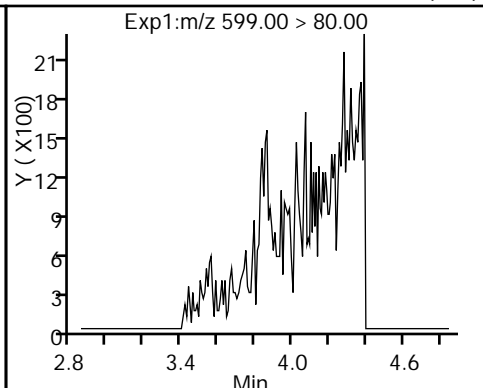
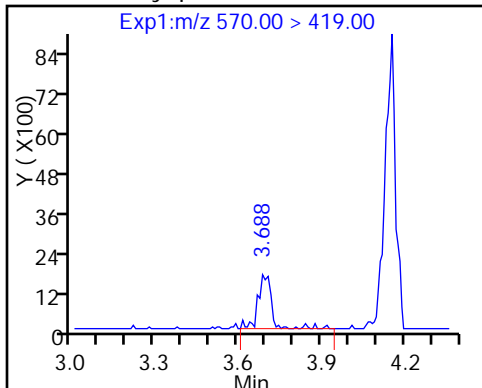
D 23 13C2 PFDA

D 27 d3-NMeFOSAA



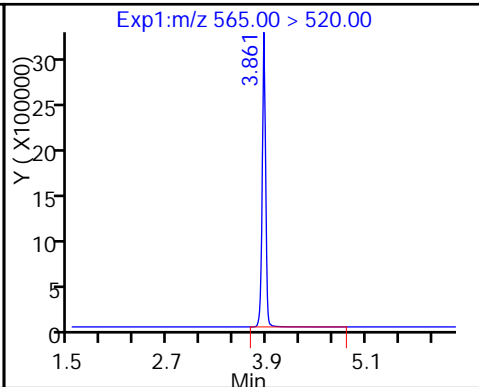
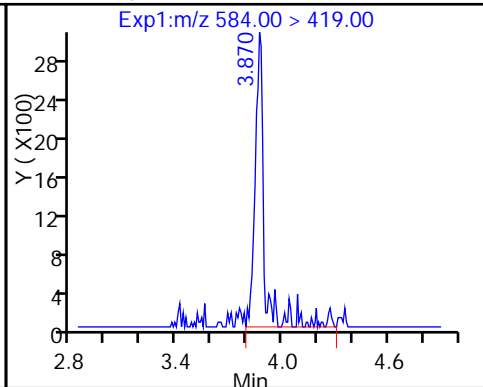
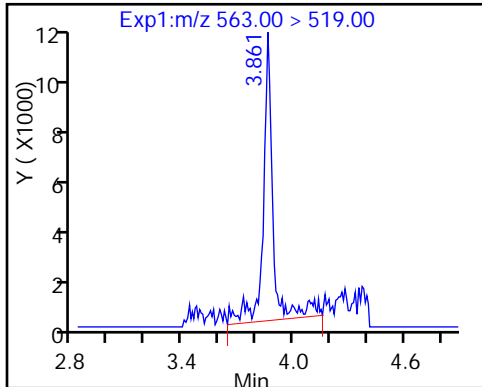
28 N-methyl perfluorooctane sulfonamide

29 Perfluorodecane Sulfonic acid (ND) D 32 d5-NEtFOSAA

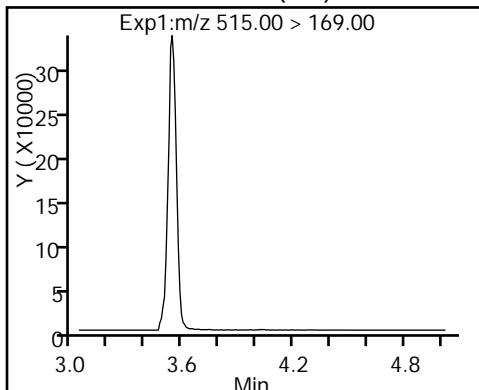


31 Perfluoroundecanoic acid

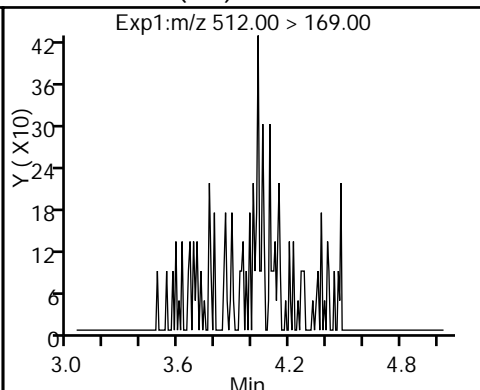
33 N-ethyl perfluorooctane sulfonamide D 30 13C2 PFUnA



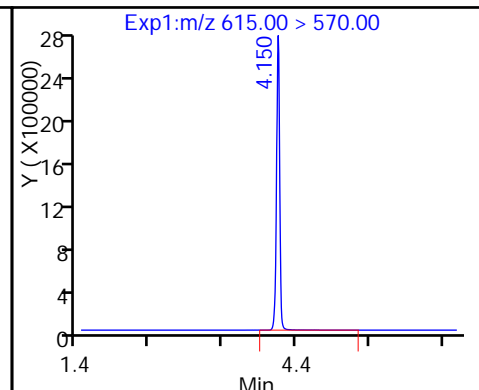
D 34 d-N-MeFOSA-M (ND)



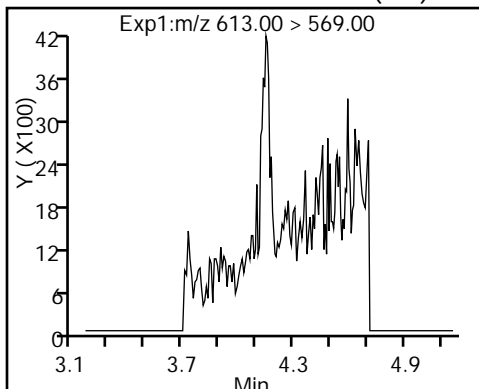
35 MeFOSA (ND)



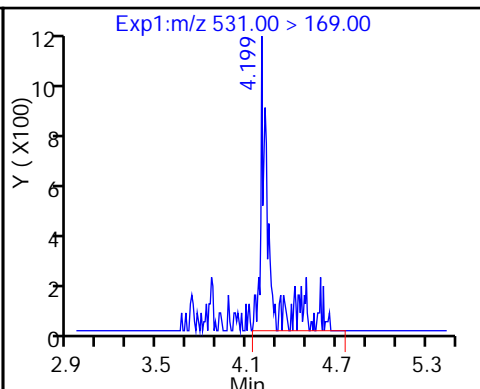
D 36 13C2 PFDaA



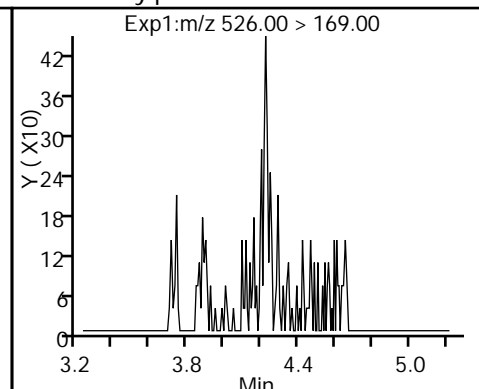
37 Perfluorododecanoic acid (ND)



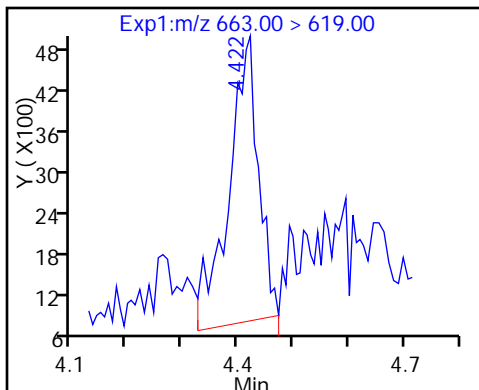
D 38 d-N-EtFOSA-M



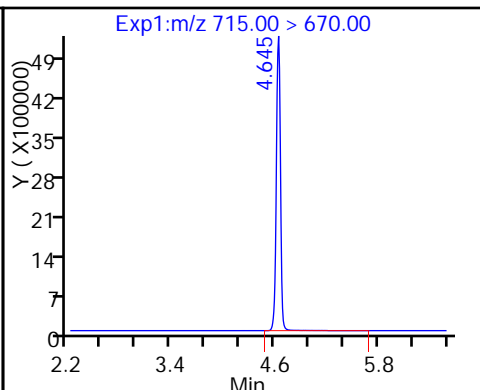
39 N-ethylperfluoro-1-octanesulfonami (ND)



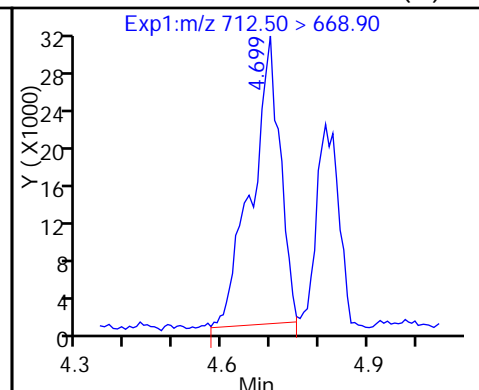
41 Perfluorotridecanoic acid



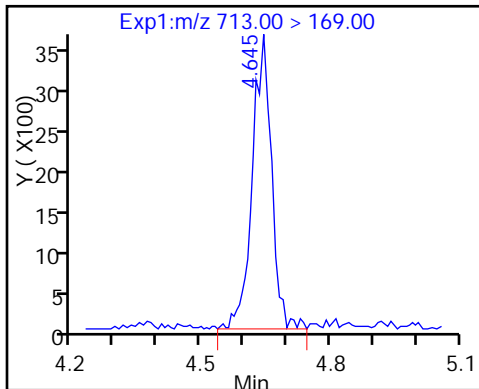
D 43 13C2-PFTeDA



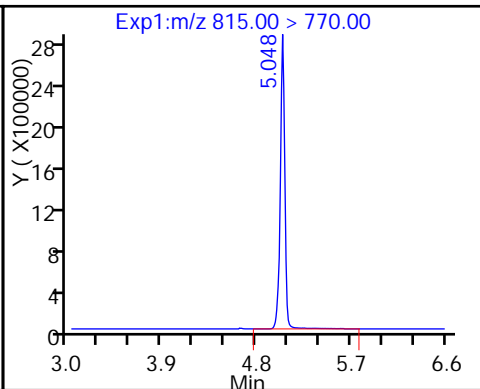
42 Perfluorotetradecanoic acid (M)



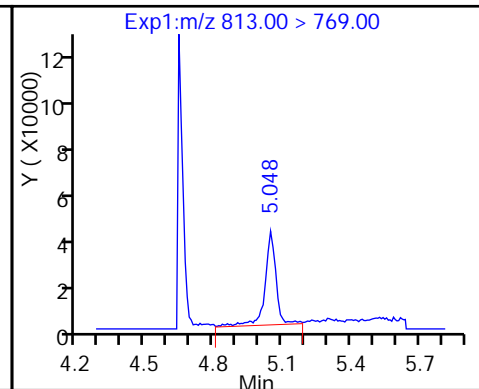
42 Perfluorotetradecanoic acid



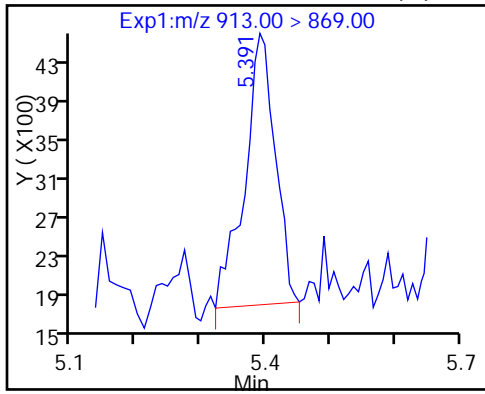
D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid (M)



TestAmerica Sacramento

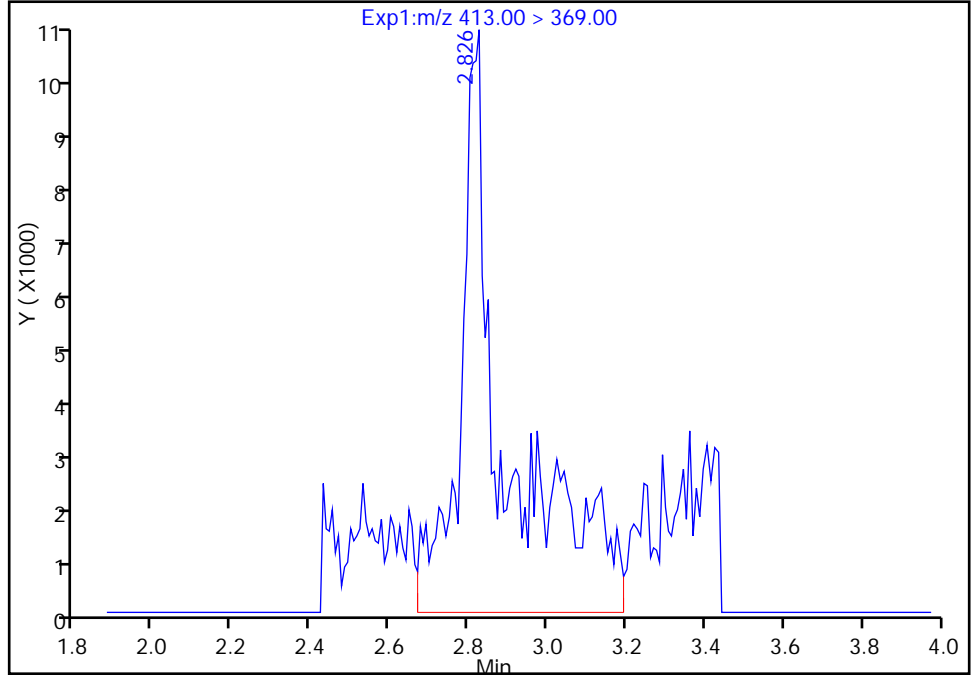
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_047.d
Injection Date: 06-Mar-2017 01:49:12 Instrument ID: A8_N
Lims ID: MB 320-152929/1-A
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 36 Worklist Smp#: 47
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

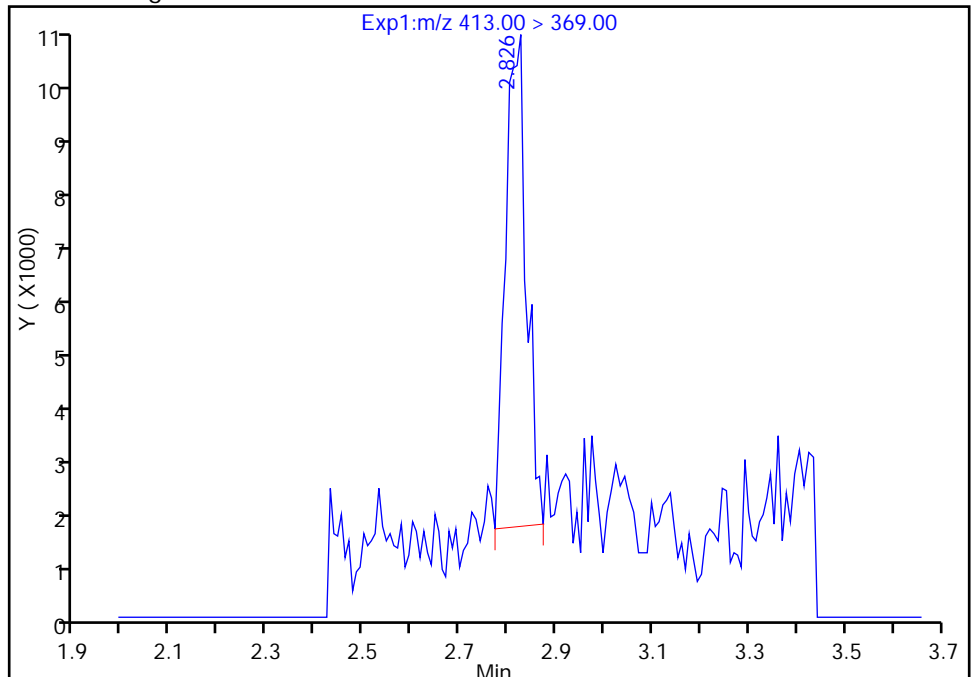
RT: 2.83
Area: 84614
Amount: 0.254950
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 27243
Amount: 0.082086
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 07-Mar-2017 15:01:01
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-152961/1-A
 Matrix: Solid Lab File ID: 2017.03.11C_029.d
 Analysis Method: 537 (Modified) Date Collected: _____
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5(g) Date Analyzed: 03/11/2017 15:42
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.30	U M	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	122	M	25-150
STL00991	13C4 PFOS	99		25-150
STL00994	18O2 PFHxS	113		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_029.d
 Lims ID: MB 320-152961/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 11-Mar-2017 15:42:39 ALS Bottle#: 21 Worklist Smp#: 26
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-152961/1-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 16-Mar-2017 08:06:27 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK016

First Level Reviewer: changnoit

Date: 13-Mar-2017 13:41:23

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	1.531	1.539	-0.008	1.000	134172	0.4677			863	
D 1 13C4 PFBA										
217.00 > 172.00	1.523	1.539	-0.016		16927834	57.9		116	794099	
D 3 13C5-PFPeA										
267.90 > 223.00	1.812	1.822	-0.010		13006613	56.0		112	919403	
D 60 M2-4:2FTS										
329.00 > 309.00	2.132	2.082	0.050		1026	NC				
D 7 13C2 PFHxA										
315.00 > 270.00	2.105	2.117	-0.012		11831659	56.1		112	371941	
D 9 13C4-PFHpA										
367.00 > 322.00	2.440	2.452	-0.012		12991496	67.3		135	391779	
D 11 18O2 PFHxS										
403.00 > 84.00	2.463	2.468	-0.005		15611542	53.7		113	436656	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.463	2.476	-0.013	1.000	62813	0.1850				M
15 Perfluorooctanoic acid										
413.00 > 369.00	2.806	2.818	-0.012	1.000	24500	0.0955			200	M
413.00 > 169.00	2.814	2.818	-0.004	1.003	11630		2.11(0.90-1.10)		403	M
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.818	-0.004		12550907	61.2		122	5125	M
D 18 13C4 PFOS										
503.00 > 80.00	3.179	3.192	-0.013		11429074	47.3		99.0	377414	
D 19 13C5 PFNA										
468.00 > 423.00	3.179	3.201	-0.022		9672030	54.4		109	179563	
D 21 13C8 FOSA										
506.00 > 78.00	3.511	3.519	-0.008		5148723	14.0		28.1	179132	
D 23 13C2 PFDA										
515.00 > 470.00	3.536	3.544	-0.008		8070397	48.4		96.8	227455	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 27 d3-NMeFOSAA	573.00	> 419.00	3.693	3.693	0.0	4312	0.0506	0.0		
D 32 d5-NEtFOSAA	589.00	> 419.00	3.839	3.867	-0.028	8158	0.1003	0.0		M
31 Perfluoroundecanoic acid	563.00	> 519.00	3.848	3.867	-0.019	1.000	13756	0.1213		351
D 30 13C2 PFUnA	565.00	> 520.00	3.865	3.876	-0.011		5594866	42.8	85.5	214862
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.979	4.010	-0.031		339	0.003853	0.0	
D 36 13C2 PFDaA	615.00	> 570.00	4.160	4.159	0.001		3601691	29.1	58.1	97744
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.188	4.195	-0.007		425	0.004985	0.0	
D 43 13C2-PFTeDA	715.00	> 670.00	4.661	4.663	-0.002		3905504	15.1	30.1	230328
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.678	4.663	0.015	1.000	56654	0.3999		601
	713.00	> 169.00	4.661	4.663	-0.002	0.996	1717		33.00(0.00-0.00)	669
D 44 13C2-PFHxDA	815.00	> 770.00	5.068	5.078	-0.010		1091667	8.73	17.5	64556
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.068	5.078	-0.010	1.000	14153	-0.1646		73.3

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_029.d

Injection Date: 11-Mar-2017 15:42:39

Instrument ID: A8_N

Lims ID: MB 320-152961/1-A

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 21

Worklist Smp#: 26

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

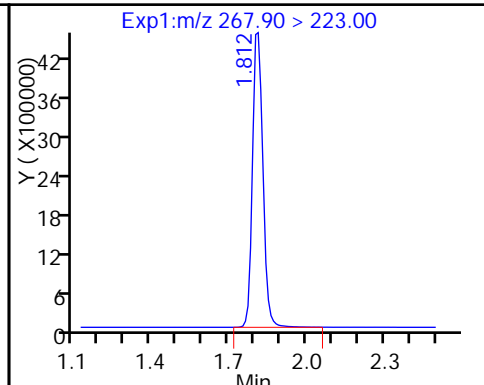
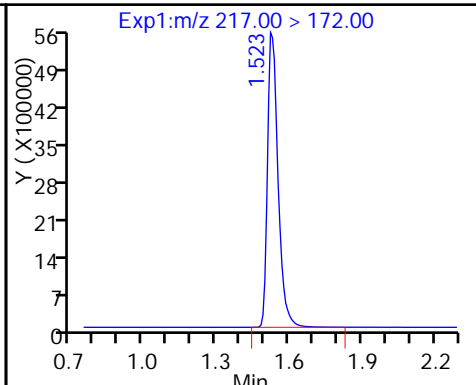
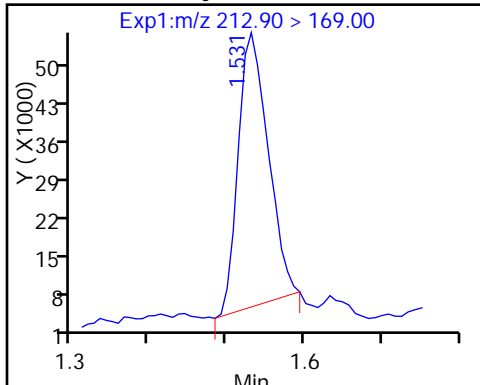
Method: A8_N

Limit Group: LC PFC_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

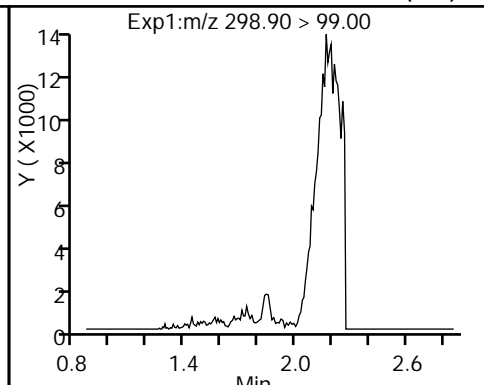
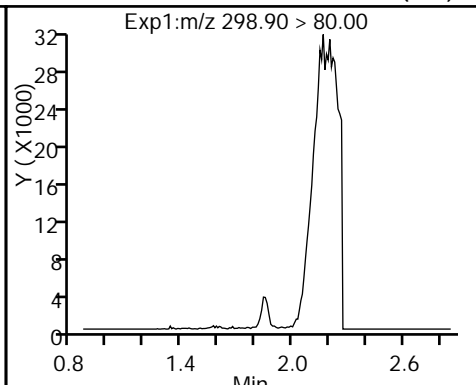
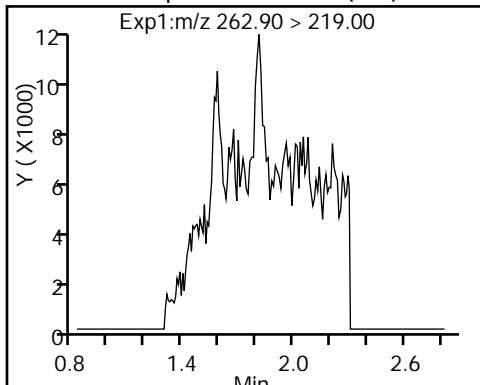
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (ND)

5 Perfluorobutanesulfonic acid (ND)

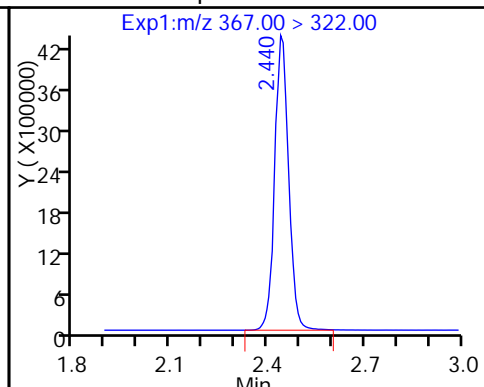
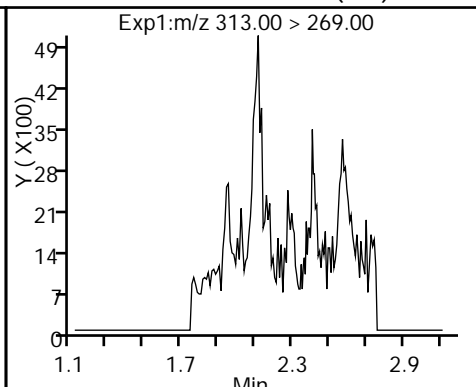
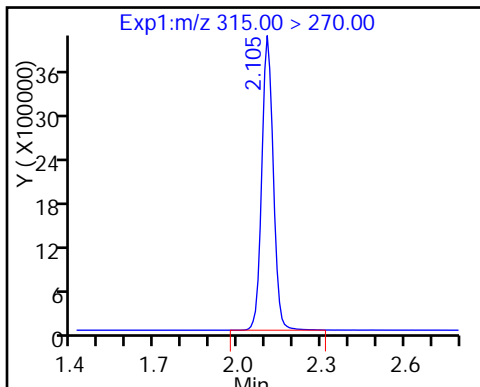
5 Perfluorobutanesulfonic acid (ND)



D 7 13C2 PFHxA

6 Perfluorohexanoic acid (ND)

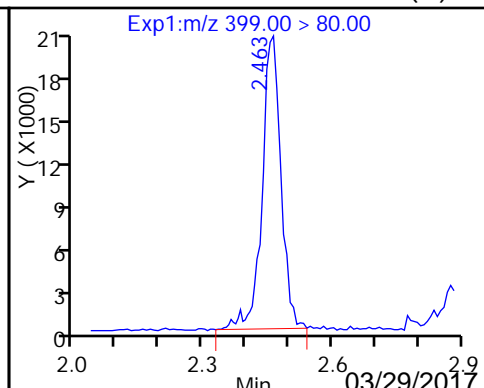
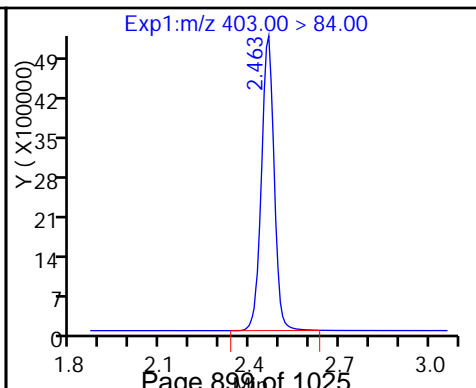
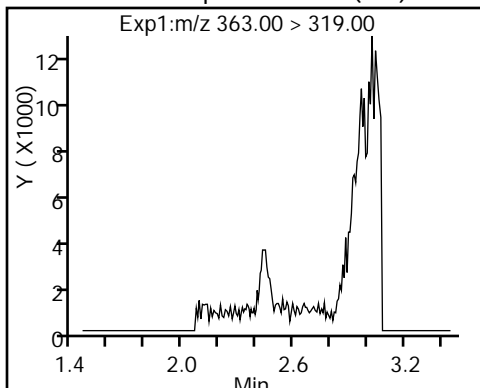
D 9 13C4-PFHpA



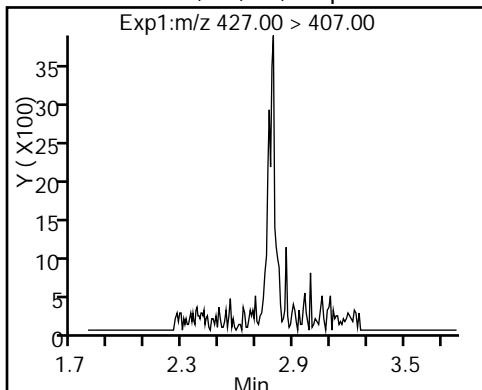
10 Perfluoroheptanoic acid (ND)

D 11 18O2 PFHxS

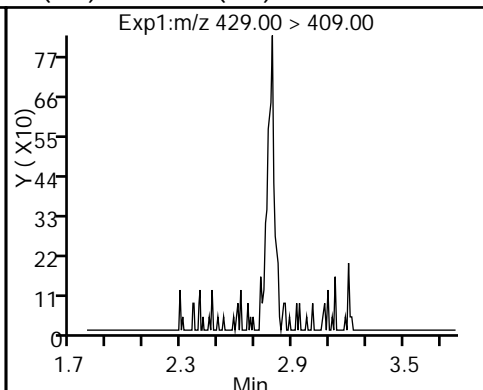
8 Perfluorohexanesulfonic acid (M)



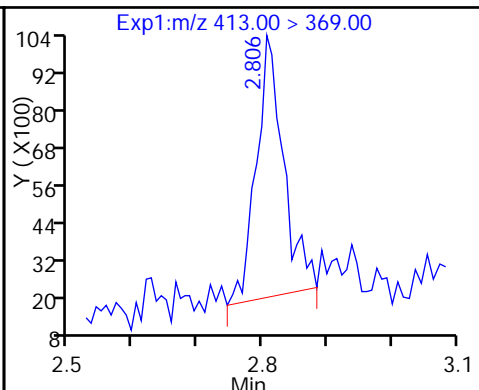
13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate (ND)



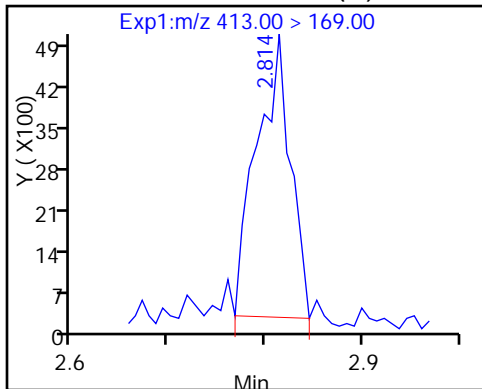
14 Sodium 1H,1H,2H,2H-perfluorooctadecanoate (ND)



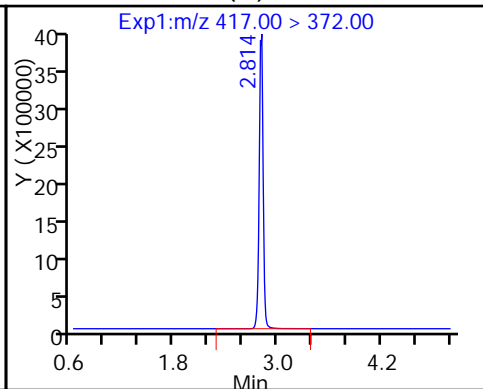
15 Perfluorooctanoic acid



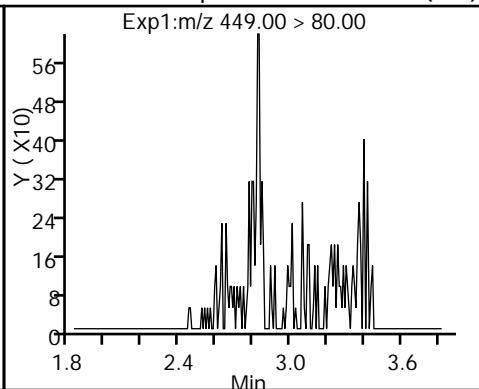
15 Perfluorooctanoic acid (M)



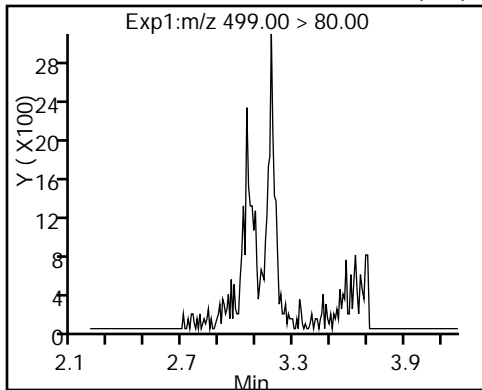
D 14 13C4 PFOA (M)



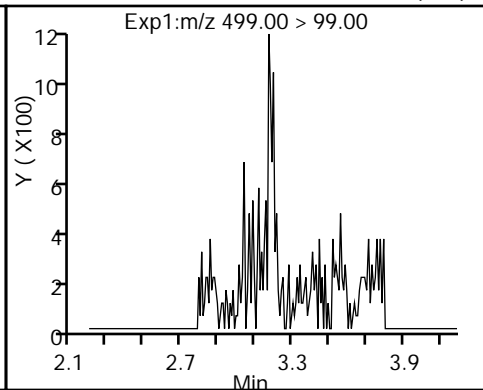
16 Perfluoroheptanesulfonic Acid (ND)



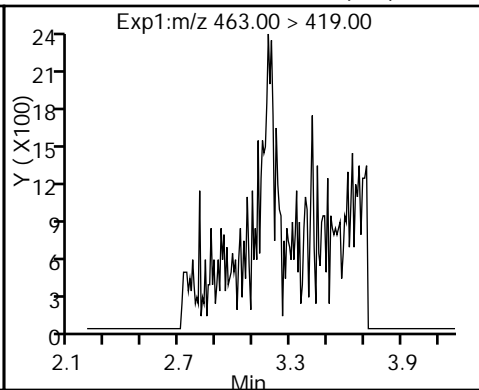
17 Perfluorooctane sulfonic acid (ND)



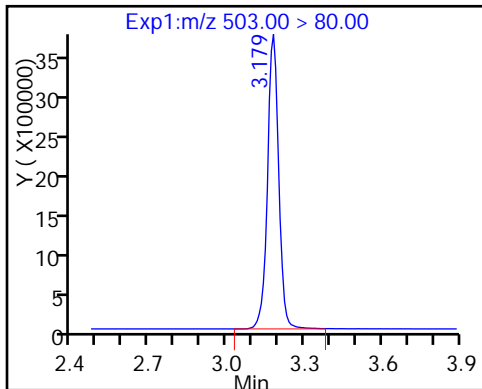
17 Perfluorooctane sulfonic acid (ND)



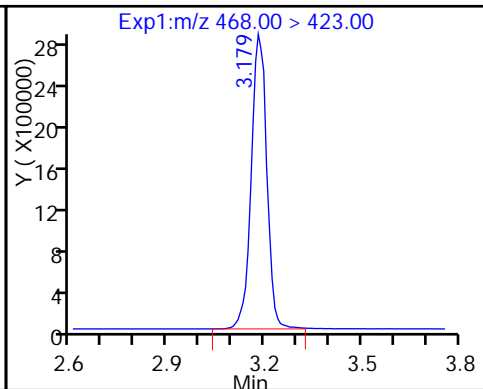
20 Perfluorononanoic acid (ND)



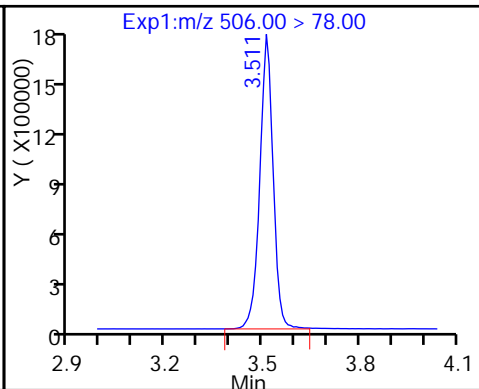
D 18 13C4 PFOS



D 19 13C5 PFNA

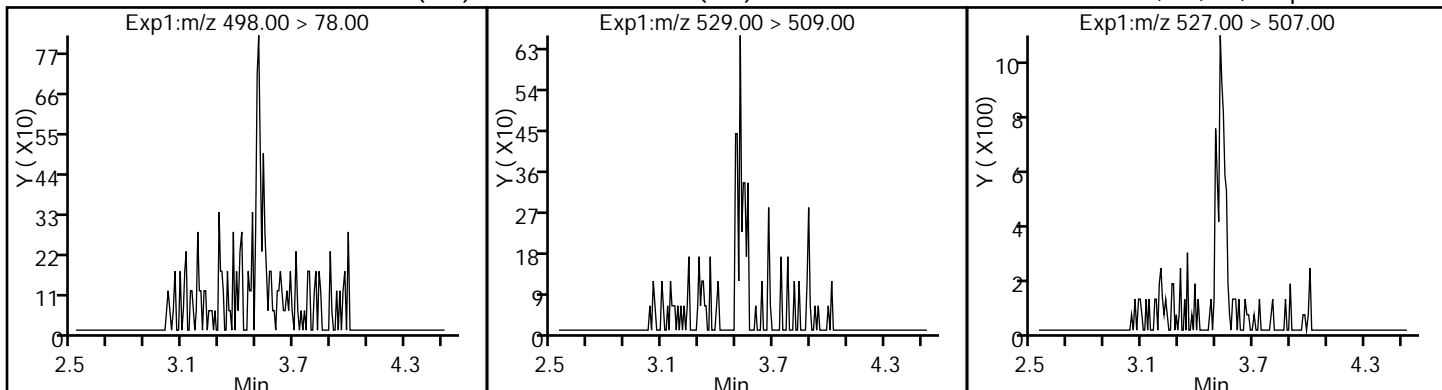


D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide (ND) D 26 M2-8:2FTS (ND)

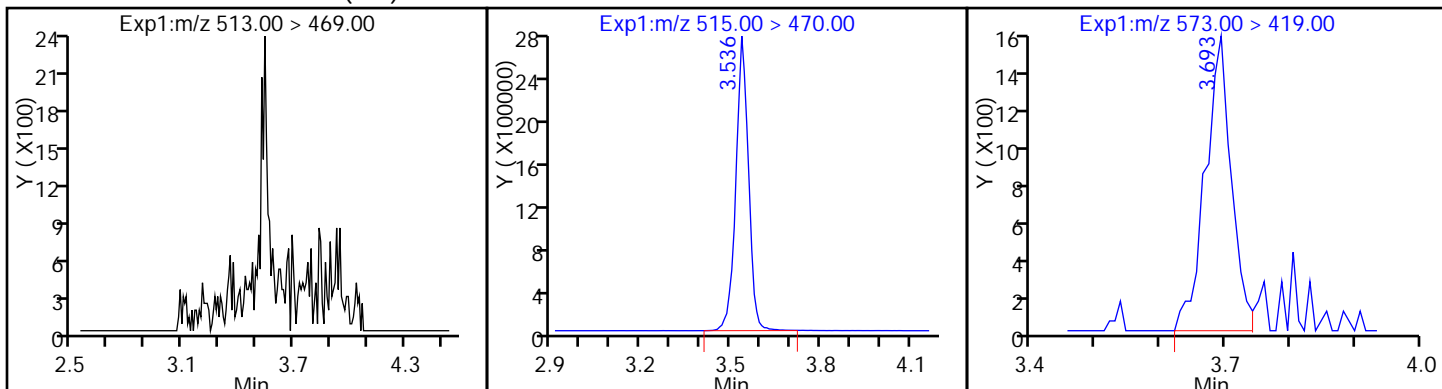
25 Sodium 1H,1H,2H,2H-perfluorooctane (ND)



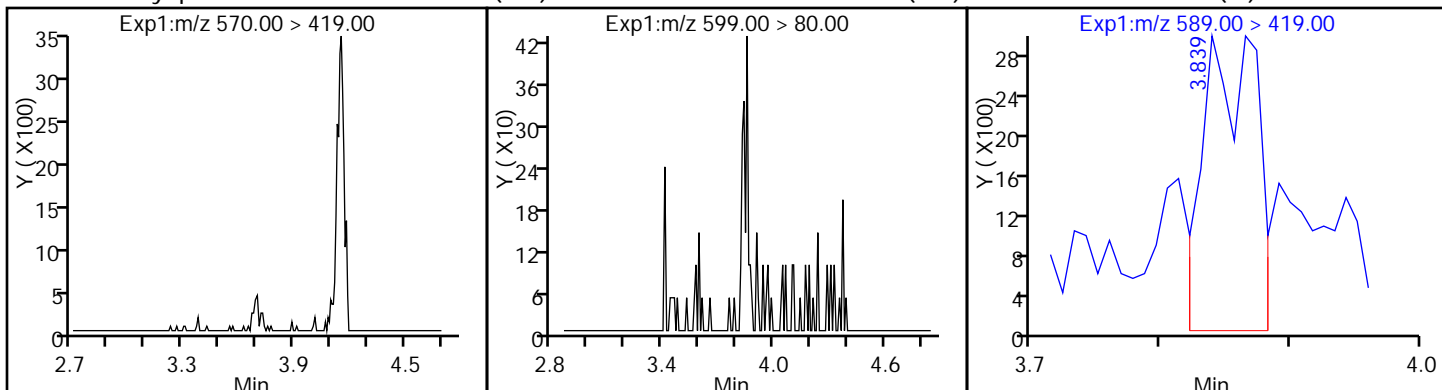
24 Perfluorodecanoic acid (ND)

D 23 13C2 PFDA

D 27 d3-NMeFOSAA

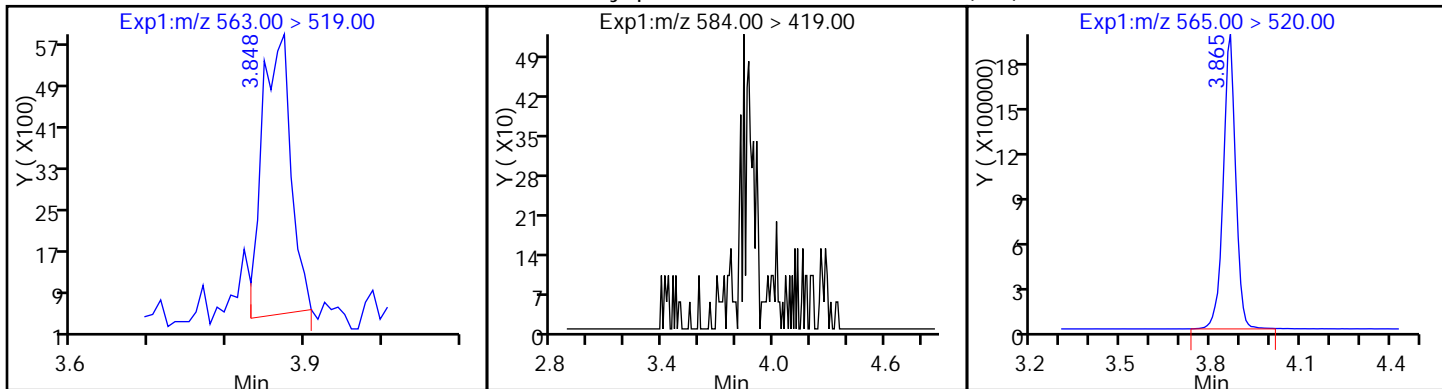


28 N-methyl perfluorooctane sulfonami (ND) D 32 d5-NEtFOSAA (M)



31 Perfluoroundecanoic acid

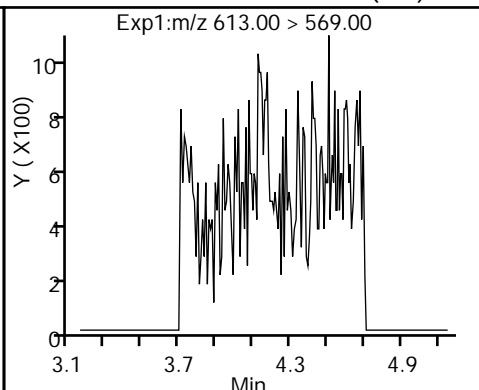
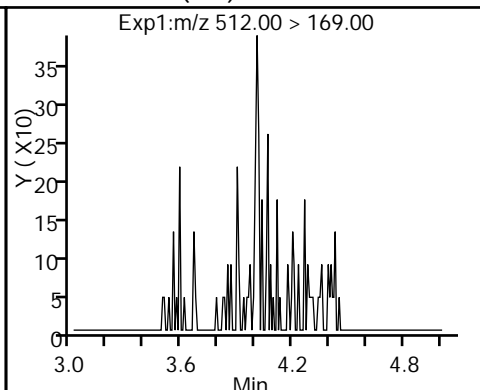
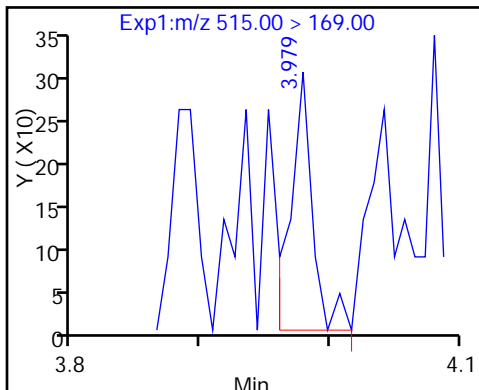
33 N-ethyl perfluorooctane sulfonamid (ND) D 30 13C2 PFUnA



D 34 d-N-MeFOSA-M

35 MeFOSA (ND)

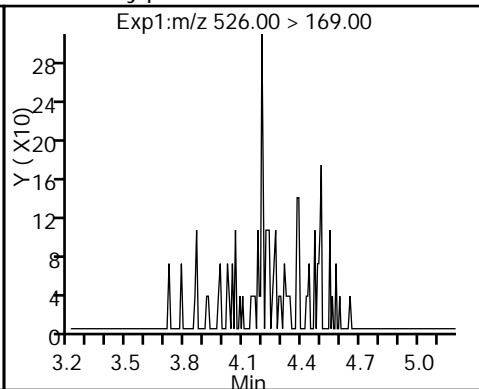
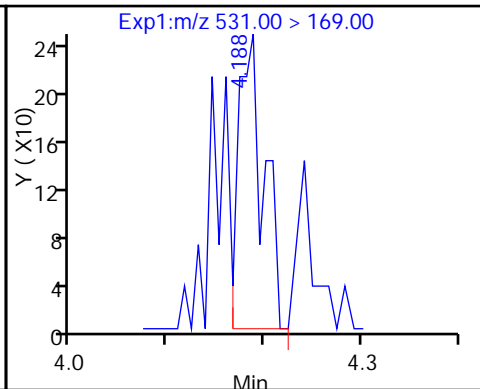
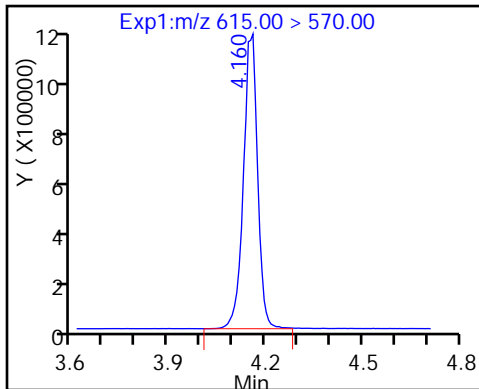
37 Perfluorododecanoic acid (ND)



