



**Off-Base Drinking Water Sample Results,
Combined Level 2 and Level 4 Laboratory Report,
Electronic Data Deliverable, Data Validation Report,
and the Sample Location Figure, SDG 320-28916-1**

*Naval Air Warfare Center Warminster
Warminster, Pennsylvania*

August 2019

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WARMINSTER_NAWC
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**LABORATORY DATA PACKAGE, 320-28916-1, NAS WILLOW GROVE NAWC
WARMINSTER PA**

07/20/2017
TESTAMERICA LABORATORIES INC

Approved for public release: distribution unlimited.

ANALYTICAL REPORT

Job Number: 320-28916-1

Job Description: TetraT: PFAS, NAS JRB Willow Grove

For:
Tetra Tech, Inc.
234 Mall Boulevard
Suite 260
King of Prussia, PA 19406
Attention: Andy Frebowitz



Approved for release.
David R Alltucker
Project Manager I
7/20/2017 5:21 PM

David R Alltucker, Project Manager I
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4383
david.alltucker@testamericainc.com
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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Qualifiers

LCMS

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
Q	One or more quality control criteria failed.
H	Sample was prepped or analyzed beyond the specified holding time
E	Result exceeded calibration range.

Glossary

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

Job Narrative
320-28916-1

Receipt

The samples were received on 6/8/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

LCMS

Method(s) 537: 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.

Method(s) 537: The Internal Standard (IS) recoveries for the following samples were very low indicating a problem in the extraction of these samples. The results are therefore not reliable as the low internal standard is causing sample concentrations to be over compensated and resulting in falsely high values, in sample NAWC-060717-RW-258A (320-28916-5).. The samples were re-extracted out of hold time and the IS recoveries were within Quality Control (QC) limits. Both sets of data are reported. NAWC-060717-FRB-79 (320-28916-4) and NAWC-060717-RW-258A (320-28916-5)

Method(s) 537: Surrogate recovery for the following samples was outside control limits: NAWC-060717-RW-145 (320-28916-7) and NAWC-060717-RW-206B (320-28916-11). Re-extraction and re-analysis was performed and the surrogate recoveries were acceptable. <CHOOSE_ONE> Both sets of data have been reported.

Method(s) 537: Re-extraction and reanalysis of the following samples was performed outside of holding time due to low surrogate recoveries in the initial extraction and analysis. Both sets of data are reported. NAWC-060717-FRB-79 (320-28916-4), NAWC-060717-RW-258A (320-28916-5), NAWC-060717-RW-145 (320-28916-7) and NAWC-060717-RW-206B (320-28916-11)

Method(s) 537: Reanalysis of the following sample was performed outside of holding time due to client request: NAWC-060717-RW-258A (320-28916-5).

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

Organic Prep

Method(s) 537: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-169764.

Method(s) 537: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-172119.

Method(s) 537: The following samples was re-prepared outside of preparation holding time. NAWC-060717-FRB-79 (320-28916-4), NAWC-060717-RW-258A (320-28916-5), NAWC-060717-RW-145 (320-28916-7), NAWC-060717-RW-206B (320-28916-11) and NAWC-060717-FRB-56 (320-28916-14).

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

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-206A

Lab Sample ID: 320-28916-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	13	J	39	6.6	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA)	12	J	19	2.7	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.2	J	9.7	1.8	ng/L	1		537	Total/NA

Client Sample ID: NAWC-060717-FRB-206A

Lab Sample ID: 320-28916-2

No Detections.

Client Sample ID: NAWC-060717-RW-79

Lab Sample ID: 320-28916-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	14	J	38	6.5	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA)	16	J	19	2.7	ng/L	1		537	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	11	J	29	5.2	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.9	J	9.5	1.8	ng/L	1		537	Total/NA

Client Sample ID: NAWC-060717-FRB-79

Lab Sample ID: 320-28916-4

No Detections.

Client Sample ID: NAWC-060717-RW-258A

Lab Sample ID: 320-28916-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	7400	E	38	6.4	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA)	15000	E	19	2.7	ng/L	1		537	Total/NA
Perfluorononanoic acid (PFNA)	7100	E	23	7.6	ng/L	1		537	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	730	E	28	5.2	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA)	5600	E	9.5	1.8	ng/L	1		537	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4000	E	85	15	ng/L	1		537	Total/NA
Perfluorooctanesulfonic acid (PFOS) - RE	17	J H M	39	6.6	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA) - RE	24	H M	19	2.7	ng/L	1		537	Total/NA
Perfluorononanoic acid (PFNA) - RE	12	J H	23	7.8	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA) - RE	8.0	J H	9.7	1.9	ng/L	1		537	Total/NA
Perfluorooctanesulfonic acid (PFOS) - RERA	18	J H M	39	6.6	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA) - RERA	26	H	19	2.7	ng/L	1		537	Total/NA
Perfluorononanoic acid (PFNA) - RERA	14	J H	23	7.8	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA) - RERA	9.0	J H	9.7	1.9	ng/L	1		537	Total/NA

Client Sample ID: NAWC-060717-FRB-258A

Lab Sample ID: 320-28916-6

No Detections.

Client Sample ID: NAWC-060717-RW-145

Lab Sample ID: 320-28916-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	18	J	39	6.6	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA)	20		19	2.7	ng/L	1		537	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-145 (Continued)

Lab Sample ID: 320-28916-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	8.1	J	29	5.3	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA)	6.6	J	9.7	1.8	ng/L	1		537	Total/NA
Perfluorooctanesulfonic acid (PFOS) - RE	18	J H M	41	6.9	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA) - RE	20	H	20	2.9	ng/L	1		537	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - RE	8.4	J H	31	5.6	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA) - RE	6.1	J H	10	1.9	ng/L	1		537	Total/NA

Client Sample ID: NAWC-060717-FRB-145

Lab Sample ID: 320-28916-8

No Detections.

Client Sample ID: NAWC-060717-RW-162

Lab Sample ID: 320-28916-9

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	28	J	39	6.6	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA)	15	J	19	2.7	ng/L	1		537	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	13	J	29	5.3	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.7	J	9.7	1.8	ng/L	1		537	Total/NA

Client Sample ID: NAWC-060717-FRB-162

Lab Sample ID: 320-28916-10

No Detections.

Client Sample ID: NAWC-060717-RW-206B

Lab Sample ID: 320-28916-11

No Detections.

Client Sample ID: NAWC-060717-RW-258B

Lab Sample ID: 320-28916-12

No Detections.

Client Sample ID: NAWC-060717-RW-56

Lab Sample ID: 320-28916-13

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	21	J	39	6.6	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA)	26		19	2.7	ng/L	1		537	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	9.6	J	29	5.3	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA)	9.8		9.7	1.8	ng/L	1		537	Total/NA

Client Sample ID: NAWC-060717-FRB-56

Lab Sample ID: 320-28916-14

No Detections.

Client Sample ID: NAWC-060717-DUP02

Lab Sample ID: 320-28916-15

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	17	J	37	6.3	ng/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA)	20		19	2.6	ng/L	1		537	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.8	J	28	5.1	ng/L	1		537	Total/NA
Perfluoroheptanoic acid (PFHpA)	6.2	J	9.3	1.8	ng/L	1		537	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-206A

Date Collected: 06/07/17 08:10

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-1

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	13	J	39	6.6	ng/L	—	06/19/17 09:24	06/23/17 22:53	1
Perfluorooctanoic acid (PFOA)	12	J	19	2.7	ng/L	—	06/19/17 09:24	06/23/17 22:53	1
Perfluorononanoic acid (PFNA)	19	U	23	7.8	ng/L	—	06/19/17 09:24	06/23/17 22:53	1
Perfluorohexanesulfonic acid (PFHxS)	12	U	29	5.3	ng/L	—	06/19/17 09:24	06/23/17 22:53	1
Perfluoroheptanoic acid (PFHpA)	3.2	J	9.7	1.8	ng/L	—	06/19/17 09:24	06/23/17 22:53	1
Perfluorobutanesulfonic acid (PFBS)	35	U M	87	16	ng/L	—	06/19/17 09:24	06/23/17 22:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	73		70 - 130	06/19/17 09:24	06/23/17 22:53	1
13C2 PFDA	76		70 - 130	06/19/17 09:24	06/23/17 22:53	1

Client Sample ID: NAWC-060717-FRB-206A

Date Collected: 06/07/17 08:05

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-2

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U	38	6.4	ng/L	—	06/19/17 09:24	06/28/17 17:32	1
Perfluorooctanoic acid (PFOA)	7.6	U	19	2.7	ng/L	—	06/19/17 09:24	06/28/17 17:32	1
Perfluorononanoic acid (PFNA)	19	U	23	7.6	ng/L	—	06/19/17 09:24	06/28/17 17:32	1
Perfluorohexanesulfonic acid (PFHxS)	11	U	28	5.2	ng/L	—	06/19/17 09:24	06/28/17 17:32	1
Perfluoroheptanoic acid (PFHpA)	3.8	U	9.5	1.8	ng/L	—	06/19/17 09:24	06/28/17 17:32	1
Perfluorobutanesulfonic acid (PFBS)	34	U	85	15	ng/L	—	06/19/17 09:24	06/28/17 17:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		70 - 130	06/19/17 09:24	06/28/17 17:32	1
13C2 PFDA	93		70 - 130	06/19/17 09:24	06/28/17 17:32	1

Client Sample ID: NAWC-060717-RW-79

Date Collected: 06/07/17 09:10

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-3

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	14	J	38	6.5	ng/L	—	06/19/17 09:24	06/23/17 23:02	1
Perfluorooctanoic acid (PFOA)	16	J	19	2.7	ng/L	—	06/19/17 09:24	06/23/17 23:02	1
Perfluorononanoic acid (PFNA)	19	U	23	7.6	ng/L	—	06/19/17 09:24	06/23/17 23:02	1
Perfluorohexanesulfonic acid (PFHxS)	11	J	29	5.2	ng/L	—	06/19/17 09:24	06/23/17 23:02	1
Perfluoroheptanoic acid (PFHpA)	4.9	J	9.5	1.8	ng/L	—	06/19/17 09:24	06/23/17 23:02	1
Perfluorobutanesulfonic acid (PFBS)	34	U M	86	15	ng/L	—	06/19/17 09:24	06/23/17 23:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	74		70 - 130	06/19/17 09:24	06/23/17 23:02	1
13C2 PFDA	79		70 - 130	06/19/17 09:24	06/23/17 23:02	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-FRB-79

Lab Sample ID: 320-28916-4

Date Collected: 06/07/17 09:05

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U	37	6.3	ng/L		06/19/17 09:24	06/23/17 23:07	1
Perfluorooctanoic acid (PFOA)	7.4	U	19	2.6	ng/L		06/19/17 09:24	06/23/17 23:07	1
Perfluorononanoic acid (PFNA)	19	U	22	7.4	ng/L		06/19/17 09:24	06/23/17 23:07	1
Perfluorohexanesulfonic acid (PFHxS)	11	U	28	5.1	ng/L		06/19/17 09:24	06/23/17 23:07	1
Perfluoroheptanoic acid (PFHpA)	3.7	U	9.3	1.8	ng/L		06/19/17 09:24	06/23/17 23:07	1
Perfluorobutanesulfonic acid (PFBS)	33	U	83	15	ng/L		06/19/17 09:24	06/23/17 23:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	17	Q	70 - 130	06/19/17 09:24	06/23/17 23:07	1
13C2 PFDA	16	Q	70 - 130	06/19/17 09:24	06/23/17 23:07	1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RE

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U H	39	6.6	ng/L		07/03/17 09:49	07/07/17 01:15	1
Perfluorooctanoic acid (PFOA)	7.7	U H	19	2.7	ng/L		07/03/17 09:49	07/07/17 01:15	1
Perfluorononanoic acid (PFNA)	19	U H	23	7.7	ng/L		07/03/17 09:49	07/07/17 01:15	1
Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	5.3	ng/L		07/03/17 09:49	07/07/17 01:15	1
Perfluoroheptanoic acid (PFHpA)	3.9	U H	9.7	1.8	ng/L		07/03/17 09:49	07/07/17 01:15	1
Perfluorobutanesulfonic acid (PFBS)	35	U H	87	16	ng/L		07/03/17 09:49	07/07/17 01:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		70 - 130	07/03/17 09:49	07/07/17 01:15	1
13C2 PFDA	93		70 - 130	07/03/17 09:49	07/07/17 01:15	1

Client Sample ID: NAWC-060717-RW-258A

Lab Sample ID: 320-28916-5

Date Collected: 06/07/17 09:55

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	7400	E	38	6.4	ng/L		06/19/17 09:24	06/23/17 23:12	1
Perfluorooctanoic acid (PFOA)	15000	E	19	2.7	ng/L		06/19/17 09:24	06/23/17 23:12	1
Perfluorononanoic acid (PFNA)	7100	E	23	7.6	ng/L		06/19/17 09:24	06/23/17 23:12	1
Perfluorohexanesulfonic acid (PFHxS)	730	E	28	5.2	ng/L		06/19/17 09:24	06/23/17 23:12	1
Perfluoroheptanoic acid (PFHpA)	5600	E	9.5	1.8	ng/L		06/19/17 09:24	06/23/17 23:12	1
Perfluorobutanesulfonic acid (PFBS)	4000	E	85	15	ng/L		06/19/17 09:24	06/23/17 23:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	48236	Q	70 - 130	06/19/17 09:24	06/23/17 23:12	1
13C2 PFDA	46396	Q	70 - 130	06/19/17 09:24	06/23/17 23:12	1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RE

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	17	J H M	39	6.6	ng/L		07/03/17 09:49	07/07/17 01:20	1
Perfluorooctanoic acid (PFOA)	24	H M	19	2.7	ng/L		07/03/17 09:49	07/07/17 01:20	1
Perfluorononanoic acid (PFNA)	12	J H	23	7.8	ng/L		07/03/17 09:49	07/07/17 01:20	1
Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	5.4	ng/L		07/03/17 09:49	07/07/17 01:20	1
Perfluoroheptanoic acid (PFHpA)	8.0	J H	9.7	1.9	ng/L		07/03/17 09:49	07/07/17 01:20	1

TestAmerica Sacramento

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-258A

Lab Sample ID: 320-28916-5

Date Collected: 06/07/17 09:55

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RE (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	35	U H	88	16	ng/L		07/03/17 09:49	07/07/17 01:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		70 - 130				07/03/17 09:49	07/07/17 01:20	1
13C2 PFDA	97		70 - 130				07/03/17 09:49	07/07/17 01:20	1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RERA

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	18	J H M	39	6.6	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluorooctanoic acid (PFOA)	26	H	19	2.7	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluorononanoic acid (PFNA)	14	J H	23	7.8	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	5.4	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluoroheptanoic acid (PFHpA)	9.0	J H	9.7	1.9	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluorobutanesulfonic acid (PFBS)	35	U H	88	16	ng/L		07/03/17 09:49	07/19/17 18:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	75		70 - 130				07/03/17 09:49	07/19/17 18:40	1
13C2 PFDA	91		70 - 130				07/03/17 09:49	07/19/17 18:40	1

Client Sample ID: NAWC-060717-FRB-258A

Lab Sample ID: 320-28916-6

Date Collected: 06/07/17 09:50

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	16	U	39	6.6	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluorooctanoic acid (PFOA)	7.8	U	19	2.7	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluorononanoic acid (PFNA)	19	U	23	7.8	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluorohexanesulfonic acid (PFHxS)	12	U	29	5.3	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluoroheptanoic acid (PFHpA)	3.9	U	9.7	1.8	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluorobutanesulfonic acid (PFBS)	35	U	87	16	ng/L		06/19/17 09:24	06/28/17 17:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		70 - 130				06/19/17 09:24	06/28/17 17:51	1
13C2 PFDA	90		70 - 130				06/19/17 09:24	06/28/17 17:51	1

Client Sample ID: NAWC-060717-RW-145

Lab Sample ID: 320-28916-7

Date Collected: 06/07/17 13:05

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	18	J	39	6.6	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluorooctanoic acid (PFOA)	20		19	2.7	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluorononanoic acid (PFNA)	19	U	23	7.7	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluorohexanesulfonic acid (PFHxS)	8.1	J	29	5.3	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluoroheptanoic acid (PFHpA)	6.6	J	9.7	1.8	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluorobutanesulfonic acid (PFBS)	35	U M	87	16	ng/L		06/19/17 09:24	06/23/17 23:21	1

TestAmerica Sacramento

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-145

Date Collected: 06/07/17 13:05

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-7

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		70 - 130	06/19/17 09:24	06/23/17 23:21	1
13C2 PFDA	68	Q	70 - 130	06/19/17 09:24	06/23/17 23:21	1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RE

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	18	J H M	41	6.9	ng/L	—	07/03/17 09:49	07/07/17 01:25	1
Perfluorooctanoic acid (PFOA)	20	H	20	2.9	ng/L		07/03/17 09:49	07/07/17 01:25	1
Perfluorononanoic acid (PFNA)	20	U H	25	8.2	ng/L		07/03/17 09:49	07/07/17 01:25	1
Perfluorohexanesulfonic acid (PFHxS)	8.4	J H	31	5.6	ng/L		07/03/17 09:49	07/07/17 01:25	1
Perfluoroheptanoic acid (PFHpA)	6.1	J H	10	1.9	ng/L		07/03/17 09:49	07/07/17 01:25	1
Perfluorobutanesulfonic acid (PFBS)	37	U H	92	16	ng/L		07/03/17 09:49	07/07/17 01:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		70 - 130	07/03/17 09:49	07/07/17 01:25	1
13C2 PFDA	95		70 - 130	07/03/17 09:49	07/07/17 01:25	1

Client Sample ID: NAWC-060717-FRB-145

Date Collected: 06/07/17 13:00

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-8

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U	37	6.4	ng/L	—	06/19/17 09:24	06/23/17 23:36	1
Perfluorooctanoic acid (PFOA)	7.5	U	19	2.6	ng/L		06/19/17 09:24	06/23/17 23:36	1
Perfluorononanoic acid (PFNA)	19	U	22	7.5	ng/L		06/19/17 09:24	06/23/17 23:36	1
Perfluorohexanesulfonic acid (PFHxS)	11	U	28	5.1	ng/L		06/19/17 09:24	06/23/17 23:36	1
Perfluoroheptanoic acid (PFHpA)	3.7	U	9.4	1.8	ng/L		06/19/17 09:24	06/23/17 23:36	1
Perfluorobutanesulfonic acid (PFBS)	34	U	84	15	ng/L		06/19/17 09:24	06/23/17 23:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		70 - 130	06/19/17 09:24	06/23/17 23:36	1
13C2 PFDA	77		70 - 130	06/19/17 09:24	06/23/17 23:36	1

Client Sample ID: NAWC-060717-RW-162

Date Collected: 06/07/17 13:50

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-9

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	28	J	39	6.6	ng/L	—	06/19/17 09:24	06/23/17 23:40	1
Perfluorooctanoic acid (PFOA)	15	J	19	2.7	ng/L		06/19/17 09:24	06/23/17 23:40	1
Perfluorononanoic acid (PFNA)	19	U	23	7.8	ng/L		06/19/17 09:24	06/23/17 23:40	1
Perfluorohexanesulfonic acid (PFHxS)	13	J	29	5.3	ng/L		06/19/17 09:24	06/23/17 23:40	1
Perfluoroheptanoic acid (PFHpA)	4.7	J	9.7	1.8	ng/L		06/19/17 09:24	06/23/17 23:40	1
Perfluorobutanesulfonic acid (PFBS)	35	U M	88	16	ng/L		06/19/17 09:24	06/23/17 23:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		70 - 130	06/19/17 09:24	06/23/17 23:40	1

TestAmerica Sacramento

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-162

Date Collected: 06/07/17 13:50

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-9

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	86		70 - 130	06/19/17 09:24	06/23/17 23:40	1

Client Sample ID: NAWC-060717-FRB-162

Date Collected: 06/07/17 13:45

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-10

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U	38	6.5	ng/L		06/19/17 09:24	06/28/17 18:19	1
Perfluorooctanoic acid (PFOA)	7.6	U	19	2.7	ng/L		06/19/17 09:24	06/28/17 18:19	1
Perfluorononanoic acid (PFNA)	19	U	23	7.6	ng/L		06/19/17 09:24	06/28/17 18:19	1
Perfluorohexanesulfonic acid (PFHxS)	11	U	29	5.3	ng/L		06/19/17 09:24	06/28/17 18:19	1
Perfluoroheptanoic acid (PFHpA)	3.8	U	9.6	1.8	ng/L		06/19/17 09:24	06/28/17 18:19	1
Perfluorobutanesulfonic acid (PFBS)	34	U	86	15	ng/L		06/19/17 09:24	06/28/17 18:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		70 - 130				06/19/17 09:24	06/28/17 18:19	1
13C2 PFDA	92		70 - 130				06/19/17 09:24	06/28/17 18:19	1

Client Sample ID: NAWC-060717-RW-206B

Date Collected: 06/07/17 08:10

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-11

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U	38	6.5	ng/L		06/19/17 09:24	06/23/17 23:50	1
Perfluorooctanoic acid (PFOA)	7.7	U	19	2.7	ng/L		06/19/17 09:24	06/23/17 23:50	1
Perfluorononanoic acid (PFNA)	19	U	23	7.7	ng/L		06/19/17 09:24	06/23/17 23:50	1
Perfluorohexanesulfonic acid (PFHxS)	12	U	29	5.3	ng/L		06/19/17 09:24	06/23/17 23:50	1
Perfluoroheptanoic acid (PFHpA)	3.8	U	9.6	1.8	ng/L		06/19/17 09:24	06/23/17 23:50	1
Perfluorobutanesulfonic acid (PFBS)	35	U	87	15	ng/L		06/19/17 09:24	06/23/17 23:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		70 - 130				06/19/17 09:24	06/23/17 23:50	1
13C2 PFDA	66	Q	70 - 130				06/19/17 09:24	06/23/17 23:50	1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RE

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	16	U H	39	6.6	ng/L		07/03/17 09:49	07/07/17 01:29	1
Perfluorooctanoic acid (PFOA)	7.8	U H	19	2.7	ng/L		07/03/17 09:49	07/07/17 01:29	1
Perfluorononanoic acid (PFNA)	19	U H	23	7.8	ng/L		07/03/17 09:49	07/07/17 01:29	1
Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	5.4	ng/L		07/03/17 09:49	07/07/17 01:29	1
Perfluoroheptanoic acid (PFHpA)	3.9	U H	9.7	1.8	ng/L		07/03/17 09:49	07/07/17 01:29	1
Perfluorobutanesulfonic acid (PFBS)	35	U H	88	16	ng/L		07/03/17 09:49	07/07/17 01:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		70 - 130				07/03/17 09:49	07/07/17 01:29	1
13C2 PFDA	92		70 - 130				07/03/17 09:49	07/07/17 01:29	1

TestAmerica Sacramento

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-258B

Lab Sample ID: 320-28916-12

Date Collected: 06/07/17 09:55

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U	38	6.5	ng/L		06/19/17 09:24	06/28/17 18:29	1
Perfluorooctanoic acid (PFOA)	7.6	U	19	2.7	ng/L		06/19/17 09:24	06/28/17 18:29	1
Perfluorononanoic acid (PFNA)	19	U	23	7.6	ng/L		06/19/17 09:24	06/28/17 18:29	1
Perfluorohexanesulfonic acid (PFHxS)	11	U	29	5.3	ng/L		06/19/17 09:24	06/28/17 18:29	1
Perfluoroheptanoic acid (PFHpA)	3.8	U	9.5	1.8	ng/L		06/19/17 09:24	06/28/17 18:29	1
Perfluorobutanesulfonic acid (PFBS)	34	U	86	15	ng/L		06/19/17 09:24	06/28/17 18:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	89		70 - 130	06/19/17 09:24	06/28/17 18:29	1
13C2 PFDA	91		70 - 130	06/19/17 09:24	06/28/17 18:29	1

Client Sample ID: NAWC-060717-RW-56

Lab Sample ID: 320-28916-13

Date Collected: 06/07/17 15:10

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	21	J	39	6.6	ng/L		06/19/17 09:24	06/23/17 23:59	1
Perfluorooctanoic acid (PFOA)	26		19	2.7	ng/L		06/19/17 09:24	06/23/17 23:59	1
Perfluorononanoic acid (PFNA)	19	U	23	7.8	ng/L		06/19/17 09:24	06/23/17 23:59	1
Perfluorohexanesulfonic acid (PFHxS)	9.6	J	29	5.3	ng/L		06/19/17 09:24	06/23/17 23:59	1
Perfluoroheptanoic acid (PFHpA)	9.8		9.7	1.8	ng/L		06/19/17 09:24	06/23/17 23:59	1
Perfluorobutanesulfonic acid (PFBS)	35	U M	87	16	ng/L		06/19/17 09:24	06/23/17 23:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	75		70 - 130	06/19/17 09:24	06/23/17 23:59	1
13C2 PFDA	78		70 - 130	06/19/17 09:24	06/23/17 23:59	1

Client Sample ID: NAWC-060717-FRB-56

Lab Sample ID: 320-28916-14

Date Collected: 06/07/17 15:05

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U	37	6.3	ng/L		06/19/17 09:24	06/24/17 00:04	1
Perfluorooctanoic acid (PFOA)	7.5	U	19	2.6	ng/L		06/19/17 09:24	06/24/17 00:04	1
Perfluorononanoic acid (PFNA)	19	U	22	7.5	ng/L		06/19/17 09:24	06/24/17 00:04	1
Perfluorohexanesulfonic acid (PFHxS)	11	U	28	5.1	ng/L		06/19/17 09:24	06/24/17 00:04	1
Perfluoroheptanoic acid (PFHpA)	3.7	U	9.3	1.8	ng/L		06/19/17 09:24	06/24/17 00:04	1
Perfluorobutanesulfonic acid (PFBS)	34	U	84	15	ng/L		06/19/17 09:24	06/24/17 00:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		70 - 130	06/19/17 09:24	06/24/17 00:04	1
13C2 PFDA	70		70 - 130	06/19/17 09:24	06/24/17 00:04	1

TestAmerica Sacramento

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-DUP02

Lab Sample ID: 320-28916-15

Date Collected: 06/07/17 07:00

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	17	J	37	6.3	ng/L		06/19/17 09:24	06/24/17 00:09	1
Perfluorooctanoic acid (PFOA)	20		19	2.6	ng/L		06/19/17 09:24	06/24/17 00:09	1
Perfluorononanoic acid (PFNA)	19	U	22	7.4	ng/L		06/19/17 09:24	06/24/17 00:09	1
Perfluorohexanesulfonic acid (PFHxS)	7.8	J	28	5.1	ng/L		06/19/17 09:24	06/24/17 00:09	1
Perfluoroheptanoic acid (PFHpA)	6.2	J	9.3	1.8	ng/L		06/19/17 09:24	06/24/17 00:09	1
Perfluorobutanesulfonic acid (PFBS)	33	U M	83	15	ng/L		06/19/17 09:24	06/24/17 00:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		70 - 130	06/19/17 09:24	06/24/17 00:09	1
13C2 PFDA	77		70 - 130	06/19/17 09:24	06/24/17 00:09	1

Default Detection Limits

Client: Tetra Tech, Inc.

TestAmerica Job ID: 320-28916-1

Project/Site: TetraT: PFAS, NAS JRB Willow Grove

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Prep: 537

Analyte	LOQ	DL	Units	Method
Perfluorobutanesulfonic acid (PFBS)	90	16	ng/L	537
Perfluoroheptanoic acid (PFHpA)	10	1.9	ng/L	537
Perfluorohexanesulfonic acid (PFHxS)	30	5.5	ng/L	537
Perfluorononanoic acid (PFNA)	24	8.0	ng/L	537
Perfluorooctanesulfonic acid (PFOS)	40	6.8	ng/L	537
Perfluorooctanoic acid (PFOA)	20	2.8	ng/L	537

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		3C2 PFHx (70-130)	3C2 PFD/ (70-130)
320-28916-1	NAWC-060717-RW-206A	73	76
320-28916-2	NAWC-060717-FRB-206A	83	93
320-28916-3	NAWC-060717-RW-79	74	79
320-28916-4	NAWC-060717-FRB-79	17 Q	16 Q
320-28916-4 - RE	NAWC-060717-FRB-79	90	93
320-28916-5	NAWC-060717-RW-258A	48236 Q	46396 Q
320-28916-5 - RE	NAWC-060717-RW-258A	84	97
320-28916-5 - RERA	NAWC-060717-RW-258A	75	91
320-28916-6	NAWC-060717-FRB-258A	82	90
320-28916-7	NAWC-060717-RW-145	83	68 Q
320-28916-7 - RE	NAWC-060717-RW-145	91	95
320-28916-8	NAWC-060717-FRB-145	91	77
320-28916-9	NAWC-060717-RW-162	81	86
320-28916-10	NAWC-060717-FRB-162	84	92
320-28916-11	NAWC-060717-RW-206B	92	66 Q
320-28916-11 - RE	NAWC-060717-RW-206B	92	92
320-28916-12	NAWC-060717-RW-258B	89	91
320-28916-13	NAWC-060717-RW-56	75	78
320-28916-14	NAWC-060717-FRB-56	85	70
320-28916-15	NAWC-060717-DUP02	80	77
LCS 320-169764/2-A	Lab Control Sample	91	81
LCSD 320-169764/3-A	Lab Control Sample Dup	93	68 Q
LLCS 320-172119/2-A	Lab Control Sample	91	94
LLCSD 320-172119/3-A	Lab Control Sample Dup	97	97
MB 320-169764/1-A	Method Blank	90	72
MB 320-172119/1-A	Method Blank	92	91

Surrogate Legend

13C2 PFHxA = 13C2 PFHxA

13C2 PFDA = 13C2 PFDA

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Lab Sample ID: MB 320-169764/1-A

Matrix: Water

Analysis Batch: 170757

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 169764

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	16	U	40	6.8	ng/L		06/19/17 09:24	06/23/17 22:39	1
Perfluorooctanoic acid (PFOA)	8.0	U	20	2.8	ng/L		06/19/17 09:24	06/23/17 22:39	1
Perfluorononanoic acid (PFNA)	20	U	24	8.0	ng/L		06/19/17 09:24	06/23/17 22:39	1
Perfluorohexanesulfonic acid (PFHxS)	12	U	30	5.5	ng/L		06/19/17 09:24	06/23/17 22:39	1
Perfluoroheptanoic acid (PFHpA)	4.0	U	10	1.9	ng/L		06/19/17 09:24	06/23/17 22:39	1
Perfluorobutanesulfonic acid (PFBS)	36	U	90	16	ng/L		06/19/17 09:24	06/23/17 22:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		70 - 130	06/19/17 09:24	06/23/17 22:39	1
13C2 PFDA	72		70 - 130	06/19/17 09:24	06/23/17 22:39	1

Lab Sample ID: LCS 320-169764/2-A

Matrix: Water

Analysis Batch: 170757

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 169764

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	160	157		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	79.9	82.3		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	77.0	66.1		ng/L		86	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	122		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	39.6	45.4		ng/L		115	70 - 130
Perfluorobutanesulfonic acid (PFBS)	353	383		ng/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	91		70 - 130
13C2 PFDA	81		70 - 130

Lab Sample ID: LCSD 320-169764/3-A

Matrix: Water

Analysis Batch: 170757

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 169764

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS)	160	152		ng/L		95	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	79.9	79.6		ng/L		100	70 - 130	3	30
Perfluorononanoic acid (PFNA)	77.0	61.8		ng/L		80	70 - 130	7	30
Perfluorohexanesulfonic acid (PFHxS)	120	123		ng/L		102	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	39.6	44.5		ng/L		112	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	353	393		ng/L		111	70 - 130	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
13C2 PFHxA	93		70 - 130
13C2 PFDA	68	Q	70 - 130

TestAmerica Sacramento

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: MB 320-172119/1-A

Matrix: Water

Analysis Batch: 172925

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172119

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	16	U	40	6.8	ng/L	—	07/03/17 09:49	07/07/17 01:01	1
Perfluorooctanoic acid (PFOA)	8.0	U	20	2.8	ng/L	—	07/03/17 09:49	07/07/17 01:01	1
Perfluorononanoic acid (PFNA)	20	U	24	8.0	ng/L	—	07/03/17 09:49	07/07/17 01:01	1
Perfluorohexanesulfonic acid (PFHxS)	12	U	30	5.5	ng/L	—	07/03/17 09:49	07/07/17 01:01	1
Perfluoroheptanoic acid (PFHpA)	4.0	U	10	1.9	ng/L	—	07/03/17 09:49	07/07/17 01:01	1
Perfluorobutanesulfonic acid (PFBS)	36	U	90	16	ng/L	—	07/03/17 09:49	07/07/17 01:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		70 - 130	07/03/17 09:49	07/07/17 01:01	1
13C2 PFDA	91		70 - 130	07/03/17 09:49	07/07/17 01:01	1

Lab Sample ID: LLCS 320-172119/2-A

Matrix: Water

Analysis Batch: 172925

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 172119

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	40.0	38.5	J M	ng/L	—	96	50 - 150
Perfluorooctanoic acid (PFOA)	20.0	19.9	J	ng/L	—	99	50 - 150
Perfluorononanoic acid (PFNA)	19.3	19.4	J	ng/L	—	101	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	30.1	29.3	J	ng/L	—	97	50 - 150
Perfluoroheptanoic acid (PFHpA)	9.90	10.7		ng/L	—	109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	88.3	94.1		ng/L	—	107	50 - 150

Surrogate	LLCS %Recovery	LLCS Qualifier	Limits
13C2 PFHxA	91		70 - 130
13C2 PFDA	94		70 - 130

Lab Sample ID: LLCSD 320-172119/3-A

Matrix: Water

Analysis Batch: 172925

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 172119

Analyte	Spike Added	LLCSD Result	LLCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS)	40.0	39.4	J M	ng/L	—	98	50 - 150	2	50
Perfluorooctanoic acid (PFOA)	20.0	20.9		ng/L	—	105	50 - 150	5	50
Perfluorononanoic acid (PFNA)	19.3	19.4	J	ng/L	—	101	50 - 150	0	50
Perfluorohexanesulfonic acid (PFHxS)	30.1	28.3	J	ng/L	—	94	50 - 150	3	50
Perfluoroheptanoic acid (PFHpA)	9.90	11.1		ng/L	—	112	50 - 150	3	50
Perfluorobutanesulfonic acid (PFBS)	88.3	94.2		ng/L	—	107	50 - 150	0.07	50

Surrogate	LLCSD %Recovery	LLCSD Qualifier	Limits
13C2 PFHxA	97		70 - 130
13C2 PFDA	97		70 - 130

TestAmerica Sacramento

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

LCMS

Prep Batch: 169764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28916-1	NAWC-060717-RW-206A	Total/NA	Water	537	
320-28916-2	NAWC-060717-FRB-206A	Total/NA	Water	537	
320-28916-3	NAWC-060717-RW-79	Total/NA	Water	537	
320-28916-4	NAWC-060717-FRB-79	Total/NA	Water	537	
320-28916-5	NAWC-060717-RW-258A	Total/NA	Water	537	
320-28916-6	NAWC-060717-FRB-258A	Total/NA	Water	537	
320-28916-7	NAWC-060717-RW-145	Total/NA	Water	537	
320-28916-8	NAWC-060717-FRB-145	Total/NA	Water	537	
320-28916-9	NAWC-060717-RW-162	Total/NA	Water	537	
320-28916-10	NAWC-060717-FRB-162	Total/NA	Water	537	
320-28916-11	NAWC-060717-RW-206B	Total/NA	Water	537	
320-28916-12	NAWC-060717-RW-258B	Total/NA	Water	537	
320-28916-13	NAWC-060717-RW-56	Total/NA	Water	537	
320-28916-14	NAWC-060717-FRB-56	Total/NA	Water	537	
320-28916-15	NAWC-060717-DUP02	Total/NA	Water	537	
MB 320-169764/1-A	Method Blank	Total/NA	Water	537	
LCS 320-169764/2-A	Lab Control Sample	Total/NA	Water	537	
LCSD 320-169764/3-A	Lab Control Sample Dup	Total/NA	Water	537	

Analysis Batch: 170757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28916-1	NAWC-060717-RW-206A	Total/NA	Water	537	169764
320-28916-3	NAWC-060717-RW-79	Total/NA	Water	537	169764
320-28916-4	NAWC-060717-FRB-79	Total/NA	Water	537	169764
320-28916-5	NAWC-060717-RW-258A	Total/NA	Water	537	169764
320-28916-7	NAWC-060717-RW-145	Total/NA	Water	537	169764
MB 320-169764/1-A	Method Blank	Total/NA	Water	537	169764
LCS 320-169764/2-A	Lab Control Sample	Total/NA	Water	537	169764
LCSD 320-169764/3-A	Lab Control Sample Dup	Total/NA	Water	537	169764

Analysis Batch: 170758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28916-8	NAWC-060717-FRB-145	Total/NA	Water	537	169764
320-28916-9	NAWC-060717-RW-162	Total/NA	Water	537	169764
320-28916-11	NAWC-060717-RW-206B	Total/NA	Water	537	169764
320-28916-13	NAWC-060717-RW-56	Total/NA	Water	537	169764
320-28916-14	NAWC-060717-FRB-56	Total/NA	Water	537	169764
320-28916-15	NAWC-060717-DUP02	Total/NA	Water	537	169764

Analysis Batch: 171486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28916-2	NAWC-060717-FRB-206A	Total/NA	Water	537	169764
320-28916-6	NAWC-060717-FRB-258A	Total/NA	Water	537	169764

Analysis Batch: 171487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28916-10	NAWC-060717-FRB-162	Total/NA	Water	537	169764
320-28916-12	NAWC-060717-RW-258B	Total/NA	Water	537	169764

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

LCMS (Continued)

Prep Batch: 172119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28916-4 - RE	NAWC-060717-FRB-79	Total/NA	Water	537	
320-28916-5 - RERA	NAWC-060717-RW-258A	Total/NA	Water	537	
320-28916-5 - RE	NAWC-060717-RW-258A	Total/NA	Water	537	
320-28916-7 - RE	NAWC-060717-RW-145	Total/NA	Water	537	
320-28916-11 - RE	NAWC-060717-RW-206B	Total/NA	Water	537	
MB 320-172119/1-A	Method Blank	Total/NA	Water	537	
LLCS 320-172119/2-A	Lab Control Sample	Total/NA	Water	537	
LLCSD 320-172119/3-A	Lab Control Sample Dup	Total/NA	Water	537	

Analysis Batch: 172925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28916-4 - RE	NAWC-060717-FRB-79	Total/NA	Water	537	172119
320-28916-5 - RE	NAWC-060717-RW-258A	Total/NA	Water	537	172119
320-28916-7 - RE	NAWC-060717-RW-145	Total/NA	Water	537	172119
320-28916-11 - RE	NAWC-060717-RW-206B	Total/NA	Water	537	172119
MB 320-172119/1-A	Method Blank	Total/NA	Water	537	172119
LLCS 320-172119/2-A	Lab Control Sample	Total/NA	Water	537	172119
LLCSD 320-172119/3-A	Lab Control Sample Dup	Total/NA	Water	537	172119

Analysis Batch: 174993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28916-5 - RERA	NAWC-060717-RW-258A	Total/NA	Water	537	172119

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-206A

Date Collected: 06/07/17 08:10

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170757	06/23/17 22:53	JRB	TAL SAC

Client Sample ID: NAWC-060717-FRB-206A

Date Collected: 06/07/17 08:05

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	171486	06/28/17 17:32	JRB	TAL SAC

Client Sample ID: NAWC-060717-RW-79

Date Collected: 06/07/17 09:10

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170757	06/23/17 23:02	JRB	TAL SAC

Client Sample ID: NAWC-060717-FRB-79

Date Collected: 06/07/17 09:05

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170757	06/23/17 23:07	JRB	TAL SAC
Total/NA	Prep	537	RE		172119	07/03/17 09:49	CCB	TAL SAC
Total/NA	Analysis	537	RE	1	172925	07/07/17 01:15	JRB	TAL SAC

Client Sample ID: NAWC-060717-RW-258A

Date Collected: 06/07/17 09:55

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537	RERA		172119	07/03/17 09:49	CCB	TAL SAC
Total/NA	Analysis	537	RERA	1	174993	07/19/17 18:40	JRB	TAL SAC
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170757	06/23/17 23:12	JRB	TAL SAC
Total/NA	Prep	537	RE		172119	07/03/17 09:49	CCB	TAL SAC
Total/NA	Analysis	537	RE	1	172925	07/07/17 01:20	JRB	TAL SAC

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-FRB-258A

Date Collected: 06/07/17 09:50

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	171486	06/28/17 17:51	JRB	TAL SAC

Client Sample ID: NAWC-060717-RW-145

Date Collected: 06/07/17 13:05

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170757	06/23/17 23:21	JRB	TAL SAC
Total/NA	Prep	537	RE		172119	07/03/17 09:49	CCB	TAL SAC
Total/NA	Analysis	537	RE	1	172925	07/07/17 01:25	JRB	TAL SAC

Client Sample ID: NAWC-060717-FRB-145

Date Collected: 06/07/17 13:00

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170758	06/23/17 23:36	JRB	TAL SAC

Client Sample ID: NAWC-060717-RW-162

Date Collected: 06/07/17 13:50

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170758	06/23/17 23:40	JRB	TAL SAC

Client Sample ID: NAWC-060717-FRB-162

Date Collected: 06/07/17 13:45

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	171487	06/28/17 18:19	JRB	TAL SAC

Client Sample ID: NAWC-060717-RW-206B

Date Collected: 06/07/17 08:10

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-206B

Lab Sample ID: 320-28916-11

Date Collected: 06/07/17 08:10

Matrix: Water

Date Received: 06/08/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	537		1	170758	06/23/17 23:50	JRB	TAL SAC
Total/NA	Prep	537	RE		172119	07/03/17 09:49	CCB	TAL SAC
Total/NA	Analysis	537	RE	1	172925	07/07/17 01:29	JRB	TAL SAC

Client Sample ID: NAWC-060717-RW-258B

Lab Sample ID: 320-28916-12

Date Collected: 06/07/17 09:55

Matrix: Water

Date Received: 06/08/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	171487	06/28/17 18:29	JRB	TAL SAC

Client Sample ID: NAWC-060717-RW-56

Lab Sample ID: 320-28916-13

Date Collected: 06/07/17 15:10

Matrix: Water

Date Received: 06/08/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170758	06/23/17 23:59	JRB	TAL SAC

Client Sample ID: NAWC-060717-FRB-56

Lab Sample ID: 320-28916-14

Date Collected: 06/07/17 15:05

Matrix: Water

Date Received: 06/08/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170758	06/24/17 00:04	JRB	TAL SAC

Client Sample ID: NAWC-060717-DUP02

Lab Sample ID: 320-28916-15

Date Collected: 06/07/17 07:00

Matrix: Water

Date Received: 06/08/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			169764	06/19/17 09:24	NS1	TAL SAC
Total/NA	Analysis	537		1	170758	06/24/17 00:09	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Laboratory: TestAmerica Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Oregon	NELAP	10	4040	01-28-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
537	537	Water	Perfluorobutanesulfonic acid (PFBS)
537	537	Water	Perfluoroheptanoic acid (PFHpA)
537	537	Water	Perfluorohexanesulfonic acid (PFHxS)
537	537	Water	Perfluorononanoic acid (PFNA)
537	537	Water	Perfluorooctanesulfonic acid (PFOS)
537	537	Water	Perfluorooctanoic acid (PFOA)

Method Summary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Method	Method Description	Protocol	Laboratory
537	Perfluorinated Alkyl Acids (LC/MS)	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

Client: Tetra Tech, Inc.

TestAmerica Job ID: 320-28916-1

Project/Site: TetraT: PFAS, NAS JRB Willow Grove

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-28916-1	NAWC-060717-RW-206A	Water	06/07/17 08:10	06/08/17 09:30
320-28916-2	NAWC-060717-FRB-206A	Water	06/07/17 08:05	06/08/17 09:30
320-28916-3	NAWC-060717-RW-79	Water	06/07/17 09:10	06/08/17 09:30
320-28916-4	NAWC-060717-FRB-79	Water	06/07/17 09:05	06/08/17 09:30
320-28916-5	NAWC-060717-RW-258A	Water	06/07/17 09:55	06/08/17 09:30
320-28916-6	NAWC-060717-FRB-258A	Water	06/07/17 09:50	06/08/17 09:30
320-28916-7	NAWC-060717-RW-145	Water	06/07/17 13:05	06/08/17 09:30
320-28916-8	NAWC-060717-FRB-145	Water	06/07/17 13:00	06/08/17 09:30
320-28916-9	NAWC-060717-RW-162	Water	06/07/17 13:50	06/08/17 09:30
320-28916-10	NAWC-060717-FRB-162	Water	06/07/17 13:45	06/08/17 09:30
320-28916-11	NAWC-060717-RW-206B	Water	06/07/17 08:10	06/08/17 09:30
320-28916-12	NAWC-060717-RW-258B	Water	06/07/17 09:55	06/08/17 09:30
320-28916-13	NAWC-060717-RW-56	Water	06/07/17 15:10	06/08/17 09:30
320-28916-14	NAWC-060717-FRB-56	Water	06/07/17 15:05	06/08/17 09:30
320-28916-15	NAWC-060717-DUP02	Water	06/07/17 07:00	06/08/17 09:30

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 173534Lab Sample ID: STD 320-173534/7 IC Client Sample ID: _____Date Analyzed: 07/11/17 14:18 Lab File ID: 11JUL2017A6B_007.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	2.44	Incomplete Integration	barnettj	07/11/17 15:17
Perfluorohexanesulfonic acid (PFHxS)	3.07	Isomers	barnettj	07/11/17 15:18
Perfluorooctanoic acid (PFOA)	3.42	Baseline	barnettj	07/11/17 15:19
Perfluorooctanesulfonic acid (PFOS)	3.85	Isomers	barnettj	07/11/17 15:19

Lab Sample ID: STD 320-173534/8 IC Client Sample ID: _____Date Analyzed: 07/11/17 14:29 Lab File ID: 11JUL2017A6B_008.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	3.07	Isomers	barnettj	07/11/17 15:20
Perfluorooctanoic acid (PFOA)	3.42	Baseline	barnettj	07/11/17 15:20
Perfluorooctanesulfonic acid (PFOS)	3.84	Isomers	barnettj	07/11/17 15:20

Lab Sample ID: STD 320-173534/9 IC Client Sample ID: _____Date Analyzed: 07/11/17 14:38 Lab File ID: 11JUL2017A6B_009.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	2.44	Incomplete Integration	barnettj	07/11/17 15:21
Perfluorohexanesulfonic acid (PFHxS)	3.07	Isomers	barnettj	07/11/17 15:21
Perfluorooctanesulfonic acid (PFOS)	3.84	Isomers	barnettj	07/11/17 15:27

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 173534Lab Sample ID: STD 320-173534/10 ICISA Client Sample ID: _____Date Analyzed: 07/11/17 14:47 Lab File ID: 11JUL2017A6B_010.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	3.07	Isomers	barnettj	07/11/17 15:41
Perfluorononanoic acid (PFNA)	3.84	Incomplete Integration	barnettj	07/11/17 15:49
Perfluorooctanesulfonic acid (PFOS)	3.84	Isomers	barnettj	07/11/17 15:48

Lab Sample ID: STD 320-173534/11 IC Client Sample ID: _____Date Analyzed: 07/11/17 14:56 Lab File ID: 11JUL2017A6B_011.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	3.07	Isomers	barnettj	07/11/17 15:23
Perfluorooctanesulfonic acid (PFOS)	3.83	Isomers	barnettj	07/11/17 15:23
Perfluorononanoic acid (PFNA)	3.84	Incomplete Integration	barnettj	07/11/17 15:24

Lab Sample ID: STD 320-173534/12 IC Client Sample ID: _____Date Analyzed: 07/11/17 15:05 Lab File ID: 11JUL2017A6B_012.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	2.45	Incomplete Integration	barnettj	07/11/17 15:24
Perfluorohexanesulfonic acid (PFHxS)	3.07	Isomers	barnettj	07/11/17 15:24
Perfluorooctanesulfonic acid (PFOS)	3.83	Isomers	barnettj	07/11/17 15:25

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 173534Lab Sample ID: CCVL 320-173534/14 Client Sample ID: _____Date Analyzed: 07/11/17 15:23 Lab File ID: 11JUL2017A6B_014.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	3.07	Isomers	barnettj	07/11/17 15:52
Perfluorooctanesulfonic acid (PFOS)	3.82	Isomers	barnettj	07/11/17 15:52

Lab Sample ID: ICV 320-173534/16 Client Sample ID: _____Date Analyzed: 07/11/17 15:42 Lab File ID: 11JUL2017A6B_016.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	3.07	Isomers	barnettj	07/11/17 15:57
Perfluorooctanesulfonic acid (PFOS)	3.82	Isomers	barnettj	07/11/17 15:58

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 174993Lab Sample ID: CCV 320-174993/35 CCVIS Client Sample ID: _____Date Analyzed: 07/19/17 18:13 Lab File ID: 19JUL2017A6_035.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.62	Isomers	barnettj	07/20/17 10:00

Lab Sample ID: 320-28916-5 RERA Client Sample ID: NAWC-060717-RW-258A RERADate Analyzed: 07/19/17 18:40 Lab File ID: 19JUL2017A6_038.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.63	Isomers	barnettj	07/20/17 10:01

Lab Sample ID: CCV 320-174993/39 CCVIS Client Sample ID: _____Date Analyzed: 07/19/17 18:49 Lab File ID: 19JUL2017A6_039.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.64	Isomers	barnettj	07/20/17 10:02

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 170757Lab Sample ID: 320-28916-1 Client Sample ID: NAWC-060717-RW-206ADate Analyzed: 06/23/17 22:53 Lab File ID: 2017.06.23_537_021.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	2.31	Baseline	barnettj	06/26/17 13:25

Lab Sample ID: 320-28916-3 Client Sample ID: NAWC-060717-RW-79Date Analyzed: 06/23/17 23:02 Lab File ID: 2017.06.23_537_023.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	2.32	Baseline	barnettj	06/26/17 13:33

Lab Sample ID: 320-28916-5 Client Sample ID: _____Date Analyzed: 06/23/17 23:12 Lab File ID: 2017.06.23_537_025.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C2-PFOA	2.99	Missed Peak	barnettj	06/26/17 13:37

Lab Sample ID: 320-28916-7 Client Sample ID: NAWC-060717-RW-145Date Analyzed: 06/23/17 23:21 Lab File ID: 2017.06.23_537_027.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	2.32	Baseline	barnettj	06/26/17 13:44

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 170758Lab Sample ID: 320-28916-9 Client Sample ID: NAWC-060717-RW-162Date Analyzed: 06/23/17 23:40 Lab File ID: 2017.06.23_537_031.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	2.32	Baseline	barnettj	06/26/17 13:39

Lab Sample ID: 320-28916-13 Client Sample ID: NAWC-060717-RW-56Date Analyzed: 06/23/17 23:59 Lab File ID: 2017.06.23_537_035.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	2.32	Baseline	barnettj	06/26/17 13:45

Lab Sample ID: 320-28916-15 Client Sample ID: NAWC-060717-DUP02Date Analyzed: 06/24/17 00:09 Lab File ID: 2017.06.23_537_037.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	2.31	Baseline	barnettj	06/26/17 13:41

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 172646Lab Sample ID: IC 320-172646/4 Client Sample ID: _____Date Analyzed: 07/05/17 19:50 Lab File ID: 2017.07.05_537CURVE_004.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid (PFHpA)	1.69	Missed Peak	barnettj	07/06/17 11:03

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 172925Lab Sample ID: CCV 320-172925/21 CCVIS Client Sample ID: _____Date Analyzed: 07/07/17 00:51 Lab File ID: 2017.07.06_537A_021.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.10	Missed Peak	barnettj	07/07/17 10:09

Lab Sample ID: LLCS 320-172119/2-A Client Sample ID: _____Date Analyzed: 07/07/17 01:06 Lab File ID: 2017.07.06_537A_024.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.10	Isomers	barnettj	07/07/17 11:16

Lab Sample ID: LLCSD 320-172119/3-A Client Sample ID: _____Date Analyzed: 07/07/17 01:10 Lab File ID: 2017.07.06_537A_025.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.11	Isomers	barnettj	07/07/17 11:16

Lab Sample ID: 320-28916-5 RE Client Sample ID: NAWC-060717-RW-258A REDate Analyzed: 07/07/17 01:20 Lab File ID: 2017.07.06_537A_027.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	1.87	Isomers	barnettj	07/07/17 11:23
Perfluorooctanesulfonic acid (PFOS)	2.10	Missed Peak	barnettj	07/07/17 11:24

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Analysis Batch Number: 172925Lab Sample ID: 320-28916-7 RE Client Sample ID: NAWC-060717-RW-145 REDate Analyzed: 07/07/17 01:25 Lab File ID: 2017.07.06_537A_028.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.10	Missed Peak	barnettj	07/07/17 11:25

Lab Sample ID: CCV 320-172925/31 CCVIS Client Sample ID: _____Date Analyzed: 07/07/17 01:39 Lab File ID: 2017.07.06_537A_031.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.10	Missed Peak	barnettj	07/07/17 11:23

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
LC537-ICV_00020	07/25/17	02/21/17	MeOH/H2O, Lot 067374	10 mL	LC537-IS_00031	200 uL	13C2-PFOA	10 ng/mL
.LC537-IS_00031	07/31/17	01/31/17	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			LCMPFOS_00019	300 uL	13C4 PFOS	1.434 ug/mL
..LCMPFOS_00019	08/03/21	Wellington Laboratories, Lot MPFOS0816					13C2-PFOA	50 ug/mL
LC537-ICV_00020	07/25/17	02/21/17	MeOH/H2O, Lot 067374	10 mL	LC537-SU_00030	500 uL	13C2 PFDA	10 ng/mL
					LC537ICIM_00015	20 uL	13C2 PFHxA	10 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	100.676 ng/mL
							Perfluoroheptanoic acid (PFHpA)	10.08 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	21.1854 ng/mL
							Perfluorononanoic acid (PFNA)	20.0076 ng/mL
							Perfluorooctanoic acid (PFOA)	20.0186 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	20.6936 ng/mL
.LC537-SU_00030	07/31/17	01/31/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	80 uL	13C2 PFDA	0.2 ug/mL
..LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			LCMPFHxA_00013	80 uL	13C2 PFHxA	0.2 ug/mL
..LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416					13C2 PFDA	50 ug/mL
.LC537ICIM_00015	07/25/17	02/21/17	Methanol, Lot 090285	25 mL	LC537-PFBS2_00007	0.55 mL	13C2 PFHxA	50 ug/mL
					LC537-PFHpA2_00010	0.05 mL	Perfluorobutanesulfonic acid (PFBS)	50.3381 ug/mL
					LC537-PFHxS2_00007	0.13 mL	Perfluoroheptanoic acid (PFHpA)	5.04 ug/mL
					LC537-PFNA2_00008	0.093 mL	Perfluorohexanesulfonic acid (PFHxS)	10.5927 ug/mL
					LC537-PFOA2_00008	0.142 mL	Perfluorononanoic acid (PFNA)	10.0038 ug/mL
					LC537-PFOS2_00007	0.21 mL	Perfluorooctanoic acid (PFOA)	10.0093 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	10.3468 ug/mL
..LC537-PFBS2_00007	08/09/17	02/20/17	Methanol, Lot 090285	8.2 mL	LC537_PFBS2_00001	0.0188 g	Perfluorobutanesulfonic acid (PFBS)	2288.1 ug/mL
...LC537_PFBS2_00001	08/09/17	Santa Cruz Biotechnology, Lot H0112					Perfluorobutanesulfonic acid (PFBS)	0.998 g/g
..LC537-PFHpA2_00010	07/25/17	12/20/16	Methanol, Lot 09092	25 mL	LC537_PFHpA2_00001	0.063 g	Perfluoroheptanoic acid (PFHpA)	2520 ug/mL
...LC537_PFHpA2_00001	07/25/17	Afla Aesar, Lot 10160443					Perfluoroheptanoic acid (PFHpA)	1 g/g
..LC537-PFHxS2_00007	07/25/17	02/20/17	Methanol, Lot 090285	10 mL	LC537_PFHxS2_00001	0.0224 g	Perfluorohexanesulfonic acid (PFHxS)	2037.06 ug/mL
...LC537_PFHxS2_00001	07/25/17	Santa Cruz Biotechnology, Lot F2612					Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
..LC537-PFNA2_00008	07/25/17	12/20/16	Methanol, Lot 090285	10 mL	LC537 PFNA2_00001	0.027 g	Perfluorononanoic acid (PFNA)	2689.2 ug/mL
...LC537 PFNA2_00001	07/25/17	Aldrich, Lot MKBJ2926V					Perfluorononanoic acid (PFNA)	0.996 g/g
..LC537-PFOA2_00008	07/25/17	12/20/16	Methanol, Lot 090285	10 mL	LC537 PFOA2_00001	0.0178 g	Perfluorooctanoic acid (PFOA)	1762.2 ug/mL
...LC537_PFOA2_00001	07/25/17	Afla Aesar, Lot D24Y026					Perfluorooctanoic acid (PFOA)	0.99 g/g

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LC537-PFOS2_00007	07/26/17	02/20/17	Methanol, Lot 090285	11 mL	LC537_PFOS2_00001	0.0174 g	Perfluorooctanesulfonic acid (PFOS)	1231.76 ug/mL
...LC537_PFOS2_00001	07/26/17	Sigma, Lot BCBF5116V			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.7787 g/g
LC537-IS_00038	10/26/17	04/26/17	Methanol, Lot 090285	20000 uL	LCM2PFOA_00005	40 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00019	120 uL	13C4 PFOS	0.2868 ug/mL
.LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCMPFOS_00019	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
LC537-IS_00043	12/19/17	06/20/17	Methanol, Lot 090285	30000 uL	LCM2PFOA_00005	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00019	180 uL	13C4 PFOS	0.2868 ug/mL
.LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCMPFOS_00019	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
LC537-L1_00018	08/09/17	03/23/17	MeOH/H2O, Lot 090285	5 mL	LC537-IS_00034	500 uL	13C2-PFOA	10 ng/mL
					LC537-MSP_00022	50 uL	13C4 PFOS	28.68 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	8.83417 ng/mL
							Perfluoroheptanoic acid (PFHpA)	0.99 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	3.00607 ng/mL
							Perfluorononanoic acid (PFNA)	1.926 ng/mL
							Perfluorooctanoic acid (PFOA)	1.998 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	4.00329 ng/mL
					LC537-SU_00035	500 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-IS_00034	09/22/17	03/22/17	Methanol, Lot 090285	20000 uL	LCM2PFOA_00005	40 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00019	120 uL	13C4 PFOS	0.2868 ug/mL
.LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCMPFOS_00019	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-MSP_00022	08/09/17	03/23/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	200 uL	Perfluorobutanesulfonic acid (PFBS)	883.417 ng/mL
							Perfluoroheptanoic acid (PFHpA)	99 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	300.607 ng/mL
							Perfluorononanoic acid (PFNA)	192.6 ng/mL
							Perfluorooctanoic acid (PFOA)	199.8 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	400.329 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHpA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
					LC537-PFHxS_00009	150 uL	Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537 PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537_PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537_PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-SU_00035	09/22/17	03/22/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	40 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	40 uL	13C2 PFHxA	0.1 ug/mL
..LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L1_00019	08/09/17	07/05/17	MeOH/H2O, Lot 090285	5 mL	LC537-IS_00045	500 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-MSP_00025	50 uL	Perfluorobutanesulfonic acid (PFBS)	8.83417 ng/mL
							Perfluoroheptanoic acid (PFHpA)	0.99 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	3.00607 ng/mL
							Perfluorononanoic acid (PFNA)	1.926 ng/mL
							Perfluorooctanoic acid (PFOA)	1.998 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	4.00329 ng/mL
					LC537-SU_00045	500 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-IS_00045	01/05/18	07/05/17	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
				LCMPFOS_00019	180 uL	13C4 PFOS	0.2868 ug/mL	
..LCM2PFOA_00007	02/12/21	Wellington Laboratories, Lot M2PFOA0216			(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00019	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-MSP_00025	08/09/17	03/30/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	200 uL	Perfluorobutanesulfonic acid (PFBS)	883.417 ng/mL
							Perfluoroheptanoic acid (PFHpA)	99 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanesulfonic acid (PFHxS)	300.607 ng/mL
							Perfluorononanoic acid (PFNA)	192.6 ng/mL
							Perfluorooctanoic acid (PFOA)	199.8 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	400.329 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHpA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
					LC537-PFHxS_00009	150 uL	Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537 PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537 PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537 PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537 PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-SU_00045	01/05/18	07/05/17	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	60 uL	13C2 PFHxA	0.1 ug/mL
..LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L2_00018	08/09/17	03/23/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00018	64 uL	Perfluorobutanesulfonic acid (PFBS)	21.202 ng/mL
							Perfluoroheptanoic acid (PFHpA)	2.376 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	7.21457 ng/mL
							Perfluorononanoic acid (PFNA)	4.6224 ng/mL
							Perfluorooctanoic acid (PFOA)	4.7952 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	9.6079 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC537-IS_00034	500 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00035	500 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00018	08/09/17	03/23/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	375 uL	Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
							Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL
							Perfluorooctanoic acid (PFOA)	374.625 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHpA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
					LC537-PFHxS_00009	150 uL	Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537 PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537 PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537 PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537 PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00034	09/22/17	03/22/17	Methanol, Lot 090285	20000 uL	LCM2PFOA_00005	40 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00019	120 uL	13C4 PFOS	0.2868 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00019	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00035	09/22/17	03/22/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	40 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	40 uL	13C2 PFHxA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L2_00019	08/09/17	07/05/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00019	64 uL	Perfluorobutanesulfonic acid (PFBS)	21.202 ng/mL
							Perfluoroheptanoic acid (PFHpA)	2.376 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	7.21457 ng/mL
							Perfluorononanoic acid (PFNA)	4.6224 ng/mL
							Perfluorooctanoic acid (PFOA)	4.7952 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	9.6079 ng/mL
					LC537-IS_00045	500 uL	13C2-PFOA	10 ng/mL
					LC537-SU_00045	500 uL	13C4 PFOS	28.68 ng/mL
							13C2 PFDA	10 ng/mL
.LC537-HSP_00019	08/09/17	03/30/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	375 uL	13C2 PFHxA	10 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
							Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL
							Perfluorooctanoic acid (PFOA)	374.625 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHxA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFB_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHxA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHxA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537_PFHxA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537_PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537_PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00045	01/05/18	07/05/17	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
..LCM2PFOA_00007	02/12/21		Wellington Laboratories, Lot M2PFOA0216		LCMPFOS_00019	180 uL	13C4 PFOS	0.2868 ug/mL
..LCMPFOS_00019	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LC537-SU_00045	01/05/18	07/05/17	Methanol, Lot 104453	30000 uL	(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916		LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
..LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416		LCMPFHxA_00013	60 uL	13C2 PFHxA	0.1 ug/mL
					(Purchased Reagent)		13C2 PFDA	50 ug/mL
					(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L3_00020	08/09/17	03/23/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00018	134 uL	Perfluorobutanesulfonic acid (PFBS)	44.3917 ng/mL
							Perfluoroheptanoic acid (PFHpA)	4.97475 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	15.1055 ng/mL
							Perfluorononanoic acid (PFNA)	9.67815 ng/mL
							Perfluorooctanoic acid (PFOA)	10.0399 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	20.1165 ng/mL
					LC537-IS_00034	500 uL	13C2-PFOA	10 ng/mL
					LC537-SU_00035	500 uL	13C4 PFOS	28.68 ng/mL
							13C2 PFDA	10 ng/mL
.LC537-HSP_00018	08/09/17	03/23/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	375 uL	13C2 PFHxA	10 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
							Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL
							Perfluorooctanoic acid (PFOA)	374.625 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHxA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537 PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537 PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00034	09/22/17	03/22/17	Methanol, Lot 090285	20000 uL	LCM2PFOA_00005	40 uL	13C2-PFOA	0.1 ug/mL
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			LCMPFOS_00019	120 uL	13C4 PFOS	0.2868 ug/mL
..LCMPFOS_00019	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LC537-SU_00035	09/22/17	03/22/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	40 uL	13C4 PFOS	47.8 ug/mL
..LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			LCMPFHxA_00013	40 uL	13C2 PFDA	0.1 ug/mL
..LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	0.1 ug/mL
LC537-L3_00022	08/09/17	07/05/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00019	134 uL	Perfluorobutanesulfonic acid (PFBS)	44.3917 ng/mL
							Perfluoroheptanoic acid (PFHpA)	4.97475 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	15.1055 ng/mL
							Perfluorononanoic acid (PFNA)	9.67815 ng/mL
							Perfluorooctanoic acid (PFOA)	10.0399 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	20.1165 ng/mL
					LC537-IS_00045	500 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
							13C2 PFDA	10 ng/mL
.LC537-HSP_00019	08/09/17	03/30/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	375 uL	13C2 PFHxA	10 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
							Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorooctanoic acid (PFOA)	374.625 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHpA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
					LC537-PFHxS_00009	150 uL	Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCM2579V		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537 PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537 PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537 PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537 PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00045	01/05/18	07/05/17	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00019	180 uL	13C4 PFOS	0.2868 ug/mL
..LCM2PFOA_00007	02/12/21		Wellington Laboratories, Lot M2PFOA0216		(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00019	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00045	01/05/18	07/05/17	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	60 uL	13C2 PFHxA	0.1 ug/mL
..LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L4_00018	08/09/17	03/23/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00018	270 uL	Perfluorobutanesulfonic acid (PFBS)	89.446 ng/mL
							Perfluoroheptanoic acid (PFHpA)	10.0238 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	30.4365 ng/mL
							Perfluorononanoic acid (PFNA)	19.5008 ng/mL
							Perfluorooctanoic acid (PFOA)	20.2297 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorooctanesulfonic acid (PFOS)	40.5333 ng/mL
					LC537-IS_00034	500 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00035	500 uL	13C2 PFDA	10 ng/mL
.LC537-HSP_00018	08/09/17	03/23/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	375 uL	13C2 PFHxA	10 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
							Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFOS_00007	440 uL	Perfluorooctanoic acid (PFOA)	374.625 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
							Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
							Perfluorononanoic acid (PFNA)	19.26 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537-PFOA_00012	200 uL	Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
							Perfluoroheptanoic acid (PFHpA)	990 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
							Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
...LC537-PFHxA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537-PFOS_00007	400 uL	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537-PFHxA_00002	04/01/18	Aldrich, Lot BCM2579V			(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	990 ug/mL
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537-PFOS_00007	400 uL	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537-PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00007	400 uL	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00007	400 uL	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537-PFOS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	19.98 ug/mL
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537-PFOS_00002	0.1034 g	Perfluorooctanoic	

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LC537-SU_00035	09/22/17	03/22/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	40 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	40 uL	13C2 PFHxA	0.1 ug/mL
..LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L4_00019	08/09/17	07/05/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00019	270 uL	Perfluorobutanesulfonic acid (PFBS)	89.446 ng/mL
							Perfluoroheptanoic acid (PFHpA)	10.0238 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	30.4365 ng/mL
							Perfluorononanoic acid (PFNA)	19.5008 ng/mL
							Perfluorooctanoic acid (PFOA)	20.2297 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	40.5333 ng/mL
					LC537-IS_00045	500 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00045	500 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00019	08/09/17	03/30/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	375 uL	Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
							Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL
							Perfluorooctanoic acid (PFOA)	374.625 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHpA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
					LC537-PFHxS_00009	150 uL	Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537 PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537 PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537 PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537 PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00045	01/05/18	07/05/17	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00019	180 uL	13C4 PFOS	0.2868 ug/mL
..LCM2PFOA_00007	02/12/21		Wellington Laboratories, Lot M2PFOA0216		(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00019	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00045	01/05/18	07/05/17	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	60 uL	13C2 PFHxA	0.1 ug/mL
..LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L5_00021	08/09/17	03/23/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00018	400 uL	Perfluorobutanesulfonic acid (PFBS)	132.513 ng/mL
							Perfluoroheptanoic acid (PFHpA)	14.85 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	45.0911 ng/mL
							Perfluorononanoic acid (PFNA)	28.89 ng/mL
							Perfluorooctanoic acid (PFOA)	29.97 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	60.0494 ng/mL
					LC537-IS_00034	500 uL	13C2-PFOA	10 ng/mL
					LC537-SU_00035	500 uL	13C4 PFOS	28.68 ng/mL
							13C2 PFDA	10 ng/mL
.LC537-HSP_00018	08/09/17	03/23/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	375 uL	13C2 PFHxA	10 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
							Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL
							Perfluorooctanoic acid (PFOA)	374.625 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
							Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
							Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537_PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537_PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537_PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00034	09/22/17	03/22/17	Methanol, Lot 090285	20000 uL	LCM2PFOA_00005	40 uL	13C2-PFOA	0.1 ug/mL
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			LCMPFOS_00019	120 uL	13C4 PFOS	0.2868 ug/mL
..LCMPFOS_00019	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LC537-SU_00035	09/22/17	03/22/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	40 uL	13C4 PFOS	47.8 ug/mL
..LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			LCMPFHxA_00013	40 uL	13C2 PFDA	0.1 ug/mL
..LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	0.1 ug/mL
LC537-L5_00023	08/09/17	07/05/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00019	400 uL	Perfluorobutanesulfonic acid (PFBS)	132.513 ng/mL
							Perfluoroheptanoic acid (PFHpA)	14.85 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	45.0911 ng/mL
							Perfluorononanoic acid (PFNA)	28.89 ng/mL
							Perfluorooctanoic acid (PFOA)	29.97 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	60.0494 ng/mL
					LC537-IS_00045	500 uL	13C2-PFOA	10 ng/mL
					LC537-SU_00045	500 uL	13C4 PFOS	28.68 ng/mL
.LC537-HSP_00019	08/09/17	03/30/17	Methanol, Lot 141039	20000 uL			13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
					LC537SPIM_00022	375 uL	Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL
							Perfluorooctanoic acid (PFOA)	374.625 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHpA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
					LC537-PFHxS_00009	150 uL	Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537 PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537 PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00045	01/05/18	07/05/17	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00019	180 uL	13C4 PFOS	0.2868 ug/mL
..LCM2PFOA_00007	02/12/21	Wellington Laboratories, Lot M2PFOA0216			(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00019	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00045	01/05/18	07/05/17	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	60 uL	13C2 PFHxA	0.1 ug/mL
..LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L6_00017	08/09/17	03/23/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00018	530 uL	Perfluorobutanesulfonic acid (PFBS)	175.579 ng/mL
							Perfluoroheptanoic acid (PFHpA)	19.6763 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanesulfonic acid (PFHxS)	59.7457 ng/mL
							Perfluorononanoic acid (PFNA)	38.2792 ng/mL
							Perfluorooctanoic acid (PFOA)	39.7103 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	79.5654 ng/mL
					LC537-IS_00034	500 uL	13C2-PFOA	10 ng/mL
					LC537-SU_00035	500 uL	13C4 PFOS	28.68 ng/mL
							13C2 PFDA	10 ng/mL
.LC537-HSP_00018	08/09/17	03/23/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	375 uL	13C2 PFHxA	10 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
							Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL
							Perfluorooctanoic acid (PFOA)	374.625 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
							Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
							Perfluorononanoic acid (PFNA)	19.26 ug/mL
							Perfluorooctanoic acid (PFOA)	19.98 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	1 g/g
...LC537-PFHxA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHxA_00002	0.05 g	Perfluorohexanesulfonic acid (PFHxS)	990 ug/mL
....LC537_PFHxA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537 PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537 PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537 PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537 PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LC537-IS_00034	09/22/17	03/22/17	Methanol, Lot 090285	20000 uL	LCM2PFOA_00005	40 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00019	120 uL	13C4 PFOS	0.2868 ug/mL
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00019	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00035	09/22/17	03/22/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	40 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	40 uL	13C2 PFHxA	0.1 ug/mL
..LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L6_00018	08/09/17	07/05/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00019	530 uL	Perfluorobutanesulfonic acid (PFBS)	175.579 ng/mL
							Perfluoroheptanoic acid (PFHpA)	19.6763 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	59.7457 ng/mL
							Perfluorononanoic acid (PFNA)	38.2792 ng/mL
							Perfluorooctanoic acid (PFOA)	39.7103 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	79.5654 ng/mL
					LC537-IS_00045	500 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00045	500 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00019	08/09/17	03/30/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	375 uL	Perfluorobutanesulfonic acid (PFBS)	1656.41 ng/mL
							Perfluoroheptanoic acid (PFHpA)	185.625 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	563.639 ng/mL
							Perfluorononanoic acid (PFNA)	361.125 ng/mL
							Perfluorooctanoic acid (PFOA)	374.625 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	750.617 ng/mL
..LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHpA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
					LC537-PFHxS_00009	150 uL	Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
...LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
...LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
...LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537_PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
....LC537 PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
...LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537_PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
....LC537 PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00045	01/05/18	07/05/17	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00019	180 uL	13C4 PFOS	0.2868 ug/mL
..LCM2PFOA_00007	02/12/21		Wellington Laboratories, Lot M2PFOA0216		(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00019	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00045	01/05/18	07/05/17	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	60 uL	13C2 PFHxA	0.1 ug/mL
..LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-LSP_00020	08/08/17	03/23/17	Methanol, Lot 090285	20000 uL	LC537SPIM_00022	50 uL	Perfluorobutane Sulfonate	220.854 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	220.854 ng/mL
							Perfluoroheptanoic acid (PFHpA)	24.75 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	75.1518 ng/mL
							Perfluorononanoic acid (PFNA)	48.15 ng/mL
							Perfluorooctanoic acid (PFOA)	49.95 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	100.082 ng/mL
.LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorobutane Sulfonate	88.3417 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHpA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
					LC537-PFHxS_00009	150 uL	Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
					LC537-PFOS_00007	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
..LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorobutane Sulfonate	2007.77 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
...LC537 PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutane Sulfonate	1 g/g

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorobutanesulfonic acid (PFBS)	1 g/g
..LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
...LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g
..LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
...LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
..LC537-PFNA_00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537_PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
...LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
..LC537-PFOA_00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537_PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
...LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
..LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
...LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
LC537-MSP_00021	08/09/17	03/23/17	Methanol, Lot 141039	20000 uL	LC537SPIM_00022	200 uL	Perfluorobutane Sulfonate	883.417 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	883.417 ng/mL
							Perfluoroheptanoic acid (PFHpA)	99 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	300.607 ng/mL
							Perfluorononanoic acid (PFNA)	192.6 ng/mL
							Perfluorooctanoic acid (PFOA)	199.8 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	400.329 ng/mL
.LC537SPIM_00022	08/09/17	03/22/17	Methanol, Lot 104453	10000 uL	LC537-PFBS_00007	440 uL	Perfluorobutane Sulfonate	88.3417 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	88.3417 ug/mL
					LC537-PFHpA_00014	100 uL	Perfluoroheptanoic acid (PFHpA)	9.9 ug/mL
					LC537-PFHxS_00009	150 uL	Perfluorohexanesulfonic acid (PFHxS)	30.0607 ug/mL
					LC537-PFNA_00012	200 uL	Perfluorononanoic acid (PFNA)	19.26 ug/mL
					LC537-PFOA_00012	200 uL	Perfluorooctanoic acid (PFOA)	19.98 ug/mL
..LC537-PFBS_00007	01/04/18	01/04/17	Methanol, Lot 090285	51.5 mL	LC537_PFBS_00002	0.1034 g	Perfluorooctanesulfonic acid (PFOS)	40.0329 ug/mL
							Perfluorobutane Sulfonate	2007.77 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	2007.77 ug/mL
							Perfluorobutane Sulfonate	1 g/g
							Perfluorobutanesulfonic acid (PFBS)	1 g/g
							Perfluorobutane Sulfonate	1 g/g
...LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutane Sulfonate	1 g/g
..LC537-PFHpA_00014	03/22/18	03/22/17	Methanol, Lot 090285	50 mL	LC537_PFHpA_00002	0.05 g	Perfluoroheptanoic acid (PFHpA)	990 ug/mL
...LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	0.99 g/g

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LC537-PFHxS_00009	01/04/18	01/04/17	Methanol, Lot 090285	54 mL	LC537_PFHxS_00002	0.119 g	Perfluorohexanesulfonic acid (PFHxS)	2004.05 ug/mL
...LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	0.9094 g/g
..LC537-PFNA 00012	03/22/18	03/22/17	Methanol, Lot 090285	23 mL	LC537 PFNA_00002	0.023 g	Perfluorononanoic acid (PFNA)	963 ug/mL
...LC537 PFNA 00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid (PFNA)	0.963 g/g
..LC537-PFOA 00012	03/22/18	03/22/17	Methanol, Lot 090285	21.5 mL	LC537 PFOA_00002	0.0215 g	Perfluorooctanoic acid (PFOA)	999 ug/mL
...LC537 PFOA 00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
..LC537-PFOS_00007	08/09/17	01/04/17	Methanol, Lot 090285	48.95 mL	LC537_PFOS_00002	0.0538 g	Perfluorooctanesulfonic acid (PFOS)	1000.82 ug/mL
...LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
LC537-SU_00042	11/09/17	05/09/17	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	60 uL	13C2 PFHxA	0.1 ug/mL
.LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)		13C2 PFDA	50 ug/mL
.LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-SU_00044	12/20/17	06/20/17	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00013	60 uL	13C2 PFHxA	0.1 ug/mL
.LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)		13C2 PFDA	50 ug/mL
.LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	50 ug/mL

Reagent

LC537_PFB_00002

4/1/15 SPV

SIGMA-ALDRICH®

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3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.com

Email USA: techserv@sial.com

Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Nonafluorobutane-1-sulfonic acid - 97%

Product Number:

562629

Batch Number:

MKBP8842V

Brand:

ALDRICH

CAS Number:

375-73-5

MDL Number:

MFCD01320794

Formula:

C₄HF₉O₃S

Formula Weight:

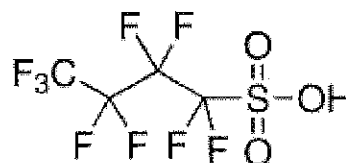
300.10 g/mol

Storage Temperature:

Store at 2 - 8 °C

Quality Release Date:

11 OCT 2013



PFBS

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
Infrared Spectrum	Conforms to Structure	Conforms
Fluorine NMR Spectrum	Conforms to Structure	Conforms
Purity (Titration by NaOH)	96.5 - 103.5 %	101.6 %

Jamie Gleason

Jamie Gleason, Manager

Quality Control

Milwaukee, Wisconsin US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Reagent

LC537_PFBBS2_00001



The Power to Question

CERTIFICATE OF ANALYSIS

Catalog Number: sc-236187
Product Name: Nonafluorobutane-1-sulfonic acid
CAS Number: 375-73-5
Molecular Formula: $C_4HF_9O_3S$
Molecular Weight: 300.10
Lot Number: H0112

Test		Result
Refractive Index	1.3200 to 1.3290	1.3219
Purity (Titration)	min. 98.0%	99.8%

Test Conditions: Refractive Index: $n_{20/D}$

Reagent

LC537_PFH_pA_00002

Certificate of Analysis

Product Name: PERFLUOROHEPTANOIC ACID
99 %
Product Number: 342041
Batch Number: BCBM2579V
Brand: Aldrich
CAS Number: 375-85-9
Formula: $\text{CF}_3(\text{CF}_2)_5\text{CO}_2\text{H}$
Formula Weight: 364.06
Quality Release Date: 06 DEC 2013
Recommended Retest Date: OCT 2018

PFH₇A

TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	COLORLESS OR WHITE	WHITE
APPEARANCE (FORM)	LIQUID OR SOLID	SOLID
TITRATION	98.5 - 101.5 %	99.8 %
TITRATION (METHOD)	-	BACK TITRATION
PURITY (GC AREA %)	≥ 98.5 %	99.5 %
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS



Dr. Claudia Geitner
Manager Quality Control
Buchs, Switzerland

Sigma-Aldrich warrants that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Reagent

LC537_PFHpA2_00001

Certificate of Analysis

Alfa Aesar
A Johnson Matthey Company

Product No.: A12092
Product: Perfluoroheptanoic acid, 98+%
Lot No.: 10160443

PFHpA

Appearance: White crystalline powder
Melting Point: 28.2 (slip point)
Assay (Aqueous acid-base titration): 100.2%

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NORTH AMERICA
Tel: +1-800-343-0660 or
+1-978-521-6300
Fax: +1-800-322-4757
Email: info@alfa.com

GERMANY
Tel: 00800 4566 4566 or
+49 721 84007 280
Fax: 00800 4577 4577 or
+49 721 84007 300
Email: Eurosales@alfa.com

UNITED KINGDOM
Tel: 0800-801812 or
+44 (0)1524-850506
Fax: +44 (0)1524-850608
Email: UKsales@alfa.com

FRANCE
Tel: 0800 03 51 47 or
+33 (0)3 8862 2690
Fax: 0800 10 20 67 or
+33 (0)3 8862 6864
Email: france@alfa.com

INDIA
Tel: +91 8008 812424 or
+91 8008 812525 or
+91 8008 812626
Fax: +91 8418 260060
Email: india@alfa.com

CHINA
Tel: +86 (010) 8567-8600
Fax: +86 (010) 8567-8601
Email: saleschina@alfa-asia.com

KOREA
Tel: +82-2-3140-6000
Fax: +82-2-3140-6002
Email: saleskorea@alfa-asia.com

Reagent

LC537_PFHxS_00002

Y: 4/1/15 SW

SIGMA-ALDRICH®

3050 Spruce Street, Saint Louis, MO 63103 USA
Email USA: techserv@sial.com Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name: TRIDECAFLUOROHXANE-1-SULFONIC ACID POTASSIUM SALT
Product Number: 50929
Batch Number: BCBL3545V
Brand: Aldrich
CAS Number: 3871-99-6
Formula: $C_{13}F_{27}KO_2S$
Formula Weight: 438.20
Quality Release Date: 20 JUN 2013

PFH₁₃S-K

TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	WHITE TO FAINT BEIGE	WHITE
APPEARANCE (FORM)	POWDER OR CRYSTALS	POWDER
TITRATION (ION EXCHANGE)	≥ 98.0 %	99.5 %
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS

Claudia Geitner

Dr. Claudia Geitner
Manager Quality Control
Buchs, Switzerland

$$MW_{corr} = \frac{(k_{form}) - (k) + (H)}{438.20 (k_{form})} = \frac{(438.20 - 39.10 + 1.01)}{438.20 (k_{form})} = 0.91307 \text{ (anion form)}$$

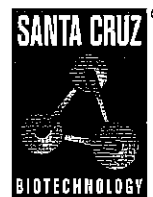
$$Purity = 90.94 \% \text{ w/m.w correction}$$

SW 4/1/15

Sigma-Aldrich warrants that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Reagent

LC537_PFHxS2_00001

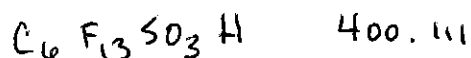
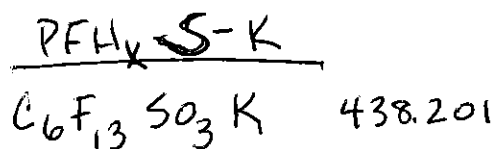


CERTIFICATE OF ANALYSIS

The Power to Question

Catalog Number: sc-237289
Product Name: Tridecafluorohexane-1-sulfonic acid potassium salt
CAS Number: 3871-99-6
Molecular Formula: $C_6F_{13}KO_3S$
Molecular Weight: 438.20
Lot Number: F2612

Test	Specification	Result
Appearance	White to faint beige powder or crystals	White powder
Infrared Spectrum	Conforms to structure	Complies
Purity (Titration, Ion Exchange)	$\geq 98.0\%$	99.6 %



$$\text{MW correction} = \frac{400.111}{438.201} = 0.91307 \quad \begin{array}{l} \text{PFH}_x\text{S} \\ \text{CAS } 355-46-4 \end{array}$$

$$\text{Purity} \times \text{MW correction} = 90.9\%$$

Reagent

LC537_PfNA_00002

R: 4/1/15 SKV



Certificate of Analysis

Apr 2, 2015 (JST)

TOKYO CHEMICAL INDUSTRY CO.,LTD.
4-10-1 Nihonbashi-Honcho, Chuo-ku, Tokyo 103-0023 Japan

Chemical Name: Heptadecafluorononanoic Acid		
Product Number: H0843	Lot: QN44F	
CAS: 375-95-1		

Tests	Results	Specifications
Purity(GC)	96.3 %	min. 95.0 %
Purity(Neutralization titration)	98.1 %	min. 95.0 %
Melting point	63.3 deg-C	62.0 to 67.0 deg-C

TCI Lot numbers are 4-5 characters in length.
Characters listed after the first 4-5 characters are control numbers for internal purpose only.

Customer service:

TCI AMERICA
Tel: +1-800-423-8616 / +1-503-283-1681
Fax: +1-888-520-1075 / +1-503-283-1987
E-mail: Sales-US@TCIchemicals.com

PFNA

Reagent

LC537_PFNA2_00001

3050 Spruce Street, Saint Louis, MO 63103, USA

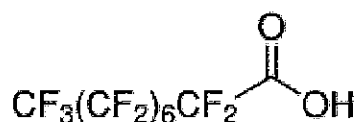
Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Perfluorononanoic acid - 97%

Product Number: 394459
Lot Number: MKBJ2926V
Brand: ALDRICH
CAS Number: 375-95-1
MDL Number: MFCD00039605
Formula: C₉H₁₇O₂
Formula Weight: 464.08 g/mol
Quality Release Date: 20 OCT 2011



Test	Specification	Result
Appearance (Color)	White to Off-White	White
Appearance (Form)	Powder or Crystals or	Powder
Crystalline Chunk(s) or Granule or Flakes or Solid		
Infrared spectrum	Conforms to Structure	Conforms
Purity (Titration by NaOH)	96.5 - 103.5 %	100.3 %
GC (area %)	≥ 96.5 %	99.6 %

Jamie Gleason, Manager
Quality Control
Milwaukee, Wisconsin US

PFNA

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Reagent

LC537_PFOA_00002

3/25/15

SIGMA-ALDRICH®

CERTIFICATE OF ANALYSIS

Sigma-Aldrich Laborchemikalien GmbH D-30918 Seelze
Telefon: +49 5137 8238-150

Seelze, 13.11.2013/505378/13/24029

Order-No.:

Customer-No.:

Order-Code:

Quantity:

Production Date: 04.Nov.2013

Expiry Date: 04.Nov.2018

Article/Product: 33824

Batch : SZBD308XV

Pentadecafluorooctanoic acid OEKANAL®

PFOA

Reference Material (RM)

1. General Information

Formula: C₈HF₁₅O₂

CAS-No.: [335-67-1]

Usage : PFOA

Molar mass: 414.07 g/Mole

Recomm. storage temp.: roomtemp.

The estimated uncertainty of a single measurement of the assay can be expected to be 0.5 % relative (confidence level = 95%, n= 6) whereby the assay measurements are calculated by 100% minus found impurities.

2. Batch Analysis

identity (GC-MS)

Assay (GCMS)

Date of Analysis

complying

99.4 %

13.Nov.2013

3. Advice and Remarks

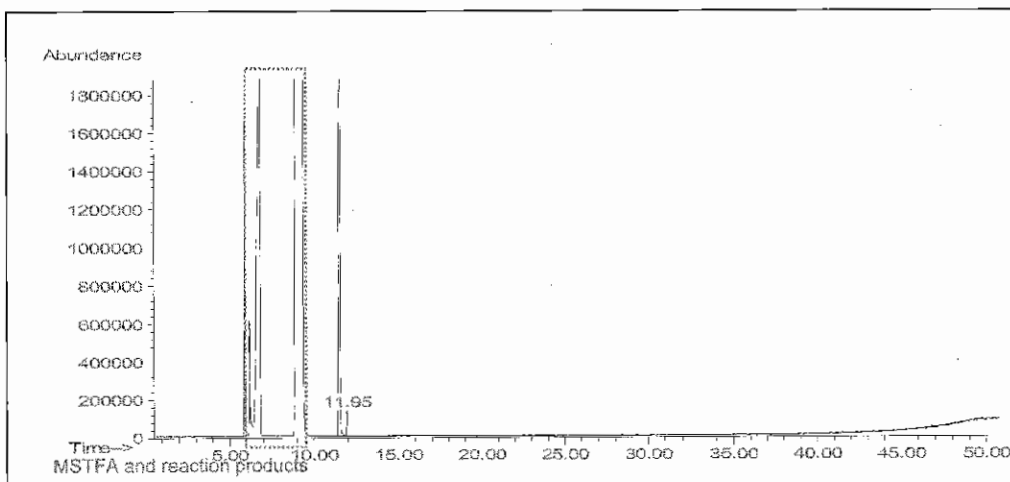
- The expiry date is based on the current knowledge and holds only for proper storage conditions in the originally closed flasks/ packages.
- Whenever the container is opened for removal of aliquot portions of the substance, the person handling the substance must assure, that the integrity of the substance is maintained and proper records of all its handlings are kept. Special care has to be taken to avoid any contamination or adulteration of the substance.
- We herewith confirm that the delivery is effected according to the technical delivery conditions agreed.
- Particular properties of the products or the suitability for a particular area of application are not assured.
- We guarantee a proper quality within our General Conditions of Sales.

Sigma-Aldrich Laborchemikalien GmbH
Quality Management SA-LC

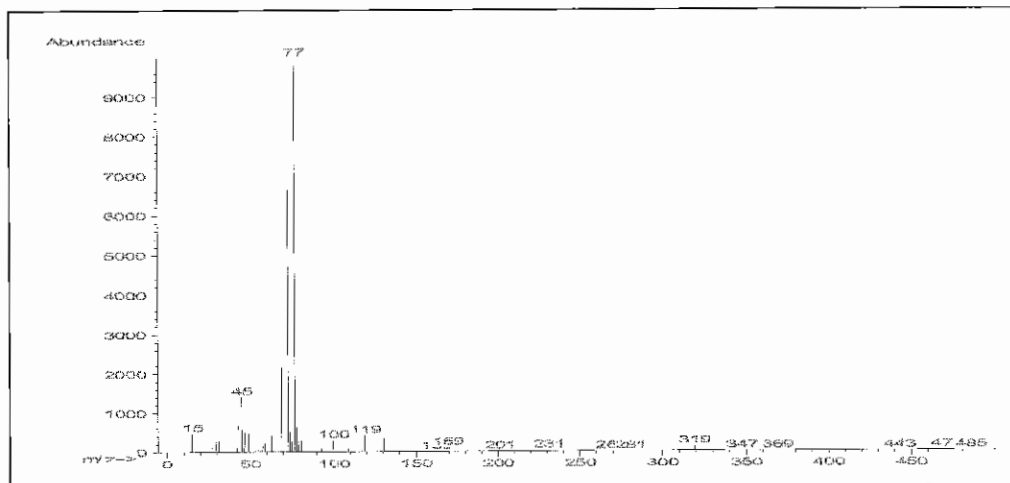
This document was produced electronically and is valid without a signature

GC/MS-Method**Analytical Department****Article:** Pentadecafluorooctanoic acid OEKANAL**Article-No.:** 33824**Batch:** SZBD308XV**Column:** XTI-5 (Restek); 30 m; fs cap.; I.D.:0.25 mm; 1 µm df**Injector:** Split mode**Injection:** approx. 1 µl of reaction mixture with MSTFA (approx. 10 mg + 200 µl MSTFA)**Inj.-temp.:** 280°C**Oven-temp.:** 40°C (for 2 min) to 320°C (6°C/min) hold for 2 min**Split:** 1:100**Flow:** 1 ml He/min (Constant flow mode)**Detector:** MSD**Mass range:** 10-600 amu (Scan mode)**Evaluation:** Purity: Total Ion Chromatogram
(MSTFA and reaction products blinded out in report)

Identity: Mass spectrum complies

Operator: Ahrens / 2013-11-13**Total Ion Chromatogram:**

Ret.time	Area	Area-%	Com
11.54	565.1670	99.4	Pentadecafluorooctanoic acid (as TMS-ester)
11.95	3.6792	0.64	

Mass spectrum (rt = 11.54 min):

Reagent

LC537_PFOA2_00001

Certificate of Analysis

Alfa Aesar
A Johnson Matthey Company

Product No.: L08862
Product: Perfluorooctanoic acid, 95%
Lot No.: D24Y026

PFOA

Appearance White solid
Melting point 58 - 60°C
Assay 99 %
Identity Matches reference

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www.alfa.com

NORTH AMERICA
Tel: +1-800-343-0660 or
+1-978-521-6300
Fax: +1-800-322-4757
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GERMANY
Tel: 00800 4566 4566 or
+49 721 84007 280
Fax: 00800 4577 4577 or
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Email: Eurosales@alfa.com

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Tel: 0800-801812 or
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Fax: +44 (0)1524-850608
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Email: frventes@alfa.com

INDIA
Tel: +91 8008 812424 or
+91 8008 812525 or
+91 8008 812626
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Email: India@alfa.com

CHINA
Tel: +86 (010) 8567-8600
Fax: +86 (010) 8567-8601
Email: saleschina@alfa-asia.com

KOREA
Tel: +82-2-3140-6000
Fax: +82-2-3140-6002
Email: saleskorea@alfa-asia.com

Reagent

LC537_PFOS_00002

F: 4/1/15 SV

SIGMA-ALDRICH®

CERTIFICATE OF ANALYSIS

Sigma-Aldrich Laborchemikalien GmbH D-30918 Seelze
Telefon: +49 5137 8238-150

Seelze, 13.08.2012/419060/12/17583

Order-No.:

Customer-No.:

Order-Code:

Quantity:

Production Date: 09.Aug.2012

Expiry Date: 09.Aug.2017 - *ex date*

Article/Product: 33829

Batch : SZBC222XV

Heptadecafluorooctanesulfonic acid potassium salt OEKANAL®

PFOS-K⁺

Reference Material (RM)

1. General Information

Formula: C8F17KO3S
CAS-No.: [2795-39-3]
Usage : PFOS

Molar mass: 538.22 g/Mole
Recomm. storage temp.: roomtemp.

The estimated uncertainty of a single measurement of the assay can be expected to be 0.5 % relative (confidence level = 95%, n= 6) whereby the assay measurements are calculated by 100% minus found impurities.

2. Batch Analysis

Identity
Assay (LC-MS)
Date of Analysis

complying
98 %
10.Aug.2012

$$\text{P/W-correction: } \frac{538.22 - 39.10 + 1.01}{538.22} = \frac{500.13}{538.22} = 0.92923$$

Purity = 91.06 %

3. Advice and Remarks

- The minimum shelf life is based on the current knowledge and holds only for proper storage conditions in the originally closed flasks/ packages.
- Whenever the container is opened for removal of aliquot portions of the substance, the person handling the substance must assure, that the integrity of the substance is maintained and proper records of all its handlings are kept. Special care has to be taken to avoid any contamination or adulteration of the substance.
- We herewith confirm that the delivery is effected according to the technical delivery conditions agreed.
- Particular properties of the products or the suitability for a particular area of application are not assured.
- We guarantee a proper quality within our General Conditions of Sales.

Sigma-Aldrich Laborchemikalien GmbH
Quality Management SA-LC

Reagent

LC537_PFOS2_00001

Certificate of Analysis

Inv 820
12LCMS 0579

Product Name:	HEPTADEC AFLUORO OCTANE SULFONIC ACID TETRAETHYLAMMONIUM SALT
	98 %
Product Number:	365289
Product Brand:	Aldrich
Molecular Formula:	C ₁₆ H ₂₀ F ₁₇ NO ₃ S
Molecular Mass:	629.37
CAS Number:	56773-42-3

TEST	SPECIFICATION	LOT BCBF5116V RESULTS
APPEARANCE (COLOR)	OFF-WHITE TO WHITE	WHITE
APPEARANCE (FORM)	POWDER, LUMPS OR CHUNKS	POWDER WITH LUMPS
CARBON CONTENT	29.77 % - 31.29 %	30.52
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS

QC RELEASE DATE 13/APR/11

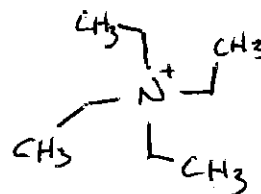
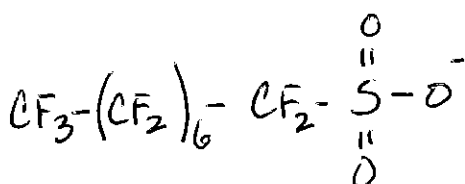
$$\text{Mass correction} = \frac{500.125}{629.37} = 0.7946$$

~~Mass = 79.46%~~ Jeh 7-26-12

Purity + MW Correction = 77.87%.

E. Schönl

Edeltraud Schwärzler, Manager
Quality Control
Buchs, Switzerland



	<u>C₈F₁₇SO₃ + H</u>
C = 12.011	96.088
F = 18.998	322.966
S = 32.066	32.066
O = 15.999	47.997
H = 1.008	1.008
N = 14.007	-
	500.125

$$\begin{array}{r} \text{C}_8\text{H}_{20}\text{N} \\ \hline 96.088 \\ - \\ - \\ - \\ - \\ 20.160 \\ 14.007 \\ \hline 130.255 \end{array} \rightarrow$$

Sigma-Aldrich warrants, that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice for additional terms and conditions of sale. The values given on the 'Certificate of Analysis' are the results determined at the time of analysis.

Certificate of Origin

Product Name: Heptadecafluorooctanesulfonic acid tetraethylammonium salt
98 %
Product Number: 365289
Product Brand: Aldrich
Lot: BCBF5116V
Molecular Formula: $C_{16}H_{20}F_{17}NO_3S$
Molecular Mass: 629.37
CAS Number: 56773-42-3
Date of Issue: 30-MAR-11

Country of Origin China

product is of synthetic origin	yes
only synthetic materials used in the manufacturing process	yes
compounds of animal origin used	no
genetically modified organisms used	no
allergenic materials used	no
procedures in place to avoid cross contamination with residue of animal, human, GMO or allergenes in manufacturing process	yes

Sigma-Aldrich has quality systems and procedures in place for monitoring the production process, traceability and batch consistency.

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For further questions please contact your local Sigma-Aldrich representative.

We are committed to the success of our Customers, Employees and Shareholders through leadership in Life Science, High Technology and Service.

Reagent

LCM2PFOA_00005



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

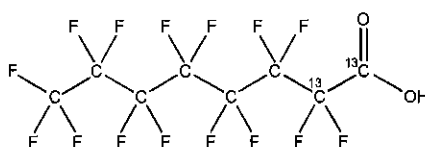
M2PFOA

LOT NUMBER:

M2PFOA0613

COMPOUND:Perfluoro-n-[1,2-¹³C₂]octanoic acid**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**¹³C₂¹²C₆H₁₅O₂**CONCENTRATION:**

50 ± 2.5 µg/ml

MOLECULAR WEIGHT:

416.05

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99%¹³C**LAST TESTED:** (mm/dd/yyyy)

06/19/2013

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

06/19/2018

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim

Date: 07/16/2013

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. They are designed to be used as reference standards for the identification and/or quantification of specific chemical compound(s).

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

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 and/or LC/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 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 17025:2005 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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.

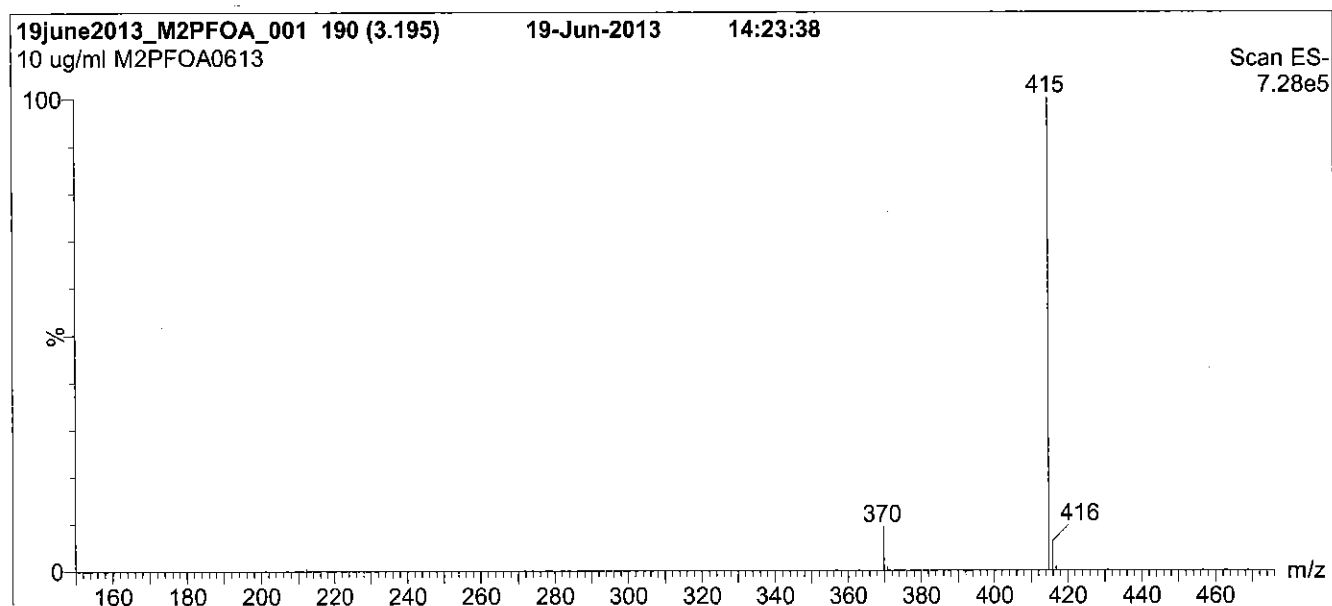
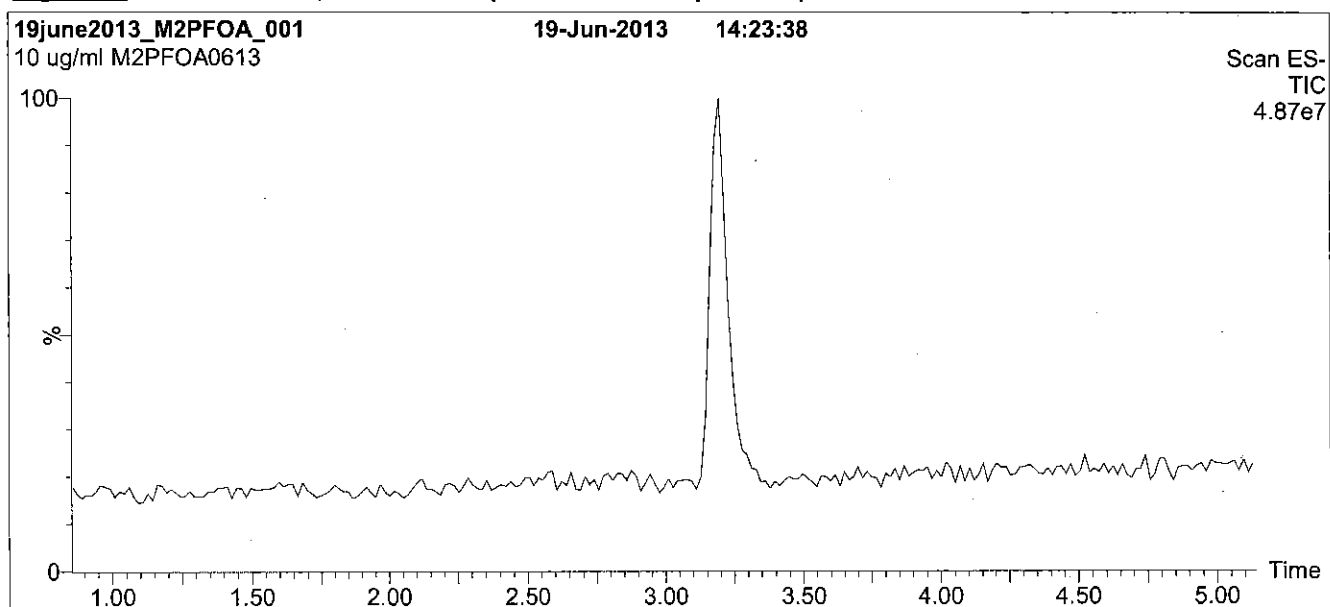
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to ISO 9001:2008 by SAI Global, ISO/IEC 17025:2005 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34:2009 by ACLASS (certificate number AR-1523).



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

Figure 1: M2PFOA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield 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

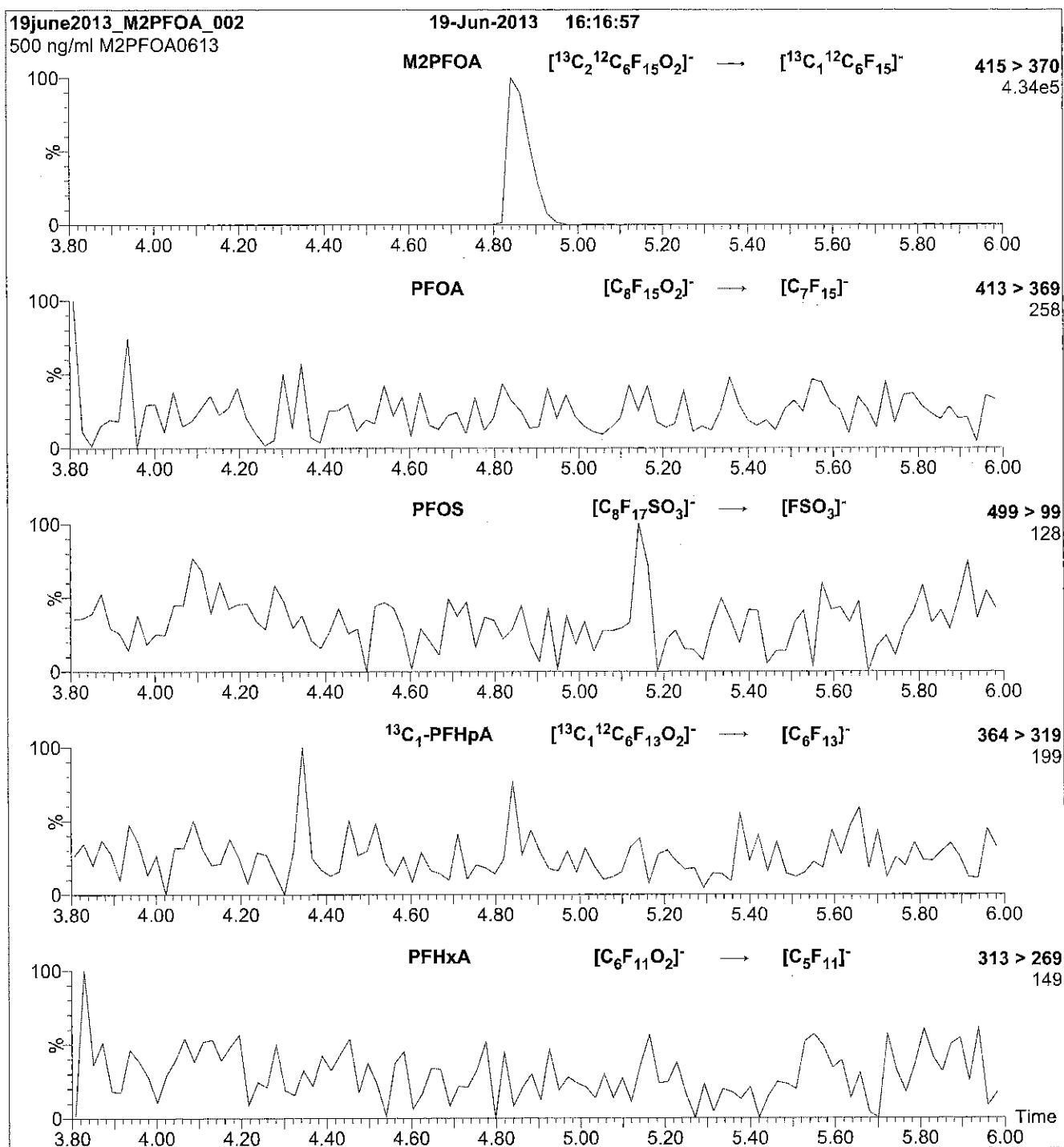
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: M2PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2PFOA)

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

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

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 11

Reagent

LCM2PFOA_00007



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

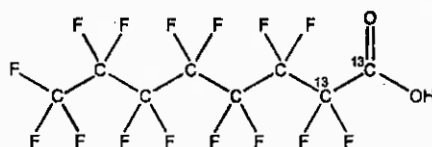
M2PFOA

LOT NUMBER:

M2PFOA0216

COMPOUND:Perfluoro-n-[1,2-¹³C₂]octanoic acid**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**¹³C₂¹²C₆HF₁₅O₂**CONCENTRATION:**

50 ± 2.5 µg/ml

MOLECULAR WEIGHT:

416.05

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C(1,2-¹³C₂)**LAST TESTED:** (mm/dd/yyyy)

02/12/2016

EXPIRY DATE: (mm/dd/yyyy)

02/12/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

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:

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:

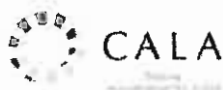
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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.

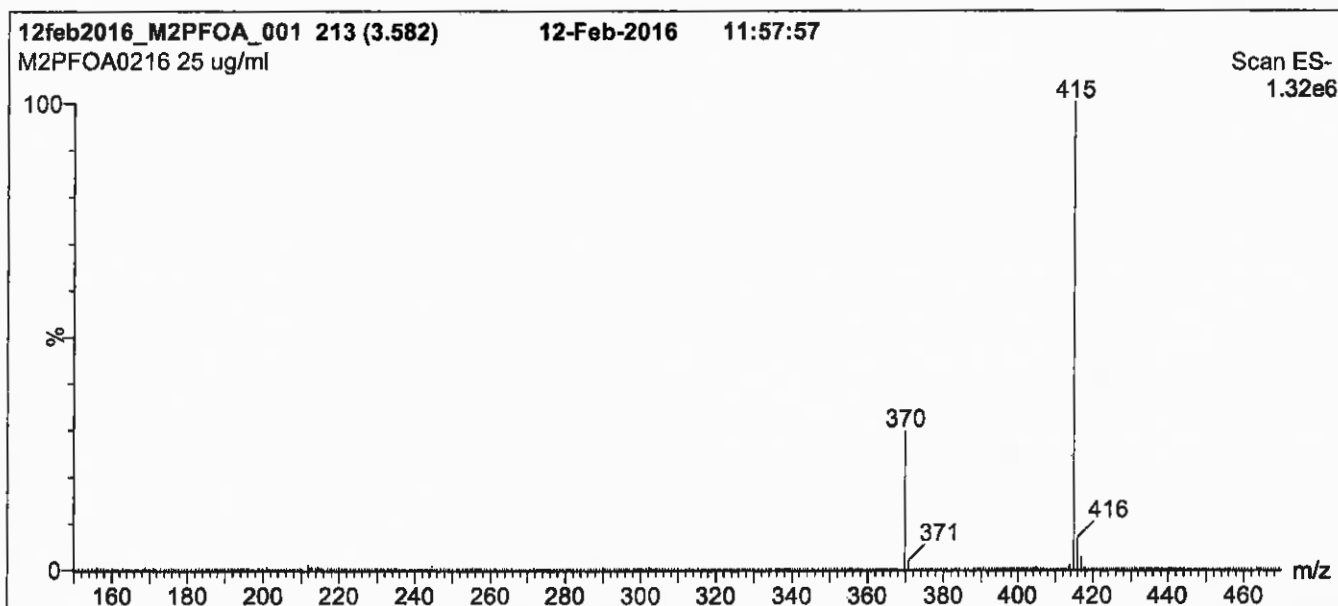
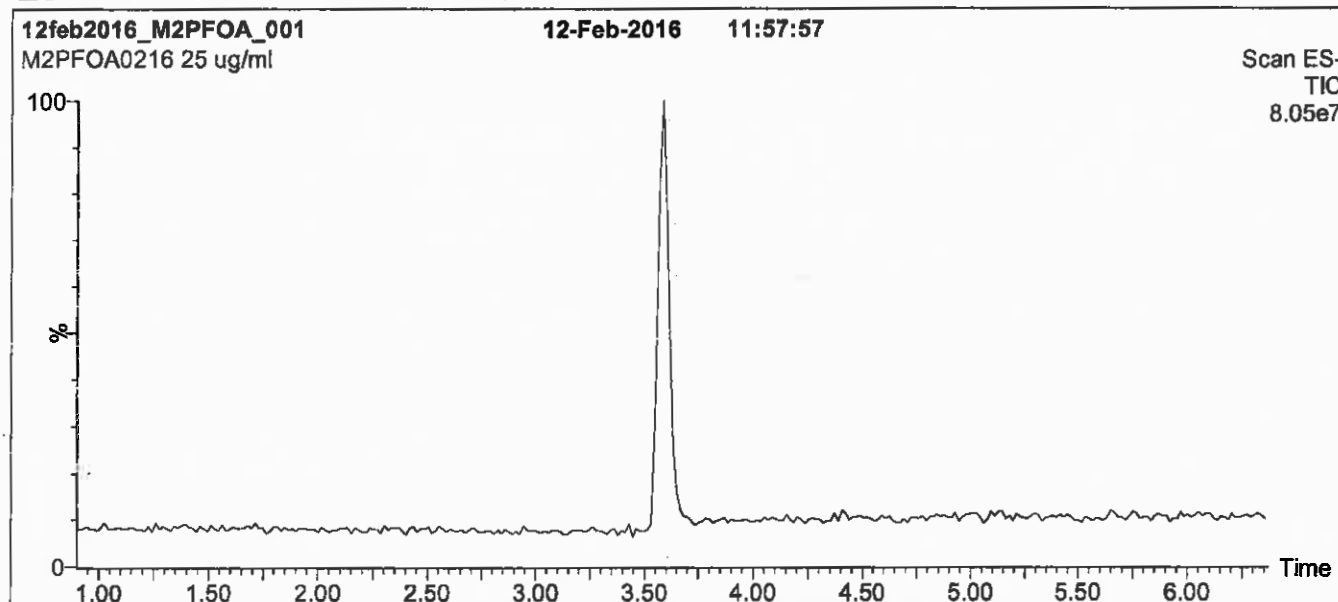
QUALITY MANAGEMENT:

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: M2PFOA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield 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)

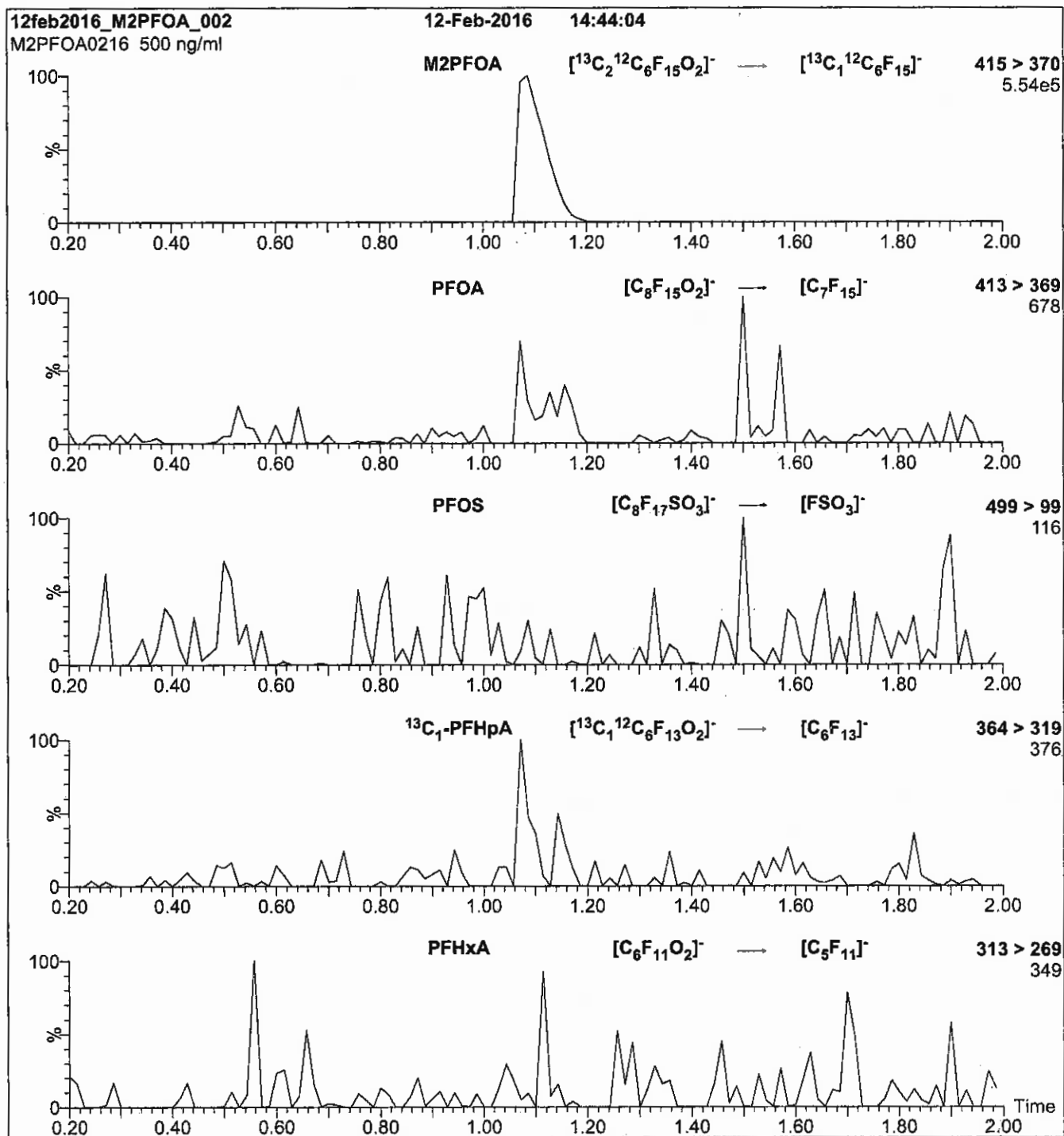
Capillary Voltage (kV) = 3.00

Cone Voltage (V) = 15.00

Cone Gas Flow (l/hr) = 100

Desolvation Gas Flow (l/hr) = 750

Figure 2: M2PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2PFOA)

Mobile phase: Isocratic 80% MeOH / 20% H_2O

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

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

Reagent

LCMPFDA_00012

R: SBC 12/21/16



814255

ID: LCMFDA_00012

Exp: 09/30/21 Prod: SBC

13C2-Perfluorodecanoic acid



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

MPFDA

LOT NUMBER:

MPFDA0916

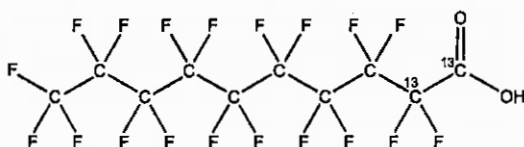
COMPOUND:

Perfluoro-n-[1,2-¹³C₂]decanoic acid

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

¹³C₂¹²C₈HF₁₉O₂

MOLECULAR WEIGHT:

516.07

CONCENTRATION:

50 ± 2.5 µg/ml

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

≥99% ¹³C

LAST TESTED: (mm/dd/yyyy)

09/30/2016

(1,2-¹³C₂)

EXPIRY DATE: (mm/dd/yyyy)

09/30/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of ¹³C₁-PFNA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chritim

Date: 10/07/2016

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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

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

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

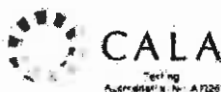
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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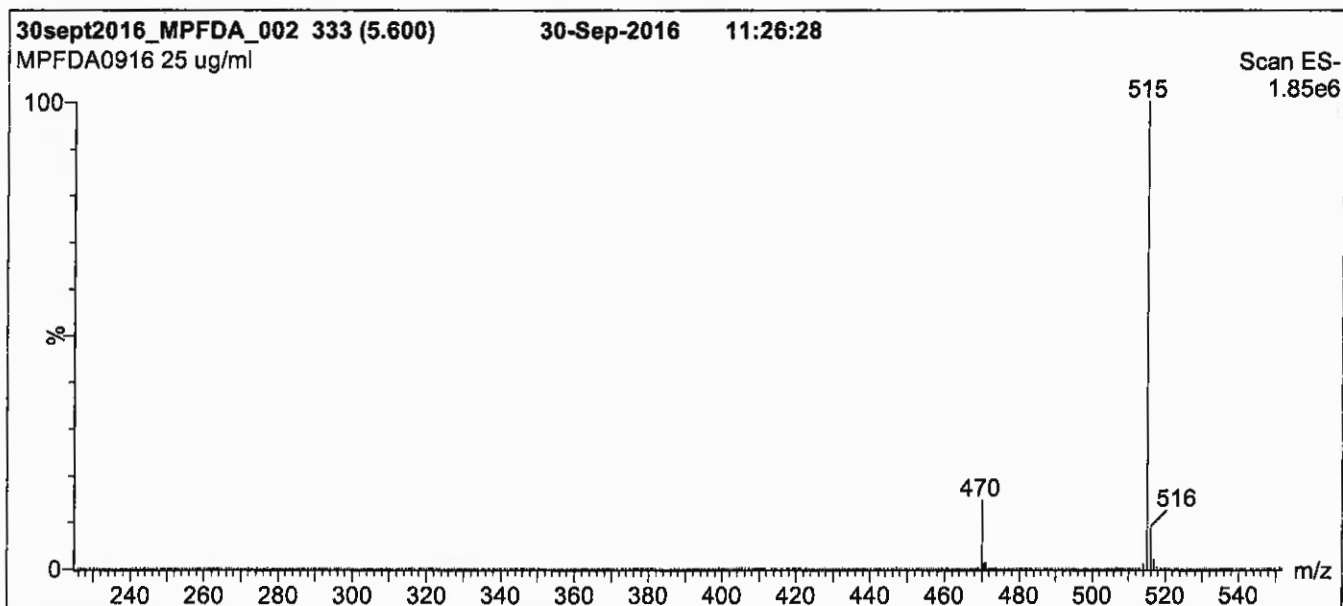
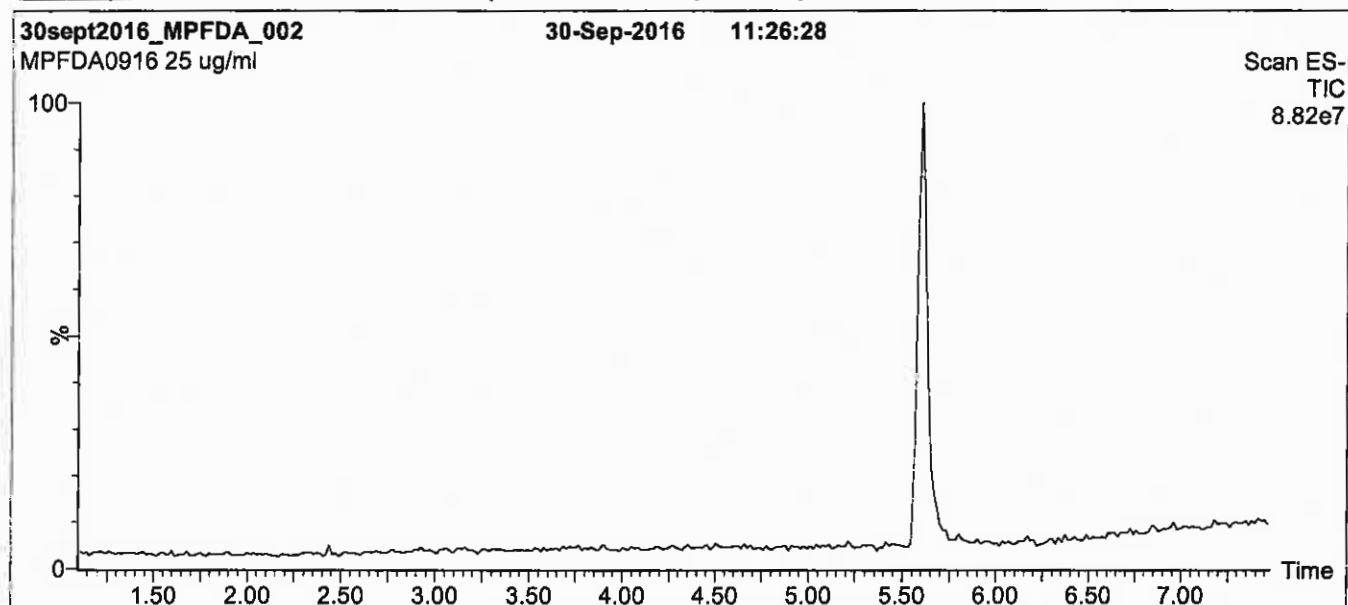
QUALITY MANAGEMENT:

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



Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield 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

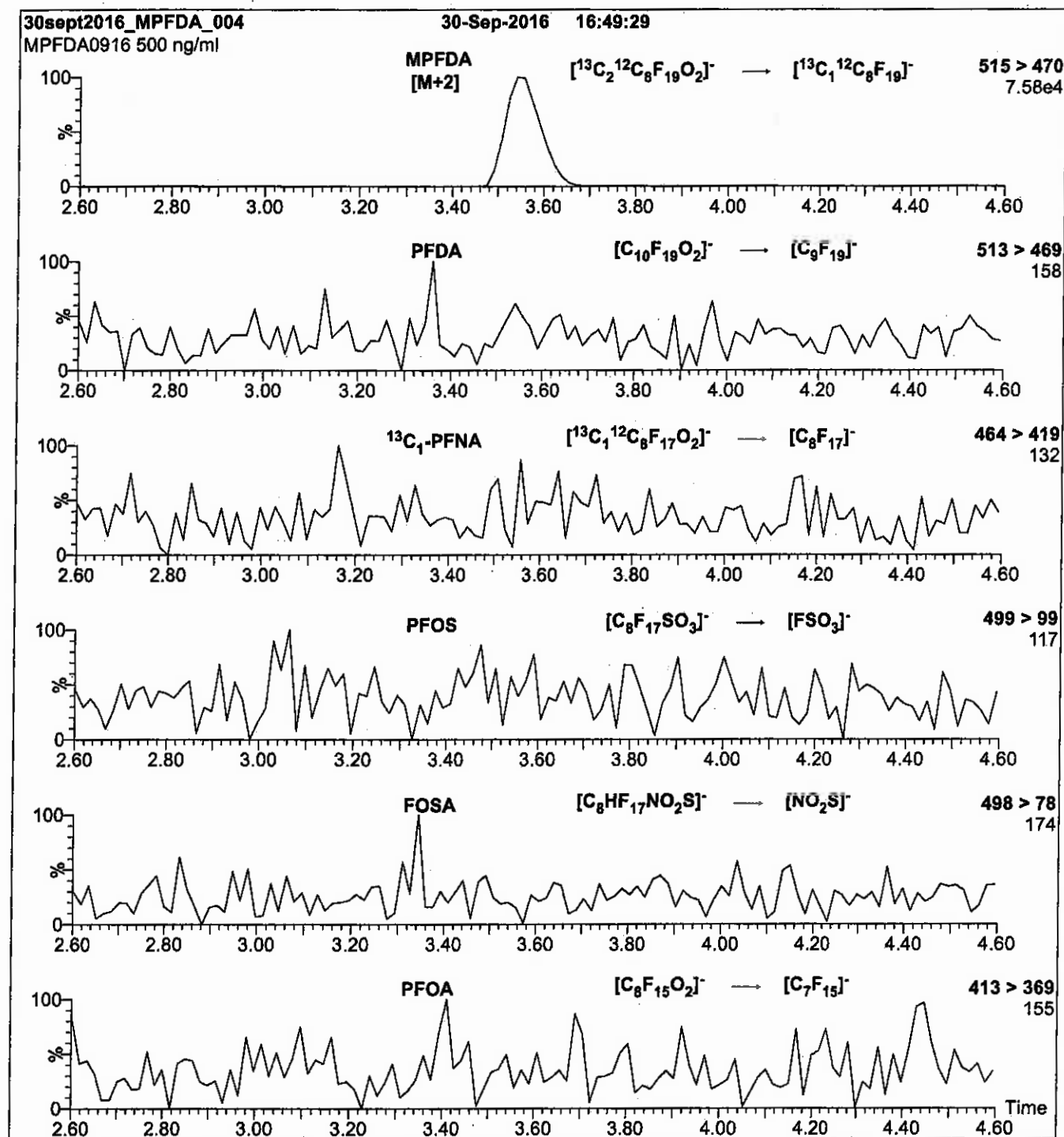
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 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% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = $3.31e-3$
Collision Energy (eV) = 13

Reagent

LCMPFHxA_00013

R: SBC 12/21/16

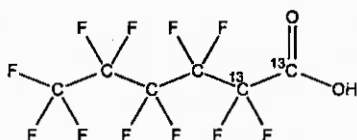
814258
ID: LCMPFHxA_00013
Exp: 04/08/21 Ppdt: SBC
13C2-Perfluorohexanoic ac**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:** MPFHxA
COMPOUND: Perfluoro-n-[1,2-¹³C₂]hexanoic acid**LOT NUMBER:** MPFHxA0416**STRUCTURE:****CAS #:** Not available**MOLECULAR FORMULA:** ¹³C₂¹²C₄HF₁₁O₂
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

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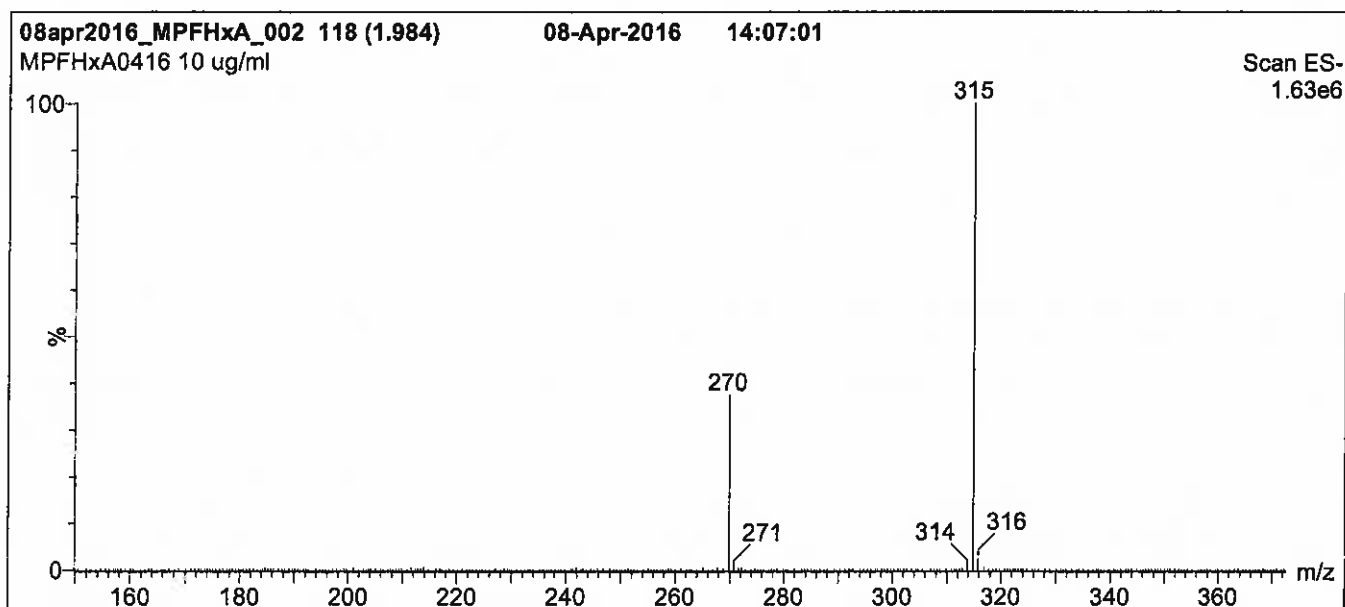
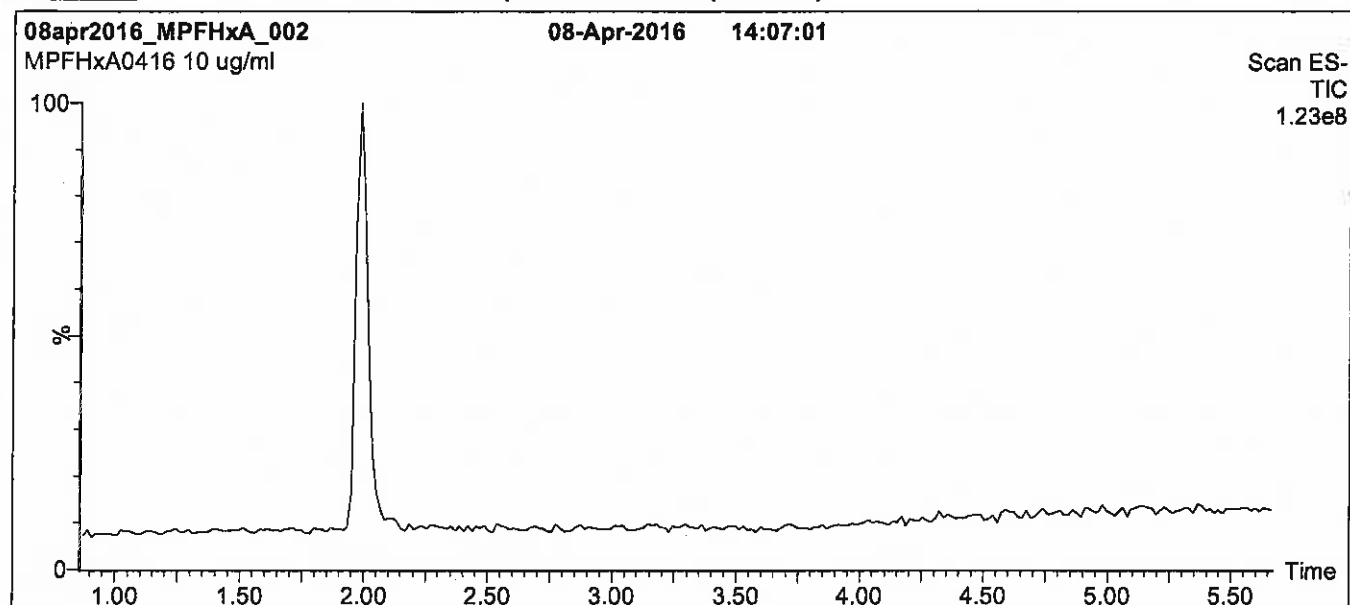
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Figure 1: MPFHxA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield 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)

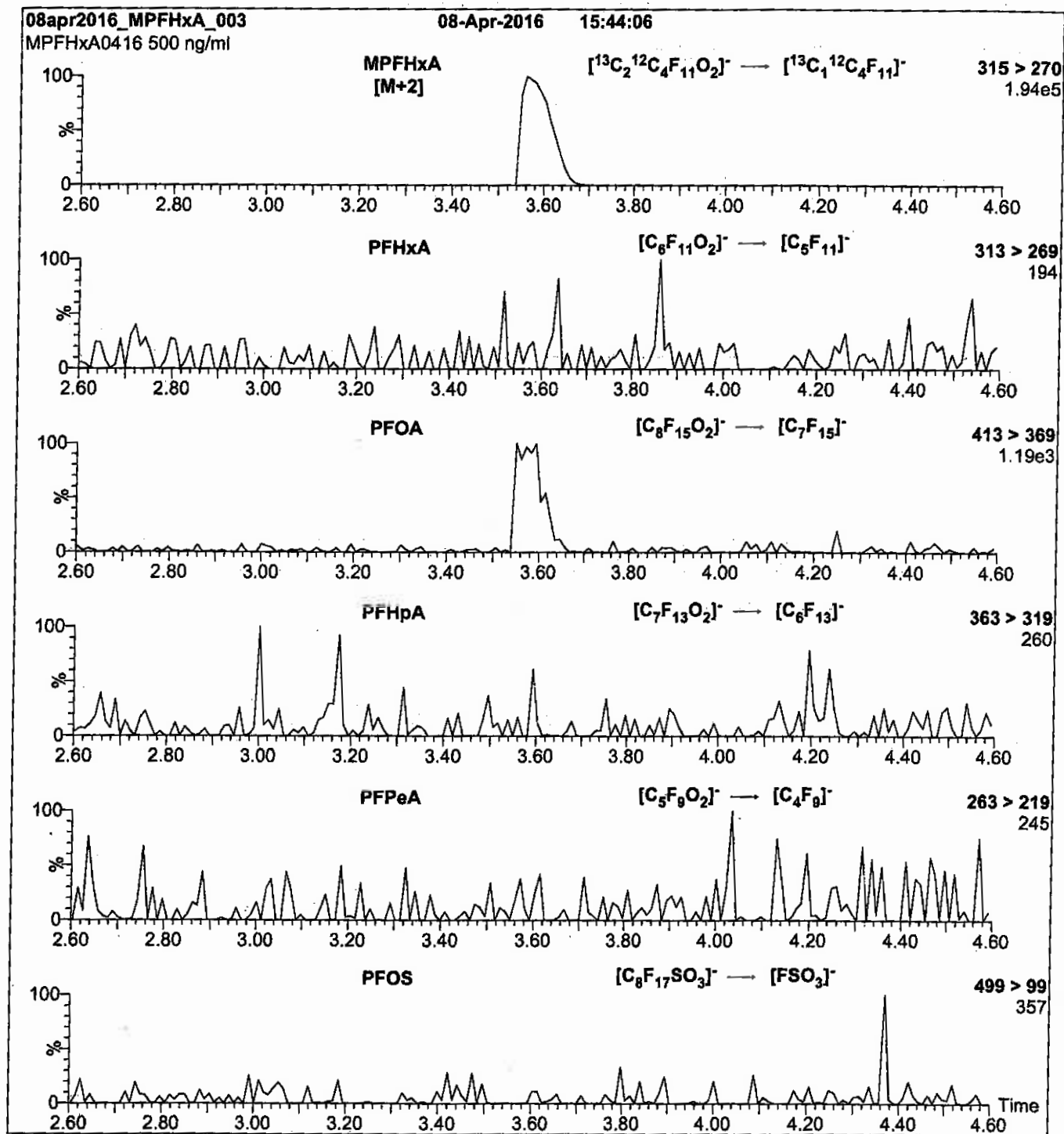
Capillary Voltage (kV) = 2.00

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) = $3.39\text{e-}3$
Collision Energy (eV) = 10

Reagent

LCMPFOS_00019

R: SBC 12/21/16



814253

ID: LCMFOS_00019

Exp: 08/03/21 Pipd: SBC

13C4-Perfluorooctanesulfo

WELLINGTON
LABORATORIESCERTIFICATE OF ANALYSIS
DOCUMENTATION**PRODUCT CODE:**

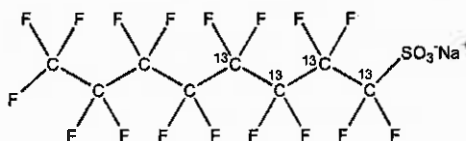
MPFOS

LOT NUMBER:

MPFOS0816

COMPOUND:Sodium perfluoro-1-[1,2,3,4-¹³C₄]octanesulfonate**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**¹³C₄¹²C₄F₁₇SO₃Na**CONCENTRATION:**

50.0 ± 2.5 µg/ml (Na salt)

47.8 ± 2.4 µg/ml (MPFOS anion)

MOLECULAR WEIGHT:

526.08

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

08/03/2016

(1,2,3,4-¹³C₄)**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

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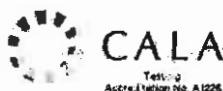
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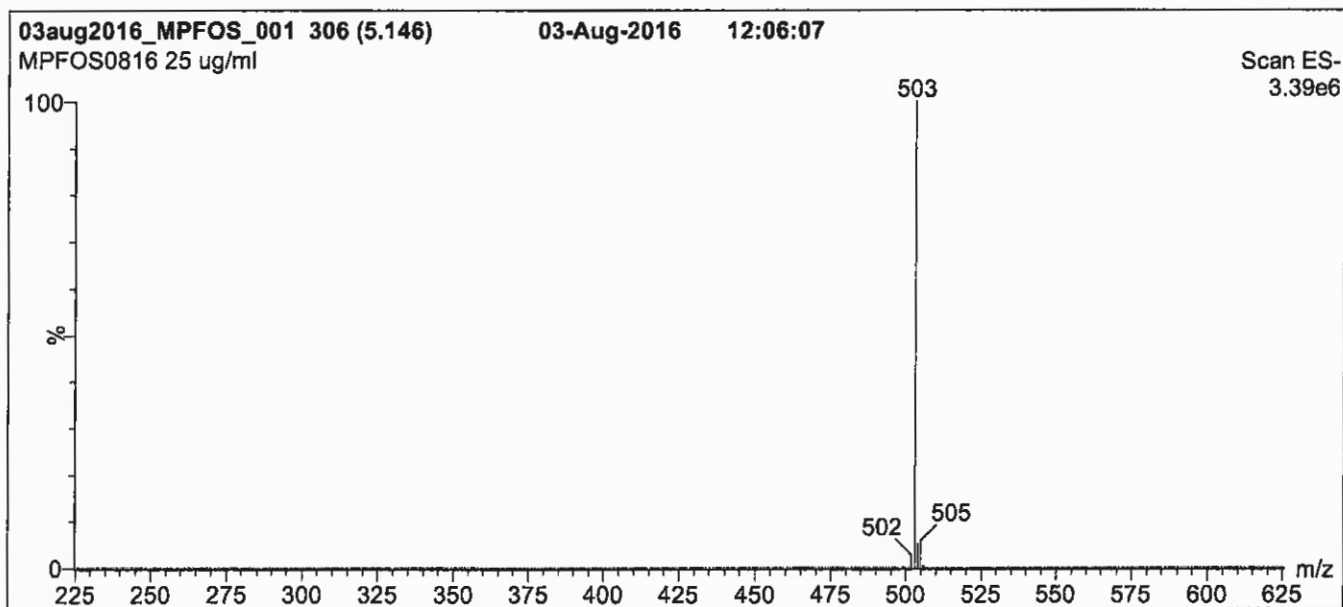
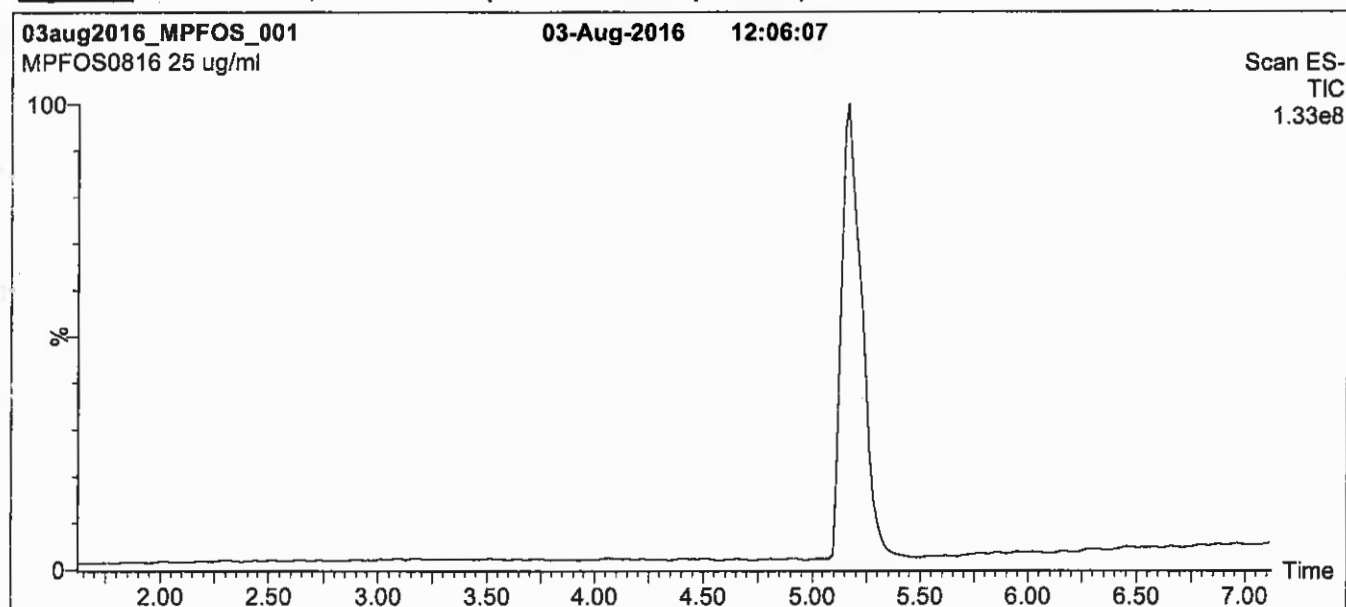
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LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro micro API MS

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

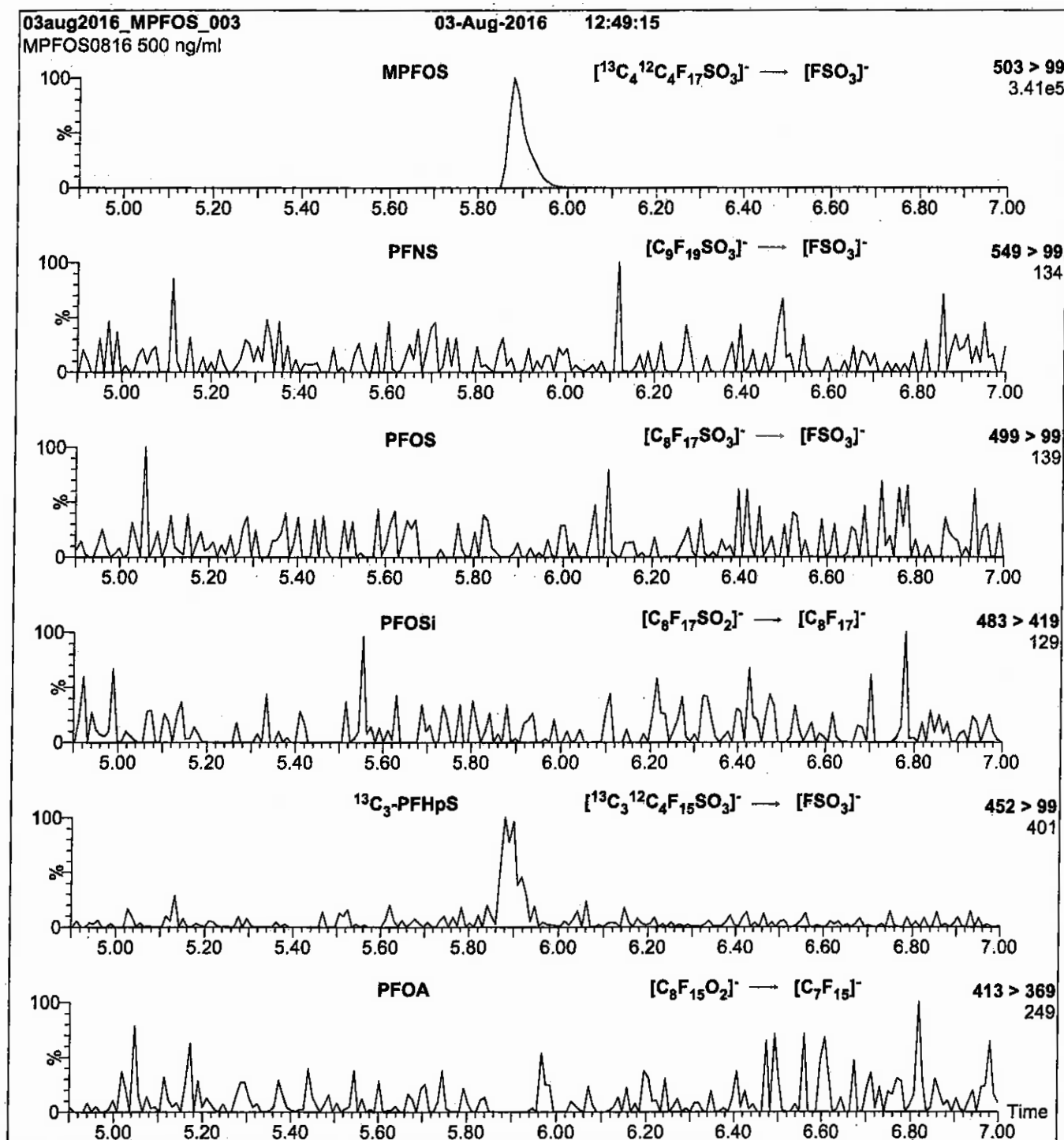
Flow: 300 μ l/min

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

Method 537 DOD

Perfluorinated Alkyl Acids (LC/MS)
by Method 537 DOD

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
NAWC-060717-RW-206 A	320-28916-1	73	76
NAWC-060717-FRB-20 6A	320-28916-2	83	93
NAWC-060717-RW-79	320-28916-3	74	79
NAWC-060717-FRB-79	320-28916-4	17 Q	16 Q
NAWC-060717-FRB-79 RE	320-28916-4 RE	90	93
NAWC-060717-RW-258 A	320-28916-5	48236 Q	46396 Q
NAWC-060717-RW-258 A RE	320-28916-5 RE	84	97
NAWC-060717-RW-258 A RERA	320-28916-5 RERA	75	91
NAWC-060717-FRB-25 8A	320-28916-6	82	90
NAWC-060717-RW-145	320-28916-7	83	68 Q
NAWC-060717-RW-145 RE	320-28916-7 RE	91	95
NAWC-060717-FRB-14 5	320-28916-8	91	77
NAWC-060717-RW-162	320-28916-9	81	86
NAWC-060717-FRB-16 2	320-28916-10	84	92
NAWC-060717-RW-206 B	320-28916-11	92	66 Q
NAWC-060717-RW-206 B RE	320-28916-11 RE	92	92
NAWC-060717-RW-258 B	320-28916-12	89	91
NAWC-060717-RW-56	320-28916-13	75	78
NAWC-060717-FRB-56	320-28916-14	85	70
NAWC-060717-DUP02	320-28916-15	80	77
	MB 320-169764/1-A	90	72
	MB 320-172119/1-A	92	91
	LCS 320-169764/2-A	91	81
	LCSD 320-169764/3-A	93	68 Q
	LLCS 320-172119/2-A	91	94
	LLCSD 320-172119/3-A	97	97

PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA

QC LIMITS
70-130
70-130

Column to be used to flag recovery values

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.06.23_537_019.d
 Lab ID: LCS 320-169764/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	160	157	98	70-130	
Perfluorooctanoic acid (PFOA)	79.9	82.3	103	70-130	
Perfluorononanoic acid (PFNA)	77.0	66.1	86	70-130	
Perfluorohexanesulfonic acid (PFHxS)	120	122	102	70-130	
Perfluoroheptanoic acid (PFHpA)	39.6	45.4	115	70-130	
Perfluorobutanesulfonic acid (PFBS)	353	383	108	70-130	

Column to be used to flag recovery and RPD values

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.06.23_537_020.d
 Lab ID: LCSD 320-169764/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanesulfonic acid (PFOS)	160	152	95	3	30	70-130	
Perfluorooctanoic acid (PFOA)	79.9	79.6	100	3	30	70-130	
Perfluorononanoic acid (PFNA)	77.0	61.8	80	7	30	70-130	
Perfluorohexanesulfonic acid (PFHxS)	120	123	102	0	30	70-130	
Perfluoroheptanoic acid (PFHpA)	39.6	44.5	112	2	30	70-130	
Perfluorobutanesulfonic acid (PFBS)	353	393	111	3	30	70-130	

Column to be used to flag recovery and RPD values

FORM III
LCMS LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.07.06_537A_024.d
 Lab ID: LLCS 320-172119/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LLCS CONCENTRATION (ng/L)	LLCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	40.0	38.5 J	96	50-150	M
Perfluorooctanoic acid (PFOA)	20.0	19.9 J	99	50-150	
Perfluorononanoic acid (PFNA)	19.3	19.4 J	101	50-150	
Perfluorohexanesulfonic acid (PFHxS)	30.1	29.3 J	97	50-150	
Perfluoroheptanoic acid (PFHpA)	9.90	10.7	109	50-150	
Perfluorobutanesulfonic acid (PFBS)	88.3	94.1	107	50-150	

Column to be used to flag recovery and RPD values

FORM III
LCMS LOW LEVEL CONTROL STANDARD DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.07.06_537A_025.d
 Lab ID: LLCSD 320-172119/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LLCSD CONCENTRATION (ng/L)	LLCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanesulfonic acid (PFOS)	40.0	39.4 J	98	2	50	50-150	M
Perfluorooctanoic acid (PFOA)	20.0	20.9	105	5	50	50-150	
Perfluorononanoic acid (PFNA)	19.3	19.4 J	101	0	50	50-150	
Perfluorohexanesulfonic acid (PFHxS)	30.1	28.3 J	94	3	50	50-150	
Perfluoroheptanoic acid (PFHpA)	9.90	11.1	112	3	50	50-150	
Perfluorobutanesulfonic acid (PFBS)	88.3	94.2	107	0.07	50	50-150	

Column to be used to flag recovery and RPD values

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab File ID: 2017.06.23_537_018.d Lab Sample ID: MB 320-169764/1-A
 Matrix: Water Date Extracted: 06/19/2017 09:24
 Instrument ID: A8_N Date Analyzed: 06/23/2017 22:39
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-169764/2-A	2017.06.23_537_019.d	06/23/2017 22:43
	LCSD 320-169764/3-A	2017.06.23_537_020.d	06/23/2017 22:48
NAWC-060717-RW-206A	320-28916-1	2017.06.23_537_021.d	06/23/2017 22:53
NAWC-060717-RW-79	320-28916-3	2017.06.23_537_023.d	06/23/2017 23:02
NAWC-060717-FRB-79	320-28916-4	2017.06.23_537_024.d	06/23/2017 23:07
NAWC-060717-RW-258A	320-28916-5	2017.06.23_537_025.d	06/23/2017 23:12
NAWC-060717-RW-145	320-28916-7	2017.06.23_537_027.d	06/23/2017 23:21
NAWC-060717-FRB-145	320-28916-8	2017.06.23_537_030.d	06/23/2017 23:36
NAWC-060717-RW-162	320-28916-9	2017.06.23_537_031.d	06/23/2017 23:40
NAWC-060717-RW-206B	320-28916-11	2017.06.23_537_033.d	06/23/2017 23:50
NAWC-060717-RW-56	320-28916-13	2017.06.23_537_035.d	06/23/2017 23:59
NAWC-060717-FRB-56	320-28916-14	2017.06.23_537_036.d	06/24/2017 00:04
NAWC-060717-DUP02	320-28916-15	2017.06.23_537_037.d	06/24/2017 00:09
NAWC-060717-FRB-206A	320-28916-2	2017.06.28_537B_007.d	06/28/2017 17:32
NAWC-060717-FRB-258A	320-28916-6	2017.06.28_537B_011.d	06/28/2017 17:51
NAWC-060717-FRB-162	320-28916-10	2017.06.28_537B_017.d	06/28/2017 18:19
NAWC-060717-RW-258B	320-28916-12	2017.06.28_537B_019.d	06/28/2017 18:29

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab File ID: 2017.07.06_537A_023.d Lab Sample ID: MB 320-172119/1-A
 Matrix: Water Date Extracted: 07/03/2017 09:49
 Instrument ID: A8_N Date Analyzed: 07/07/2017 01:01
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LLCS 320-172119/2-A	2017.07.06_537A_024.d	07/07/2017 01:06
	LLCSD 320-172119/3-A	2017.07.06_537A_025.d	07/07/2017 01:10
NAWC-060717-FRB-79 RE	320-28916-4 RE	2017.07.06_537A_026.d	07/07/2017 01:15
NAWC-060717-RW-258A RE	320-28916-5 RE	2017.07.06_537A_027.d	07/07/2017 01:20
NAWC-060717-RW-145 RE	320-28916-7 RE	2017.07.06_537A_028.d	07/07/2017 01:25
NAWC-060717-RW-206B RE	320-28916-11 RE	2017.07.06_537A_029.d	07/07/2017 01:29
NAWC-060717-RW-258A RERA	320-28916-5 RERA	19JUL2017A6038.d	07/19/2017 18:40

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Instrument ID: A6 Calibration Start Date: 07/11/2017 14:18
 GC Column: GeminiC18 3x100 ID: 3(mm) Calibration End Date: 07/11/2017 15:05
 Calibration ID: 32318

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		450436	3.41	941742	3.83		
UPPER LIMIT		675654	3.91	1412613	4.33		
LOWER LIMIT		225218	2.91	470871	3.33		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-173534/14		427789	3.41	968938	3.82		
ICV 320-173534/16		465673	3.41	985132	3.81		
CCV 320-174993/35 CCVIS		384974	3.27	771185	3.62		
320-28916-5 RERA	NAWC-060717-RW-258A RERA	381076	3.27	844190	3.63		
CCV 320-174993/39 CCVIS		399300	3.27	794629	3.63		

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-174993/35 Date Analyzed: 07/19/2017 18:13
 Instrument ID: A6 GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 19JUL2017A6_035.d Heated Purge: (Y/N) N
 Calibration ID: 32318

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	384974	3.27	771185	3.62		
UPPER LIMIT	538964	3.77	1079659	4.12		
LOWER LIMIT	269482	2.77	539830	3.12		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-28916-5 RERA	NAWC-060717-RW-258A RERA		381076	3.27	844190	3.63

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-174993/39 Date Analyzed: 07/19/2017 18:49
 Instrument ID: A6 GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 19JUL2017A6_039.d Heated Purge: (Y/N) N
 Calibration ID: 32318

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	399300	3.27	794629	3.63		
UPPER LIMIT	559020	3.77	1112481	4.13		
LOWER LIMIT	279510	2.77	556240	3.13		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-28916-5 RERA	NAWC-060717-RW-258A RERA		381076	3.27	844190	3.63

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Instrument ID: A8_N Calibration Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3(mm) Calibration End Date: 06/19/2017 18:04
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		3870975	2.86	9204122	2.99		
UPPER LIMIT		5806463	3.36	13806183	3.49		
LOWER LIMIT		1935488	2.36	4602061	2.49		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-169955/11		3724287	2.86	8759638	2.99		
ICV 320-169955/13		3818724	2.85	9420237	2.99		
CCVL 320-170756/4		3324713	2.97	9202106	3.10		
CCV 320-170757/16 CCVIS		3755516	3.00	10146250	3.13		
MB 320-169764/1-A		3675107	2.99	9517190	3.13		
LCS 320-169764/2-A		3410881	3.00	8977613	3.13		
320-28916-1	NAWC-060717-RW-206A	3430791	3.00	9562787	3.13		
320-28916-3	NAWC-060717-RW-79	3252034	3.00	9259264	3.13		
320-28916-4	NAWC-060717-FRB-79	3305372	3.00	9018633	3.13		
320-28916-5	NAWC-060717-RW-258A	6096Q	2.99	28231Q	3.12		
320-28916-7	NAWC-060717-RW-145	3472036	3.00	9551542	3.13		
CCV 320-170757/28 CCVIS		3741048	3.00	10476733	3.13		
CCV 320-170758/28 CCVIS		3741048	3.00	10476733	3.13		
320-28916-8	NAWC-060717-FRB-145	3611365	2.99	9737019	3.13		
320-28916-9	NAWC-060717-RW-162	3247640	3.00	9698322	3.13		
320-28916-11	NAWC-060717-RW-206B	3595082	3.00	9532883	3.13		
320-28916-13	NAWC-060717-RW-56	3369243	3.00	9643905	3.13		
320-28916-14	NAWC-060717-FRB-56	3390484	3.00	9264399	3.13		
320-28916-15	NAWC-060717-DUP02	3504602	2.99	9894345	3.13		
CCV 320-170758/40 CCVIS		3800811	3.00	10834949	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-170757/16 Date Analyzed: 06/23/2017 22:29
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.23_537_016. Heated Purge: (Y/N) N
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3755516	3.00	10146250	3.13		
UPPER LIMIT		5257722	3.50	14204750	3.63		
LOWER LIMIT		2628861	2.50	7102375	2.63		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-169764/1-A		3675107	2.99	9517190	3.13		
LCS 320-169764/2-A		3410881	3.00	8977613	3.13		
LCSD 320-169764/3-A		3275235	3.00	8450857	3.13		
320-28916-1	NAWC-060717-RW-206A	3430791	3.00	9562787	3.13		
320-28916-3	NAWC-060717-RW-79	3252034	3.00	9259264	3.13		
320-28916-4	NAWC-060717-FRB-79	3305372	3.00	9018633	3.13		
320-28916-5	NAWC-060717-RW-258A	6096Q	2.99	28231Q	3.12		
320-28916-7	NAWC-060717-RW-145	3472036	3.00	9551542	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-170757/28 Date Analyzed: 06/23/2017 23:26
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.23_537_028. Heated Purge: (Y/N) N
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3741048	3.00	10476733	3.13		
UPPER LIMIT		5237467	3.50	14667426	3.63		
LOWER LIMIT		2618734	2.50	7333713	2.63		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-169764/1-A		3675107	2.99	9517190	3.13		
LCS 320-169764/2-A		3410881	3.00	8977613	3.13		
LCSD 320-169764/3-A		3275235	3.00	8450857	3.13		
320-28916-1	NAWC-060717-RW-206A	3430791	3.00	9562787	3.13		
320-28916-3	NAWC-060717-RW-79	3252034	3.00	9259264	3.13		
320-28916-4	NAWC-060717-FRB-79	3305372	3.00	9018633	3.13		
320-28916-5	NAWC-060717-RW-258A	6096Q	2.99	28231Q	3.12		
320-28916-7	NAWC-060717-RW-145	3472036	3.00	9551542	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-170758/28 Date Analyzed: 06/23/2017 23:26
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.23_537_028. Heated Purge: (Y/N) N
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3741048	3.00	10476733	3.13		
UPPER LIMIT		5237467	3.50	14667426	3.63		
LOWER LIMIT		2618734	2.50	7333713	2.63		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-28916-8	NAWC-060717-FRB-145	3611365	2.99	9737019	3.13		
320-28916-9	NAWC-060717-RW-162	3247640	3.00	9698322	3.13		
320-28916-11	NAWC-060717-RW-206B	3595082	3.00	9532883	3.13		
320-28916-13	NAWC-060717-RW-56	3369243	3.00	9643905	3.13		
320-28916-14	NAWC-060717-FRB-56	3390484	3.00	9264399	3.13		
320-28916-15	NAWC-060717-DUP02	3504602	2.99	9894345	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-170758/40 Date Analyzed: 06/24/2017 00:23
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.23_537_040. Heated Purge: (Y/N) N
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3800811	3.00	10834949	3.13		
UPPER LIMIT		5321135	3.50	15168929	3.63		
LOWER LIMIT		2660568	2.50	7584464	2.63		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-28916-8	NAWC-060717-FRB-145	3611365	2.99	9737019	3.13		
320-28916-9	NAWC-060717-RW-162	3247640	3.00	9698322	3.13		
320-28916-11	NAWC-060717-RW-206B	3595082	3.00	9532883	3.13		
320-28916-13	NAWC-060717-RW-56	3369243	3.00	9643905	3.13		
320-28916-14	NAWC-060717-FRB-56	3390484	3.00	9264399	3.13		
320-28916-15	NAWC-060717-DUP02	3504602	2.99	9894345	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Instrument ID: A8_N Calibration Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3 (mm) Calibration End Date: 06/28/2017 16:35
 Calibration ID: 32056

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		1994745	1.88	5921908	2.12		
UPPER LIMIT		2992118	2.38	8882862	2.62		
LOWER LIMIT		997373	1.38	2960954	1.62		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-171480/11		1582044	1.88	4789035	2.12		
ICV 320-171480/13		1851564	1.87	5746016	2.12		
CCV 320-171486/1 CCVIS		2273492	1.88	7068921	2.12		
320-28916-2	NAWC-060717-FRB-206A	1730623	1.87	5122339	2.12		
320-28916-6	NAWC-060717-FRB-258A	1642678	1.87	5026090	2.12		
CCV 320-171486/13 CCVIS		2250330	1.87	6965525	2.11		
CCV 320-171487/13 CCVIS		2250330	1.87	6965525	2.11		
320-28916-10	NAWC-060717-FRB-162	1787242	1.87	5229286	2.10		
320-28916-12	NAWC-060717-RW-258B	1752750	1.87	5073699	2.11		
CCV 320-171487/25 CCVIS		2130233	1.87	6980804	2.11		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-171486/1 Date Analyzed: 06/28/2017 17:03
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.28_537B_001 Heated Purge: (Y/N) N
 Calibration ID: 32056

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	2273492	1.88	7068921	2.12		
UPPER LIMIT	3182889	2.38	9896489	2.62		
LOWER LIMIT	1591444	1.38	4948245	1.62		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-28916-2	NAWC-060717-FRB-206A		1730623	1.87	5122339	2.12
320-28916-6	NAWC-060717-FRB-258A		1642678	1.87	5026090	2.12

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-171486/13 Date Analyzed: 06/28/2017 18:00
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.28_537B_013 Heated Purge: (Y/N) N
 Calibration ID: 32056

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	2250330	1.87	6965525	2.11		
UPPER LIMIT	3150462	2.37	9751735	2.61		
LOWER LIMIT	1575231	1.37	4875868	1.61		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-28916-2	NAWC-060717-FRB-206A		1730623	1.87	5122339	2.12
320-28916-6	NAWC-060717-FRB-258A		1642678	1.87	5026090	2.12

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-171487/13 Date Analyzed: 06/28/2017 18:00
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.28_537B_013 Heated Purge: (Y/N) N
 Calibration ID: 32056

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	2250330	1.87	6965525	2.11		
UPPER LIMIT	3150462	2.37	9751735	2.61		
LOWER LIMIT	1575231	1.37	4875868	1.61		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-28916-10	NAWC-060717-FRB-162		1787242	1.87	5229286	2.10
320-28916-12	NAWC-060717-RW-258B		1752750	1.87	5073699	2.11

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-171487/25 Date Analyzed: 06/28/2017 18:57
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.28_537B_025 Heated Purge: (Y/N) N
 Calibration ID: 32056

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	2130233	1.87	6980804	2.11		
UPPER LIMIT	2982326	2.37	9773126	2.61		
LOWER LIMIT	1491163	1.37	4886563	1.61		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-28916-10	NAWC-060717-FRB-162		1787242	1.87	5229286	2.10
320-28916-12	NAWC-060717-RW-258B		1752750	1.87	5073699	2.11

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Instrument ID: A8_N Calibration Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3 (mm) Calibration End Date: 07/05/2017 20:13
 Calibration ID: 32198

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		966867	1.88	2790947	2.12		
UPPER LIMIT		1450301	2.38	4186421	2.62		
LOWER LIMIT		483434	1.38	1395474	1.62		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-172646/11		960063	1.87	2831967	2.11		
ICV 320-172646/13		920859	1.87	2667731	2.11		
CCV 320-172925/21 CCVIS		950253	1.87	2836262	2.10		
MB 320-172119/1-A		1083015	1.87	3110942	2.10		
LLCS 320-172119/2-A		1053354	1.86	3003980	2.10		
LLCSD 320-172119/3-A		1029303	1.87	3025587	2.10		
320-28916-4 RE	NAWC-060717-FRB-79 RE	1099242	1.86	3057297	2.09		
320-28916-5 RE	NAWC-060717-RW-258A RE	1083388	1.87	3020215	2.10		
320-28916-7 RE	NAWC-060717-RW-145 RE	1045604	1.86	2855283	2.10		
320-28916-11 RE	NAWC-060717-RW-206B RE	1046919	1.87	2909172	2.10		
CCV 320-172925/31 CCVIS		962177	1.86	2769042	2.10		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-172925/21 Date Analyzed: 07/07/2017 00:51
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.07.06_537A_021 Heated Purge: (Y/N) N
 Calibration ID: 32198

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		950253	1.87	2836262	2.10		
UPPER LIMIT		1330354	2.37	3970767	2.60		
LOWER LIMIT		665177	1.37	1985383	1.60		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-172119/1-A		1083015	1.87	3110942	2.10		
LLCS 320-172119/2-A		1053354	1.86	3003980	2.10		
LLCSD 320-172119/3-A		1029303	1.87	3025587	2.10		
320-28916-4 RE	NAWC-060717-FRB-79 RE	1099242	1.86	3057297	2.09		
320-28916-5 RE	NAWC-060717-RW-258A RE	1083388	1.87	3020215	2.10		
320-28916-7 RE	NAWC-060717-RW-145 RE	1045604	1.86	2855283	2.10		
320-28916-11 RE	NAWC-060717-RW-206B RE	1046919	1.87	2909172	2.10		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-172925/31 Date Analyzed: 07/07/2017 01:39
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.07.06_537A_031 Heated Purge: (Y/N) N
 Calibration ID: 32198

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	962177	1.86	2769042	2.10		
UPPER LIMIT	1347048	2.36	3876659	2.60		
LOWER LIMIT	673524	1.36	1938329	1.60		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-172119/1-A		1083015	1.87	3110942	2.10	
LLCS 320-172119/2-A		1053354	1.86	3003980	2.10	
LLCSD 320-172119/3-A		1029303	1.87	3025587	2.10	
320-28916-4 RE	NAWC-060717-FRB-79 RE	1099242	1.86	3057297	2.09	
320-28916-5 RE	NAWC-060717-RW-258A RE	1083388	1.87	3020215	2.10	
320-28916-7 RE	NAWC-060717-RW-145 RE	1045604	1.86	2855283	2.10	
320-28916-11 RE	NAWC-060717-RW-206B RE	1046919	1.87	2909172	2.10	

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: NAWC-060717-RW-206A Lab Sample ID: 320-28916-1
 Matrix: Water Lab File ID: 2017.06.23_537_021.d
 Analysis Method: 537 Date Collected: 06/07/2017 08:10
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 257.5 (mL) Date Analyzed: 06/23/2017 22:53
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170757 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	13	J	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	12	J	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.2	J	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U M	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	73		70-130
STL00996	13C2 PFDA	76		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_021.d
 Lims ID: 320-28916-A-1-A
 Client ID: NAWC-060717-RW-206A
 Sample Type: Client
 Inject. Date: 23-Jun-2017 22:53:17 ALS Bottle#: 13 Worklist Smp#: 21
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-1-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:26:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.314	2.183	0.131	1.000	342287	1.19		46.1	M
298.90 > 99.00	2.314	2.183	0.131	1.000	266828		1.28(0.00-0.00)	67.0	M
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	2593685	7.29		5407	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.777	2.625	0.152	1.000	311939	0.8016		34.7	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.784	2.630	0.154	1.000	241283	0.8340		12.0	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3430791	10.0		8292	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	916949	3.05		50.1	
413.00 > 169.00	2.989	2.859	0.130	0.997	577676		1.59(0.00-0.00)	612	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		9562787	28.7		6497	
9 Perfluorononanoic acid									
463.00 > 419.00	3.133	3.003	0.130	1.000	108086	0.3693		5.0	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.262	3.123	0.139	1.000	2524566	7.65		4884	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.118	3.126	-0.008	1.000	1167772	3.45		394	
499.00 > 99.00	3.126	3.126	0.0	1.002	199239		5.86(0.00-0.00)	154	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_021.d

Injection Date: 23-Jun-2017 22:53:17

Instrument ID: A8_N

Lims ID: 320-28916-A-1-A

Lab Sample ID: 320-28916-1

Client ID: NAWC-060717-RW-206A

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 21

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

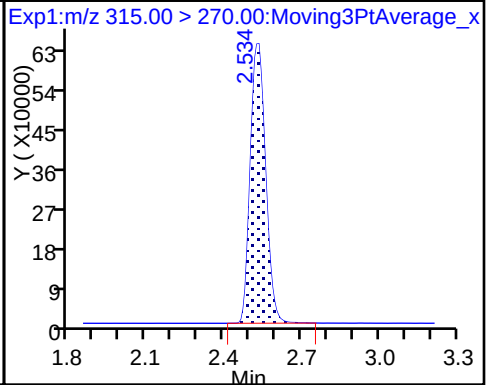
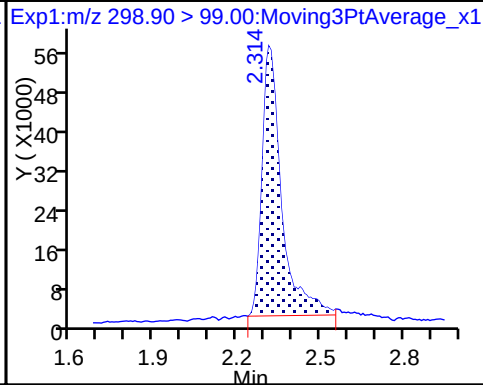
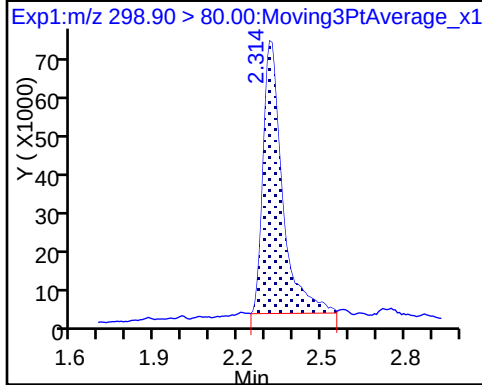
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (M)

1 Perfluorobutanesulfonic acid (M)

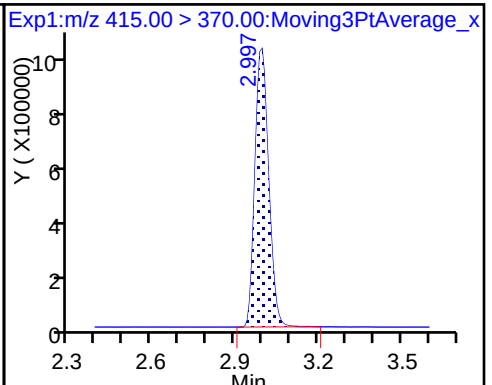
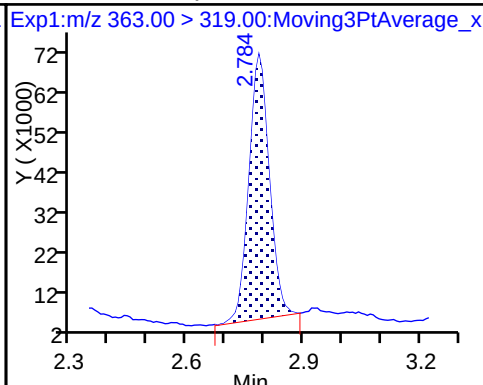
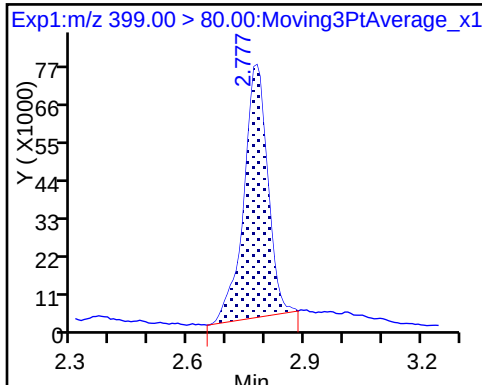
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

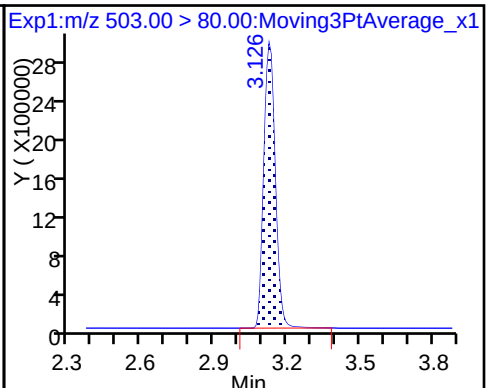
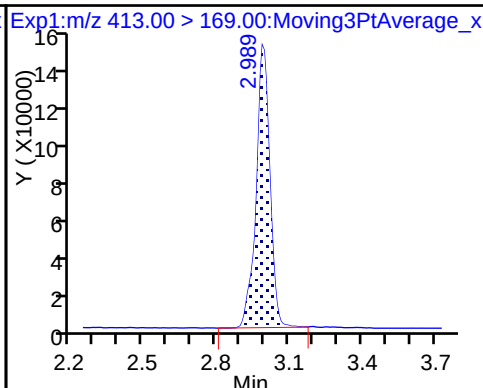
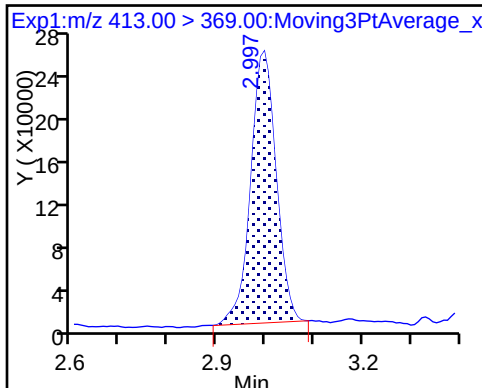
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

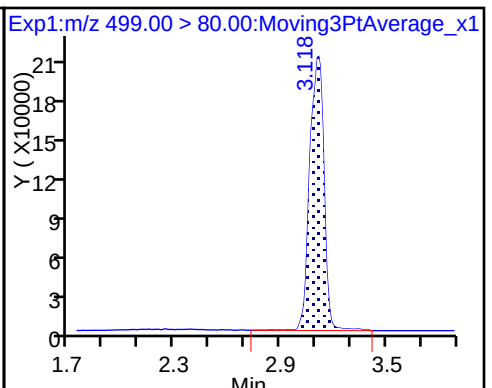
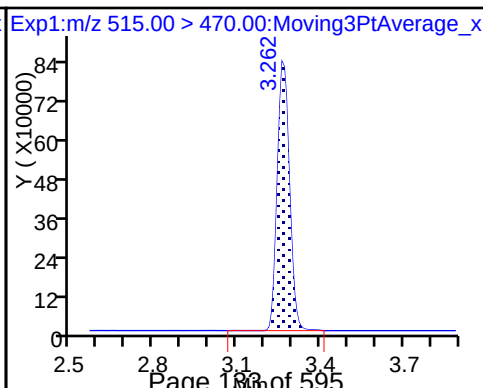
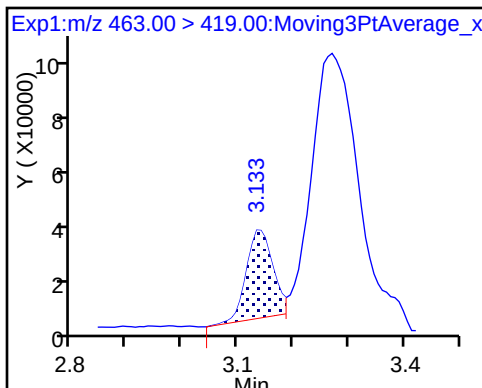
* 7 13C4 PFOS



9 Perfluorononanoic acid

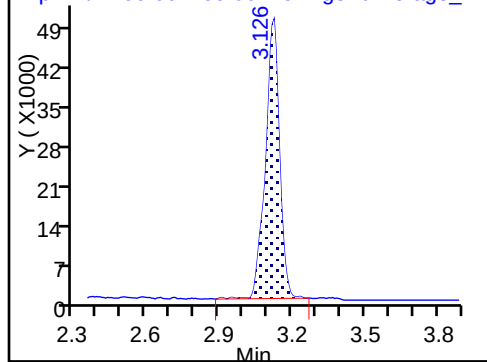
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_021.d
Lims ID: 320-28916-A-1-A
Client ID: NAWC-060717-RW-206A
Sample Type: Client
Inject. Date: 23-Jun-2017 22:53:17 ALS Bottle#: 13 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-1-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:26:10

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	7.29	72.86
\$ 10 13C2 PFDA	10.0	7.65	76.47

TestAmerica Sacramento

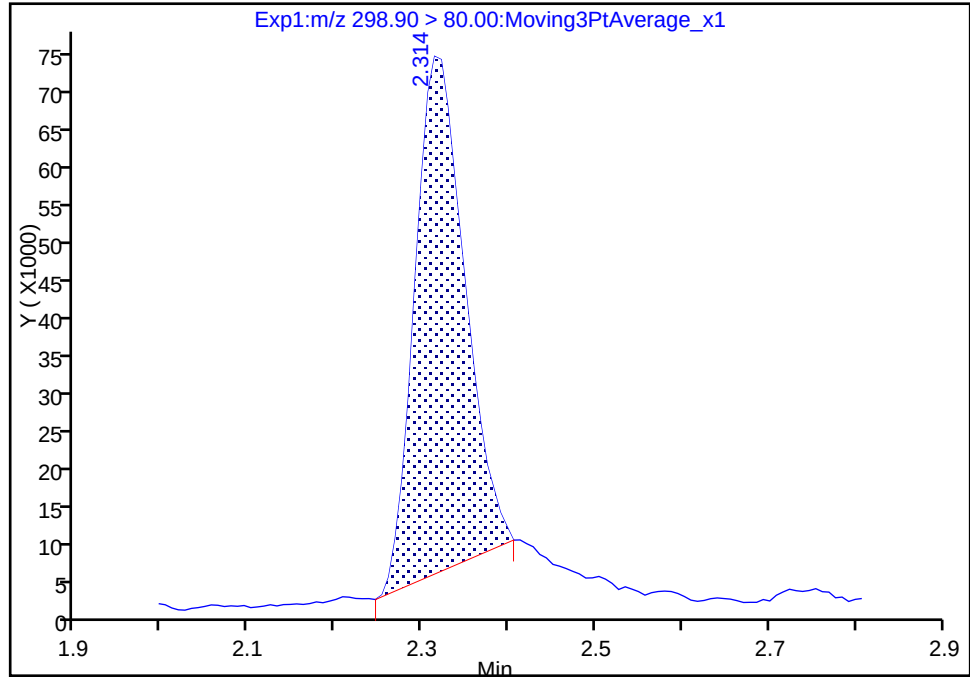
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Injection Date: 23-Jun-2017 22:53:17 Instrument ID: A8_N
Lims ID: 320-28916-A-1-A Lab Sample ID: 320-28916-1
Client ID: NAWC-060717-RW-206A
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

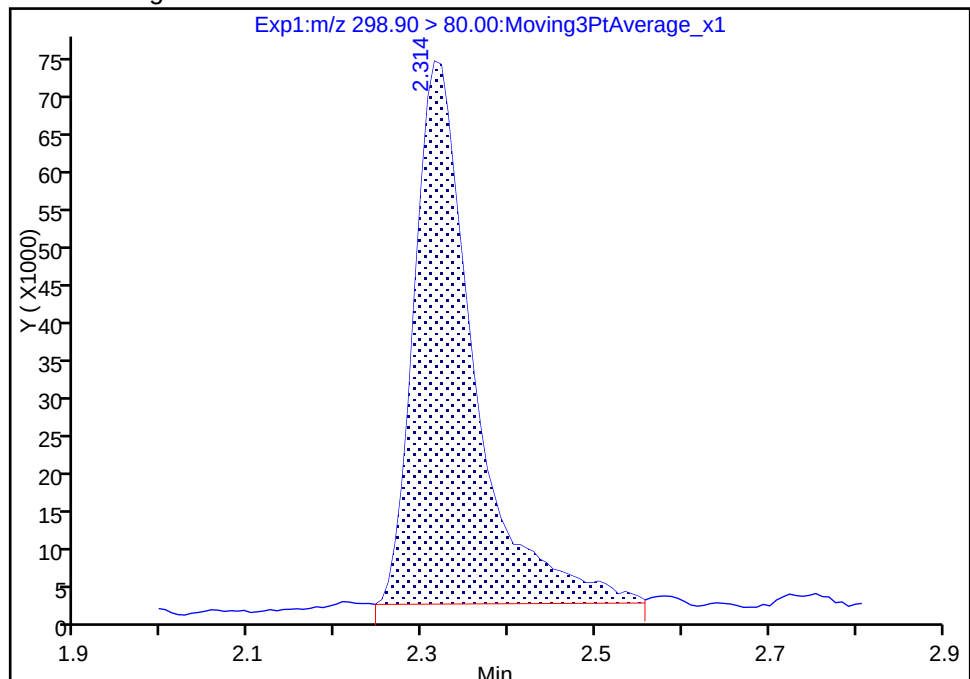
RT: 2.31
Area: 271475
Amount: 0.941821
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 342287
Amount: 1.187487
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:25:12
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 136 of 595

TestAmerica Sacramento

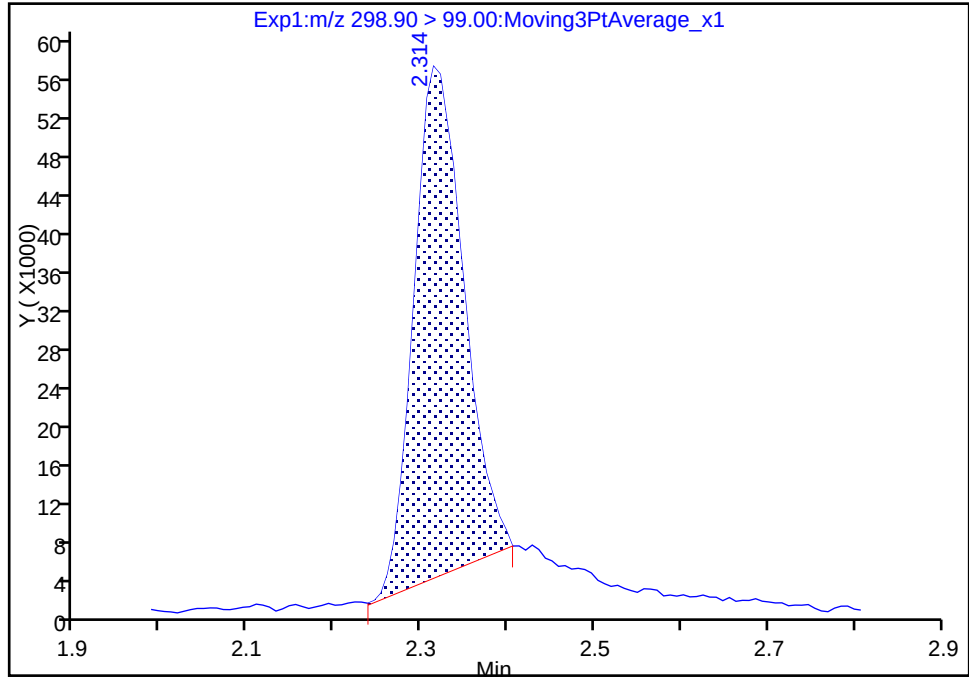
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_021.d
Injection Date: 23-Jun-2017 22:53:17 Instrument ID: A8_N
Lims ID: 320-28916-A-1-A Lab Sample ID: 320-28916-1
Client ID: NAWC-060717-RW-206A
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

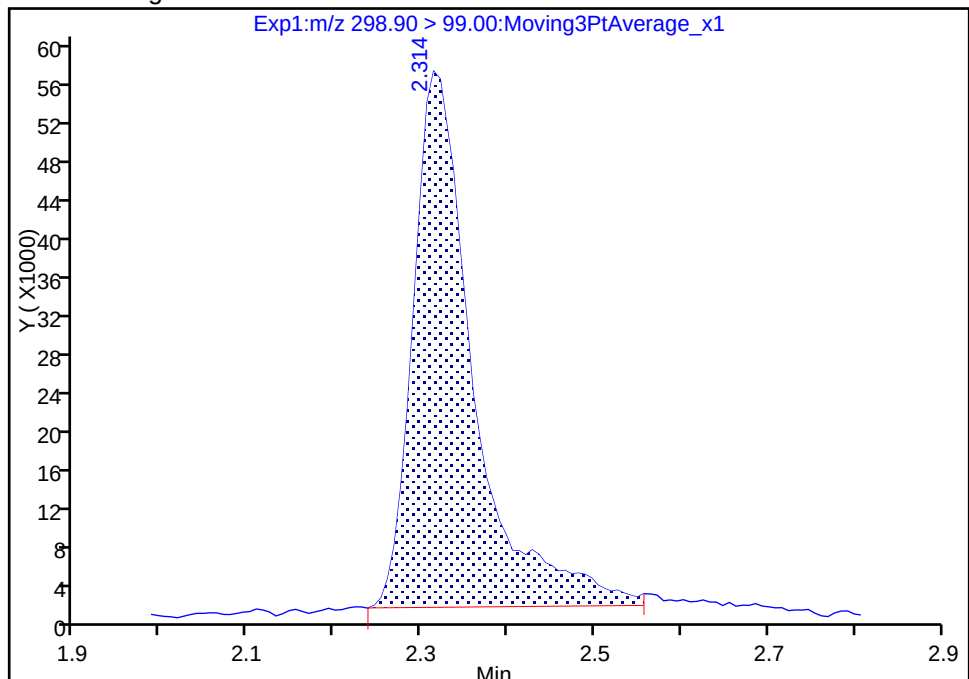
RT: 2.31
Area: 209985
Amount: 0.941821
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 266828
Amount: 1.187487
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:25:49

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-FRB-206A</u>	Lab Sample ID: <u>320-28916-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.28_537B_007.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 08:05</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>264.1 (mL)</u>	Date Analyzed: <u>06/28/2017 17:32</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>171486</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	38	15	6.4
335-67-1	Perfluorooctanoic acid (PFOA)	7.6	U	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	28	11	5.2
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.8	U	9.5	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	85	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	93		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_007.d
 Lims ID: 320-28916-A-2-A
 Client ID: NAWC-060717-FRB-206A
 Sample Type: Client
 Inject. Date: 28-Jun-2017 17:32:05 ALS Bottle#: 5 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-a-2-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 13:54:12 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	1730184	8.31		4810	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.882	-0.008		1730623	10.0		4682	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.119	-0.002		5122339	28.7		3254	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.291	2.291	0.0	1.000	1055506	9.26		3778	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_007.d

Injection Date: 28-Jun-2017 17:32:05

Instrument ID: A8_N

Lims ID: 320-28916-A-2-A

Lab Sample ID: 320-28916-2

Client ID: NAWC-060717-FRB-206A

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

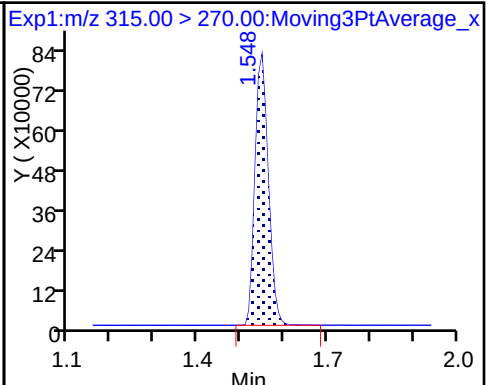
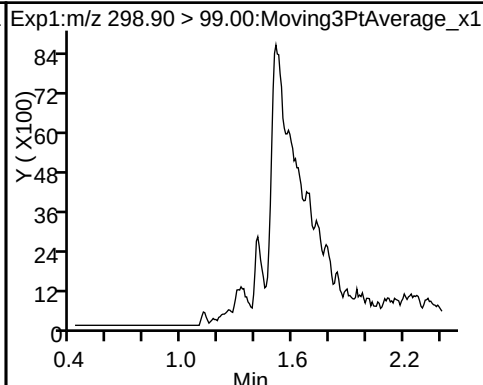
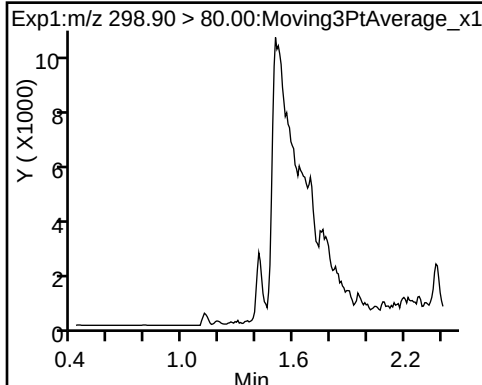
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

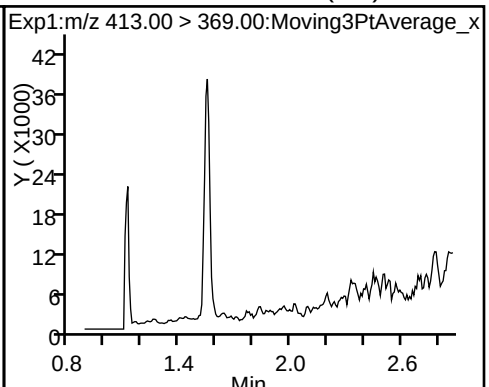
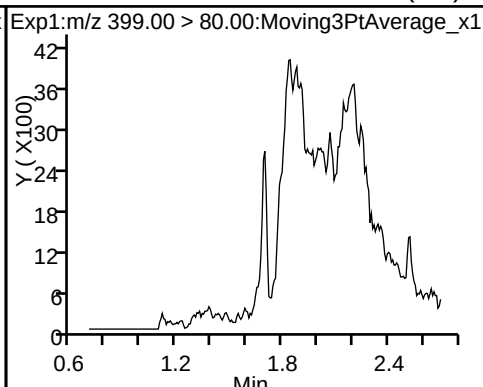
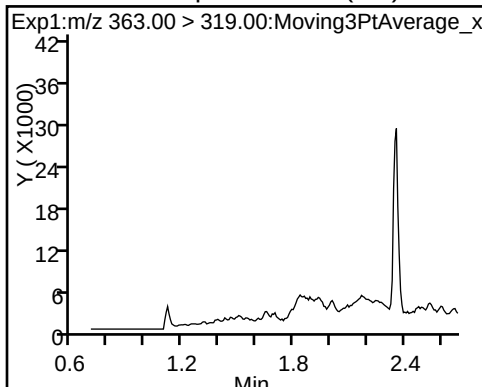
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid (ND)

3 Perfluorohexanesulfonic acid (ND)

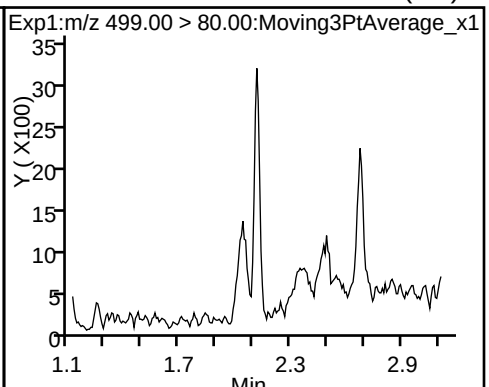
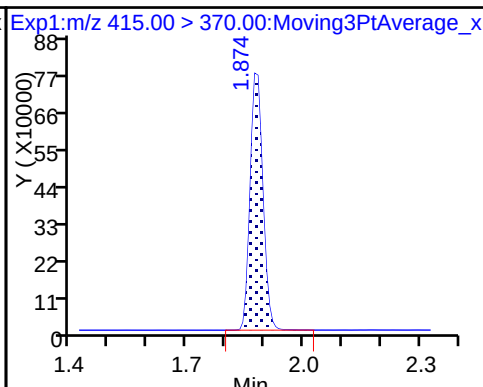
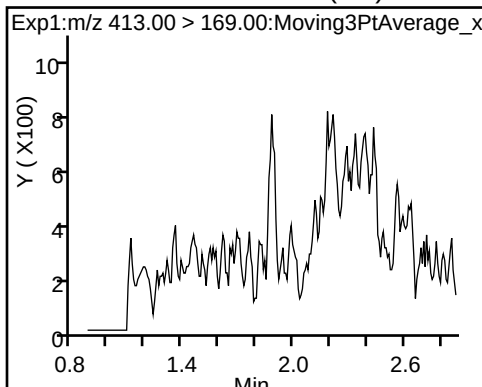
5 Perfluorooctanoic acid (ND)



5 Perfluorooctanoic acid (ND)

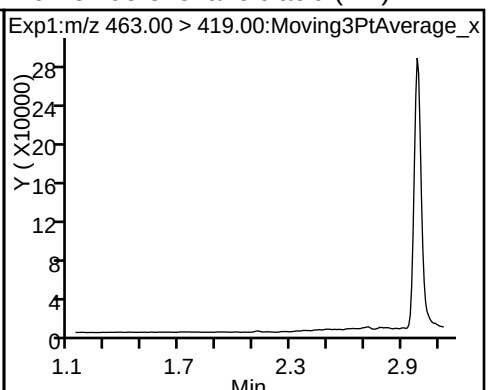
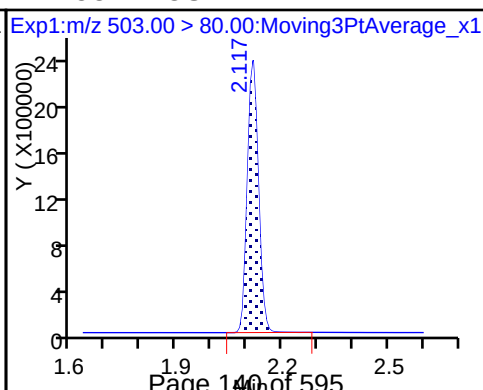
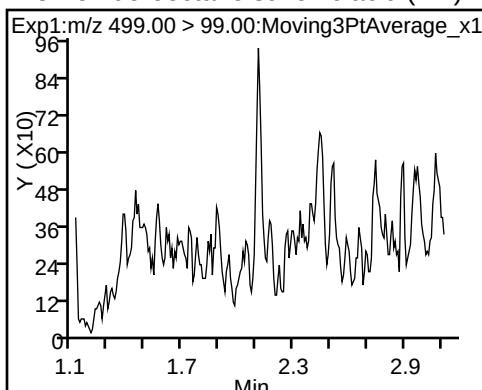
* 6 13C2-PFOA

8 Perfluorooctane sulfonic acid (ND)

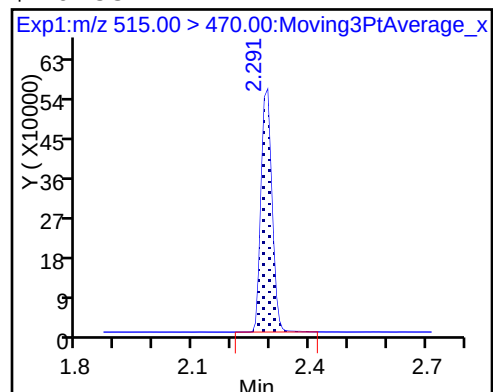


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_007.d
Lims ID: 320-28916-A-2-A
Client ID: NAWC-060717-FRB-206A
Sample Type: Client
Inject. Date: 28-Jun-2017 17:32:05 ALS Bottle#: 5 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-a-2-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 13:54:12 Calib Date: 28-Jun-2017 16:35:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.31	83.09
\$ 10 13C2 PFDA	10.0	9.26	92.65

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-79</u>	Lab Sample ID: <u>320-28916-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.23_537_023.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:10</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>262.4 (mL)</u>	Date Analyzed: <u>06/23/2017 23:02</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>170757</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	14	J	38	15	6.5
335-67-1	Perfluorooctanoic acid (PFOA)	16	J	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	J	29	11	5.2
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.9	J	9.5	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U M	86	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	74		70-130
STL00996	13C2 PFDA	79		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_023.d
 Lims ID: 320-28916-A-3-A
 Client ID: NAWC-060717-RW-79
 Sample Type: Client
 Inject. Date: 23-Jun-2017 23:02:47 ALS Bottle#: 15 Worklist Smp#: 23
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-3-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:34:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.322	2.183	0.139	1.000	343319	1.23		22.6	M
298.90 > 99.00	2.322	2.183	0.139	1.000	311496		1.10(0.00-0.00)	78.9	M
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	2505736	7.43		4310	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.784	2.625	0.159	1.000	1089955	2.89		57.7	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.792	2.630	0.162	1.000	352612	1.29		11.3	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3252034	10.0		6693	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	1206597	4.24		47.5	
413.00 > 169.00	2.997	2.859	0.138	1.000	762479		1.58(0.00-0.00)	573	
* 7 13C4 PFOS									
503.00 > 80.00	3.133	2.991	0.142		9259264	28.7		2876	
9 Perfluorononanoic acid									
463.00 > 419.00	3.141	3.003	0.138	1.000	100605	0.3627		4.7	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2467032	7.88		4156	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.118	3.126	-0.008	1.000	1183782	3.61		179	
499.00 > 99.00	3.126	3.126	0.0	1.002	192761		6.14(0.00-0.00)	117	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_023.d

Injection Date: 23-Jun-2017 23:02:47

Instrument ID: A8_N

Lims ID: 320-28916-A-3-A

Lab Sample ID: 320-28916-3

Client ID: NAWC-060717-RW-79

Operator ID: SACINSTLCMS01

ALS Bottle#: 15

Worklist Smp#: 23

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

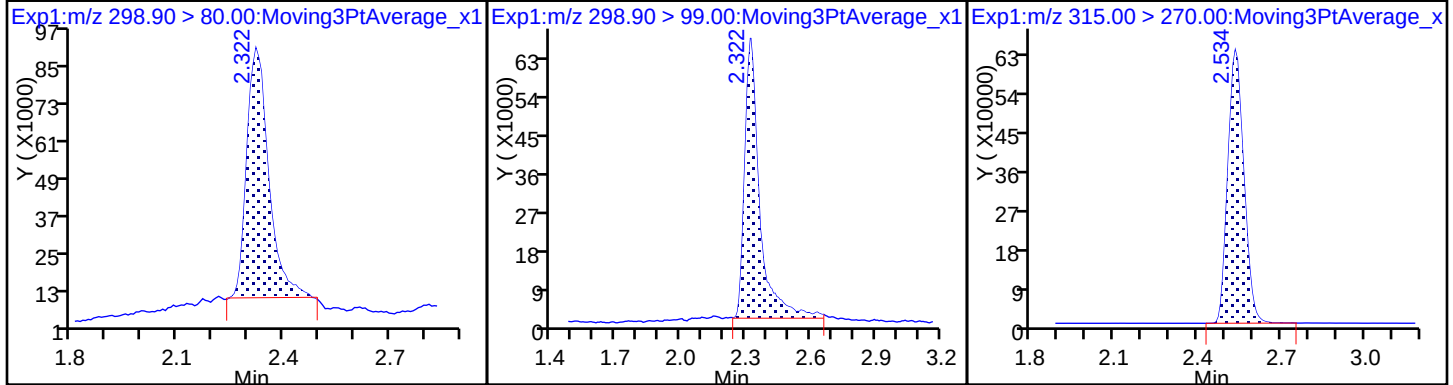
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (M)

1 Perfluorobutanesulfonic acid (M)

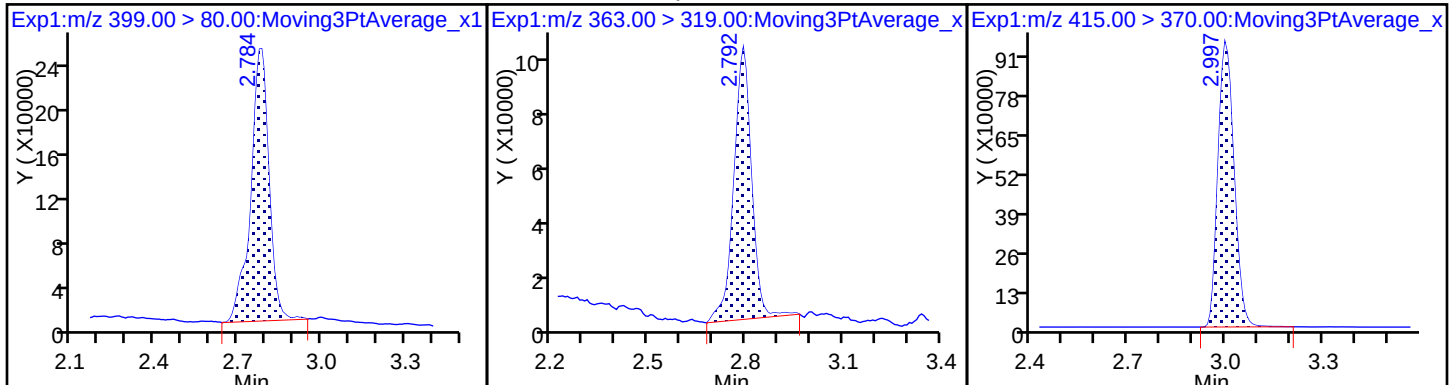
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

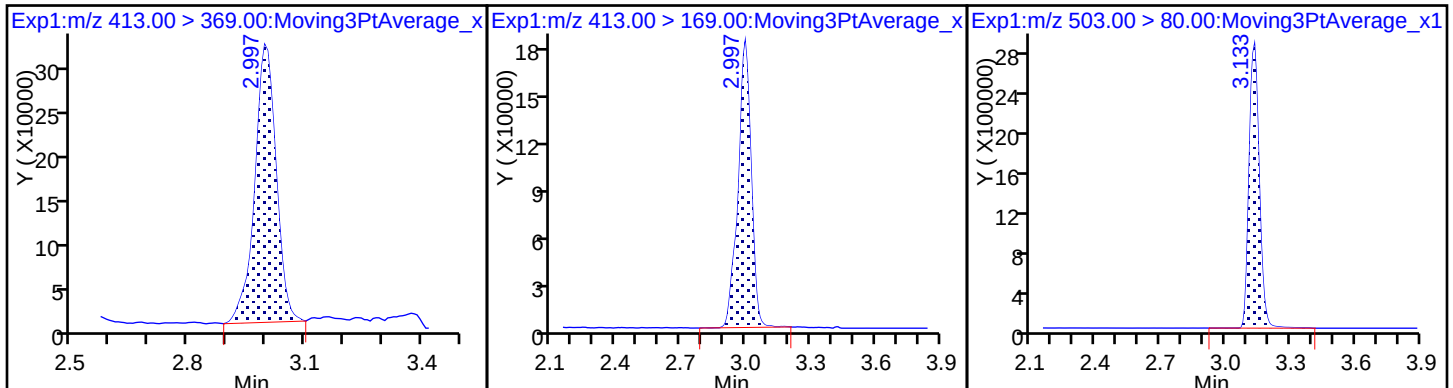
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

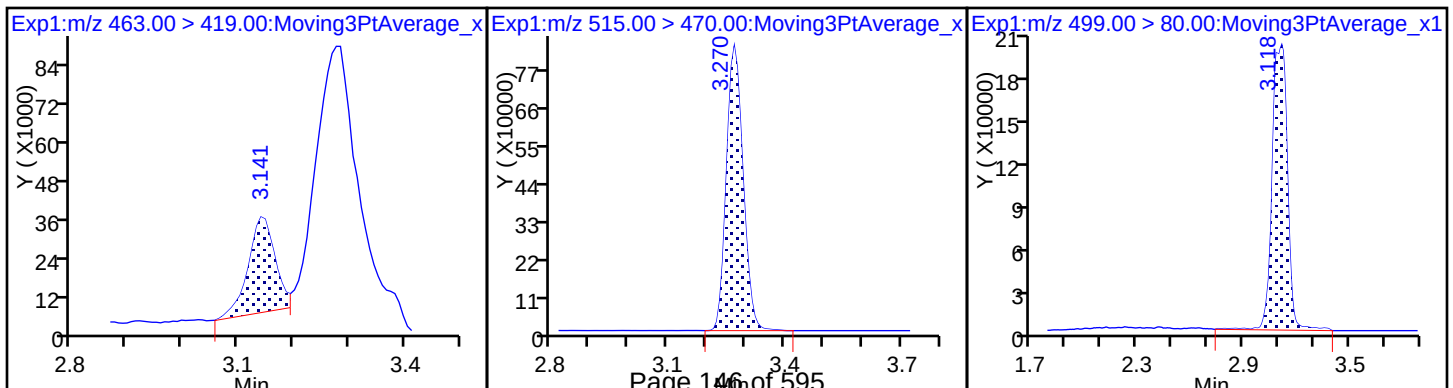
* 7 13C4 PFOS



9 Perfluorononanoic acid

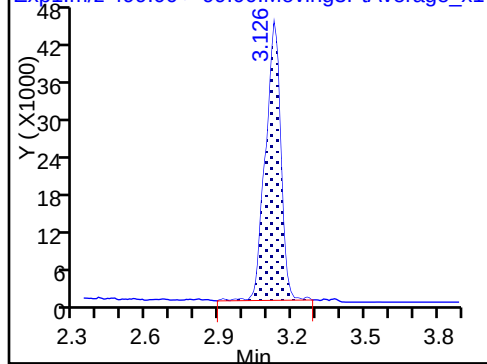
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_023.d
Lims ID: 320-28916-A-3-A
Client ID: NAWC-060717-RW-79
Sample Type: Client
Inject. Date: 23-Jun-2017 23:02:47 ALS Bottle#: 15 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-3-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:34:32

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	7.43	74.25
\$ 10 13C2 PFDA	10.0	7.88	78.84

TestAmerica Sacramento

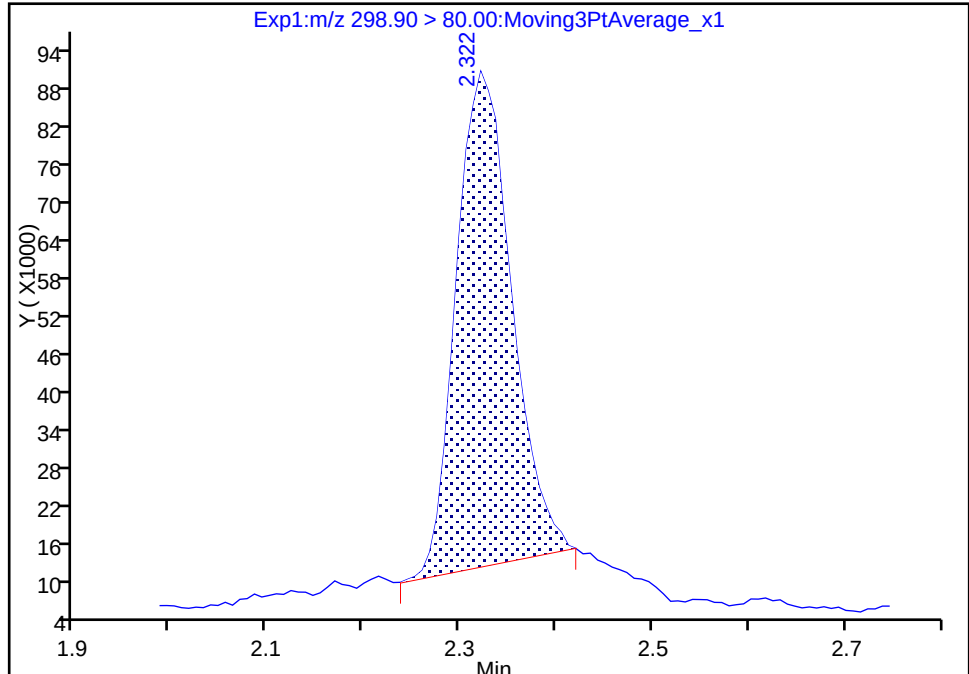
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Injection Date:	23-Jun-2017 23:02:47	Instrument ID:	A8_N		
Lims ID:	320-28916-A-3-A	Lab Sample ID:	320-28916-3		
Client ID:	NAWC-060717-RW-79				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	23
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

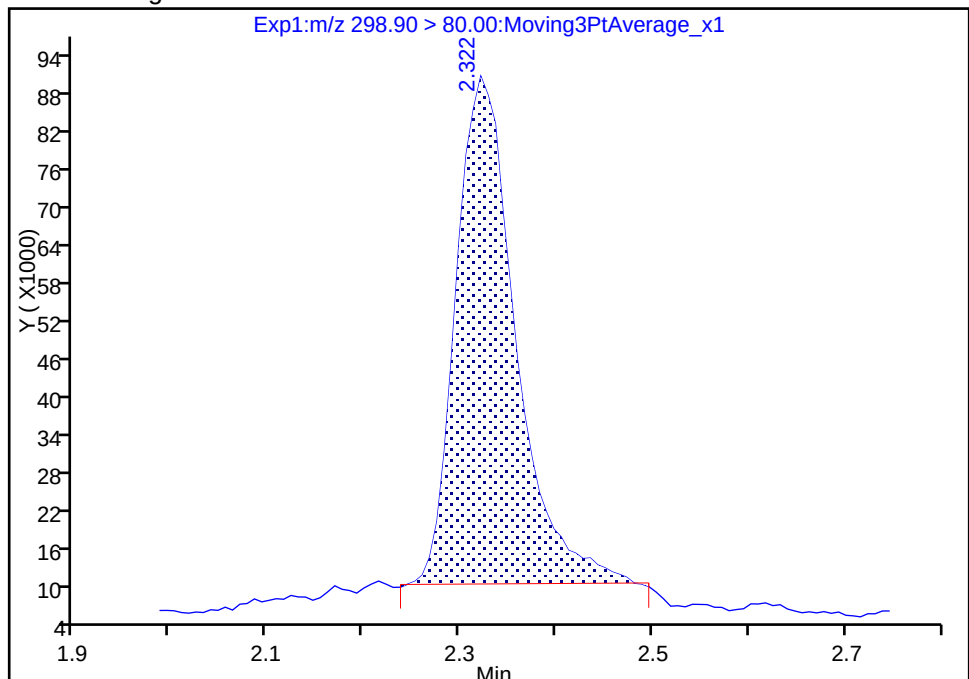
RT: 2.32
Area: 311681
Amount: 1.116752
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 343319
Amount: 1.230111
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:33:58
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

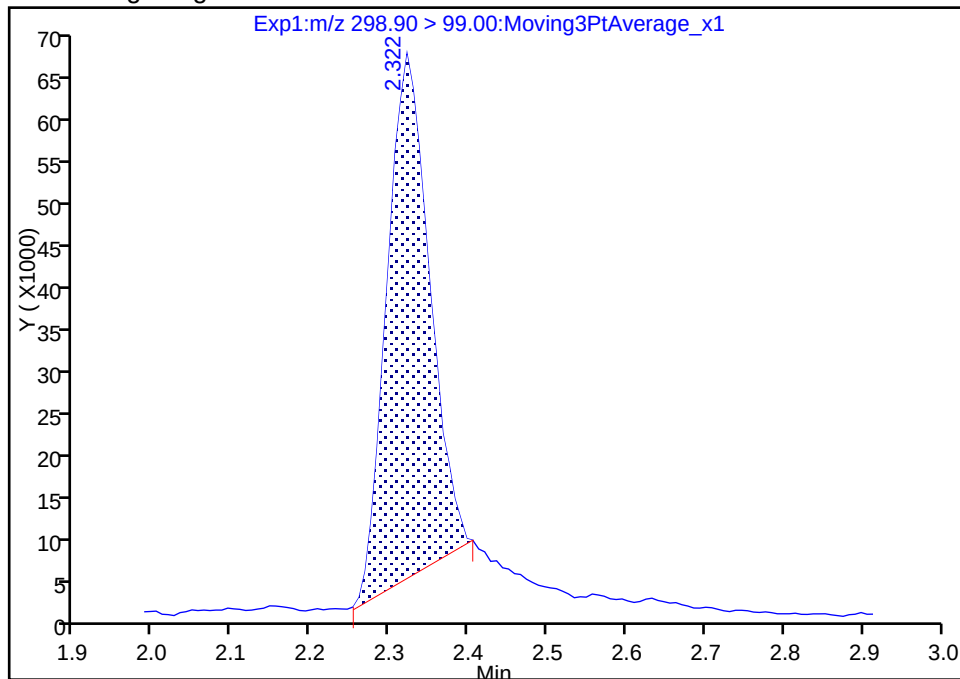
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Injection Date: 23-Jun-2017 23:02:47 Instrument ID: A8_N
Lims ID: 320-28916-A-3-A Lab Sample ID: 320-28916-3
Client ID: NAWC-060717-RW-79
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

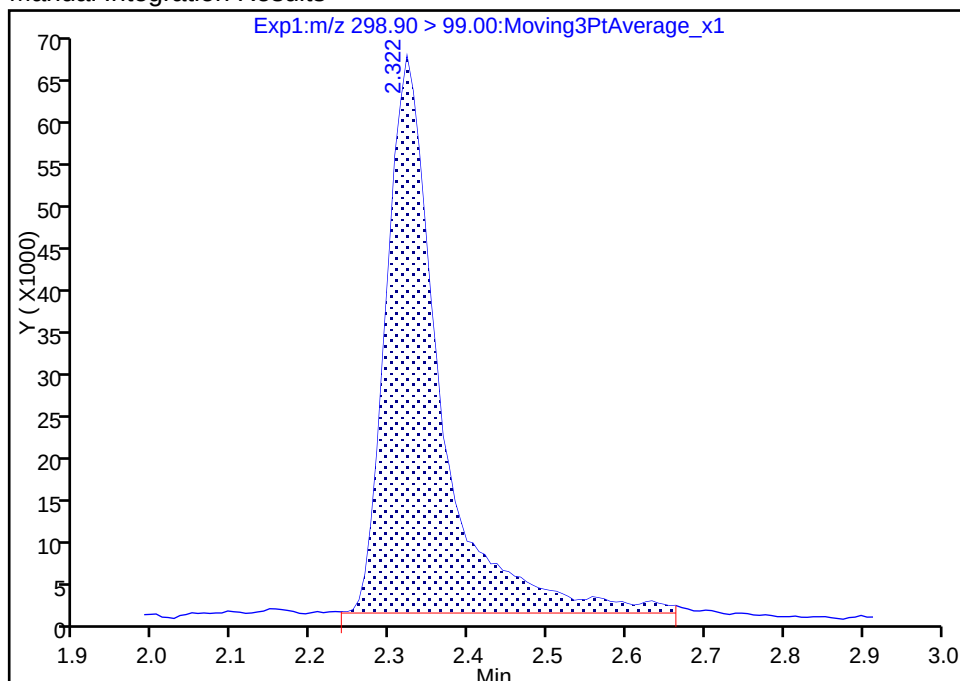
RT: 2.32
Area: 231419
Amount: 1.116752
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 311496
Amount: 1.230111
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:34:13

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-FRB-79</u>	Lab Sample ID: <u>320-28916-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.23_537_024.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:05</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>270 (mL)</u>	Date Analyzed: <u>06/23/2017 23:07</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>170757</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	37	15	6.3
335-67-1	Perfluorooctanoic acid (PFOA)	7.4	U	19	7.4	2.6
375-95-1	Perfluorononanoic acid (PFNA)	19	U	22	19	7.4
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	28	11	5.1
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.7	U	9.3	3.7	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	33	U	83	33	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	17	Q	70-130
STL00996	13C2 PFDA	16	Q	70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_024.d
 Lims ID: 320-28916-A-4-A
 Client ID: NAWC-060717-FRB-79
 Sample Type: Client
 Inject. Date: 23-Jun-2017 23:07:33 ALS Bottle#: 16 Worklist Smp#: 24
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-4-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:35:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA

315.00 > 270.00 2.534 2.381 0.153 1.000 567364 1.65 1878

* 6 13C2-PFOA

415.00 > 370.00 2.997 2.859 0.138 3305372 10.0 8006

* 7 13C4 PFOS

503.00 > 80.00 3.126 2.991 0.135 9018633 28.7 21962

\$ 10 13C2 PFDA

515.00 > 470.00 3.270 3.123 0.147 1.000 514588 1.62 810

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_024.d

Injection Date: 23-Jun-2017 23:07:33

Instrument ID: A8_N

Lims ID: 320-28916-A-4-A

Lab Sample ID: 320-28916-4

Client ID: NAWC-060717-FRB-79

Operator ID: SACINSTLCMS01

ALS Bottle#: 16

Worklist Smp#: 24

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

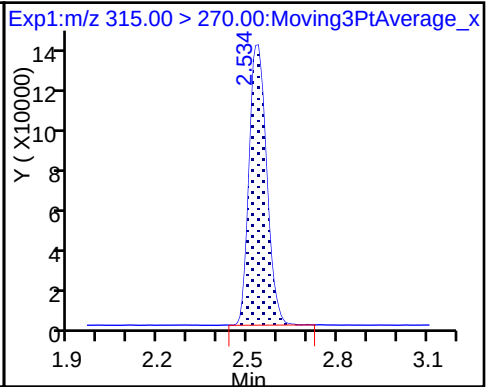
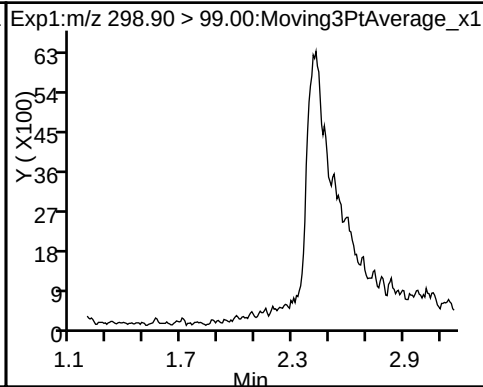
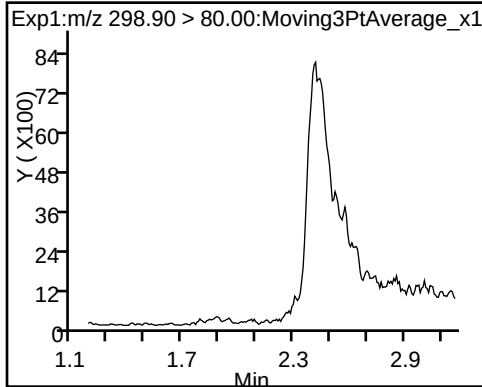
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

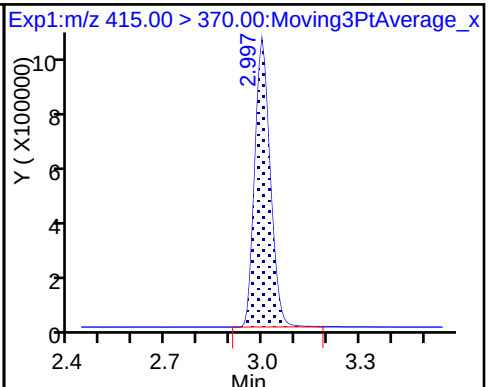
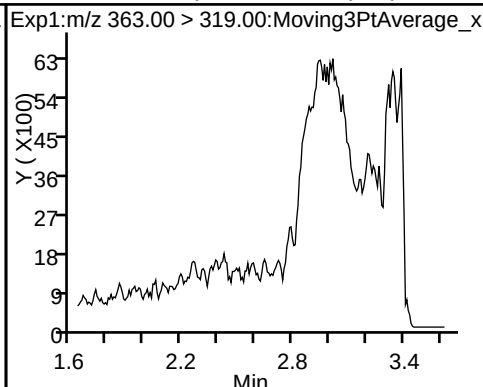
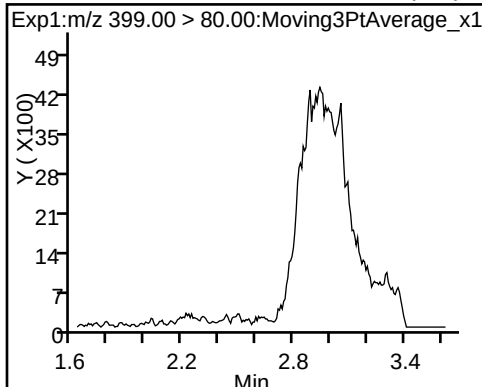
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (ND)

4 Perfluoroheptanoic acid (ND)

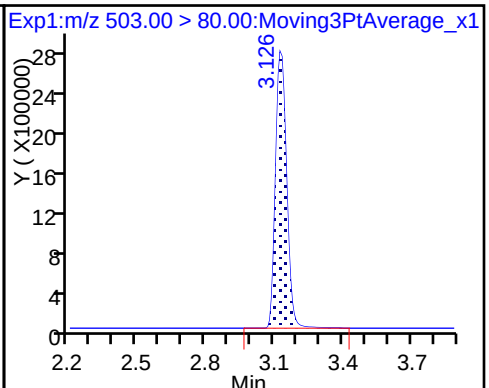
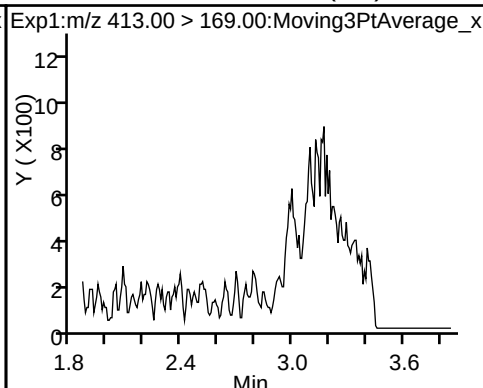
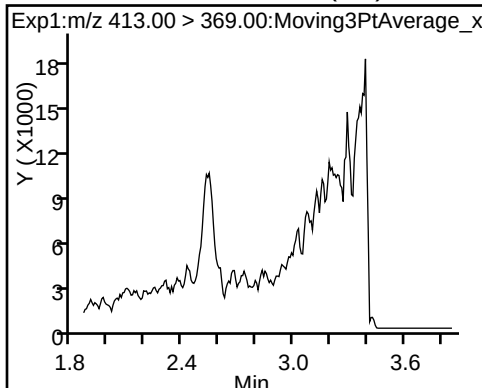
* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

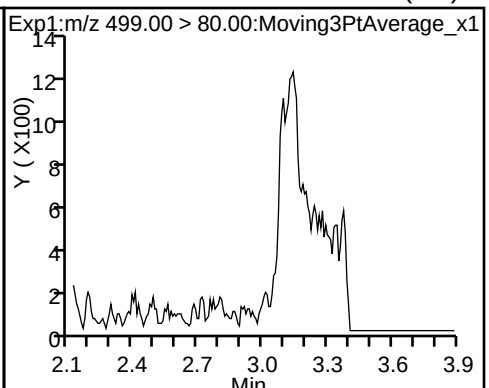
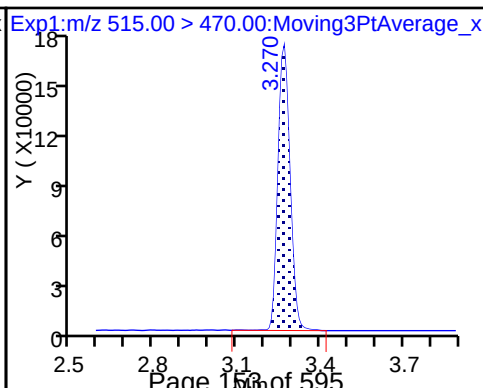
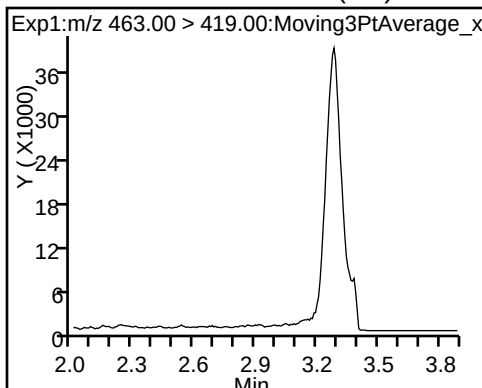
* 7 13C4 PFOS



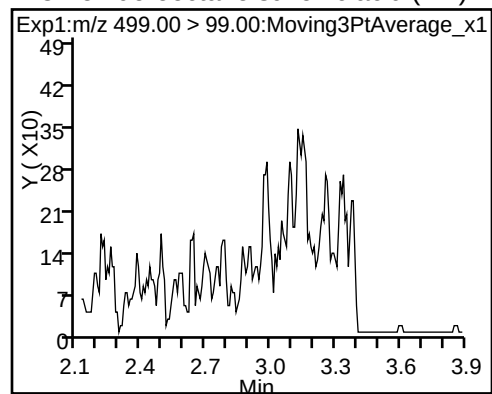
9 Perfluorononanoic acid (ND)

\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_024.d
Lims ID: 320-28916-A-4-A
Client ID: NAWC-060717-FRB-79
Sample Type: Client
Inject. Date: 23-Jun-2017 23:07:33 ALS Bottle#: 16 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-4-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:35:25

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	1.65	16.54
\$ 10 13C2 PFDA	10.0	1.62	16.18

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-FRB-79 RE</u>	Lab Sample ID: <u>320-28916-4 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.07.06_537A_026.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:05</u>
Extraction Method: <u>537</u>	Date Extracted: <u>07/03/2017 09:49</u>
Sample wt/vol: <u>258.9(mL)</u>	Date Analyzed: <u>07/07/2017 01:15</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>172925</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U H	39	15	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	7.7	U H	19	7.7	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U H	23	19	7.7
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.9	U H	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U H	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	90		70-130
STL00996	13C2 PFDA	93		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_026.d
 Lims ID: 320-28916-B-4-A
 Client ID: NAWC-060717-FRB-79
 Sample Type: Client
 Inject. Date: 07-Jul-2017 01:15:32 ALS Bottle#: 16 Worklist Smp#: 26
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-b-4-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK011

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.533	1.539	-0.006	1.000	1127803	9.03		4230	
* 6 13C2-PFOA									
415.00 > 370.00	1.859	1.878	-0.019		1099242	10.0		3450	
* 7 13C4 PFOS									
503.00 > 80.00	2.094	2.117	-0.023		3057297	28.7		3886	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.281	-0.013	1.000	855424	9.27		1593	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_026.d

Injection Date: 07-Jul-2017 01:15:32

Instrument ID: A8_N

Lims ID: 320-28916-B-4-A

Lab Sample ID: 320-28916-4

Client ID: NAWC-060717-FRB-79

Operator ID: SACINSTLCMS01

ALS Bottle#: 16

Worklist Smp#: 26

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

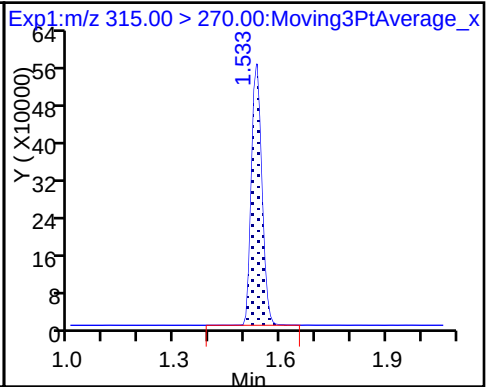
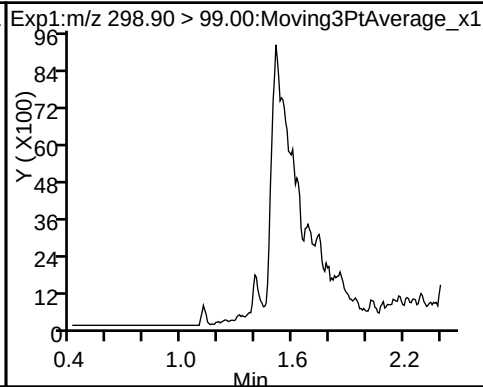
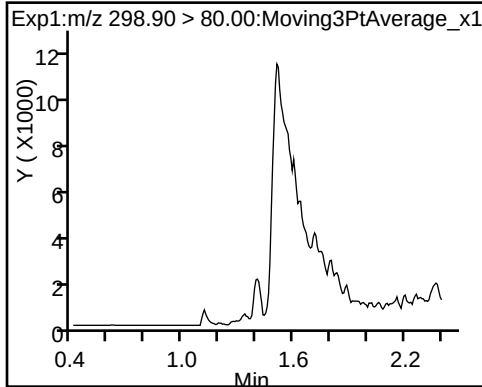
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

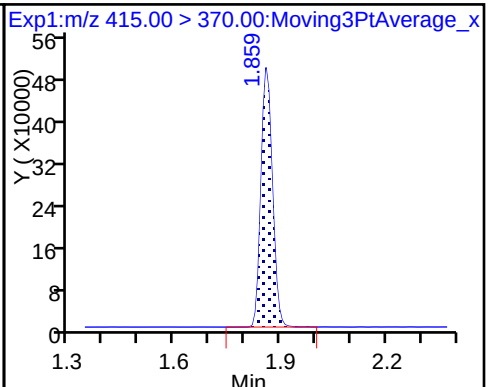
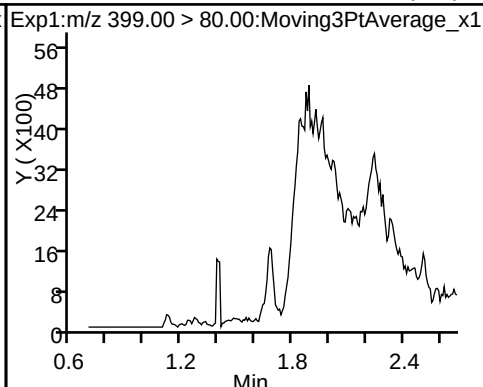
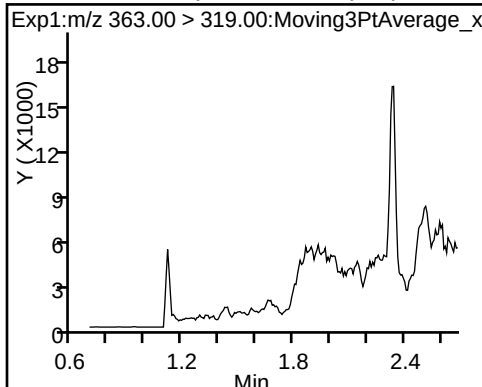
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid (ND)

3 Perfluorohexanesulfonic acid (ND)

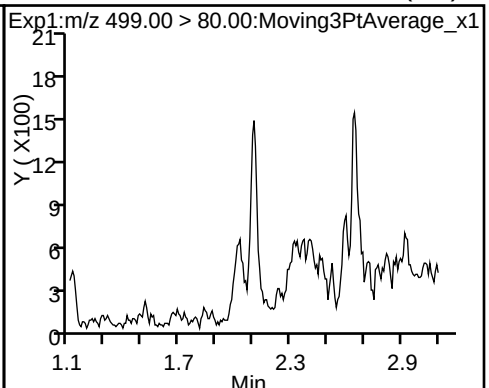
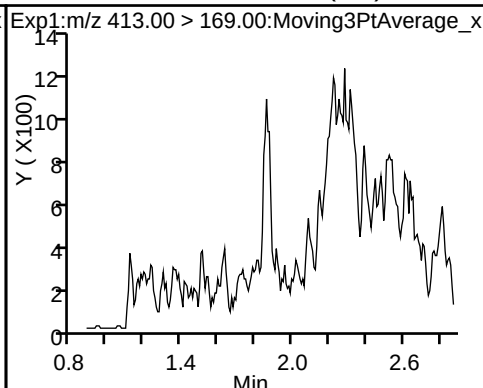
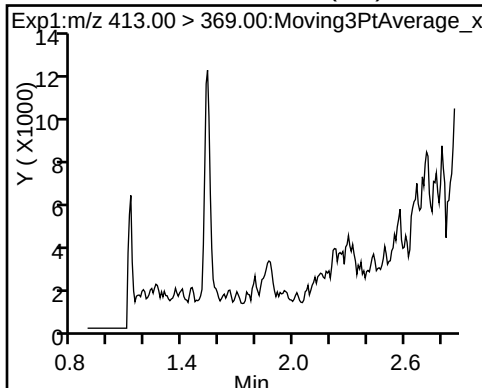
* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

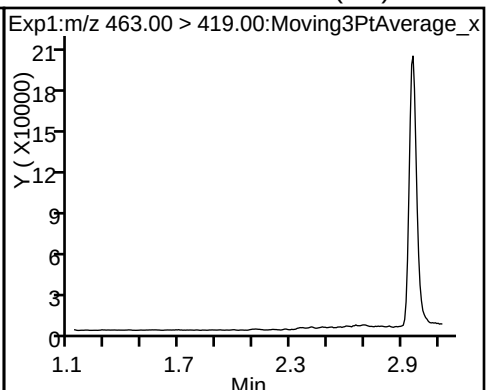
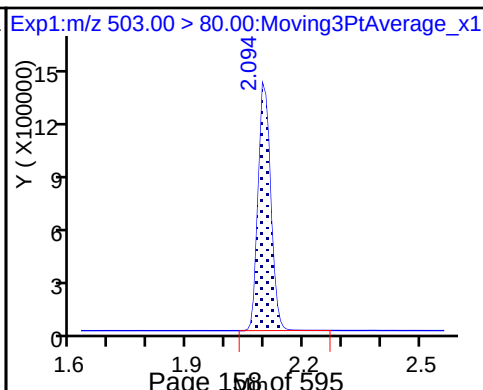
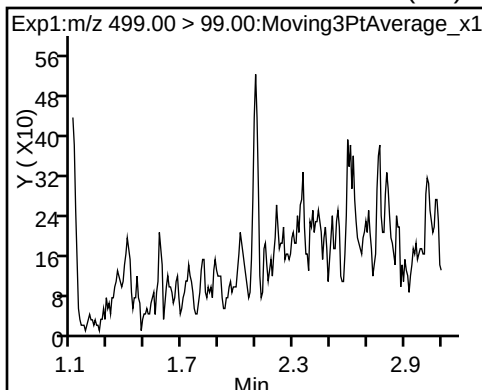
5 Perfluorooctanoic acid (ND)

8 Perfluorooctane sulfonic acid (ND)

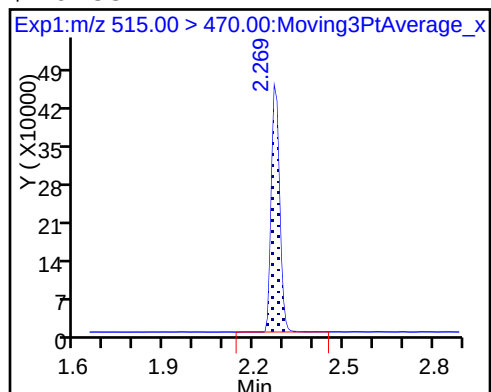


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_026.d
Lims ID: 320-28916-B-4-A
Client ID: NAWC-060717-FRB-79
Sample Type: Client
Inject. Date: 07-Jul-2017 01:15:32 ALS Bottle#: 16 Worklist Smp#: 26
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-b-4-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK011

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.03	90.30
\$ 10 13C2 PFDA	10.0	9.27	92.69

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-258A</u>	Lab Sample ID: <u>320-28916-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.23_537_025.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:55</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>264(mL)</u>	Date Analyzed: <u>06/23/2017 23:12</u>
Con. Extract Vol.: <u>1.0(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>170757</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	7400	E	38	15	6.4
335-67-1	Perfluorooctanoic acid (PFOA)	15000	E	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	7100	E	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	730	E	28	11	5.2
375-85-9	Perfluoroheptanoic acid (PFHpA)	5600	E	9.5	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	4000	E	85	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	48236	Q	70-130
STL00996	13C2 PFDA	46396	Q	70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_025.d
 Lims ID: 320-28916-A-5-A
 Client ID: NAWC-060717-RW-258A
 Sample Type: Client
 Inject. Date: 23-Jun-2017 23:12:17 ALS Bottle#: 17 Worklist Smp#: 25
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-5-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:35:53

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									E
298.90 > 80.00	2.314	2.183	0.131	1.000	890569	1046.6		20.5	E
298.90 > 99.00	2.322	2.183	0.139	1.003	666640		1.34(0.00-0.00)	101	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.526	2.381	0.145	1.000	3051196	4823.6		3625	
3 Perfluorohexanesulfonic acid									E
399.00 > 80.00	2.777	2.625	0.152	1.000	220413	191.8		5.0	E
4 Perfluoroheptanoic acid									E
363.00 > 319.00	2.784	2.630	0.154	1.000	758647	1475.8		13.1	E
* 6 13C2-PFOA									SM
415.00 > 370.00	2.989	2.859	0.130		6096	10.0		15.8	M
5 Perfluorooctanoic acid									E
413.00 > 369.00	2.997	2.859	0.138	1.000	2082578	3900.6		47.1	E
413.00 > 169.00	2.997	2.859	0.138	1.000	1269356		1.64(0.00-0.00)	985	
* 7 13C4 PFOS									S
503.00 > 80.00	3.118	2.991	0.127		28231	28.7		1.9	
9 Perfluorononanoic acid									E
463.00 > 419.00	3.141	3.003	0.138	1.000	973165	1871.4		47.7	E
\$ 10 13C2 PFDA									
515.00 > 470.00	3.262	3.123	0.139	1.000	2721534	4639.6		6847	
8 Perfluorooctane sulfonic acid									E
499.00 > 80.00	3.126	3.126	0.0	1.000	1945032	1945.2		109	E
499.00 > 99.00	3.126	3.126	0.0	1.000	315367		6.17(0.00-0.00)	164	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

s - Failed ISTD Recovery Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_025.d

Injection Date: 23-Jun-2017 23:12:17

Instrument ID: A8_N

Lims ID: 320-28916-A-5-A

Lab Sample ID: 320-28916-5

Client ID: NAWC-060717-RW-258A

Operator ID: SACINSTLCMS01

ALS Bottle#: 17

Worklist Smp#: 25

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

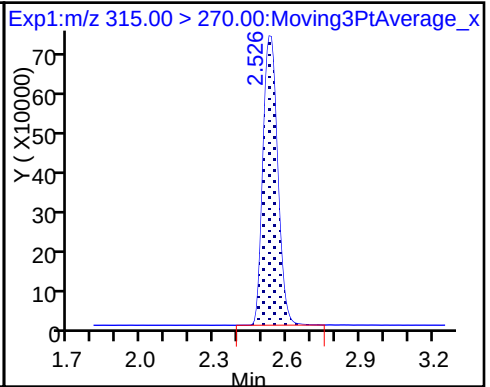
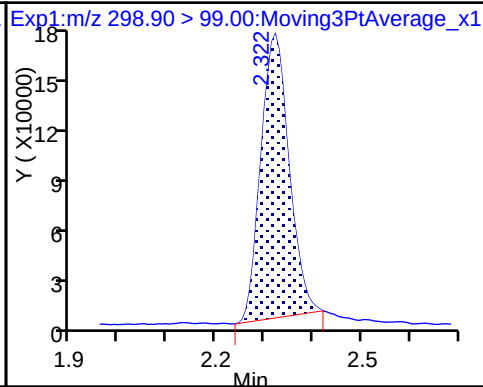
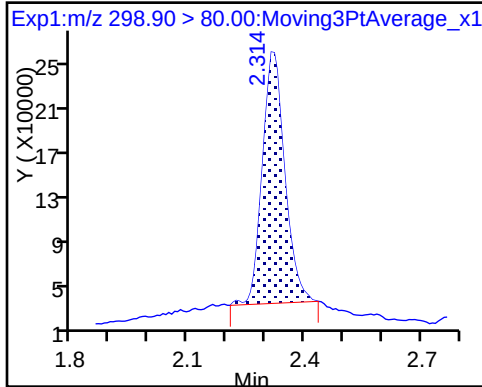
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

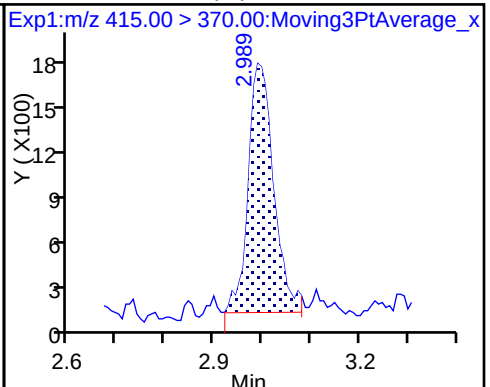
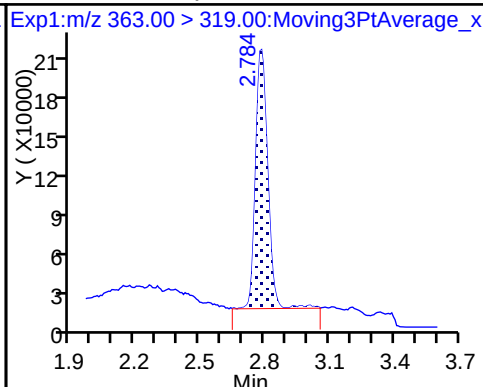
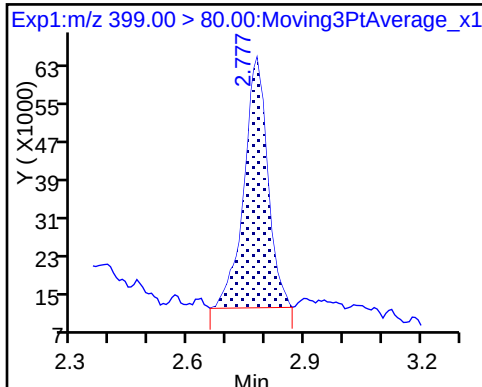
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

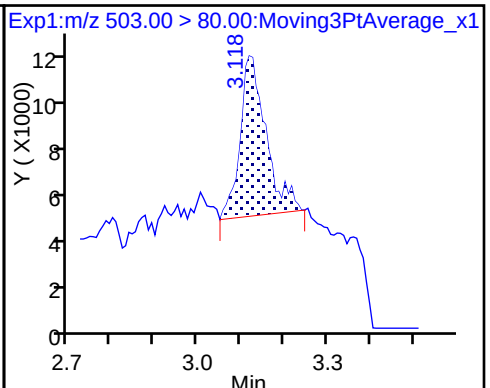
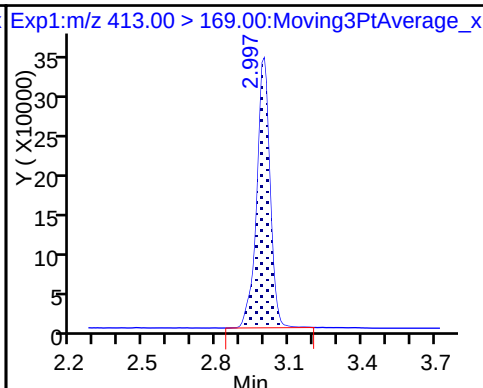
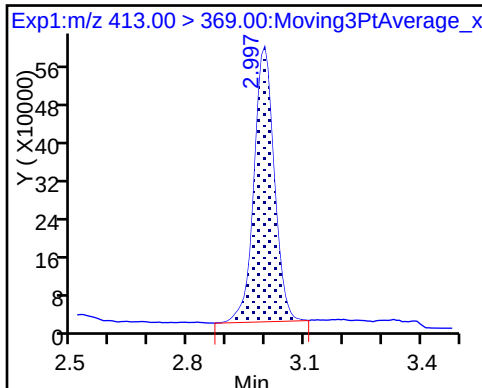
* 6 13C2-PFOA (M)



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

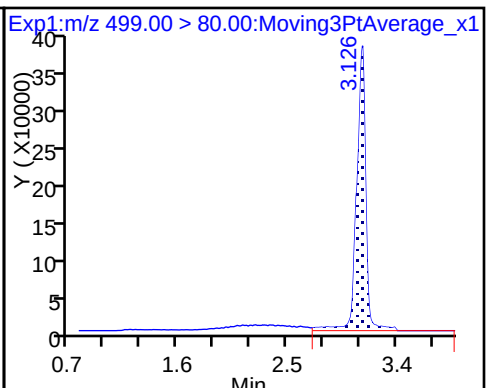
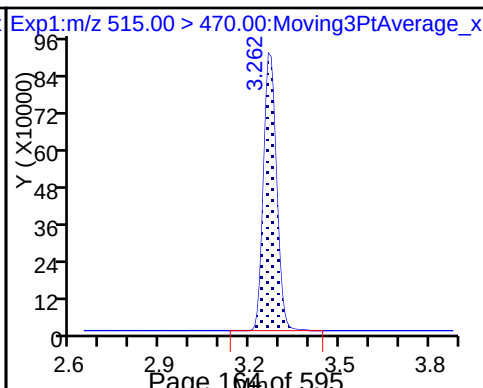
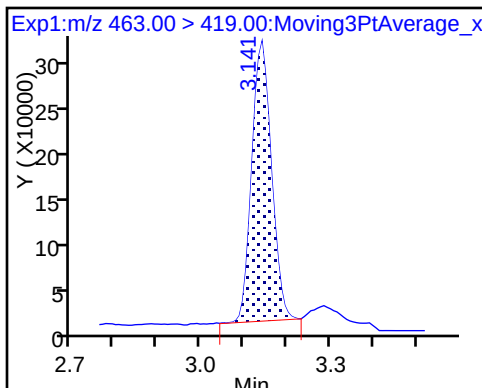
* 7 13C4 PFOS



9 Perfluorononanoic acid

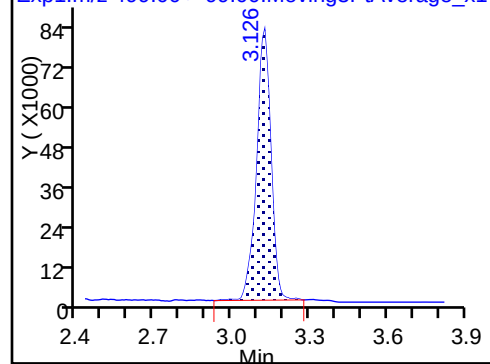
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_025.d
Lims ID: 320-28916-A-5-A
Client ID: NAWC-060717-RW-258A
Sample Type: Client
Inject. Date: 23-Jun-2017 23:12:17 ALS Bottle#: 17 Worklist Smp#: 25
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-5-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:35:53

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	4823.6	48235.87
\$ 10 13C2 PFDA	10.0	4639.6	46396.30

TestAmerica Sacramento

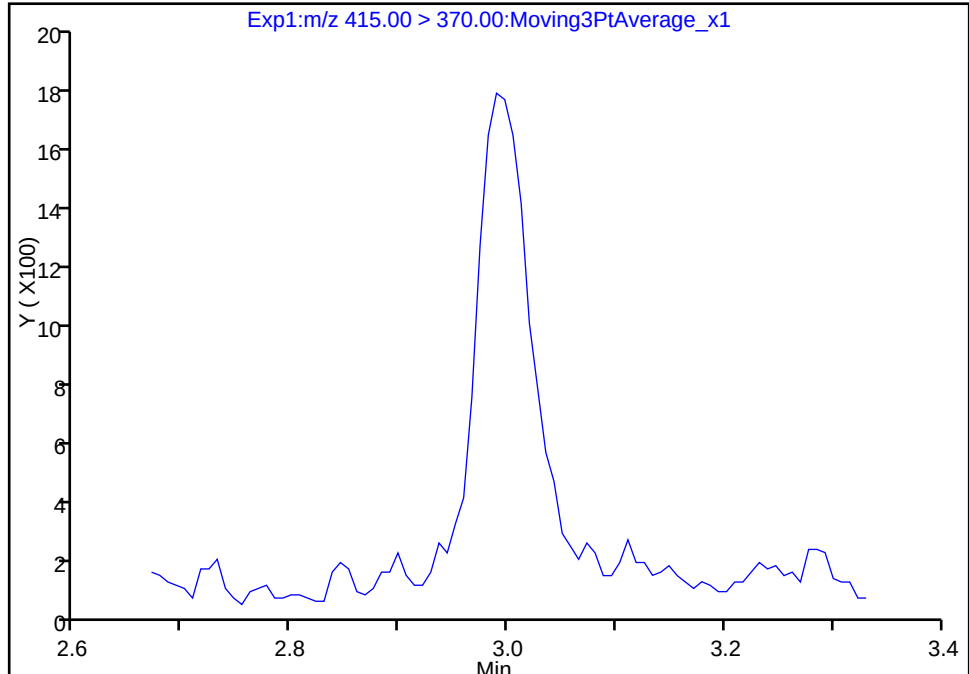
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Injection Date:	23-Jun-2017 23:12:17	Instrument ID:	A8_N		
Lims ID:	320-28916-A-5-A	Lab Sample ID:	320-28916-5		
Client ID:	NAWC-060717-RW-258A				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	25
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector:	EXP1		

* 6 13C2-PFOA, CAS: STL00623

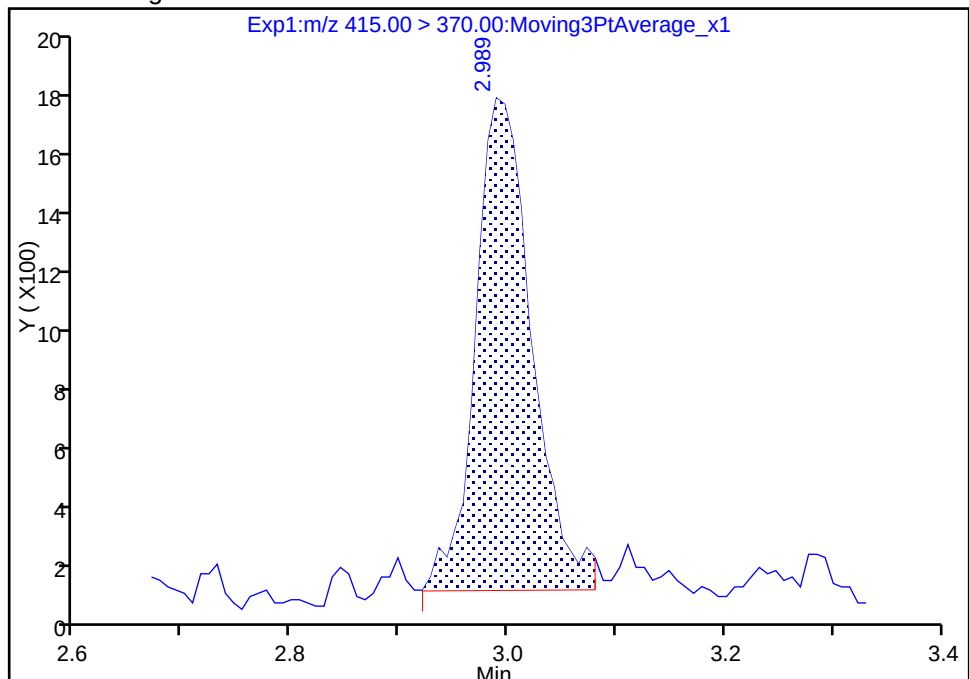
Signal: 1

Not Detected
Expected RT: 2.86

Processing Integration Results

RT: 2.99
Area: 6096
Amount: 10.000000
Amount Units: ng/ml

Manual Integration Results

Reviewer: barnettj, 26-Jun-2017 13:37:03
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-258A RE</u>	Lab Sample ID: <u>320-28916-5 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.07.06_537A_027.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:55</u>
Extraction Method: <u>537</u>	Date Extracted: <u>07/03/2017 09:49</u>
Sample wt/vol: <u>256.7(mL)</u>	Date Analyzed: <u>07/07/2017 01:20</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>172925</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	17	J H M	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	24	H M	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	12	J H	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	12	5.4
375-85-9	Perfluoroheptanoic acid (PFHpA)	8.0	J H	9.7	3.9	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U H	88	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	97		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_027.d
 Lims ID: 320-28916-B-5-A
 Client ID: NAWC-060717-RW-258A
 Sample Type: Client
 Inject. Date: 07-Jul-2017 01:20:19 ALS Bottle#: 17 Worklist Smp#: 27
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-b-5-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:24:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	271979	2.90		43.9	
298.90 > 99.00	1.404	1.404	0.0	1.000	190072		1.43(0.00-0.00)	71.7	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.533	1.539	-0.006	1.000	1038239	8.43		4007	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.684	1.691	-0.007	1.000	233070	2.06		18.4	
* 6 13C2-PFOA									
415.00 > 370.00	1.866	1.878	-0.012		1083388	10.0		3501	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.866	1.879	-0.013	1.000	603422	6.04		43.1	M
413.00 > 169.00	1.866	1.879	-0.013	1.000	383433		1.57(0.00-0.00)	336	M
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.102	2.102	0.0	1.000	478068	4.43		100	M
499.00 > 99.00	2.102	2.102	0.0	1.000	89698		5.33(0.00-0.00)	117	M
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.117	-0.015		3020215	28.7		990	
9 Perfluorononanoic acid									
463.00 > 419.00	2.109	2.124	-0.015	1.000	279536	3.13		7.5	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	879090	9.67		1886	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_027.d

Injection Date: 07-Jul-2017 01:20:19

Instrument ID: A8_N

Lims ID: 320-28916-B-5-A

Lab Sample ID: 320-28916-5

Client ID: NAWC-060717-RW-258A

Operator ID: SACINSTLCMS01

ALS Bottle#: 17

Worklist Smp#: 27

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

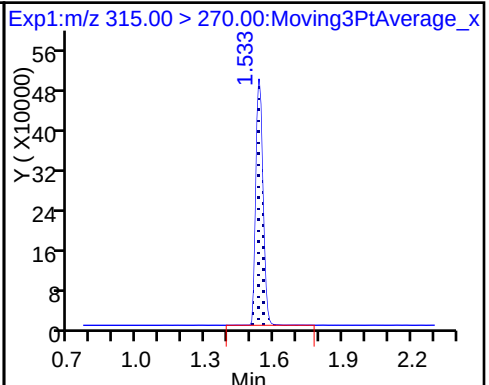
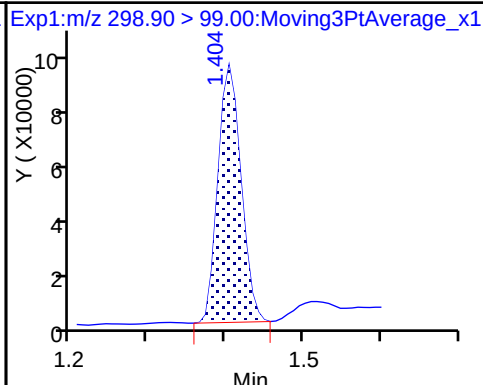
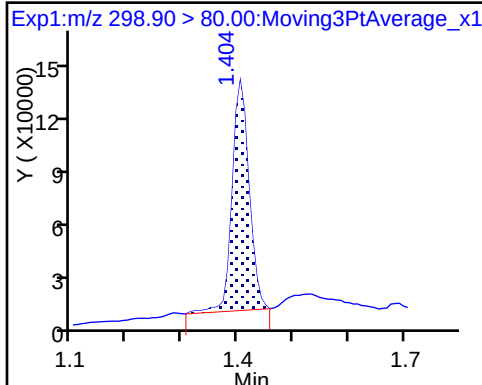
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

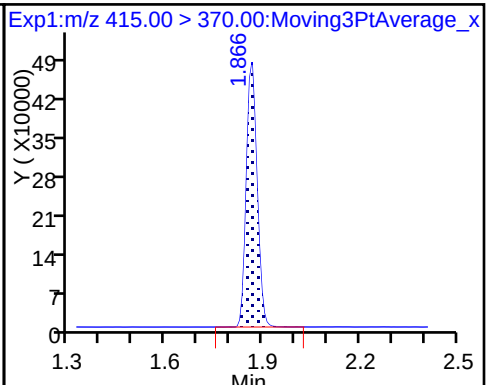
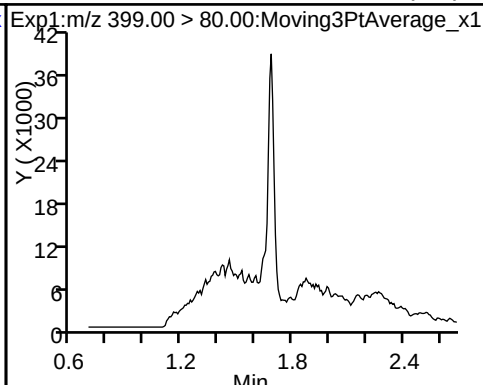
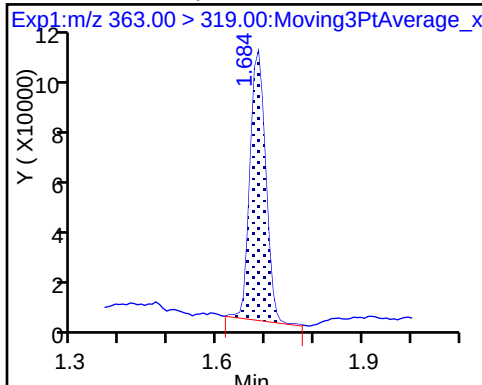
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid (ND) *

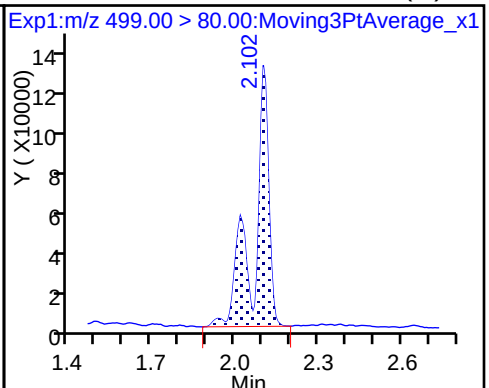
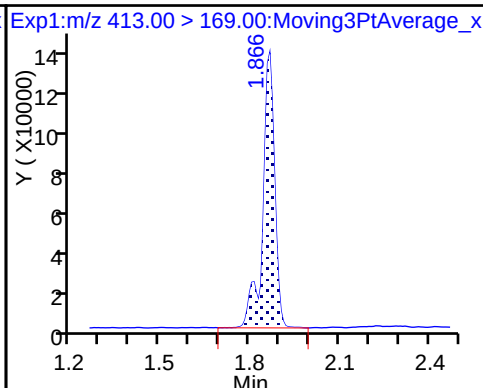
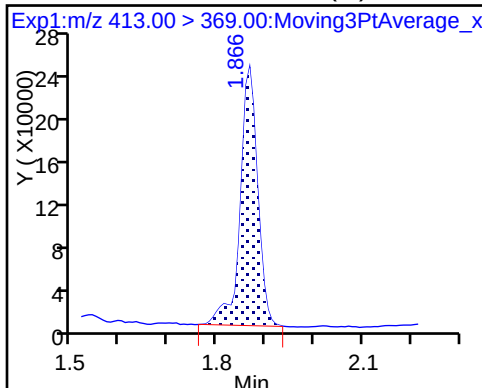
6 13C2-PFOA



5 Perfluorooctanoic acid (M)

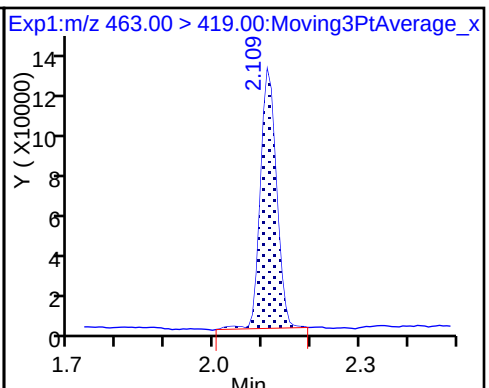
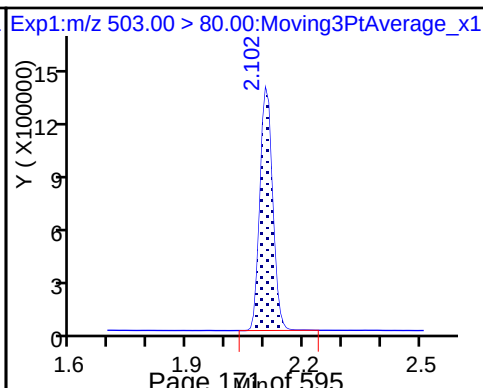
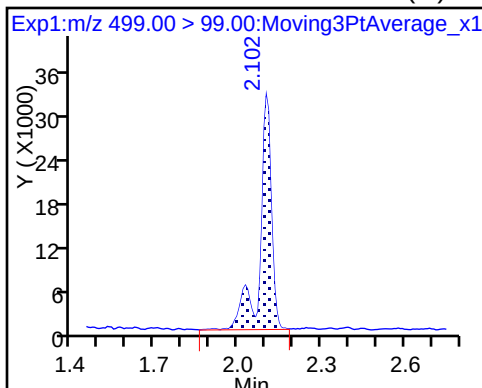
5 Perfluorooctanoic acid

8 Perfluorooctane sulfonic acid (M)

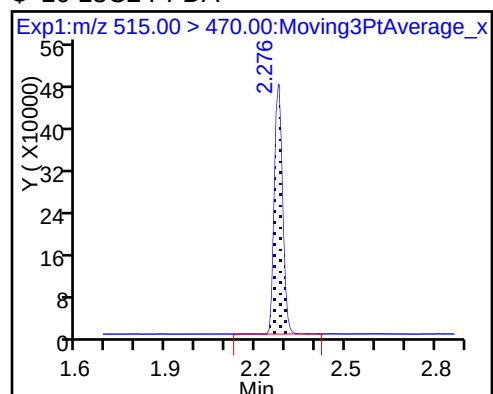


8 Perfluorooctane sulfonic acid (M) * 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_027.d
Lims ID: 320-28916-B-5-A
Client ID: NAWC-060717-RW-258A
Sample Type: Client
Inject. Date: 07-Jul-2017 01:20:19 ALS Bottle#: 17 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-b-5-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
Column 1 : Det: EXP1
Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:24:48

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.43	84.35
\$ 10 13C2 PFDA	10.0	9.67	96.65

TestAmerica Sacramento

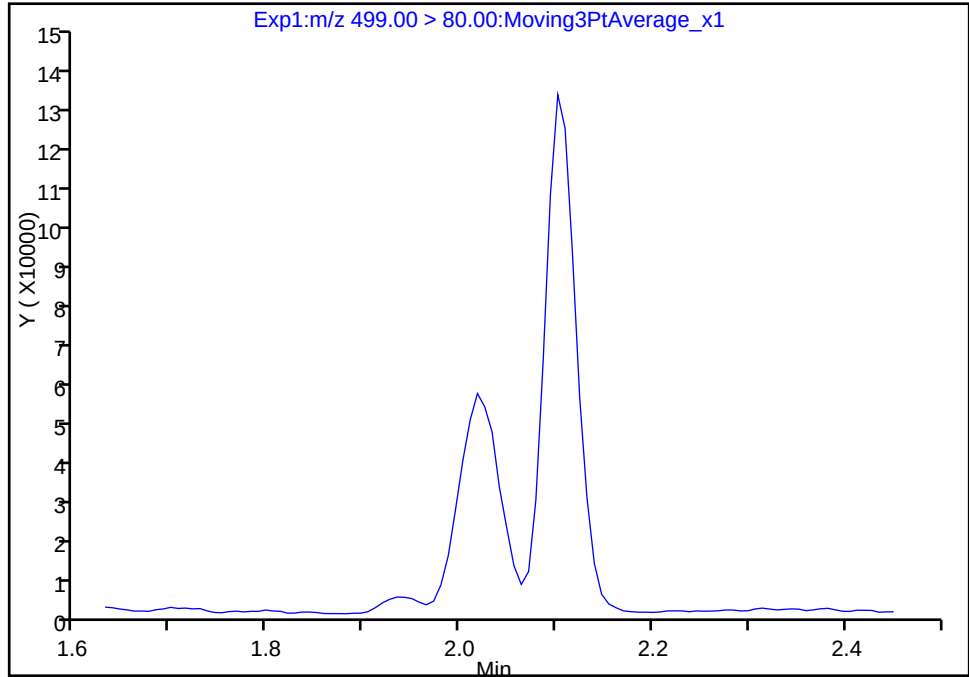
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Injection Date:	07-Jul-2017 01:20:19	Instrument ID:	A8_N		
Lims ID:	320-28916-B-5-A	Lab Sample ID:	320-28916-5		
Client ID:	NAWC-060717-RW-258A				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	27
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

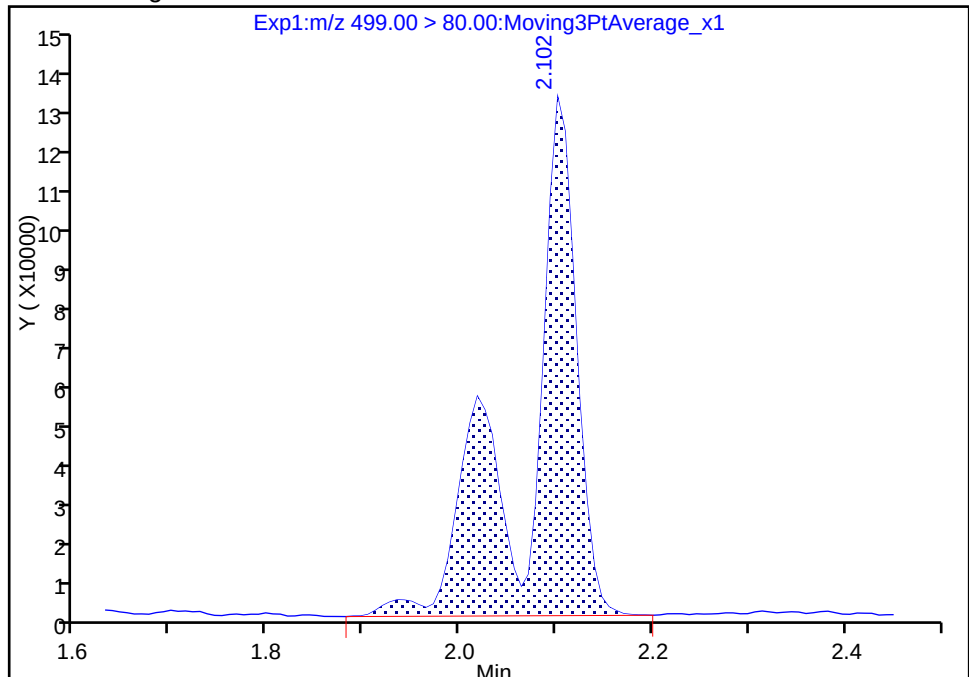
Signal: 1

Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results



RT: 2.10
Area: 478068
Amount: 4.432861
Amount Units: ng/ml

TestAmerica Sacramento

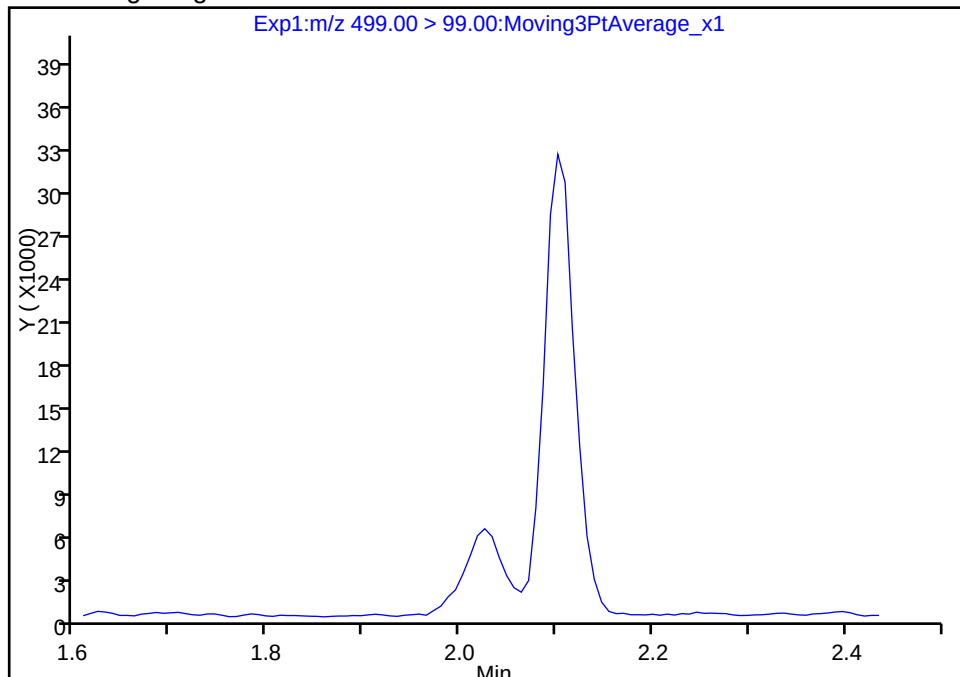
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_027.d				
Injection Date:	07-Jul-2017 01:20:19	Instrument ID:	A8_N		
Lims ID:	320-28916-B-5-A	Lab Sample ID:	320-28916-5		
Client ID:	NAWC-060717-RW-258A				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	27
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

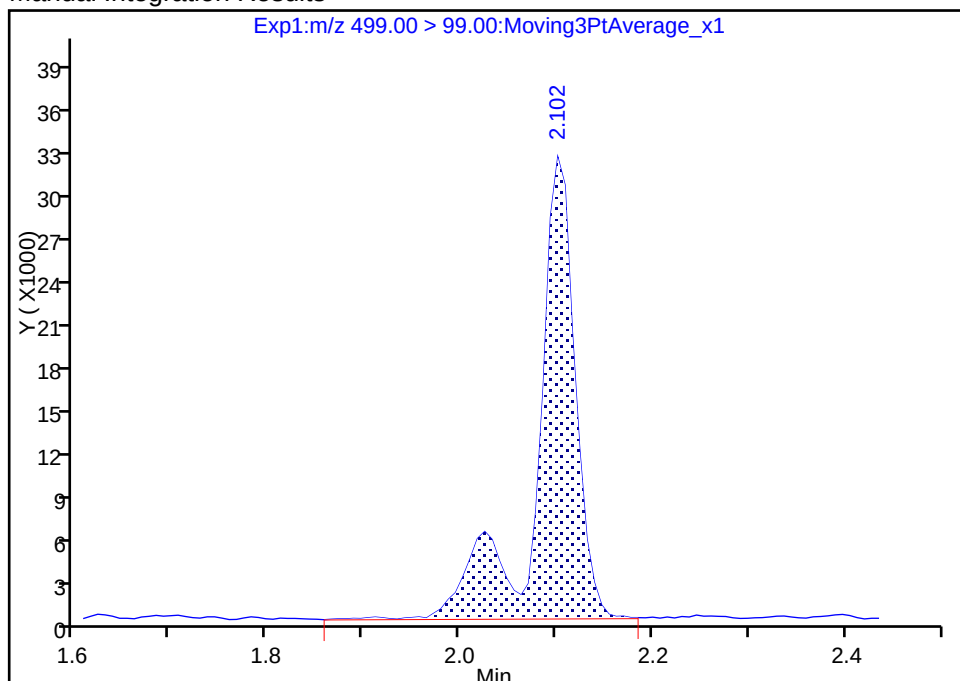
Signal: 2

Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 89698
Amount: 4.432861
Amount Units: ng/ml

Reviewer: barnettj, 07-Jul-2017 11:24:24

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

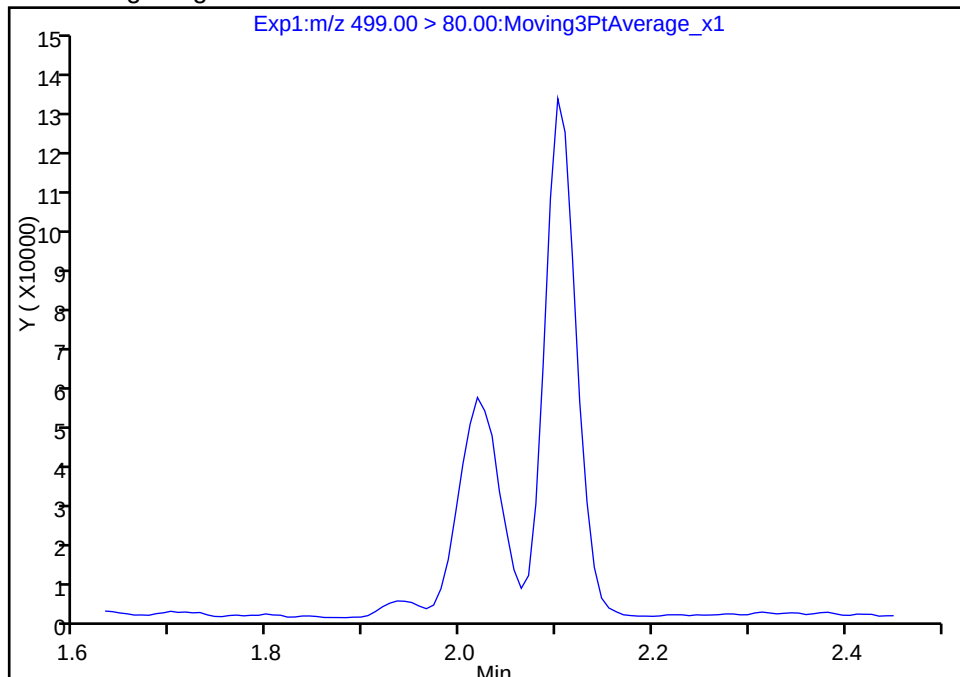
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Injection Date: 07-Jul-2017 01:20:19 Instrument ID: A8_N
Lims ID: 320-28916-B-5-A Lab Sample ID: 320-28916-5
Client ID: NAWC-060717-RW-258A
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

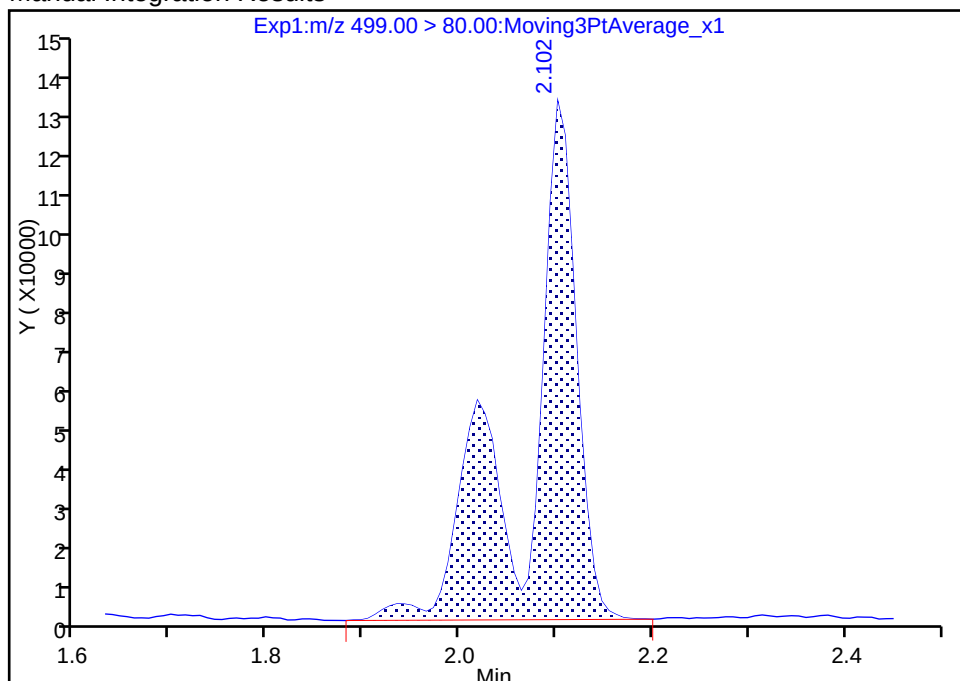
Signal: 1

Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results



RT: 2.10
Area: 478068
Amount: 4.432861
Amount Units: ng/ml

Reviewer: barnettj, 07-Jul-2017 11:24:24

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

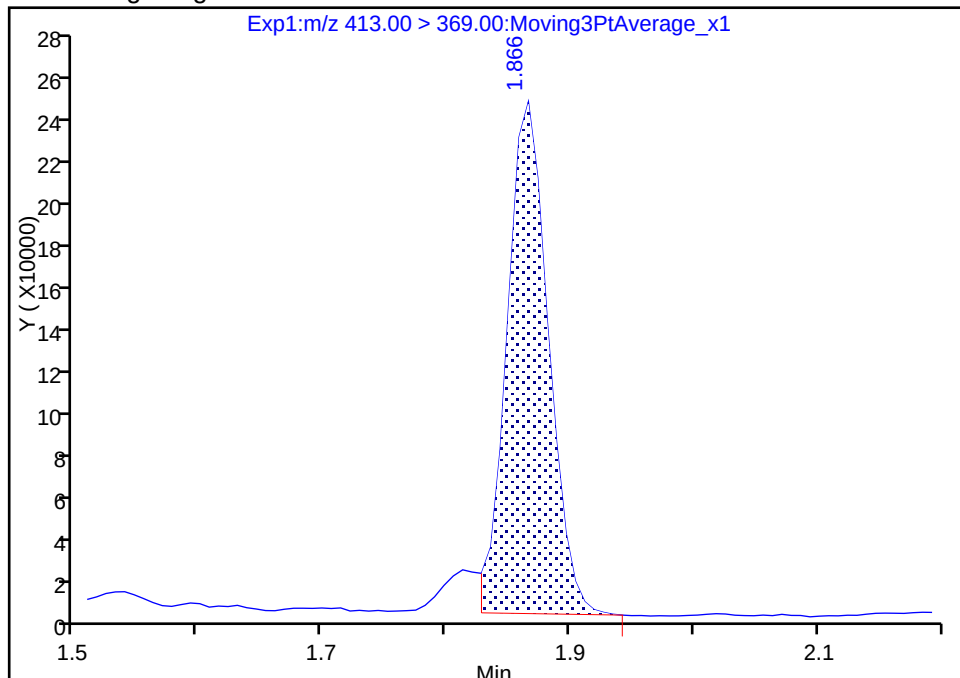
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Injection Date: 07-Jul-2017 01:20:19 Instrument ID: A8_N
Lims ID: 320-28916-B-5-A Lab Sample ID: 320-28916-5
Client ID: NAWC-060717-RW-258A
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

5 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

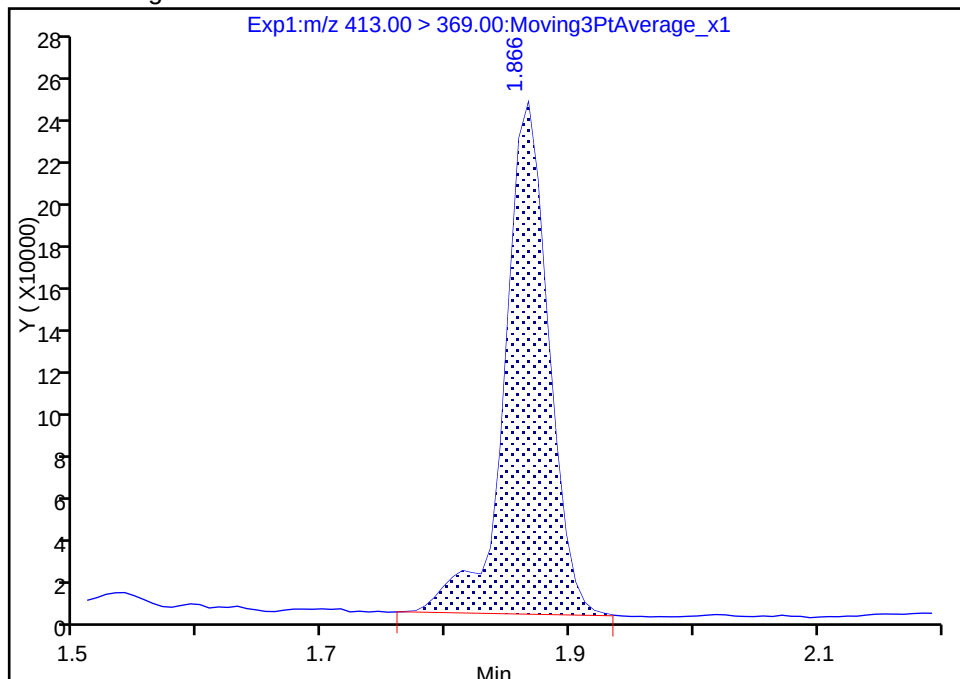
RT: 1.87
Area: 563772
Amount: 5.645925
Amount Units: ng/ml

Processing Integration Results



RT: 1.87
Area: 603422
Amount: 6.043002
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Jul-2017 11:23:51

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: NAWC-060717-RW-258A RERA Lab Sample ID: 320-28916-5 RERA
 Matrix: Water Lab File ID: 19JUL2017A6_038.d
 Analysis Method: 537 Date Collected: 06/07/2017 09:55
 Extraction Method: 537 Date Extracted: 07/03/2017 09:49
 Sample wt/vol: 256.7(mL) Date Analyzed: 07/19/2017 18:40
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 174993 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	18	J H M	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	26	H	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	14	J H	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	12	5.4
375-85-9	Perfluoroheptanoic acid (PFHpA)	9.0	J H	9.7	3.9	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U H	88	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	75		70-130
STL00996	13C2 PFDA	91		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_038.d
 Lims ID: 320-28916-B-5-A
 Client ID: NAWC-060717-RW-258A
 Sample Type: Client
 Inject. Date: 19-Jul-2017 18:40:47 ALS Bottle#: 22 Worklist Smp#: 38
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-B-5-A
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jul-2017 10:04:40 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK031

First Level Reviewer: barnettj

Date: 20-Jul-2017 10:02:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid
 299.0 > 80.0 2.484 2.484 0.0 1.000 49741 2.11 37.9
 \$ 2 13C2 PFHxA
 315.0 > 270.0 2.763 2.757 0.006 1.000 402142 7.53 861
 4 Perfluoroheptanoic acid
 363.0 > 319.0 3.024 3.012 0.012 1.000 101964 2.30 59.0
 * 5 13C2-PFOA
 415.0 > 370.0 3.272 3.272 0.0 381076 10.0 1011
 6 Perfluorooctanoic acid
 413.0 > 369.0 3.282 3.272 0.010 1.000 272424 6.56 384
 * 8 13C4 PFOS
 503.0 > 80.0 3.631 3.624 0.007 844190 28.7 462
 7 Perfluorooctane sulfonic acid M
 499.0 > 80.0 3.631 3.624 0.007 1.000 136022 4.55 233 M
 9 Perfluorononanoic acid
 463.0 > 419.0 3.653 3.645 0.008 1.000 168002 3.59 167
 \$ 10 13C2 PFDA
 515.0 > 470.0 4.217 4.214 0.003 1.000 357385 9.15 1097

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_038.d

Injection Date: 19-Jul-2017 18:40:47

Instrument ID: A6

Lims ID: 320-28916-B-5-A

Lab Sample ID: 320-28916-5

Client ID: NAWC-060717-RW-258A

Operator ID: JRB

ALS Bottle#: 22

Worklist Smp#: 38

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

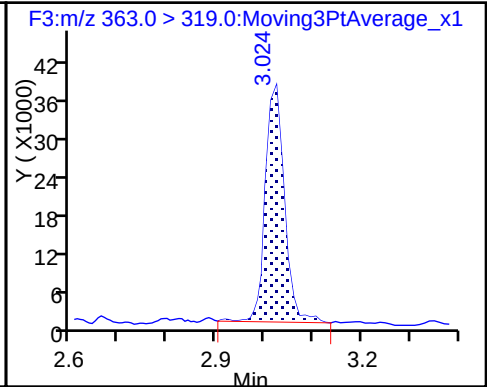
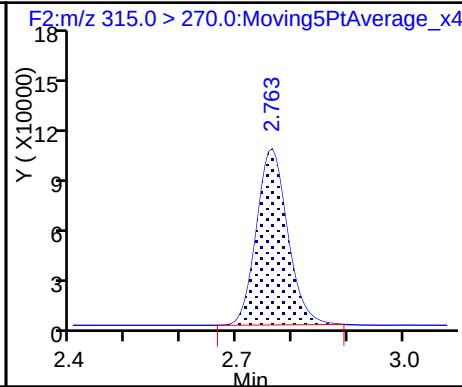
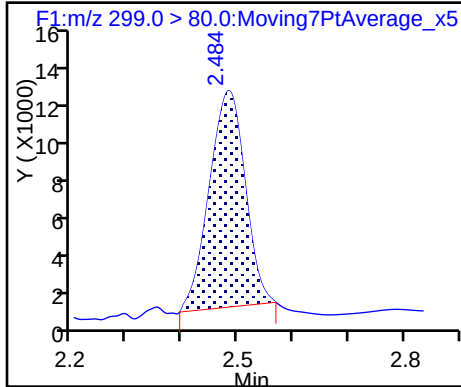
Method: 537__A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

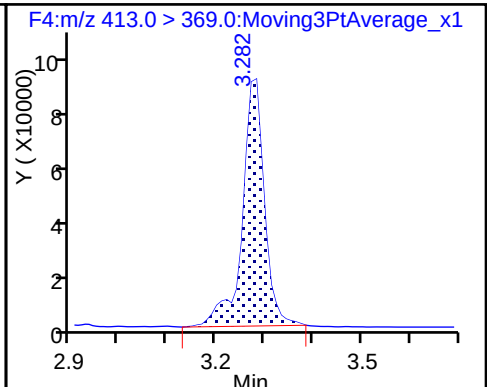
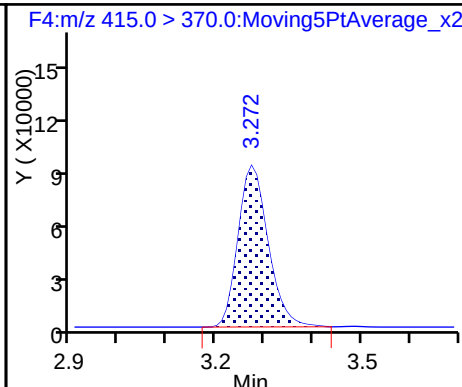
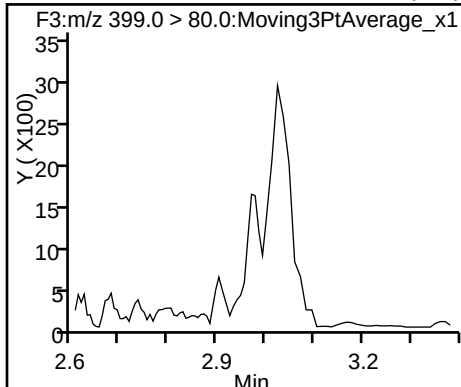
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid (ND)

* 5 13C2-PFOA

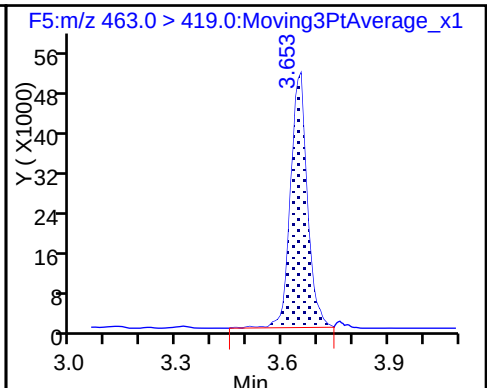
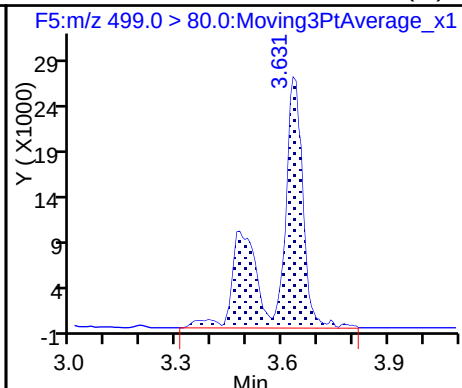
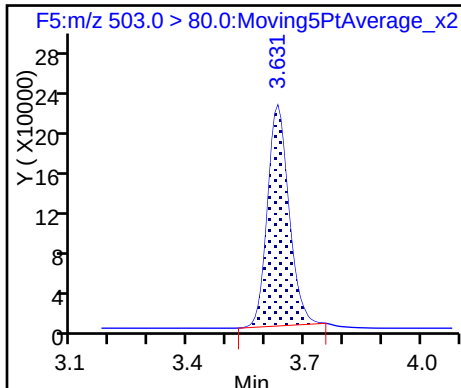
6 Perfluorooctanoic acid



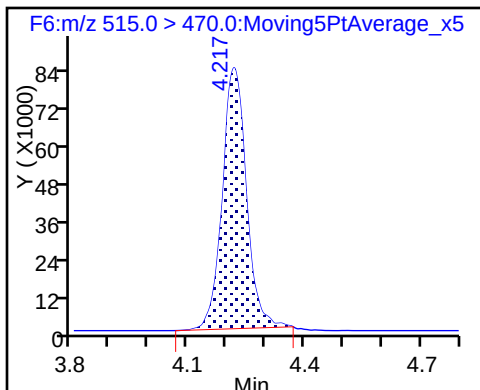
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_038.d
Lims ID: 320-28916-B-5-A
Client ID: NAWC-060717-RW-258A
Sample Type: Client
Inject. Date: 19-Jul-2017 18:40:47 ALS Bottle#: 22 Worklist Smp#: 38
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-B-5-A
Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
Operator ID: JRB Instrument ID: A6
Method: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 20-Jul-2017 10:04:40 Calib Date: 11-Jul-2017 15:05:33
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: barnettj

Date: 20-Jul-2017 10:02:17

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	7.53	75.28
\$ 10 13C2 PFDA	10.0	9.15	91.50

TestAmerica Sacramento

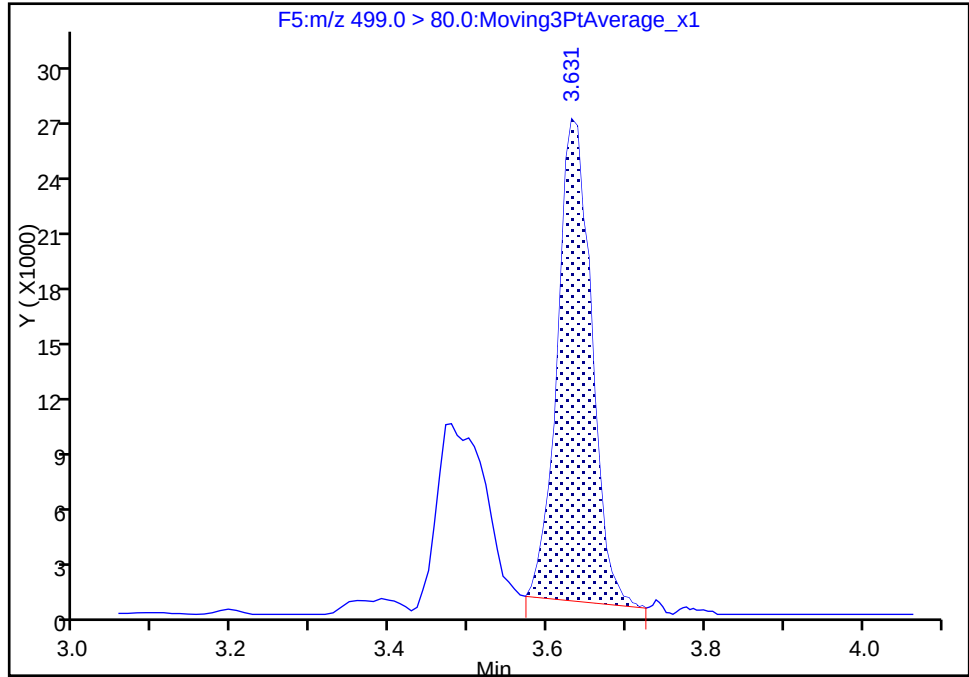
Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_038.d
Injection Date: 19-Jul-2017 18:40:47 Instrument ID: A6
Lims ID: 320-28916-B-5-A Lab Sample ID: 320-28916-5
Client ID: NAWC-060717-RW-258A
Operator ID: JRB ALS Bottle#: 22 Worklist Smp#: 38
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

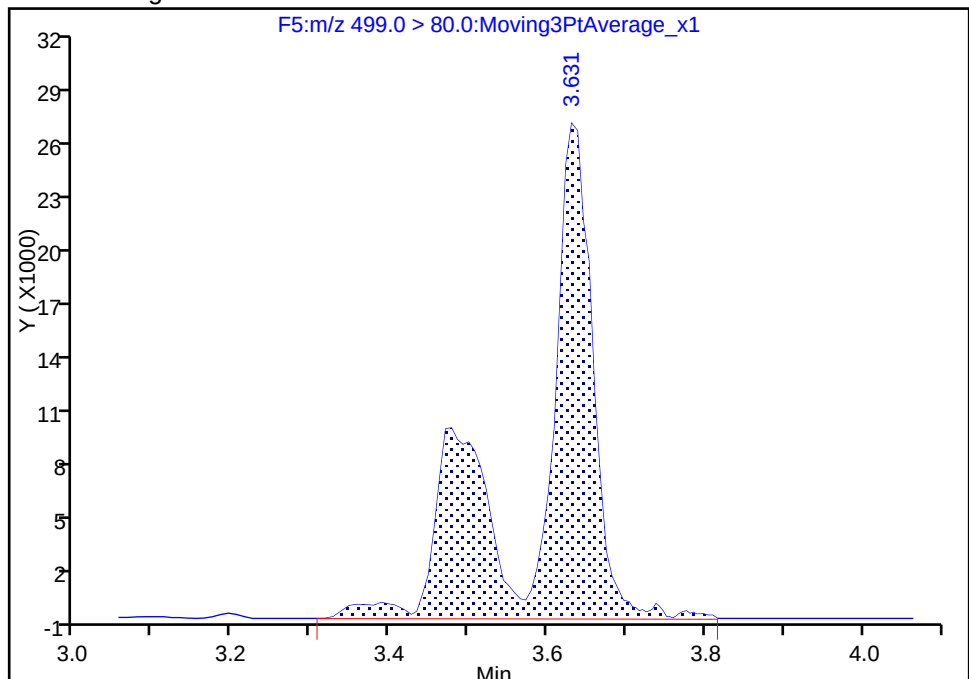
RT: 3.63
Area: 77917
Amount: 2.608176
Amount Units: ng/ml

Processing Integration Results



RT: 3.63
Area: 136022
Amount: 4.553170
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 20-Jul-2017 10:01:57

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Client Sample ID: NAWC-060717-FRB-258A Lab Sample ID: 320-28916-6

Matrix: Water Lab File ID: 2017.06.28_537B_011.d

Analysis Method: 537 Date Collected: 06/07/2017 09:50

Extraction Method: 537 Date Extracted: 06/19/2017 09:24

Sample wt/vol: 257.3(mL) Date Analyzed: 06/28/2017 17:51

Con. Extract Vol.: 1.0(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171486 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	16	U	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	7.8	U	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.9	U	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	90		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_011.d
 Lims ID: 320-28916-A-6-A
 Client ID: NAWC-060717-FRB-258A
 Sample Type: Client
 Inject. Date: 28-Jun-2017 17:51:05 ALS Bottle#: 9 Worklist Smp#: 11
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-a-6-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 13:54:12 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.548	-0.008	1.000	1626810	8.23		4958	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.882	-0.008		1642678	10.0		4915	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.119	-0.002		5026090	28.7		3561	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.291	-0.007	1.000	976390	9.03		3660	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_011.d

Injection Date: 28-Jun-2017 17:51:05

Instrument ID: A8_N

Lims ID: 320-28916-A-6-A

Lab Sample ID: 320-28916-6

Client ID: NAWC-060717-FRB-258A

Operator ID: SACINSTLCMS01

ALS Bottle#: 9

Worklist Smp#: 11

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

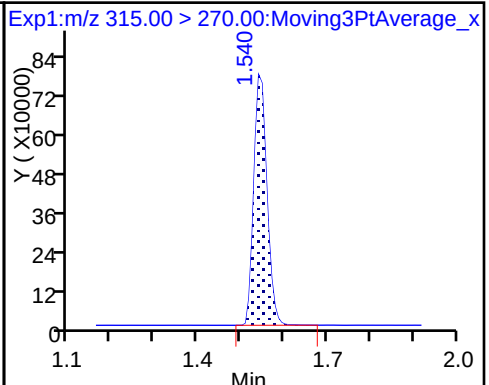
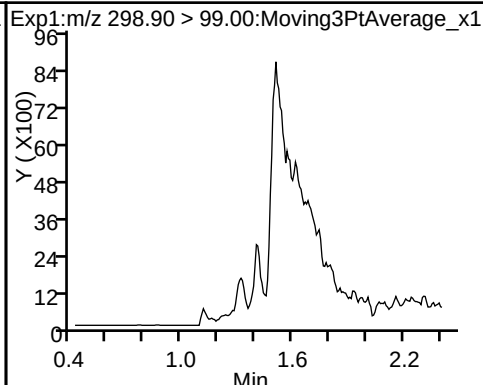
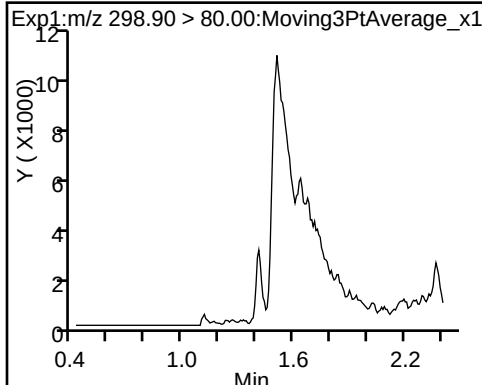
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

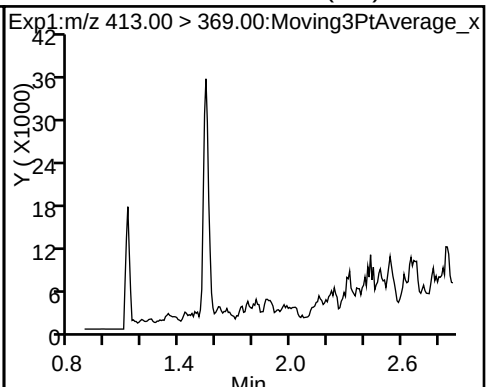
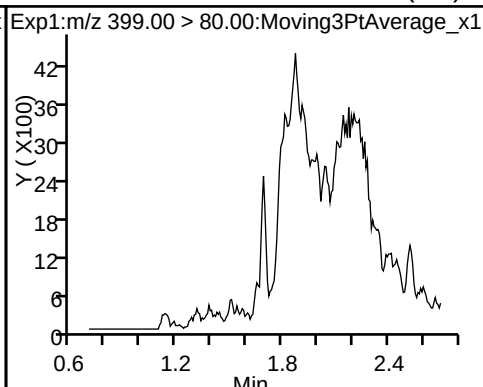
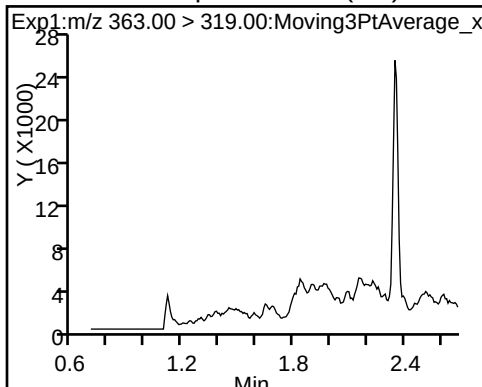
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid (ND)

3 Perfluorohexanesulfonic acid (ND)

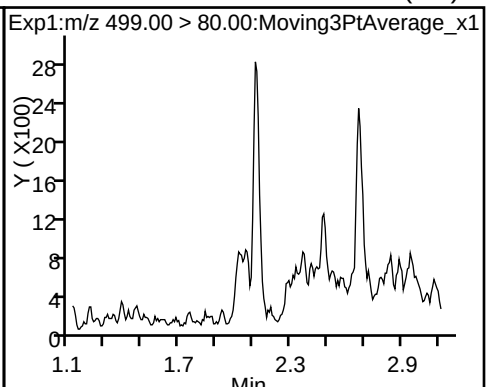
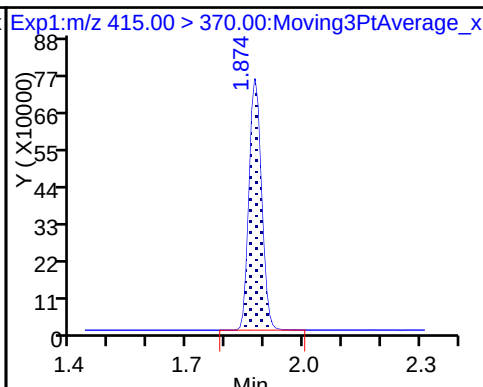
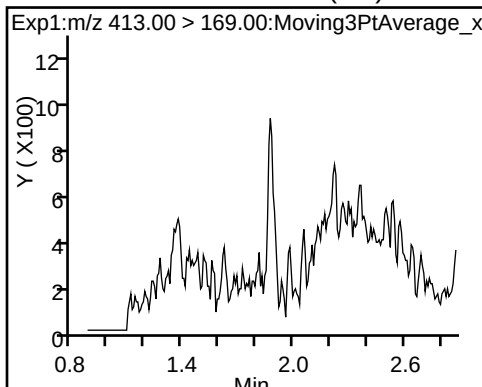
5 Perfluorooctanoic acid (ND)



5 Perfluorooctanoic acid (ND)

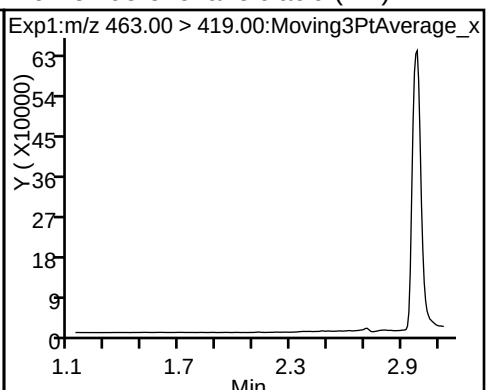
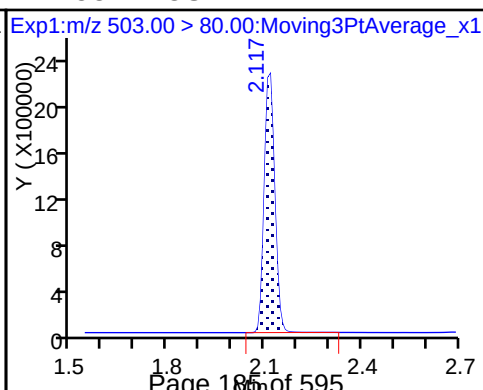
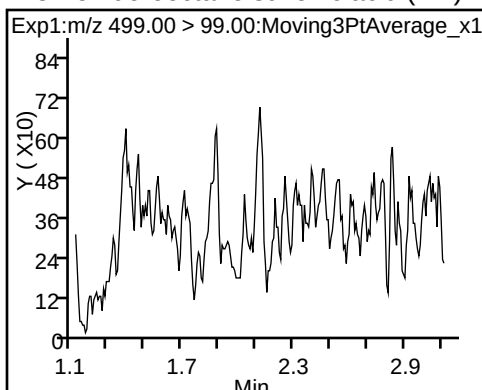
* 6 13C2-PFOA

8 Perfluorooctane sulfonic acid (ND)

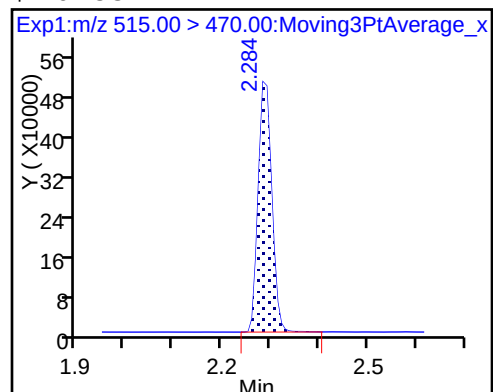


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_011.d
Lims ID: 320-28916-A-6-A
Client ID: NAWC-060717-FRB-258A
Sample Type: Client
Inject. Date: 28-Jun-2017 17:51:05 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-a-6-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 13:54:12 Calib Date: 28-Jun-2017 16:35:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.23	82.30
\$ 10 13C2 PFDA	10.0	9.03	90.29

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: NAWC-060717-RW-145 Lab Sample ID: 320-28916-7
 Matrix: Water Lab File ID: 2017.06.23_537_027.d
 Analysis Method: 537 Date Collected: 06/07/2017 13:05
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 258.2 (mL) Date Analyzed: 06/23/2017 23:21
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170757 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	18	J	39	15	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	20		19	7.7	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.7
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.1	J	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	6.6	J	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U M	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	68	Q	70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_027.d
 Lims ID: 320-28916-A-7-A
 Client ID: NAWC-060717-RW-145
 Sample Type: Client
 Inject. Date: 23-Jun-2017 23:21:47 ALS Bottle#: 19 Worklist Smp#: 27
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-7-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj Date: 26-Jun-2017 13:36:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.322	2.183	0.139	1.000	686945	2.39		57.2	M
298.90 > 99.00	2.322	2.183	0.139	1.000	568690		1.21(0.00-0.00)	115	M
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	2985385	8.29		4723	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.777	2.625	0.152	1.000	809349	2.08		55.9	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.784	2.630	0.154	1.000	499560	1.71		14.7	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3472036	10.0		7336	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	1592677	5.24		72.0	
413.00 > 169.00	2.997	2.859	0.138	1.000	990423		1.61(0.00-0.00)	889	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		9551542	28.7		3627	
9 Perfluorononanoic acid									
463.00 > 419.00	3.141	3.003	0.138	1.000	177502	0.5993		4.2	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2281713	6.83		4163	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.118	3.126	-0.008	1.000	1546664	4.57		285	
499.00 > 99.00	3.126	3.126	0.0	1.002	258504		5.98(0.00-0.00)	142	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_027.d

Injection Date: 23-Jun-2017 23:21:47

Instrument ID: A8_N

Lims ID: 320-28916-A-7-A

Lab Sample ID: 320-28916-7

Client ID: NAWC-060717-RW-145

Operator ID: SACINSTLCMS01

ALS Bottle#: 19

Worklist Smp#: 27

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

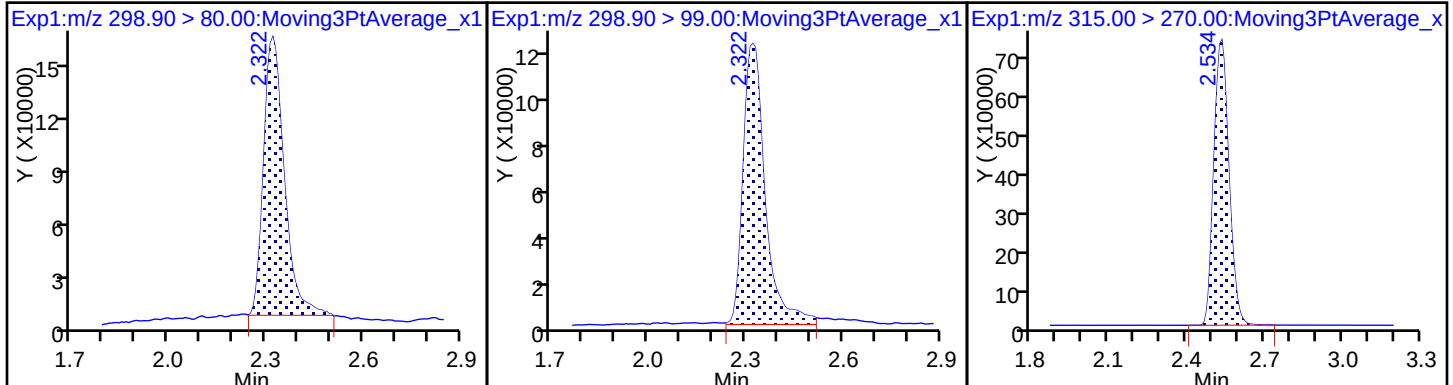
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (M)

1 Perfluorobutanesulfonic acid (M)

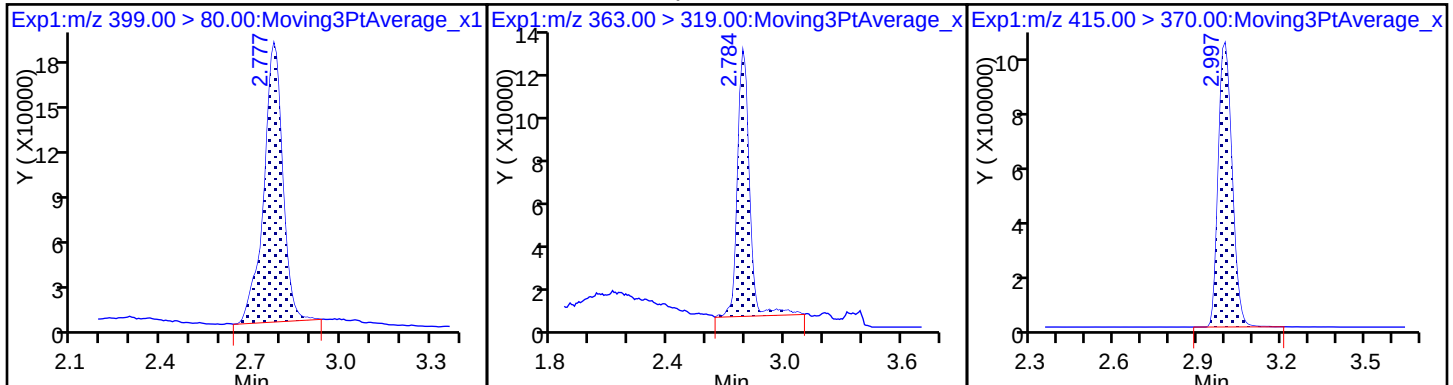
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

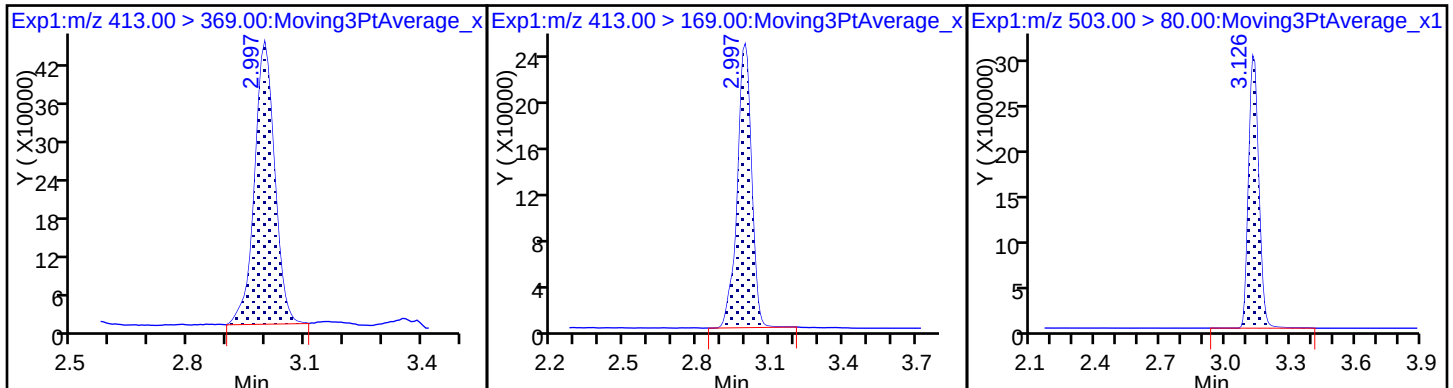
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

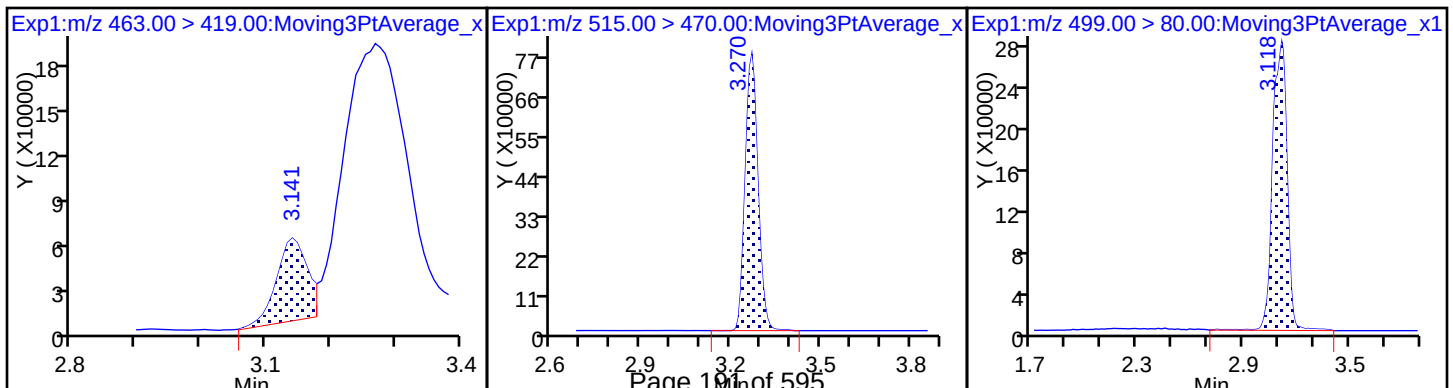
* 7 13C4 PFOS



9 Perfluorononanoic acid

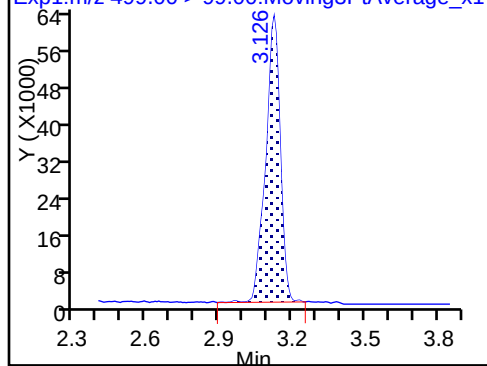
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_027.d
Lims ID: 320-28916-A-7-A
Client ID: NAWC-060717-RW-145
Sample Type: Client
Inject. Date: 23-Jun-2017 23:21:47 ALS Bottle#: 19 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-7-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:36:39

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.29	82.86
\$ 10 13C2 PFDA	10.0	6.83	68.30

TestAmerica Sacramento

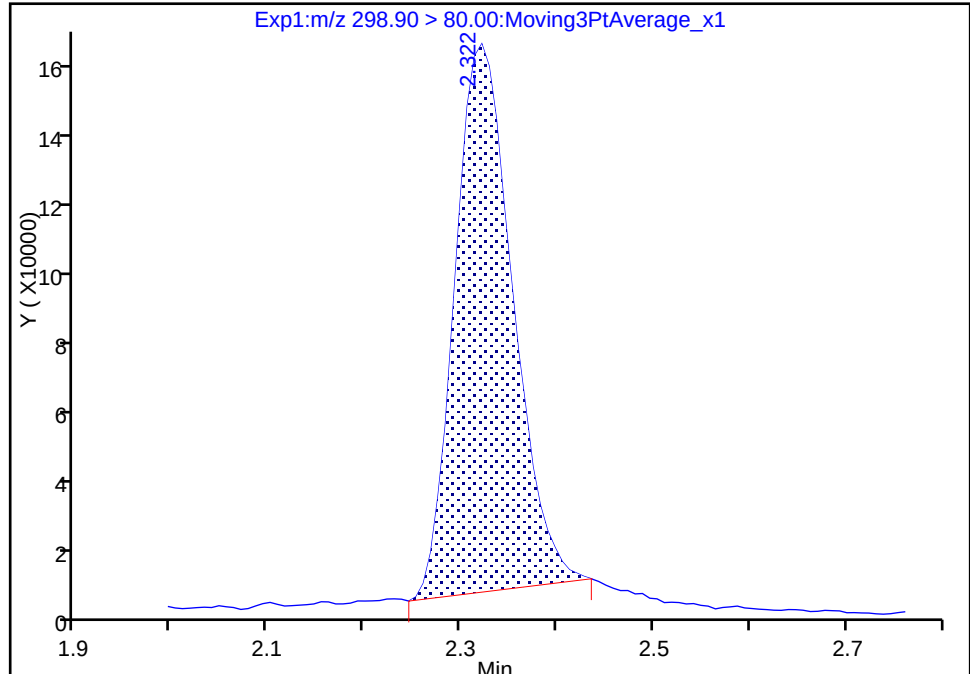
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Injection Date: 23-Jun-2017 23:21:47 Instrument ID: A8_N
Lims ID: 320-28916-A-7-A Lab Sample ID: 320-28916-7
Client ID: NAWC-060717-RW-145
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

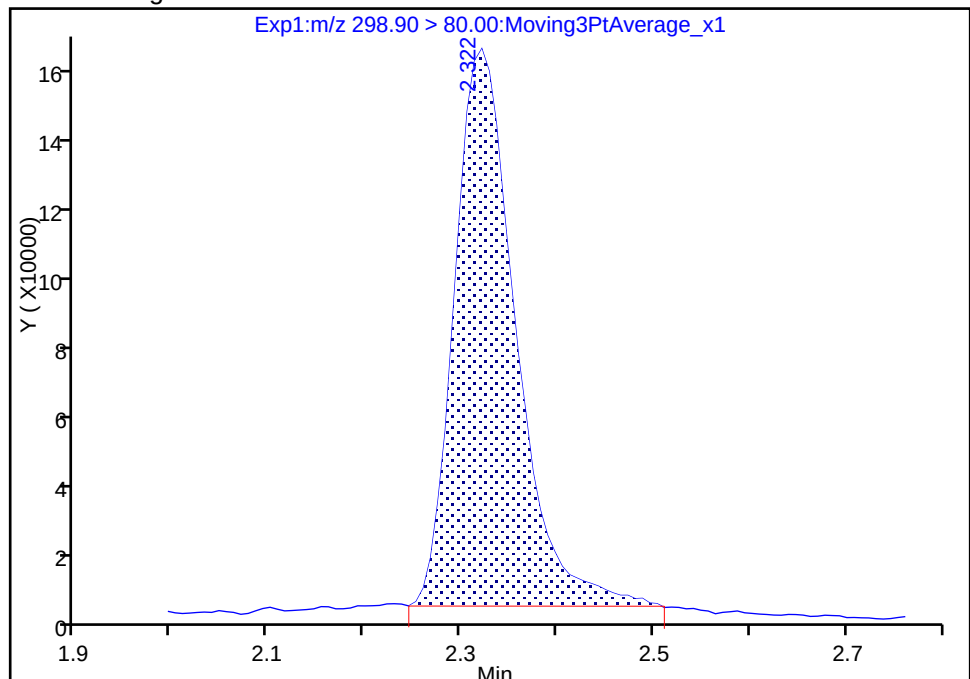
RT: 2.32
Area: 638044
Amount: 2.216155
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 686945
Amount: 2.386006
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:44:19
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 194 of 595