D 36 13C2 PFDaA

D 38 d-N-EtFOSA-M

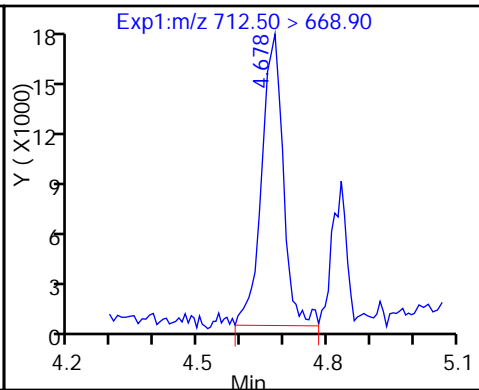
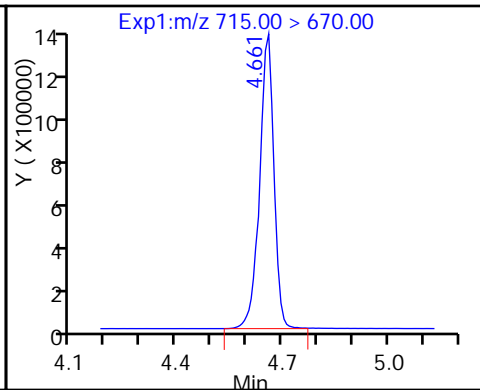
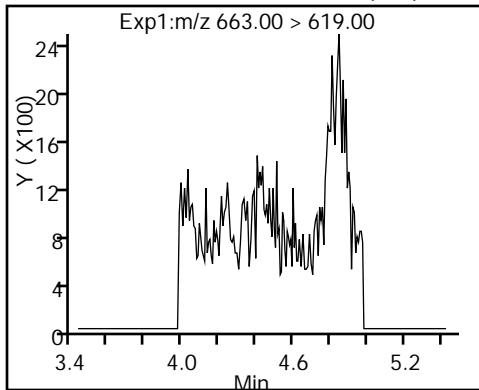
39 N-ethylperfluoro-1-octanesulfonami (ND)



41 Perfluorotridecanoic acid (ND)

D 43 13C2-PFTeDA

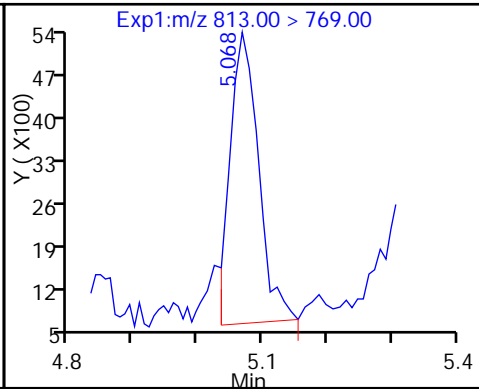
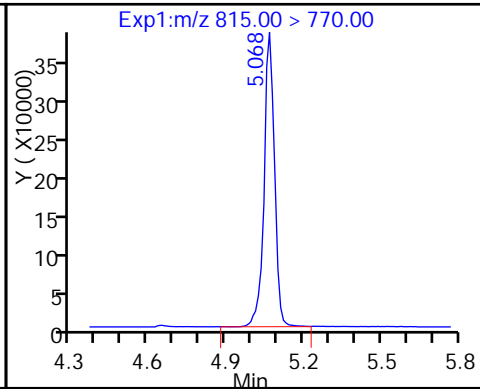
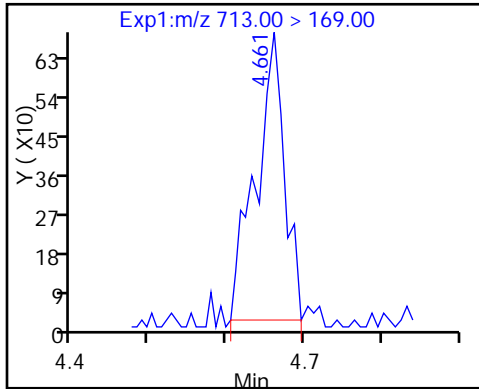
42 Perfluorotetradecanoic acid



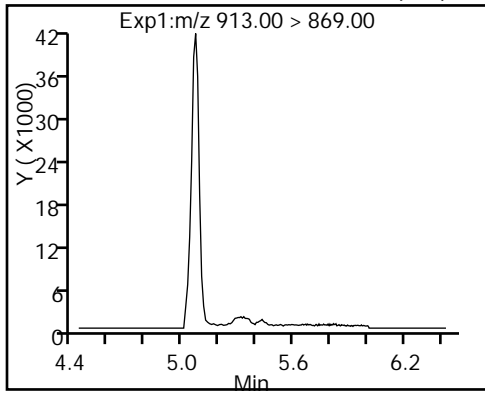
42 Perfluorotetradecanoic acid (M)

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid (ND)



TestAmerica Sacramento

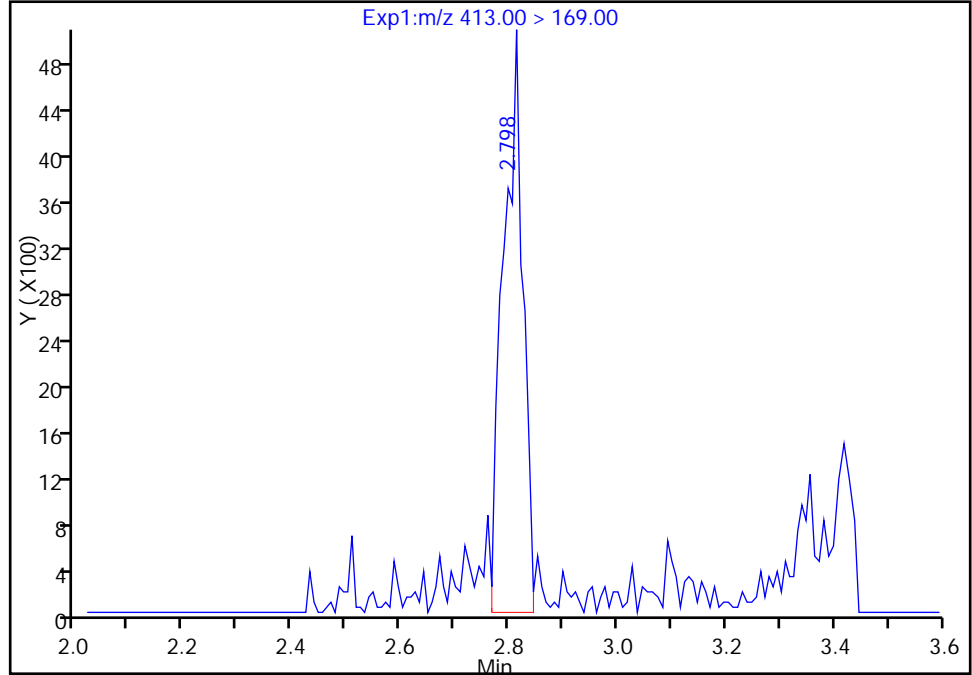
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_029.d
Injection Date: 11-Mar-2017 15:42:39 Instrument ID: A8_N
Lims ID: MB 320-152961/1-A
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 21 Worklist Smp#: 26
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

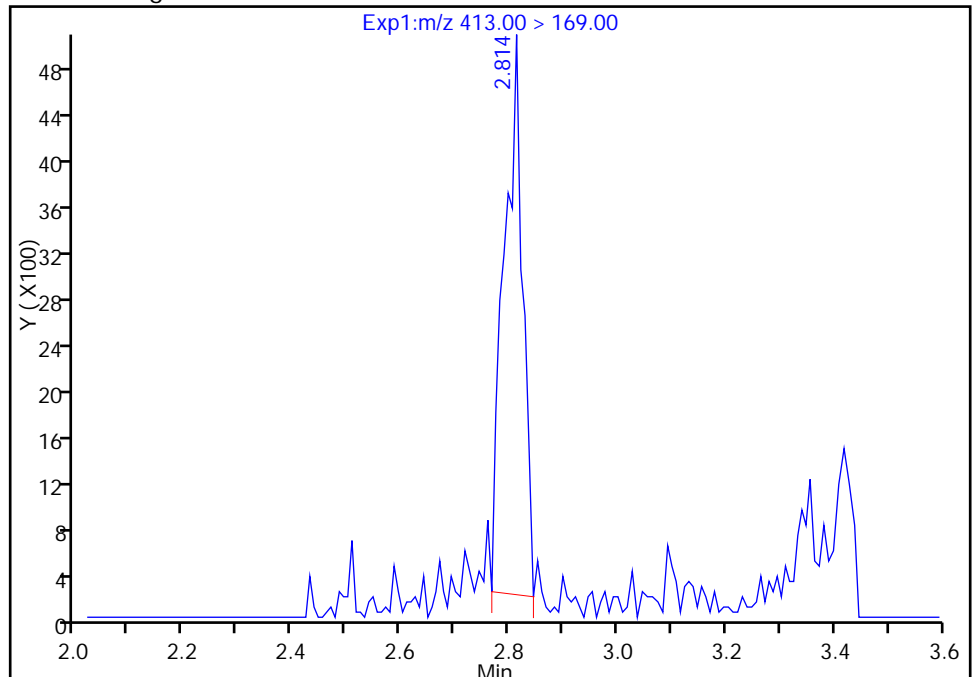
RT: 2.80
Area: 12547
Amount: 0.095533
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 11630
Amount: 0.095533
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Mar-2017 08:06:19

Audit Action: Manually Integrated

Audit Reason: Baseline

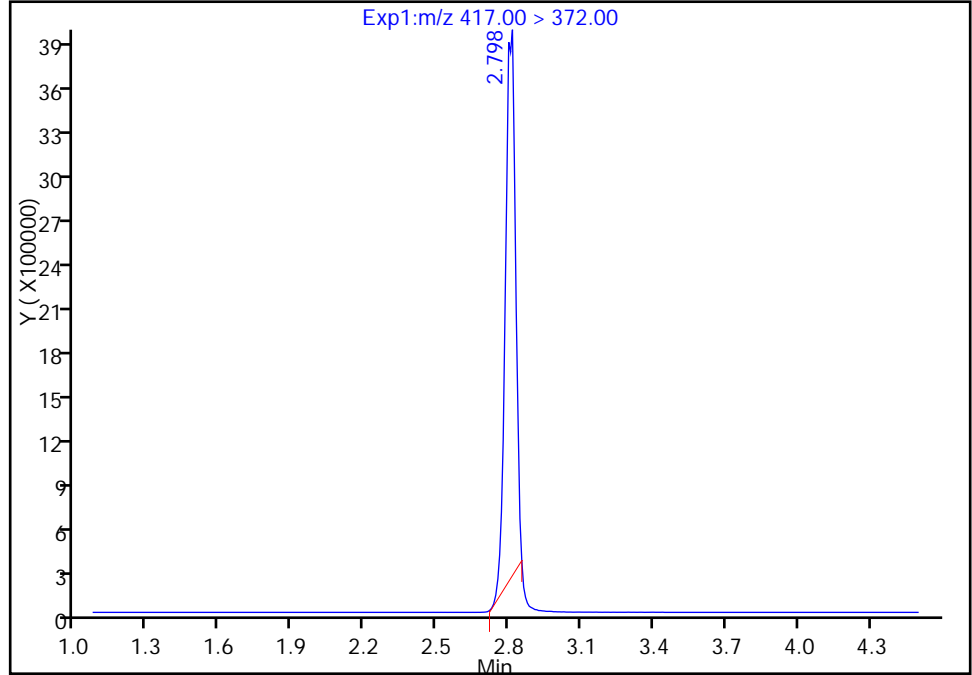
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_029.d
Injection Date: 11-Mar-2017 15:42:39 Instrument ID: A8_N
Lims ID: MB 320-152961/1-A
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 21 Worklist Smp#: 26
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

D 14 13C4 PFOA, CAS: STL00990
Signal: 1

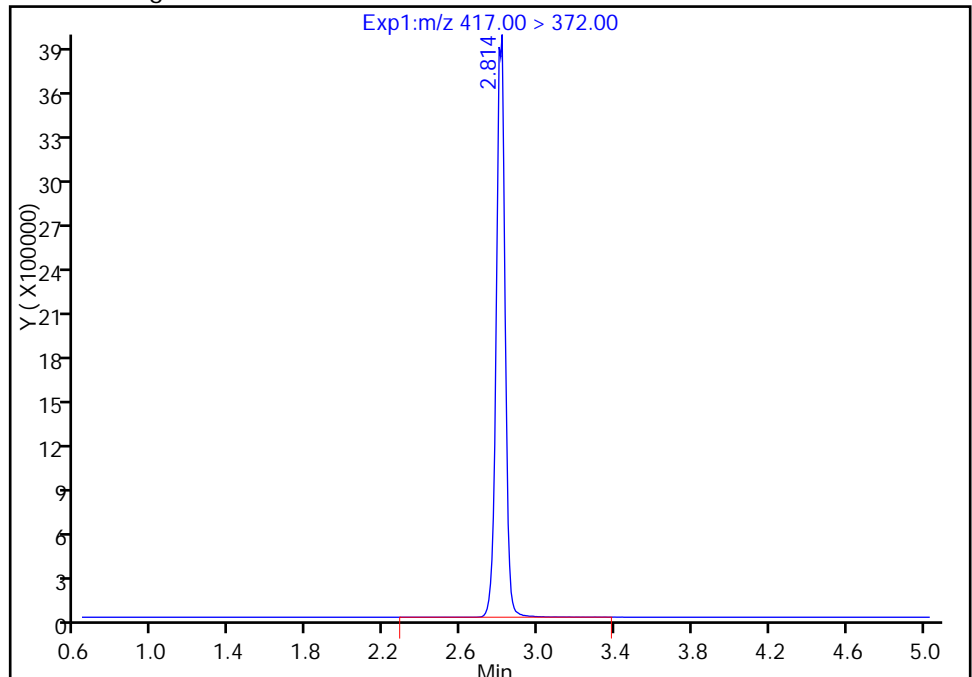
RT: 2.80
Area: 10788575
Amount: 52.639263
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 12550907
Amount: 61.237976
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Mar-2017 08:05:20
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 320-152929/2-A
 Matrix: Water Lab File ID: 2017.03.04A_048.d
 Analysis Method: 537 (Modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 250.00 (mL) Date Analyzed: 03/06/2017 01:56
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	43.7		2.5	2.0	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	38.5		4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	44.5		2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	140		25-150
STL00991	13C4 PFOS	125		25-150
STL00994	18O2 PFHxS	128		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_048.d
 Lims ID: LCS 320-152929/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 06-Mar-2017 01:56:41 ALS Bottle#: 37 Worklist Smp#: 48
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-152929/2-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 07-Mar-2017 14:37:19 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK017

First Level Reviewer: changnoit Date: 07-Mar-2017 14:37:19

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	1.530	1.530	0.0	19531711	66.8		134	2075657	
2 Perfluorobutyric acid	212.90 > 169.00	1.530	1.538	-0.008	1.000	7830518	23.7	118	110978	
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.811	0.0	15611917	67.2		134	2769664	
4 Perfluoropentanoic acid	262.90 > 219.00	1.811	1.821	-0.010	1.000	6761974	22.1	111	54861	M
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.851	1.851	0.0	1.000	11840904	22.3	126		
	298.90 > 99.00	1.851	1.851	0.0	1.000	4881881	2.43(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.103	2.113	-0.010		14186177	67.3	135	61966	
6 Perfluorohexanoic acid	313.00 > 269.00	2.103	2.113	-0.010	1.000	5487195	21.7	109	0.0	
D 9 13C4-PFHpA	367.00 > 322.00	2.440	2.448	-0.008		14283133	74.0	148	4876166	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.448	2.456	-0.008	1.000	6018520	21.8	109	72637	
D 11 18O2 PFHxS	403.00 > 84.00	2.463	2.464	-0.001		17570578	60.4	128	70378	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.463	2.464	-0.001	1.000	7346280	19.2	106		
15 Perfluorooctanoic acid	413.00 > 369.00	2.805	2.806	-0.001	1.000	6413104	21.8	109	263020	
	413.00 > 169.00	2.813	2.806	0.007	1.003	3687766	1.74(0.90-1.10)		1170126	
D 14 13C4 PFOA	417.00 > 372.00	2.805	2.814	-0.009		14372438	70.1	140	4444013	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.813	2.814	-0.001	1.000	6962175	22.3		117
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.154	3.156	-0.002	1.000	5736320	19.2		104 142375
	499.00	> 99.00	3.178	3.156	0.022	1.007	1355518		4.23(0.90-1.10)	189964
20 Perfluorononanoic acid	463.00	> 419.00	3.178	3.188	-0.010	1.000	4713953	23.1		115 355524
D 19 13C5 PFNA	468.00	> 423.00	3.186	3.188	-0.002		11290811	63.5		127 3276301
D 18 13C4 PFOS	503.00	> 80.00	3.178	3.188	-0.010		14490658	60.0		125 903515
D 21 13C8 FOSA	506.00	> 78.00	3.525	3.538	-0.013		4518358	12.3		24.6 355841
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.533	3.538	-0.005	1.000	1713684	21.1		106 279827
24 Perfluorodecanoic acid	513.00	> 469.00	3.533	3.547	-0.014	1.000	4759196	23.0		115 734427
D 23 13C2 PFDA	515.00	> 470.00	3.533	3.547	-0.014		11404036	68.4		137 384059
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.845	3.850	-0.005	1.000	3713644	20.6		107
D 30 13C2 PFUnA	565.00	> 520.00	3.862	3.867	-0.005		8517097	65.1		130 2622437
31 Perfluoroundecanoic acid	563.00	> 519.00	3.862	3.867	-0.005	1.000	3450079	20.0		99.9 182456
37 Perfluorododecanoic acid	613.00	> 569.00	4.150	4.152	-0.002	1.000	2955665	21.2		106 447499
D 36 13C2 PFDoA	615.00	> 570.00	4.150	4.152	-0.002		7617234	61.5		123 0.0
41 Perfluorotridecanoic acid	663.00	> 619.00	4.414	4.419	-0.005	1.000	2963646	22.3		111 478168
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.647	4.641	0.006	1.000	7244655	24.2		121 213923
	713.00	> 169.00	4.637	4.641	-0.004	0.998	949177		7.63(0.00-0.00)	308230
D 43 13C2-PFTeDA	715.00	> 670.00	4.637	4.651	-0.014		17371005	67.0		134 50026
D 44 13C2-PFHxDA	815.00	> 770.00	5.049	5.055	-0.006		8266519	66.1		132 269987
45 Perfluorohexadecanoic acid	813.00	> 769.00	5.049	5.055	-0.006	1.000	3142918	21.9		109 5466
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.392	5.397	-0.005	1.000	3044082	27.8		139 4229

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_048.d

Injection Date: 06-Mar-2017 01:56:41

Instrument ID: A8_N

Lims ID: LCS 320-152929/2-A

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 37

Worklist Smp#: 48

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

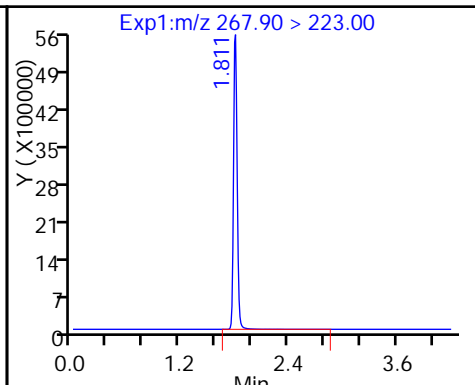
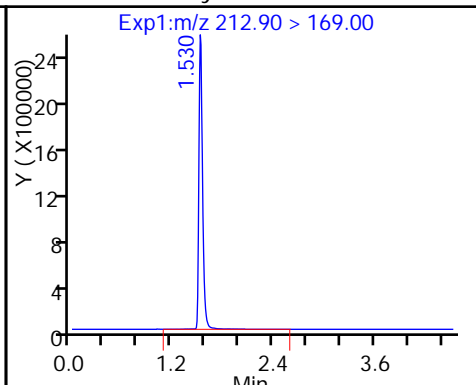
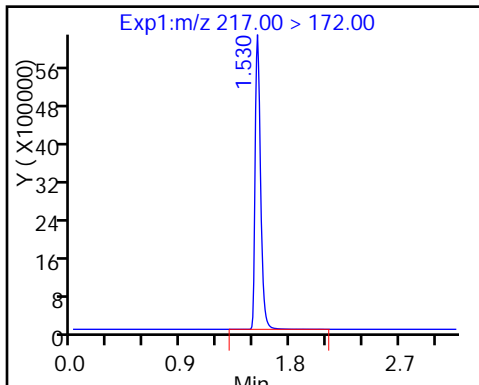
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

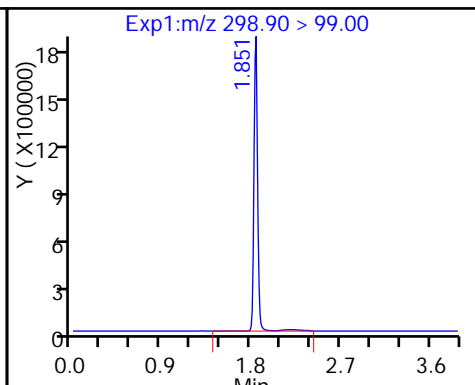
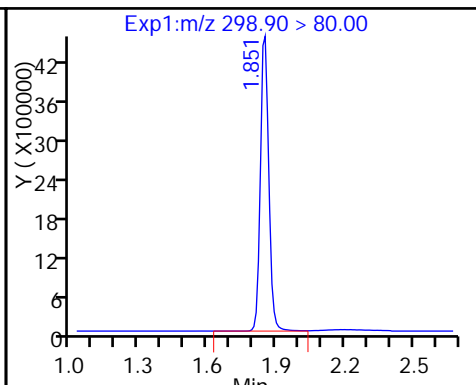
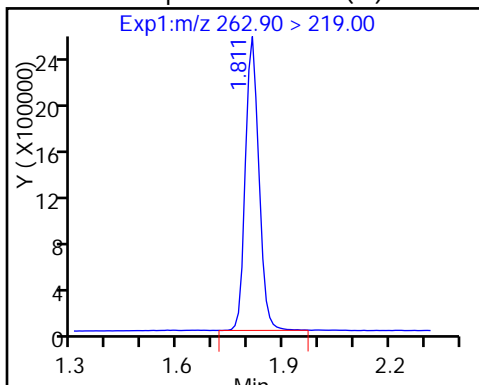
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (M)

5 Perfluorobutanesulfonic acid

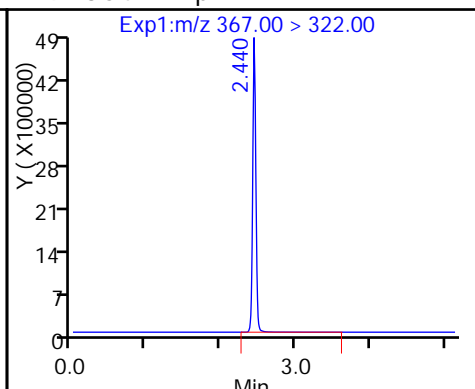
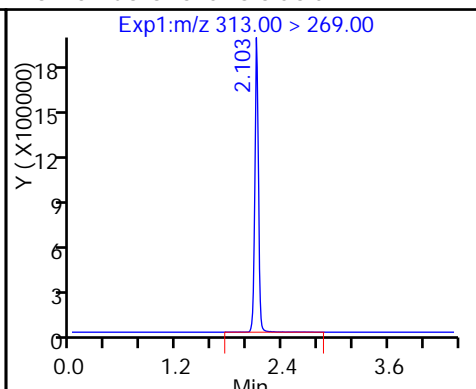
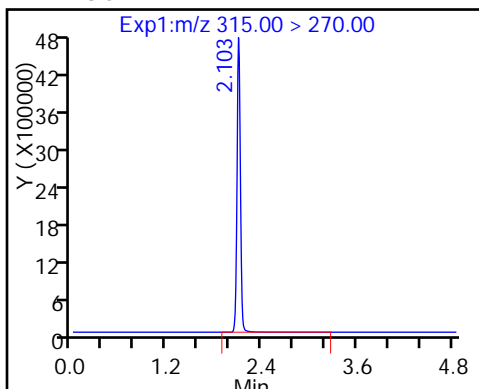
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

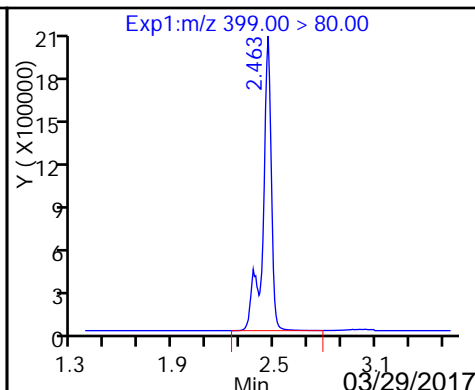
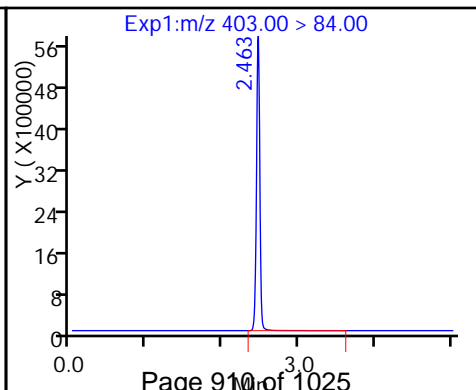
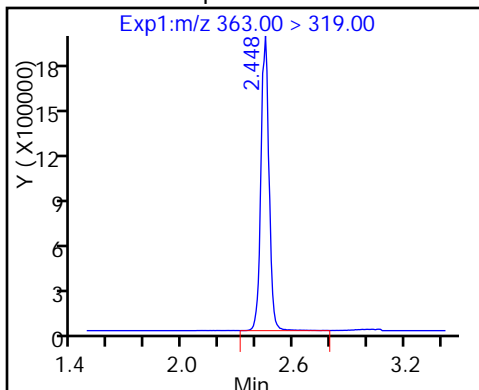
D 9 13C4-PFHpA

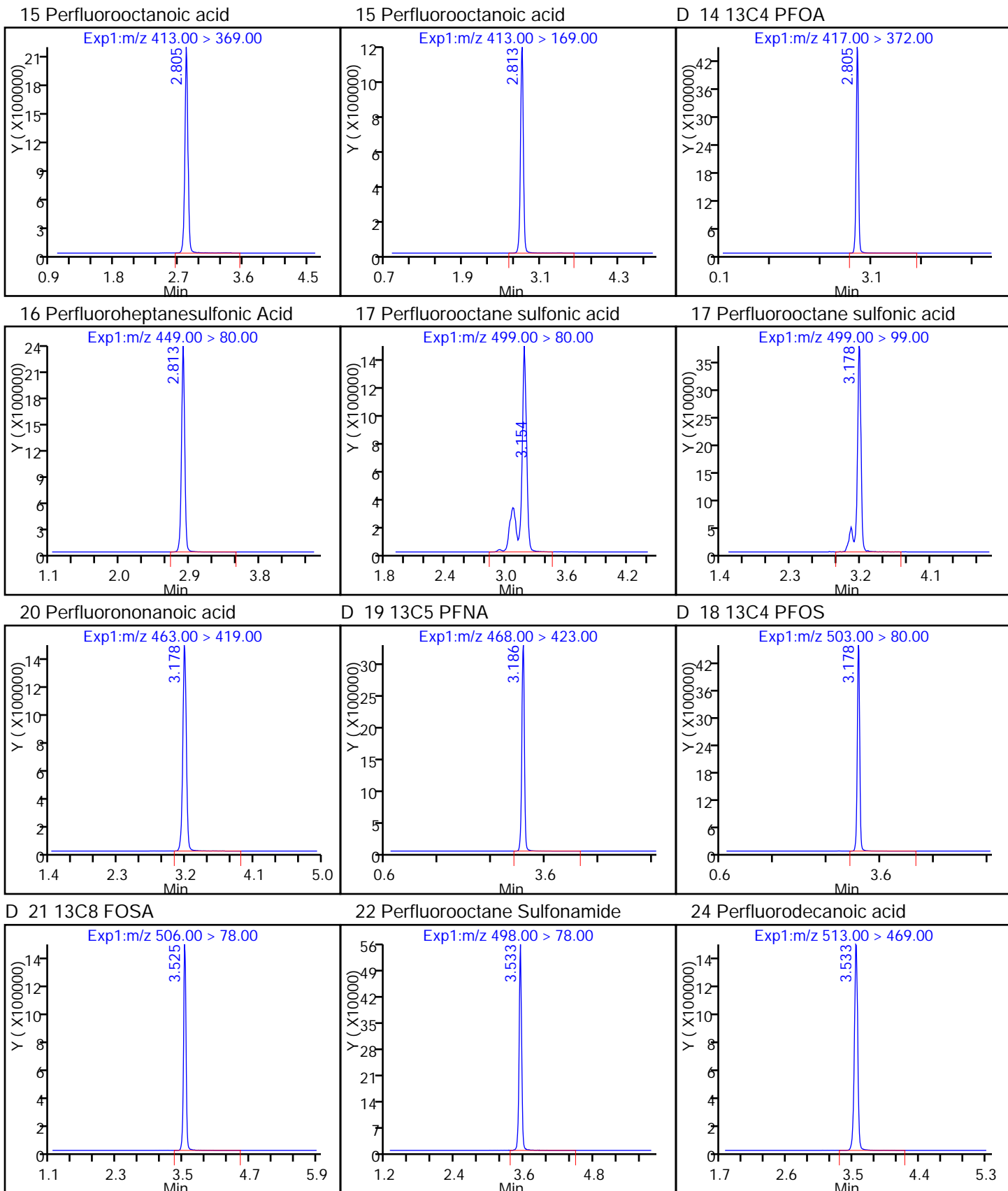


10 Perfluoroheptanoic acid

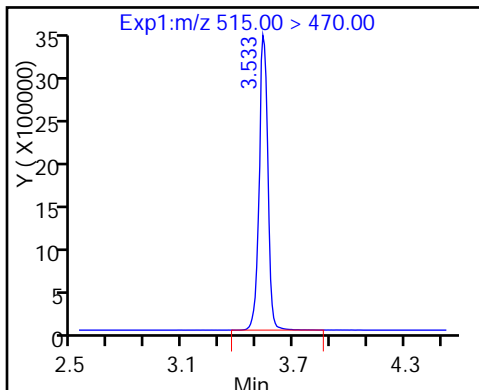
D 11 18O2 PFHxS

8 Perfluorohexanesulfonic acid

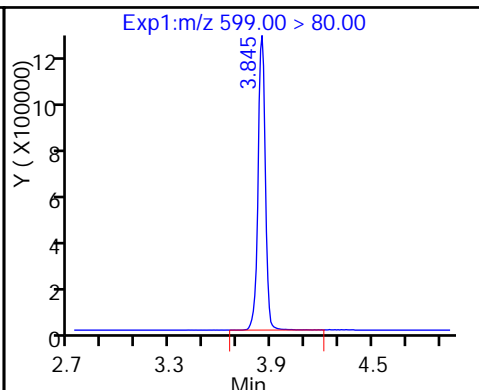




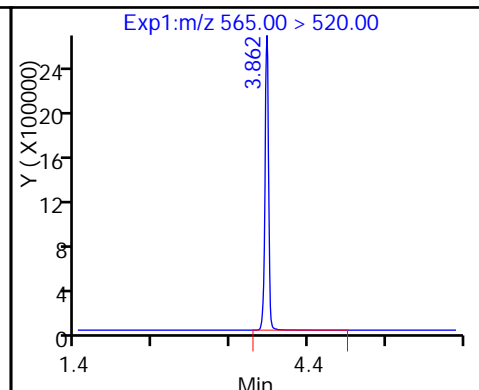
D 23 13C2 PFDA



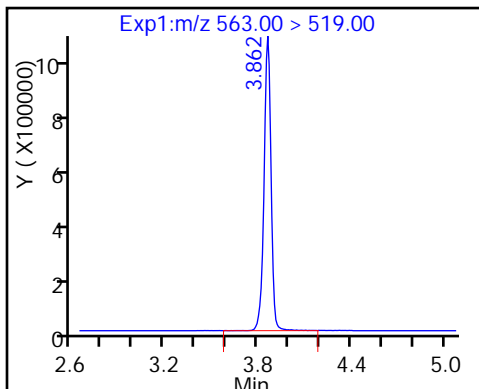
29 Perfluorodecane Sulfonic acid



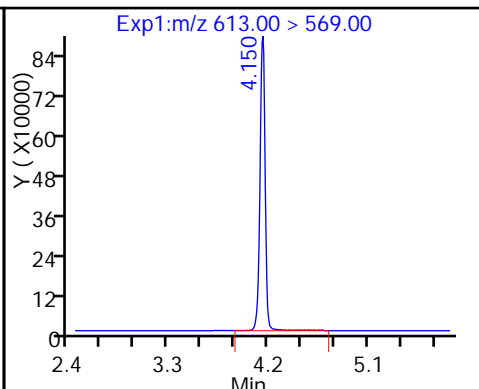
D 30 13C2 PFUnA



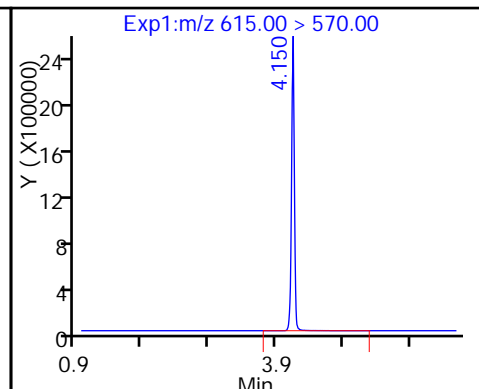
31 Perfluoroundecanoic acid



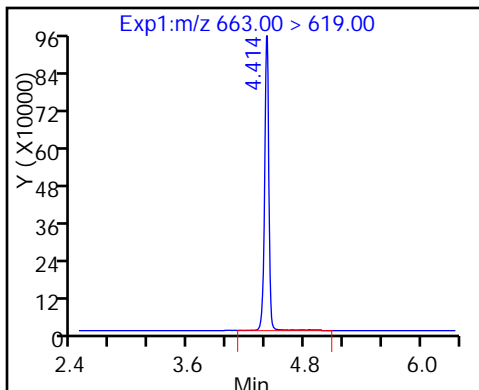
37 Perfluorododecanoic acid



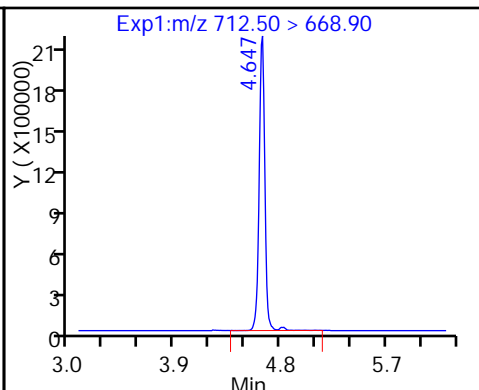
D 36 13C2 PFDaA



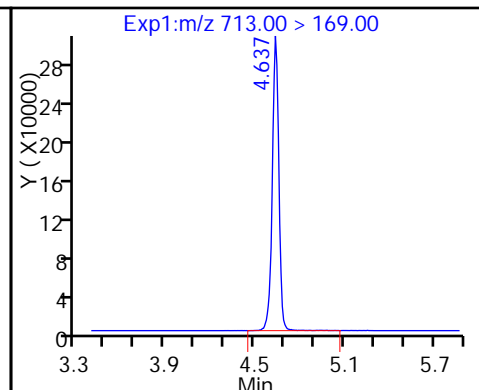
41 Perfluorotridecanoic acid



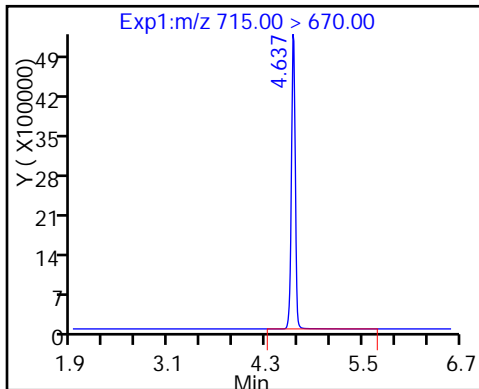
42 Perfluorotetradecanoic acid



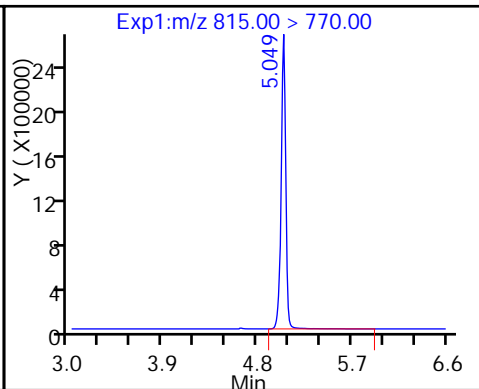
42 Perfluorotetradecanoic acid



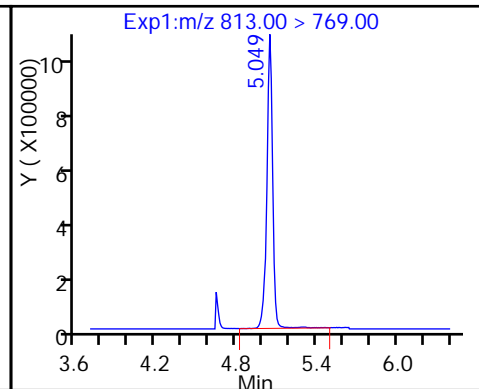
D 43 13C2-PFTeDA



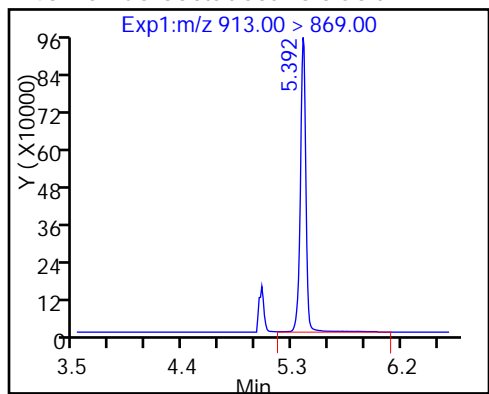
D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 320-152961/2-A
 Matrix: Solid Lab File ID: 2017.03.11C_030.d
 Analysis Method: 537 (Modified) Date Collected: _____
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5(g) Date Analyzed: 03/11/2017 15:50
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	4.25		0.50	0.30	0.10
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.90	M	0.50	0.30	0.13
375-73-5	Perfluorobutanesulfonic acid (PFBS)	4.04		0.40	0.30	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	113		25-150
STL00991	13C4 PFOS	100		25-150
STL00994	18O2 PFHxS	108		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_030.d
 Lims ID: LCS 320-152961/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 11-Mar-2017 15:50:10 ALS Bottle#: 22 Worklist Smp#: 27
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-152961/2-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 16-Mar-2017 08:07:17 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK016

First Level Reviewer: changnoit Date: 13-Mar-2017 13:43:01

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	1.539	1.539	0.0	1.000	6207356	22.5		113	34637	
D 1 13C4 PFBA										
217.00 > 172.00	1.531	1.539	-0.008		16263597	55.7		111	873396	
D 3 13C5-PFPeA										
267.90 > 223.00	1.812	1.822	-0.010		12900820	55.6		111	642597	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.822	1.822	0.0	1.000	5293681	21.0		105	53511	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.862	1.862	0.0	1.000	9063620	20.2		114		
298.90 > 99.00	1.852	1.862	-0.010	0.995	3681995		2.46(0.00-0.00)			
D 7 13C2 PFHxA										
315.00 > 270.00	2.114	2.117	-0.003		11255192	53.4		107	386580	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.114	2.117	-0.003	1.000	4264279	21.3		106	68562	
D 9 13C4-PFHpA										
367.00 > 322.00	2.451	2.452	-0.001		12045502	62.4		125	424209	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.451	2.452	-0.001	1.000	4769410	20.5		102	44338	
D 11 18O2 PFHxS										
403.00 > 84.00	2.467	2.468	-0.001		14824463	51.0		108	445048	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.467	2.476	-0.009	1.000	5797120	18.0		98.8		M M
15 Perfluorooctanoic acid										
413.00 > 369.00	2.817	2.818	-0.001	1.000	5017942	21.3		106	51775	
413.00 > 169.00	2.817	2.818	-0.001	1.000	2908750		1.73(0.90-1.10)		70652	
D 14 13C4 PFOA										
417.00 > 372.00	2.817	2.818	-0.001		11549112	56.4		113	274031	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluoroheptanesulfonic Acid	449.00 > 80.00	2.825	2.826	-0.001	1.000	5467339	22.0	116		
17 Perfluorooctane sulfonic acid	499.00 > 80.00	3.183	3.192	-0.009	1.000	4622109	19.5	105	125982	M
	499.00 > 99.00	3.183	3.192	-0.009	1.000	1056407		4.38(0.90-1.10)	305554	M
20 Perfluorononanoic acid	463.00 > 419.00	3.183	3.192	-0.009	1.000	3572364	21.4	107	129365	M
D 18 13C4 PFOS	503.00 > 80.00	3.183	3.192	-0.009		11525773	47.7	99.8	319128	
D 19 13C5 PFNA	468.00 > 423.00	3.183	3.201	-0.018		9242189	52.0	104	268813	
D 21 13C8 FOSA	506.00 > 78.00	3.522	3.519	0.003		7304099	19.9	39.8	232731	
22 Perfluorooctane Sulfonamide	498.00 > 78.00	3.522	3.519	0.003	1.000	2698921	20.6	103	144218	
24 Perfluorodecanoic acid	513.00 > 469.00	3.548	3.544	0.004	1.000	3152164	21.6	108	121090	
D 23 13C2 PFDA	515.00 > 470.00	3.539	3.544	-0.005		8044389	48.3	96.5	173179	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.860	3.858	0.002	1.000	2377793	16.6	85.9		
31 Perfluoroundecanoic acid	563.00 > 519.00	3.868	3.867	0.001	1.000	2092016	18.3	91.7	84522	
D 30 13C2 PFUnA	565.00 > 520.00	3.868	3.876	-0.008		5629350	43.0	86.1	260670	
37 Perfluorododecanoic acid	613.00 > 569.00	4.156	4.159	-0.003	1.000	1667761	19.9	99.6	50613	
D 36 13C2 PFDoA	615.00 > 570.00	4.156	4.159	-0.003		4578448	36.9	73.9	151689	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.429	4.428	0.001	1.000	1175044	14.7	73.5	23883	
D 43 13C2-PFTeDA	715.00 > 670.00	4.664	4.663	0.001		6556041	25.3	50.6	306881	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.664	4.663	0.001	1.000	2328892	12.9	64.7	23847	
	713.00 > 169.00	4.664	4.663	0.001	1.000	342993		6.79(0.00-0.00)	59180	
D 44 13C2-PFHxDA	815.00 > 770.00	5.070	5.078	-0.008		1482012	11.9	23.7	67346	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.081	5.078	0.003	1.000	525219	5.81	29.1	1790	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.430	5.429	0.001	1.000	254133	3.87	19.3	984	

QC Flag Legend

Review Flags

M - Manually Integrated

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_030.d

Injection Date: 11-Mar-2017 15:50:10

Instrument ID: A8_N

Lims ID: LCS 320-152961/2-A

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 22

Worklist Smp#: 27

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

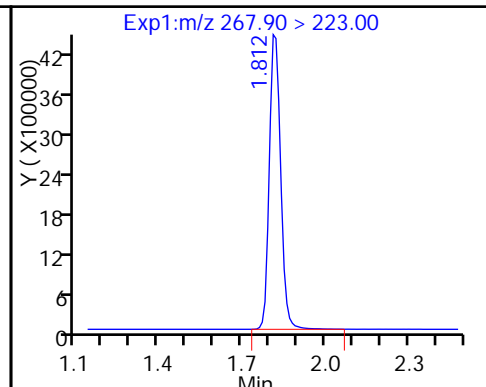
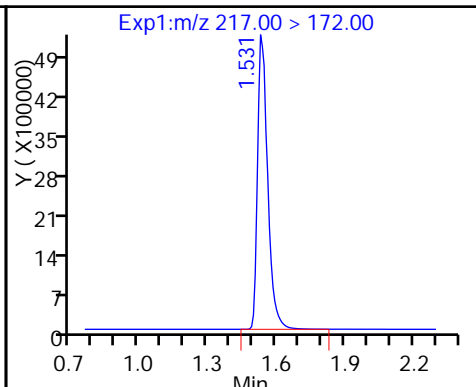
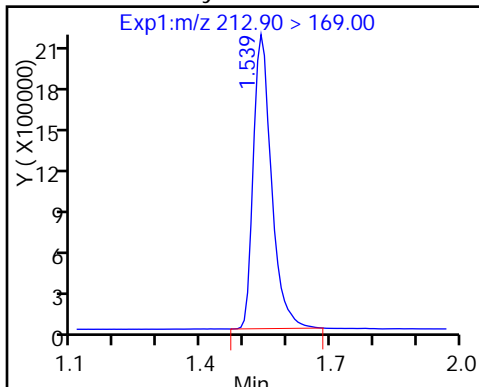
Method: A8_N

Limit Group: LC PFC_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

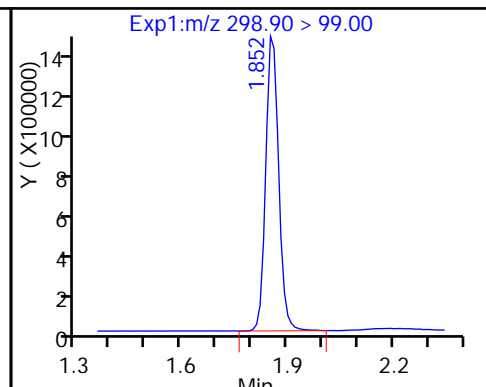
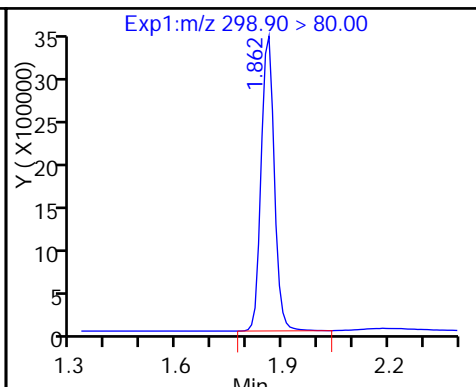
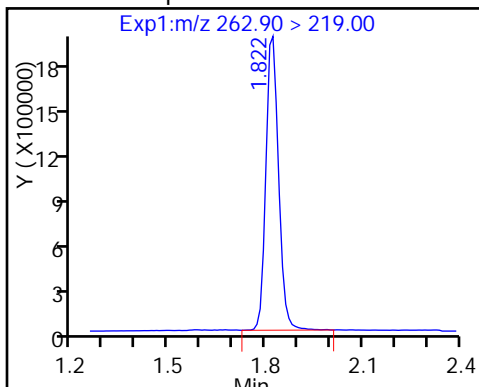
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

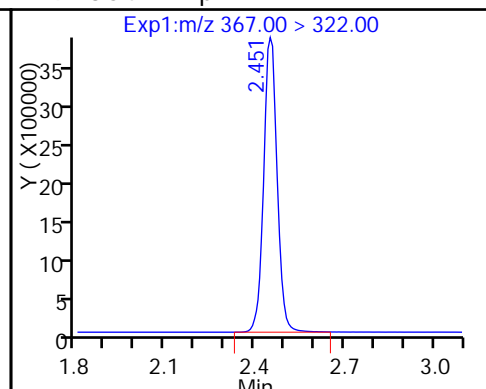
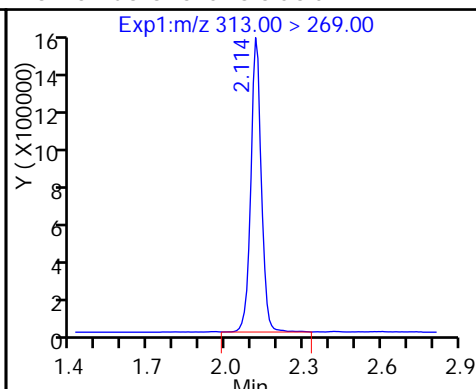
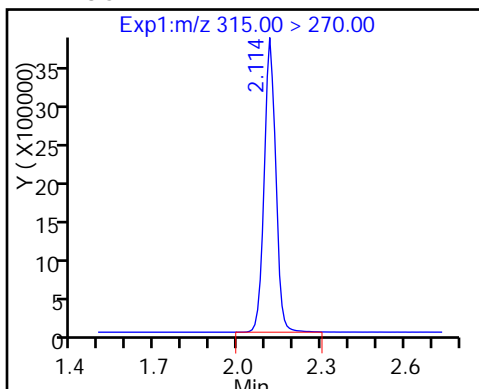
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

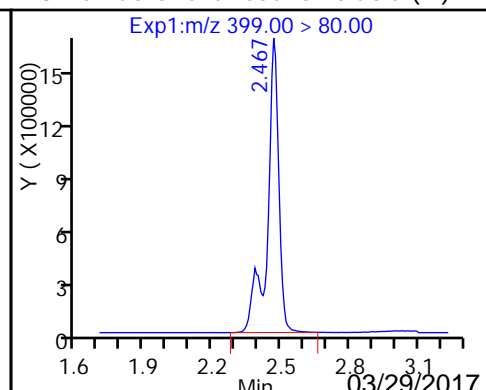
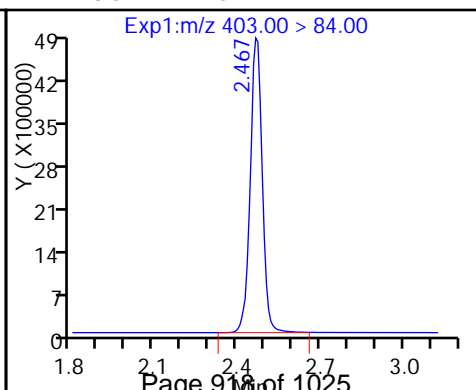
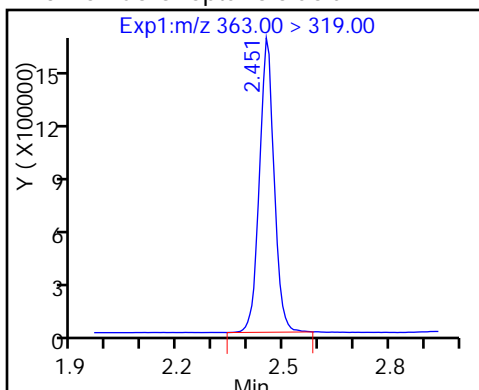
D 9 13C4-PFHpA

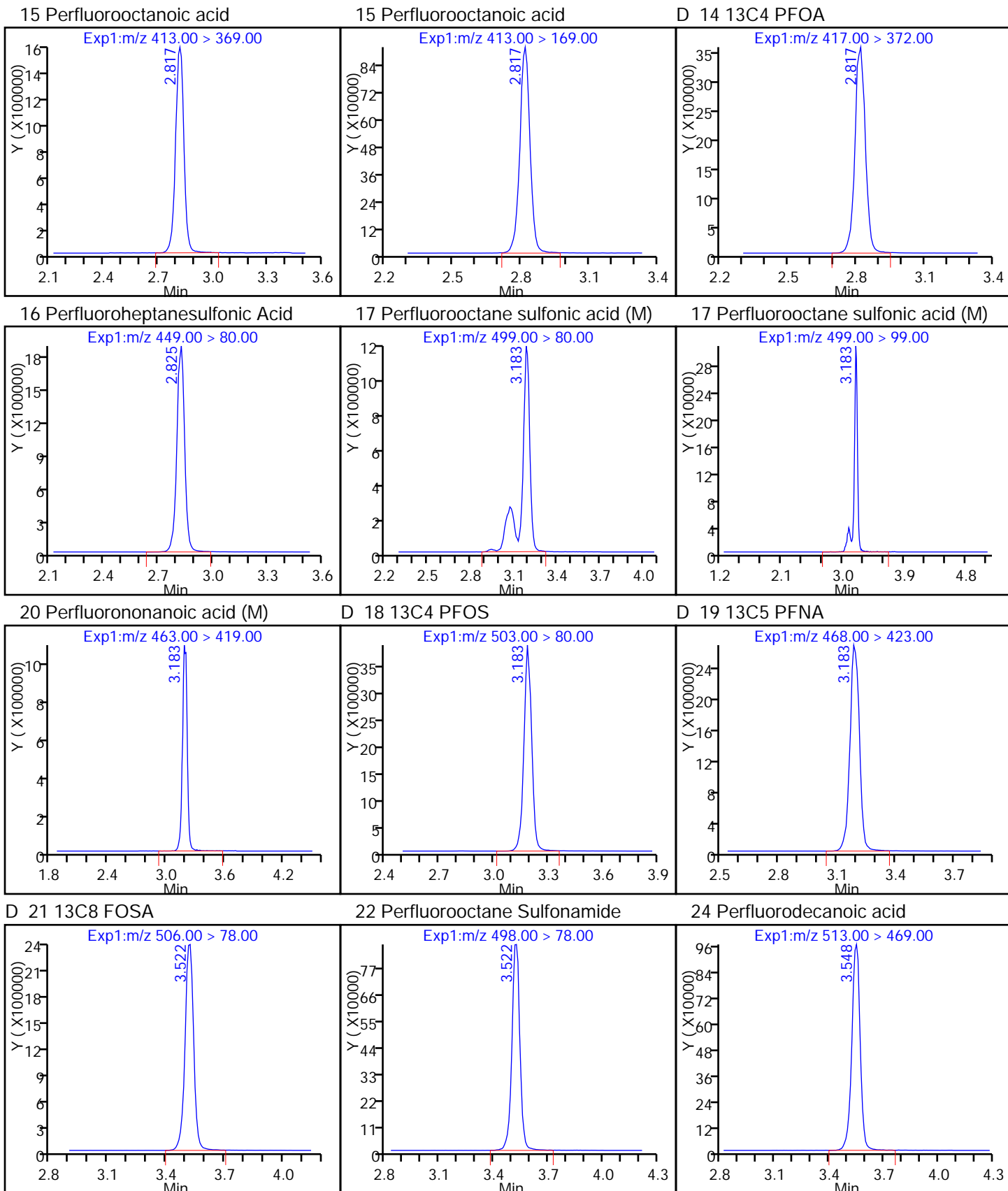


10 Perfluoroheptanoic acid

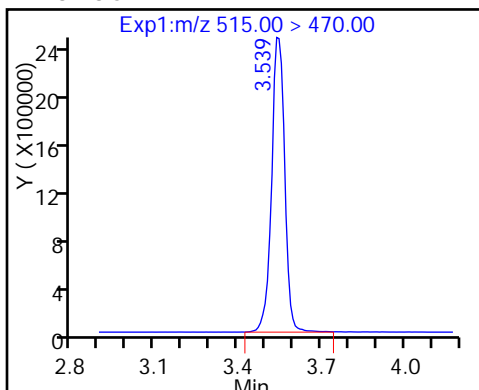
D 11 18O2 PFHxS

8 Perfluorohexanesulfonic acid (M)

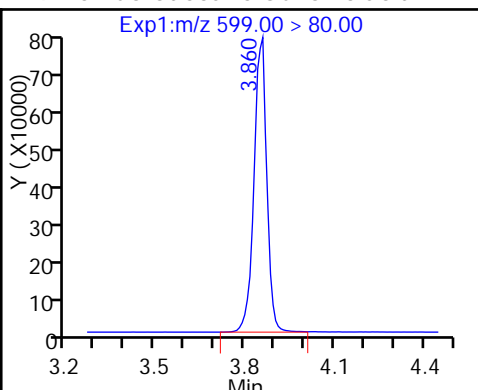




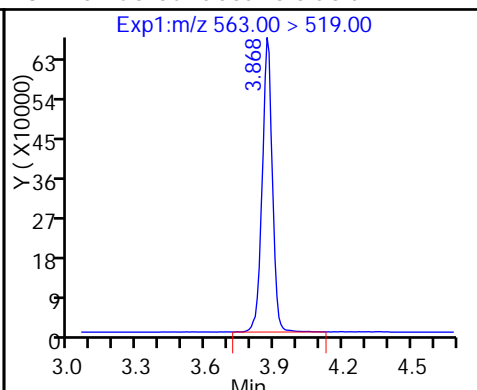
D 23 13C2 PFDA



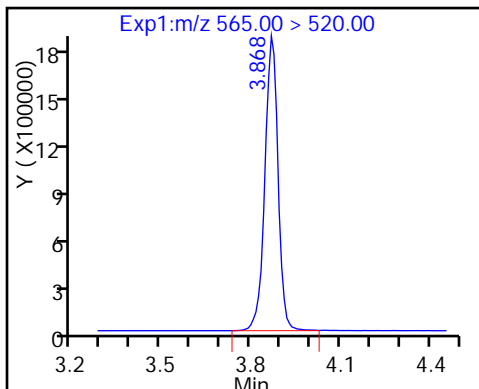
29 Perfluorodecane Sulfonic acid



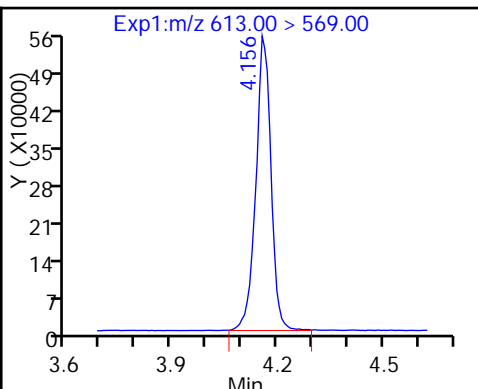
31 Perfluoroundecanoic acid



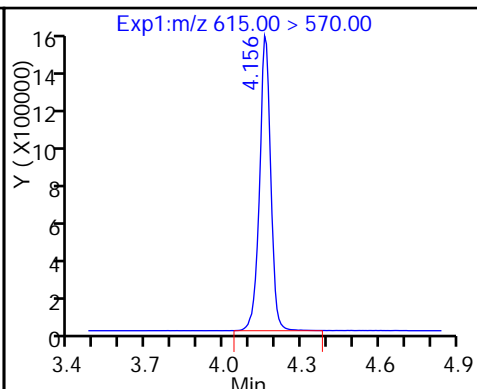
D 30 13C2 PFUa



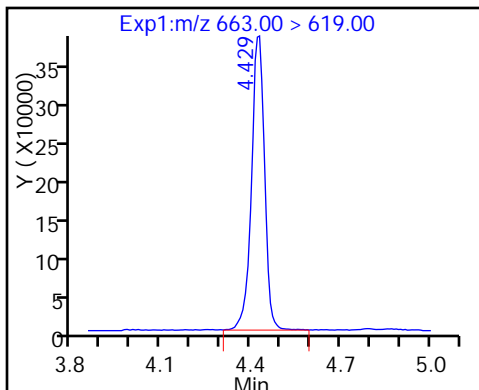
37 Perfluorododecanoic acid



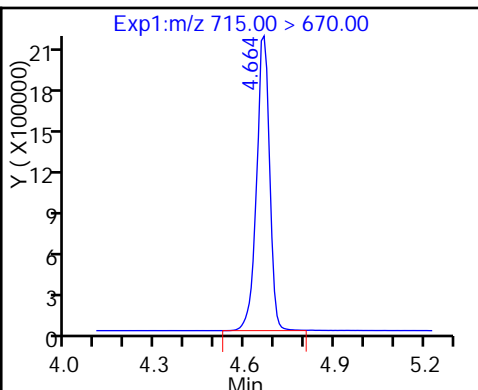
D 36 13C2 PFDa



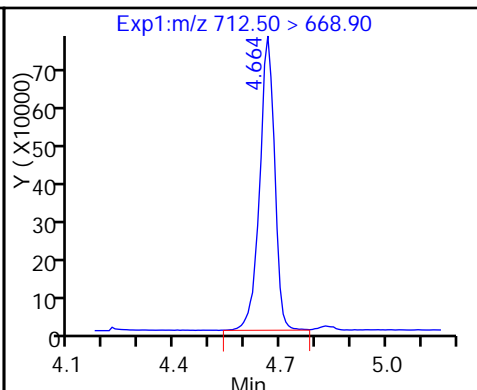
41 Perfluorotridecanoic acid



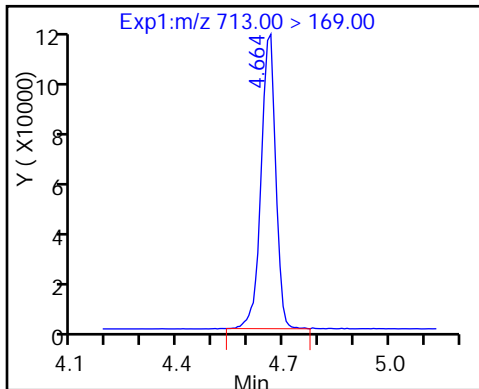
D 43 13C2-PFTeDA



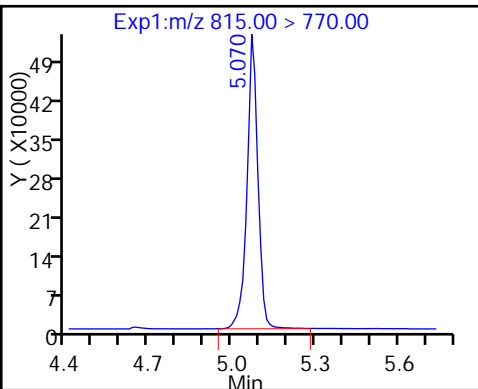
42 Perfluorotetradecanoic acid



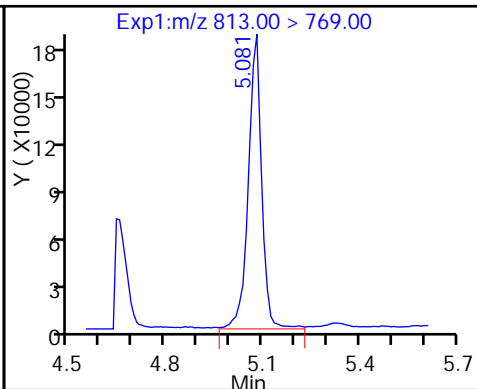
42 Perfluorotetradecanoic acid



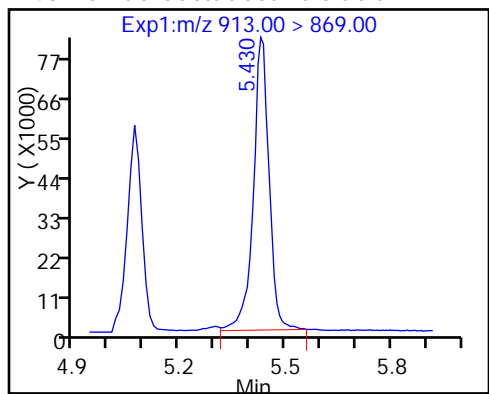
D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

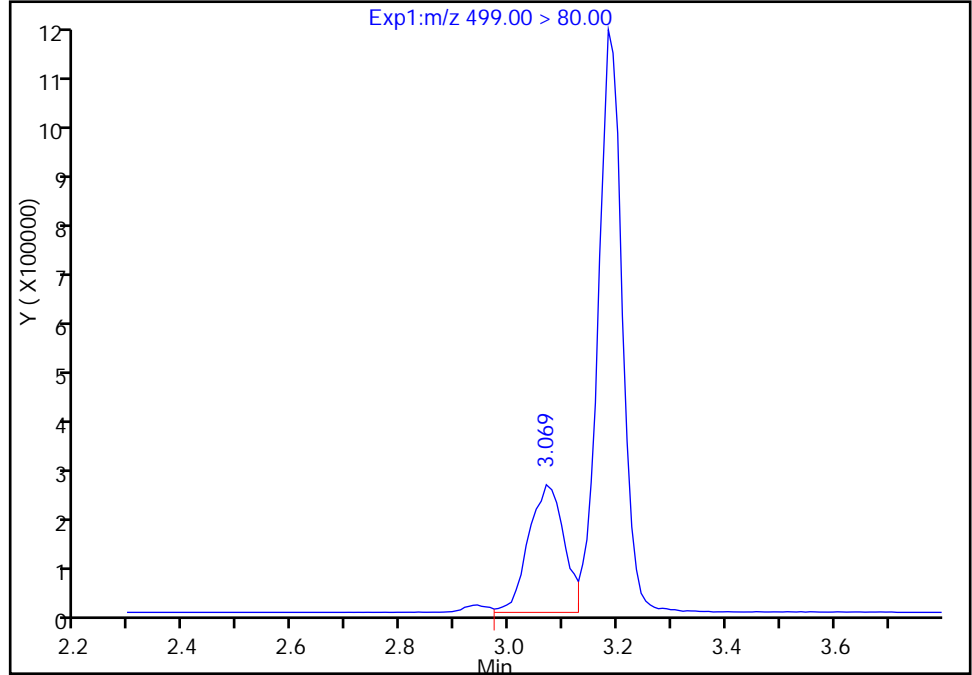
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170311-40737.b\2017.03.11C_030.d
Injection Date: 11-Mar-2017 15:50:10 Instrument ID: A8_N
Lims ID: LCS 320-152961/2-A
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 22 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

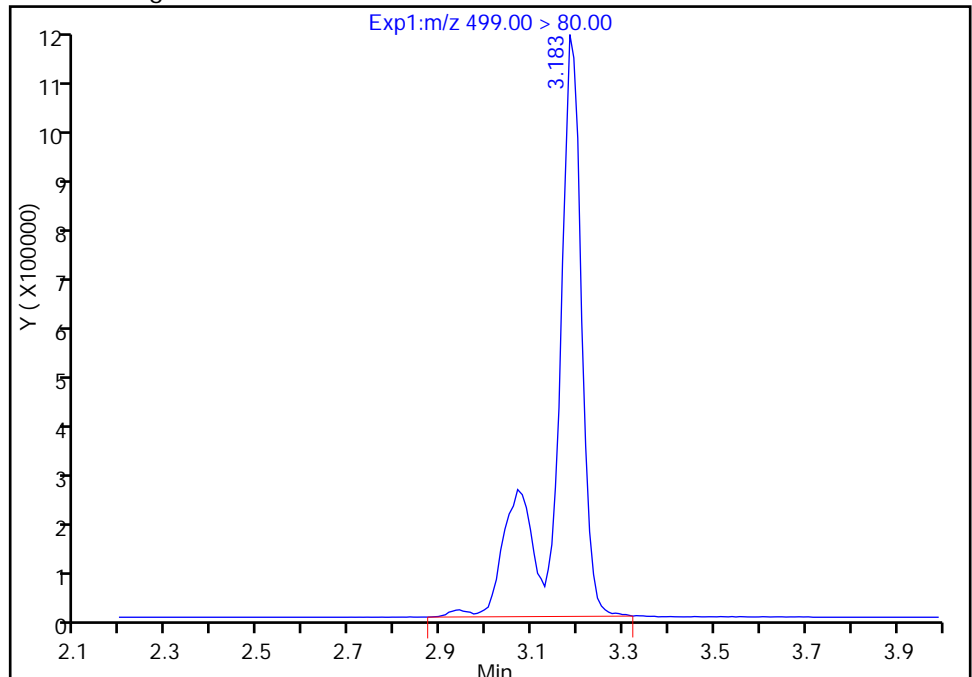
RT: 3.07
Area: 1125580
Amount: 4.746436
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 4622109
Amount: 19.490881
Amount Units: ng/ml

Manual Integration Results



Reviewer: changnoit, 16-Mar-2017 08:06:29
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

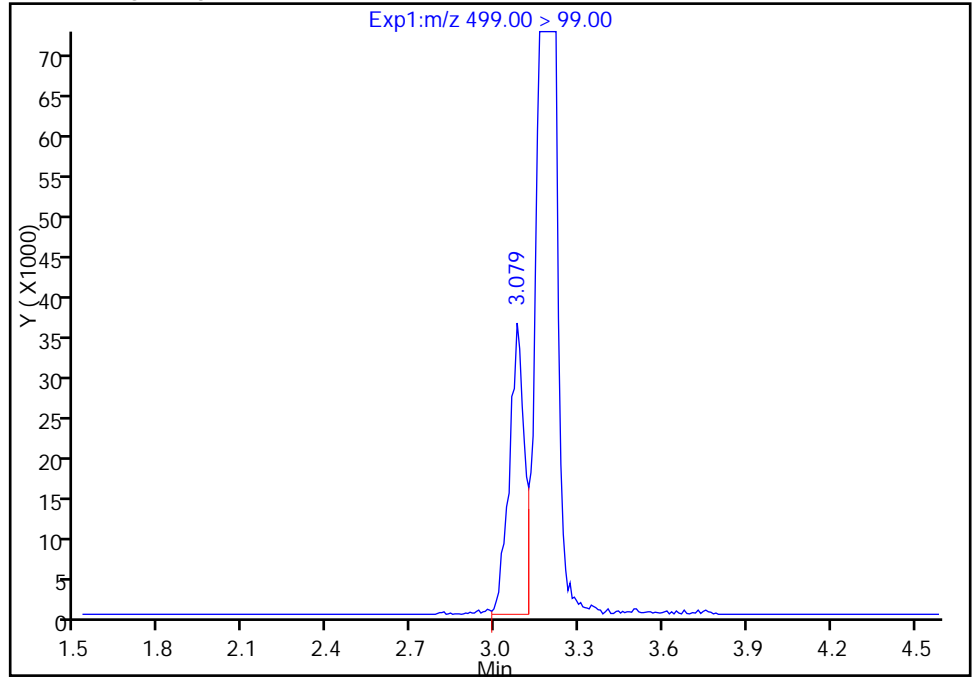
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Injection Date: 11-Mar-2017 15:50:10 Instrument ID: A8_N
Lims ID: LCS 320-152961/2-A
Client ID:
Operator ID: A8-PC\A8 ALS Bottle#: 22 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

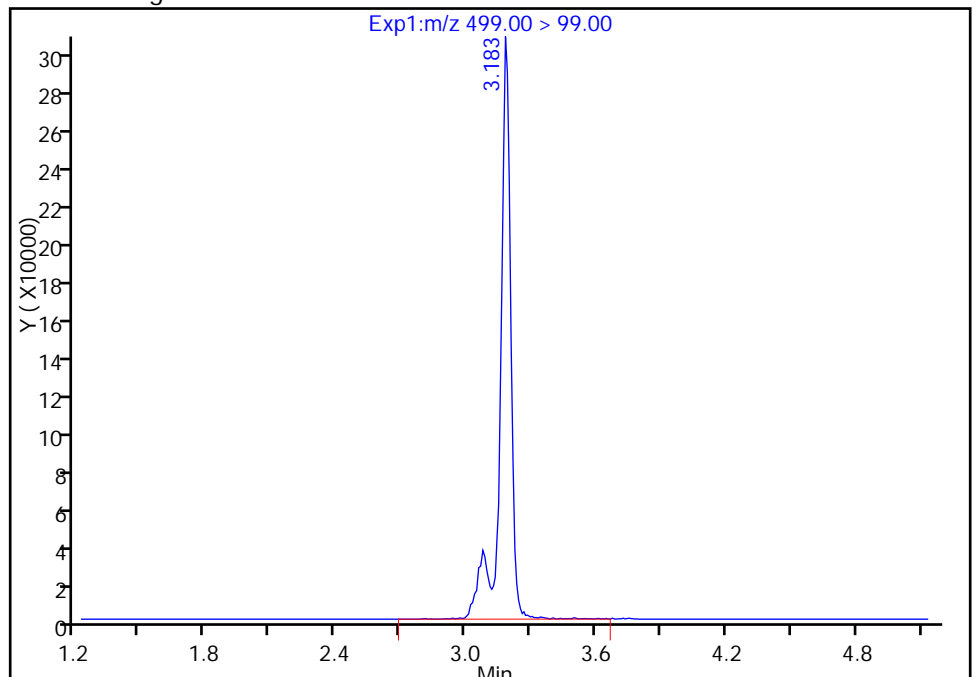
RT: 3.08
Area: 131886
Amount: 4.746436
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 1056407
Amount: 19.490881
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 MS Lab Sample ID: 320-26105-3 MS
 Matrix: Water Lab File ID: 2017.03.04A_053.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 273.4 (mL) Date Analyzed: 03/06/2017 02:34
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	499	E 4	2.3	1.8	0.68
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	79.8		3.7	2.7	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	43.3		2.3	1.8	0.84

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	57		25-150
STL00991	13C4 PFOS	113		25-150
STL00994	18O2 PFHxS	115		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_053.d
 Lims ID: 320-26105-C-3-A MS
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: MS
 Inject. Date: 06-Mar-2017 02:34:11 ALS Bottle#: 42 Worklist Smp#: 53
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-c-3-a ms
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 07-Mar-2017 14:50:12 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK017

First Level Reviewer: changnoit Date: 07-Mar-2017 14:50:12

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	1.530	1.530	0.0	6820818	23.3		46.7	1172913	
2 Perfluorobutyric acid	212.90 > 169.00	1.538	1.538	0.0	2786698	24.1		121	34471	
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.811	0.0	10733160	46.2		92.5	4035503	
4 Perfluoropentanoic acid	262.90 > 219.00	1.811	1.821	-0.010	5116492	24.4		122	54621	
D 47 13C3-PFBS	301.90 > 83.00	1.831	1.851	-0.020	3858	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.841	1.851	-0.010	11310529	23.7		134		
	298.90 > 99.00	1.851	1.851	0.0	4507453		2.51(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.110	2.113	-0.003	9238685	43.8		87.6	1612393	
6 Perfluorohexanoic acid	313.00 > 269.00	2.110	2.113	-0.003	5010446	30.5		152	115125	
D 9 13C4-PFHpA	367.00 > 322.00	2.437	2.448	-0.011	7851454	40.7		81.4	2666102	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.437	2.456	-0.019	4681671	30.8		154	45454	
D 11 18O2 PFHxS	403.00 > 84.00	2.460	2.464	-0.004	15756565	54.2		115	85400	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.460	2.464	-0.004	10680553	31.2		171		M M
D 12 M2-6:2FTS	429.00 > 409.00	2.780	2.783	-0.003	2124	0.0275		0.0		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.772	2.783	-0.011	25312	NR		0.0		03/29/2017

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.810	2.806	0.004	1.000	32387297	272.7		1364	1887415	E
413.00 > 169.00	2.803	2.806	-0.003	0.997	22841685		1.42(0.90-1.10)		51590	
D 14 13C4 PFOA										
417.00 > 372.00	2.810	2.814	-0.004		5811427	28.4		56.7	18125	
16 Perfluoroheptanesulfonic Acid										M
449.00 > 80.00	2.810	2.814	-0.004	1.000	6757848	24.0		126		M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.061	3.156	-0.095	1.000	11733869	43.6		235	98053	
499.00 > 99.00	3.070	3.156	-0.086	1.003	2133532		5.50(0.90-1.10)		25598	
20 Perfluorononanoic acid										
463.00 > 419.00	3.183	3.188	-0.005	1.000	1753269	23.3		116	43741	
D 19 13C5 PFNA										
468.00 > 423.00	3.183	3.188	-0.005		4167725	23.4		46.9	1311411	
D 18 13C4 PFOS										
503.00 > 80.00	3.183	3.188	-0.005		13074838	54.1		113	356158	
D 21 13C8 FOSA										
506.00 > 78.00	3.531	3.538	-0.007		315609	0.8602		1.7	51699	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.531	3.538	-0.007	1.000	124091	21.9		109	13551	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.539	3.547	-0.008	1.000	1521730	23.7		118	69664	
D 23 13C2 PFDA										
515.00 > 470.00	3.539	3.547	-0.008		3546254	21.3		42.5	565450	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.842	3.850	-0.008	1.000	3338287	20.5		106		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.850	3.859	-0.009		19912	0.2447		0.0		
D 30 13C2 PFUnA										
565.00 > 520.00	3.859	3.867	-0.008		2734855	20.9		41.8	449064	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.859	3.867	-0.008	1.000	1106823	20.0		99.8	73368	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.154	4.152	0.002	1.000	1255246	22.7		113	199732	
D 36 13C2 PFDaA										
615.00 > 570.00	4.147	4.152	-0.005		3028925	24.4		48.9	0.0	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.411	4.419	-0.008	1.000	1521897	28.8		144	490468	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.642	4.641	0.001	1.000	4555309	38.2		191	142905	
713.00 > 169.00	4.642	4.641	0.001	1.000	617751		7.37(0.00-0.00)		9664	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.642	4.651	-0.009		11052022	42.6		85.3	3101405	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.046	5.055	-0.009		6724992	53.8		108	61512	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.055	0.002	1.000	2605099	46.0		230	5519	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.397	5.397	0.0	1.000	1987671	45.7	229	2880

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_053.d

Injection Date: 06-Mar-2017 02:34:11

Instrument ID: A8_N

Lims ID: 320-26105-C-3-A MS

Client ID: MEAFF-MRD-1A14-0217

Operator ID: A8-PC\A8

ALS Bottle#: 42

Worklist Smp#: 53

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

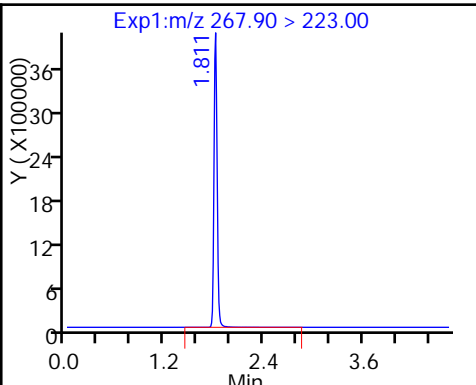
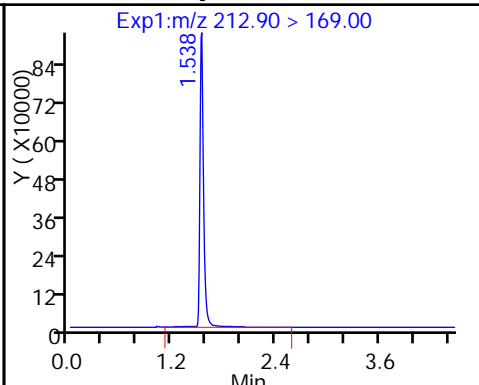
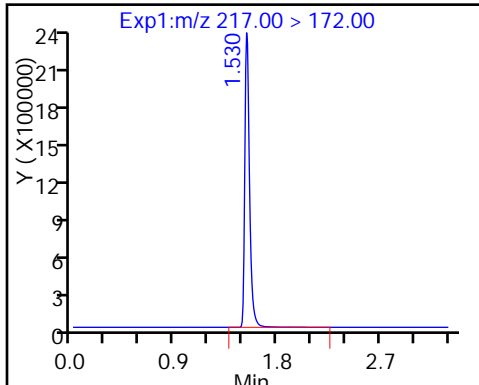
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

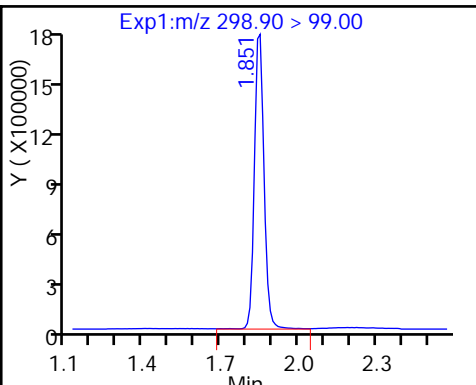
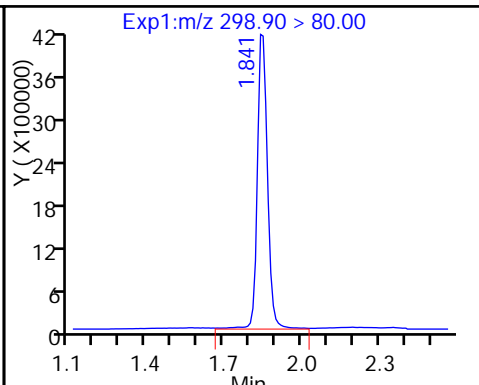
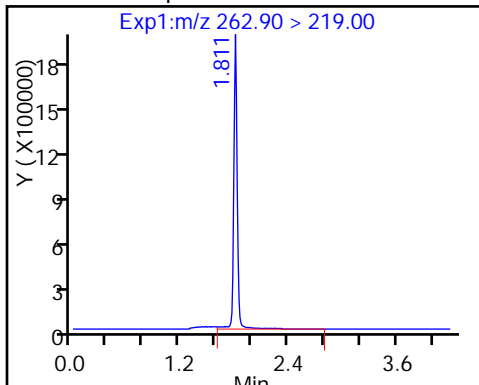
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

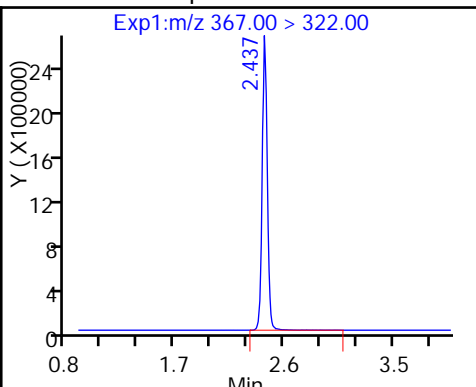
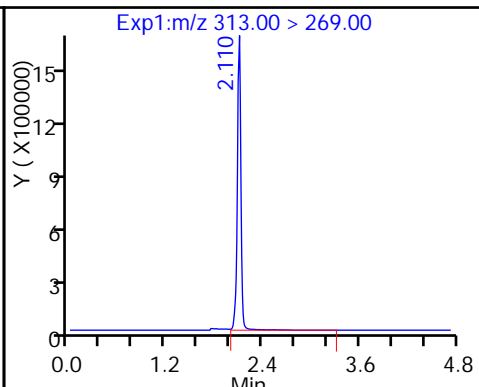
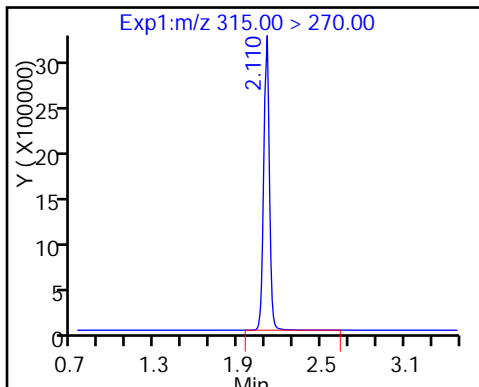
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

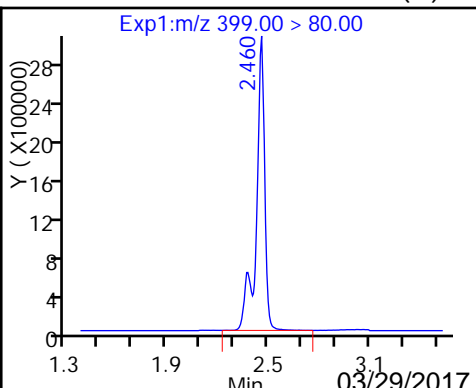
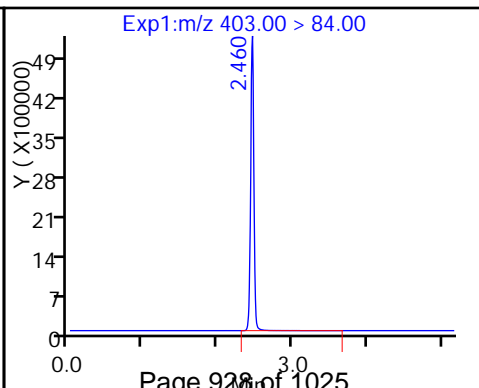
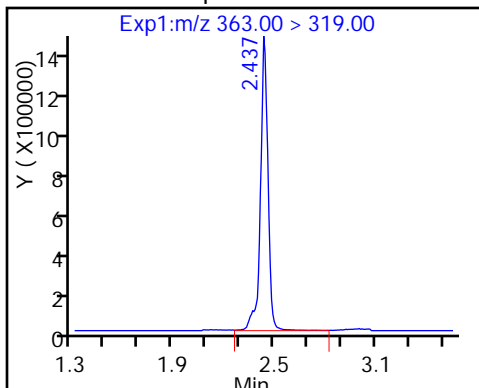
D 9 13C4-PFHpA



10 Perfluoroheptanoic acid

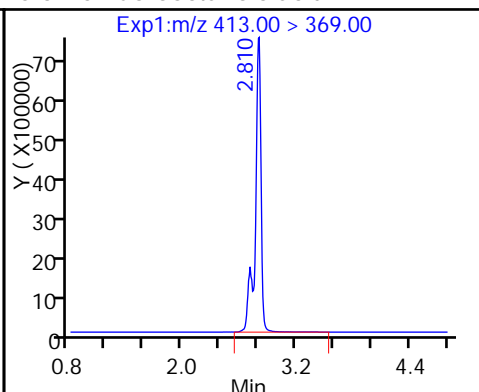
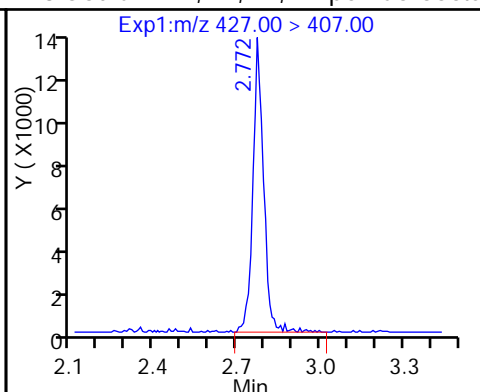
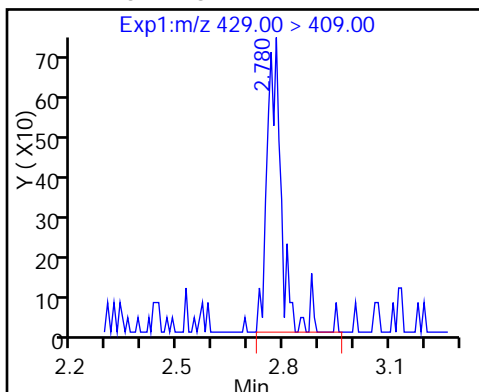
D 11 18O2 PFHxS

8 Perfluorohexanesulfonic acid (M)



D 12 M2-6:2FTS

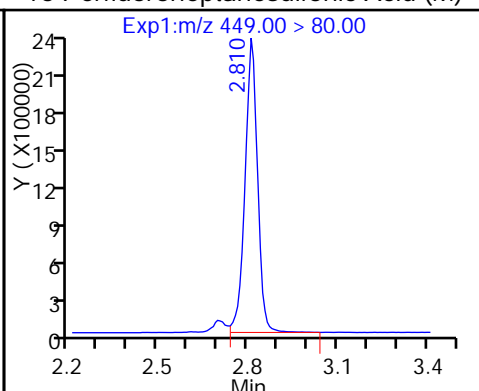
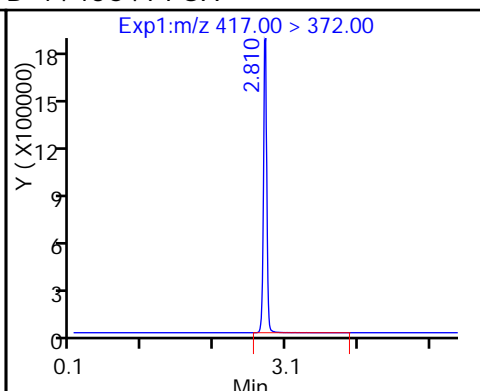
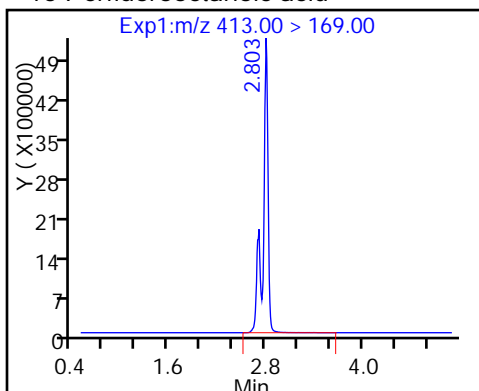
13 Sodium 1H,1H,2H,2H-perfluorooctane 5 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

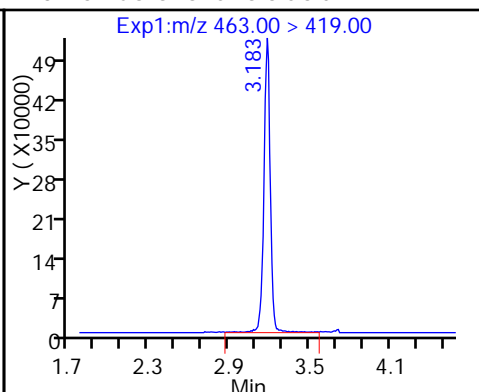
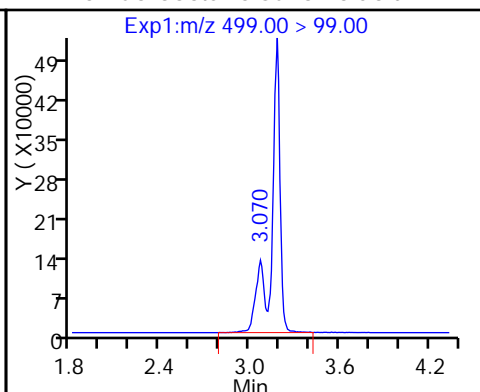
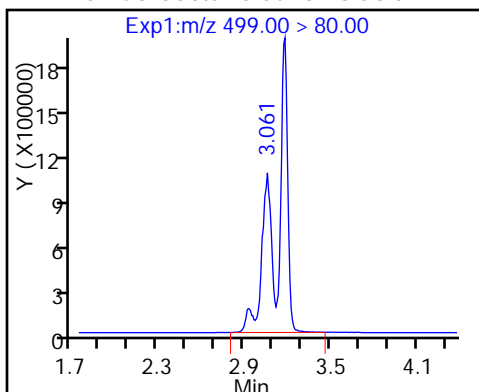
16 Perfluoroheptanesulfonic Acid (M)



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

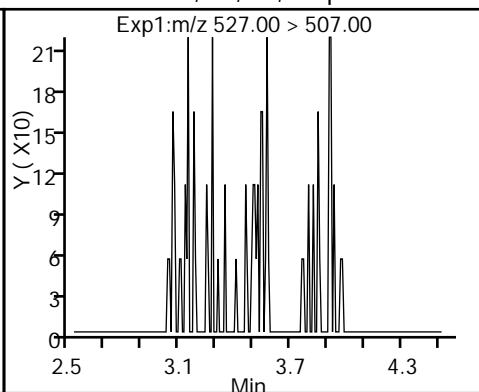
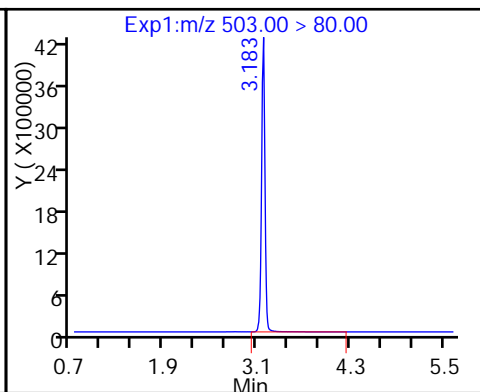
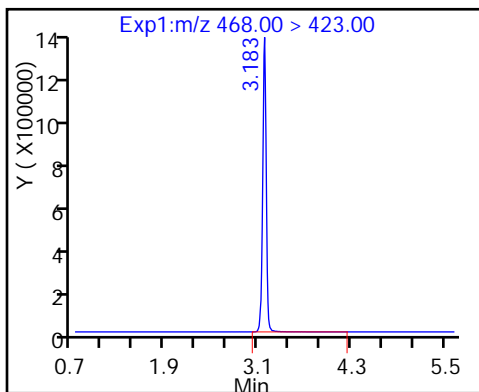
20 Perfluorononanoic acid



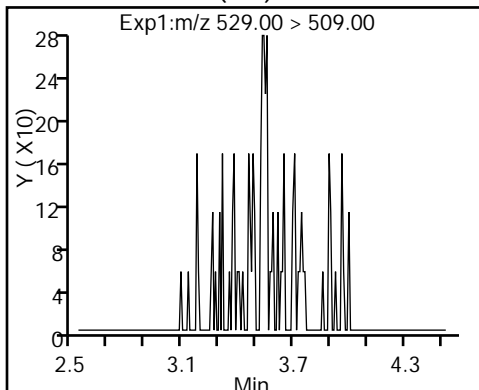
D 19 13C5 PFNA

D 18 13C4 PFOS

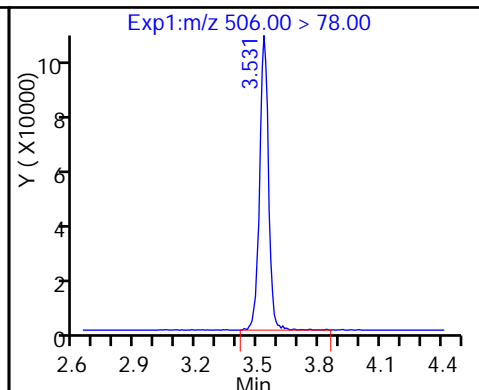
25 Sodium 1H,1H,2H,2H-perfluorooctane (ND)



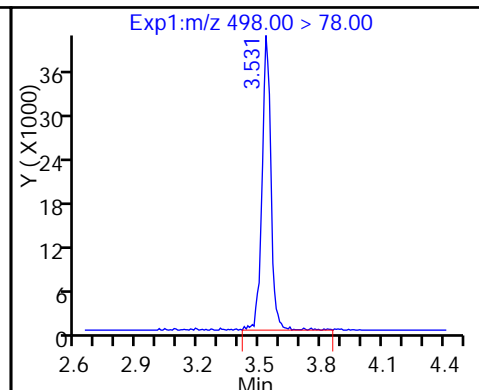
D 26 M2-8:2FTS (ND)