TestAmerica Sacramento

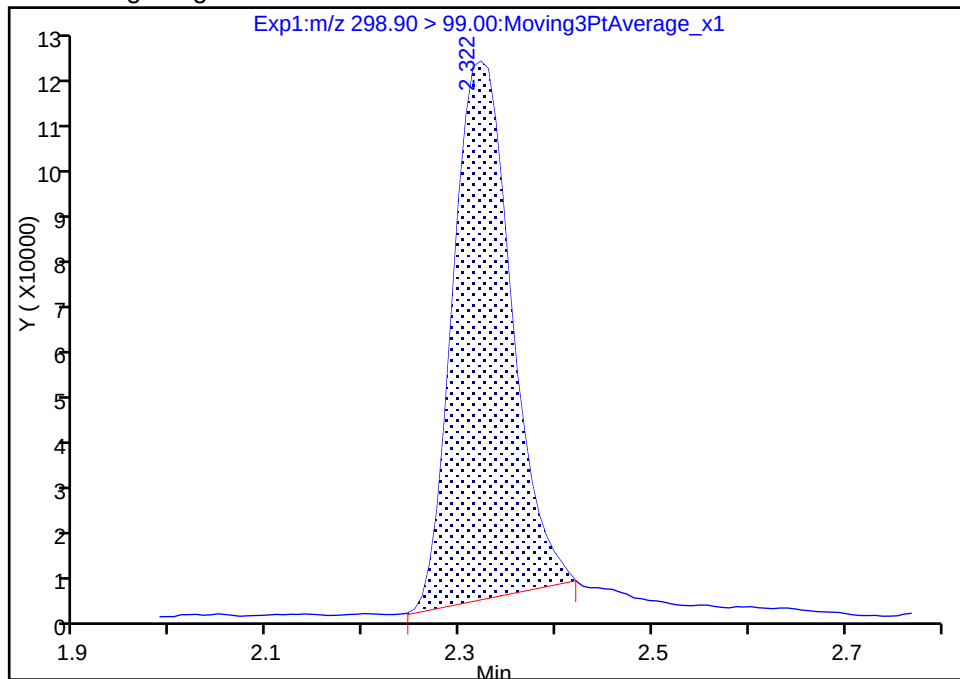
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_027.d
Injection Date: 23-Jun-2017 23:21:47 Instrument ID: A8_N
Lims ID: 320-28916-A-7-A Lab Sample ID: 320-28916-7
Client ID: NAWC-060717-RW-145
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

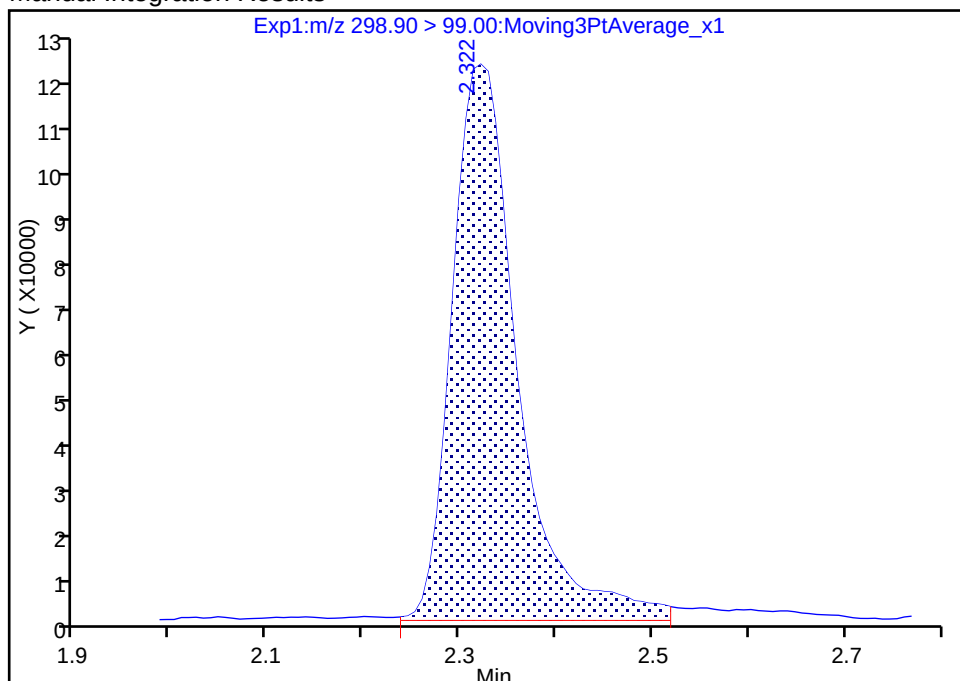
RT: 2.32
Area: 492751
Amount: 2.216155
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 568690
Amount: 2.386006
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:44:36

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-145 RE</u>	Lab Sample ID: <u>320-28916-7 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.07.06_537A_028.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 13:05</u>
Extraction Method: <u>537</u>	Date Extracted: <u>07/03/2017 09:49</u>
Sample wt/vol: <u>244.8 (mL)</u>	Date Analyzed: <u>07/07/2017 01:25</u>
Con. Extract Vol.: <u>1.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>172925</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	18	J H M	41	16	6.9
335-67-1	Perfluorooctanoic acid (PFOA)	20	H	20	8.2	2.9
375-95-1	Perfluorononanoic acid (PFNA)	20	U H	25	20	8.2
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.4	J H	31	12	5.6
375-85-9	Perfluoroheptanoic acid (PFHpA)	6.1	J H	10	4.1	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	37	U H	92	37	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	91		70-130
STL00996	13C2 PFDA	95		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_028.d
 Lims ID: 320-28916-B-7-A
 Client ID: NAWC-060717-RW-145
 Sample Type: Client
 Inject. Date: 07-Jul-2017 01:25:02 ALS Bottle#: 18 Worklist Smp#: 28
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-b-7-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:25:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	182293	2.05		51.3	
298.90 > 99.00	1.404	1.404	0.0	1.000	143361		1.27(0.00-0.00)	55.9	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.533	1.539	-0.006	1.000	1081338	9.10		4385	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.684	1.691	-0.007	1.000	164013	1.50		17.6	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.684	1.692	-0.008	1.000	285314	2.06		83.7	
* 6 13C2-PFOA									
415.00 > 370.00	1.859	1.878	-0.019		1045604	10.0		3484	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.866	1.879	-0.013	1.000	467724	4.85		44.2	
413.00 > 169.00	1.866	1.879	-0.013	1.000	324372		1.44(0.00-0.00)	298	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.102	2.102	0.0	1.000	444430	4.36		221	M
499.00 > 99.00	2.102	2.102	0.0	1.000	77237		5.75(0.00-0.00)	111	M
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.117	-0.015		2855283	28.7		2530	
9 Perfluorononanoic acid									
463.00 > 419.00	2.109	2.124	-0.015	1.000	59232	0.6874		1.6	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	835859	9.52		1607	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_028.d

Injection Date: 07-Jul-2017 01:25:02

Instrument ID: A8_N

Lims ID: 320-28916-B-7-A

Lab Sample ID: 320-28916-7

Client ID: NAWC-060717-RW-145

Operator ID: SACINSTLCMS01

ALS Bottle#: 18

Worklist Smp#: 28

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

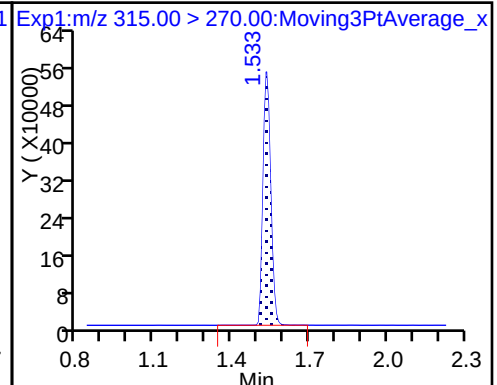
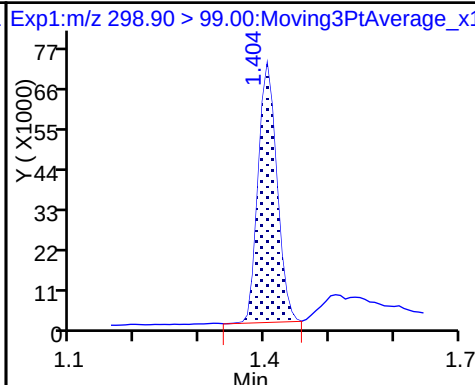
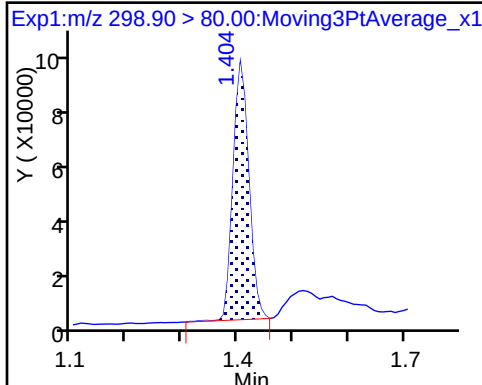
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

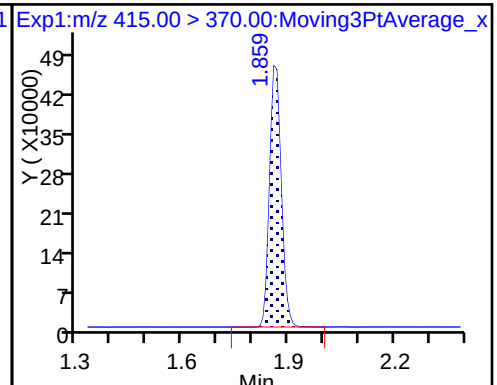
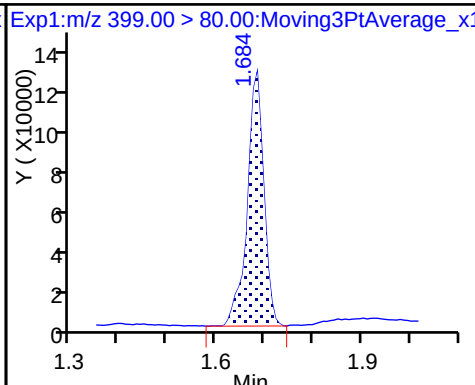
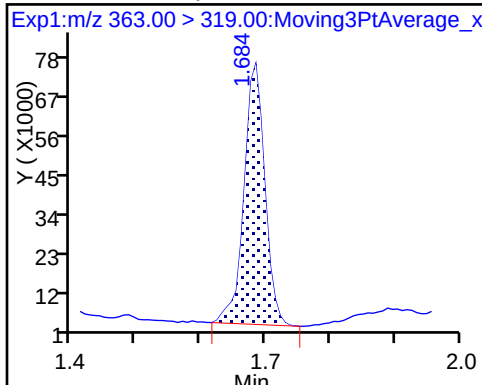
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

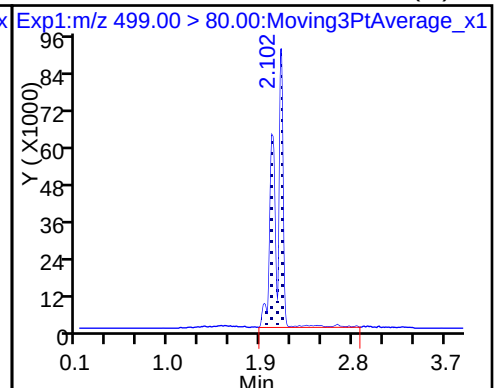
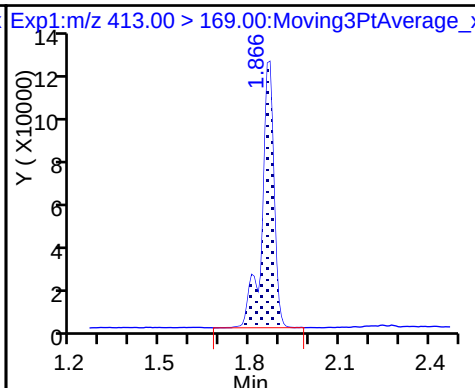
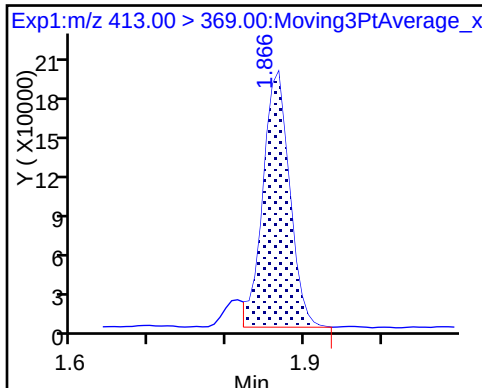
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

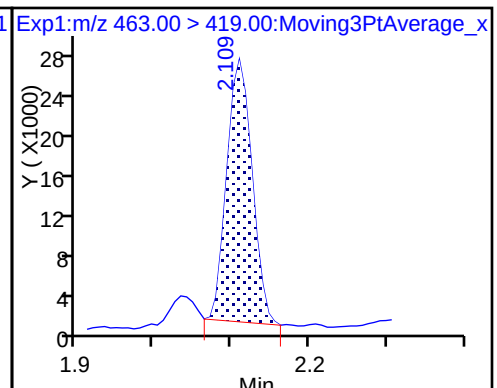
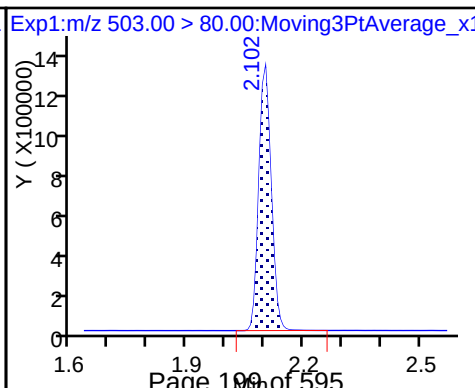
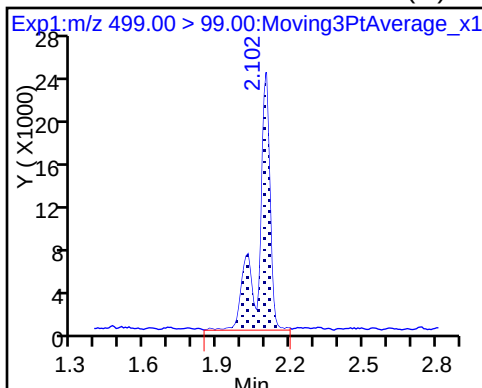
8 Perfluorooctane sulfonic acid (M)



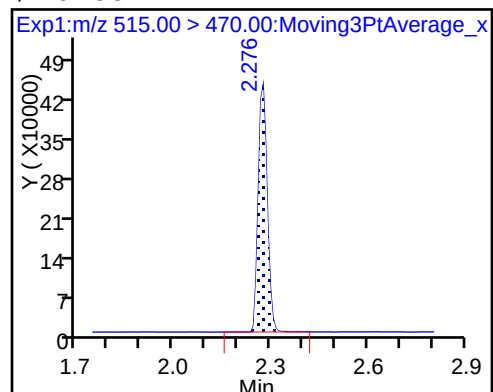
8 Perfluorooctane sulfonic acid (M)

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_028.d
Lims ID: 320-28916-B-7-A
Client ID: NAWC-060717-RW-145
Sample Type: Client
Inject. Date: 07-Jul-2017 01:25:02 ALS Bottle#: 18 Worklist Smp#: 28
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-b-7-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
Column 1 : Det: EXP1
Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:25:54

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.10	91.02
\$ 10 13C2 PFDA	10.0	9.52	95.22

TestAmerica Sacramento

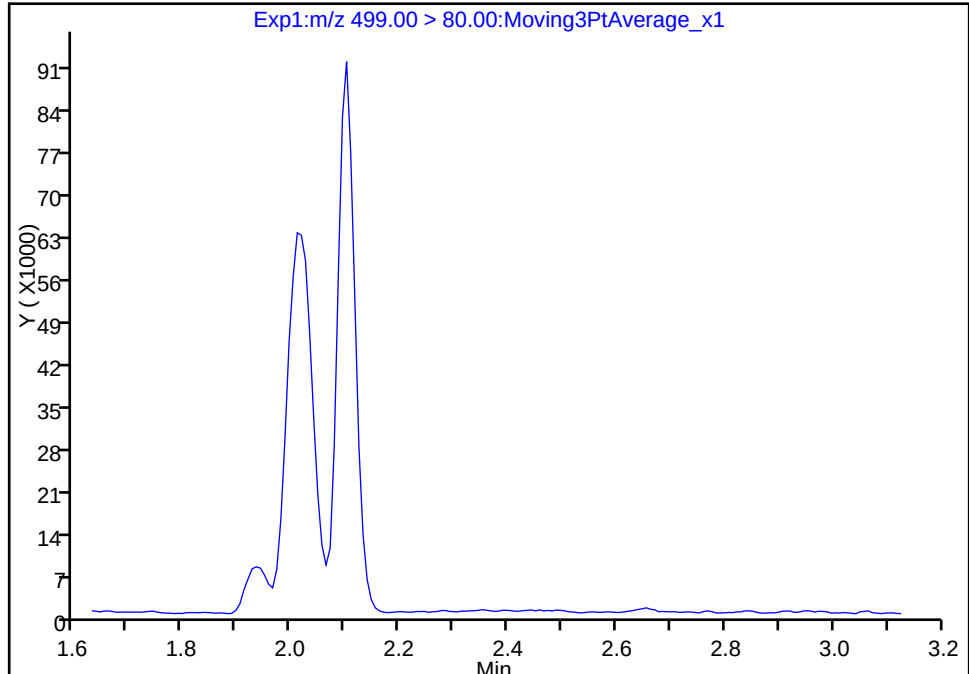
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_028.d
Injection Date: 07-Jul-2017 01:25:02 Instrument ID: A8_N
Lims ID: 320-28916-B-7-A Lab Sample ID: 320-28916-7
Client ID: NAWC-060717-RW-145
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 28
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

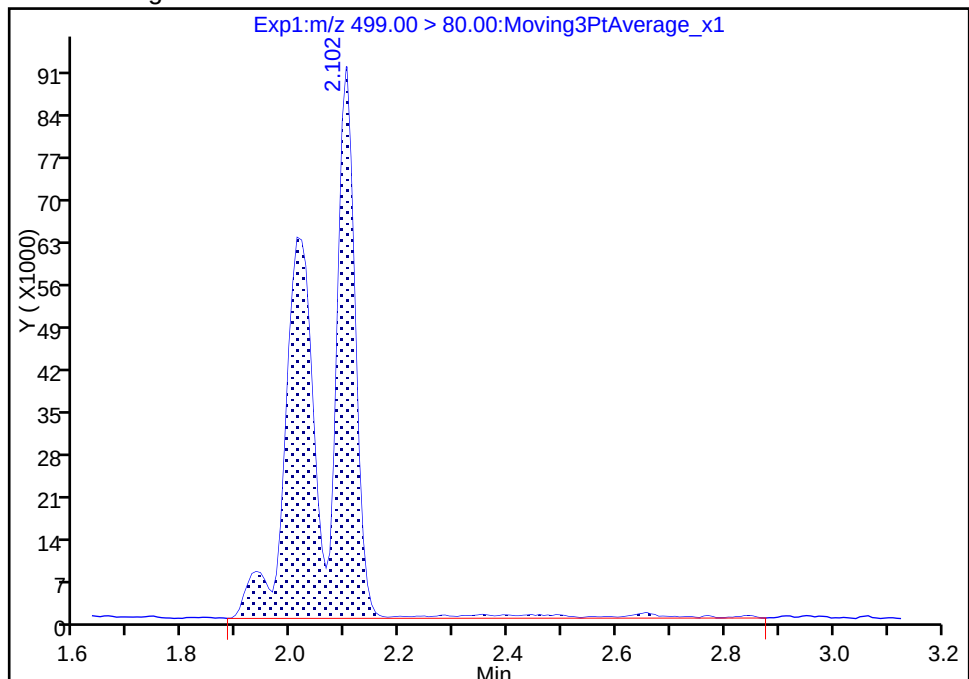
Signal: 1

Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results



RT: 2.10
Area: 444430
Amount: 4.358996
Amount Units: ng/ml

Reviewer: barnettj, 07-Jul-2017 11:25:02

Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

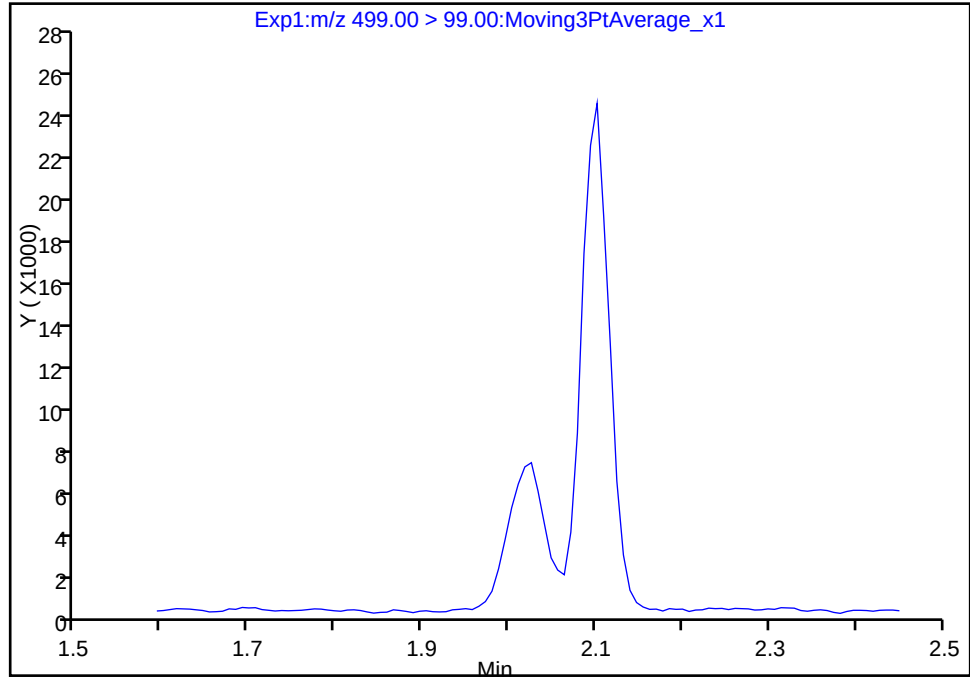
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Injection Date: 07-Jul-2017 01:25:02 Instrument ID: A8_N
Lims ID: 320-28916-B-7-A Lab Sample ID: 320-28916-7
Client ID: NAWC-060717-RW-145
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 28
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

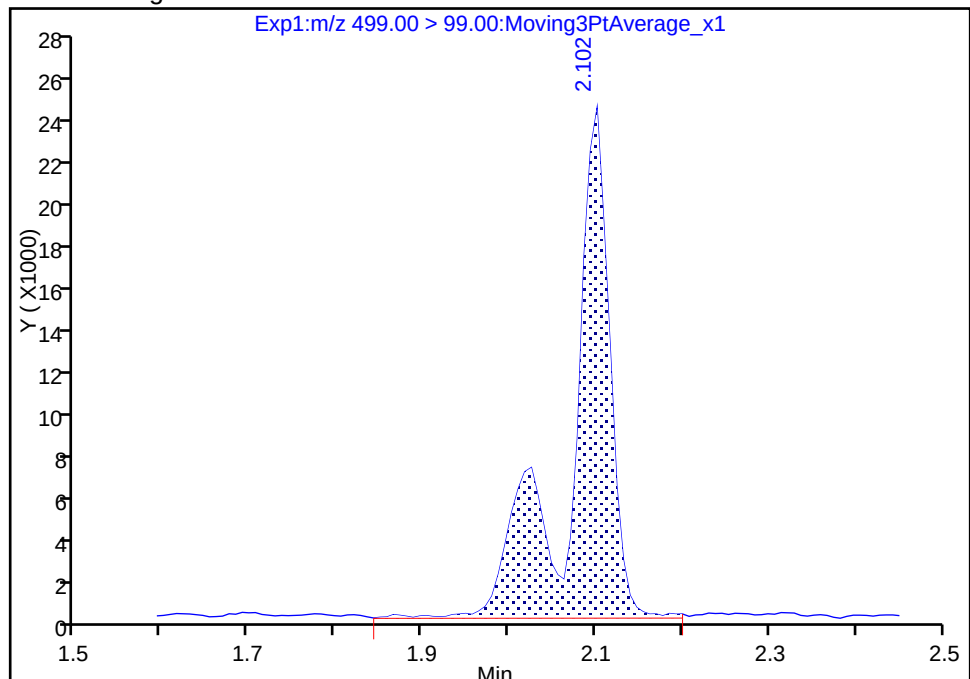
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 77237
Amount: 4.358996
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 11:25:19

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

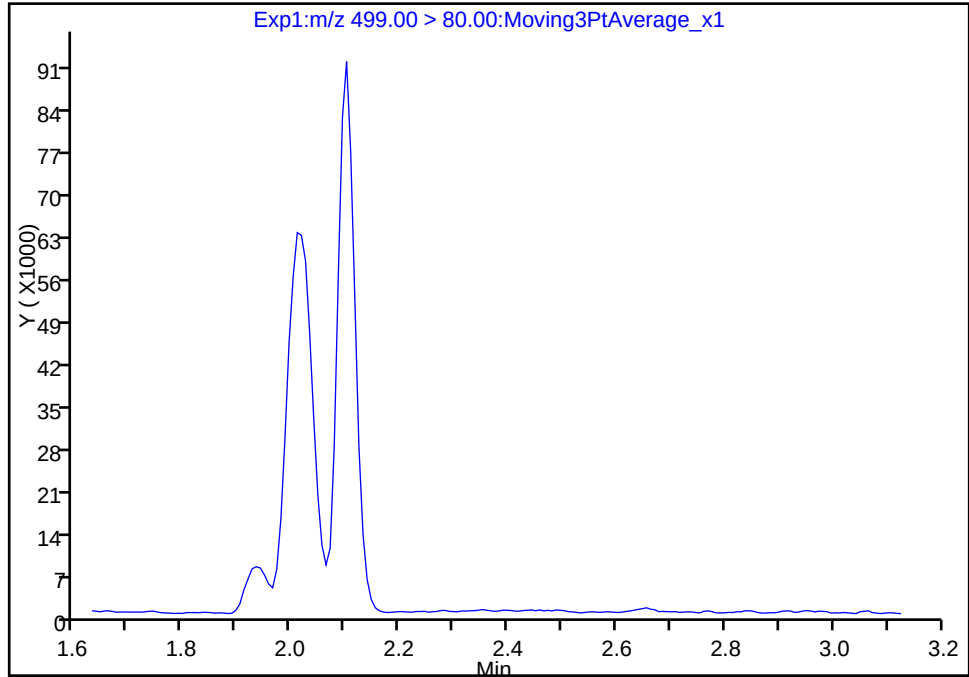
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Injection Date: 07-Jul-2017 01:25:02 Instrument ID: A8_N
Lims ID: 320-28916-B-7-A Lab Sample ID: 320-28916-7
Client ID: NAWC-060717-RW-145
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 28
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

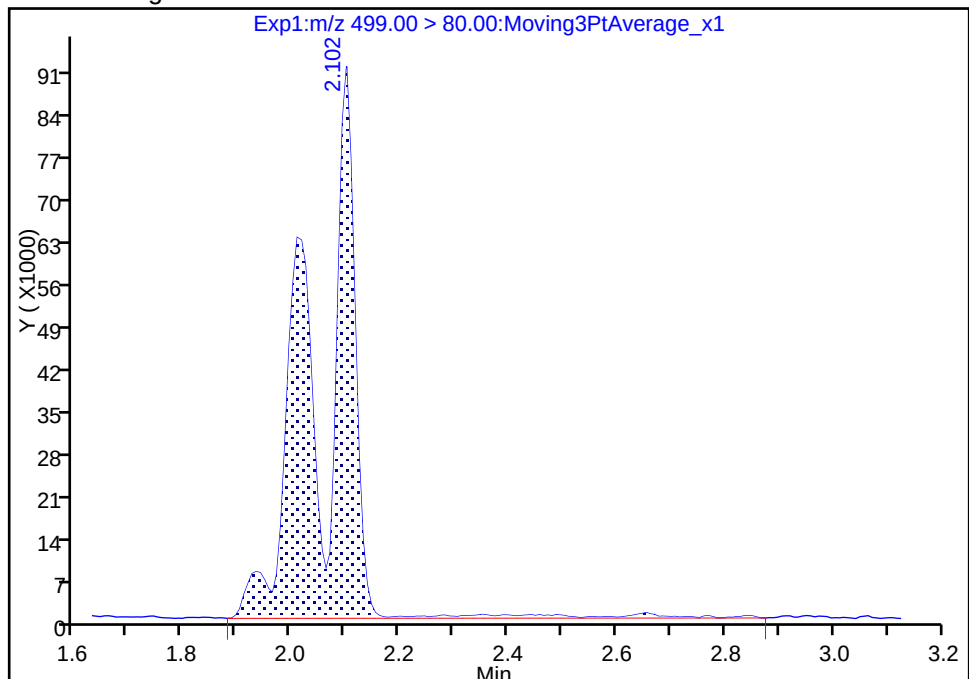
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 444430
Amount: 4.358996
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 11:25:19

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-FRB-145</u>	Lab Sample ID: <u>320-28916-8</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.23_537_030.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 13:00</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>267.2 (mL)</u>	Date Analyzed: <u>06/23/2017 23:36</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>170758</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	37	15	6.4
335-67-1	Perfluorooctanoic acid (PFOA)	7.5	U	19	7.5	2.6
375-95-1	Perfluorononanoic acid (PFNA)	19	U	22	19	7.5
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	28	11	5.1
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.7	U	9.4	3.7	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	84	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	91		70-130
STL00996	13C2 PFDA	77		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_030.d
 Lims ID: 320-28916-A-8-A
 Client ID: NAWC-060717-FRB-145
 Sample Type: Client
 Inject. Date: 23-Jun-2017 23:36:00 ALS Bottle#: 20 Worklist Smp#: 30
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-8-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:38:35

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA

315.00 > 270.00 2.526 2.381 0.145 1.000 3418484 9.12 5618

* 6 13C2-PFOA

415.00 > 370.00 2.989 2.859 0.130 3611365 10.0 6772

* 7 13C4 PFOS

503.00 > 80.00 3.126 2.991 0.135 9737019 28.7 22107

\$ 10 13C2 PFDA

515.00 > 470.00 3.262 3.123 0.139 1.000 2664270 7.67 6481

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_030.d

Injection Date: 23-Jun-2017 23:36:00

Instrument ID: A8_N

Lims ID: 320-28916-A-8-A

Lab Sample ID: 320-28916-8

Client ID: NAWC-060717-FRB-145

Operator ID: SACINSTLCMS01

ALS Bottle#: 20

Worklist Smp#: 30

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

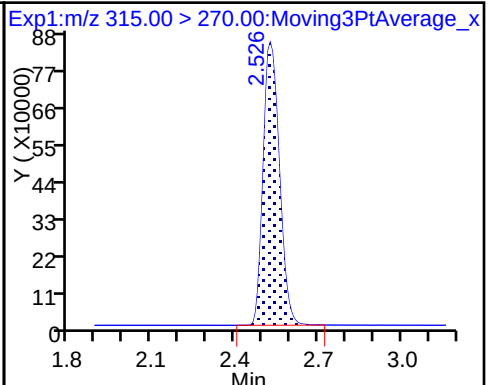
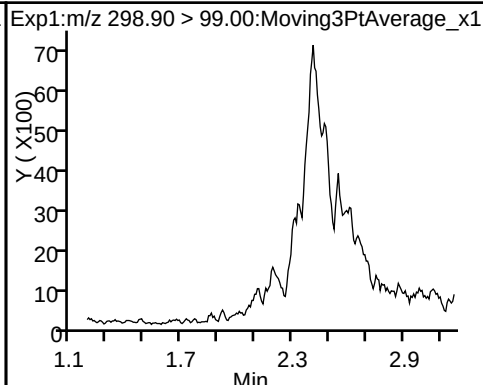
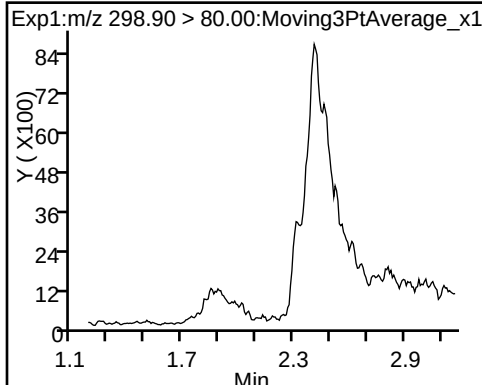
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

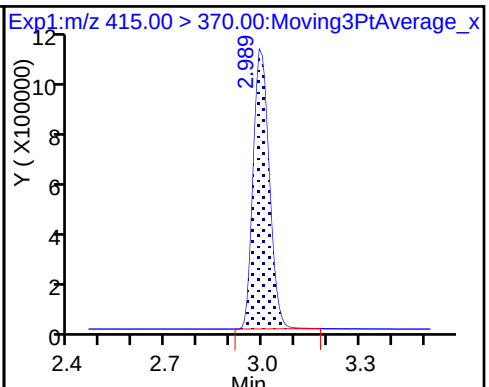
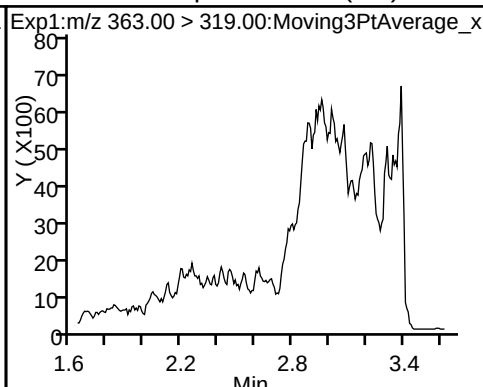
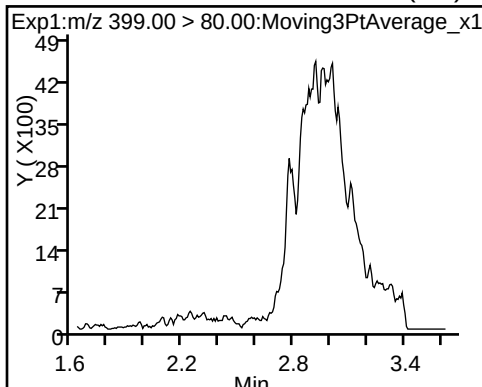
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (ND)

4 Perfluoroheptanoic acid (ND)

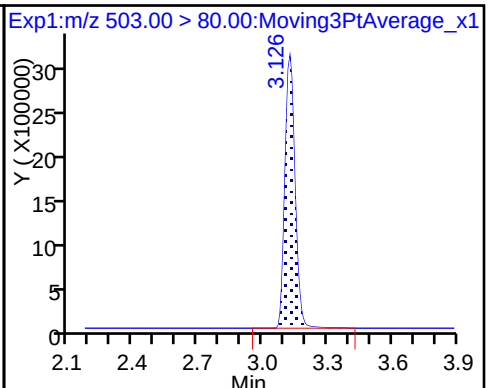
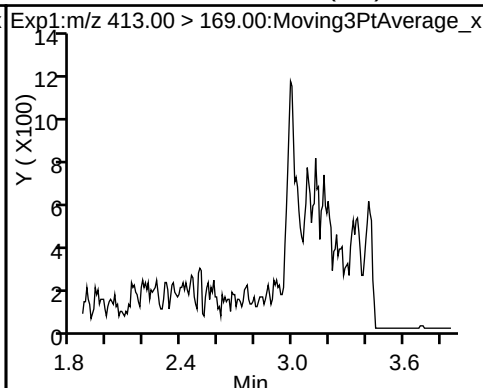
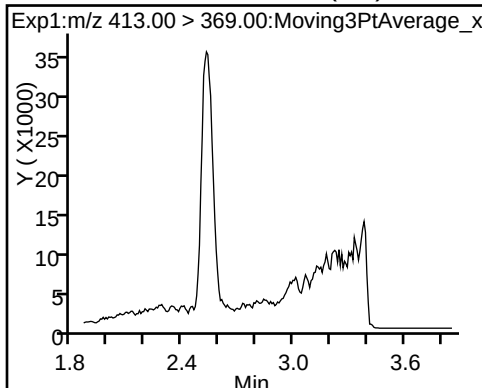
* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

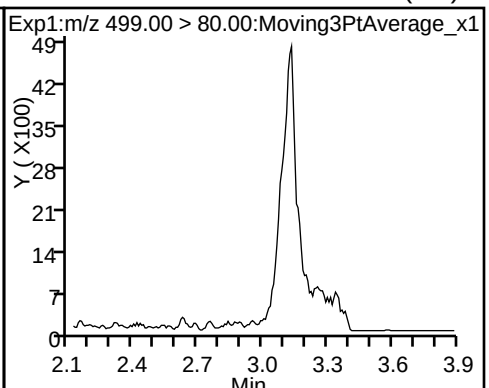
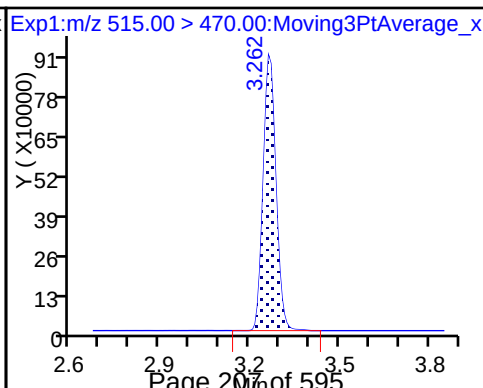
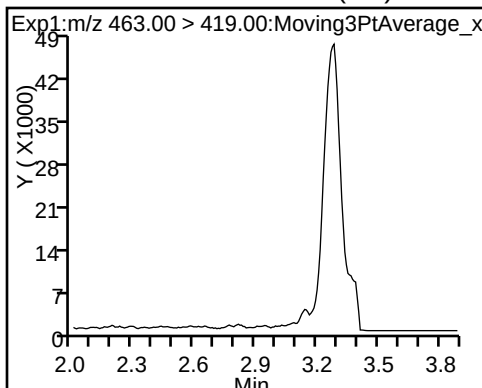
* 7 13C4 PFOS



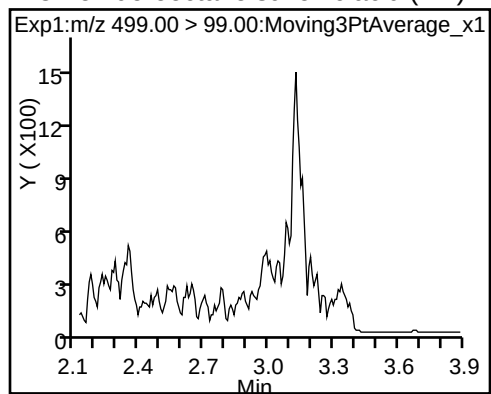
9 Perfluorononanoic acid (ND)

\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_030.d
Lims ID: 320-28916-A-8-A
Client ID: NAWC-060717-FRB-145
Sample Type: Client
Inject. Date: 23-Jun-2017 23:36:00 ALS Bottle#: 20 Worklist Smp#: 30
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-8-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:38:35

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.12	91.22
\$ 10 13C2 PFDA	10.0	7.67	76.67

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: NAWC-060717-RW-162 Lab Sample ID: 320-28916-9
 Matrix: Water Lab File ID: 2017.06.23_537_031.d
 Analysis Method: 537 Date Collected: 06/07/2017 13:50
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 257.1 (mL) Date Analyzed: 06/23/2017 23:40
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170758 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	28	J	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	15	J	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	13	J	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.7	J	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U M	88	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	81		70-130
STL00996	13C2 PFDA	86		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_031.d
 Lims ID: 320-28916-A-9-A
 Client ID: NAWC-060717-RW-162
 Sample Type: Client
 Inject. Date: 23-Jun-2017 23:40:46 ALS Bottle#: 21 Worklist Smp#: 31
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-9-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:39:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.322	2.183	0.139	1.000	526521	1.80		29.3	M
298.90 > 99.00	2.329	2.183	0.146	1.003	432521		1.22(0.00-0.00)	91.5	M
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	2738013	8.12		3750	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.777	2.625	0.152	1.000	1284300	3.25		71.6	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.792	2.630	0.162	1.000	332966	1.22		9.7	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3247640	10.0		6399	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	1087260	3.82		38.7	
413.00 > 169.00	2.997	2.859	0.138	1.000	697909		1.56(0.00-0.00)	639	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		9698322	28.7		2733	
9 Perfluorononanoic acid									
463.00 > 419.00	3.141	3.003	0.138	1.000	100955	0.3644		5.9	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2678726	8.57		4547	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.126	3.126	0.0	1.000	2454252	7.14		401	
499.00 > 99.00	3.126	3.126	0.0	1.000	467498		5.25(0.00-0.00)	321	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_031.d

Injection Date: 23-Jun-2017 23:40:46

Instrument ID: A8_N

Lims ID: 320-28916-A-9-A

Lab Sample ID: 320-28916-9

Client ID: NAWC-060717-RW-162

Operator ID: SACINSTLCMS01

ALS Bottle#: 21

Worklist Smp#: 31

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

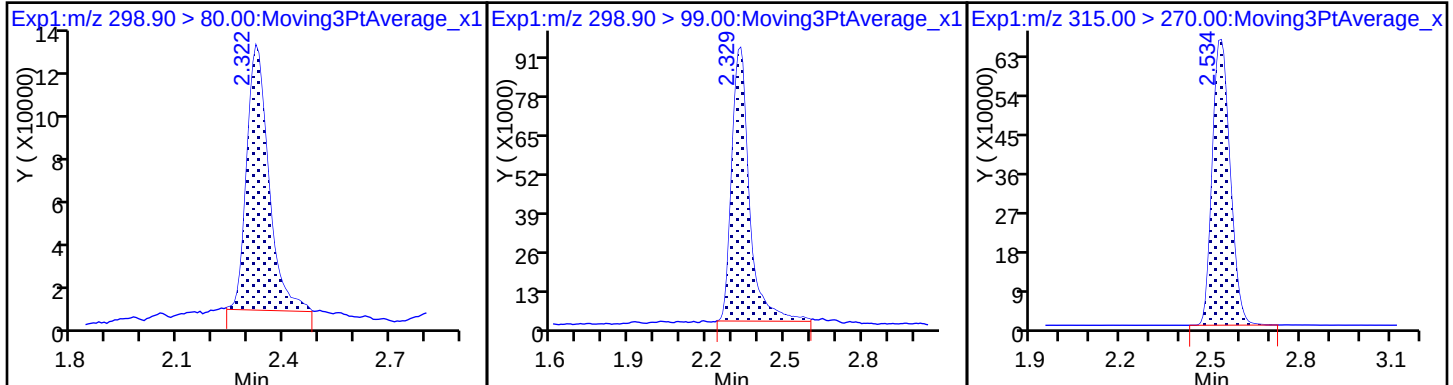
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (M)

1 Perfluorobutanesulfonic acid (M)

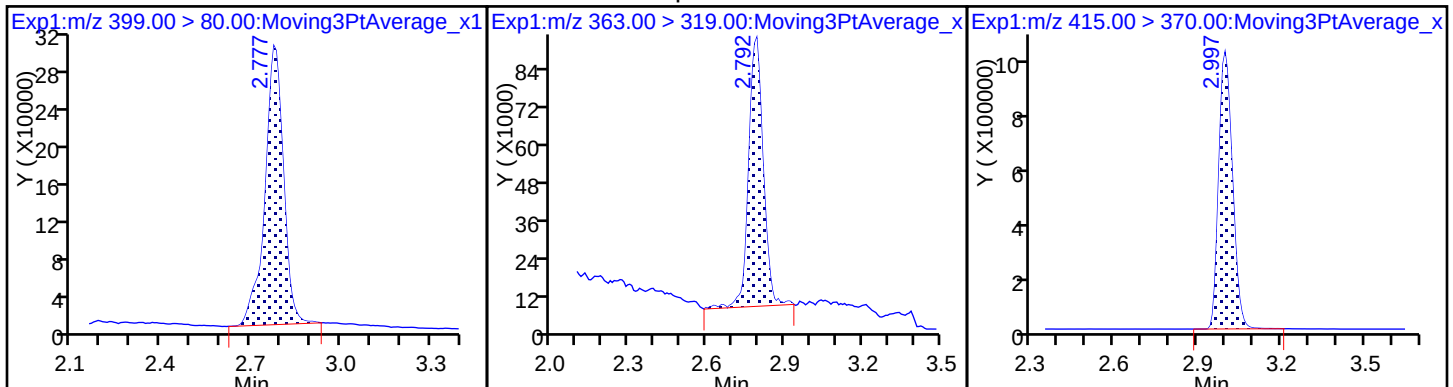
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

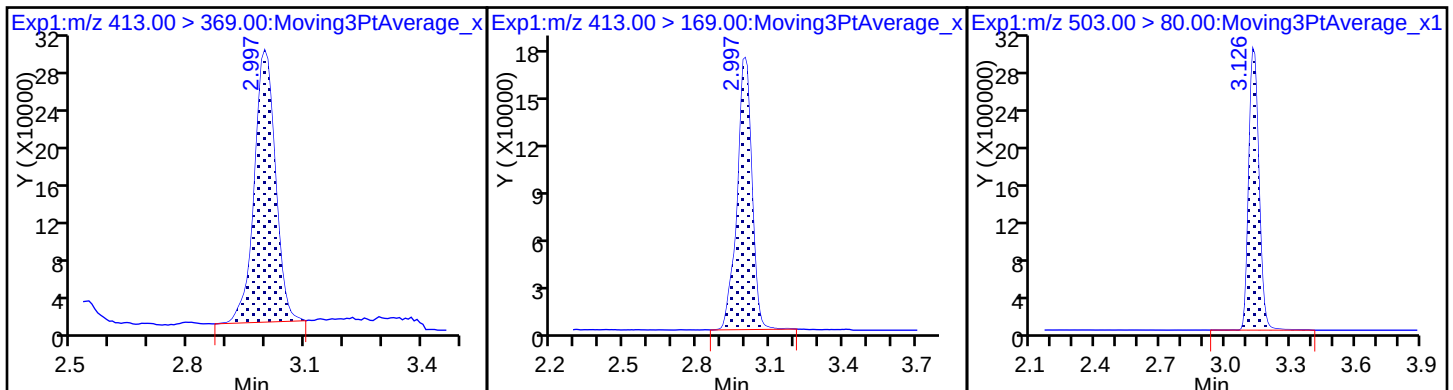
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

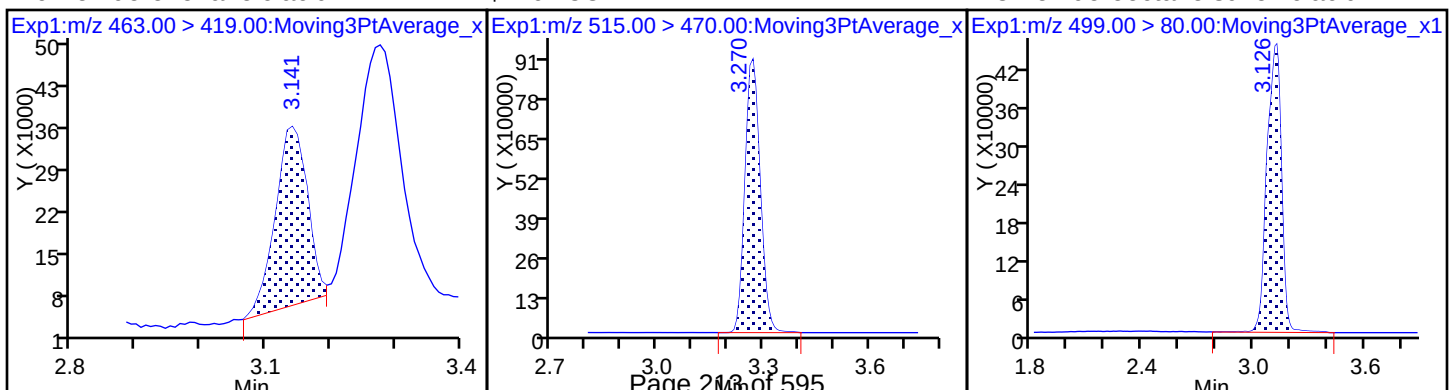
* 7 13C4 PFOS



9 Perfluorononanoic acid

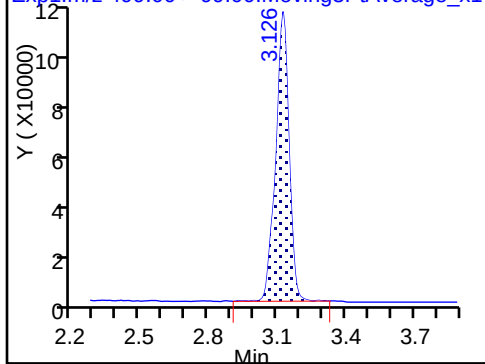
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_031.d
Lims ID: 320-28916-A-9-A
Client ID: NAWC-060717-RW-162
Sample Type: Client
Inject. Date: 23-Jun-2017 23:40:46 ALS Bottle#: 21 Worklist Smp#: 31
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-9-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:39:34

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.12	81.25
\$ 10 13C2 PFDA	10.0	8.57	85.72

TestAmerica Sacramento

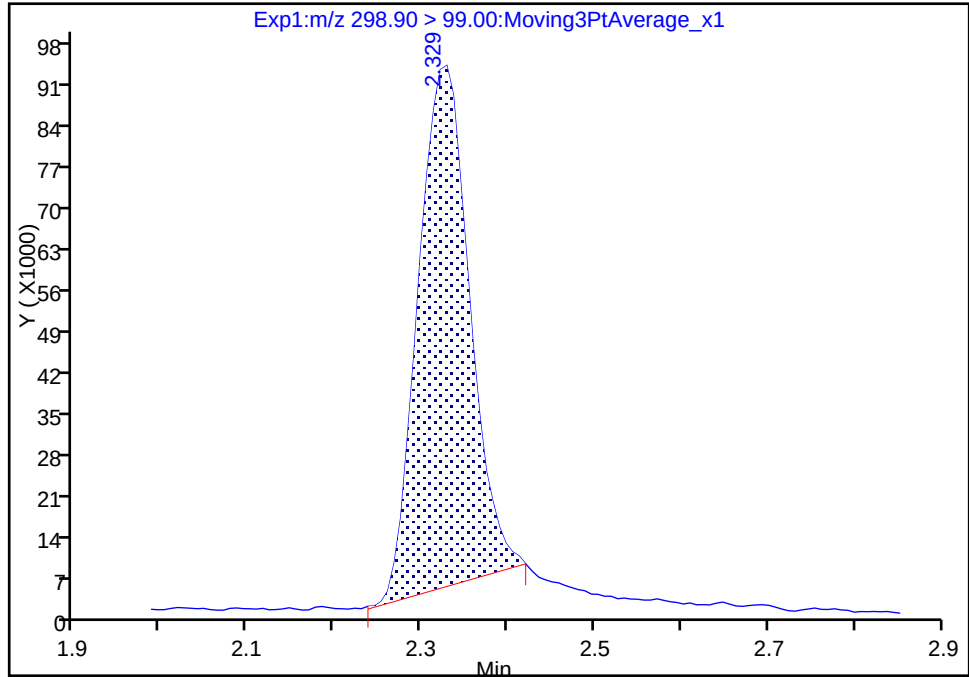
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_031.d				
Injection Date:	23-Jun-2017 23:40:46	Instrument ID:	A8_N		
Lims ID:	320-28916-A-9-A	Lab Sample ID:	320-28916-9		
Client ID:	NAWC-060717-RW-162				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	31
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

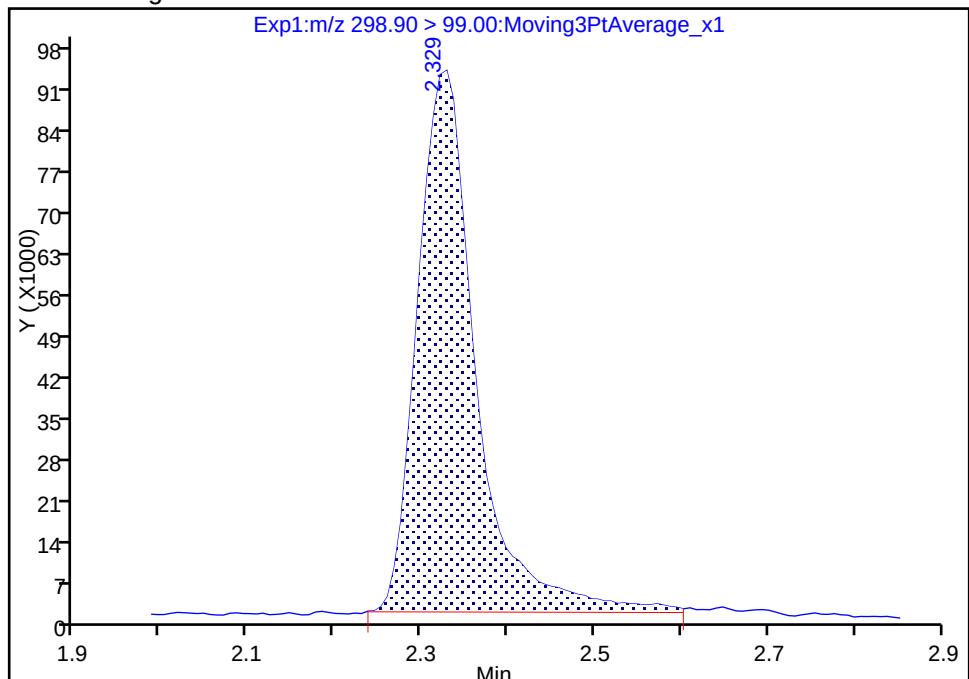
RT: 2.33
Area: 365413
Amount: 1.627608
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 432521
Amount: 1.801118
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:39:08
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 216 of 595

TestAmerica Sacramento

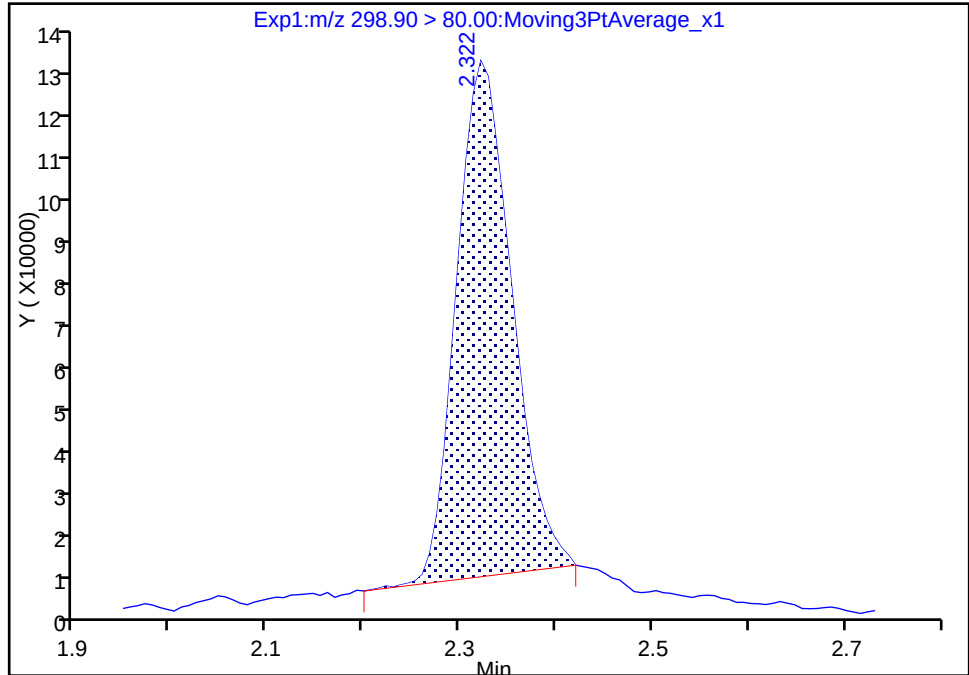
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_031.d
Injection Date: 23-Jun-2017 23:40:46 Instrument ID: A8_N
Lims ID: 320-28916-A-9-A Lab Sample ID: 320-28916-9
Client ID: NAWC-060717-RW-162
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 31
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

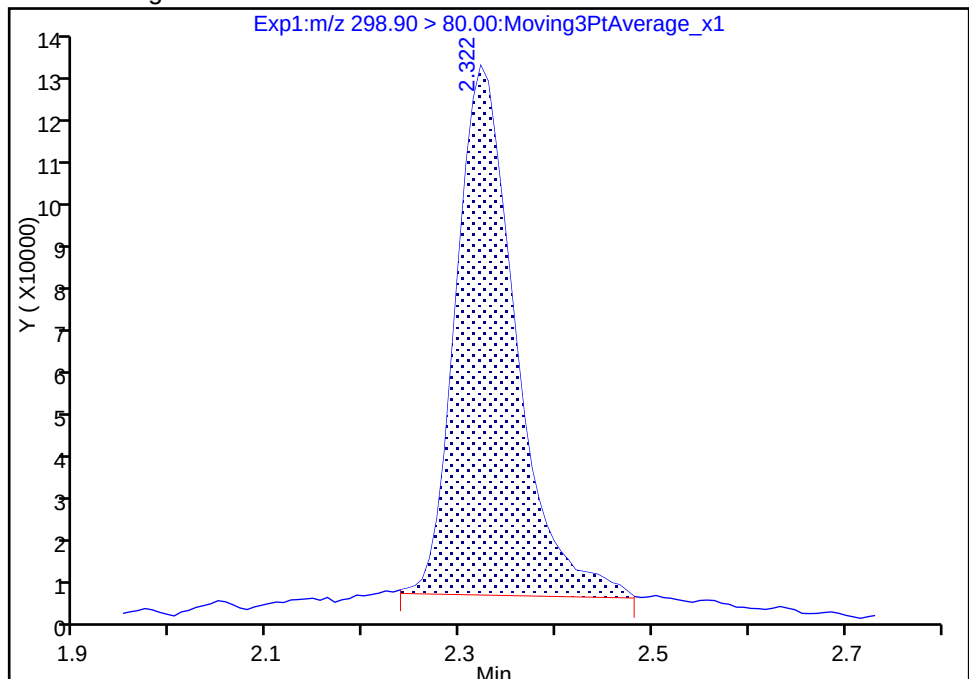
RT: 2.32
Area: 475799
Amount: 1.627608
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 526521
Amount: 1.801118
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:39:18

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Client Sample ID: NAWC-060717-FRB-162 Lab Sample ID: 320-28916-10

Matrix: Water Lab File ID: 2017.06.28_537B_017.d

Analysis Method: 537 Date Collected: 06/07/2017 13:45

Extraction Method: 537 Date Extracted: 06/19/2017 09:24

Sample wt/vol: 261.7(mL) Date Analyzed: 06/28/2017 18:19

Con. Extract Vol.: 1.0(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171487 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	38	15	6.5
335-67-1	Perfluorooctanoic acid (PFOA)	7.6	U	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	29	11	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.8	U	9.6	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	86	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	92		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_017.d
 Lims ID: 320-28916-A-10-A
 Client ID: NAWC-060717-FRB-162
 Sample Type: Client
 Inject. Date: 28-Jun-2017 18:19:35 ALS Bottle#: 13 Worklist Smp#: 17
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-a-10-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 13:54:22 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.548	-0.008	1.000	1803397	8.39		4884	
* 6 13C2-PFOA									
415.00 > 370.00	1.866	1.882	-0.016		1787242	10.0		4770	
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.119	-0.017		5229286	28.7		3357	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.291	-0.007	1.000	1084452	9.22		3982	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_017.d

Injection Date: 28-Jun-2017 18:19:35

Instrument ID: A8_N

Lims ID: 320-28916-A-10-A

Lab Sample ID: 320-28916-10

Client ID: NAWC-060717-FRB-162

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 17

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

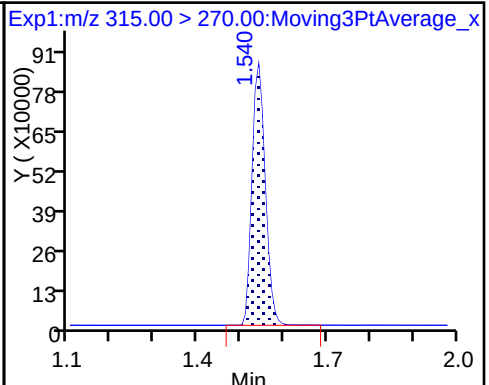
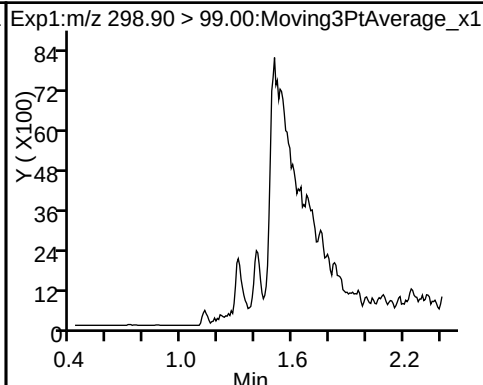
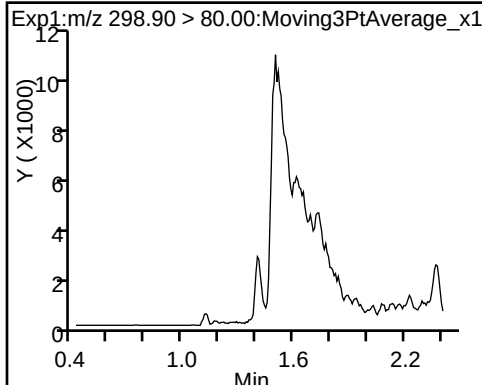
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

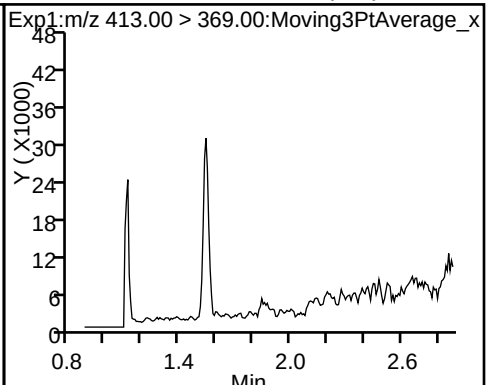
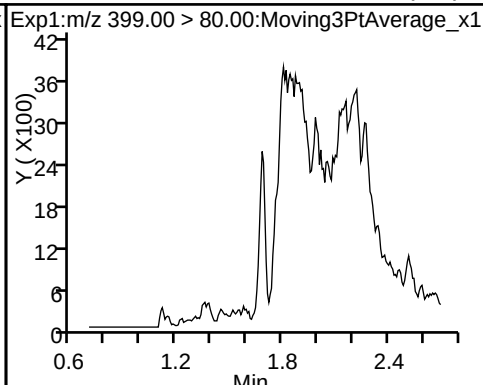
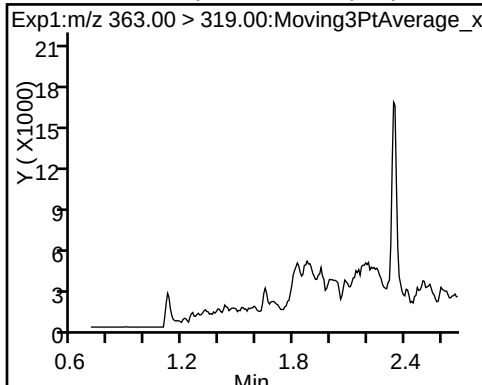
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid (ND)

3 Perfluorohexanesulfonic acid (ND)

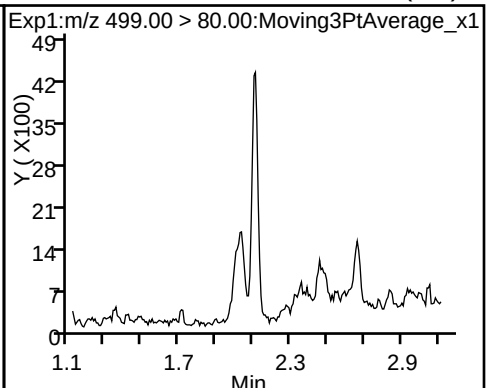
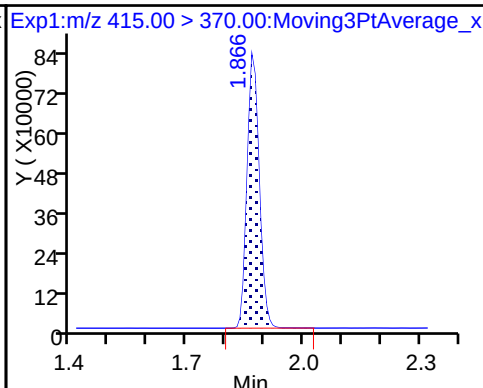
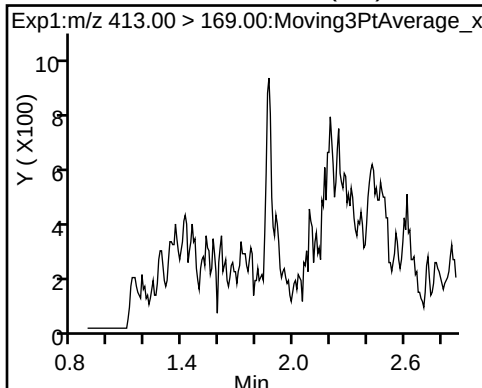
5 Perfluorooctanoic acid (ND)



5 Perfluorooctanoic acid (ND)

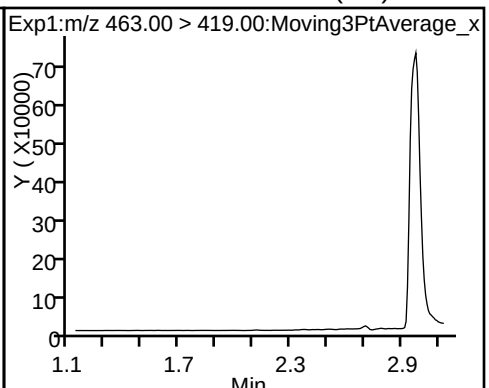
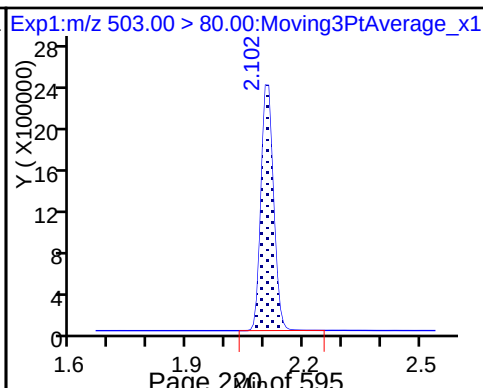
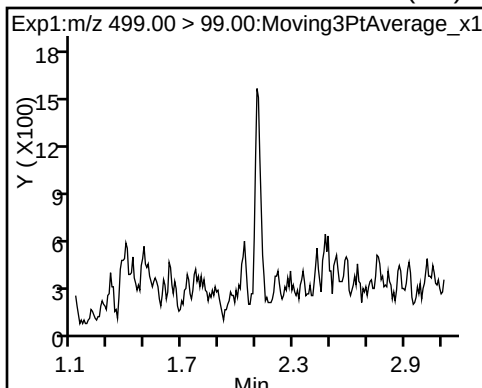
* 6 13C2-PFOA

8 Perfluorooctane sulfonic acid (ND)

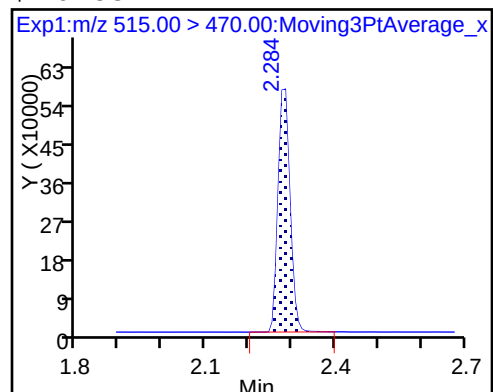


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_017.d
Lims ID: 320-28916-A-10-A
Client ID: NAWC-060717-FRB-162
Sample Type: Client
Inject. Date: 28-Jun-2017 18:19:35 ALS Bottle#: 13 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-a-10-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 13:54:22 Calib Date: 28-Jun-2017 16:35:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 :

Det: EXP1

Process Host: XAWRK033

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.39	83.86
\$ 10 13C2 PFDA	10.0	9.22	92.17

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-206B</u>	Lab Sample ID: <u>320-28916-11</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.23_537_033.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 08:10</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>259.8 (mL)</u>	Date Analyzed: <u>06/23/2017 23:50</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>170758</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	38	15	6.5
335-67-1	Perfluorooctanoic acid (PFOA)	7.7	U	19	7.7	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.7
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.8	U	9.6	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U	87	35	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	66	Q	70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_033.d
 Lims ID: 320-28916-A-11-A
 Client ID: NAWC-060717-RW-206B
 Sample Type: Client
 Inject. Date: 23-Jun-2017 23:50:16 ALS Bottle#: 23 Worklist Smp#: 33
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-11-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:40:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA

315.00 > 270.00 2.534 2.381 0.153 1.000 3418792 9.16 5134

* 6 13C2-PFOA

415.00 > 370.00 2.997 2.859 0.138 3595082 10.0 8539

* 7 13C4 PFOS

503.00 > 80.00 3.126 2.991 0.135 9532883 28.7 25685

\$ 10 13C2 PFDA

515.00 > 470.00 3.270 3.123 0.147 1.000 2285698 6.61 4570

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_033.d

Injection Date: 23-Jun-2017 23:50:16

Instrument ID: A8_N

Lims ID: 320-28916-A-11-A

Lab Sample ID: 320-28916-11

Client ID: NAWC-060717-RW-206B

Operator ID: SACINSTLCMS01

ALS Bottle#: 23

Worklist Smp#: 33

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

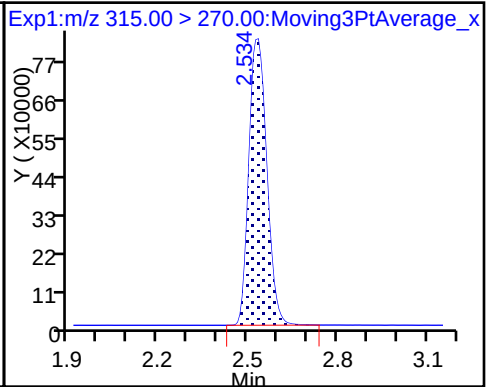
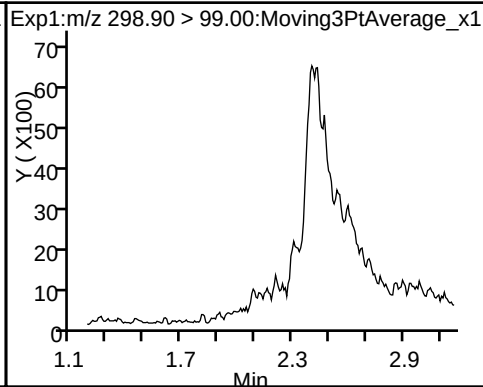
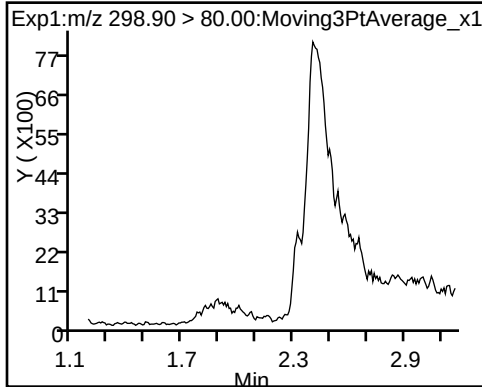
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

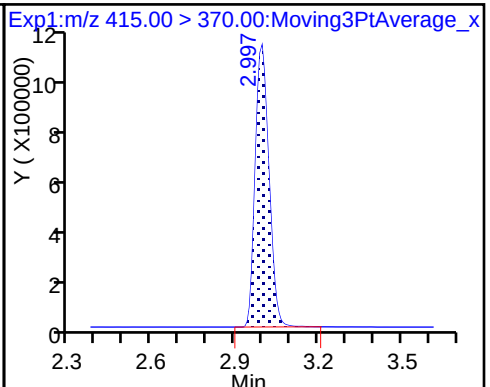
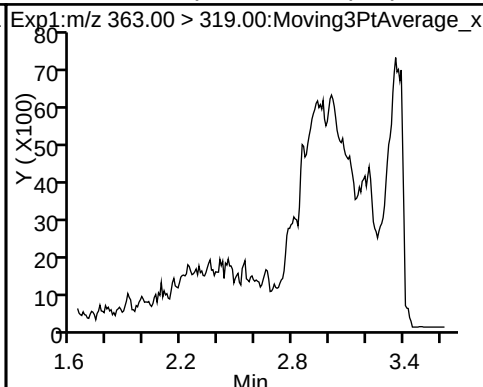
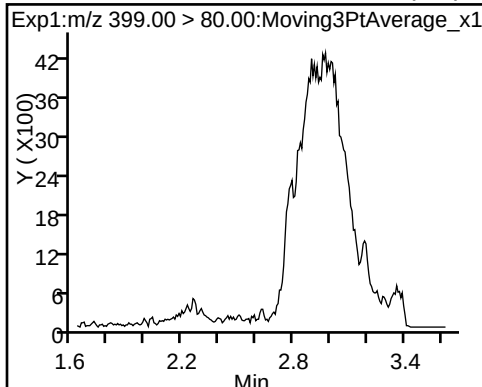
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (ND)

4 Perfluoroheptanoic acid (ND)

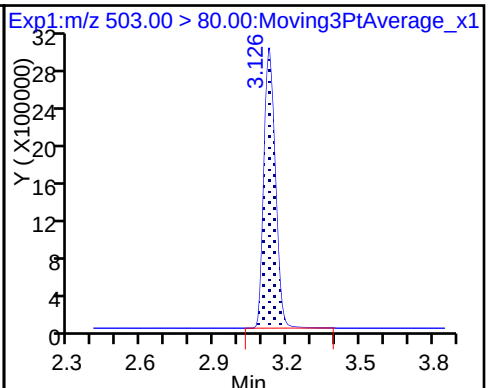
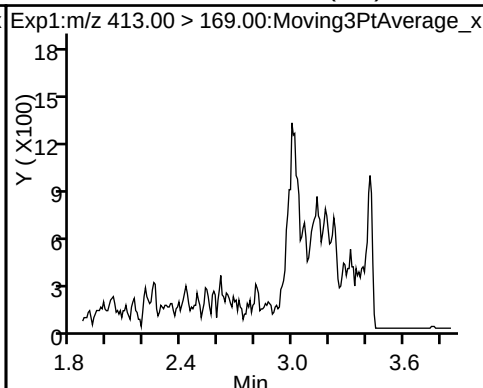
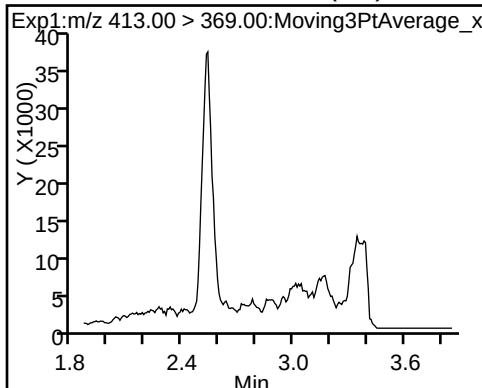
* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

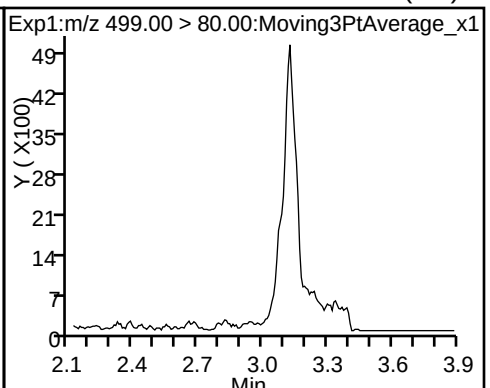
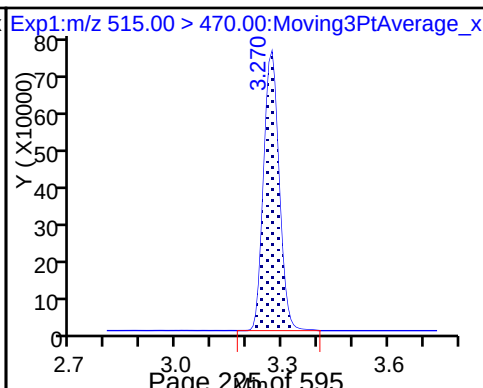
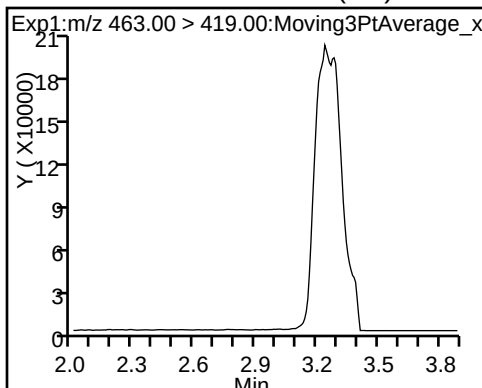
* 7 13C4 PFOS



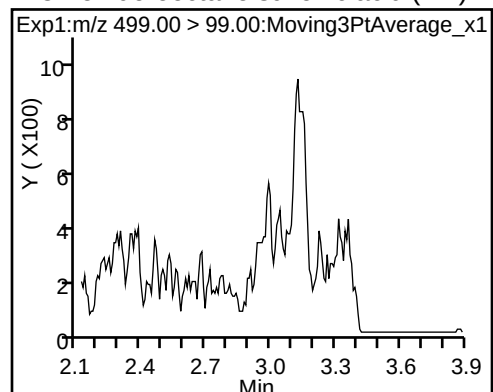
9 Perfluorononanoic acid (ND)

\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_033.d
Lims ID: 320-28916-A-11-A
Client ID: NAWC-060717-RW-206B
Sample Type: Client
Inject. Date: 23-Jun-2017 23:50:16 ALS Bottle#: 23 Worklist Smp#: 33
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-11-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:40:10

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.16	91.65
\$ 10 13C2 PFDA	10.0	6.61	66.07

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-206B RE</u>	Lab Sample ID: <u>320-28916-11 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.07.06_537A_029.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 08:10</u>
Extraction Method: <u>537</u>	Date Extracted: <u>07/03/2017 09:49</u>
Sample wt/vol: <u>256.8 (mL)</u>	Date Analyzed: <u>07/07/2017 01:29</u>
Con. Extract Vol.: <u>1.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>172925</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	<i>Perfluorooctanesulfonic acid (PFOS)</i>	16	U H	39	16	6.6
335-67-1	<i>Perfluorooctanoic acid (PFOA)</i>	7.8	U H	19	7.8	2.7
375-95-1	<i>Perfluorononanoic acid (PFNA)</i>	19	U H	23	19	7.8
355-46-4	<i>Perfluorohexanesulfonic acid (PFHxS)</i>	12	U H	29	12	5.4
375-85-9	<i>Perfluoroheptanoic acid (PFHpA)</i>	3.9	U H	9.7	3.9	1.8
375-73-5	<i>Perfluorobutanesulfonic acid (PFBS)</i>	35	U H	88	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	92		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_029.d
 Lims ID: 320-28916-B-11-A
 Client ID: NAWC-060717-RW-206B
 Sample Type: Client
 Inject. Date: 07-Jul-2017 01:29:47 ALS Bottle#: 19 Worklist Smp#: 29
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-b-11-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK011

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.539	0.001	1.000	1096599	9.22		4042	
* 6 13C2-PFOA									
415.00 > 370.00	1.866	1.878	-0.012		1046919	10.0		3357	
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.117	-0.015		2909172	28.7		3723	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	810099	9.22		1636	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_029.d

Injection Date: 07-Jul-2017 01:29:47

Instrument ID: A8_N

Lims ID: 320-28916-B-11-A

Lab Sample ID: 320-28916-11

Client ID: NAWC-060717-RW-206B

Operator ID: SACINSTLCMS01

ALS Bottle#: 19

Worklist Smp#: 29

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

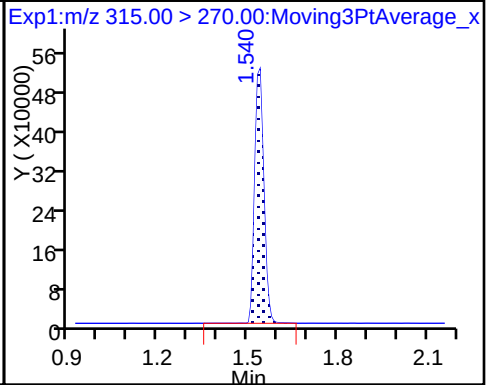
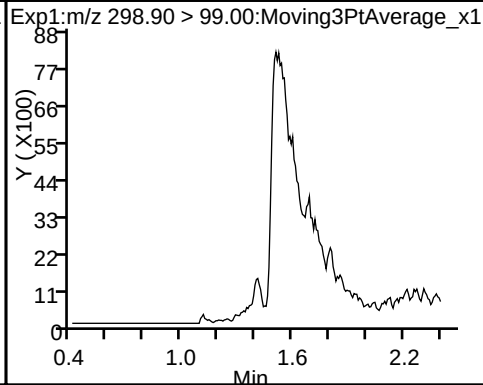
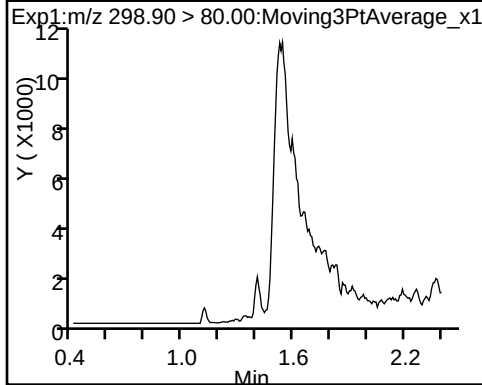
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

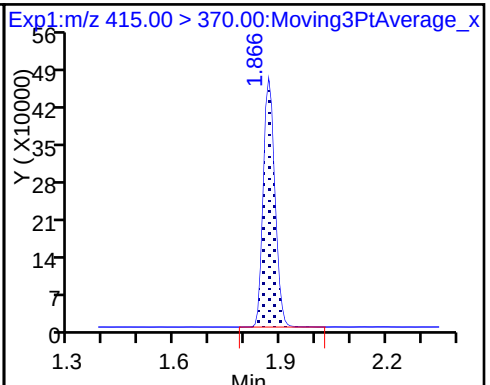
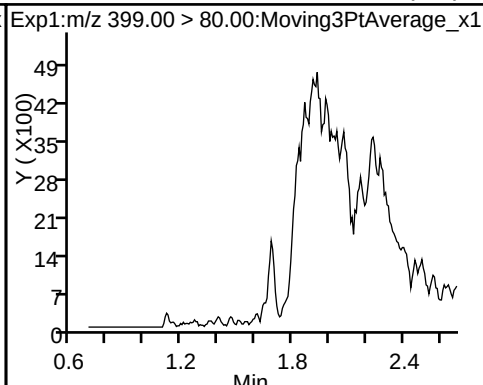
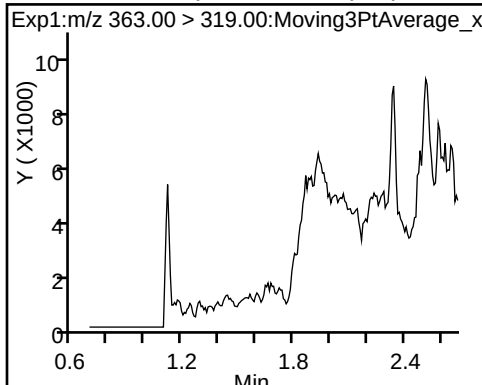
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid (ND)

3 Perfluorohexanesulfonic acid (ND)

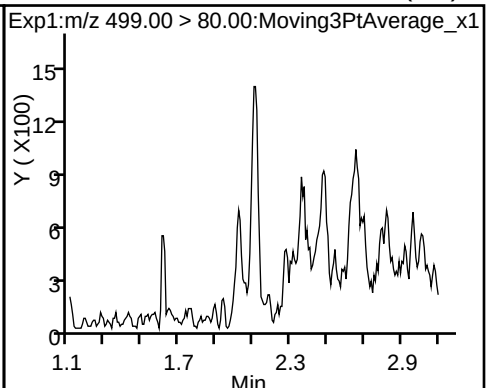
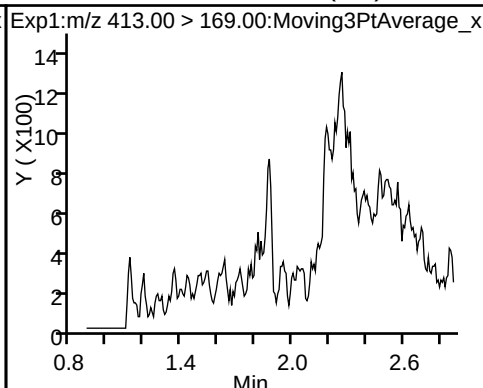
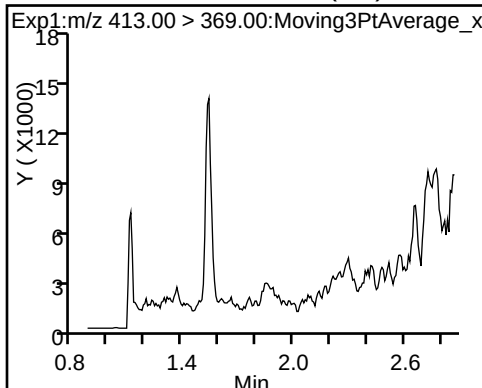
* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

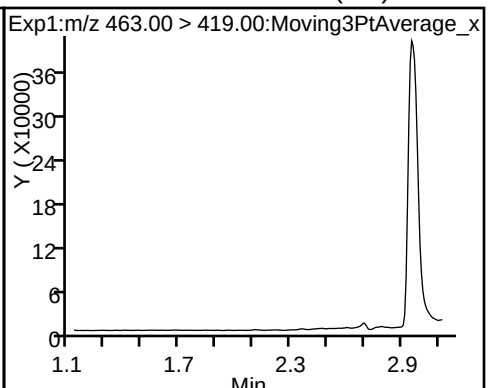
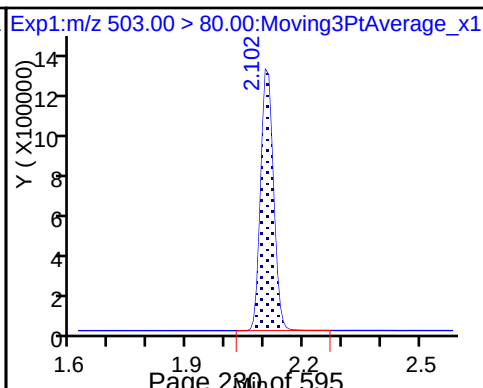
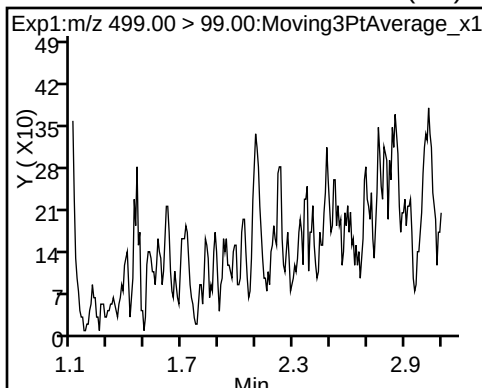
5 Perfluorooctanoic acid (ND)

8 Perfluorooctane sulfonic acid (ND)

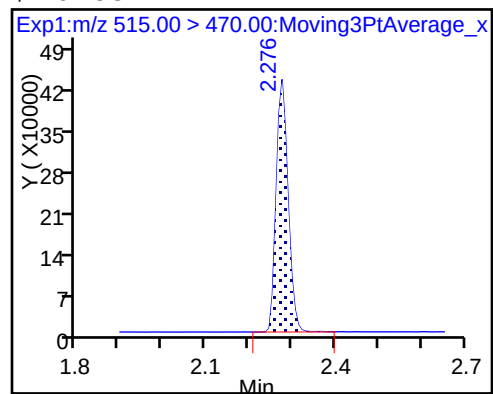


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_029.d
Lims ID: 320-28916-B-11-A
Client ID: NAWC-060717-RW-206B
Sample Type: Client
Inject. Date: 07-Jul-2017 01:29:47 ALS Bottle#: 19 Worklist Smp#: 29
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-b-11-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 :

Det: EXP1

Process Host: XAWRK011

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.22	92.19
\$ 10 13C2 PFDA	10.0	9.22	92.17

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-258B</u>	Lab Sample ID: <u>320-28916-12</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.28_537B_019.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:55</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>261.8 (mL)</u>	Date Analyzed: <u>06/28/2017 18:29</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>171487</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	38	15	6.5
335-67-1	Perfluorooctanoic acid (PFOA)	7.6	U	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	29	11	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.8	U	9.5	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	86	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	89		70-130
STL00996	13C2 PFDA	91		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_019.d
 Lims ID: 320-28916-A-12-A
 Client ID: NAWC-060717-RW-258B
 Sample Type: Client
 Inject. Date: 28-Jun-2017 18:29:05 ALS Bottle#: 15 Worklist Smp#: 19
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-a-12-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 13:54:22 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	1870531	8.87		5987	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.882	-0.008		1752750	10.0		5720	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.119	-0.010		5073699	28.7		3185	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.291	-0.007	1.000	1050996	9.11		4086	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_019.d

Injection Date: 28-Jun-2017 18:29:05

Instrument ID: A8_N

Lims ID: 320-28916-A-12-A

Lab Sample ID: 320-28916-12

Client ID: NAWC-060717-RW-258B

Operator ID: SACINSTLCMS01

ALS Bottle#: 15

Worklist Smp#: 19

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

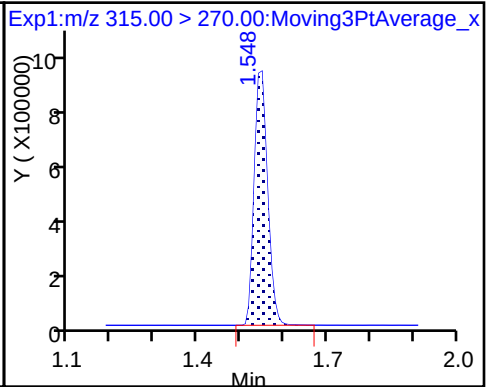
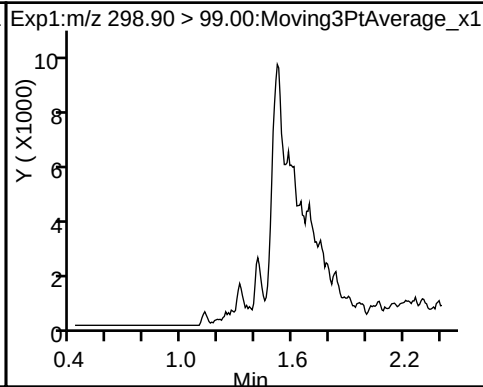
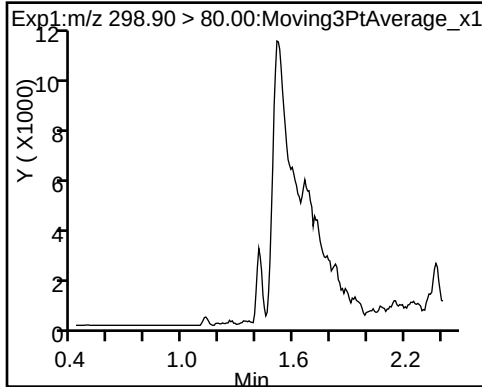
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

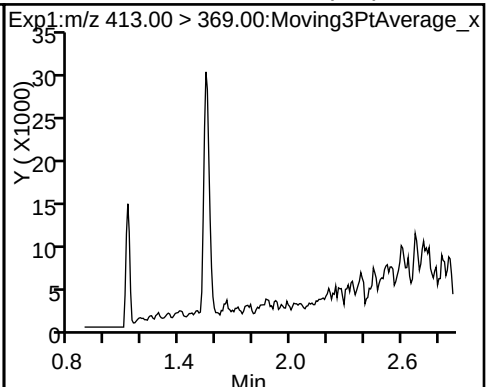
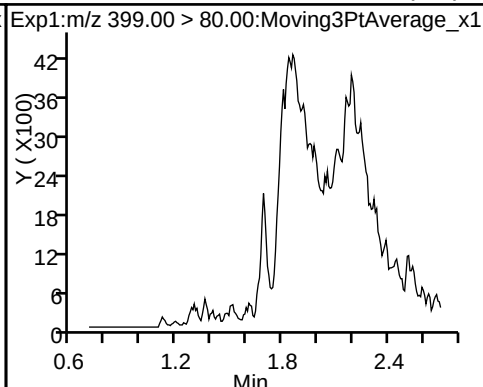
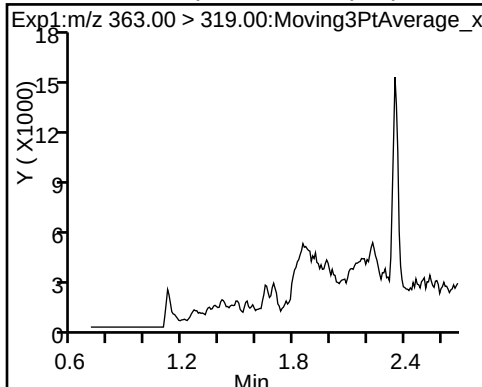
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid (ND)

3 Perfluorohexanesulfonic acid (ND)

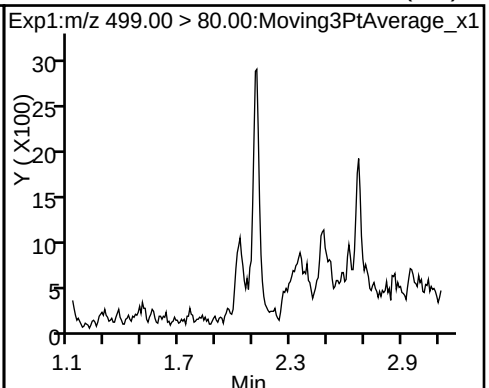
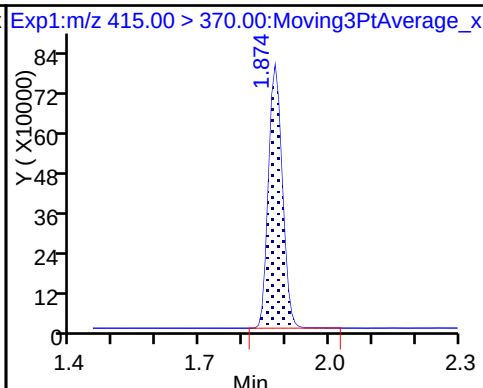
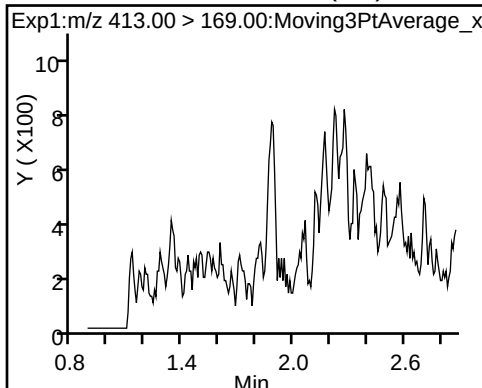
5 Perfluorooctanoic acid (ND)



5 Perfluorooctanoic acid (ND)

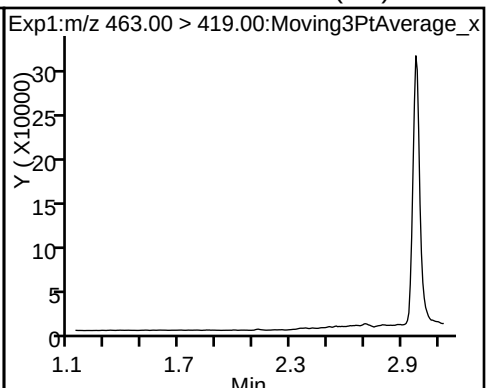
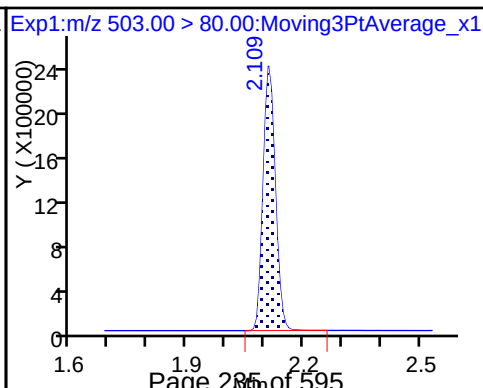
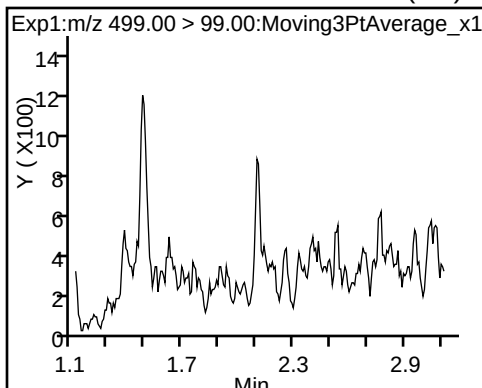
* 6 13C2-PFOA

8 Perfluorooctane sulfonic acid (ND)

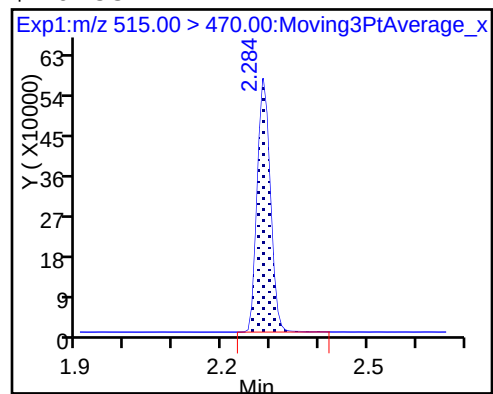


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_019.d
Lims ID: 320-28916-A-12-A
Client ID: NAWC-060717-RW-258B
Sample Type: Client
Inject. Date: 28-Jun-2017 18:29:05 ALS Bottle#: 15 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-a-12-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 13:54:22 Calib Date: 28-Jun-2017 16:35:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 :

Det: EXP1

Process Host: XAWRK033

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.87	88.69
\$ 10 13C2 PFDA	10.0	9.11	91.09

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: NAWC-060717-RW-56 Lab Sample ID: 320-28916-13
 Matrix: Water Lab File ID: 2017.06.23_537_035.d
 Analysis Method: 537 Date Collected: 06/07/2017 15:10
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 258 (mL) Date Analyzed: 06/23/2017 23:59
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170758 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	21	J	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	26		19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	9.6	J	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	9.8		9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U M	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	75		70-130
STL00996	13C2 PFDA	78		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_035.d
 Lims ID: 320-28916-A-13-A
 Client ID: NAWC-060717-RW-56
 Sample Type: Client
 Inject. Date: 23-Jun-2017 23:59:45 ALS Bottle#: 25 Worklist Smp#: 35
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-13-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj Date: 26-Jun-2017 13:40:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									M
298.90 > 80.00	2.322	2.183	0.139	1.000	745723	2.57		33.3	M
298.90 > 99.00	2.329	2.183	0.146	1.003	586789		1.27(0.00-0.00)	102	M
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	2634053	7.53		4166	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.777	2.625	0.152	1.000	967519	2.47		37.7	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.784	2.630	0.154	1.000	719796	2.53		16.6	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3369243	10.0		6666	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	1988556	6.74		68.3	
413.00 > 169.00	2.997	2.859	0.138	1.000	1265726		1.57(0.00-0.00)	805	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		9643905	28.7		1840	
9 Perfluorononanoic acid									
463.00 > 419.00	3.141	3.003	0.138	1.000	187891	0.6537		7.0	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2514303	7.76		4982	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.126	3.126	0.0	1.000	1827795	5.35		188	
499.00 > 99.00	3.126	3.126	0.0	1.000	322127		5.67(0.00-0.00)	135	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_035.d

Injection Date: 23-Jun-2017 23:59:45

Instrument ID: A8_N

Lims ID: 320-28916-A-13-A

Lab Sample ID: 320-28916-13

Client ID: NAWC-060717-RW-56

Operator ID: SACINSTLCMS01

ALS Bottle#: 25

Worklist Smp#: 35

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

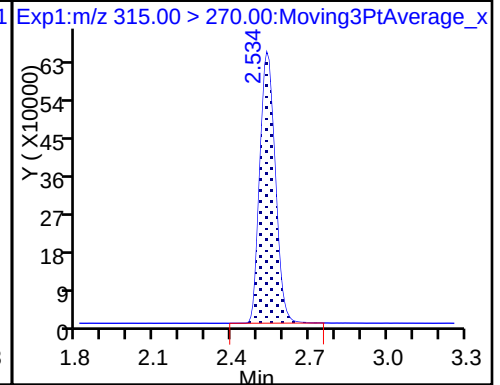
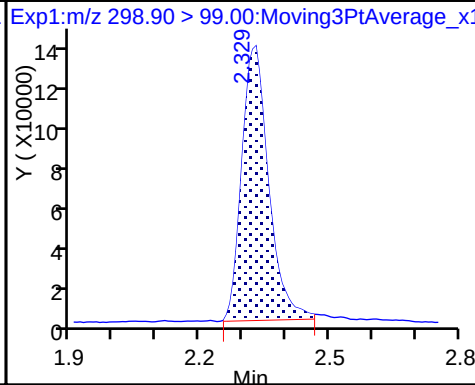
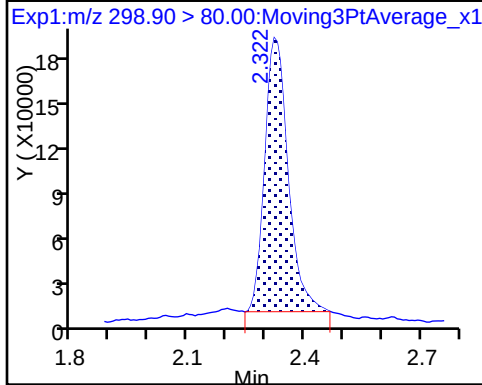
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (M)

1 Perfluorobutanesulfonic acid (M)

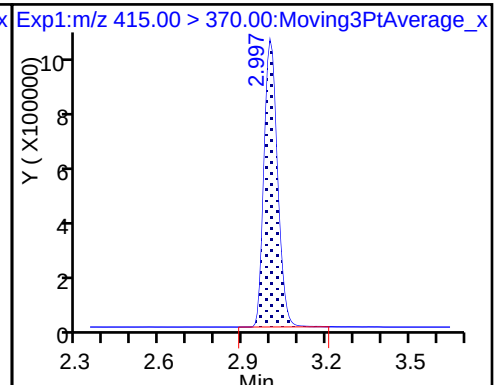
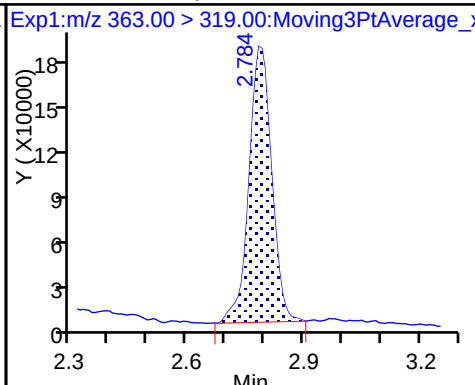
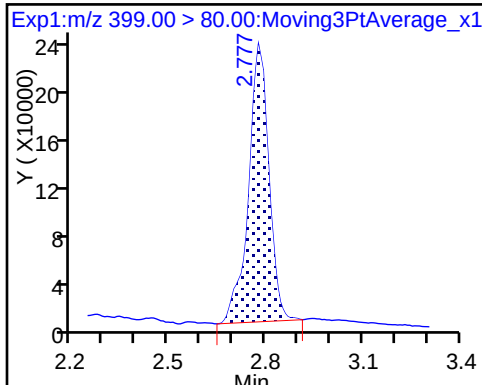
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

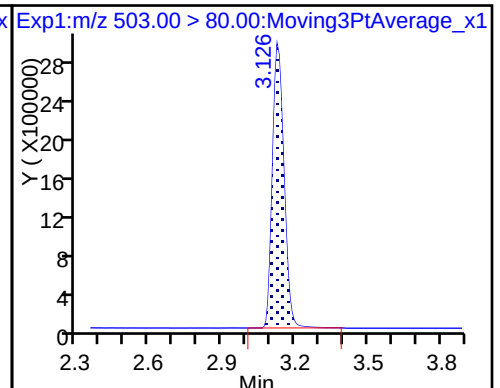
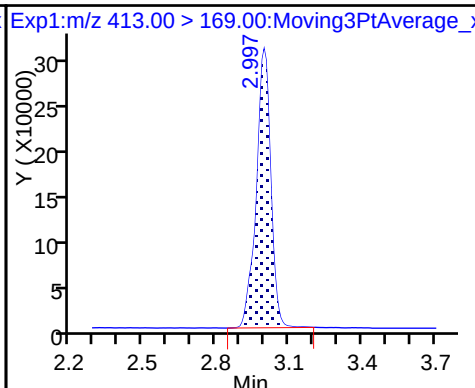
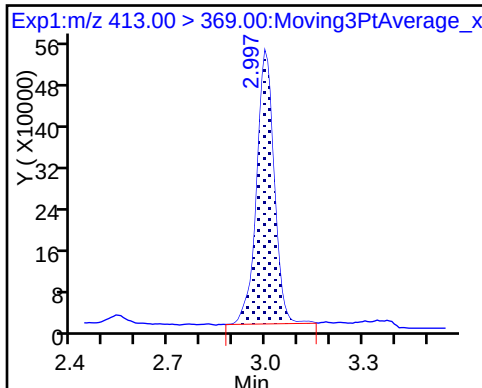
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

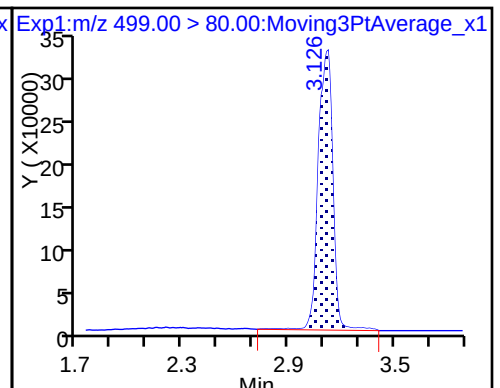
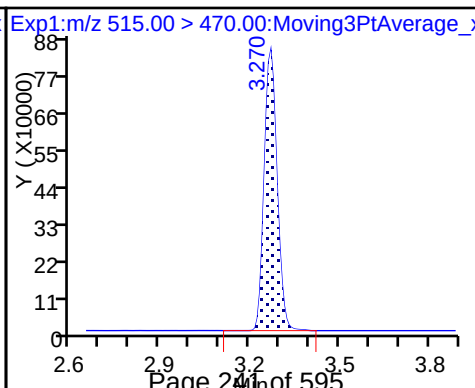
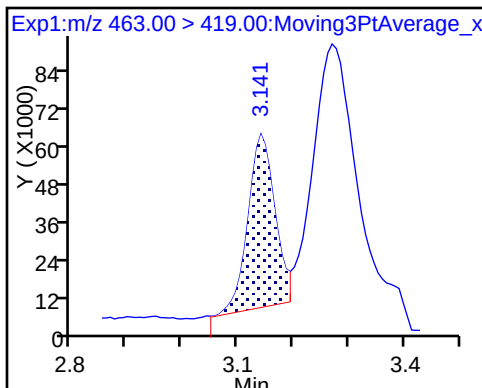
* 7 13C4 PFOS



9 Perfluorononanoic acid

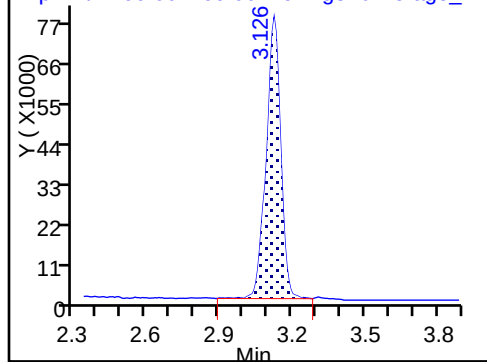
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_035.d
Lims ID: 320-28916-A-13-A
Client ID: NAWC-060717-RW-56
Sample Type: Client
Inject. Date: 23-Jun-2017 23:59:45 ALS Bottle#: 25 Worklist Smp#: 35
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-13-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:40:45

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	7.53	75.34
\$ 10 13C2 PFDA	10.0	7.76	77.55

TestAmerica Sacramento

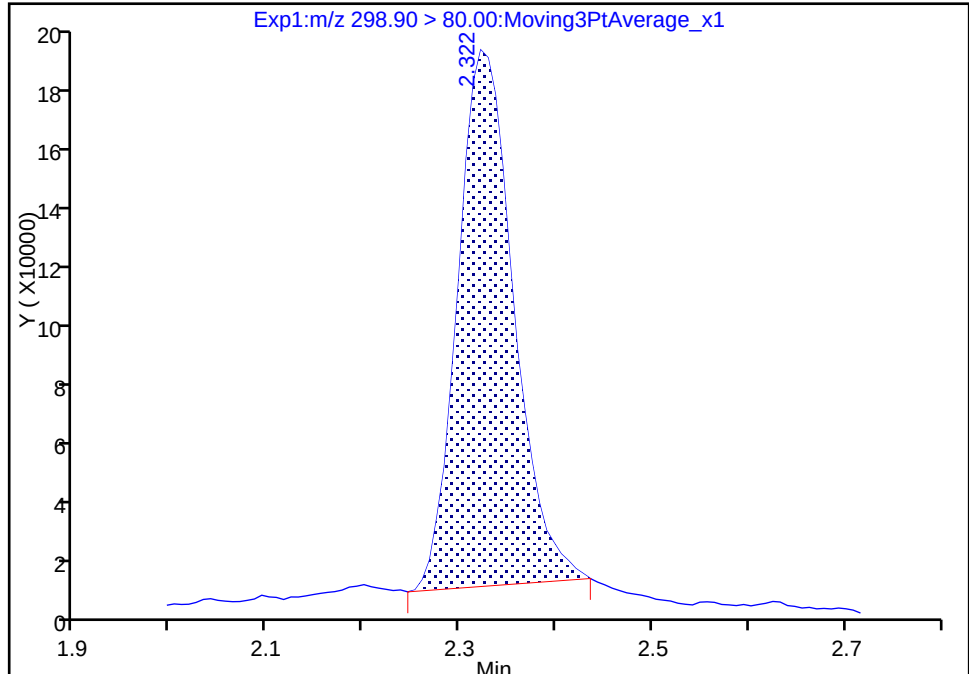
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Injection Date:	23-Jun-2017 23:59:45	Instrument ID:	A8_N		
Lims ID:	320-28916-A-13-A	Lab Sample ID:	320-28916-13		
Client ID:	NAWC-060717-RW-56				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	35
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

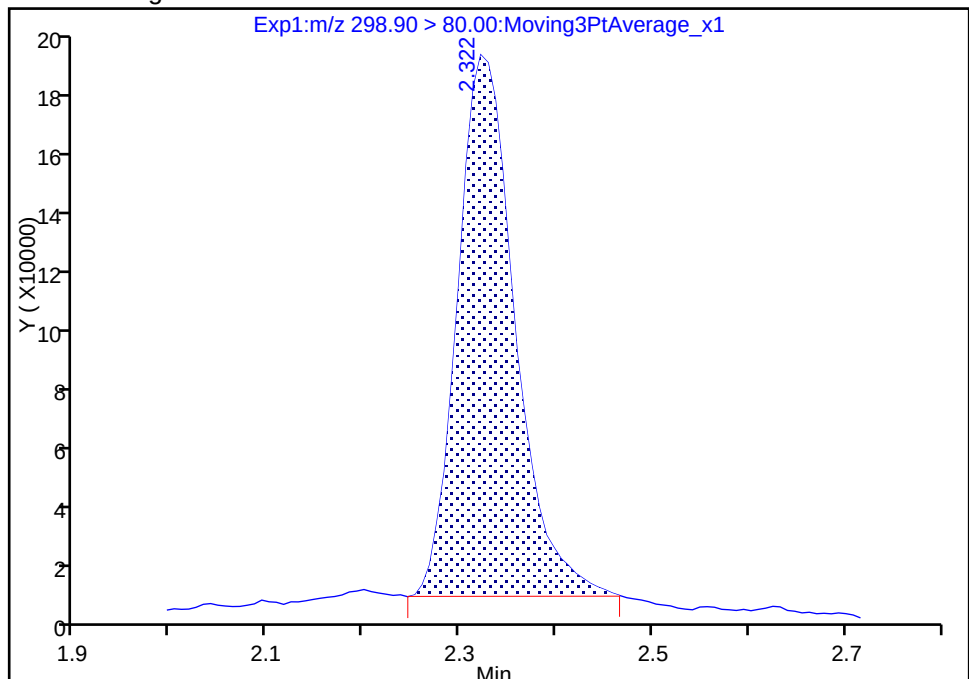
RT: 2.32
Area: 718295
Amount: 2.471001
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 745723
Amount: 2.565356
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:45:21
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 244 of 595

TestAmerica Sacramento

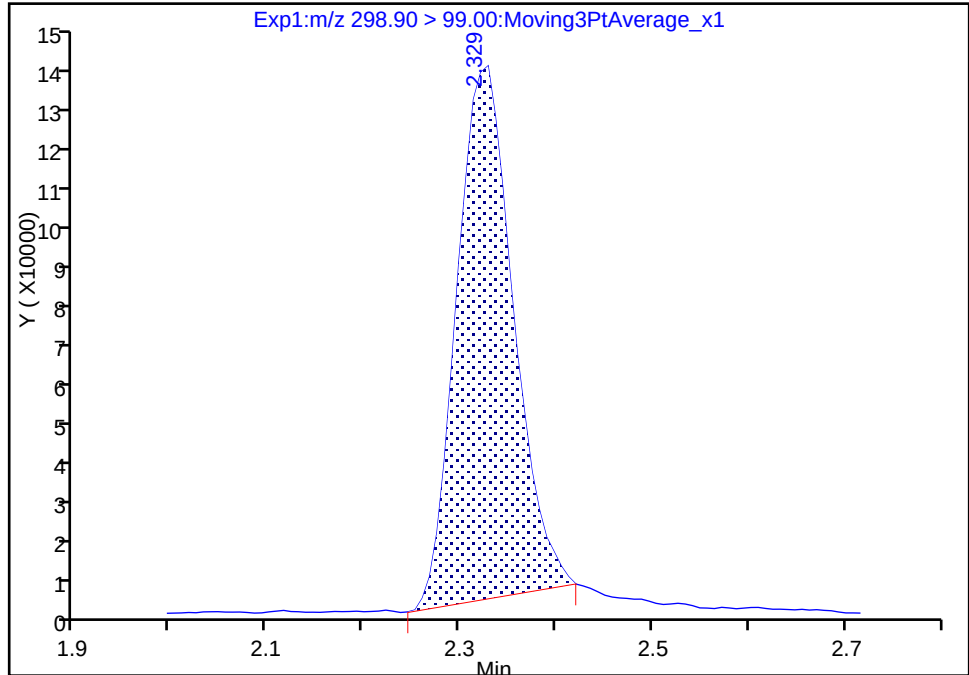
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Injection Date:	23-Jun-2017 23:59:45	Instrument ID:	A8_N		
Lims ID:	320-28916-A-13-A	Lab Sample ID:	320-28916-13		
Client ID:	NAWC-060717-RW-56				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	35
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

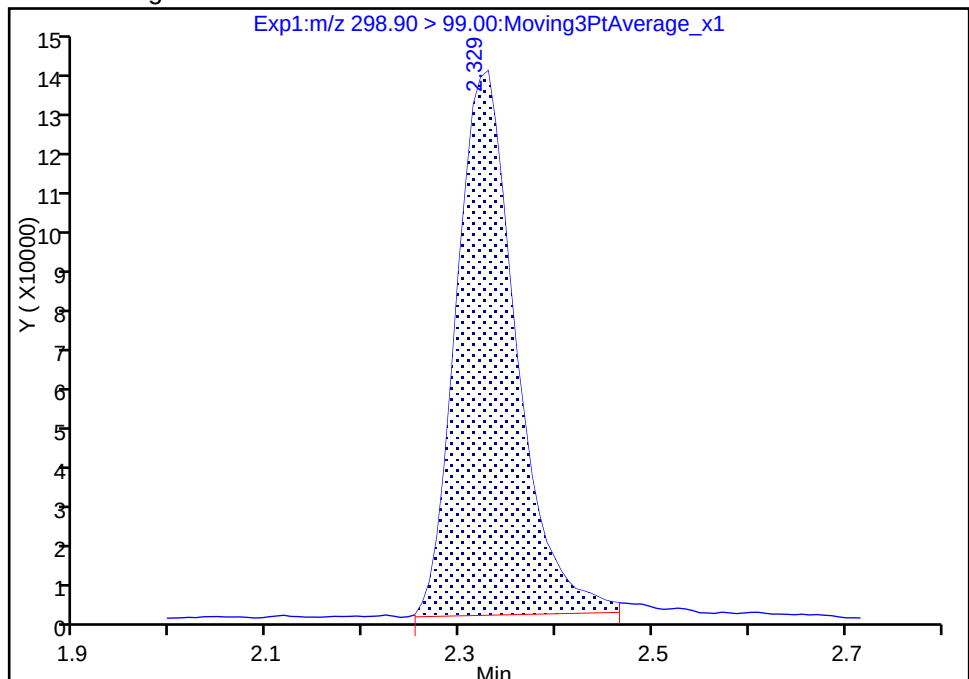
RT: 2.33
Area: 544186
Amount: 2.471001
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 586789
Amount: 2.565356
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:45:28

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Client Sample ID: NAWC-060717-FRB-56 Lab Sample ID: 320-28916-14

Matrix: Water Lab File ID: 2017.06.23_537_036.d

Analysis Method: 537 Date Collected: 06/07/2017 15:05

Extraction Method: 537 Date Extracted: 06/19/2017 09:24

Sample wt/vol: 268.3(mL) Date Analyzed: 06/24/2017 00:04

Con. Extract Vol.: 1.0(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 170758 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	37	15	6.3
335-67-1	Perfluorooctanoic acid (PFOA)	7.5	U	19	7.5	2.6
375-95-1	Perfluorononanoic acid (PFNA)	19	U	22	19	7.5
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	28	11	5.1
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.7	U	9.3	3.7	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	84	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	85		70-130
STL00996	13C2 PFDA	70		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_036.d
 Lims ID: 320-28916-A-14-A
 Client ID: NAWC-060717-FRB-56
 Sample Type: Client
 Inject. Date: 24-Jun-2017 00:04:30 ALS Bottle#: 26 Worklist Smp#: 36
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-14-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	2991480	8.50		5145	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3390484	10.0		7762	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		9264399	28.7		16891	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2278915	6.99		4252	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_036.d

Injection Date: 24-Jun-2017 00:04:30

Instrument ID: A8_N

Lims ID: 320-28916-A-14-A

Lab Sample ID: 320-28916-14

Client ID: NAWC-060717-FRB-56

Operator ID: SACINSTLCMS01

ALS Bottle#: 26

Worklist Smp#: 36

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

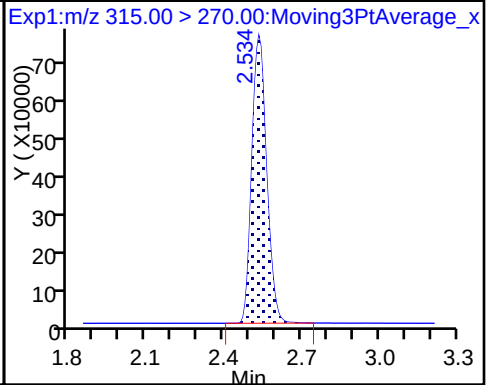
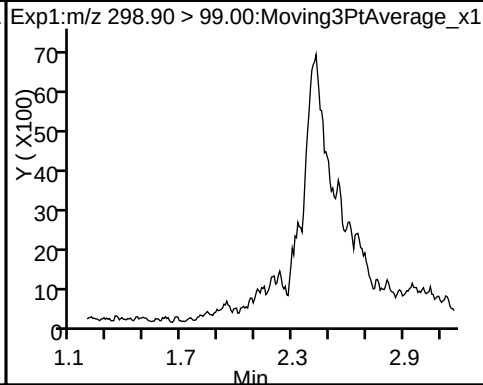
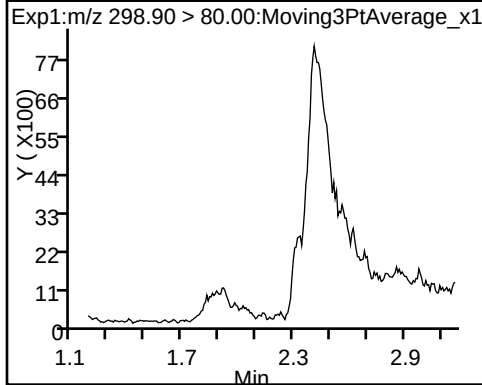
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

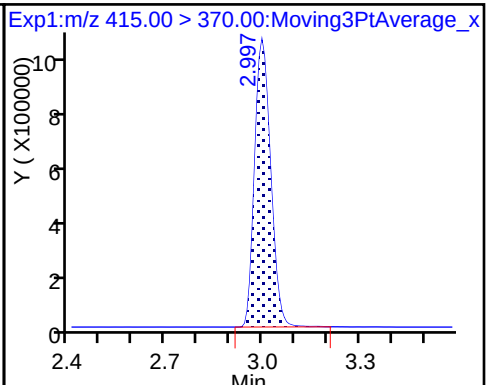
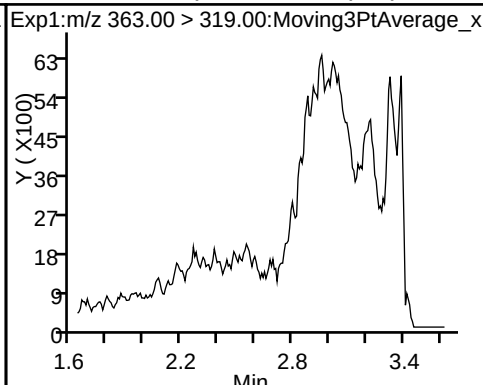
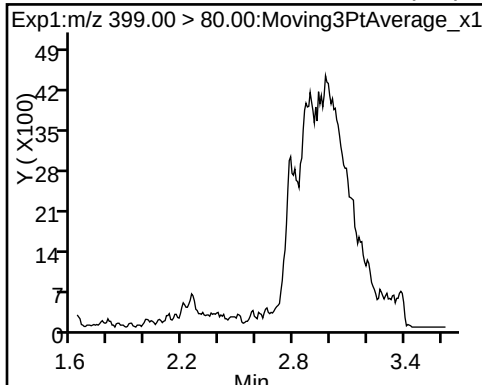
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (ND)

4 Perfluoroheptanoic acid (ND)

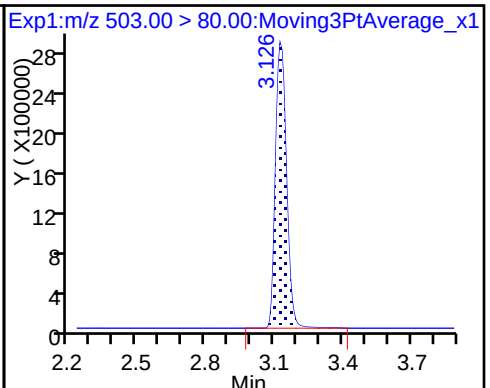
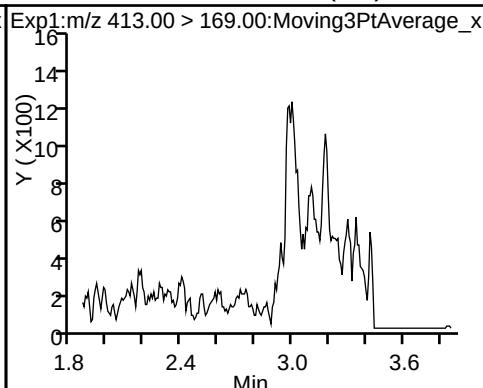
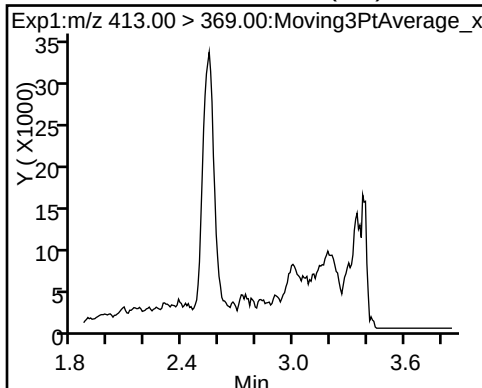
* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

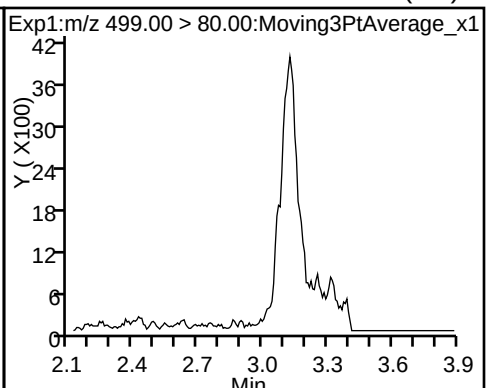
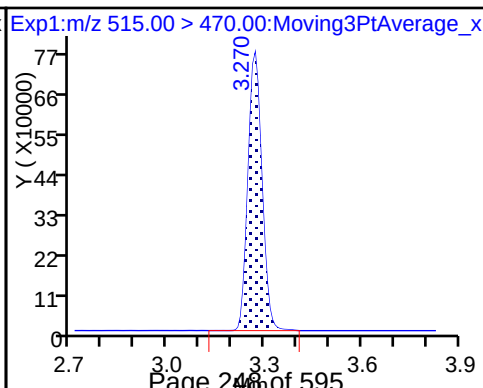
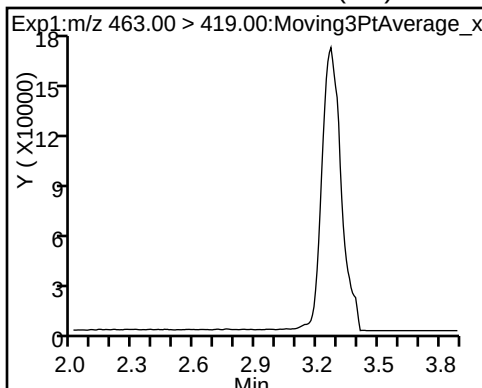
* 7 13C4 PFOS



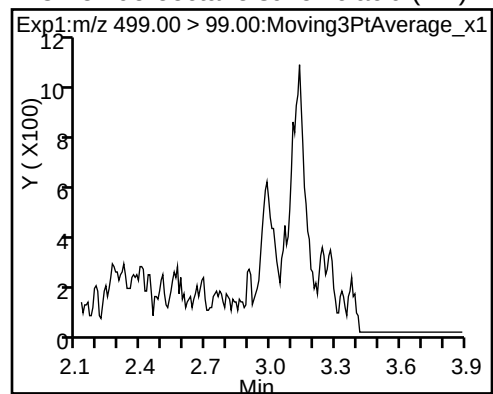
9 Perfluorononanoic acid (ND)

\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_036.d
Lims ID: 320-28916-A-14-A
Client ID: NAWC-060717-FRB-56
Sample Type: Client
Inject. Date: 24-Jun-2017 00:04:30 ALS Bottle#: 26 Worklist Smp#: 36
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-14-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 :

Det: EXP1

Process Host: XAWRK033

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.50	85.03
\$ 10 13C2 PFDA	10.0	6.99	69.85

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Client Sample ID: NAWC-060717-DUP02 Lab Sample ID: 320-28916-15

Matrix: Water Lab File ID: 2017.06.23_537_037.d

Analysis Method: 537 Date Collected: 06/07/2017 07:00

Extraction Method: 537 Date Extracted: 06/19/2017 09:24

Sample wt/vol: 269.9(mL) Date Analyzed: 06/24/2017 00:09

Con. Extract Vol.: 1.0(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 170758 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	17	J	37	15	6.3
335-67-1	Perfluorooctanoic acid (PFOA)	20		19	7.4	2.6
375-95-1	Perfluorononanoic acid (PFNA)	19	U	22	19	7.4
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	7.8	J	28	11	5.1
375-85-9	Perfluoroheptanoic acid (PFHpA)	6.2	J	9.3	3.7	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	33	U M	83	33	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	80		70-130
STL00996	13C2 PFDA	77		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_037.d
 Lims ID: 320-28916-A-15-A
 Client ID: NAWC-060717-DUP02
 Sample Type: Client
 Inject. Date: 24-Jun-2017 00:09:15 ALS Bottle#: 27 Worklist Smp#: 37
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-15-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:41:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.314	2.183	0.131	1.000	707351	2.37		58.2	M
298.90 > 99.00	2.314	2.183	0.131	1.000	559891		1.26(0.00-0.00)	119	M
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.526	2.381	0.145	1.000	2919699	8.03		4396	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.769	2.625	0.144	1.000	853079	2.12		59.2	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.777	2.630	0.147	1.000	490594	1.66		15.9	
* 6 13C2-PFOA									
415.00 > 370.00	2.989	2.859	0.130		3504602	10.0		7437	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.989	2.859	0.130	1.000	1636240	5.33		71.2	
413.00 > 169.00	2.989	2.859	0.130	1.000	1049281		1.56(0.00-0.00)	834	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		9894345	28.7		3470	
9 Perfluorononanoic acid									
463.00 > 419.00	3.133	3.003	0.130	1.000	207447	0.6939		7.8	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.262	3.123	0.139	1.000	2598505	7.71		4649	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.111	3.126	-0.015	1.000	1643308	4.69		304	
499.00 > 99.00	3.118	3.126	-0.008	1.002	282981		5.81(0.00-0.00)	159	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_037.d

Injection Date: 24-Jun-2017 00:09:15

Instrument ID: A8_N

Lims ID: 320-28916-A-15-A

Lab Sample ID: 320-28916-15

Client ID: NAWC-060717-DUP02

Operator ID: SACINSTLCMS01

ALS Bottle#: 27

Worklist Smp#: 37

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

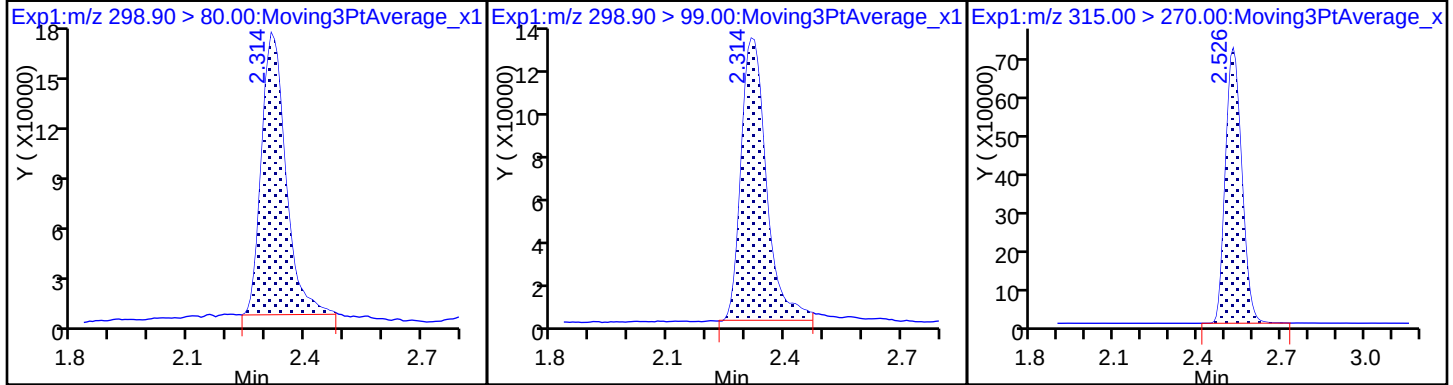
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (M)

1 Perfluorobutanesulfonic acid (M)

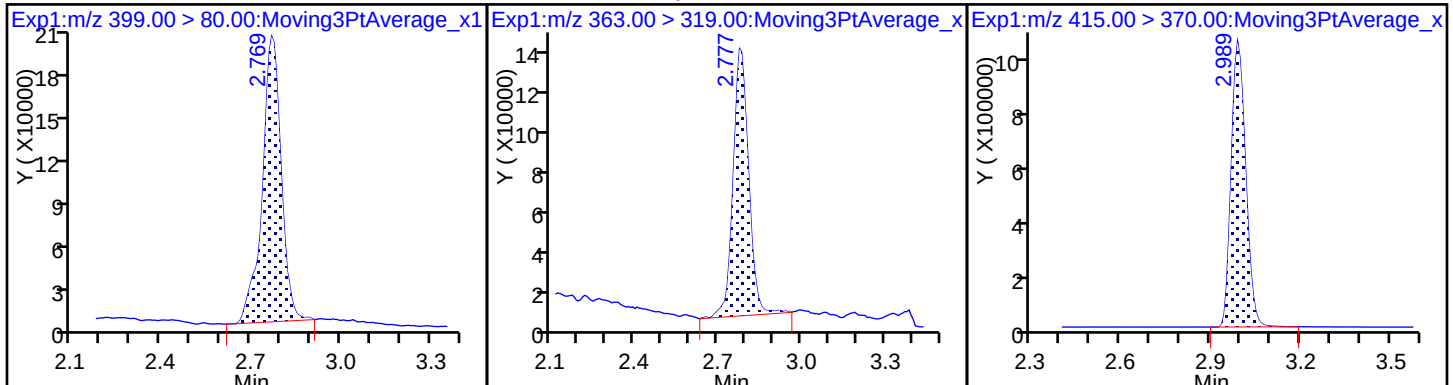
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

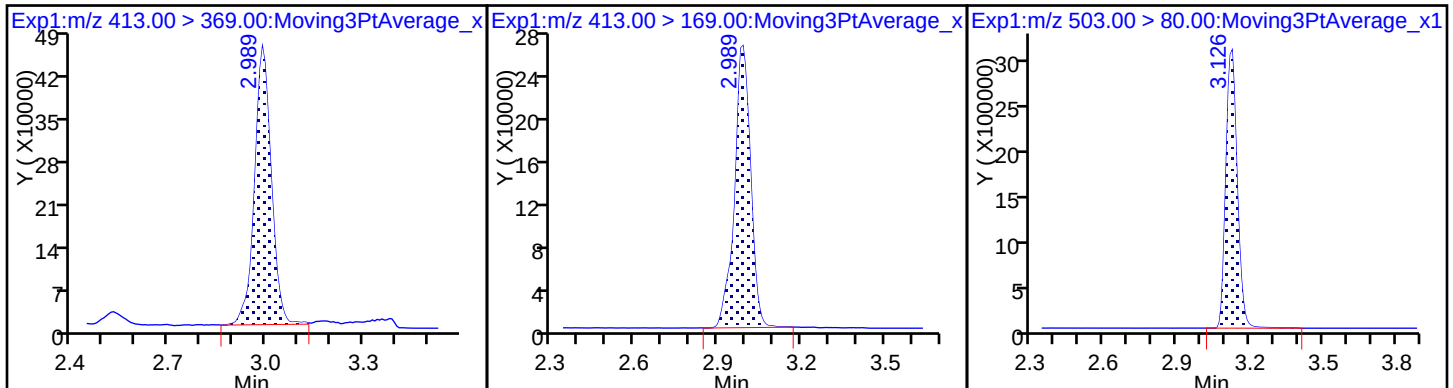
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

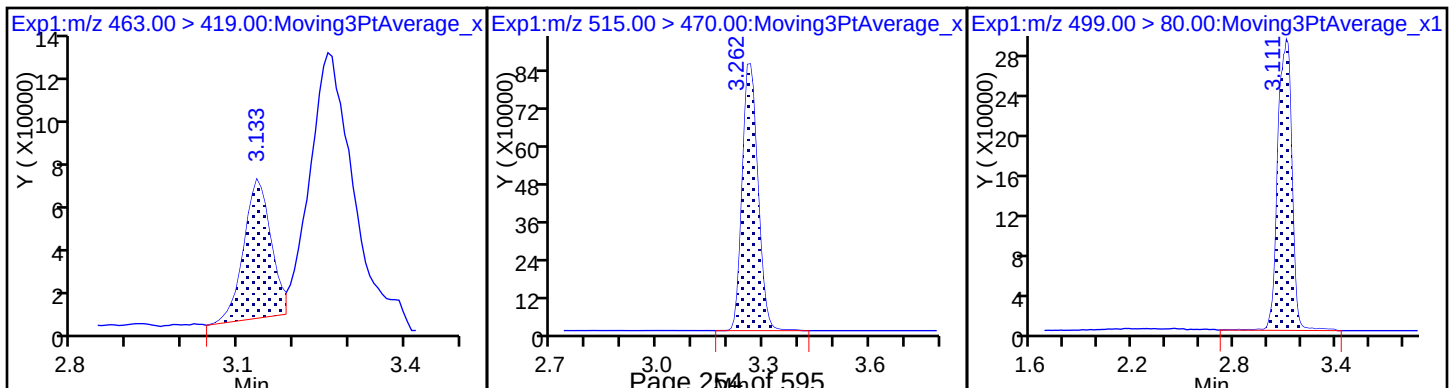
* 7 13C4 PFOS



9 Perfluorononanoic acid

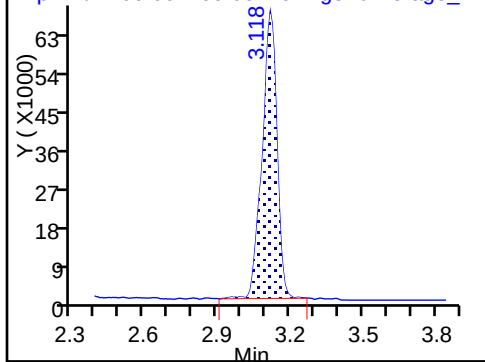
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_037.d
Lims ID: 320-28916-A-15-A
Client ID: NAWC-060717-DUP02
Sample Type: Client
Inject. Date: 24-Jun-2017 00:09:15 ALS Bottle#: 27 Worklist Smp#: 37
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28916-A-15-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:41:06

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.03	80.29
\$ 10 13C2 PFDA	10.0	7.71	77.05

TestAmerica Sacramento

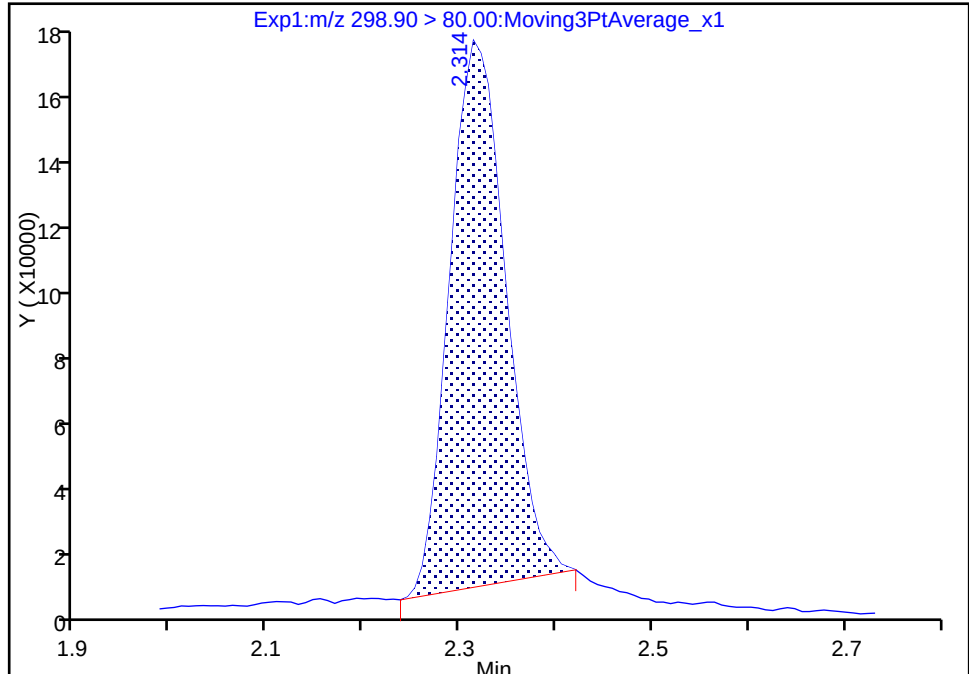
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_037.d				
Injection Date:	24-Jun-2017 00:09:15	Instrument ID:	A8_N		
Lims ID:	320-28916-A-15-A	Lab Sample ID:	320-28916-15		
Client ID:	NAWC-060717-DUP02				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	27	Worklist Smp#:	37
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

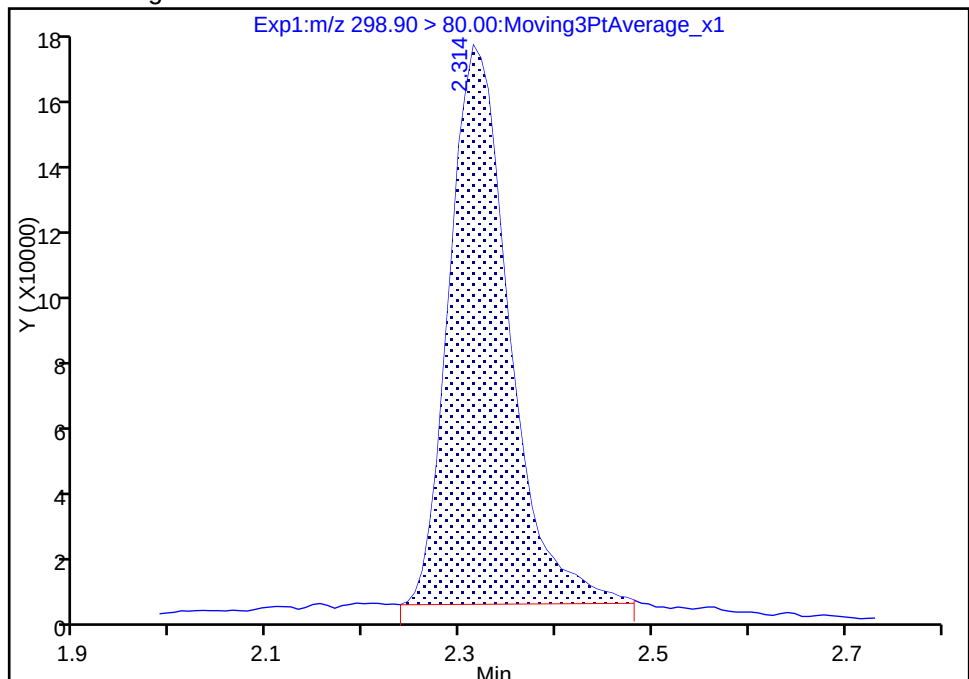
RT: 2.31
Area: 646729
Amount: 2.168494
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 707351
Amount: 2.371761
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:41:34
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 257 of 595

TestAmerica Sacramento

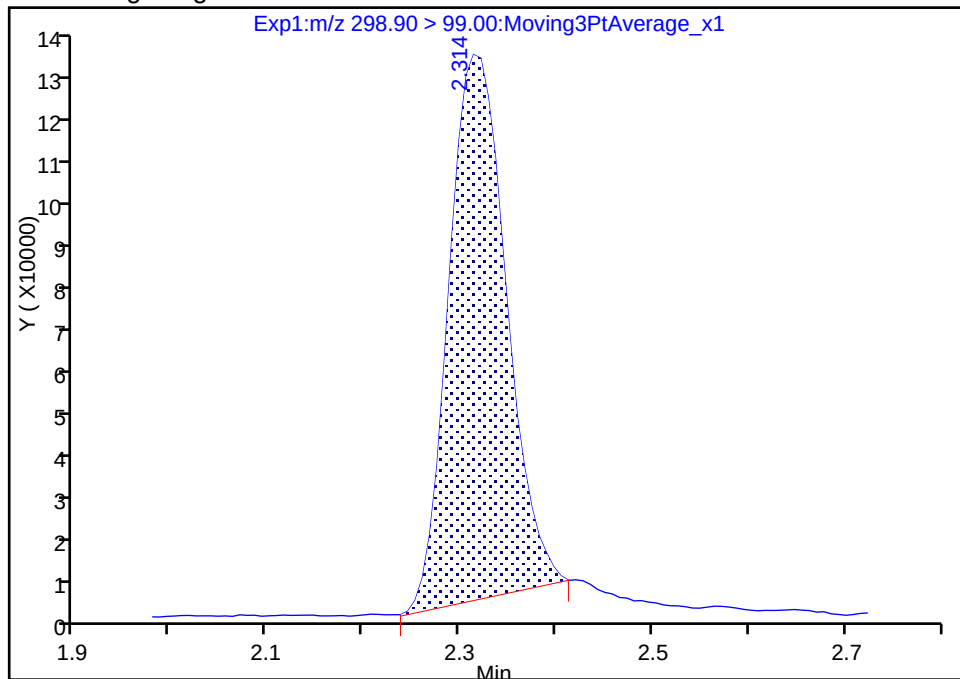
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_037.d
Injection Date: 24-Jun-2017 00:09:15 Instrument ID: A8_N
Lims ID: 320-28916-A-15-A Lab Sample ID: 320-28916-15
Client ID: NAWC-060717-DUP02
Operator ID: SACINSTLCMS01 ALS Bottle#: 27 Worklist Smp#: 37
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

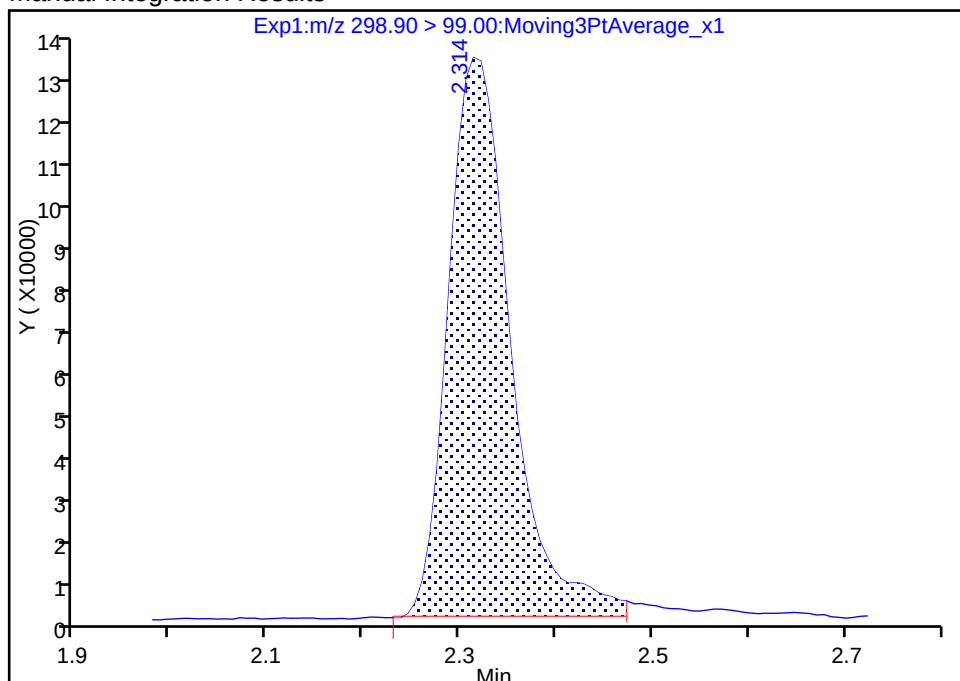
RT: 2.31
Area: 504594
Amount: 2.168494
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 559891
Amount: 2.371761
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 26-Jun-2017 13:41:45

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 173534

SDG No.: _____

Instrument ID: A6 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/11/2017 14:18 Calibration End Date: 07/11/2017 15:05 Calibration ID: 32318

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 320-173534/7	11JUL2017A6B_007.d
Level 2	STD 320-173534/8	11JUL2017A6B_008.d
Level 3	STD 320-173534/9	11JUL2017A6B_009.d
Level 4	STD 320-173534/10	11JUL2017A6B_010.d
Level 5	STD 320-173534/11	11JUL2017A6B_011.d
Level 6	STD 320-173534/12	11JUL2017A6B_012.d

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								
Perfluorobutanesulfonic acid (PFBS)	0.7749 0.8618	0.7766	0.7594	0.8073	0.8259	Ave		0.8010				4.8		30.0			
Perfluoroheptanoic acid (PFHpA)	1.1363 1.1338	1.1029	1.1533	1.2571	1.2026	Ave		1.1643				4.8		30.0			
Perfluorohexanesulfonic acid (PFHxS)	0.7347 0.9646	0.8116	0.6871	0.7955	0.8137	Ave		0.8012				11.8		30.0			
Perfluorooctanoic acid (PFOA)	0.9900 1.1908	1.0617	1.1075	1.1164	1.0721	Ave		1.0898				6.1		30.0			
Perfluorooctanesulfonic acid (PFOS)	0.8857 1.1433	0.9839	0.9996	0.9975	1.0796	Ave		1.0149				8.7		30.0			
Perfluorononanoic acid (PFNA)	1.2732 1.1319	1.2394	1.2801	1.2530	1.1883	Ave		1.2277				4.7		30.0			
13C2 PFHxA	1.4739 1.4411	1.3152	1.4752	1.4134	1.2918	Ave		1.4018				5.7		30.0			
13C2 PFDA	1.0447 1.0450	0.9322	1.0778	1.0654	0.9849	Ave		1.0250				5.4		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 173534

SDG No.: _____

Instrument ID: A6 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/11/2017 14:18 Calibration End Date: 07/11/2017 15:05 Calibration ID: 32318

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 320-173534/7	11JUL2017A6B_007.d
Level 2	STD 320-173534/8	11JUL2017A6B_008.d
Level 3	STD 320-173534/9	11JUL2017A6B_009.d
Level 4	STD 320-173534/10	11JUL2017A6B_010.d
Level 5	STD 320-173534/11	11JUL2017A6B_011.d
Level 6	STD 320-173534/12	11JUL2017A6B_012.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
Perfluorobutanesulfonic acid (PFBS)	PFOS	Ave	224824 4732899	543185	1163511	2360302	3579670	8.83 176	21.2	44.4	89.4	133
Perfluoroheptanoic acid (PFHpA)	13PF OA	Ave	46641 1046972	119710	257968	551247	847873	0.990 19.7	2.38	4.97	10.0	14.9
Perfluorohexanesulfonic acid (PFHxS)	PFOS	Ave	72532 1802638	193156	358215	791471	1199989	3.01 59.7	7.21	15.1	30.4	45.1
Perfluorooctanoic acid (PFOA)	13PF OA	Ave	82014 2219289	232563	499953	988038	1525464	2.00 39.7	4.80	10.0	20.2	30.0
Perfluorooctanesulfonic acid (PFOS)	PFOS	Ave	116446 2845332	311845	694018	1321595	2120345	4.00 79.6	9.61	20.1	40.5	60.0
Perfluorononanoic acid (PFNA)	13PF OA	Ave	101669 2033486	261713	557035	1068968	1629901	1.93 38.3	4.62	9.68	19.5	28.9
13C2 PFHxA	13PF OA	Ave	611112 676347	600819	663271	618332	613307	10.0 10.0	10.0	10.0	10.0	10.0
13C2 PFDA	13PF OA	Ave	433139 490441	425840	484590	466074	467617	10.0 10.0	10.0	10.0	10.0	10.0

Curve Type Legend:

Ave = Average ISTD

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 173534

SDG No.: _____

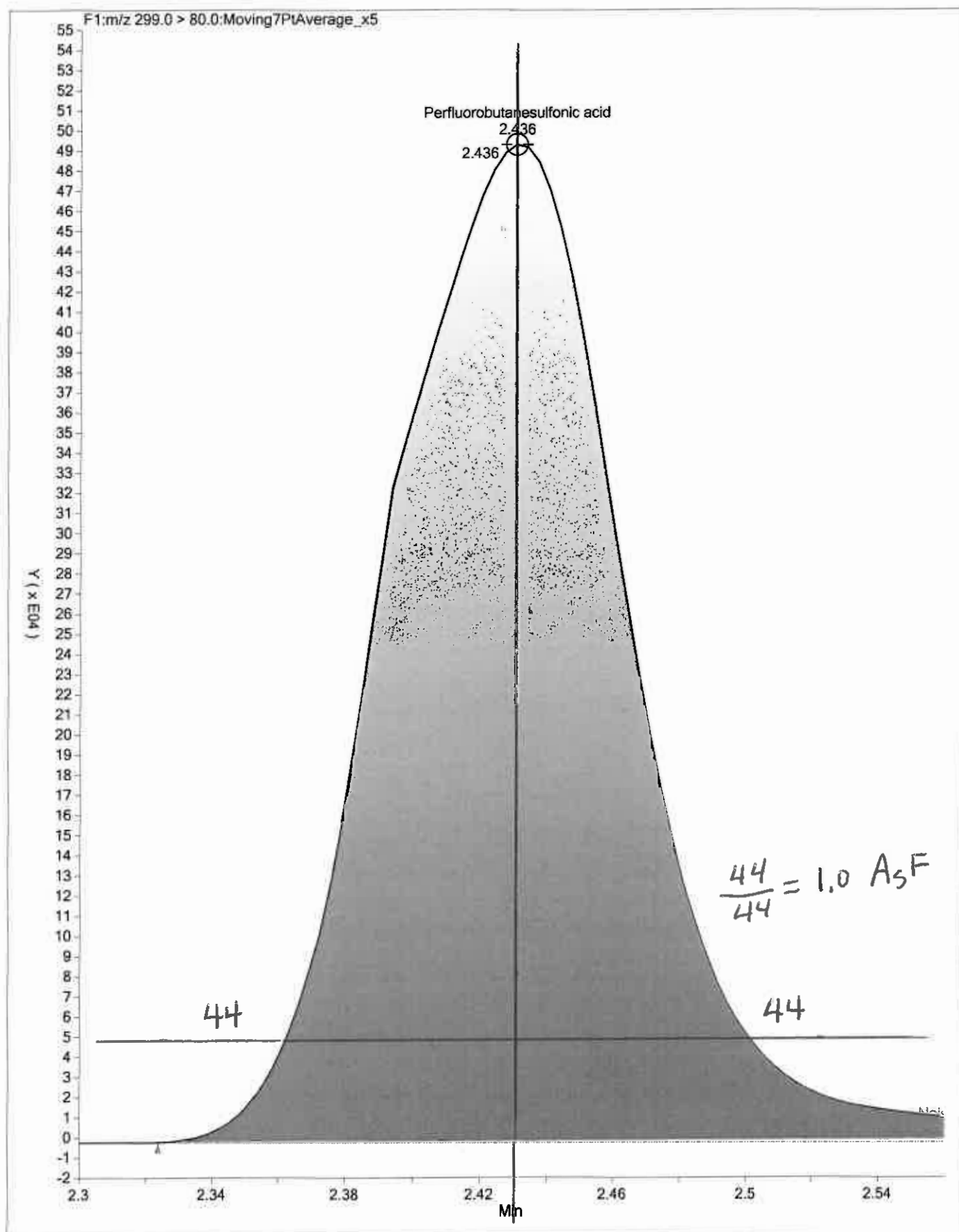
Instrument ID: A6 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

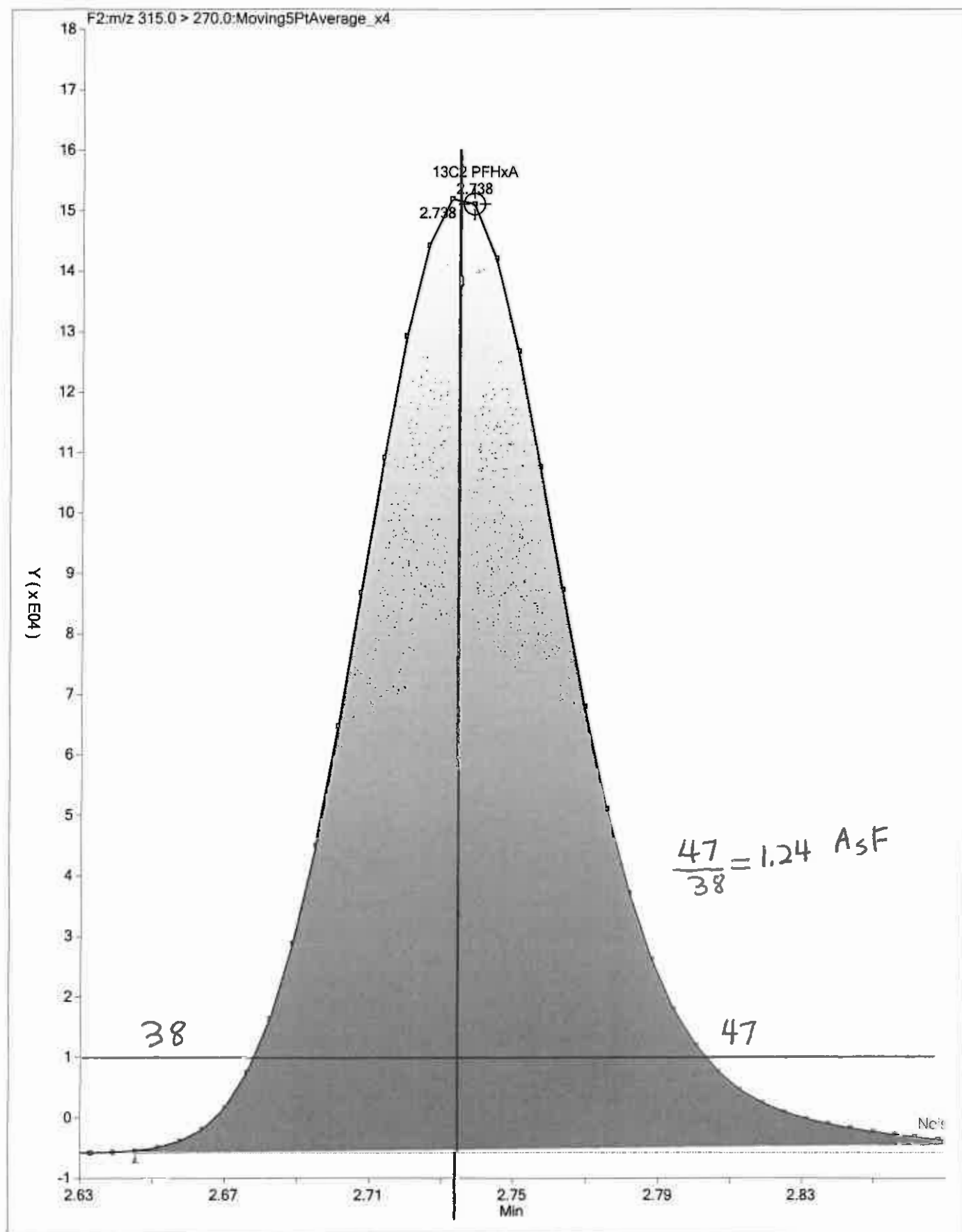
Calibration Start Date: 07/11/2017 14:18 Calibration End Date: 07/11/2017 15:05 Calibration ID: 32318

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 320-173534/7	11JUL2017A6B_007.d
Level 2	STD 320-173534/8	11JUL2017A6B_008.d
Level 3	STD 320-173534/9	11JUL2017A6B_009.d
Level 4	STD 320-173534/10	11JUL2017A6B_010.d
Level 5	STD 320-173534/11	11JUL2017A6B_011.d
Level 6	STD 320-173534/12	11JUL2017A6B_012.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanesulfonic acid (PFBS)	-3.3	-3.0	-5.2	0.8	3.1	7.6	50	50	50	50	50	50
Perfluoroheptanoic acid (PFHpA)	-2.4	-5.3	-0.9	8.0	3.3	-2.6	50	50	50	50	50	50
Perfluorohexanesulfonic acid (PFHxS)	-8.3	1.3	-14.2	-0.7	1.6	20.4	50	50	50	50	50	50
Perfluorooctanoic acid (PFOA)	-9.2	-2.6	1.6	2.4	-1.6	9.3	50	50	50	50	50	50
Perfluorooctanesulfonic acid (PFOS)	-12.7	-3.1	-1.5	-1.7	6.4	12.7	50	50	50	50	50	50
Perfluorononanoic acid (PFNA)	3.7	1.0	4.3	2.1	-3.2	-7.8	50	50	50	50	50	50
13C2 PFHxA	5.1	-6.2	5.2	0.8	-7.8	2.8	30	30	30	30	30	30
13C2 PFDA	1.9	-9.1	5.1	3.9	-3.9	2.0	30	30	30	30	30	30





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_007.d
 Lims ID: STD L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 11-Jul-2017 14:18:46 ALS Bottle#: 1 Worklist Smp#: 7
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: L1_537
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 11-Jul-2017 15:53:29 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 11-Jul-2017 15:19:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								M
299.0 > 80.0	2.439	2.442	-0.003	1.000	224824	8.55	274	M
\$ 2 13C2 PFHxA								
315.0 > 270.0	2.732	2.733	-0.001	1.000	611112	10.5	534	
4 Perfluoroheptanoic acid								
363.0 > 319.0	3.060	3.060	0.0	1.000	46641	0.9662	66.6	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	3.071	3.071	0.0	1.000	72532	2.76	1453	M
* 5 13C2-PFOA								
415.0 > 370.0	3.416	3.411	0.005		414618	10.0	235	
6 Perfluorooctanoic acid								M
413.0 > 369.0	3.416	3.413	0.003	1.000	82014	1.82	112	M
* 8 13C4 PFOS								
503.0 > 80.0	3.841	3.830	0.011		941885	28.7	278	
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	3.847	3.835	0.012	1.000	116446	3.49	4.5	M
9 Perfluorononanoic acid								
463.0 > 419.0	3.853	3.842	0.011	1.000	101669	2.00	500	
\$ 10 13C2 PFDA								
515.0 > 470.0	4.486	4.465	0.021	1.000	433139	10.2	498	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L1_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_007.d

Injection Date: 11-Jul-2017 14:18:46

Instrument ID: A6

Lims ID: STD L1

Client ID:

Operator ID: JRB

ALS Bottle#: 1

Worklist Smp#: 7

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

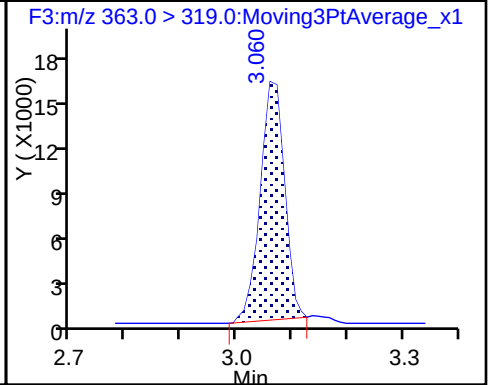
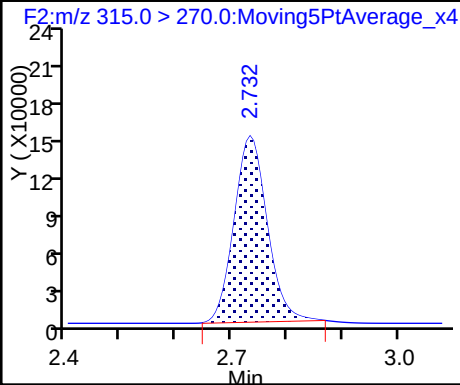
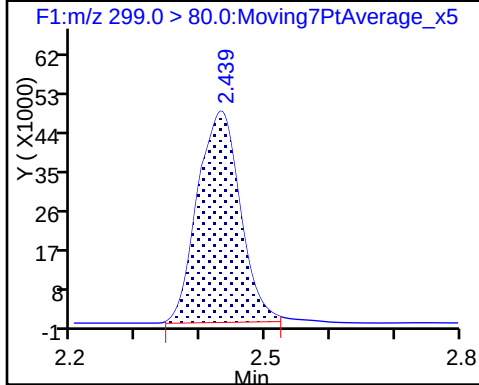
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (M)

\$ 2 13C2 PFHxA

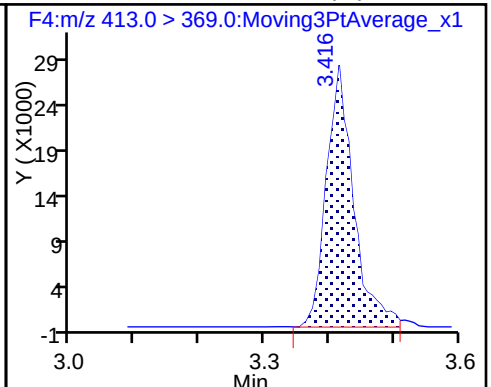
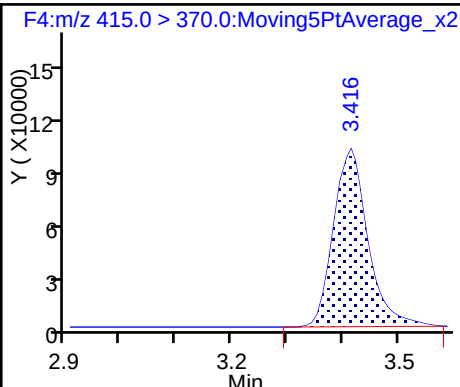
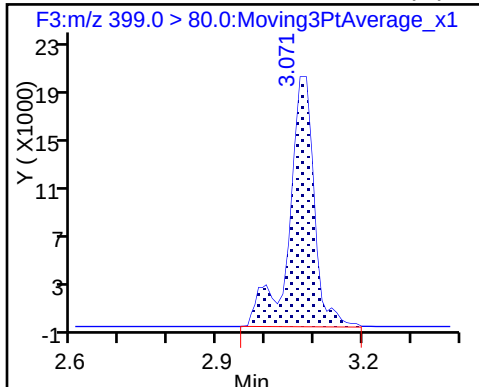
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid (M)

* 5 13C2-PFOA

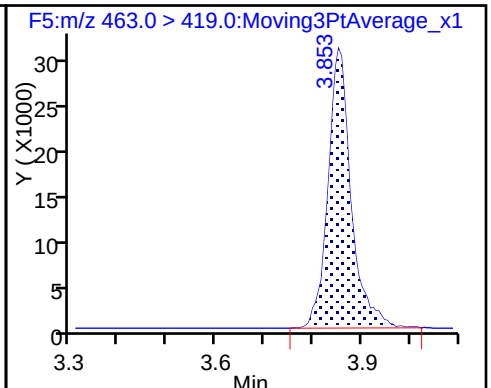
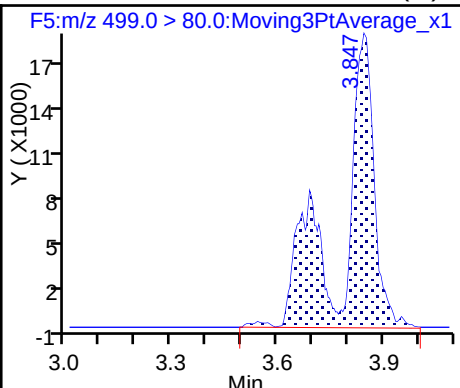
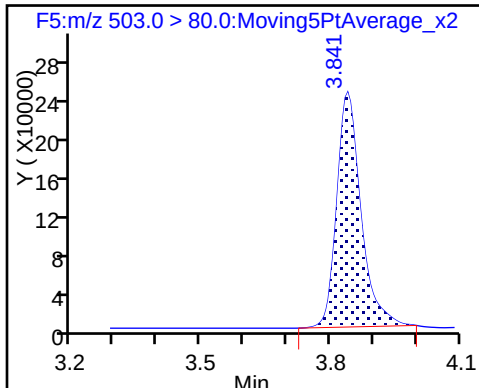
6 Perfluorooctanoic acid (M)



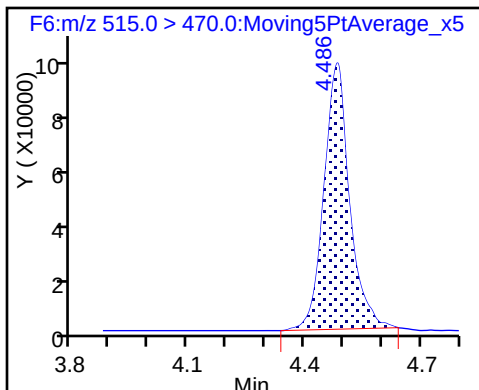
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

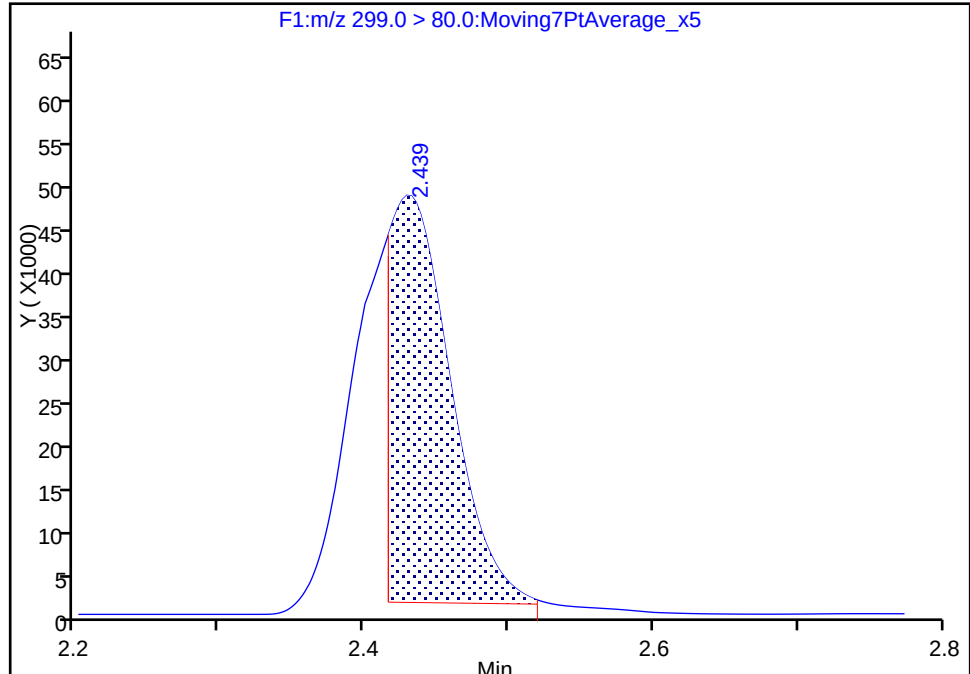
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_007.d
Injection Date: 11-Jul-2017 14:18:46 Instrument ID: A6
Lims ID: STD L1
Client ID:
Operator ID: JRB ALS Bottle#: 1 Worklist Smp#: 7
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm) Detector: F1:MRM

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

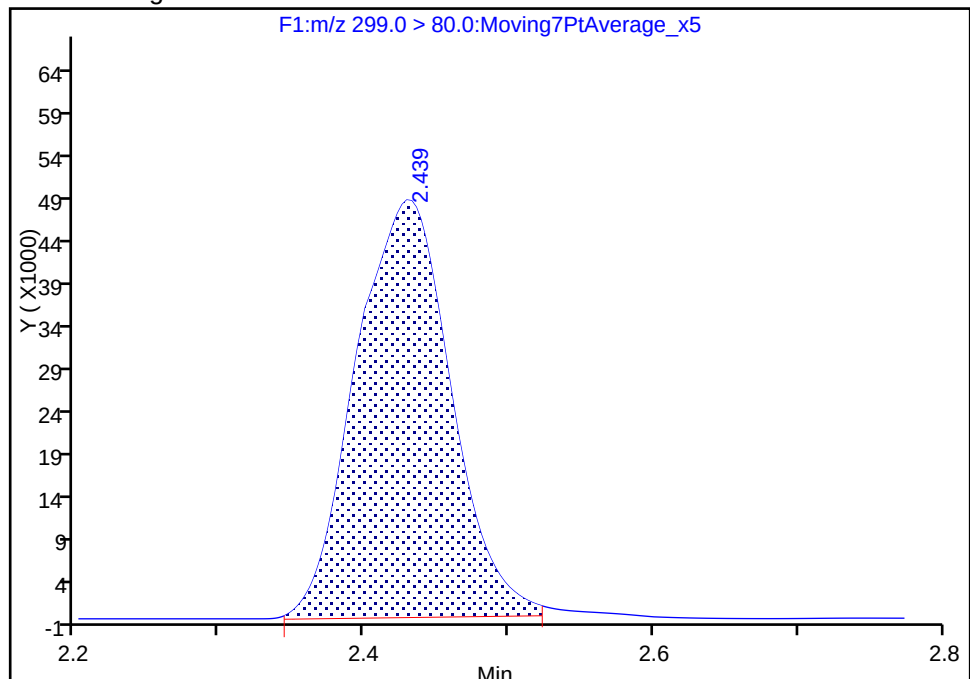
RT: 2.44
Area: 138868
Amount: 6.309732
Amount Units: ng/ml

Processing Integration Results



RT: 2.44
Area: 224824
Amount: 8.546638
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:17:38
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 267 of 595

TestAmerica Sacramento

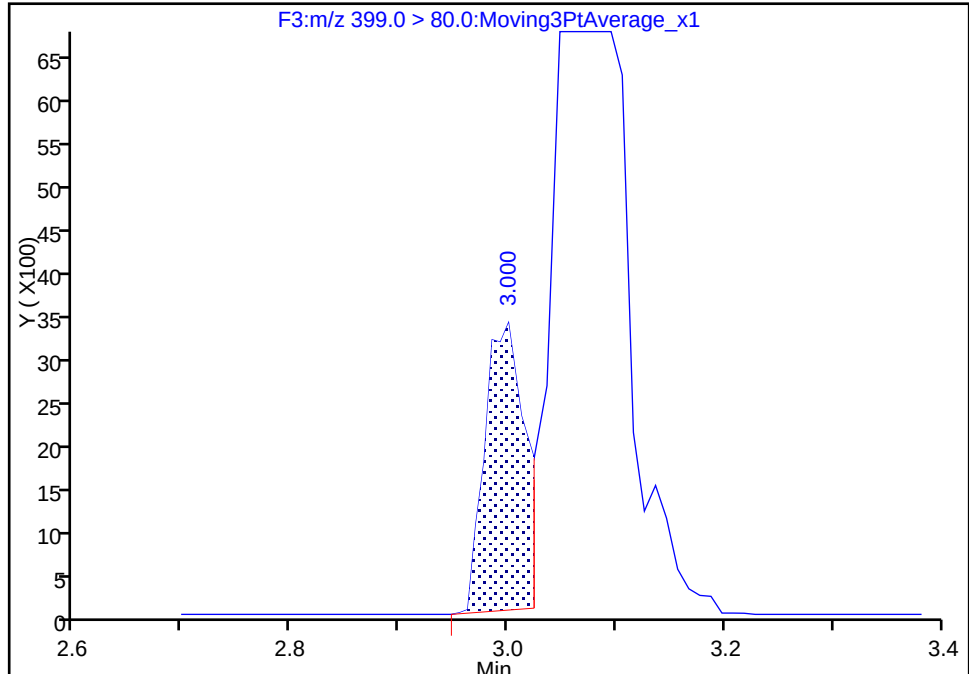
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_007.d
Injection Date: 11-Jul-2017 14:18:46 Instrument ID: A6
Lims ID: STD L1
Client ID:
Operator ID: JRB ALS Bottle#: 1 Worklist Smp#: 7
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm) Detector: F3:MRM

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

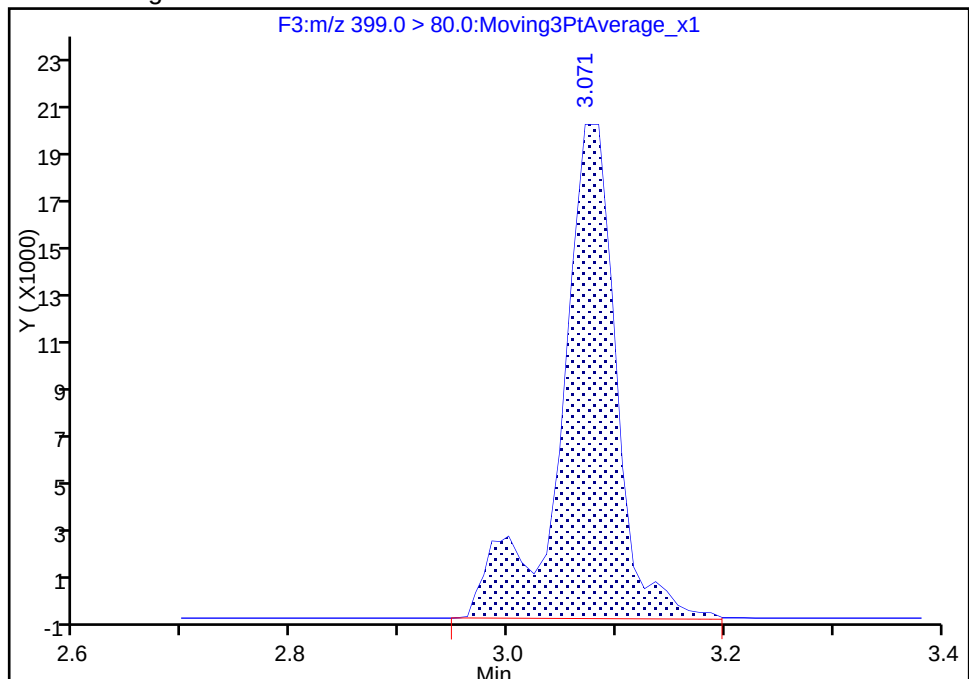
RT: 3.00
Area: 8209
Amount: 2.741437
Amount Units: ng/ml

Processing Integration Results



RT: 3.07
Area: 72532
Amount: 2.756580
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:18:29

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

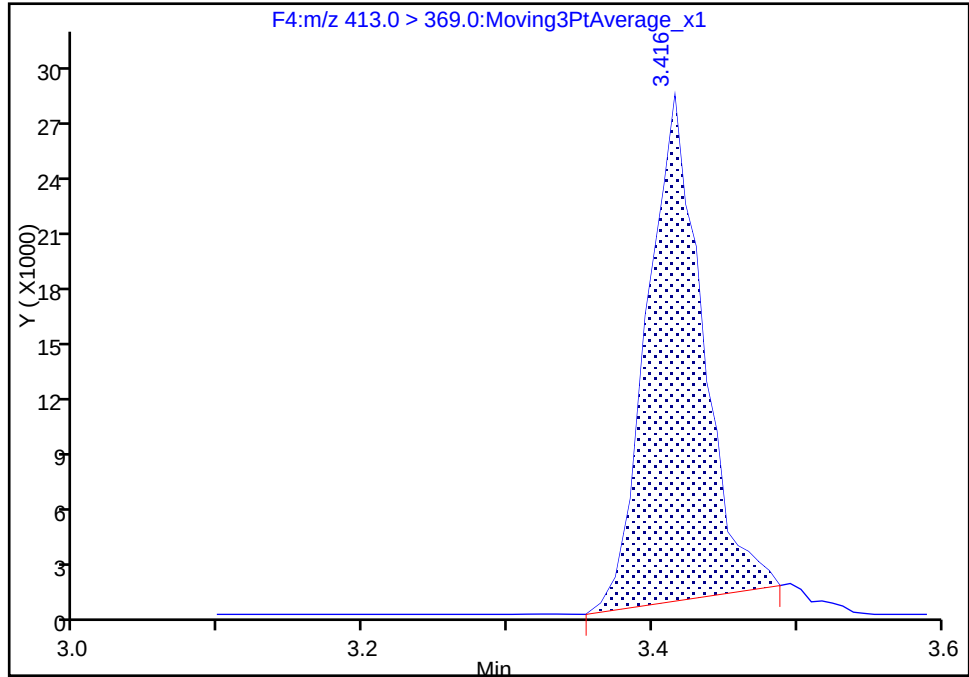
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_007.d
Injection Date: 11-Jul-2017 14:18:46 Instrument ID: A6
Lims ID: STD L1
Client ID:
Operator ID: JRB ALS Bottle#: 1 Worklist Smp#: 7
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

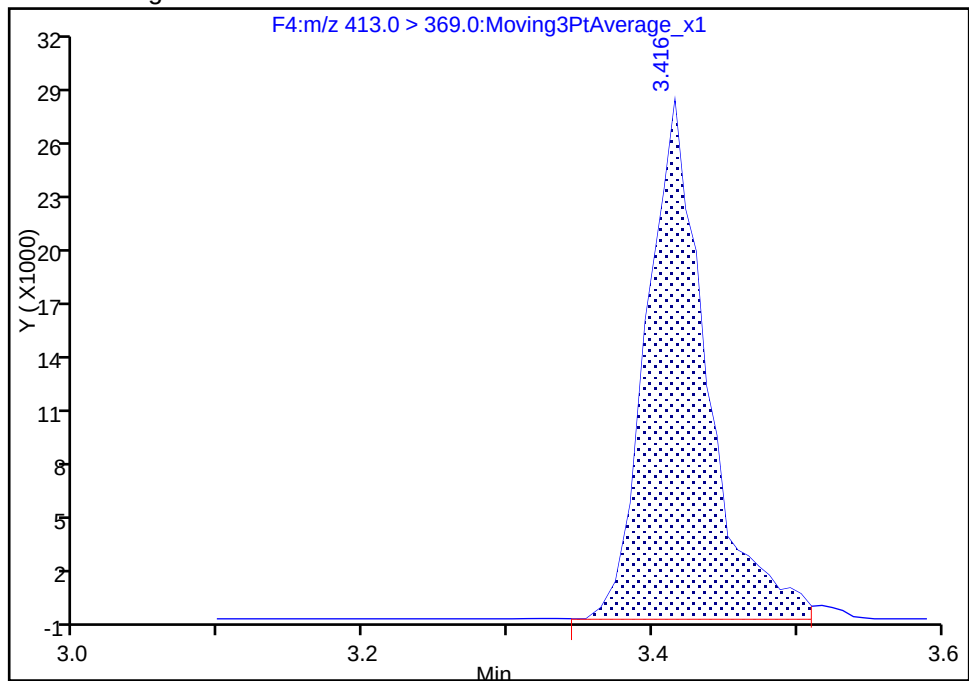
RT: 3.42
Area: 73622
Amount: 1.671183
Amount Units: ng/ml

Processing Integration Results



RT: 3.42
Area: 82014
Amount: 1.815138
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:19:20

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

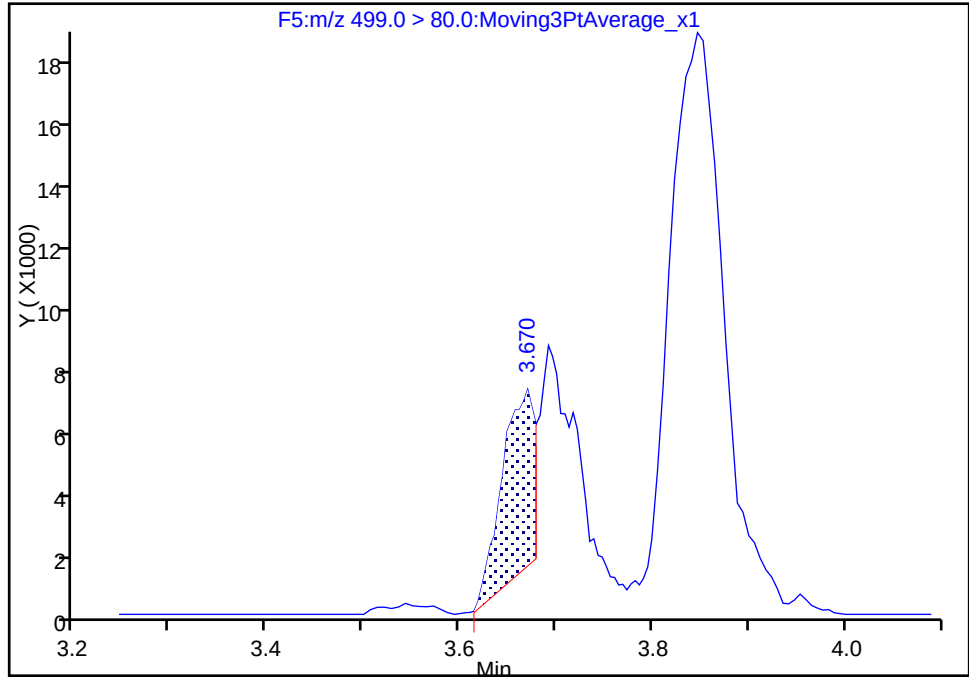
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_007.d
Injection Date: 11-Jul-2017 14:18:46 Instrument ID: A6
Lims ID: STD L1
Client ID:
Operator ID: JRB ALS Bottle#: 1 Worklist Smp#: 7
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

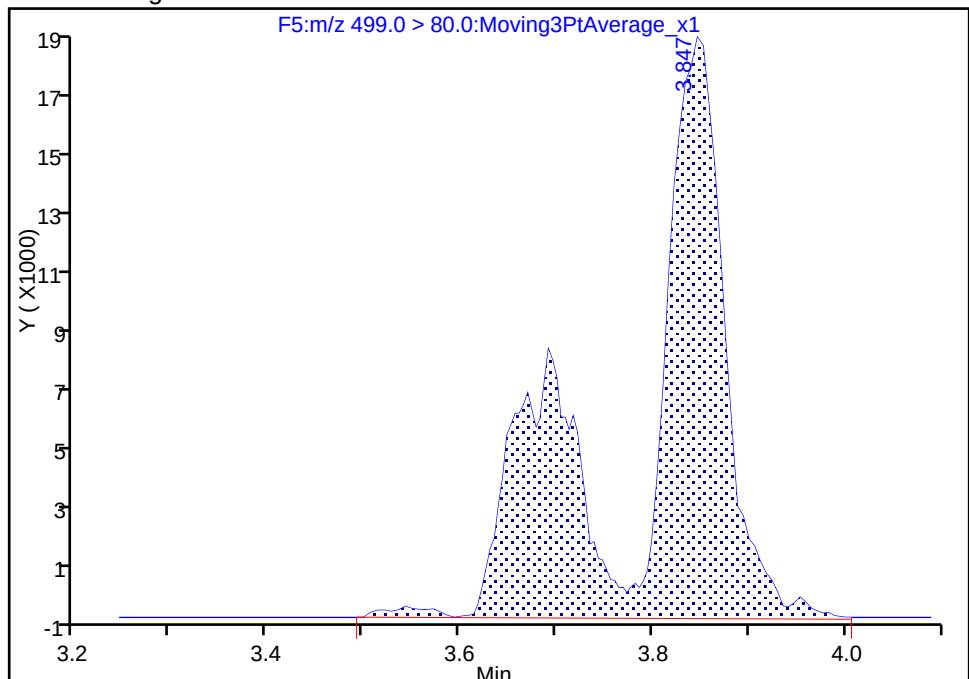
RT: 3.67
Area: 13019
Amount: 2.024064
Amount Units: ng/ml

Processing Integration Results



RT: 3.85
Area: 116446
Amount: 3.493588
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:19:00

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_008.d
 Lims ID: STD L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 11-Jul-2017 14:29:14 ALS Bottle#: 2 Worklist Smp#: 8
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: L2_537
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 11-Jul-2017 15:53:30 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 11-Jul-2017 15:20:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	2.439	2.442	-0.003	1.000	543185	20.6	276	
\$ 2 13C2 PFHxA								
315.0 > 270.0	2.732	2.733	-0.001	1.000	600819	9.38	695	
4 Perfluoroheptanoic acid								
363.0 > 319.0	3.060	3.060	0.0	1.000	119710	2.25	185	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	3.071	3.071	0.0	1.000	193156	7.31	825	M
* 5 13C2-PFOA								
415.0 > 370.0	3.415	3.411	0.004		456818	10.0	464	
6 Perfluorooctanoic acid								M
413.0 > 369.0	3.415	3.413	0.002	1.000	232563	4.67	327	M
* 8 13C4 PFOS								
503.0 > 80.0	3.835	3.830	0.005		946126	28.7	336	
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	3.835	3.835	0.0	1.000	311845	9.31	798	M
9 Perfluorononanoic acid								
463.0 > 419.0	3.847	3.842	0.005	1.000	261713	4.67	1252	
\$ 10 13C2 PFDA								
515.0 > 470.0	4.475	4.465	0.010	1.000	425840	9.09	704	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L2_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_008.d

Injection Date: 11-Jul-2017 14:29:14

Instrument ID: A6

Lims ID: STD L2

Client ID:

Operator ID: JRB

ALS Bottle#: 2

Worklist Smp#: 8

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

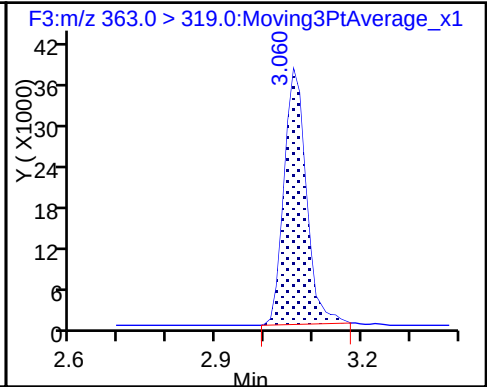
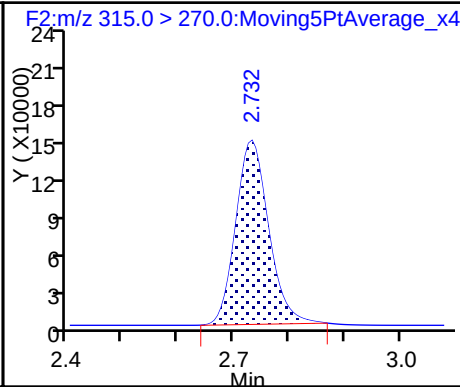
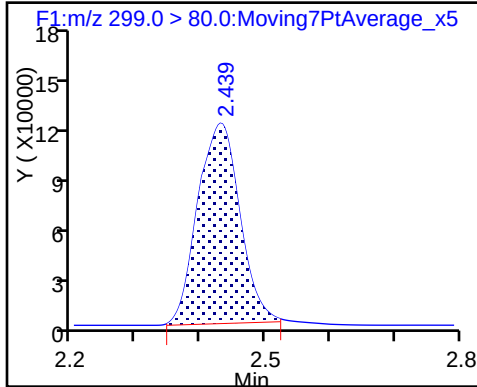
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

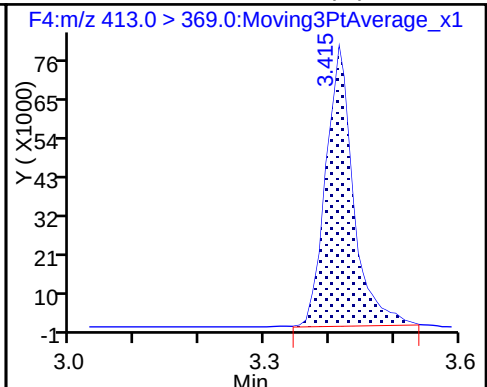
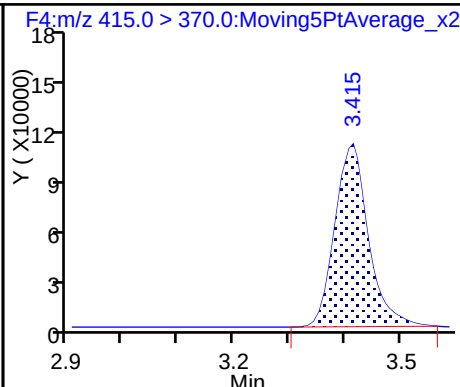
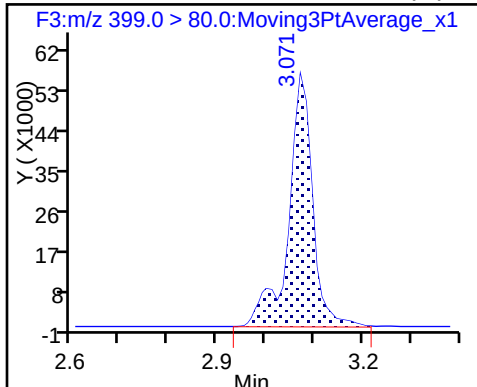
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid (M)

* 5 13C2-PFOA

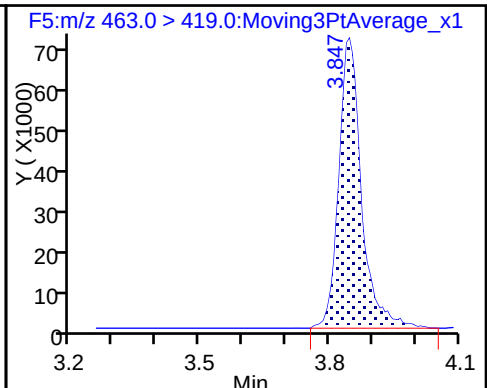
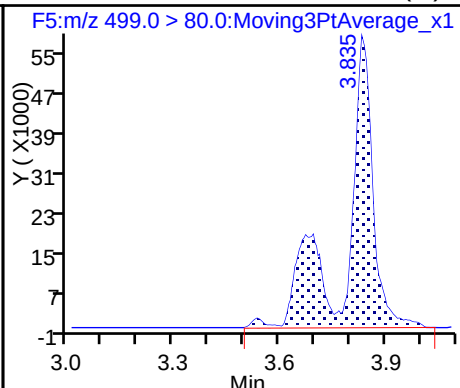
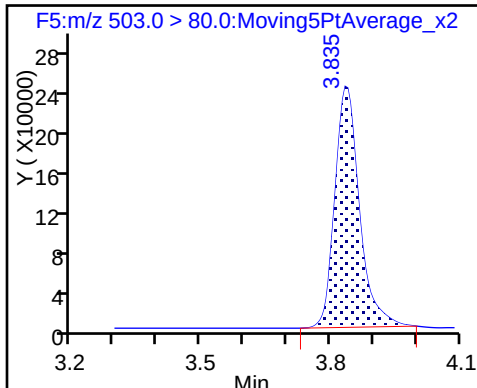
6 Perfluorooctanoic acid (M)



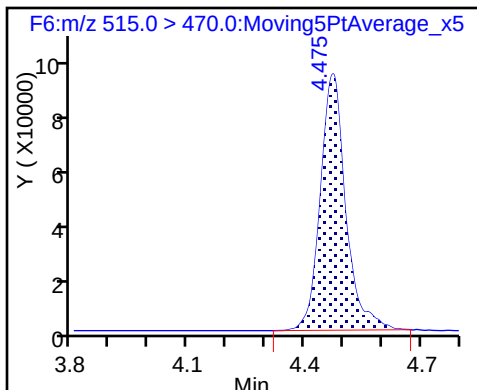
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

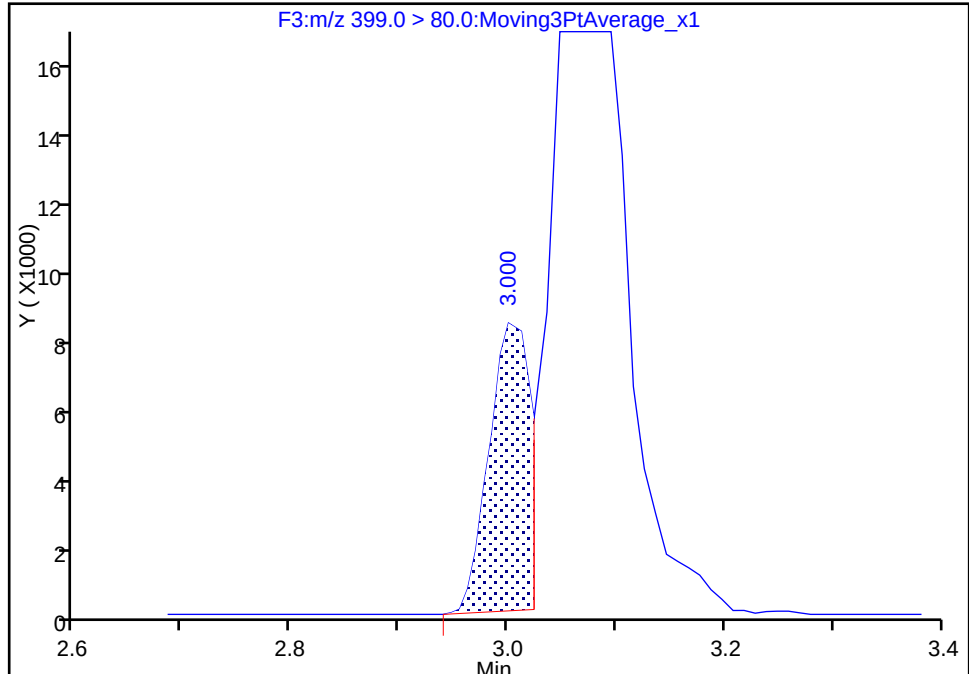
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_008.d
Injection Date: 11-Jul-2017 14:29:14 Instrument ID: A6
Lims ID: STD L2
Client ID:
Operator ID: JRB ALS Bottle#: 2 Worklist Smp#: 8
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F3:MRM

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

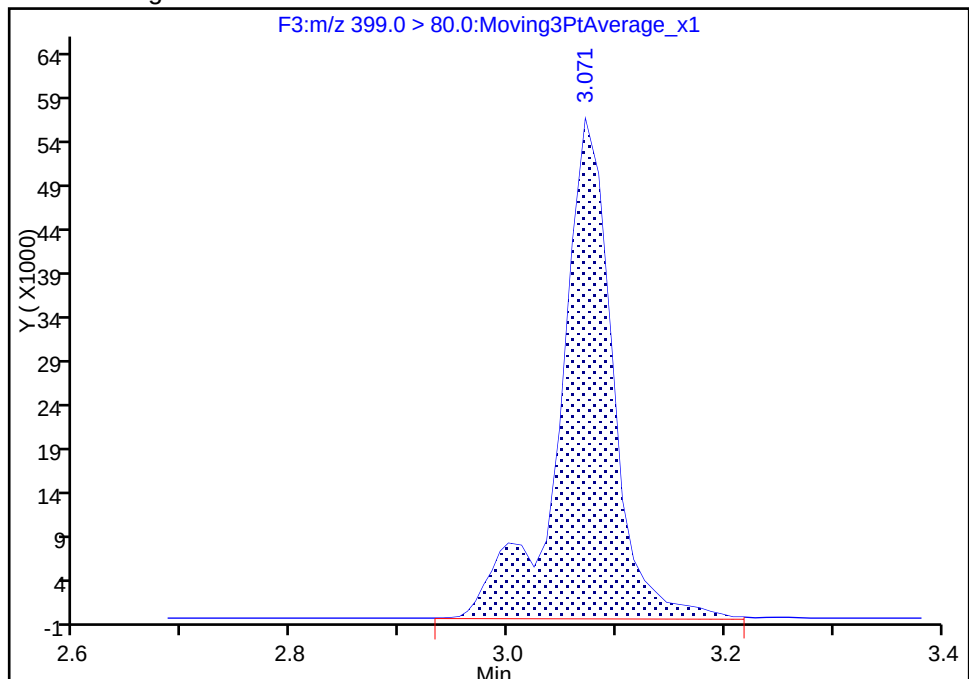
RT: 3.00
Area: 21096
Amount: 3.201099
Amount Units: ng/ml

Processing Integration Results



RT: 3.07
Area: 193156
Amount: 7.307991
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:20:04
Audit Action: Manually Integrated

Audit Reason: Isomers
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TestAmerica Sacramento

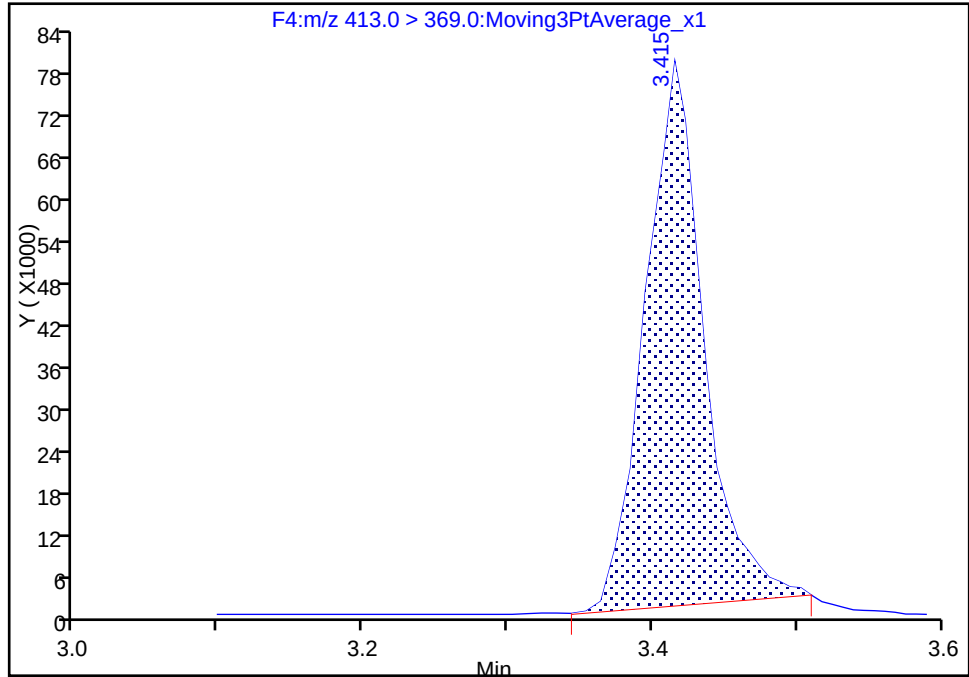
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Injection Date: 11-Jul-2017 14:29:14 Instrument ID: A6
Lims ID: STD L2
Client ID:
Operator ID: JRB ALS Bottle#: 2 Worklist Smp#: 8
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm) Detector: F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

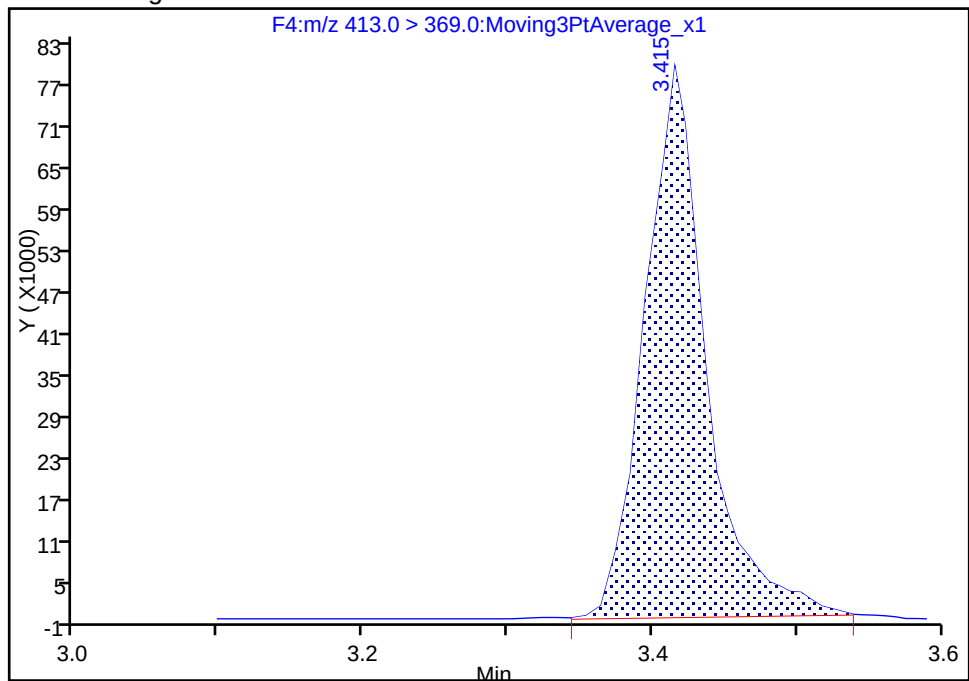
RT: 3.42
Area: 218948
Amount: 4.440333
Amount Units: ng/ml

Processing Integration Results



RT: 3.42
Area: 232563
Amount: 4.671616
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:20:36

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

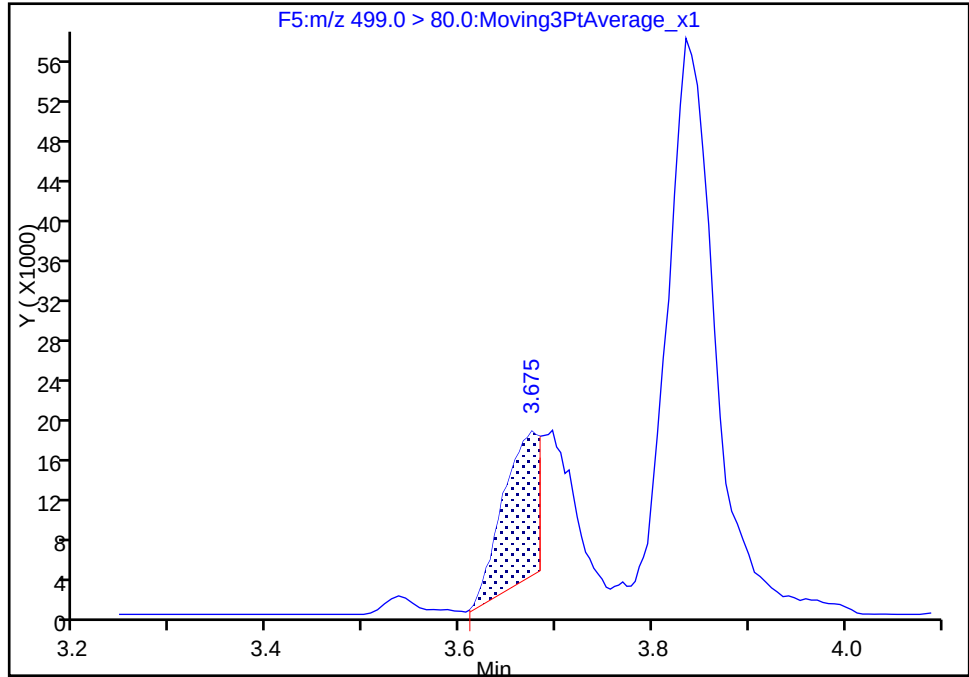
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Injection Date: 11-Jul-2017 14:29:14 Instrument ID: A6
Lims ID: STD L2
Client ID:
Operator ID: JRB ALS Bottle#: 2 Worklist Smp#: 8
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

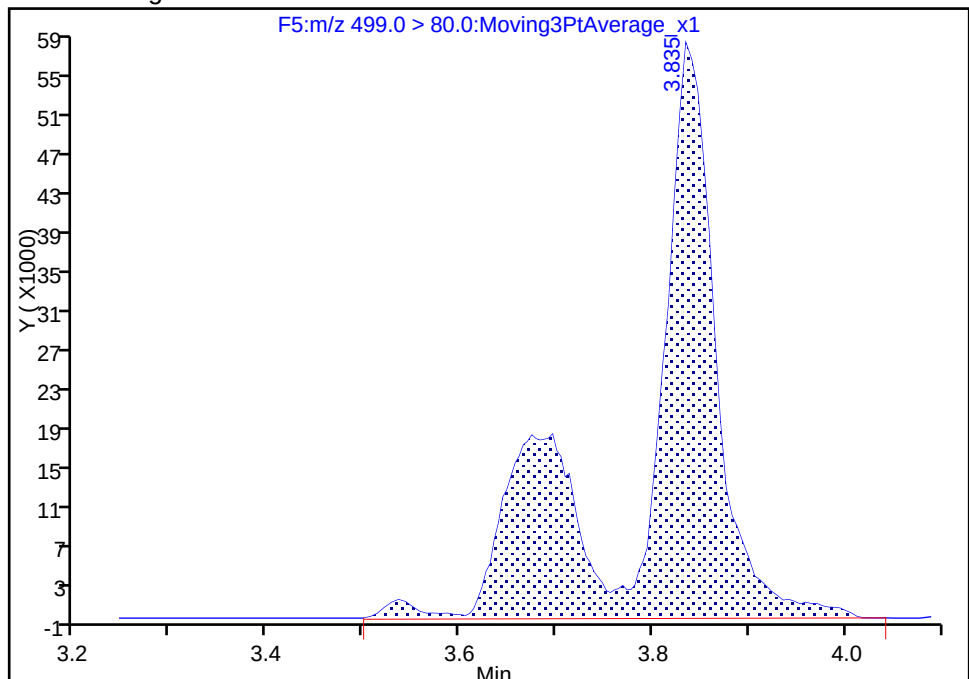
RT: 3.67
Area: 37973
Amount: 3.520461
Amount Units: ng/ml

Processing Integration Results



RT: 3.83
Area: 311845
Amount: 9.313968
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:20:22

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_009.d
 Lims ID: STD L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 11-Jul-2017 14:38:19 ALS Bottle#: 3 Worklist Smp#: 9
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: L3_537
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 11-Jul-2017 15:53:31 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 11-Jul-2017 15:22:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								M
299.0 > 80.0	2.439	2.442	-0.003	1.000	1163511	42.1	238	M
\$ 2 13C2 PFHxA								
315.0 > 270.0	2.732	2.733	-0.001	1.000	663271	10.5	1743	
4 Perfluoroheptanoic acid								
363.0 > 319.0	3.060	3.060	0.0	1.000	257968	4.93	874	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	3.071	3.071	0.0	1.000	358215	13.0	274	M
* 5 13C2-PFOA								
415.0 > 370.0	3.408	3.411	-0.003		449621	10.0	132	
6 Perfluorooctanoic acid								
413.0 > 369.0	3.416	3.413	0.003	1.000	499953	10.2	601	
* 8 13C4 PFOS								
503.0 > 80.0	3.829	3.830	-0.001		989876	28.7	483	
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	3.835	3.835	0.0	1.000	694018	19.8	1090	M
9 Perfluorononanoic acid								
463.0 > 419.0	3.841	3.842	-0.001	1.000	557035	10.1	3648	
\$ 10 13C2 PFDA								
515.0 > 470.0	4.463	4.465	-0.002	1.000	484590	10.5	510	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L3_00022

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_009.d

Injection Date: 11-Jul-2017 14:38:19

Instrument ID: A6

Lims ID: STD L3

Client ID:

Operator ID: JRB

ALS Bottle#: 3

Worklist Smp#: 9

Injection Vol: 10.0 ul

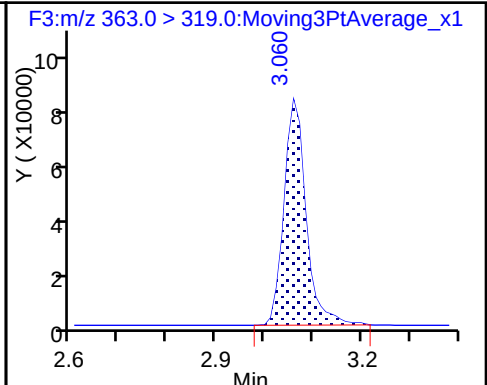
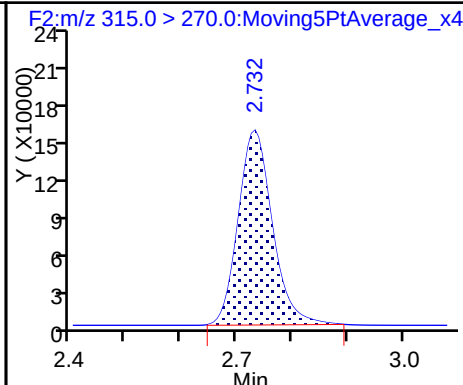
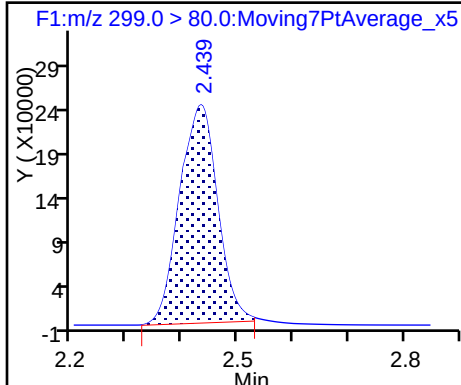
Dil. Factor: 1.0000

Method: 537__A6

Limit Group: LC 537 ICAL

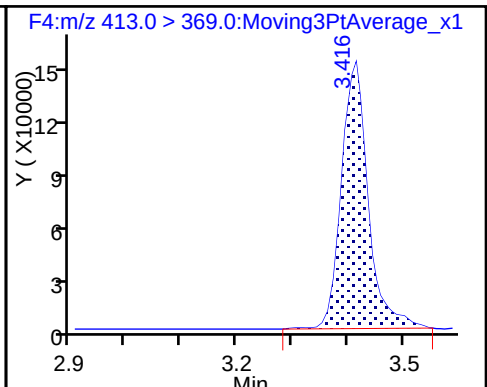
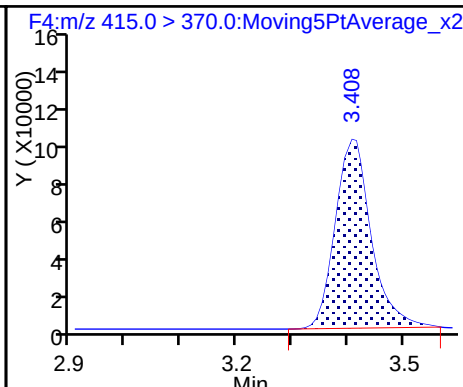
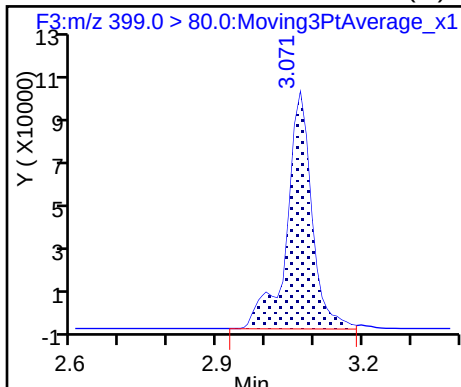
1 Perfluorobutanesulfonic acid (M) \$ 2 13C2 PFHxA

4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid (M) * 5 13C2-PFOA

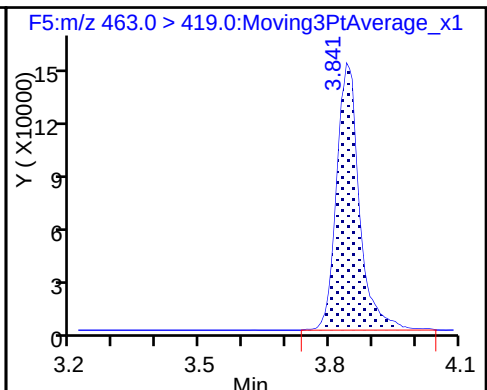
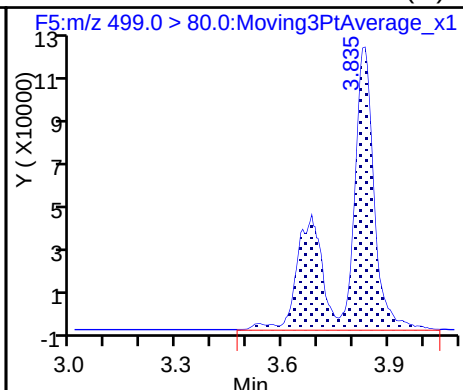
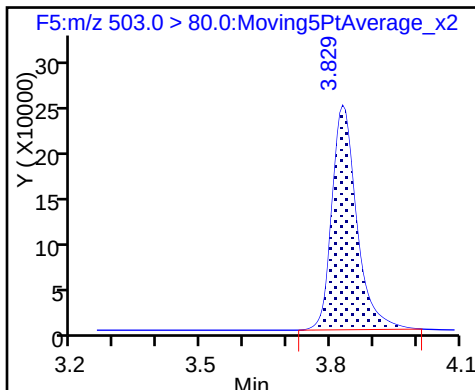
6 Perfluorooctanoic acid



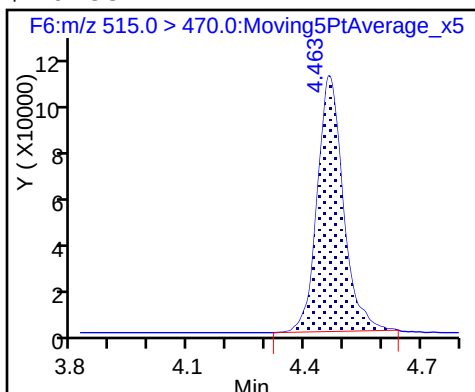
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

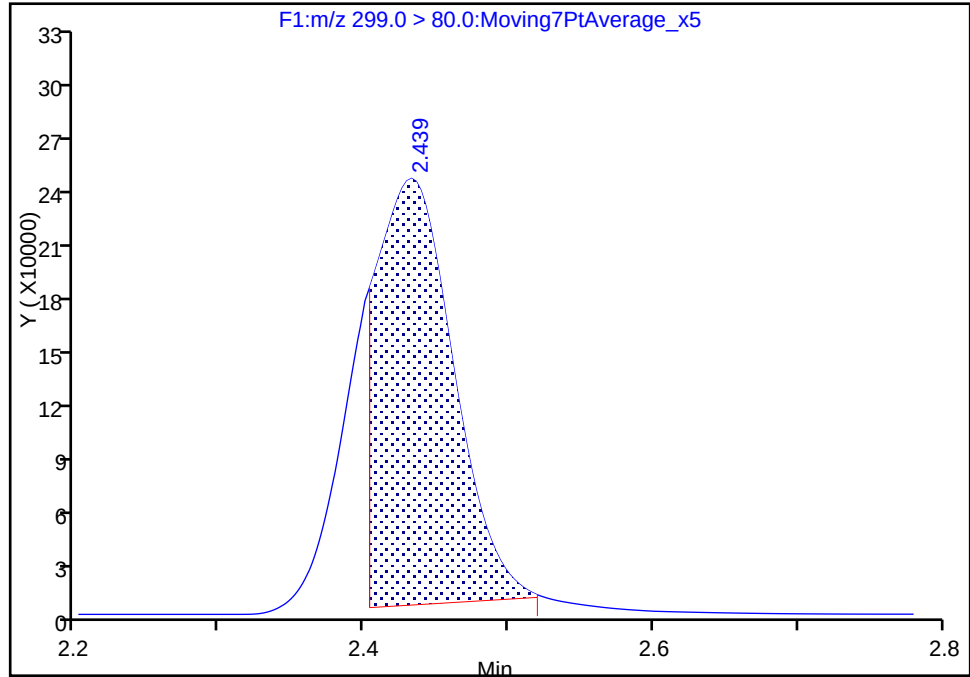
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Injection Date: 11-Jul-2017 14:38:19 Instrument ID: A6
Lims ID: STD L3
Client ID:
Operator ID: JRB ALS Bottle#: 3 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm) Detector: F1:MRM

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

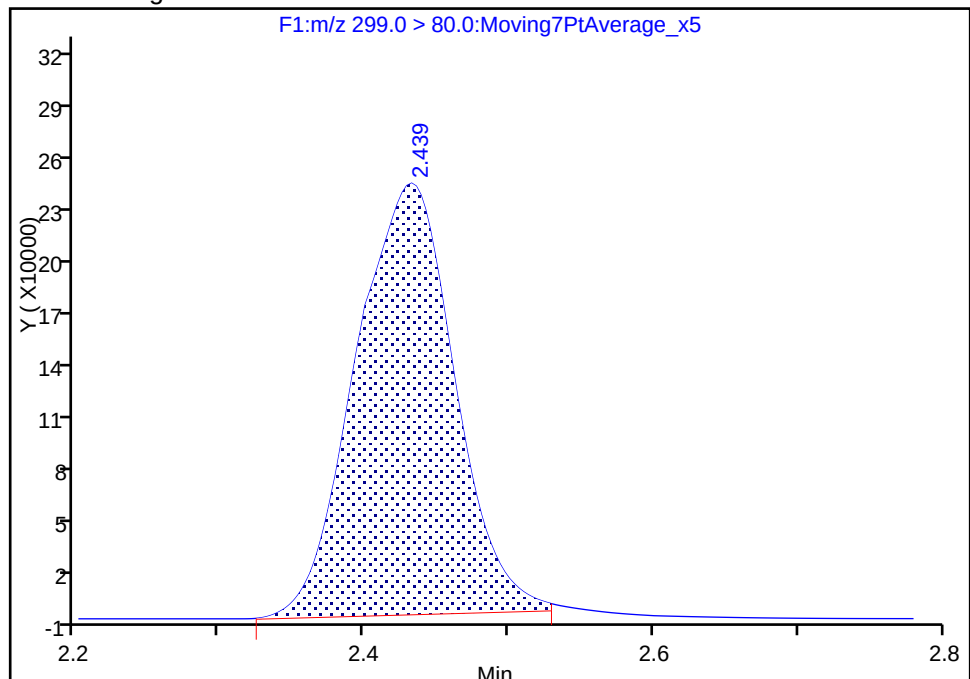
RT: 2.44
Area: 884462
Amount: 35.614669
Amount Units: ng/ml

Processing Integration Results



RT: 2.44
Area: 1163511
Amount: 42.086248
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:21:01

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

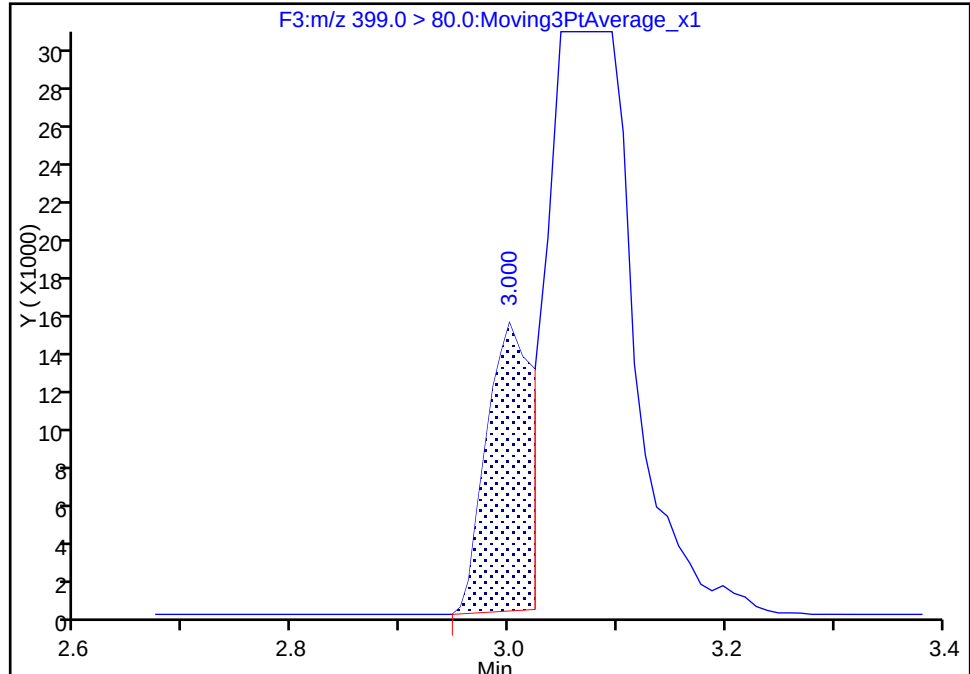
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_009.d
Injection Date: 11-Jul-2017 14:38:19 Instrument ID: A6
Lims ID: STD L3
Client ID:
Operator ID: JRB ALS Bottle#: 3 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm) Detector: F3:MRM

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

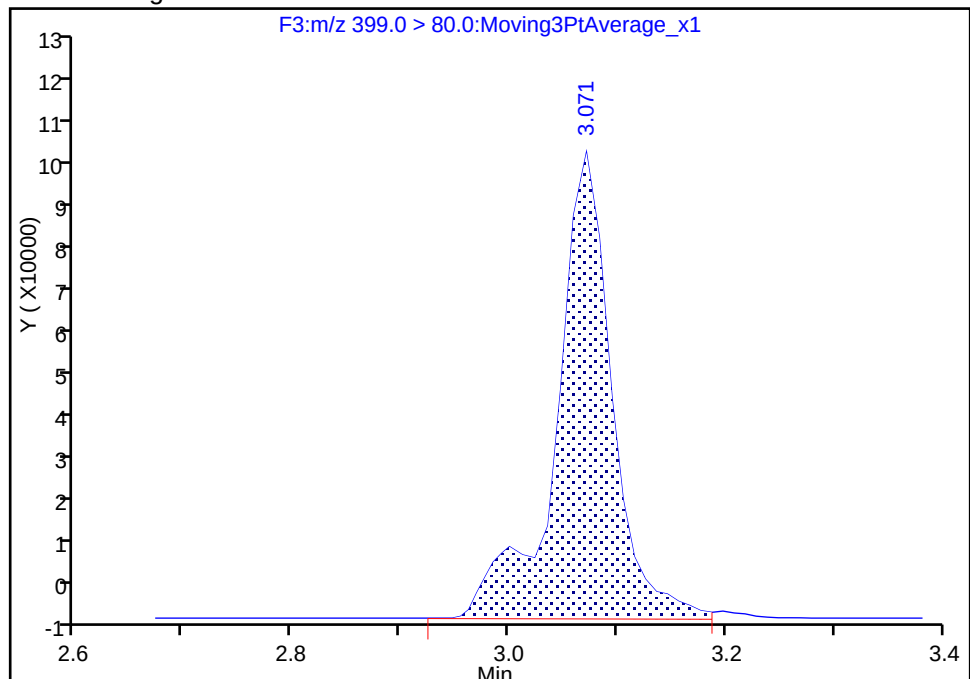
RT: 3.00
Area: 41284
Amount: 3.734891
Amount Units: ng/ml

Processing Integration Results



RT: 3.07
Area: 358215
Amount: 12.953936
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:21:25
Audit Action: Manually Integrated

Audit Reason: Isomers
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TestAmerica Sacramento

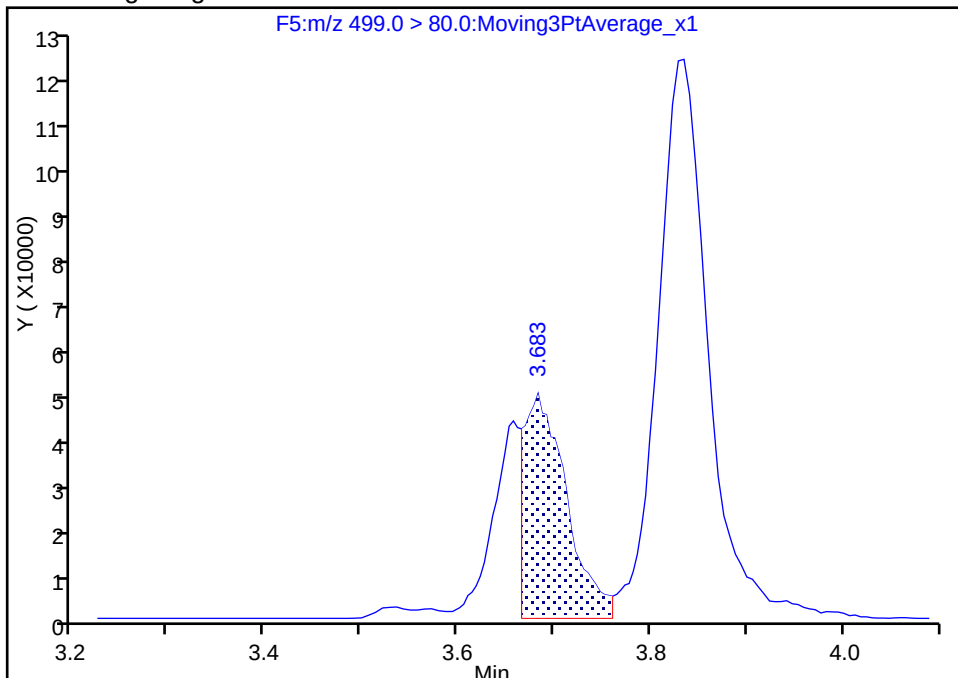
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Injection Date: 11-Jul-2017 14:38:19 Instrument ID: A6
Lims ID: STD L3
Client ID:
Operator ID: JRB ALS Bottle#: 3 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

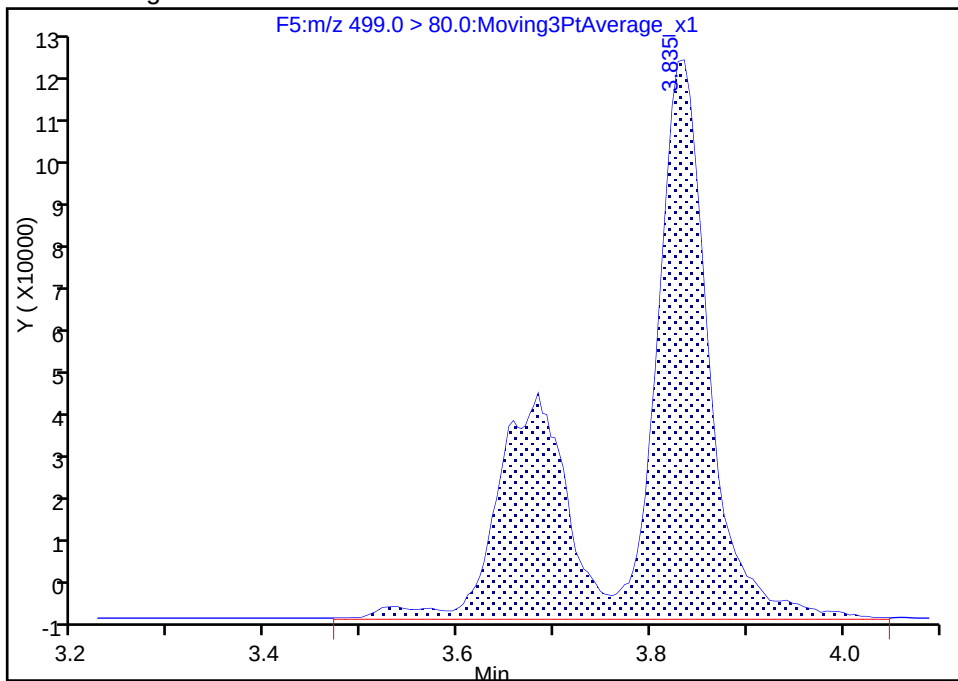
RT: 3.68
Area: 146525
Amount: 6.374180
Amount Units: ng/ml

Processing Integration Results



RT: 3.83
Area: 694018
Amount: 19.812300
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:27:24

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_010.d
 Lims ID: STD L4
 Client ID:
 Sample Type: ICISAV Calib Level: 4
 Inject. Date: 11-Jul-2017 14:47:23 ALS Bottle#: 4 Worklist Smp#: 10
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: L4_537
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 11-Jul-2017 15:53:33 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 11-Jul-2017 15:23:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	2.436	2.442	-0.006	1.000	2360302	90.1	1505	
\$ 2 13C2 PFHxA								
315.0 > 270.0	2.732	2.733	-0.001	1.000	618332	10.1	662	
4 Perfluoroheptanoic acid								
363.0 > 319.0	3.060	3.060	0.0	1.000	551247	10.8	783	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	3.072	3.071	0.001	1.000	791471	30.2	16276	M
* 5 13C2-PFOA								
415.0 > 370.0	3.408	3.411	-0.003		437474	10.0	134	
6 Perfluorooctanoic acid								
413.0 > 369.0	3.416	3.413	0.003	1.000	988038	20.7	166	
* 8 13C4 PFOS								
503.0 > 80.0	3.829	3.830	-0.001		937482	28.7	432	
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	3.835	3.835	0.0	1.000	1321595	39.8	370	M
9 Perfluorononanoic acid								M
463.0 > 419.0	3.841	3.842	-0.001	1.000	1068968	19.9	647	M
\$ 10 13C2 PFDA								
515.0 > 470.0	4.459	4.465	-0.006	1.000	466074	10.4	1137	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L4_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_010.d

Injection Date: 11-Jul-2017 14:47:23

Instrument ID: A6

Lims ID: STD L4

Client ID:

Operator ID: JRB

ALS Bottle#: 4

Worklist Smp#: 10

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

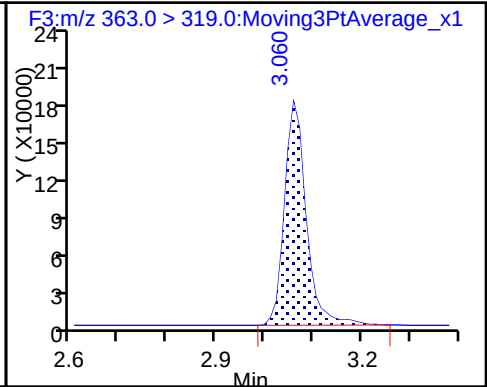
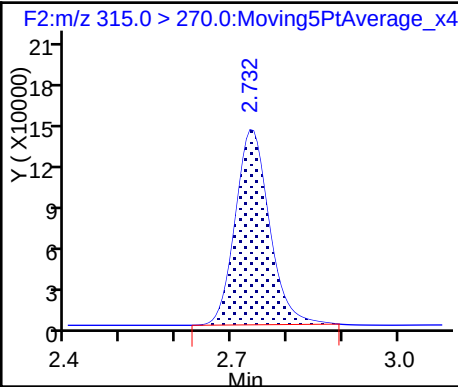
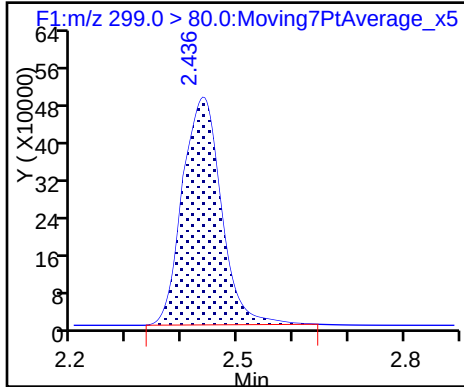
Method: 537__A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

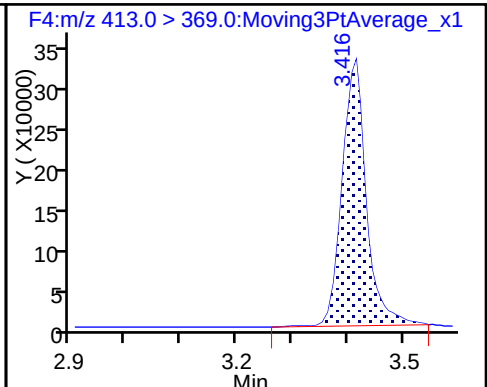
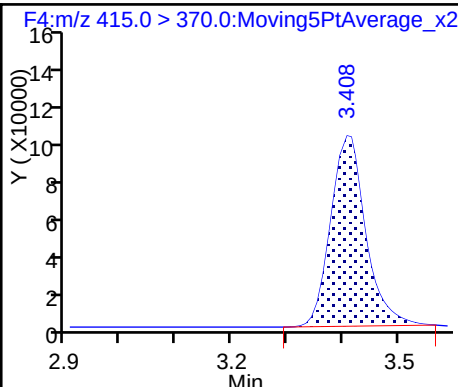
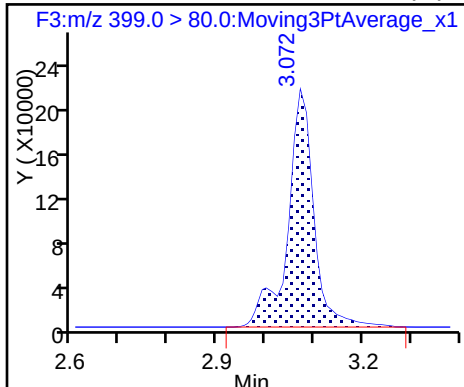
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid (M)

* 5 13C2-PFOA

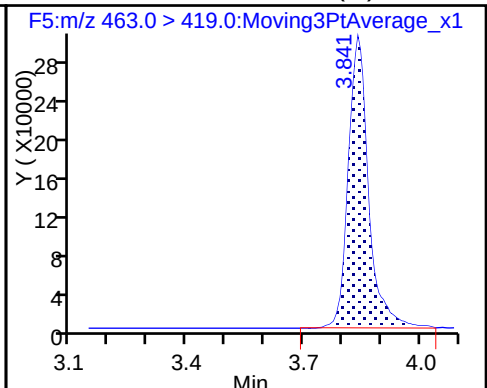
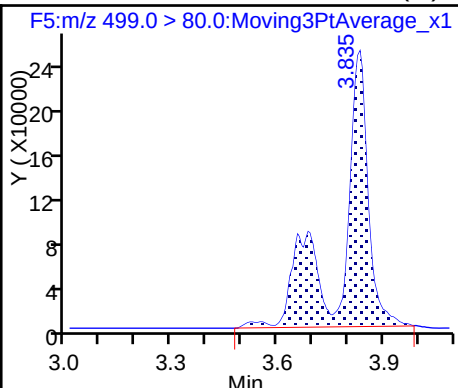
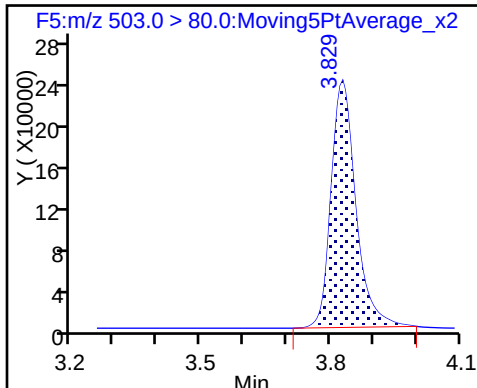
6 Perfluorooctanoic acid



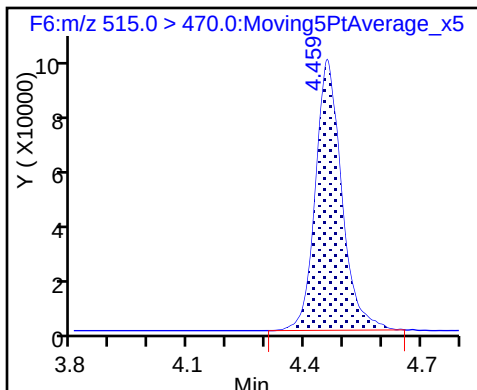
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento

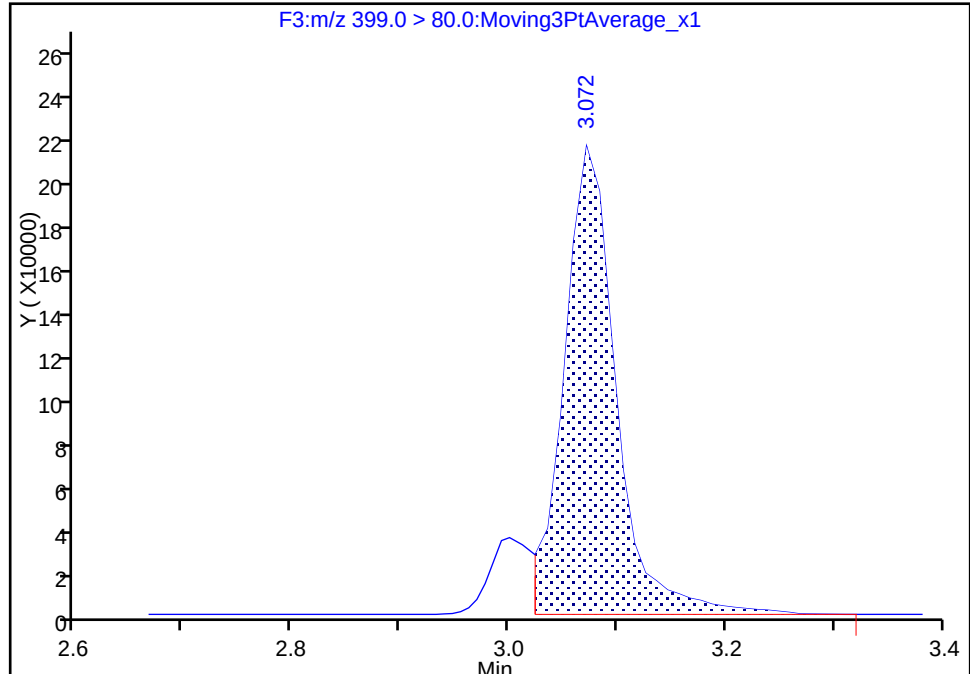
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_010.d
Injection Date: 11-Jul-2017 14:47:23 Instrument ID: A6
Lims ID: STD L4
Client ID:
Operator ID: JRB ALS Bottle#: 4 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F3:MRM

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

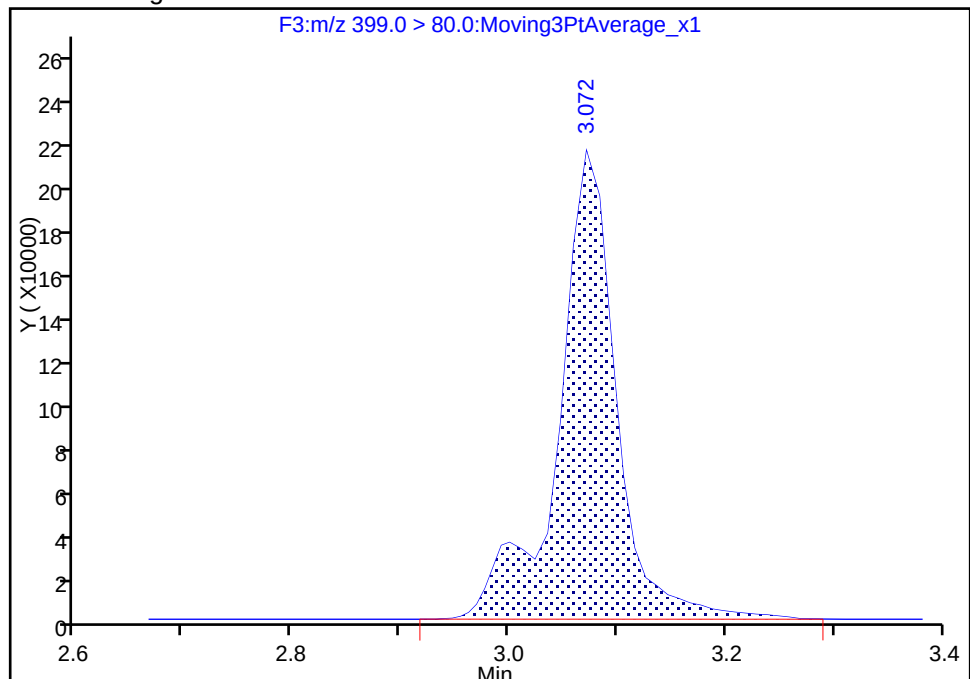
RT: 3.07
Area: 702877
Amount: 27.344847
Amount Units: ng/ml

Processing Integration Results



RT: 3.07
Area: 791471
Amount: 30.221141
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:41:27

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

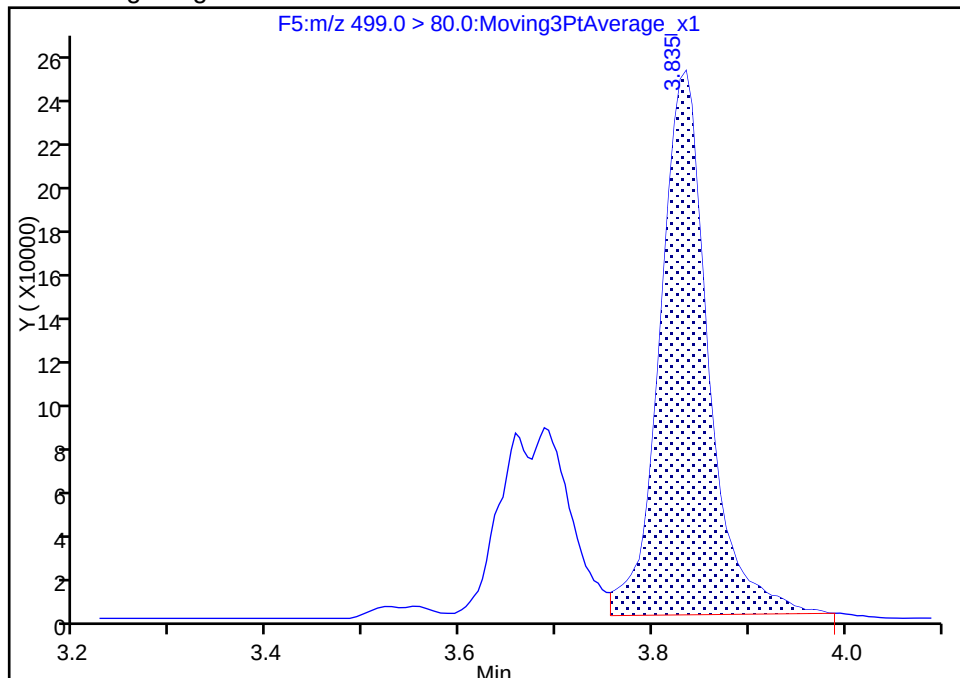
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_010.d
Injection Date: 11-Jul-2017 14:47:23 Instrument ID: A6
Lims ID: STD L4
Client ID:
Operator ID: JRB ALS Bottle#: 4 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

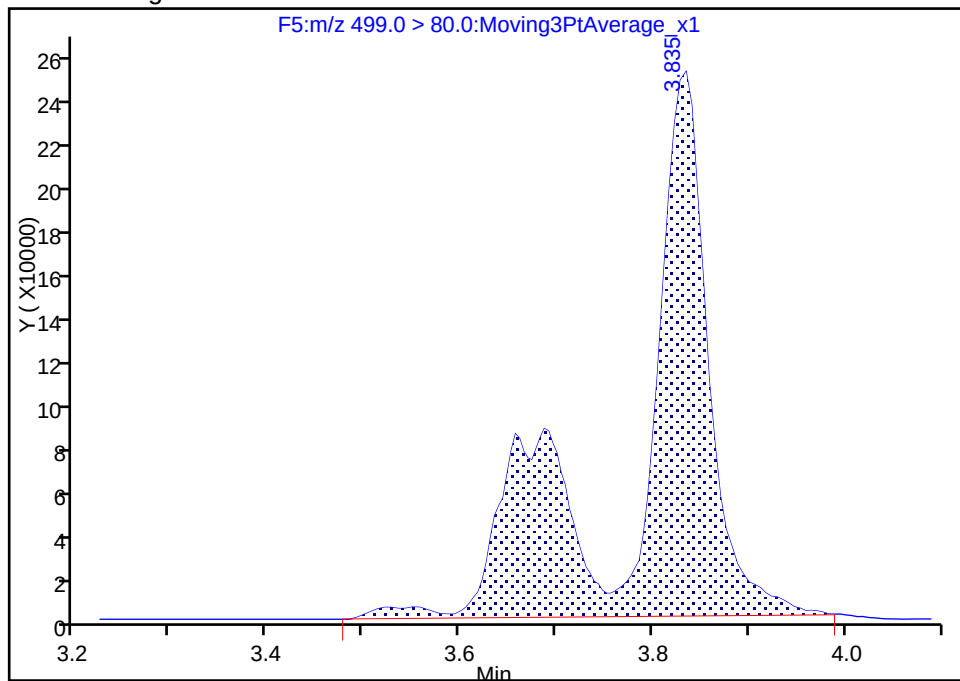
RT: 3.83
Area: 865594
Amount: 27.654288
Amount Units: ng/ml

Processing Integration Results



RT: 3.83
Area: 1321595
Amount: 39.836429
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:48:46

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

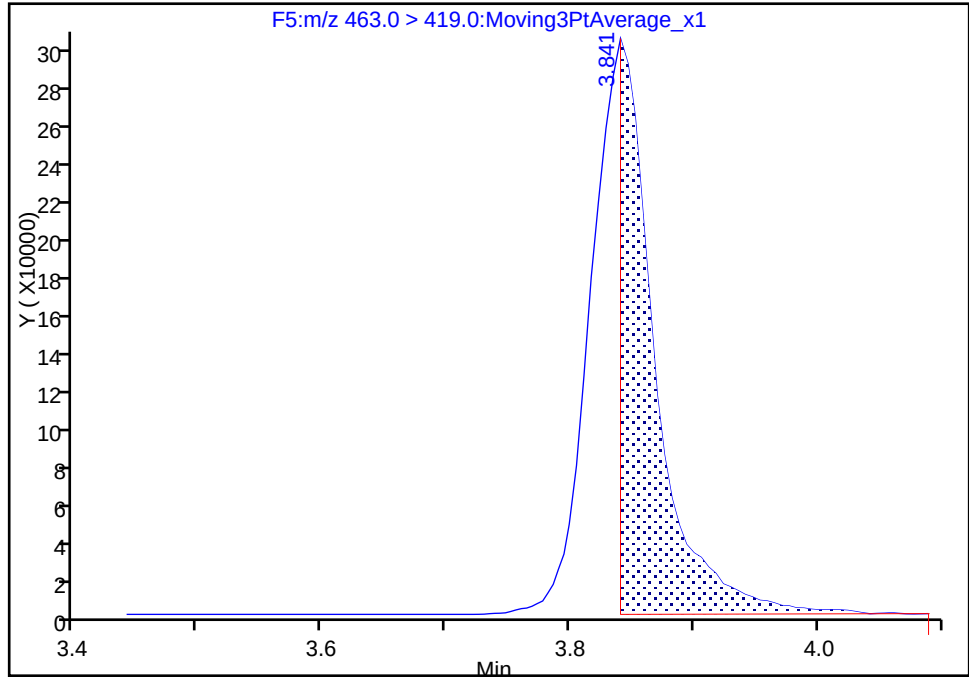
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_010.d
Injection Date: 11-Jul-2017 14:47:23 Instrument ID: A6
Lims ID: STD L4
Client ID:
Operator ID: JRB ALS Bottle#: 4 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

9 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

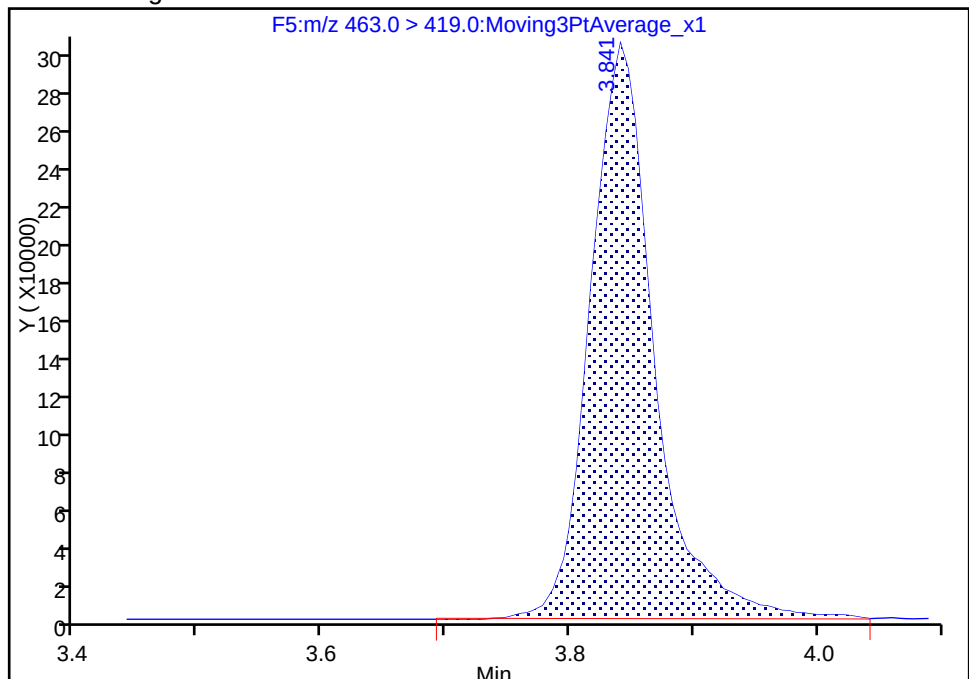
RT: 3.84
Area: 578321
Amount: 11.680128
Amount Units: ng/ml

Processing Integration Results



RT: 3.84
Area: 1068968
Amount: 19.903832
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:49:01
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_011.d
 Lims ID: STD L5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 11-Jul-2017 14:56:28 ALS Bottle#: 5 Worklist Smp#: 11
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: L5_537
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 11-Jul-2017 15:53:34 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 11-Jul-2017 15:24:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	2.448	2.442	0.006	1.000	3579670	136.6	1616	
\$ 2 13C2 PFHxA								
315.0 > 270.0	2.732	2.733	-0.001	1.000	613307	9.22	840	
4 Perfluoroheptanoic acid								
363.0 > 319.0	3.060	3.060	0.0	1.000	847873	15.3	6607	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	3.072	3.071	0.001	1.000	1199989	45.8	1173	M
* 5 13C2-PFOA								
415.0 > 370.0	3.408	3.411	-0.003		474775	10.0	311	
6 Perfluorooctanoic acid								
413.0 > 369.0	3.408	3.413	-0.005	1.000	1525464	29.5	381	
* 8 13C4 PFOS								
503.0 > 80.0	3.823	3.830	-0.007		938030	28.7	657	
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	3.829	3.835	-0.006	1.000	2120345	63.9	420	M
9 Perfluorononanoic acid								M
463.0 > 419.0	3.835	3.842	-0.007	1.000	1629901	28.0	741	M
\$ 10 13C2 PFDA								
515.0 > 470.0	4.459	4.465	-0.006	1.000	467617	9.61	544	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L5_00023

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_011.d

Injection Date: 11-Jul-2017 14:56:28

Instrument ID: A6

Lims ID: STD L5

Client ID:

Operator ID: JRB

ALS Bottle#: 5

Worklist Smp#: 11

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

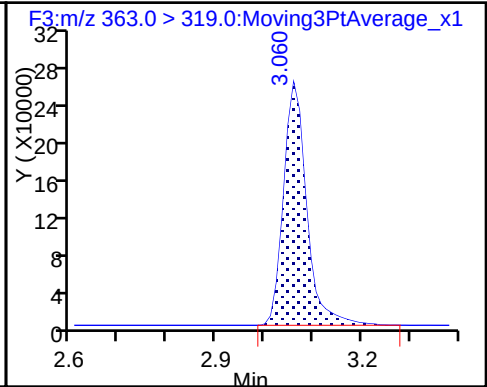
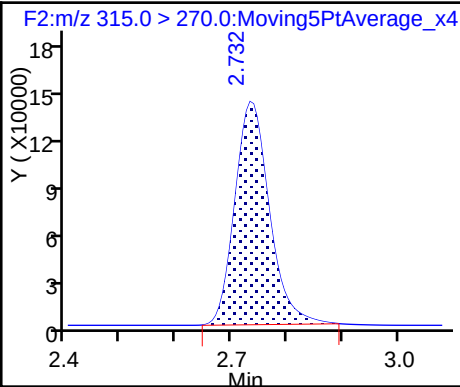
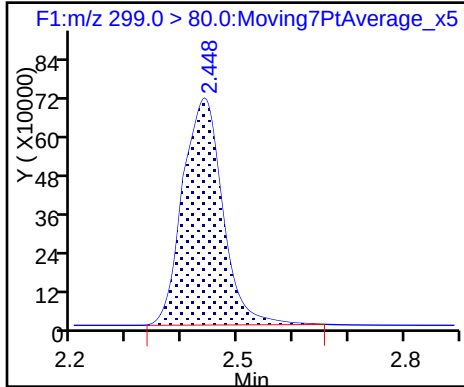
Method: 537__A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

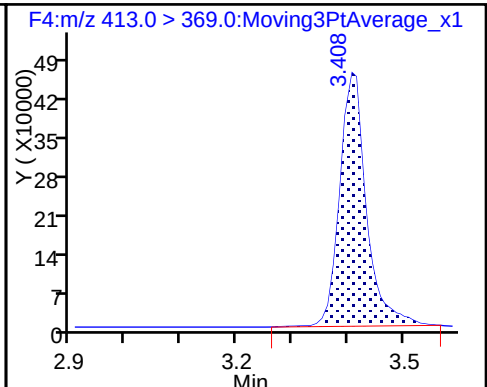
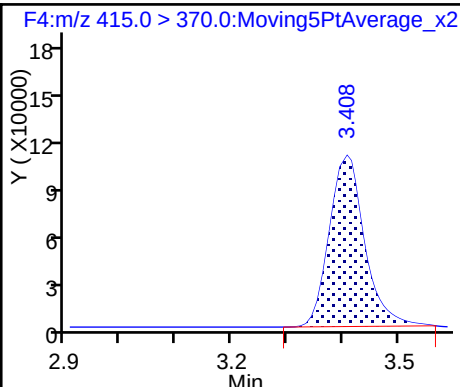
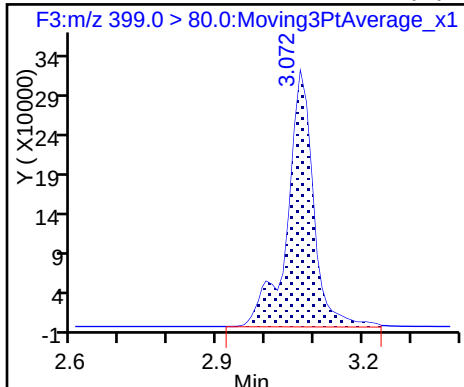
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid (M)

* 5 13C2-PFOA

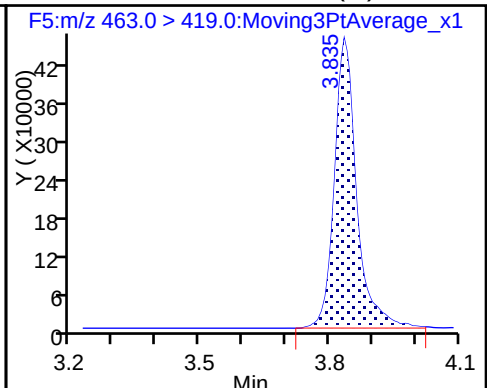
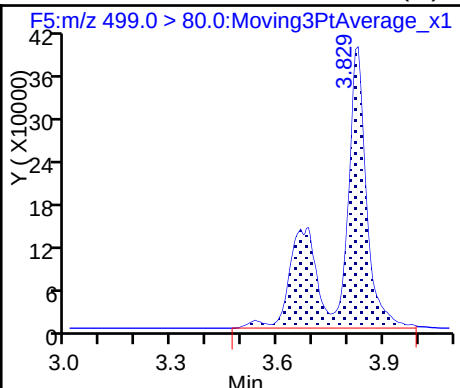
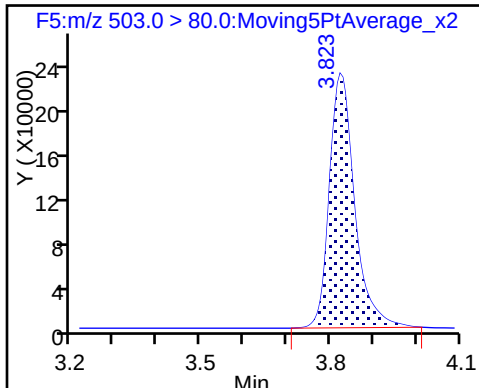
6 Perfluorooctanoic acid



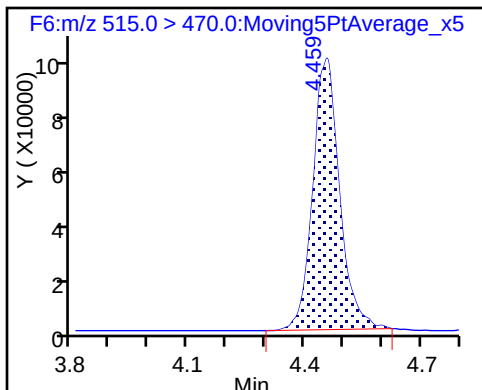
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento

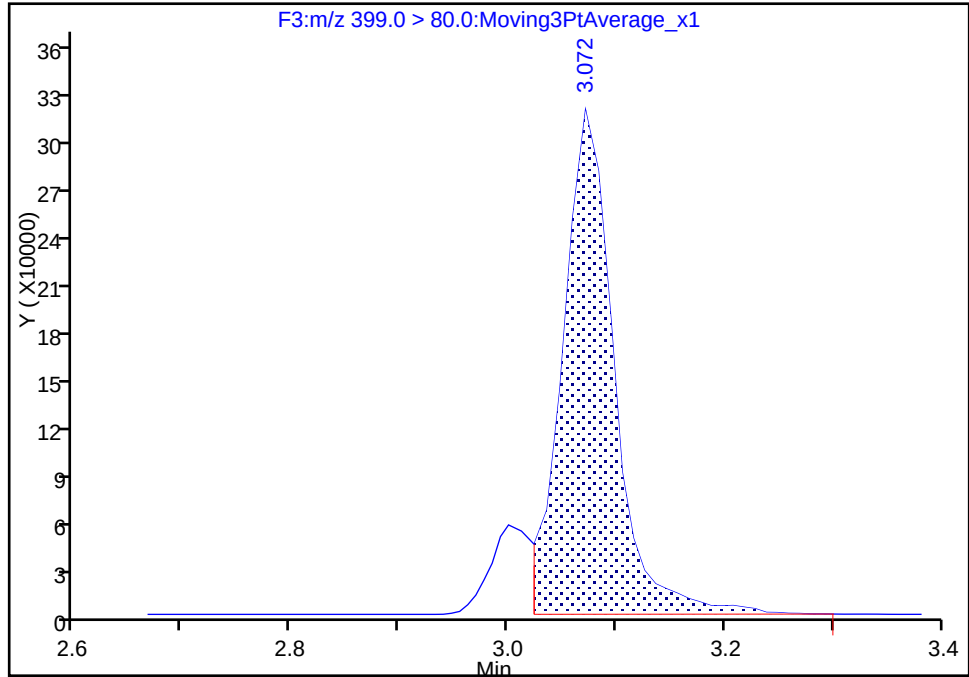
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_011.d
Injection Date: 11-Jul-2017 14:56:28 Instrument ID: A6
Lims ID: STD L5
Client ID:
Operator ID: JRB ALS Bottle#: 5 Worklist Smp#: 11
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F3:MRM

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

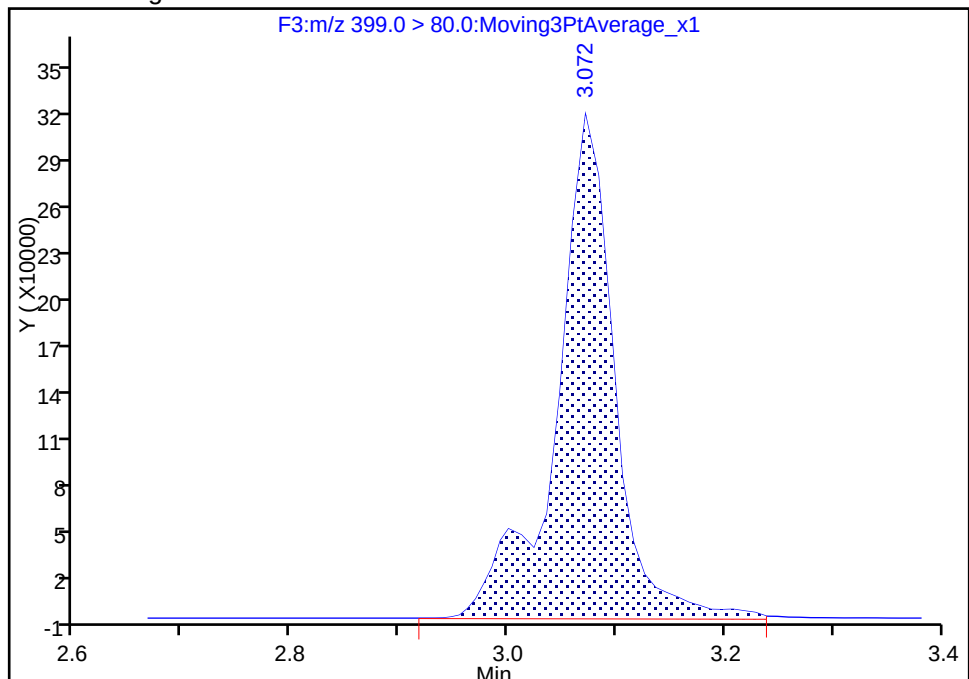
RT: 3.07
Area: 1048365
Amount: 41.849197
Amount Units: ng/ml

Processing Integration Results



RT: 3.07
Area: 1199989
Amount: 45.793024
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:23:25
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 292 of 595

TestAmerica Sacramento

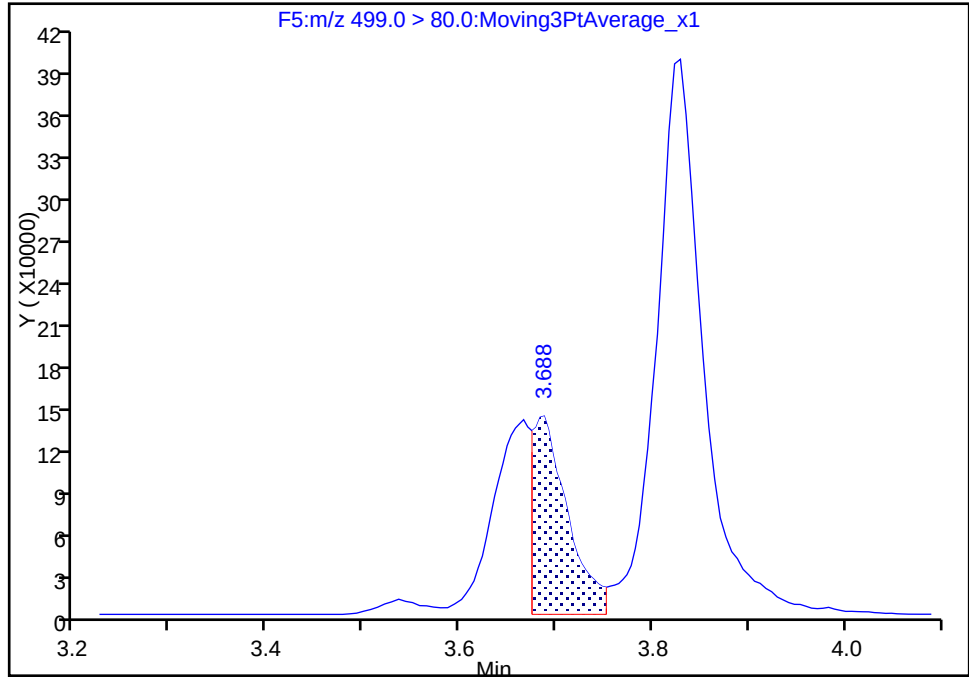
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_011.d
Injection Date: 11-Jul-2017 14:56:28 Instrument ID: A6
Lims ID: STD L5
Client ID:
Operator ID: JRB ALS Bottle#: 5 Worklist Smp#: 11
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

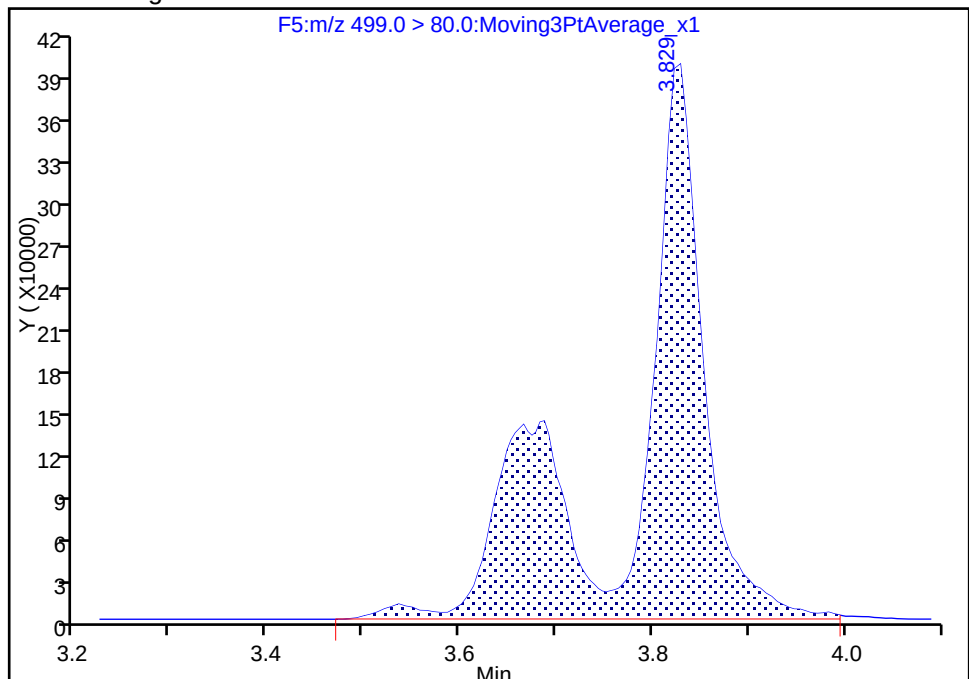
RT: 3.69
Area: 348404
Amount: 17.393123
Amount Units: ng/ml

Processing Integration Results



RT: 3.83
Area: 2120345
Amount: 63.875565
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:23:36

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

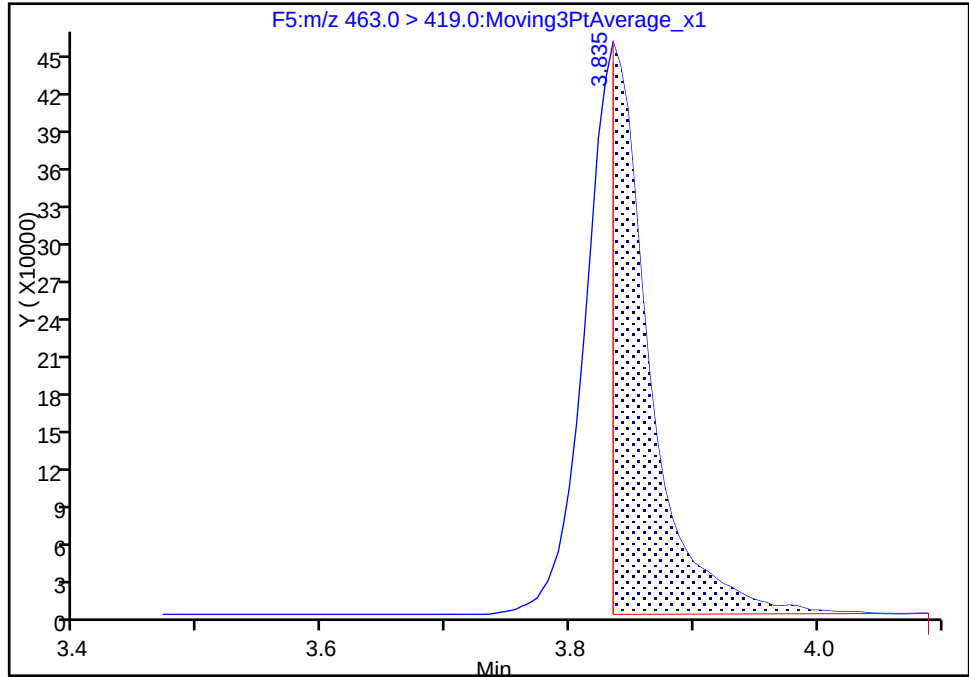
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_011.d
Injection Date: 11-Jul-2017 14:56:28 Instrument ID: A6
Lims ID: STD L5
Client ID:
Operator ID: JRB ALS Bottle#: 5 Worklist Smp#: 11
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

9 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

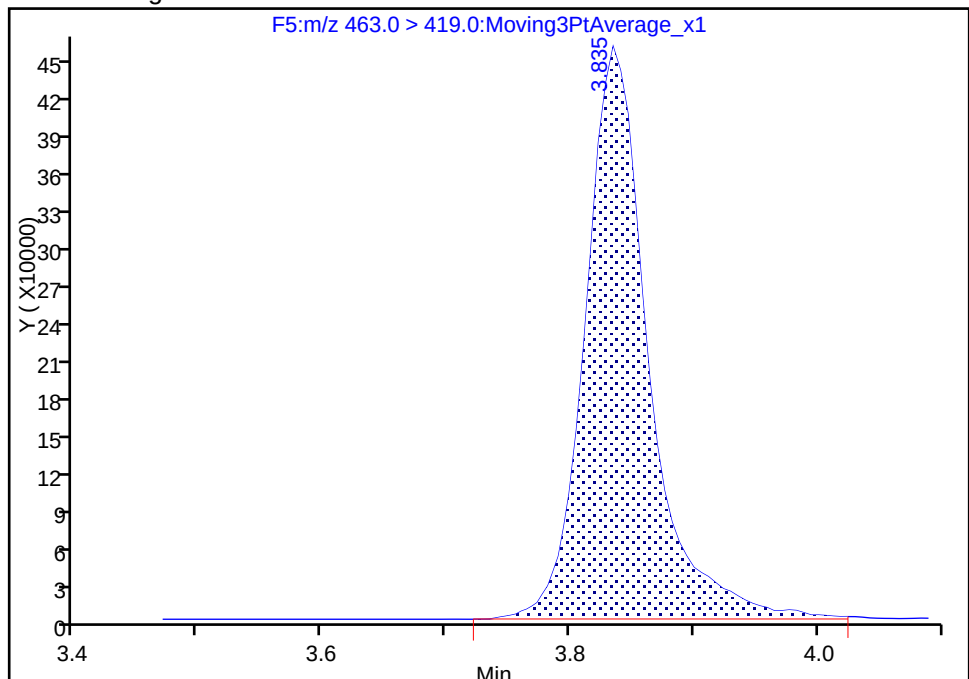
RT: 3.83
Area: 923222
Amount: 16.986939
Amount Units: ng/ml

Processing Integration Results



RT: 3.83
Area: 1629901
Amount: 27.963892
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:24:00

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Lims ID: STD L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 11-Jul-2017 15:05:33 ALS Bottle#: 6 Worklist Smp#: 12
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: L6_537
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 11-Jul-2017 15:53:36 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 11-Jul-2017 15:25:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								M
299.0 > 80.0	2.452	2.442	0.010	1.000	4732899	188.9	704	M
\$ 2 13C2 PFHxA								
315.0 > 270.0	2.738	2.733	0.005	1.000	676347	10.3	897	
4 Perfluoroheptanoic acid								
363.0 > 319.0	3.060	3.060	0.0	1.000	1046972	19.2	1502	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	3.071	3.071	0.0	1.000	1802638	71.9	1963	M
* 5 13C2-PFOA								
415.0 > 370.0	3.408	3.411	-0.003		469312	10.0	533	
6 Perfluorooctanoic acid								
413.0 > 369.0	3.408	3.413	-0.005	1.000	2219289	43.4	82.9	
* 8 13C4 PFOS								
503.0 > 80.0	3.823	3.830	-0.007		897051	28.7	473	
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	3.829	3.835	-0.006	1.000	2845332	89.6	464	M
9 Perfluorononanoic acid								
463.0 > 419.0	3.835	3.842	-0.007	1.000	2033486	35.3	9504	
\$ 10 13C2 PFDA								
515.0 > 470.0	4.451	4.465	-0.014	1.000	490441	10.2	1016	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L6_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d

Injection Date: 11-Jul-2017 15:05:33

Instrument ID: A6

Lims ID: STD L6

Client ID:

Operator ID: JRB

ALS Bottle#: 6

Worklist Smp#: 12

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

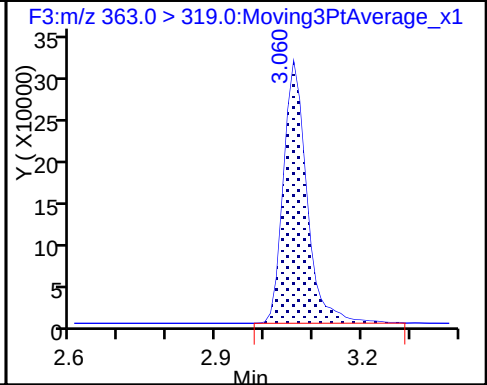
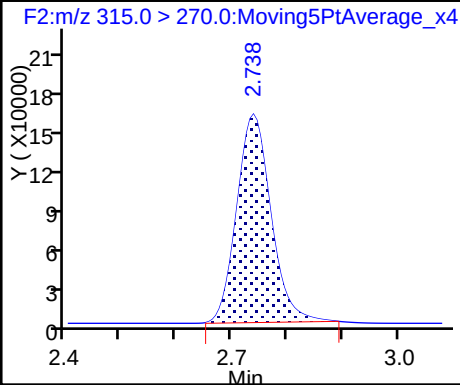
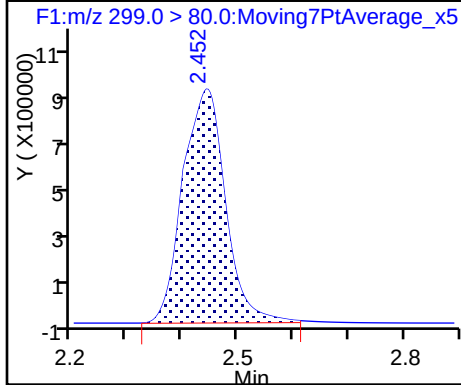
Method: 537__A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (M)

\$ 2 13C2 PFHxA

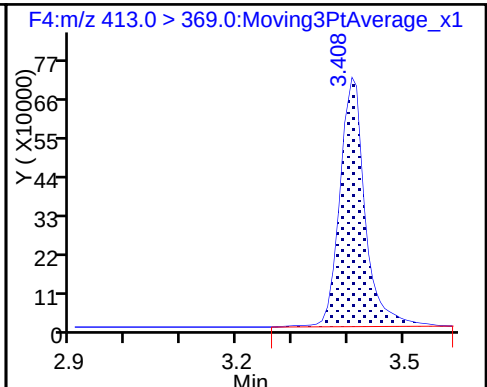
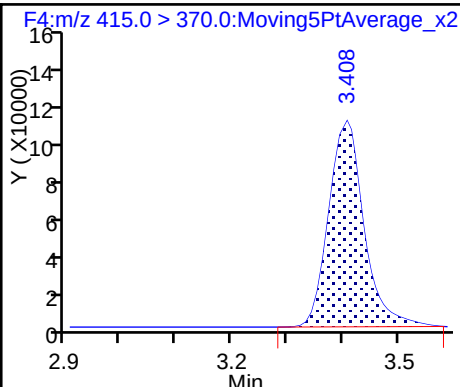
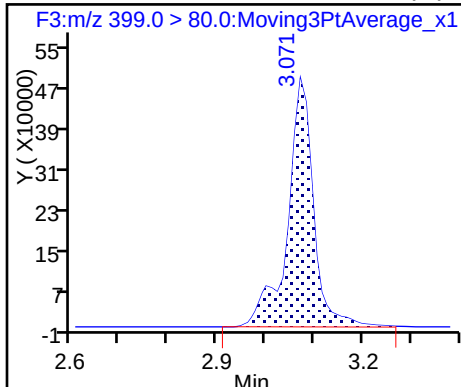
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid (M)

* 5 13C2-PFOA

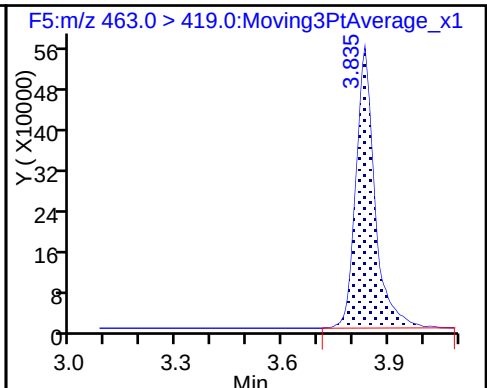
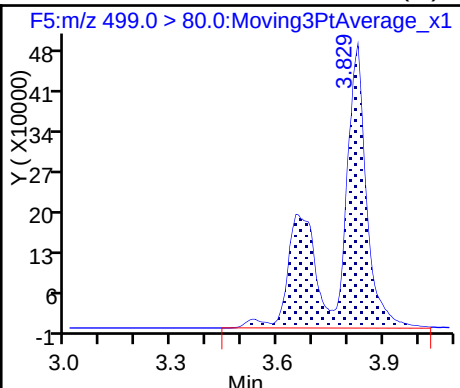
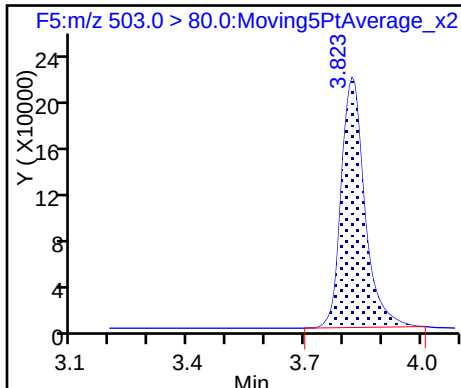
6 Perfluorooctanoic acid



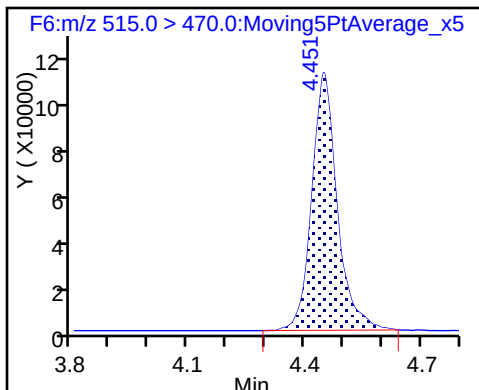
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

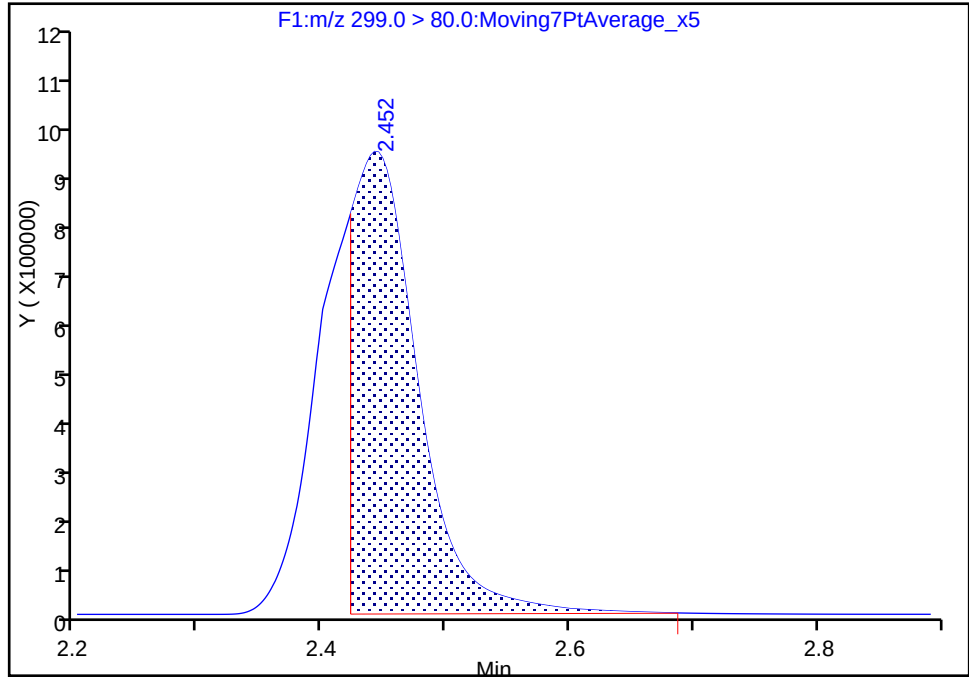
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
Injection Date: 11-Jul-2017 15:05:33 Instrument ID: A6
Lims ID: STD L6
Client ID:
Operator ID: JRB ALS Bottle#: 6 Worklist Smp#: 12
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F1:MRM

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

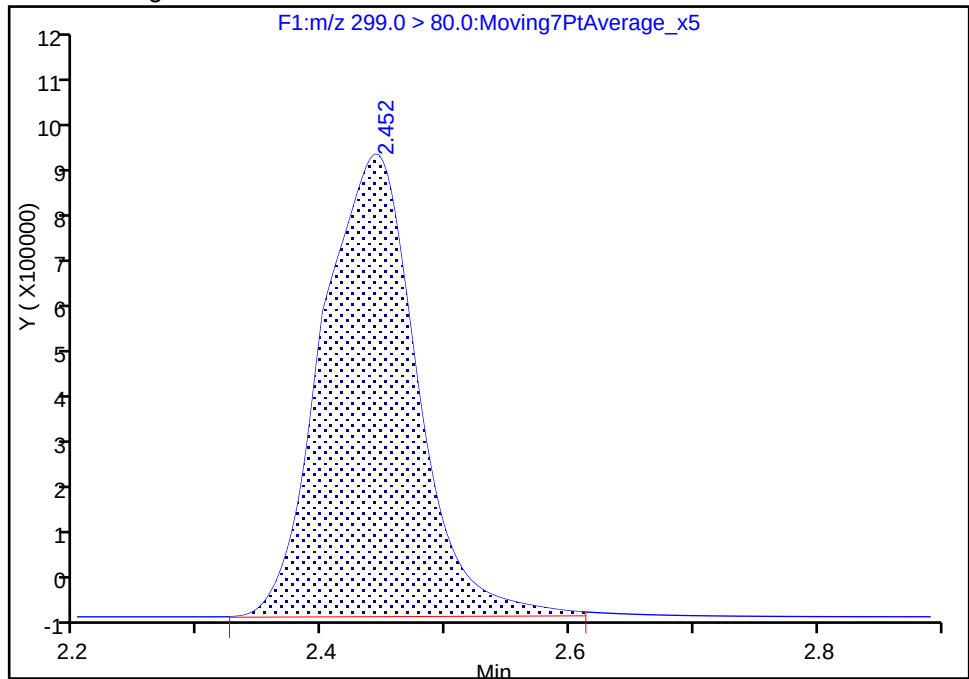
RT: 2.45
Area: 3182709
Amount: 135.6953
Amount Units: ng/ml

Processing Integration Results



RT: 2.45
Area: 4732899
Amount: 188.9125
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:24:20
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

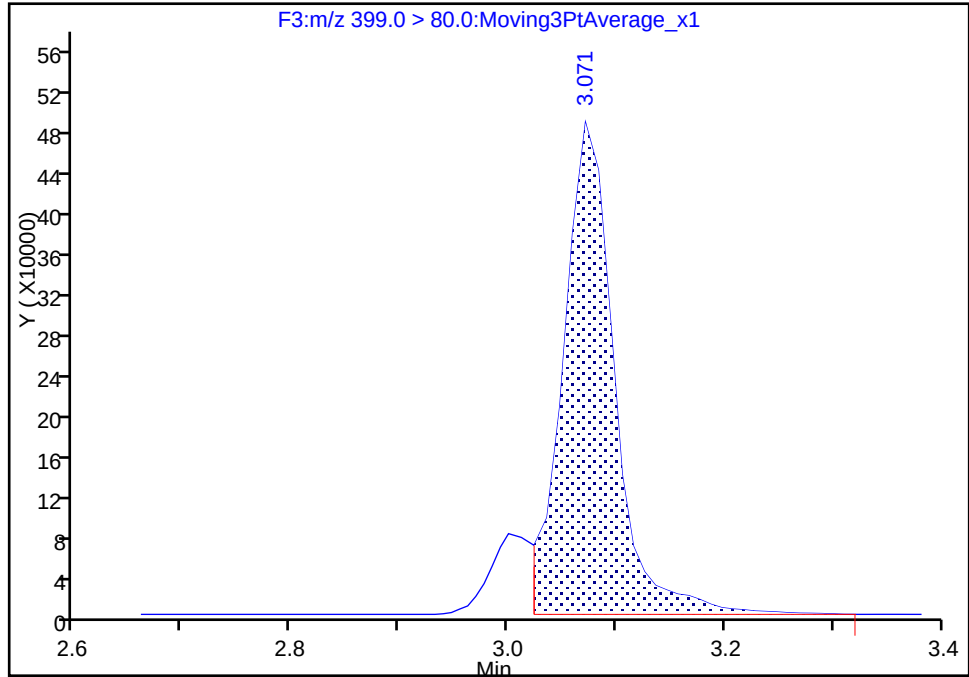
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
Injection Date: 11-Jul-2017 15:05:33 Instrument ID: A6
Lims ID: STD L6
Client ID:
Operator ID: JRB ALS Bottle#: 6 Worklist Smp#: 12
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F3:MRM

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

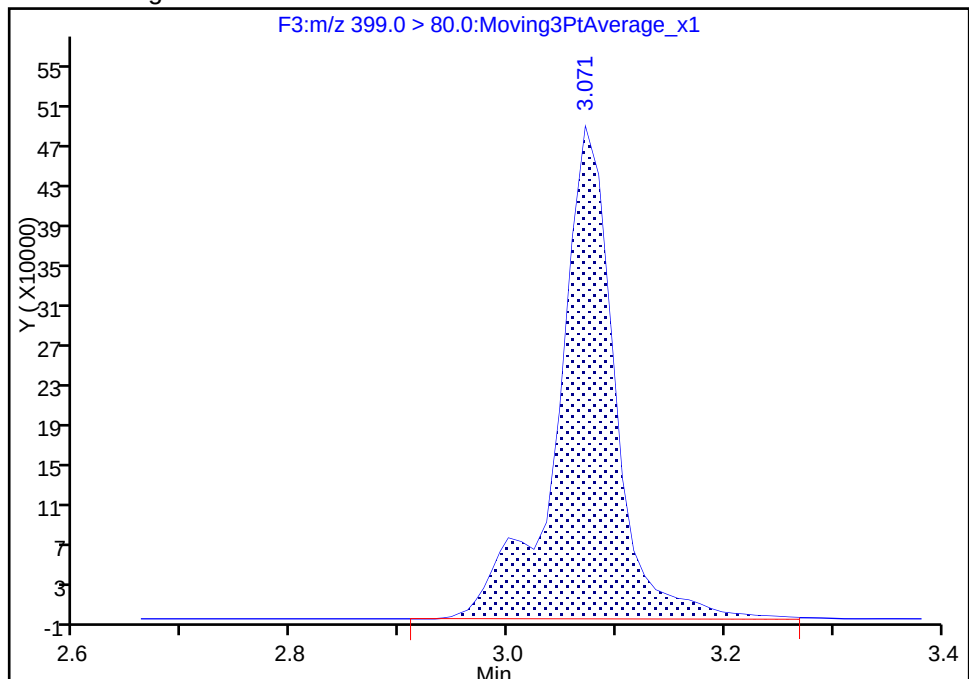
RT: 3.07
Area: 1596855
Amount: 65.197484
Amount Units: ng/ml

Processing Integration Results



RT: 3.07
Area: 1802638
Amount: 71.933332
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:24:50

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

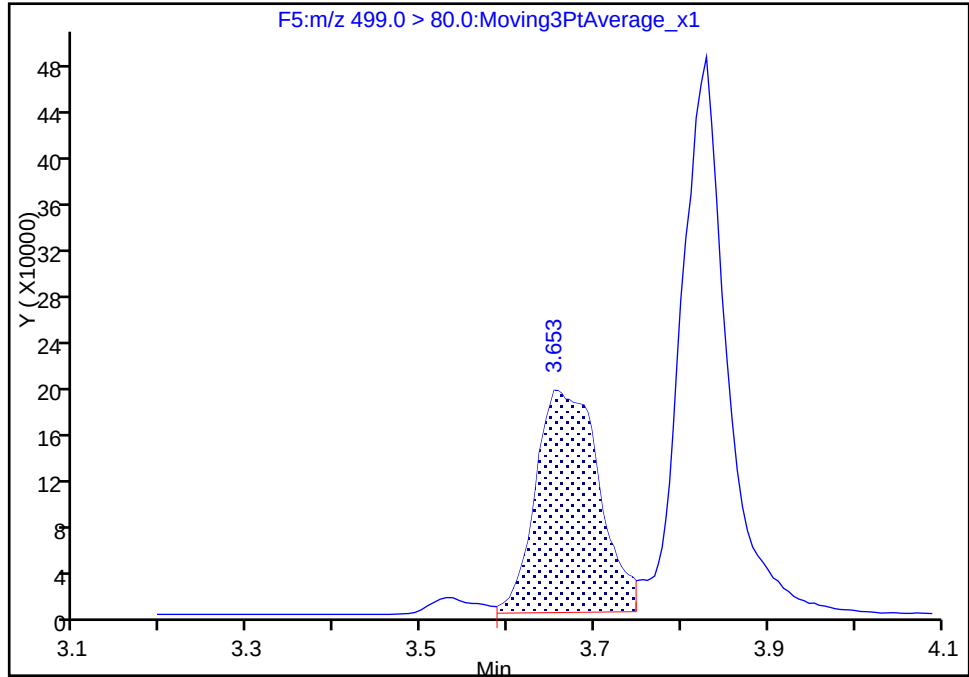
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
Injection Date: 11-Jul-2017 15:05:33 Instrument ID: A6
Lims ID: STD L6
Client ID:
Operator ID: JRB ALS Bottle#: 6 Worklist Smp#: 12
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

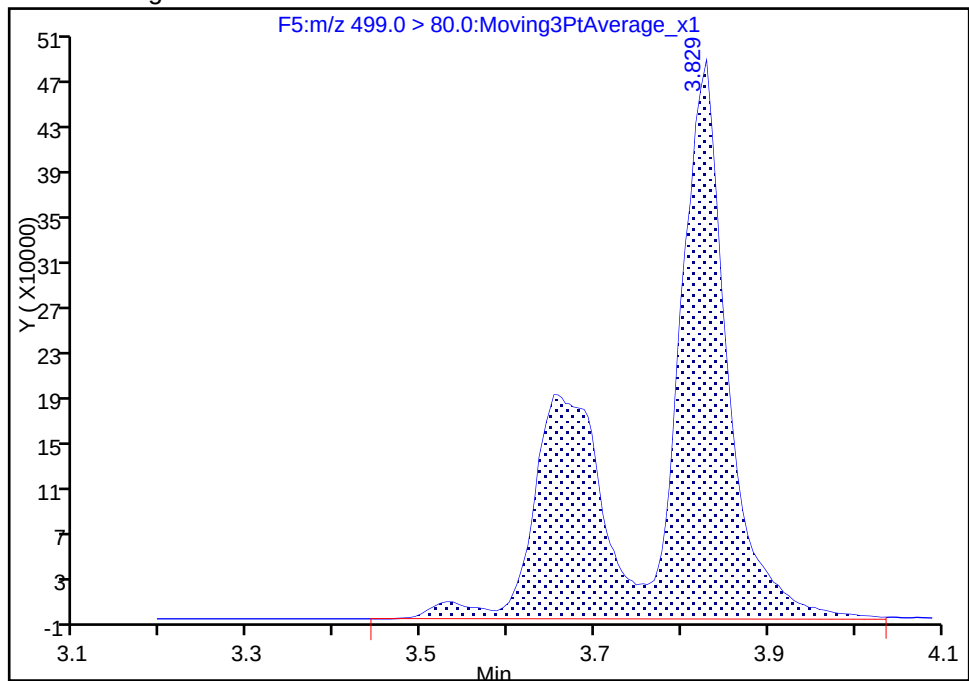
RT: 3.65
Area: 974180
Amount: 40.830350
Amount Units: ng/ml

Processing Integration Results



RT: 3.83
Area: 2845332
Amount: 89.631520
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:25:02

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 169955

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/19/2017 17:40 Calibration End Date: 06/19/2017 18:04 Calibration ID: 31800

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-169955/4	2017.06.19_537A_ICAL_004.d
Level 2	IC 320-169955/5	2017.06.19_537A_ICAL_005.d
Level 3	IC 320-169955/6	2017.06.19_537A_ICAL_006.d
Level 4	IC 320-169955/7	2017.06.19_537A_ICAL_007.d
Level 5	IC 320-169955/8	2017.06.19_537A_ICAL_008.d
Level 6	IC 320-169955/9	2017.06.19_537A_ICAL_009.d

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								
Perfluorobutanesulfonic acid (PFBS)	0.8507 0.7713	0.9245	0.9209	0.8993	0.8202	Ave		0.8645				7.1		30.0			
Perfluorohexanesulfonic acid (PFHxS)	1.0986 1.2032	1.1398	1.1650	1.2147	1.1817	Ave		1.1672				3.7		30.0			
Perfluoroheptanoic acid (PFHpA)	0.7891 0.8718	0.8248	0.8229	0.8642	0.8866	Ave		0.8433				4.4		30.0			
Perfluorooctanoic acid (PFOA)	0.8301 0.8992	0.8817	0.8545	0.8779	0.9114	Ave		0.8758				3.4		30.0			
Perfluorooctanesulfonic acid (PFOS)	0.9620 1.0275	1.0017	1.0209	1.0440	1.0387	Ave		1.0158				3.0		30.0			
Perfluorononanoic acid (PFNA)	0.8823 0.8046	0.8981	0.8287	0.8656	0.8391	Ave		0.8531				4.1		30.0			
13C2 PFHxA	0.9940 1.0771	1.0270	1.0324	1.0293	1.0661	Ave		1.0377				2.9		30.0			
13C2 PFDA	0.9372 1.0284	0.9499	0.8947	0.9980	0.9652	Ave		0.9622				4.9		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 169955

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/19/2017 17:40 Calibration End Date: 06/19/2017 18:04 Calibration ID: 31800

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-169955/4	2017.06.19_537A_ICAL_004.d
Level 2	IC 320-169955/5	2017.06.19_537A_ICAL_005.d
Level 3	IC 320-169955/6	2017.06.19_537A_ICAL_006.d
Level 4	IC 320-169955/7	2017.06.19_537A_ICAL_007.d
Level 5	IC 320-169955/8	2017.06.19_537A_ICAL_008.d
Level 6	IC 320-169955/9	2017.06.19_537A_ICAL_009.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
Perfluorobutanesulfonic acid (PFBS)	PFOS	Ave	2332510 46244402	5989080	14078909	23681909	35795970	8.83 176	21.2	44.4	89.4	133
Perfluorohexanesulfonic acid (PFHxS)	PFOS	Ave	1024970 24546576	2512643	6060498	10884436	17549225	3.01 59.7	7.21	15.1	30.4	45.1
Perfluoroheptanoic acid (PFHpA)	13PF OA	Ave	289244 7166616	730235	1714811	3092048	5084081	0.990 19.7	2.38	4.97	10.0	14.9
Perfluorooctanoic acid (PFOA)	13PF OA	Ave	614079 14918357	1575504	3593653	6339348	10547603	2.00 39.7	4.80	10.0	20.2	30.0
Perfluorooctanesulfonic acid (PFOS)	PFOS	Ave	1195186 27918279	2940776	7072765	12458294	20543461	4.00 79.6	9.61	20.1	40.5	60.0
Perfluorononanoic acid (PFNA)	13PF OA	Ave	629127 12866660	1546914	3359467	6025078	9360498	1.93 38.3	4.62	9.68	19.5	28.9
13C2 PFHxA	13PF OA	Ave	3680309 4499723	3826956	4324388	3674058	4116656	10.0 10.0	10.0	10.0	10.0	10.0
13C2 PFDA	13PF OA	Ave	3469979 4296473	3539389	3747801	3562371	3726982	10.0 10.0	10.0	10.0	10.0	10.0

Curve Type Legend:

Ave = Average ISTD

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 169955

SDG No.: _____

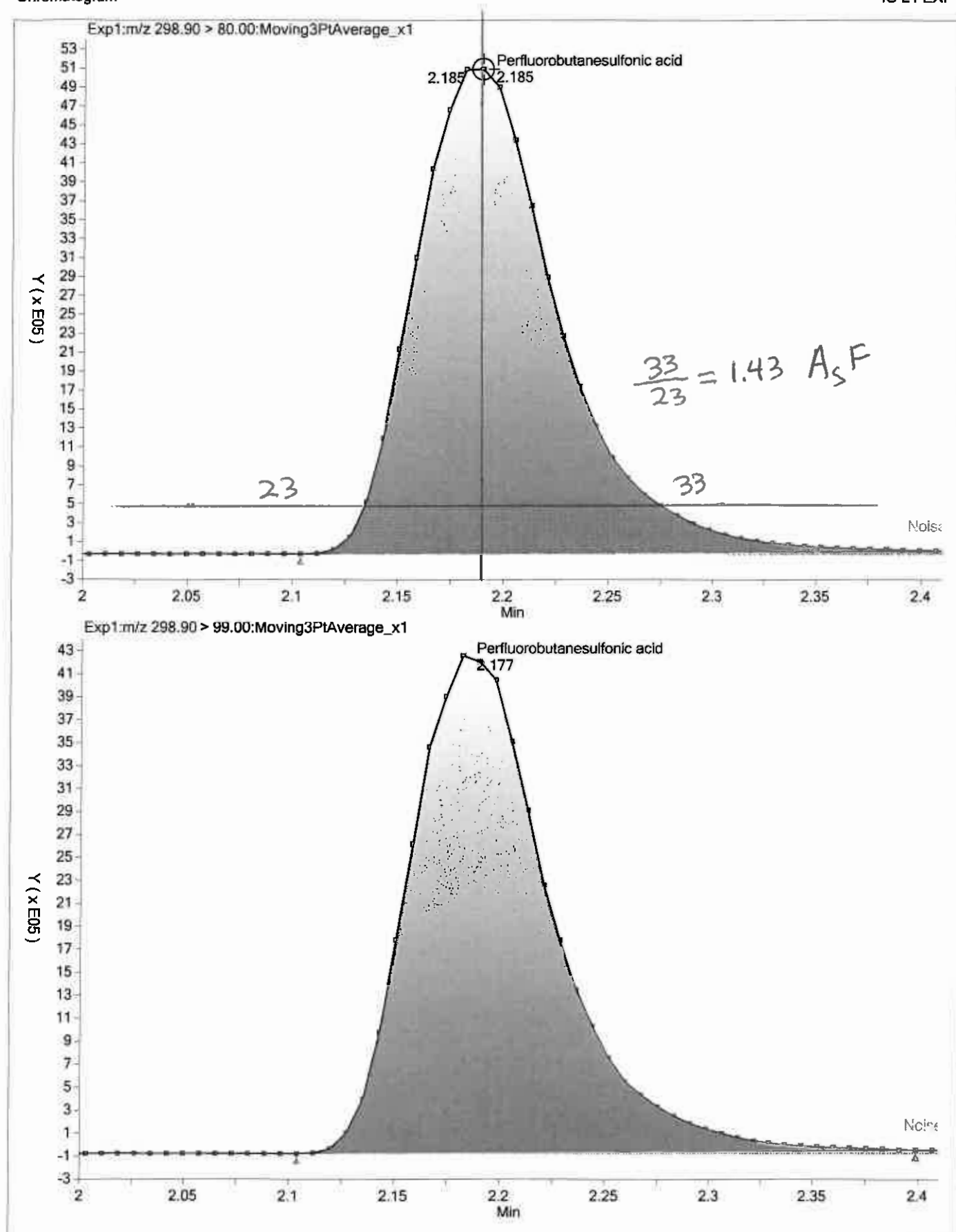
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

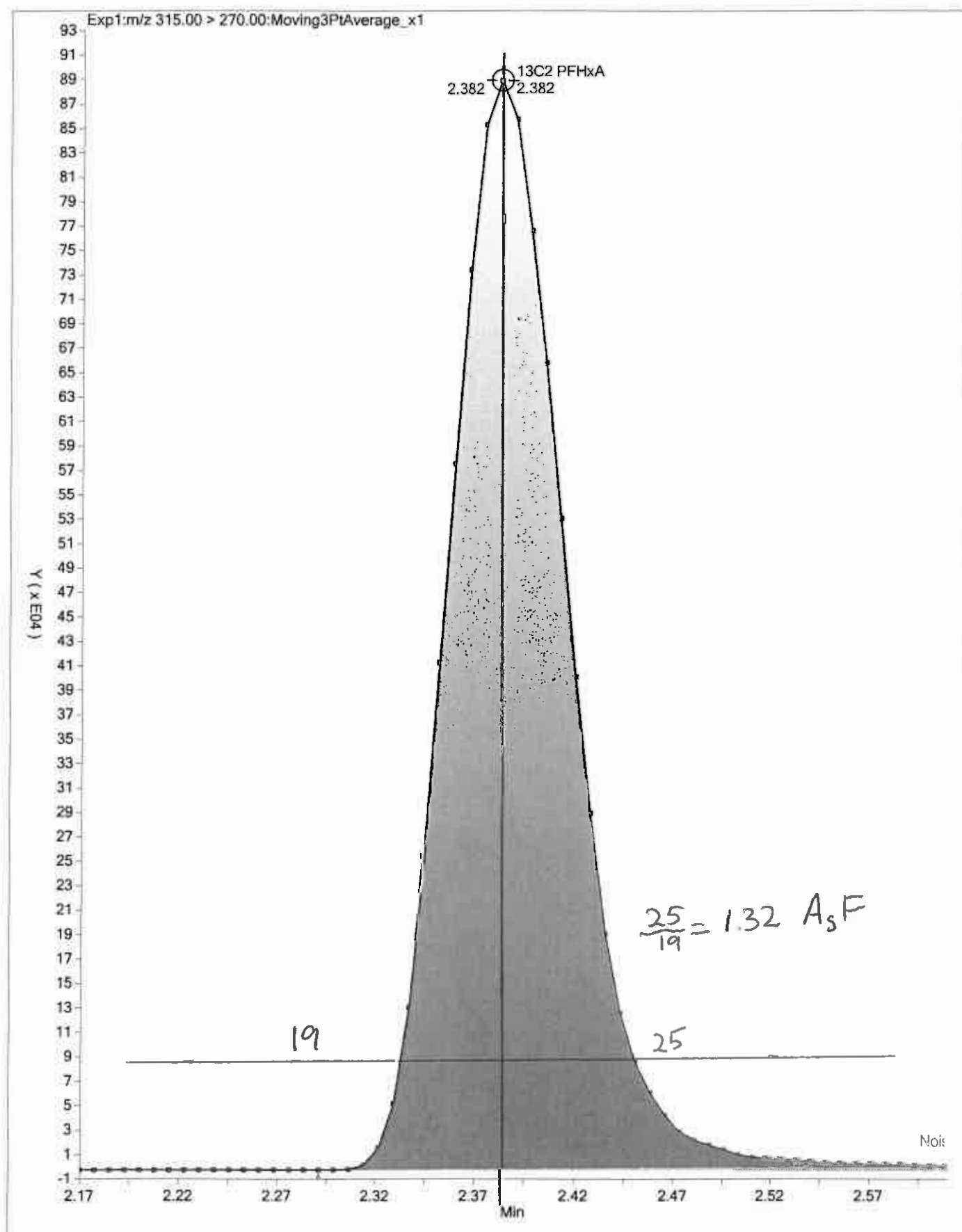
Calibration Start Date: 06/19/2017 17:40 Calibration End Date: 06/19/2017 18:04 Calibration ID: 31800

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-169955/4	2017.06.19_537A_ICAL_004.d
Level 2	IC 320-169955/5	2017.06.19_537A_ICAL_005.d
Level 3	IC 320-169955/6	2017.06.19_537A_ICAL_006.d
Level 4	IC 320-169955/7	2017.06.19_537A_ICAL_007.d
Level 5	IC 320-169955/8	2017.06.19_537A_ICAL_008.d
Level 6	IC 320-169955/9	2017.06.19_537A_ICAL_009.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanesulfonic acid (PFBS)	-1.6	6.9	6.5	4.0	-5.1	-10.8	50	50	50	50	50	50
Perfluorohexanesulfonic acid (PFHxS)	-5.9	-2.3	-0.2	4.1	1.2	3.1	50	50	50	50	50	50
Perfluoroheptanoic acid (PFHpA)	-6.4	-2.2	-2.4	2.5	5.1	3.4	50	50	50	50	50	50
Perfluorooctanoic acid (PFOA)	-5.2	0.7	-2.4	0.2	4.1	2.7	50	50	50	50	50	50
Perfluorooctanesulfonic acid (PFOS)	-5.3	-1.4	0.5	2.8	2.3	1.2	50	50	50	50	50	50
Perfluorononanoic acid (PFNA)	3.4	5.3	-2.9	1.5	-1.6	-5.7	50	50	50	50	50	50
13C2 PFHxA	-4.2	-1.0	-0.5	-0.8	2.7	3.8	30	30	30	30	30	30
13C2 PFDA	-2.6	-1.3	-7.0	3.7	0.3	6.9	30	30	30	30	30	30





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_004.d
 Lims ID: IC L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 19-Jun-2017 17:40:57 ALS Bottle#: 1 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L1_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jun-2017 10:57:40 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK019

First Level Reviewer: phomsophat

Date: 19-Jun-2017 19:22:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.177	2.183	-0.006	1.000	2332510	8.69		505	
298.90 > 99.00	2.185	2.183	0.002	1.003	1908008		1.22(0.00-0.00)	450	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.382	2.381	0.001	1.000	3680309	9.58		3596	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.633	2.625	0.008	1.000	1024970	2.83		411	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.633	2.630	0.003	1.000	289244	0.9264		43.6	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.860	2.859	0.001	1.000	614079	1.89		110	
413.00 > 169.00	2.860	2.859	0.001	1.000	349047		1.76(0.00-0.00)	389	
* 6 13C2-PFOA									
415.00 > 370.00	2.860	2.859	0.001		3702444	10.0		7418	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.989	2.982	0.007	1.000	1195186	3.79		3927	
499.00 > 99.00	2.989	2.982	0.007	1.000	252400		4.74(0.00-0.00)	772	
* 7 13C4 PFOS									
503.00 > 80.00	2.989	2.991	-0.002		8901064	28.7		12694	
9 Perfluorononanoic acid									
463.00 > 419.00	3.004	3.003	0.001	1.000	629127	1.99		317	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.126	3.123	0.003	1.000	3469979	9.74		12506	

Reagents:

LC537-L1_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_004.d

Injection Date: 19-Jun-2017 17:40:57

Instrument ID: A8_N

Lims ID: IC L1

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

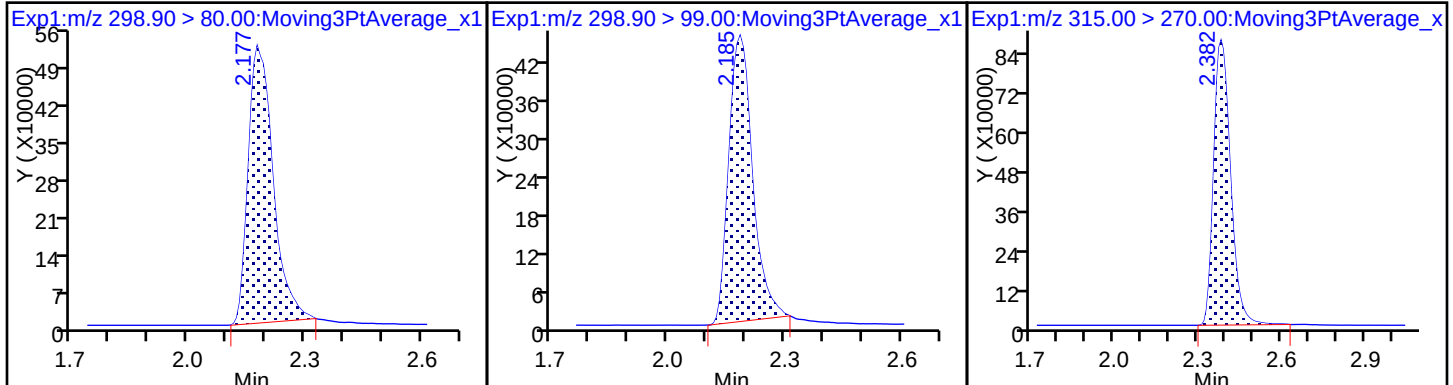
Method: 537_A8_N

Limit Group: LC 537 ICA

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

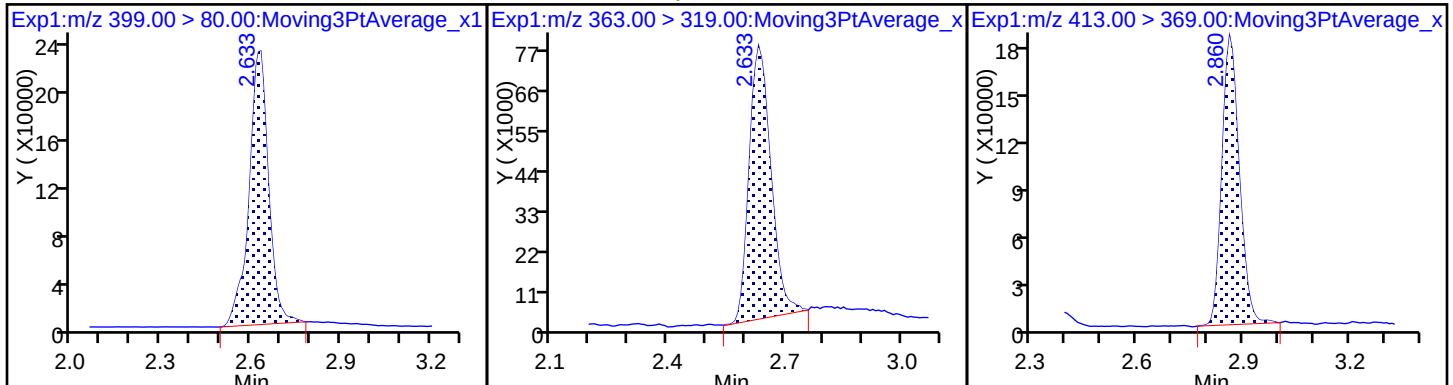
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

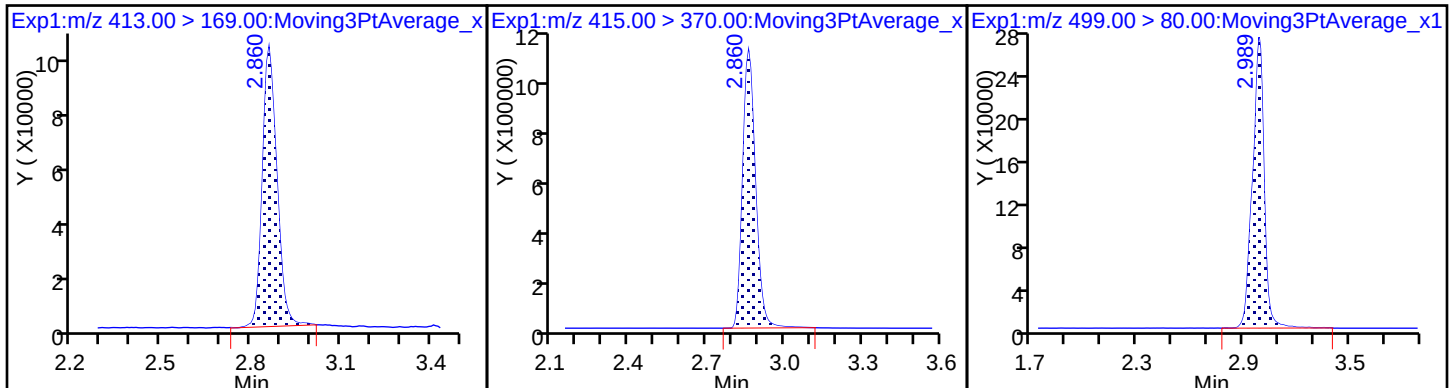
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

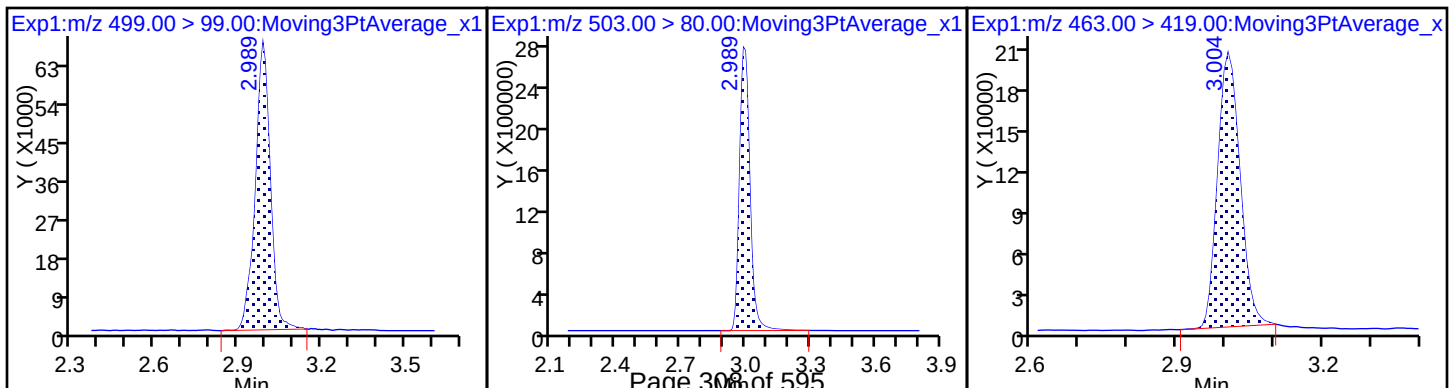
8 Perfluorooctane sulfonic acid



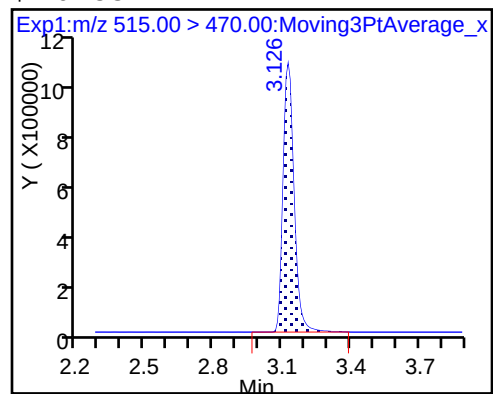
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_005.d
 Lims ID: IC L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 19-Jun-2017 17:45:45 ALS Bottle#: 2 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L2_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jun-2017 10:57:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK019

First Level Reviewer: phomsophat

Date: 19-Jun-2017 19:22:53

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.185	2.183	0.002	1.000	5989080	22.7		1091	
298.90 > 99.00	2.185	2.183	0.002	1.000	4863302		1.23(0.00-0.00)	925	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.382	2.381	0.001	1.000	3826956	9.90		4102	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.625	2.625	0.0	1.000	2512643	7.05		933	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.633	2.630	0.003	1.000	730235	2.32		97.2	
* 6 13C2-PFOA									
415.00 > 370.00	2.860	2.859	0.001		3726225	10.0		7660	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.860	2.859	0.001	1.000	1575504	4.83		271	
413.00 > 169.00	2.860	2.859	0.001	1.000	868749		1.81(0.00-0.00)	913	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.989	2.982	0.007	1.000	2940776	9.47		8105	
499.00 > 99.00	2.989	2.982	0.007	1.000	644706		4.56(0.00-0.00)	1875	
* 7 13C4 PFOS									
503.00 > 80.00	2.997	2.991	0.006		8763141	28.7		16058	
9 Perfluorononanoic acid									
463.00 > 419.00	3.004	3.003	0.001	1.000	1546914	4.87		742	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.126	3.123	0.003	1.000	3539389	9.87		10257	

Reagents:

LC537-L2_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_005.d

Injection Date: 19-Jun-2017 17:45:45

Instrument ID: A8_N

Lims ID: IC L2

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

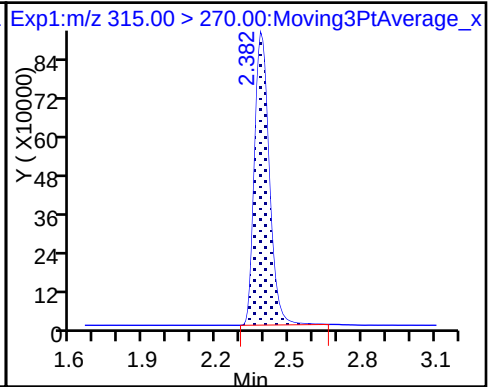
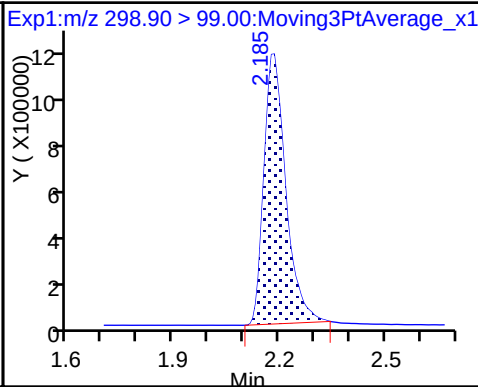
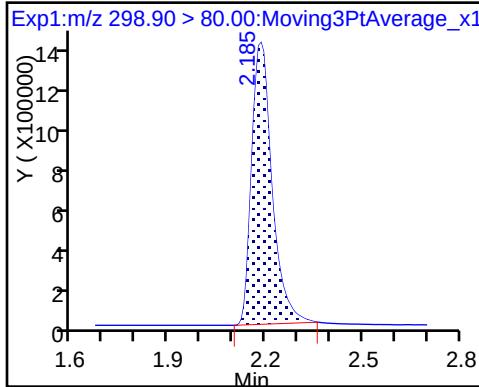
Method: 537_A8_N