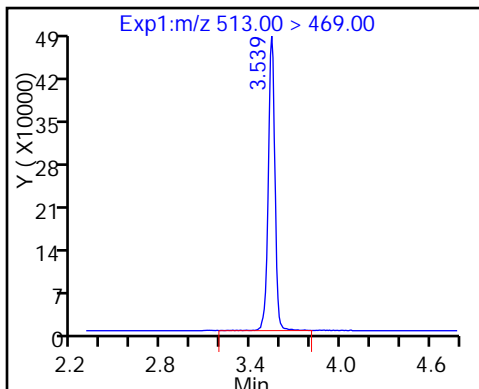
D 21 13C8 FOSA



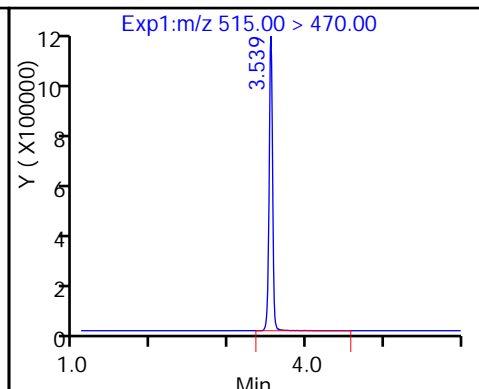
22 Perfluorooctane Sulfonamide



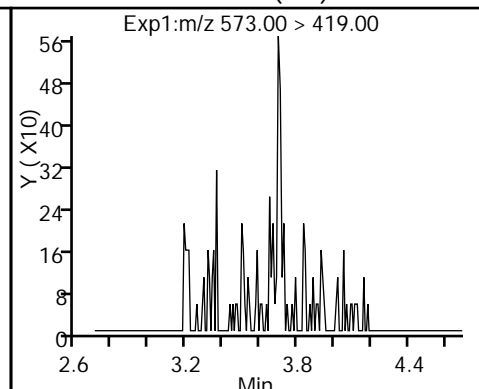
24 Perfluorodecanoic acid



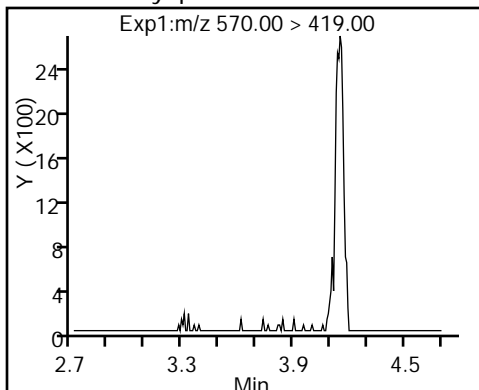
D 23 13C2 PFDA



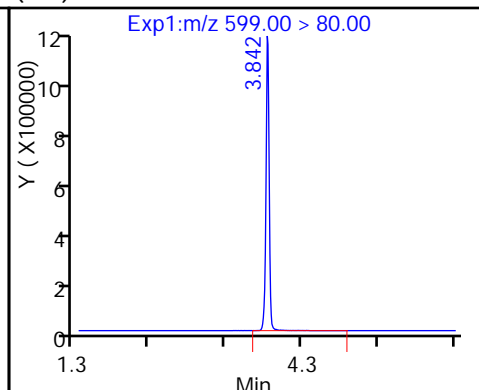
D 27 d3-NMeFOSAA (ND)



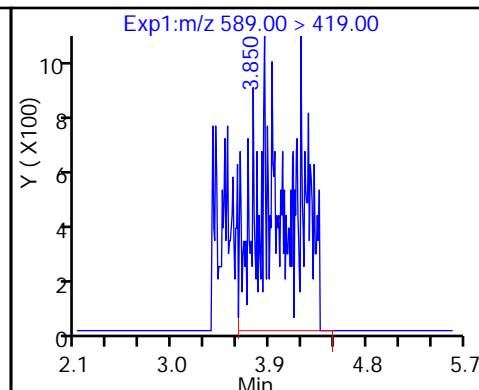
28 N-methyl perfluorooctane sulfonamide (ND)



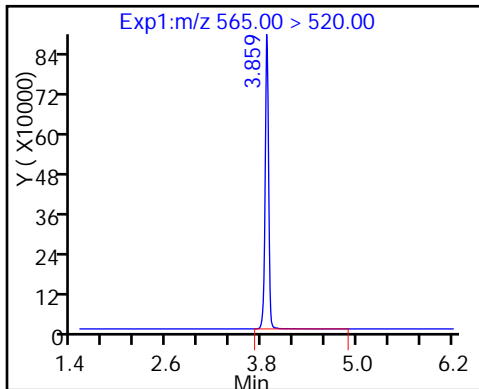
29 Perfluorodecane Sulfonic acid



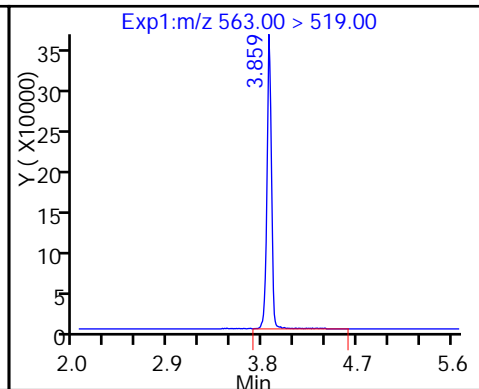
D 32 d5-NEtFOSAA



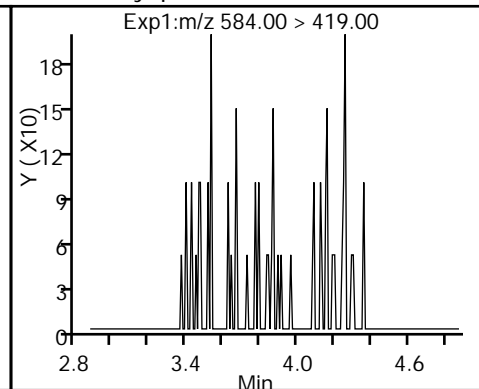
D 30 13C2 PFUnA



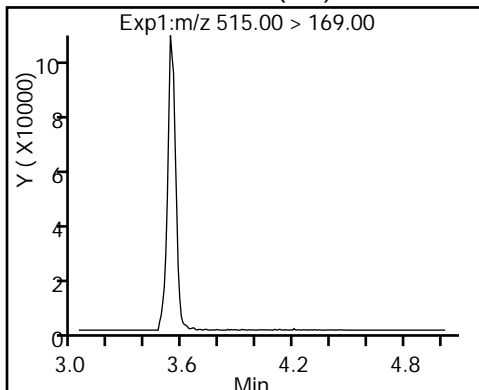
31 Perfluoroundecanoic acid



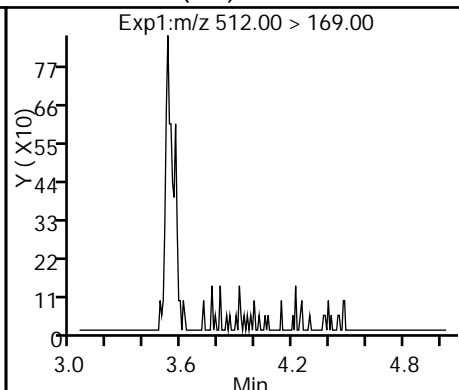
33 N-ethyl perfluorooctane sulfonamid (ND)



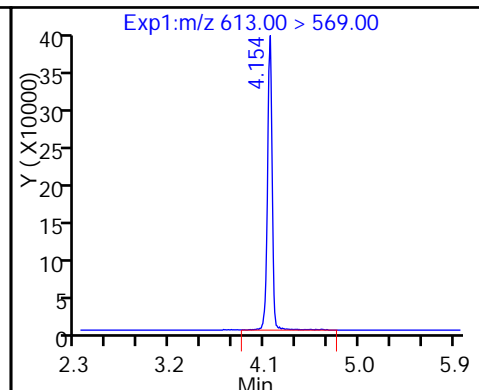
D 34 d-N-MeFOSA-M (ND)



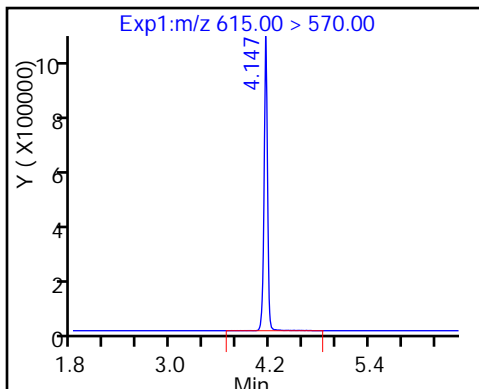
35 MeFOSA (ND)



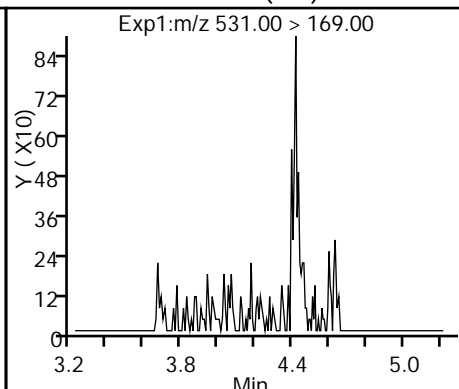
37 Perfluorododecanoic acid



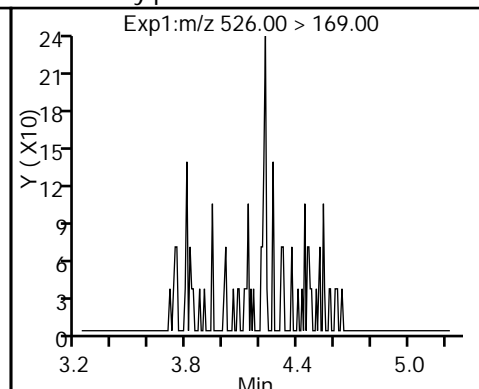
D 36 13C2 PFDaA



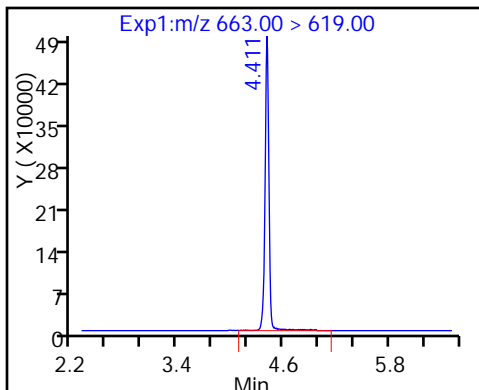
D 38 d-N-EtFOSA-M (ND)



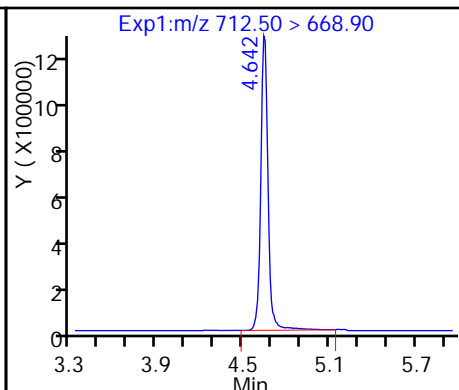
39 N-ethylperfluoro-1-octanesulfonami (ND)



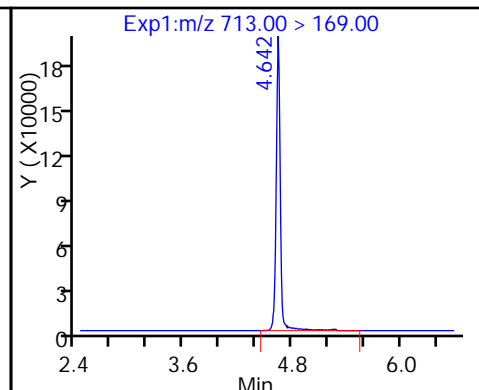
41 Perfluorotridecanoic acid



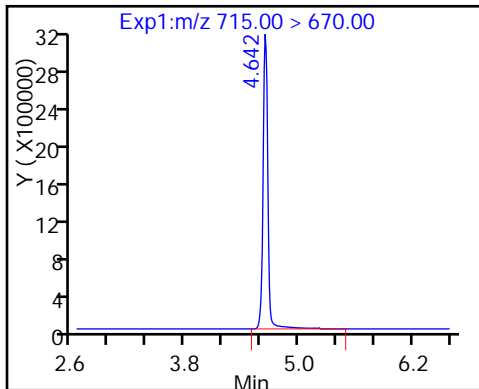
42 Perfluorotetradecanoic acid



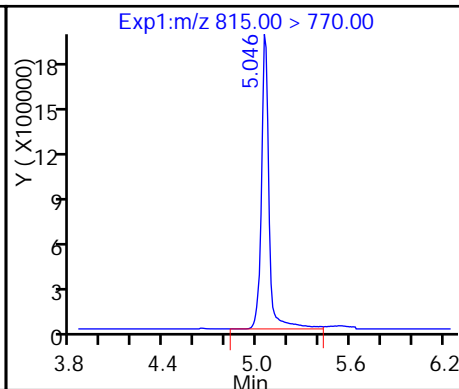
42 Perfluorotetradecanoic acid



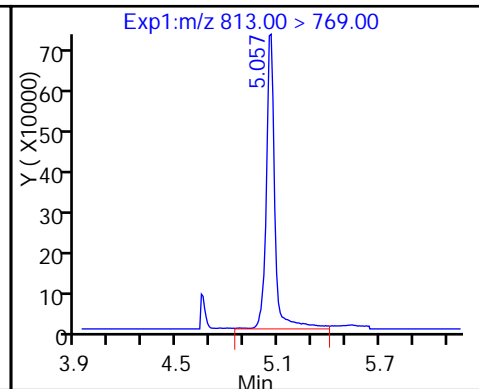
D 43 13C2-PFTeDA



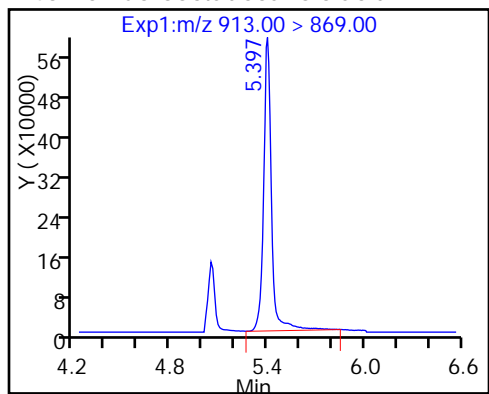
D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 MS DL Lab Sample ID: 320-26105-3 MS DL
 Matrix: Water Lab File ID: 2017.03.08B_009.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 273.4 (mL) Date Analyzed: 03/08/2017 20:32
 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.: 154016 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	530	D M 4	11	9.1	3.4
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	78.7	D M J	18	14	5.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	42.7	D	11	9.1	4.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	71		25-150
STL00991	13C4 PFOS	119		25-150
STL00994	18O2 PFHxS	134		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_009.d
 Lims ID: 320-26105-C-3-A MS
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: MS
 Inject. Date: 08-Mar-2017 20:32:06 ALS Bottle#: 5 Worklist Smp#: 9
 Injection Vol: 2.0 ul Dil. Factor: 5.0000
 Sample Info: 320-26105-c-3-a ms 5X
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 09-Mar-2017 14:14:20 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK034

First Level Reviewer: westendorfc Date: 09-Mar-2017 08:19:34

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	1.530	1.539	-0.009	2705987	9.26		18.5	240152	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.530	1.538	-0.008	1.000	1031039	4.50		112	6945	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.811	1.813	-0.002	1.000	1330924	4.54		114	11524	
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.813	-0.002	2995084	12.9		25.8	225908	
D 47 13C3-PFBS	301.90 > 83.00	1.831	1.853	-0.022	546	NC				
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.841	1.853	-0.012	1.000	2604253	4.67		132		
298.90 > 99.00	1.851	1.853	-0.002	1.005	1024534		2.54(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.104	2.108	-0.004	2062085	9.78		19.6	122702	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.104	2.113	-0.009	1.000	1102976	6.01		150	26155	
D 9 13C4-PFHpA	367.00 > 322.00	2.444	2.448	-0.004	1796252	9.31		18.6	155991	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.460	2.456	0.004	1.000	2358773	5.89		162		M
D 11 18O2 PFHxS	403.00 > 84.00	2.460	2.464	-0.004	3681331	12.7		26.8	258626	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.444	2.449	-0.005	1.000	1027164	5.91		148	8353	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.764	2.776	-0.012	1.000	7438	NR		0.0		
D 14 13C4 PFOA	417.00 > 372.00	2.802	2.806	-0.004	1446939	7.06		14.1	125340	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.802	2.799	0.003	1.000	8571308	58.0		1450	157127	M
413.00 > 169.00	2.802	2.799	0.003	1.000	5535501		1.55(0.90-1.10)		357757	M
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.810	2.799	0.011	1.000	1489236	5.02		132		
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.184	3.164	0.020	1.000	2437128	8.61		232	427067	M
499.00 > 99.00	3.184	3.164	0.020	1.000	471552		5.17(0.90-1.10)		0.0	M
D 18 13C4 PFOS										
503.00 > 80.00	3.184	3.172	0.012		2752563	11.4		23.8	64495	
D 19 13C5 PFNA										
468.00 > 423.00	3.193	3.172	0.021		998879	5.62		11.2	80162	
20 Perfluorononanoic acid										
463.00 > 419.00	3.184	3.188	-0.004	1.000	414623	4.59		115	6536	
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.540	3.496	0.044	1.000	411	NR		0.0		
24 Perfluorodecanoic acid										
513.00 > 469.00	3.540	3.522	0.018	1.000	307312	4.68		117	9569	
D 21 13C8 FOSA										
506.00 > 78.00	3.540	3.522	0.018		69577	0.1896		0.4	4735	
D 23 13C2 PFDA										
515.00 > 470.00	3.548	3.522	0.026		724328	4.34		8.7	19768	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.540	3.522	0.018	1.000	24614	3.94		98.4	3193	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.668	3.676	-0.008		640	0.007513		0.0		
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.842	3.631	0.211	0.996	669	NR		0.0		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.859	3.841	0.018		3174	0.0390		0.0		
D 30 13C2 PFUnA										
565.00 > 520.00	3.868	3.841	0.027		508511	3.89		7.8	40563	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.868	3.823	0.045	1.000	211231	4.10		102	5687	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.859	3.832	0.027	1.000	663780	3.87		100		
D 36 13C2 PFDoA										
615.00 > 570.00	4.161	4.127	0.034		594464	4.80		9.6	21118	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.154	4.127	0.027	1.000	235472	4.33		108	7629	
D 38 d-N-EtFOSA-M										
531.00 > 169.00	4.411	4.198	0.213		549	0.006440		0.0		
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.418	4.398	0.020	1.000	268544	5.17		129	6607	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.652	4.617	0.035	1.000	787310	6.73		168	15444	
713.00 > 169.00	4.642	4.617	0.025	0.998	105951		7.43(0.00-0.00)		18068	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA	715.00 > 670.00	4.652	4.624	0.028	1897541	7.32		14.6	74174	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.058	5.039	0.019	461164	7.99	1.000	200	2501	
D 44 13C2-PFHxDA	815.00 > 770.00	5.058	5.039	0.019	1198324	9.58		19.2	46620	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.406	5.384	0.022	345147	8.09	1.000	202	1480	

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\20170309-40626.b\2017.03.08B_009.d

Injection Date: 08-Mar-2017 20:32:06

Instrument ID: A8_N

Lims ID: 320-26105-C-3-A MS

Client ID: MEAFF-MRD-1A14-0217

Operator ID: A8-PC\A8

ALS Bottle#: 5

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 5.0000

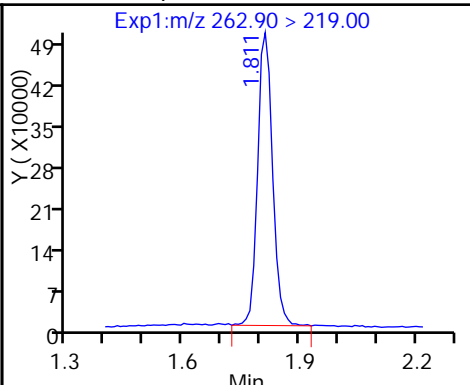
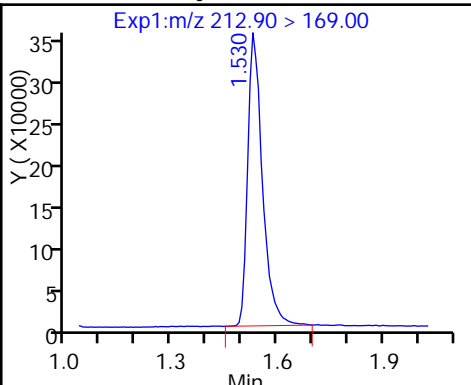
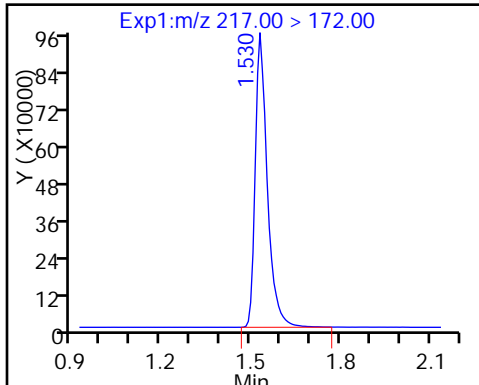
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

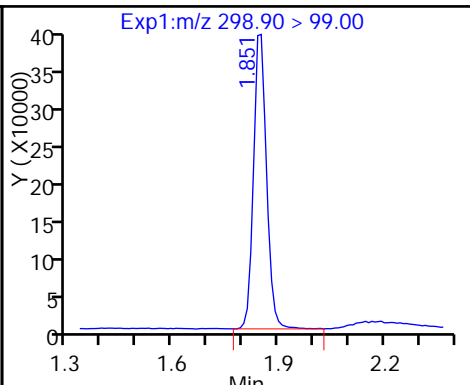
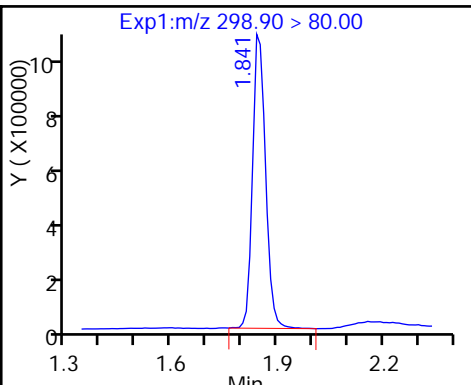
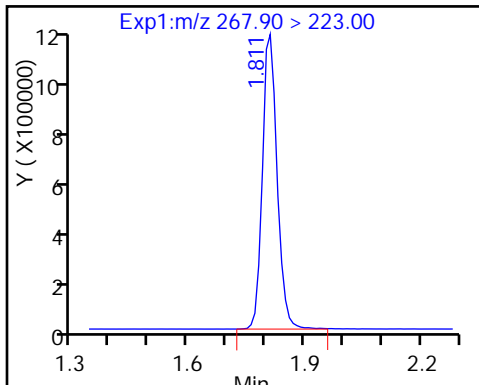
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

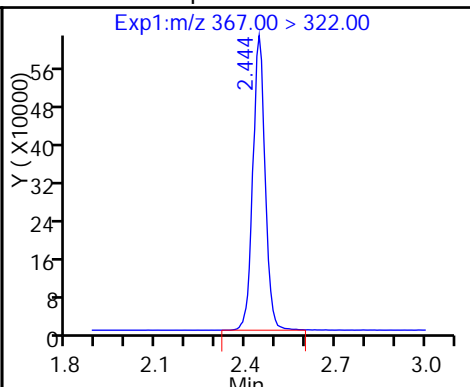
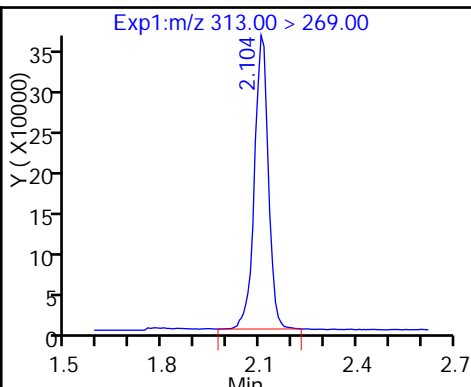
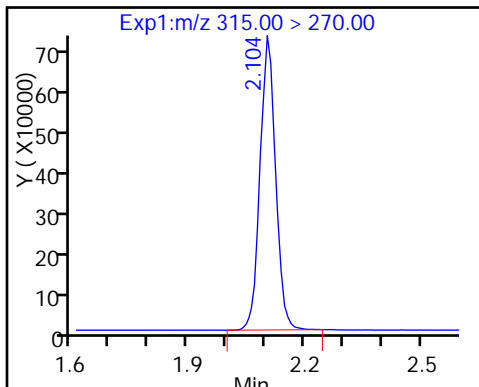
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

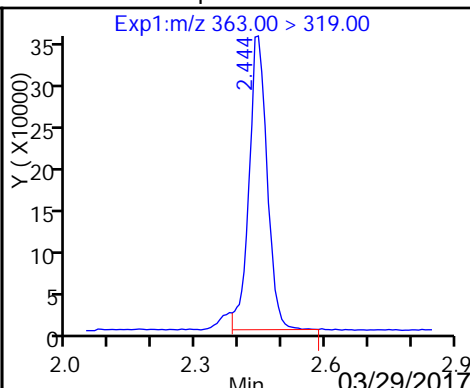
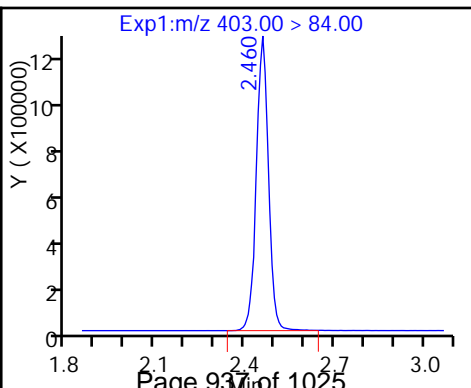
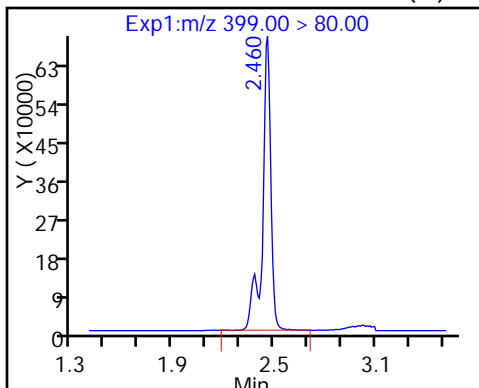
D 9 13C4-PFHpA



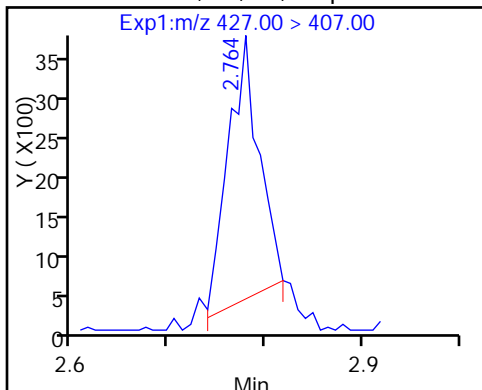
8 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS

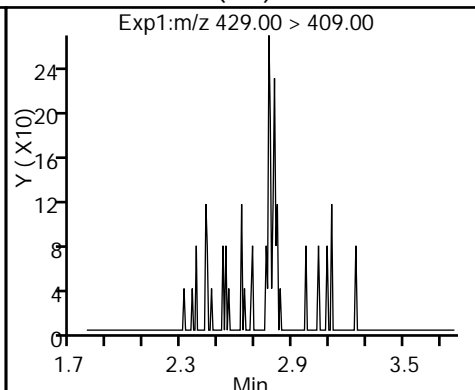
10 Perfluoroheptanoic acid



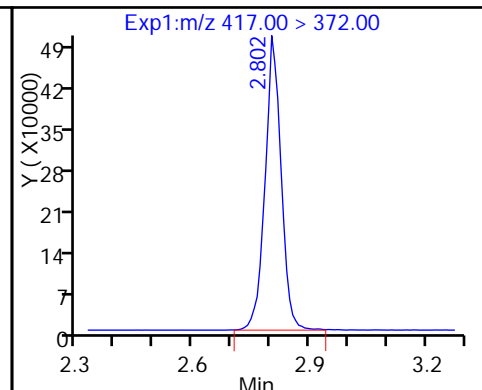
13 Sodium 1H,1H,2H,2H-perfluorooctane



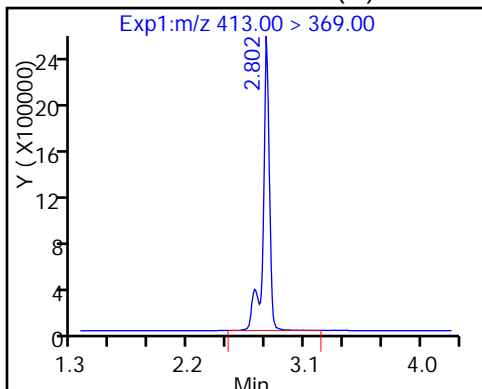
D 12 M2-6:2FTS (ND)



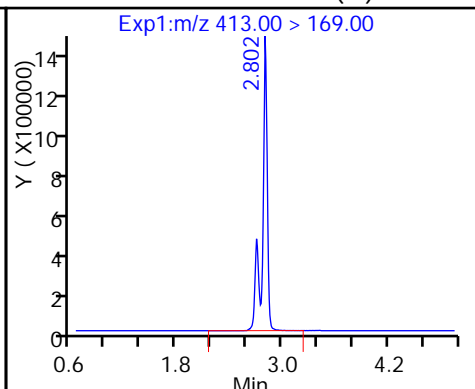
D 14 13C4 PFOA



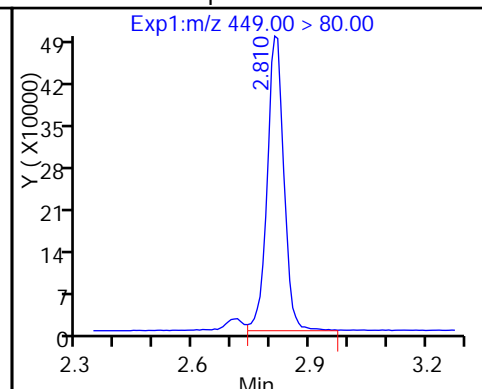
15 Perfluorooctanoic acid (M)



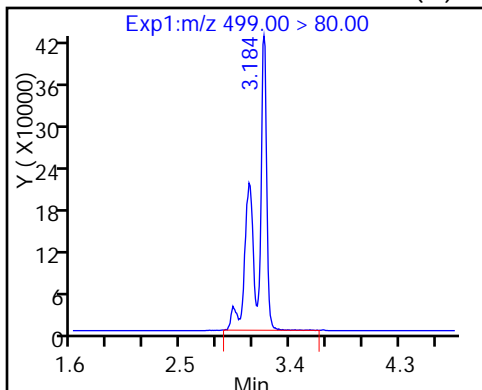
15 Perfluorooctanoic acid (M)



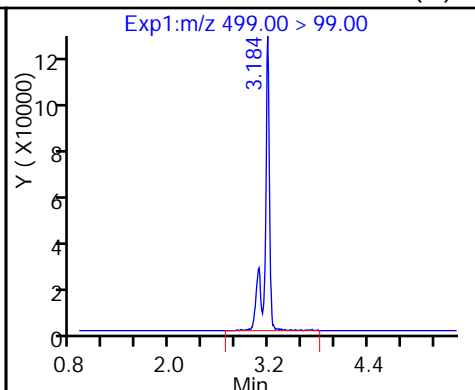
16 Perfluoroheptanesulfonic Acid



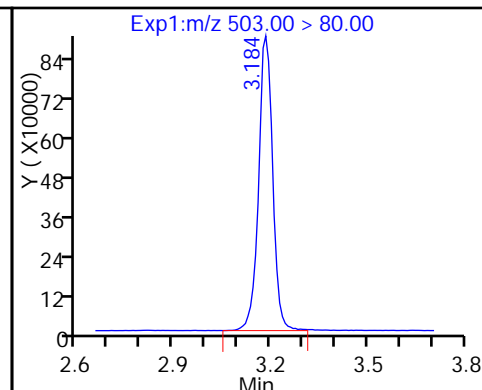
17 Perfluorooctane sulfonic acid (M)



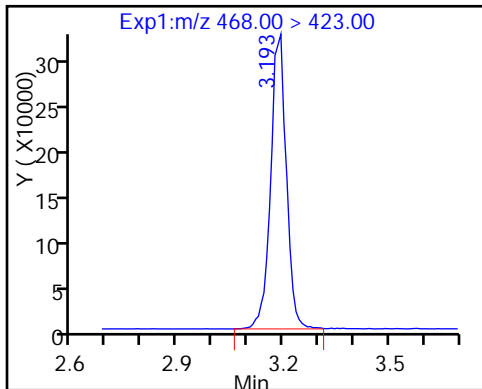
17 Perfluorooctane sulfonic acid (M)



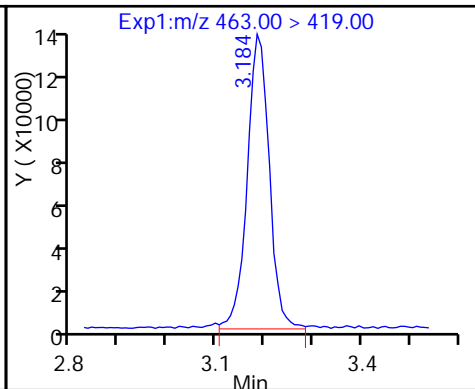
D 18 13C4 PFOS



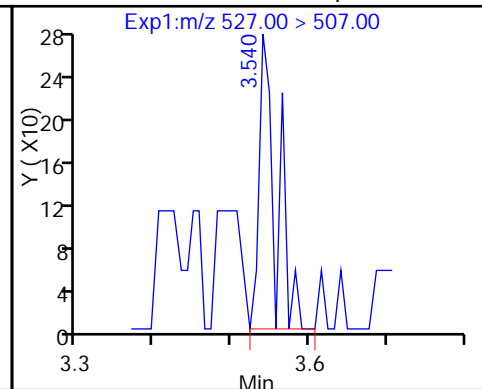
D 19 13C5 PFNA

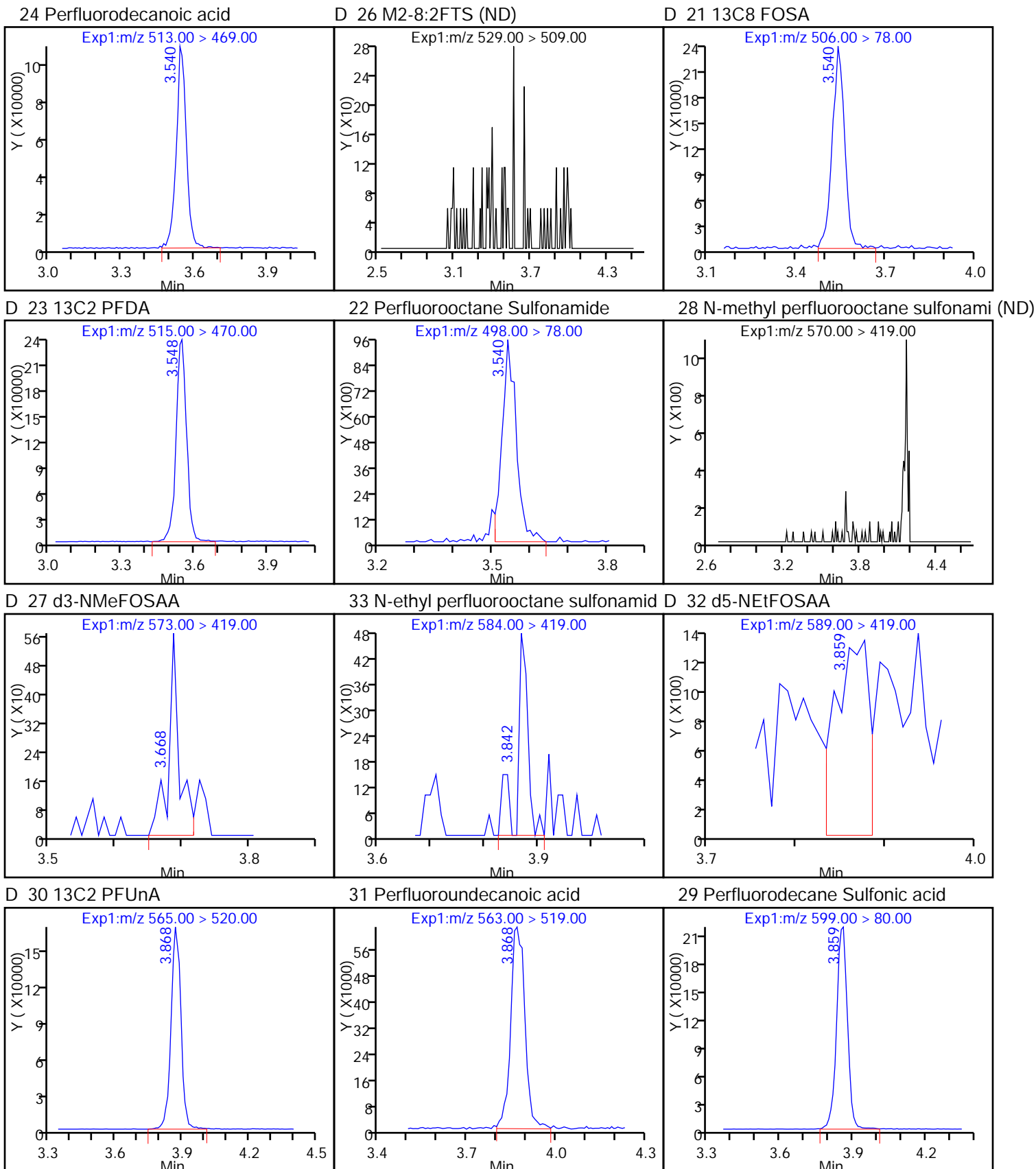


20 Perfluorononanoic acid

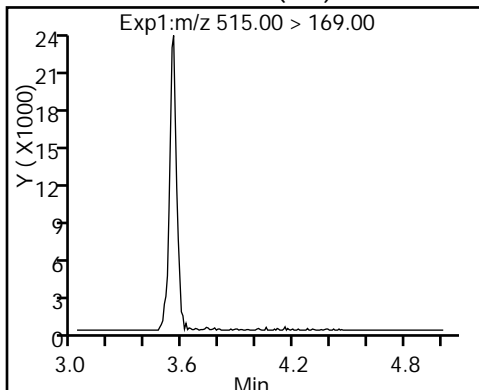


25 Sodium 1H,1H,2H,2H-perfluorooctane

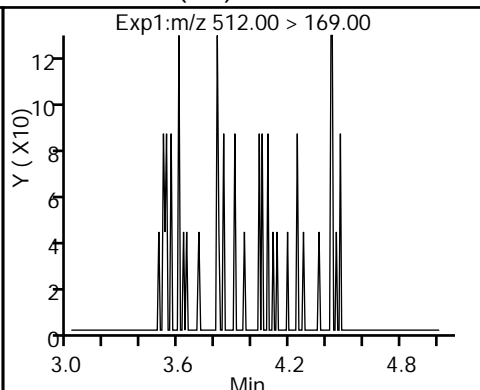




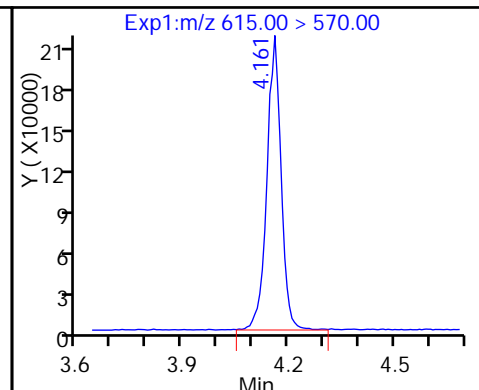
D 34 d-N-MeFOSA-M (ND)



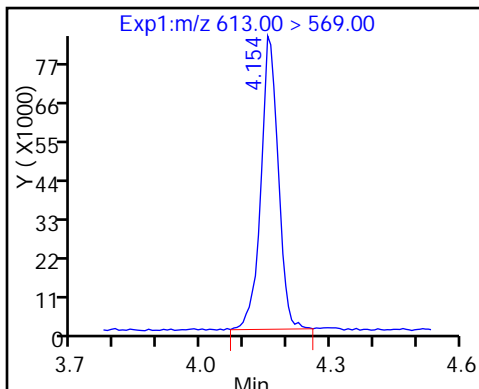
35 MeFOSA (ND)



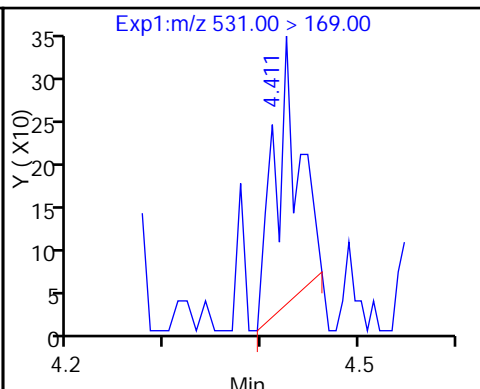
D 36 13C2 PFDaA



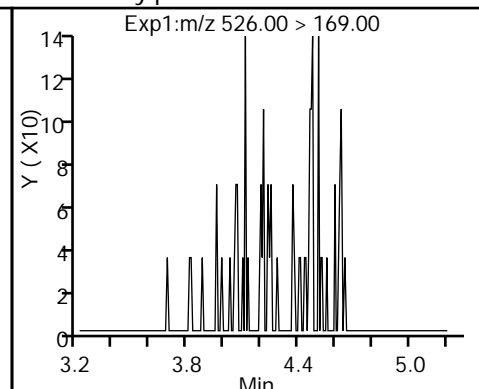
37 Perfluorododecanoic acid



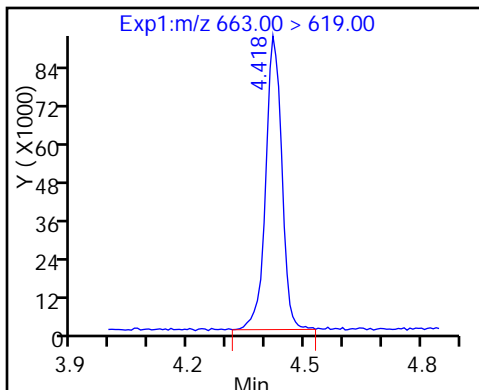
D 38 d-N-EtFOSA-M



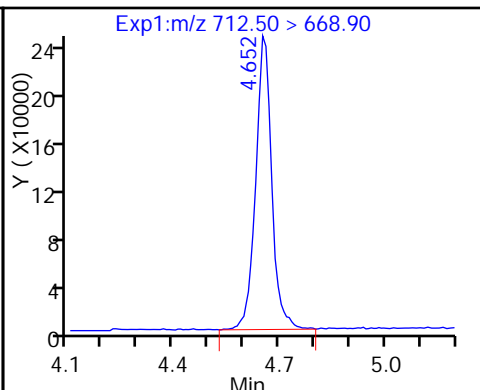
39 N-ethylperfluoro-1-octanesulfonami (ND)



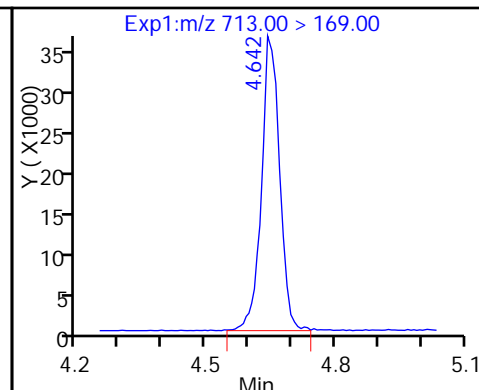
41 Perfluorotridecanoic acid



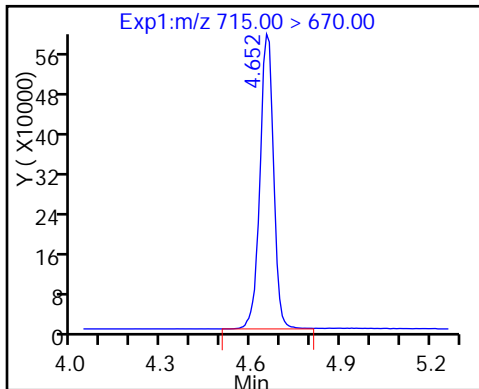
42 Perfluorotetradecanoic acid



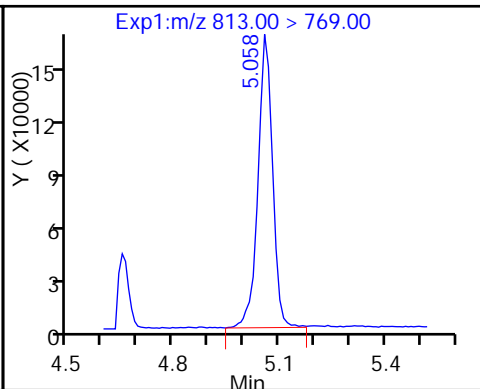
42 Perfluorotetradecanoic acid



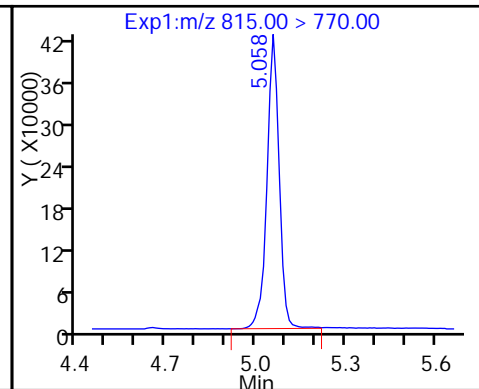
D 43 13C2-PFTeDA



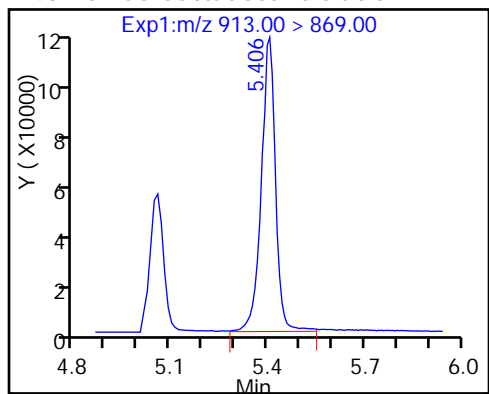
45 Perfluorohexadecanoic acid



D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

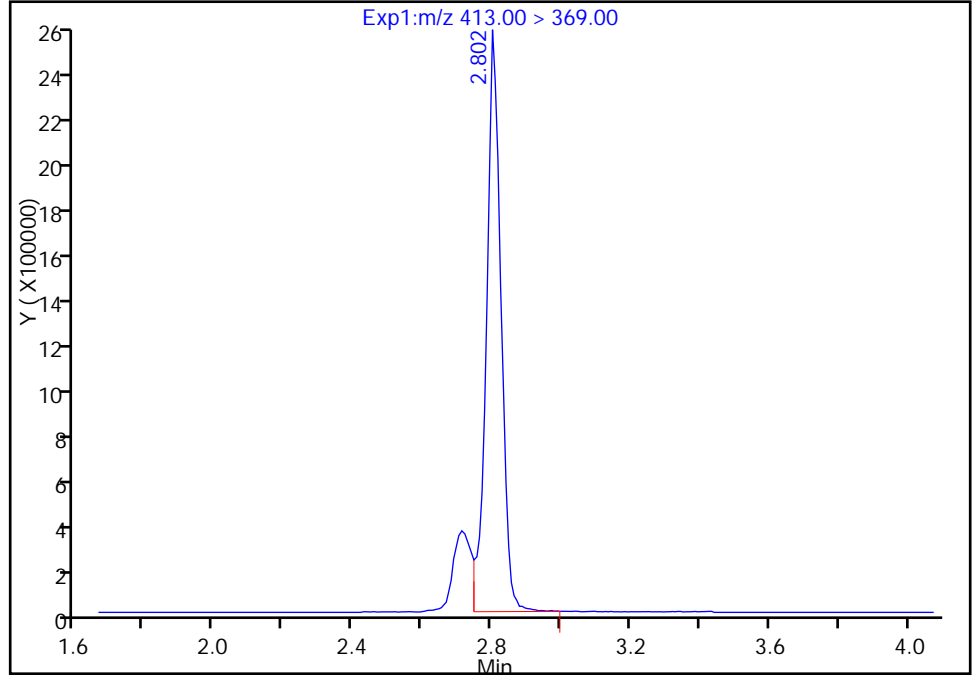
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Injection Date: 08-Mar-2017 20:32:06 Instrument ID: A8_N
Lims ID: 320-26105-C-3-A MS
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

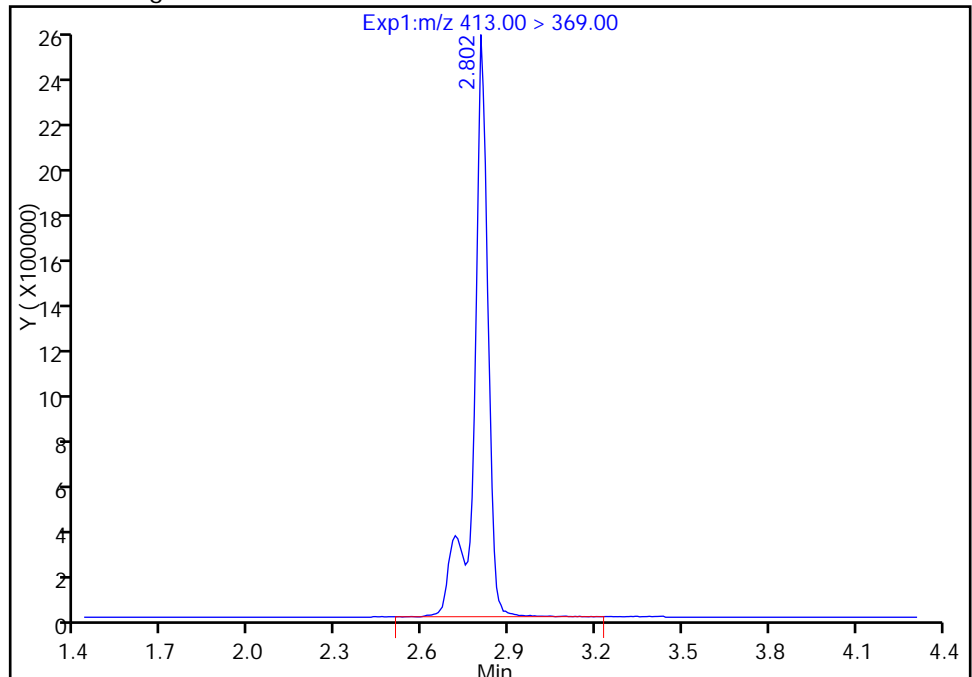
RT: 2.80
Area: 7289246
Amount: 246.5453
Amount Units: ng/ml

Processing Integration Results



RT: 2.80
Area: 8571308
Amount: 57.981728
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 14:14:35
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

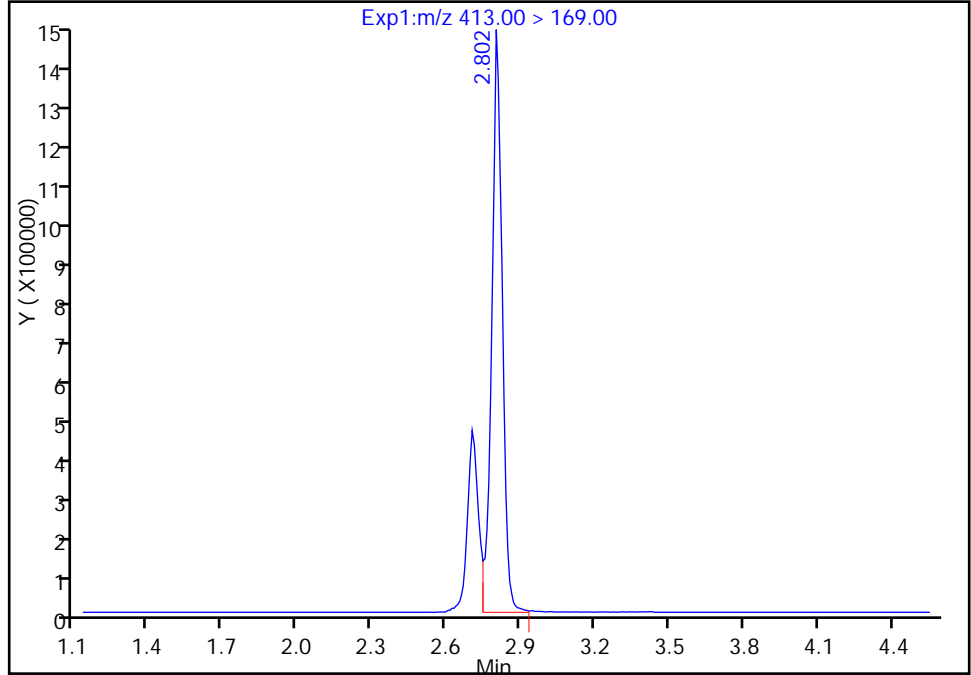
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Injection Date: 08-Mar-2017 20:32:06 Instrument ID: A8_N
Lims ID: 320-26105-C-3-A MS
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

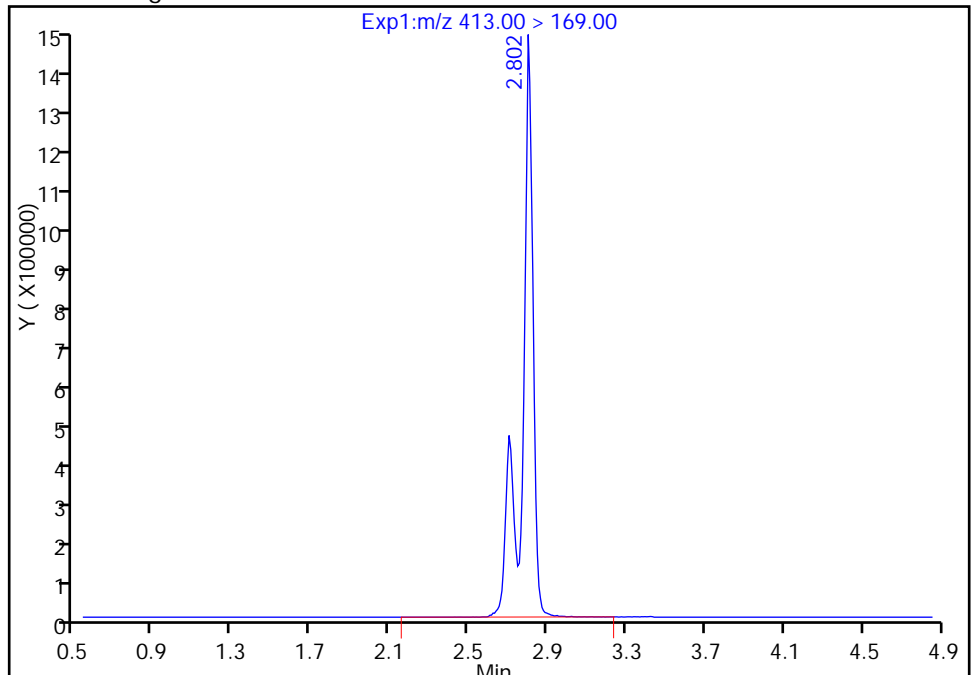
RT: 2.80
Area: 4172948
Amount: 246.5453
Amount Units: ng/ml

Processing Integration Results



RT: 2.80
Area: 5535501
Amount: 57.981728
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

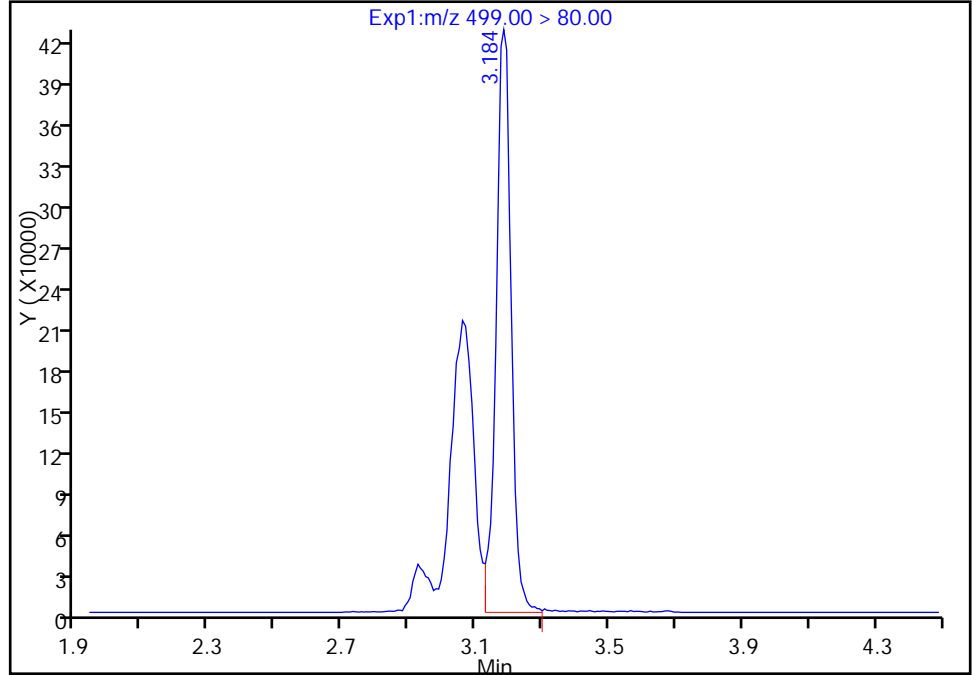
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Injection Date: 08-Mar-2017 20:32:06 Instrument ID: A8_N
Lims ID: 320-26105-C-3-A MS
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

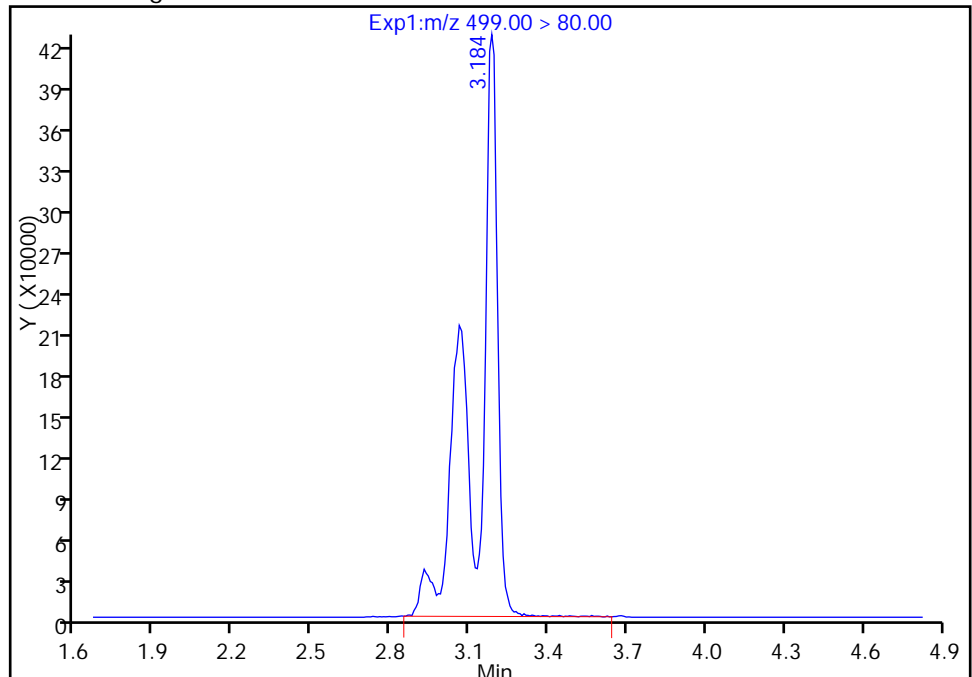
RT: 3.18
Area: 1328943
Amount: 23.465534
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 2437128
Amount: 8.606616
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 14:14:35
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

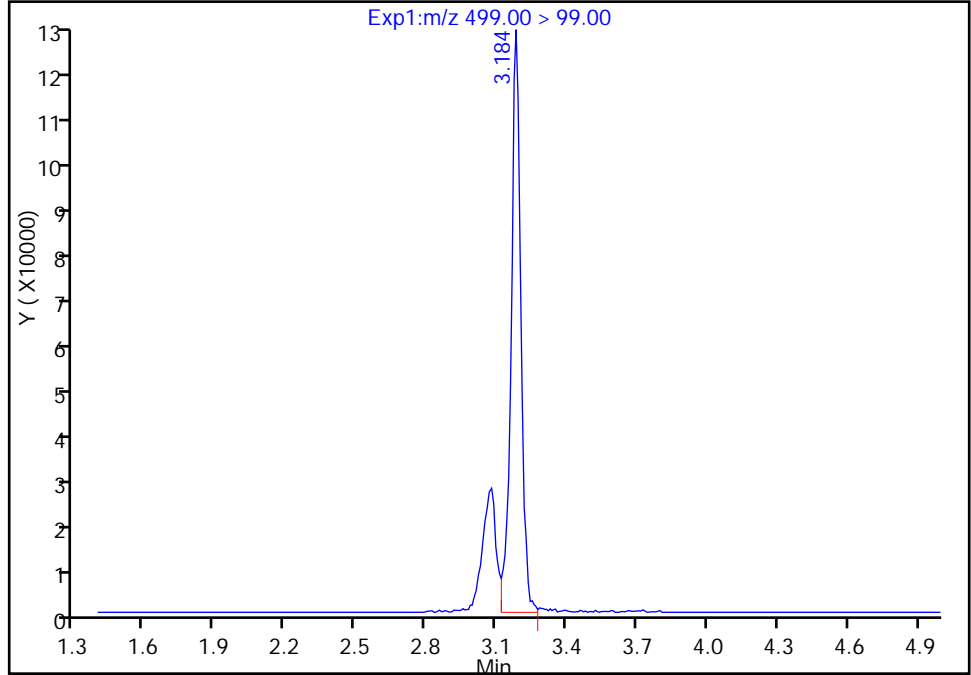
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Injection Date: 08-Mar-2017 20:32:06 Instrument ID: A8_N
Lims ID: 320-26105-C-3-A MS
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

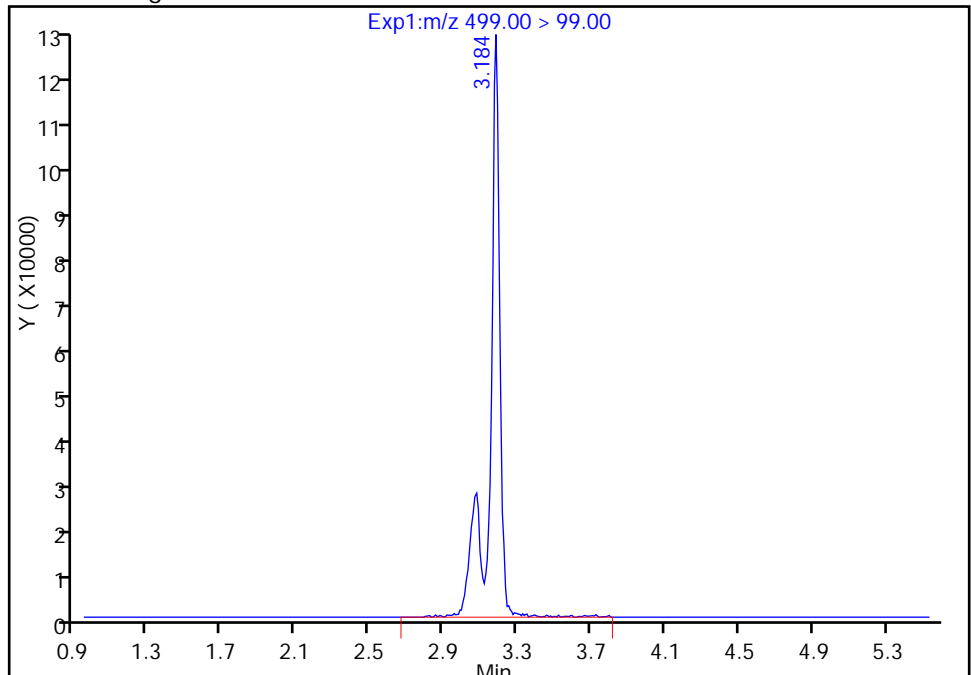
RT: 3.18
Area: 353735
Amount: 23.465534
Amount Units: ng/ml

Processing Integration Results



RT: 3.18
Area: 471552
Amount: 8.606616
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 MSD Lab Sample ID: 320-26105-3 MSD
 Matrix: Water Lab File ID: 2017.03.04A_054.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 270.3 (mL) Date Analyzed: 03/06/2017 02:41
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	478	E 4	2.3	1.8	0.69
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	76.1		3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	41.3		2.3	1.8	0.85

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	54		25-150
STL00991	13C4 PFOS	122		25-150
STL00994	18O2 PFHxS	122		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_054.d
 Lims ID: 320-26105-D-3-B MSD
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: MSD
 Inject. Date: 06-Mar-2017 02:41:40 ALS Bottle#: 43 Worklist Smp#: 54
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-26105-d-3-b msd
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 07-Mar-2017 14:52:11 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK017

First Level Reviewer: changnoit Date: 07-Mar-2017 14:52:11

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	1.530	1.530	0.0	6732939	23.0		46.1	1155661	
2 Perfluorobutyric acid	212.90 > 169.00	1.530	1.538	-0.008	1.000	2590043	22.7	114	32072	
D 3 13C5-PFPeA	267.90 > 223.00	1.811	1.811	0.0	9843206	42.4		84.8	3715478	
4 Perfluoropentanoic acid	262.90 > 219.00	1.811	1.821	-0.010	1.000	4593197	23.8	119	58035	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.851	1.851	0.0	1.000	11400457	22.4	126		
	298.90 > 99.00	1.851	1.851	0.0	1.000	4514929	2.53(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.111	2.113	-0.002	7958223	37.7		75.5	27635	
6 Perfluorohexanoic acid	313.00 > 269.00	2.102	2.113	-0.011	1.000	4099763	29.0	145	115431	
D 9 13C4-PFHpA	367.00 > 322.00	2.437	2.448	-0.011	7547927	39.1		78.2	2430277	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.445	2.456	-0.011	1.000	4229063	29.0	145	48392	
D 11 18O2 PFHxS	403.00 > 84.00	2.453	2.464	-0.011	16841539	57.9		122	777298	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.461	2.464	-0.003	1.000	10911135	29.8	164		
D 12 M2-6:2FTS	429.00 > 409.00	2.765	2.783	-0.018	3008	0.0390		0.0		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.773	2.783	-0.010	1.000	40863	NR	0.0		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.803	2.806	-0.003	1.000	29374310	258.3		1291	3440948	E
413.00 > 169.00	2.803	2.806	-0.003	1.000	20507318		1.43(0.90-1.10)		33285	
D 14 13C4 PFOA										
417.00 > 372.00	2.803	2.814	-0.011		5566376	27.2		54.3	1772954	
16 Perfluoroheptanesulfonic Acid										M
449.00 > 80.00	2.818	2.814	0.004	1.000	6812760	22.4		118		M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.061	3.156	-0.095	1.000	11933135	41.2		222	122066	
499.00 > 99.00	3.144	3.156	-0.012	1.027	2183348		5.47(0.90-1.10)		41033	
20 Perfluorononanoic acid										M
463.00 > 419.00	3.175	3.188	-0.013	1.000	1441110	21.6		108	22546	M
D 19 13C5 PFNA										
468.00 > 423.00	3.184	3.188	-0.004		3685894	20.7		41.4	1133944	
D 18 13C4 PFOS										
503.00 > 80.00	3.175	3.188	-0.013		14090503	58.3		122	398183	
D 21 13C8 FOSA										
506.00 > 78.00	3.531	3.538	-0.007		543475	1.48		3.0	177136	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.531	3.538	-0.007	1.000	212868	21.8		109	23346	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.548	3.547	0.001	1.000	1229515	22.2		111	129828	
D 23 13C2 PFDA										
515.00 > 470.00	3.531	3.547	-0.016		3054797	18.3		36.6	1017589	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.842	3.850	-0.008	1.000	3373533	19.2		99.6		
D 30 13C2 PFUnA										
565.00 > 520.00	3.859	3.867	-0.008		2293263	17.5		35.1	256891	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.859	3.867	-0.008	1.000	910588	19.6		97.9	38235	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.147	4.152	-0.005	1.000	1070821	20.8		104	123336	
D 36 13C2 PFDoA										
615.00 > 570.00	4.147	4.152	-0.005		2811354	22.7		45.4	0.0	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.411	4.419	-0.008	1.000	1390256	28.3		142	147632	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.642	4.641	0.001	1.000	4406767	39.9		199	320418	
713.00 > 169.00	4.642	4.641	0.001	1.000	580494		7.59(0.00-0.00)		7573	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.642	4.651	-0.009		11050448	42.6		85.3	37053	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.047	5.055	-0.008		6851675	54.8		110	346119	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.047	5.055	-0.008	1.000	2550705	48.6		243	6178	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.398	5.397	0.001	1.000	2057614	51.0		255	2595	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b\2017.03.04A_054.d

Injection Date: 06-Mar-2017 02:41:40

Instrument ID: A8_N

Lims ID: 320-26105-D-3-B MSD

Client ID: MEAFF-MRD-1A14-0217

Operator ID: A8-PC\A8

ALS Bottle#: 43

Worklist Smp#: 54

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

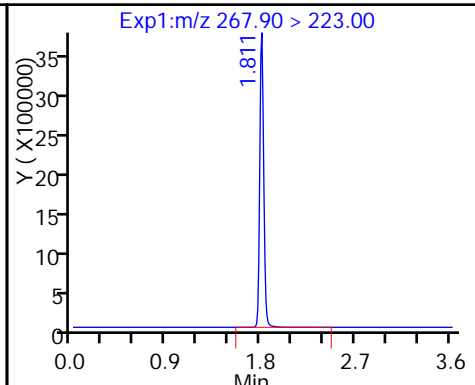
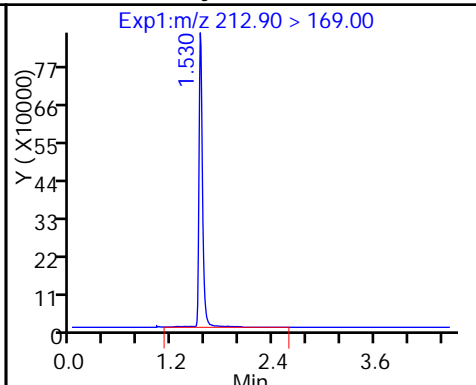
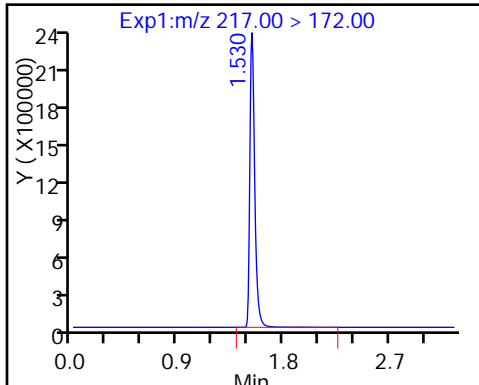
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

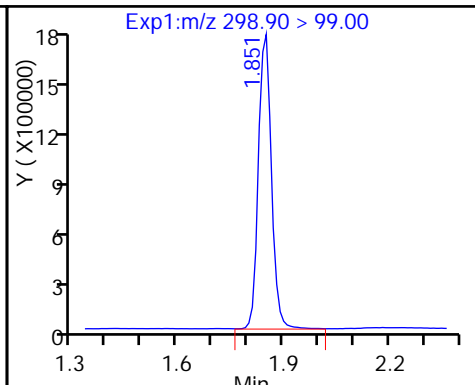
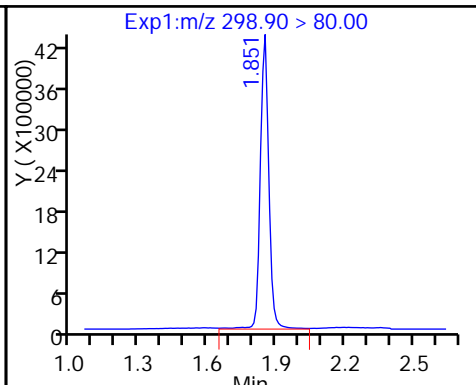
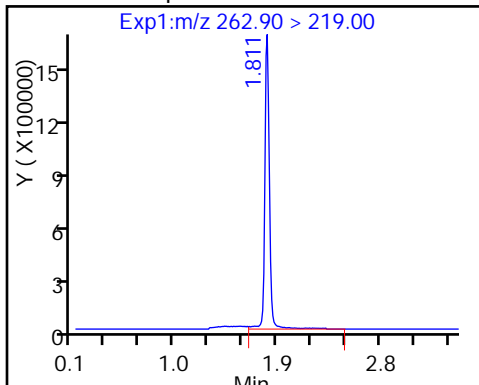
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

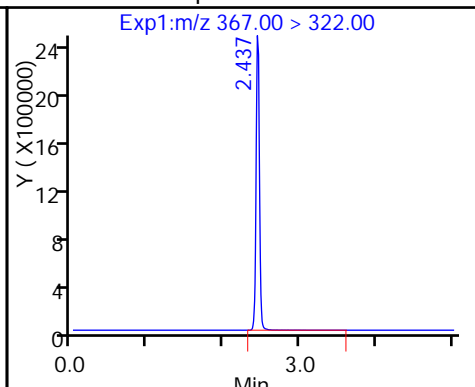
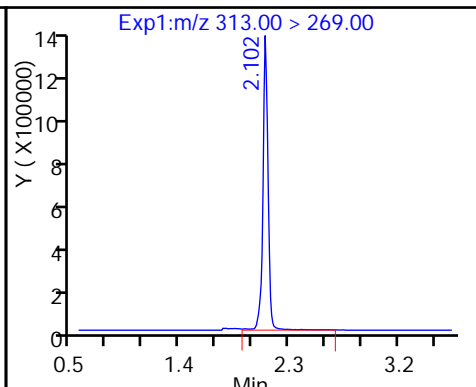
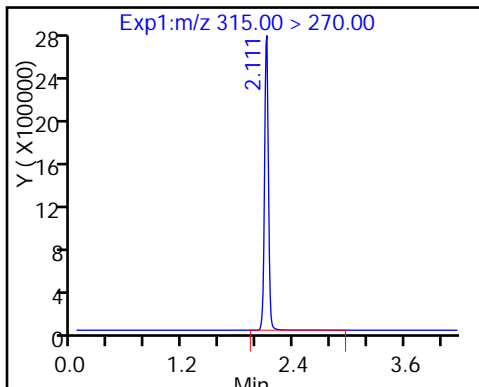
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

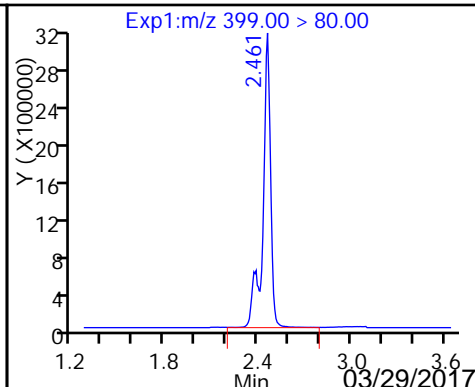
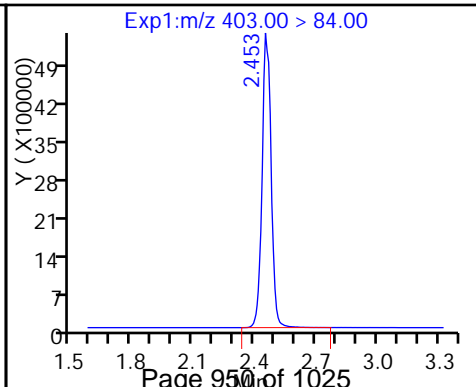
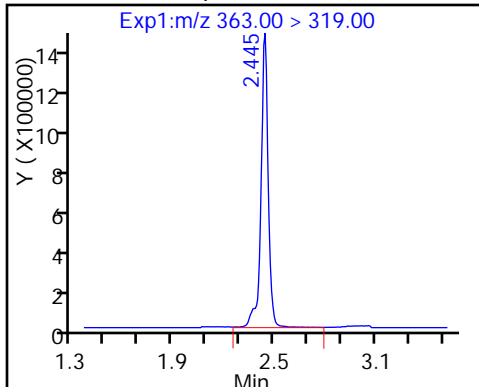
D 9 13C4-PFHpA



10 Perfluoroheptanoic acid

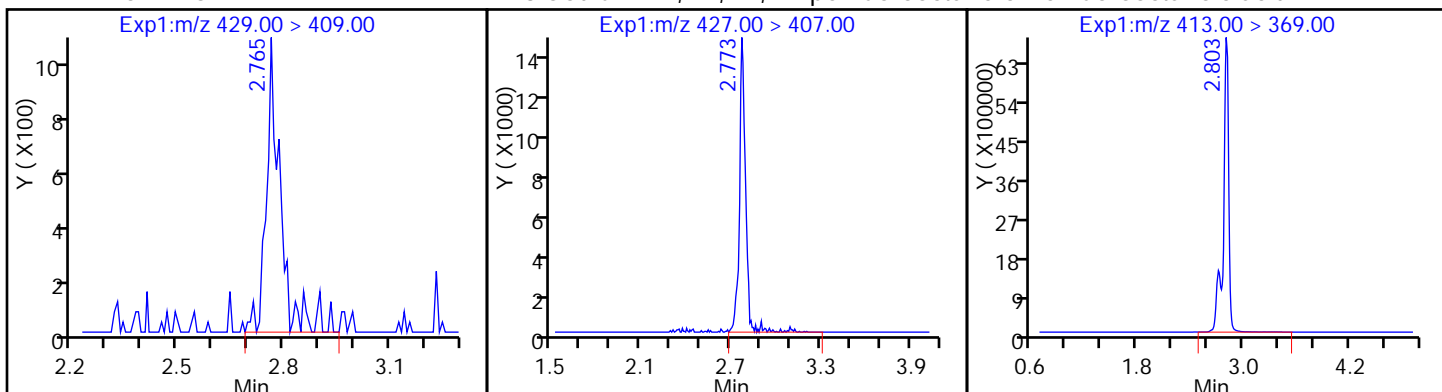
D 11 18O2 PFHxS

8 Perfluorohexanesulfonic acid



D 12 M2-6:2FTS

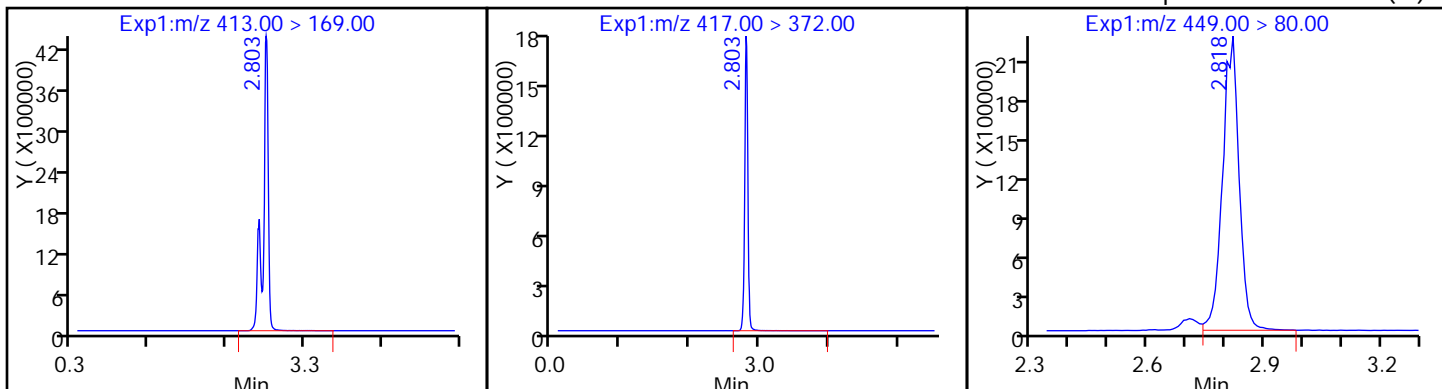
13 Sodium 1H,1H,2H,2H-perfluorooctane 5 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

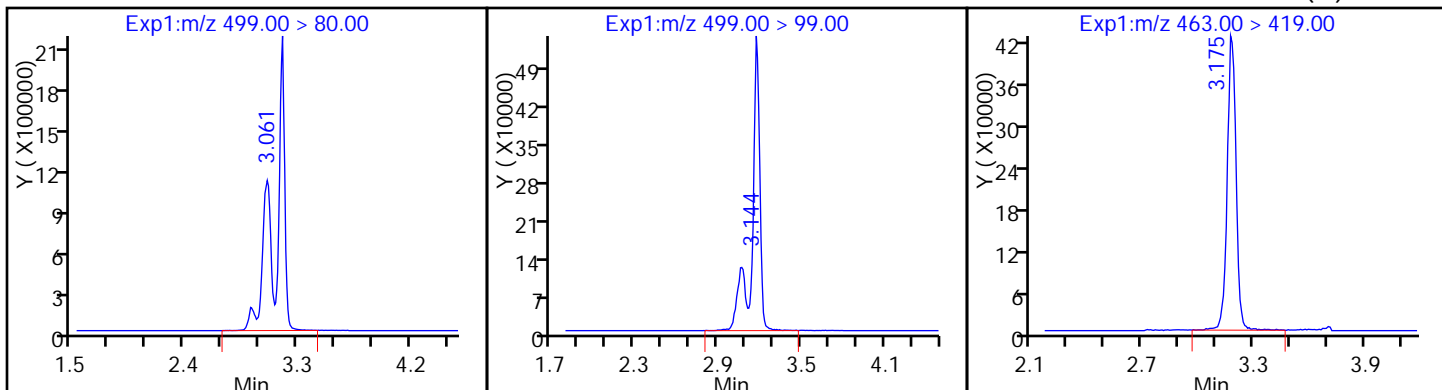
16 Perfluoroheptanesulfonic Acid (M)



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

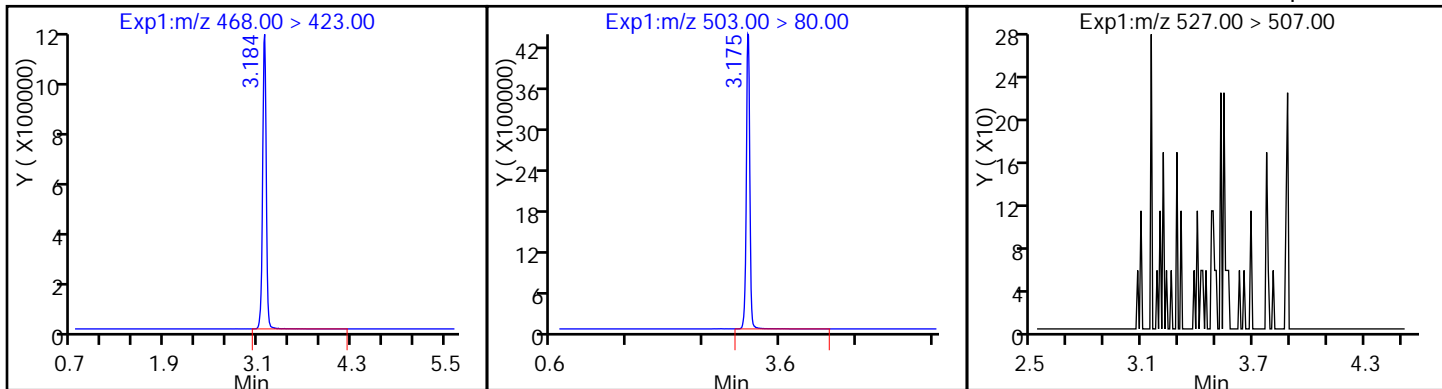
20 Perfluorononanoic acid (M)



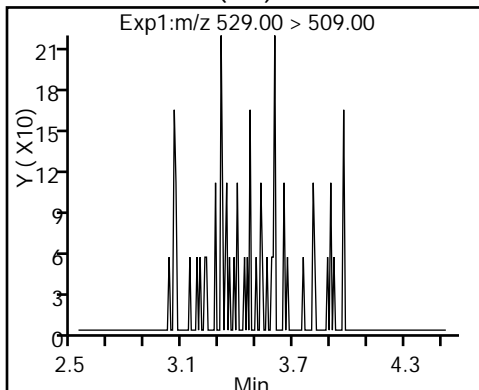
D 19 13C5 PFNA

D 18 13C4 PFOS

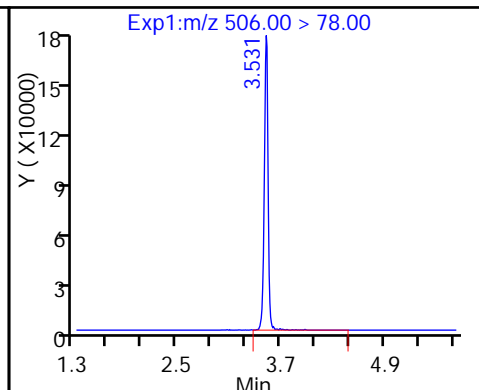
25 Sodium 1H,1H,2H,2H-perfluorooctane (ND)



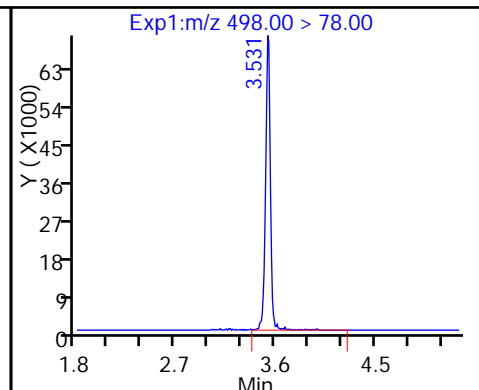
D 26 M2-8:2FTS (ND)



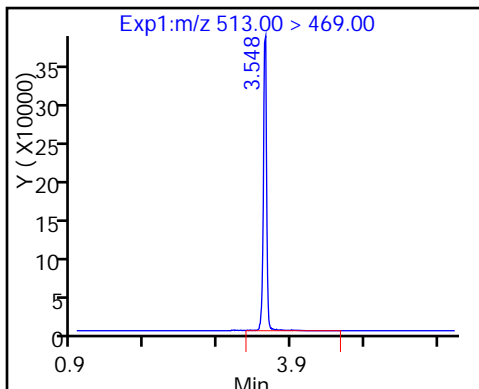
D 21 13C8 FOSA



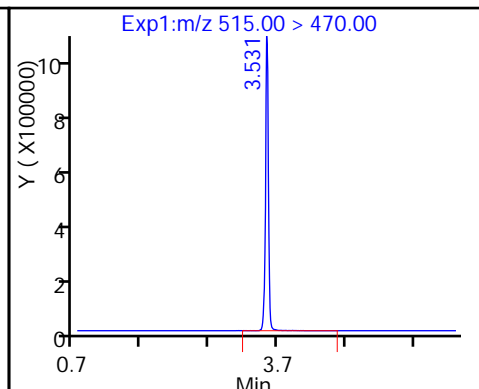
22 Perfluorooctane Sulfonamide



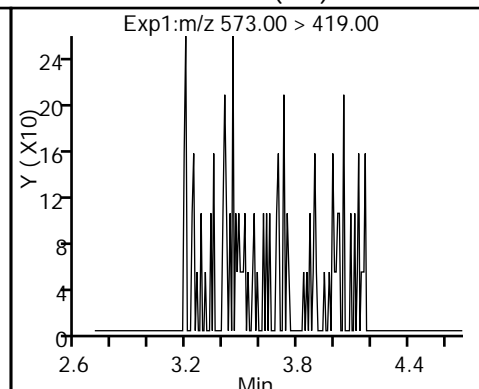
24 Perfluorodecanoic acid



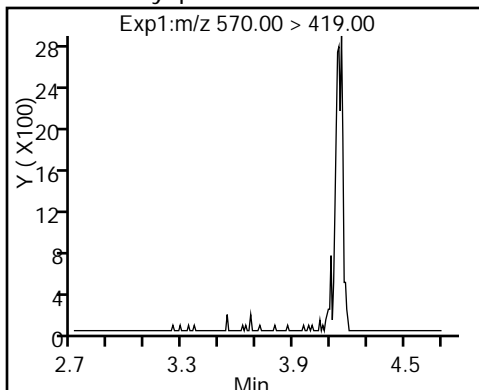
D 23 13C2 PFDA



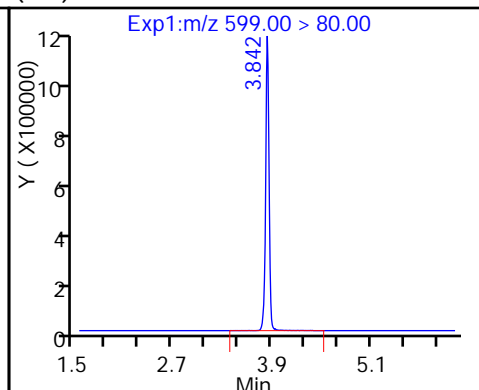
D 27 d3-NMeFOSAA (ND)



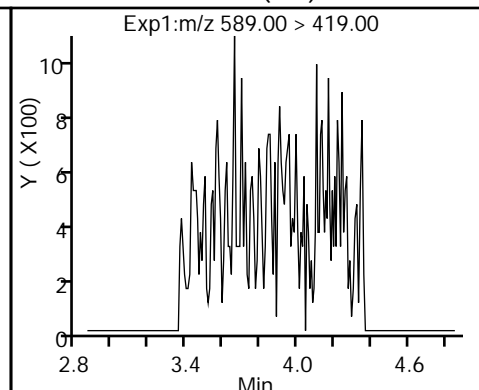
28 N-methyl perfluorooctane sulfonami (ND)



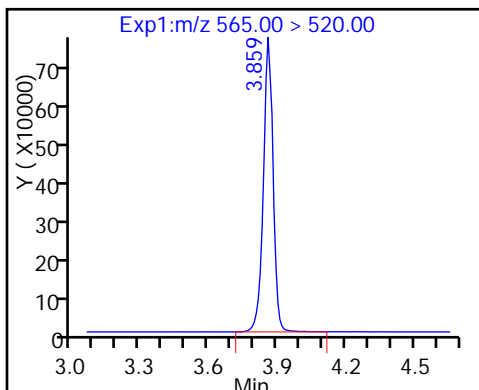
29 Perfluorodecane Sulfonic acid



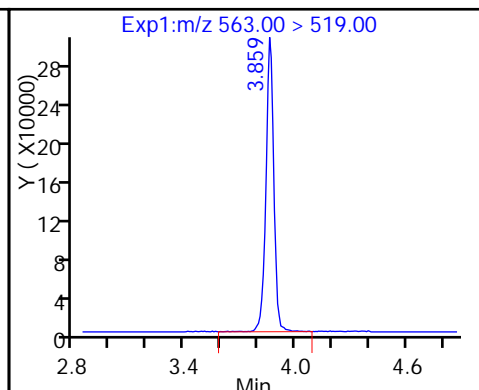
D 32 d5-NEtFOSAA (ND)



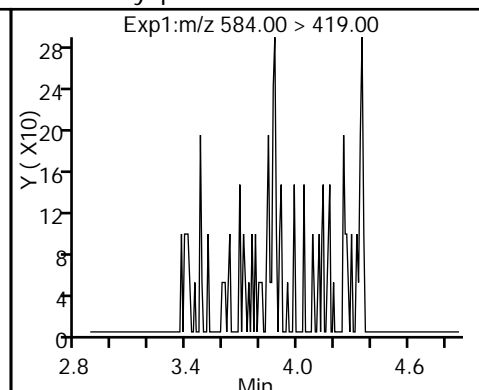
D 30 13C2 PFUnA



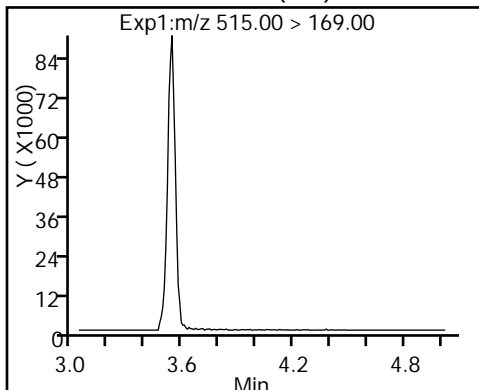
31 Perfluoroundecanoic acid



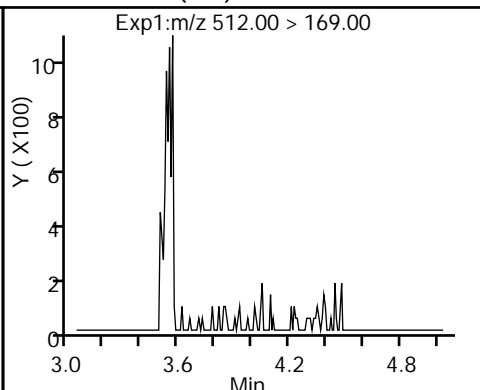
33 N-ethyl perfluorooctane sulfonamid (ND)



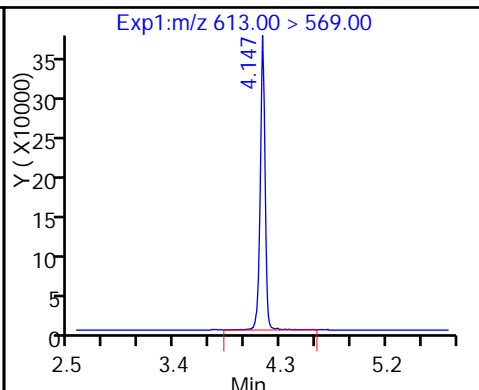
D 34 d-N-MeFOSA-M (ND)