Limit Group: LC 537 ICA

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

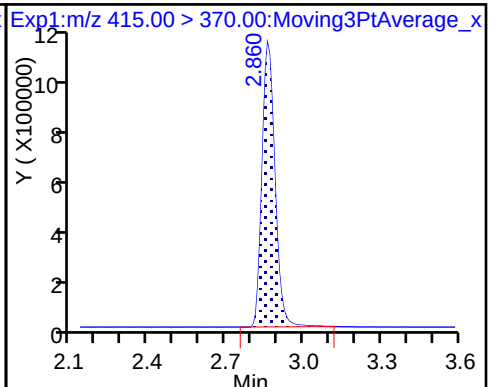
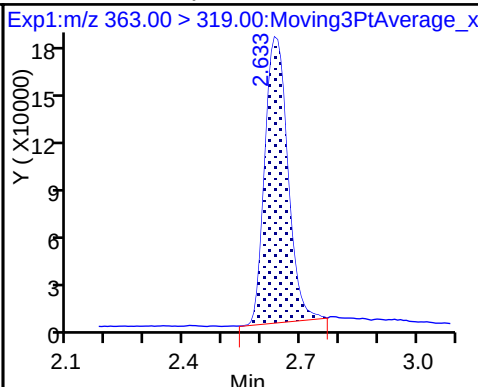
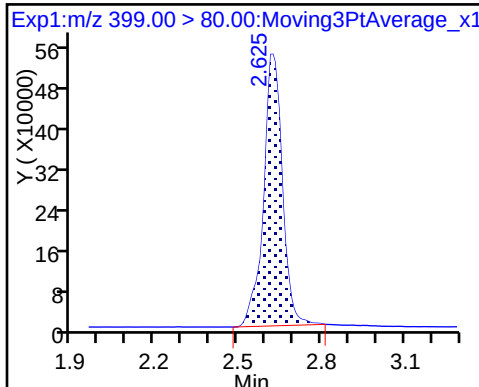
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

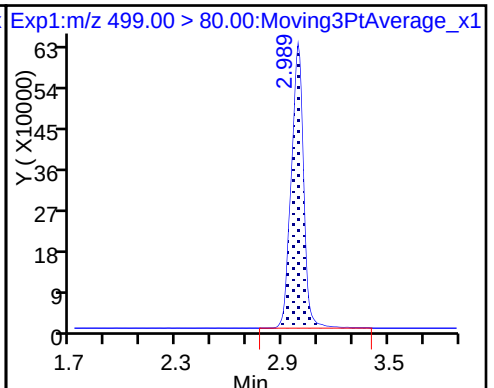
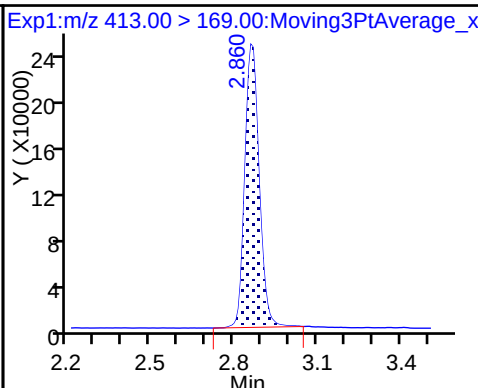
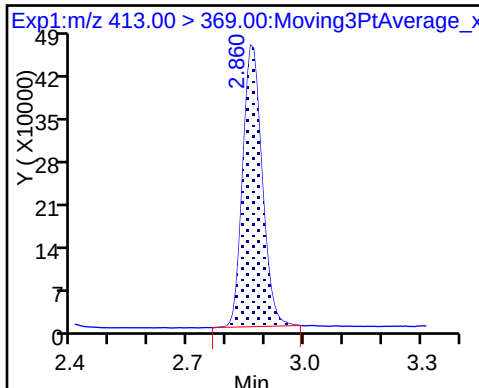
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

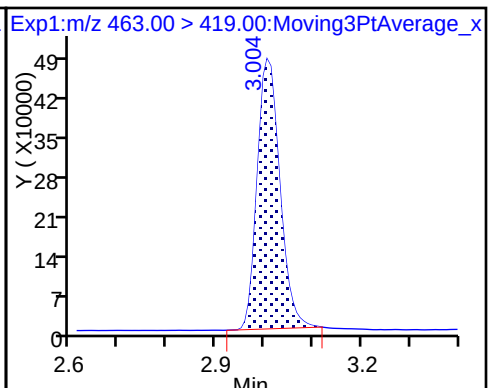
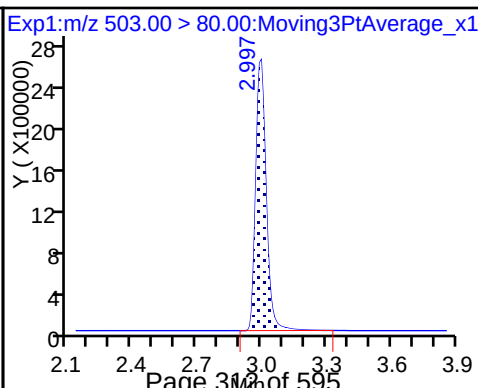
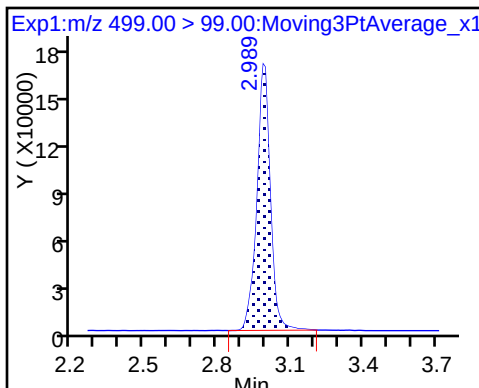
8 Perfluorooctane sulfonic acid



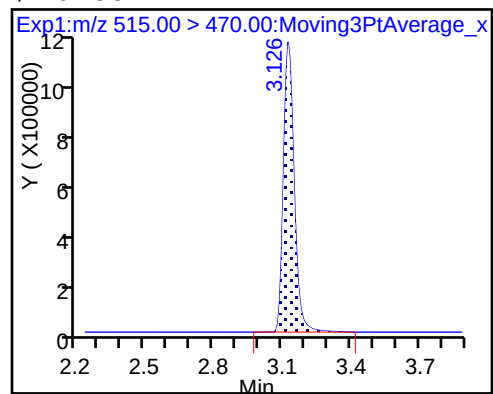
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_006.d
 Lims ID: IC L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 19-Jun-2017 17:50:31 ALS Bottle#: 3 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L3_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jun-2017 10:57:42 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK019

First Level Reviewer: phomsophat

Date: 19-Jun-2017 19:23:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.177	2.183	-0.006	1.000	14078909	47.3		1725	
298.90 > 99.00	2.177	2.183	-0.006	1.000	11416286		1.23(0.00-0.00)	1531	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.375	2.381	-0.006	1.000	4324388	9.95		4628	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.625	2.625	0.0	1.000	6060498	15.1		2120	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.625	2.630	-0.005	1.000	1714811	4.85		230	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.860	2.859	0.001	1.000	3593653	9.80		599	
413.00 > 169.00	2.860	2.859	0.001	1.000	2004974		1.79(0.00-0.00)	2034	
* 6 13C2-PFOA									
415.00 > 370.00	2.860	2.859	0.001		4188714	10.0		10342	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.989	2.982	0.007	1.000	7072765	20.2		16591	
499.00 > 99.00	2.989	2.982	0.007	1.000	1570517		4.50(0.00-0.00)	4323	
* 7 13C4 PFOS									
503.00 > 80.00	2.989	2.991	-0.002		9877270	28.7		17530	
9 Perfluorononanoic acid									
463.00 > 419.00	3.004	3.003	0.001	1.000	3359467	9.40		1478	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.126	3.123	0.003	1.000	3747801	9.30		10298	

Reagents:

LC537-L3_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_006.d

Injection Date: 19-Jun-2017 17:50:31

Instrument ID: A8_N

Lims ID: IC L3

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

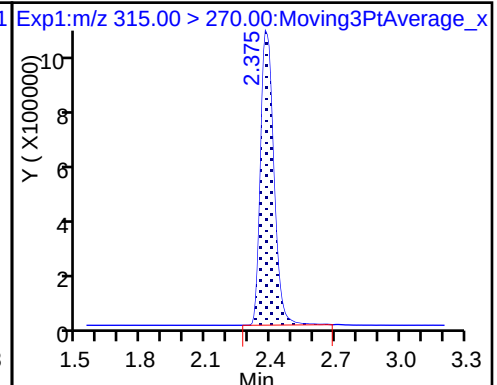
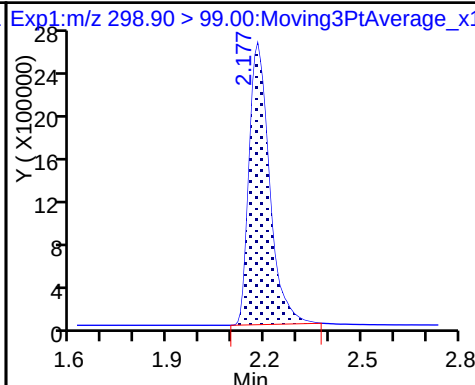
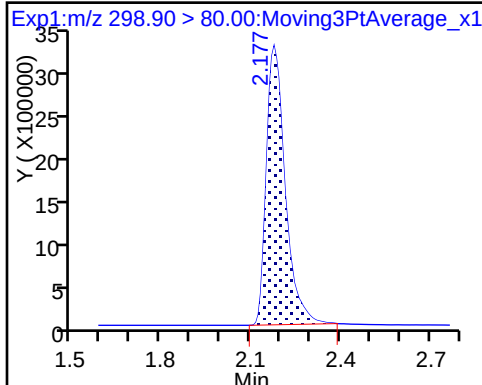
Method: 537_A8_N

Limit Group: LC 537 ICA

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

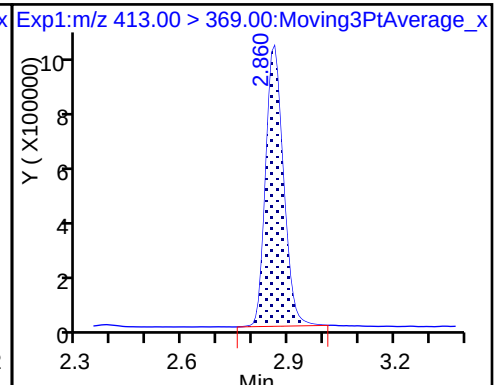
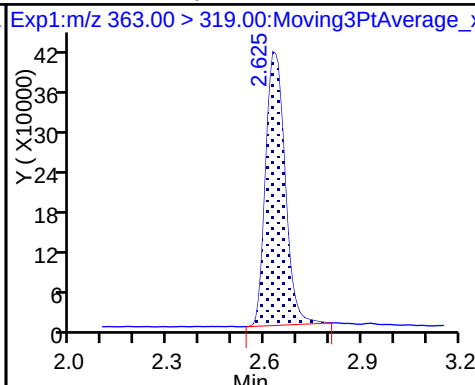
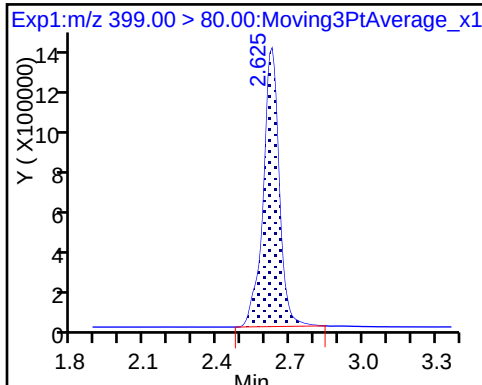
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

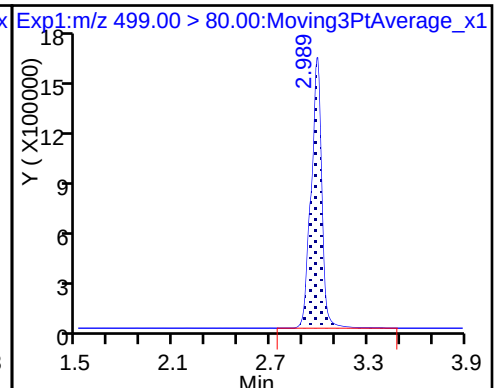
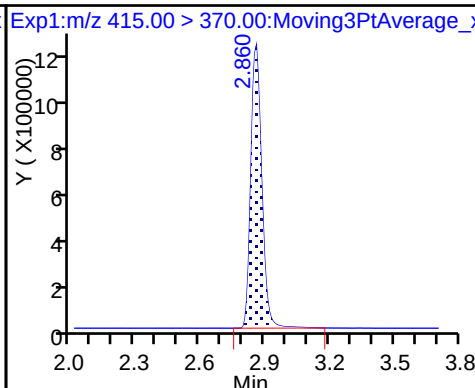
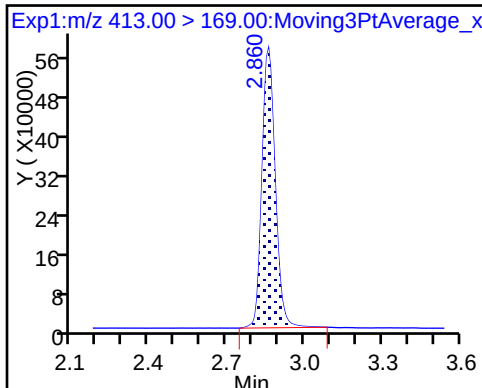
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

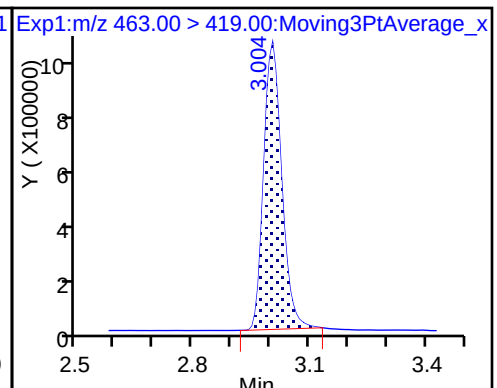
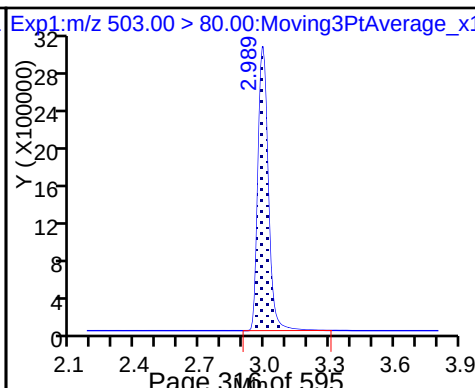
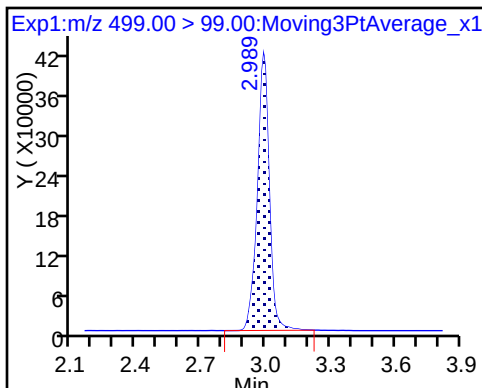
8 Perfluorooctane sulfonic acid



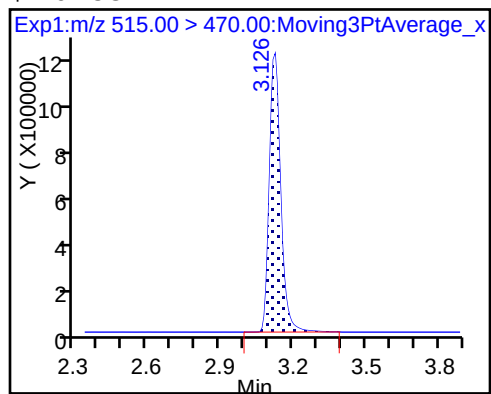
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_007.d
 Lims ID: IC L4
 Client ID:
 Sample Type: ICISAV Calib Level: 4
 Inject. Date: 19-Jun-2017 17:55:14 ALS Bottle#: 4 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L4_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jun-2017 10:57:43 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK019

First Level Reviewer: phomsophat

Date: 19-Jun-2017 19:22:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.185	2.183	0.002	1.000	23681909	93.0		2103	
298.90 > 99.00	2.177	2.183	-0.006	0.997	19279111		1.23(0.00-0.00)	1851	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.382	2.381	0.001	1.000	3674058	9.92		3533	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.625	2.625	0.0	1.000	10884436	31.7		2979	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.633	2.630	0.003	1.000	3092048	10.3		423	
* 6 13C2-PFOA									
415.00 > 370.00	2.860	2.859	0.001		3569446	10.0		7613	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.860	2.859	0.001	1.000	6339348	20.3		910	
413.00 > 169.00	2.860	2.859	0.001	1.000	3614623		1.75(0.00-0.00)	2747	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.989	2.982	0.007	1.000	12458294	41.7		22549	
499.00 > 99.00	2.989	2.982	0.007	1.000	2773908		4.49(0.00-0.00)	6283	
* 7 13C4 PFOS									
503.00 > 80.00	2.989	2.991	-0.002		8443710	28.7		17037	
9 Perfluorononanoic acid									
463.00 > 419.00	3.004	3.003	0.001	1.000	6025078	19.8		2149	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.126	3.123	0.003	1.000	3562371	10.4		8880	

Reagents:

LC537-L4_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_007.d

Injection Date: 19-Jun-2017 17:55:14

Instrument ID: A8_N

Lims ID: IC L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 4

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

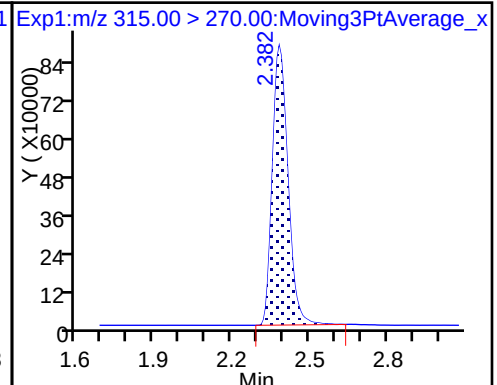
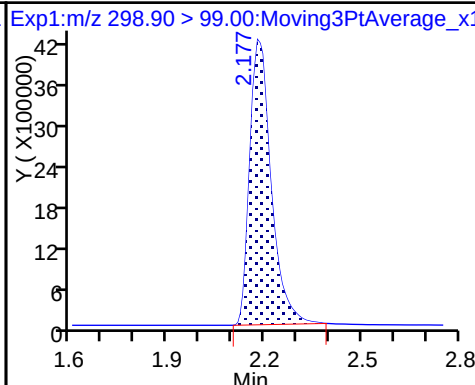
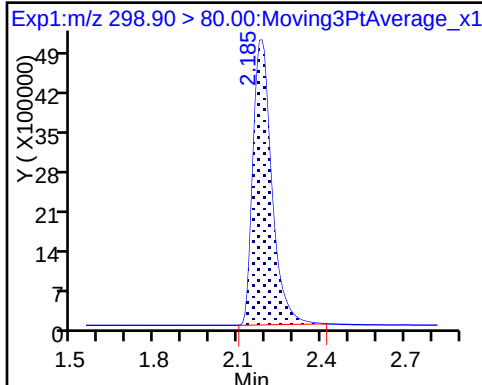
Method: 537_A8_N

Limit Group: LC 537 ICA

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

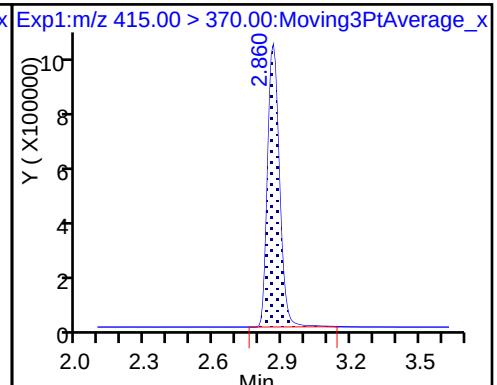
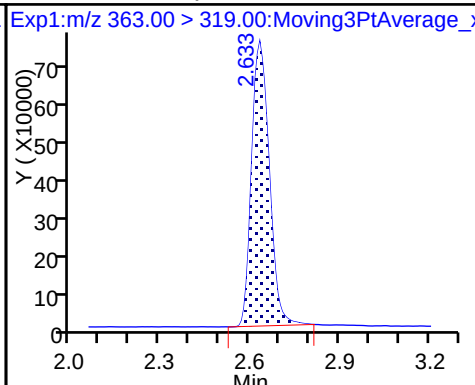
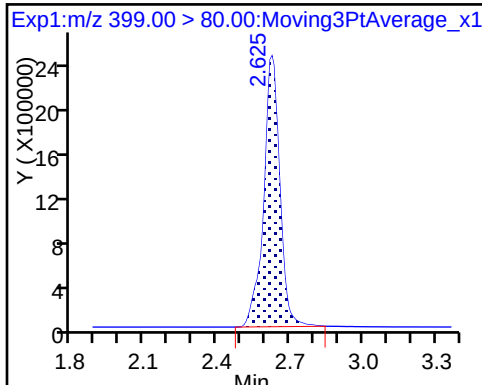
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

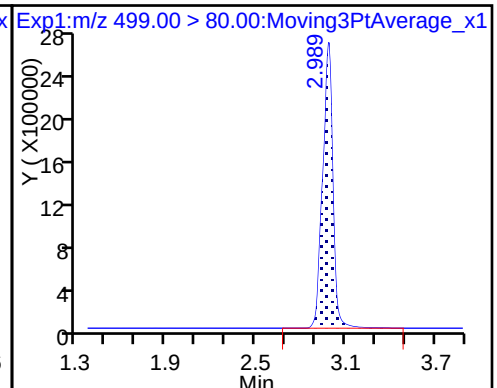
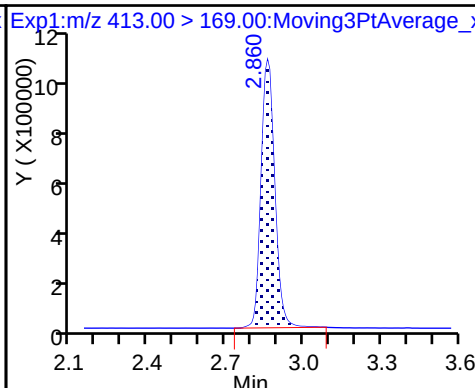
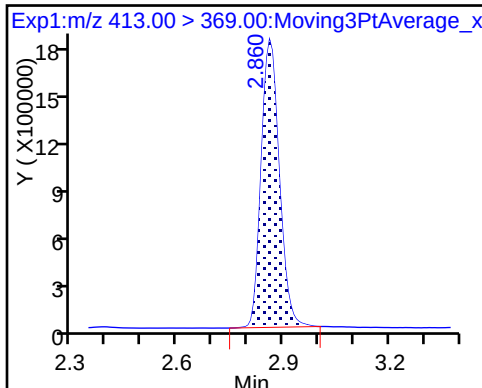
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

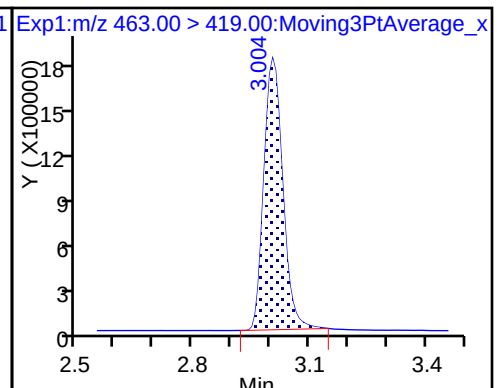
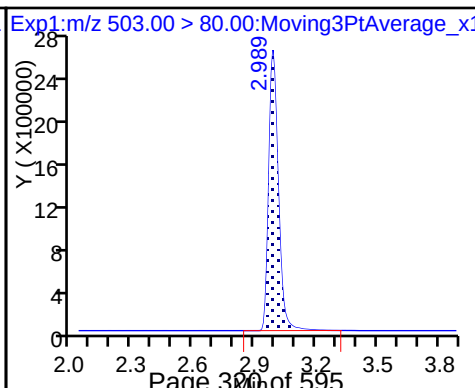
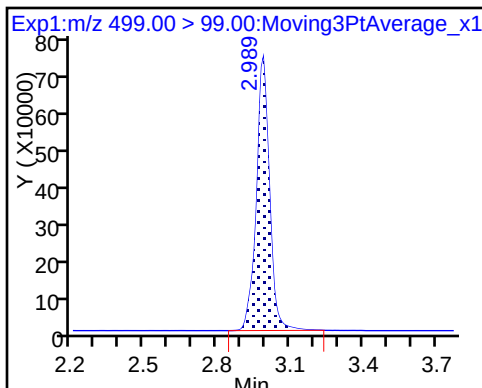
8 Perfluorooctane sulfonic acid



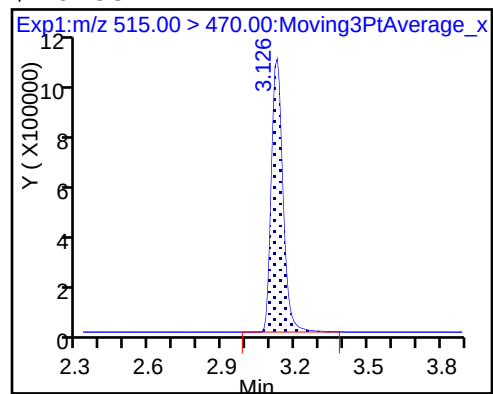
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_008.d
 Lims ID: IC L5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 19-Jun-2017 17:59:58 ALS Bottle#: 5 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L5_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jun-2017 10:57:44 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK019

First Level Reviewer: phomsophat

Date: 19-Jun-2017 19:23:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.185	2.183	0.002	1.000	35795970	125.7		2021	
298.90 > 99.00	2.185	2.183	0.002	1.000	29851648		1.20(0.00-0.00)	2318	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.382	2.381	0.001	1.000	4116656	10.3		3234	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.625	2.625	0.0	1.000	17549225	45.7		4202	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.633	2.630	0.003	1.000	5084081	15.6		737	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.860	2.859	0.001	1.000	10547603	31.2		1518	
413.00 > 169.00	2.860	2.859	0.001	1.000	5893768		1.79(0.00-0.00)	5500	
* 6 13C2-PFOA									
415.00 > 370.00	2.860	2.859	0.001		3861310	10.0		6380	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.989	2.982	0.007	1.000	20543461	61.4		27604	
499.00 > 99.00	2.989	2.982	0.007	1.000	4568104		4.50(0.00-0.00)	9840	
* 7 13C4 PFOS									
503.00 > 80.00	2.989	2.991	-0.002		9445975	28.7		13989	
9 Perfluorononanoic acid									
463.00 > 419.00	3.004	3.003	0.001	1.000	9360498	28.4		2543	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.118	3.123	-0.005	1.000	3726982	10.0		9457	

Reagents:

LC537-L5_00021

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_008.d

Injection Date: 19-Jun-2017 17:59:58

Instrument ID: A8_N

Lims ID: IC L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

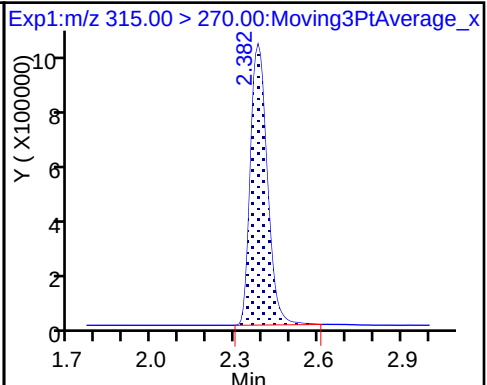
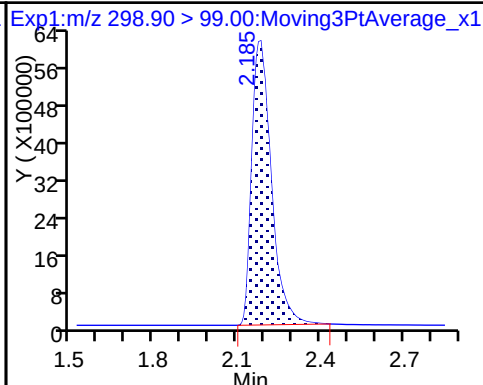
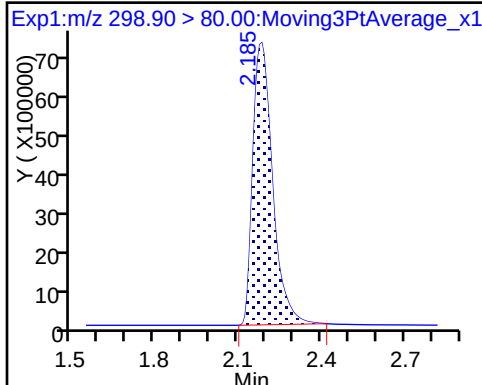
Method: 537_A8_N

Limit Group: LC 537 ICA

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

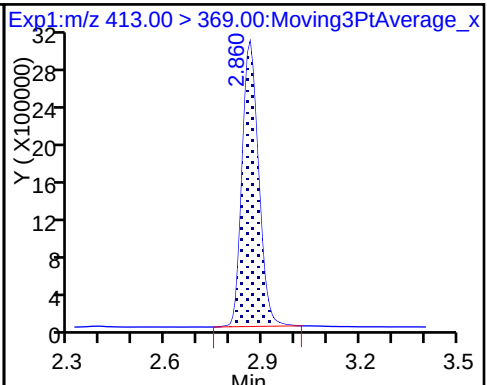
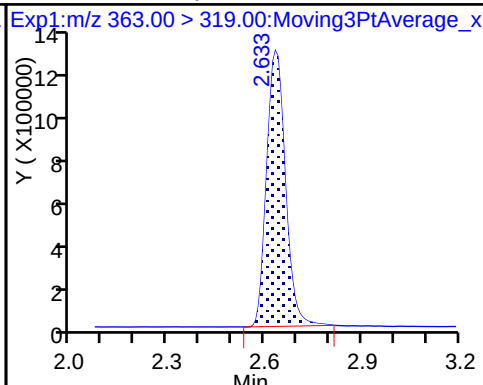
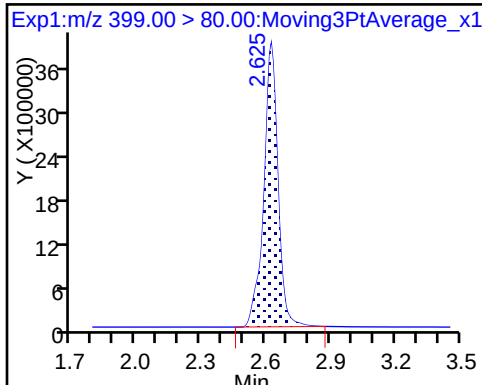
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

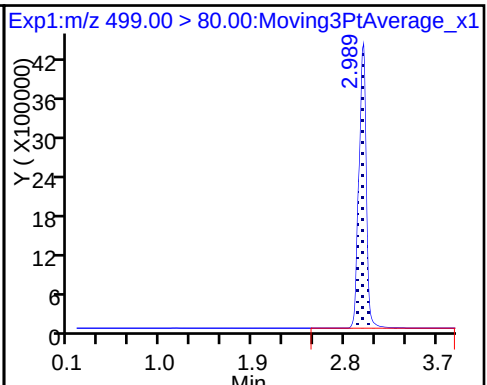
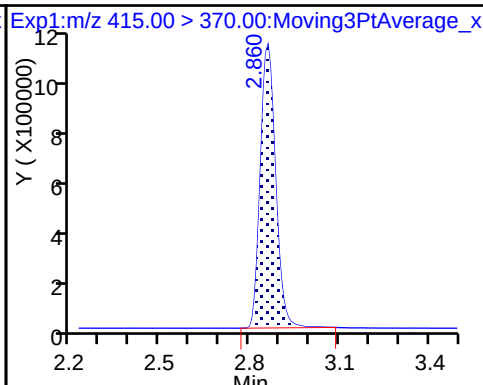
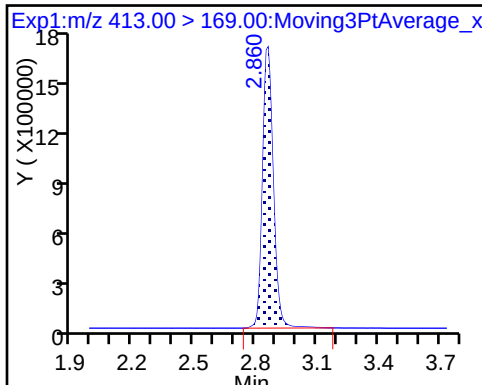
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

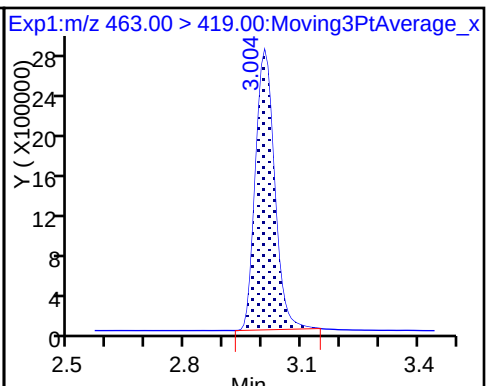
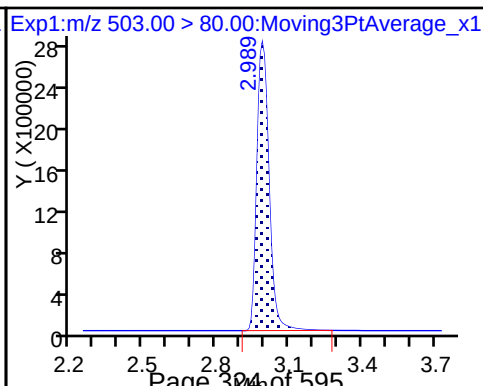
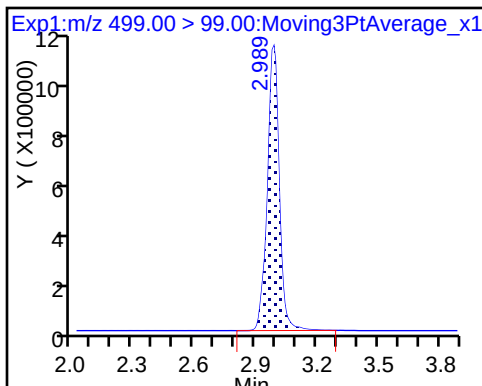
8 Perfluorooctane sulfonic acid



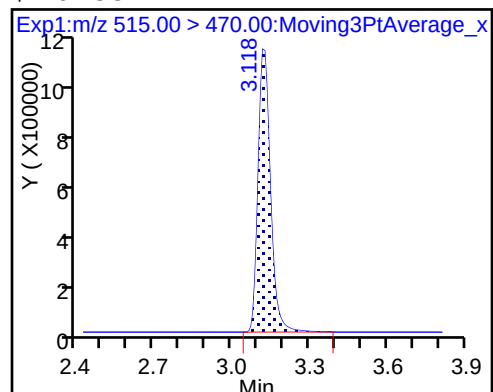
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Lims ID: IC L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 19-Jun-2017 18:04:42 ALS Bottle#: 6 Worklist Smp#: 9
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L6_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jun-2017 10:57:45 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK019

First Level Reviewer: phomsophat

Date: 19-Jun-2017 19:23:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.185	2.183	0.002	1.000	46244402	156.7		1994	
298.90 > 99.00	2.177	2.183	-0.006	0.997	38450203		1.20(0.00-0.00)	2037	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.382	2.381	0.001	1.000	4499723	10.4		3470	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.618	2.625	-0.007	1.000	24546576	61.6		4971	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.625	2.630	-0.005	1.000	7166616	20.3		1025	
* 6 13C2-PFOA									
415.00 > 370.00	2.853	2.859	-0.006		4177713	10.0		6058	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.853	2.859	-0.006	1.000	14918357	40.8		1802	
413.00 > 169.00	2.853	2.859	-0.006	1.000	8666954		1.72(0.00-0.00)	8092	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.982	2.982	0.0	1.000	27918279	80.5		31072	
499.00 > 99.00	2.982	2.982	0.0	1.000	6349926		4.40(0.00-0.00)	18668	
* 7 13C4 PFOS									
503.00 > 80.00	2.989	2.991	-0.002		9793572	28.7		19130	
9 Perfluorononanoic acid									
463.00 > 419.00	2.997	3.003	-0.006	1.000	12866660	36.1		3609	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.118	3.123	-0.005	1.000	4296473	10.7		11949	

Reagents:

LC537-L6_00017

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Injection Date: 19-Jun-2017 18:04:42

Instrument ID: A8_N

Lims ID: IC L6

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 6

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

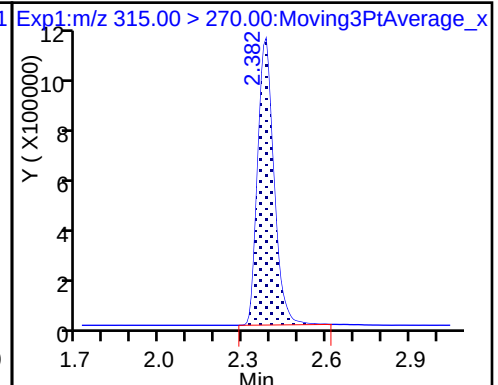
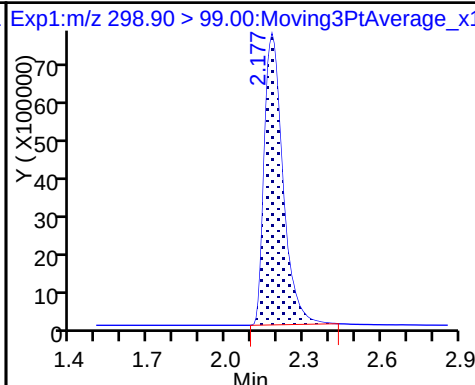
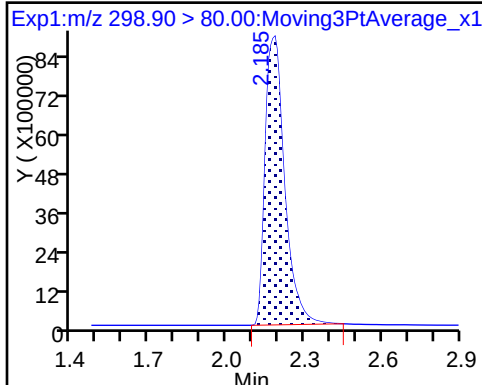
Method: 537_A8_N

Limit Group: LC 537 ICA

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

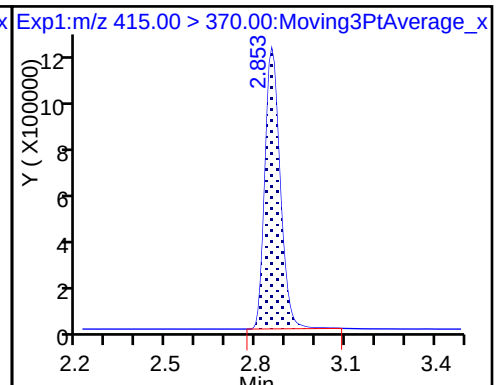
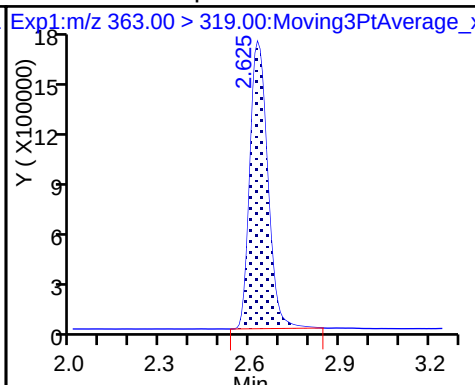
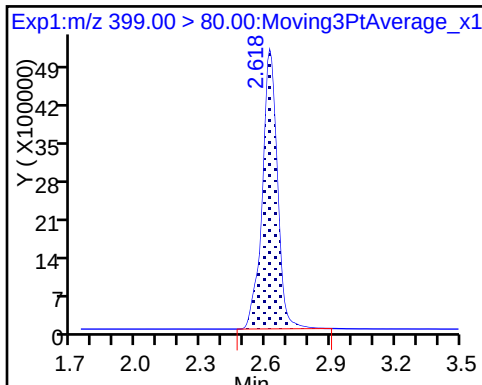
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

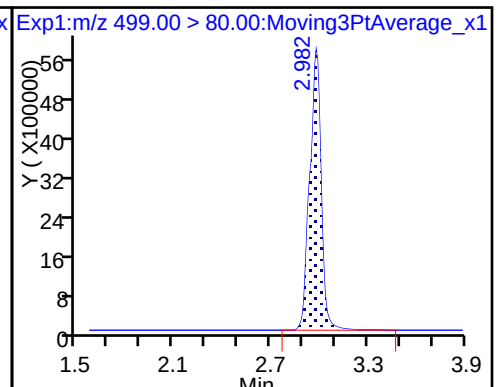
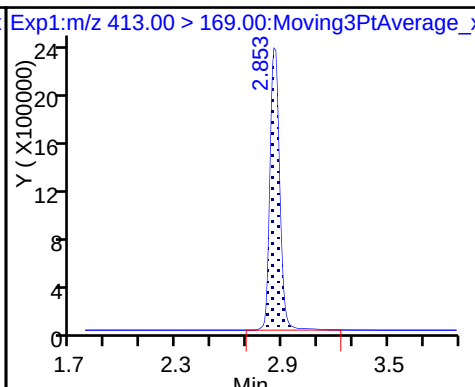
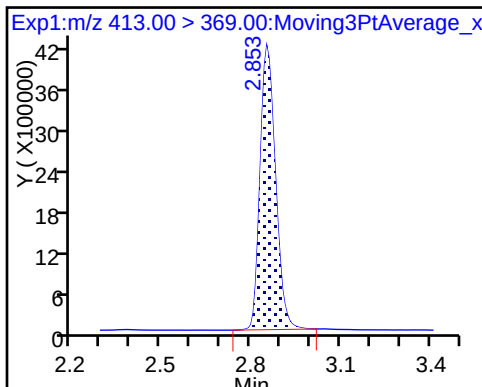
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

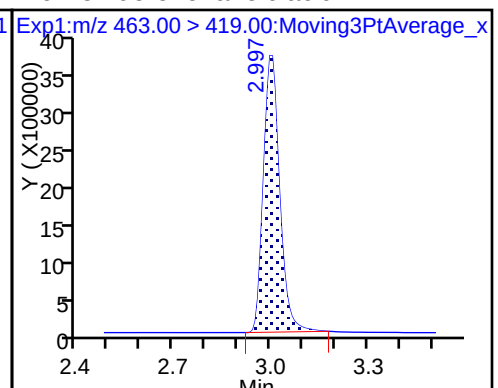
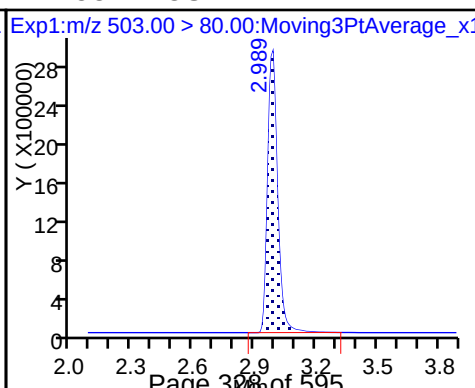
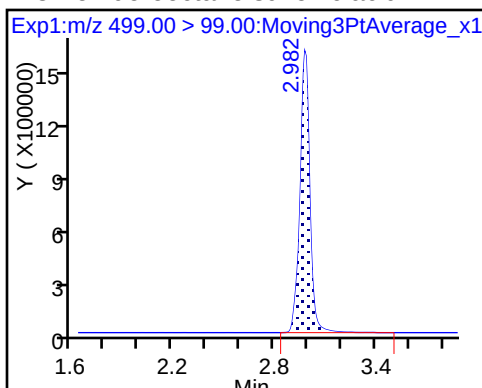
8 Perfluorooctane sulfonic acid



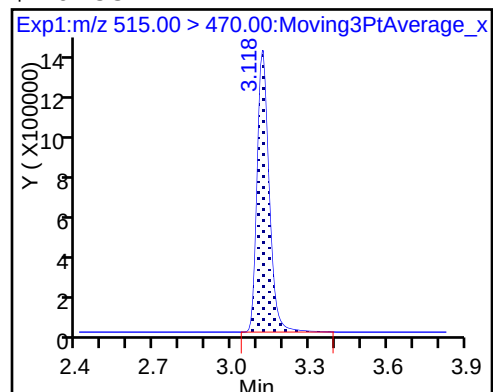
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 171480

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 16:11 Calibration End Date: 06/28/2017 16:35 Calibration ID: 32056

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171480/4	2017.06.28_537_CURVE_004.d
Level 2	IC 320-171480/5	2017.06.28_537_CURVE_005.d
Level 3	IC 320-171480/6	2017.06.28_537_CURVE_006.d
Level 4	IC 320-171480/7	2017.06.28_537_CURVE_007.d
Level 5	IC 320-171480/8	2017.06.28_537_CURVE_008.d
Level 6	IC 320-171480/9	2017.06.28_537_CURVE_009.d

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								
Perfluorobutanesulfonic acid (PFBS)	1.0542 0.7747	1.1911	1.1019	0.9631	0.8595	QuaF		1.1739	-0.002299						0.9990		0.9600
Perfluoroheptanoic acid (PFHpA)	0.9802 0.9208	1.0349	0.9965	1.0023	0.9814	Ave		0.9860				3.8		30.0			
Perfluorohexanesulfonic acid (PFHxS)	1.4453 1.4041	1.5145	1.5704	1.4814	1.4492	Ave		1.4774				4.0		30.0			
Perfluorooctanoic acid (PFOA)	0.7781 0.8844	0.9090	0.8846	0.8950	0.9189	Ave		0.8783				5.8		30.0			
Perfluorooctanesulfonic acid (PFOS)	1.0077 1.0654	1.0142	1.0631	1.0030	1.0482	Ave		1.0336				2.8		30.0			
Perfluorononanoic acid (PFNA)	0.6497 0.6570	0.7320	0.7099	0.6959	0.6634	Ave		0.6847				4.8		30.0			
13C2 PFHxA	1.1301 1.2157	1.2214	1.2083	1.2062	1.2378	Ave		1.2033				3.1		30.0			
13C2 PFDA	0.6178 0.6956	0.6701	0.6547	0.6457	0.6660	Ave		0.6583				4.0		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 171480

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 16:11 Calibration End Date: 06/28/2017 16:35 Calibration ID: 32056

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171480/4	2017.06.28_537_CURVE_004.d
Level 2	IC 320-171480/5	2017.06.28_537_CURVE_005.d
Level 3	IC 320-171480/6	2017.06.28_537_CURVE_006.d
Level 4	IC 320-171480/7	2017.06.28_537_CURVE_007.d
Level 5	IC 320-171480/8	2017.06.28_537_CURVE_008.d
Level 6	IC 320-171480/9	2017.06.28_537_CURVE_009.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
Perfluorobutanesulfonic acid (PFBS)	PFOS	QuaF	1790966 30127104	4119763	11524329	15979460	27434944	8.83 176	21.2	44.4	89.4	133
Perfluoroheptanoic acid (PFHpA)	13PF OA	Ave	189804 3839119	382424	1150592	1723856	3354002	0.990 19.7	2.38	4.97	10.0	14.9
Perfluorohexanesulfonic acid (PFHxS)	PFOS	Ave	835502 18580566	1782416	5588395	8363563	15739710	3.01 59.7	7.21	15.1	30.4	45.1
Perfluorooctanoic acid (PFOA)	13PF OA	Ave	304104 7442161	677915	2061378	3106405	6337635	2.00 39.7	4.80	10.0	20.2	30.0
Perfluorooctanesulfonic acid (PFOS)	PFOS	Ave	775815 18774908	1589627	5038246	7541349	15161771	4.00 79.6	9.61	20.1	40.5	60.0
Perfluorononanoic acid (PFNA)	13PF OA	Ave	244768 5329596	526209	1594605	2328532	4410928	1.93 38.3	4.62	9.68	19.5	28.9
13C2 PFHxA	13PF OA	Ave	2210545 2576119	1899539	2804666	2069475	2848725	10.0 10.0	10.0	10.0	10.0	10.0
13C2 PFDA	13PF OA	Ave	1208487 1473923	1042170	1519617	1107876	1532613	10.0 10.0	10.0	10.0	10.0	10.0

Curve Type Legend:

Ave = Average ISTD
QuaF = Quadratic ISTD forced zero

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 171480

SDG No.: _____

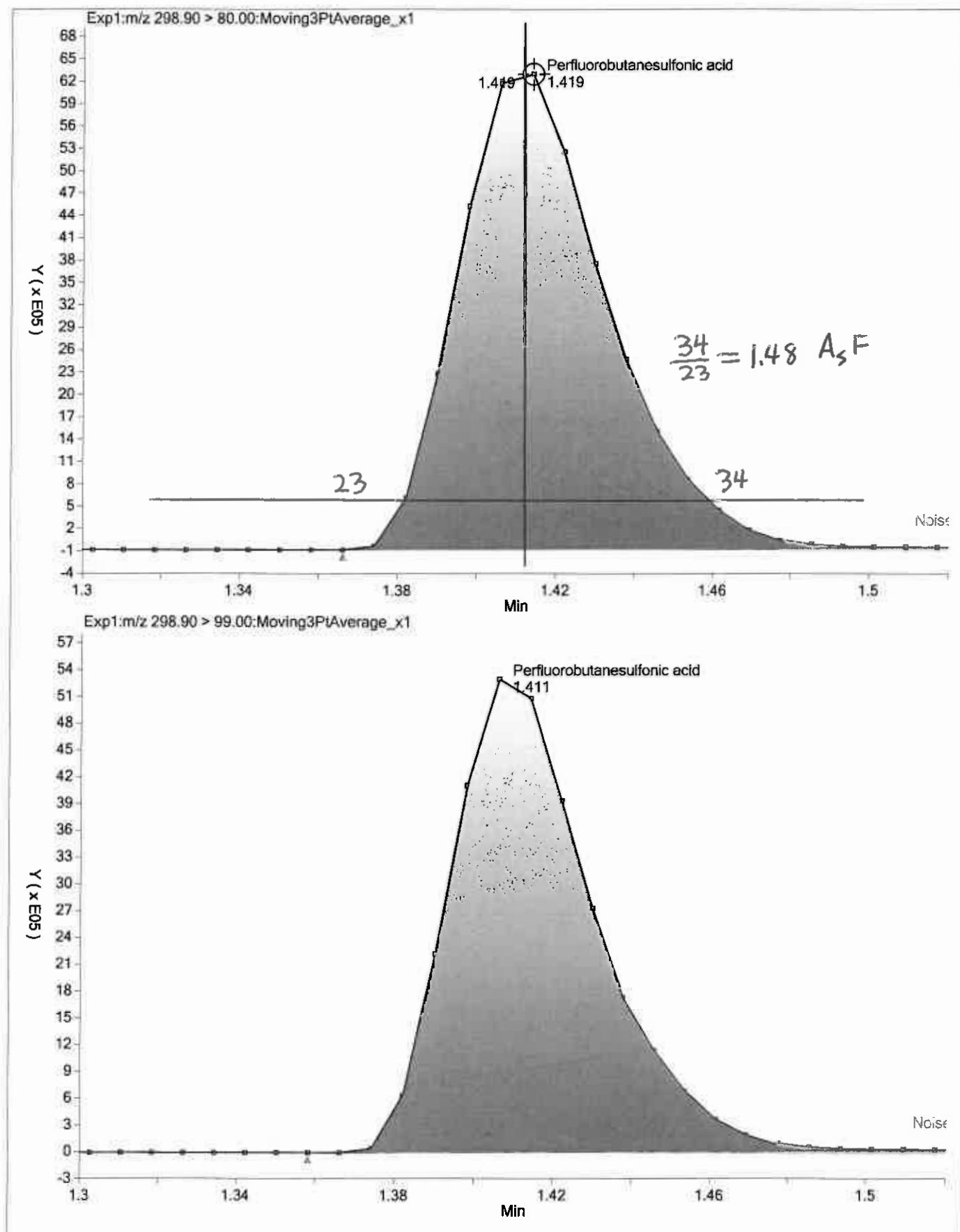
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

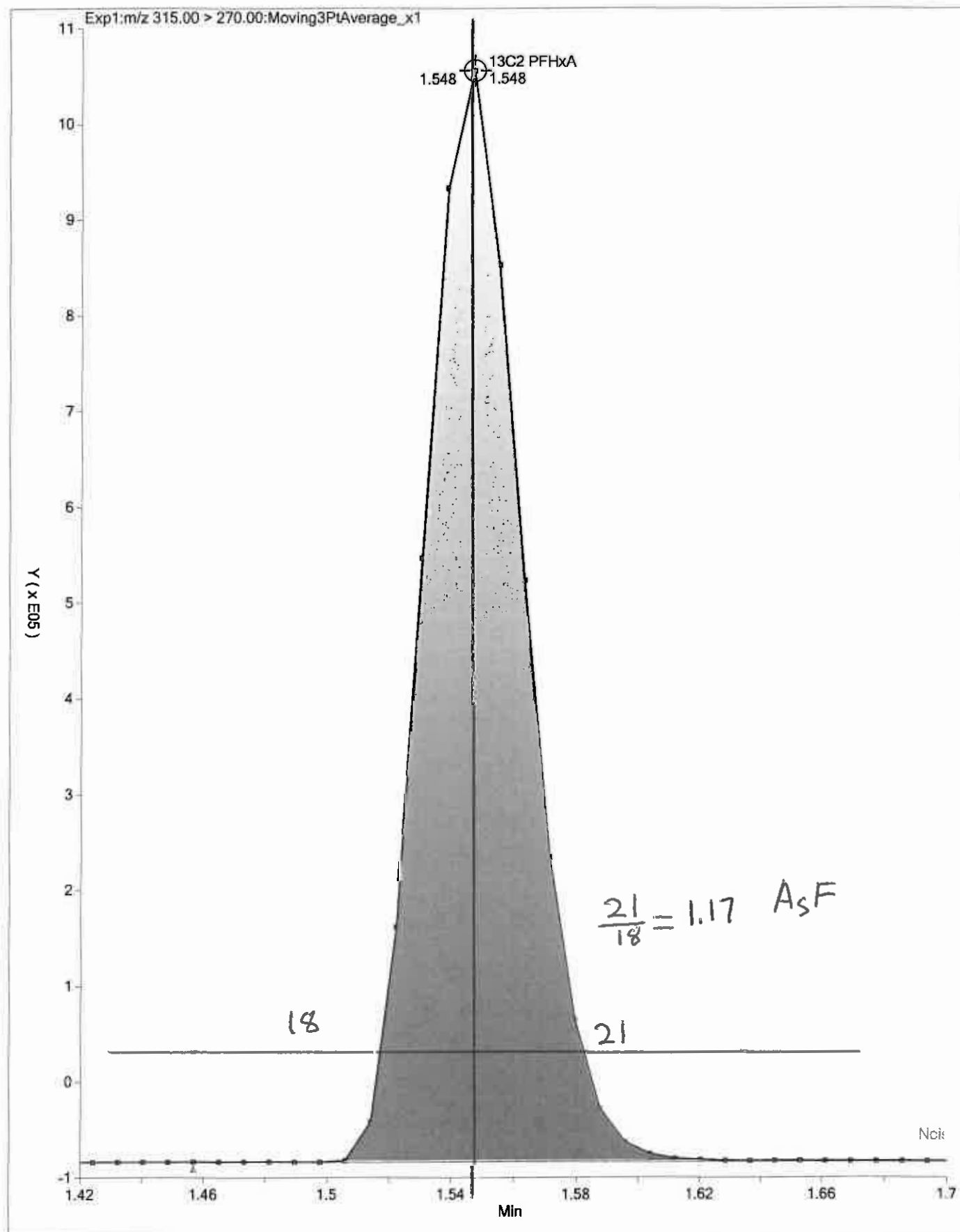
Calibration Start Date: 06/28/2017 16:11 Calibration End Date: 06/28/2017 16:35 Calibration ID: 32056

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171480/4	2017.06.28_537_CURVE_004.d
Level 2	IC 320-171480/5	2017.06.28_537_CURVE_005.d
Level 3	IC 320-171480/6	2017.06.28_537_CURVE_006.d
Level 4	IC 320-171480/7	2017.06.28_537_CURVE_007.d
Level 5	IC 320-171480/8	2017.06.28_537_CURVE_008.d
Level 6	IC 320-171480/9	2017.06.28_537_CURVE_009.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanesulfonic acid (PFBS)	-8.8	6.1	3.1	-0.7	-1.7	1.2	50	50	50	50	50	50
Perfluoroheptanoic acid (PFHpA)	-0.6	5.0	1.1	1.7	-0.5	-6.6	50	50	50	50	50	50
Perfluorohexanesulfonic acid (PFHxS)	-2.2	2.5	6.3	0.3	-1.9	-5.0	50	50	50	50	50	50
Perfluorooctanoic acid (PFOA)	-11.4	3.5	0.7	1.9	4.6	0.7	50	50	50	50	50	50
Perfluorooctanesulfonic acid (PFOS)	-2.5	-1.9	2.9	-3.0	1.4	3.1	50	50	50	50	50	50
Perfluorononanoic acid (PFNA)	-5.1	6.9	3.7	1.6	-3.1	-4.0	50	50	50	50	50	50
13C2 PFHxA	-6.1	1.5	0.4	0.2	2.9	1.0	30	30	30	30	30	30
13C2 PFDA	-6.1	1.8	-0.5	-1.9	1.2	5.7	30	30	30	30	30	30





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_004.d
 Lims ID: IC L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 28-Jun-2017 16:11:22 ALS Bottle#: 1 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L1_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 28-Jun-2017 16:55:27 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: barnettj

Date: 28-Jun-2017 16:43:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.411	1.415	-0.004	1.000	1790966	8.06		545	
298.90 > 99.00	1.411	1.415	-0.004	1.000	1409413		1.27(0.00-0.00)	649	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	2210545	9.39		5756	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.699	1.697	0.002	1.000	189804	0.9841		35.4	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.699	1.698	0.001	1.000	835502	2.94		332	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.882	0.0	1.000	304104	1.77		16.2	
413.00 > 169.00	1.882	1.882	0.0	1.000	188306		1.61(0.00-0.00)	293	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.882	0.0		1955989	10.0		4940	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.124	2.117	0.007	1.000	775815	3.90		640	
499.00 > 99.00	2.117	2.117	0.0	0.996	168832		4.60(0.00-0.00)	217	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.119	-0.002		5515470	28.7		3323	
9 Perfluorononanoic acid									
463.00 > 419.00	2.132	2.131	0.001	1.000	244768	1.83		21.7	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.291	2.291	0.0	1.000	1208487	9.39		3415	

Reagents:

LC537-L1_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_004.d

Injection Date: 28-Jun-2017 16:11:22

Instrument ID: A8_N

Lims ID: IC L1

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

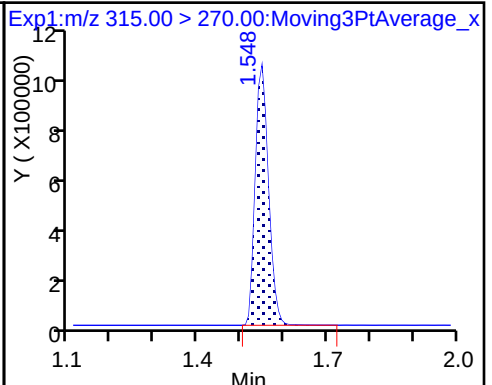
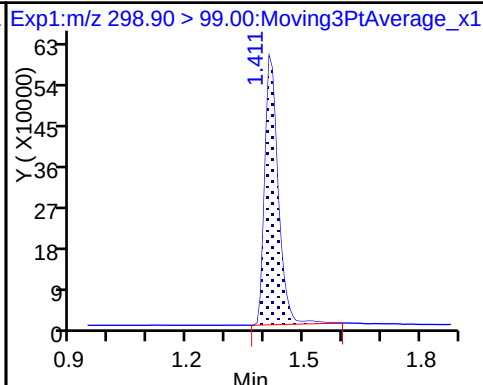
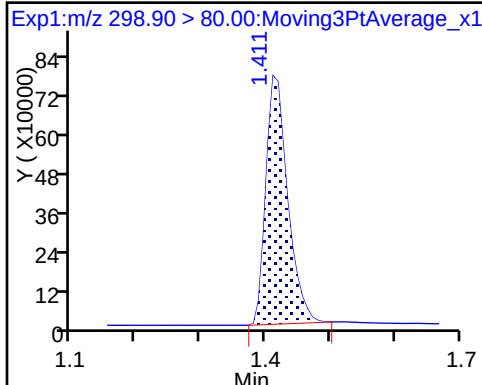
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

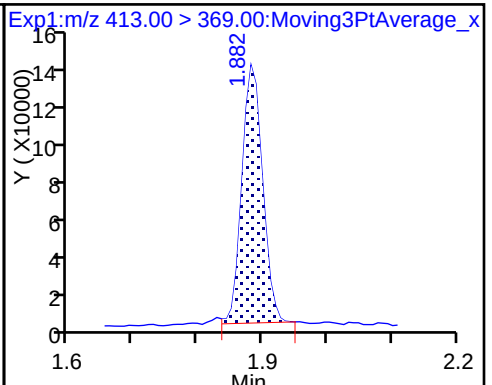
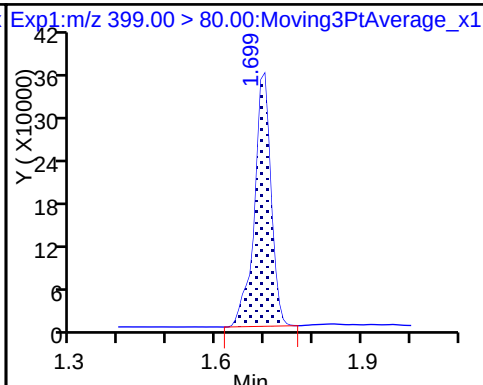
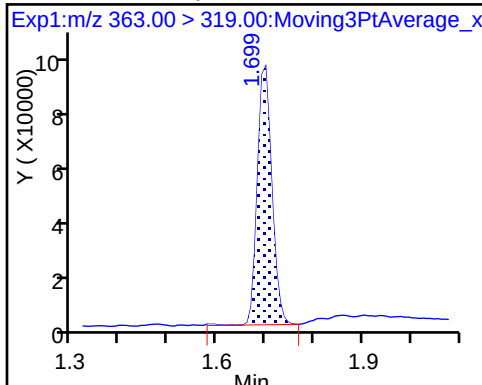
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

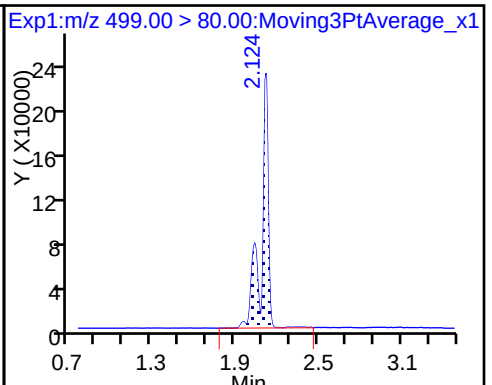
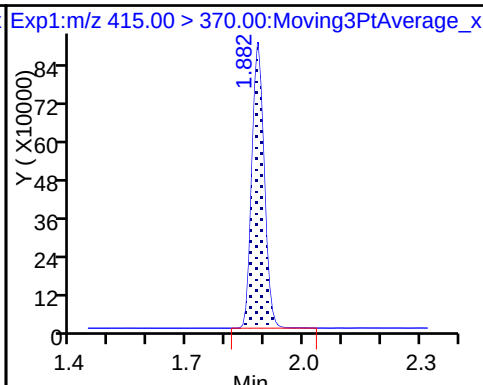
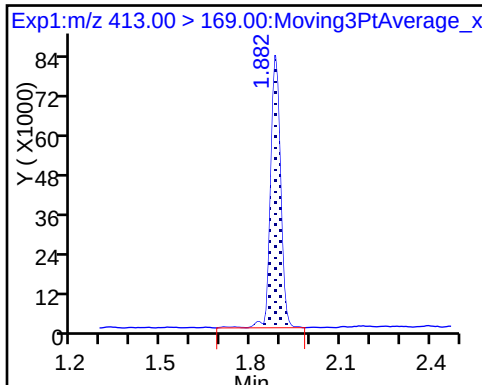
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

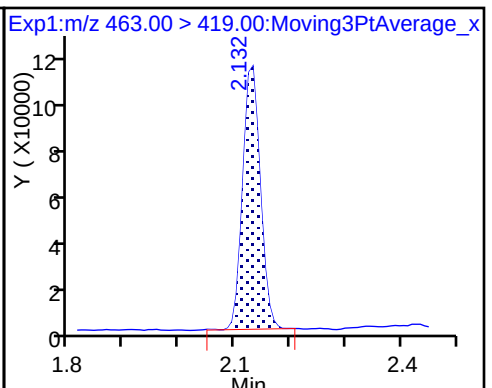
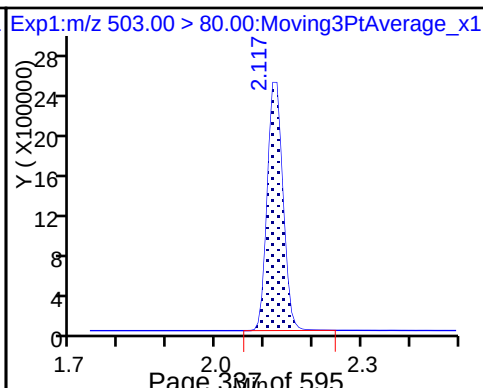
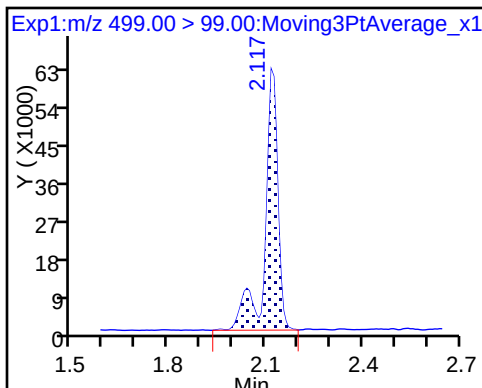
8 Perfluorooctane sulfonic acid



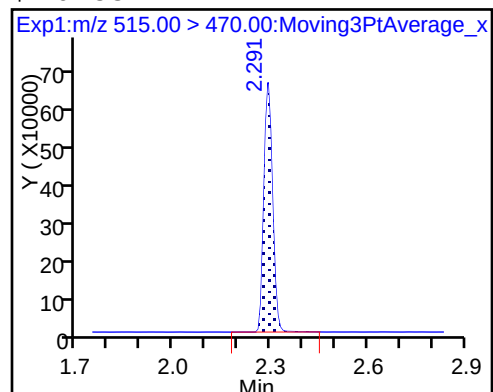
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_005.d
 Lims ID: IC L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 28-Jun-2017 16:16:06 ALS Bottle#: 2 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L2_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 28-Jun-2017 16:55:28 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: barnettj

Date: 28-Jun-2017 16:35:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.419	1.415	0.004	1.000	4119763	22.5		1210	
298.90 > 99.00	1.419	1.415	0.004	1.000	3074490		1.34(0.00-0.00)	1108	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	1899539	10.2		5966	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.699	1.697	0.002	1.000	382424	2.49		66.6	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.699	1.698	0.001	1.000	1782416	7.40		819	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.882	0.0		1555217	10.0		3952	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.882	0.0	1.000	677915	4.96		38.6	
413.00 > 169.00	1.882	1.882	0.0	1.000	409648		1.65(0.00-0.00)	660	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.124	2.117	0.007	1.000	1589627	9.43		1107	
499.00 > 99.00	2.117	2.117	0.0	0.996	355184		4.48(0.00-0.00)	456	
* 7 13C4 PFOS									
503.00 > 80.00	2.124	2.119	0.005		4678665	28.7		3312	
9 Perfluorononanoic acid									
463.00 > 419.00	2.132	2.131	0.001	1.000	526209	4.94		49.3	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.291	2.291	0.0	1.000	1042170	10.2		3269	

Reagents:

LC537-L2_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_005.d

Injection Date: 28-Jun-2017 16:16:06

Instrument ID: A8_N

Lims ID: IC L2

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

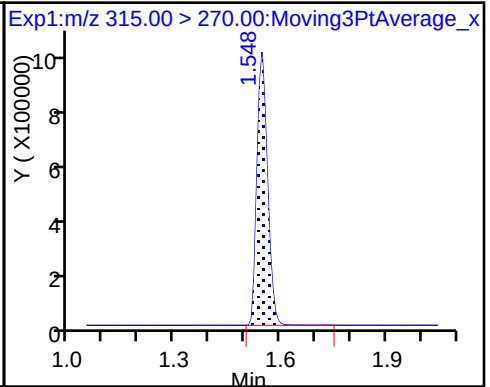
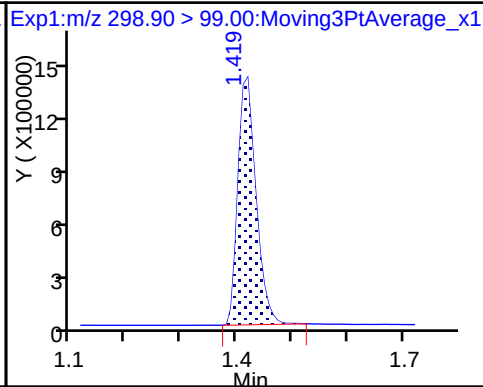
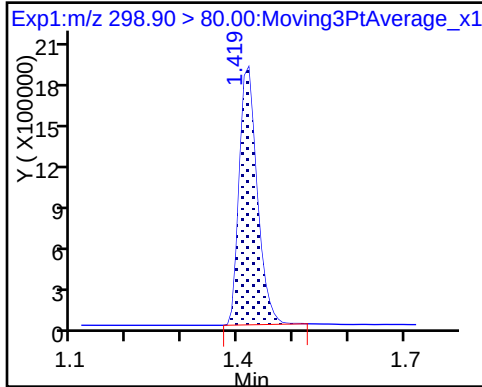
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

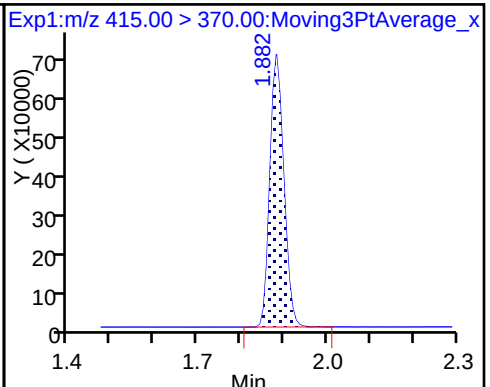
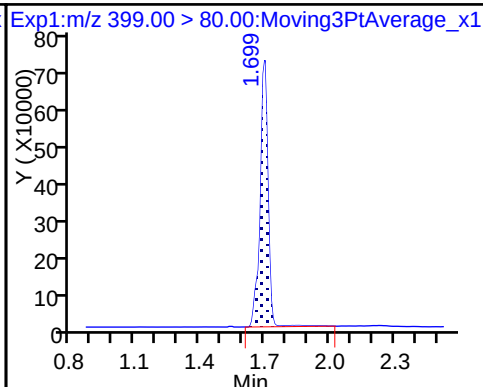
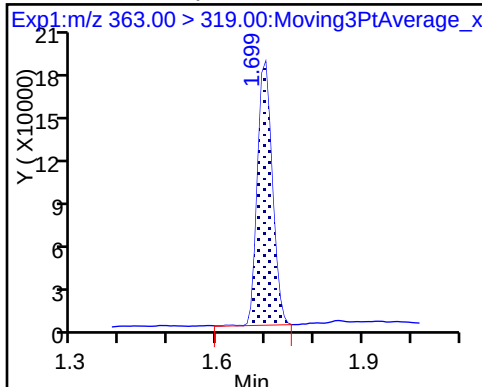
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

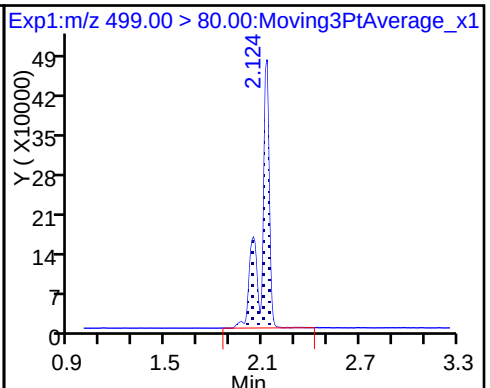
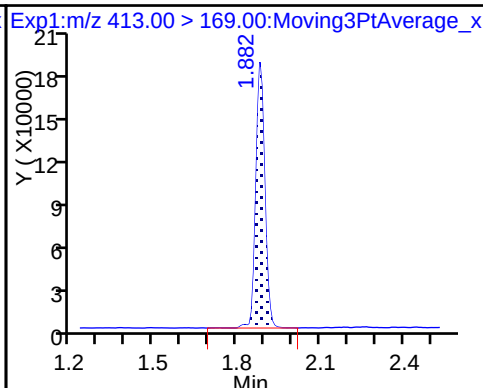
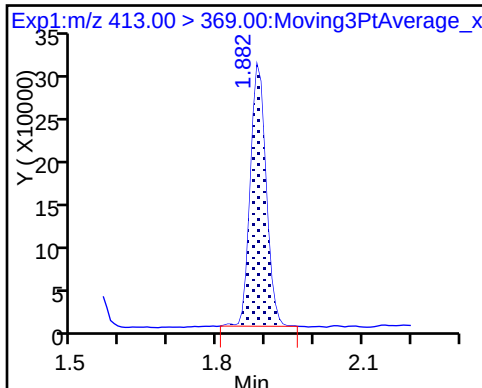
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

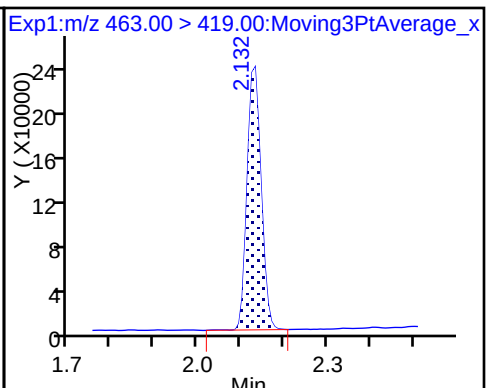
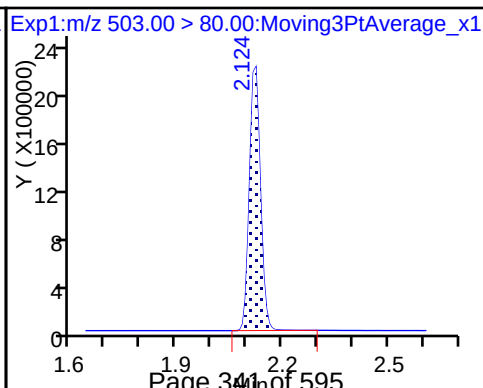
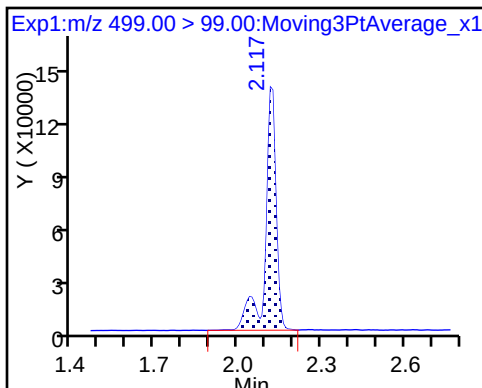
8 Perfluorooctane sulfonic acid



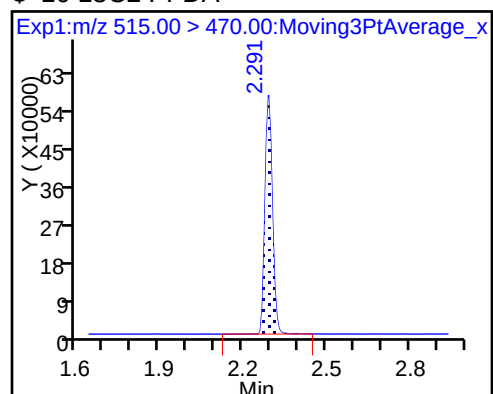
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_006.d
 Lims ID: IC L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 28-Jun-2017 16:20:50 ALS Bottle#: 3 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L3_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 28-Jun-2017 16:55:29 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: barnettj

Date: 28-Jun-2017 16:32:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.411	1.415	-0.004	1.000	11524329	45.8		2493	
298.90 > 99.00	1.411	1.415	-0.004	1.000	8951622		1.29(0.00-0.00)	2436	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	2804666	10.0		6939	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.697	-0.005	1.000	1150592	5.03		197	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.699	1.698	0.001	1.000	5588395	16.1		1987	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.882	0.0	1.000	2061378	10.1		114	
413.00 > 169.00	1.882	1.882	0.0	1.000	1221192		1.69(0.00-0.00)	1652	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.882	0.0		2321071	10.0		5723	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.124	2.117	0.007	1.000	5038246	20.7		2652	
499.00 > 99.00	2.117	2.117	0.0	0.996	1124439		4.48(0.00-0.00)	1216	
* 7 13C4 PFOS									
503.00 > 80.00	2.124	2.119	0.005		6756643	28.7		4106	
9 Perfluorononanoic acid									
463.00 > 419.00	2.132	2.131	0.001	1.000	1594605	10.0		131	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.291	2.291	0.0	1.000	1519617	9.95		4272	

Reagents:

LC537-L3_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_006.d

Injection Date: 28-Jun-2017 16:20:50

Instrument ID: A8_N

Lims ID: IC L3

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

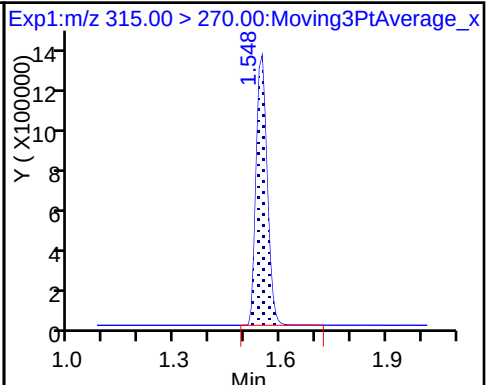
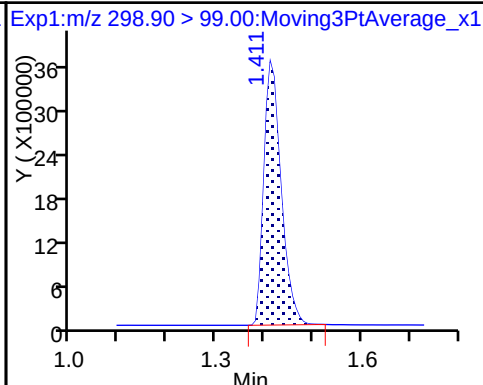
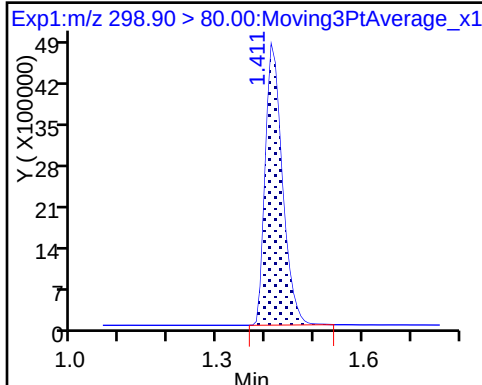
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

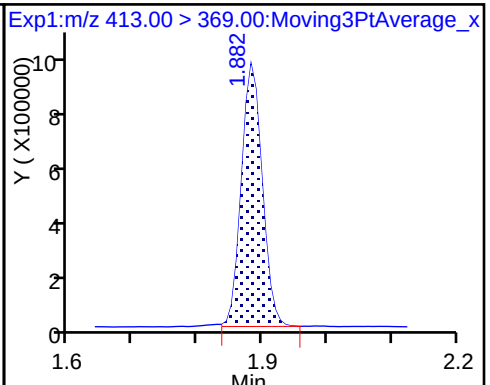
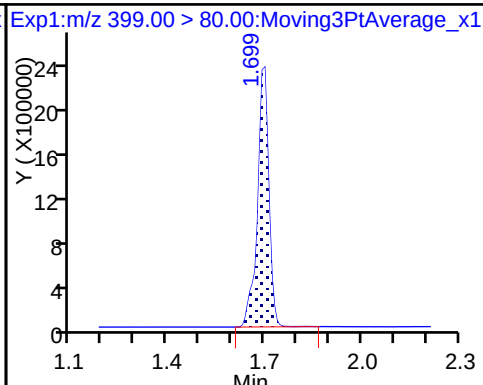
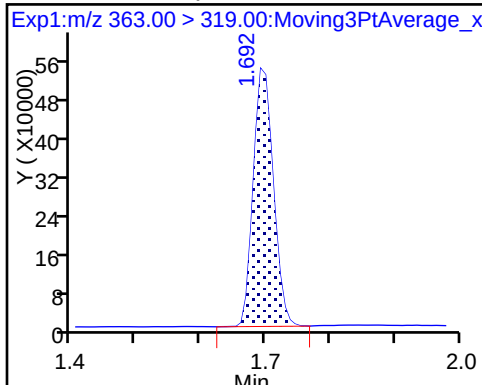
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

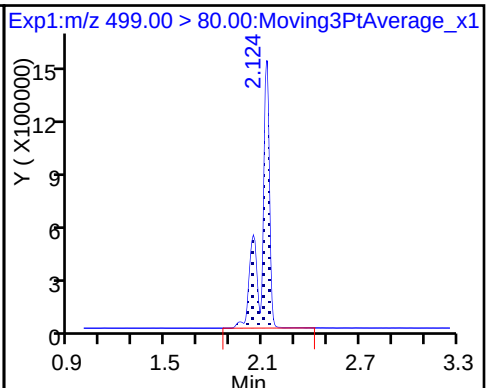
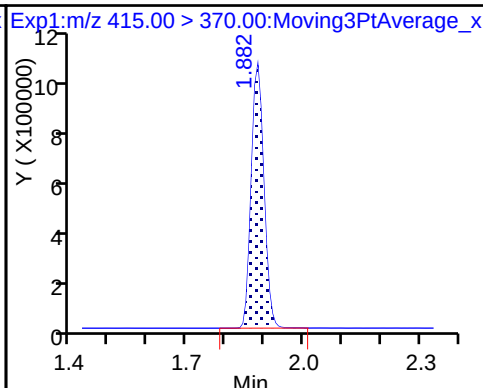
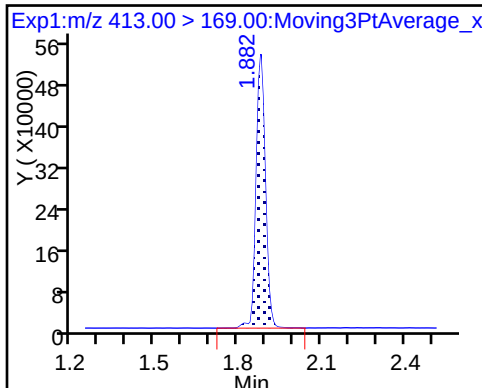
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

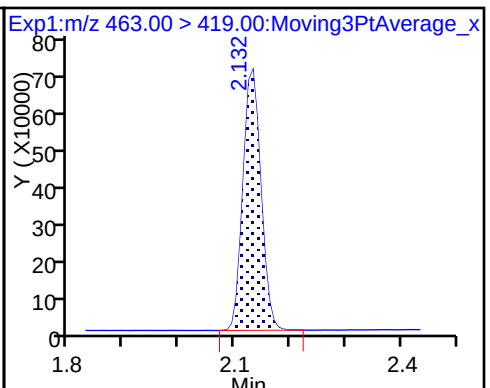
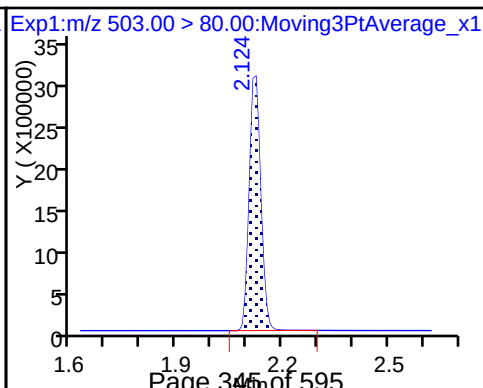
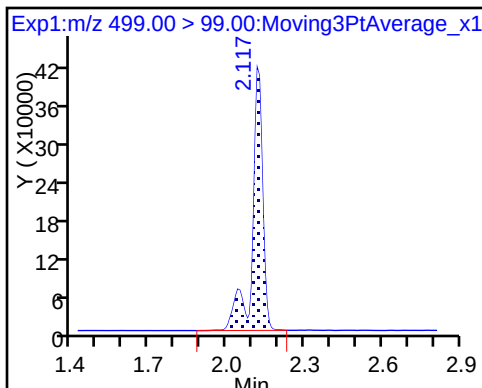
8 Perfluorooctane sulfonic acid



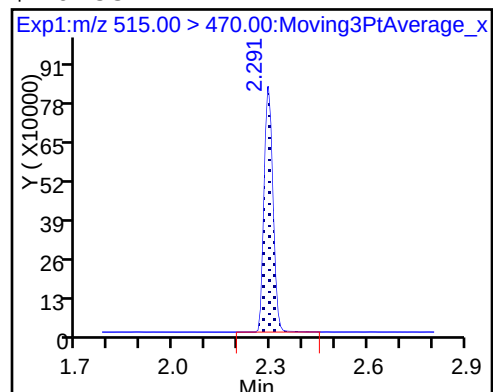
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_007.d
 Lims ID: IC L4
 Client ID:
 Sample Type: ICISAV Calib Level: 4
 Inject. Date: 28-Jun-2017 16:25:35 ALS Bottle#: 4 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L4_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 28-Jun-2017 16:55:31 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: barnettj

Date: 28-Jun-2017 16:55:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.419	1.415	0.004	1.000	15979460	88.8		2331	
298.90 > 99.00	1.411	1.415	-0.004	0.995	12860446		1.24(0.00-0.00)	2491	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	2069475	10.0		4999	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.699	1.697	0.002	1.000	1723856	10.2		294	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.699	1.698	0.001	1.000	8363563	30.5		2247	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.882	0.0		1715754	10.0		4697	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.882	0.0	1.000	3106405	20.6		184	
413.00 > 169.00	1.882	1.882	0.0	1.000	1868573		1.66(0.00-0.00)	2128	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.124	2.117	0.007	1.000	7541349	39.3		3213	
499.00 > 99.00	2.117	2.117	0.0	0.996	1752429		4.30(0.00-0.00)	1678	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.119	-0.002		5320058	28.7		3607	
9 Perfluorononanoic acid									
463.00 > 419.00	2.132	2.131	0.001	1.000	2328532	19.8		190	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.291	2.291	0.0	1.000	1107876	9.81		3405	

Reagents:

LC537-L4_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_007.d

Injection Date: 28-Jun-2017 16:25:35

Instrument ID: A8_N

Lims ID: IC L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 4

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

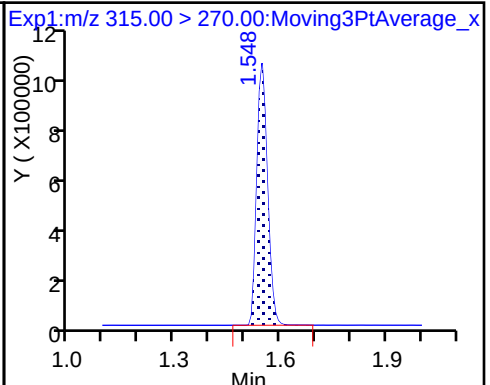
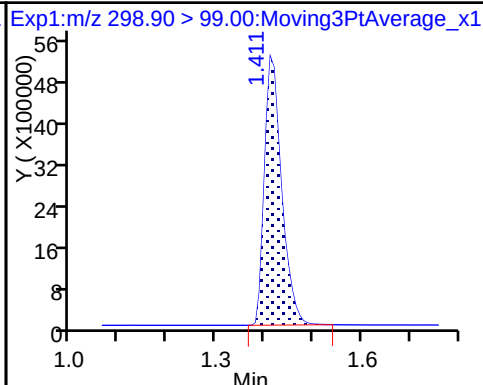
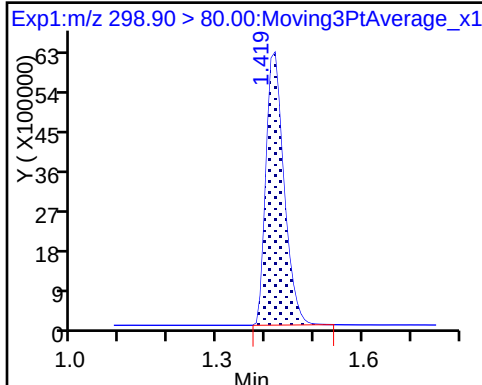
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

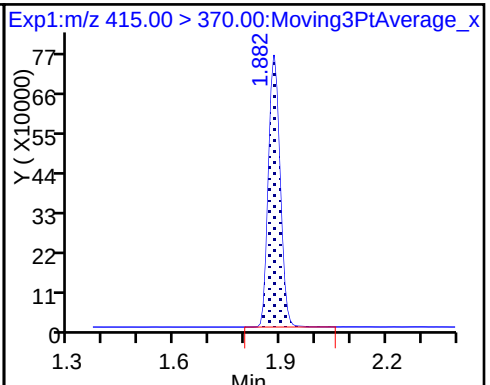
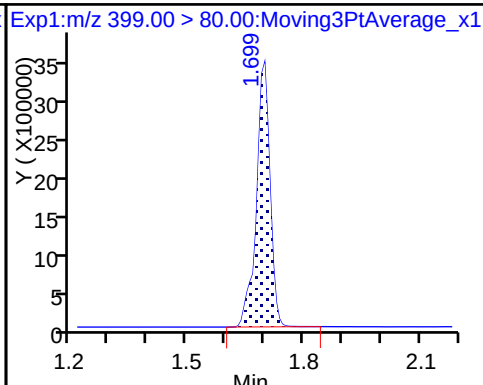
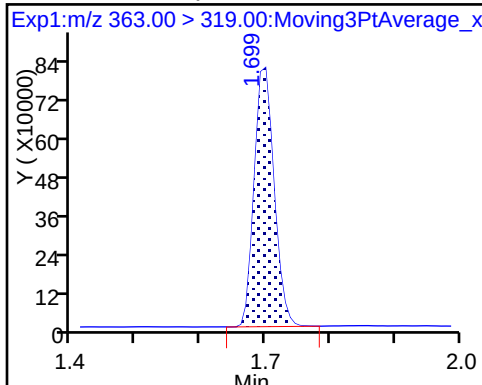
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

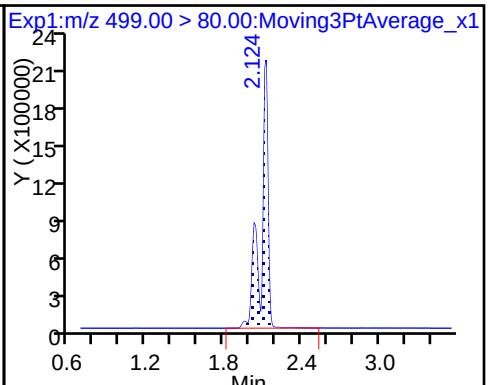
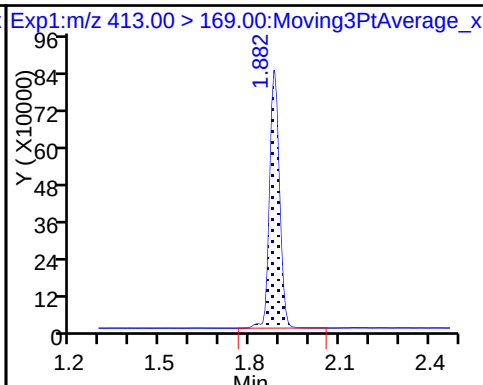
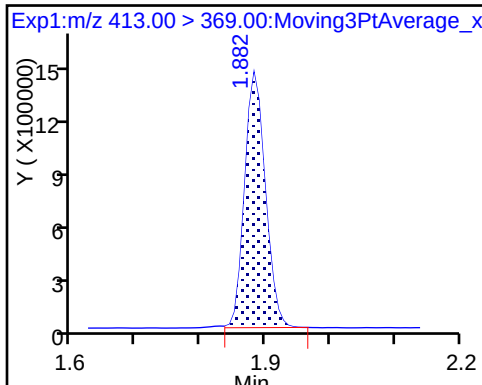
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

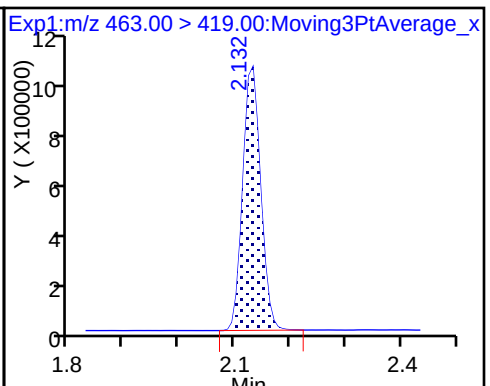
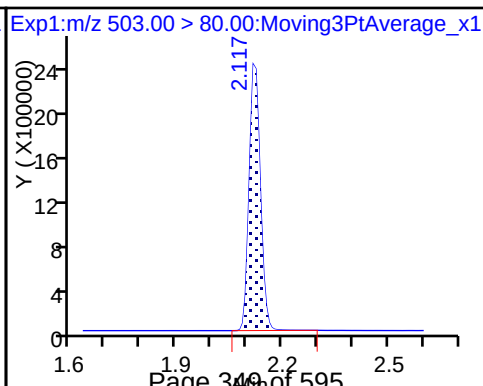
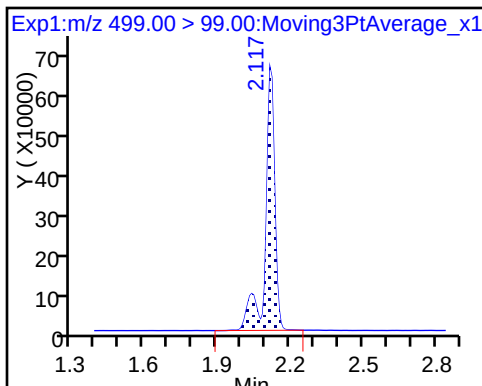
8 Perfluorooctane sulfonic acid



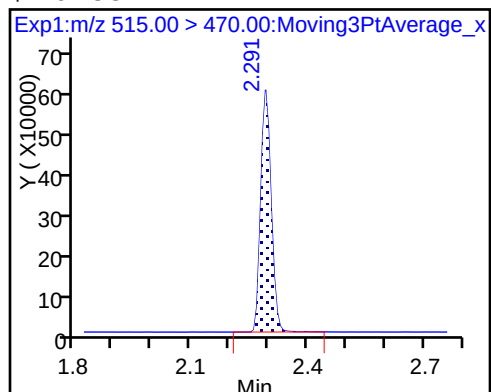
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_008.d
 Lims ID: IC L5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 28-Jun-2017 16:30:19 ALS Bottle#: 5 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L5_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 28-Jun-2017 16:55:32 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: barnettj

Date: 28-Jun-2017 16:44:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.419	1.415	0.004	1.000	27434944	130.2		2906	
298.90 > 99.00	1.411	1.415	-0.004	0.995	21997952		1.25(0.00-0.00)	2902	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	2848725	10.3		7994	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.699	1.697	0.002	1.000	3354002	14.8		559	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.699	1.698	0.001	1.000	15739710	44.2		3098	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.882	0.0	1.000	6337635	31.4		367	
413.00 > 169.00	1.882	1.882	0.0	1.000	3765616		1.68(0.00-0.00)	3658	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.882	0.0		2301384	10.0		5680	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.117	0.0	1.000	15161771	60.9		4851	
499.00 > 99.00	2.117	2.117	0.0	1.000	3453740		4.39(0.00-0.00)	2548	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.119	-0.002		6908198	28.7		4041	
9 Perfluorononanoic acid									
463.00 > 419.00	2.132	2.131	0.001	1.000	4410928	28.0		295	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.291	2.291	0.0	1.000	1532613	10.1		4398	

Reagents:

LC537-L5_00021

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_008.d

Injection Date: 28-Jun-2017 16:30:19

Instrument ID: A8_N

Lims ID: IC L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

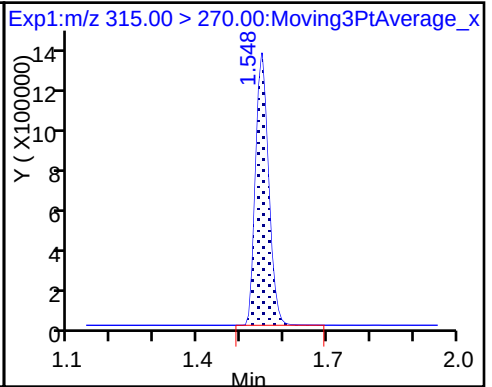
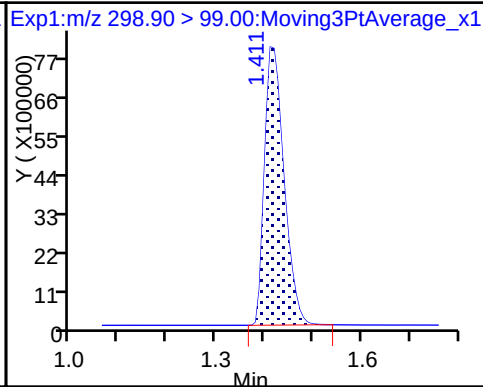
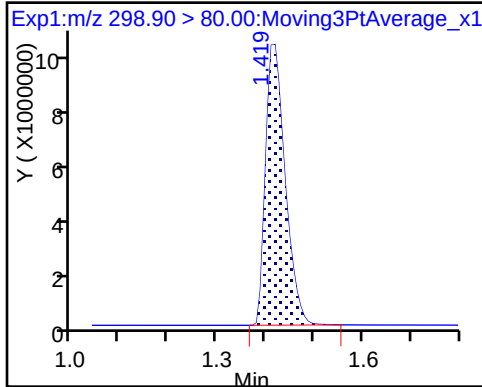
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

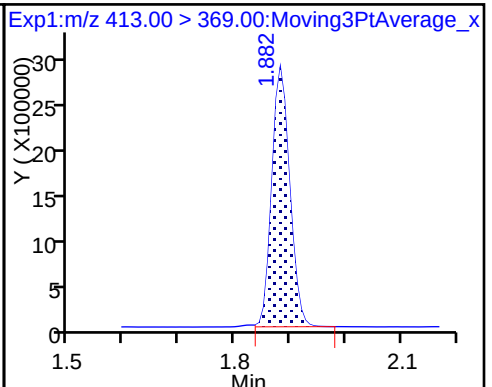
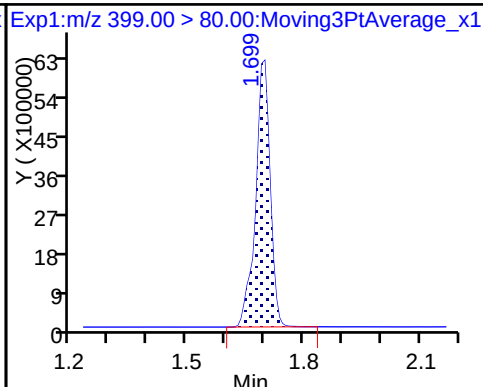
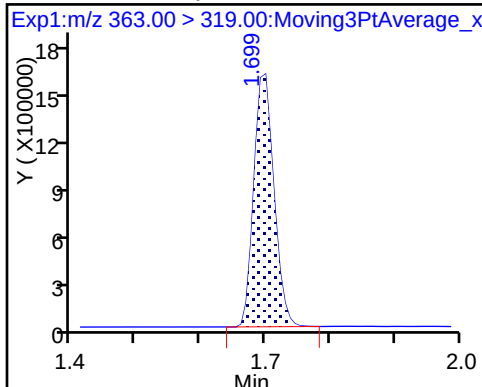
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

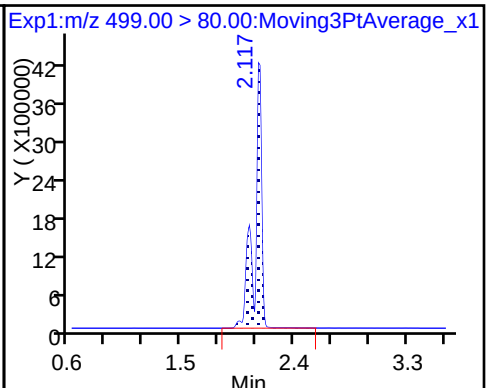
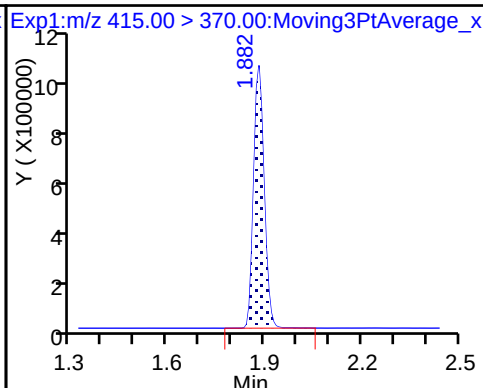
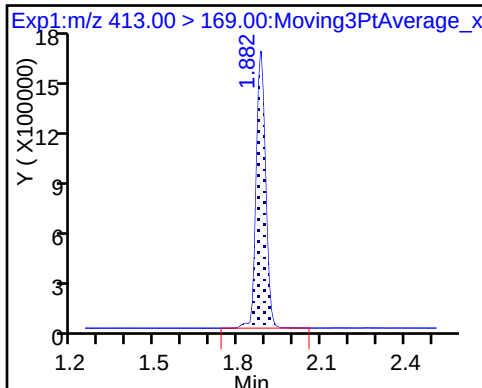
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

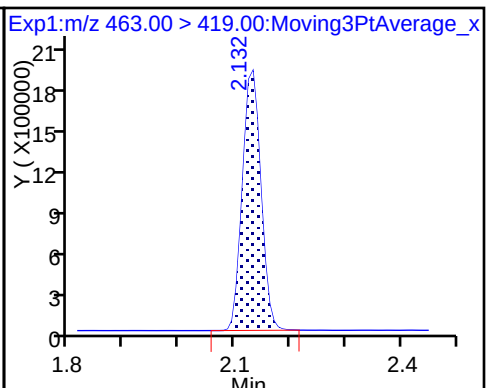
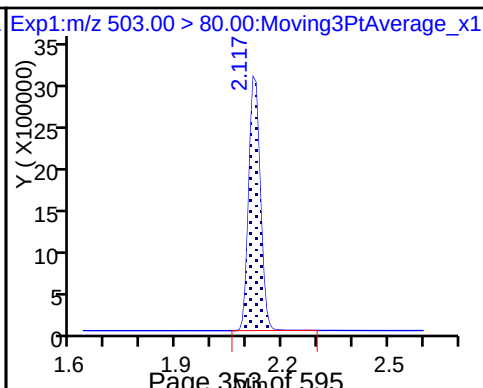
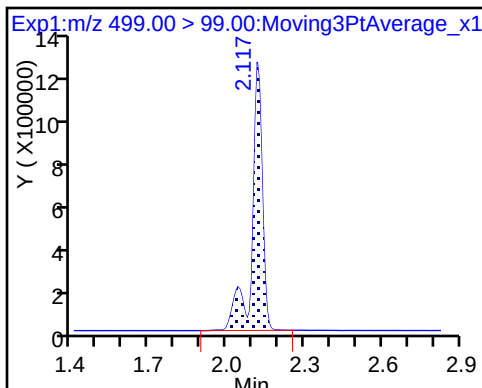
8 Perfluorooctane sulfonic acid



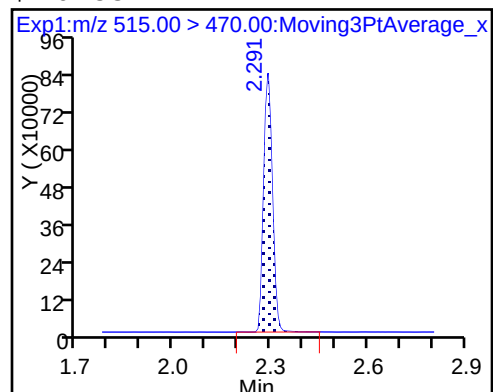
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d
 Lims ID: IC L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 28-Jun-2017 16:35:04 ALS Bottle#: 6 Worklist Smp#: 9
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L6_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 28-Jun-2017 16:55:33 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: barnettj

Date: 28-Jun-2017 16:44:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.411	1.415	-0.004	1.000	30127104	177.7		2406	
298.90 > 99.00	1.411	1.415	-0.004	1.000	24441009		1.23(0.00-0.00)	2627	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	2576119	10.1		6622	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.697	-0.005	1.000	3839119	18.4		646	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.698	-0.006	1.000	18580566	56.8		3190	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.882	0.0		2119055	10.0		4846	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.882	0.0	1.000	7442161	40.0		389	
413.00 > 169.00	1.882	1.882	0.0	1.000	4539976		1.64(0.00-0.00)	3482	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.117	0.0	1.000	18774908	82.0		4721	
499.00 > 99.00	2.117	2.117	0.0	1.000	4251678		4.42(0.00-0.00)	2817	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.119	-0.002		6352413	28.7		3631	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.131	-0.007	1.000	5329596	36.7		409	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.291	2.291	0.0	1.000	1473923	10.6		4283	

Reagents:

LC537-L6_00017

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Injection Date: 28-Jun-2017 16:35:04

Instrument ID: A8_N

Lims ID: IC L6

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 6

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

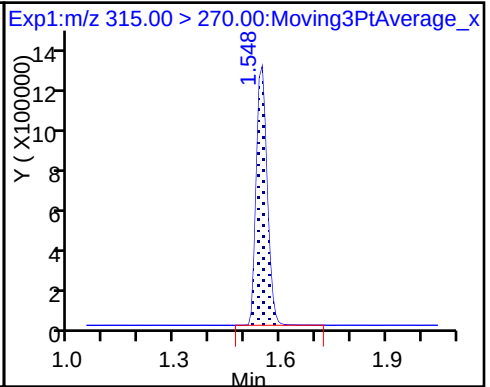
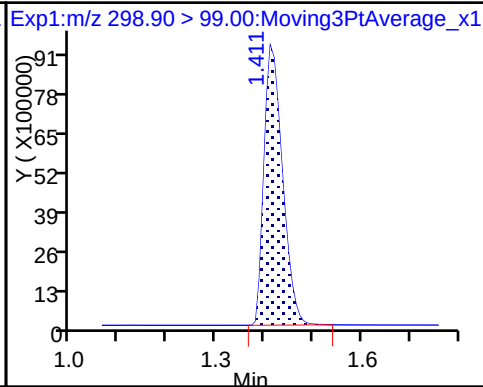
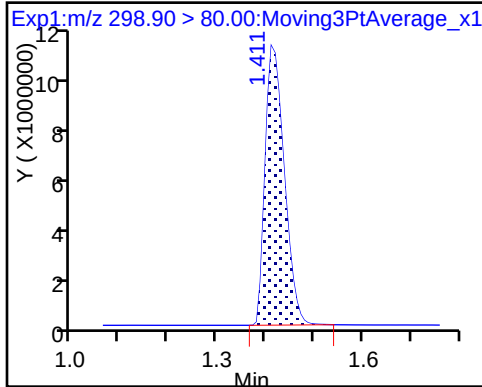
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

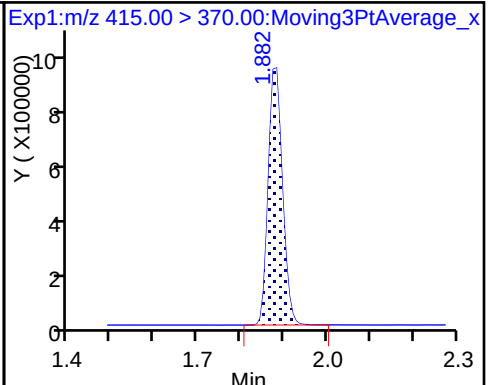
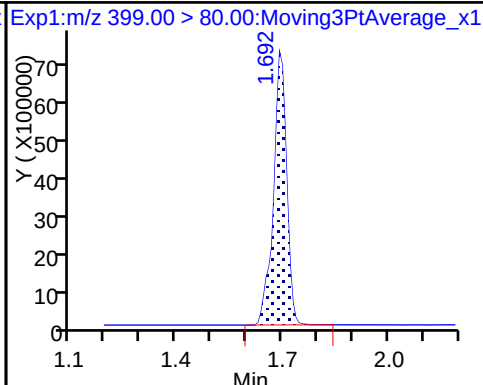
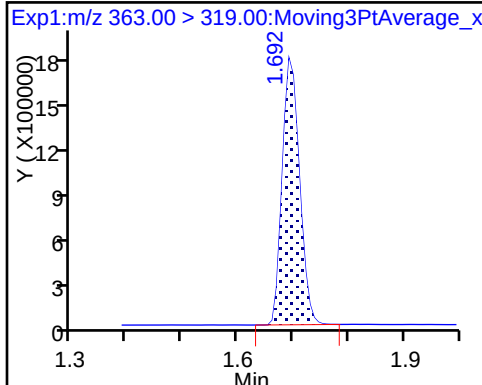
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

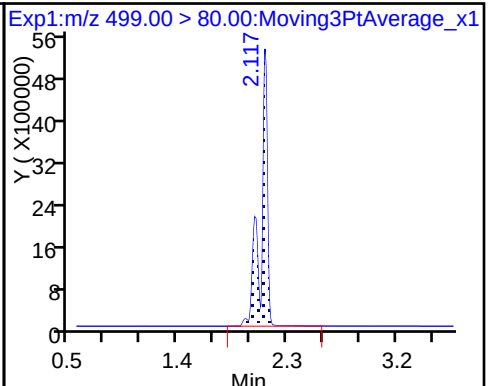
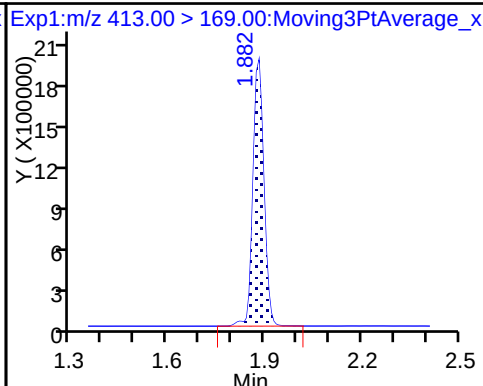
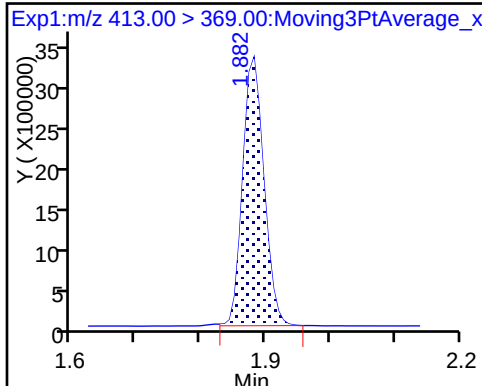
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

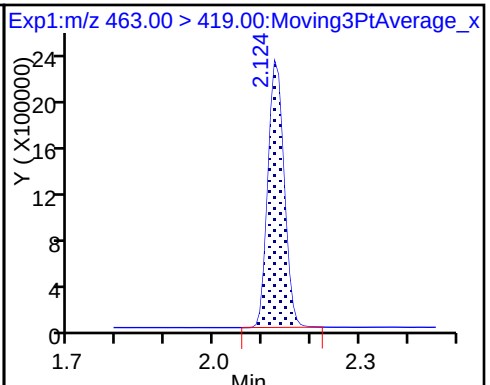
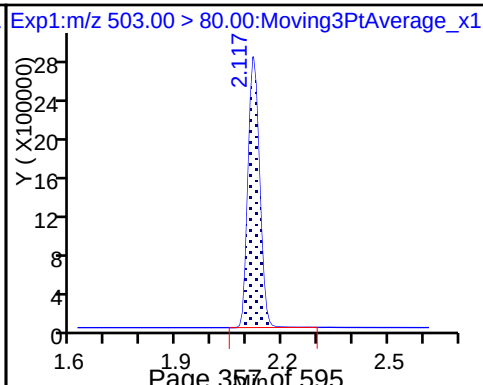
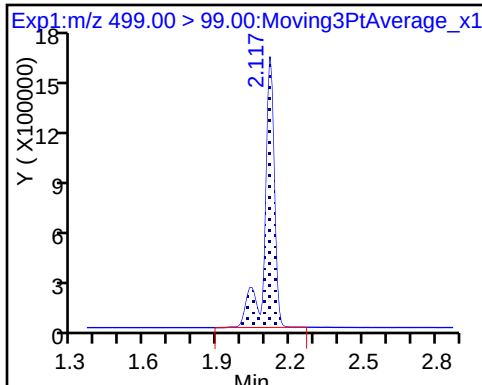
8 Perfluorooctane sulfonic acid



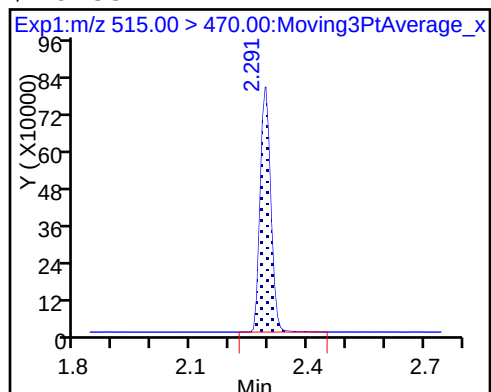
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 172646

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/05/2017 19:50 Calibration End Date: 07/05/2017 20:13 Calibration ID: 32198

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-172646/4	2017.07.05_537CURVE_004.d
Level 2	IC 320-172646/5	2017.07.05_537CURVE_005.d
Level 3	IC 320-172646/6	2017.07.05_537CURVE_006.d
Level 4	IC 320-172646/7	2017.07.05_537CURVE_007.d
Level 5	IC 320-172646/8	2017.07.05_537CURVE_008.d
Level 6	IC 320-172646/9	2017.07.05_537CURVE_009.d

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								
Perfluorobutanesulfonic acid (PFBS)	0.9481 0.7897	0.9454	0.9006	0.8560	0.9067	Ave		0.8911				6.7		30.0			
Perfluoroheptanoic acid (PFHpA)	1.0233 1.0518	1.1219	1.0105	1.0079	1.0586	Ave		1.0457				4.1		30.0			
Perfluorohexanesulfonic acid (PFHxS)	1.4151 1.3485	1.4140	1.3485	1.3337	1.5012	Ave		1.3935				4.6		30.0			
Perfluorooctanoic acid (PFOA)	0.8653 0.9458	0.9483	0.8907	0.9155	0.9646	Ave		0.9217				4.1		30.0			
Perfluorooctanesulfonic acid (PFOS)	1.0233 0.9990	1.0180	1.0066	1.0023	1.0955	Ave		1.0241				3.5		30.0			
Perfluorononanoic acid (PFNA)	0.8166 0.8011	0.8671	0.8018	0.8165	0.8416	Ave		0.8241				3.1		30.0			
13C2 PFHxA	1.0491 1.1558	1.1981	1.1291	1.1054	1.1794	Ave		1.1362				4.8		30.0			
13C2 PFDA	0.8223 0.8325	0.8717	0.8508	0.8171	0.8428	Ave		0.8395				2.4		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 172646

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/05/2017 19:50 Calibration End Date: 07/05/2017 20:13 Calibration ID: 32198

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-172646/4	2017.07.05_537CURVE_004.d
Level 2	IC 320-172646/5	2017.07.05_537CURVE_005.d
Level 3	IC 320-172646/6	2017.07.05_537CURVE_006.d
Level 4	IC 320-172646/7	2017.07.05_537CURVE_007.d
Level 5	IC 320-172646/8	2017.07.05_537CURVE_008.d
Level 6	IC 320-172646/9	2017.07.05_537CURVE_009.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
Perfluorobutanesulfonic acid (PFBS)	PFOS	Ave	803806 14234634	1925519	3823269	7725129	11133396	8.83 176	21.2	44.4	89.4	133
Perfluoroheptanoic acid (PFHpA)	13PF OA	Ave	101135 1993330	250235	490415	984967	1494114	0.990 19.7	2.38	4.97	10.0	14.9
Perfluorohexanesulfonic acid (PFHxS)	PFOS	Ave	408251 8271288	980019	1948018	4095579	6272381	3.01 59.7	7.21	15.1	30.4	45.1
Perfluorooctanoic acid (PFOA)	13PF OA	Ave	172606 3617366	426873	872357	1805622	2747595	2.00 39.7	4.80	10.0	20.2	30.0
Perfluorooctanesulfonic acid (PFOS)	PFOS	Ave	393122 8159668	939618	1936577	4098834	6095701	4.00 79.6	9.61	20.1	40.5	60.0
Perfluorononanoic acid (PFNA)	13PF OA	Ave	157013 2953507	376270	756974	1552293	2310846	1.93 38.3	4.62	9.68	19.5	28.9
13C2 PFHxA	13PF OA	Ave	1047405 1113221	1124762	1101523	1077727	1120950	10.0 10.0	10.0	10.0	10.0	10.0
13C2 PFDA	13PF OA	Ave	820977 801864	818323	829957	796662	800975	10.0 10.0	10.0	10.0	10.0	10.0

Curve Type Legend:

Ave = Average ISTD

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 172646

SDG No.: _____

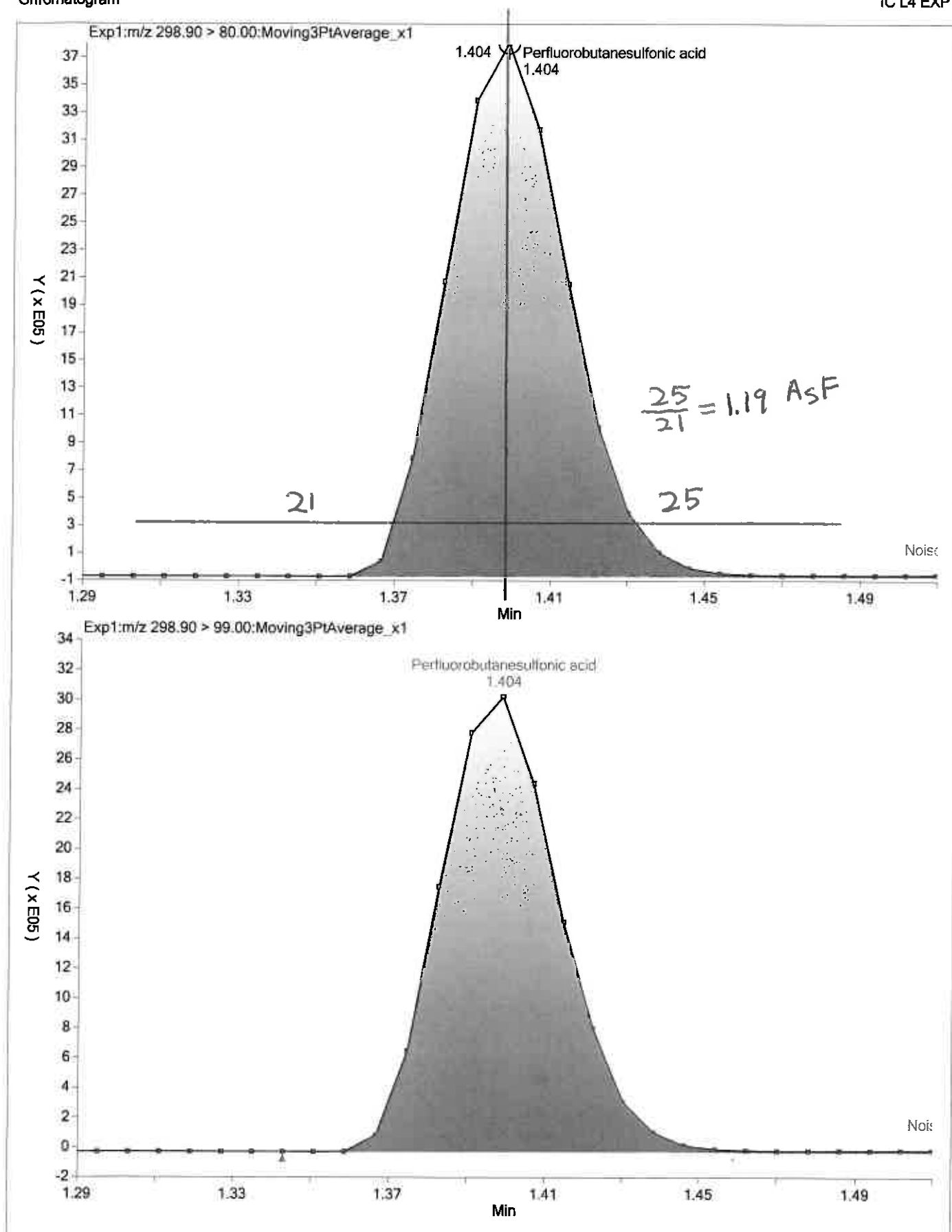
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

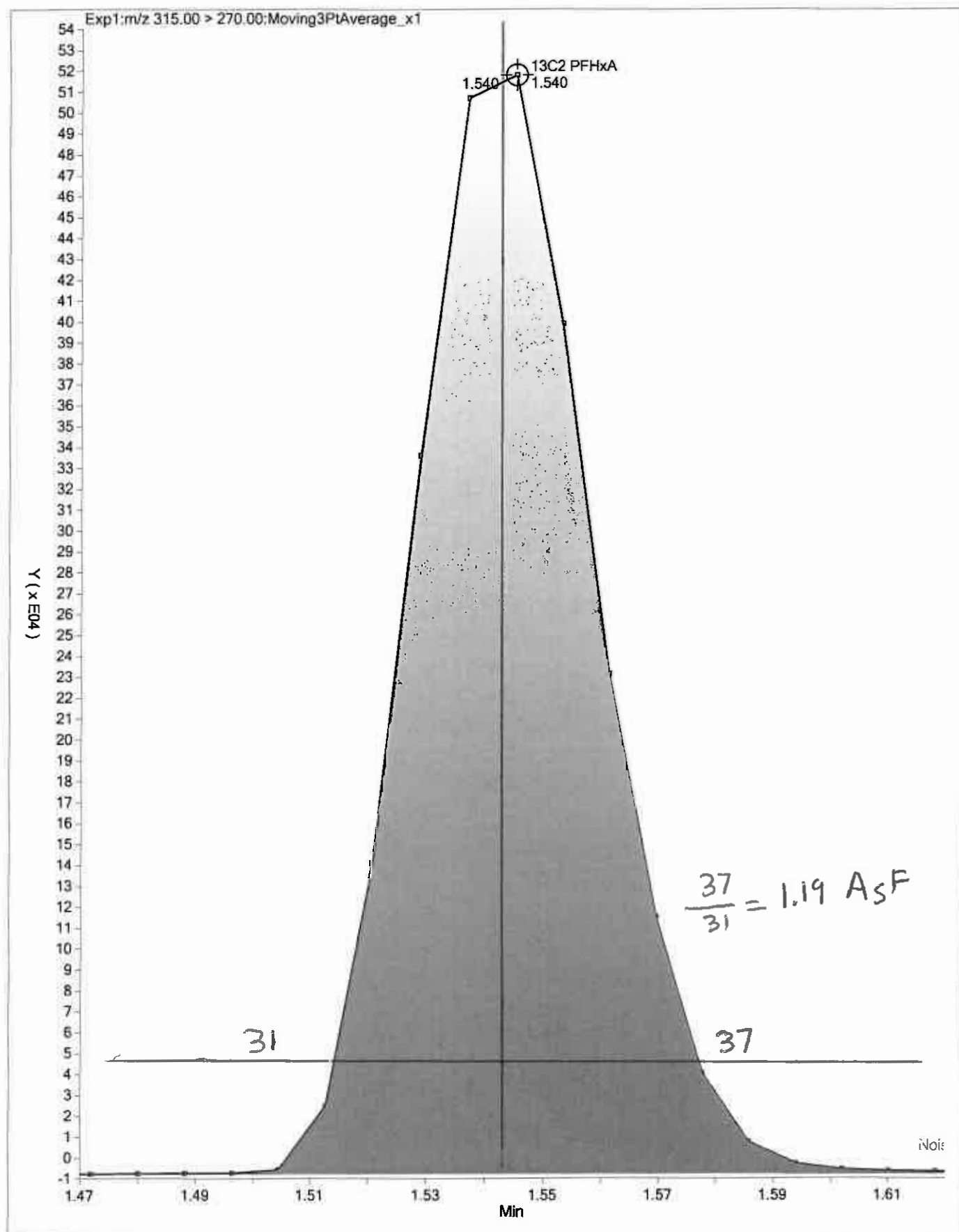
Calibration Start Date: 07/05/2017 19:50 Calibration End Date: 07/05/2017 20:13 Calibration ID: 32198

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-172646/4	2017.07.05_537CURVE_004.d
Level 2	IC 320-172646/5	2017.07.05_537CURVE_005.d
Level 3	IC 320-172646/6	2017.07.05_537CURVE_006.d
Level 4	IC 320-172646/7	2017.07.05_537CURVE_007.d
Level 5	IC 320-172646/8	2017.07.05_537CURVE_008.d
Level 6	IC 320-172646/9	2017.07.05_537CURVE_009.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanesulfonic acid (PFBS)	6.4	6.1	1.1	-3.9	1.8	-11.4	50	50	50	50	50	50
Perfluoroheptanoic acid (PFHpA)	-2.1	7.3	-3.4	-3.6	1.2	0.6	50	50	50	50	50	50
Perfluorohexanesulfonic acid (PFHxS)	1.6	1.5	-3.2	-4.3	7.7	-3.2	50	50	50	50	50	50
Perfluorooctanoic acid (PFOA)	-6.1	2.9	-3.4	-0.7	4.7	2.6	50	50	50	50	50	50
Perfluorooctanesulfonic acid (PFOS)	-0.1	-0.6	-1.7	-2.1	7.0	-2.5	50	50	50	50	50	50
Perfluorononanoic acid (PFNA)	-0.9	5.2	-2.7	-0.9	2.1	-2.8	50	50	50	50	50	50
13C2 PFHxA	-7.7	5.5	-0.6	-2.7	3.8	1.7	30	30	30	30	30	30
13C2 PFDA	-2.0	3.8	1.3	-2.7	0.4	-0.8	30	30	30	30	30	30





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_004.d
 Lims ID: IC L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 05-Jul-2017 19:50:03 ALS Bottle#: 1 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L1_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Jul-2017 14:15:30 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: westendorfc

Date: 06-Jul-2017 10:59:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	803806	9.40		272	
298.90 > 99.00	1.404	1.404	0.0	1.000	646416		1.24(0.00-0.00)	310	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.539	0.001	1.000	1047405	9.23		3630	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.691	0.001	1.000	101135	0.9688		15.5	M
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.692	0.0	1.000	408251	3.05		136	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.878	0.004		998347	10.0		3971	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.879	0.003	1.000	172606	1.88		20.9	
413.00 > 169.00	1.882	1.879	0.003	1.000	106296		1.62(0.00-0.00)	105	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.117	0.0		2752369	28.7		3870	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.124	2.124	0.0	1.000	393122	4.00		395	
499.00 > 99.00	2.117	2.124	-0.007	0.996	88646		4.43(0.00-0.00)	221	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.124	0.0	1.000	157013	1.91		27.9	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.281	0.003	1.000	820977	9.80		2019	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L1_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_004.d

Injection Date: 05-Jul-2017 19:50:03

Instrument ID: A8_N

Lims ID: IC L1

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

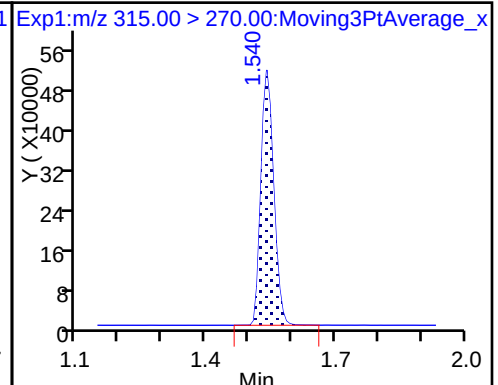
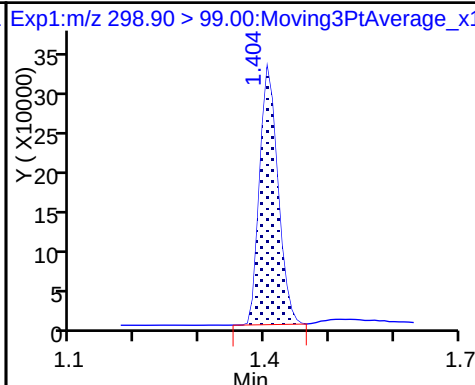
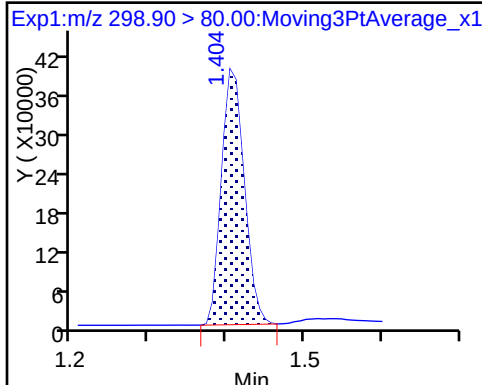
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

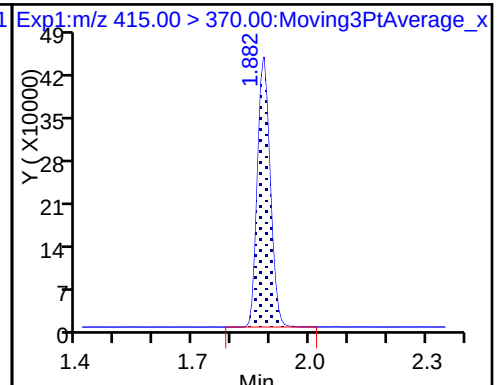
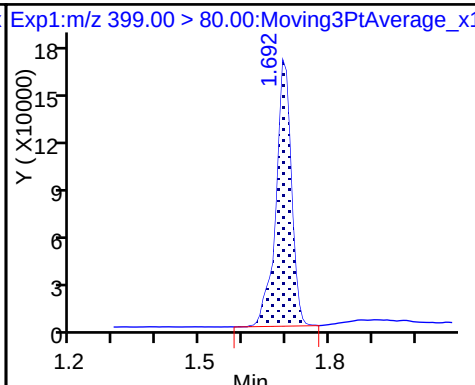
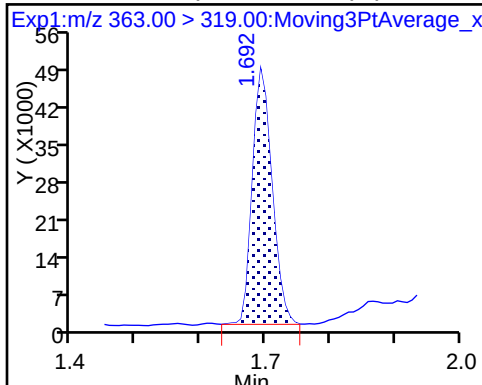
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid (M)

3 Perfluorohexanesulfonic acid

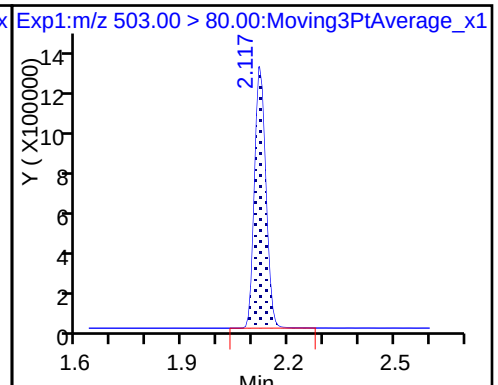
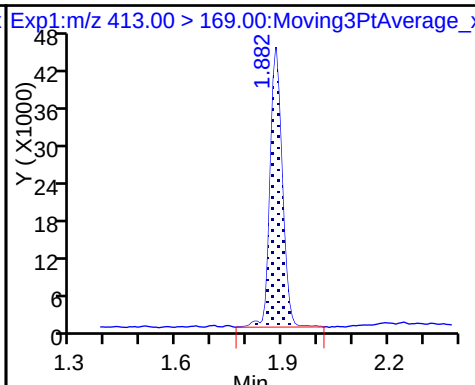
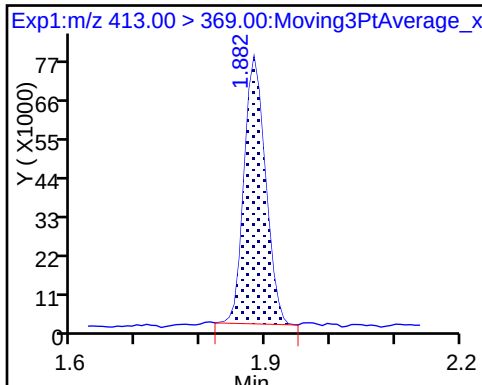
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

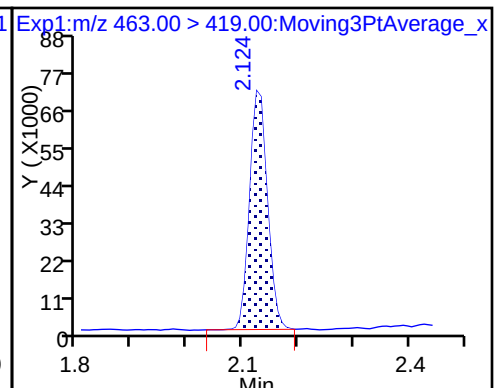
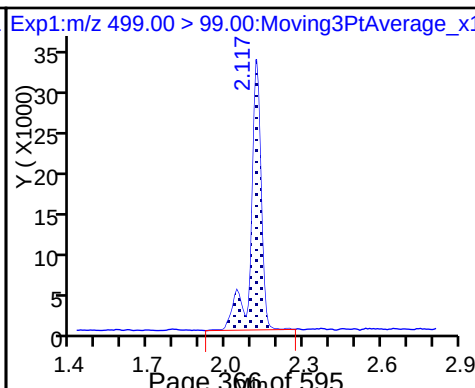
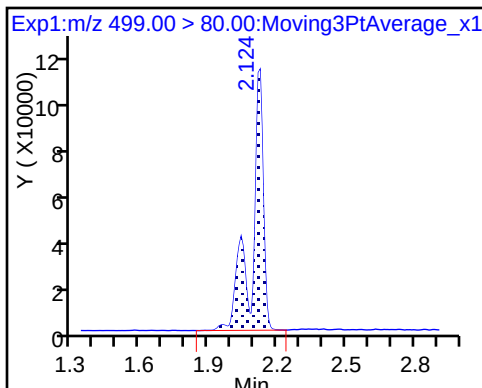
* 7 13C4 PFOS



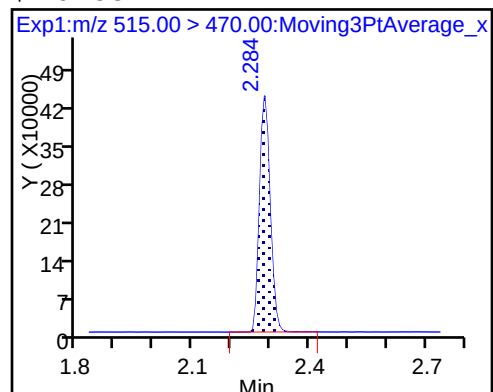
8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

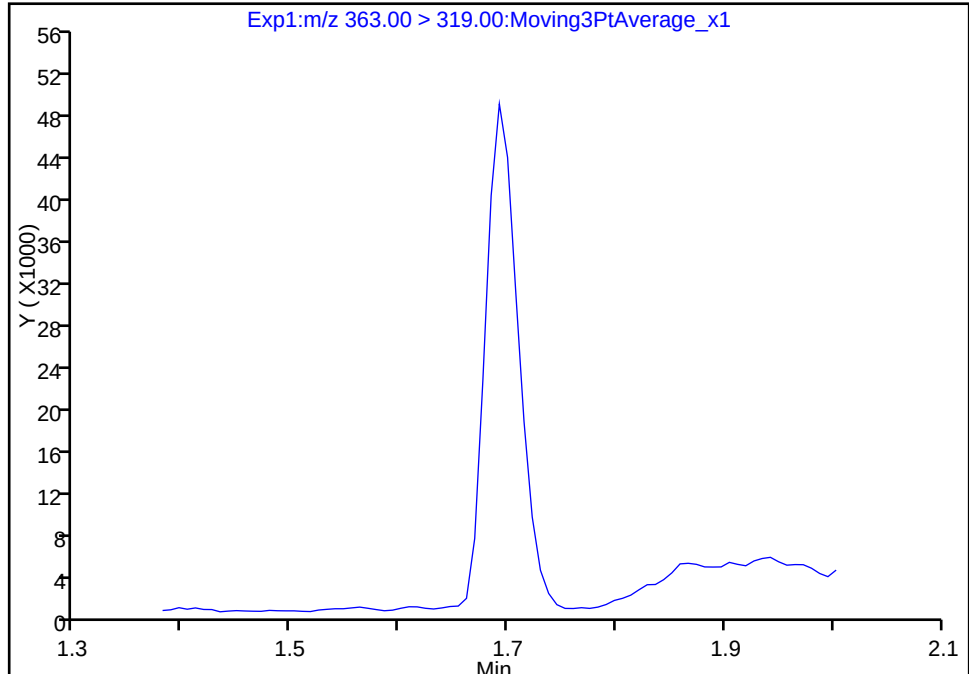
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_004.d
Injection Date: 05-Jul-2017 19:50:03 Instrument ID: A8_N
Lims ID: IC L1
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

4 Perfluoroheptanoic acid, CAS: 375-85-9

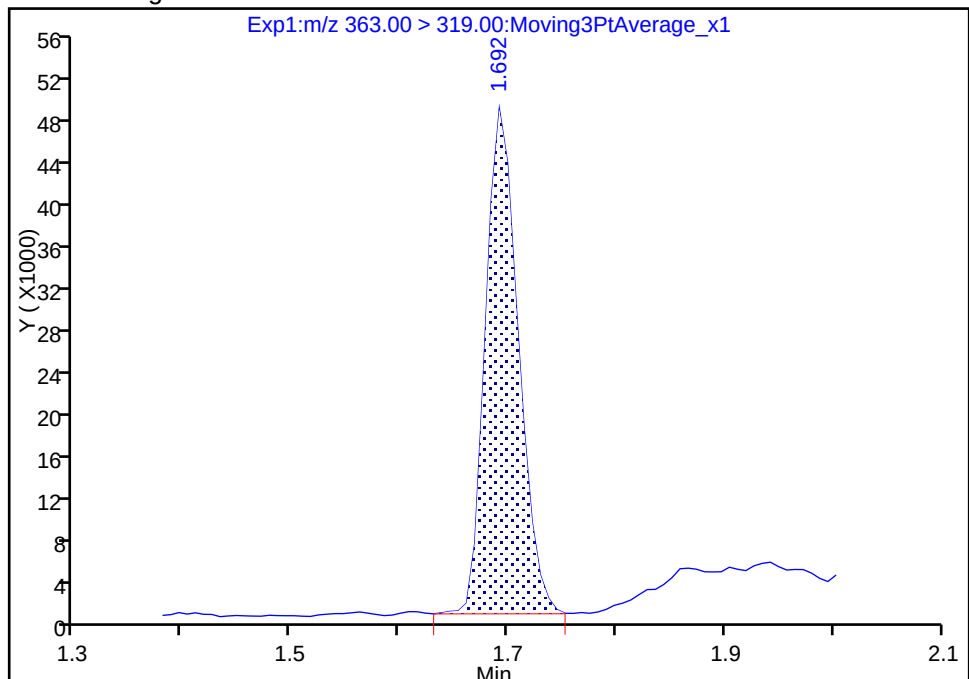
Signal: 1

Not Detected
Expected RT: 1.69

Processing Integration Results



Manual Integration Results



RT: 1.69
Area: 101135
Amount: 0.968791
Amount Units: ng/ml

Reviewer: barnettj, 06-Jul-2017 11:03:45

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_005.d
 Lims ID: IC L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 05-Jul-2017 19:54:49 ALS Bottle#: 2 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L2_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Jul-2017 14:15:34 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: westendorfc

Date: 06-Jul-2017 10:59:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	1925519	22.5		627	
298.90 > 99.00	1.404	1.404	0.0	1.000	1437061		1.34(0.00-0.00)	617	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.533	1.539	-0.006	1.000	1124762	10.5		3950	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.684	1.691	-0.007	1.000	250235	2.55		35.1	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.692	0.0	1.000	980019	7.32		336	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.878	-0.004		938771	10.0		3641	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.874	1.879	-0.005	1.000	426873	4.93		51.1	
413.00 > 169.00	1.874	1.879	-0.005	1.000	256717		1.66(0.00-0.00)	260	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.117	0.0		2755145	28.7		3792	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.124	0.0	1.000	376270	4.86		63.1	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.124	-0.007	1.000	939618	9.55		901	
499.00 > 99.00	2.117	2.124	-0.007	1.000	215298		4.36(0.00-0.00)	444	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.281	0.003	1.000	818323	10.4		2010	

Reagents:

LC537-L2_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_005.d

Injection Date: 05-Jul-2017 19:54:49

Instrument ID: A8_N

Lims ID: IC L2

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

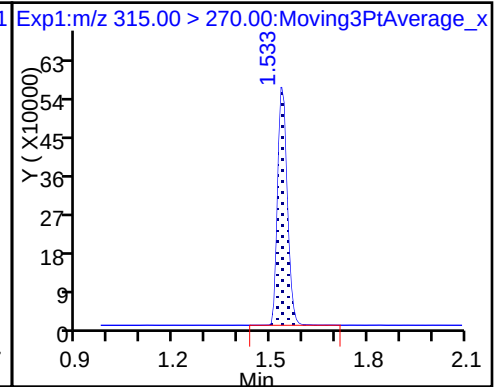
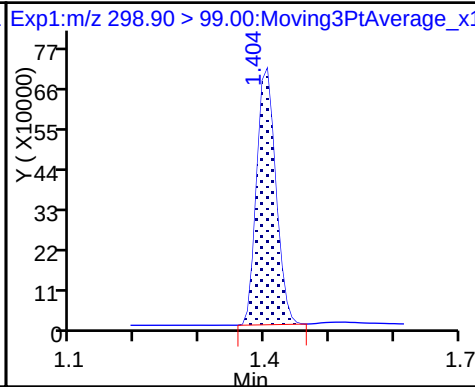
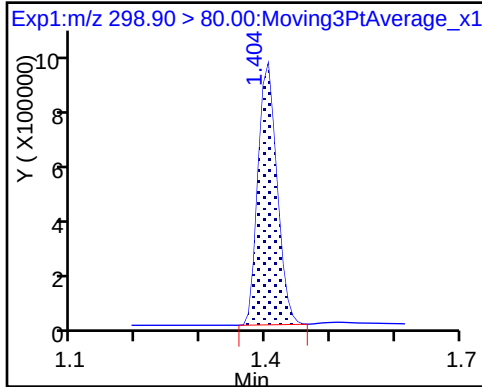
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

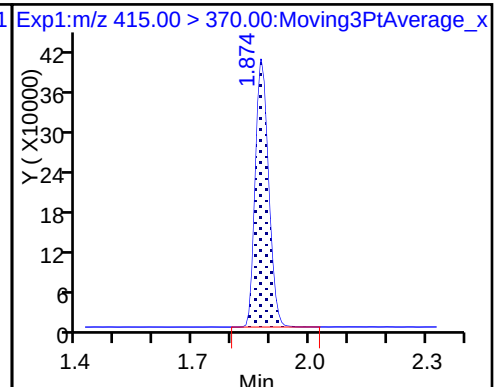
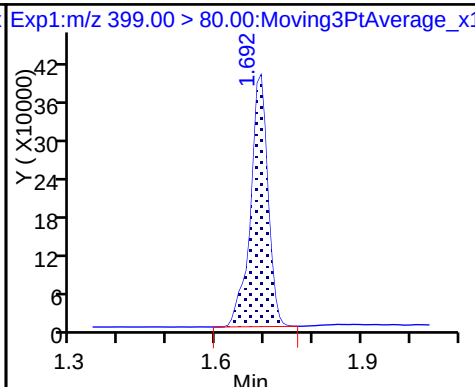
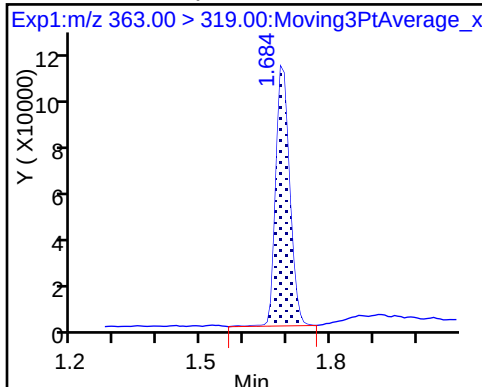
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

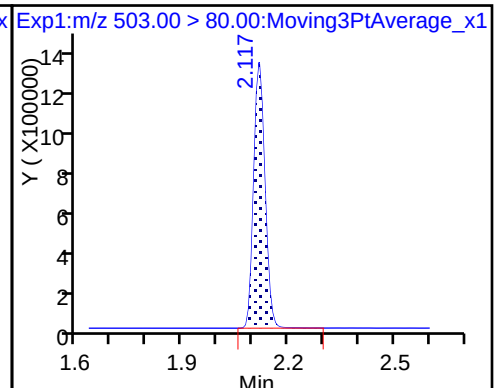
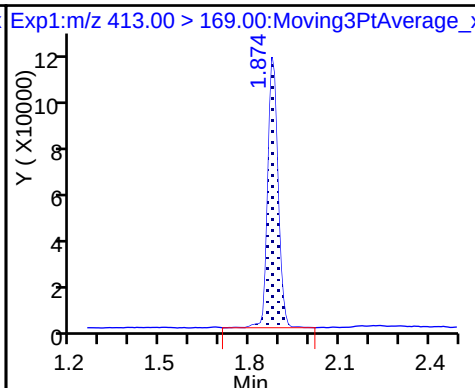
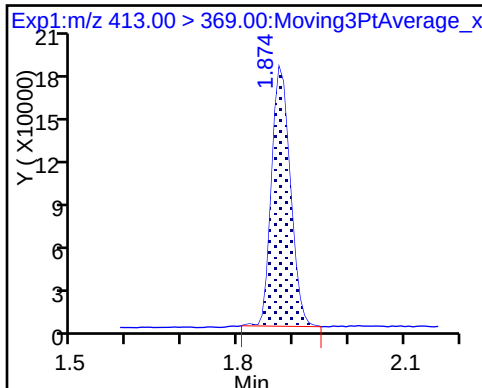
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

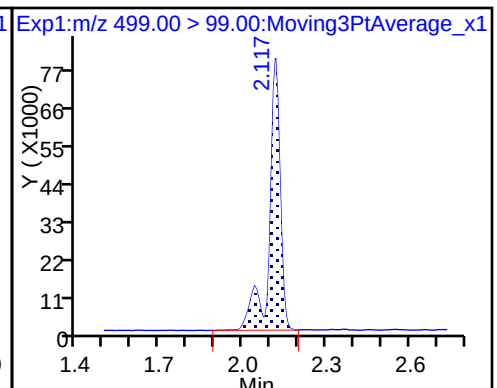
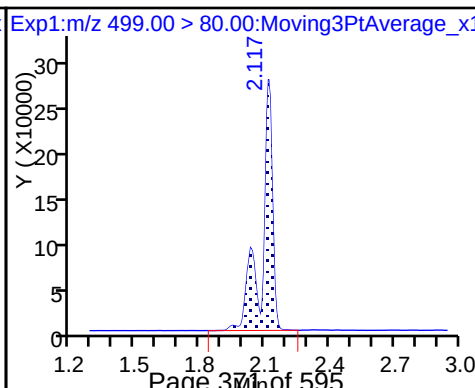
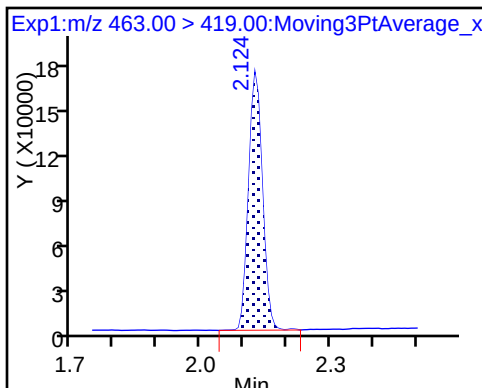
* 7 13C4 PFOS



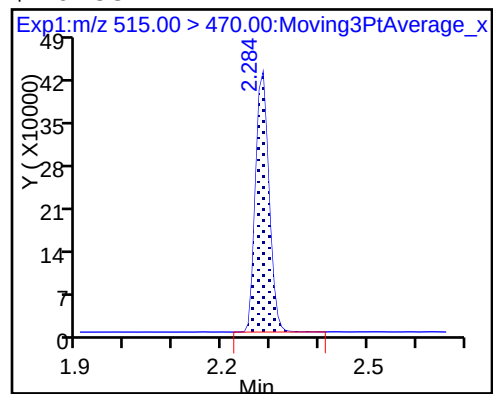
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_006.d
 Lims ID: IC L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 05-Jul-2017 19:59:33 ALS Bottle#: 3 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L3_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Jul-2017 14:15:41 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: westendorfc

Date: 06-Jul-2017 10:59:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	3823269	44.9		1166	
298.90 > 99.00	1.404	1.404	0.0	1.000	2920357		1.31(0.00-0.00)	1258	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.539	0.001	1.000	1101523	9.94		3884	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.691	0.001	1.000	490415	4.81		75.9	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.692	0.0	1.000	1948018	14.6		651	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.878	0.004		975549	10.0		3730	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.879	0.003	1.000	872357	9.70		109	
413.00 > 169.00	1.882	1.879	0.003	1.000	514618		1.70(0.00-0.00)	504	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.117	0.0		2742820	28.7		3791	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.124	-0.007	1.000	1936577	19.8		2045	
499.00 > 99.00	2.117	2.124	-0.007	1.000	449750		4.31(0.00-0.00)	935	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.124	0.0	1.000	756974	9.42		111	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.281	0.003	1.000	829957	10.1		2049	

Reagents:

LC537-L3_00022

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_006.d

Injection Date: 05-Jul-2017 19:59:33

Instrument ID: A8_N

Lims ID: IC L3

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

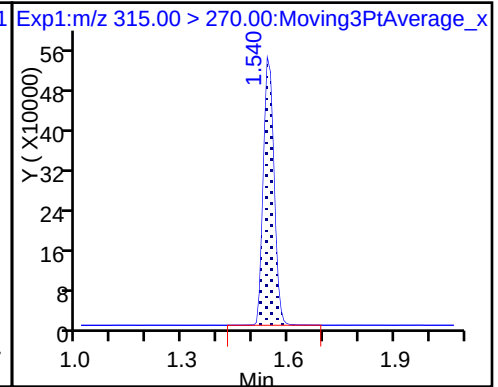
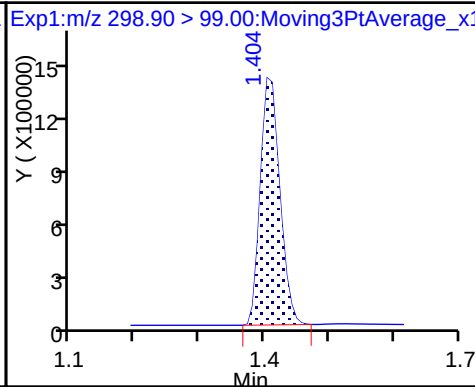
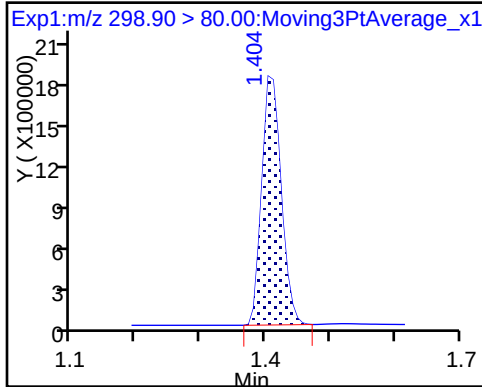
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

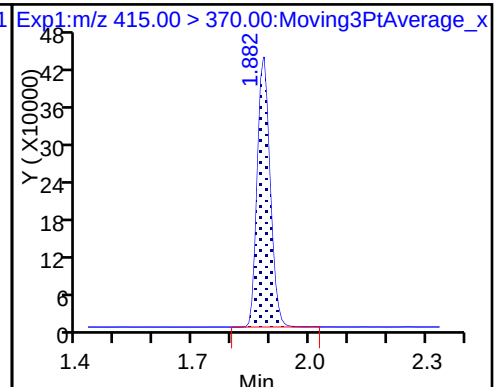
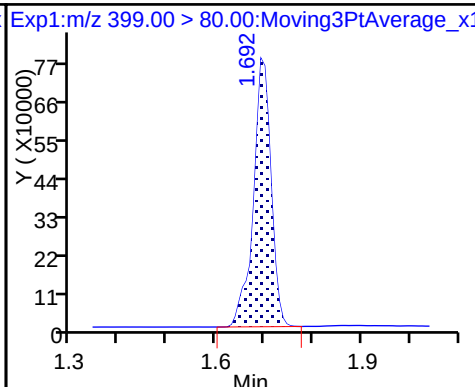
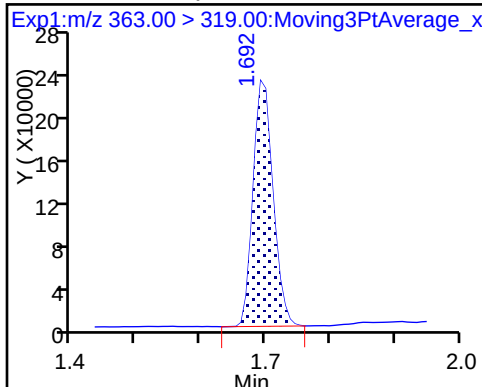
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

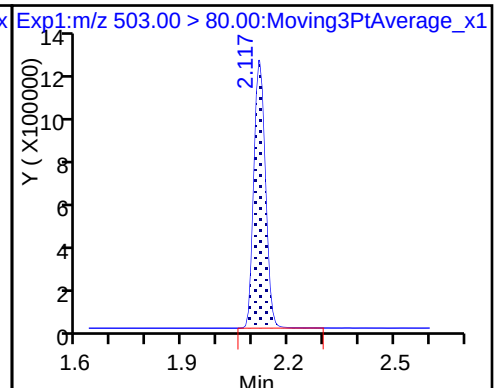
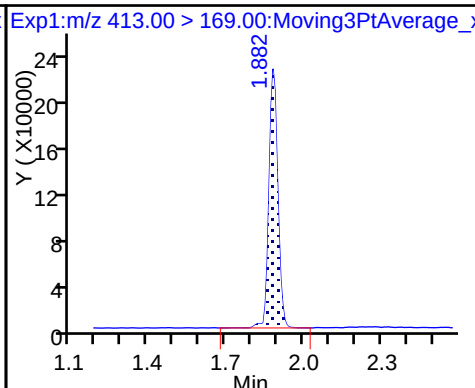
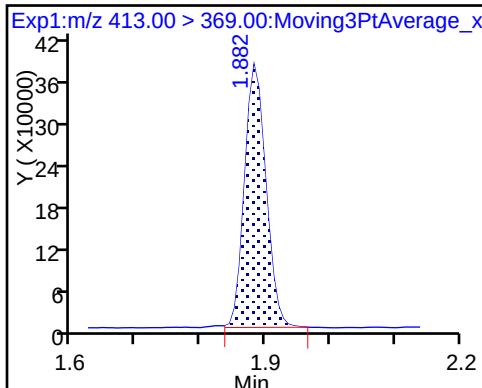
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

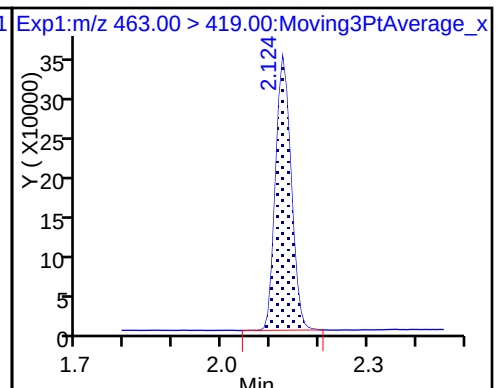
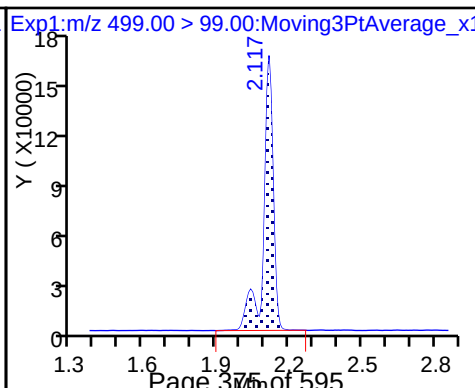
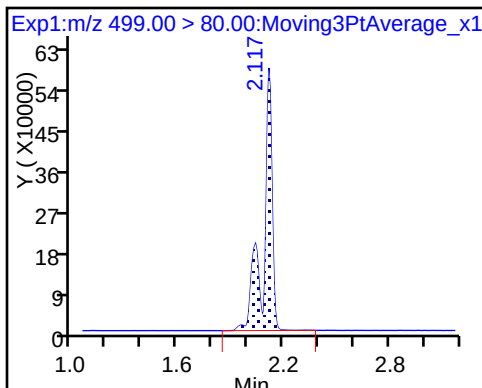
* 7 13C4 PFOS



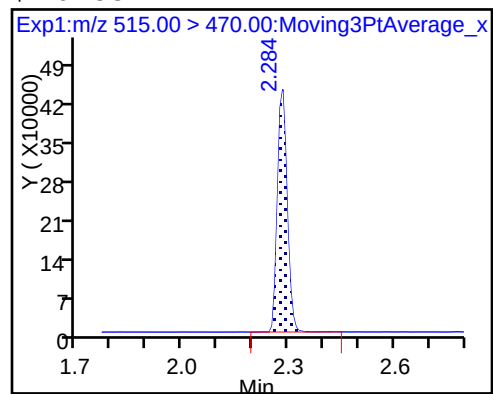
8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_007.d
 Lims ID: IC L4
 Client ID:
 Sample Type: ICISAV Calib Level: 4
 Inject. Date: 05-Jul-2017 20:04:17 ALS Bottle#: 4 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L4_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Jul-2017 14:15:45 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: barnettj

Date: 06-Jul-2017 13:17:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	7725129	85.9		2754	
298.90 > 99.00	1.404	1.404	0.0	1.000	6080754		1.27(0.00-0.00)	3025	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.539	0.001	1.000	1077727	9.73		3508	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.691	0.001	1.000	984967	9.66		146	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.692	0.0	1.000	4095579	29.1		1332	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.878	-0.004		974930	10.0		3371	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.879	0.003	1.000	1805622	20.1		203	
413.00 > 169.00	1.874	1.879	-0.005	0.996	1061719		1.70(0.00-0.00)	1067	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.117	0.0		2893551	28.7		3911	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.124	0.0	1.000	1552293	19.3		265	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.124	-0.007	1.000	4098834	39.7		3405	
499.00 > 99.00	2.117	2.124	-0.007	1.000	919355		4.46(0.00-0.00)	1708	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	796662	9.73		1776	

Reagents:

LC537-L4_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_007.d

Injection Date: 05-Jul-2017 20:04:17

Instrument ID: A8_N

Lims ID: IC L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 4

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

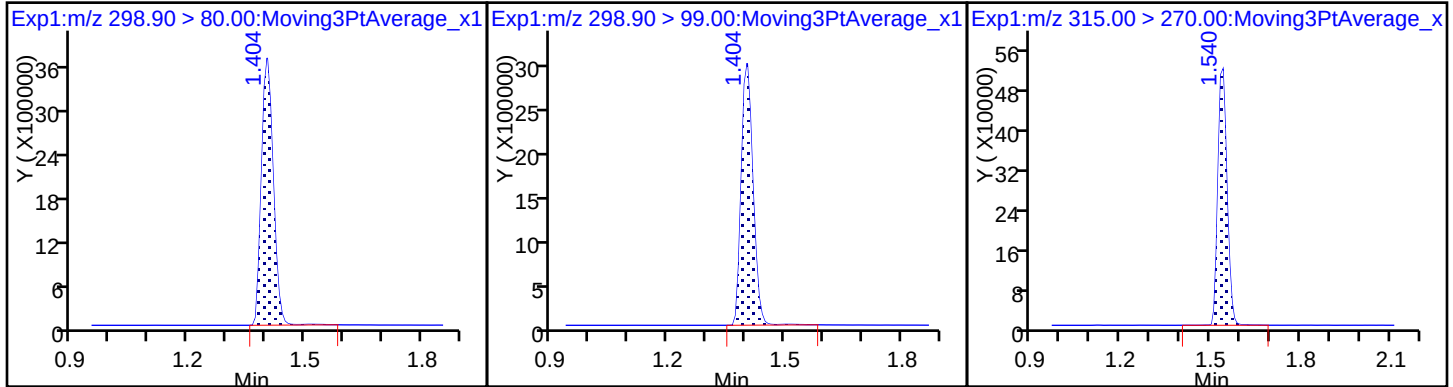
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

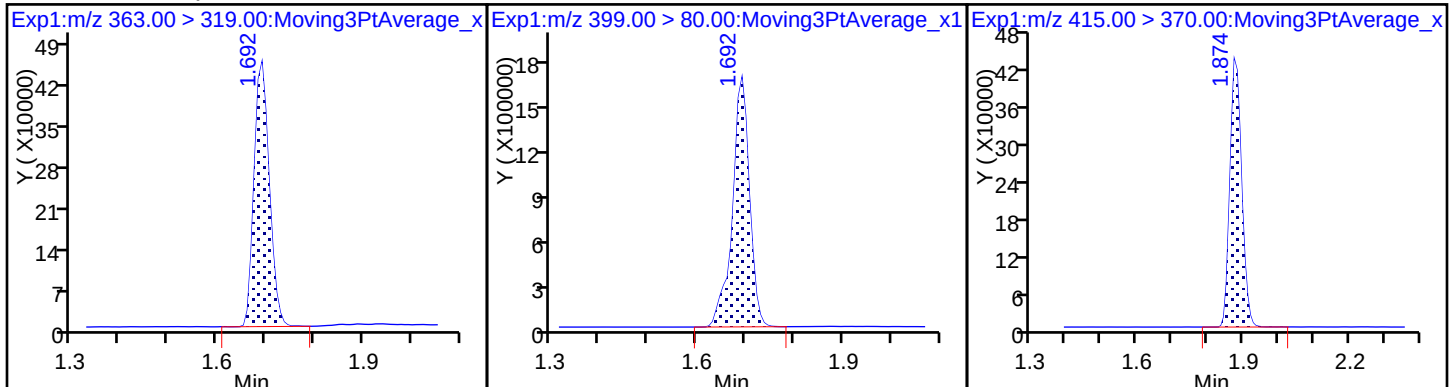
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

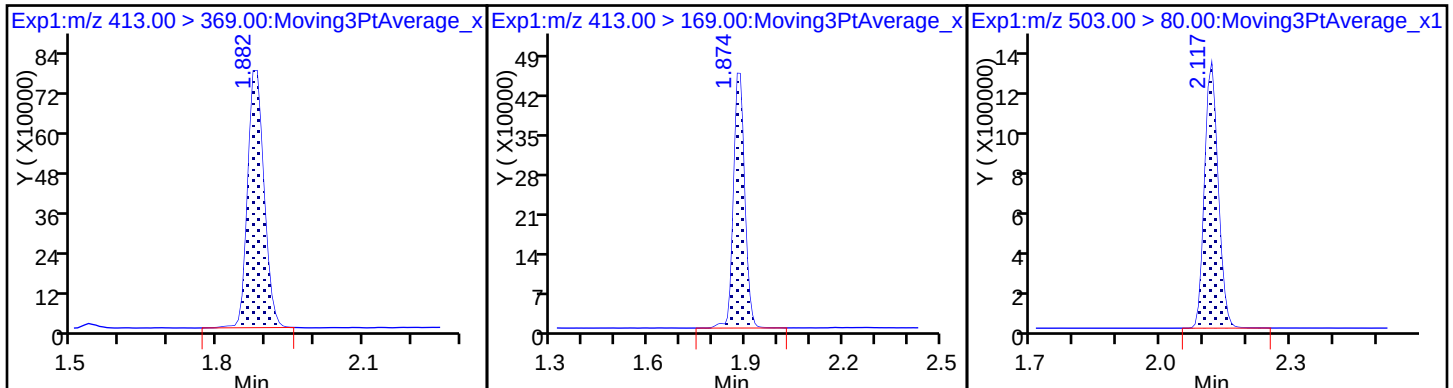
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

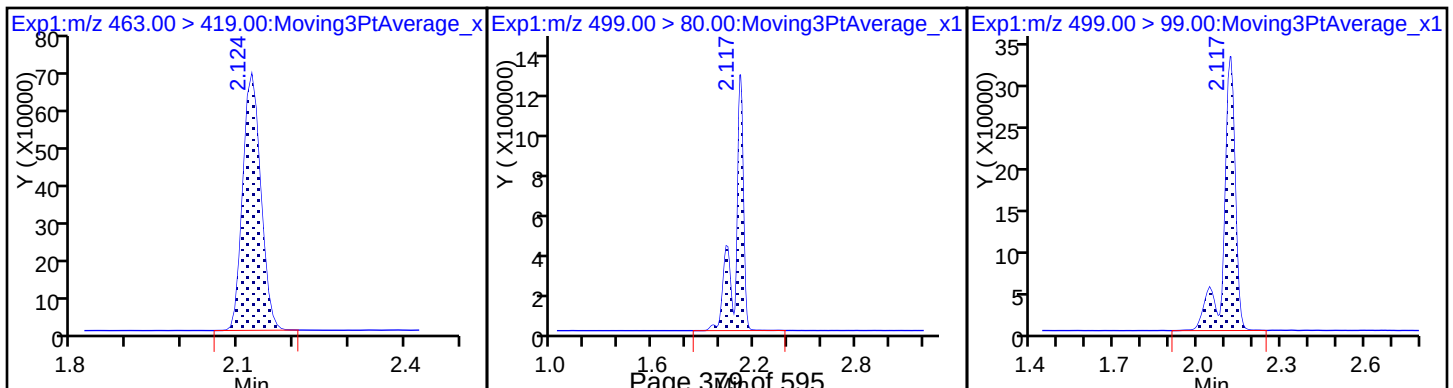
* 7 13C4 PFOS



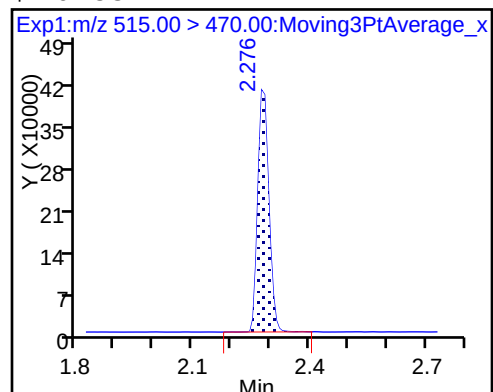
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_008.d
 Lims ID: IC L5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 05-Jul-2017 20:09:01 ALS Bottle#: 5 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L5_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Jul-2017 14:15:48 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: barnettj

Date: 06-Jul-2017 14:15:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	11133396	134.8		2833	
298.90 > 99.00	1.404	1.404	0.0	1.000	9082765		1.23(0.00-0.00)	2901	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.539	0.001	1.000	1120950	10.4		4043	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.691	0.001	1.000	1494114	15.0		221	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.692	0.0	1.000	6272381	48.6		1990	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.878	-0.004		950425	10.0		3440	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.874	1.879	-0.005	1.000	2747595	31.4		299	
413.00 > 169.00	1.874	1.879	-0.005	1.000	1674247		1.64(0.00-0.00)	1571	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.117	0.0		2657493	28.7		3483	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.124	-0.007	1.000	6095701	64.2		4978	
499.00 > 99.00	2.117	2.124	-0.007	1.000	1321716		4.61(0.00-0.00)	2212	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.124	0.0	1.000	2310846	29.5		371	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.281	0.003	1.000	800975	10.0		1851	

Reagents:

LC537-L5_00023

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_008.d

Injection Date: 05-Jul-2017 20:09:01

Instrument ID: A8_N

Lims ID: IC L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

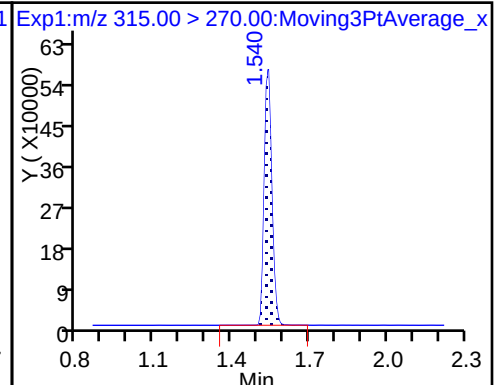
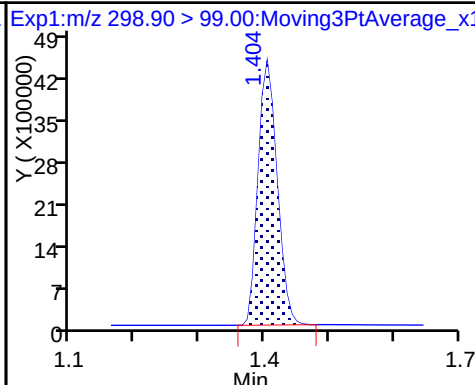
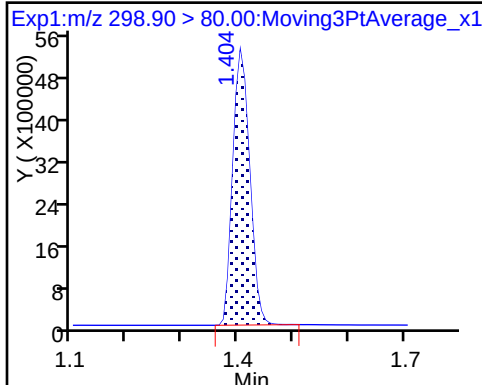
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

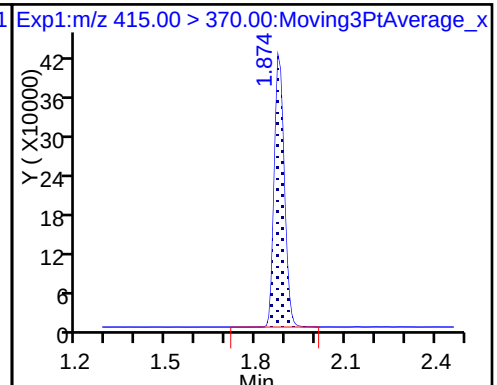
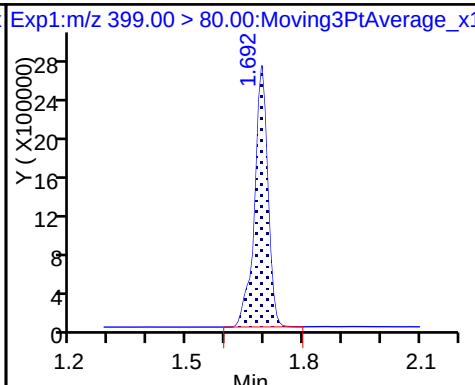
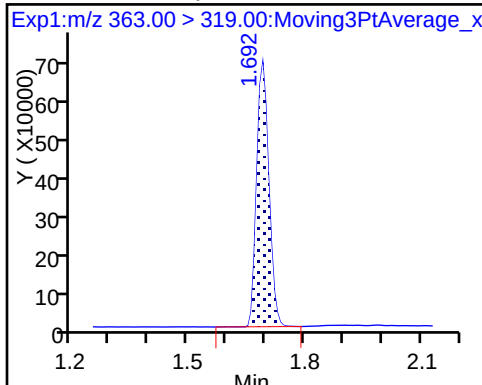
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

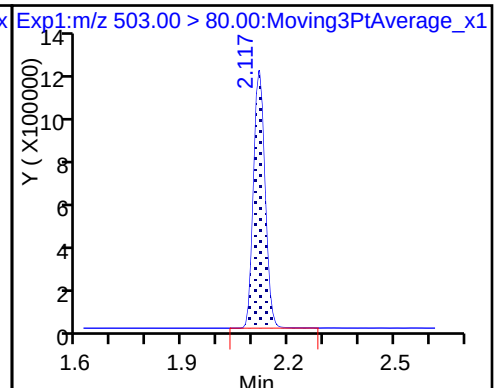
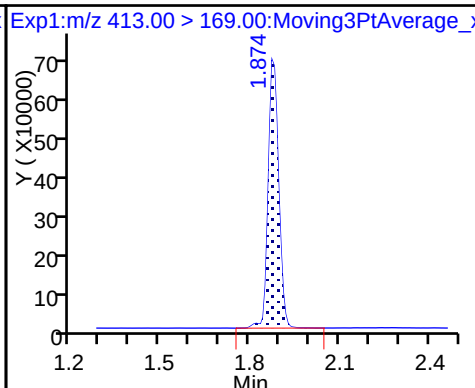
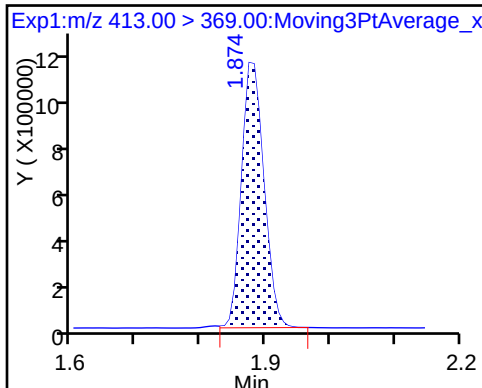
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

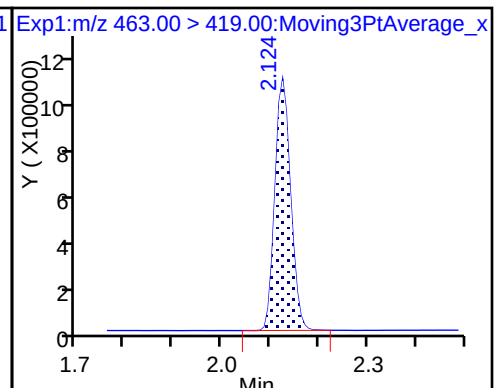
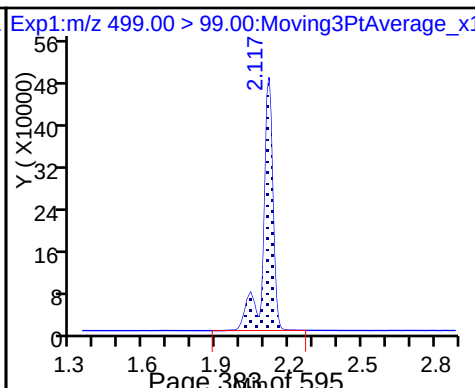
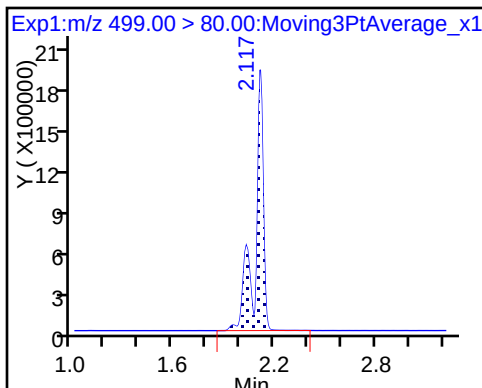
* 7 13C4 PFOS



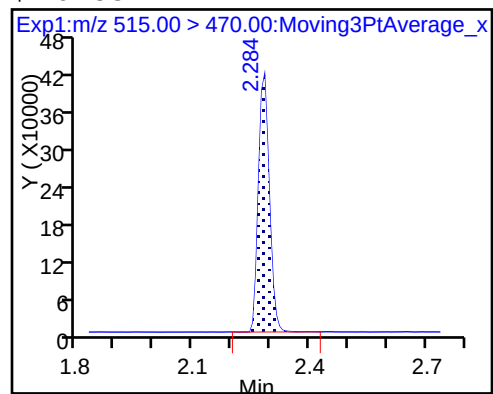
8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
 Lims ID: IC L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 05-Jul-2017 20:13:46 ALS Bottle#: 6 Worklist Smp#: 9
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L6_537
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Jul-2017 14:15:51 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: barnettj

Date: 06-Jul-2017 11:02:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	14234634	155.6		3178	
298.90 > 99.00	1.404	1.404	0.0	1.000	10833802		1.31(0.00-0.00)	3119	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.539	0.001	1.000	1113221	10.2		3988	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.691	0.001	1.000	1993330	19.8		301	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.692	0.0	1.000	8271288	57.8		2408	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.878	0.004		963179	10.0		3523	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.879	0.003	1.000	3617366	40.7		410	
413.00 > 169.00	1.882	1.879	0.003	1.000	2130918		1.70(0.00-0.00)	1930	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.117	0.0		2944302	28.7		3886	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.124	0.0	1.000	2953507	37.2		463	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.124	-0.007	1.000	8159668	77.6		5286	
499.00 > 99.00	2.117	2.124	-0.007	1.000	1870549		4.36(0.00-0.00)	2998	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	801864	9.92		1695	

Reagents:

LC537-L6_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Injection Date: 05-Jul-2017 20:13:46

Instrument ID: A8_N

Lims ID: IC L6

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 6

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

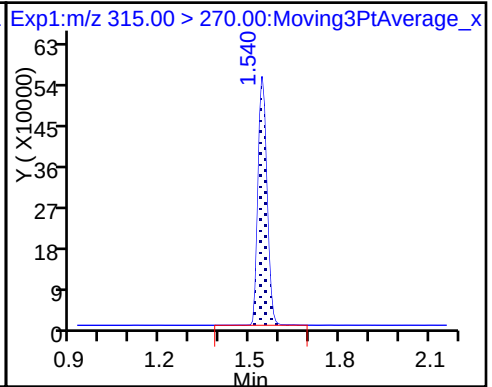
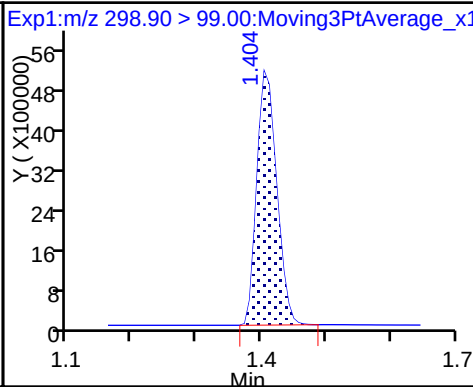
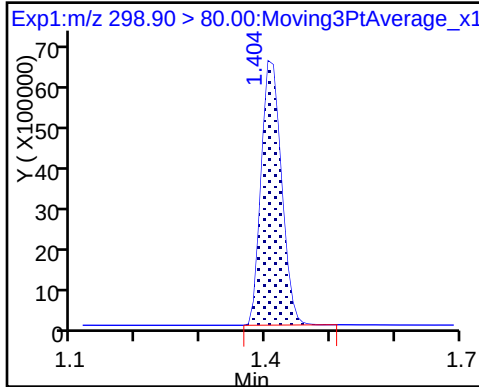
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

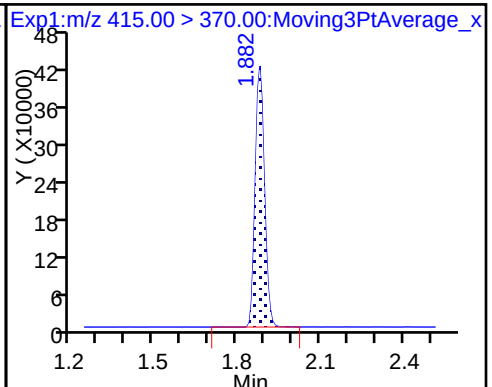
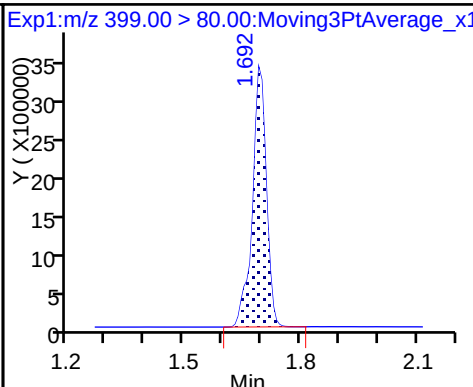
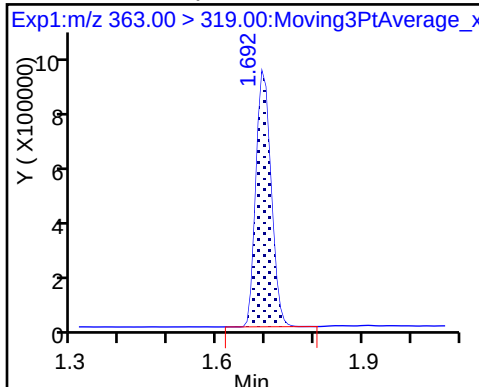
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

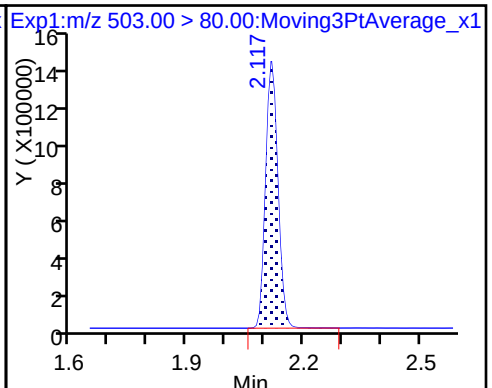
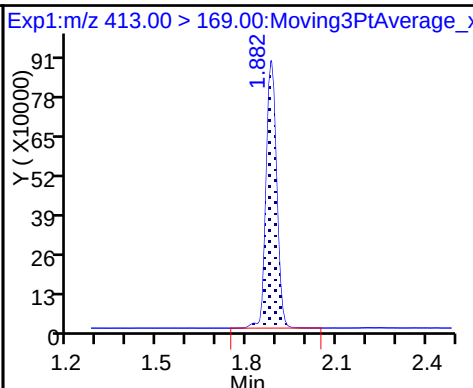
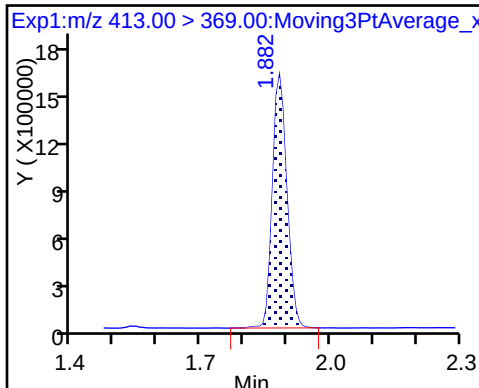
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

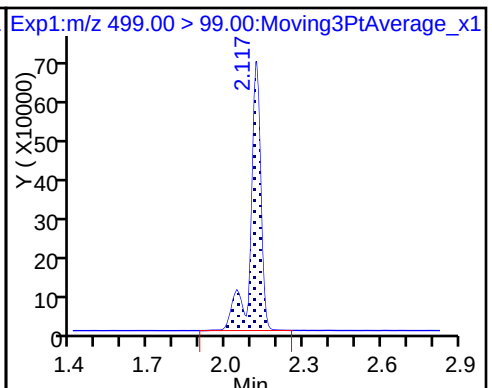
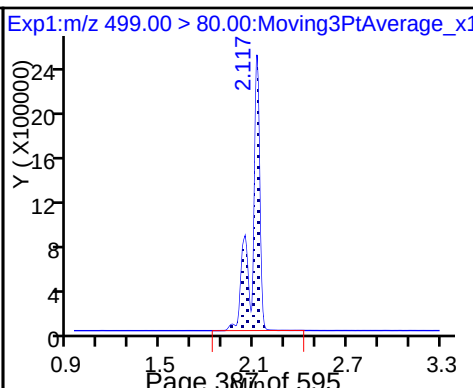
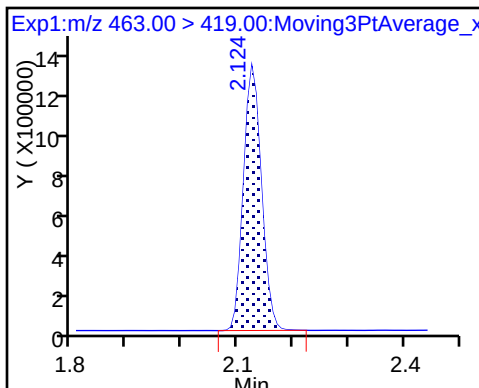
* 7 13C4 PFOS



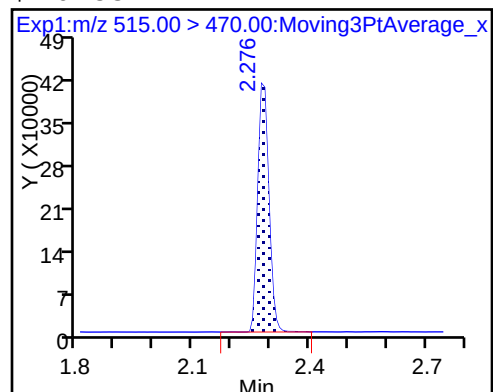
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-173534/14 Calibration Date: 07/11/2017 15:23
 Instrument ID: A6 Calib Start Date: 07/11/2017 14:18
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/11/2017 15:05
 Lab File ID: 11JUL2017A6B_014.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8010	0.7561		20.0	21.2	-5.6	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.164	1.314		2.68	2.38	12.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	0.8012	0.8160		7.35	7.21	1.8	50.0
Perfluorooctanoic acid (PFOA)	Ave	1.090	1.129		4.97	4.80	3.6	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.015	1.070		10.1	9.61	5.5	50.0
Perfluorononanoic acid (PFNA)	Ave	1.228	1.385		5.22	4.62	12.8	50.0
13C2 PFHxA	Ave	1.402	1.345		9.60	10.0	-4.0	30.0
13C2 PFDA	Ave	1.025	1.068		10.4	10.0	4.2	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_014.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 11-Jul-2017 15:23:46 ALS Bottle#: 2 Worklist Smp#: 14
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCVL
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 11-Jul-2017 15:53:39 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 11-Jul-2017 15:53:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	2.445	2.442	0.003	1.000	541619	20.0	216	
\$ 2 13C2 PFHxA								
315.0 > 270.0	2.738	2.733	0.005	1.000	575433	9.60	914	
4 Perfluoroheptanoic acid								
363.0 > 319.0	3.060	3.060	0.0	1.000	133527	2.68	106	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	3.071	3.071	0.0	1.000	198894	7.35	162	M
* 5 13C2-PFOA								
415.0 > 370.0	3.408	3.411	-0.003		427789	10.0	252	
6 Perfluorooctanoic acid								
413.0 > 369.0	3.408	3.413	-0.005	1.000	231537	4.97	131	
* 8 13C4 PFOS								
503.0 > 80.0	3.817	3.830	-0.013		968938	28.7	712	
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	3.817	3.835	-0.018	1.000	347469	10.1	2102	M
9 Perfluorononanoic acid								
463.0 > 419.0	3.829	3.842	-0.013	1.000	273921	5.22	310	
\$ 10 13C2 PFDA								
515.0 > 470.0	4.446	4.465	-0.019	1.000	456803	10.4	882	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L2_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_014.d

Injection Date: 11-Jul-2017 15:23:46

Instrument ID: A6

Lims ID: CCVL

Client ID:

Operator ID: JRB

ALS Bottle#: 2

Worklist Smp#: 14

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

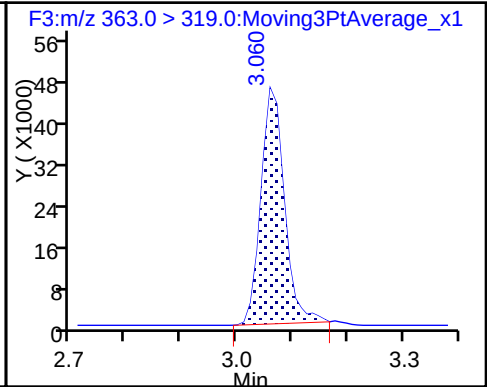
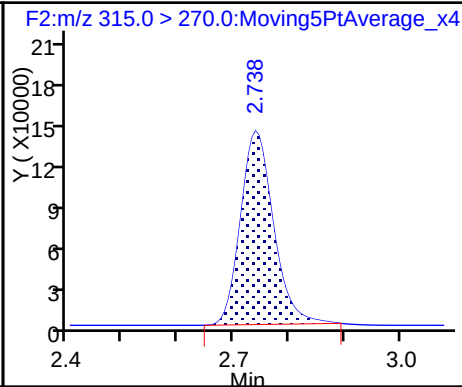
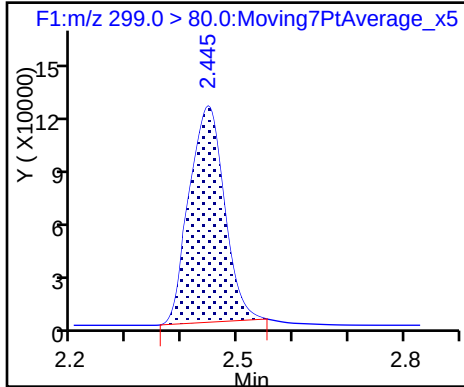
Method: 537__A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

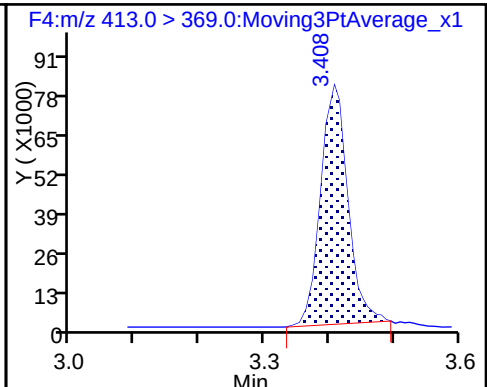
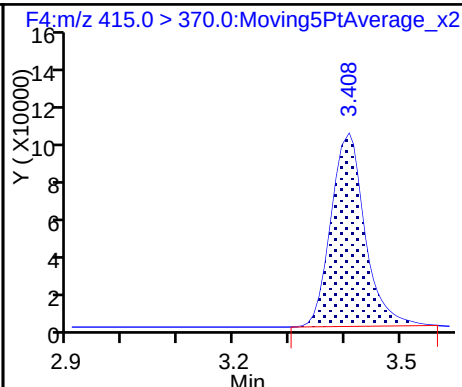
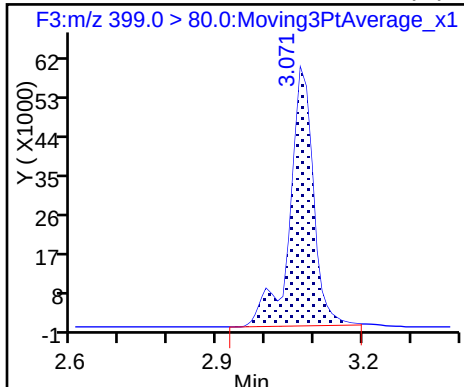
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid (M)

* 5 13C2-PFOA

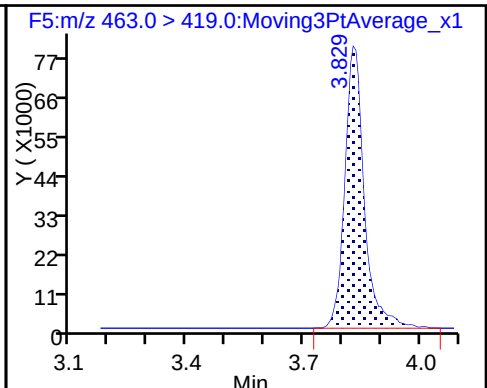
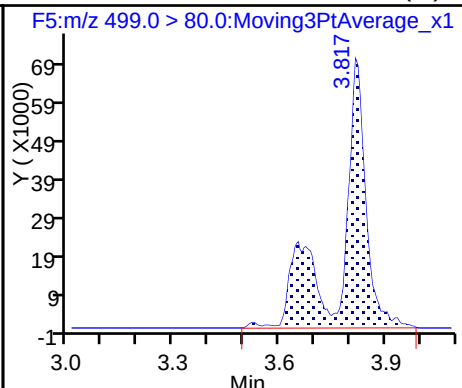
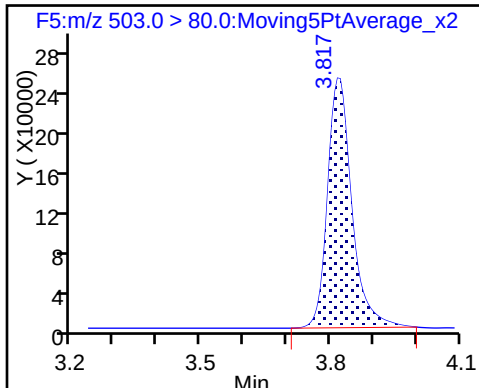
6 Perfluorooctanoic acid



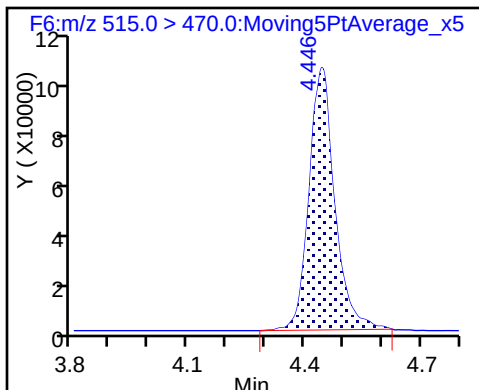
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

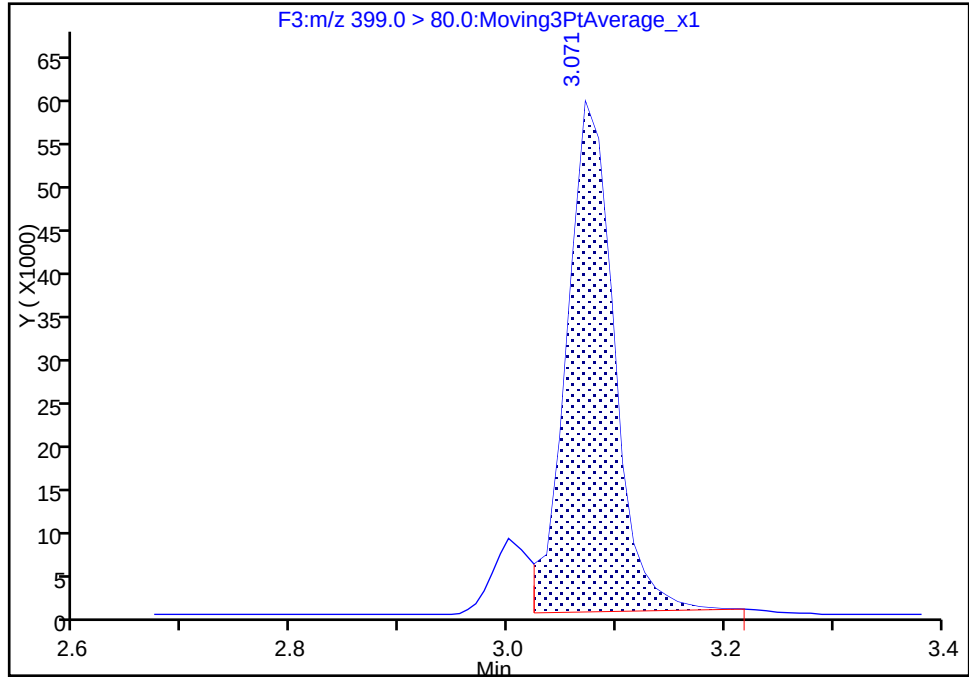
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_014.d
Injection Date: 11-Jul-2017 15:23:46 Instrument ID: A6
Lims ID: CCVL
Client ID:
Operator ID: JRB ALS Bottle#: 2 Worklist Smp#: 14
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F3:MRM

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

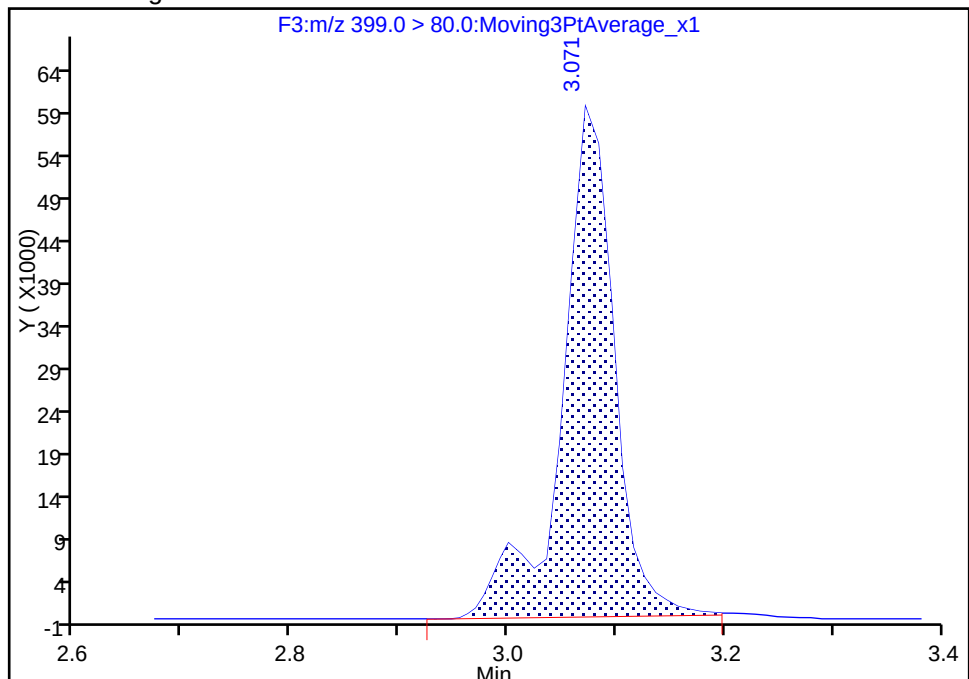
RT: 3.07
Area: 178345
Amount: 6.588761
Amount Units: ng/ml

Processing Integration Results



RT: 3.07
Area: 198894
Amount: 7.347921
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:52:04

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

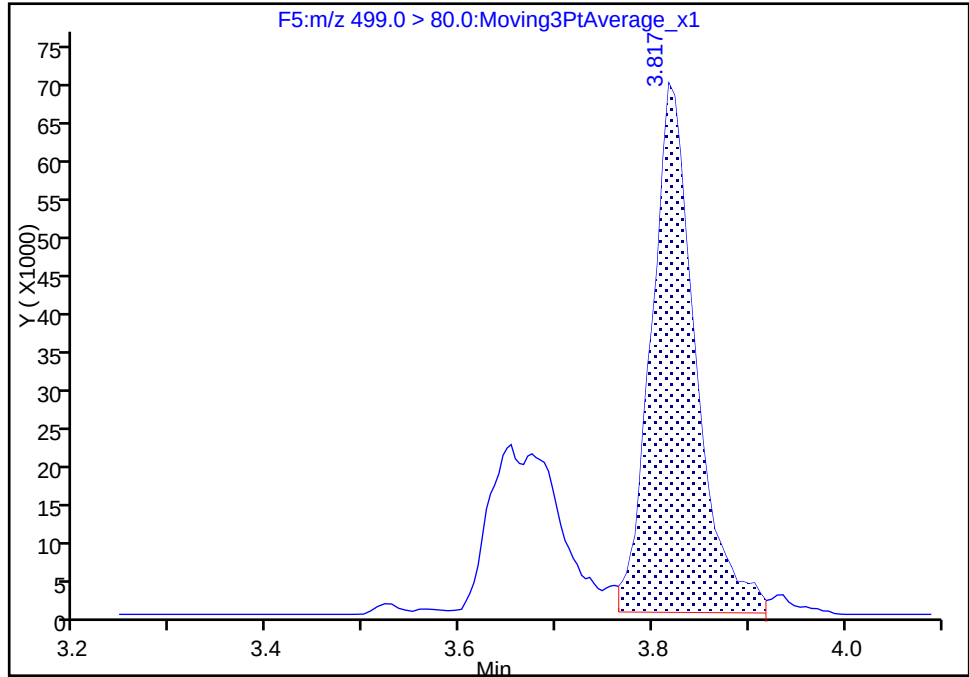
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_014.d
Injection Date: 11-Jul-2017 15:23:46 Instrument ID: A6
Lims ID: CCVL
Client ID:
Operator ID: JRB ALS Bottle#: 2 Worklist Smp#: 14
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

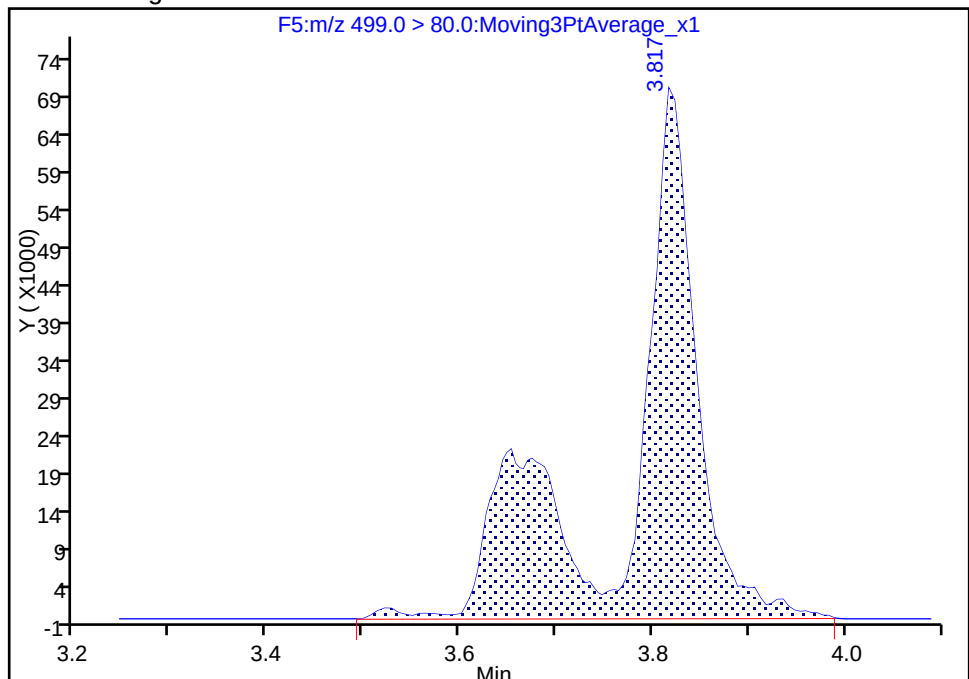
RT: 3.82
Area: 219785
Amount: 6.409837
Amount Units: ng/ml

Processing Integration Results



RT: 3.82
Area: 347469
Amount: 10.133630
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:52:17

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: ICV 320-173534/16 Calibration Date: 07/11/2017 15:42
 Instrument ID: A6 Calib Start Date: 07/11/2017 14:18
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/11/2017 15:05
 Lab File ID: 11JUL2017A6B_016.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8010	0.7916		99.5	101	-1.2	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.164	1.071		9.27	10.1	-8.0	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	0.8012	0.8072		21.3	21.2	0.8	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.090	1.062		19.5	20.0	-2.5	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.015	1.017		20.7	20.7	0.2	30.0
Perfluorononanoic acid (PFNA)	Ave	1.228	1.264		20.6	20.0	2.9	30.0
13C2 PFHxA	Ave	1.402	1.297		9.25	10.0	-7.5	30.0
13C2 PFDA	Ave	1.025	0.997		9.73	10.0	-2.7	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_016.d
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 11-Jul-2017 15:42:00 ALS Bottle#: 7 Worklist Smp#: 16
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist:
 Method: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 11-Jul-2017 16:21:43 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 11-Jul-2017 16:13:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	2.445	2.442	0.003	1.000	2737453	99.5	1412	
\$ 2 13C2 PFHxA								
315.0 > 270.0	2.738	2.733	0.005	1.000	603752	9.25	681	
4 Perfluoroheptanoic acid								
363.0 > 319.0	3.060	3.060	0.0	1.000	502622	9.27	1098	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	3.071	3.071	0.0	1.000	587410	21.3	715	M
* 5 13C2-PFOA								
415.0 > 370.0	3.408	3.411	-0.003		465673	10.0	378	
6 Perfluorooctanoic acid								
413.0 > 369.0	3.408	3.413	-0.005	1.000	990048	19.5	342	
* 8 13C4 PFOS								
503.0 > 80.0	3.811	3.830	-0.019		985132	28.7	597	
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	3.817	3.835	-0.018	1.000	722733	20.7	1109	M
9 Perfluorononanoic acid								
463.0 > 419.0	3.823	3.842	-0.019	1.000	1177250	20.6	6685	
\$ 10 13C2 PFDA								
515.0 > 470.0	4.443	4.465	-0.022	1.000	464251	9.73	825	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-ICV_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_016.d

Injection Date: 11-Jul-2017 15:42:00

Instrument ID: A6

Lims ID: ICV

Client ID:

Operator ID: JRB

ALS Bottle#: 7

Worklist Smp#: 16

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

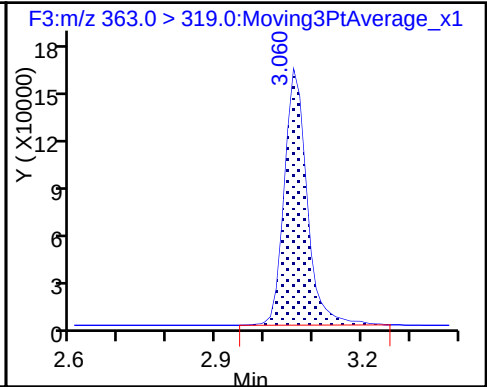
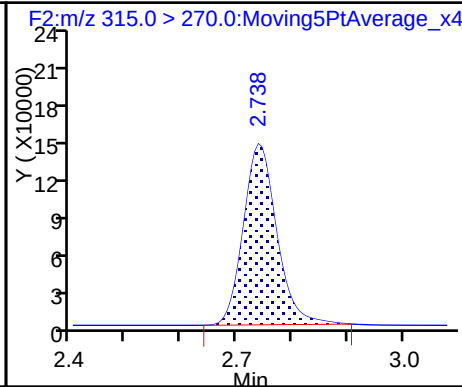
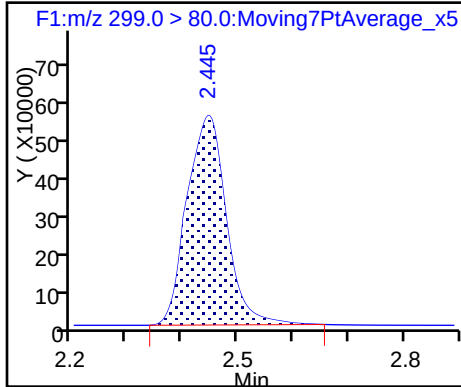
Method: 537__A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

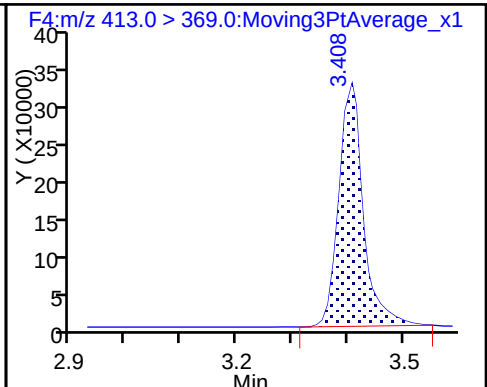
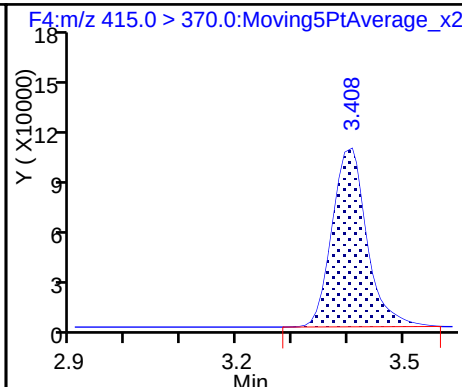
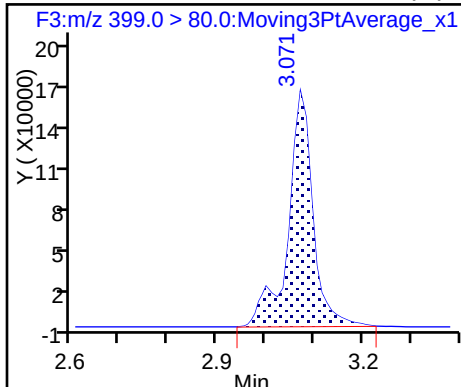
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid (M)

* 5 13C2-PFOA

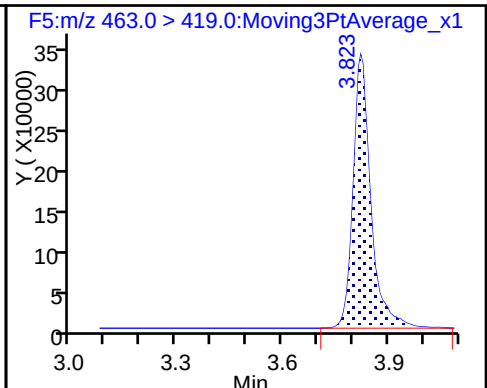
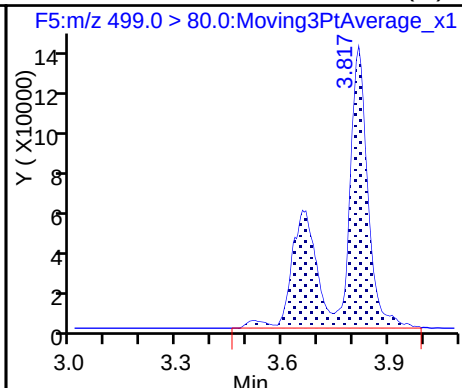
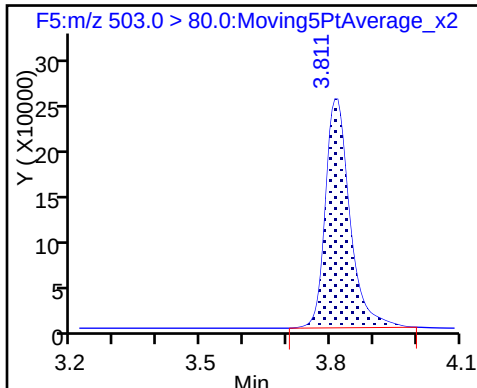
6 Perfluorooctanoic acid



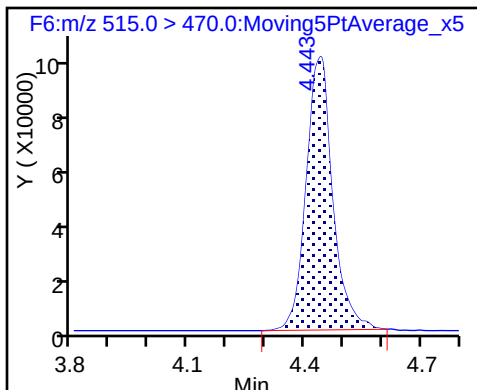
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

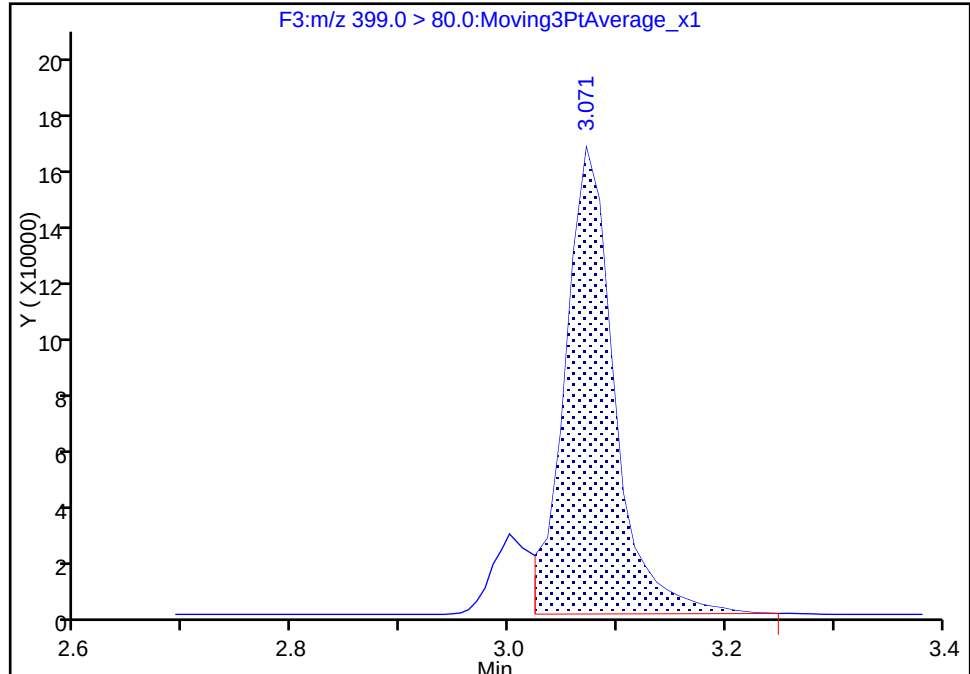
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Injection Date: 11-Jul-2017 15:42:00 Instrument ID: A6
Lims ID: ICV
Client ID:
Operator ID: JRB ALS Bottle#: 7 Worklist Smp#: 16
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F3:MRM

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

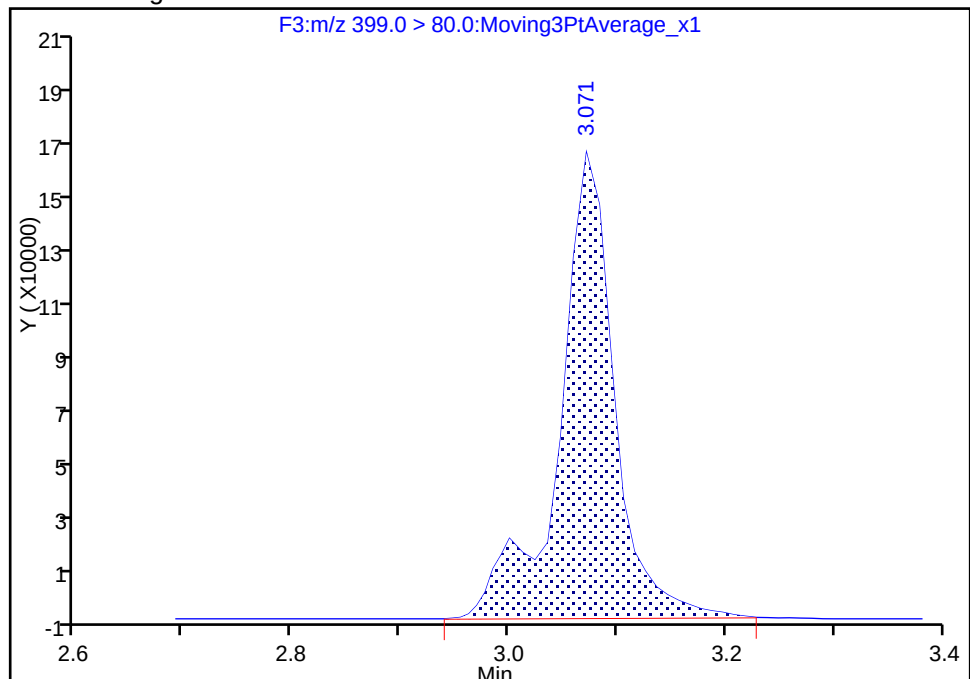
RT: 3.07
Area: 520262
Amount: 18.904555
Amount Units: ng/ml

Processing Integration Results



RT: 3.07
Area: 587410
Amount: 21.344486
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:57:50

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

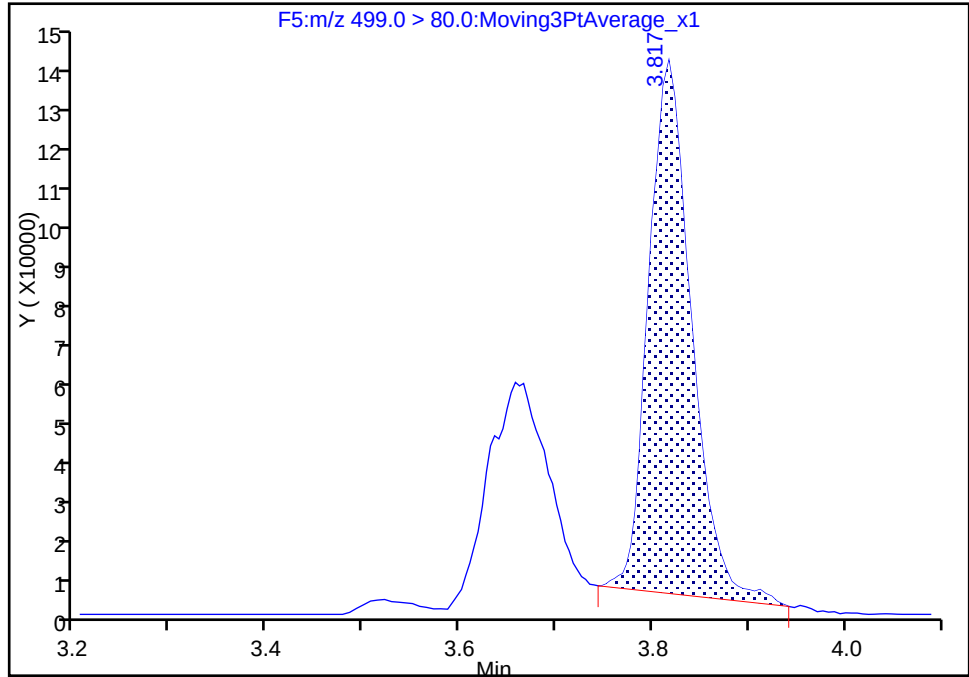
Data File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_016.d
Injection Date: 11-Jul-2017 15:42:00 Instrument ID: A6
Lims ID: ICV
Client ID:
Operator ID: JRB ALS Bottle#: 7 Worklist Smp#: 16
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

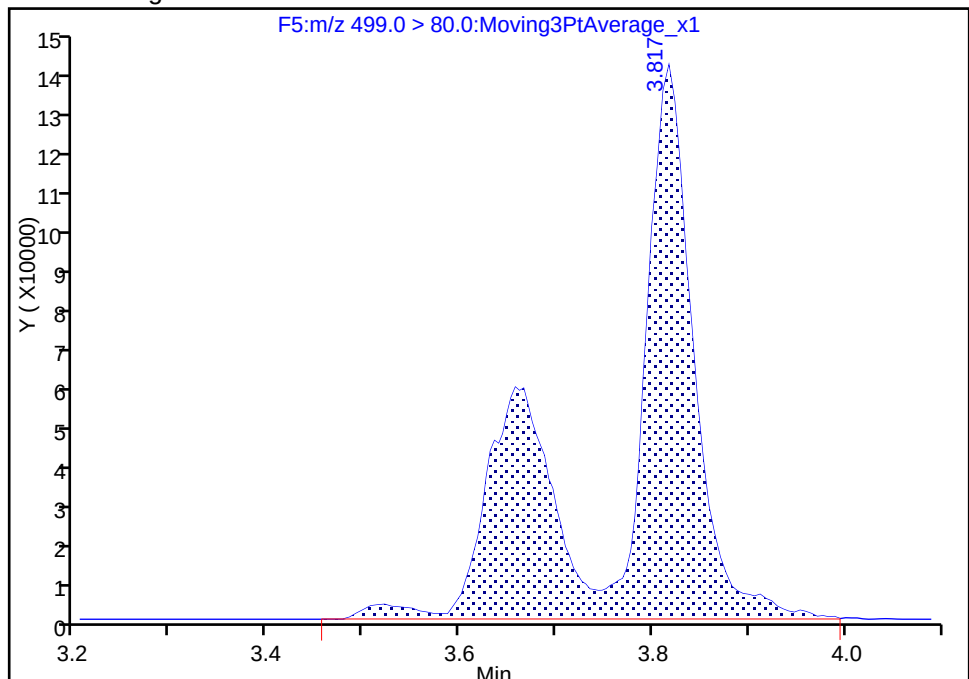
RT: 3.82
Area: 396134
Amount: 11.362990
Amount Units: ng/ml

Processing Integration Results



RT: 3.82
Area: 722733
Amount: 20.731389
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 11-Jul-2017 15:58:06
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 400 of 595

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-174993/35 Calibration Date: 07/19/2017 18:13
 Instrument ID: A6 Calib Start Date: 07/11/2017 14:18
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/11/2017 15:05
 Lab File ID: 19JUL2017A6_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8010	0.7302		121	133	-8.8	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.164	1.106		14.1	14.9	-5.0	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	0.8012	0.9197		51.8	45.1	14.8	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.090	1.162		32.0	30.0	6.6	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.015	1.070		63.3	60.0	5.4	30.0
Perfluorononanoic acid (PFNA)	Ave	1.228	1.202		28.3	28.9	-2.1	30.0
13C2 PFHxA	Ave	1.402	1.353		9.65	10.0	-3.5	30.0
13C2 PFDA	Ave	1.025	0.9649		9.41	10.0	-5.9	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_035.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 19-Jul-2017 18:13:28 ALS Bottle#: 5 Worklist Smp#: 35
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jul-2017 10:04:40 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK031

First Level Reviewer: barnettj

Date: 20-Jul-2017 10:01:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid
 299.0 > 80.0 2.484 2.484 0.0 1.000 2601736 120.8 959
 \$ 2 13C2 PFHxA
 315.0 > 270.0 2.757 2.757 0.0 1.000 520695 9.65 1911
 4 Perfluoroheptanoic acid
 363.0 > 319.0 3.012 3.012 0.0 1.000 632557 14.1 1295
 3 Perfluorohexanesulfonic acid
 399.0 > 80.0 3.024 3.024 0.0 1.000 1115121 51.8 1752
 * 5 13C2-PFOA
 415.0 > 370.0 3.272 3.272 0.0 384974 10.0 1060
 6 Perfluorooctanoic acid
 413.0 > 369.0 3.272 3.272 0.0 1.000 1340648 32.0 642
 * 8 13C4 PFOS
 503.0 > 80.0 3.624 3.624 0.0 771185 28.7 317
 7 Perfluorooctane sulfonic acid M
 499.0 > 80.0 3.624 3.624 0.0 1.000 1727836 63.3 843 M
 9 Perfluorononanoic acid
 463.0 > 419.0 3.645 3.645 0.0 1.000 1337267 28.3 3096
 \$ 10 13C2 PFDA
 515.0 > 470.0 4.214 4.214 0.0 1.000 371476 9.41 1566

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L5_00023

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_035.d

Injection Date: 19-Jul-2017 18:13:28

Instrument ID: A6

Lims ID: CCV L5

Client ID:

Operator ID: JRB

ALS Bottle#: 5

Worklist Smp#: 35

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

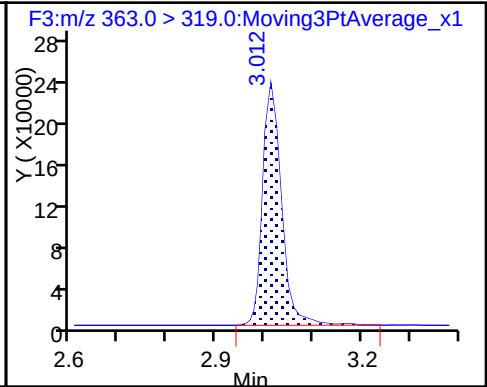
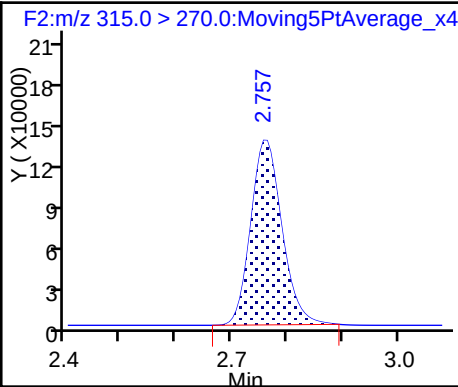
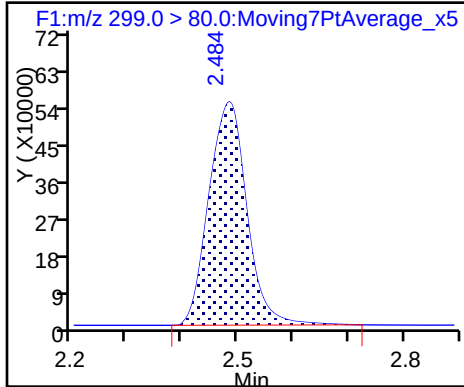
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

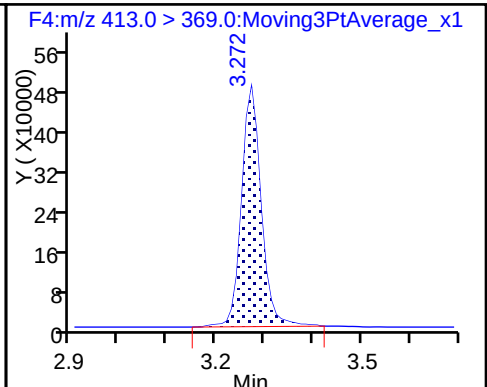
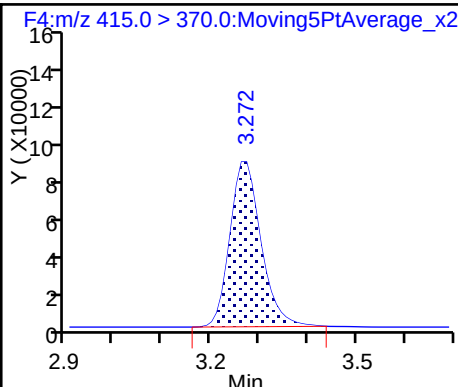
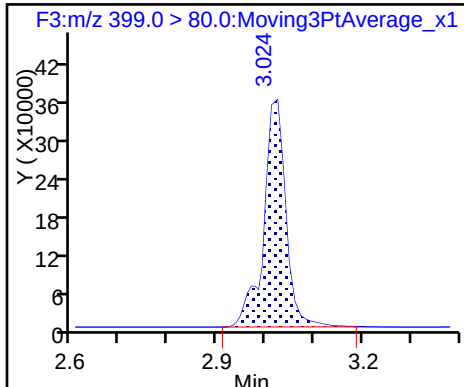
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid

* 5 13C2-PFOA

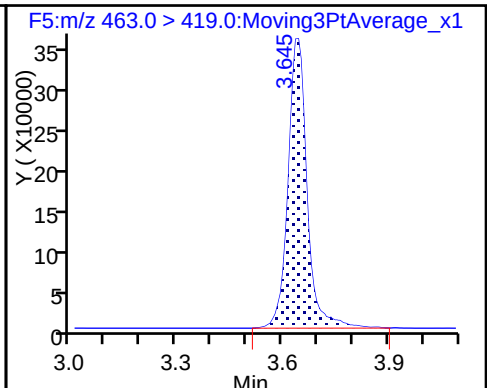
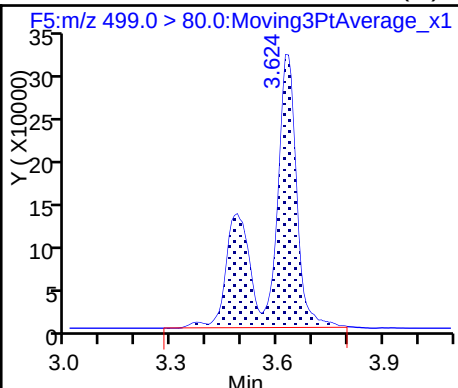
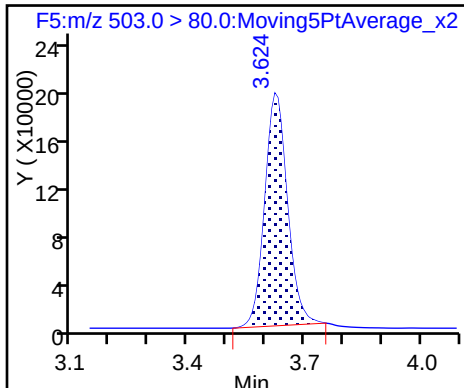
6 Perfluorooctanoic acid



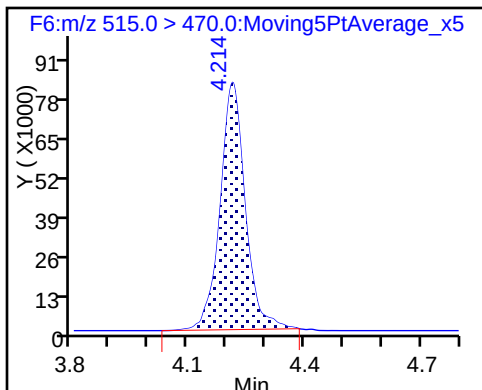
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

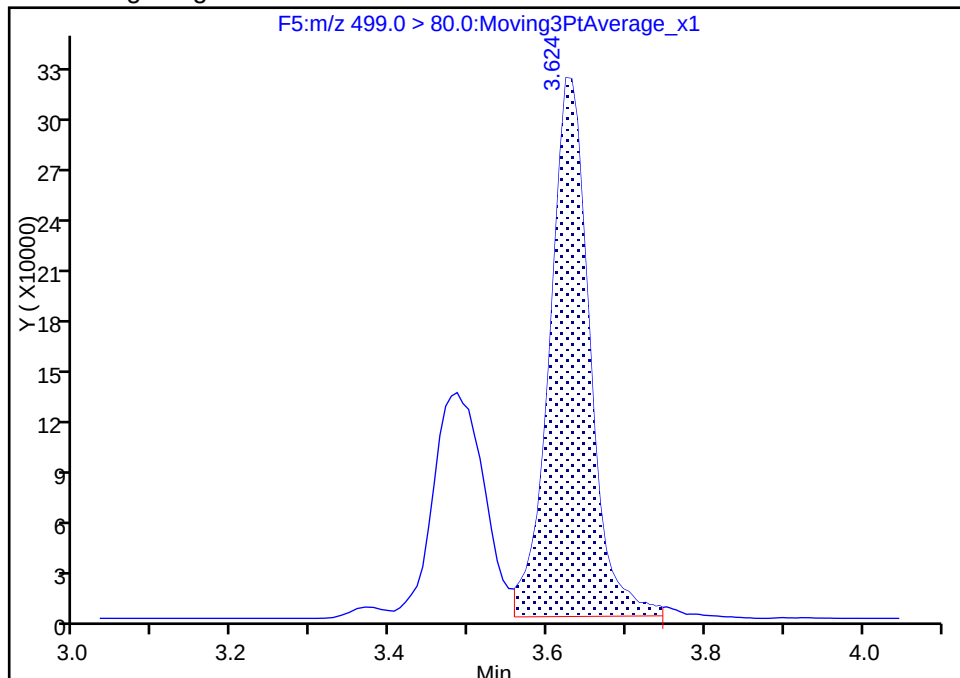
Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_035.d
Injection Date: 19-Jul-2017 18:13:28 Instrument ID: A6
Lims ID: CCV L5
Client ID:
Operator ID: JRB ALS Bottle#: 5 Worklist Smp#: 35
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

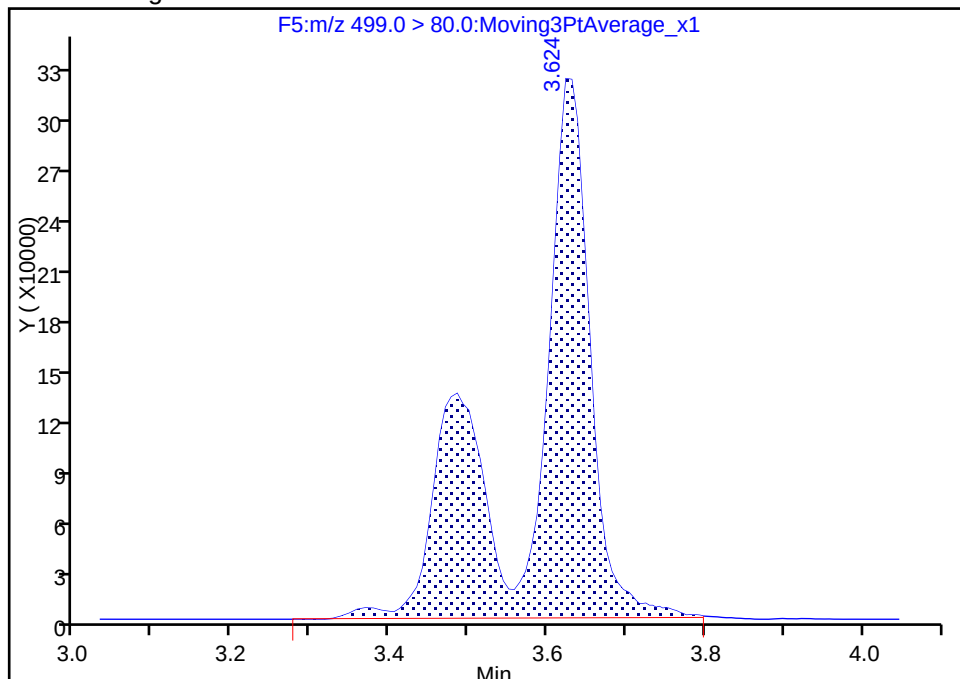
RT: 3.62
Area: 1108323
Amount: 40.611845
Amount Units: ng/ml

Processing Integration Results



RT: 3.62
Area: 1727836
Amount: 63.312417
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 20-Jul-2017 10:00:10

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-174993/39 Calibration Date: 07/19/2017 18:49
 Instrument ID: A6 Calib Start Date: 07/11/2017 14:18
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/11/2017 15:05
 Lab File ID: 19JUL2017A6_039.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8010	0.7923		43.9	44.4	-1.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.164	1.108		4.73	4.97	-4.9	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	0.8012	0.7910		14.9	15.1	-1.3	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.090	1.041		9.59	10.0	-4.5	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.015	1.000		19.8	20.1	-1.5	30.0
Perfluorononanoic acid (PFNA)	Ave	1.228	1.232		9.71	9.68	0.4	30.0
13C2 PFHxA	Ave	1.402	1.304		9.30	10.0	-7.0	30.0
13C2 PFDA	Ave	1.025	0.8674		8.46	10.0	-15.4	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_039.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 19-Jul-2017 18:49:52 ALS Bottle#: 3 Worklist Smp#: 39
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3
 Misc. Info.: Gemini C18, 3um, 2X50mm , T=35°C
 Operator ID: JRB Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jul-2017 10:04:45 Calib Date: 11-Jul-2017 15:05:33
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170711-45298.b\11JUL2017A6B_012.d
 Column 1 : Gemini C18 3um 3 x 100mm (3.00 mm) Det: F1:MRM
 Process Host: XAWRK031

First Level Reviewer: barnettj

Date: 20-Jul-2017 10:02:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid
 299.0 > 80.0 2.478 2.478 0.0 1.000 974438 43.9 1709
 \$ 2 13C2 PFHxA
 315.0 > 270.0 2.763 2.763 0.0 1.000 520629 9.30 901
 4 Perfluoroheptanoic acid
 363.0 > 319.0 3.024 3.024 0.0 1.000 220019 4.73 790
 3 Perfluorohexanesulfonic acid
 399.0 > 80.0 3.024 3.024 0.0 1.000 331048 14.9 754
 * 5 13C2-PFOA
 415.0 > 370.0 3.272 3.272 0.0 399300 10.0 865
 6 Perfluorooctanoic acid
 413.0 > 369.0 3.282 3.282 0.0 1.000 417391 9.59 599
 * 8 13C4 PFOS
 503.0 > 80.0 3.631 3.631 0.0 794629 28.7 366
 7 Perfluorooctane sulfonic acid
 499.0 > 80.0 3.638 3.638 0.0 1.000 557258 19.8 588 M
 9 Perfluorononanoic acid
 463.0 > 419.0 3.652 3.652 0.0 1.000 476122 9.71 890
 \$ 10 13C2 PFDA
 515.0 > 470.0 4.220 4.220 0.0 1.000 346339 8.46 1483

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L3_00022

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_039.d

Injection Date: 19-Jul-2017 18:49:52

Instrument ID: A6

Lims ID: CCV L3

Client ID:

Operator ID: JRB

ALS Bottle#: 3

Worklist Smp#: 39

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

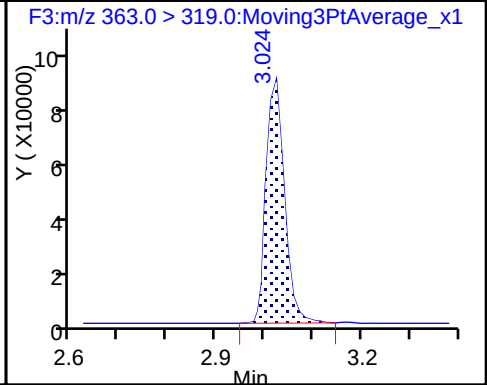
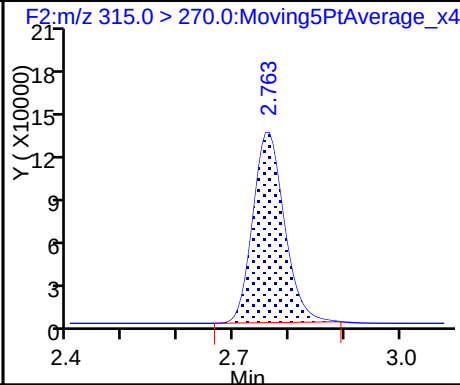
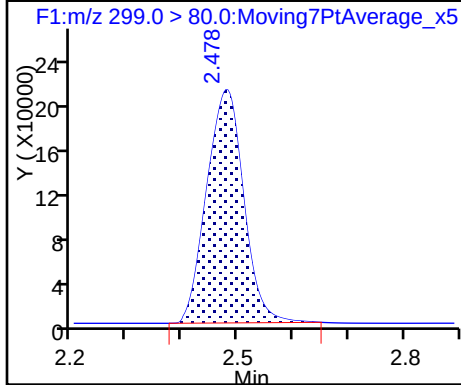
Method: 537__A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

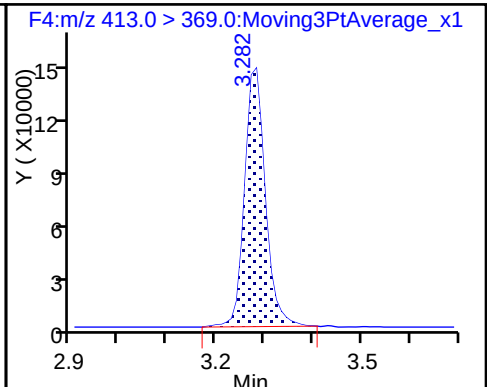
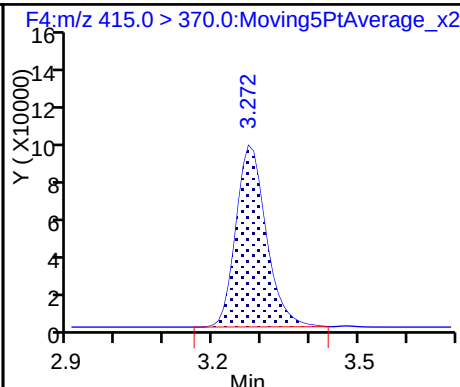
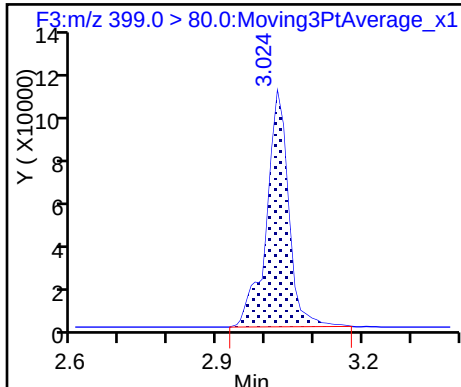
4 Perfluoroheptanoic acid



3 Perfluorohexanesulfonic acid

* 5 13C2-PFOA

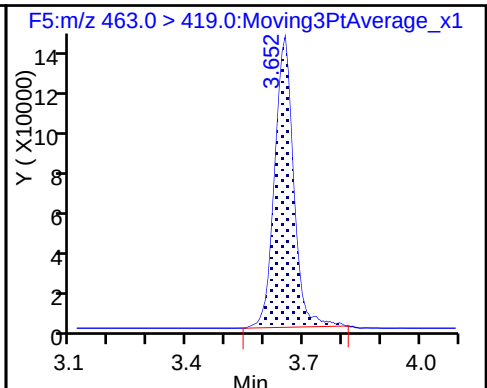
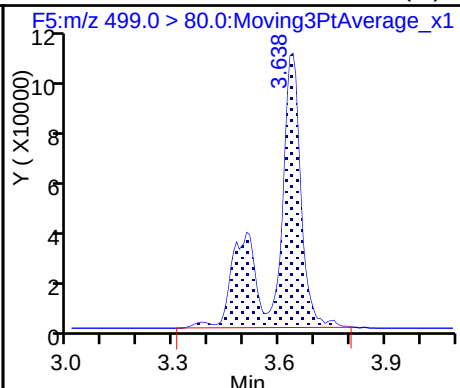
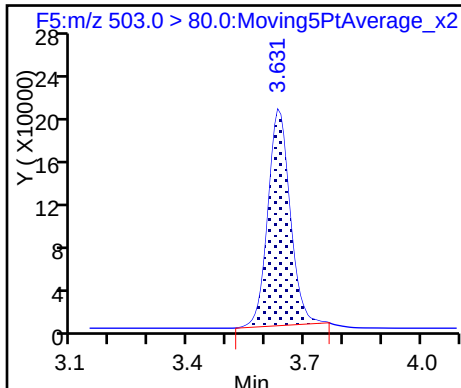
6 Perfluorooctanoic acid



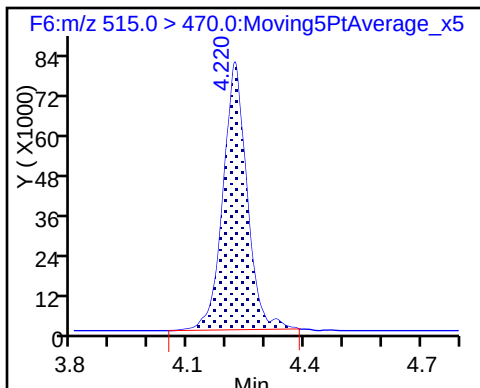
* 8 13C4 PFOS

7 Perfluorooctane sulfonic acid (M)

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

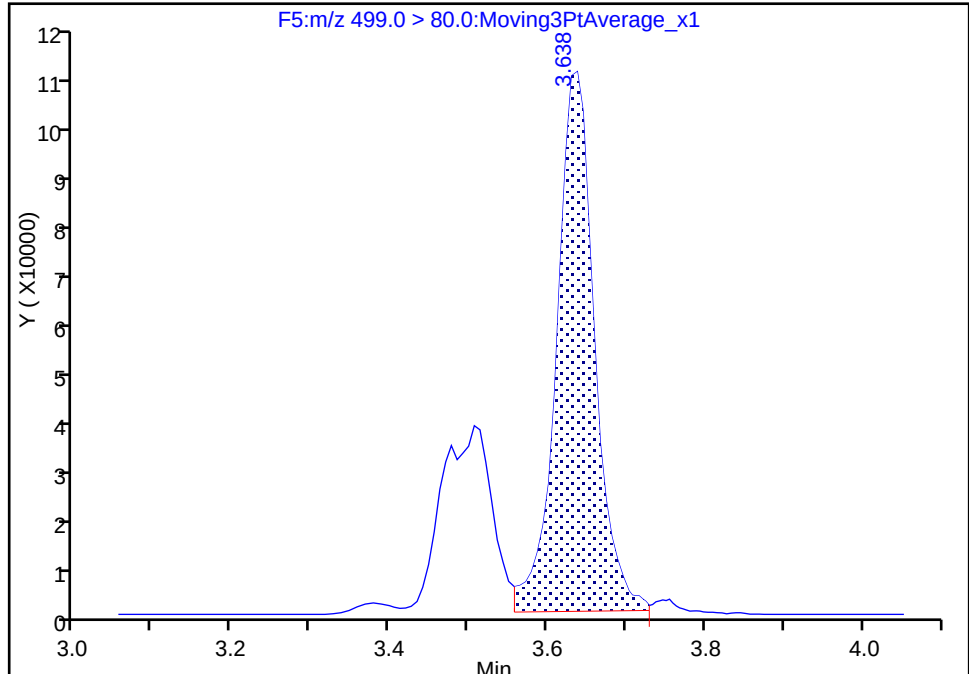
Data File: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b\19JUL2017A6_039.d
Injection Date: 19-Jul-2017 18:49:52 Instrument ID: A6
Lims ID: CCV L3
Client ID:
Operator ID: JRB ALS Bottle#: 3 Worklist Smp#: 39
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Gemini C18 3um 3 x 100mm (3.00 mm ID) Detector: F5:MRM

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

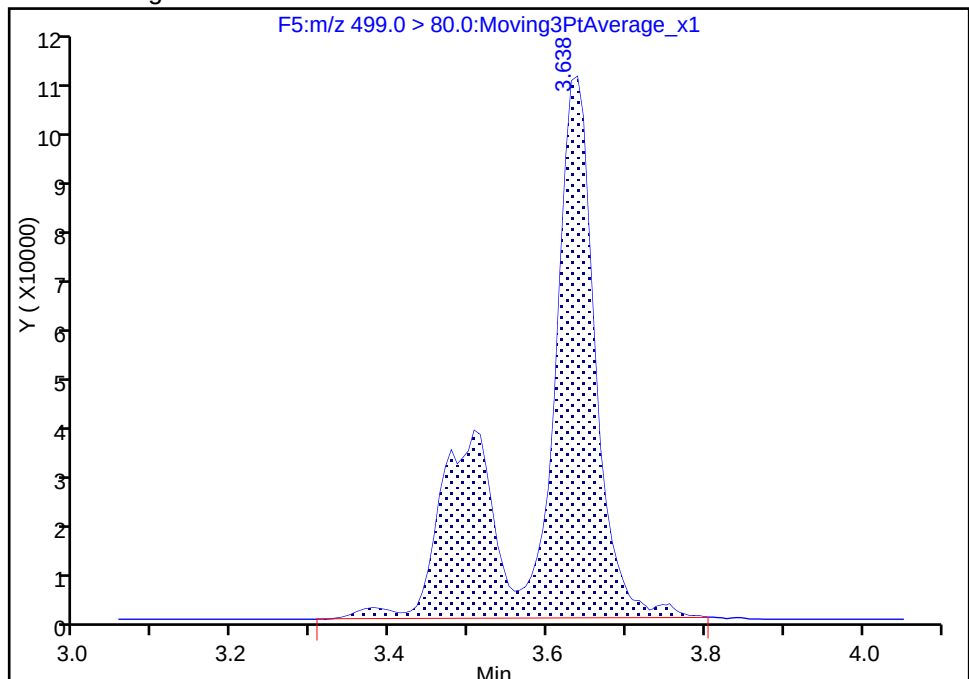
RT: 3.64
Area: 369837
Amount: 13.151973
Amount Units: ng/ml

Processing Integration Results



RT: 3.64
Area: 557258
Amount: 19.816952
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 20-Jul-2017 10:02:41

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-169955/11 Calibration Date: 06/19/2017 18:14
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.19_537A_ICAL_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	0.9450		23.2	21.2	9.3	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.179		7.29	7.21	1.0	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.8532		2.40	2.38	1.2	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.8753		4.79	4.80	-0.0	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.024		9.69	9.61	0.8	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.8772		4.75	4.62	2.8	50.0
13C2 PFHxA	Ave	1.038	1.019		9.82	10.0	-1.8	30.0
13C2 PFDA	Ave	0.9622	0.9654		10.0	10.0	0.3	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_011.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 19-Jun-2017 18:14:11 ALS Bottle#: 2 Worklist Smp#: 11
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jun-2017 10:57:47 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK019

First Level Reviewer: phomsophat

Date: 19-Jun-2017 19:26:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.177	2.183	-0.006	1.000	6119266	23.2		1090	
298.90 > 99.00	2.177	2.183	-0.006	1.000	4828214		1.27(0.00-0.00)	940	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.375	2.381	-0.006	1.000	3793675	9.82		3005	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.625	2.625	0.0	1.000	2598248	7.29		1032	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.633	2.630	0.003	1.000	754972	2.40		111	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.860	2.859	0.001	1.000	1563113	4.79		276	
413.00 > 169.00	2.860	2.859	0.001	1.000	891112		1.75(0.00-0.00)	972	
* 6 13C2-PFOA									
415.00 > 370.00	2.860	2.859	0.001		3724287	10.0		7530	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.989	2.982	0.007	1.000	3005378	9.69		8873	
499.00 > 99.00	2.989	2.982	0.007	1.000	647078		4.64(0.00-0.00)	1786	
* 7 13C4 PFOS									
503.00 > 80.00	2.989	2.991	-0.002		8759638	28.7		18344	
9 Perfluorononanoic acid									
463.00 > 419.00	3.004	3.003	0.001	1.000	1510040	4.75		678	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.118	3.123	-0.005	1.000	3595473	10.0		12802	

Reagents:

LC537-L2_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_011.d

Injection Date: 19-Jun-2017 18:14:11

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 11

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

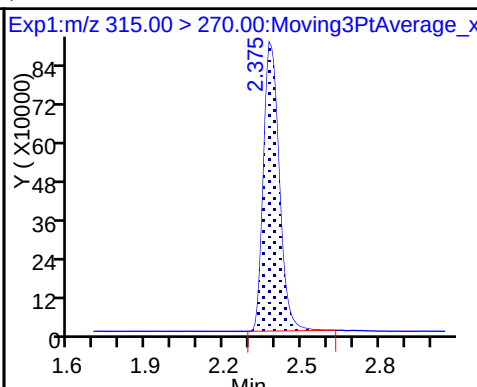
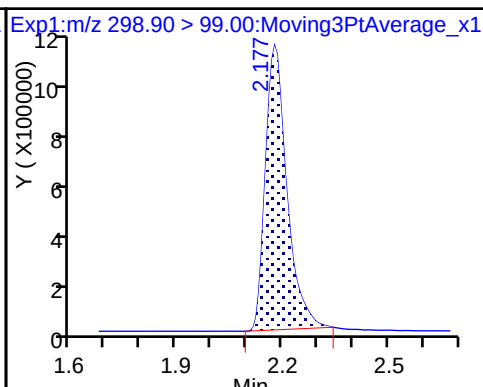
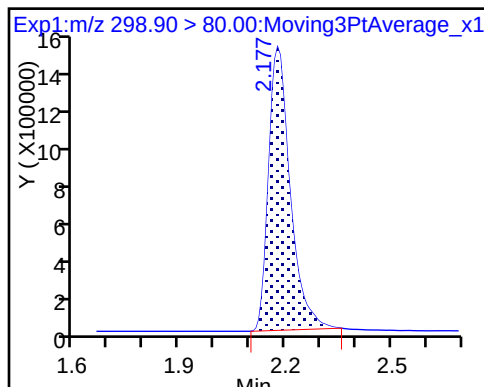
Method: 537_A8_N

Limit Group: LC 537 ICA

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

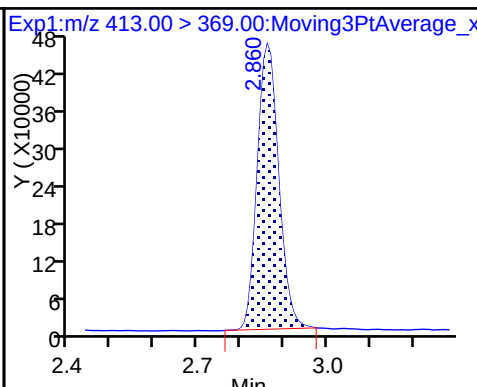
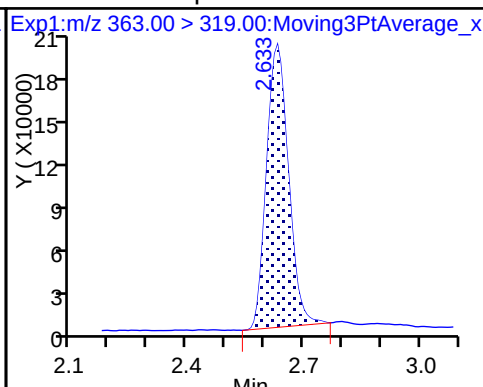
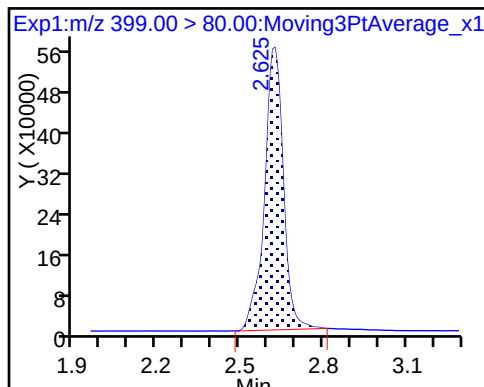
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

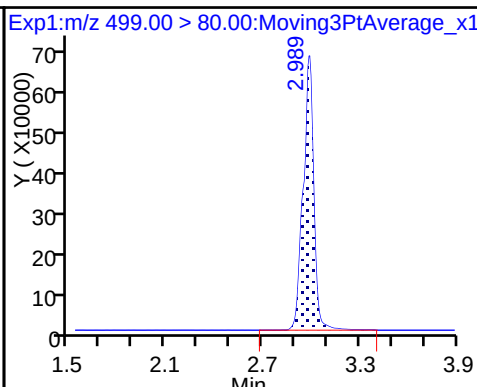
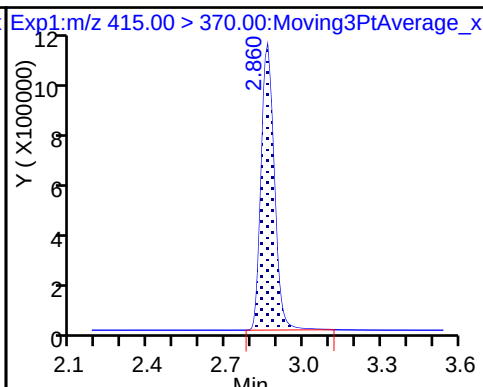
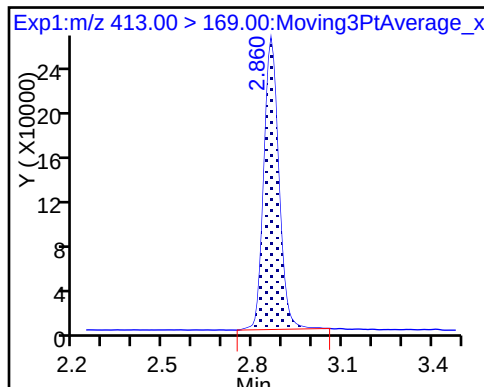
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

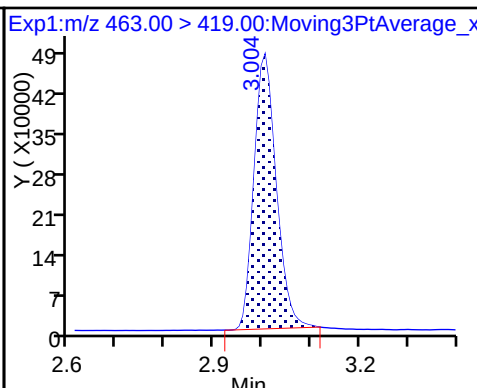
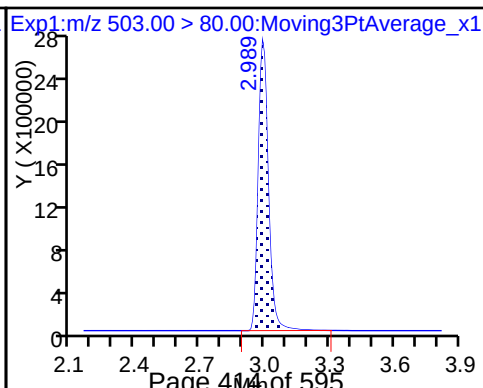
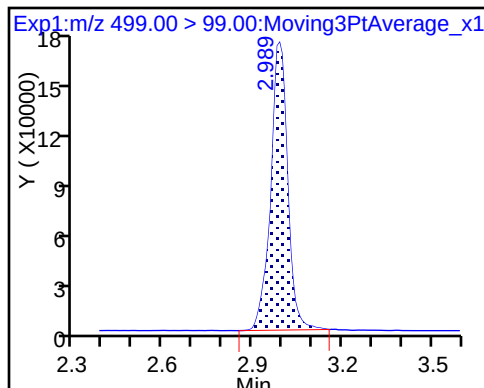
8 Perfluorooctane sulfonic acid



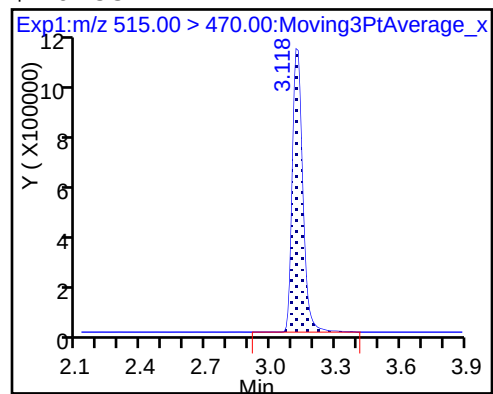
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: ICV 320-169955/13 Calibration Date: 06/19/2017 18:23
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.19_537A_ICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	0.8921		104	101	3.2	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.265		23.0	21.2	8.4	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.8190		9.79	10.1	-2.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.9521		21.8	20.0	8.7	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.080		22.0	20.7	6.3	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.8825		20.7	20.0	3.5	30.0
13C2 PFHxA	Ave	1.038	1.057		10.2	10.0	1.8	30.0
13C2 PFDA	Ave	0.9622	1.049		10.9	10.0	9.0	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_013.d
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 19-Jun-2017 18:23:38 ALS Bottle#: 7 Worklist Smp#: 13
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 20-Jun-2017 10:57:48 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK019

First Level Reviewer: phomsophat

Date: 19-Jun-2017 19:34:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.177	2.183	-0.006	1.000	29499258	103.9		2039	
298.90 > 99.00	2.177	2.183	-0.006	1.000	24839559		1.19(0.00-0.00)	1897	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.375	2.381	-0.006	1.000	4035623	10.2		4361	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.618	2.625	-0.007	1.000	8802712	23.0		2710	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.625	2.630	-0.005	1.000	3152523	9.79		444	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.860	2.859	0.001	1.000	7278322	21.8		1054	
413.00 > 169.00	2.860	2.859	0.001	1.000	3946679		1.84(0.00-0.00)	3880	
* 6 13C2-PFOA									
415.00 > 370.00	2.853	2.859	-0.006		3818724	10.0		6298	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.982	2.982	0.0	1.000	7338229	22.0		20107	
499.00 > 99.00	2.982	2.982	0.0	1.000	1253171		5.86(0.00-0.00)	3549	
* 7 13C4 PFOS									
503.00 > 80.00	2.989	2.991	-0.002		9420237	28.7		22623	
9 Perfluorononanoic acid									
463.00 > 419.00	2.997	3.003	-0.006	1.000	6742905	20.7		2160	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.118	3.123	-0.005	1.000	4006098	10.9		14118	

Reagents:

LC537-ICV_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_013.d

Injection Date: 19-Jun-2017 18:23:38

Instrument ID: A8_N

Lims ID: ICV

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 7

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

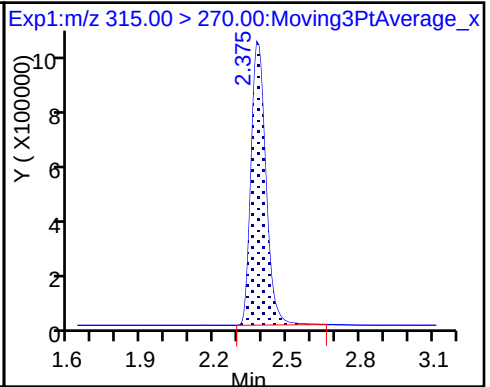
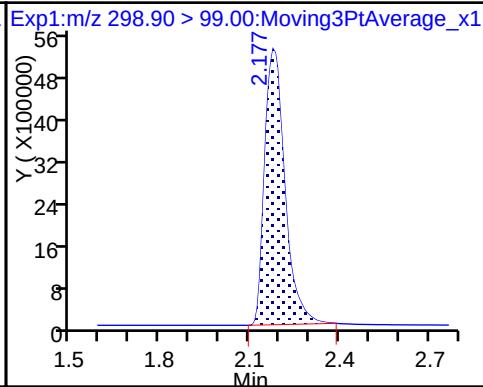
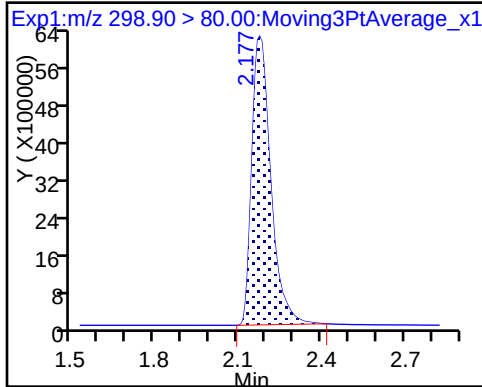
Method: 537_A8_N

Limit Group: LC 537 ICA

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

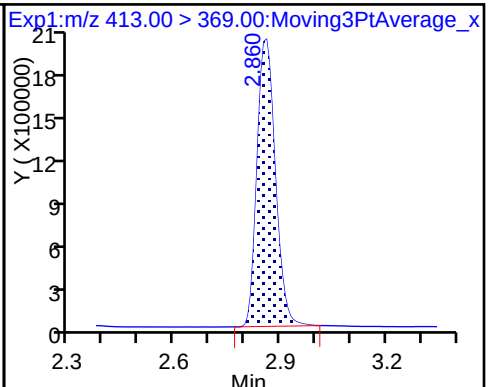
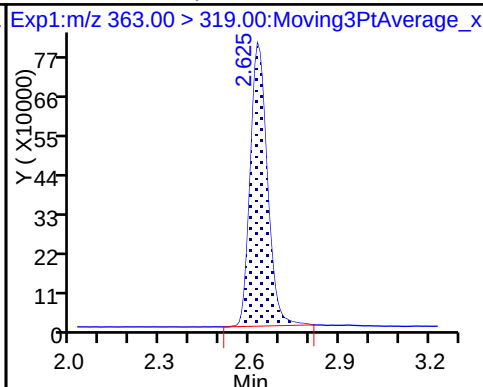
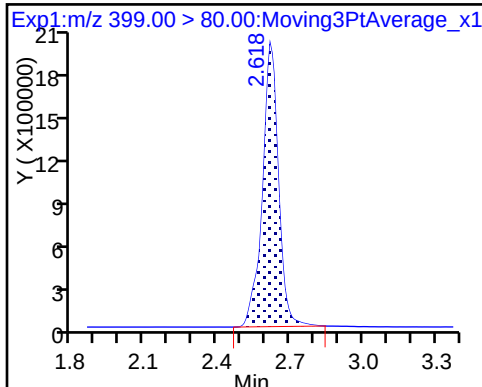
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

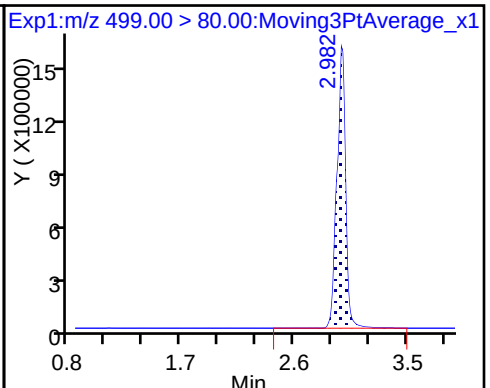
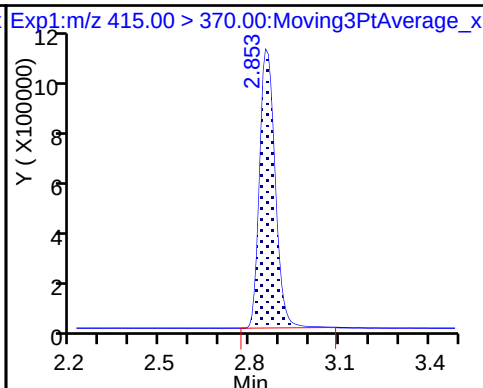
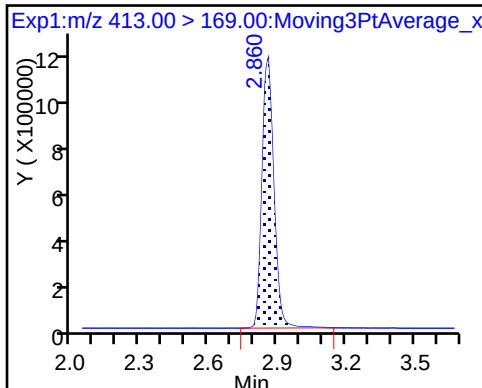
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

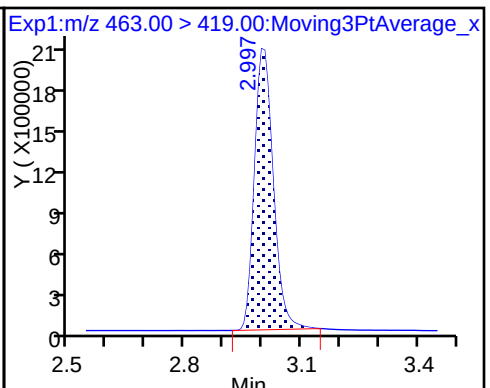
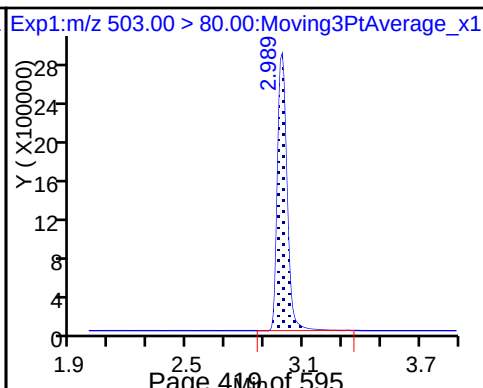
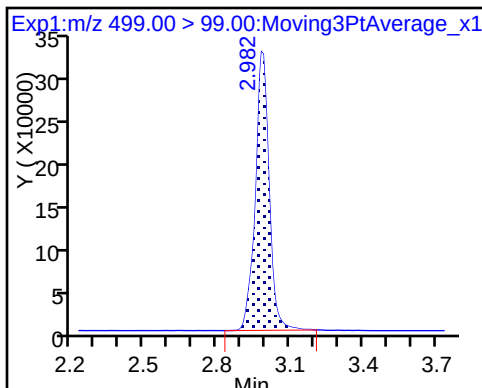
8 Perfluorooctane sulfonic acid



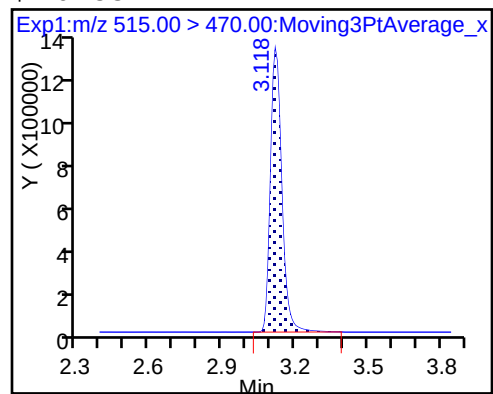
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-170756/4 Calibration Date: 06/23/2017 21:32
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	1.002		24.6	21.2	15.9	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.202		7.43	7.21	3.0	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.8996		2.53	2.38	6.7	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.8735		4.78	4.80	-0.3	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.009		9.54	9.61	-0.7	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.7965		4.32	4.62	-6.6	50.0
13C2 PFHxA	Ave	1.038	1.061		10.2	10.0	2.2	30.0
13C2 PFDA	Ave	0.9622	0.7546		7.84	10.0	-21.6	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_004.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 23-Jun-2017 21:32:32 ALS Bottle#: 2 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 11:19:06 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 26-Jun-2017 11:09:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.299	2.183	0.116	1.000	6814079	24.6		1203	
298.90 > 99.00	2.291	2.183	0.108	0.997	5285405		1.29(0.00-0.00)	1636	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.504	2.381	0.123	1.000	3526099	10.2		7010	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.746	2.625	0.121	1.000	2781941	7.43		1144	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.754	2.630	0.124	1.000	710635	2.53		80.4	
* 6 13C2-PFOA									
415.00 > 370.00	2.974	2.859	0.115		3324713	10.0		9023	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.974	2.859	0.115	1.000	1392518	4.78		70.4	
413.00 > 169.00	2.974	2.859	0.115	1.000	815613		1.71(0.00-0.00)	1433	
* 7 13C4 PFOS									
503.00 > 80.00	3.103	2.991	0.112		9202106	28.7		37152	
9 Perfluorononanoic acid									
463.00 > 419.00	3.118	3.003	0.115	1.000	1224127	4.32		533	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.247	3.123	0.124	1.000	2508923	7.84		5212	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.103	3.126	-0.023	1.000	3110362	9.54		10552	
499.00 > 99.00	3.103	3.126	-0.023	1.000	688781		4.52(0.00-0.00)	2395	

Reagents:

LC537-L2_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_004.d

Injection Date: 23-Jun-2017 21:32:32

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

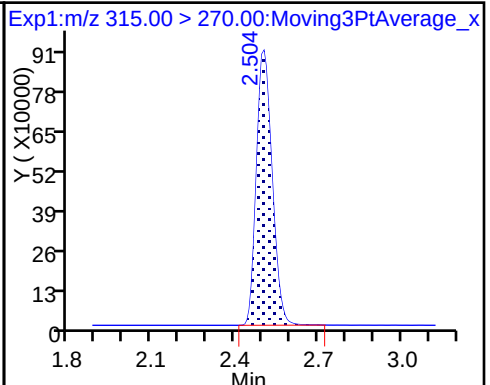
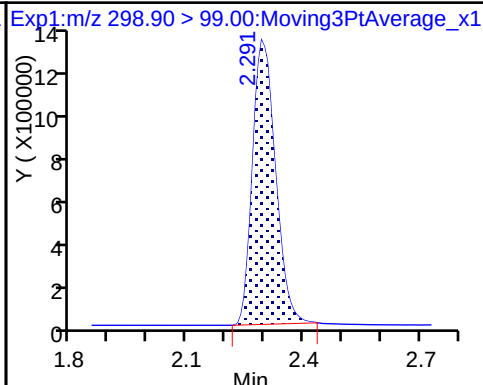
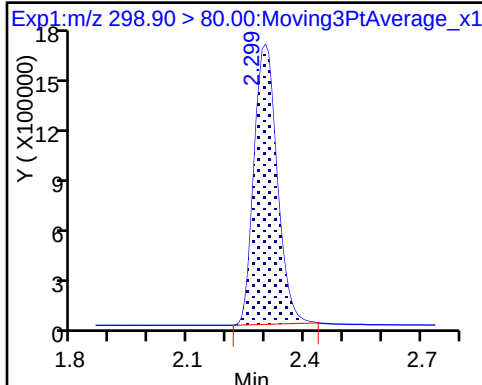
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

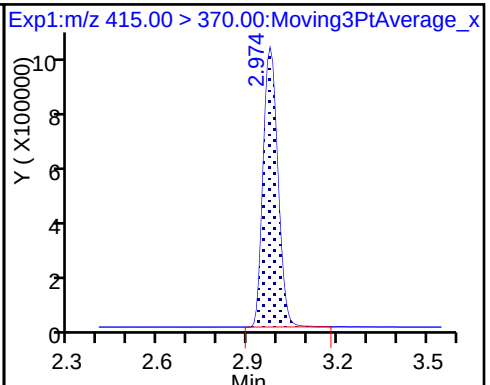
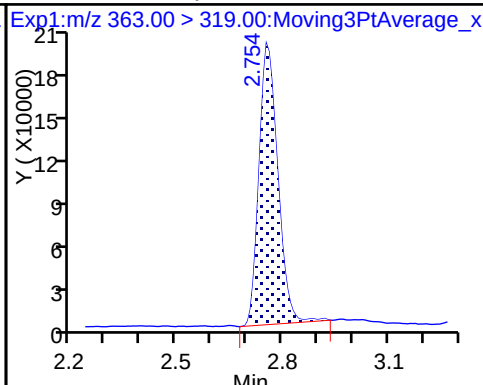
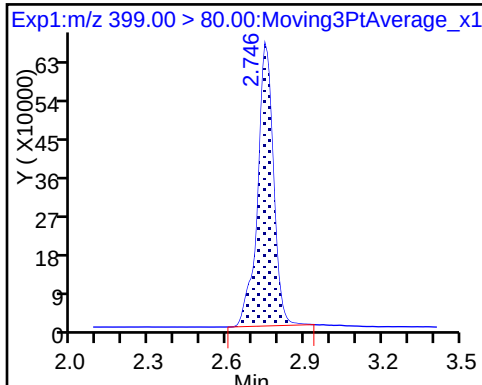
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

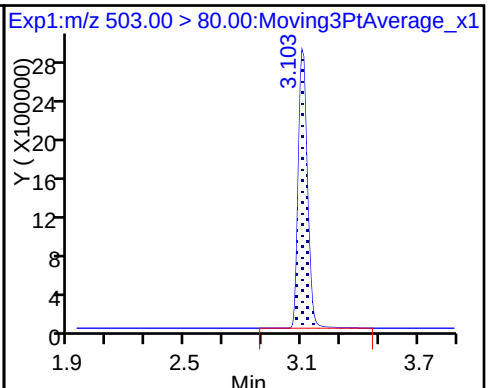
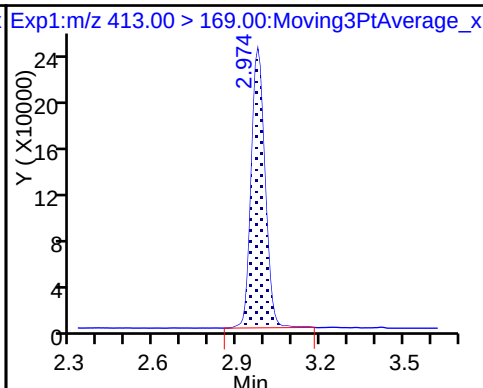
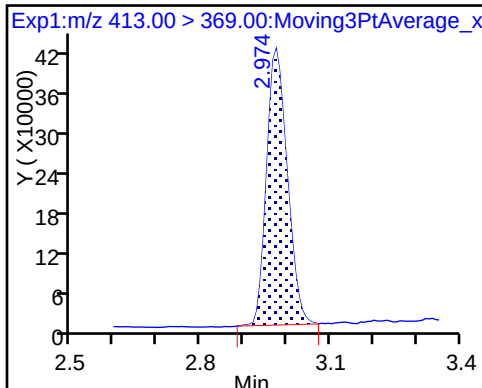
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

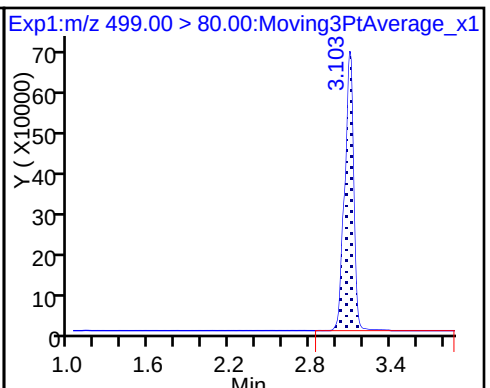
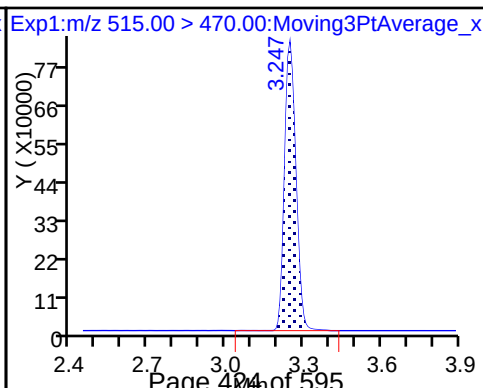
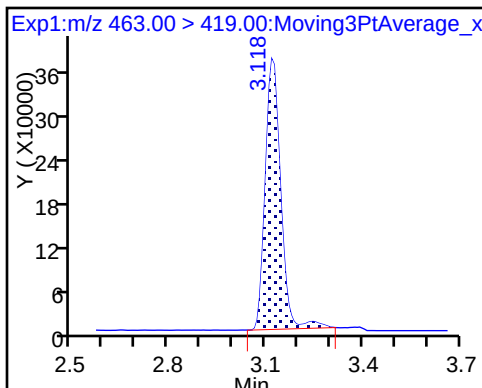
* 7 13C4 PFOS



9 Perfluorononanoic acid

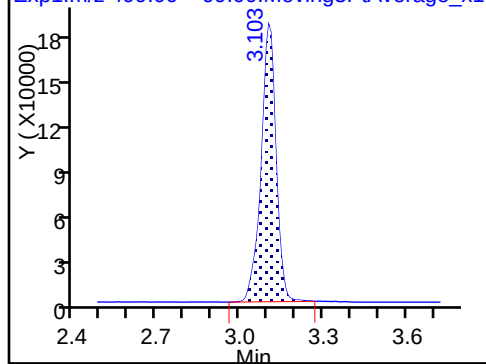
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-170757/16 Calibration Date: 06/23/2017 22:29
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_016.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	1.009		51.8	44.4	16.7	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.238		16.0	15.1	6.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.9020		5.32	4.97	7.0	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.8757		10.0	10.0	-0.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.029		20.4	20.1	1.3	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.7570		8.59	9.68	-11.3	30.0
13C2 PFHxA	Ave	1.038	1.071		10.3	10.0	3.2	30.0
13C2 PFDA	Ave	0.9622	0.7334		7.62	10.0	-23.8	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_016.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 23-Jun-2017 22:29:32 ALS Bottle#: 3 Worklist Smp#: 16
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 11:19:16 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 26-Jun-2017 11:18:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.322	2.183	0.139	1.000	15843259	51.8		2425	
298.90 > 99.00	2.322	2.183	0.139	1.000	12441137		1.27(0.00-0.00)	2570	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	4021468	10.3		6229	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.777	2.625	0.152	1.000	6618010	16.0		2129	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.784	2.630	0.154	1.000	1685134	5.32		224	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3755516	10.0		8525	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	3301767	10.0		170	
413.00 > 169.00	2.997	2.859	0.138	1.000	1917503		1.72(0.00-0.00)	2844	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		10146250	28.7		26095	
9 Perfluorononanoic acid									
463.00 > 419.00	3.149	3.003	0.146	1.000	2751453	8.59		70.7	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2754431	7.62		3879	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.126	3.126	0.0	1.000	7320173	20.4		25790	
499.00 > 99.00	3.126	3.126	0.0	1.000	1625063		4.50(0.00-0.00)	7041	

Reagents:

LC537-L3_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_016.d

Injection Date: 23-Jun-2017 22:29:32

Instrument ID: A8_N

Lims ID: CCV L3

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 16

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

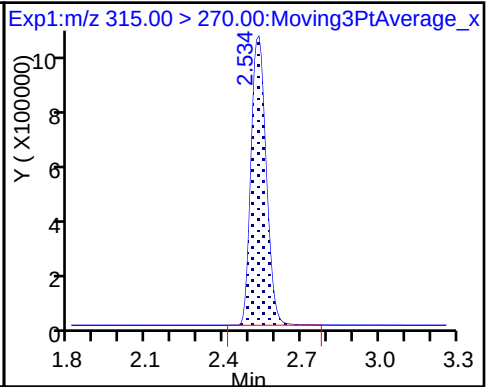
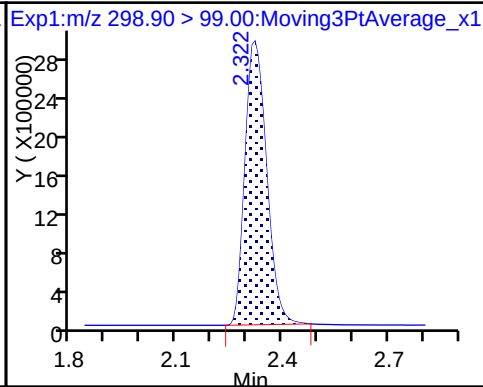
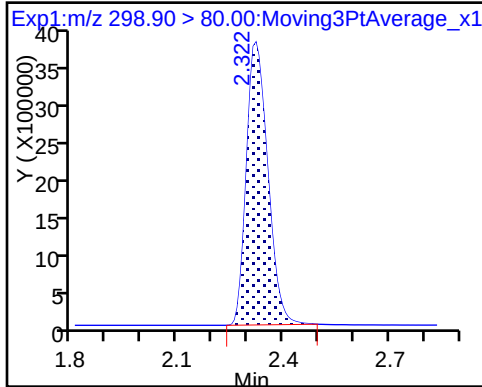
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

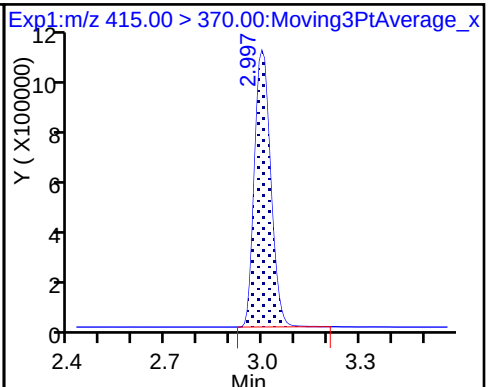
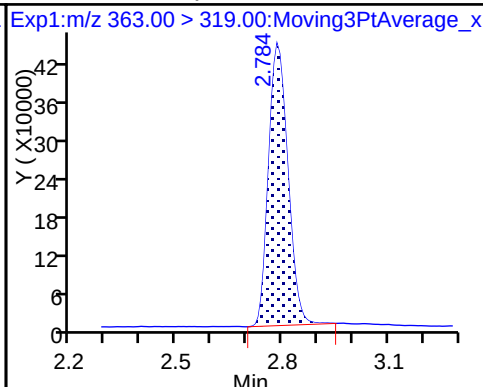
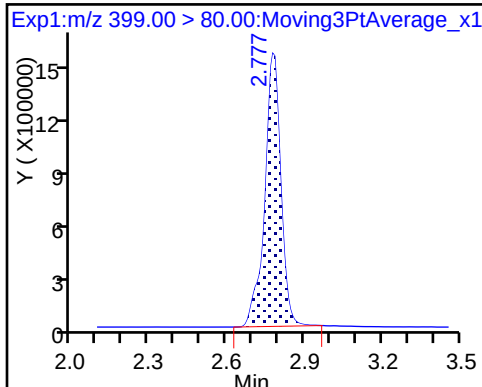
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

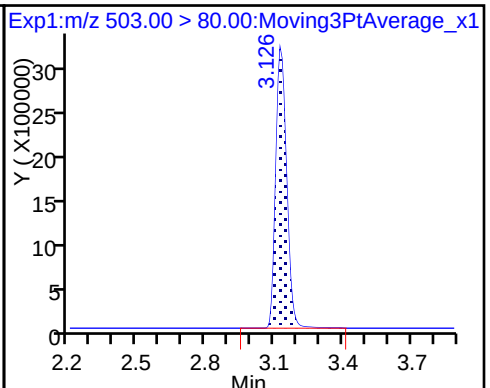
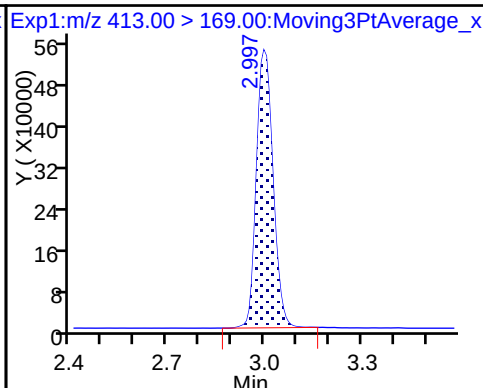
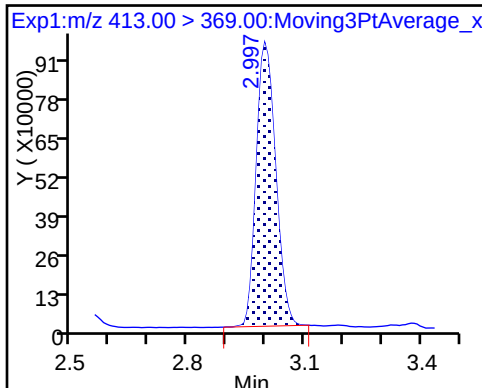
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

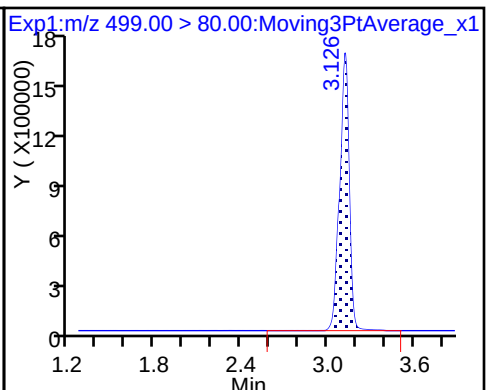
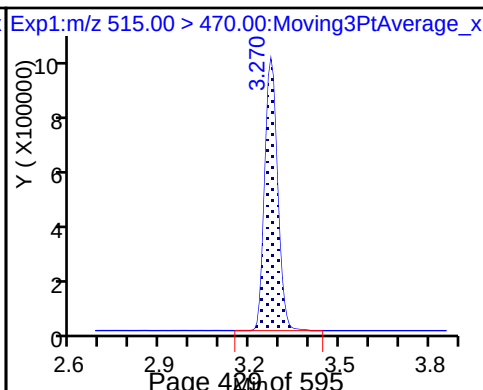
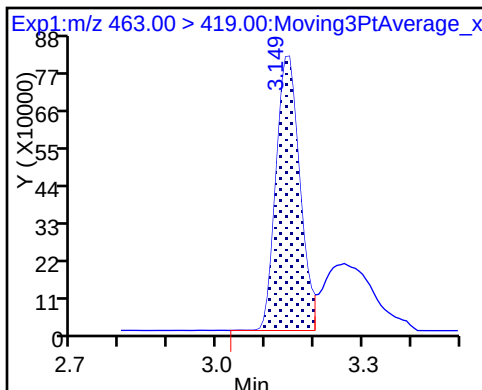
* 7 13C4 PFOS



9 Perfluorononanoic acid

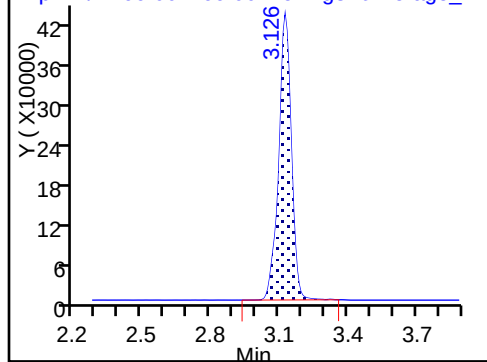
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-170757/28 Calibration Date: 06/23/2017 23:26
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	0.8619		132	133	-0.3	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.272		49.1	45.1	9.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.9206		16.2	14.9	9.2	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.9112		31.2	30.0	4.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.030		60.9	60.0	1.4	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.8118		27.5	28.9	-4.8	30.0
13C2 PFHxA	Ave	1.038	1.114		10.7	10.0	7.3	30.0
13C2 PFDA	Ave	0.9622	0.7612		7.91	10.0	-20.9	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-170758/28 Calibration Date: 06/23/2017 23:26
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	0.8619		132	133	-0.3	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.272		49.1	45.1	9.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.9206		16.2	14.9	9.2	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.9112		31.2	30.0	4.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.030		60.9	60.0	1.4	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.8118		27.5	28.9	-4.8	30.0
13C2 PFHxA	Ave	1.038	1.114		10.7	10.0	7.3	30.0
13C2 PFDA	Ave	0.9622	0.7612		7.91	10.0	-20.9	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_028.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 23-Jun-2017 23:26:32 ALS Bottle#: 5 Worklist Smp#: 28
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:37:59

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.329	2.183	0.146	1.000	41722606	132.1		2870	
298.90 > 99.00	2.329	2.183	0.146	1.000	33825752		1.23(0.00-0.00)	3189	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	4166142	10.7		6873	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.784	2.625	0.159	1.000	20948722	49.1		3571	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.792	2.630	0.162	1.000	5114516	16.2		706	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3741048	10.0		7531	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	10216657	31.2		497	
413.00 > 169.00	2.997	2.859	0.138	1.000	6060855		1.69(0.00-0.00)	7325	
* 7 13C4 PFOS									
503.00 > 80.00	3.133	2.991	0.142		10476733	28.7		20841	
9 Perfluorononanoic acid									
463.00 > 419.00	3.149	3.003	0.146	1.000	8774160	27.5		1091	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2847819	7.91		4163	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.133	3.126	0.007	1.000	22584562	60.9		58921	
499.00 > 99.00	3.126	3.126	0.0	0.998	5451184		4.14(0.00-0.00)	15023	

Reagents:

LC537-L5_00021

Amount Added: 1.00

Units: mL

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_028.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 23-Jun-2017 23:26:32 ALS Bottle#: 5 Worklist Smp#: 28
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:37:59

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.329	2.183	0.146	1.000	41722606	132.1		2870	
298.90 > 99.00	2.329	2.183	0.146	1.000	33825752		1.23(0.00-0.00)	3189	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	4166142	10.7		6873	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.784	2.625	0.159	1.000	20948722	49.1		3571	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.792	2.630	0.162	1.000	5114516	16.2		706	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3741048	10.0		7531	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	10216657	31.2		497	
413.00 > 169.00	2.997	2.859	0.138	1.000	6060855		1.69(0.00-0.00)	7325	
* 7 13C4 PFOS									
503.00 > 80.00	3.133	2.991	0.142		10476733	28.7		20841	
9 Perfluorononanoic acid									
463.00 > 419.00	3.149	3.003	0.146	1.000	8774160	27.5		1091	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2847819	7.91		4163	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.133	3.126	0.007	1.000	22584562	60.9		58921	
499.00 > 99.00	3.126	3.126	0.0	0.998	5451184		4.14(0.00-0.00)	15023	

Reagents:

LC537-L5_00021

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_028.d

Injection Date: 23-Jun-2017 23:26:32

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 28

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

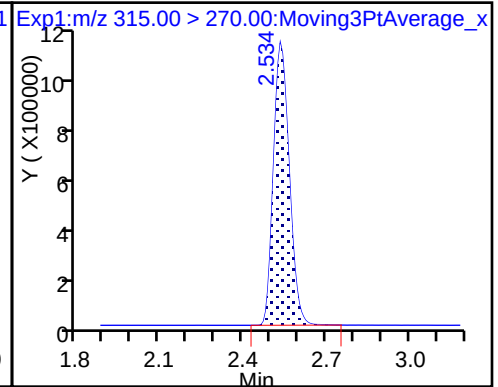
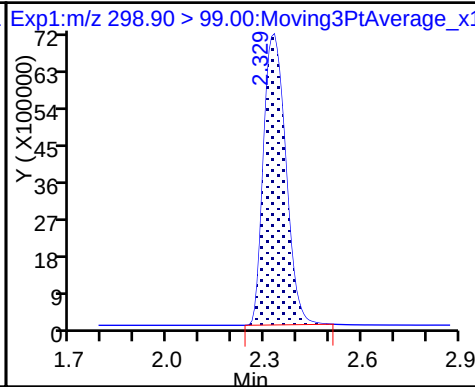
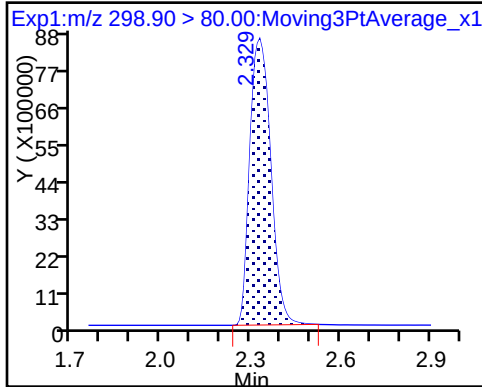
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

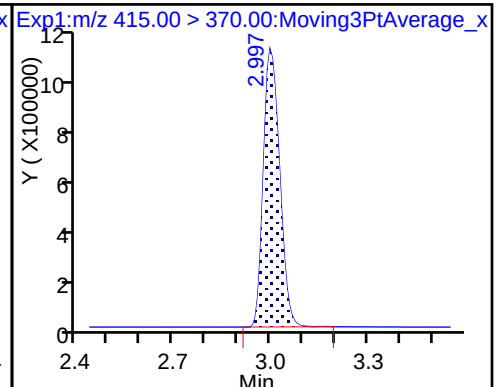
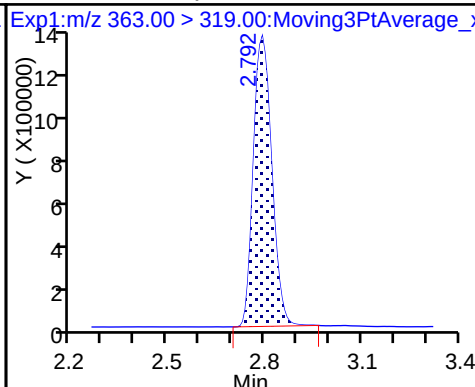
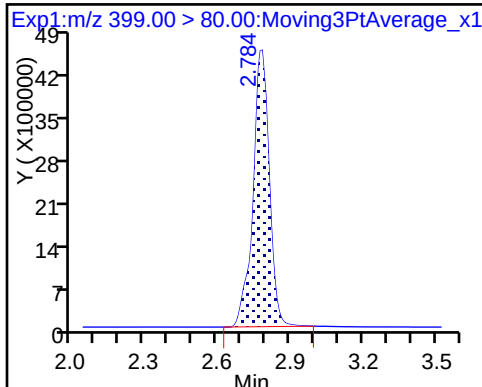
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

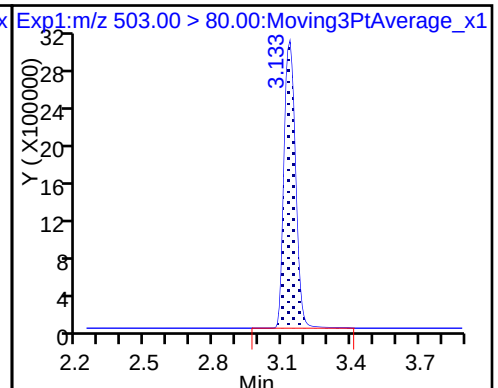
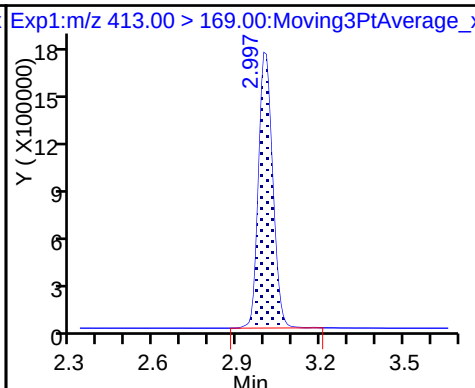
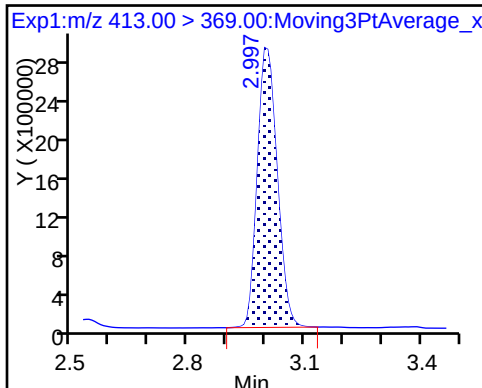
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

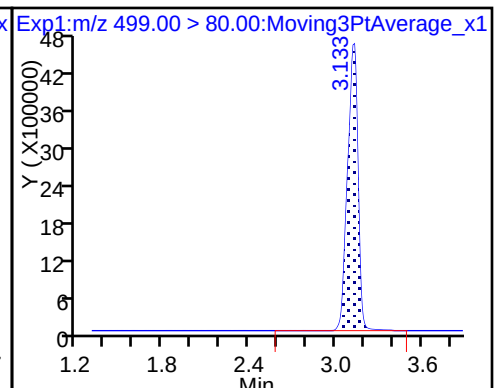
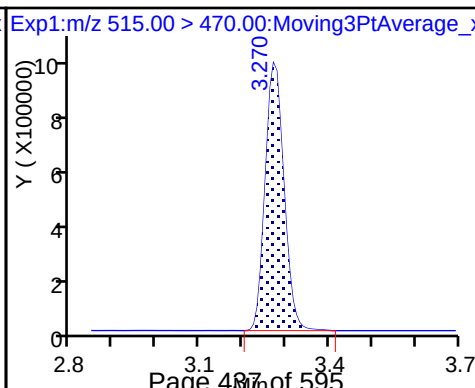
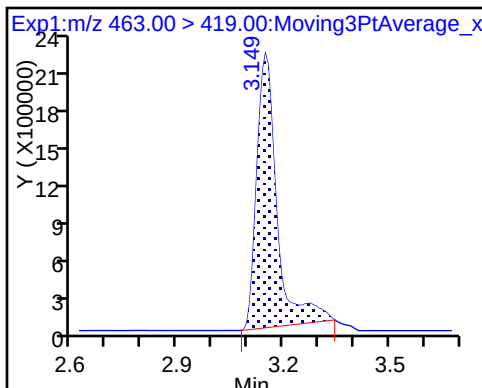
* 7 13C4 PFOS



9 Perfluorononanoic acid

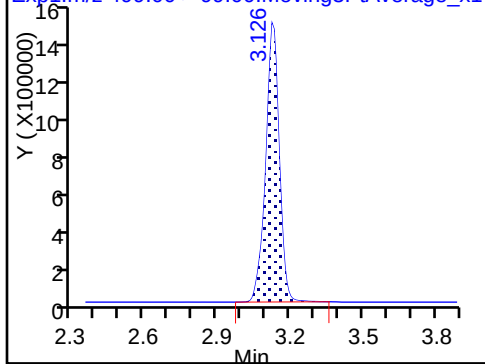
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_028.d

Injection Date: 23-Jun-2017 23:26:32

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 28

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

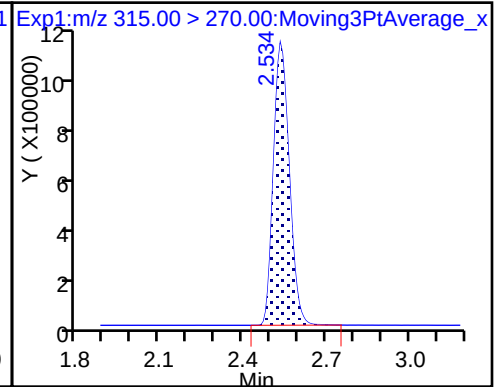
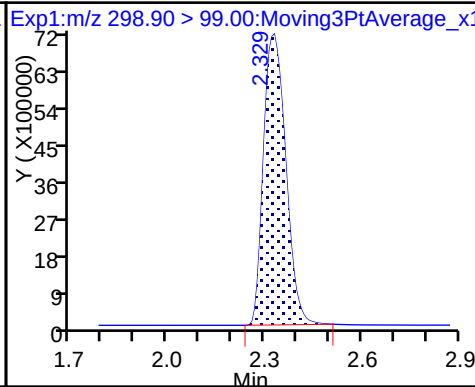
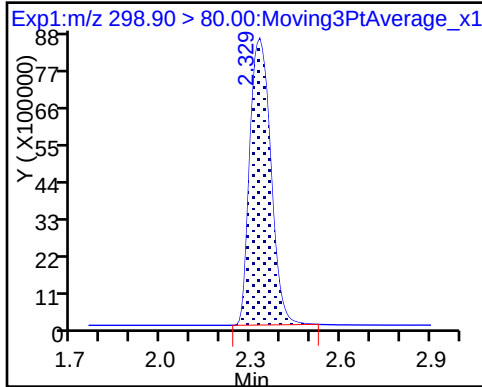
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

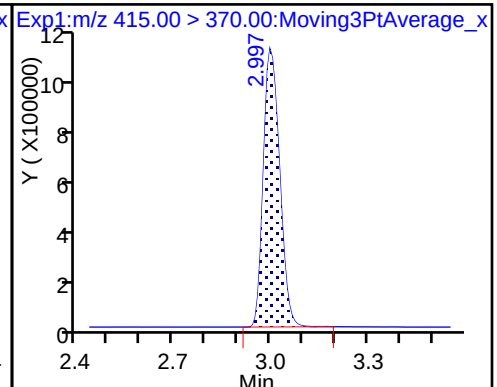
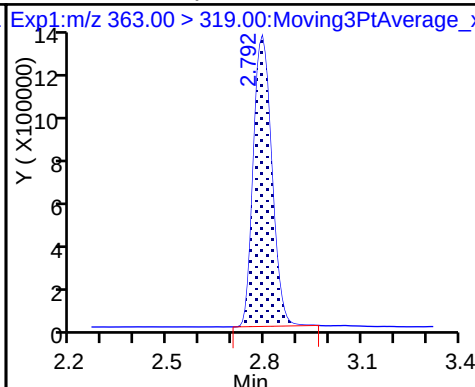
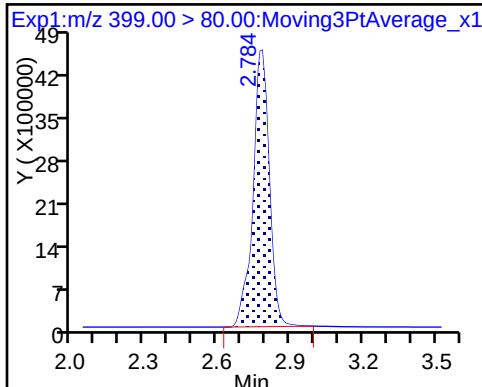
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

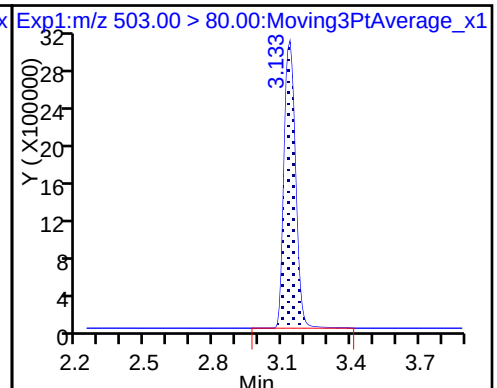
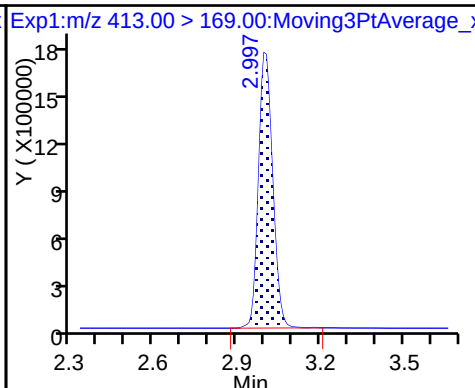
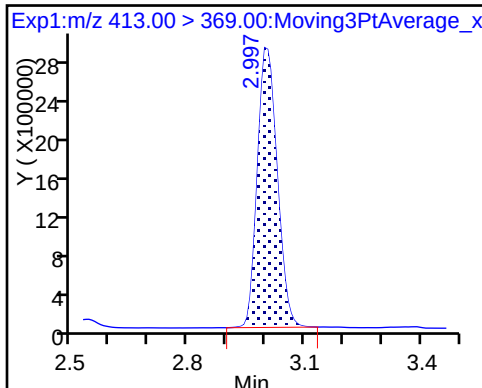
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

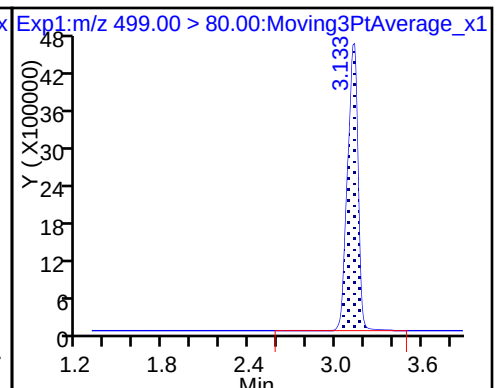
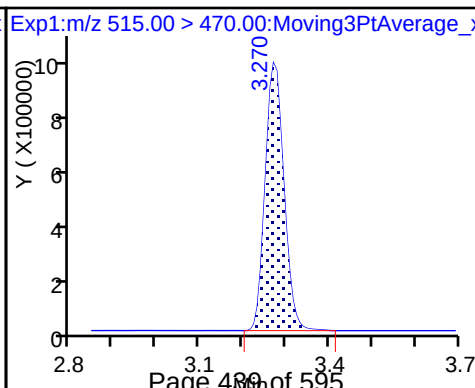
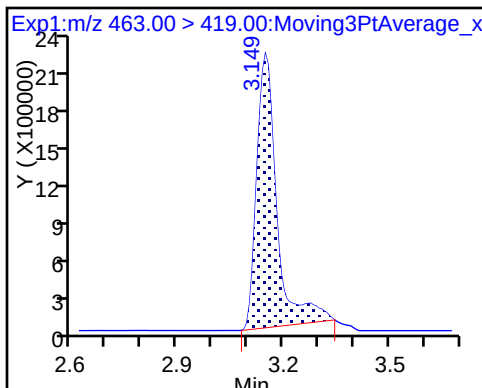
* 7 13C4 PFOS



9 Perfluorononanoic acid

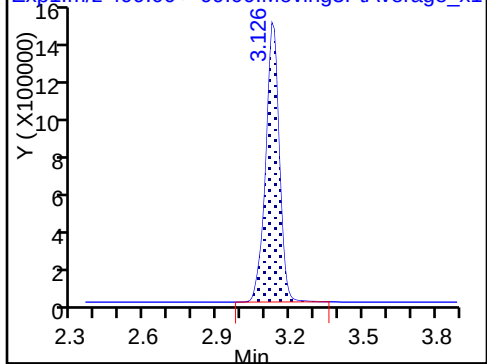
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-170758/40 Calibration Date: 06/24/2017 00:23
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_040.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	1.021		52.4	44.4	18.1	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.238		16.0	15.1	6.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.9034		5.33	4.97	7.1	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.9028		10.3	10.0	3.1	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.013		20.1	20.1	-0.3	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.7437		8.44	9.68	-12.8	30.0
13C2 PFHxA	Ave	1.038	1.047		10.1	10.0	0.9	30.0
13C2 PFDA	Ave	0.9622	0.7496		7.79	10.0	-22.1	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_040.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 24-Jun-2017 00:23:31 ALS Bottle#: 3 Worklist Smp#: 40
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:51 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:38:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.322	2.183	0.139	1.000	17118035	52.4		2305	
298.90 > 99.00	2.314	2.183	0.131	0.997	13135147		1.30(0.00-0.00)	2639	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.526	2.381	0.145	1.000	3979677	10.1		6419	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.777	2.625	0.152	1.000	7065978	16.0		1966	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.784	2.630	0.154	1.000	1708060	5.33		251	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3800811	10.0		8018	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	3445171	10.3		178	
413.00 > 169.00	2.997	2.859	0.138	1.000	1982404		1.74(0.00-0.00)	3458	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		10834949	28.7		25150	
9 Perfluorononanoic acid									
463.00 > 419.00	3.141	3.003	0.138	1.000	2735755	8.44		107	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.262	3.123	0.139	1.000	2848965	7.79		3825	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.126	3.126	0.0	1.000	7698970	20.1		26635	
499.00 > 99.00	3.126	3.126	0.0	1.000	1735038		4.44(0.00-0.00)	4998	

Reagents:

LC537-L3_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_040.d

Injection Date: 24-Jun-2017 00:23:31

Instrument ID: A8_N

Lims ID: CCV L3

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 40

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

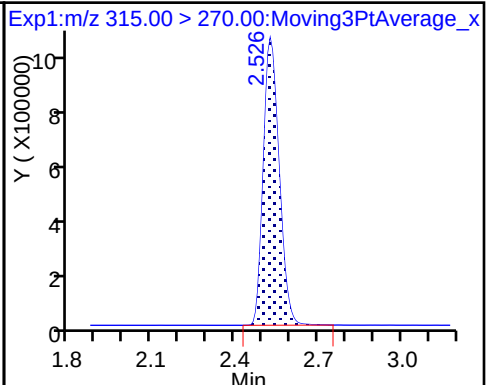
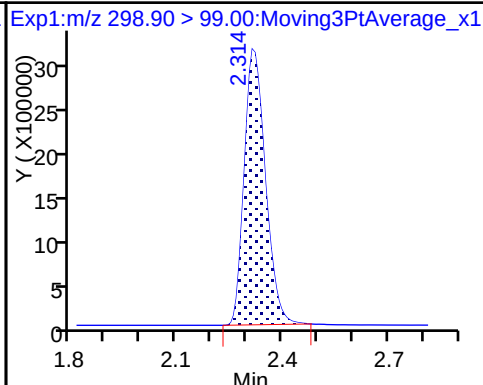
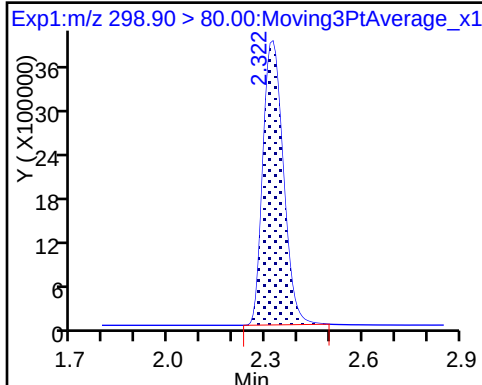
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

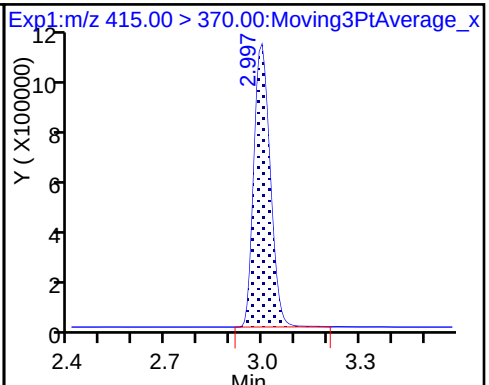
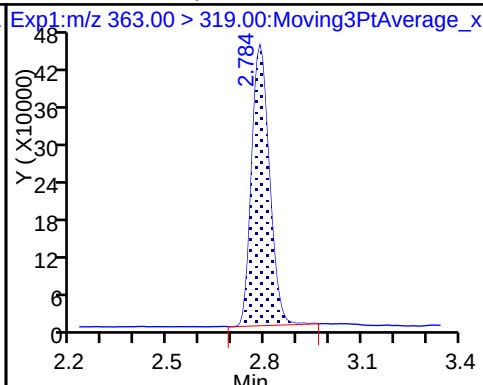
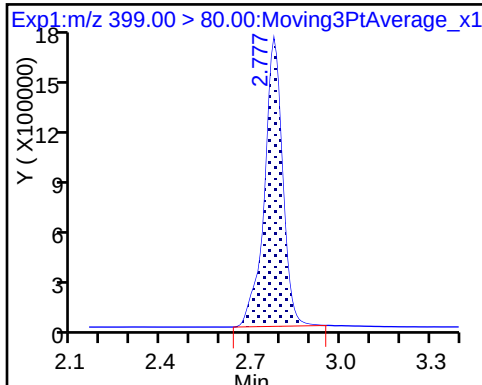
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

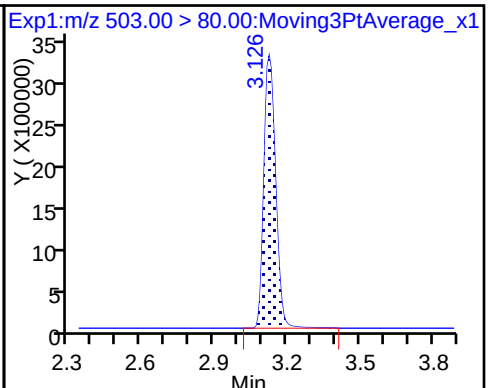
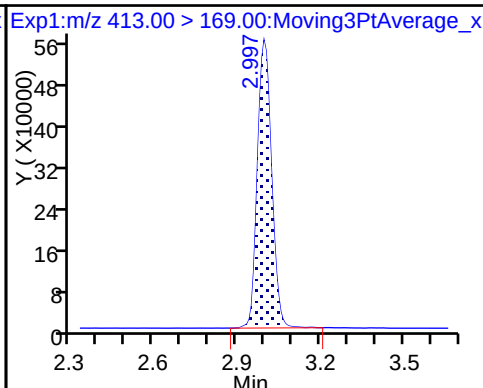
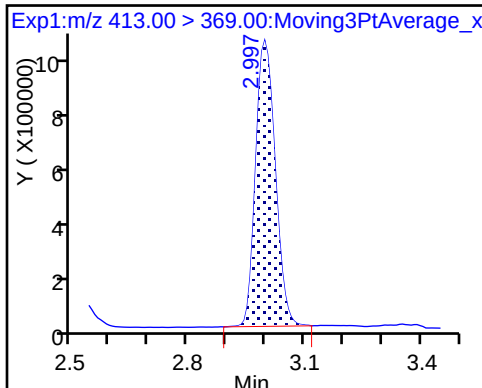
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

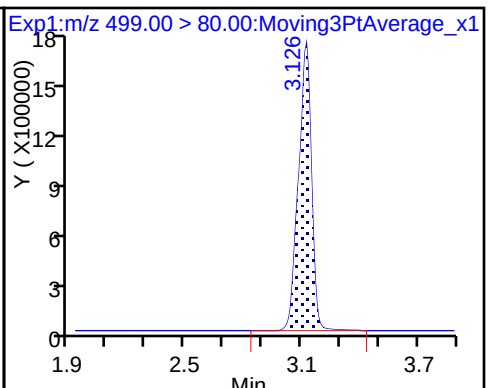
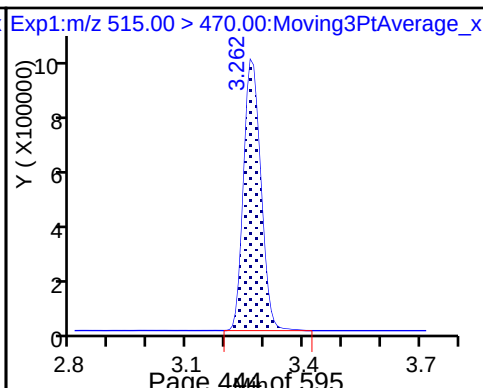
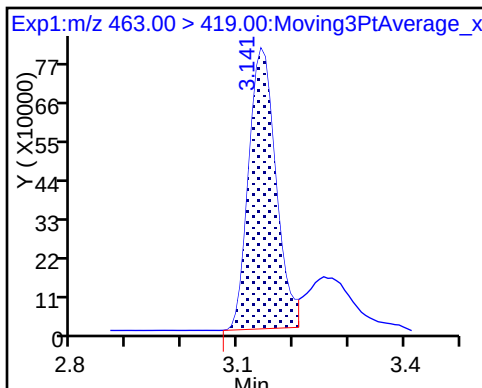
* 7 13C4 PFOS



9 Perfluorononanoic acid

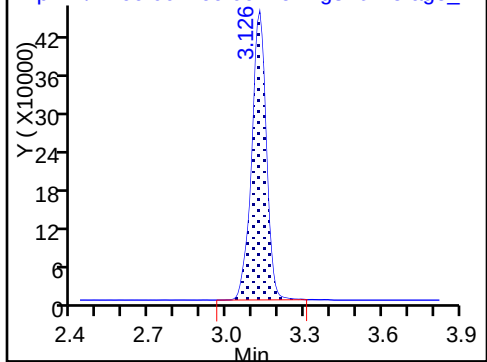
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-171480/11 Calibration Date: 06/28/2017 16:44
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537_CURVE_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.110		20.9	21.2	-1.4	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	1.011		2.44	2.38	2.5	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.461		7.13	7.21	-1.1	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.8953		4.89	4.80	1.9	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034	0.9935		9.24	9.61	-3.9	50.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.7253		4.90	4.62	5.9	50.0
13C2 PFHxA	Ave	1.203	1.147		9.53	10.0	-4.7	30.0
13C2 PFDA	Ave	0.6583	0.6379		9.69	10.0	-3.1	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_011.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 28-Jun-2017 16:44:33 ALS Bottle#: 2 Worklist Smp#: 11
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 28-Jun-2017 17:07:11 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: barnettj

Date: 28-Jun-2017 17:06:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.419	1.415	0.004	1.000	3928845	20.9		1101	
298.90 > 99.00	1.411	1.415	-0.004	0.995	2994833		1.31(0.00-0.00)	1022	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	1813825	9.53		5389	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.699	1.697	0.002	1.000	379920	2.44		69.5	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.699	1.698	0.001	1.000	1759780	7.13		637	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.882	0.0	1.000	679227	4.89		38.9	
413.00 > 169.00	1.882	1.882	0.0	1.000	397588		1.71(0.00-0.00)	592	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.882	0.0		1582044	10.0		4701	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.117	0.0	1.000	1593927	9.24		1046	
499.00 > 99.00	2.117	2.117	0.0	1.000	361438		4.41(0.00-0.00)	443	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.119	-0.002		4789035	28.7		3269	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.131	-0.007	1.000	530394	4.90		54.2	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.291	2.291	0.0	1.000	1009197	9.69		3142	

Reagents:

LC537-L2_00018

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_011.d

Injection Date: 28-Jun-2017 16:44:33

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 11

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

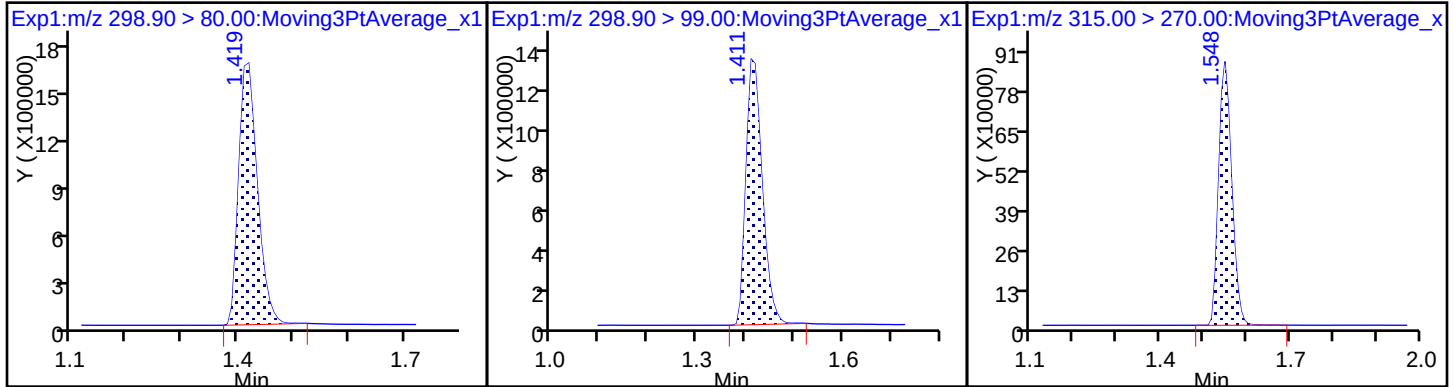
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

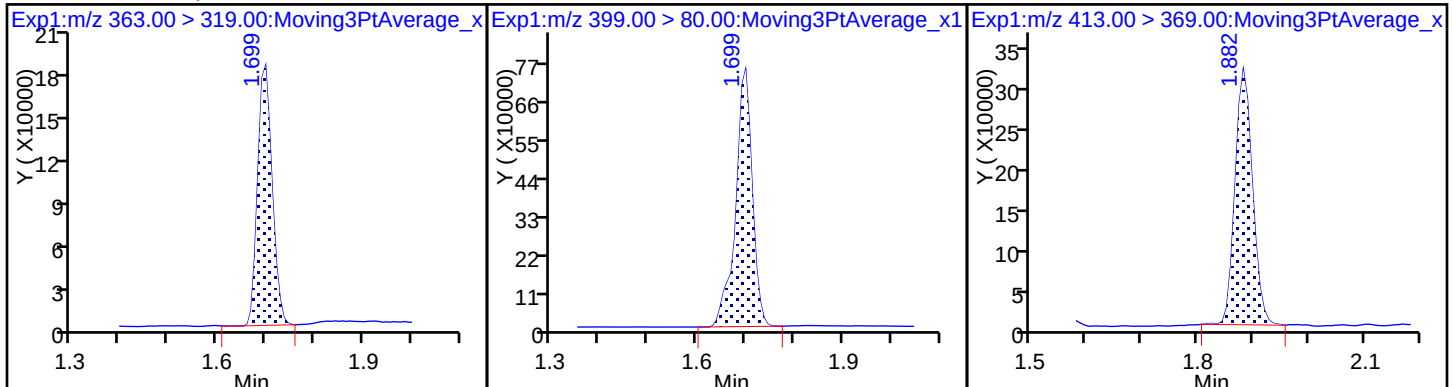
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