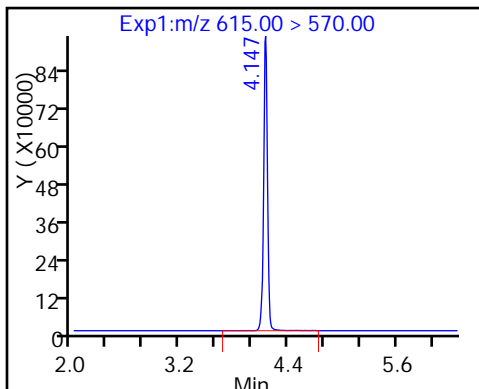
35 MeFOSA (ND)



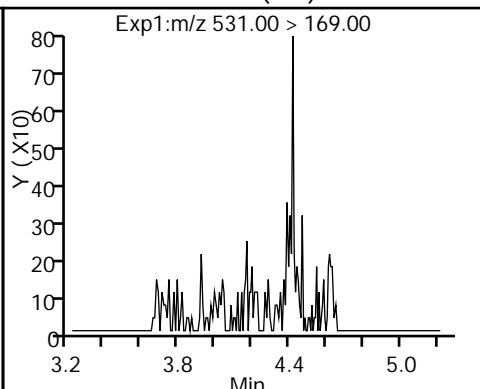
37 Perfluorododecanoic acid



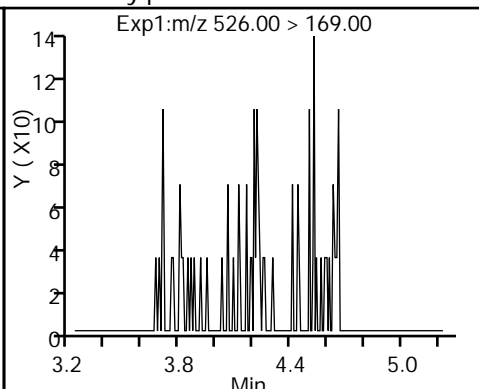
D 36 13C2 PFDaA



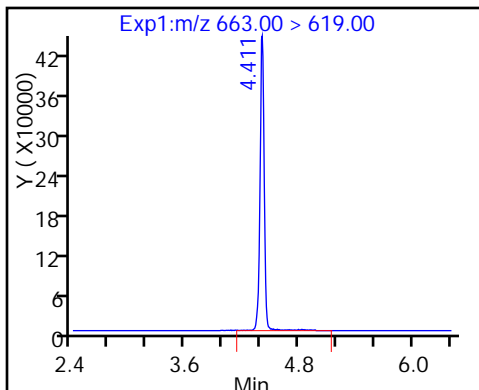
D 38 d-N-EtFOSA-M (ND)



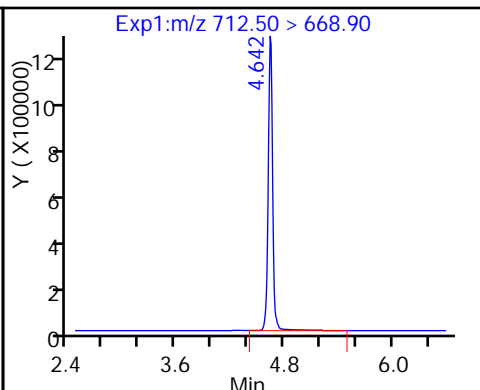
39 N-ethylperfluoro-1-octanesulfonami (ND)



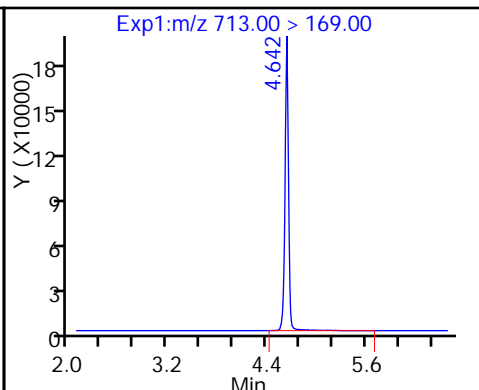
41 Perfluorotridecanoic acid



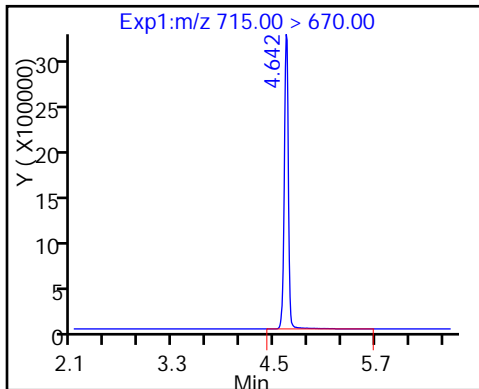
42 Perfluorotetradecanoic acid



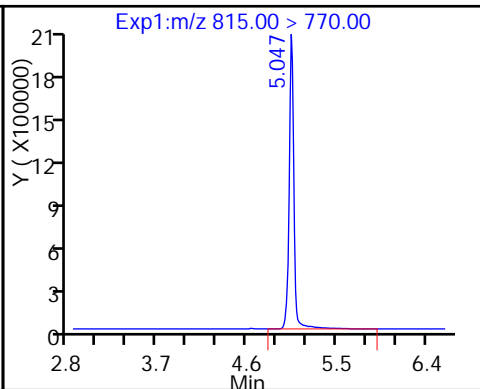
42 Perfluorotetradecanoic acid



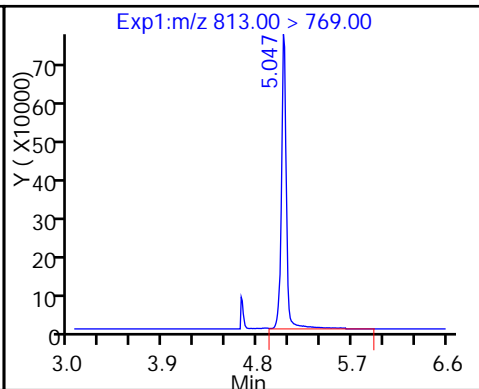
D 43 13C2-PFTeDA



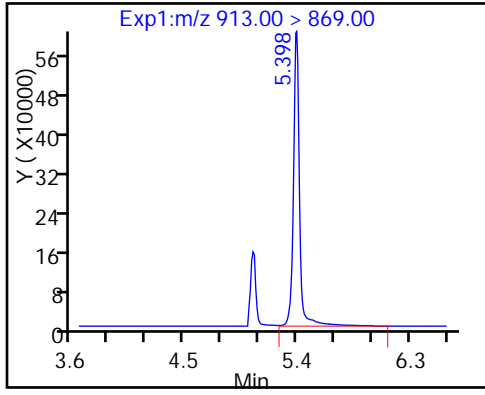
D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 MSD DL Lab Sample ID: 320-26105-3 MSD DL
 Matrix: Water Lab File ID: 2017.03.08B_010.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 270.3(mL) Date Analyzed: 03/08/2017 20:39
 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.: 154016 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	504	D M 4	12	9.2	3.5
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	76.8	D M J	18	14	5.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	40.7	D	12	9.2	4.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	68		25-150
STL00991	13C4 PFOS	128		25-150
STL00994	18O2 PFHxS	147		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\2017.03.08B_010.d
 Lims ID: 320-26105-D-3-B MSD
 Client ID: MEAFF-MRD-1A14-0217
 Sample Type: MSD
 Inject. Date: 08-Mar-2017 20:39:36 ALS Bottle#: 6 Worklist Smp#: 10
 Injection Vol: 2.0 ul Dil. Factor: 5.0000
 Sample Info: 320-26105-d-3-b msd 5X
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A8-PC\A8 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b\A8_N.m
 Limit Group: LC PFC_DOD ICAL
 Last Update: 09-Mar-2017 14:14:20 Calib Date: 01-Mar-2017 11:53:47
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK034

First Level Reviewer: westendorfc Date: 09-Mar-2017 08:20:24

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	1.539	1.539	0.0	2657662	9.09		18.2	298934	
2 Perfluorobutyric acid	212.90 > 169.00	1.539	1.538	0.001	947932	4.21		105	7898	
4 Perfluoropentanoic acid	262.90 > 219.00	1.823	1.813	0.010	1153272	4.25		106	13216	
D 3 13C5-PFPeA	267.90 > 223.00	1.823	1.813	0.010	2775196	12.0		23.9	272039	
D 47 13C3-PFBS	301.90 > 83.00	1.853	1.853	0.0	549	NC				
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.863	1.853	0.010	2701581	4.40		125		
	298.90 > 99.00	1.863	1.853	0.010	1086924		2.49(0.00-0.00)			
D 7 13C2 PFHxA	315.00 > 270.00	2.120	2.108	0.012	1847550	8.76		17.5	96343	
6 Perfluorohexanoic acid	313.00 > 269.00	2.120	2.113	0.007	938488	5.71		143	21573	
D 9 13C4-PFHpA	367.00 > 322.00	2.463	2.448	0.014	1771664	9.18		18.4	160972	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.478	2.456	0.022	2455764	5.58		153		M
										M
D 11 18O2 PFHxS	403.00 > 84.00	2.470	2.464	0.006	4050200	13.9		29.4	207025	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.463	2.449	0.013	935326	5.46		136	8747	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.781	2.776	0.005	10269	NR		0.0		
D 12 M2-6:2FDS	429.00 > 409.00	2.774	2.783	-0.009				0.0		

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	2.820	2.806	0.014		1399605	6.83		13.7	120629	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.820	2.799	0.021	1.000	7789667	54.5		1362	120227	M
413.00 > 169.00	2.820	2.799	0.021	1.000	5146918		1.51(0.90-1.10)		190751	M
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.828	2.799	0.029	1.000	1477874	4.63		122		
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.186	3.164	0.022	1.000	2525968	8.30		224	0.0	M
499.00 > 99.00	3.186	3.164	0.022	1.000	467927		5.40(0.90-1.10)		436	M
D 18 13C4 PFOS										
503.00 > 80.00	3.194	3.172	0.022		2958331	12.2		25.6	68435	
D 19 13C5 PFNA										
468.00 > 423.00	3.186	3.172	0.014		886666	4.99		10.0	69180	
20 Perfluorononanoic acid										
463.00 > 419.00	3.194	3.188	0.006	1.000	355308	4.43		111	6584	
25 Sodium 1H,1H,2H,2H-perfluorooctane										
527.00 > 507.00	3.609	3.496	0.113	1.000	340	NR		0.0		
24 Perfluorodecanoic acid										
513.00 > 469.00	3.550	3.522	0.028	1.000	239564	4.66		116	8867	
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.522	0.020		116174	0.3166		0.6	9973	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.522	0.020		567993	3.41		6.8	13473	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.550	3.522	0.028	1.000	42725	4.09		102	3796	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.710	3.676	0.034		712	0.008358		0.0		
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.861	3.631	0.230	1.009	322	NR		0.0		
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.827	3.841	-0.014		1463	0.0180		0.0		
D 30 13C2 PFUnA										
565.00 > 520.00	3.879	3.841	0.038		453493	3.47		6.9	38866	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.879	3.823	0.056	1.000	178514	3.88		97.1	5282	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.861	3.832	0.029	1.000	670670	3.64		94.4		
D 36 13C2 PFDaA										
615.00 > 570.00	4.162	4.127	0.035		507152	4.09		8.2	16719	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.162	4.127	0.035	1.000	196523	4.24		106	6206	
D 38 d-N-EtFOSA-M										
531.00 > 169.00	4.426	4.198	0.228		462	0.005419		0.0		
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.426	4.398	0.028	1.000	245972	5.55		139	4857	

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	4.662	4.617	0.045	1.000	695403	6.97		174	13094	
713.00 > 169.00	4.653	4.617	0.036	0.998	92949		7.48(0.00-0.00)		30566	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.662	4.624	0.038		1813558	7.00		14.0	117640	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.069	5.039	0.030	1.000	444702	9.08		227	2497	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.069	5.039	0.030		1248425	9.98		20.0	69917	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.406	5.384	0.022	1.000	299238	8.22		206	1340	

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\20170309-40626.b\2017.03.08B_010.d

Injection Date: 08-Mar-2017 20:39:36

Instrument ID: A8_N

Lims ID: 320-26105-D-3-B MSD

Client ID: MEAFF-MRD-1A14-0217

Operator ID: A8-PC\A8

ALS Bottle#: 6

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 5.0000

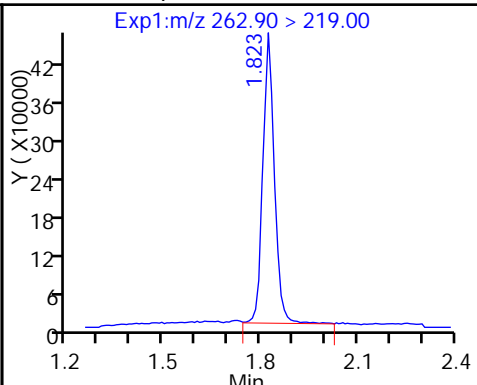
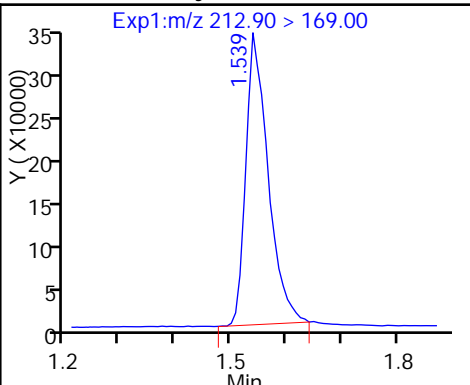
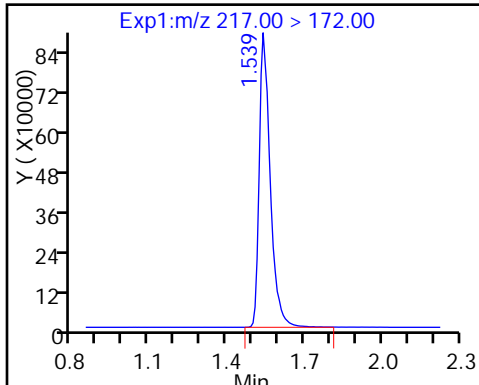
Method: A8_N

Limit Group: LC PFC_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

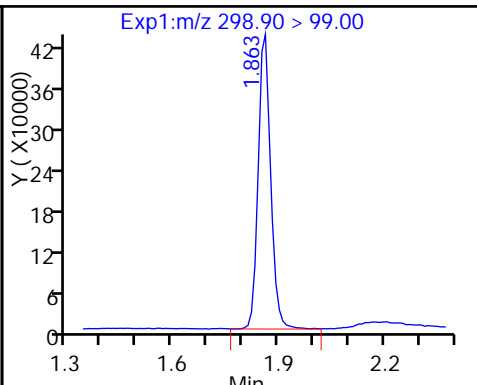
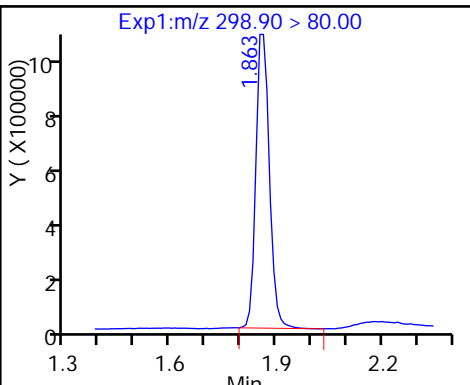
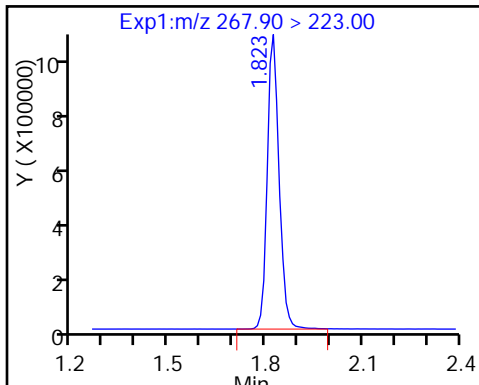
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

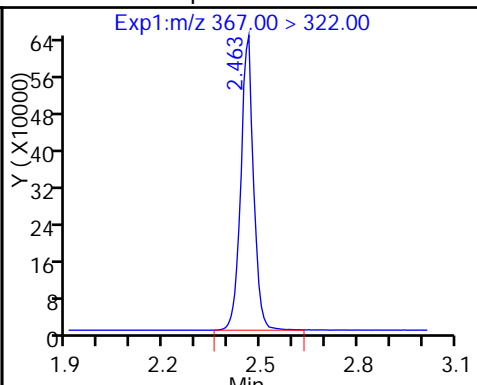
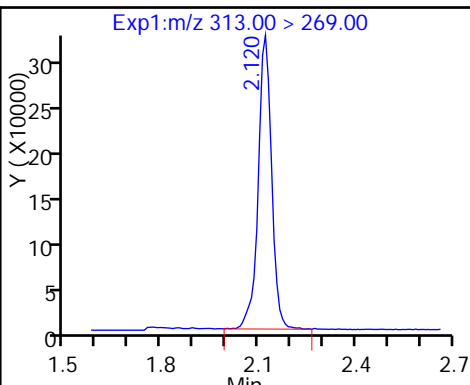
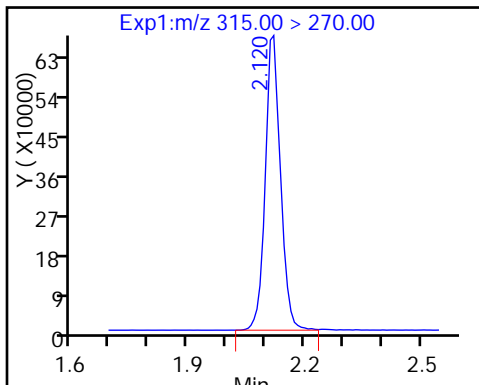
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

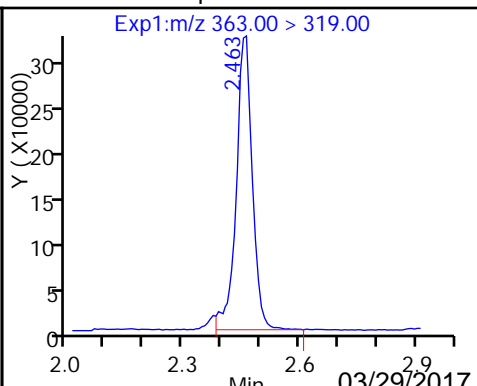
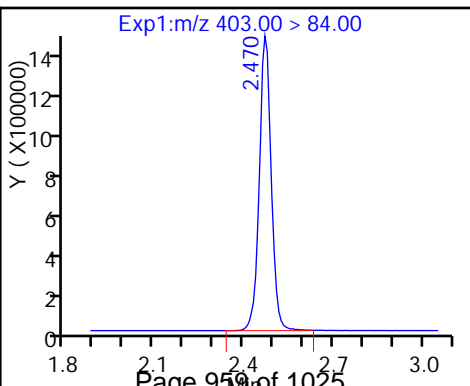
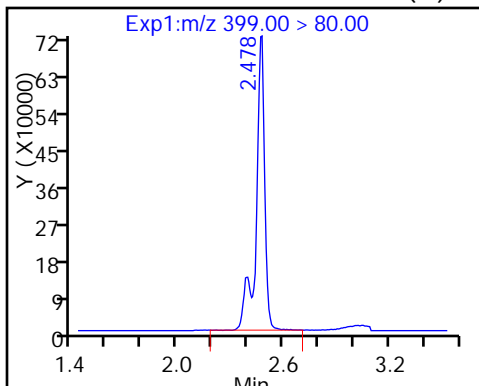
D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS

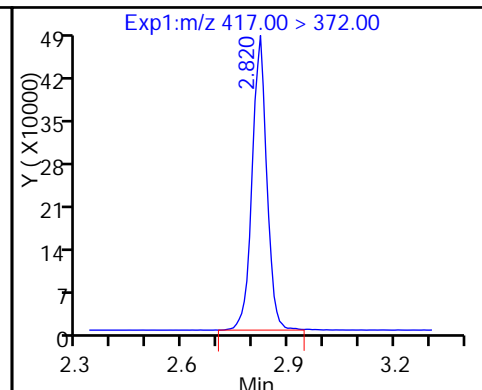
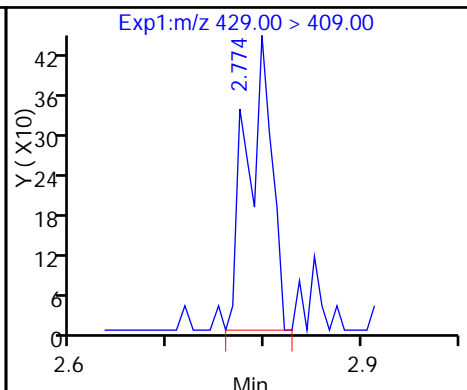
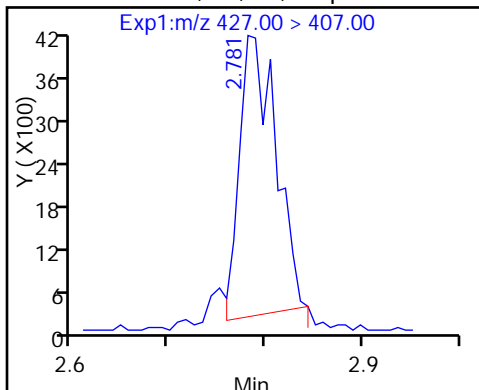
10 Perfluoroheptanoic acid



13 Sodium 1H,1H,2H,2H-perfluorooctane

D 12 M2-6:2FTS

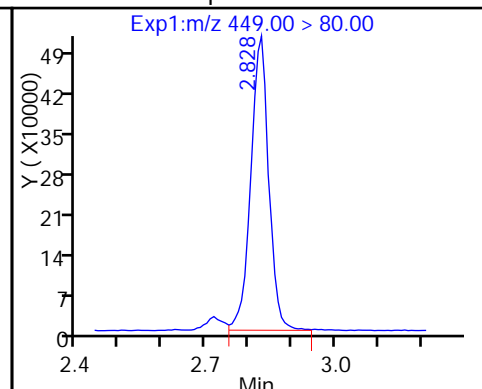
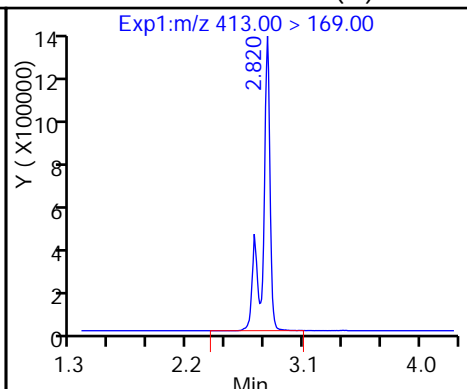
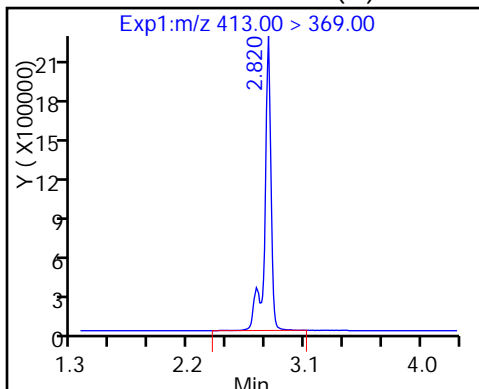
D 14 13C4 PFOA



15 Perfluorooctanoic acid (M)

15 Perfluorooctanoic acid (M)

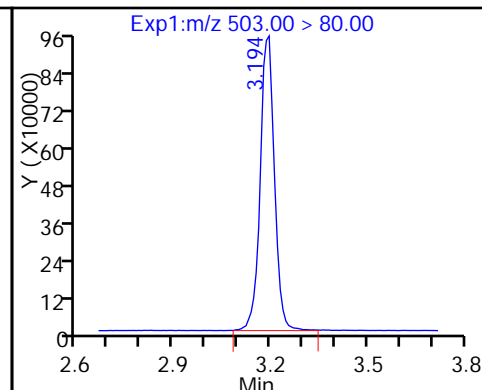
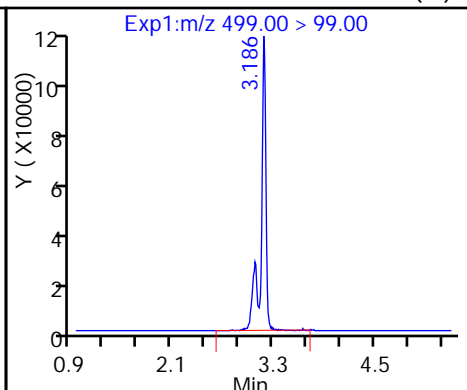
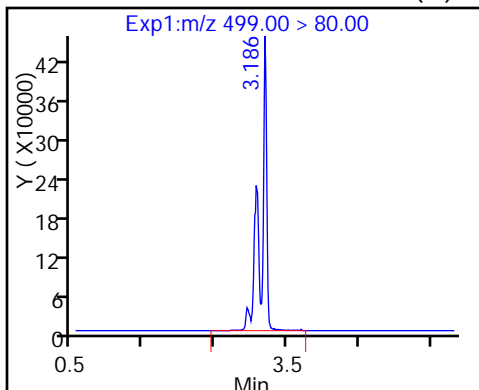
16 Perfluoroheptanesulfonic Acid



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

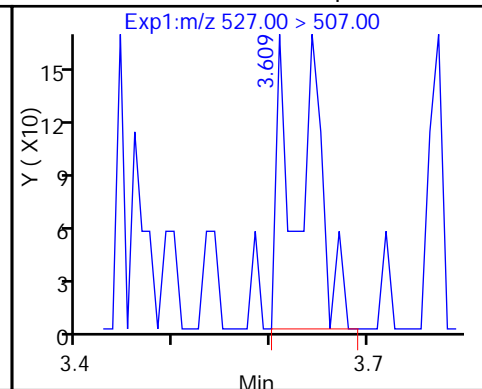
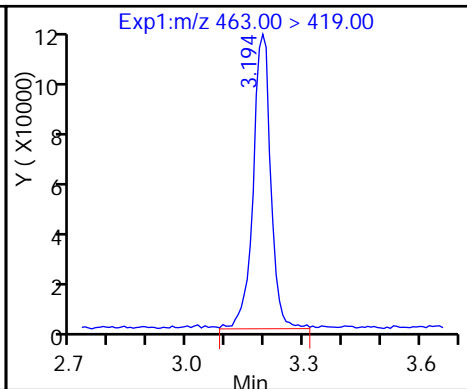
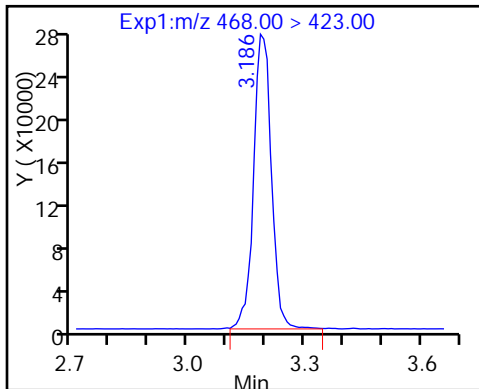
D 18 13C4 PFOS

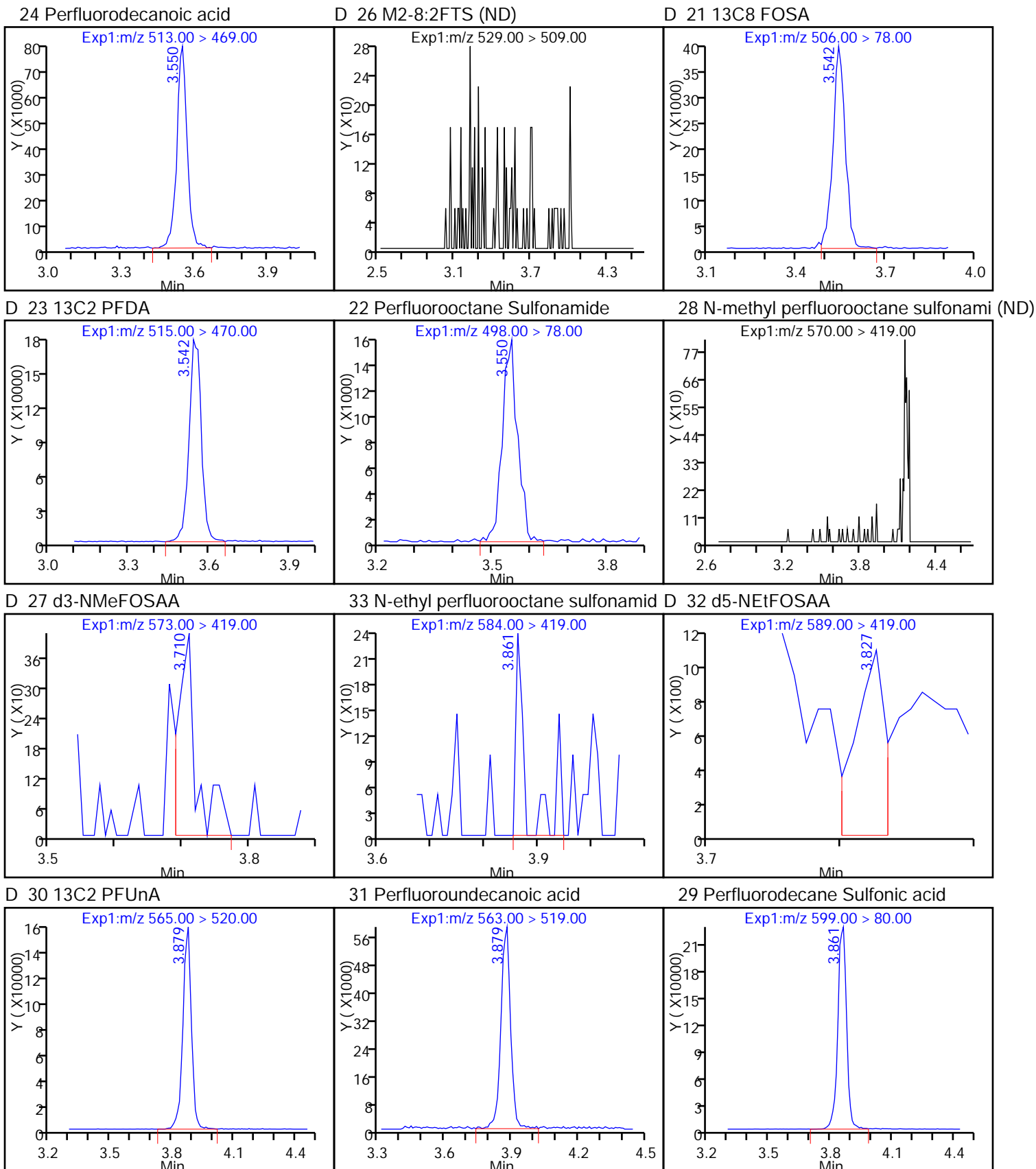


D 19 13C5 PFNA

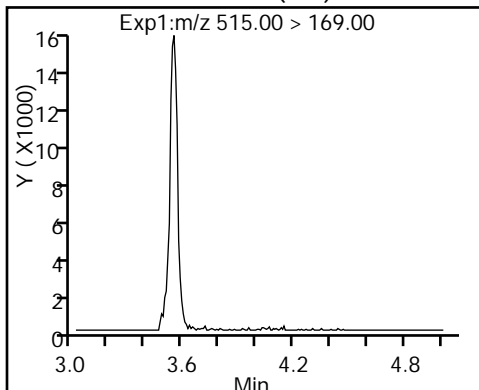
20 Perfluorononanoic acid

25 Sodium 1H,1H,2H,2H-perfluorooctane

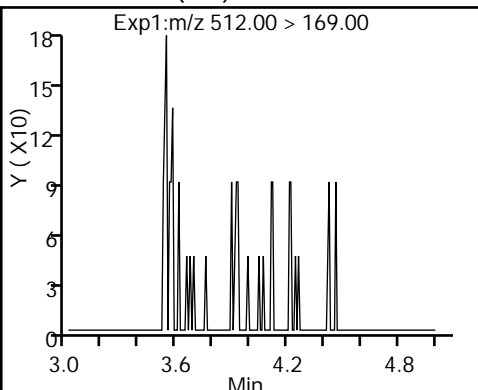




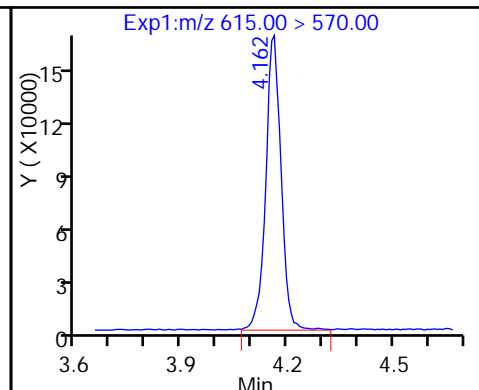
D 34 d-N-MeFOSA-M (ND)



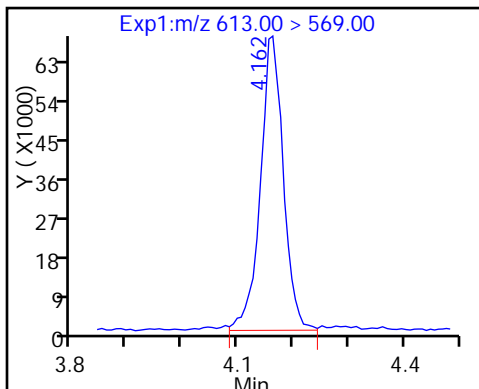
35 MeFOSA (ND)



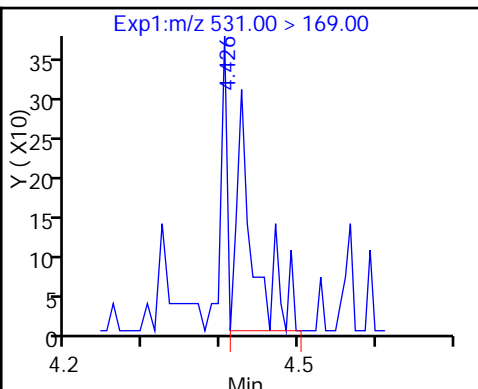
D 36 13C2 PFDaA



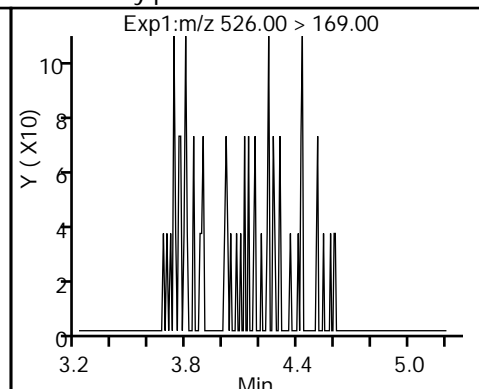
37 Perfluorododecanoic acid



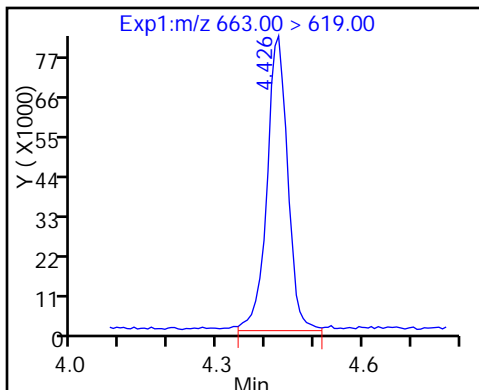
D 38 d-N-EtFOSA-M



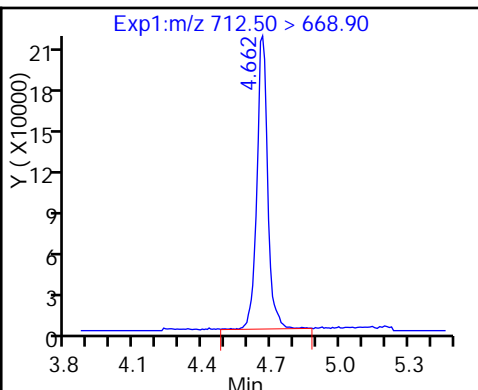
39 N-ethylperfluoro-1-octanesulfonami (ND)



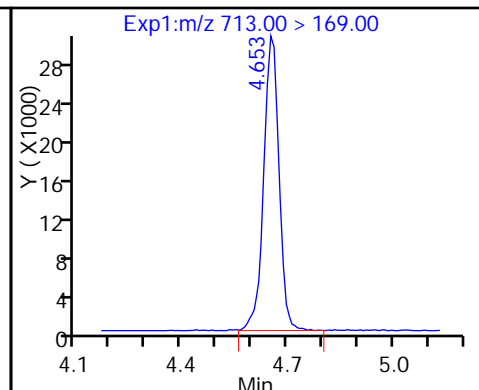
41 Perfluorotridecanoic acid



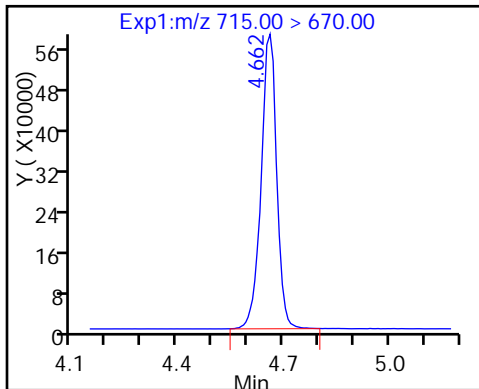
42 Perfluorotetradecanoic acid



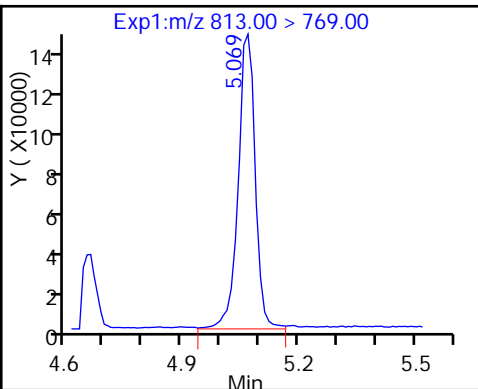
42 Perfluorotetradecanoic acid



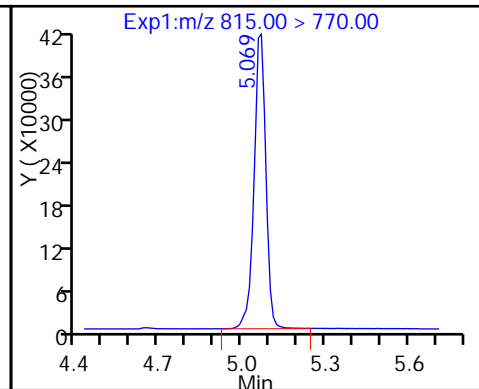
D 43 13C2-PFTeDA



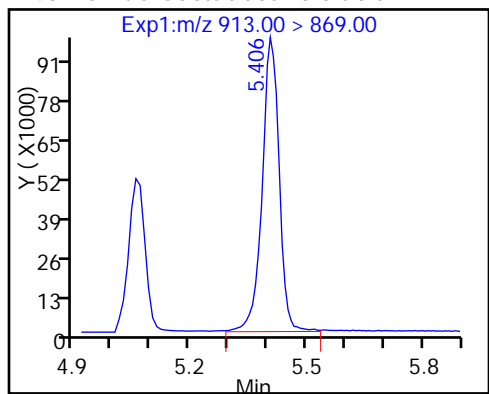
45 Perfluorohexadecanoic acid



D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

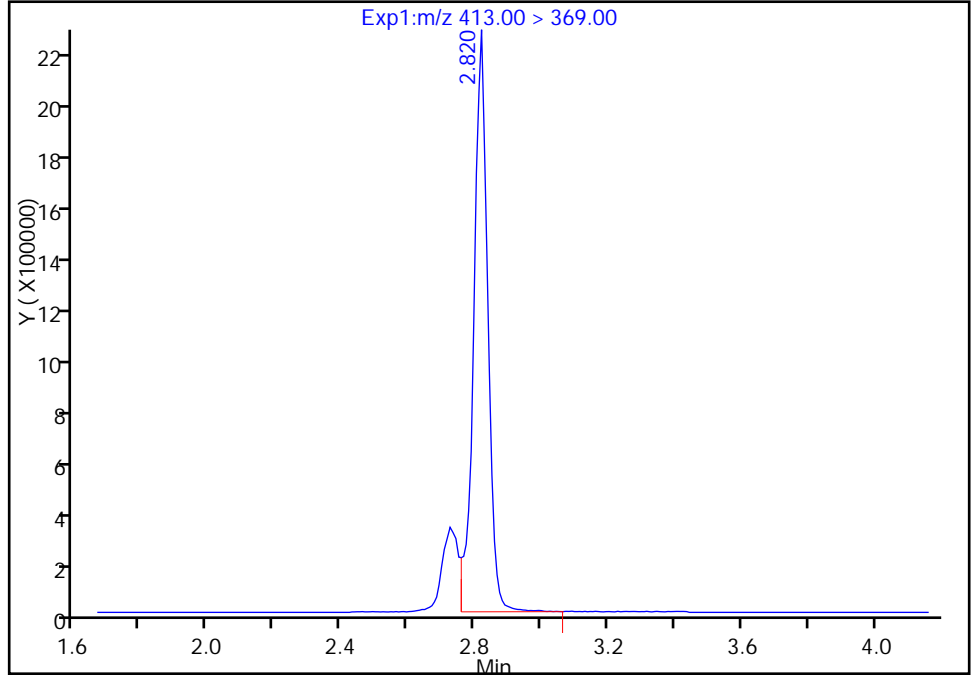
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Injection Date: 08-Mar-2017 20:39:36 Instrument ID: A8_N
Lims ID: 320-26105-D-3-B MSD
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 6 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

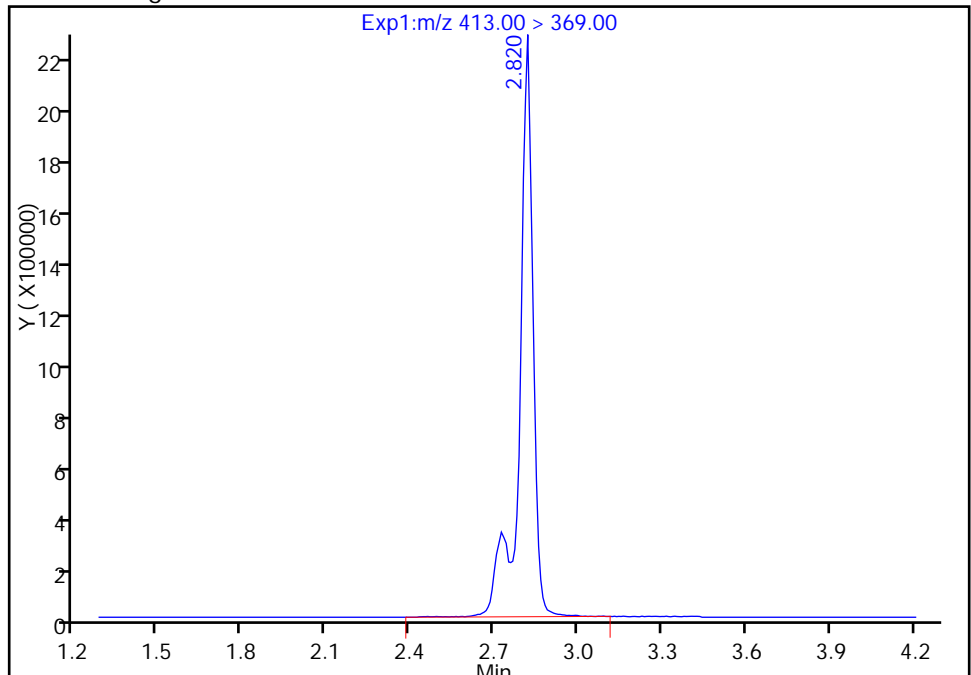
RT: 2.82
Area: 6641773
Amount: 232.2431
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 7789667
Amount: 54.476310
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 14:14:37
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

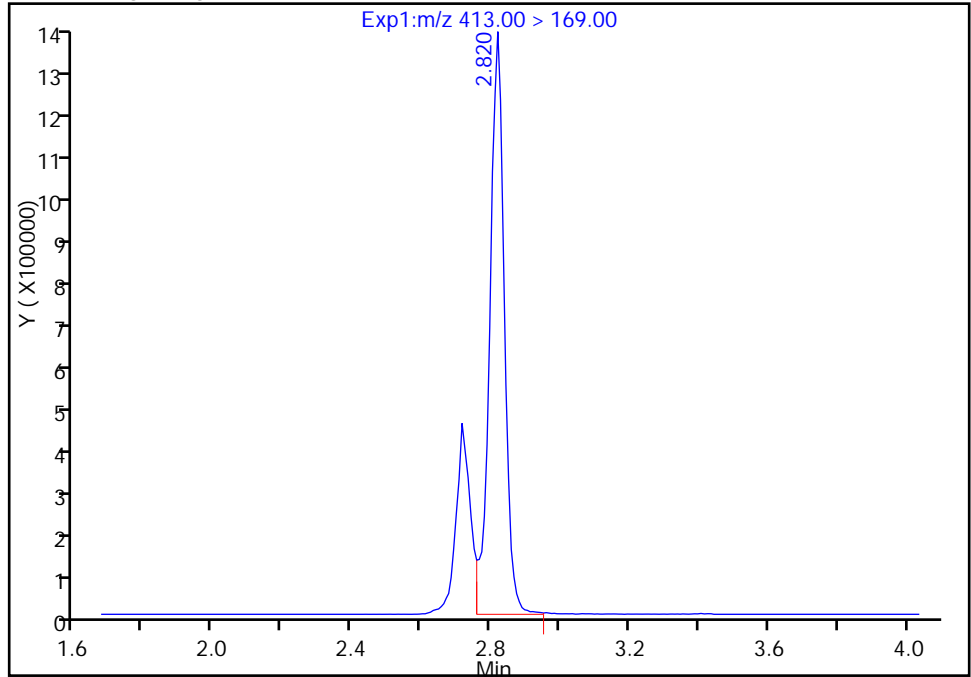
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Injection Date: 08-Mar-2017 20:39:36 Instrument ID: A8_N
Lims ID: 320-26105-D-3-B MSD
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 6 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

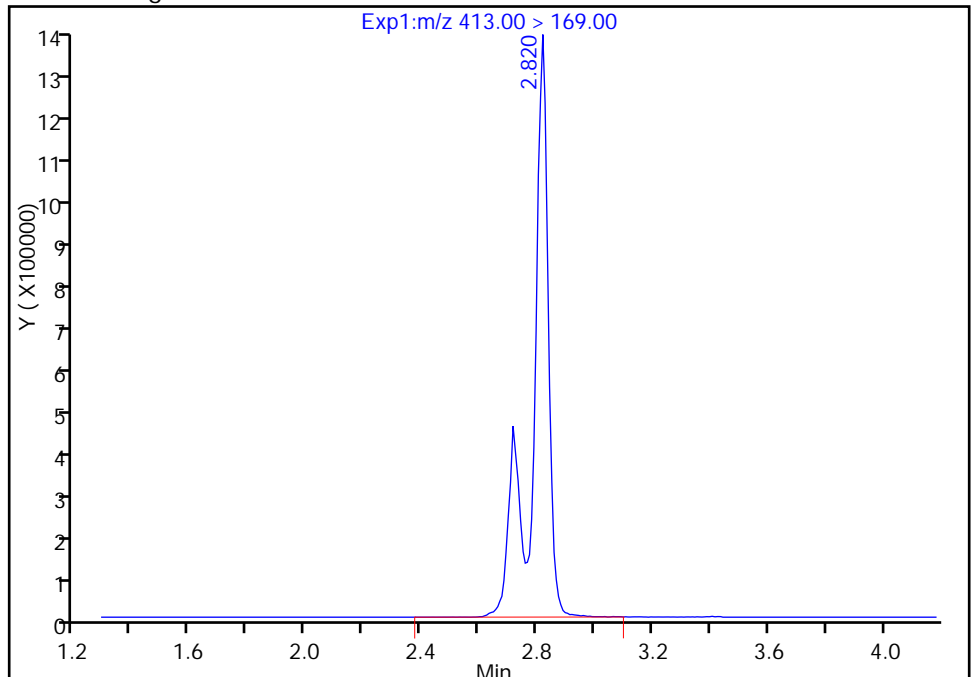
RT: 2.82
Area: 3898345
Amount: 232.2431
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 5146918
Amount: 54.476310
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 14:14:37