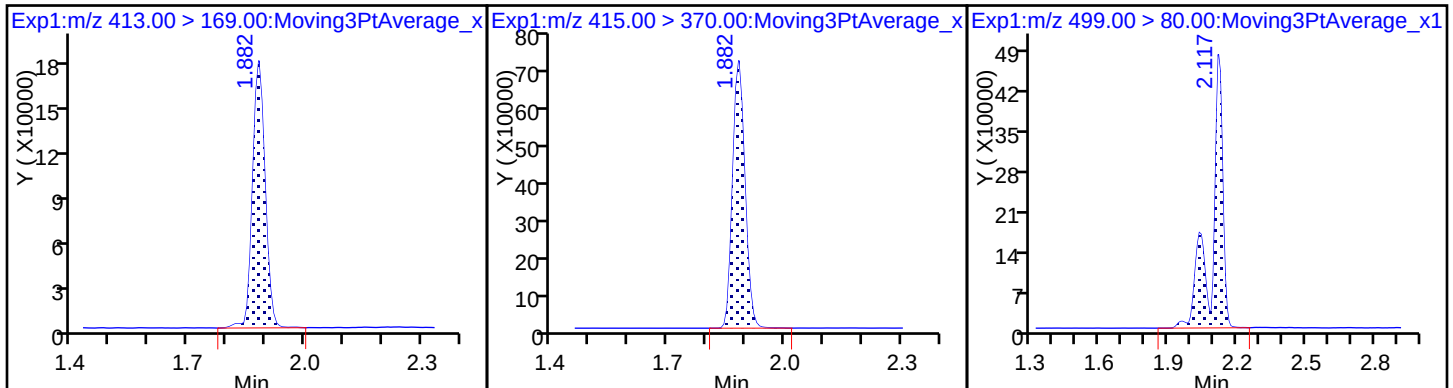
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

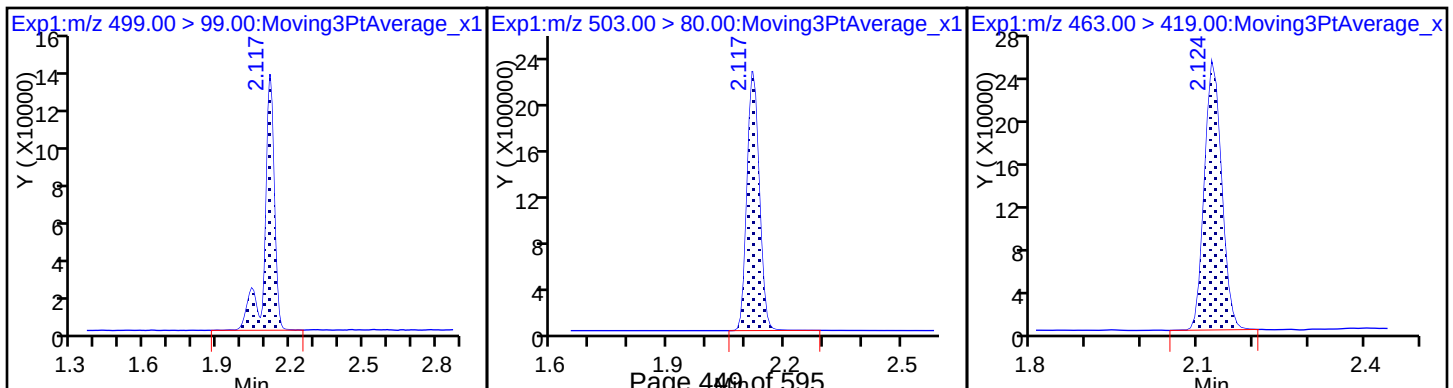
8 Perfluorooctane sulfonic acid



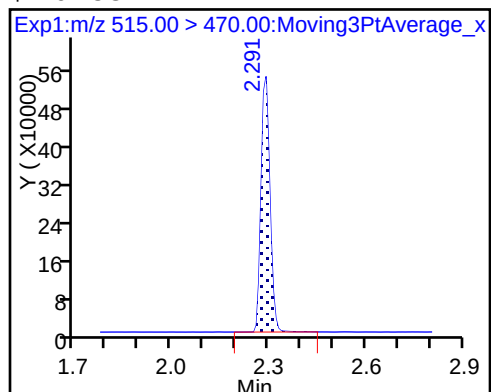
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: ICV 320-171480/13 Calibration Date: 06/28/2017 16:54
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537_CURVE_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.008		110	101	9.4	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	0.9330		9.54	10.1	-5.4	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.657		23.8	21.2	12.1	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.9424		21.5	20.0	7.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034	1.098		22.0	20.7	6.2	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.7209		21.1	20.0	5.3	30.0
13C2 PFHxA	Ave	1.203	1.187		9.86	10.0	-1.4	30.0
13C2 PFDA	Ave	0.6583	0.6889		10.5	10.0	4.7	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_013.d
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 28-Jun-2017 16:54:03 ALS Bottle#: 7 Worklist Smp#: 13
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 28-Jun-2017 17:36:37 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: barnettj

Date: 28-Jun-2017 17:36:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.411	1.415	-0.004	1.000	20322669	110.2		2543	
298.90 > 99.00	1.411	1.415	-0.004	1.000	16013247		1.27(0.00-0.00)	2529	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.548	-0.008	1.000	2197673	9.86		5336	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.697	-0.005	1.000	1741229	9.54		297	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.698	-0.006	1.000	7031099	23.8		2079	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.874	1.882	-0.008	1.000	3493109	21.5		193	
413.00 > 169.00	1.874	1.882	-0.008	1.000	2046548		1.71(0.00-0.00)	2161	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.882	-0.008		1851564	10.0		4138	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.117	0.0	1.000	4552562	22.0		2363	
499.00 > 99.00	2.117	2.117	0.0	1.000	853049		5.34(0.00-0.00)	941	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.119	-0.002		5746016	28.7		3941	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.131	-0.007	1.000	2670491	21.1		258	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.291	2.291	0.0	1.000	1275595	10.5		3491	

Reagents:

LC537-ICV_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_013.d

Injection Date: 28-Jun-2017 16:54:03

Instrument ID: A8_N

Lims ID: ICV

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 7

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

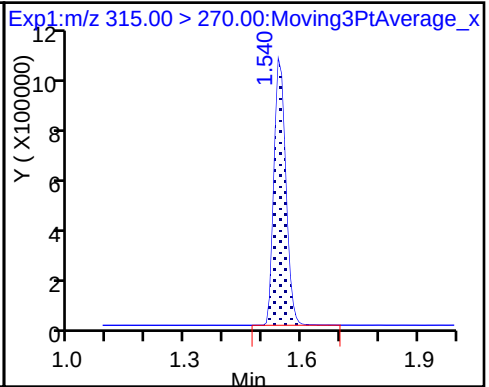
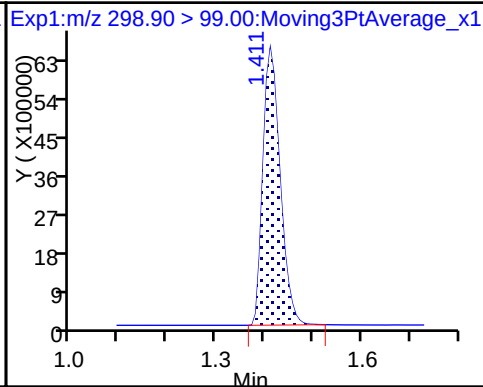
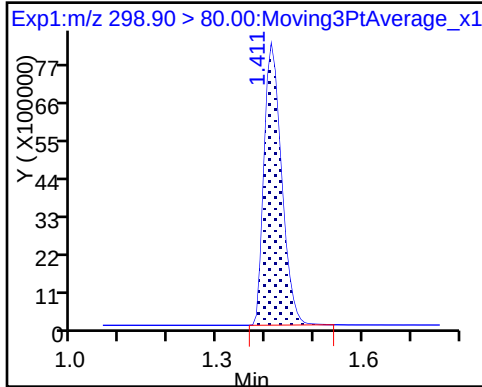
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

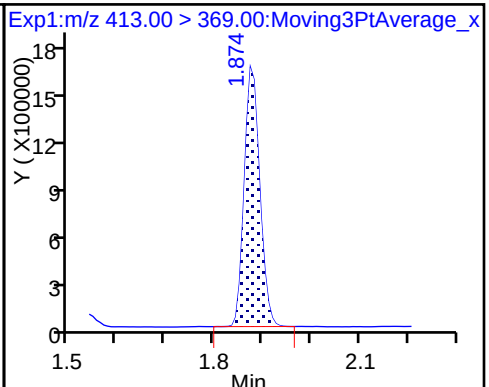
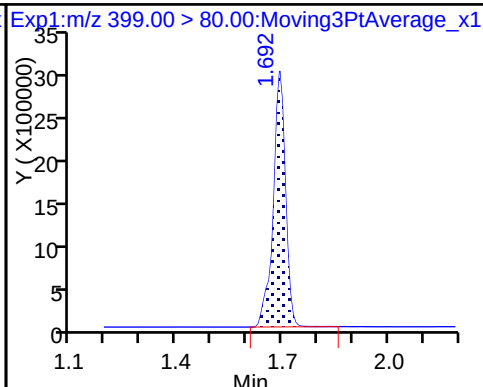
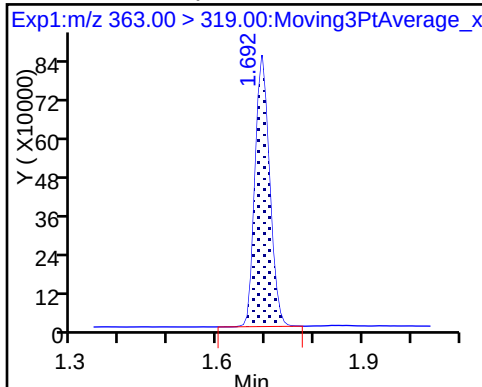
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

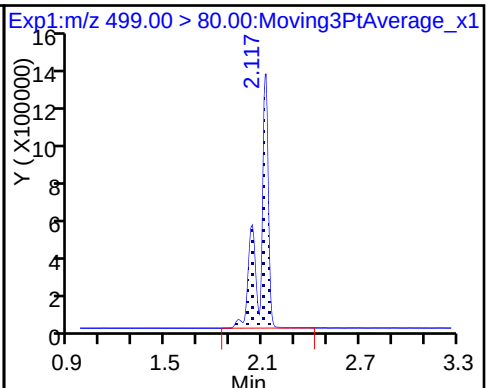
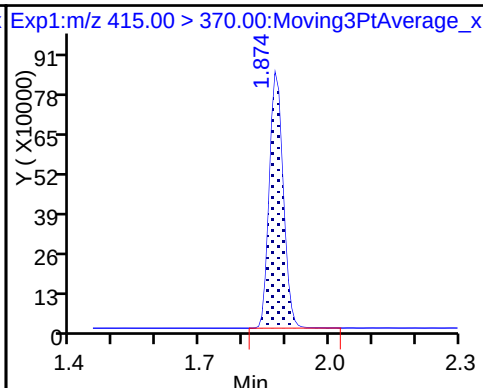
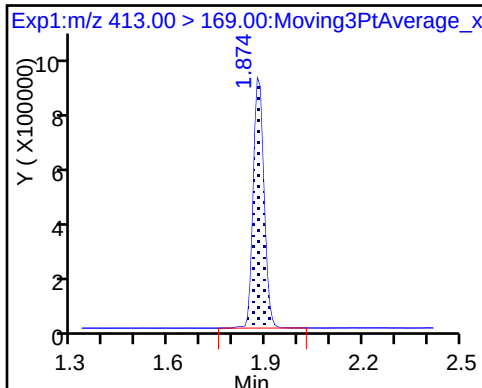
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

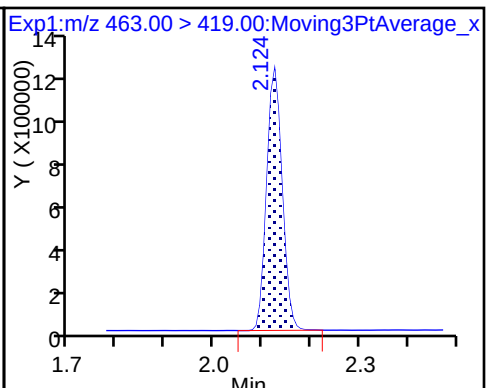
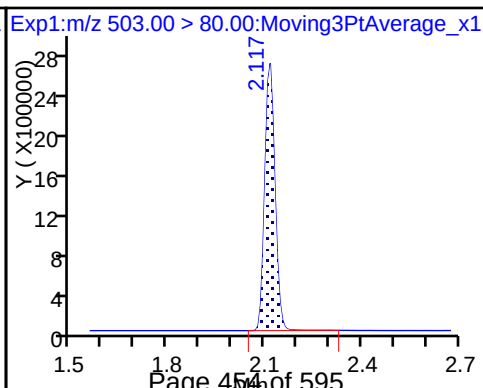
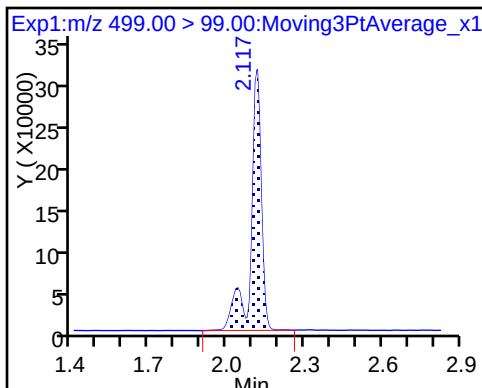
8 Perfluorooctane sulfonic acid



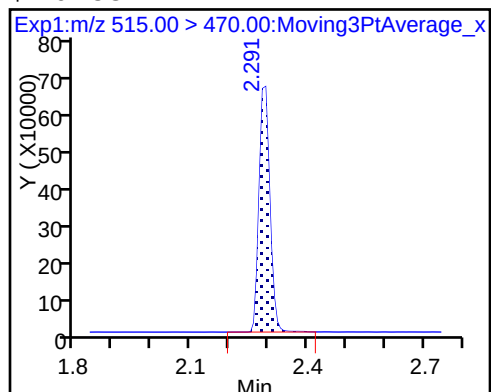
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-171486/1 Calibration Date: 06/28/2017 17:03
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537B_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		0.8414		126	133	-4.8	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	1.007		15.2	14.9	2.1	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.428		43.6	45.1	-3.3	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.9314		31.8	30.0	6.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034	1.059		61.5	60.0	2.5	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.6633		28.0	28.9	-3.1	30.0
13C2 PFHxA	Ave	1.203	1.240		10.3	10.0	3.0	30.0
13C2 PFDA	Ave	0.6583	0.6727		10.2	10.0	2.2	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_001.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 28-Jun-2017 17:03:33 ALS Bottle#: 5 Worklist Smp#: 1
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 13:54:12 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 28-Jun-2017 17:37:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.411	1.415	-0.004	1.000	27481451	126.1		2887	
298.90 > 99.00	1.411	1.415	-0.004	1.000	21903190		1.25(0.00-0.00)	2953	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.548	1.548	0.0	1.000	2818620	10.3		7191	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.697	-0.005	1.000	3398672	15.2		637	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.698	-0.006	1.000	15871051	43.6		3346	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.882	1.882	0.0	1.000	6346246	31.8		328	
413.00 > 169.00	1.882	1.882	0.0	1.000	3779895		1.68(0.00-0.00)	3532	
* 6 13C2-PFOA									
415.00 > 370.00	1.882	1.882	0.0		2273492	10.0		5422	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.117	0.0	1.000	15673325	61.5		5473	
499.00 > 99.00	2.117	2.117	0.0	1.000	3641947		4.30(0.00-0.00)	2814	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.119	-0.002		7068921	28.7		4106	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.131	-0.007	1.000	4356814	28.0		297	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.291	-0.007	1.000	1529474	10.2		3764	

Reagents:

LC537-L5_00021

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_001.d

Injection Date: 28-Jun-2017 17:03:33

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

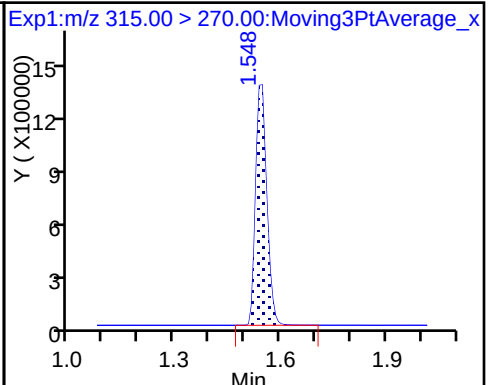
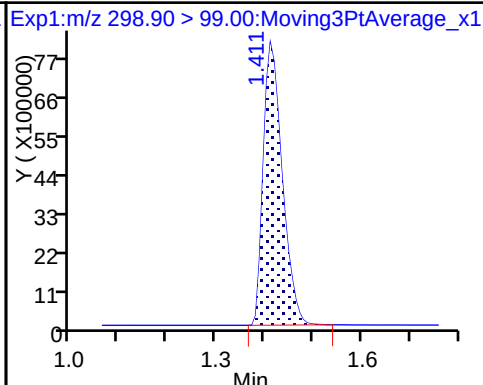
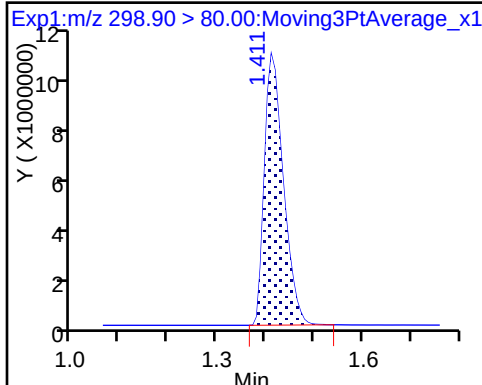
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

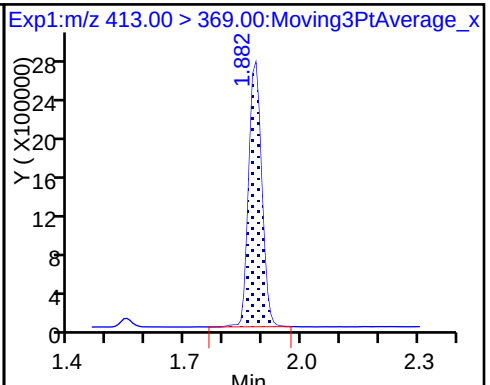
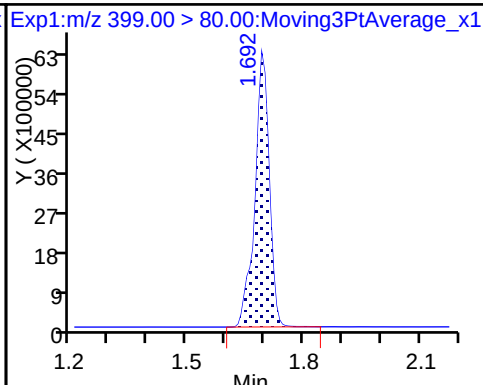
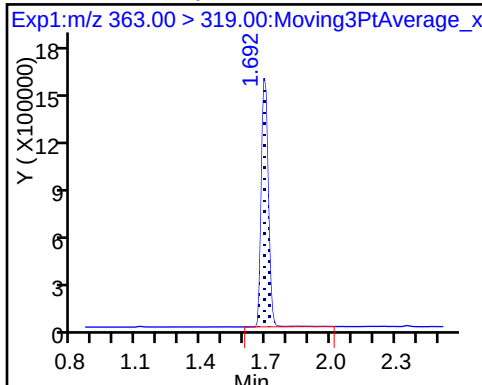
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

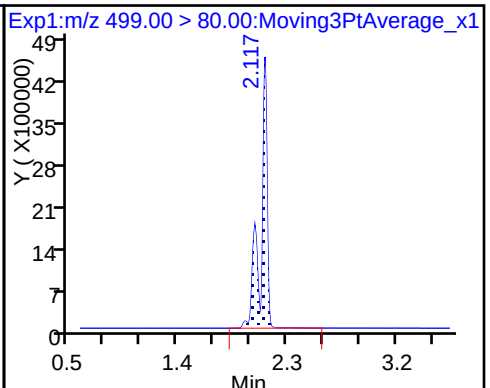
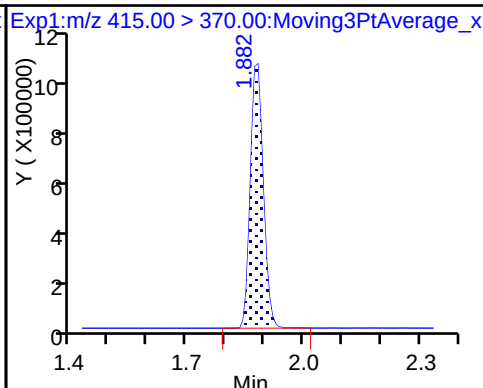
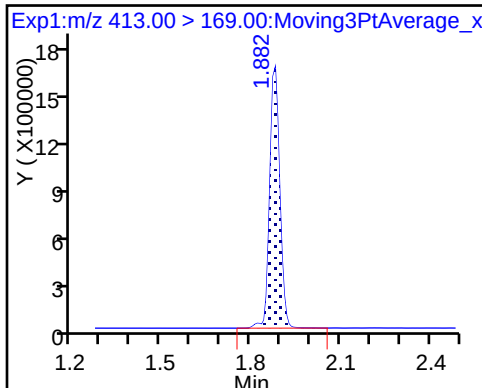
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

* 6 13C2-PFOA

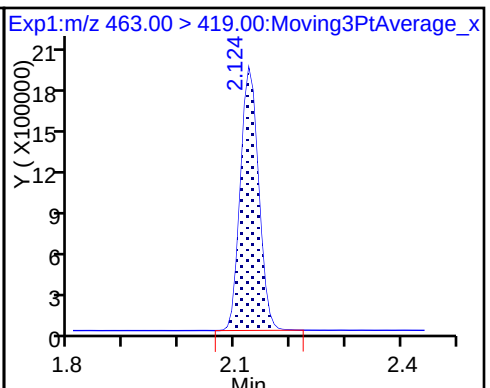
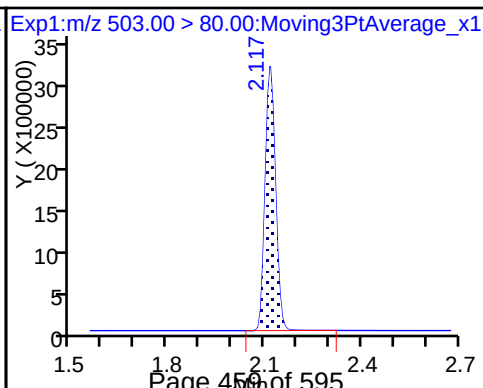
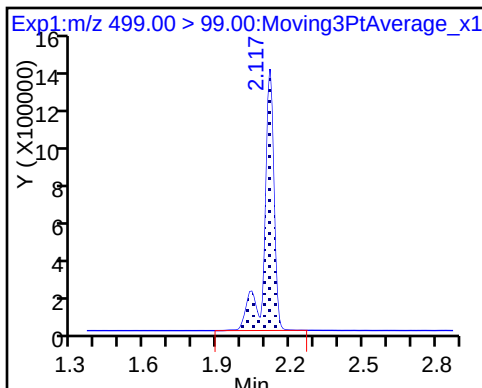
8 Perfluorooctane sulfonic acid



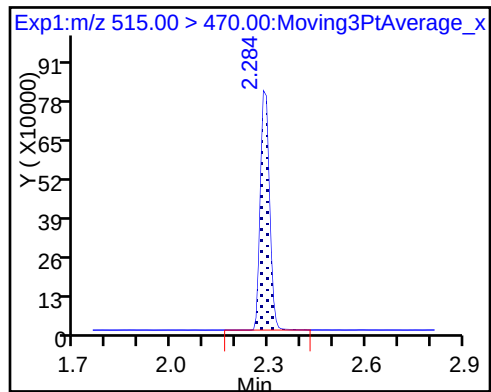
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-171486/13 Calibration Date: 06/28/2017 18:00
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537B_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.120		46.6	44.4	5.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	0.9860		4.97	4.97	0.0	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.562		16.0	15.1	5.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.8867		10.1	10.0	0.9	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.6692		9.46	9.68	-2.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034			4.00	20.1		
13C2 PFHxA	Ave	1.203	1.196		9.94	10.0	-0.6	30.0
13C2 PFDA	Ave	0.6583	0.6190		9.40	10.0	-6.0	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-171487/13 Calibration Date: 06/28/2017 18:00
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537B_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.120		46.6	44.4	5.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	0.9860		4.97	4.97	0.0	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.562		16.0	15.1	5.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.8867		10.1	10.0	0.9	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.6692		9.46	9.68	-2.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034			4.00	20.1		
13C2 PFHxA	Ave	1.203	1.196		9.94	10.0	-0.6	30.0
13C2 PFDA	Ave	0.6583	0.6190		9.40	10.0	-6.0	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_013.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 28-Jun-2017 18:00:34 ALS Bottle#: 3 Worklist Smp#: 13
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 13:54:22 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.411	1.415	-0.004	1.000	12079215	46.6		2787	
298.90 > 99.00	1.411	1.415	-0.004	1.000	9196863		1.31(0.00-0.00)	2519	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.548	-0.008	1.000	2691859	9.94		7164	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.697	-0.005	1.000	1103803	4.97		238	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.698	-0.006	1.000	5730314	16.0		2338	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.874	1.882	-0.008	1.000	2003259	10.1		115	
413.00 > 169.00	1.874	1.882	-0.008	1.000	1211658		1.65(0.00-0.00)	1870	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.882	-0.008		2250330	10.0		6285	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.119	-0.010		6965525	28.7		4979	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.131	-0.014	1.000	1457519	9.46		81.2	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.291	-0.007	1.000	1393000	9.40		5257	

Reagents:

LC537-L3_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_013.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 28-Jun-2017 18:00:34 ALS Bottle#: 3 Worklist Smp#: 13
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 13:54:22 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.411	1.415	-0.004	1.000	12079215	46.6		2787	
298.90 > 99.00	1.411	1.415	-0.004	1.000	9196863		1.31(0.00-0.00)	2519	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.548	-0.008	1.000	2691859	9.94		7164	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.697	-0.005	1.000	1103803	4.97		238	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.698	-0.006	1.000	5730314	16.0		2338	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.874	1.882	-0.008	1.000	2003259	10.1		115	
413.00 > 169.00	1.874	1.882	-0.008	1.000	1211658		1.65(0.00-0.00)	1870	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.882	-0.008		2250330	10.0		6285	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.119	-0.010		6965525	28.7		4979	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.131	-0.014	1.000	1457519	9.46		81.2	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.291	-0.007	1.000	1393000	9.40		5257	

Reagents:

LC537-L3_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_013.d

Injection Date: 28-Jun-2017 18:00:34

Instrument ID: A8_N

Lims ID: CCV L3

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

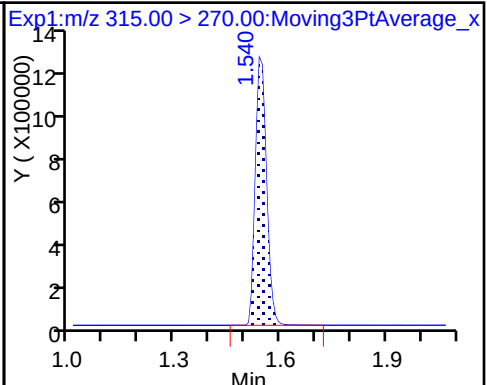
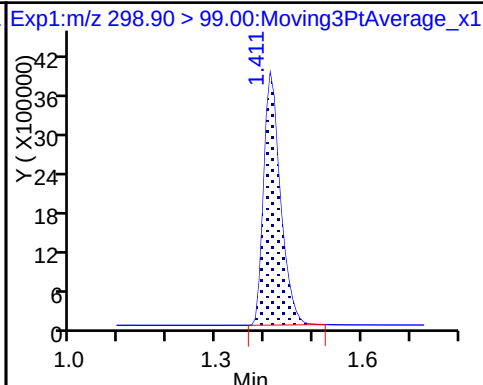
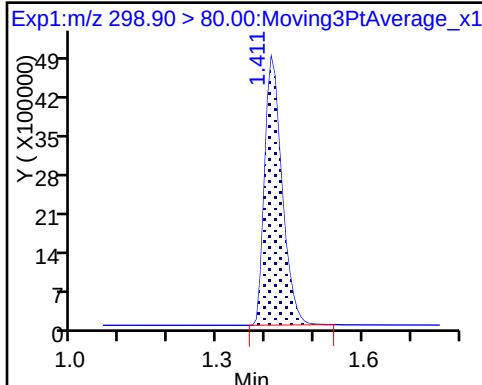
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

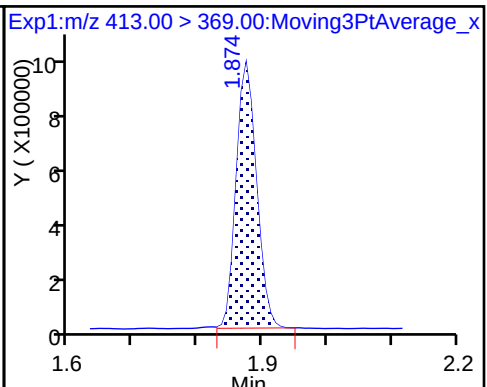
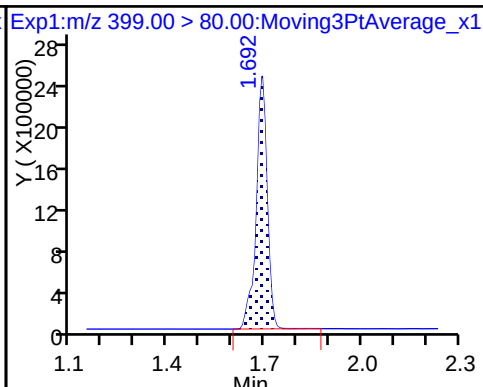
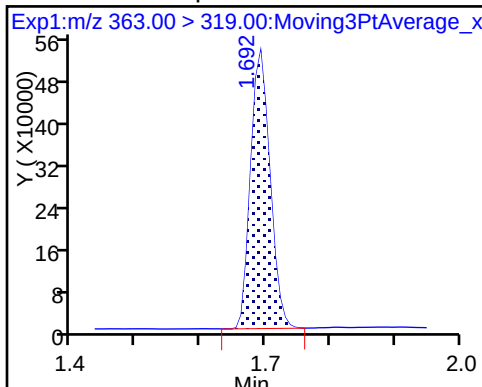
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

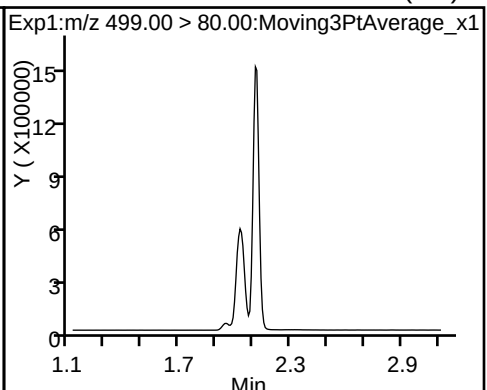
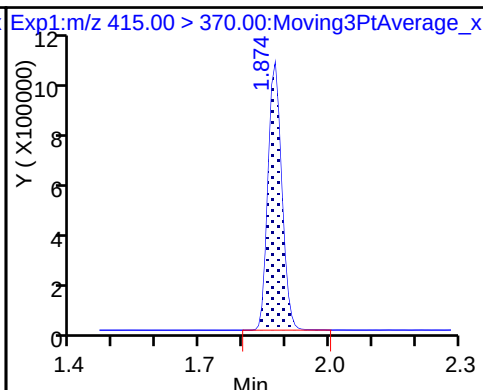
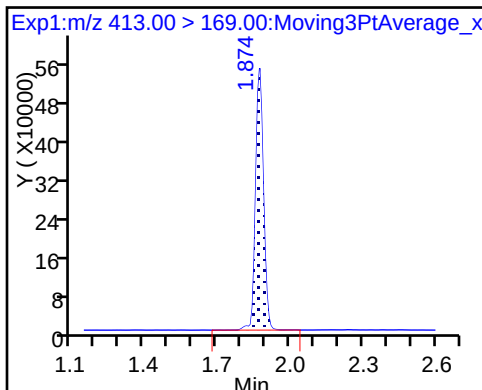
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

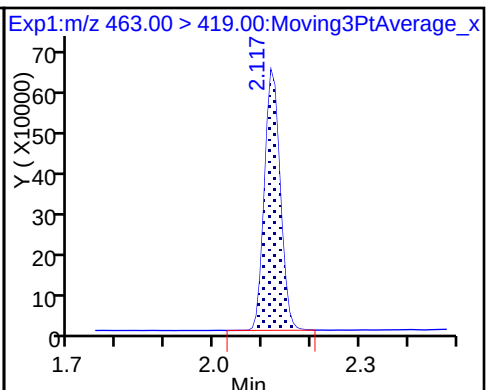
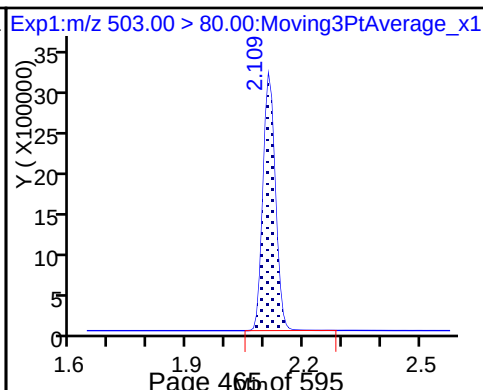
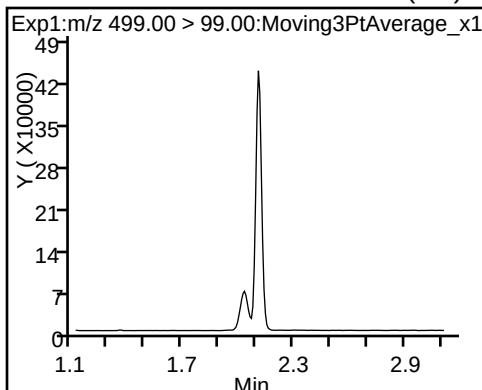
* 6 13C2-PFOA

8 Perfluorooctane sulfonic acid (ND)

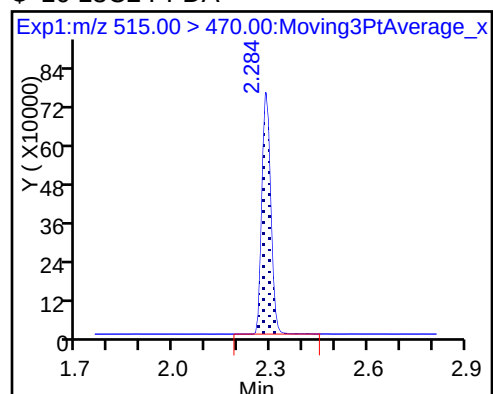


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_013.d

Injection Date: 28-Jun-2017 18:00:34

Instrument ID: A8_N

Lims ID: CCV L3

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

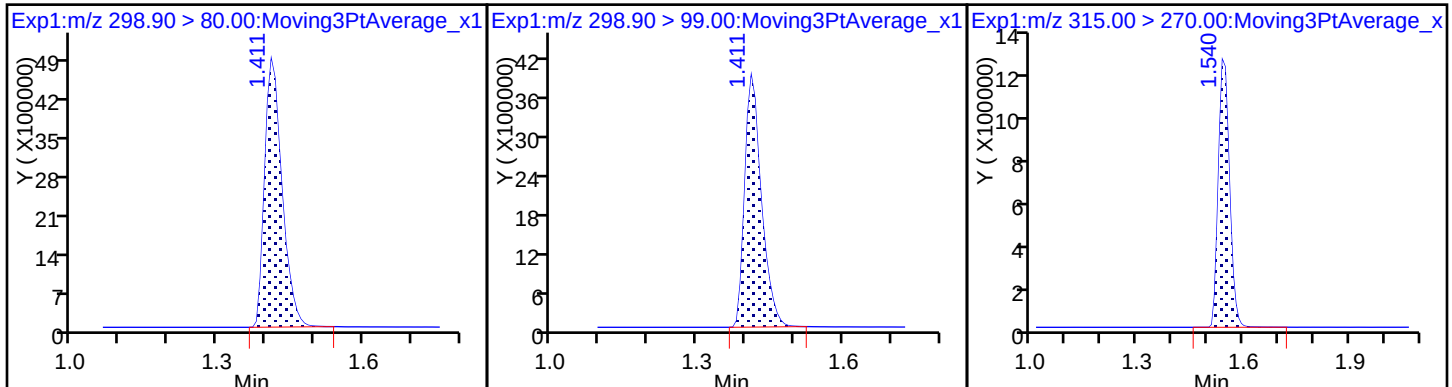
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

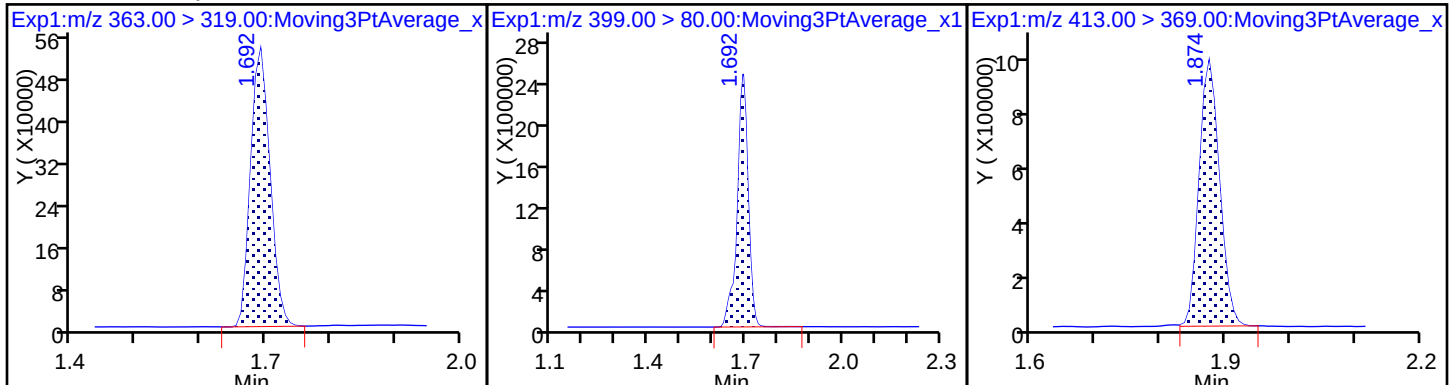
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

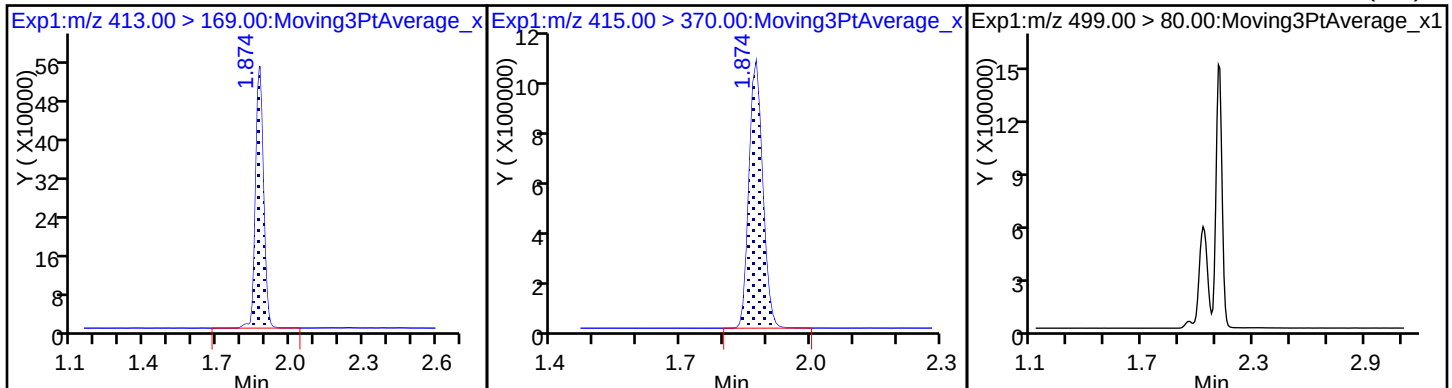
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

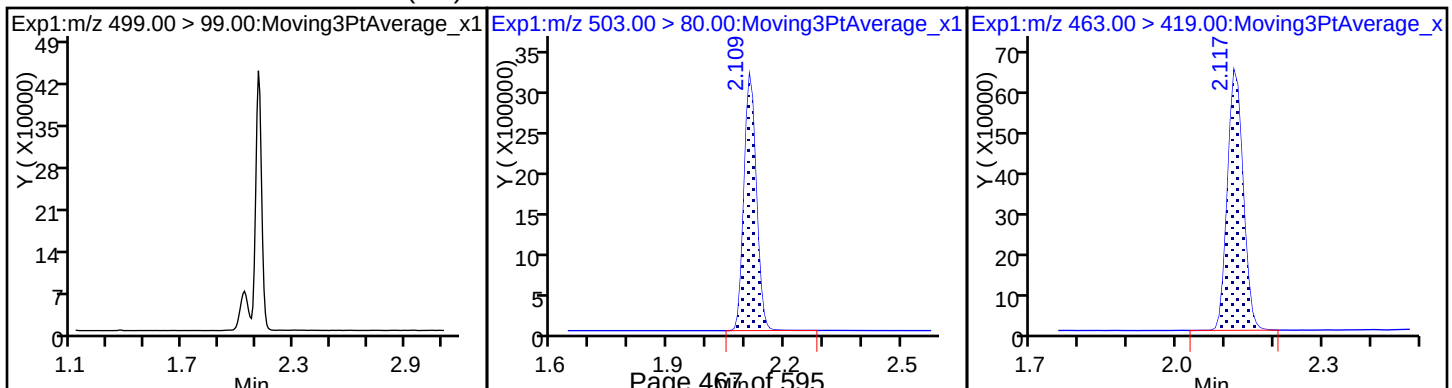
* 6 13C2-PFOA

8 Perfluorooctane sulfonic acid (ND)

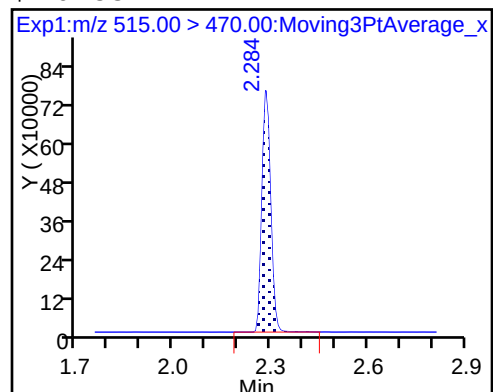


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-171487/25 Calibration Date: 06/28/2017 18:57
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537B_025.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		0.8337		124	133	-6.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	0.9887		14.9	14.9	0.3	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.420		43.3	45.1	-3.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.9415		32.1	30.0	7.2	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.6883		29.0	28.9	0.5	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034			4.00	60.0		
13C2 PFHxA	Ave	1.203	1.272		10.6	10.0	5.7	30.0
13C2 PFDA	Ave	0.6583	0.6711		10.2	10.0	1.9	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_025.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 28-Jun-2017 18:57:32 ALS Bottle#: 5 Worklist Smp#: 25
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 13:54:32 Calib Date: 28-Jun-2017 16:35:04
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44832.b\2017.06.28_537_CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK033

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.411	1.415	-0.004	1.000	26891509	124.4		3084	
298.90 > 99.00	1.411	1.415	-0.004	1.000	21783878		1.23(0.00-0.00)	3157	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.548	-0.008	1.000	2709486	10.6		7645	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.697	-0.005	1.000	3127699	14.9		678	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.698	-0.006	1.000	15581857	43.3		3502	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.874	1.882	-0.008	1.000	6011048	32.1		324	
413.00 > 169.00	1.874	1.882	-0.008	1.000	3480330		1.73(0.00-0.00)	3710	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.882	-0.008		2130233	10.0		5468	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.119	-0.010		6980804	28.7		4715	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.131	-0.014	1.000	4236109	29.0		281	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.291	-0.007	1.000	1429603	10.2		5026	

Reagents:

LC537-L5_00021

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b\2017.06.28_537B_025.d

Injection Date: 28-Jun-2017 18:57:32

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 25

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

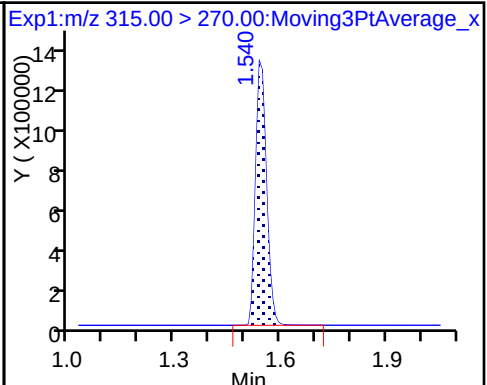
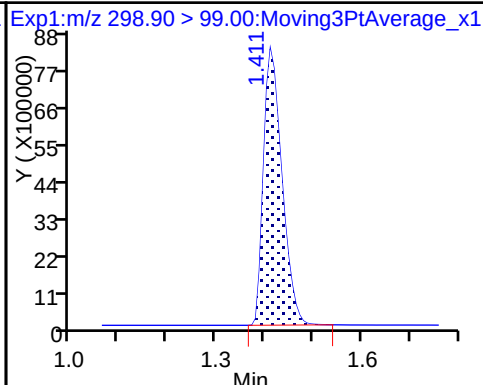
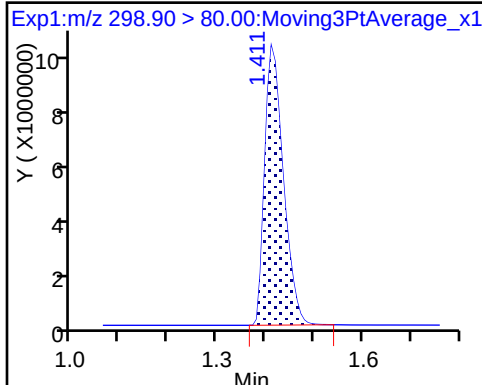
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

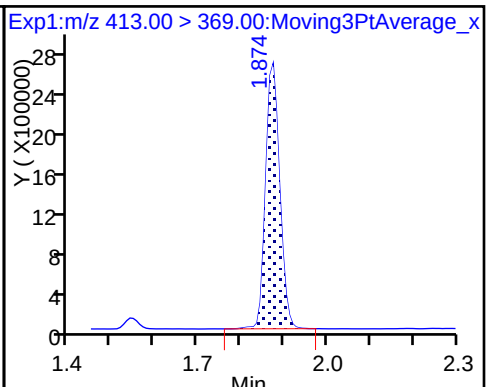
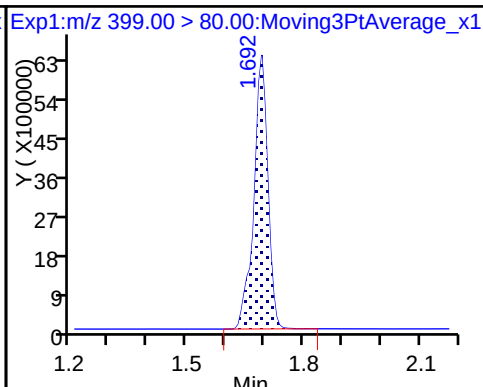
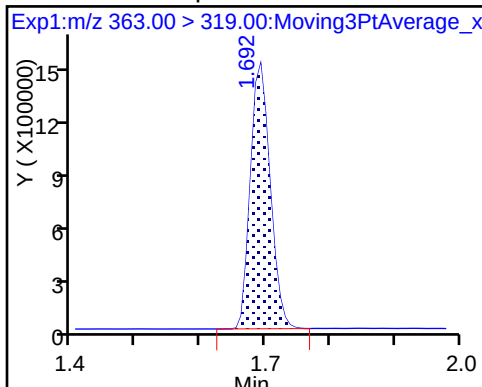
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

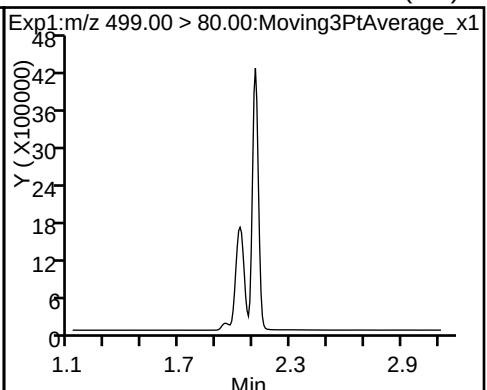
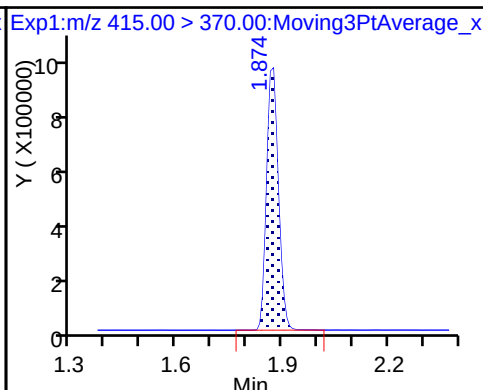
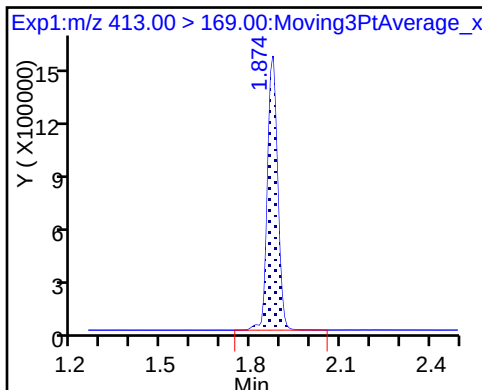
5 Perfluorooctanoic acid



5 Perfluorooctanoic acid

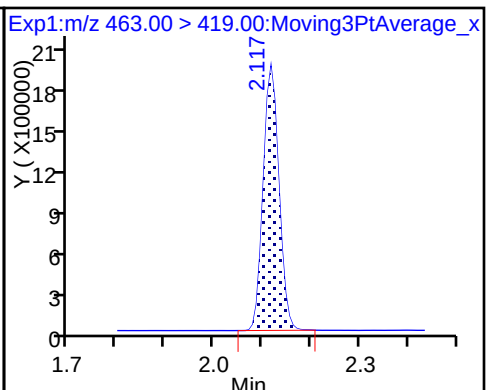
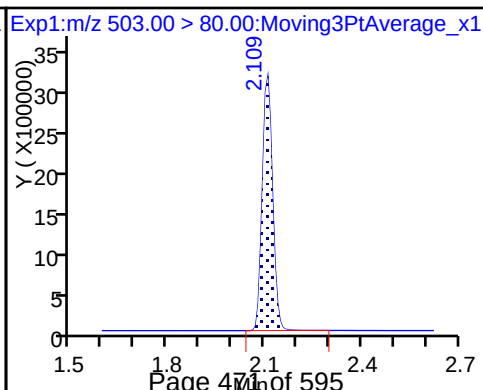
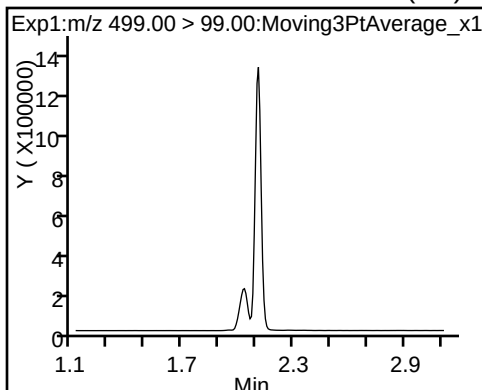
* 6 13C2-PFOA

8 Perfluorooctane sulfonic acid (ND)

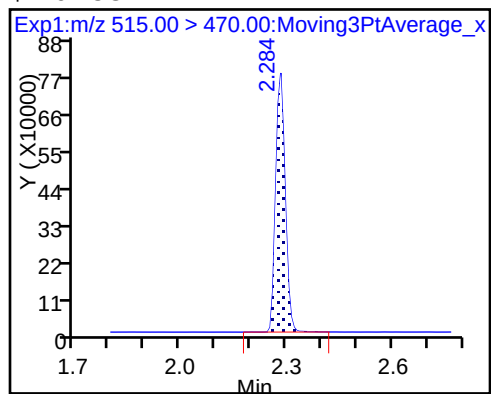


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-172646/11 Calibration Date: 07/05/2017 20:23
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.05_537CURVE_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.9450		22.5	21.2	6.0	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	1.013		2.30	2.38	-3.1	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.375		7.12	7.21	-1.3	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9158		4.76	4.80	-0.6	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	0.9585		8.99	9.61	-6.4	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.8346		4.68	4.62	1.3	50.0
13C2 PFHxA	Ave	1.136	1.093		9.62	10.0	-3.8	30.0
13C2 PFDA	Ave	0.8395	0.8398		10.0	10.0	0.0	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_011.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 05-Jul-2017 20:23:16 ALS Bottle#: 2 Worklist Smp#: 11
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Jul-2017 14:15:58 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: barnettj

Date: 06-Jul-2017 11:10:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.396	1.404	-0.008	1.000	1978330	22.5		577	
298.90 > 99.00	1.396	1.404	-0.008	1.000	1439219		1.37(0.00-0.00)	562	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.533	1.539	-0.006	1.000	1049709	9.62		3794	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.684	1.691	-0.007	1.000	231101	2.30		34.4	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.684	1.692	-0.008	1.000	979833	7.12		363	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.878	-0.004		960063	10.0		3662	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.874	1.879	-0.005	1.000	421619	4.76		51.2	
413.00 > 169.00	1.874	1.879	-0.005	1.000	257723		1.64(0.00-0.00)	279	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.117	-0.008		2831967	28.7		3554	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.109	2.124	-0.015	1.000	909348	8.99		844	
499.00 > 99.00	2.109	2.124	-0.015	1.000	216396		4.20(0.00-0.00)	463	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.124	-0.007	1.000	370397	4.68		53.0	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	806268	10.0		1841	

Reagents:

LC537-L2_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_011.d

Injection Date: 05-Jul-2017 20:23:16

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 11

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

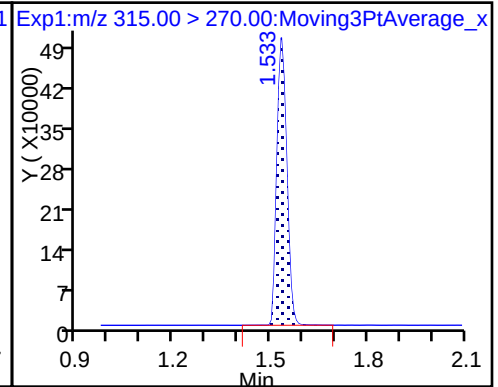
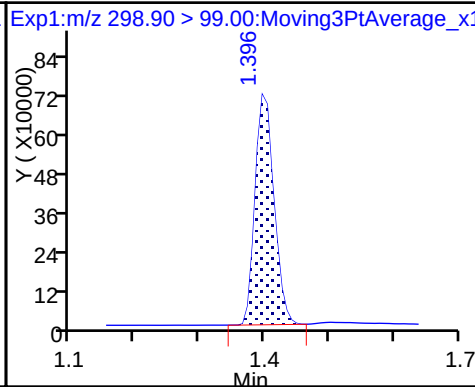
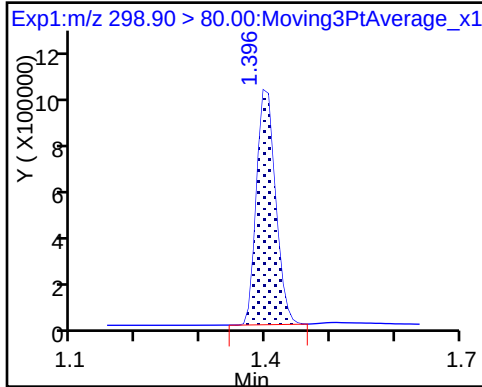
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

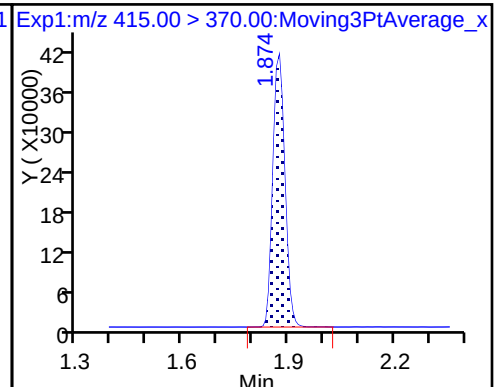
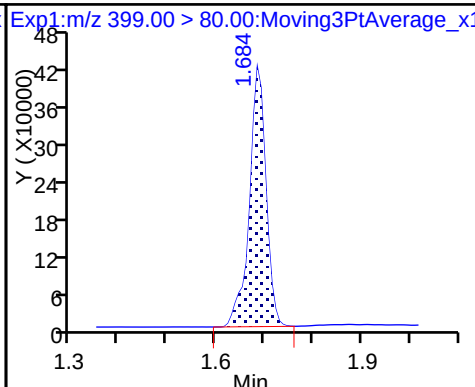
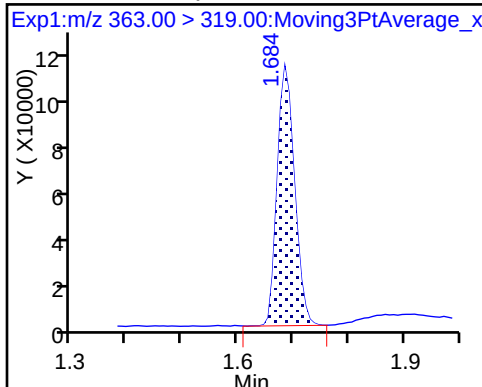
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

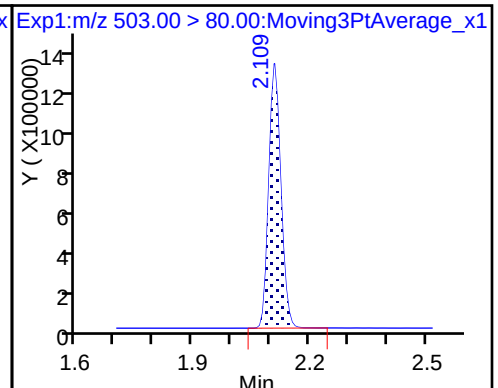
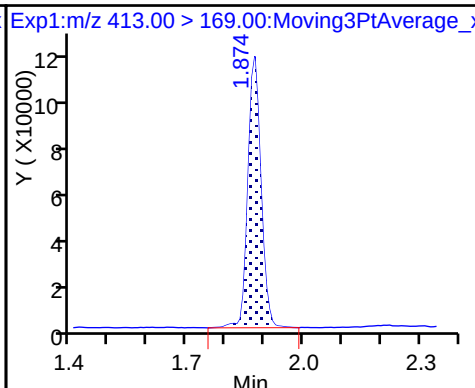
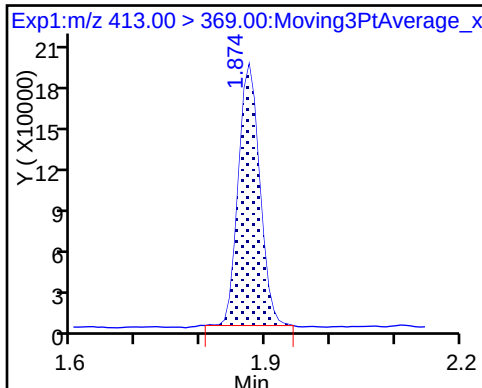
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

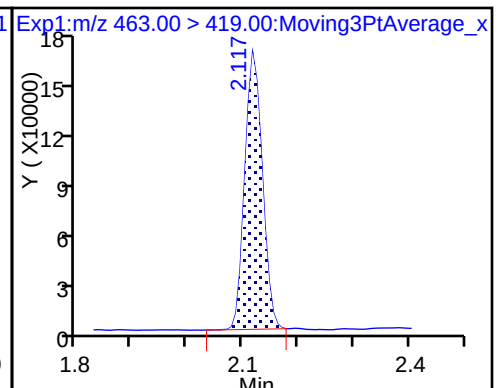
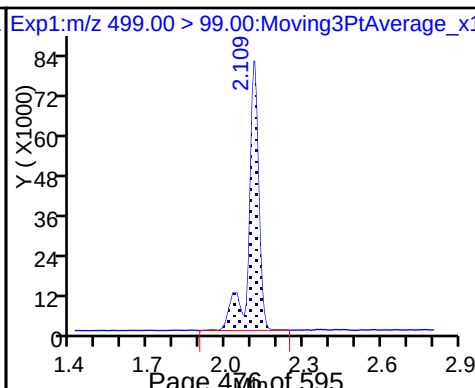
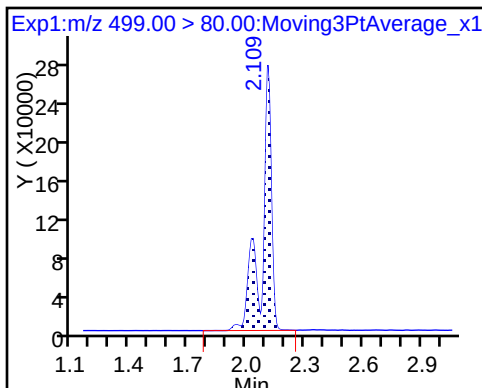
* 7 13C4 PFOS



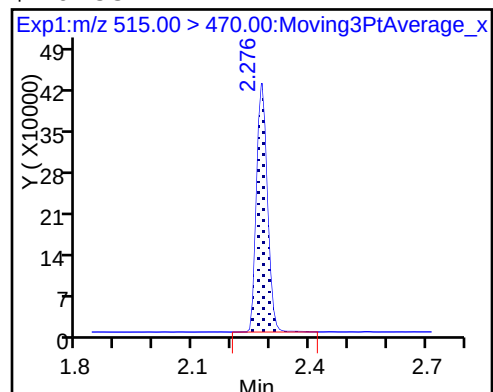
8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: ICV 320-172646/13 Calibration Date: 07/05/2017 20:32
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.05_537CURVE_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.9309		105	101	4.5	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	0.9545		9.20	10.1	-8.7	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.547		23.5	21.2	11.0	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9807		21.3	20.0	6.4	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	1.035		20.9	20.7	1.0	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.8757		21.3	20.0	6.3	30.0
13C2 PFHxA	Ave	1.136	1.143		10.1	10.0	0.6	30.0
13C2 PFDA	Ave	0.8395	0.8348		9.94	10.0	-0.6	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_013.d
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 05-Jul-2017 20:32:46 ALS Bottle#: 7 Worklist Smp#: 13
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Jul-2017 14:16:05 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: barnettj

Date: 06-Jul-2017 11:07:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	8717456	105.2		2832	
298.90 > 99.00	1.396	1.404	-0.008	0.995	6912302		1.26(0.00-0.00)	2975	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.533	1.539	-0.006	1.000	1052723	10.1		4488	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.684	1.691	-0.007	1.000	885966	9.20		135	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.684	1.692	-0.008	1.000	3047530	23.5		1030	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.878	-0.004		920859	10.0		3493	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.874	1.879	-0.005	1.000	1807847	21.3		208	
413.00 > 169.00	1.866	1.879	-0.013	0.996	1047091		1.73(0.00-0.00)	1088	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.117	-0.008		2667731	28.7		3721	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.109	2.124	-0.015	1.000	1991461	20.9		1878	
499.00 > 99.00	2.109	2.124	-0.015	1.000	375691		5.30(0.00-0.00)	756	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.124	-0.007	1.000	1613491	21.3		254	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	768757	9.94		1760	

Reagents:

LC537-ICV_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_013.d

Injection Date: 05-Jul-2017 20:32:46

Instrument ID: A8_N

Lims ID: ICV

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 7

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

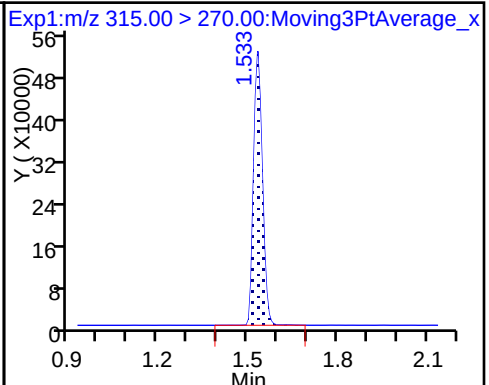
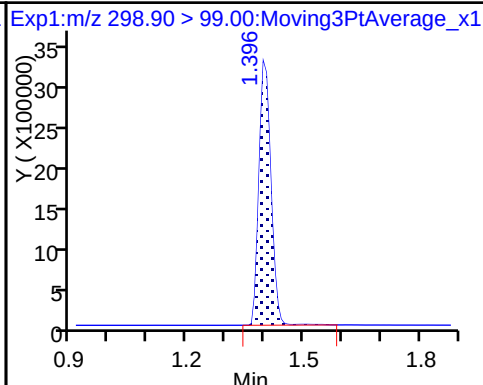
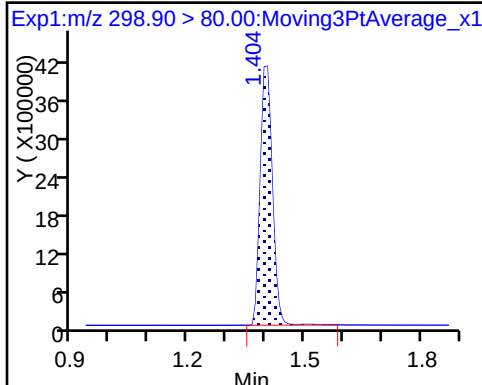
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

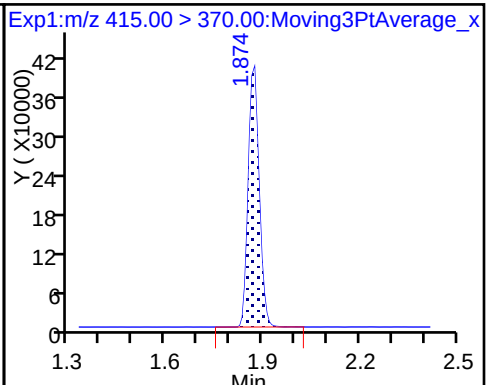
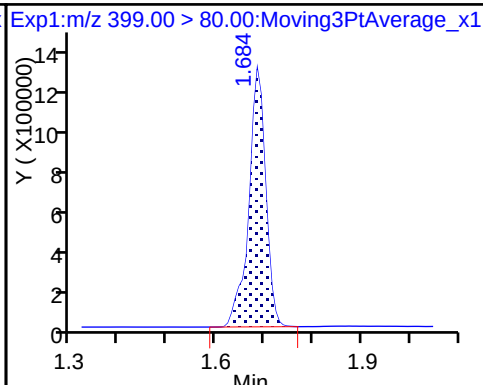
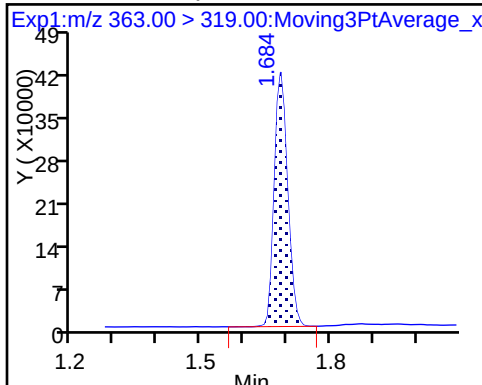
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

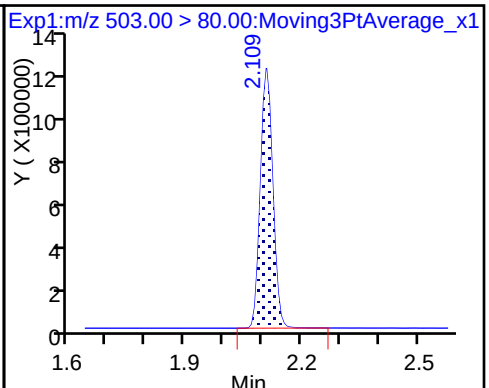
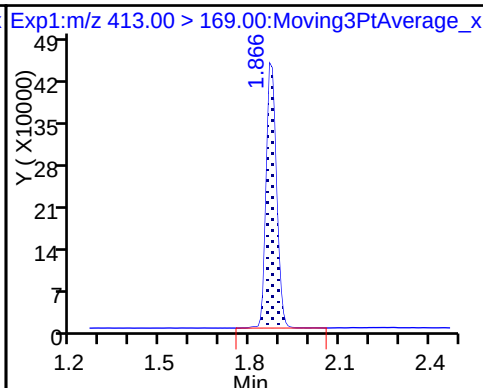
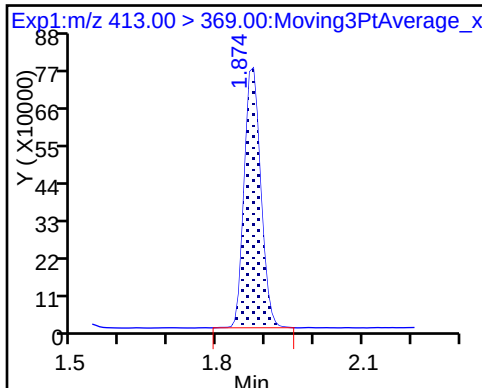
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

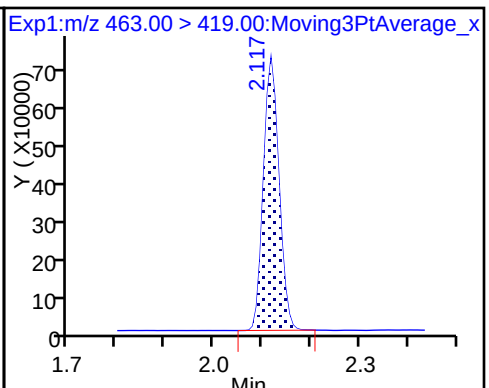
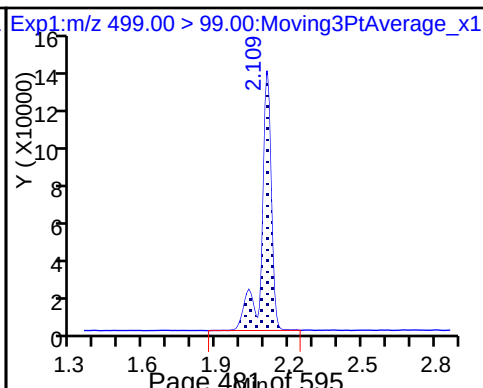
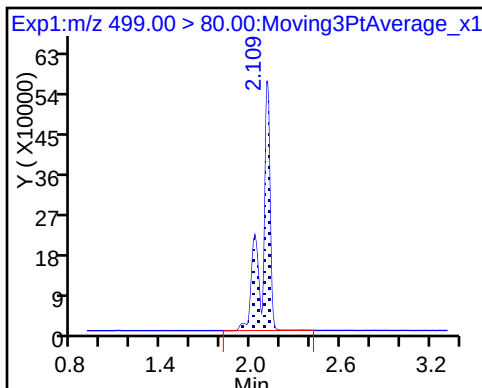
* 7 13C4 PFOS



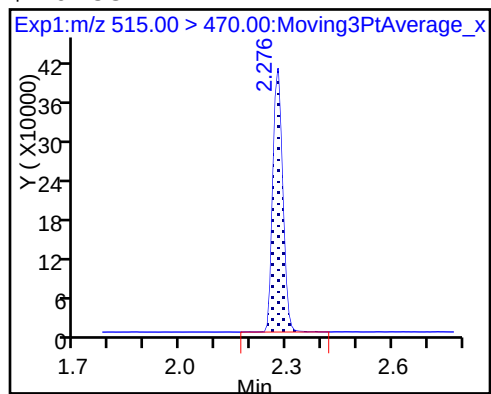
8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-172919/4 Calibration Date: 07/06/2017 23:31
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.06_537A_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.9095		21.6	21.2	2.1	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	1.065		2.42	2.38	1.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.361		7.05	7.21	-2.3	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9312		4.84	4.80	1.0	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	1.015		9.52	9.61	-0.9	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.8413		4.72	4.62	2.1	50.0
13C2 PFHxA	Ave	1.136	1.111		9.78	10.0	-2.2	30.0
13C2 PFDA	Ave	0.8395	0.8721		10.4	10.0	3.9	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_004.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 06-Jul-2017 23:31:03 ALS Bottle#: 2 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 14:12:53 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 10:08:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	1913540	21.6		615	
298.90 > 99.00	1.404	1.404	0.0	1.000	1464771		1.31(0.00-0.00)	650	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.540	1.539	0.001	1.000	1099189	9.78		4085	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.692	1.691	0.001	1.000	250200	2.42		34.6	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.692	1.692	0.0	1.000	974244	7.05		340	
* 6 13C2-PFOA									
415.00 > 370.00	1.874	1.878	-0.004		989181	10.0		4208	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.874	1.879	-0.005	1.000	441686	4.84		57.2	
413.00 > 169.00	1.874	1.879	-0.005	1.000	268035		1.65(0.00-0.00)	276	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.117	2.102	0.015	1.000	967977	9.52		886	
499.00 > 99.00	2.117	2.102	0.015	1.000	229640		4.22(0.00-0.00)	513	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.117	-0.008		2846016	28.7		3938	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.124	0.0	1.000	384660	4.72		68.4	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.284	2.281	0.003	1.000	862654	10.4		1453	

Reagents:

LC537-L2_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_004.d

Injection Date: 06-Jul-2017 23:31:03

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

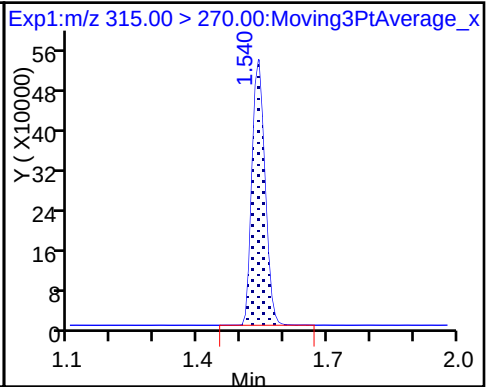
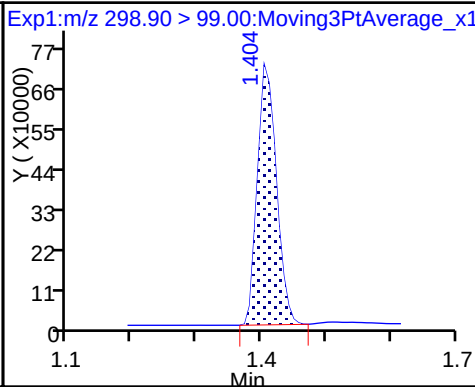
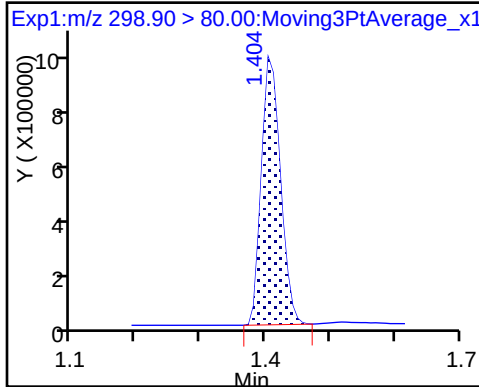
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

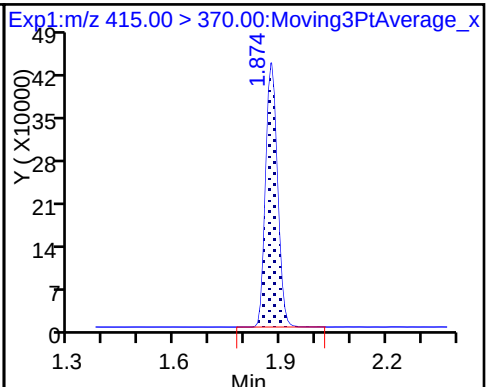
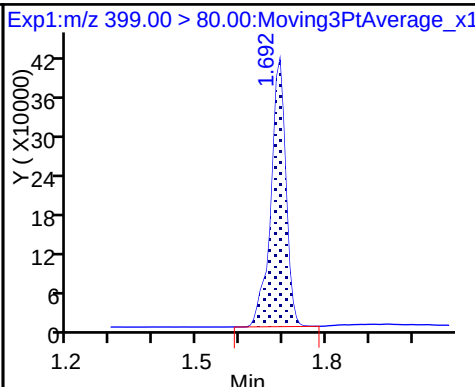
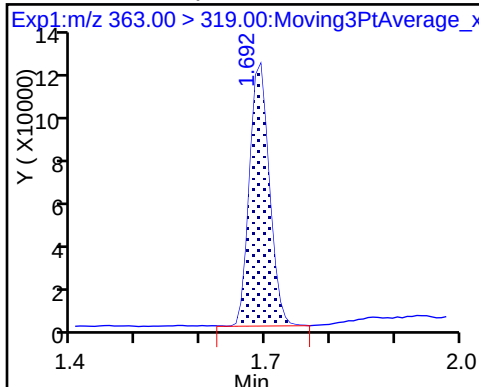
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

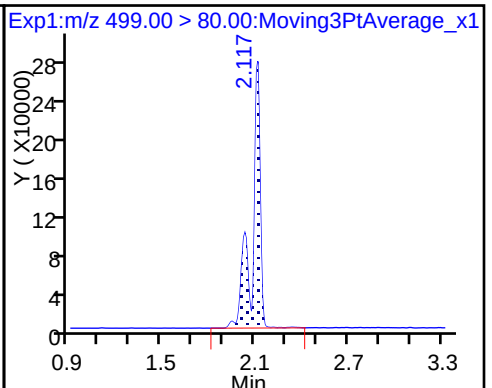
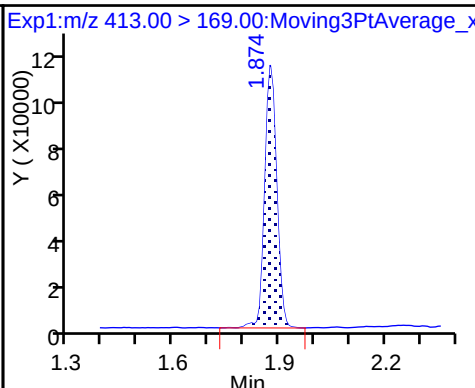
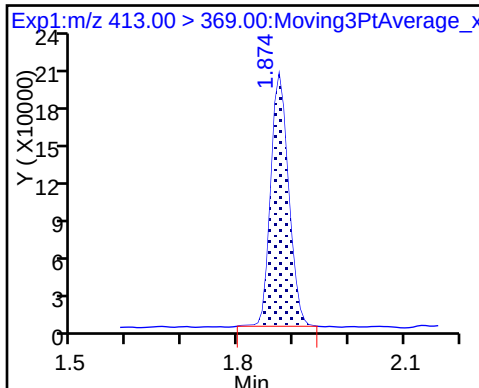
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

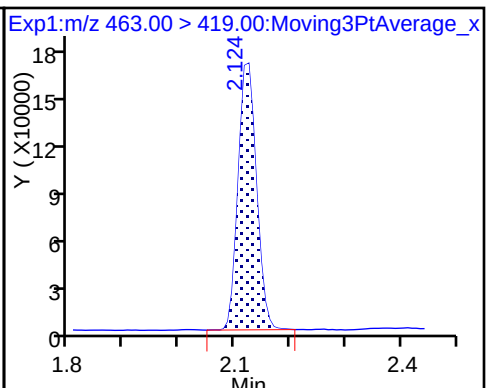
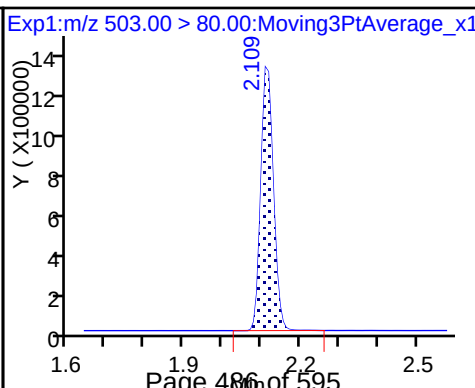
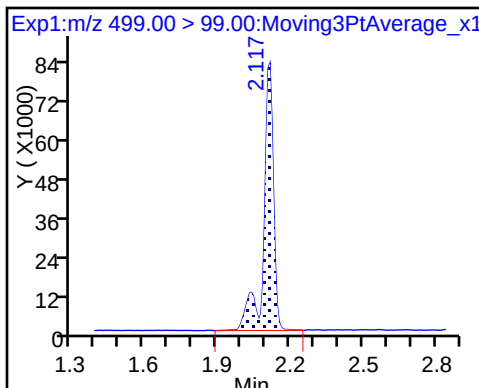
8 Perfluorooctane sulfonic acid



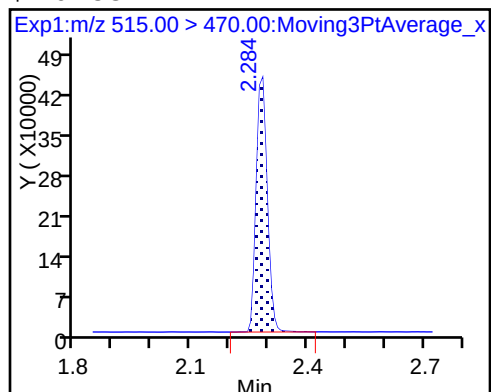
8 Perfluorooctane sulfonic acid

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-172925/21 Calibration Date: 07/07/2017 00:51
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.06_537A_021.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.8822		131	133	-1.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	1.025		14.6	14.9	-2.0	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.380		44.7	45.1	-0.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9608		31.2	30.0	4.2	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	1.043		61.2	60.0	1.8	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.7904		27.7	28.9	-4.1	30.0
13C2 PFHxA	Ave	1.136	1.145		10.1	10.0	0.7	30.0
13C2 PFDA	Ave	0.8395	0.8603		10.2	10.0	2.5	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_021.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 07-Jul-2017 00:51:47 ALS Bottle#: 5 Worklist Smp#: 21
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 10:18:32 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 10:10:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	11560821	131.2		2742	
298.90 > 99.00	1.404	1.404	0.0	1.000	8968775		1.29(0.00-0.00)	3346	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.533	1.539	-0.006	1.000	1087620	10.1		4935	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.684	1.691	-0.007	1.000	1445777	14.6		197	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.684	1.692	-0.008	1.000	6154995	44.7		2705	
* 6 13C2-PFOA									
415.00 > 370.00	1.866	1.878	-0.012		950253	10.0		3370	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.866	1.879	-0.013	1.000	2736274	31.2		336	
413.00 > 169.00	1.866	1.879	-0.013	1.000	1684483		1.62(0.00-0.00)	1694	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.102	2.102	0.0	1.000	6193984	61.2		4543	M
499.00 > 99.00	2.102	2.102	0.0	1.000	1465911		4.23(0.00-0.00)	2716	M
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.117	-0.015		2836262	28.7		3701	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.124	-0.007	1.000	2169724	27.7		295	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	817531	10.2		1440	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L5_00023

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_021.d

Injection Date: 07-Jul-2017 00:51:47

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 21

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

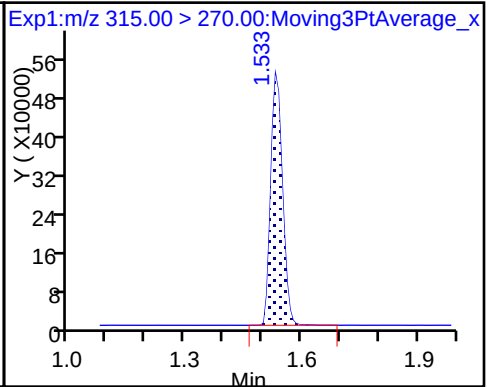
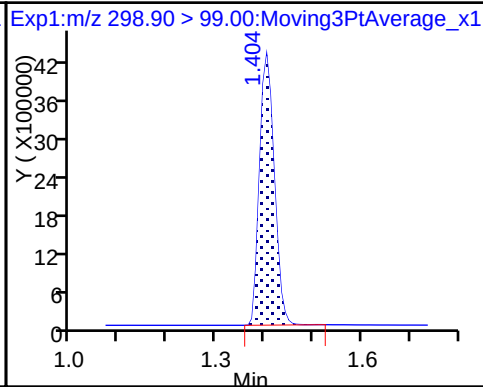
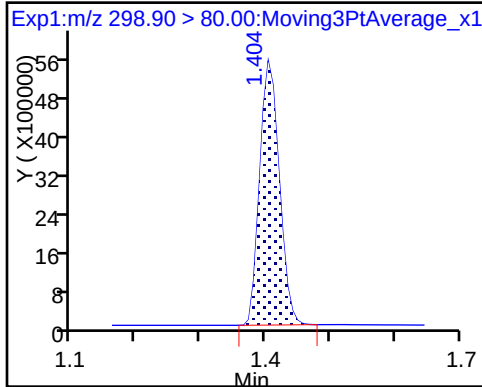
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

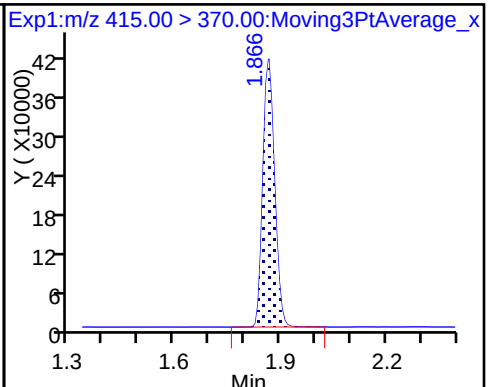
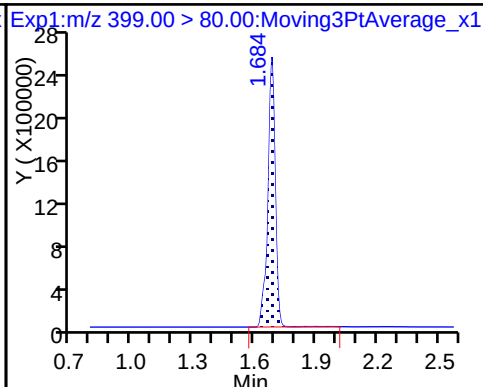
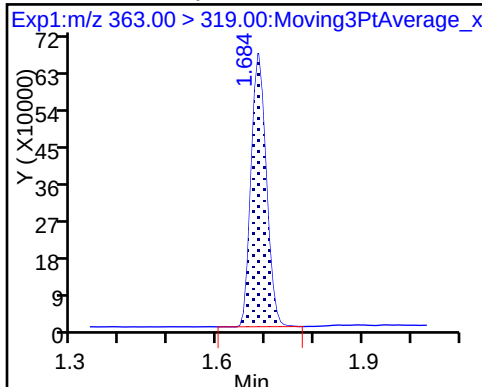
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

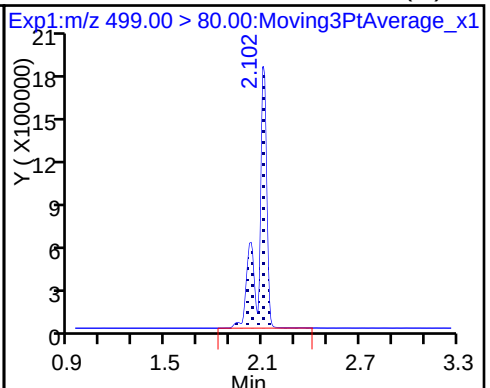
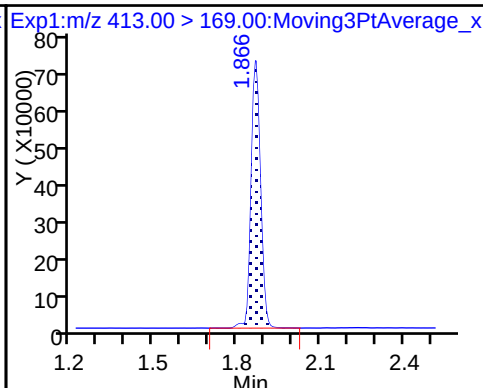
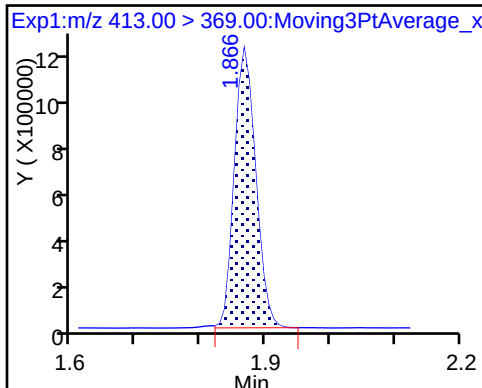
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

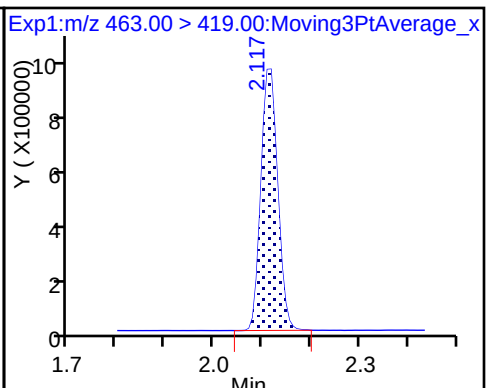
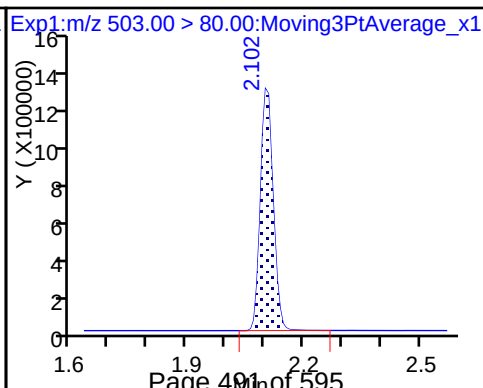
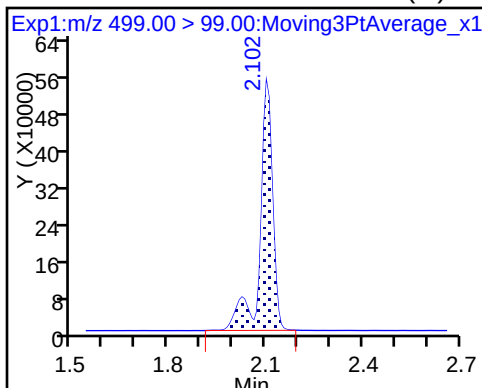
8 Perfluorooctane sulfonic acid (M)



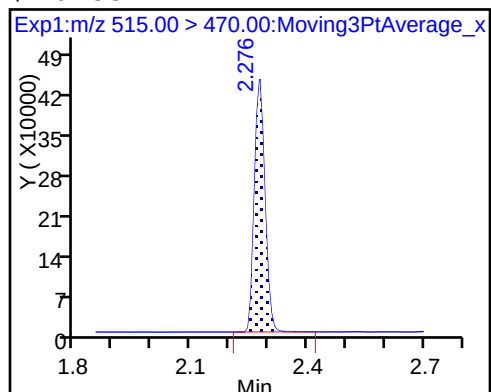
8 Perfluorooctane sulfonic acid (M)

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

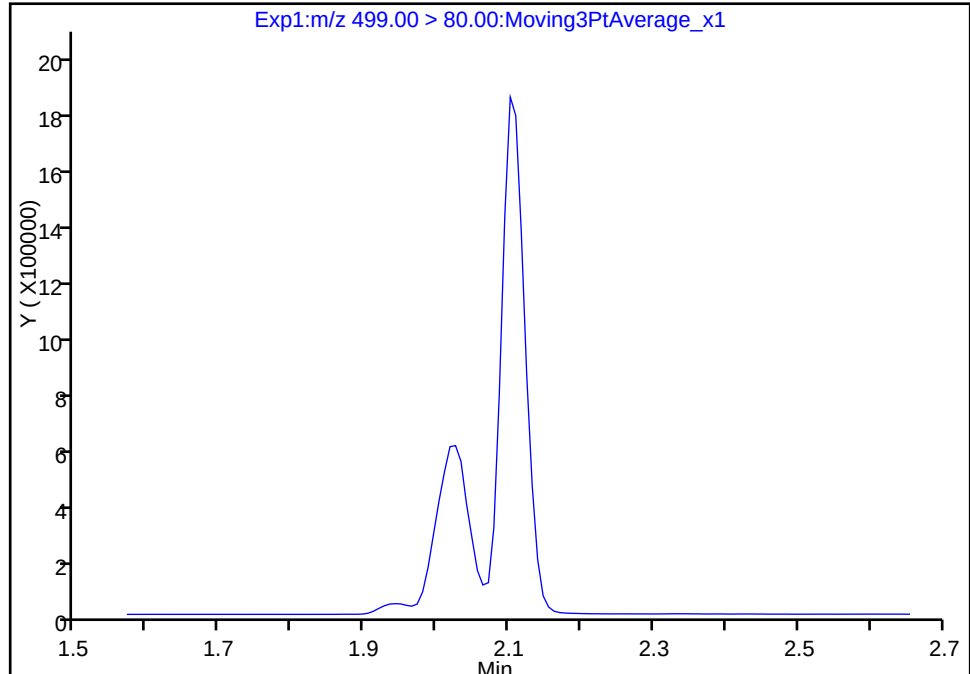
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_021.d
Injection Date: 07-Jul-2017 00:51:47 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

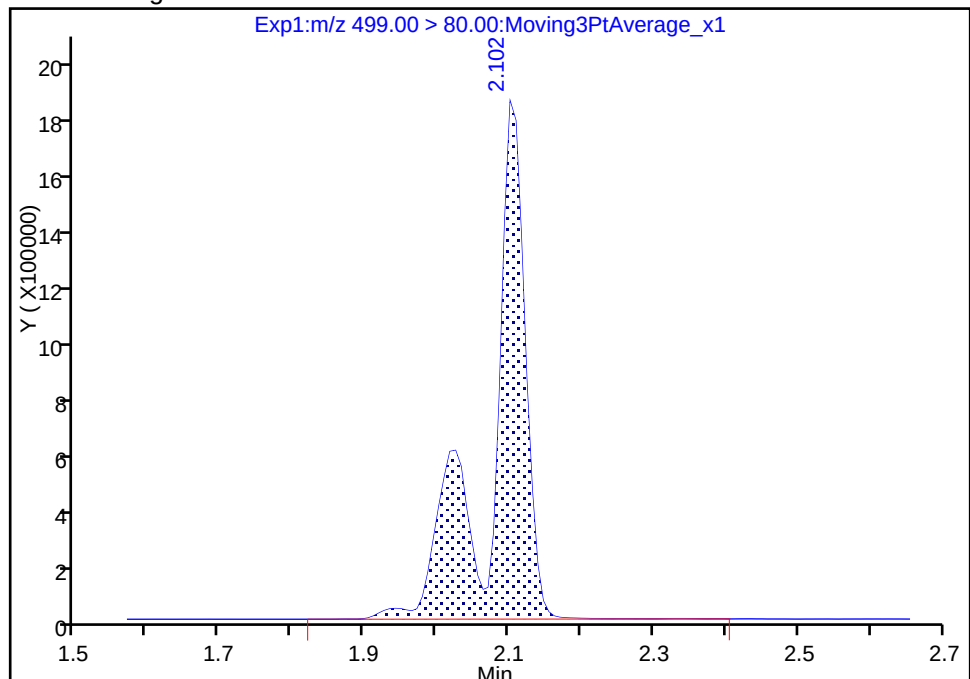
Signal: 1

Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results



RT: 2.10
Area: 6193984
Amount: 61.158388
Amount Units: ng/ml

Reviewer: barnettj, 07-Jul-2017 10:09:34

Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

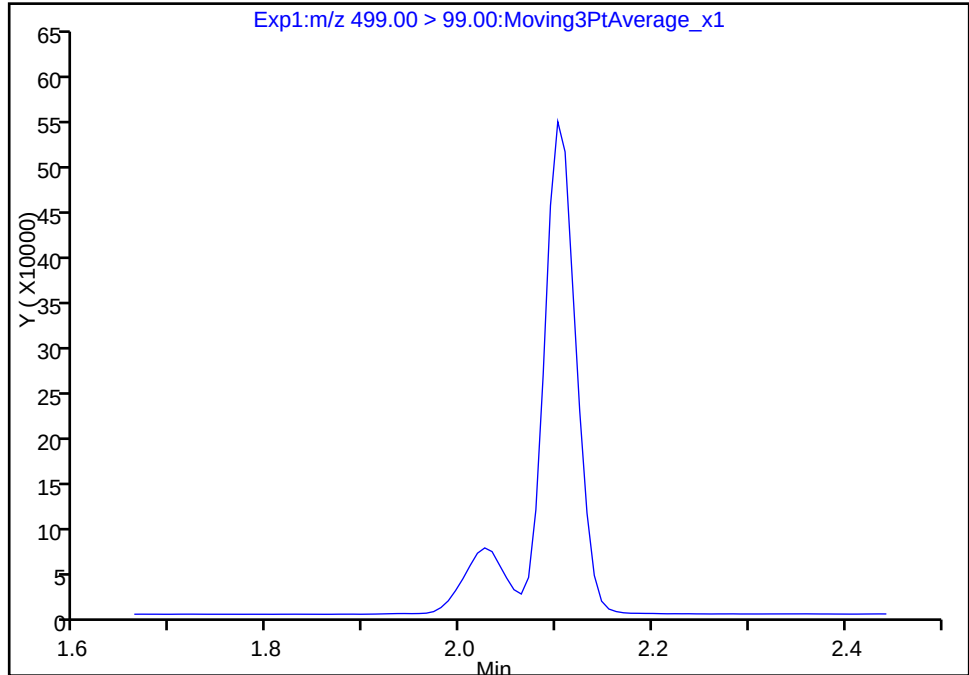
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_021.d
Injection Date: 07-Jul-2017 00:51:47 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

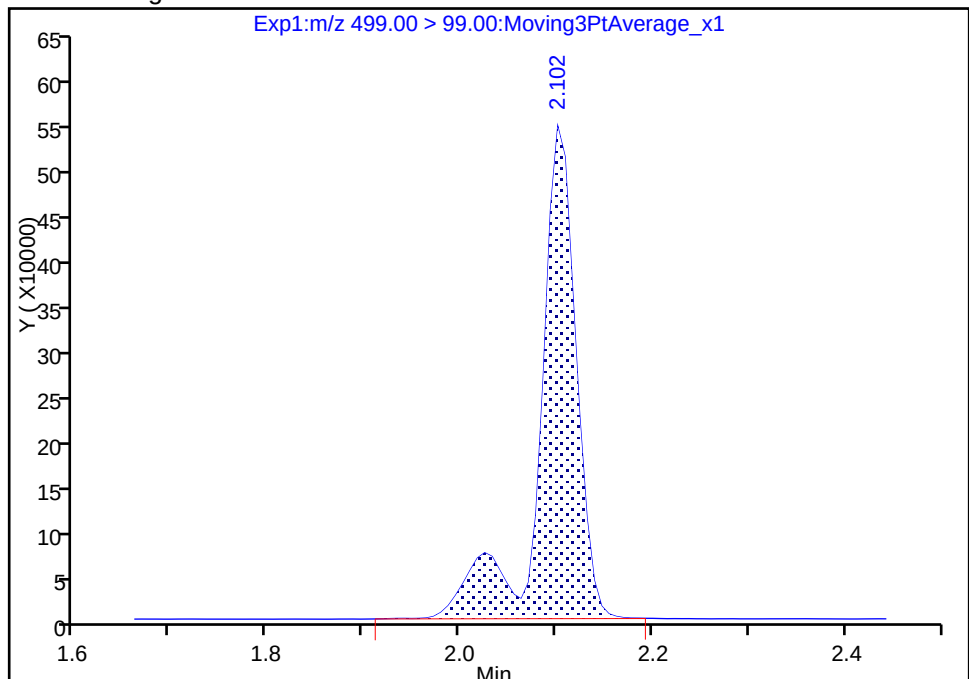
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 1465911
Amount: 61.158388
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 10:09:52

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

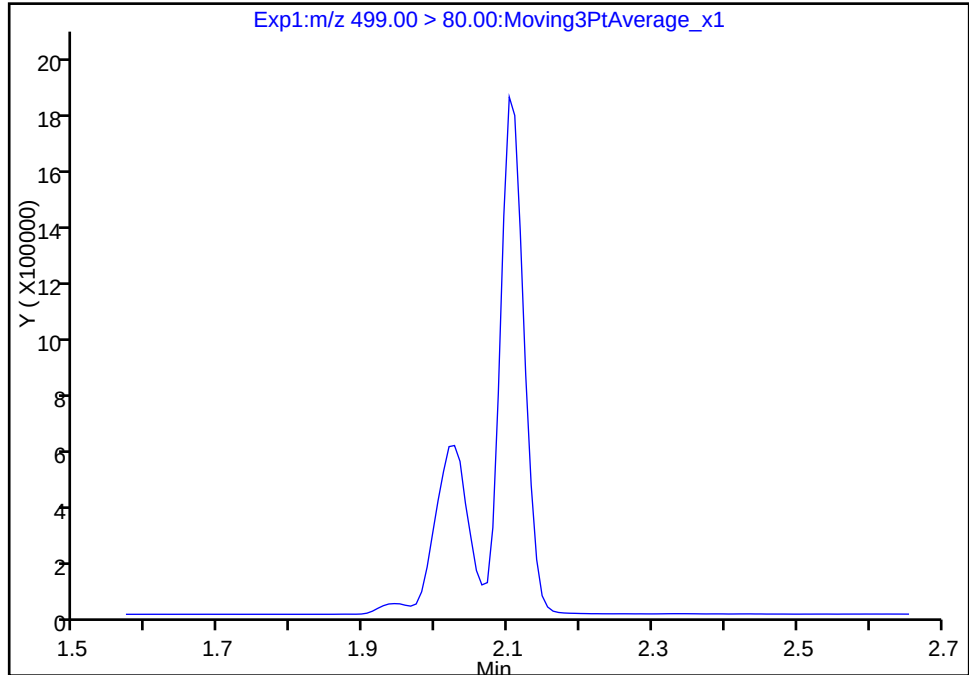
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_021.d
Injection Date: 07-Jul-2017 00:51:47 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

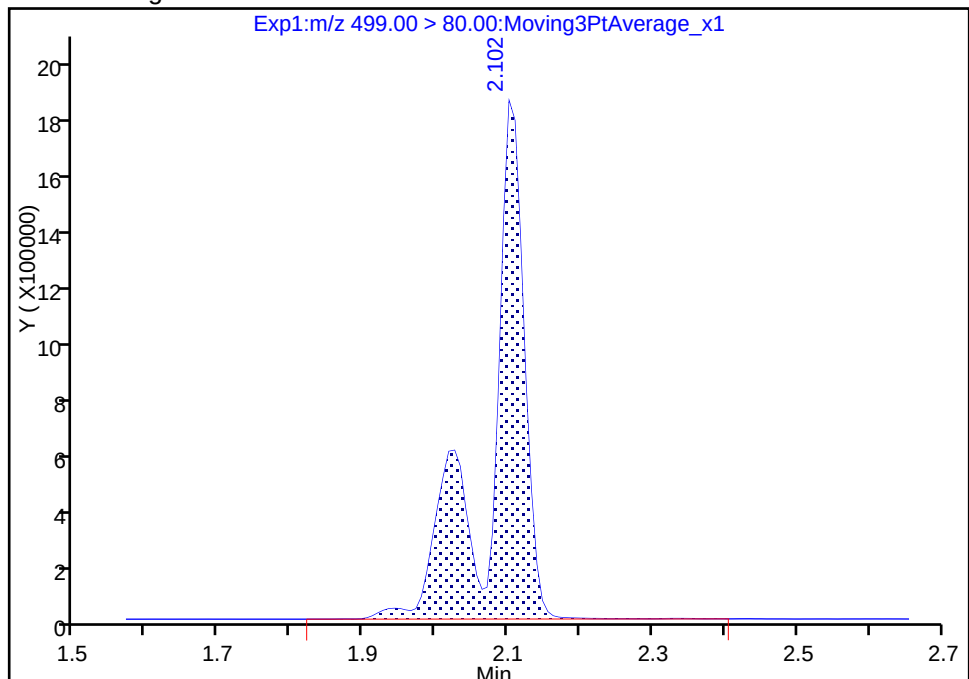
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 6193984
Amount: 61.158388
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 10:09:52

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-172925/31 Calibration Date: 07/07/2017 01:39
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.06_537A_031.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.9177		45.7	44.4	3.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	1.043		4.96	4.97	-0.2	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.374		14.9	15.1	-1.4	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9082		9.89	10.0	-1.5	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	1.010		19.8	20.1	-1.4	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.7875		9.25	9.68	-4.4	30.0
13C2 PFHxA	Ave	1.136	1.139		10.0	10.0	0.3	30.0
13C2 PFDA	Ave	0.8395	0.8636		10.3	10.0	2.9	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_031.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 07-Jul-2017 01:39:20 ALS Bottle#: 3 Worklist Smp#: 31
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-537_A8_N*sub1
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 11:26:37 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:23:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	3933156	45.7		1191	
298.90 > 99.00	1.404	1.404	0.0	1.000	2960310		1.33(0.00-0.00)	1244	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.533	1.539	-0.006	1.000	1096105	10.0		4682	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.677	1.691	-0.014	1.000	499470	4.96		69.3	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.684	1.692	-0.008	1.000	2004430	14.9		733	
* 6 13C2-PFOA									
415.00 > 370.00	1.859	1.878	-0.019		962177	10.0		3818	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.859	1.879	-0.020	1.000	877305	9.89		106	
413.00 > 169.00	1.859	1.879	-0.020	1.000	520029		1.69(0.00-0.00)	574	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.102	2.102	0.0	1.000	1961510	19.8		1960	M
499.00 > 99.00	2.102	2.102	0.0	1.000	440619		4.45(0.00-0.00)	1013	M
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.117	-0.015		2769042	28.7		3788	
9 Perfluorononanoic acid									
463.00 > 419.00	2.109	2.124	-0.015	1.000	733296	9.25		62.8	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	830960	10.3		1422	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L3_00022

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_031.d

Injection Date: 07-Jul-2017 01:39:20

Instrument ID: A8_N

Lims ID: CCV L3

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 31

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

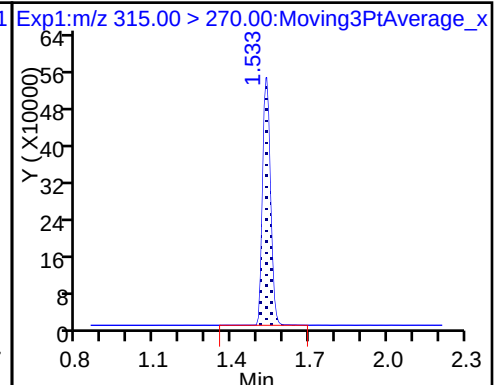
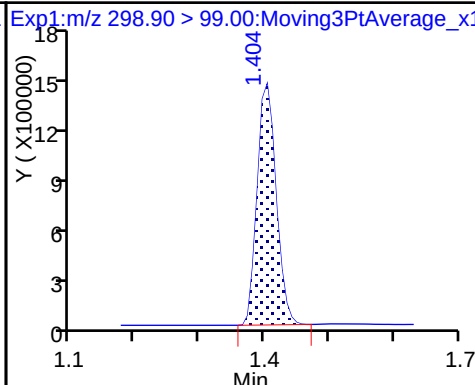
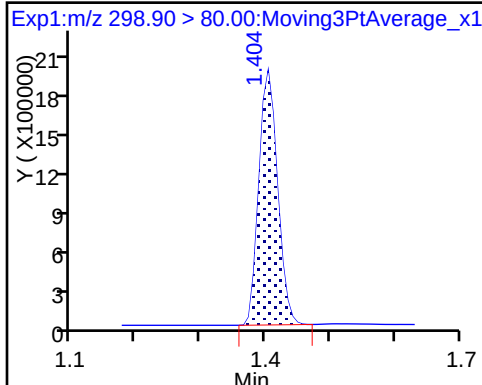
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

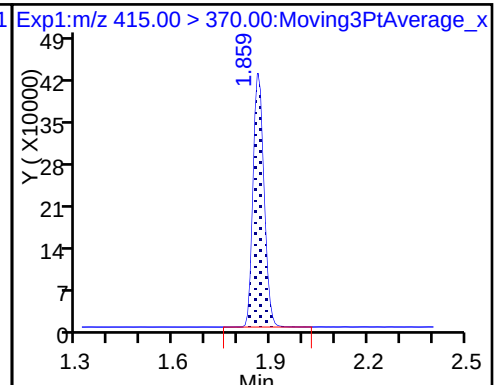
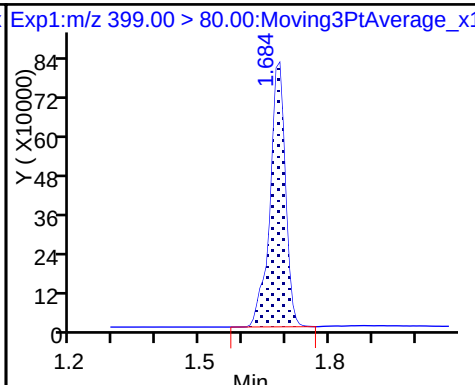
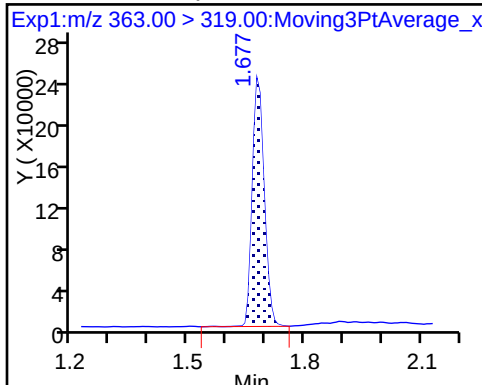
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

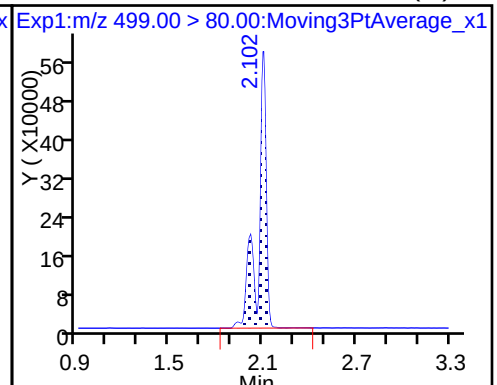
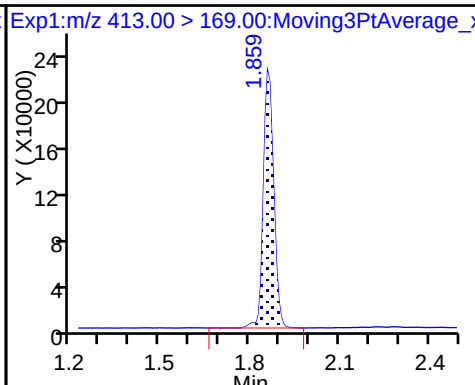
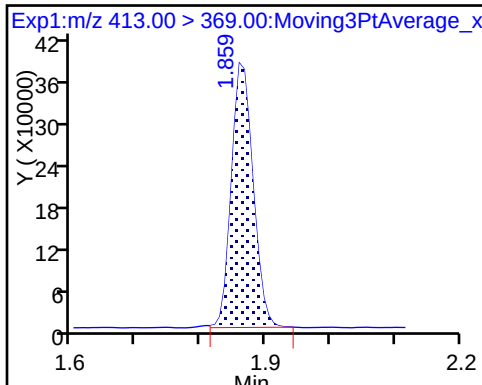
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

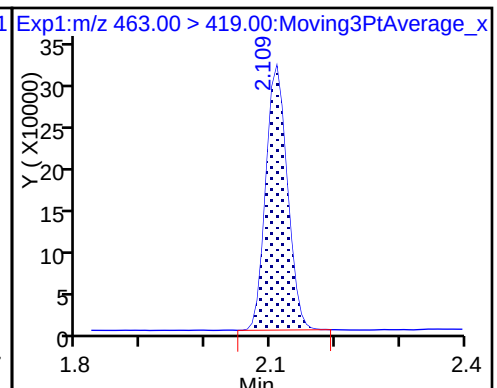
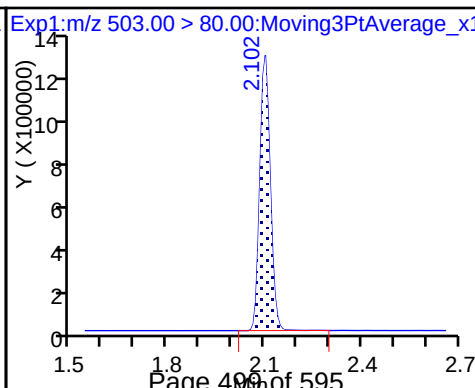
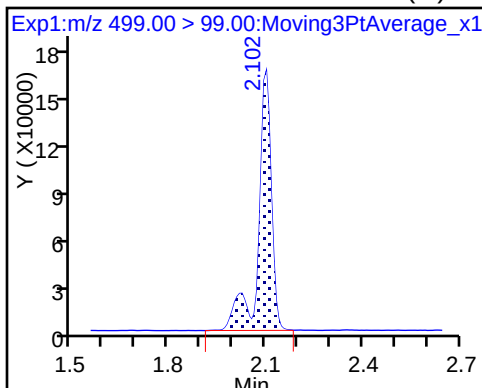
8 Perfluorooctane sulfonic acid (M)



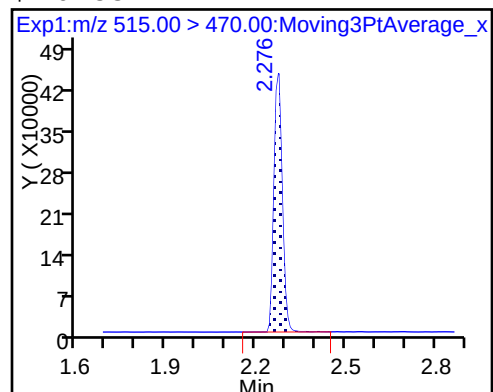
8 Perfluorooctane sulfonic acid (M)

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

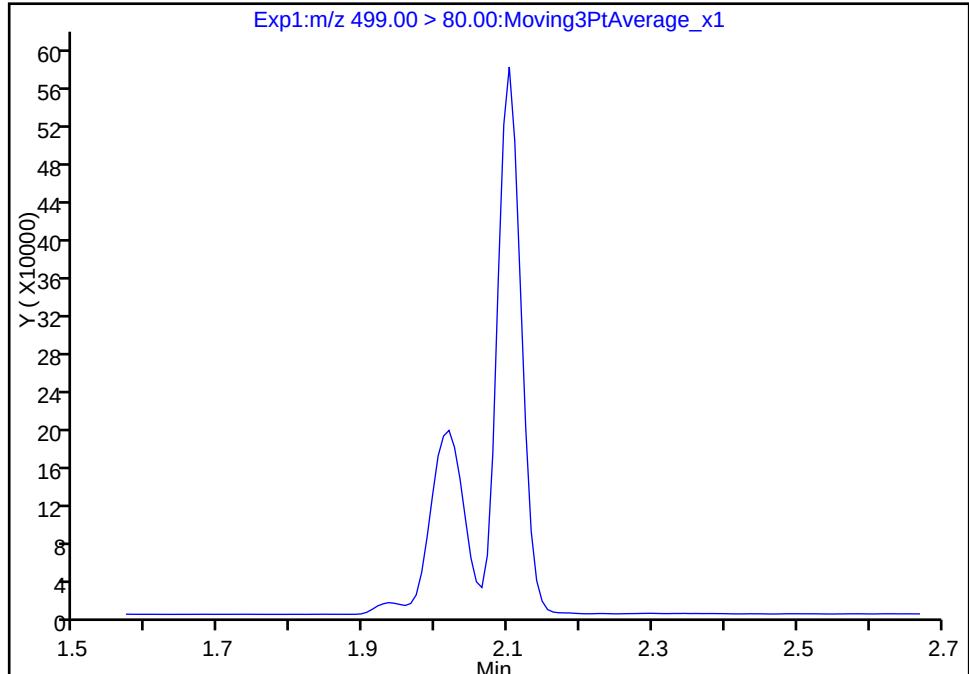
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_031.d
Injection Date: 07-Jul-2017 01:39:20 Instrument ID: A8_N
Lims ID: CCV L3
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 31
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

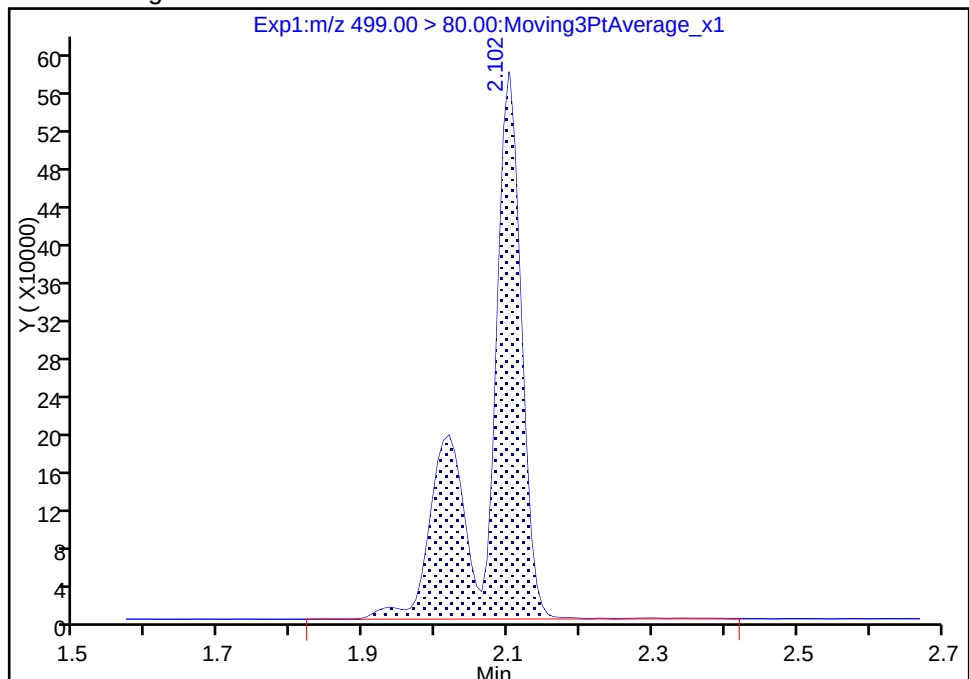
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 1961510
Amount: 19.837790
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 11:22:21

Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

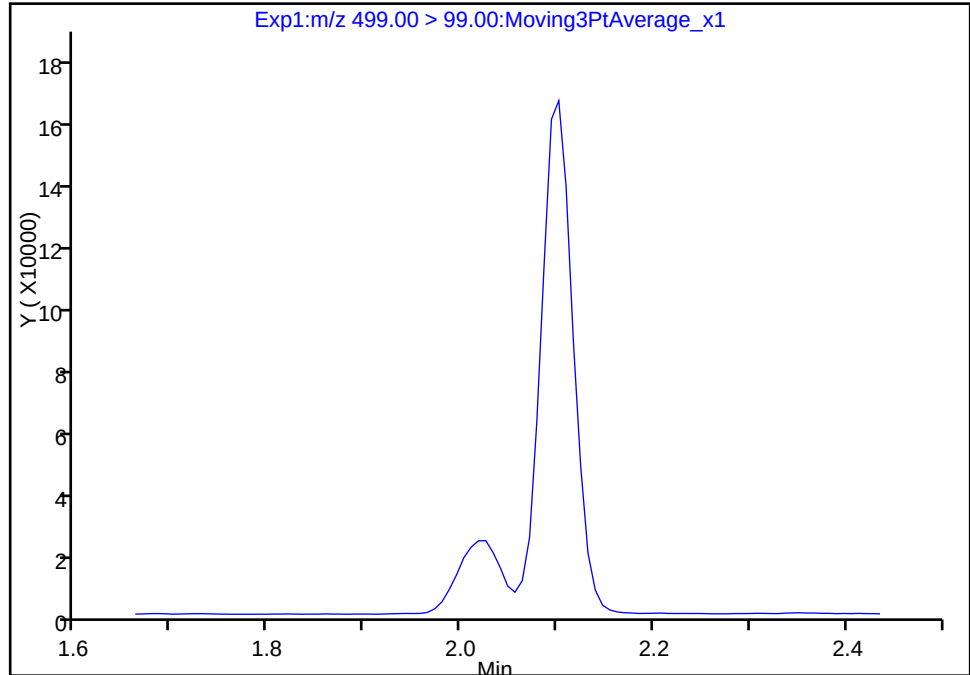
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_031.d
Injection Date: 07-Jul-2017 01:39:20 Instrument ID: A8_N
Lims ID: CCV L3
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 31
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

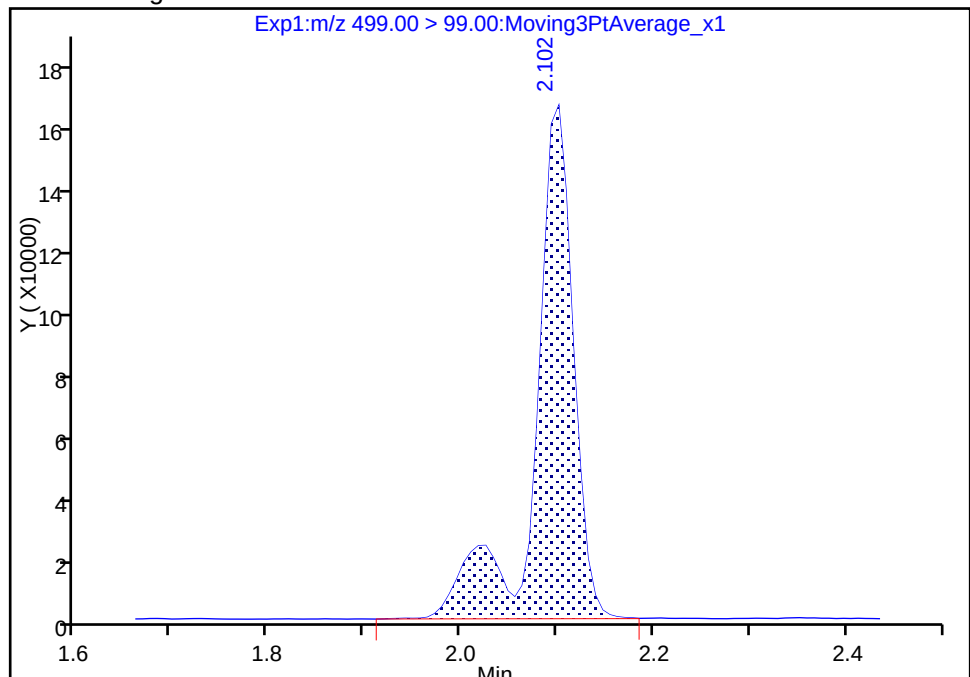
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 440619
Amount: 19.837790
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 11:23:00

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

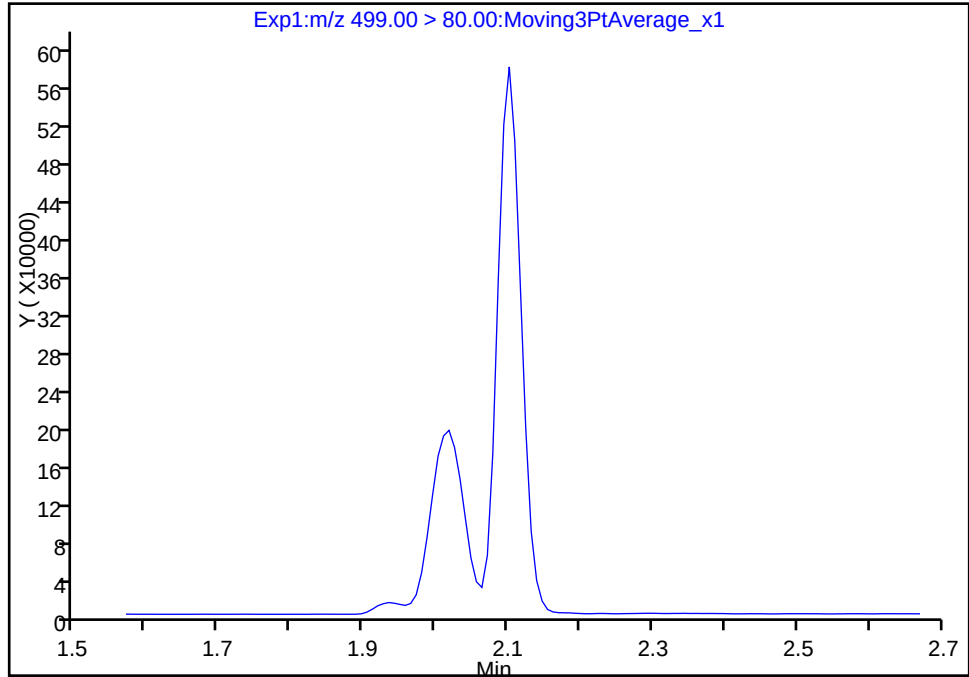
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_031.d
Injection Date: 07-Jul-2017 01:39:20 Instrument ID: A8_N
Lims ID: CCV L3
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 31
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

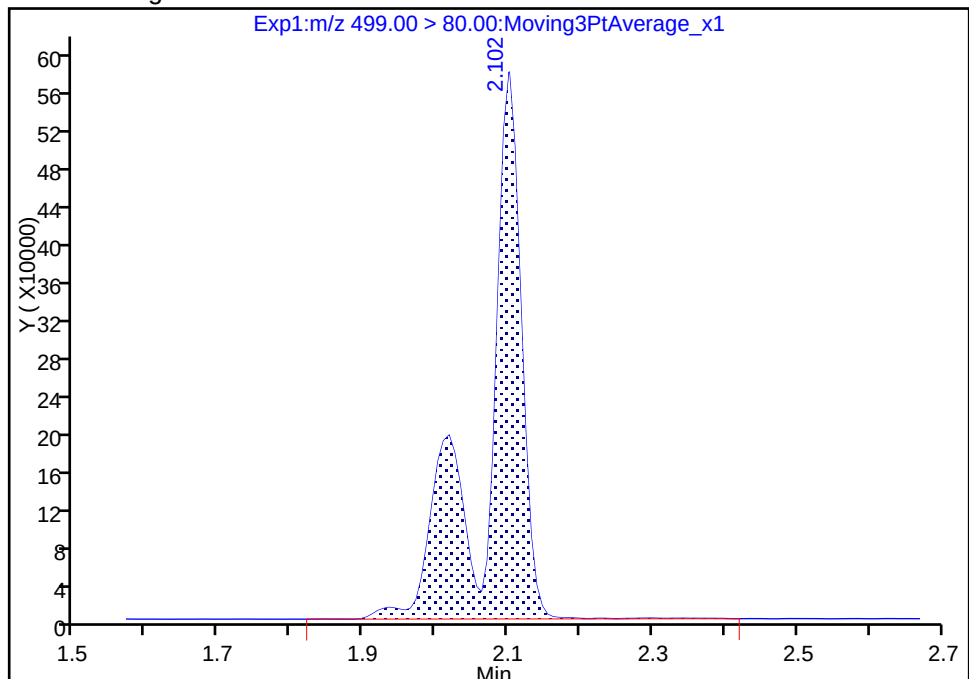
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 1961510
Amount: 19.837790
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 11:23:00

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-169764/1-A
 Matrix: Water Lab File ID: 2017.06.23_537_018.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 250 (mL) Date Analyzed: 06/23/2017 22:39
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170757 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	16	U	40	16	6.8
335-67-1	Perfluorooctanoic acid (PFOA)	8.0	U	20	8.0	2.8
375-95-1	Perfluorononanoic acid (PFNA)	20	U	24	20	8.0
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	30	12	5.5
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.0	U	10	4.0	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36	U	90	36	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	90		70-130
STL00996	13C2 PFDA	72		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_018.d
 Lims ID: MB 320-169764/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 23-Jun-2017 22:39:01 ALS Bottle#: 10 Worklist Smp#: 18
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: MB 320-169764/1-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:23:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
--------	----	-----------	-----------	-----------	----------	-----------------	---------------	-----	-------

\$ 2 13C2 PFHxA

315.00 > 270.00 2.526 2.381 0.145 1.000 3445838 9.04 5997

* 6 13C2-PFOA

415.00 > 370.00 2.989 2.859 0.130 3675107 10.0 8213

* 7 13C4 PFOS

503.00 > 80.00 3.126 2.991 0.135 9517190 28.7 23802

\$ 10 13C2 PFDA

515.00 > 470.00 3.262 3.123 0.139 1.000 2563719 7.25 6842

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_018.d

Injection Date: 23-Jun-2017 22:39:01

Instrument ID: A8_N

Lims ID: MB 320-169764/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 18

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

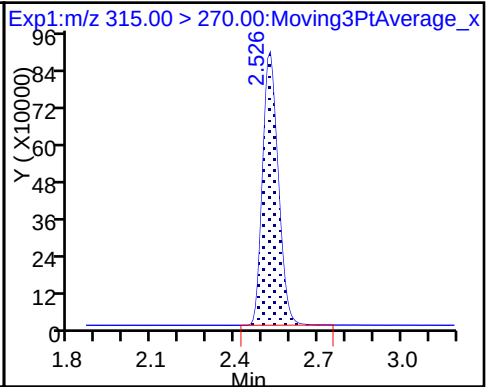
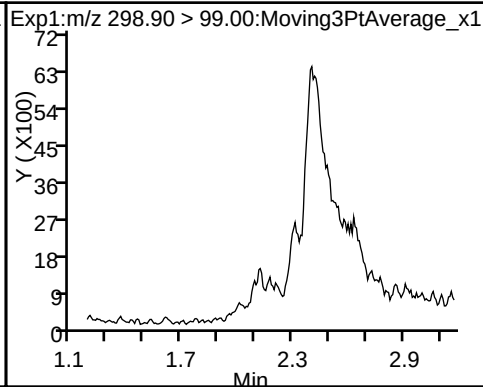
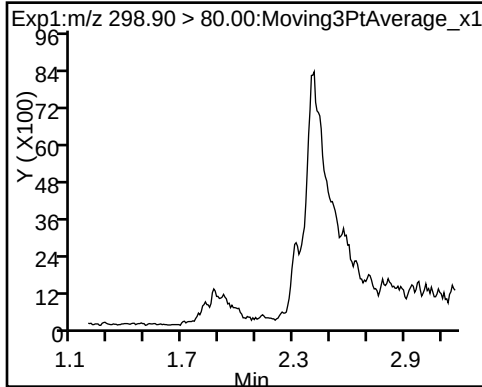
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

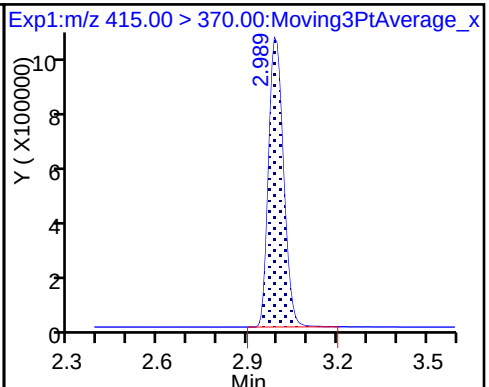
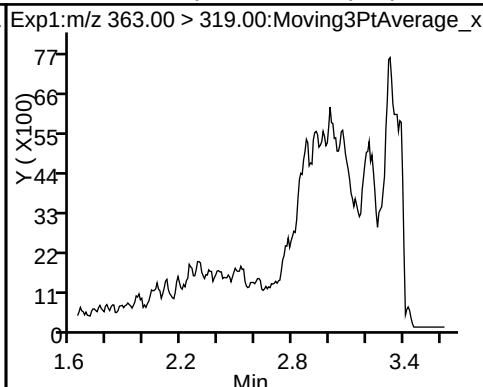
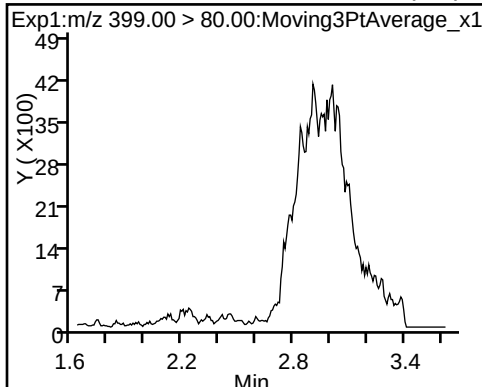
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (ND)

4 Perfluoroheptanoic acid (ND)

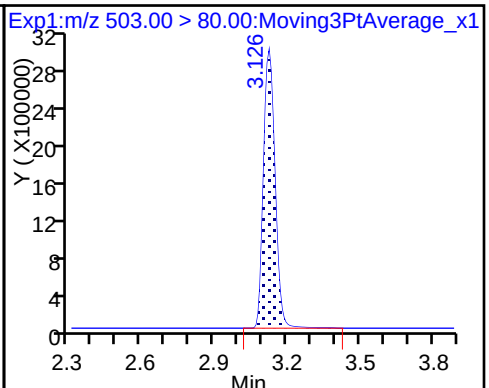
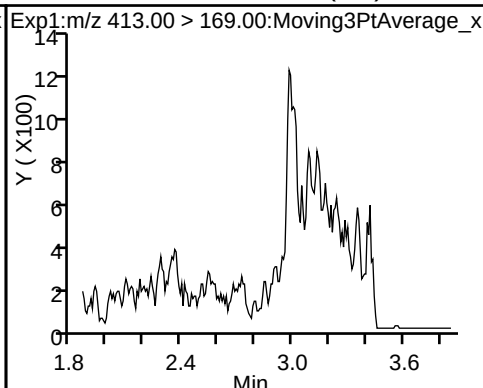
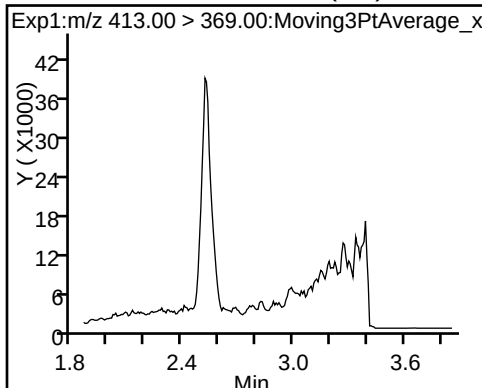
* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

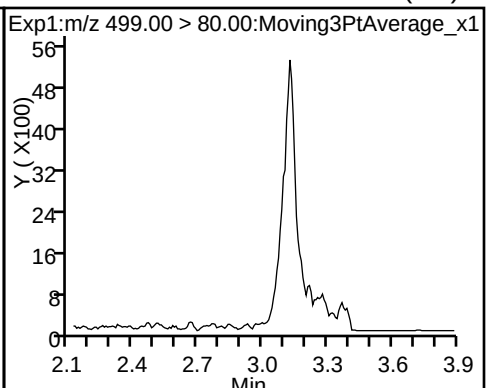
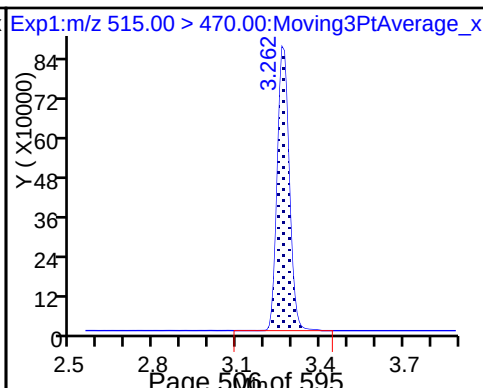
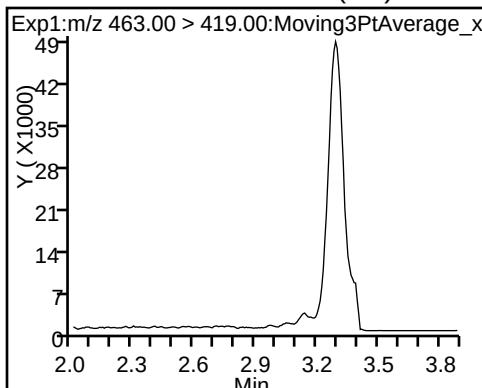
* 7 13C4 PFOS



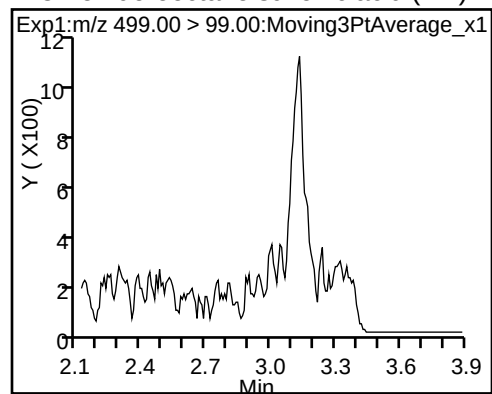
9 Perfluorononanoic acid (ND)

\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_018.d
Lims ID: MB 320-169764/1-A
Client ID:
Sample Type: MB
Inject. Date: 23-Jun-2017 22:39:01 ALS Bottle#: 10 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-169764/1-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:23:28

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.04	90.36
\$ 10 13C2 PFDA	10.0	7.25	72.50

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-172119/1-A
 Matrix: Water Lab File ID: 2017.07.06_537A_023.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 07/03/2017 09:49
 Sample wt/vol: 250 (mL) Date Analyzed: 07/07/2017 01:01
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 172925 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	16	U	40	16	6.8
335-67-1	Perfluorooctanoic acid (PFOA)	8.0	U	20	8.0	2.8
375-95-1	Perfluorononanoic acid (PFNA)	20	U	24	20	8.0
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	30	12	5.5
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.0	U	10	4.0	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36	U	90	36	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	91		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_023.d
 Lims ID: MB 320-172119/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 07-Jul-2017 01:01:16 ALS Bottle#: 13 Worklist Smp#: 23
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-172119/1-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:15:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA

315.00 > 270.00 1.533 1.539 -0.006 1.000 1134779 9.22 4632

* 6 13C2-PFOA

415.00 > 370.00 1.866 1.878 -0.012 1083015 10.0 3565

* 7 13C4 PFOS

503.00 > 80.00 2.102 2.117 -0.015 3110942 28.7 3642

\$ 10 13C2 PFDA

515.00 > 470.00 2.276 2.281 -0.005 1.000 824636 9.07 1551

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_023.d

Injection Date: 07-Jul-2017 01:01:16

Instrument ID: A8_N

Lims ID: MB 320-172119/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 23

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

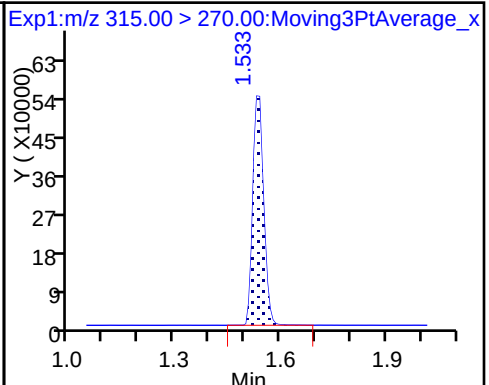
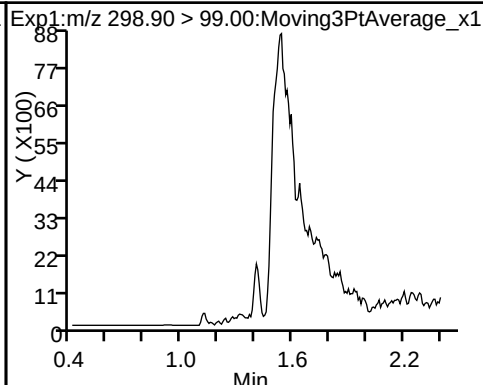
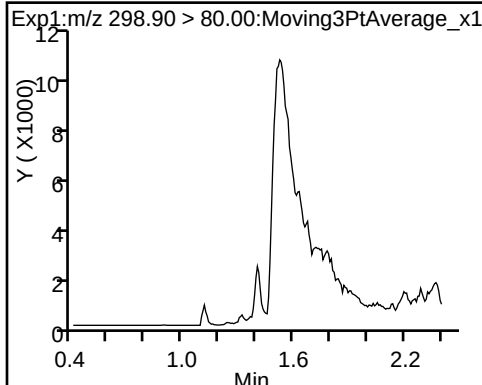
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

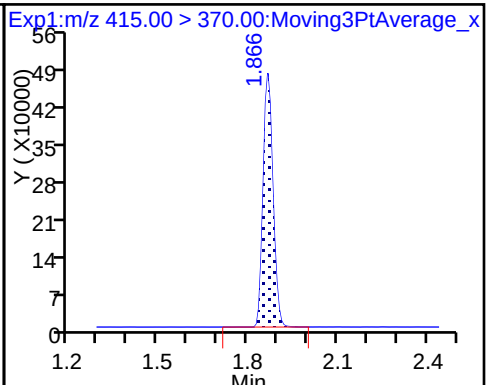
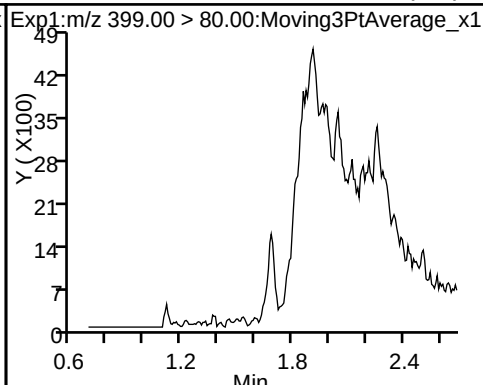
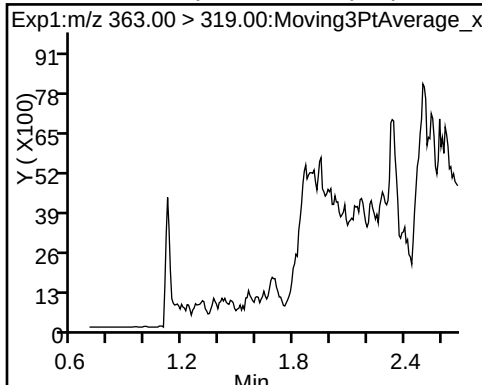
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid (ND)

3 Perfluorohexanesulfonic acid (ND)

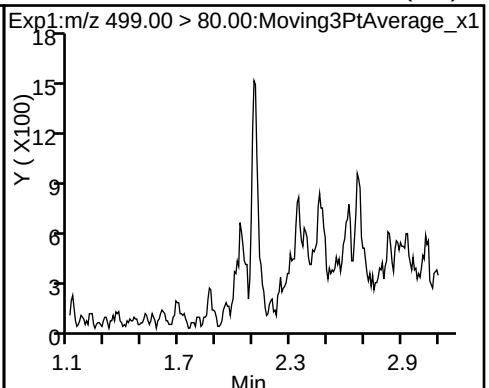
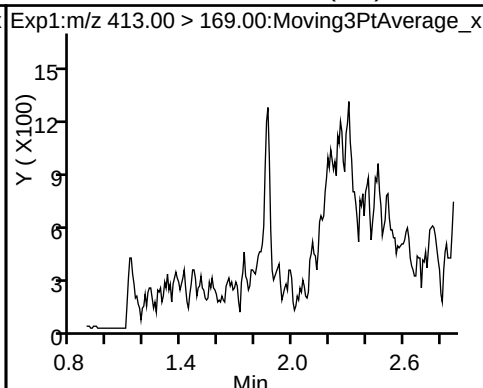
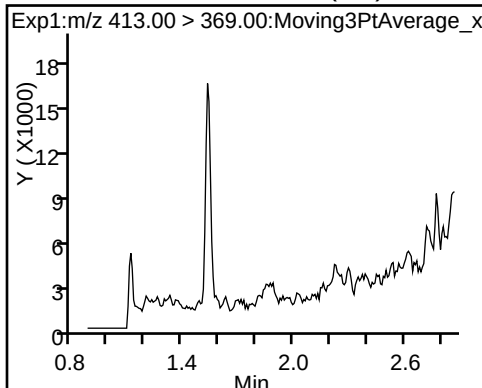
* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

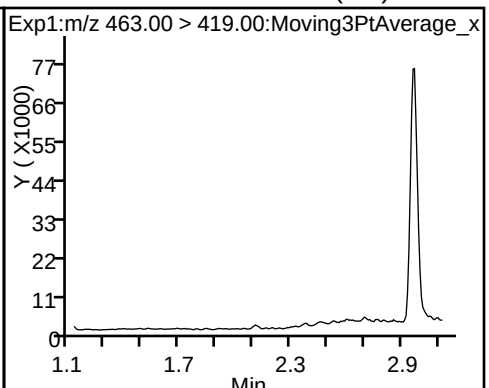
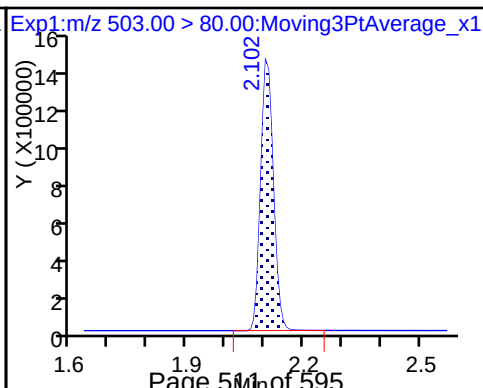
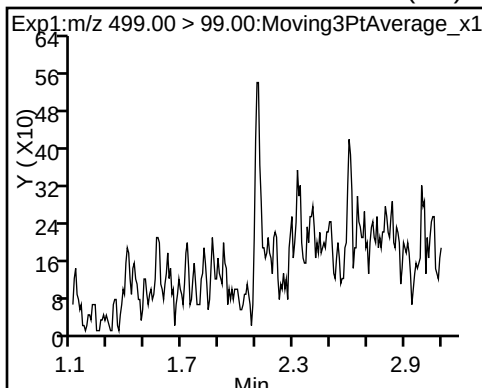
5 Perfluorooctanoic acid (ND)

8 Perfluorooctane sulfonic acid (ND)

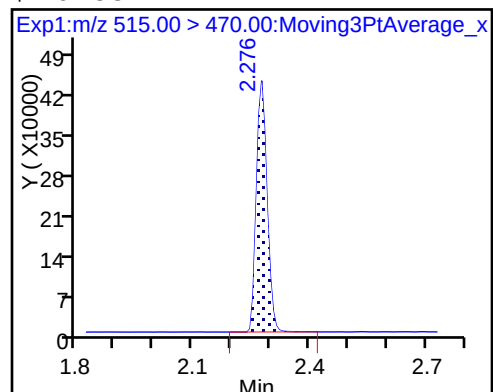


8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS

9 Perfluorononanoic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_023.d
Lims ID: MB 320-172119/1-A
Client ID:
Sample Type: MB
Inject. Date: 07-Jul-2017 01:01:16 ALS Bottle#: 13 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-172119/1-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
Column 1 : Det: EXP1
Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:15:38

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.22	92.22
\$ 10 13C2 PFDA	10.0	9.07	90.70

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 320-169764/2-A
 Matrix: Water Lab File ID: 2017.06.23_537_019.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 250 (mL) Date Analyzed: 06/23/2017 22:43
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170757 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	157		40	16	6.8
335-67-1	Perfluorooctanoic acid (PFOA)	82.3		20	8.0	2.8
375-95-1	Perfluorononanoic acid (PFNA)	66.1		24	20	8.0
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	122		30	12	5.5
375-85-9	Perfluoroheptanoic acid (PFHpA)	45.4		10	4.0	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	383		90	36	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	91		70-130
STL00996	13C2 PFDA	81		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_019.d
 Lims ID: LCS 320-169764/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 23-Jun-2017 22:43:46 ALS Bottle#: 11 Worklist Smp#: 19
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 320-169764/2-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:23:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.322	2.183	0.139	1.000	25908419	95.7		2874	
298.90 > 99.00	2.322	2.183	0.139	1.000	20565880		1.26(0.00-0.00)	2697	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	3229797	9.13		5552	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.777	2.625	0.152	1.000	11181172	30.6		2706	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.784	2.630	0.154	1.000	3263498	11.3		410	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3410881	10.0		7522	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	6143758	20.6		422	
413.00 > 169.00	2.997	2.859	0.138	1.000	3560097		1.73(0.00-0.00)	4975	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		8977613	28.7		20293	
9 Perfluorononanoic acid									
463.00 > 419.00	3.141	3.003	0.138	1.000	4809777	16.5		1890	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2643134	8.05		5268	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.126	3.126	0.0	1.000	12481976	39.3		39203	
499.00 > 99.00	3.126	3.126	0.0	1.000	2786228		4.48(0.00-0.00)	4398	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_019.d

Injection Date: 23-Jun-2017 22:43:46

Instrument ID: A8_N

Lims ID: LCS 320-169764/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 11

Worklist Smp#: 19

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

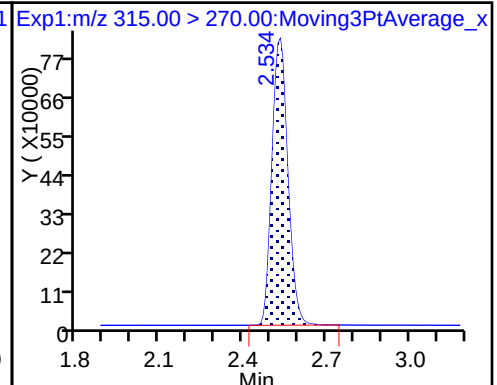
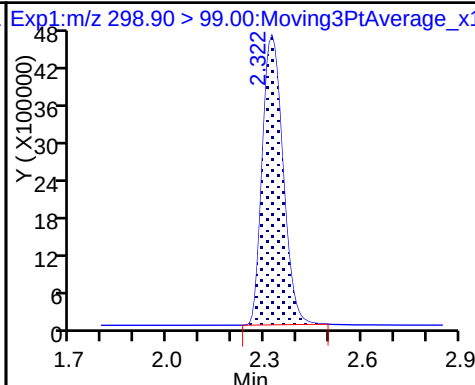
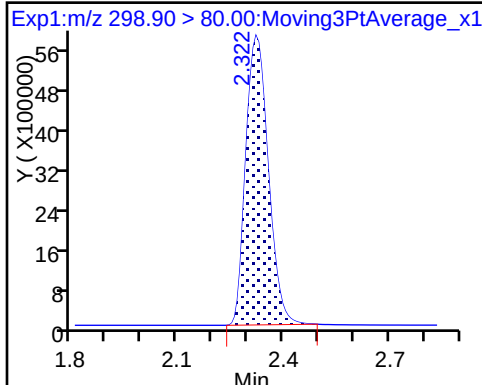
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

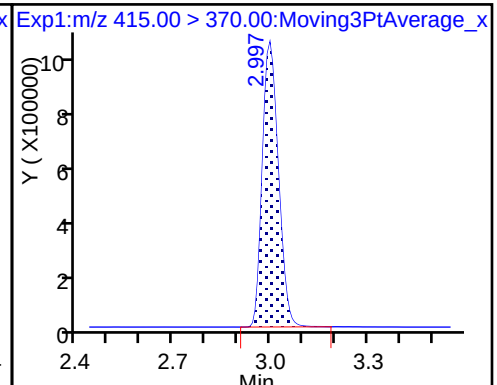
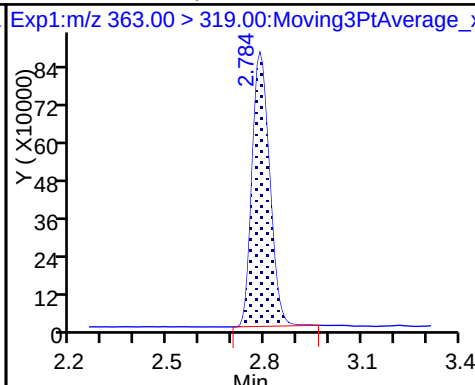
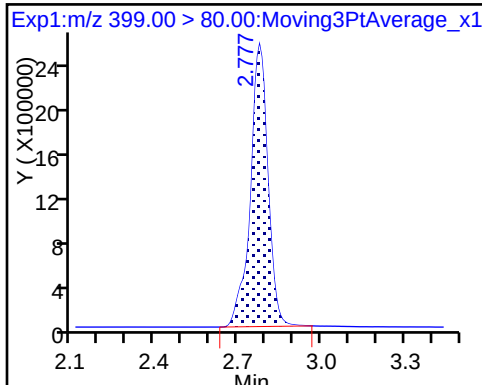
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

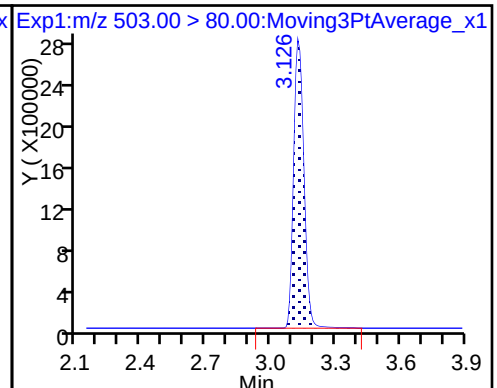
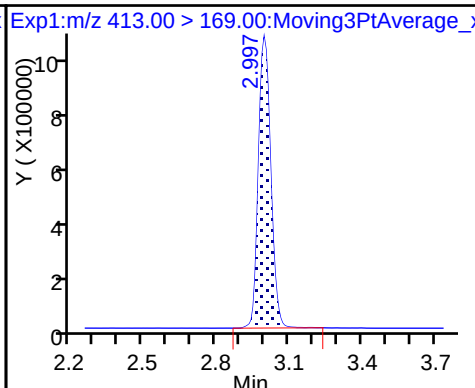
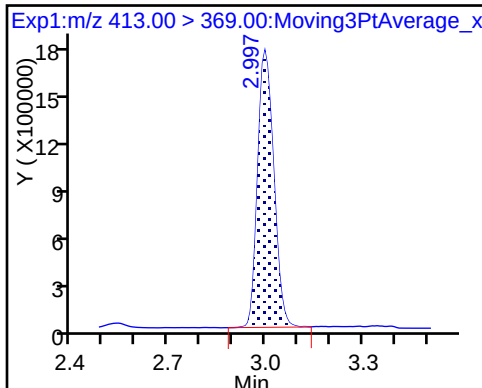
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

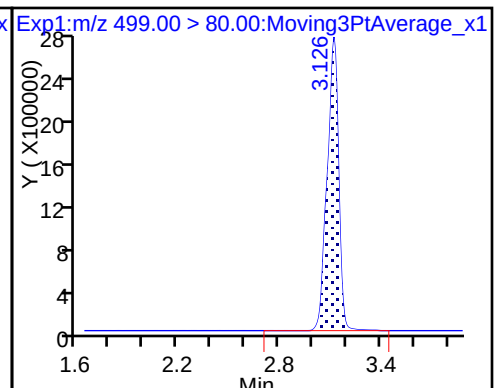
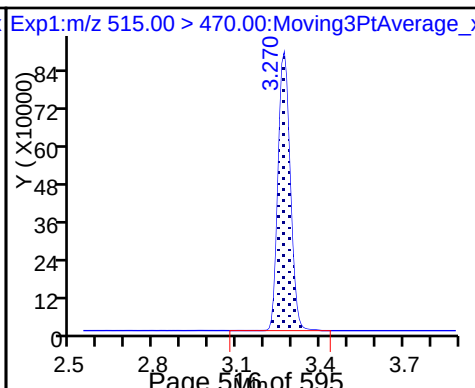
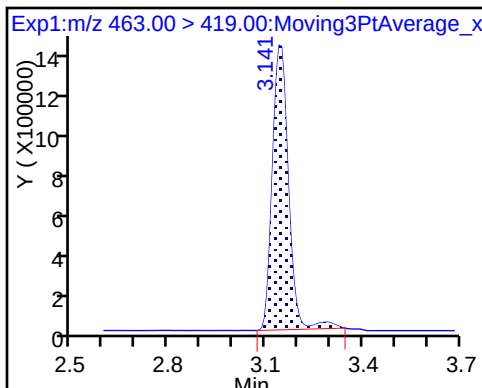
* 7 13C4 PFOS



9 Perfluorononanoic acid

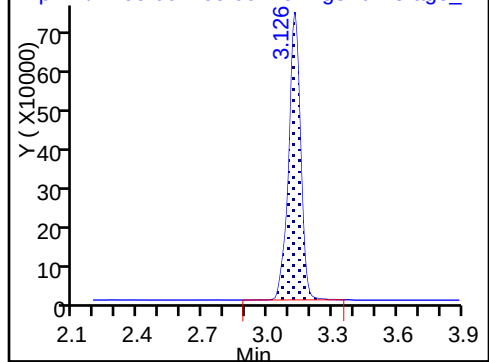
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_019.d
Lims ID: LCS 320-169764/2-A
Client ID:
Sample Type: LCS
Inject. Date: 23-Jun-2017 22:43:46 ALS Bottle#: 11 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-169764/2-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:23:55

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.13	91.25
\$ 10 13C2 PFDA	10.0	8.05	80.53

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCSD 320-169764/3-A
 Matrix: Water Lab File ID: 2017.06.23_537_020.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 250 (mL) Date Analyzed: 06/23/2017 22:48
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170757 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	152		40	16	6.8
335-67-1	Perfluorooctanoic acid (PFOA)	79.6		20	8.0	2.8
375-95-1	Perfluorononanoic acid (PFNA)	61.8		24	20	8.0
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	123		30	12	5.5
375-85-9	Perfluoroheptanoic acid (PFHpA)	44.5		10	4.0	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	393		90	36	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	68	Q	70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_020.d
 Lims ID: LCSD 320-169764/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 23-Jun-2017 22:48:32 ALS Bottle#: 12 Worklist Smp#: 20
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: LCSD 320-169764/3-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:24:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.322	2.183	0.139	1.000	25049269	98.3		2599	
298.90 > 99.00	2.322	2.183	0.139	1.000	20016088		1.25(0.00-0.00)	2434	
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	3143912	9.25		4978	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.777	2.625	0.152	1.000	10563019	30.7		2429	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.792	2.630	0.162	1.000	3070297	11.1		431	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3275235	10.0		7766	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	5705041	19.9		444	
413.00 > 169.00	2.997	2.859	0.138	1.000	3268674		1.75(0.00-0.00)	4157	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		8450857	28.7		21533	
9 Perfluorononanoic acid									
463.00 > 419.00	3.141	3.003	0.138	1.000	4316043	15.4		135	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2147626	6.81		4245	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.126	3.126	0.0	1.000	11365735	38.0		15947	
499.00 > 99.00	3.126	3.126	0.0	1.000	2553878		4.45(0.00-0.00)	3928	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_020.d

Injection Date: 23-Jun-2017 22:48:32

Instrument ID: A8_N

Lims ID: LCSD 320-169764/3-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 12

Worklist Smp#: 20

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

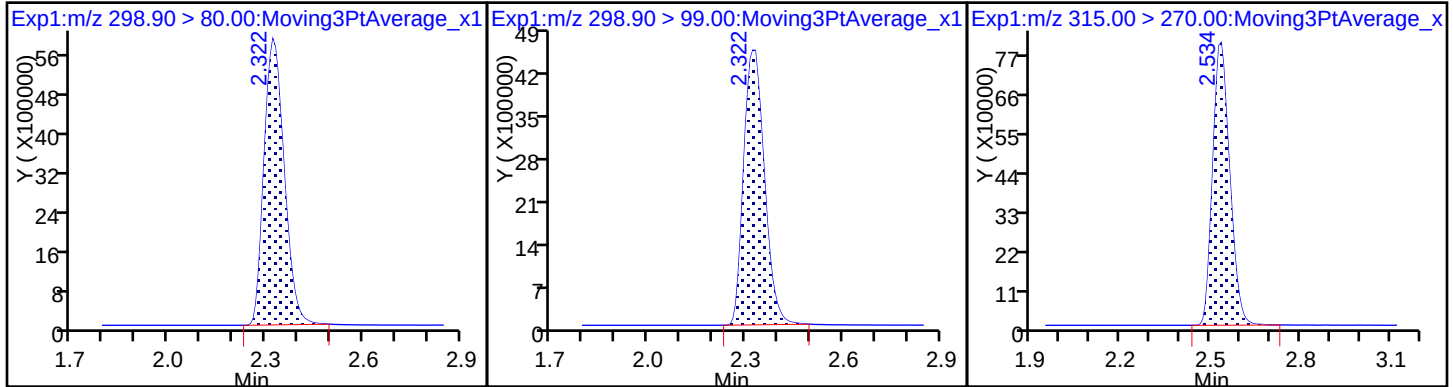
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