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

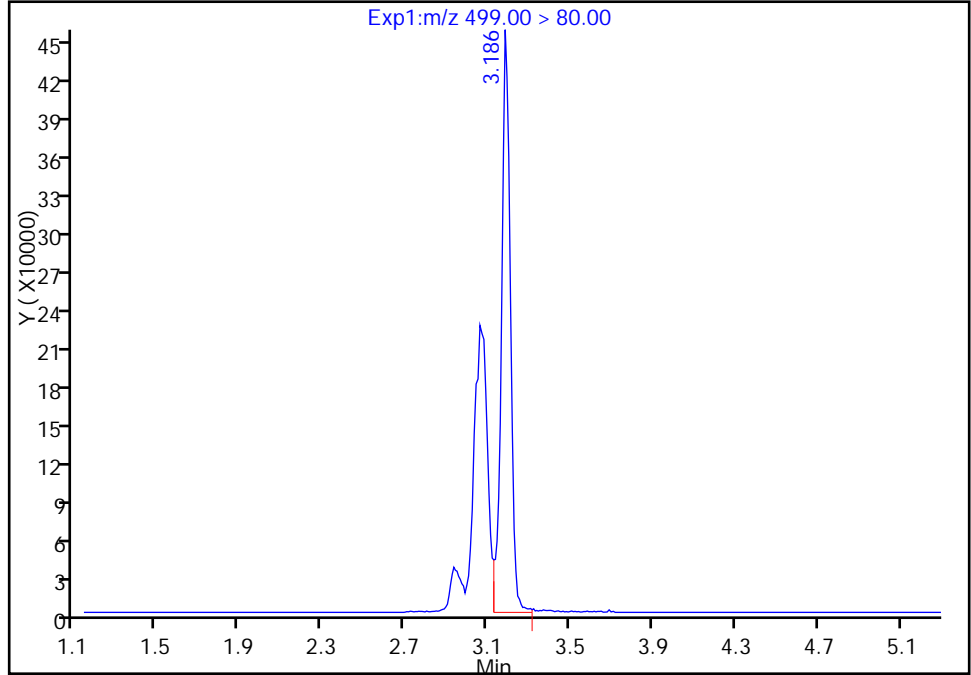
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Injection Date: 08-Mar-2017 20:39:36 Instrument ID: A8_N
Lims ID: 320-26105-D-3-B MSD
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 6 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

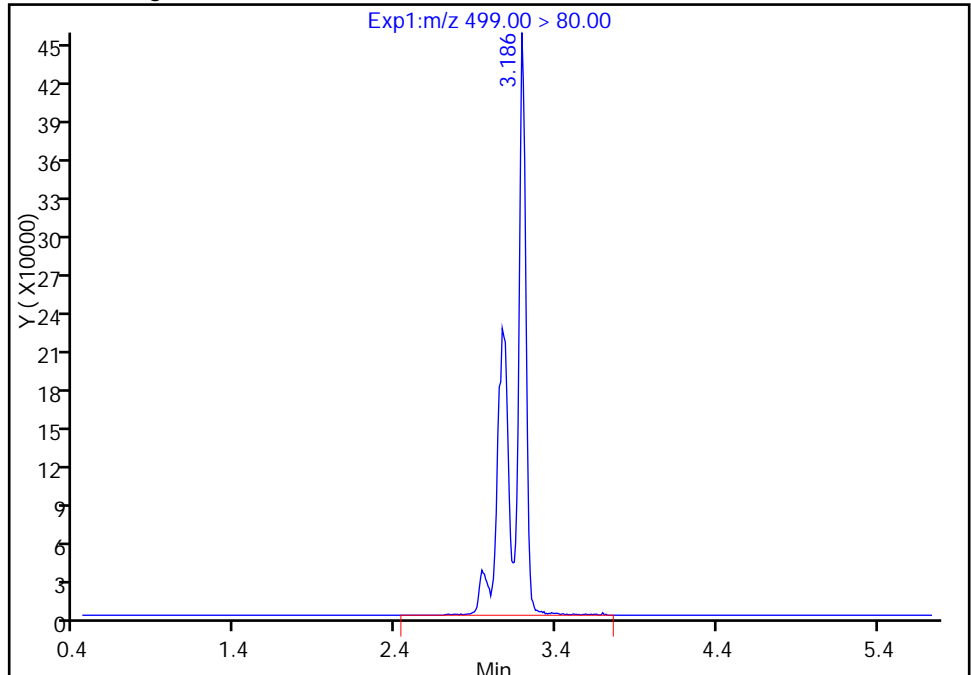
RT: 3.19
Area: 1363123
Amount: 22.394926
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 2525968
Amount: 8.299892
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 09-Mar-2017 14:14:37
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

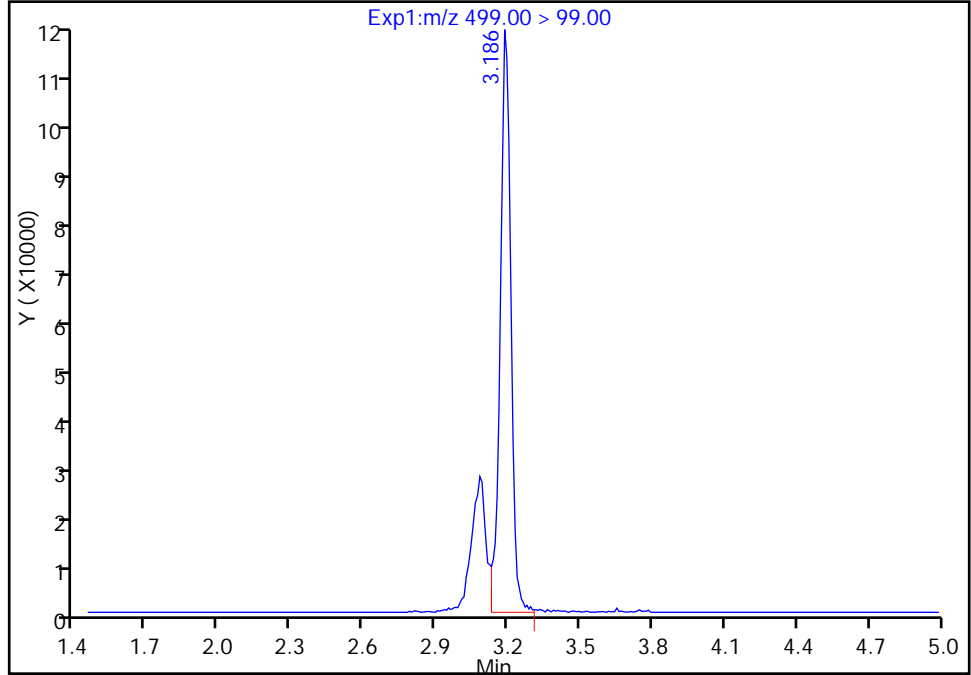
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Injection Date: 08-Mar-2017 20:39:36 Instrument ID: A8_N
Lims ID: 320-26105-D-3-B MSD
Client ID: MEAFF-MRD-1A14-0217
Operator ID: A8-PC\A8 ALS Bottle#: 6 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Method: A8_N Limit Group: LC PFC_DOD ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

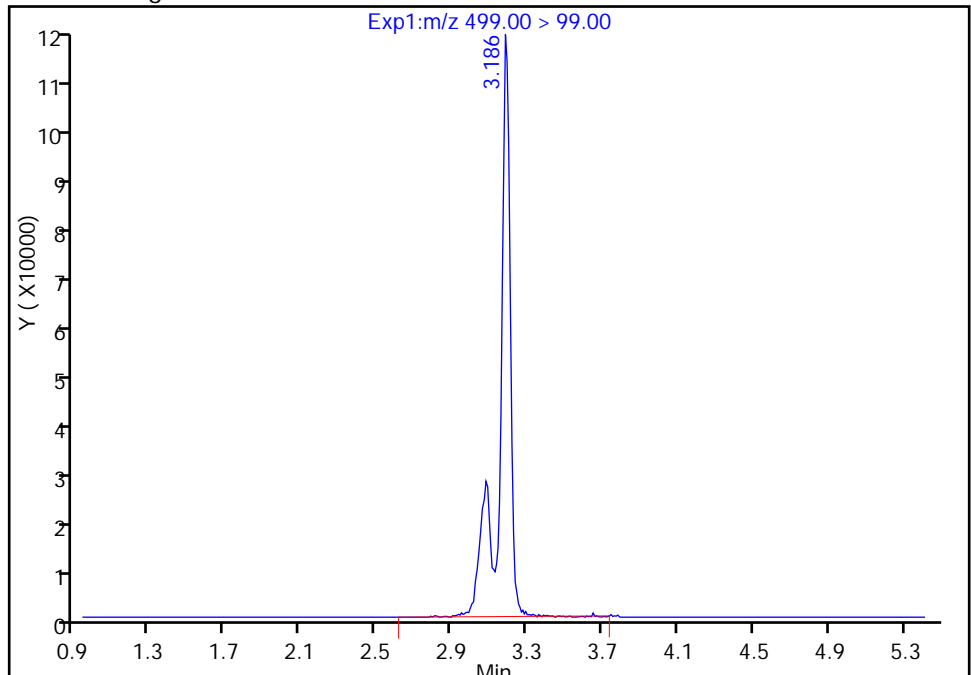
RT: 3.19
Area: 355618
Amount: 22.394926
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 467927
Amount: 8.299892
Amount Units: ng/ml

Manual Integration Results



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Start Date: 03/01/2017 11:08

Analysis Batch Number: 152681 End Date: 03/01/2017 12:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-152681/2		03/01/2017 11:08	1	2017.03.01CURVE 003.d	GeminiC18 3x100 3(mm)
IC 320-152681/3		03/01/2017 11:16	1	2017.03.01CURVE 004.d	GeminiC18 3x100 3(mm)
IC 320-152681/4		03/01/2017 11:23	1	2017.03.01CURVE 005.d	GeminiC18 3x100 3(mm)
IC 320-152681/5		03/01/2017 11:31	1	2017.03.01CURVE 006.d	GeminiC18 3x100 3(mm)
IC 320-152681/6		03/01/2017 11:38	1	2017.03.01CURVE 007.d	GeminiC18 3x100 3(mm)
IC 320-152681/7		03/01/2017 11:46	1	2017.03.01CURVE 008.d	GeminiC18 3x100 3(mm)
ICB 320-152681/12		03/01/2017 12:23	1		GeminiC18 3x100 3(mm)
ICV 320-152681/13		03/01/2017 12:31	1	2017.03.01CURVE 014.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Start Date: 03/05/2017 20:19

Analysis Batch Number: 153421 End Date: 03/06/2017 03:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-153421/3 CCVL		03/05/2017 20:19	1		GeminiC18 3x100 3(mm)
CCV 320-153421/4		03/05/2017 20:26	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/05/2017 20:34	1		GeminiC18 3x100 3(mm)
CCV 320-153421/16		03/05/2017 21:56	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/05/2017 23:11	1		GeminiC18 3x100 3(mm)
CCV 320-153421/27		03/05/2017 23:19	1		GeminiC18 3x100 3(mm)
CCV 320-153421/31		03/05/2017 23:49	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/05/2017 23:56	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 00:04	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 00:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 00:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 00:26	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 00:34	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 00:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 00:49	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 00:56	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 01:04	1		GeminiC18 3x100 3(mm)
CCV 320-153421/42		03/06/2017 01:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 01:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 01:26	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2017 01:34	1		GeminiC18 3x100 3(mm)
CCV 320-153421/46		03/06/2017 01:41	1	2017.03.04A_046 .d	GeminiC18 3x100 3(mm)
MB 320-152929/1-A		03/06/2017 01:49	1	2017.03.04A_047 .d	GeminiC18 3x100 3(mm)
LCS 320-152929/2-A		03/06/2017 01:56	1	2017.03.04A_048 .d	GeminiC18 3x100 3(mm)
320-26105-1		03/06/2017 02:11	1	2017.03.04A_050 .d	GeminiC18 3x100 3(mm)
320-26105-2		03/06/2017 02:19	1	2017.03.04A_051 .d	GeminiC18 3x100 3(mm)
320-26105-3		03/06/2017 02:26	1	2017.03.04A_052 .d	GeminiC18 3x100 3(mm)
320-26105-3 MS		03/06/2017 02:34	1	2017.03.04A_053 .d	GeminiC18 3x100 3(mm)
320-26105-3 MSD		03/06/2017 02:41	1	2017.03.04A_054 .d	GeminiC18 3x100 3(mm)
320-26105-12		03/06/2017 02:49	1	2017.03.04A_055 .d	GeminiC18 3x100 3(mm)
320-26105-13		03/06/2017 02:56	1	2017.03.04A_056 .d	GeminiC18 3x100 3(mm)
CCV 320-153421/57		03/06/2017 03:04	1	2017.03.04A_057 .d	GeminiC18 3x100 3(mm)
320-26105-14		03/06/2017 03:11	1	2017.03.04A_058 .d	GeminiC18 3x100 3(mm)
320-26105-15		03/06/2017 03:19	1	2017.03.04A_059 .d	GeminiC18 3x100 3(mm)
320-26105-16		03/06/2017 03:26	1	2017.03.04A_060 .d	GeminiC18 3x100 3(mm)
CCV 320-153421/62		03/06/2017 03:41	1	2017.03.04A_062 .d	GeminiC18 3x100 3(mm)
CCV 320-153421/64		03/06/2017 03:56	1	2017.03.04A_064 .d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Start Date: 03/08/2017 19:31

Analysis Batch Number: 154016 End Date: 03/08/2017 21:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
RINSE 320-154016/2		03/08/2017 19:31	1		GeminiC18 3x100 3(mm)
CCV 320-154016/3 CCVL		03/08/2017 19:39	1	2017.03.08E_002 .d	GeminiC18 3x100 3(mm)
CCV 320-154016/4		03/08/2017 19:47	1	2017.03.08E_003 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/08/2017 19:54	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/08/2017 20:09	1		GeminiC18 3x100 3(mm)
320-26105-2 DL		03/08/2017 20:17	5	2017.03.08E_007 .d	GeminiC18 3x100 3(mm)
320-26105-3 DL		03/08/2017 20:24	5	2017.03.08E_008 .d	GeminiC18 3x100 3(mm)
320-26105-3 MS DL		03/08/2017 20:32	5	2017.03.08E_009 .d	GeminiC18 3x100 3(mm)
320-26105-3 MSD DL		03/08/2017 20:39	5	2017.03.08E_010 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/08/2017 20:47	1		GeminiC18 3x100 3(mm)
CCV 320-154016/13		03/08/2017 21:02	1	2017.03.08E_013 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/08/2017 21:09	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/08/2017 21:17	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/08/2017 21:24	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/08/2017 21:32	1		GeminiC18 3x100 3(mm)
CCV 320-154016/18		03/08/2017 21:39	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Start Date: 03/11/2017 12:34

Analysis Batch Number: 154503 End Date: 03/11/2017 18:27

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-154503/1 CCVL		03/11/2017 12:34	1	2017.03.11C_004 .d	GeminiC18 3x100 3(mm)
CCV 320-154503/2		03/11/2017 12:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 12:50	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 13:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 13:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 13:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 13:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 13:50	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 13:57	1		GeminiC18 3x100 3(mm)
CCV 320-154503/13		03/11/2017 14:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 14:12	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 14:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 14:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 14:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 14:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 14:50	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 14:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 15:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 15:12	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 15:20	1		GeminiC18 3x100 3(mm)
CCV 320-154503/24		03/11/2017 15:27	1	2017.03.11C_027 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 15:35	1		GeminiC18 3x100 3(mm)
MB 320-152961/1-A		03/11/2017 15:42	1	2017.03.11C_029 .d	GeminiC18 3x100 3(mm)
LCS 320-152961/2-A		03/11/2017 15:50	1	2017.03.11C_030 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 15:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 16:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 16:12	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 16:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 16:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 16:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 16:42	1		GeminiC18 3x100 3(mm)
CCV 320-154503/35		03/11/2017 16:50	1	2017.03.11C_038 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 16:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 17:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/11/2017 17:12	1		GeminiC18 3x100 3(mm)
320-26105-4		03/11/2017 17:20	1	2017.03.11C_042 .d	GeminiC18 3x100 3(mm)
320-26105-5		03/11/2017 17:27	1	2017.03.11C_043 .d	GeminiC18 3x100 3(mm)
320-26105-6		03/11/2017 17:35	1	2017.03.11C_044 .d	GeminiC18 3x100 3(mm)
320-26105-7		03/11/2017 17:42	1	2017.03.11C_045 .d	GeminiC18 3x100 3(mm)
320-26105-8		03/11/2017 17:50	1	2017.03.11C_046 .d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Start Date: 03/11/2017 12:34

Analysis Batch Number: 154503 End Date: 03/11/2017 18:27

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
320-26105-9		03/11/2017 17:57	1	2017.03.11C_047.d	GeminiC18 3x100 3(mm)
320-26105-10		03/11/2017 18:05	1	2017.03.11C_048.d	GeminiC18 3x100 3(mm)
CCV 320-154503/46		03/11/2017 18:12	1	2017.03.11C_049.d	GeminiC18 3x100 3(mm)
320-26105-11		03/11/2017 18:20	1	2017.03.11C_050.d	GeminiC18 3x100 3(mm)
CCV 320-154503/48		03/11/2017 18:27	1	2017.03.11C_051.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Start Date: 03/13/2017 11:39

Analysis Batch Number: 154721 End Date: 03/13/2017 13:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-154721/1 CCVL		03/13/2017 11:39	1	2017.03.13A_004 .d	GeminiC18 3x100 3(mm)
CCV 320-154721/2		03/13/2017 11:47	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 12:02	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 12:09	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 12:17	20		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 12:24	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 12:32	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 12:39	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 12:47	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 12:54	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 13:02	10		GeminiC18 3x100 3(mm)
CCV 320-154721/12		03/13/2017 13:09	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 13:17	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 13:24	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 13:32	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 13:39	10		GeminiC18 3x100 3(mm)
CCV 320-154721/17		03/13/2017 13:47	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: A8_N Start Date: 03/13/2017 15:52

Analysis Batch Number: 154808 End Date: 03/13/2017 17:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-154808/1		03/13/2017 15:52	1	2017.03.13A_037.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 16:01	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 16:08	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 16:16	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 16:23	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 16:31	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 16:38	20		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 16:46	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 16:53	1		GeminiC18 3x100 3(mm)
320-26105-10 DL		03/13/2017 17:01	10	2017.03.13A_046.d	GeminiC18 3x100 3(mm)
CCV 320-154808/11		03/13/2017 17:08	1	2017.03.13A_047.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 17:16	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 17:23	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 17:31	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 17:38	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/13/2017 17:46	1		GeminiC18 3x100 3(mm)
CCV 320-154808/17		03/13/2017 17:53	1		GeminiC18 3x100 3(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Batch Number: 152929 Batch Start Date: 03/02/17 14:23 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 03/03/17 13:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFCSU 00047	LCPFCSU 00080
MB 320-152929/1		3535, 537 (Modified)				250.00 mL	0.50 mL	25 uL	
LCS 320-152929/2		3535, 537 (Modified)				250.00 mL	0.50 mL	25 uL	20 uL
320-26105-C-1	MEAFF-08MW01D-0217	3535, 537 (Modified)	T	285.34 g	26.90 g	258.4 mL	0.50 mL	25 uL	
320-26105-B-2	MEAFF-08MW01-0217	3535, 537 (Modified)	T	280.34 g	27.08 g	253.3 mL	0.50 mL	25 uL	
320-26105-D-3	MEAFF-MRD-1A14-0217	3535, 537 (Modified)	T	297.30 g	28.00 g	269.3 mL	0.50 mL	25 uL	
320-26105-C-3 MS	MEAFF-MRD-1A14-0217	3535, 537 (Modified)	T	300.16 g	26.74 g	273.4 mL	0.50 mL	25 uL	20 uL
320-26105-D-3 MSD	MEAFF-MRD-1A14-0217	3535, 537 (Modified)	T	298.14 g	27.81 g	270.3 mL	0.50 mL	25 uL	20 uL
320-26105-D-12	MEAFF-08MW03-0217	3535, 537 (Modified)	T	305.97 g	27.47 g	278.5 mL	0.50 mL	25 uL	
320-26105-D-13	MEAFF-08MW06-0217	3535, 537 (Modified)	T	298.22 g	27.77 g	270.5 mL	0.50 mL	25 uL	
320-26105-D-14	MEAFF-FD02-0217	3535, 537 (Modified)	T	326.56 g	27.79 g	298.8 mL	0.50 mL	25 uL	
320-26105-A-15	MEAFF-MRD-IA01-0217A	3535, 537 (Modified)	T	291.45 g	26.88 g	264.6 mL	0.50 mL	25 uL	
320-26105-A-16	MEAFF-FD03-0217	3535, 537 (Modified)	T	287.51 g	27.09 g	260.4 mL	0.50 mL	25 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.: 320-26105-1

SDG No.: _____

Batch Number: 152929 Batch Start Date: 03/02/17 14:23 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 03/03/17 13:30

Batch Notes	
Balance ID	QA-070
H2O ID	2-28-17
Hexane ID	863965
Manifold ID	2, 6
Methanol ID	851508
Sodium Hydroxide ID	0.1N NaOH: 819948
Pipette ID	MD05306
Analyst ID - Reagent Drop	JER Reg. Surr (5/5)
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	VPM
Solvent Lot #	847209
Solvent Name	0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 500 mg
Solid Phase Extraction Disk ID	002836112A

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.: 320-26105-1

SDG No.: _____

Batch Number: 152961 Batch Start Date: 03/02/17 17:04 Batch Analyst: Winchester, Ethan R

Batch Method: SHAKE Batch End Date: 03/07/17 19:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFCSU 00047	LCPFCSU 00080		
MB 320-152961/1		SHAKE, 537 (Modified)		5 g	1 mL	50 uL			
LCS 320-152961/2		SHAKE, 537 (Modified)		5 g	1 mL	50 uL	40 uL		
320-26105-A-4	MEAFF-BLD002-SB01-0204	SHAKE, 537 (Modified)	T	4.95 g	1 mL	50 uL			
320-26105-A-5	MEAFF-BLD002-SB01-0001	SHAKE, 537 (Modified)	T	5.08 g	1 mL	50 uL			
320-26105-A-6	MEAFF-BLD002-SB02-0001	SHAKE, 537 (Modified)	T	4.98 g	1 mL	50 uL			
320-26105-A-7	MEAFF-BLD002-SB02-0204	SHAKE, 537 (Modified)	T	5.00 g	1 mL	50 uL			
320-26105-A-8	MEAFF-BLD192-SB03-0001	SHAKE, 537 (Modified)	T	5.03 g	1 mL	50 uL			
320-26105-A-9	MEAFF-BLD192-SB03-0204	SHAKE, 537 (Modified)	T	4.95 g	1 mL	50 uL			
320-26105-A-10	MEAFF-SWON-SB03-0001	SHAKE, 537 (Modified)	T	5.02 g	1 mL	50 uL			
320-26105-A-11	MEAFF-SWON-SB03-0204	SHAKE, 537 (Modified)	T	4.94 g	1 mL	50 uL			

Batch Notes	
Acetic Acid ID	429065
Balance ID	QA-074
Hexane ID	863965
Manifold ID	5,6
Methanol ID	865706
Methanolic Potassium Hydroxide ID	865063
Millipore Water Dispense Date	3-6-17
Sodium Hydroxide ID	858158
Ammonium Hydroxide/MeOH ID	864283
Analyst ID - Reagent Drop Witness	DXD
Blank Sand Lot #	156690
SPE Cartridge ID	016836329B
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.: 320-26105-1

SDG No.: _____

Batch Number: 152961 Batch Start Date: 03/02/17 17:04 Batch Analyst: Winchester, Ethan R

Batch Method: SHAKE Batch End Date: 03/07/17 19:30

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.

Job Number(s): 320-26105
320-26096, 320-26102
 Extraction Batch: 152176, 152929
 Delivery Rank: 4

Work List ID(s): 10512, 40626
 Analysis Batch(es): 153211, 15407, 15406
 Due Date: 3/15/17

A. Calibration/Instrument Run QC	1 st Level	2 nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# <u>102681</u>	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• RF _{average} 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			
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.

1st Level (Analyst): Time. CW 3/10/17

Date: 3/7/17

2nd Level Reviewer: M. Way

Date: 3/10/2017

NCM# 80031, 80032, 80036, 79642

NCM# 80423, 80424, 80425, 80426, 80432

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 05MAR2017A_PFC Worklist Number: 40512
 Instrument Name: A8_N Chrom Method: A8_N
 Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20170306-40512.b
 QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 153421	LC PFC ICAL Raw Batch: 153422	LC PFAS ICAL Raw Batch: 153423	LC PFC_PREC ICAL Raw Batch: 153424
# 1 RINSE	# 1 RINSE	# 1 RINSE	# 1 RINSE	# 1 RINSE
# 2 RINSE	# 2 RINSE	# 2 RINSE	# 2 RINSE	# 2 RINSE
# 3 CCV L2	# 3 CCV L2	# 3 CCV L2	# 3 CCV L2	# 3 CCV L2
# 4 CCV L5	# 4 CCV L5	# 4 CCV L5	# 4 CCV L5	# 4 CCV L5
# 5 RB	# 5 RB	# 5 RB	# 5 RB	# 5 RB
# 6 MB 320-152650/1-A		# 6 MB 320-152650/1-A	# 6 MB 320-152650/1-A	
# 7 LCS 320-152650/2-A		# 7 LCS 320-152650/2-A	# 7 LCS 320-152650/2-A	
# 8 LCSD 320-152650/3-A		# 8 LCSD 320-152650/3-A	# 8 LCSD 320-152650/3-A	
# 9 320-25891-A-1-A		# 9 320-25891-A-1-A	# 9 320-25891-A-1-A	
#10 320-25891-A-2-A		#10 320-25891-A-2-A	#10 320-25891-A-2-A	
#11 320-25891-A-3-A		#11 320-25891-A-3-A	#11 320-25891-A-3-A	
#12 320-25891-A-4-A		#12 320-25891-A-4-A	#12 320-25891-A-4-A	
#13 320-25891-A-5-A		#13 320-25891-A-5-A	#13 320-25891-A-5-A	
#14 320-25891-A-6-A		#14 320-25891-A-6-A	#14 320-25891-A-6-A	
#15 320-25891-A-7-A	#16 CCV L4	#15 320-25891-A-7-A	#15 320-25891-A-7-A	#16 CCV L4
#16 CCV L4		#16 CCV L4	#16 CCV L4	
#17 320-25891-A-8-A		#17 320-25891-A-8-A	#17 320-25891-A-8-A	
#18 320-25891-A-9-A		#18 320-25891-A-9-A	#18 320-25891-A-9-A	
#19 320-25891-A-10-A		#19 320-25891-A-10-A	#19 320-25891-A-10-A	
#20 320-25891-A-11-A		#20 320-25891-A-11-A	#20 320-25891-A-11-A	
#21 320-25891-A-12-A		#21 320-25891-A-12-A	#21 320-25891-A-12-A	
#22 320-25891-A-13-A		#22 320-25891-A-13-A	#22 320-25891-A-13-A	
#23 320-25891-A-15-A		#23 320-25891-A-15-A	#23 320-25891-A-15-A	
#24 320-25891-A-16-A		#24 320-25891-A-16-A	#24 320-25891-A-16-A	
#25 320-25891-A-17-A	#26 RB	#25 320-25891-A-17-A	#25 320-25891-A-17-A	#26 RB
#26 RB	#27 CCV L5	#26 RB	#26 RB	#27 CCV L5
#27 CCV L5		#27 CCV L5	#27 CCV L5	
#28 320-25891-A-18-A		#28 320-25891-A-18-A	#28 320-25891-A-18-A	
#29 320-25891-A-19-A		#29 320-25891-A-19-A	#29 320-25891-A-19-A	
#30 320-25891-A-20-A	#31 CCV L4	#30 320-25891-A-20-A	#30 320-25891-A-20-A	#31 CCV L4
#31 CCV L4	#32 MB 320-152476/1-A	#31 CCV L4	#31 CCV L4	
#32 MB 320-152476/1-A	#33 LCS 320-152476/2-A			
#33 LCS 320-152476/2-A	#34 320-26096-A-2-A			
#34 320-26096-A-2-A	#35 320-26096-A-4-A			
#35 320-26096-A-4-A	#36 320-26096-A-6-A			
#36 320-26096-A-6-A	#37 320-26096-A-8-A			
#37 320-26096-A-8-A	#38 320-26102-A-2-A			
#38 320-26102-A-2-A	#39 320-26102-A-3-A			
#39 320-26102-A-3-A	#40 320-26102-A-5-A			
#40 320-26102-A-5-A	#41 320-26102-A-8-A			
#41 320-26102-A-8-A	#42 CCV L5	#42 CCV L5	#42 CCV L5	#42 CCV L5
#42 CCV L5	#43 320-26102-A-8-B MS			
#43 320-26102-A-8-B MS	#44 320-26102-A-8-C MSD	#46 CCV L4	#46 CCV L4	#46 CCV L4
#44 320-26102-A-8-C MSD	#45 320-26102-A-11-A	#47 MB 320-152929/1-A		
#45 320-26102-A-11-A	#46 CCV L4	#48 LCS		
#46 CCV L4	#47 MB 320-152929/1-A	320-152929/2-A	#49 320-25891-B-14-A	
#47 MB 320-152929/1-A	#48 LCS	#49 320-25891-B-14-A		
#48 LCS 320-152929/2-A				
#49 320-25891-B-14-A	#50 320-26105-C-1-A	#52 320-26105-D-3-A		
#50 320-26105-C-1-A	#51 320-26105-B-2-A	#53 320-26105-C-3-A		
#51 320-26105-B-2-A	#52 320-26105-D-3-A	MS Page 980 of 1025		
#52 320-26105-D-3-A	#53 320-26105-C-3-A	#54 320-26105-D-3-B		
#53 320-26105-C-3-A				

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 153421	LC PFC ICAL Raw Batch: 153422	LC PFAS ICAL Raw Batch: 153423	LC PFC_PREC ICAL Raw Batch: 153424
#56 320-26105-D-13-A	#56 320-26105-D-13-A			
#57 CCV L5	#57 CCV L5	#57 CCV L5	#57 CCV L5	#57 CCV L5
#58 320-26105-D-14-A	#58 320-26105-D-14-A			
#59 320-26105-A-15-A	#59 320-26105-A-15-A			
#60 320-26105-A-16-A	#60 320-26105-A-16-A			
#61 320-26174-A-1-A		#61 320-26174-A-1-A	#61 320-26174-A-1-A	
#62 CCV L4	#62 CCV L4	#62 CCV L4	#62 CCV L4	#62 CCV L4
#63 320-24955-B-3-B		#63 320-24955-B-3-B	#63 320-24955-B-3-B	
#64 CCV L5	#64 CCV L5	#64 CCV L5	#64 CCV L5	#64 CCV L5
#65 RINSE	#65 RINSE	#65 RINSE	#65 RINSE	#65 RINSE
#66 RINSE	#66 RINSE	#66 RINSE	#66 RINSE	#66 RINSE
#67 RINSE	#67 RINSE	#67 RINSE	#67 RINSE	#67 RINSE

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 08MAR2017B_PFC Worklist Number: 40626
 Instrument Name: A8_N Chrom Method: A8_N
 Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20170309-40626.b
 QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 154016	LC PFC ICAL Raw Batch: 154017	LC PFAS ICAL Raw Batch: 154018	LC PFC_PREC ICAL Raw Batch: 154019
# 1 RINSE	# 1 RINSE	# 1 RINSE	# 1 RINSE	# 1 RINSE
# 2 RINSE	# 2 RINSE	# 2 RINSE	# 2 RINSE	# 2 RINSE
# 3 CCV L2	# 3 CCV L2	# 3 CCV L2	# 3 CCV L2	# 3 CCV L2
# 4 CCV L4	# 4 CCV L4	# 4 CCV L4	# 4 CCV L4	# 4 CCV L4
# 5 RB	# 5 RB	# 5 RB	# 5 RB	# 5 RB
# 6 MB 320-152650/1-A		# 6 MB 320-152650/1-A		
# 7 MB 320-152929/1-A		# 7 MB 320-152929/1-A		
#19 320-26105-B-2-A	#19 320-26105-B-2-A			
# 8 320-26105-D-3-A	# 8 320-26105-D-3-A			
# 9 320-26105-C-3-A MS	# 9 320-26105-C-3-A MS			
#10 320-26105-D-3-B MSD	#10 320-26105-D-3-B MSD			
#11 320-26105-D-12-A	#11 320-26105-D-12-A	#12 320-26174-A-1-A	#12 320-26174-A-1-A	
#12 320-26174-A-1-A		#13 CCV L5	#13 CCV L5	#13 CCV L5
#13 CCV L5	#13 CCV L5			
#14 320-26102-A-8-A	#14 320-26102-A-8-A			
#15 320-26102-A-8-B MS	#15 320-26102-A-8-B MS			
#16 320-26102-A-8-C MSD	#16 320-26102-A-8-C MSD	#18 CCV L4	#18 CCV L4	#18 CCV L4
#17 320-26102-A-11-A	#17 320-26102-A-11-A			
#18 CCV L4	#18 CCV L4			

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

AB 3/5/17 @

Batch Number: 320-152476

Analyst: Winchester, Ethan R

Batch Open: 2/28/2017 10:56:00AM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/2/17 10:45

Shake Extraction with Ultrasonic Bath Extraction

De 3/8 3/10 Dno
R 3/15/17

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-320-152476/1 N/A	N/A	5 g	1 mL	N/A	N/A	N/A		MB 320-152476-1-A
2 LCS-320-152476/2 N/A	N/A	5 g	1 mL	N/A	N/A	N/A		LCS 320-152476/2-A
3 320-26096-A-2 (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26096-1)	4.99 g	1 mL	3/2/17	8_Days	4		320-26096-A-2-A
4 320-26096-A-4 (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26096-1)	5.02 g	1 mL	3/2/17	8_Days	4		320-26096-A-4-A
5 320-26096-A-6 (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26096-1)	5.08 g	1 mL	3/2/17	8_Days	4		320-26096-A-6-A
6 320-26096-A-8 (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26096-1)	5.07 g	1 mL	3/2/17	8_Days	4		320-26096-A-8-A
7 320-26102-A-2 (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26102-1)	4.98 g	1 mL	3/2/17	8_Days	4		320-26102-A-2-A
8 320-26102-A-3 (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26102-1)	5.01 g	1 mL	3/2/17	8_Days	4		320-26102-A-3-A
9 320-26102-A-5 (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26102-1)	4.93 g	1 mL	3/2/17	8_Days	4		320-26102-A-5-A
10 320-26102-A-8 (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26102-1)	5.01 g	1 mL	3/2/17	8_Days	4	10x DL	320-26102-A-8-A
11 320-26102-A-8-MS (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26102-1)	4.92 g	1 mL	3/2/17	8_Days	4	10x DL	320-26102-A-8-B-MS
12 320-26102-A-8-MSD (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26102-1)	5.01 g	1 mL	3/2/17	8_Days	4	10x DL	320-26102-A-8-C-MSD
13 320-26102-A-11 (PFC_IDA_DOD5)	M3010.0019.0017.0 (320-26102-1)	5.05 g	1 mL	3/2/17	8_Days	4	RA Canyon	320-26102-A-11-A

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152476

Analyst: Winchester, Ethan R

Batch Open: 2/28/2017 10:56:00AM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Batch Notes	
Balance ID	QA-070
Blank Sand Lot #	156690
Filter ID	NA
Millipore Water Dispense Date	3/2/17
Analyst ID - Reagent Drop Witness	CC B
SPE Cartridge ID	016836329B
SPE Cartridge Type	150mg WAX
Hexane ID	0000130361
Methanol ID	816942
Ammonium Hydroxide/MeOH ID	889450 840 3/2/17 864283
Sodium Hydroxide ID	858158
Methanolic Potassium Hydroxide ID	826650
Manifold ID	5
Interference check solution ID	NA
Acetic Acid ID	NA
Batch Comment	

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152476

Analyst: Winchester, Ethan R

Batch Open: 2/28/2017 10:56:00AM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Comments

320-26096-A-2	Method Comments: include add on spikes
320-26096-A-4	Method Comments: include add on spikes
320-26096-A-6	Method Comments: include add on spikes
320-26096-A-8	Method Comments: include add on spikes
320-26102-A-2	Method Comments: include add on spikes
320-26102-A-3	Method Comments: include add on spikes
320-26102-A-5	Method Comments: include add on spikes
320-26102-A-8	Method Comments: include add on spikes
320-26102-A-8~MS	Method Comments: include add on spikes
320-26102-A-8~MSD	Method Comments: include add on spikes
320-26102-A-11	Method Comments: include add on spikes

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152476

Analyst: Winchester, Ethan R

Batch Open: 2/28/2017 10:56:00AM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added (Final Amount)	By	Witness
MB 320-152476/1	LCMPFC2SU_00014	50 µL ^{21 µL}	ERC 2/28/17	see 2/28/17
MB 320-152476/1	LCMPFCSU_00047	50 uL ^{21 µL}		
LCS 320-152476/2	LCMPFC2SU_00014	50 µL ^{21 µL}		
LCS 320-152476/2	LCMPFCSU_00047	50 uL		
LCS 320-152476/2	LCPF2SP_00026	40 uL		
LCS 320-152476/2	LCPF2SP_00080	40 uL ^{21 µL}		
320-26096-A-2	LCMPFC2SU_00014	50 µL ^{21 µL}		
320-26096-A-2	LCMPFCSU_00047	50 uL ^{21 µL}		
320-26096-A-4	LCMPFC2SU_00014	50 µL ^{21 µL}		
320-26096-A-4	LCMPFCSU_00047	50 uL ^{21 µL}		
320-26096-A-6	LCMPFC2SU_00014	50 µL ^{21 µL}		
320-26096-A-6	LCMPFCSU_00047	50 uL ^{21 µL}		
320-26096-A-8	LCMPFC2SU_00014	50 µL ^{21 µL}		
320-26096-A-8	LCMPFCSU_00047	50 uL ^{21 µL}		
320-26102-A-2	LCMPFC2SU_00014	50 µL ^{21 µL}		
320-26102-A-2	LCMPFCSU_00047	50 uL ^{21 µL}		
320-26102-A-3	LCMPFC2SU_00014	50 µL ^{21 µL}		
320-26102-A-3	LCMPFCSU_00047	50 uL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152476

Analyst: Winchester, Ethan R

Batch Open: 2/28/2017 10:56:00AM

Method Code: 320-Shake_Bath_14D-320

Batch End:

320-26102-A-5	LCMPFC2SU_00014	50 mL 50 uL	1 mL	ERW 2/28/17	CS 2/28/17
320-26102-A-5	LCMPFCSU_00047	50 uL	1 mL		
320-26102-A-8	LCMPFC2SU_00014	50 mL 50 uL	1 mL		
320-26102-A-8	LCMPFCSU_00047	50 uL	1 mL		
320-26102-A-8 MS	LCMPFC2SU_00014	50 mL 50 uL	1 mL		
320-26102-A-8 MS	LCMPFCSU_00047	50 uL	1 mL		
320-26102-A-8 MS	LCPF2SP_00026	40 uL	1 mL		
320-26102-A-8 MS	LCPFCSP_00080	40 uL	1 mL		
320-26102-A-8 MSD	LCMPFC2SU_00014	50 mL 50 uL	1 mL		
320-26102-A-8 MSD	LCMPFCSU_00047	50 uL	1 mL		
320-26102-A-8 MSD	LCPF2SP_00026	40 uL	1 mL		
320-26102-A-8 MSD	LCPFCSP_00080	40 uL	1 mL		
320-26102-A-11	LCMPFC2SU_00014	50 mL 50 uL	1 mL		
320-26102-A-11	LCMPFCSU_00047	50 uL	1 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152476

Analyst: Winchester, Ethan R

Batch Open: 2/28/2017 10:56:00AM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Reagent	Other Reagents:	Amount/Units	Lot#:

Preparation Batch Number(s): 152476 Test: PFC-IDA (5)
 Earliest Holding Time: 3/9/17

Sample List Tab		1 st Level Reviewer	2 nd Level Reviewer
Samples identified to the correct method		/	✓
All necessary NCMs filed (including holding time)		NA	NA
Method/sample/login/QAS checked and correct		/	✓
Worksheet Tab		1 st Level Reviewer	2 nd 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		/	✓
Reagents Tab		1 st Level Reviewer	2 nd Level Reviewer
All necessary reagents not expired and entered into TALS		/	✓
All spike amounts correct and added to necessary samples and QC		/	✓
Batch Information		1 st Level Reviewer	2 nd Level Reviewer
Date and time accurate and entered into TALS correctly		/	✓
All necessary 'batch information' complete and entered into TALS correctly		/	✓

1st Level Reviewer: vpm

Date: 3/2/17

2nd Level Reviewer: [Signature]

Date: 3/02/17

Comments: _____

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Number: 320-152929

Method Code: 320-3535_PFC-320

Batch Open: 3/2/2017 2:23:00PM

Batch End: 3/3/17 13:30

Solid-Phase Extraction (SPE)

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	Rcvd	PHs		Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
					Adj1	Adj2					
1 MB-320-152929/1 N/A	N/A		250.00 mL 0.50 mL				N/A	N/A	N/A		
2 LCS-320-152929/2 N/A	N/A		250.00 mL 0.50 mL				N/A	N/A	N/A		
3 320-25891-B-14 (PFC_IDA)	N/A (320-25891-1)	297.46 g 26.61 g	270.9 mL 0.50 mL				3/10/17	14_Days	4		
4 320-26105-C-1 (PFC_IDA_DOD5)	N/A (320-26105-1)	285.34 g 26.90 g	258.4 mL 0.50 mL				3/3/17	23_Days	4	Re-extracted this sample.	
5 320-26105-B-2 (PFC_IDA_DOD5)	N/A (320-26105-1)	280.34 g 27.08 g	253.3 mL 0.50 mL				3/3/17	23_Days	4	5X	
6 320-26105-D-3 (PFC_IDA_DOD5)	N/A (320-26105-1)	297.30 g 28.00 g	269.3 mL 0.50 mL				3/3/17	23_Days	4	5X	
7 320-26105-C-3-MS (PFC_IDA_DOD5)	N/A (320-26105-1)	300.16 g 26.74 g	273.4 mL 0.50 mL				3/3/17	23_Days	4	5X	
8 320-26105-D-3-MSD (PFC_IDA_DOD5)	N/A (320-26105-1)	298.14 g 27.81 g	270.3 mL 0.50 mL				3/3/17	23_Days	4	5X	
9 320-26105-D-12 (PFC_IDA_DOD5)	N/A (320-26105-1)	305.97 g 27.47 g	278.5 mL 0.50 mL				3/3/17	23_Days	4	RT Canyon	
10 320-26105-D-13 (PFC_IDA_DOD5)	N/A (320-26105-1)	298.22 g 27.77 g	270.5 mL 0.50 mL				3/3/17	23_Days	4		

Due 3/10

03/29/2017

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)






Analyst: Reed, Jonathan E

Batch Number: 320-152929

Method Code: 320-3535_PFC-320

Batch Open: 3/2/2017 2:23:00PM

Batch End:

11	320-26105-D-14 (PFC_IDA_DOD5)	N/A (320-26105-1)	326.56 g	298.8 mL	4	23_Days	3/3/17					
			27.79 g	0.50 mL								
12	320-26105-A-15 (PFC_IDA_DOD5)	N/A (320-26105-1)	291.45 g	264.6 mL	4	23_Days	3/3/17					
			26.88 g	0.50 mL								
13	320-26105-A-16 (PFC_IDA_DOD5)	N/A (320-26105-1)	287.51 g	260.4 mL	4	23_Days	3/3/17					
			27.09 g	0.50 mL								
14	320-26174-A-1 (PFC_IDA)	N/A (320-26174-1)	320.59 g	292.3 mL	2	8_Days	3/8/17					
			28.25 g	0.50 mL								
												50X

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 3/2/2017 2:23:00PM

Batch End:

Batch Number: 320-152929

Method Code: 320-3535_PFC-320

Batch Notes

Manifold ID 2, 6

Methanol ID 851508

Hexane ID 863965

Sodium Hydroxide ID 0.1N NaOH: 819948

First Start time NA

First End time NA

SPE Cartridge Type WAX 500 mg

Solid Phase Extraction Disk ID 002836112A

Balance ID QA-070

H2O ID 2-28-17

Pipette ID MD05306

Solvent Name 0.3% NH4OH/MeOH

Solvent Lot # 847209

Analyst ID - Reagent Drop JER

Analyst ID - SU Reagent Drop JER

Analyst ID - SU Reagent Drop Witness JRM

Acid Name NA

Acid ID NA

Reagent ID NA

Reagent Lot Number NA

SOP Number WS-LC-0025

Surr Reg. (5/5)

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 3/2/2017 2:23:00PM

Batch End:

Batch Number: 320-152929

Method Code: 320-3535_PFC-320

Batch Comment NA

Comments

320-26105-C-1	Method Comments: DOD site, Screen-caution
320-26105-B-2	Method Comments: DOD site, Screen-caution, limited volume
320-26105-D-3	Method Comments: DOD site, Screen-caution
320-26105-C-3-MS	Method Comments: DOD site, Screen-caution
320-26105-D-3-MSD	Method Comments: DOD site, Screen-caution
320-26105-D-12	Method Comments: DOD site, Screen-caution
320-26105-D-13	Method Comments: DOD site, Screen-caution
320-26105-D-14	Method Comments: DOD site, Screen-caution
320-26105-A-15	Method Comments: DOD site, Screen-caution
320-26105-A-16	Method Comments: DOD site, Screen-caution

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E


Batch Number: 320-152929

Method Code: 320-3535_PFC-320

Batch Open: 3/2/2017 2:23:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-152929/1	LCMPFCSU_00047	25 uL	0.50 mL	 3/2/17	VPM 3/2/17
LCS 320-152929/2	LCMPFCSU_00047	25 uL	0.50 mL		
LCS 320-152929/2	LCPFCSU_00080	20 uL	0.50 mL		
320-25891-B-14	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-C-1	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-B-2	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-D-3	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-C-3 MS	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-C-3 MS	LCPFCSU_00080	20 uL	0.50 mL		
320-26105-D-3 MSD	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-D-3 MSD	LCPFCSU_00080	20 uL	0.50 mL		
320-26105-D-12	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-D-13	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-D-14	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-A-15	LCMPFCSU_00047	25 uL	0.50 mL		
320-26105-A-16	LCMPFCSU_00047	25 uL	0.50 mL		
320-26174-A-1	LCMPFCSU_00047	25 uL	0.50 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152929

Method Code: 320-3535_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 3/2/2017 2:23:00PM

Batch End:

Reagent	Other Reagents:	Amount/Units	Lot#:

Preparation Batch Number(s): 3520-152929 Test: PFC-3535
 Earliest Holding Time: 3/3/17 (3/1 f.u. Rx)

Sample List Tab		1 st Level Reviewer	2 nd Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		/	/
Method/sample/login/QAS checked and correct		/	/
Worksheet Tab		1 st Level Reviewer	2 nd 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		/	/
Reagents Tab		1 st Level Reviewer	2 nd Level Reviewer
All necessary reagents not expired and entered into TALS		/	/
All spike amounts correct and added to necessary samples and QC		/	/
Batch Information		1 st Level Reviewer	2 nd Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1st Level Reviewer: cel

Date: 3-3-17

2nd Level Reviewer: vmm

Date: 3/3/17

Comments: _____

Method ID DPC-IDA

Job # 320-26105, 320-26174,
320-26102

Analyst (Print Name) Thep Phomsopha

Analyst Initials TP

Date 3/8/17

Sample#	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-26105-2	500	60	300	5X
↓ -3	500	60	300	5X
↓ -3MS	500	60	300	5X
↓ -3MSD	500	60	300	5X
320-26174-1	500	30	1500	50X
320-26102-8	500	30	300	10X
↓ -8MS	500	30	300	10X
↓ -8MSD	500	30	300	10X

TP 3/8/17

Comments:

26319, 26320, A8
 Job No: 26321 Instrument ID & Date: 3-14-17 ICAL Batch: 153408
 Extraction Batch: 154682 Worklist #: 40849, 40851 TALS Batch: 155003, 155025, 155026, 155057

Review Items	-- Level 1 --			Level 2
	Yes	No	N/A	
Initial Calibration				
1. Is ICAL verified and locked in Chrom & TALS?	✓			✓
2. Is ICV properly linked in TALS?	✓			✓
Continuing Calibration				
1. Low-range CCV injected at start of analytical run? CCV injected after every 10 samples and at the end of the analytical run and alternated between Low-range, Mid-range and High-range?	✓			✓
2. If sequence was not after an ICAL was a low and mid range CCV injected at the start of the analytical run?	✓			✓
3. Native compounds and surrogates in control? Low-range within ±50% of true value Mid and High-range within ±30% of true value	✓			✓
4. Internal Standard areas in control? Areas ≥ 50% of average area of the ICAL and 70-140% of the most recent CCV.	✓			✓
Client Samples & QC Sample Results				
1. Were preparation and analysis done within holding times?	✓			✓
2. Are Chromatograms reviewed and spectra verified?	✓			✓
3. Are positive results within calibration range?	✓			✓
4. Dilutions due to target cpds? _____ Dilutions due to non-targets? _____			✓	✓
5. All target compounds in MB < 1/3 RL? (Requires NCM if "no.")	✓			✓
6. Are target constituents in LCS/LCSD within method control limits?	✓			✓
7. Internal Standard areas in control for all samples and QC reported? ±50% from the average area of the ICAL and 70-140% of the most recent CCV	✓			✓
8. Do results (e.g., dilutions/trip blanks) make sense?	✓			✓
9. Are MS/MSD recoveries and RPDs within method control limits?	✓			✓
10. Are all QC samples properly linked in TALS?	✓			✓
11. All manual integrations appropriate and completely documented?	✓			✓
12. Are nonconformances documented as NCMs?	✓			✓
13. Are all Chrom graphics uploaded?	✓			✓

1st Level Reviewer / Date: JRB 3-15-17 2nd Level Reviewer / Date: AWW 3/16/2017

NCM # and Comments: 81004

A8

Instrument ID & Date: 3-6-17 Worklist#: 40511

ICAL Batch: 153407, 153408 Calibration ID number: 28784, 28785

Review Items	-- Level 1 --			Level 2
	Yes	No	N/A	
Initial Calibration				
1. Mass calibration, as needed, verified by full scan of PFC stock standard. All PFC ions used for quantitation are within 0.3 m/z of true mass?	✓			✓
2. Responses increase with increasing concentration?	✓			✓
3. Fit used (circle): <u>Average</u> Linear (1/x ²)Linear <u>Quadratic</u> (6 points minimum)				
4. Meets fit criteria? Intercept ≤ 1/2 RL RSD ≤ 30% for Average R ² ≥ 0.990 for Linear R ² ≥ 0.990 for Quadratic NOTE: "Force through Zero" must be used and weighted if needed	✓			✓
5. If quadratic fit used the curve does not "bend over".	✓			✓
6. Feed calibration points into the calculated curve. Are points ≤MRL within ±50% of true value? Are points >MRL within ±30% of true value?	✓			✓
7. Any carryover from the high calibration point must be ≤ 1/3 RL	✓			✓
8. Asymmetry check meets criteria for the first two eluting peaks? (0.8 - 1.5).	✓			✓
9. Is the asymmetry check scanned and linked in TALS to the calibration point?	✓			✓
10. Is ICV (2 nd source) ± 30% of true value?	✓			✓
11. Is ICV (2 nd source) internal standards ±50% of average area of the ICAL?	✓			✓
12. ICAL locked in Chrom and uploaded to TALS?	✓			
13. ICAL locked in TALS and scanned?				✓

1st Level Reviewer / Date: JRB 3-6-17

2nd Level Reviewer / Date: MWJ 3/22/17

NCM # and Comments: _____

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 14MAR2017A_537

Worklist Number: 40849

Instrument Name: A8_N

Chrom Method: 537_A8_N

Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20170315-40849.b

QC Batching: Enabled

Limit Group Batching: Enabled

QC Batch: 1	LC 537 CS ICAL Raw Batch: 155003	LC 537 ICAL Raw Batch: 155004
# 1 RINSE	# 1 RINSE	# 3 CCVL
# 2 RINSE	# 2 RINSE	
# 3 CCVL	# 3 CCVL	
# 4 CCV L5	# 4 CCV L5	
# 5 RB	# 5 RB	
# 6 MB 320-154682/1-A	# 6 MB 320-154682/1-A	
# 7 LCS 320-154682/2-A	# 7 LCS 320-154682/2-A	
# 8 320-26319-A-1-A	# 8 320-26319-A-1-A	
# 9 320-26319-A-2-A	# 9 320-26319-A-2-A	
#10 320-26319-A-3-A	#10 320-26319-A-3-A	
#11 320-26319-A-4-A	#11 320-26319-A-4-A	
#12 320-26319-A-5-A	#12 320-26319-A-5-A	
#13 320-26319-A-6-A	#13 320-26319-A-6-A	
#14 320-26319-A-7-A	#14 320-26319-A-7-A	
#15 320-26319-A-8-A	#15 320-26319-A-8-A	
#16 CCV L3	#16 CCV L3	

QC Batch: 2	LC 537 CS ICAL Raw Batch: 155025
#16 CCV L3	#16 CCV L3
#17 RB	#17 RB
#18 320-26319-A-9-A	#18 320-26319-A-9-A
#19 320-26319-A-10-A	#19 320-26319-A-10-A
#20 320-26319-A-11-A	#20 320-26319-A-11-A
#21 320-26319-A-12-A	#21 320-26319-A-12-A
#22 320-26319-A-12-D LMS	#22 320-26319-A-12-D LMS
#23 320-26319-A-12-E LMSD	#23 320-26319-A-12-E LMSD
#24 320-26320-A-1-A	#24 320-26320-A-1-A
#25 320-26320-A-1-D LMS	#25 320-26320-A-1-D LMS
#26 320-26320-A-1-E LMSD	#26 320-26320-A-1-E LMSD
#27 320-26320-A-2-A	#27 320-26320-A-2-A
#28 CCV L5	#28 CCV L5

QC Batch: 3	LC 537 CS ICAL Raw Batch: 155026
#28 CCV L5	#28 CCV L5
#29 RB	#29 RB
#30 320-26320-A-3-A	#30 320-26320-A-3-A
#31 320-26320-A-4-A	#31 320-26320-A-4-A
#32 320-26321-A-1-A	#32 320-26321-A-1-A
#33 320-26321-A-1-D LMS	#33 320-26321-A-1-D LMS
#34 320-26321-A-1-E LMSD	#34 320-26321-A-1-E LMSD
#35 320-26321-A-2-A	#35 320-26321-A-2-A
#36 320-26321-A-3-A	#36 320-26321-A-3-A
#37 320-26321-A-4-A	#37 320-26321-A-4-A
#38 CCV L3	#38 CCV L3
#39 RB	#39 RB

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 15MAR2017A_537

Worklist Number: 40851

Instrument Name: A8_N

Chrom Method: 537_A8_N

Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20170315-40851.b

QC Batching: Enabled

Limit Group Batching: Enabled

QC Batch: 1	LC 537 CS ICAL Raw Batch: 155007	LC 537 ICAL Raw Batch: 155008
# 1 RINSE	# 1 RINSE	# 3 CCVL
# 2 RINSE	# 2 RINSE	
# 3 CCVL	# 3 CCVL	
# 4 CCV L5	# 4 CCV L5	
# 5 RB	# 5 RB	
# 6 QC LC537-SU_00033	# 6 QC LC537-SU_00033	
# 7 CCV L3	# 7 CCV L3	

QC Batch: 2	LC 537 CS ICAL Raw Batch: 155057
# 7 CCV L3	# 7 CCV L3
# 8 RB	# 8 RB
# 9 RINSE	# 9 RINSE
#10 CCV L5	#10 CCV L5
#11 320-26319-A-1-A	#11 320-26319-A-1-A
#12 320-26320-A-3-A	#12 320-26320-A-3-A
#13 CCV L3	#13 CCV L3
#14 RB	#14 RB

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Kolstad, Kate M

Batch Number: 320-154682

Method Code: 320-537_Prep-320

Batch Open: 3/13/2017 2:41:00PM

Batch End: 3/14/17 13:50

Extraction of Perfluorinated Alkyl Acids

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	PHS Rcvd	Adj1	Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1 MB-320-154682/1 N/A	N/A		250 mL 1.0 mL				N/A	N/A	N/A	chlorine=ND	MB-320-154682/1-A
2 LCS-320-154682/2 N/A	N/A		250 mL 1.0 mL				N/A	N/A	N/A	chlorine=ND	LCS-320-154682/2-A
3 320-26319-A-1 (537_DuPont)	N/A (320-26319-1)	278.68 g 27.21 g	251.5 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	320-26319-A-1-A
4 320-26319-A-2 (537_DuPont)	N/A (320-26319-1)	277.30 g 27.05 g	250.3 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	320-26319-A-2-A
5 320-26319-A-3 (537_DuPont)	N/A (320-26319-1)	281.82 g 27.14 g	254.7 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	320-26319-A-3-A
6 320-26319-A-4 (537_DuPont)	N/A (320-26319-1)	278.40 g 26.92 g	251.5 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	320-26319-A-4-A
7 320-26319-A-5 (537_DuPont)	N/A (320-26319-1)	281.07 g 27.51 g	253.6 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	320-26319-A-5-A
8 320-26319-A-6 (537_DuPont)	N/A (320-26319-1)	283.56 g 27.08 g	256.5 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	320-26319-A-6-A
9 320-26319-A-7 (537_DuPont)	N/A (320-26319-1)	281.17 g 27.50 g	253.7 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	320-26319-A-7-A
10 320-26319-A-8 (537_DuPont)	N/A (320-26319-1)	278.72 g 26.99 g	251.7 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	320-26319-A-8-A

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)













Batch Number: 320-154682

Analyst: Kolstad, Kate M

Batch Open: 3/13/2017 2:41:00PM

Method Code: 320-537_Prep-320

Batch End:

11	320-26319-A-9 (537_DuPont)	N/A (320-26319-1)	277.96 g 27.63 g	250.3 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
12	320-26319-A-10 (537_DuPont)	N/A (320-26319-1)	278.68 g 27.06 g	251.6 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
13	320-26319-A-11 (537_DuPont)	N/A (320-26319-1)	280.12 g 27.53 g	252.6 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
14	320-26319-A-12 (537_DuPont)	N/A (320-26319-1)	280.60 g 26.87 g	253.7 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
15	320-26319-A-12-LMS (537_DuPont)	N/A (320-26319-1)	281.42 g 27.04 g	254.4 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
16	320-26319-A-12-LMSD (537_DuPont)	N/A (320-26319-1)	284.71 g 26.77 g	257.9 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
17	320-26320-A-1 (537_DuPont)	N/A (320-26320-1)	277.04 g 26.98 g	250.1 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
18	320-26320-A-1-LMS (537_DuPont)	N/A (320-26320-1)	281.00 g 26.81 g	254.2 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
19	320-26320-A-1-LMSD (537_DuPont)	N/A (320-26320-1)	281.66 g 27.15 g	254.5 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
20	320-26320-A-2 (537_DuPont)	N/A (320-26320-1)	276.29 g 27.12 g	249.2 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
21	320-26320-A-3 (537_DuPont)	N/A (320-26320-1)	274.01 g 27.15 g	246.9 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
22	320-26320-A-4 (537_DuPont)	N/A (320-26320-1)	279.79 g 27.36 g	252.4 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)







Batch Number: 320-154682

Analyst: Kolstad, Kate M

Batch Open: 3/13/2017 2:41:00PM

Method Code: 320-537_Prep-320

Batch End:

23	320-26321-A-1 (537_DuPont)	N/A (320-26321-1)	275.25 g 27.14 g	248.1 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
24	320-26321-A-1-LMS (537_DuPont)	N/A (320-26321-1)	273.50 g 27.45 g	246.1 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
25	320-26321-A-1-LMSD (537_DuPont)	N/A (320-26321-1)	276.37 g 26.86 g	249.5 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
26	320-26321-A-2 (537_DuPont)	N/A (320-26321-1)	282.88 g 27.52 g	255.4 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
27	320-26321-A-3 (537_DuPont)	N/A (320-26321-1)	278.34 g 26.80 g	251.5 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	
28	320-26321-A-4 (537_DuPont)	N/A (320-26321-1)	282.99 g 27.33 g	255.7 mL 1.0 mL	7			3/10/17	8_Days	4	chlorine=ND	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-154682

Method Code: 320-537_Prep-320

Analyst: Kolstad, Kate M

Batch Open: 3/13/2017 2:41:00PM

Batch End:

Batch Notes	
Manifold ID 1, 3, 4	
Trizma ID SLBR4303V	
SPE Cartridge ID 6341059-06	
Methanol ID 865699	
Reagent Water ID 3/13/17	
Pipette ID MD05306	
Analyst ID - TA Reagent Drop KMK	
Analyst ID - TA Reagent Drop Witness CCB	
Analyst ID - SU Reagent Drop KMK	
Analyst ID - SU Reagent Drop Witness CCB	
Analyst ID - IS Reagent Drop <i>HFA</i>	
Analyst ID - IS Reagent Drop Witness <i>CCB</i>	
Batch Comment	<i>861760 1/2</i>

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Kolstad, Kate M

Batch Open: 3/13/2017 2:41:00PM

Batch End:

Batch Number: 320-154682

Method Code: 320-537_Prep-320

Comments

320-26319-A-1	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-2	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-3	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-4	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-5	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-6	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-7	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-8	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-9	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-10	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-11	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-12	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-12-MS	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26319-A-12-MSD	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26320-A-1	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26320-A-1-MS	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26320-A-1-MSD	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26320-A-2	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26320-A-3	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Kolstad, Kate M

Batch Open: 3/13/2017 2:41:00PM

Batch End:

Batch Number: 320-154682

Method Code: 320-537_Prep-320

320-26320-A-4	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26321-A-1	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26321-A-1~MS	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26321-A-1~MSD	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26321-A-2	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26321-A-3	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-26321-A-4	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-154682

Analyst: Kolstad, Kate M

Batch Open: 3/13/2017 2:41:00PM

Method Code: 320-537_Prep-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-154682/1	LC537-SU_00032	50 uL	1.0 mL	KMK 3-13-17	CJS 3-13-17
LCS 320-154682/2	LC537-HSP_00014	50 uL	1.0 mL		
LCS 320-154682/2	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-1	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-2	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-3	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-4	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-5	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-6	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-7	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-8	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-9	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-10	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-11	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-12	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-12 LMS	LC537-LSP_00017	50 uL	1.0 mL		
320-26319-A-12 LMS	LC537-SU_00032	50 uL	1.0 mL		
320-26319-A-12 LMSD	LC537-LSP_00017	50 uL	1.0 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-154682

Analyst: Kolstad, Kate M

Batch Open: 3/13/2017 2:41:00PM

Method Code: 320-537_Prep-320

Batch End:

320-26319-A-12 LMSD	LC537-SU_00032	50 uL	1.0 mL	KMK 3-13-17	008 3-13-17
320-26320-A-1	LC537-SU_00032	50 uL	1.0 mL		
320-26320-A-1 LMS	LC537-LSP_00017	50 uL	1.0 mL		
320-26320-A-1 LMS	LC537-SU_00032	50 uL	1.0 mL		
320-26320-A-1 LMSD	LC537-LSP_00017	50 uL	1.0 mL		
320-26320-A-1 LMSD	LC537-SU_00032	50 uL	1.0 mL		
320-26320-A-2	LC537-SU_00032	50 uL	1.0 mL		
320-26320-A-3	LC537-SU_00032	50 uL	1.0 mL		
320-26320-A-4	LC537-SU_00032	50 uL	1.0 mL		
320-26321-A-1	LC537-SU_00032	50 uL	1.0 mL		
320-26321-A-1 LMS	LC537-LSP_00017	50 uL	1.0 mL		
320-26321-A-1 LMS	LC537-SU_00032	50 uL	1.0 mL		
320-26321-A-1 LMSD	LC537-LSP_00017	50 uL	1.0 mL		
320-26321-A-1 LMSD	LC537-SU_00032	50 uL	1.0 mL		
320-26321-A-2	LC537-SU_00032	50 uL	1.0 mL		
320-26321-A-3	LC537-SU_00032	50 uL	1.0 mL		
320-26321-A-4	LC537-SU_00032	50 uL	1.0 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-154682

Method Code: 320-537_Prep-320

Analyst: Kolstad, Kate M

Batch Open: 3/13/2017 2:41:00PM

Batch End:

Reagent	Other Reagents:	Amount/Units	Lot#:

Preparation Batch Number(s): 154682

Test: 537-Prep

Earliest Holding Time: 3-14-17

Sample List Tab		1 st Level Reviewer	2 nd Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		/	/
Method/sample/login/QAS checked and correct		/	/
Worksheet Tab		1 st Level Reviewer	2 nd 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 CI Check)		/	/
The pH is transcribed correctly in TALS		/	/
All additional information transcribed into TALS is correct and raw data is attached		/	/
Comments are transcribed correctly in TALS		/	/
Reagents Tab		1 st Level Reviewer	2 nd Level Reviewer
All necessary reagents not expired and entered into TALS		/	/
All spike amounts correct and added to necessary samples and QC		/	/
Batch Information		1 st Level Reviewer	2 nd Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1st Level Reviewer: CEB

Date: 3-14-17

2nd Level Reviewer: VPM

Date: 3-14-17

Comments: _____

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento

Job Number: 320-26105-1

SDG No.: _____

Project: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID	Lab Sample ID
<u>MEAFF-BLD002-SB01-0204</u>	<u>320-26105-4</u>
<u>MEAFF-BLD002-SB01-0001</u>	<u>320-26105-5</u>
<u>MEAFF-BLD002-SB02-0001</u>	<u>320-26105-6</u>
<u>MEAFF-BLD002-SB02-0204</u>	<u>320-26105-7</u>
<u>MEAFF-BLD192-SB03-0001</u>	<u>320-26105-8</u>
<u>MEAFF-BLD192-SB03-0204</u>	<u>320-26105-9</u>
<u>MEAFF-SWON-SB03-0001</u>	<u>320-26105-10</u>
<u>MEAFF-SWON-SB03-0204</u>	<u>320-26105-11</u>

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento

Job Number: 320-26105-1

SDG Number: _____

Matrix: Solid

Instrument ID: NOEQUIP

Method: D 2216

LOQ Date: 01/01/2012 08:18

Analyte	Wavelength/ Mass	LOQ (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento

Job Number: 320-26105-1

SDG Number: _____

Matrix: Solid

Instrument ID: NOEQUIP

Method: D 2216

XRL Date: 01/01/2012 08:19

Analyte	Wavelength/ Mass	XRL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: NOEQUIP Analysis Method: D 2216

Start Date: 02/27/2017 15:45 End Date: 02/27/2017 15:45

Lab Sample Id	D/F	Type	Time	Analytes																											
				% S	M o i s t																										
ZZZZZZ			15:45																												
ZZZZZZ			15:45																												
ZZZZZZ			15:45																												
ZZZZZZ			15:45																												
ZZZZZZ			15:45																												
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ZZZZZZ			15:45																												
ZZZZZZ			15:45																												
ZZZZZZ			15:45																												
320-26105-4		1 T	15:45	X	X																										
320-26105-5		1 T	15:45	X	X																										
320-26105-6		1 T	15:45	X	X																										
320-26105-7		1 T	15:45	X	X																										

Prep Types: _____
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Instrument ID: NOEQUIP Analysis Method: D 2216

Start Date: 02/27/2017 16:11 End Date: 02/27/2017 16:11

Lab Sample Id	D/F	Type	Time	Analytes																										
				% S	M																									
320-26105-8	1	T	16:11	X	X																									
320-26105-9	1	T	16:11	X	X																									
320-26105-10	1	T	16:11	X	X																									
320-26105-11	1	T	16:11	X	X																									
ZZZZZZ			16:11																											
ZZZZZZ			16:11																											
ZZZZZZ			16:11																											
ZZZZZZ			16:11																											
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ZZZZZZ			16:11																											
ZZZZZZ			16:11																											

Prep Types: _____
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Batch Number: 152396 Batch Start Date: 02/27/17 15:45 Batch Analyst: Yang, Maisee

Batch Method: D 2216 Batch End Date: 02/28/17 10:04

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-26105-A-4	MEAFF-BLD002-SB0 1-0204	D 2216	T	17	1.02 g	7.12 g	6.05 g		
320-26105-A-5	MEAFF-BLD002-SB0 1-0001	D 2216	T	18	1.02 g	8.13 g	7.41 g		
320-26105-A-6	MEAFF-BLD002-SB0 2-0001	D 2216	T	19	1.01 g	8.22 g	7.30 g		
320-26105-A-7	MEAFF-BLD002-SB0 2-0204	D 2216	T	20	1.02 g	7.79 g	6.86 g		

Batch Notes	
Balance ID	QA-068 No Unit
Date and Time Samples in Desiccator	02/28/17 @ 9:25
Date and Time Samples out of Desiccator	02/28/17 @ 10:04
Date samples were placed in the oven	02/27/17
Oven Temp In	109 Degrees C
Time samples were place in the oven	16:41
Date samples were removed from oven	02/28/17
Oven Temp Out	112 Degrees C
Time Samples were removed from oven	9:25
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.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1

SDG No.: _____

Batch Number: 152404 Batch Start Date: 02/27/17 16:11 Batch Analyst: Yang, Maisee

Batch Method: D 2216 Batch End Date: 02/28/17 10:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-26105-A-8	MEAFF-BLD192-SB03-0001	D 2216	T	1	1.01 g	10.99 g	9.32 g		
320-26105-A-9	MEAFF-BLD192-SB03-0204	D 2216	T	2	1.03 g	6.88 g	5.67 g		
320-26105-A-10	MEAFF-SWON-SB03-0001	D 2216	T	3	1.00 g	7.35 g	6.47 g		
320-26105-A-11	MEAFF-SWON-SB03-0204	D 2216	T	4	1.03 g	10.38 g	9.11 g		

Batch Notes	
Balance ID	QA-068 No Unit
Date and Time Samples in Desiccator	02/28/17 @ 9:25
Date and Time Samples out of Desiccator	02/28/17 @ 10:10
Date samples were placed in the oven	02/27/17
Oven Temp In	109 Degrees C
Time samples were place in the oven	16:41
Date samples were removed from oven	02/28/17
Oven Temp Out	112 Degrees C
Time Samples were removed from oven	9:25
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): 152405, 152404
152396 Test: % Moisture

Earliest Holding Time: N/A
320-26103, -26105, -26050, -26102, -26096, -26047

Sample List Tab		1 st Level Reviewer	2 nd Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		/	/
Method/sample/login/QAS checked and correct		/	/
Worksheet Tab		1 st Level Reviewer	2 nd Level Reviewer
All samples properly preserved		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	/
All additional information transcribed into TALS is correct and raw data is attached		NA	/
Comments are transcribed correctly in TALS		NA	/
Reagents Tab		1 st Level Reviewer	2 nd Level Reviewer
All necessary reagents not expired and entered into TALS		NA	/
All spike amounts correct and added to necessary samples and QC		NA	/
Batch Information		1 st Level Reviewer	2 nd Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1st Level Reviewer: MY

Date: 02/28/17

2nd Level Reviewer: OMO

Date: 02/29/17

Comments: _____

Preparation Batch Number(s): 152405, 152404
152396 Test: % Moisture

Earliest Holding Time: N/A
320-26103, -26105, -26050, -26102, -26096, -26047

Sample List Tab		1 st Level Reviewer	2 nd Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		/	/
Method/sample/login/QAS checked and correct		/	/
Worksheet Tab		1 st Level Reviewer	2 nd Level Reviewer
All samples properly preserved		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	/
All additional information transcribed into TALS is correct and raw data is attached		NA	/
Comments are transcribed correctly in TALS		NA	/
Reagents Tab		1 st Level Reviewer	2 nd Level Reviewer
All necessary reagents not expired and entered into TALS		NA	/
All spike amounts correct and added to necessary samples and QC		NA	/
Batch Information		1 st Level Reviewer	2 nd Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1st Level Reviewer: MY

Date: 02/28/17

2nd Level Reviewer: OMO

Date: 02/29/17

Comments: _____

Shipping and Receiving Documents

West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248

TestAmerica Laboratories, Inc.

Regulatory Program: BW NPDES RCRA Other:

Client Contact
CH2M Hill
6600 Peachtree Dunwoody Rd., 400 Embassy Row, Suite 600
Atlanta, GA 30328
(678) 530-4060 Phone
(770) 604-9183 FAX

Project Manager: Bryan Burkingstock
Tell/Fax:

Site Contact: Ryan Brown
Lab Contact: Jill Kellmann

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below 21 days
 2 weeks
 1 week
 2 days
 1 day

For Lab Use Only: J. McCarroll
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)
MEAFF-08HW01D-0217	2/24/17	12:15	G	GW	4	NN	XX
MEAFF-08HW01-0217		12:00			2	XX	XX
MEAFF-MRD-1A14-0217		15:00			4	XX	XX
MEAFF-MRD-1A14-0217-MS					1	XX	XX
MEAFF-BLD002-SB01-0204				SD	1	XX	XX
MEAFF-BLD002-SB01-0001		09:05			1	XX	XX
MEAFF-BLD002-SB02-0001		09:15			1	XX	XX
MEAFF-BLD002-SB02-0204		09:20			1	XX	XX
MEAFF-BLD197-SB03-0001		11:10			1	XX	XX
MEAFF-BLD197-SB03-0204		11:15			1	XX	XX
MEAFF-SW01-SB03-0001		11:35			1	XX	XX

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 Lamboni -> 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

Custody Seal No.: CH2M
Company: CH2M
Date/Time: 2/24/17

Received by: Ryan Brown
Company: Ryan Brown
Date/Time: 2/29/01

Received by: Mike Lamboni
Company: SAMS
Date/Time: 2-25-17 850

Received in Laboratory by: Ryan Brown
Company: Ryan Brown
Date/Time: 2-25-17

Therm ID No.: AIC
Date/Time: 2-20
Date/Time: 2-25-17 850

Sample Specific Notes:
low volume only 1 amber HDPE 500ml
matrix spike
matrix spike duplicate

Barcode: 320-26105 Chain of Custody

West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248

Regulatory Program: DW NPDES RCRA Other: _____

Client Contact
CH2M Hill
6600 Peachtree Dunwoody Rd., 400 Embassy Row, Suite 600
Atlanta, GA 30328
(678) 530-4060 Phone
(770) 604-9183 FAX
Project Name: Meridian 10006-7-105420 JM01 Navy Clean
Site: NAS Meridian
P.O.# 10006-7-105420

Project Manager: Bryan Burkingstock
Tel/Fax: _____

Site Contact: Ryan Brown
Lab Contact: Jill Kellmann

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below: 21 days
 2 weeks
 1 week
 2 days
 1 day

COC No.: 4 of 2 COCs

Sampler: Ryan D. Averick
For Lab Use Only: S.J. McCann
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)	Carrier: FedEx	Date: 2/24/17	Sample Specific Notes
MEAFF-SWON-SB03-0204	2/24/17	1140	G SD	SD	1	N	N			
MEAFF-08MW03-0217		1130	G	GW	4	Y	Y			field duplicate
MEAFF-08MW00-0217		1315			1	Y	Y			field duplicate
MEAFF-FB02-0217					2	Y	Y			
MEAFF-MED-1A01-0217		1530			2	Y	Y			
MEAFF-FB03-0217				GW	2	Y	Y			field duplicate

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

Possible Hazard Identification: 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

Sample Disposal: (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Custody Seals Intact: Yes No

Received by: Ryan Brown
Company: CH2M
Date/Time: 2/24/17 @ 1700

Received by: [Signature]
Company: [Signature]
Date/Time: 2-25-17 850

Received in Laboratory by: [Signature]
Company: [Signature]
Date/Time: _____

Therm ID No.: _____
Date/Time: _____
Date/Time: _____

Login Sample Receipt Checklist

Client: CH2M Hill, Inc.

Job Number: 320-26105-1

Login Number: 26105
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	

**DATA VALIDATION SUMMARY REPORT
NAVAL AIR STATION MERIDIAN, MISSISSIPPI**

Client: CH2M HILL, Inc., Virginia Beach, Virginia
 SDG: 320-26105-1
 Laboratory: Test America Laboratories, West Sacramento, California
 Site: Naval Air Station Meridian, JM01, Meridian, Mississippi
 Date: October 28, 2017

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MEAFF-08MW01D-0217	320-26105-1	Water
2	MEAFF-08MW01-0217	320-26105-2	Water
2DL*	MEAFF-08MW01-0217DL	320-26105-2DL	Water
3	MEAFF-MRD-1A14-0217	320-26105-3	Water
3MS	MEAFF-MRD-1A14-0217MS	320-26105-3MS	Water
3MSD	MEAFF-MRD-1A14-0217MSD	320-26105-3MSD	Water
3DL*	MEAFF-MRD-1A14-0217DL	320-26105-3DL	Water
3DLMS*	MEAFF-MRD-1A14-0217DLMS	320-26105-3DLMS	Water
3DLMSD*	MEAFF-MRD-1A14-0217DLMSD	320-26105-3DLMSD	Water
4*	MEAFF-BLD002-SB01-0204	320-26105-4	Soil
5*	MEAFF-BLD002-SB01-0001	320-26105-5	Soil
6*	MEAFF-BLD002-SB02-0001	320-26105-6	Soil
7*	MEAFF-BLD002-SB02-0204	320-26105-7	Soil
8*	MEAFF-BLD192-SB03-0001	320-26105-8	Soil
9*	MEAFF-BLD192-SB03-0204	320-26105-9	Soil
10*	MEAFF-SWON-SB03-0001	320-26105-10	Soil
10DL*	MEAFF-SWON-SB03-0001DL	320-26105-10DL	Soil
11*	MEAFF-SWON-SB03-0204	320-26105-11	Soil
12	MEAFF-08MW03-0217	320-26105-12	Water
13	MEAFF-08MW06-0217	320-26105-13	Water
14	MEAFF-FD02-0217	320-26105-14	Water
15*	MEAFF-MRD-IA01-0217A	320-26105-15	Water
16*	MEAFF-FD03-0217	320-26105-16	Water

* - PFCs only

A full data validation was performed on the analytical data for eight soil samples and eight water samples collected on February 24, 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)" and the Test America Laboratories (TAL) Standard Operating Procedure for the analysis of 1,4-dioxane by GC/MS-SIM.

Specific method references are as follows:

Analysis

PFCs
SVOC-SIM (1,4-Dioxane)

Method References

USEPA Method 537 Modified
TAL SOP WS-MS-0011

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;
- USEPA Region 4 “Data Validation Standard Operating Procedures for CLP Organic Data using GC/MS and GC/ECD”, Rev. 0.0, February 2016;
- and the reviewer’s professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Holding times and sample preservation
- Liquid/Gas Chromatography/Mass Spectrometry (LC/GC/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 exceedances of QC criteria.

Perfluorinated Compounds (PFCs)

Holding Times

- All samples were extracted within 14 days for water and soil 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 QC samples were free of contamination.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
MEAFF-EB03-GW-0317	None - ND	-	-	-
MEAFF-EB04-GW-0317	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values except for the following.

MS/MSD Sample ID	Compound	MS %R/MSD %R/ RPD	Qualifier	Affected Samples
3	PFOA	OK/7%/OK	None	4X Rule Applies
3DL	PFOA	OK/12%/OK	None	4X Rule Applies
	PFOS	162%/154%/OK	J	3DL

Laboratory Control Sample (LCS)

- The LCS samples exhibited acceptable percent recoveries (%R) 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.
- EDS Sample IDs 2 and 3 were flagged (E) by the laboratory for PFOA exceeding the linear range of the instrument. The samples were diluted and reanalyzed and the dilution results for PFOA should be used for reporting purposes.
- EDS Sample ID 10 was flagged (E) by the laboratory for PFOS exceeding the linear range of the instrument. The sample was diluted and reanalyzed and the dilution result for PFOS should be used for reporting purposes.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision is acceptable.

Compound	MEAFF-08MW06-0217 ng/L	MEAFF-FD02-0217 ng/L	RPD	Qualifier
PFOA	130	130	0%	None
PFOS	55	54	2%	
PFBS	22	20	10%	

Compound	MEAFF-MRD-IA01-0217A ng/L	MEAFF-FD03-0217 ng/L	RPD	Qualifier
PFOA	120	120	0%	None
PFOS	3.0	3.0	0%	
PFBS	6.9	5.2	28%	

Semivolatile Organic Compounds (1,4-Dioxane)

Holding Times

- All samples were extracted within 7 days for water samples and analyzed within 40 days.

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The initial calibrations exhibited acceptable %RSD and/or correlation coefficients and mean RRF criteria.

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF criteria.

Method Blank

- The method blanks were free of contamination.

Field Blank

- The field QC samples were free of contamination.

Blank ID	Compound	Conc. ug/L	Qualifier	Affected Samples
MEAFF-EB03-GW-0317	None - ND	-	-	-
MEAFF-EB04-GW-0317	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate recoveries.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples/Laboratory Control Sample Duplicate (LCS/LCSD)

- The LCS samples exhibited acceptable percent recoveries (%R) and RPD values.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

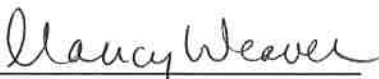
- Several samples results were flagged (M) by the laboratory indicating manual integration. These flags were removed by the reviewer.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision is acceptable.

Compound	MEAFF-08MW06-0217 ug/L	MEAFF-FD02-0217 ug/L	RPD	Qualifier
1,4-Dioxane	1.4	1.4	0%	None

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:  Dated: 11/2/17
Nancy Weaver
Senior Chemist

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

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01D-0217 Lab Sample ID: 320-26105-1
 Matrix: Water Lab File ID: 2017.03.04A_050.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 12:15
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 258.4 (mL) Date Analyzed: 03/06/2017 02:11
 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.: 153421 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	0.72
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.9	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.9	U	2.4	1.9	0.89

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	88		25-150
STL00991	13C4 PFOS	125		25-150
STL00994	18O2 PFHxS	127		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

2

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01-0217 Lab Sample ID: 320-26105-2
 Matrix: Water Lab File ID: 2017.03.04A 051.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 12:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 253.3(mL) Date Analyzed: 03/06/2017 02:19
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	520 490 E		12 2.5	9.9 2.0	3.7 0.74
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	270		3.9	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	14	N	2.5	2.0	0.91

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	82		25-150
STL00991	13C4 PFOS	100		25-150
STL00994	18O2 PFHxS	99		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

202

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01-0217 DL Lab Sample ID: 320-26105-2 DL
 Matrix: Water Lab File ID: 2017.03.08B_007.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 12:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 253.3(mL) Date Analyzed: 03/08/2017 20:17
 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.: 154016 Units: ng/L

Use original results

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	520	DM	12	9.9	3.7
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	270	DM	20	15	6.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	16	DM	12	9.9	4.5

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	105		25-150
STL00991	13C4 PFOS	98		25-150
STL00994	18O2 PFHxS	104		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

3

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 Lab Sample ID: 320-26105-3
 Matrix: Water Lab File ID: 2017.03.04A_052.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 269.3(mL) Date Analyzed: 03/06/2017 02:26
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	490 500 J	E J	2.3 12	1.9 9.3	0.69 3.5
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	43		3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.8	M	2.3	1.9	0.85

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	46		25-150
STL00991	13C4 PFOS	129		25-150
STL00994	18O2 PFHxS	132		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

3DL

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 DL Lab Sample ID: 320-26105-3 DL
 Matrix: Water Lab File ID: 2017.03.08B_008.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 269.3(mL) Date Analyzed: 03/08/2017 20:24
 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.: 154016 Units: ng/L

Use original results

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	500	D M J	12	9.3	3.5
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	24	D M J J	19	14	5.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	9.3	U M	12	9.3	4.3

MSH

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	48		25-150
STL00991	13C4 PFOS	120		25-150
STL00994	18O2 PFHxS	141		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

4

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD002-SB01-0204 Lab Sample ID: 320-26105-4
 Matrix: Solid Lab File ID: 2017.03.11C_042.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 09:00
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 4.95(g) Date Analyzed: 03/11/2017 17:20
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 17.5 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.37	U M	0.61	0.37	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.1	M	0.61	0.37	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.37	U M	0.49	0.37	0.13

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	100		25-150
STL00991	13C4 PFOS	58		25-150
STL00994	18O2 PFHxS	93		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

5

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD002-SB01-0001 Lab Sample ID: 320-26105-5
 Matrix: Solid Lab File ID: 2017.03.11C_043.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 09:05
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.08(g) Date Analyzed: 03/11/2017 17:27
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 10.1 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.25	J M	0.55	0.33	0.11
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	19	M	0.55	0.33	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.33	U M	0.44	0.33	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	109		25-150
STL00991	13C4 PFOS	83		25-150
STL00994	18O2 PFHxS	93		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

6

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD002-SB02-0001 Lab Sample ID: 320-26105-6
 Matrix: Solid Lab File ID: 2017.03.11C_044.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 09:15
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 4.98(g) Date Analyzed: 03/11/2017 17:35
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 12.8 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	6.3	M	0.58	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	21	M	0.58	0.35	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.35	U M	0.46	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	95		25-150
STL00991	13C4 PFOS	61		25-150
STL00994	18O2 PFHxS	92		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

7

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD002-SB02-0204 Lab Sample ID: 320-26105-7
 Matrix: Solid Lab File ID: 2017.03.11C_045.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 09:20
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.00(g) Date Analyzed: 03/11/2017 17:42
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 13.7 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.15	J M	0.58	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.35	U M	0.58	0.35	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.35	U	0.46	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	104		25-150
STL00991	13C4 PFOS	56		25-150
STL00994	18O2 PFHxS	95		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

8

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD192-SB03-0001 Lab Sample ID: 320-26105-8
 Matrix: Solid Lab File ID: 2017.03.11C_046.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:10
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.03(g) Date Analyzed: 03/11/2017 17:50
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 16.7 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	5.1	Y	0.60	0.36	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	Y	0.60	0.36	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.36	U M	0.48	0.36	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	107		25-150
STL00991	13C4 PFOS	72		25-150
STL00994	18O2 PFHxS	100		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

9

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-BLD192-SB03-0204 Lab Sample ID: 320-26105-9
 Matrix: Solid Lab File ID: 2017.03.11C_047.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:15
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 4.95(g) Date Analyzed: 03/11/2017 17:57
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 20.7 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.28	J	0.64	0.38	0.13
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.40	J Y	0.64	0.38	0.16
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.38	U	0.51	0.38	0.13

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	119		25-150
STL00991	13C4 PFOS	78		25-150
STL00994	18O2 PFHxS	108		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

10

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-SWON-SB03-0001 Lab Sample ID: 320-26105-10
 Matrix: Solid Lab File ID: 2017.03.11C_048.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:35
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.02(g) Date Analyzed: 03/11/2017 18:05
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 13.9 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	38	M	0.58	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	64	65 E M	5.8 0.58	3.5 0.35	1.5 0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.0		0.46	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	85		25-150
STL00991	13C4 PFOS	56		25-150
STL00994	18O2 PFHxS	59		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

10DL

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-SWON-SB03-0001 DL Lab Sample ID: 320-26105-10 DL
 Matrix: Solid Lab File ID: 2017.03.13A_046.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:35
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 5.02(g) Date Analyzed: 03/13/2017 17:01
 Con. Extract Vol.: 1(mL) Dilution Factor: 10
 Injection Volume: 2(uL) GC Column: Gemini 18 3x100 ID: 3(mm)
 % Moisture: 13.9 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154808 Units: ug/Kg

Use original results

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	42	DM	5.8	3.5	1.2
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	64	DM	5.8	3.5	1.5
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	J	4.6	3.5	1.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	94	M	25-150
STL00991	13C4 PFOS	52		25-150
STL00994	18O2 PFHxS	81		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

11

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-SWON-SB03-0204 Lab Sample ID: 320-26105-11
 Matrix: Solid Lab File ID: 2017.03.11C 050.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:40
 Extraction Method: SHAKE Date Extracted: 03/02/2017 17:04
 Sample wt/vol: 4.94(g) Date Analyzed: 03/11/2017 18:20
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: 13.6 GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154503 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	8.3	M	0.59	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	8.3	M	0.59	0.35	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6		0.47	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	108		25-150
STL00991	13C4 PFOS	53		25-150
STL00994	18O2 PFHxS	82		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

12

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW03-0217 Lab Sample ID: 320-26105-12
 Matrix: Water Lab File ID: 2017.03.04A_055.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 11:30
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 278.5(mL) Date Analyzed: 03/06/2017 02:49
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	3.9	Y	2.2	1.8	0.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U Y	3.6	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	5.5	Y	2.2	1.8	0.82

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	68		25-150
STL00991	13C4 PFOS	131		25-150
STL00994	18O2 PFHxS	141		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

13

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW06-0217 Lab Sample ID: 320-26105-13
 Matrix: Water Lab File ID: 2017.03.04A 056.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 13:15
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 270.5(mL) Date Analyzed: 03/06/2017 02:56
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	130		2.3	1.8	0.69
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	55		3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	22	M	2.3	1.8	0.85

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	59		25-150
STL00991	13C4 PFOS	120		25-150
STL00994	18O2 PFHxS	128		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

14

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-FD02-0217 Lab Sample ID: 320-26105-14
 Matrix: Water Lab File ID: 2017.03.04A_058.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 00:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 298.8(mL) Date Analyzed: 03/06/2017 03:11
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	130		2.1	1.7	0.63
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	54		3.3	2.5	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	20	M	2.1	1.7	0.77

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	65		25-150
STL00991	13C4 PFOS	124		25-150
STL00994	18O2 PFHxS	132		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

15

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-IA01-0217A Lab Sample ID: 320-26105-15
 Matrix: Water Lab File ID: 2017.03.04A_059.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 15:30
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 264.6(mL) Date Analyzed: 03/06/2017 03:19
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	120		2.4	1.9	0.71
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	6.9	M	2.4	1.9	0.87

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	79		25-150
STL00991	13C4 PFOS	115		25-150
STL00994	18O2 PFHxS	107		25-150

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

16

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-FD03-0217 Lab Sample ID: 320-26105-16
 Matrix: Water Lab File ID: 2017.03.04A_060.d
 Analysis Method: 537 (Modified) Date Collected: 02/24/2017 00:00
 Extraction Method: 3535 Date Extracted: 03/02/2017 14:24
 Sample wt/vol: 260.4(mL) Date Analyzed: 03/06/2017 03:26
 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.: 153421 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	120		2.4	1.9	0.72
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.0	J M	3.8	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	5.2	Y	2.4	1.9	0.88

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	83		25-150
STL00991	13C4 PFOS	133		25-150
STL00994	18O2 PFHxS	124		25-150



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01D-0217 Lab Sample ID: 320-26105-1
 Matrix: Water Lab File ID: S031408.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 12:15
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1051.4(mL) Date Analyzed: 03/14/2017 17:42
 Con. Extract Vol.: 1.0(mL) Dilution Factor: 1
 Injection Volume: 1(uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	0.48	U	0.95	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	80		42-91

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

2

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW01-0217 Lab Sample ID: 320-26105-2
 Matrix: Water Lab File ID: S031409.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 12:00
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 625(mL) Date Analyzed: 03/14/2017 18:05
 Con. Extract Vol.: 1.0(mL) Dilution Factor: 1
 Injection Volume: 1(uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	4.0	✓	1.6	0.80	0.32

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	59		42-91

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

3

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-MRD-1A14-0217 Lab Sample ID: 320-26105-3
 Matrix: Water Lab File ID: S031410.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 15:00
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1052.2(mL) Date Analyzed: 03/14/2017 18:28
 Con. Extract Vol.: 1.0(mL) Dilution Factor: 1
 Injection Volume: 1(uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	0.48	U	0.95	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	73		42-91

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

12

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW03-0217 Lab Sample ID: 320-26105-12
 Matrix: Water Lab File ID: S031413.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 11:30
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1032.9(mL) Date Analyzed: 03/14/2017 19:35
 Con. Extract Vol.: 1.0(mL) Dilution Factor: 1
 Injection Volume: 1(uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	14	M	0.97	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	69		42-91

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

13

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-08MW06-0217 Lab Sample ID: 320-26105-13
 Matrix: Water Lab File ID: S031414.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 13:15
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1045.4(mL) Date Analyzed: 03/14/2017 19:58
 Con. Extract Vol.: 1.0(mL) Dilution Factor: 1
 Injection Volume: 1(uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	1.4	/	0.96	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	74		42-91

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

14

Lab Name: TestAmerica Sacramento Job No.: 320-26105-1
 SDG No.: _____
 Client Sample ID: MEAFF-FD02-0217 Lab Sample ID: 320-26105-14
 Matrix: Water Lab File ID: S031415.D
 Analysis Method: WS-MS-0011 Date Collected: 02/24/2017 00:00
 Extract. Method: 3510C Date Extracted: 03/02/2017 13:45
 Sample wt/vol: 1039.7(mL) Date Analyzed: 03/14/2017 20:21
 Con. Extract Vol.: 1.0(mL) Dilution Factor: 1
 Injection Volume: 1(uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 154875 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	1.4	M	0.96	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	62		42-91