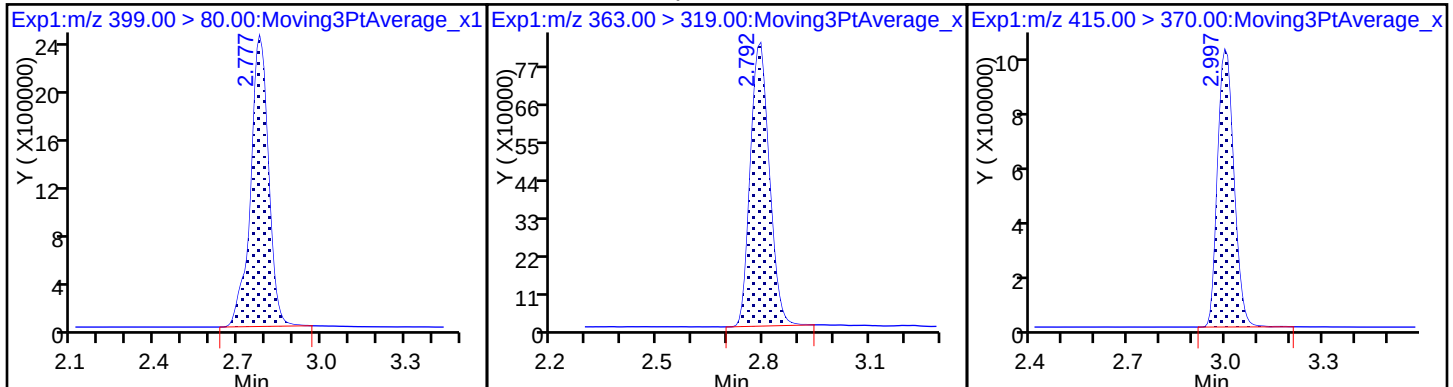
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

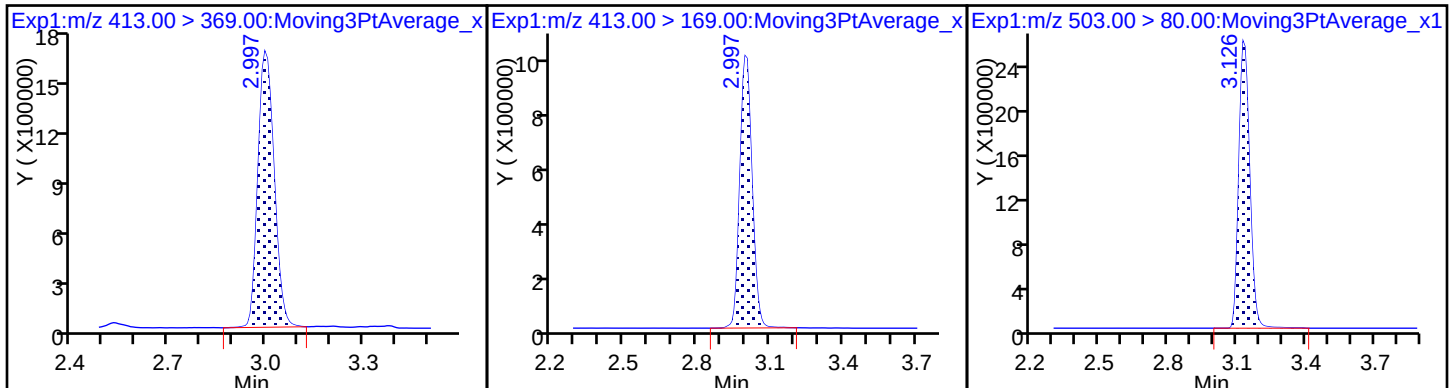
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

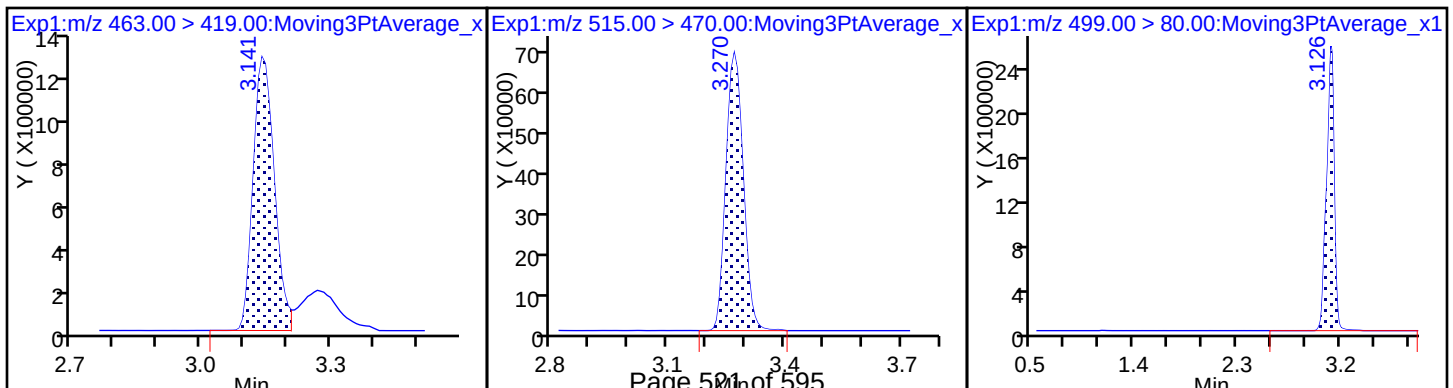
* 7 13C4 PFOS



9 Perfluorononanoic acid

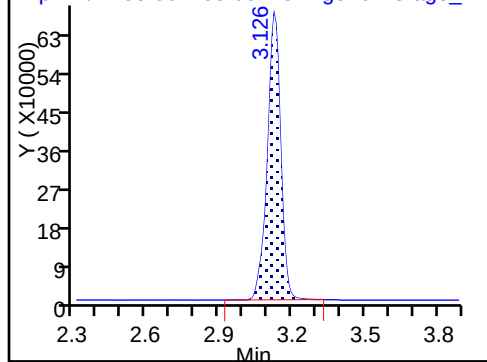
\$ 10 13C2 PFDA

8 Perfluorooctane sulfonic acid



8 Perfluorooctane sulfonic acid

Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x1



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_020.d
Lims ID: LCSD 320-169764/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 23-Jun-2017 22:48:32 ALS Bottle#: 12 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-169764/3-A
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 26-Jun-2017 13:45:41 Calib Date: 19-Jun-2017 18:04:42
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d
Column 1 : Det: EXP1
Process Host: XAWRK033

First Level Reviewer: barnettj

Date: 26-Jun-2017 13:24:28

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.25	92.51
\$ 10 13C2 PFDA	10.0	6.81	68.14

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LLCS 320-172119/2-A
 Matrix: Water Lab File ID: 2017.07.06_537A_024.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 07/03/2017 09:49
 Sample wt/vol: 250 (mL) Date Analyzed: 07/07/2017 01:06
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 172925 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	38.5	J M	40	16	6.8
335-67-1	Perfluorooctanoic acid (PFOA)	19.9	J	20	8.0	2.8
375-95-1	Perfluorononanoic acid (PFNA)	19.4	J	24	20	8.0
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	29.3	J	30	12	5.5
375-85-9	Perfluoroheptanoic acid (PFHpA)	10.7		10	4.0	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	94.1		90	36	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	91		70-130
STL00996	13C2 PFDA	94		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_024.d
 Lims ID: LLCS 320-172119/2-A
 Client ID:
 Sample Type: LLCS
 Inject. Date: 07-Jul-2017 01:06:01 ALS Bottle#: 14 Worklist Smp#: 24
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: llcs 320-172119/2-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:16:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.396	1.404	-0.008	1.000	2195481	23.5		654	
298.90 > 99.00	1.396	1.404	-0.008	1.000	1666128		1.32(0.00-0.00)	622	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.525	1.539	-0.014	1.000	1091551	9.12		4555	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.677	1.691	-0.014	1.000	295850	2.69		39.9	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.677	1.692	-0.015	1.000	1068472	7.32		383	
* 6 13C2-PFOA									
415.00 > 370.00	1.859	1.878	-0.019		1053354	10.0		3189	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.859	1.879	-0.020	1.000	482077	4.97		57.0	
413.00 > 169.00	1.859	1.879	-0.020	1.000	302187		1.60(0.00-0.00)	361	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.102	2.102	0.0	1.000	1033393	9.63		1242	M
499.00 > 99.00	2.102	2.102	0.0	1.000	239429		4.32(0.00-0.00)	535	M
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.117	-0.015		3003980	28.7		3857	
9 Perfluorononanoic acid									
463.00 > 419.00	2.109	2.124	-0.015	1.000	422047	4.86		30.1	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.281	-0.013	1.000	834675	9.44		1583	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_024.d

Injection Date: 07-Jul-2017 01:06:01

Instrument ID: A8_N

Lims ID: LLCS 320-172119/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 24

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

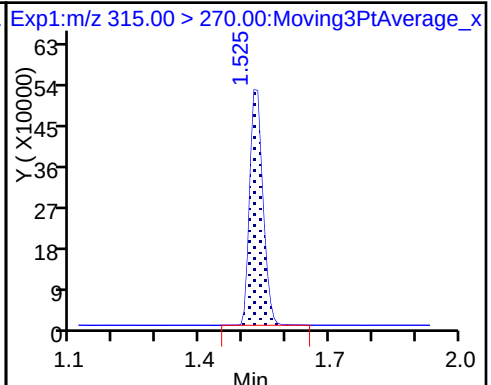
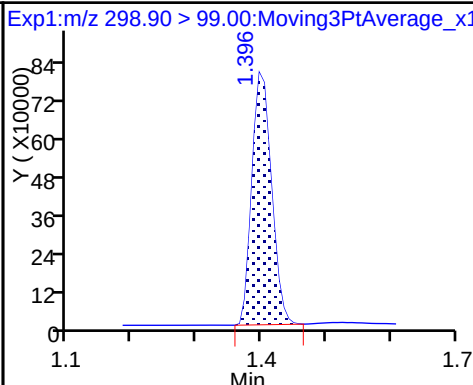
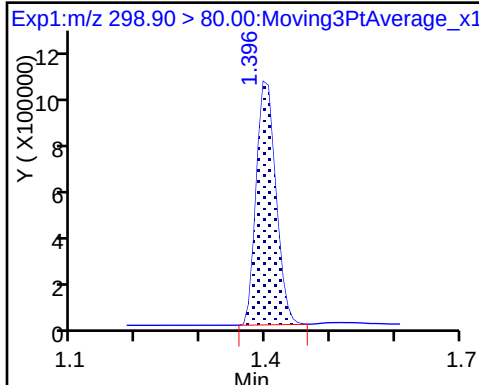
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

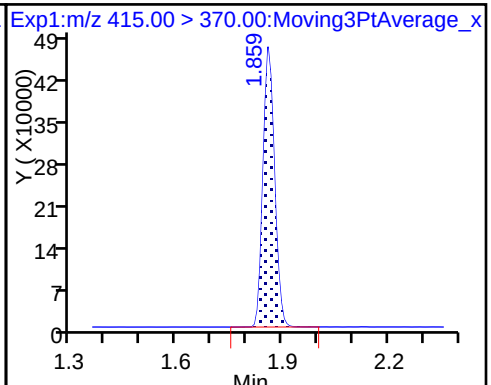
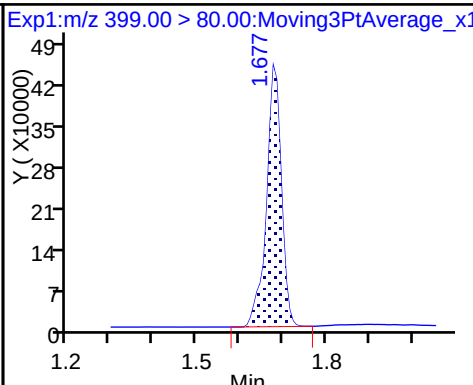
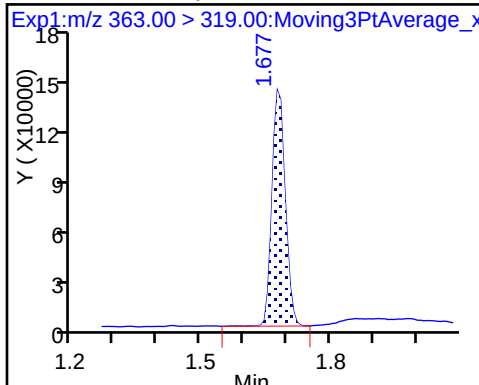
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

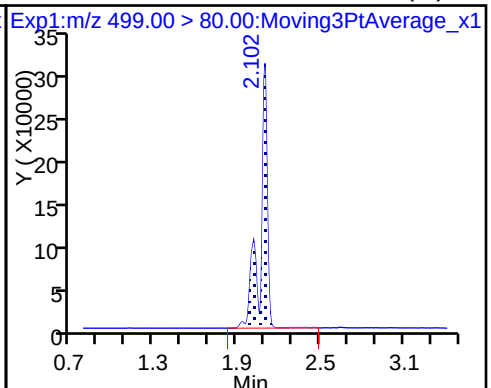
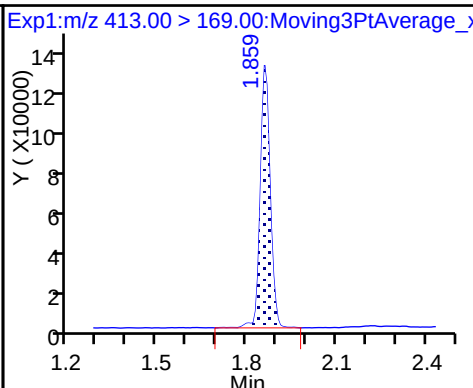
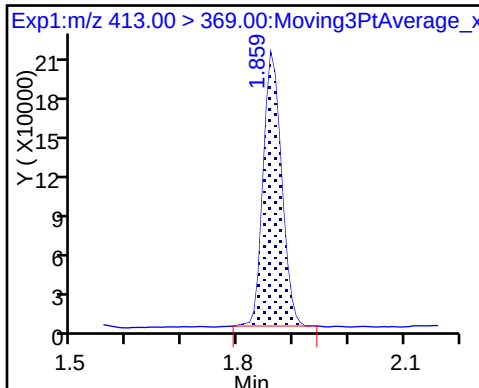
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

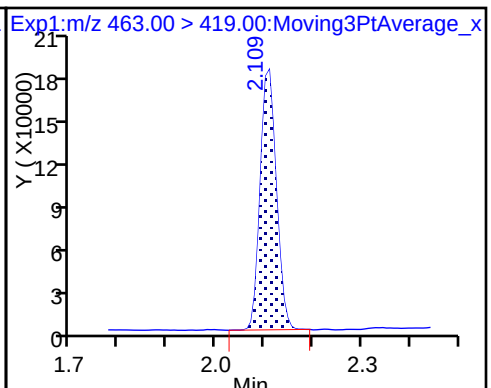
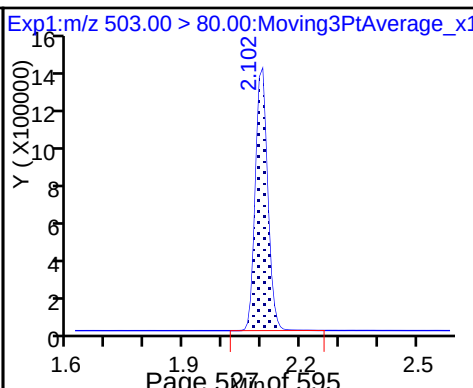
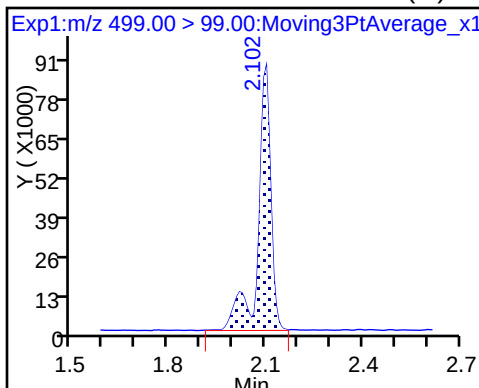
8 Perfluorooctane sulfonic acid (M)



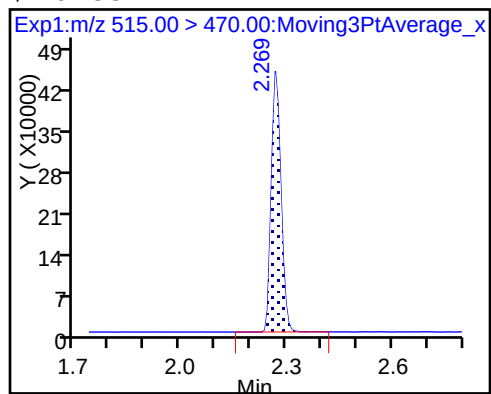
8 Perfluorooctane sulfonic acid (M)

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_024.d
Lims ID: LLCS 320-172119/2-A
Client ID:
Sample Type: LLCS
Inject. Date: 07-Jul-2017 01:06:01 ALS Bottle#: 14 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: llcs 320-172119/2-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
Column 1 : Det: EXP1
Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:16:20

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.12	91.21
\$ 10 13C2 PFDA	10.0	9.44	94.39

TestAmerica Sacramento

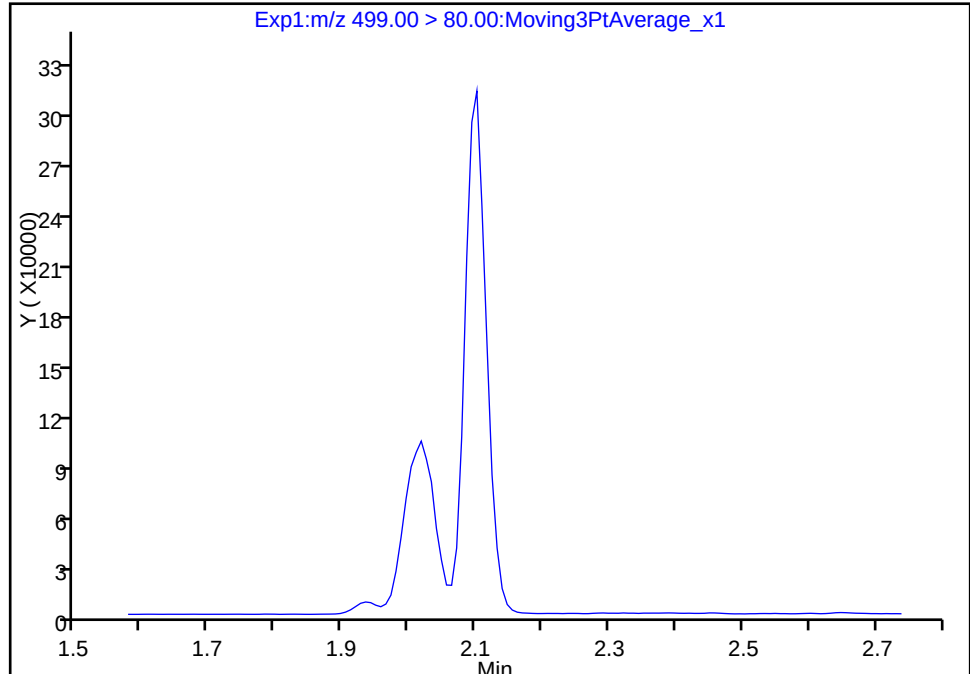
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_024.d
Injection Date: 07-Jul-2017 01:06:01 Instrument ID: A8_N
Lims ID: LLCS 320-172119/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

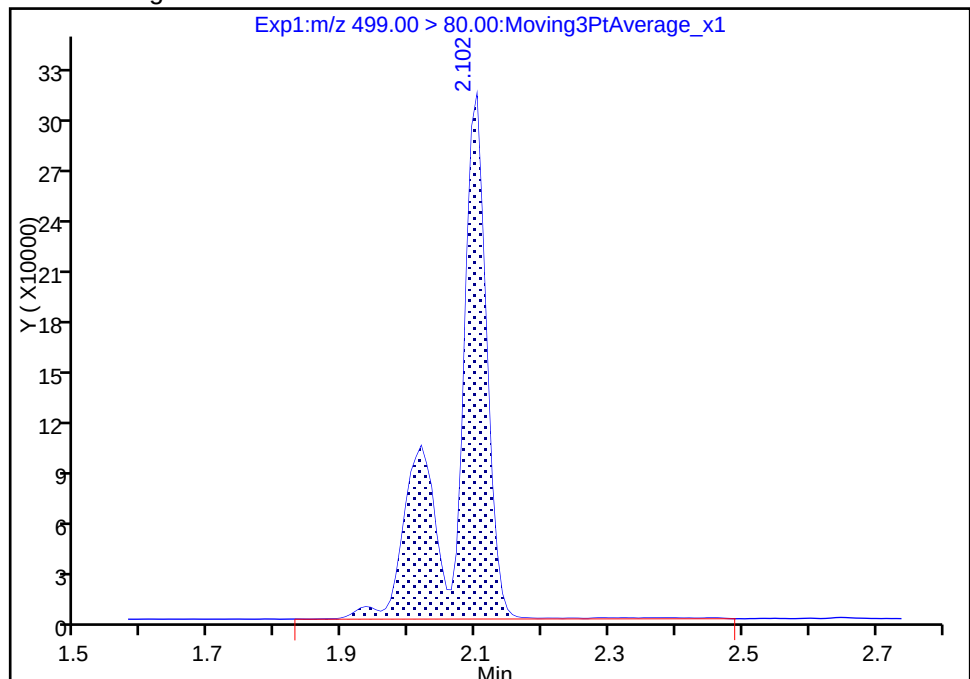
Not Detected
Expected RT: 2.10

Processing Integration Results



RT: 2.10
Area: 1033393
Amount: 9.633870
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Jul-2017 11:15:44

Audit Action: Assigned Compound ID

Audit Reason: Isomers

TestAmerica Sacramento

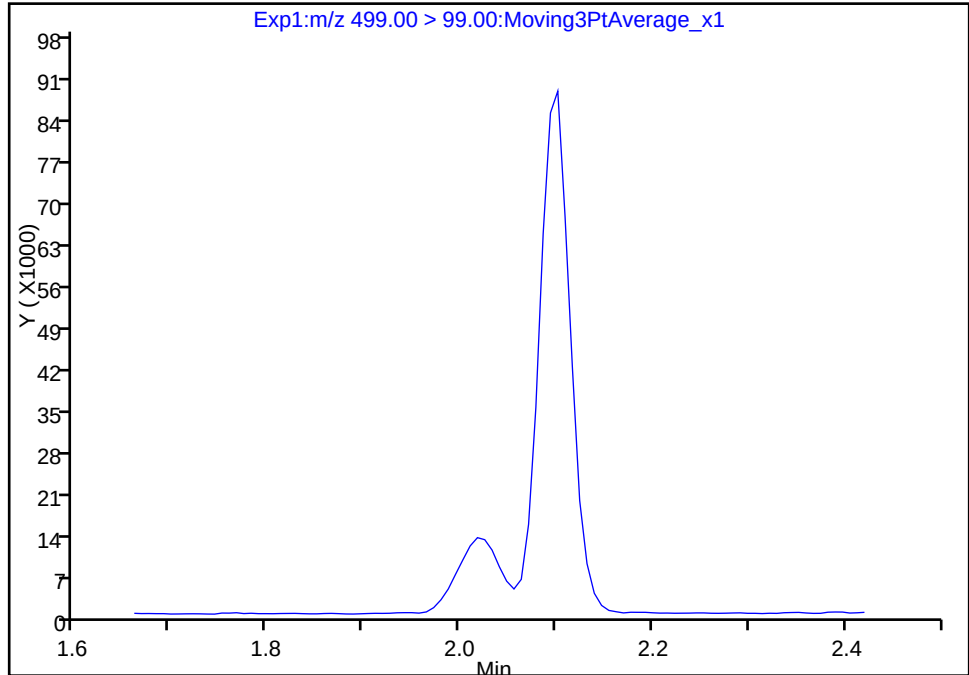
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Injection Date: 07-Jul-2017 01:06:01 Instrument ID: A8_N
Lims ID: LLCS 320-172119/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

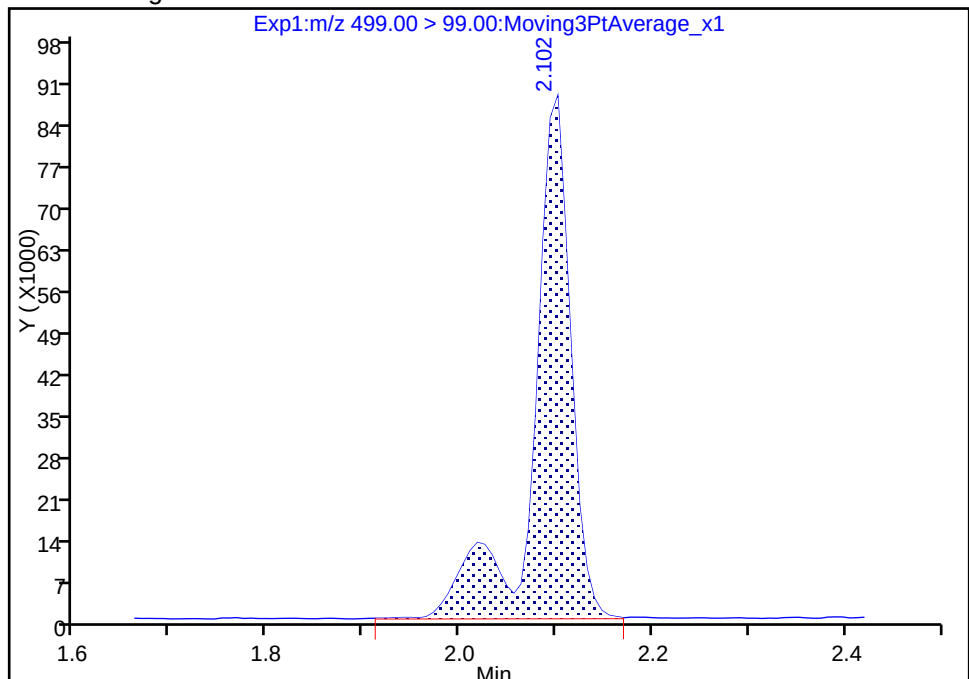
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 239429
Amount: 9.633870
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 11:16:01

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

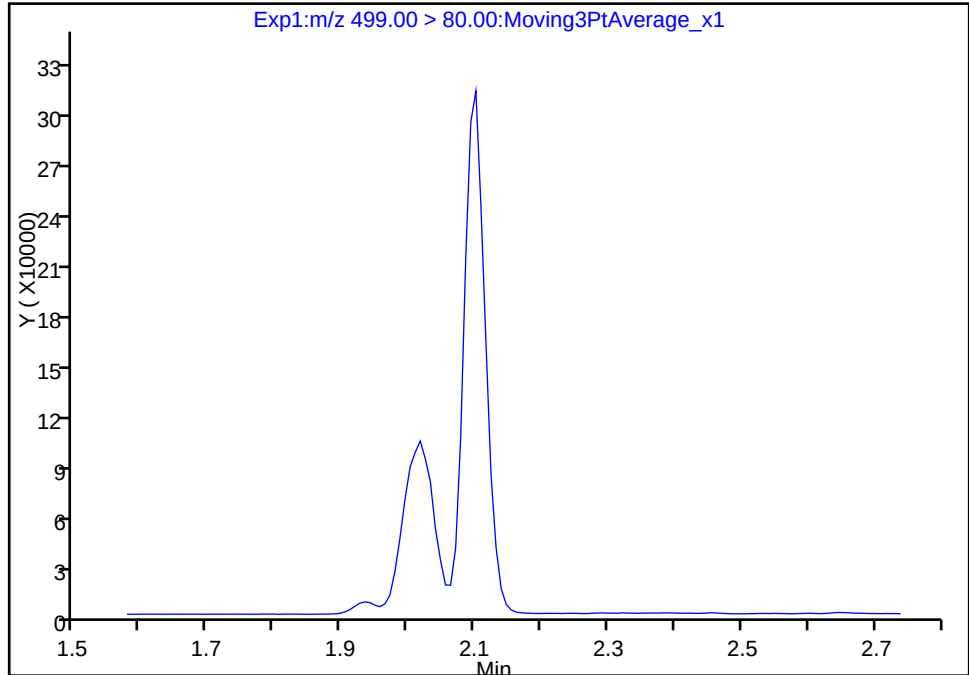
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Injection Date: 07-Jul-2017 01:06:01 Instrument ID: A8_N
Lims ID: LLCS 320-172119/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

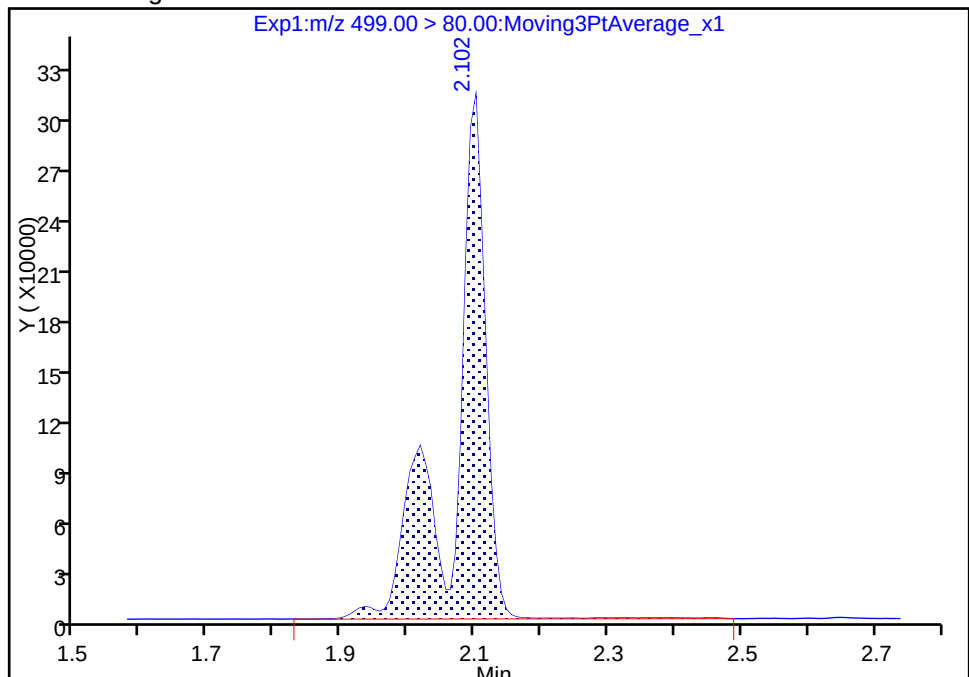
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 1033393
Amount: 9.633870
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 11:16:01

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LLCSD 320-172119/3-A
 Matrix: Water Lab File ID: 2017.07.06_537A_025.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 07/03/2017 09:49
 Sample wt/vol: 250 (mL) Date Analyzed: 07/07/2017 01:10
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 172925 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	39.4	J M	40	16	6.8
335-67-1	Perfluorooctanoic acid (PFOA)	20.9		20	8.0	2.8
375-95-1	Perfluorononanoic acid (PFNA)	19.4	J	24	20	8.0
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	28.3	J	30	12	5.5
375-85-9	Perfluoroheptanoic acid (PFHpA)	11.1		10	4.0	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	94.2		90	36	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	97		70-130
STL00996	13C2 PFDA	97		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_025.d
 Lims ID: LLCSD 320-172119/3-A
 Client ID:
 Sample Type: LLCSD
 Inject. Date: 07-Jul-2017 01:10:46 ALS Bottle#: 15 Worklist Smp#: 25
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: llcsd 320-172119/3-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
 Column 1 : Det: EXP1
 Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:16:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.404	1.404	0.0	1.000	2212815	23.5		733	
298.90 > 99.00	1.404	1.404	0.0	1.000	1611013		1.37(0.00-0.00)	635	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.533	1.539	-0.006	1.000	1135418	9.71		4332	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.684	1.691	-0.007	1.000	299335	2.78		43.6	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.684	1.692	-0.008	1.000	1041030	7.08		386	
* 6 13C2-PFOA									
415.00 > 370.00	1.866	1.878	-0.012		1029303	10.0		3447	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.866	1.879	-0.013	1.000	496536	5.23		62.8	
413.00 > 169.00	1.866	1.879	-0.013	1.000	299325		1.66(0.00-0.00)	329	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.109	2.102	0.007	1.000	1063627	9.84		1160	M
499.00 > 99.00	2.102	2.102	0.0	0.996	237198		4.48(0.00-0.00)	494	M
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.117	-0.015		3025587	28.7		3502	
9 Perfluorononanoic acid									
463.00 > 419.00	2.109	2.124	-0.015	1.000	412375	4.86		22.9	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.281	-0.005	1.000	835067	9.66		1612	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_025.d

Injection Date: 07-Jul-2017 01:10:46

Instrument ID: A8_N

Lims ID: LLCSD 320-172119/3-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 15

Worklist Smp#: 25

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

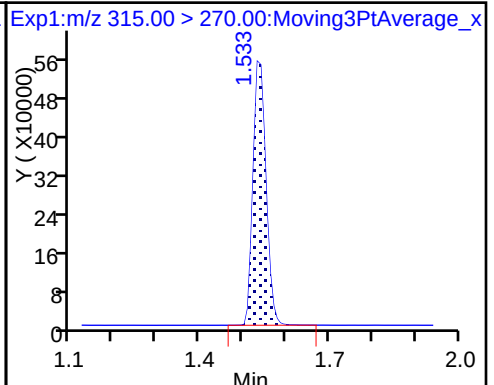
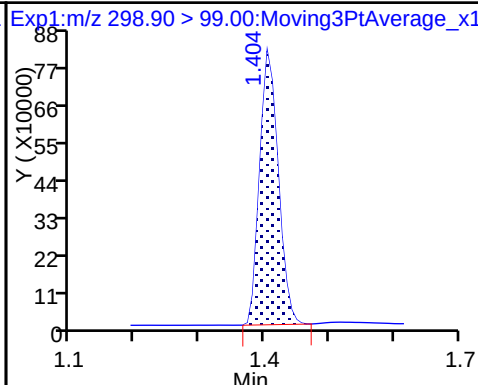
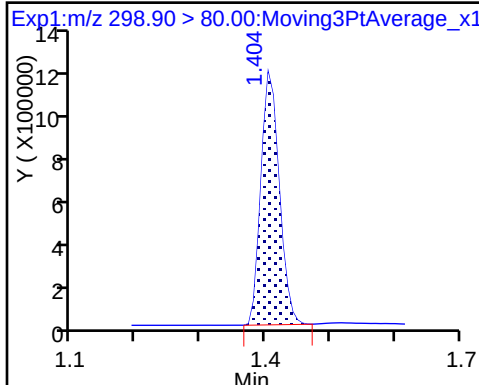
Method: 537_A8_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

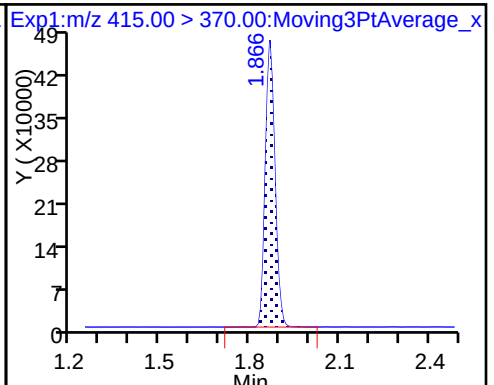
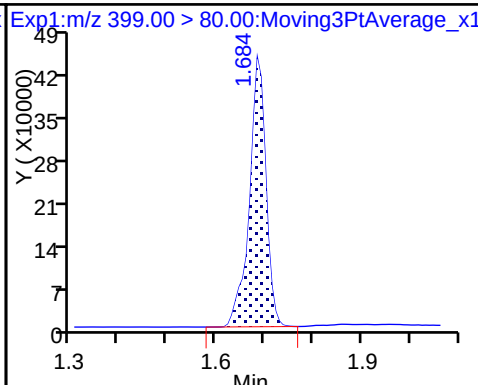
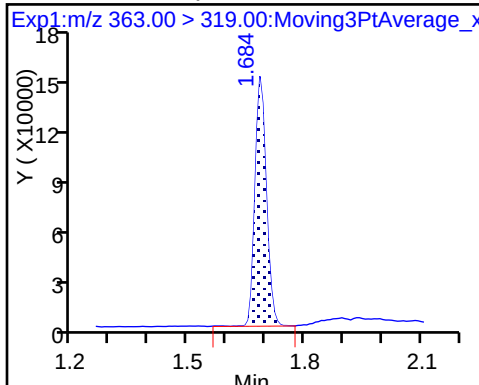
\$ 2 13C2 PFHxA



4 Perfluoroheptanoic acid

3 Perfluorohexanesulfonic acid

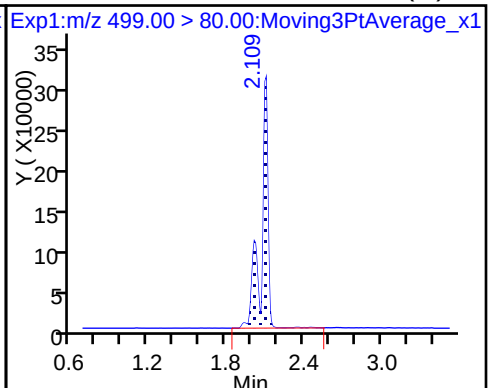
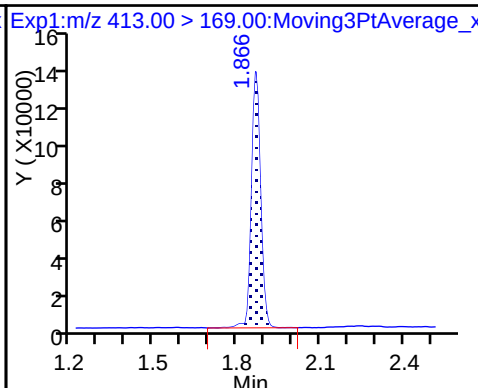
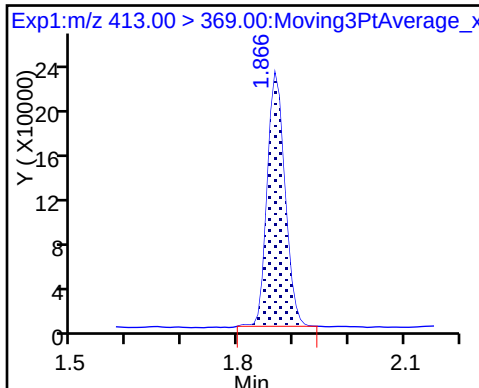
* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

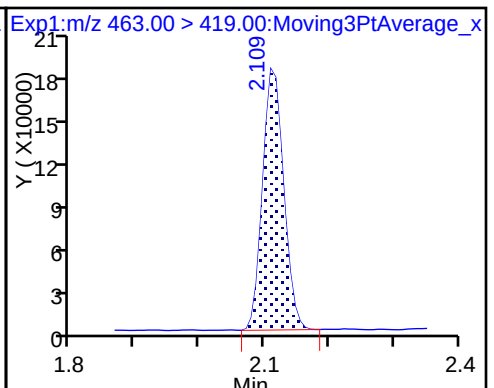
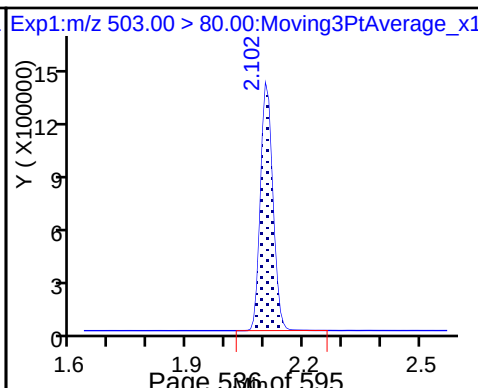
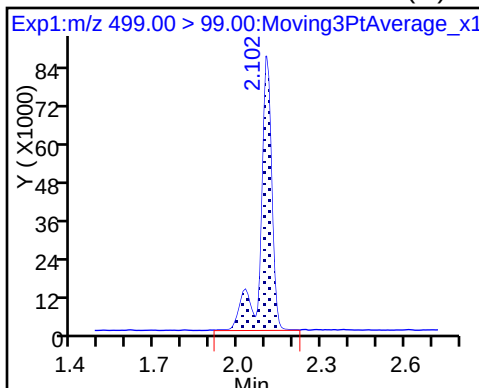
8 Perfluorooctane sulfonic acid (M)



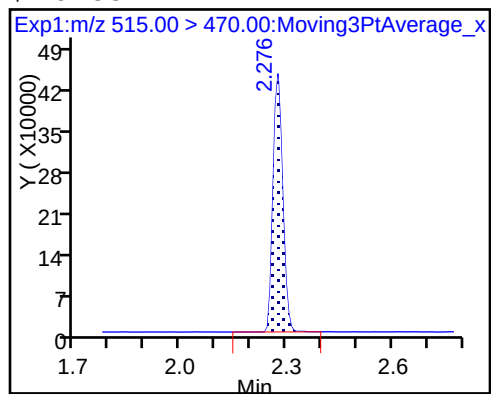
8 Perfluorooctane sulfonic acid (M)

* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_025.d
Lims ID: LLCSD 320-172119/3-A
Client ID:
Sample Type: LLCSD
Inject. Date: 07-Jul-2017 01:10:46 ALS Bottle#: 15 Worklist Smp#: 25
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: llcsd 320-172119/3-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Method: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Jul-2017 11:25:54 Calib Date: 05-Jul-2017 20:13:46
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170706-45099.b\2017.07.05_537CURVE_009.d
Column 1 : Det: EXP1
Process Host: XAWRK011

First Level Reviewer: barnettj

Date: 07-Jul-2017 11:16:56

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.71	97.09
\$ 10 13C2 PFDA	10.0	9.66	96.64

TestAmerica Sacramento

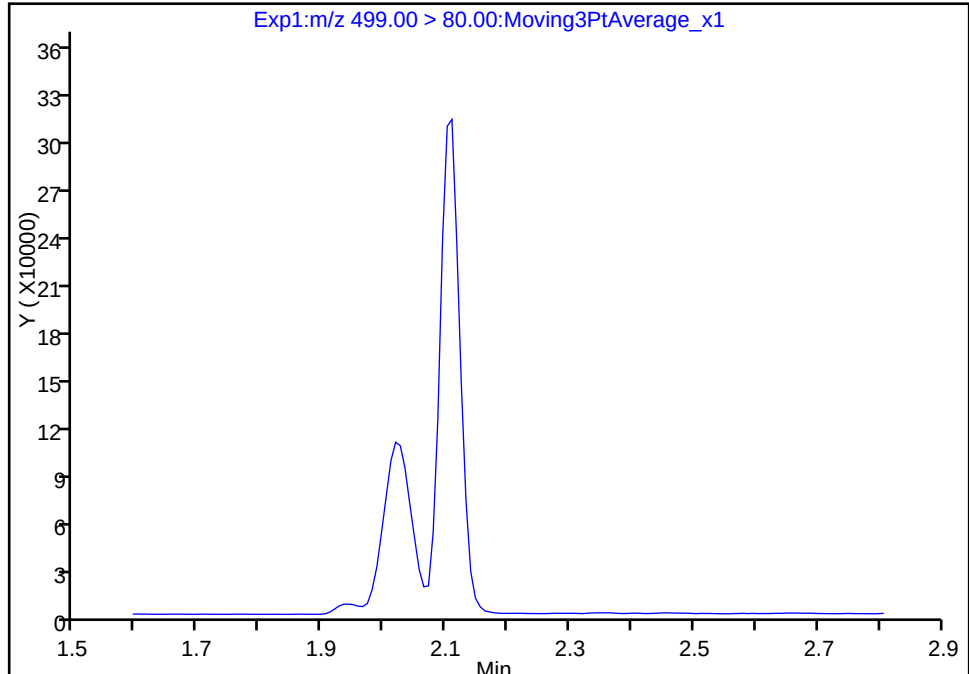
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_025.d
Injection Date: 07-Jul-2017 01:10:46 Instrument ID: A8_N
Lims ID: LLCSD 320-172119/3-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 25
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

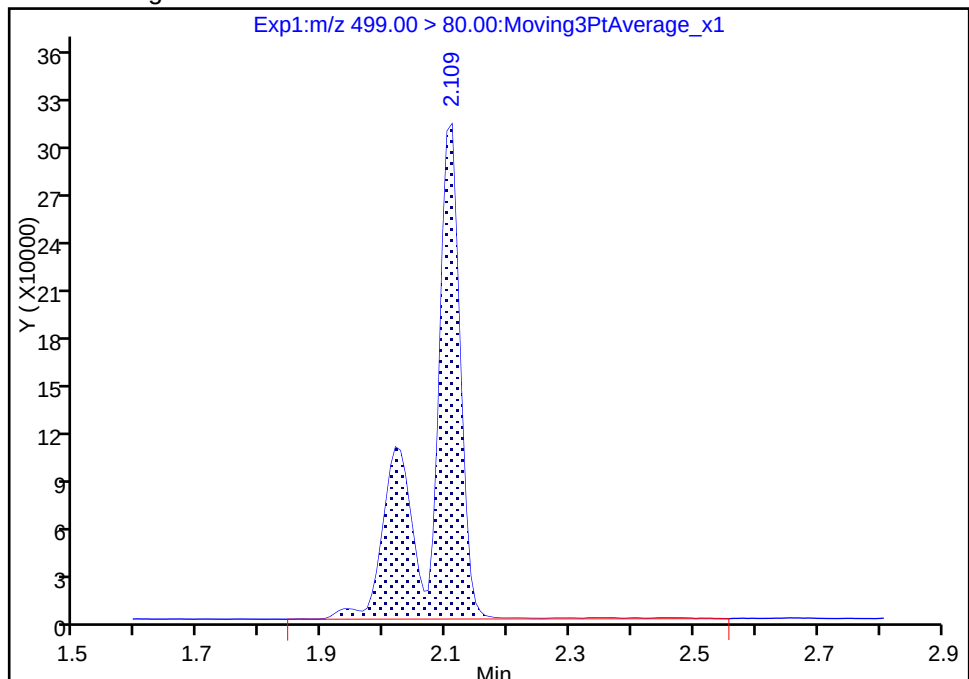
Not Detected
Expected RT: 2.10

Processing Integration Results



RT: 2.11
Area: 1063627
Amount: 9.844916
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Jul-2017 11:16:26
Audit Action: Assigned Compound ID

Audit Reason: Isomers

TestAmerica Sacramento

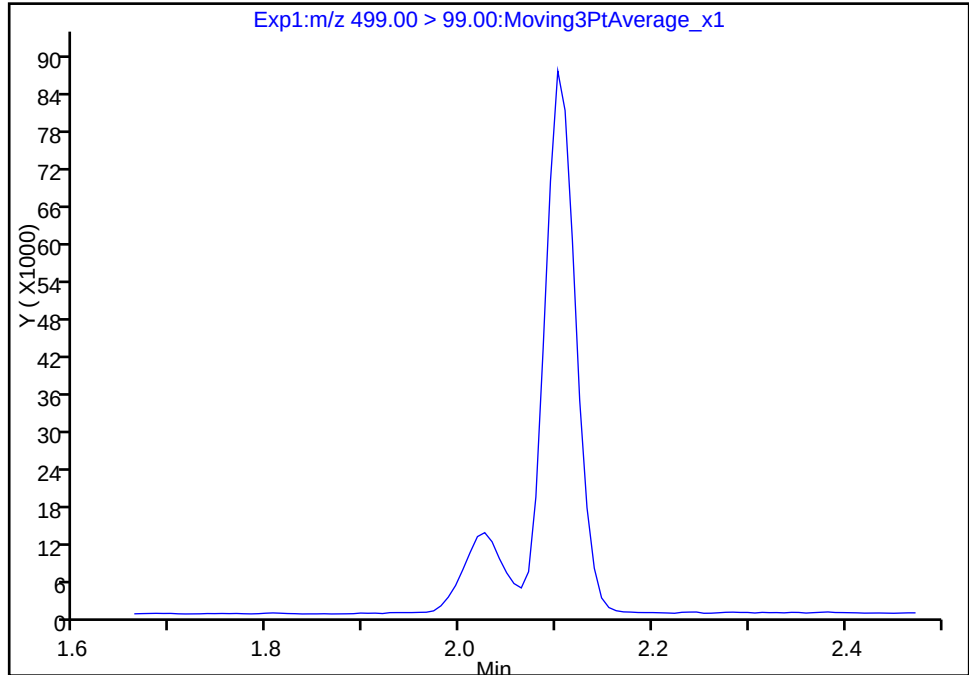
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_025.d
Injection Date: 07-Jul-2017 01:10:46 Instrument ID: A8_N
Lims ID: LLCSD 320-172119/3-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 25
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

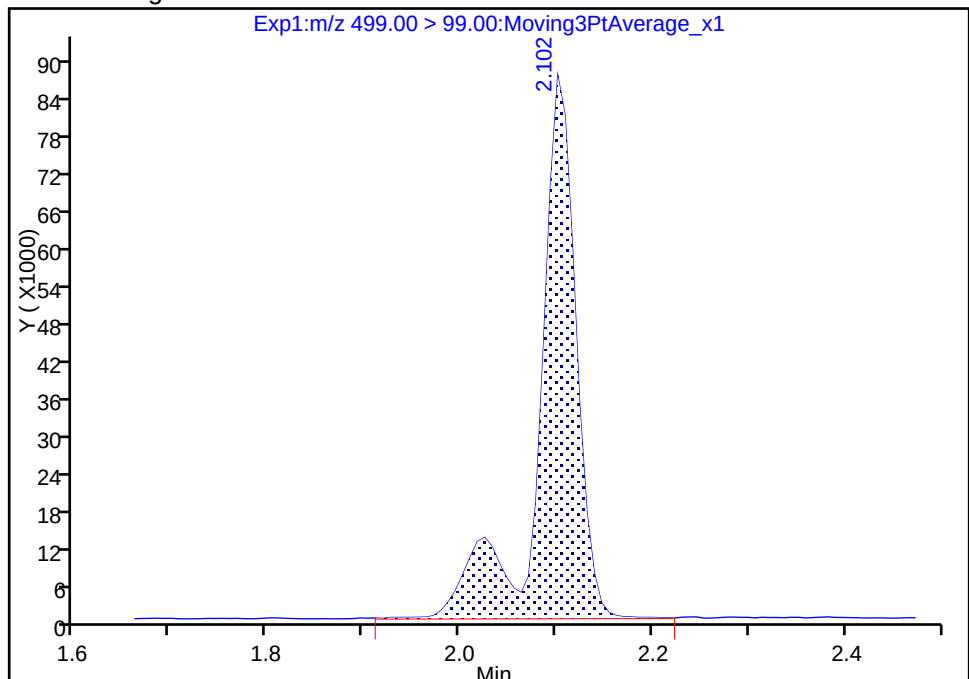
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 237198
Amount: 9.844916
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 11:16:42

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

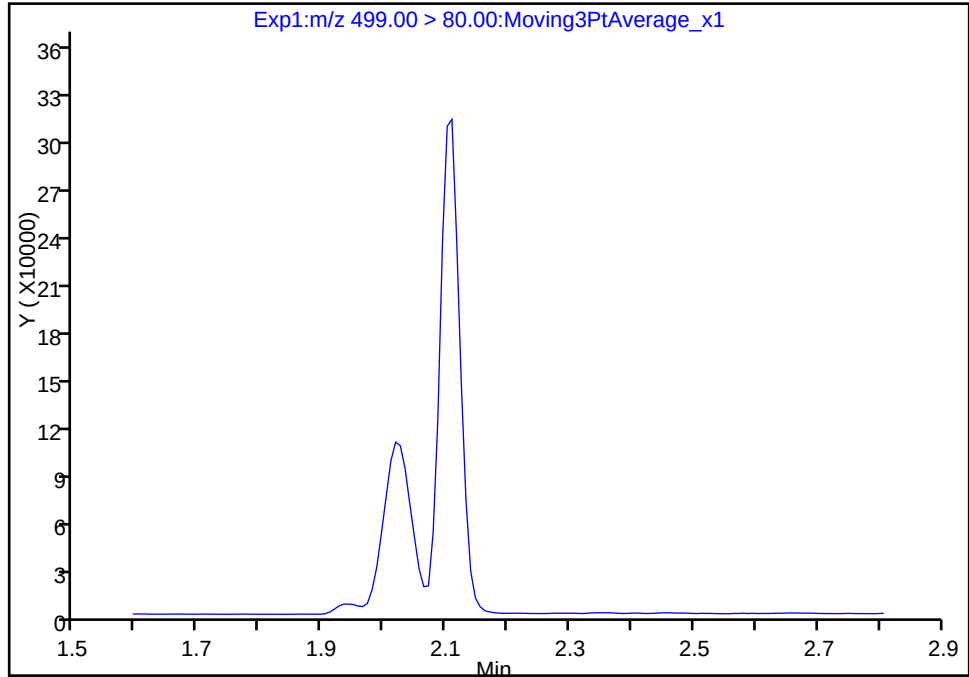
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b\2017.07.06_537A_025.d
Injection Date: 07-Jul-2017 01:10:46 Instrument ID: A8_N
Lims ID: LLCSD 320-172119/3-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 25
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL
Column: Detector EXP1

8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

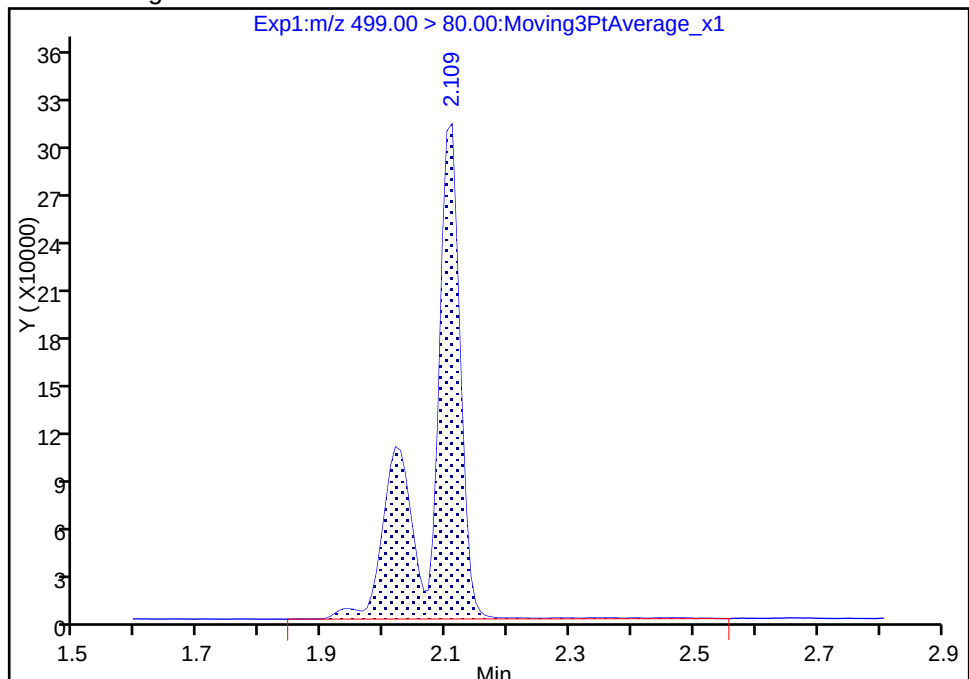
Not Detected
Expected RT: 2.10

Processing Integration Results



Manual Integration Results

RT: 2.11
Area: 1063627
Amount: 9.844916
Amount Units: ng/ml



Reviewer: barnettj, 07-Jul-2017 11:16:42

Audit Action: Manually Integrated

Audit Reason: Isomers

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Start Date: 06/19/2017 17:40Analysis Batch Number: 169955 End Date: 06/19/2017 18:23

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-169955/4		06/19/2017 17:40	1	2017.06.19_537A ICAL 004.d	GeminiC18 3x100 3(mm)
IC 320-169955/5		06/19/2017 17:45	1	2017.06.19_537A ICAL 005.d	GeminiC18 3x100 3(mm)
IC 320-169955/6		06/19/2017 17:50	1	2017.06.19_537A ICAL 006.d	GeminiC18 3x100 3(mm)
IC 320-169955/7 ICISAV		06/19/2017 17:55	1	2017.06.19_537A ICAL 007.d	GeminiC18 3x100 3(mm)
IC 320-169955/8		06/19/2017 17:59	1	2017.06.19_537A ICAL 008.d	GeminiC18 3x100 3(mm)
IC 320-169955/9		06/19/2017 18:04	1	2017.06.19_537A ICAL 009.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/19/2017 18:09	1		GeminiC18 3x100 3(mm)
CCVL 320-169955/11		06/19/2017 18:14	1	2017.06.19_537A ICAL 011.d	GeminiC18 3x100 3(mm)
ICV 320-169955/13		06/19/2017 18:23	1	2017.06.19_537A ICAL 013.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 06/23/2017 21:32Analysis Batch Number: 170756End Date: 06/23/2017 22:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-170756/4		06/23/2017 21:32	1	2017.06.23_537_004.d	GeminiC18 3x100 3(mm)
CCV 320-170756/5 CCVIS		06/23/2017 21:37	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 21:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 21:46	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 21:51	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 21:56	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:01	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:10	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:15	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:24	1		GeminiC18 3x100 3(mm)
CCV 320-170756/16 CCVIS		06/23/2017 22:29	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 06/23/2017 22:29Analysis Batch Number: 170757End Date: 06/23/2017 23:26

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-170757/16 CCVIS		06/23/2017 22:29	1	2017.06.23_537_ 016.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:34	1		GeminiC18 3x100 3(mm)
MB 320-169764/1-A		06/23/2017 22:39	1	2017.06.23_537_ 018.d	GeminiC18 3x100 3(mm)
LCS 320-169764/2-A		06/23/2017 22:43	1	2017.06.23_537_ 019.d	GeminiC18 3x100 3(mm)
LCSD 320-169764/3-A		06/23/2017 22:48	1	2017.06.23_537_ 020.d	GeminiC18 3x100 3(mm)
320-28916-1		06/23/2017 22:53	1	2017.06.23_537_ 021.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:58	1		GeminiC18 3x100 3(mm)
320-28916-3		06/23/2017 23:02	1	2017.06.23_537_ 023.d	GeminiC18 3x100 3(mm)
320-28916-4		06/23/2017 23:07	1	2017.06.23_537_ 024.d	GeminiC18 3x100 3(mm)
320-28916-5		06/23/2017 23:12	1	2017.06.23_537_ 025.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 23:17	1		GeminiC18 3x100 3(mm)
320-28916-7		06/23/2017 23:21	1	2017.06.23_537_ 027.d	GeminiC18 3x100 3(mm)
CCV 320-170757/28 CCVIS		06/23/2017 23:26	1	2017.06.23_537_ 028.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 06/23/2017 23:26Analysis Batch Number: 170758End Date: 06/24/2017 00:23

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-170758/28 CCVIS		06/23/2017 23:26	1	2017.06.23_537_ 028.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 23:31	1		GeminiC18 3x100 3(mm)
320-28916-8		06/23/2017 23:36	1	2017.06.23_537_ 030.d	GeminiC18 3x100 3(mm)
320-28916-9		06/23/2017 23:40	1	2017.06.23_537_ 031.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 23:45	1		GeminiC18 3x100 3(mm)
320-28916-11		06/23/2017 23:50	1	2017.06.23_537_ 033.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 23:55	1		GeminiC18 3x100 3(mm)
320-28916-13		06/23/2017 23:59	1	2017.06.23_537_ 035.d	GeminiC18 3x100 3(mm)
320-28916-14		06/24/2017 00:04	1	2017.06.23_537_ 036.d	GeminiC18 3x100 3(mm)
320-28916-15		06/24/2017 00:09	1	2017.06.23_537_ 037.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/24/2017 00:13	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/24/2017 00:18	1		GeminiC18 3x100 3(mm)
CCV 320-170758/40 CCVIS		06/24/2017 00:23	1	2017.06.23_537_ 040.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 06/28/2017 16:11Analysis Batch Number: 171480End Date: 06/28/2017 16:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-171480/4		06/28/2017 16:11	1	2017.06.28_537_ CURVE 004.d	GeminiC18 3x100 3(mm)
IC 320-171480/5		06/28/2017 16:16	1	2017.06.28_537_ CURVE 005.d	GeminiC18 3x100 3(mm)
IC 320-171480/6		06/28/2017 16:20	1	2017.06.28_537_ CURVE 006.d	GeminiC18 3x100 3(mm)
IC 320-171480/7 ICISAV		06/28/2017 16:25	1	2017.06.28_537_ CURVE 007.d	GeminiC18 3x100 3(mm)
IC 320-171480/8		06/28/2017 16:30	1	2017.06.28_537_ CURVE 008.d	GeminiC18 3x100 3(mm)
IC 320-171480/9		06/28/2017 16:35	1	2017.06.28_537_ CURVE 009.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 16:39	1		GeminiC18 3x100 3(mm)
CCVL 320-171480/11		06/28/2017 16:44	1	2017.06.28_537_ CURVE 011.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 16:49	1		GeminiC18 3x100 3(mm)
ICV 320-171480/13		06/28/2017 16:54	1	2017.06.28_537_ CURVE 013.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Start Date: 06/28/2017 17:03Analysis Batch Number: 171486 End Date: 06/28/2017 18:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-171486/1 CCVIS		06/28/2017 17:03	1	2017.06.28_537B 001.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:08	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:13	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:17	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:22	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:27	1		GeminiC18 3x100 3(mm)
320-28916-2		06/28/2017 17:32	1	2017.06.28_537B 007.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:36	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:46	1		GeminiC18 3x100 3(mm)
320-28916-6		06/28/2017 17:51	1	2017.06.28_537B 011.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:55	1		GeminiC18 3x100 3(mm)
CCV 320-171486/13 CCVIS		06/28/2017 18:00	1	2017.06.28_537B 013.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Start Date: 06/28/2017 18:00Analysis Batch Number: 171487 End Date: 06/28/2017 18:57

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-171487/13 CCVIS		06/28/2017 18:00	1	2017.06.28_537B 013.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:10	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:14	1		GeminiC18 3x100 3(mm)
320-28916-10		06/28/2017 18:19	1	2017.06.28_537B 017.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:24	1		GeminiC18 3x100 3(mm)
320-28916-12		06/28/2017 18:29	1	2017.06.28_537B 019.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:33	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:38	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:43	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:48	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:52	1		GeminiC18 3x100 3(mm)
CCV 320-171487/25 CCVIS		06/28/2017 18:57	1	2017.06.28_537B 025.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Start Date: 07/05/2017 19:50Analysis Batch Number: 172646 End Date: 07/05/2017 20:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-172646/4		07/05/2017 19:50	1	2017.07.05_537C URVE 004.d	GeminiC18 3x100 3(mm)
IC 320-172646/5		07/05/2017 19:54	1	2017.07.05_537C URVE 005.d	GeminiC18 3x100 3(mm)
IC 320-172646/6		07/05/2017 19:59	1	2017.07.05_537C URVE 006.d	GeminiC18 3x100 3(mm)
IC 320-172646/7 ICISAV		07/05/2017 20:04	1	2017.07.05_537C URVE 007.d	GeminiC18 3x100 3(mm)
IC 320-172646/8		07/05/2017 20:09	1	2017.07.05_537C URVE 008.d	GeminiC18 3x100 3(mm)
IC 320-172646/9		07/05/2017 20:13	1	2017.07.05_537C URVE 009.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/05/2017 20:18	1		GeminiC18 3x100 3(mm)
CCVL 320-172646/11		07/05/2017 20:23	1	2017.07.05_537C URVE 011.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/05/2017 20:28	1		GeminiC18 3x100 3(mm)
ICV 320-172646/13		07/05/2017 20:32	1	2017.07.05_537C URVE 013.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Start Date: 07/06/2017 23:31Analysis Batch Number: 172919 End Date: 07/07/2017 00:18

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-172919/4		07/06/2017 23:31	1	2017.07.06_537A 004.d	GeminiC18 3x100 3(mm)
CCV 320-172919/5 CCVIS		07/06/2017 23:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/06/2017 23:40	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/06/2017 23:45	2		GeminiC18 3x100 3(mm)
CCV 320-172919/14 CCVIS		07/07/2017 00:18	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 07/07/2017 00:51Analysis Batch Number: 172925End Date: 07/07/2017 01:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-172925/21 CCVIS		07/07/2017 00:51	1	2017.07.06_537A 021.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/07/2017 00:56	1		GeminiC18 3x100 3(mm)
MB 320-172119/1-A		07/07/2017 01:01	1	2017.07.06_537A 023.d	GeminiC18 3x100 3(mm)
LLCS 320-172119/2-A		07/07/2017 01:06	1	2017.07.06_537A 024.d	GeminiC18 3x100 3(mm)
LLCSD 320-172119/3-A		07/07/2017 01:10	1	2017.07.06_537A 025.d	GeminiC18 3x100 3(mm)
320-28916-4 RE		07/07/2017 01:15	1	2017.07.06_537A 026.d	GeminiC18 3x100 3(mm)
320-28916-5 RE		07/07/2017 01:20	1	2017.07.06_537A 027.d	GeminiC18 3x100 3(mm)
320-28916-7 RE		07/07/2017 01:25	1	2017.07.06_537A 028.d	GeminiC18 3x100 3(mm)
320-28916-11 RE		07/07/2017 01:29	1	2017.07.06_537A 029.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/07/2017 01:34	1		GeminiC18 3x100 3(mm)
CCV 320-172925/31 CCVIS		07/07/2017 01:39	1	2017.07.06_537A 031.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A6Start Date: 07/11/2017 14:18Analysis Batch Number: 173534End Date: 07/11/2017 16:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD 320-173534/7 IC		07/11/2017 14:18	1	11JUL2017A6B_00 7.d	GeminiC18 3x100 3(mm)
STD 320-173534/8 IC		07/11/2017 14:29	1	11JUL2017A6B_00 8.d	GeminiC18 3x100 3(mm)
STD 320-173534/9 IC		07/11/2017 14:38	1	11JUL2017A6B_00 9.d	GeminiC18 3x100 3(mm)
STD 320-173534/10 ICISAV		07/11/2017 14:47	1	11JUL2017A6B_01 0.d	GeminiC18 3x100 3(mm)
STD 320-173534/11 IC		07/11/2017 14:56	1	11JUL2017A6B_01 1.d	GeminiC18 3x100 3(mm)
STD 320-173534/12 IC		07/11/2017 15:05	1	11JUL2017A6B_01 2.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/11/2017 15:14	1		GeminiC18 3x100 3(mm)
CCVL 320-173534/14		07/11/2017 15:23	1	11JUL2017A6B_01 4.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/11/2017 15:32	1		GeminiC18 3x100 3(mm)
ICV 320-173534/16		07/11/2017 15:42	1	11JUL2017A6B_01 6.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/11/2017 15:51	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/11/2017 15:59	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/11/2017 16:09	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/11/2017 16:18	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/11/2017 16:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/11/2017 16:36	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/11/2017 16:45	1		GeminiC18 3x100 3(mm)
CCV 320-173534/24 CCVIS		07/11/2017 16:54	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A6 Start Date: 07/19/2017 18:13Analysis Batch Number: 174993 End Date: 07/19/2017 18:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-174993/35 CCVIS		07/19/2017 18:13	1	19JUL2017A6_035 .d	GeminiC18 3x100 3(mm)
320-28916-5 RERA		07/19/2017 18:40	1	19JUL2017A6_038 .d	GeminiC18 3x100 3(mm)
CCV 320-174993/39 CCVIS		07/19/2017 18:49	1	19JUL2017A6_039 .d	GeminiC18 3x100 3(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Batch Number: 169764 Batch Start Date: 06/19/17 09:24 Batch Analyst: Sharifi, NooshinBatch Method: 537 Batch End Date: 06/20/17 19:18

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00038
MB 320-169764/1		537, 537				250 mL	1.0 mL	7 SU	100 uL
LCS 320-169764/2		537, 537				250 mL	1.0 mL	7 SU	100 uL
LCSD 320-169764/3		537, 537				250 mL	1.0 mL	7 SU	100 uL
320-28916-A-1	NAWC-060717-RW-206A	537, 537	T	284.82 g	27.36 g	257.5 mL	1.0 mL	7 SU	100 uL
320-28916-A-2	NAWC-060717-FRB-206A	537, 537	T	290.73 g	26.64 g	264.1 mL	1.0 mL	7 SU	100 uL
320-28916-A-3	NAWC-060717-RW-79	537, 537	T	290.03 g	27.61 g	262.4 mL	1.0 mL	7 SU	100 uL
320-28916-A-4	NAWC-060717-FRB-79	537, 537	T	297.40 g	27.45 g	270 mL	1.0 mL	7 SU	100 uL
320-28916-A-5	NAWC-060717-RW-258A	537, 537	T	291.29 g	27.27 g	264 mL	1.0 mL	7 SU	100 uL
320-28916-A-6	NAWC-060717-FRB-258A	537, 537	T	284.91 g	27.63 g	257.3 mL	1.0 mL	7 SU	100 uL
320-28916-A-7	NAWC-060717-RW-145	537, 537	T	285.67 g	27.44 g	258.2 mL	1.0 mL	7 SU	100 uL
320-28916-A-8	NAWC-060717-FRB-145	537, 537	T	294.30 g	27.13 g	267.2 mL	1.0 mL	7 SU	100 uL
320-28916-A-9	NAWC-060717-RW-162	537, 537	T	284.71 g	27.62 g	257.1 mL	1.0 mL	7 SU	100 uL
320-28916-A-10	NAWC-060717-FRB-162	537, 537	T	288.47 g	26.74 g	261.7 mL	1.0 mL	7 SU	100 uL
320-28916-A-11	NAWC-060717-RW-206B	537, 537	T	287.74 g	27.98 g	259.8 mL	1.0 mL	7 SU	100 uL
320-28916-A-12	NAWC-060717-RW-258B	537, 537	T	289.91 g	28.15 g	261.8 mL	1.0 mL	7 SU	100 uL
320-28916-A-13	NAWC-060717-RW-56	537, 537	T	286.04 g	28.00 g	258 mL	1.0 mL	7 SU	100 uL
320-28916-A-14	NAWC-060717-FRB-56	537, 537	T	295.46 g	27.15 g	268.3 mL	1.0 mL	7 SU	100 uL
320-28916-A-15	NAWC-060717-DUP02	537, 537	T	296.93 g	27.08 g	269.9 mL	1.0 mL	7 SU	100 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-MSP 00021	LC537-SU 00042	AnalysisComment			
MB 320-169764/1		537, 537			100 uL	CH ND			
LCS 320-169764/2		537, 537		100 uL	100 uL	CH ND			

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.: 320-28916-1

SDG No.: _____

Batch Number: 169764 Batch Start Date: 06/19/17 09:24 Batch Analyst: Sharifi, NooshinBatch Method: 537 Batch End Date: 06/20/17 19:18

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-MSP 00021	LC537-SU 00042	AnalysisComment			
LCSD 320-169764/3		537, 537		100 uL	100 uL	CH ND			
320-28916-A-1	NAWC-060717-RW-2 06A	537, 537	T		100 uL	CH ND			
320-28916-A-2	NAWC-060717-FRB- 206A	537, 537	T		100 uL	CH ND			
320-28916-A-3	NAWC-060717-RW-7 9	537, 537	T		100 uL	CH ND			
320-28916-A-4	NAWC-060717-FRB- 79	537, 537	T		100 uL	CH ND			
320-28916-A-5	NAWC-060717-RW-2 58A	537, 537	T		100 uL	CH ND			
320-28916-A-6	NAWC-060717-FRB- 258A	537, 537	T		100 uL	CH ND			
320-28916-A-7	NAWC-060717-RW-1 45	537, 537	T		100 uL	CH ND			
320-28916-A-8	NAWC-060717-FRB- 145	537, 537	T		100 uL	CH ND			
320-28916-A-9	NAWC-060717-RW-1 62	537, 537	T		100 uL	CH ND			
320-28916-A-10	NAWC-060717-FRB- 162	537, 537	T		100 uL	CH ND			
320-28916-A-11	NAWC-060717-RW-2 06B	537, 537	T		100 uL	CH ND			
320-28916-A-12	NAWC-060717-RW-2 58B	537, 537	T		100 uL	CH ND			
320-28916-A-13	NAWC-060717-RW-5 6	537, 537	T		100 uL	CH ND			
320-28916-A-14	NAWC-060717-FRB- 56	537, 537	T		100 uL	CH ND			
320-28916-A-15	NAWC-060717-DUP0 2	537, 537	T		100 uL	CH ND			

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.: 320-28916-1

SDG No.: _____

Batch Number: 169764 Batch Start Date: 06/19/17 09:24 Batch Analyst: Sharifi, NooshinBatch Method: 537 Batch End Date: 06/20/17 19:18

Batch Notes	
Batch Comment	IS: 911914
Manifold ID	4, 1
Methanol ID	952645
Pipette ID	M16387D
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	TN
Analyst ID - SU Reagent Drop	NSH
Analyst ID - SU Reagent Drop Witness	JNS
Analyst ID - TA Reagent Drop	NSH
Analyst ID - TA Reagent Drop Witness	JNS
SPE Cartridge ID	6346595-04
Trizma ID	SLBR4303V
Reagent Water ID	6-14-17

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.: 320-28916-1

SDG No.: _____

Batch Number: 172119 Batch Start Date: 07/03/17 09:49 Batch Analyst: Branscum, CassieBatch Method: 537 Batch End Date: 07/05/17 22:25

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00043
MB 320-172119/1		537, 537				250 mL	1.00 mL	7 SU	100 uL
LLCS 320-172119/2		537, 537				250 mL	1.00 mL	7 SU	100 uL
LLCSD 320-172119/3		537, 537				250 mL	1.00 mL	7 SU	100 uL
320-28916-B-4	NAWC-060717-FRB-79	537, 537	T	286.38 g	27.44 g	258.9 mL	1.00 mL	7 SU	100 uL
320-28916-B-5	NAWC-060717-RW-258A	537, 537	T	285.18 g	28.52 g	256.7 mL	1.00 mL	7 SU	100 uL
320-28916-B-7	NAWC-060717-RW-145	537, 537	T	272.54 g	27.76 g	244.8 mL	1.00 mL	7 SU	100 uL
320-28916-B-11	NAWC-060717-RW-206B	537, 537	T	284.30 g	27.51 g	256.8 mL	1.00 mL	7 SU	100 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-LSP 00020	LC537-SU 00044	AnalysisComment			
MB 320-172119/1		537, 537			100 uL	ch nd			
LLCS 320-172119/2		537, 537		100 uL	100 uL	ch nd			
LLCSD 320-172119/3		537, 537		100 uL	100 uL	ch nd			
320-28916-B-4	NAWC-060717-FRB-79	537, 537	T		100 uL	ch nd			
320-28916-B-5	NAWC-060717-RW-258A	537, 537	T		100 uL	ch nd			
320-28916-B-7	NAWC-060717-RW-145	537, 537	T		100 uL	ch nd			
320-28916-B-11	NAWC-060717-RW-206B	537, 537	T		100 uL	ch nd			

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.: 320-28916-1

SDG No.: _____

Batch Number: 172119 Batch Start Date: 07/03/17 09:49 Batch Analyst: Branscum, CassieBatch Method: 537 Batch End Date: 07/05/17 22:25

Batch Notes	
Batch Comment	IS:960784
Manifold ID	3
Methanol ID	973181
Pipette ID	MD05306
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	JER
Analyst ID - SU Reagent Drop	CCB
Analyst ID - SU Reagent Drop Witness	NSH
Analyst ID - TA Reagent Drop	CCB
Analyst ID - TA Reagent Drop Witness	NSH
SPE Cartridge ID	6357081-01
Trizma ID	SLBR4303V
Reagent Water ID	6-27-17

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.

A8

Job No: 28916, 28987 Instrument ID & Date: 6-23-17 ICAL Batch: 169955, 171480
 Extraction Batch: 169764 Worklist #: 44660, 44833 TALS Batch: 170757, 170758, 171486, 171487

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 6-29-17

2nd Level Reviewer / Date: M. Wang 6/30/2017

NCM # and Comments: 92430 (Re-prep Ncm)

Instrument ID & Date: 6-19-17 Worklist#: 44448

ICAL Batch: 169955, 169956 Calibration ID number: 31800, 31801

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 Quadratic (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 6-20-17

2nd Level Reviewer / Date: M. Way 6/20/2017

NCM # and Comments: _____

A8

Instrument ID & Date: 6-28-17 Worklist#: 44832

ICAL Batch: 171480, 171481 Calibration ID number: 32056, 32057

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 ≤ ½ 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 6-29-17

2nd Level Reviewer / Date: MWJ 6/29/2017

NCM # and Comments: _____

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 23JUN2017A_537A

Worklist Number: 44660

Instrument Name: A8_N

Chrom Method: 537_A8_N

Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b

QC Batching: Enabled

Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 170756
# 1 RINSE	# 1 RINSE
# 2 RINSE	# 2 RINSE
# 3 RINSE	# 3 RINSE
# 4 CCVL	# 4 CCVL
# 5 CCV L5	# 5 CCV L5
# 6 RB	# 6 RB
# 7 MB 320-169979/1-A	# 7 MB 320-169979/1-A
# 8 LCS 320-169979/2-A	# 8 LCS 320-169979/2-A
# 9 LCSD 320-169979/3-A	# 9 LCSD 320-169979/3-A
#10 590-6274-A-1-A	#10 590-6274-A-1-A
#11 320-29094-A-1-A	#11 320-29094-A-1-A
#12 440-186667-A-3-A	#12 440-186667-A-3-A
#13 440-186667-A-4-A	#13 440-186667-A-4-A
#14 440-186667-A-5-A	#14 440-186667-A-5-A
#15 440-186667-A-6-A	#15 440-186667-A-6-A
#16 CCV L3	#16 CCV L3

QC Batch: 2	LC 537 ICAL Raw Batch: 170757
#16 CCV L3	#16 CCV L3
#17 RB	#17 RB
#18 MB 320-169764/1-A	#18 MB 320-169764/1-A
#19 LCS 320-169764/2-A	#19 LCS 320-169764/2-A
#20 LCSD 320-169764/3-A	#20 LCSD 320-169764/3-A
#21 320-28916-A-1-A	#21 320-28916-A-1-A
#22 320-28916-A-2-A	#22 320-28916-A-2-A
#23 320-28916-A-3-A	#23 320-28916-A-3-A
#24 320-28916-A-4-A	#24 320-28916-A-4-A
#25 320-28916-A-5-A	#25 320-28916-A-5-A
#26 320-28916-A-6-A	#26 320-28916-A-6-A
#27 320-28916-A-7-A	#27 320-28916-A-7-A
#28 CCV L5	#28 CCV L5

QC Batch: 3	LC 537 ICAL Raw Batch: 170758
#28 CCV L5	#28 CCV L5
#29 RB	#29 RB
#30 320-28916-A-8-A	#30 320-28916-A-8-A
#31 320-28916-A-9-A	#31 320-28916-A-9-A
#32 320-28916-A-10-A	#32 320-28916-A-10-A
#33 320-28916-A-11-A	#33 320-28916-A-11-A
#34 320-28916-A-12-A	#34 320-28916-A-12-A
#35 320-28916-A-13-A	#35 320-28916-A-13-A
#36 320-28916-A-14-A	#36 320-28916-A-14-A
#37 320-28916-A-15-A	#37 320-28916-A-15-A
#38 320-28987-A-1-A	#38 320-28987-A-1-A
#39 320-28987-A-2-A	#39 320-28987-A-2-A
#40 CCV L3	#40 CCV L3
#41 RB	#41 RB

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 28JUN2017A_537A Worklist Number: 44833
Instrument Name: A8_N Chrom Method: 537_A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20170628-44833.b
QC Batching: Enabled Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 171486
# 1 CCV L5	# 1 CCV L5
# 2 RB	# 2 RB
# 3 MB 320-169764/1-A	# 3 MB 320-169764/1-A
# 4 LCS 320-169764/2-A	# 4 LCS 320-169764/2-A
# 5 LCSD 320-169764/3-A	# 5 LCSD 320-169764/3-A
# 6 320-28916-A-1-A	# 6 320-28916-A-1-A
# 7 320-28916-A-2-A	# 7 320-28916-A-2-A
# 8 320-28916-A-3-A	# 8 320-28916-A-3-A
# 9 320-28916-A-4-A	# 9 320-28916-A-4-A
#10 320-28916-A-5-A	#10 320-28916-A-5-A
#11 320-28916-A-6-A	#11 320-28916-A-6-A
#12 320-28916-A-7-A	#12 320-28916-A-7-A
#13 CCV L3	#13 CCV L3

QC Batch: 2	LC 537 ICAL Raw Batch: 171487
#13 CCV L3	#13 CCV L3
#14 RB	#14 RB
#15 320-28916-A-8-A	#15 320-28916-A-8-A
#16 320-28916-A-9-A	#16 320-28916-A-9-A
#17 320-28916-A-10-A	#17 320-28916-A-10-A
#18 320-28916-A-11-A	#18 320-28916-A-11-A
#19 320-28916-A-12-A	#19 320-28916-A-12-A
#20 320-28916-A-13-A	#20 320-28916-A-13-A
#21 320-28916-A-14-A	#21 320-28916-A-14-A
#22 320-28916-A-15-A	#22 320-28916-A-15-A
#23 320-28987-A-1-A	#23 320-28987-A-1-A
#24 320-28987-A-2-A	#24 320-28987-A-2-A
#25 CCV L5	#25 CCV L5
#26 RB	#26 RB

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-169764

Analyst: Sharifi, Nooshin

Batch Open: 6/19/2017 9:24:00AM

Method Code: 320-537_Prep-320

Batch End: 6/20/2017 7:18:00PM

Extraction of Perfluorinated Alkyl Acids

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	Rcvd	PHs Adj1	Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1 MB~320-169764/1 N/A	N/A		250 mL	7			N/A	N/A	N/A	CH ND	
			1.0 mL								
2 LCS~320-169764/2 N/A	N/A		250 mL	7			N/A	N/A	N/A	CH ND	
			1.0 mL								
3 LCSD~320-169764/3 N/A	N/A		250 mL	7			N/A	N/A	N/A	CH ND	
			1.0 mL								
4 320-28916-A-1 (537_DOD5)	N/A (320-28916-1)	284.82 g	257.5 mL	7			6/14/17	16_Days	4	CH ND	
		27.36 g	1.0 mL								
5 320-28916-A-2 (537_DOD5)	N/A (320-28916-1)	290.73 g	264.1 mL	7			6/14/17	16_Days	4	CH ND	
		26.64 g	1.0 mL								
6 320-28916-A-3 (537_DOD5)	N/A (320-28916-1)	290.03 g	262.4 mL	7			6/14/17	16_Days	4	CH ND	
		27.61 g	1.0 mL								
7 320-28916-A-4 (537_DOD5)	N/A (320-28916-1)	297.40 g	270 mL	7			6/14/17	16_Days	4	CH ND	
		27.45 g	1.0 mL								
8 320-28916-A-5 (537_DOD5)	N/A (320-28916-1)	291.29 g	264 mL	7			6/14/17	16_Days	4	CH ND	
		27.27 g	1.0 mL								
9 320-28916-A-6 (537_DOD5)	N/A (320-28916-1)	284.91 g	257.3 mL	7			6/14/17	16_Days	4	CH ND	
		27.63 g	1.0 mL								
10 320-28916-A-7 (537_DOD5)	N/A (320-28916-1)	285.67 g	258.2 mL	7			6/14/17	16_Days	4	CH ND	
		27.44 g	1.0 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-169764

Analyst: Sharifi, Nooshin

Batch Open: 6/19/2017 9:24:00AM

Method Code: 320-537_Prep-320

Batch End: 6/20/2017 7:18:00PM

11	320-28916-A-8 (537_DOD5)	N/A (320-28916-1)	294.30 g	267.2 mL	7			6/14/17	16_Days	4	CH ND	
			27.13 g	1.0 mL								
12	320-28916-A-9 (537_DOD5)	N/A (320-28916-1)	284.71 g	257.1 mL	7			6/14/17	16_Days	4	CH ND	
			27.62 g	1.0 mL								
13	320-28916-A-10 (537_DOD5)	N/A (320-28916-1)	288.47 g	261.7 mL	7			6/14/17	16_Days	4	CH ND	
			26.74 g	1.0 mL								
14	320-28916-A-11 (537_DOD5)	N/A (320-28916-1)	287.74 g	259.8 mL	7			6/14/17	16_Days	4	CH ND	
			27.98 g	1.0 mL								
15	320-28916-A-12 (537_DOD5)	N/A (320-28916-1)	289.91 g	261.8 mL	7			6/14/17	16_Days	4	CH ND	
			28.15 g	1.0 mL								
16	320-28916-A-13 (537_DOD5)	N/A (320-28916-1)	286.04 g	258 mL	7			6/14/17	16_Days	4	CH ND	
			28.00 g	1.0 mL								
17	320-28916-A-14 (537_DOD5)	N/A (320-28916-1)	295.46 g	268.3 mL	7			6/14/17	16_Days	4	CH ND	
			27.15 g	1.0 mL								
18	320-28916-A-15 (537_DOD5)	N/A (320-28916-1)	296.93 g	269.9 mL	7			6/14/17	16_Days	4	CH ND	
			27.08 g	1.0 mL								
19	320-28987-A-1 (537_DOD5)	N/A (320-28987-1)	298.63 g	270.6 mL	7			6/15/17	16_Days	4	CH ND	
			27.99 g	1.0 mL								
20	320-28987-A-2 (537_DOD5)	N/A (320-28987-1)	299.65 g	272.5 mL	7			6/15/17	16_Days	4	CH ND	
			27.13 g	1.0 mL								

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Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-169764

Analyst: Sharifi, Nooshin

Batch Open: 6/19/2017 9:24:00AM

Method Code: 320-537_Prep-320

Batch End: 6/20/2017 7:18:00PM

Batch Notes

Manifold ID 4, 1

Trizma ID SLBR4303V

SPE Cartridge ID 6346595-04

Methanol ID 952645

Reagent Water ID 6-14-17

Pipette ID M16387D

Analyst ID - TA Reagent Drop NSH

Analyst ID - TA Reagent Drop JNS

Witness

Analyst ID - SU Reagent Drop NSH

Analyst ID - SU Reagent Drop JNS

Witness

Analyst ID - IS Reagent Drop VPM

Analyst ID - IS Reagent Drop TN

Witness

Batch Comment IS: 911914

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-169764

Analyst: Sharifi, Nooshin

Batch Open: 6/19/2017 9:24:00AM

Method Code: 320-537_Prep-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-169764/1	LC537-SU_00042	100 uL	1.0 mL	NSH 6-19-17	JNS 6/19/17
LCS 320-169764/2	LC537-MSP_00021	100 uL	1.0 mL		
LCS 320-169764/2	LC537-SU_00042	100 uL	1.0 mL		
LCSD 320-169764/3	LC537-MSP_00021	100 uL	1.0 mL		
LCSD 320-169764/3	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-1	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-2	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-3	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-4	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-5	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-6	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-7	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-8	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-9	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-10	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-11	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-12	LC537-SU_00042	100 uL	1.0 mL		
320-28916-A-13	LC537-SU_00042	100 uL	1.0 mL		

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Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-169764

Analyst: Sharifi, Nooshin

Batch Open: 6/19/2017 9:24:00AM

Method Code: 320-537_Prep-320

Batch End:

320-28916-A-14	LC537-SU_00042	100 uL	1.0 mL	NSH 6-19-17	JNS 6/19/17
320-28916-A-15	LC537-SU_00042	100 uL	1.0 mL		
320-28987-A-1	LC537-SU_00042	100 uL	1.0 mL		
320-28987-A-2	LC537-SU_00042	100 uL	1.0 mL		

Other Reagents:

Reagent

Amount/Units

Lot#:

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Preparation Batch Number(s): 169764 Test: 537-DOD5
Earliest Holding Time: 06-21-17

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: TN

Date: 06/20/17

2nd Level Reviewer: vpm

Date: 6/20/17

Comments: _____

Job No: 29632, 28916 Instrument ID & Date: 7-19-17 ICAL Batch: 173535, 173534
 Extraction Batch: 173435 Worklist #: 45621 TALS Batch: 174994, 174990, 174992, 174993

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? <u>174880, 174881</u>	✓			✓
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? <u>NCM</u>	✓			NCM
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 7-20-17 2nd Level Reviewer / Date: SLW 7/20/17

NCM # and Comments: 94691

Instrument ID & Date: A6 7-11-17 Worklist#: 45298

ICAL Batch: 173534, 173535 Calibration ID number: 32318, 32319

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 Quadratic (6 points minimum)				
4. Meets fit criteria? Intercept ≤ ½ 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 7-12-17

2nd Level Reviewer / Date: AWW 7/12/2017

NCM # and Comments: _____

TestAmerica Laboratories

Worklist QC Batch Report

Worklist Name: 19JUL2017A_537

Worklist Number: 45621

Instrument Name: A6

Chrom Method: 537_A6

Data Directory: \\ChromNA\Sacramento\ChromData\A6\20170719-45621.b

QC Batching: Enabled

Limit Group Batching: Enabled

QC Batch: 1	LC 537 CS ICAL Raw Batch: 174880	LC 537 ICAL Raw Batch: 174881
# 1 RINSE	# 1 RINSE	# 4 CCVL
# 2 RINSE	# 2 RINSE	
# 3 RINSE	# 3 RINSE	
# 4 CCVL	# 4 CCVL	
# 5 CCV L3	# 5 CCV L3	
# 6 RB	# 6 RB	
# 7 320-29627-A-10-A	# 7 320-29627-A-10-A	
# 8 CCV L5	# 8 CCV L5	
# 9 RB	# 9 RB	
#10 RINSE	#10 RINSE	

QC Batch: 2	LC 537 CS ICAL Raw Batch: 174994
#10 RINSE	#10 RINSE
#11 CCV L5	#11 CCV L5
#12 RB	#12 RB
#13 MB 320-173435/1-A	#13 MB 320-173435/1-A
#14 LCS 320-173435/2-A	#14 LCS 320-173435/2-A
#15 LCSD 320-173435/3-A	#15 LCSD 320-173435/3-A
#16 320-29627-A-1-A	#16 320-29627-A-1-A
#17 320-29627-A-2-A	#17 320-29627-A-2-A
#18 320-29627-A-2-B MS	#18 320-29627-A-2-B MS
#19 320-29627-A-2-C MSD	#19 320-29627-A-2-C MSD
#20 320-29627-A-3-A	#20 320-29627-A-3-A
#21 320-29627-A-4-A	#21 320-29627-A-4-A
#22 320-29627-A-5-A	#22 320-29627-A-5-A
#23 CCV L3	#23 CCV L3

QC Batch: 3	LC 537 CS ICAL Raw Batch: 174990	LC 537 ICAL Raw Batch: 174991
#23 CCV L3	#23 CCV L3	
#24 RB	#24 RB	
#25 320-29627-A-6-A	#25 320-29627-A-6-A	
#26 320-29631-A-1-A	#26 320-29631-A-1-A	
#27 320-29631-A-2-A	#27 320-29631-A-2-A	
#28 320-29631-A-2-B MS	#28 320-29631-A-2-B MS	
#29 320-29631-A-2-C MSD	#29 320-29631-A-2-C MSD	
#30 320-29631-A-3-A	#30 320-29631-A-3-A	
#31 320-29632-A-1-A	#31 320-29632-A-1-A	
#32 320-29632-A-1-B MS	#32 320-29632-A-1-B MS	
#33 320-29632-A-1-C MSD	#33 320-29632-A-1-C MSD	
#34 320-29632-A-2-A	#34 320-29632-A-2-A	
#35 CCV L5	#35 CCV L5	#35 CCV L5

QC Batch: 4	LC 537 CS ICAL Raw Batch: 174992	LC 537 ICAL Raw Batch: 174993
#35 CCV L5	#35 CCV L5	#35 CCV L5
#36 RB	#36 RB	
#37 320-29632-A-3-A	#37 320-29632-A-3-A	
#38 320-28916-B-5-A		#38 320-28916-B-5-A

QC Batch: 4	LC 537 CS ICAL Raw Batch: 174992	LC 537 ICAL Raw Batch: 174993
#39 CCV L3 #40 RB	#39 CCV L3 #40 RB	#39 CCV L3

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173435

Analyst: Branscum, Cassie

Batch Open: 7/11/2017 9:35:00AM

Method Code: 320-537_Prep-320

Batch End: 7/18/2017 5:45:00PM

Extraction of Perfluorinated Alkyl Acids

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	Adj1	Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1 MB-320-173435/1 N/A	N/A		250 mL	7			N/A	N/A	N/A	ch nd	
			1.00 mL								
2 LCS-320-173435/2 N/A	N/A		250 mL	7			N/A	N/A	N/A	ch nd	
			1.00 mL								
3 LCSD-320-173435/3 N/A	N/A		250 mL	7			N/A	N/A	N/A	ch nd	
			1.00 mL								
320-29627-A-1 (537_DuPont)	N/A (320-29627-1)	287.17 g	259 mL	7			7/10/17	8_Days	4	ch nd	
		28.19 g	1.00 mL								
320-29627-A-2 (537_DuPont)	N/A (320-29627-1)	277.89 g	250.4 mL	7			7/10/17	8_Days	4	ch nd	
		27.52 g	1.00 mL								
320-29627-A-2-MS (537_DuPont)	N/A (320-29627-1)	296.28 g	267.3 mL	7			7/10/17	8_Days	4	ch nd	
		29.00 g	1.00 mL								
320-29627-A-2-MSD (537_DuPont)	N/A (320-29627-1)	290.11 g	262.8 mL	7			7/10/17	8_Days	4	ch nd	
		27.35 g	1.00 mL								
320-29627-A-3 (537_DuPont)	N/A (320-29627-1)	279.41 g	251.9 mL	7			7/10/17	8_Days	4	ch nd	
		27.50 g	1.00 mL								
320-29627-A-4 (537_DuPont)	N/A (320-29627-1)	285.70 g	256 mL	7			7/10/17	8_Days	4	ch nd	
		29.68 g	1.00 mL								
320-29627-A-5 (537_DuPont)	N/A (320-29627-1)	280.03 g	252.4 mL	7			7/10/17	8_Days	4	ch nd	
		27.66 g	1.00 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

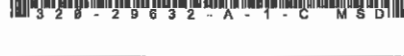
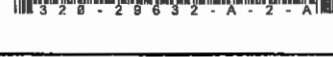
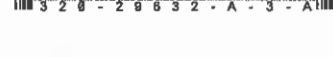
Batch Number: 320-173435

Analyst: Branscum, Cassie

Batch Open: 7/11/2017 9:35:00AM

Method Code: 320-537_Prep-320

Batch End: 7/18/2017 5:45:00PM

11	320-29627-A-6 (537_DuPont)	N/A (320-29627-1)	288.57 g 28.48 g	260.1 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
12	320-29631-A-1 (537_DuPont)	N/A (320-29631-1)	288.40 g 28.77 g	259.6 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
13	320-29631-A-2 (537_DuPont)	N/A (320-29631-1)	276.10 g 28.47 g	247.6 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
14	320-29631-A-2-MS (537_DuPont)	N/A (320-29631-1)	286.30 g 28.75 g	257.6 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
15	320-29631-A-2-MSD (537_DuPont)	N/A (320-29631-1)	285.56 g 27.88 g	257.7 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
	320-29631-A-3 (537_DuPont)	N/A (320-29631-1)	286.53 g 27.98 g	258.6 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
	320-29632-A-1 (537_DuPont)	N/A (320-29632-1)	284.77 g 28.46 g	256.3 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
18	320-29632-A-1-MS (537_DuPont)	N/A (320-29632-1)	291.96 g 28.35 g	263.6 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
19	320-29632-A-1-MSD (537_DuPont)	N/A (320-29632-1)	287.53 g 28.14 g	259.4 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
20	320-29632-A-2 (537_DuPont)	N/A (320-29632-1)	288.46 g 28.12 g	260.3 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	
21	320-29632-A-3 (537_DuPont)	N/A (320-29632-1)	290.31 g 28.01 g	262.3 mL 1.00 mL	7		7/10/17	8_Days	4	ch nd	

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Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173435

Analyst: Branscum, Cassie

Batch Open: 7/11/2017 9:35:00AM

Method Code: 320-537_Prep-320

Batch End: 7/18/2017 5:45:00PM

Batch Notes

Manifold ID 1,3

Trizma ID SLBR4303V

SPE Cartridge ID 6357081-01

Methanol ID 973172

Reagent Water ID 7-10-17

Pipette ID M16387D

Analyst ID - TA Reagent Drop CCB

Analyst ID - TA Reagent Drop NSH
Witness

Analyst ID - SU Reagent Drop CCB

Analyst ID - SU Reagent Drop NSH
Witness

Analyst ID - IS Reagent Drop JER

Analyst ID - IS Reagent Drop TN
Witness

Batch Comment IS:975029

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173435

Analyst: Branscum, Cassie

Batch Open: 7/11/2017 9:35:00AM

Method Code: 320-537_Prep-320

Batch End: 7/18/2017 5:45:00PM

Comments

Login Comments for Job 29627: Late 537 7/17/17

320-29627-A-1

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29627-A-2

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29627-A-2~MS

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29627-A-2~MSD

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29627-A-3

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29627-A-4

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29627-A-5

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29627-A-6

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

Login Comments for Job 29631: Late 537 7/17/17

320-29631-A-1

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29631-A-2

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29631-A-2~MS

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29631-A-2~MSD

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29631-A-3

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

Login Comments for Job 29632: Late 537 7/17/17

320-29632-A-1

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29632-A-1~MS

Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

320-29632-A-1~MSD

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173435

Analyst: Branscum, Cassie

Batch Open: 7/11/2017 9:35:00AM

Method Code: 320-537_Prep-320

Batch End: 7/18/2017 5:45:00PM

320-29632-A-2	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
320-29632-A-3	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB
	Method Comments: DuPont QAS_LCSD req if No MS/MSD per JOB

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173435

Analyst: Branscum, Cassie

Batch Open: 7/11/2017 9:35:00AM

Method Code: 320-537_Prep-320

Batch End: 7/18/2017 5:45:00PM

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-173435/1	LC537-IS_00044	100 uL	1.00 mL	CCB 7-11-17	NSH 7/11/17
MB 320-173435/1	LC537-SU_00045	100 uL	1.00 mL		
LCS 320-173435/2	LC537-IS_00044	100 uL	1.00 mL		
LCS 320-173435/2	LC537-MSP_00021	100 uL	1.00 mL		
LCS 320-173435/2	LC537-SU_00045	100 uL	1.00 mL		
LCSD 320-173435/3	LC537-IS_00044	100 uL	1.00 mL		
LCSD 320-173435/3	LC537-MSP_00021	100 uL	1.00 mL		
LCSD 320-173435/3	LC537-SU_00045	100 uL	1.00 mL		
320-29627-A-1	LC537-IS_00044	100 uL	1.00 mL		
320-29627-A-1	LC537-SU_00045	100 uL	1.00 mL		
320-29627-A-2	LC537-IS_00044	100 uL	1.00 mL		
320-29627-A-2	LC537-SU_00045	100 uL	1.00 mL		
320-29627-A-2 MS	LC537-IS_00044	100 uL	1.00 mL		
320-29627-A-2 MS	LC537-MSP_00021	100 uL	1.00 mL		
320-29627-A-2 MS	LC537-SU_00045	100 uL	1.00 mL		
320-29627-A-2 MSD	LC537-IS_00044	100 uL	1.00 mL		
320-29627-A-2 MSD	LC537-MSP_00021	100 uL	1.00 mL		
320-29627-A-2 MSD	LC537-SU_00045	100 uL	1.00 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173435

Analyst: Branscum, Cassie

Batch Open: 7/11/2017 9:35:00AM

Method Code: 320-537_Prep-320

Batch End: 7/18/2017 5:45:00PM

320-29627-A-3	LC537-IS_00044	100 uL	1.00 mL	cel 7-11-17	NSH 7/11/17
320-29627-A-3	LC537-SU_00045	100 uL	1.00 mL		
320-29627-A-4	LC537-IS_00044	100 uL	1.00 mL		
320-29627-A-4	LC537-SU_00045	100 uL	1.00 mL		
320-29627-A-5	LC537-IS_00044	100 uL	1.00 mL		
320-29627-A-5	LC537-SU_00045	100 uL	1.00 mL		
320-29627-A-6	LC537-IS_00044	100 uL	1.00 mL		
320-29627-A-6	LC537-SU_00045	100 uL	1.00 mL		
320-29631-A-1	LC537-IS_00044	100 uL	1.00 mL		
320-29631-A-1	LC537-SU_00045	100 uL	1.00 mL		
320-29631-A-2	LC537-IS_00044	100 uL	1.00 mL		
320-29631-A-2	LC537-SU_00045	100 uL	1.00 mL		
320-29631-A-2 MS	LC537-IS_00044	100 uL	1.00 mL		
320-29631-A-2 MS	LC537-SU_00045	100 uL	1.00 mL		
320-29631-A-2 MSD	LC537-IS_00044	100 uL	1.00 mL		
320-29631-A-2 MSD	LC537-SU_00045	100 uL	1.00 mL		
320-29631-A-3	LC537-IS_00044	100 uL	1.00 mL		
320-29631-A-3	LC537-SU_00045	100 uL	1.00 mL		
320-29632-A-1	LC537-IS_00044	100 uL	1.00 mL		
320-29632-A-1	LC537-SU_00045	100 uL	1.00 mL		
320-29632-A-1 MS	LC537-IS_00044	100 uL	1.00 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173435

Analyst: Branscum, Cassie

Batch Open: 7/11/2017 9:35:00AM

Method Code: 320-537_Prep-320

Batch End: 7/18/2017 5:45:00PM

320-29632-A-1 MS	LC537-MSP_00021	100 uL	1.00 mL	CeB 7-11-17	NSH 7/11/17
320-29632-A-1 MS	LC537-SU_00045	100 uL	1.00 mL		
320-29632-A-1 MSD	LC537-IS_00044	100 uL	1.00 mL		
320-29632-A-1 MSD	LC537-MSP_00021	100 uL	1.00 mL		
320-29632-A-1 MSD	LC537-SU_00045	100 uL	1.00 mL		
320-29632-A-2	LC537-IS_00044	100 uL	1.00 mL		
320-29632-A-2	LC537-SU_00045	100 uL	1.00 mL		
320-29632-A-3	LC537-IS_00044	100 uL	1.00 mL		
320-29632-A-3	LC537-SU_00045	100 uL	1.00 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

Preparation Batch Number(s): 320-173435 Test: 537-DuPont

Earliest Holding Time: 7-12-17

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	/	/
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: CCB

Date: 7-19-17

2nd Level Reviewer: VPM

Date: 7/19/17

Comments: _____

Job No: 28916 Instrument ID & Date: 7-7-17 A8
 Extraction Batch: 17219 Worklist #: 44 45159 ICA Batch: 172646
 TALS Batch: 172925
 JRB 7-7-17

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 $\pm 50\%$ of true value Mid and High-range within $\pm 30\%$ of true value	✓			✓
4. Internal Standard areas in control? Areas $\geq 50\%$ 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? NCM	✓			✓
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? $\pm 50\%$ 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 7-7-17

2nd Level Reviewer / Date: mcw 7/10/2017

NCM # and Comments: 93087, 93090, 93094

A8

Instrument ID & Date: 7-5-17 Worklist#: 45099

ICAL Batch: 172646, 172647 Calibration ID number: 32198, 32199

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 Quadratic (6 points minimum)				
4. Meets fit criteria? Intercept ≤ ½ 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 7-6-17 2nd Level Reviewer / Date: CBW 7/6/17

NCM # and Comments: _____

TestAmerica Laboratories

Worklist QC Batch Report

Worklist Name: 06JUL2017_537A

Worklist Number: 45159

Instrument Name: A8_N

Chrom Method: 537_A8_N

Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20170707-45159.b

QC Batching: Enabled

Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 172919	LC 537 CS ICAL Raw Batch: 172920
# 1 RB	# 1 RB	
# 2 RB	# 2 RB	
# 3 RB	# 3 RB	
# 4 CCV L2	# 4 CCV L2	# 4 CCV L2
# 5 CCV L5	# 5 CCV L5	# 5 CCV L5
# 6 RB	# 6 RB	# 6 RB
# 7 590-6390-A-1-A	# 7 590-6390-A-1-A	
# 8 320-29284-A-1-A		# 8 320-29284-A-1-A
# 9 320-29284-A-1-B MS		# 9 320-29284-A-1-B MS
#10 320-29284-A-1-C MSD		#10 320-29284-A-1-C MSD
#11 320-29284-A-2-A		#11 320-29284-A-2-A
#12 320-29284-A-4-A		#12 320-29284-A-4-A
#13 320-29284-A-6-A		#13 320-29284-A-6-A
#14 CCV L3	#14 CCV L3	#14 CCV L3

QC Batch: 2	LC 537 CS ICAL Raw Batch: 172921	LC 537 ICAL Raw Batch: 172922
#14 CCV L3	#14 CCV L3	#14 CCV L3
#15 RB	#15 RB	
#16 320-29252-A-1-B	#16 320-29252-A-1-B	
#17 320-29253-A-1-D	#17 320-29253-A-1-D	
#18 320-29253-A-1-E LMS	#18 320-29253-A-1-E LMS	
#19 320-29253-A-1-F LMSD	#19 320-29253-A-1-F LMSD	
#20 320-29253-A-2-B	#20 320-29253-A-2-B	
#21 CCV L5	#21 CCV L5	#21 CCV L5

QC Batch: 3	LC 537 CS ICAL Raw Batch: 172923	LC 537 ICAL Raw Batch: 172925
#21 CCV L5	#21 CCV L5	#21 CCV L5
#22 RB		#22 RB
#23 MB 320-172119/1-A		#23 MB 320-172119/1-A
#24 LLCS 320-172119/2-A		#24 LLCS 320-172119/2-A
#25 LLCSD 320-172119/3-A		#25 LLCSD 320-172119/3-A
#26 320-28916-B-4-A		#26 320-28916-B-4-A
#27 320-28916-B-5-A		#27 320-28916-B-5-A
#28 320-28916-B-7-A		#28 320-28916-B-7-A
#29 320-28916-B-11-A		#29 320-28916-B-11-A
#30 320-28916-B-14-A		#30 320-28916-B-14-A
#31 CCV L3		#31 CCV L3
#32 RB		#32 RB

38

RX

Aqueous Extraction Analysis Sheet

A8 716117

(To Accompany Samples to Instruments)

Batch Number: 320-172119

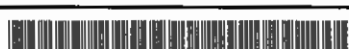
Analyst: Branscum, Cassie

Batch Open: 7/3/2017 9:49:00AM

Method Code: 320-537_Prep-320

Batch End: 7/5/2017 10:25:00PM

Extraction of Perfluorinated Alkyl Acids

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	Rcvd	PHs Adj1	Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1	MB-320-172119/1 N/A	N/A		250 mL	7			N/A	N/A	N/A	ch nd	
				1.00 mL								
2	LLCS-320-172119/2 N/A	N/A		250 mL	7			N/A	N/A	N/A	ch nd	
				1.00 mL								
3	LLCSD-320-172119/3 N/A	N/A		250 mL	7			N/A	N/A	N/A	ch nd	
				1.00 mL								
4	320-28916-B-4 (537_DOD5)	N/A (320-28916-1)	286.38 g	258.9 mL	7			6/14/17	16_Days	4	ch nd	
			27.44 g	1.00 mL								
5	320-28916-B-5 (537_DOD5)	N/A (320-28916-1)	285.18 g	256.7 mL	7			6/14/17	16_Days	4	ch nd	
			28.52 g	1.00 mL								
6	320-28916-B-7 (537_DOD5)	N/A (320-28916-1)	272.54 g	244.8 mL	7			6/14/17	16_Days	4	ch nd	
			27.76 g	1.00 mL								
7	320-28916-B-11 (537_DOD5)	N/A (320-28916-1)	284.30 g	256.8 mL	7			6/14/17	16_Days	4	ch nd	
			27.51 g	1.00 mL								
8	320-28916-B-14 (537_DOD5)	N/A (320-28916-1)	289.42 g	262.2 mL	7			6/14/17	16_Days	4	ch nd	
			27.25 g	1.00 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172119

Analyst: Branscum, Cassie

Batch Open: 7/3/2017 9:49:00AM

Method Code: 320-537_Prep-320

Batch End: 7/5/2017 10:25:00PM

Batch Notes

Manifold ID 3

Trizma ID SLBR4303V

SPE Cartridge ID 6357081-01

Methanol ID 973181

Reagent Water ID 6-27-17

Pipette ID MD05306

Analyst ID - TA Reagent Drop CCB

Analyst ID - TA Reagent Drop NSH

Witness

Analyst ID - SU Reagent Drop CCB

Analyst ID - SU Reagent Drop NSH

Witness

Analyst ID - IS Reagent Drop VPM

Analyst ID - IS Reagent Drop JER

Witness

Batch Comment IS:960784

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172119

Analyst: Branscum, Cassie

Batch Open: 7/3/2017 9:49:00AM

Method Code: 320-537_Prep-320

Batch End: 7/5/2017 10:25:00PM

Comments

320-28916-B-4

Rework Comments: Low surrogate recoveries.

320-28916-B-5

Rework Comments: Low surrogate recoveries.

320-28916-B-7

Rework Comments: Low surrogate recoveries.

320-28916-B-11

Rework Comments: Low surrogate recoveries.

320-28916-B-14

Rework Comments: Low surrogate recoveries.

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172119

Analyst: Branscum, Cassie

Batch Open: 7/3/2017 9:49:00AM

Method Code: 320-537_Prep-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-172119/1	LC537-SU_00044	100 uL	1.00 mL	del 7-3-17	NSH 7-3-17
LLCS 320-172119/2	LC537-LSP_00020	100 uL	1.00 mL		
LLCS 320-172119/2	LC537-SU_00044	100 uL	1.00 mL		
LLCSD 320-172119/3	LC537-LSP_00020	100 uL	1.00 mL		
LLCSD 320-172119/3	LC537-SU_00044	100 uL	1.00 mL		
320-28916-B-4	LC537-SU_00044	100 uL	1.00 mL		
320-28916-B-5	LC537-SU_00044	100 uL	1.00 mL		
320-28916-B-7	LC537-SU_00044	100 uL	1.00 mL		
320-28916-B-11	LC537-SU_00044	100 uL	1.00 mL		
320-28916-B-14	LC537-SU_00044	100 uL	1.00 mL		

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Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172119

Analyst: Branscum, Cassie

Batch Open: 7/3/2017 9:49:00AM

Method Code: 320-537_Prep-320

Batch End:

Other Reagents:

Reagent

Amount/Units

Lot#:

Preparation Batch Number(s): 172119 Test: 532.0005
Earliest Holding Time: 6-21-17

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: VRM Date: 7/5/17
2nd Level Reviewer: [Signature] Date: 7/05/17
Comments: _____

Shipping and Receiving Documents

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☒ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact		Project Manager: Andy Frebowitz		Site Contact: Mary Kay Bond		Date: 6/7/2017		COC No:	
TetraTech		Tel/Fax: 610-382-1170		Lab Contact: Dave Alltucker		Carrier: FedEx		1 of 2 COCs	
234 Mall Boulevard Suite 260		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS/MSD (Y/N) EPA 537 UCMR3				Samplers: Andy Frebowitz, Mary Kay Bond	
King of Prussia, PA 19406		☒ CALENDAR DAYS ☐ WORKING DAYS						For Lab Use Only:	
(610) 382-1174 Phone		TAT if different from Below 21 days						Walk-in Client:	
(610) 491-9645 FAX		☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day						Lab Sampling:	
Project Name: Warminster								Job / SDG No.:	
Site: Warminster									
P O # 1132358 (through EarthToxics)									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.			Sample Specific Notes:
NAWC-060717-RW-206A		6/7/17	0810	G	DW	2	N	Y	
NAWC-060717-FRB-206A		6/7/17	0805	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-79		6/7/17	0910	G	DW	2	N	Y	
NAWC-060717-FRB-79		6/7/17	0905	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-258A		6/7/17	0955	G	DW	2	N	Y	
NAWC-060717-FRB-258A		6/7/17	0950	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-145		6/7/17	1305	G	DW	2	N	Y	
NAWC-060717-FRB-145		6/7/17	1300	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-162		6/7/17	1350	G	DW	2	N	Y	
NAWC-060717-FRB-162		6/7/17	1345	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-206B		6/7/17	0810	G	DW	2	N	Y	
NAWC-060717-RW-258B		6/7/17	0955	G	DW	2	N	Y	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other Trizma							6		
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.							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months		
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown									
Special Instructions/QC Requirements & Comments: FedEx Air Bill # 6109-5153-0428 6612 1992 5905									
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: 1.3 Corr'd: -		Therm ID No.: AP-1			
Relinquished by: MK Bond		Company: TetraTech		Date/Time: 6/7/17 17:00		Received by: [Signature]		Company: J. Aug	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	

880 Riverside Parkway

Chain of Custody Record

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

[illegible]

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Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 320-28916-1

Login Number: 28916

List Source: TestAmerica Sacramento

List Number: 1

Creator: Turpen, Troy

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

"NAWC-060717-RW-206A","537","RES","320-28916-1","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","13","ng/L","J","6.6","DL","","TRG","","","39","LOQ","YES","-99","","257.5","1.0","16",""
"NAWC-060717-RW-206A","537","RES","320-28916-1","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","12","ng/L","J","2.7","DL","","TRG","","","19","LOQ","YES","-99","","257.5","1.0","7.8",""
"NAWC-060717-RW-206A","537","RES","320-28916-1","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","12","ng/L","U","5.3","DL","","TRG","","","29","LOQ","YES","-99","","257.5","1.0","12",""
"NAWC-060717-RW-206A","537","RES","320-28916-1","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","35","ng/L","U M","16","DL","","TRG","","","87","LOQ","YES","-99","","257.5","1.0","35",""
"NAWC-060717-RW-206A","537","RES","320-28916-1","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","3.2","ng/L","J","1.8","DL","","TRG","","","9.7","LOQ","YES","-99","","257.5","1.0","3.9",""
"NAWC-060717-RW-206A","537","RES","320-28916-1","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","19","ng/L","U","7.8","DL","","TRG","","","23","LOQ","YES","-99","","257.5","1.0","19",""
"NAWC-060717-RW-206A","537","RES","320-28916-1","TALSAC","STL00993","13C2 PFHxA","28","ng/L","","-99","DL","","SURRE","73","","-99","LOQ","YES","38.8","","257.5","1.0","0",""
"NAWC-060717-RW-206A","537","RES","320-28916-1","TALSAC","STL00996","13C2 PFDA","30","ng/L","","-99","DL","","SURRE","76","","-99","LOQ","YES","38.8","","257.5","1.0","0",""
"NAWC-060717-FRB-162","537","RES","320-28916-10","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","15","ng/L","U","6.5","DL","","TRG","","","38","LOQ","YES","-99","","261.7","1.0","15",""
"NAWC-060717-FRB-162","537","RES","320-28916-10","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","7.6","ng/L","U","2.7","DL","","TRG","","","19","LOQ","YES","-99","","261.7","1.0","7.6",""
"NAWC-060717-FRB-162","537","RES","320-28916-10","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","11","ng/L","U","5.3","DL","","TRG","","","29","LOQ","YES","-99","","261.7","1.0","11",""
"NAWC-060717-FRB-162","537","RES","320-28916-10","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","34","ng/L","U","15","DL","","TRG","","","86","LOQ","YES","-99","","261.7","1.0","34",""
"NAWC-060717-FRB-162","537","RES","320-28916-10","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","3.8","ng/L","U","1.8","DL","","TRG","","","9.6","LOQ","YES","-99","","261.7","1.0","3.8",""
"NAWC-060717-FRB-162","537","RES","320-28916-10","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","19","ng/L","U","7.6","DL","","TRG","","","23","LOQ","YES","-99","","261.7","1.0","19",""
"NAWC-060717-FRB-162","537","RES","320-28916-10","TALSAC","STL00993","13C2 PFHxA","32","ng/L","","-99","DL","","SURRE","84","","-99","LOQ","YES","38.2","","261.7","1.0","0",""
"NAWC-060717-FRB-162","537","RES","320-28916-10","TALSAC","STL00996","13C2 PFDA","35","ng/L","","-99","DL","","SURRE","92","","-99","LOQ","YES","38.2","","261.7","1.0","0",""
"NAWC-060717-RW-206B","537","RE","320-28916-11","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","16","ng/L","U H","6.6","DL","","TRG","","","39","LOQ","NO","-99","","256.8","1.00","16",""
"NAWC-060717-RW-206B","537","RE","320-28916-11","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","7.8","ng/L","U H","2.7","DL","","TRG","","","19","LOQ","NO","-99","","256.8","1.00","7.8",""
"NAWC-060717-RW-206B","537","RE","320-28916-11","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","12","ng/L","U H","5.4","DL","","TRG","","","29","LOQ","NO","-99","","256.8","1.00","12",""
"NAWC-060717-RW-206B","537","RE","320-28916-11","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","35","ng/L","U H","16","DL","","TRG","","","88","LOQ","NO","-99","","256.8","1.00","35",""
"NAWC-060717-RW-206B","537","RE","320-28916-11","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","3.9","ng/L","U H","1.8","DL","","TRG","","","9.7","LOQ","NO","-99","","256.8","1.00","3.9",""
"NAWC-060717-RW-206B","537","RE","320-28916-11","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","19","ng/L","U H","7.8","DL","","TRG","","","23","LOQ","NO","-99","","256.8","1.00","19",""
"NAWC-060717-RW-206B","537","RE","320-28916-11","TALSAC","STL00993","13C2 PFHxA","36","ng/L","","-99","DL","","SURRE","92","","-99","LOQ","YES","38.9","","256.8","1.00","0",""
"NAWC-060717-RW-206B","537","RE","320-28916-11","TALSAC","STL00996","13C2 PFDA","36","ng/L","","-99","DL","","SURRE","92","","-99","LOQ","YES","38.9","","256.8","1.00","0",""
"NAWC-060717-RW-206B","537","RES","320-28916-11","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","15","ng/L","U","6.5","DL","","TRG","","","38","LOQ","YES","-99","","259.8","1.0","15",""
"NAWC-060717-RW-206B","537","RES","320-28916-11","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","7.7","ng/L","U","2.7","DL","","TRG","","","19","LOQ","YES","-99","","259.8","1.0","7.7",""
"NAWC-060717-RW-206B","537","RES","320-28916-11","TALSAC","355-46-4","Perfluorohexanesulfonic acid

(PFHxS)","12","ng/L","U","5.3","DL","","TRG","","","29","LOQ","YES",-99","","259.8","1.0","12",""
"NAWC-060717-RW-206B","537","RES","320-28916-11","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","35","ng/L","U","15","DL","","TRG","","","87","LOQ","YES",-99","","259.8","1.0","35",""
"NAWC-060717-RW-206B","537","RES","320-28916-11","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.8","ng/L","U","1.8","DL","","TRG","","","9.6","LOQ","YES",-99","","259.8","1.0","3.8",""
"NAWC-060717-RW-206B","537","RES","320-28916-11","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.7","DL","","TRG","","","23","LOQ","YES",-99","","259.8","1.0","19",""
"NAWC-060717-RW-206B","537","RES","320-28916-11","TALSAC","STL00993","13C2
PFHxA","35","ng/L","","-99","DL","","SURR","92","","-99","LOQ","YES","38.5","","259.8","1.0","0",""
"NAWC-060717-RW-206B","537","RES","320-28916-11","TALSAC","STL00996","13C2
PFDA","25","ng/L","Q",-99","DL","","SURR","66","","-99","LOQ","YES","38.5","","259.8","1.0","0",""
"NAWC-060717-RW-258B","537","RES","320-28916-12","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","15","ng/L","U","6.5","DL","","TRG","","","38","LOQ","YES",-99","","261.8","1.0","15",""
"NAWC-060717-RW-258B","537","RES","320-28916-12","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","7.6","ng/L","U","2.7","DL","","TRG","","","19","LOQ","YES",-99","","261.8","1.0","7.6",""
"NAWC-060717-RW-258B","537","RES","320-28916-12","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","11","ng/L","U","5.3","DL","","TRG","","","29","LOQ","YES",-99","","261.8","1.0","11",""
"NAWC-060717-RW-258B","537","RES","320-28916-12","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","34","ng/L","U","15","DL","","TRG","","","86","LOQ","YES",-99","","261.8","1.0","34",""
"NAWC-060717-RW-258B","537","RES","320-28916-12","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.8","ng/L","U","1.8","DL","","TRG","","","9.5","LOQ","YES",-99","","261.8","1.0","3.8",""
"NAWC-060717-RW-258B","537","RES","320-28916-12","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.6","DL","","TRG","","","23","LOQ","YES",-99","","261.8","1.0","19",""
"NAWC-060717-RW-258B","537","RES","320-28916-12","TALSAC","STL00993","13C2
PFHxA","34","ng/L","","-99","DL","","SURR","89","","-99","LOQ","YES","38.2","","261.8","1.0","0",""
"NAWC-060717-RW-258B","537","RES","320-28916-12","TALSAC","STL00996","13C2
PFDA","35","ng/L","","-99","DL","","SURR","91","","-99","LOQ","YES","38.2","","261.8","1.0","0",""
"NAWC-060717-RW-56","537","RES","320-28916-13","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","21","ng/L","J","6.6","DL","","TRG","","","39","LOQ","YES",-99","","258","1.0","16",""
"NAWC-060717-RW-56","537","RES","320-28916-13","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","26","ng/L","","2.7","DL","","TRG","","","19","LOQ","YES",-99","","258","1.0","7.8",""
"NAWC-060717-RW-56","537","RES","320-28916-13","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","9.6","ng/L","J","5.3","DL","","TRG","","","29","LOQ","YES",-99","","258","1.0","12",""
"NAWC-060717-RW-56","537","RES","320-28916-13","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","35","ng/L","U M","16","DL","","TRG","","","87","LOQ","YES",-99","","258","1.0","35",""
"NAWC-060717-RW-56","537","RES","320-28916-13","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","9.8","ng/L","","1.8","DL","","TRG","","","9.7","LOQ","YES",-99","","258","1.0","3.9",""
"NAWC-060717-RW-56","537","RES","320-28916-13","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.8","DL","","TRG","","","23","LOQ","YES",-99","","258","1.0","19",""
"NAWC-060717-RW-56","537","RES","320-28916-13","TALSAC","STL00993","13C2
PFHxA","29","ng/L","","-99","DL","","SURR","75","","-99","LOQ","YES","38.8","","258","1.0","0",""
"NAWC-060717-RW-56","537","RES","320-28916-13","TALSAC","STL00996","13C2
PFDA","30","ng/L","","-99","DL","","SURR","78","","-99","LOQ","YES","38.8","","258","1.0","0",""
"NAWC-060717-FRB-56","537","RES","320-28916-14","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","15","ng/L","U","6.3","DL","","TRG","","","37","LOQ","YES",-99","","268.3","1.0","15",""
"NAWC-060717-FRB-56","537","RES","320-28916-14","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","7.5","ng/L","U","2.6","DL","","TRG","","","19","LOQ","YES",-99","","268.3","1.0","7.5",""
"NAWC-060717-FRB-56","537","RES","320-28916-14","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","11","ng/L","U","5.1","DL","","TRG","","","28","LOQ","YES",-99","","268.3","1.0","11",""
"NAWC-060717-FRB-56","537","RES","320-28916-14","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","34","ng/L","U","15","DL","","TRG","","","84","LOQ","YES",-99","","268.3","1.0","34",""
"NAWC-060717-FRB-56","537","RES","320-28916-14","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.7","ng/L","U","1.8","DL","","TRG","","","9.3","LOQ","YES",-99","","268.3","1.0","3.7",""
"NAWC-060717-FRB-56","537","RES","320-28916-14","TALSAC","375-95-1","Perfluorononanoic acid

(PFNA),"19","ng/L","U","7.5","DL","","","TRG","","","22","LOQ","YES","-99","","","268.3","1.0","19","","
"NAWC-060717-FRB-56","537","RES","320-28916-14","TALSAC","STL00993","13C2
PFHxA","32","ng/L","","","-99","DL","","","SURRE","85","","","-99","LOQ","YES","37.3","","","268.3","1.0","0","","
"NAWC-060717-FRB-56","537","RES","320-28916-14","TALSAC","STL00996","13C2
PFDA","26","ng/L","","","-99","DL","","","SURRE","70","","","-99","LOQ","YES","37.3","","","268.3","1.0","0","","
"NAWC-060717-DUP02","537","RES","320-28916-15","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","17","ng/L","J","6.3","DL","","","TRG","","","37","LOQ","YES","-99","","","269.9","1.0","15","","
"NAWC-060717-DUP02","537","RES","320-28916-15","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","20","ng/L","","","2.6","DL","","","TRG","","","19","LOQ","YES","-99","","","269.9","1.0","7.4","","
"NAWC-060717-DUP02","537","RES","320-28916-15","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","7.8","ng/L","J","5.1","DL","","","TRG","","","28","LOQ","YES","-99","","","269.9","1.0","11","","
"NAWC-060717-DUP02","537","RES","320-28916-15","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","33","ng/L","U M","15","DL","","","TRG","","","83","LOQ","YES","-99","","","269.9","1.0","33","","
"NAWC-060717-DUP02","537","RES","320-28916-15","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","6.2","ng/L","J","1.8","DL","","","TRG","","","9.3","LOQ","YES","-99","","","269.9","1.0","3.7","","
"NAWC-060717-DUP02","537","RES","320-28916-15","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.4","DL","","","TRG","","","22","LOQ","YES","-99","","","269.9","1.0","19","","
"NAWC-060717-DUP02","537","RES","320-28916-15","TALSAC","STL00993","13C2
PFHxA","30","ng/L","","","-99","DL","","","SURRE","80","","","-99","LOQ","YES","37.1","","","269.9","1.0","0","","
"NAWC-060717-DUP02","537","RES","320-28916-15","TALSAC","STL00996","13C2
PFDA","29","ng/L","","","-99","DL","","","SURRE","77","","","-99","LOQ","YES","37.1","","","269.9","1.0","0","","
"NAWC-060717-FRB-206A","537","RES","320-28916-2","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","15","ng/L","U","6.4","DL","","","TRG","","","38","LOQ","YES","-99","","","264.1","1.0","15","","
"NAWC-060717-FRB-206A","537","RES","320-28916-2","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","7.6","ng/L","U","2.7","DL","","","TRG","","","19","LOQ","YES","-99","","","264.1","1.0","7.6","","
"NAWC-060717-FRB-206A","537","RES","320-28916-2","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","11","ng/L","U","5.2","DL","","","TRG","","","28","LOQ","YES","-99","","","264.1","1.0","11","","
"NAWC-060717-FRB-206A","537","RES","320-28916-2","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","34","ng/L","U","15","DL","","","TRG","","","85","LOQ","YES","-99","","","264.1","1.0","34","","
"NAWC-060717-FRB-206A","537","RES","320-28916-2","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.8","ng/L","U","1.8","DL","","","TRG","","","9.5","LOQ","YES","-99","","","264.1","1.0","3.8","","
"NAWC-060717-FRB-206A","537","RES","320-28916-2","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.6","DL","","","TRG","","","23","LOQ","YES","-99","","","264.1","1.0","19","","
"NAWC-060717-FRB-206A","537","RES","320-28916-2","TALSAC","STL00993","13C2
PFHxA","31","ng/L","","","-99","DL","","","SURRE","83","","","-99","LOQ","YES","37.9","","","264.1","1.0","0","","
"NAWC-060717-FRB-206A","537","RES","320-28916-2","TALSAC","STL00996","13C2
PFDA","35","ng/L","","","-99","DL","","","SURRE","93","","","-99","LOQ","YES","37.9","","","264.1","1.0","0","","
"NAWC-060717-RW-79","537","RES","320-28916-3","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","14","ng/L","J","6.5","DL","","","TRG","","","38","LOQ","YES","-99","","","262.4","1.0","15","","
"NAWC-060717-RW-79","537","RES","320-28916-3","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","16","ng/L","J","2.7","DL","","","TRG","","","19","LOQ","YES","-99","","","262.4","1.0","7.6","","
"NAWC-060717-RW-79","537","RES","320-28916-3","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","11","ng/L","J","5.2","DL","","","TRG","","","29","LOQ","YES","-99","","","262.4","1.0","11","","
"NAWC-060717-RW-79","537","RES","320-28916-3","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","34","ng/L","U M","15","DL","","","TRG","","","86","LOQ","YES","-99","","","262.4","1.0","34","","
"NAWC-060717-RW-79","537","RES","320-28916-3","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","4.9","ng/L","J","1.8","DL","","","TRG","","","9.5","LOQ","YES","-99","","","262.4","1.0","3.8","","
"NAWC-060717-RW-79","537","RES","320-28916-3","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.6","DL","","","TRG","","","23","LOQ","YES","-99","","","262.4","1.0","19","","
"NAWC-060717-RW-79","537","RES","320-28916-3","TALSAC","STL00993","13C2
PFHxA","28","ng/L","","","-99","DL","","","SURRE","74","","","-99","LOQ","YES","38.1","","","262.4","1.0","0","","
"NAWC-060717-RW-79","537","RES","320-28916-3","TALSAC","STL00996","13C2
PFDA","30","ng/L","","","-99","DL","","","SURRE","79","","","-99","LOQ","YES","38.1","","","262.4","1.0","0","","
"NAWC-060717-FRB-79","537","RE","320-28916-4","TALSAC","1763-23-1","Perfluorooctanesulfonic acid

(PFOS),"15","ng/L","U H","6.6","DL","","TRG","","","39","LOQ","NO",-99","","258.9","1.00","15",""
"NAWC-060717-FRB-79","537","RE","320-28916-4","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA),"7.7","ng/L","U H","2.7","DL","","TRG","","","19","LOQ","NO",-99","","258.9","1.00","7.7",""
"NAWC-060717-FRB-79","537","RE","320-28916-4","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS),"12","ng/L","U H","5.3","DL","","TRG","","","29","LOQ","NO",-99","","258.9","1.00","12",""
"NAWC-060717-FRB-79","537","RE","320-28916-4","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS),"35","ng/L","U H","16","DL","","TRG","","","87","LOQ","NO",-99","","258.9","1.00","35",""
"NAWC-060717-FRB-79","537","RE","320-28916-4","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA),"3.9","ng/L","U H","1.8","DL","","TRG","","","9.7","LOQ","NO",-99","","258.9","1.00","3.9",""
"NAWC-060717-FRB-79","537","RE","320-28916-4","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA),"19","ng/L","U H","7.7","DL","","TRG","","","23","LOQ","NO",-99","","258.9","1.00","19",""
"NAWC-060717-FRB-79","537","RE","320-28916-4","TALSAC","STL00993","13C2
PFHxA","35","ng/L","","-99","DL","","SURR","90","","-99","LOQ","YES","38.6","","258.9","1.00","0",""
"NAWC-060717-FRB-79","537","RE","320-28916-4","TALSAC","STL00996","13C2
PFDA","36","ng/L","","-99","DL","","SURR","93","","-99","LOQ","YES","38.6","","258.9","1.00","0",""
"NAWC-060717-FRB-79","537","RES","320-28916-4","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS),"15","ng/L","U","6.3","DL","","TRG","","","37","LOQ","YES",-99","","270","1.0","15",""
"NAWC-060717-FRB-79","537","RES","320-28916-4","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA),"7.4","ng/L","U","2.6","DL","","TRG","","","19","LOQ","YES",-99","","270","1.0","7.4",""
"NAWC-060717-FRB-79","537","RES","320-28916-4","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS),"11","ng/L","U","5.1","DL","","TRG","","","28","LOQ","YES",-99","","270","1.0","11",""
"NAWC-060717-FRB-79","537","RES","320-28916-4","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS),"33","ng/L","U","15","DL","","TRG","","","83","LOQ","YES",-99","","270","1.0","33",""
"NAWC-060717-FRB-79","537","RES","320-28916-4","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA),"3.7","ng/L","U","1.8","DL","","TRG","","","9.3","LOQ","YES",-99","","270","1.0","3.7",""
"NAWC-060717-FRB-79","537","RES","320-28916-4","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA),"19","ng/L","U","7.4","DL","","TRG","","","22","LOQ","YES",-99","","270","1.0","19",""
"NAWC-060717-FRB-79","537","RES","320-28916-4","TALSAC","STL00993","13C2
PFHxA","6.1","ng/L","Q","-99","DL","","SURR","17","","-99","LOQ","YES","37.0","","270","1.0","0",""
"NAWC-060717-FRB-79","537","RES","320-28916-4","TALSAC","STL00996","13C2
PFDA","6.0","ng/L","Q","-99","DL","","SURR","16","","-99","LOQ","YES","37.0","","270","1.0","0",""
"NAWC-060717-RW-258A","537","RE","320-28916-5","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS),"17","ng/L","J H M","6.6","DL","","TRG","","","39","LOQ","NO",-99","","256.7","1.00","16",""
"NAWC-060717-RW-258A","537","RE","320-28916-5","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA),"24","ng/L","H M","2.7","DL","","TRG","","","19","LOQ","NO",-99","","256.7","1.00","7.8",""
"NAWC-060717-RW-258A","537","RE","320-28916-5","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS),"12","ng/L","U H","5.4","DL","","TRG","","","29","LOQ","NO",-99","","256.7","1.00","12",""
"NAWC-060717-RW-258A","537","RE","320-28916-5","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS),"35","ng/L","U H","16","DL","","TRG","","","88","LOQ","NO",-99","","256.7","1.00","35",""
"NAWC-060717-RW-258A","537","RE","320-28916-5","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA),"8.0","ng/L","J H","1.9","DL","","TRG","","","9.7","LOQ","NO",-99","","256.7","1.00","3.9",""
"NAWC-060717-RW-258A","537","RE","320-28916-5","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA),"12","ng/L","J H","7.8","DL","","TRG","","","23","LOQ","NO",-99","","256.7","1.00","19",""
"NAWC-060717-RW-258A","537","RE","320-28916-5","TALSAC","STL00993","13C2
PFHxA","33","ng/L","","-99","DL","","SURR","84","","-99","LOQ","YES","39.0","","256.7","1.00","0",""
"NAWC-060717-RW-258A","537","RE","320-28916-5","TALSAC","STL00996","13C2
PFDA","38","ng/L","","-99","DL","","SURR","97","","-99","LOQ","YES","39.0","","256.7","1.00","0",""
"NAWC-060717-RW-258A","537","RES","320-28916-5","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS),"7400","ng/L","E","6.4","DL","","TRG","","","38","LOQ","YES",-99","","264","1.0","15",""
"NAWC-060717-RW-258A","537","RES","320-28916-5","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA),"15000","ng/L","E","2.7","DL","","TRG","","","19","LOQ","YES",-99","","264","1.0","7.6",""
"NAWC-060717-RW-258A","537","RES","320-28916-5","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS),"730","ng/L","E","5.2","DL","","TRG","","","28","LOQ","YES",-99","","264","1.0","11",""
"NAWC-060717-RW-258A","537","RES","320-28916-5","TALSAC","375-73-5","Perfluorobutanesulfonic acid

(PFBS)","4000","ng/L","E","15","DL","","TRG","","","85","LOQ","YES","-99","","264","1.0","34",""
"NAWC-060717-RW-258A","537","RES","320-28916-5","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","5600","ng/L","E","1.8","DL","","TRG","","","9.5","LOQ","YES","-99","","264","1.0","3.8",""
"NAWC-060717-RW-258A","537","RES","320-28916-5","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","7100","ng/L","E","7.6","DL","","TRG","","","23","LOQ","YES","-99","","264","1.0","19",""
"NAWC-060717-RW-258A","537","RES","320-28916-5","TALSAC","STL00993","13C2
PFHxA","18000","ng/L","Q","-99","DL","","SURR","48236","","-99","LOQ","YES","37.9","","264","1.0","0",""
"NAWC-060717-RW-258A","537","RES","320-28916-5","TALSAC","STL00996","13C2
PFDA","18000","ng/L","Q","-99","DL","","SURR","46396","","-99","LOQ","YES","37.9","","264","1.0","0",""
"NAWC-060717-FRB-258A","537","RES","320-28916-6","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","16","ng/L","U","6.6","DL","","TRG","","","39","LOQ","YES","-99","","257.3","1.0","16",""
"NAWC-060717-FRB-258A","537","RES","320-28916-6","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","7.8","ng/L","U","2.7","DL","","TRG","","","19","LOQ","YES","-99","","257.3","1.0","7.8",""
"NAWC-060717-FRB-258A","537","RES","320-28916-6","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","12","ng/L","U","5.3","DL","","TRG","","","29","LOQ","YES","-99","","257.3","1.0","12",""
"NAWC-060717-FRB-258A","537","RES","320-28916-6","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","35","ng/L","U","16","DL","","TRG","","","87","LOQ","YES","-99","","257.3","1.0","35",""
"NAWC-060717-FRB-258A","537","RES","320-28916-6","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.9","ng/L","U","1.8","DL","","TRG","","","9.7","LOQ","YES","-99","","257.3","1.0","3.9",""
"NAWC-060717-FRB-258A","537","RES","320-28916-6","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.8","DL","","TRG","","","23","LOQ","YES","-99","","257.3","1.0","19",""
"NAWC-060717-FRB-258A","537","RES","320-28916-6","TALSAC","STL00993","13C2
PFHxA","32","ng/L","","-99","DL","","SURR","82","","-99","LOQ","YES","38.9","","257.3","1.0","0",""
"NAWC-060717-FRB-258A","537","RES","320-28916-6","TALSAC","STL00996","13C2
PFDA","35","ng/L","","-99","DL","","SURR","90","","-99","LOQ","YES","38.9","","257.3","1.0","0",""
"NAWC-060717-RW-145","537","RE","320-28916-7","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","18","ng/L","J H M","6.9","DL","","TRG","","","41","LOQ","NO","-99","","244.8","1.00","16",""
"NAWC-060717-RW-145","537","RE","320-28916-7","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","20","ng/L","H","2.9","DL","","TRG","","","20","LOQ","NO","-99","","244.8","1.00","8.2",""
"NAWC-060717-RW-145","537","RE","320-28916-7","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","8.4","ng/L","J H","5.6","DL","","TRG","","","31","LOQ","NO","-99","","244.8","1.00","12",""
"NAWC-060717-RW-145","537","RE","320-28916-7","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","37","ng/L","U H","16","DL","","TRG","","","92","LOQ","NO","-99","","244.8","1.00","37",""
"NAWC-060717-RW-145","537","RE","320-28916-7","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","6.1","ng/L","J H","1.9","DL","","TRG","","","10","LOQ","NO","-99","","244.8","1.00","4.1",""
"NAWC-060717-RW-145","537","RE","320-28916-7","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","20","ng/L","U H","8.2","DL","","TRG","","","25","LOQ","NO","-99","","244.8","1.00","20",""
"NAWC-060717-RW-145","537","RE","320-28916-7","TALSAC","STL00993","13C2
PFHxA","37","ng/L","","-99","DL","","SURR","91","","-99","LOQ","YES","40.8","","244.8","1.00","0",""
"NAWC-060717-RW-145","537","RE","320-28916-7","TALSAC","STL00996","13C2
PFDA","39","ng/L","","-99","DL","","SURR","95","","-99","LOQ","YES","40.8","","244.8","1.00","0",""
"NAWC-060717-RW-145","537","RES","320-28916-7","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","18","ng/L","J","6.6","DL","","TRG","","","39","LOQ","YES","-99","","258.2","1.0","15",""
"NAWC-060717-RW-145","537","RES","320-28916-7","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","20","ng/L","","2.7","DL","","TRG","","","19","LOQ","YES","-99","","258.2","1.0","7.7",""
"NAWC-060717-RW-145","537","RES","320-28916-7","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","8.1","ng/L","J","5.3","DL","","TRG","","","29","LOQ","YES","-99","","258.2","1.0","12",""
"NAWC-060717-RW-145","537","RES","320-28916-7","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","35","ng/L","U M","16","DL","","TRG","","","87","LOQ","YES","-99","","258.2","1.0","35",""
"NAWC-060717-RW-145","537","RES","320-28916-7","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","6.6","ng/L","J","1.8","DL","","TRG","","","9.7","LOQ","YES","-99","","258.2","1.0","3.9",""
"NAWC-060717-RW-145","537","RES","320-28916-7","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.7","DL","","TRG","","","23","LOQ","YES","-99","","258.2","1.0","19",""
"NAWC-060717-RW-145","537","RES","320-28916-7","TALSAC","STL00993","13C2

PFHxA","32","ng/L","",-99","DL","","SURRE","83","","-99","LOQ","YES","38.7","","258.2","1.0","0",""
"NAWC-060717-RW-145","537","RES","320-28916-7","TALSAC","STL00996","13C2
PFDA","26","ng/L","Q","-99","DL","","SURRE","68","","-99","LOQ","YES","38.7","","258.2","1.0","0",""
"NAWC-060717-FRB-145","537","RES","320-28916-8","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","15","ng/L","U","6.4","DL","","TRG","","","37","LOQ","YES","-99","","267.2","1.0","15",""
"NAWC-060717-FRB-145","537","RES","320-28916-8","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","7.5","ng/L","U","2.6","DL","","TRG","","","19","LOQ","YES","-99","","267.2","1.0","7.5",""
"NAWC-060717-FRB-145","537","RES","320-28916-8","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","11","ng/L","U","5.1","DL","","TRG","","","28","LOQ","YES","-99","","267.2","1.0","11",""
"NAWC-060717-FRB-145","537","RES","320-28916-8","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","34","ng/L","U","15","DL","","TRG","","","84","LOQ","YES","-99","","267.2","1.0","34",""
"NAWC-060717-FRB-145","537","RES","320-28916-8","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.7","ng/L","U","1.8","DL","","TRG","","","9.4","LOQ","YES","-99","","267.2","1.0","3.7",""
"NAWC-060717-FRB-145","537","RES","320-28916-8","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.5","DL","","TRG","","","22","LOQ","YES","-99","","267.2","1.0","19",""
"NAWC-060717-FRB-145","537","RES","320-28916-8","TALSAC","STL00993","13C2
PFHxA","34","ng/L","",-99","DL","","SURRE","91","","-99","LOQ","YES","37.4","","267.2","1.0","0",""
"NAWC-060717-FRB-145","537","RES","320-28916-8","TALSAC","STL00996","13C2
PFDA","29","ng/L","",-99","DL","","SURRE","77","","-99","LOQ","YES","37.4","","267.2","1.0","0",""
"NAWC-060717-RW-162","537","RES","320-28916-9","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","28","ng/L","J","6.6","DL","","TRG","","","39","LOQ","YES","-99","","257.1","1.0","16",""
"NAWC-060717-RW-162","537","RES","320-28916-9","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","15","ng/L","J","2.7","DL","","TRG","","","19","LOQ","YES","-99","","257.1","1.0","7.8",""
"NAWC-060717-RW-162","537","RES","320-28916-9","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","13","ng/L","J","5.3","DL","","TRG","","","29","LOQ","YES","-99","","257.1","1.0","12",""
"NAWC-060717-RW-162","537","RES","320-28916-9","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","35","ng/L","U M","16","DL","","TRG","","","88","LOQ","YES","-99","","257.1","1.0","35",""
"NAWC-060717-RW-162","537","RES","320-28916-9","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","4.7","ng/L","J","1.8","DL","","TRG","","","9.7","LOQ","YES","-99","","257.1","1.0","3.9",""
"NAWC-060717-RW-162","537","RES","320-28916-9","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19","ng/L","U","7.8","DL","","TRG","","","23","LOQ","YES","-99","","257.1","1.0","19",""
"NAWC-060717-RW-162","537","RES","320-28916-9","TALSAC","STL00993","13C2
PFHxA","32","ng/L","",-99","DL","","SURRE","81","","-99","LOQ","YES","38.9","","257.1","1.0","0",""
"NAWC-060717-RW-162","537","RES","320-28916-9","TALSAC","STL00996","13C2
PFDA","33","ng/L","",-99","DL","","SURRE","86","","-99","LOQ","YES","38.9","","257.1","1.0","0",""
"LCS 320-169764/2-A","537","RES","LCS 320-169764/2-A","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","157","ng/L","","6.8","DL","","SPK","98","","40","LOQ","YES","160","","250","1.0","16",""
"LCS 320-169764/2-A","537","RES","LCS 320-169764/2-A","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","82.3","ng/L","","2.8","DL","","SPK","103","","20","LOQ","YES","79.9","","250","1.0","8.0",""
"LCS 320-169764/2-A","537","RES","LCS 320-169764/2-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","122","ng/L","","5.5","DL","","SPK","102","","30","LOQ","YES","120","","250","1.0","12",""
"LCS 320-169764/2-A","537","RES","LCS 320-169764/2-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","383","ng/L","","16","DL","","SPK","108","","90","LOQ","YES","353","","250","1.0","36",""
"LCS 320-169764/2-A","537","RES","LCS 320-169764/2-A","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","45.4","ng/L","","1.9","DL","","SPK","115","","10","LOQ","YES","39.6","","250","1.0","4.0",""
"LCS 320-169764/2-A","537","RES","LCS 320-169764/2-A","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","66.1","ng/L","","8.0","DL","","SPK","86","","24","LOQ","YES","77.0","","250","1.0","20",""
"LCS 320-169764/2-A","537","RES","LCS 320-169764/2-A","TALSAC","STL00993","13C2
PFHxA","36.5","ng/L","",-99","DL","","SURRE","91","","-99","LOQ","YES","40.0","","250","1.0","0",""
"LCS 320-169764/2-A","537","RES","LCS 320-169764/2-A","TALSAC","STL00996","13C2
PFDA","32.2","ng/L","",-99","DL","","SURRE","81","","-99","LOQ","YES","40.0","","250","1.0","0",""
"LCSD 320-169764/3-A","537","RES","LCSD 320-169764/3-A","TALSAC","1763-23-1","Perfluorooctanesulfonic
acid (PFOS)","152","ng/L","","6.8","DL","","SPK","-99","","40","LOQ","YES","160","","250","1.0","16",""
"LCSD 320-169764/3-A","537","RES","LCSD 320-169764/3-A","TALSAC","335-67-1","Perfluorooctanoic acid

(PFOA),"79.6","ng/L","","2.8","DL","","SPK","-99","","20","LOQ","YES","79.9","","250","1.0","8.0",""
"LCSD 320-169764/3-A","537","RES","LCSD 320-169764/3-A","TALSAC","355-46-4","Perfluorohexanesulfonic
acid (PFHxS)","123","ng/L","","5.5","DL","","SPK","-99","","30","LOQ","YES","120","","250","1.0","12",""
"LCSD 320-169764/3-A","537","RES","LCSD 320-169764/3-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","393","ng/L","","16","DL","","SPK","-99","","90","LOQ","YES","353","","250","1.0","36",""
"LCSD 320-169764/3-A","537","RES","LCSD 320-169764/3-A","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","44.5","ng/L","","1.9","DL","","SPK","-99","","10","LOQ","YES","39.6","","250","1.0","4.0",""
"LCSD 320-169764/3-A","537","RES","LCSD 320-169764/3-A","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","61.8","ng/L","","8.0","DL","","SPK","-99","","24","LOQ","YES","77.0","","250","1.0","20",""
"LCSD 320-169764/3-A","537","RES","LCSD 320-169764/3-A","TALSAC","STL00993","13C2
PFHxA","37.0","ng/L","","-99","DL","","SURRE","-99","","-99","LOQ","YES","40.0","","250","1.0","0",""
"LCSD 320-169764/3-A","537","RES","LCSD 320-169764/3-A","TALSAC","STL00996","13C2
PFDA","27.3","ng/L","","-99","DL","","SURRE","-99","","-99","LOQ","YES","40.0","","250","1.0","0",""
"LCSD 320-169764/3-A","537","RE2","LCSD 320-169764/3-A","TALSAC","1763-23-1","Perfluorooctanesulfonic
acid (PFOS)","148","ng/L","","6.8","DL","","SPK","93","6","40","LOQ","YES","160","LCS 320-169764/2-
A","250","1.0","16",""
"LCSD 320-169764/3-A","537","RE2","LCSD 320-169764/3-A","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","75.0","ng/L","","2.8","DL","","SPK","94","9","20","LOQ","YES","79.9","LCS 320-169764/2-
A","250","1.0","8.0",""
"LCSD 320-169764/3-A","537","RE2","LCSD 320-169764/3-A","TALSAC","355-46-4","Perfluorohexanesulfonic
acid (PFHxS)","116","ng/L","","5.5","DL","","SPK","97","5","30","LOQ","YES","120","LCS 320-169764/2-
A","250","1.0","12",""
"LCSD 320-169764/3-A","537","RE2","LCSD 320-169764/3-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","365","ng/L","","16","DL","","SPK","103","5","90","LOQ","YES","353","LCS 320-169764/2-
A","250","1.0","36",""
"LCSD 320-169764/3-A","537","RE2","LCSD 320-169764/3-A","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","40.3","ng/L","","1.9","DL","","SPK","102","12","10","LOQ","YES","39.6","LCS 320-169764/2-
A","250","1.0","4.0",""
"LCSD 320-169764/3-A","537","RE2","LCSD 320-169764/3-A","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","71.6","ng/L","","8.0","DL","","SPK","93","8","24","LOQ","YES","77.0","LCS 320-169764/2-
A","250","1.0","20",""
"LCSD 320-169764/3-A","537","RE2","LCSD 320-169764/3-A","TALSAC","STL00993","13C2
PFHxA","32.9","ng/L","","-99","DL","","SURRE","82","","-99","LOQ","YES","40.0","LCS 320-169764/2-
A","250","1.0","0",""
"LCSD 320-169764/3-A","537","RE2","LCSD 320-169764/3-A","TALSAC","STL00996","13C2
PFDA","36.6","ng/L","","-99","DL","","SURRE","92","","-99","LOQ","YES","40.0","LCS 320-169764/2-
A","250","1.0","0",""
"LLCS 320-172119/2-A","537","RES","LLCS 320-172119/2-A","TALSAC","1763-23-1","Perfluorooctanesulfonic
acid (PFOS)","38.5","ng/L","J M","6.8","DL","","SPK","96","","40","LOQ","YES","40.0","","250","1.00","16",""
"LLCS 320-172119/2-A","537","RES","LLCS 320-172119/2-A","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","19.9","ng/L","J","2.8","DL","","SPK","99","","20","LOQ","YES","20.0","","250","1.00","8.0",""
"LLCS 320-172119/2-A","537","RES","LLCS 320-172119/2-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","29.3","ng/L","J","5.5","DL","","SPK","97","","30","LOQ","YES","30.1","","250","1.00","12",""
"LLCS 320-172119/2-A","537","RES","LLCS 320-172119/2-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","94.1","ng/L","","16","DL","","SPK","107","","90","LOQ","YES","88.3","","250","1.00","36",""
"LLCS 320-172119/2-A","537","RES","LLCS 320-172119/2-A","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","10.7","ng/L","","1.9","DL","","SPK","109","","10","LOQ","YES","9.90","","250","1.00","4.0",""
"LLCS 320-172119/2-A","537","RES","LLCS 320-172119/2-A","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","19.4","ng/L","J","8.0","DL","","SPK","101","","24","LOQ","YES","19.3","","250","1.00","20",""
"LLCS 320-172119/2-A","537","RES","LLCS 320-172119/2-A","TALSAC","STL00993","13C2
PFHxA","36.5","ng/L","","-99","DL","","SURRE","91","","-99","LOQ","YES","40.0","","250","1.00","0",""
"LLCS 320-172119/2-A","537","RES","LLCS 320-172119/2-A","TALSAC","STL00996","13C2
PFDA","37.8","ng/L","","-99","DL","","SURRE","94","","-99","LOQ","YES","40.0","","250","1.00","0",""
"LLCSD 320-172119/3-A","537","RES","LLCSD 320-172119/3-A","TALSAC","1763-23-1","Perfluorooctanesulfonic

acid (PFOS)","39.4","ng/L","J M","6.8","DL","","SPK","98","2","40","LOQ","YES","40.0","LLCS 320-172119/2-A","250","1.00","16",""

"LLCSD 320-172119/3-A","537","RES","LLCSD 320-172119/3-A","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","20.9","ng/L","","2.8","DL","","SPK","105","5","20","LOQ","YES","20.0","LLCS 320-172119/2-A","250","1.00","8.0",""

"LLCSD 320-172119/3-A","537","RES","LLCSD 320-172119/3-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","28.3","ng/L","J","5.5","DL","","SPK","94","3","30","LOQ","YES","30.1","LLCS 320-172119/2-A","250","1.00","12",""

"LLCSD 320-172119/3-A","537","RES","LLCSD 320-172119/3-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","94.2","ng/L","","16","DL","","SPK","107","0.07","90","LOQ","YES","88.3","LLCS 320-172119/2-A","250","1.00","36",""

"LLCSD 320-172119/3-A","537","RES","LLCSD 320-172119/3-A","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","11.1","ng/L","","1.9","DL","","SPK","112","3","10","LOQ","YES","9.90","LLCS 320-172119/2-A","250","1.00","4.0",""

"LLCSD 320-172119/3-A","537","RES","LLCSD 320-172119/3-A","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","19.4","ng/L","J","8.0","DL","","SPK","101","0","24","LOQ","YES","19.3","LLCS 320-172119/2-A","250","1.00","20",""

"LLCSD 320-172119/3-A","537","RES","LLCSD 320-172119/3-A","TALSAC","STL00993","13C2 PFHxA","38.8","ng/L","","-99","DL","","SURR","97","6","-99","LOQ","YES","40.0","LLCS 320-172119/2-A","250","1.00","0",""

"LLCSD 320-172119/3-A","537","RES","LLCSD 320-172119/3-A","TALSAC","STL00996","13C2 PFDA","38.7","ng/L","","-99","DL","","SURR","97","2","-99","LOQ","YES","40.0","LLCS 320-172119/2-A","250","1.00","0",""

"MB 320-169764/1-A","537","RES","MB 320-169764/1-A","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","16","ng/L","U","6.8","DL","","TRG","","","40","LOQ","YES","-99","","250","1.0","16",""

"MB 320-169764/1-A","537","RES","MB 320-169764/1-A","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","8.0","ng/L","U","2.8","DL","","TRG","","","20","LOQ","YES","-99","","250","1.0","8.0",""

"MB 320-169764/1-A","537","RES","MB 320-169764/1-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","12","ng/L","U","5.5","DL","","TRG","","","30","LOQ","YES","-99","","250","1.0","12",""

"MB 320-169764/1-A","537","RES","MB 320-169764/1-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","36","ng/L","U","16","DL","","TRG","","","90","LOQ","YES","-99","","250","1.0","36",""

"MB 320-169764/1-A","537","RES","MB 320-169764/1-A","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","4.0","ng/L","U","1.9","DL","","TRG","","","10","LOQ","YES","-99","","250","1.0","4.0",""

"MB 320-169764/1-A","537","RES","MB 320-169764/1-A","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","20","ng/L","U","8.0","DL","","TRG","","","24","LOQ","YES","-99","","250","1.0","20",""

"MB 320-169764/1-A","537","RES","MB 320-169764/1-A","TALSAC","STL00993","13C2 PFHxA","36.1","ng/L","","-99","DL","","SURR","90","","-99","LOQ","YES","40.0","","250","1.0","0",""

"MB 320-169764/1-A","537","RES","MB 320-169764/1-A","TALSAC","STL00996","13C2 PFDA","29.0","ng/L","","-99","DL","","SURR","72","","-99","LOQ","YES","40.0","","250","1.0","0",""

"MB 320-172119/1-A","537","RES","MB 320-172119/1-A","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","16","ng/L","U","6.8","DL","","TRG","","","40","LOQ","YES","-99","","250","1.00","16",""

"MB 320-172119/1-A","537","RES","MB 320-172119/1-A","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","8.0","ng/L","U","2.8","DL","","TRG","","","20","LOQ","YES","-99","","250","1.00","8.0",""

"MB 320-172119/1-A","537","RES","MB 320-172119/1-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","12","ng/L","U","5.5","DL","","TRG","","","30","LOQ","YES","-99","","250","1.00","12",""

"MB 320-172119/1-A","537","RES","MB 320-172119/1-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","36","ng/L","U","16","DL","","TRG","","","90","LOQ","YES","-99","","250","1.00","36",""

"MB 320-172119/1-A","537","RES","MB 320-172119/1-A","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","4.0","ng/L","U","1.9","DL","","TRG","","","10","LOQ","YES","-99","","250","1.00","4.0",""

"MB 320-172119/1-A","537","RES","MB 320-172119/1-A","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","20","ng/L","U","8.0","DL","","TRG","","","24","LOQ","YES","-99","","250","1.00","20",""

"MB 320-172119/1-A","537","RES","MB 320-172119/1-A","TALSAC","STL00993","13C2 PFHxA","36.9","ng/L","","-99","DL","","SURR","92","","-99","LOQ","YES","40.0","","250","1.00","0",""

"MB 320-172119/1-A","537","RES","MB 320-172119/1-A","TALSAC","STL00996","13C2

PFDA","36.3","ng/L","",-99","DL","","SURR","91","",-99","LOQ","YES","40.0","","250","1.00","0",""
"Unknown","Unknown","NAWC-060717-RW-206A","06/07/2017 08:10","AQ","320-28916-
1","NM","","1.30","537","METHOD","RES","06/19/2017 09:24","06/23/2017
22:53","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170757","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-FRB-162","06/07/2017 13:45","AQ","320-28916-
10","FB","","1.30","537","METHOD","RES","06/19/2017 09:24","06/28/2017
18:19","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
171487","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-206B","06/07/2017 08:10","AQ","320-28916-
11","NM","","1.30","537","METHOD","RES","06/19/2017 09:24","06/23/2017
23:50","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170758","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-206B","06/07/2017 08:10","AQ","320-28916-
11","NM","","1.30","537","METHOD","RE","07/03/2017 09:49","07/07/2017
01:29","TALSAC","COA","WET","NA","1","NA","NA","","100","320-172119","320-172119","NA","320-
172925","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-258B","06/07/2017 09:55","AQ","320-28916-
12","NM","","1.30","537","METHOD","RES","06/19/2017 09:24","06/28/2017
18:29","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
171487","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-56","06/07/2017 15:10","AQ","320-28916-
13","NM","","1.30","537","METHOD","RES","06/19/2017 09:24","06/23/2017
23:59","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170758","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-FRB-56","06/07/2017 15:05","AQ","320-28916-
14","FB","","1.30","537","METHOD","RES","06/19/2017 09:24","06/24/2017
00:04","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170758","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-DUP02","06/07/2017 07:00","AQ","320-28916-
15","FD","","1.30","537","METHOD","RES","06/19/2017 09:24","06/24/2017
00:09","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170758","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-FRB-206A","06/07/2017 08:05","AQ","320-28916-
2","FB","","1.30","537","METHOD","RES","06/19/2017 09:24","06/28/2017
17:32","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
171486","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-79","06/07/2017 09:10","AQ","320-28916-
3","NM","","1.30","537","METHOD","RES","06/19/2017 09:24","06/23/2017
23:02","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170757","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-FRB-79","06/07/2017 09:05","AQ","320-28916-
4","FB","","1.30","537","METHOD","RES","06/19/2017 09:24","06/23/2017
23:07","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170757","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-FRB-79","06/07/2017 09:05","AQ","320-28916-
4","FB","","1.30","537","METHOD","RE","07/03/2017 09:49","07/07/2017
01:15","TALSAC","COA","WET","NA","1","NA","NA","","100","320-172119","320-172119","NA","320-
172925","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-258A","06/07/2017 09:55","AQ","320-28916-
5","NM","","1.30","537","METHOD","RES","06/19/2017 09:24","06/23/2017
23:12","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170757","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-258A","06/07/2017 09:55","AQ","320-28916-

5","NM","","1.30","537","METHOD","RE","07/03/2017 09:49","07/07/2017
01:20","TALSAC","COA","WET","NA","1","NA","NA","","100","320-172119","320-172119","NA","320-
172925","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-FRB-258A","06/07/2017 09:50","AQ","320-28916-
6","FB","","1.30","537","METHOD","RES","06/19/2017 09:24","06/28/2017
17:51","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
171486","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-145","06/07/2017 13:05","AQ","320-28916-
7","NM","","1.30","537","METHOD","RES","06/19/2017 09:24","06/23/2017
23:21","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170757","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-145","06/07/2017 13:05","AQ","320-28916-
7","NM","","1.30","537","METHOD","RE","07/03/2017 09:49","07/07/2017
01:25","TALSAC","COA","WET","NA","1","NA","NA","","100","320-172119","320-172119","NA","320-
172925","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-FRB-145","06/07/2017 13:00","AQ","320-28916-
8","FB","","1.30","537","METHOD","RES","06/19/2017 09:24","06/23/2017
23:36","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170758","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","NAWC-060717-RW-162","06/07/2017 13:50","AQ","320-28916-
9","NM","","1.30","537","METHOD","RES","06/19/2017 09:24","06/23/2017
23:40","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170758","320-28916-1","06/08/2017 09:30","06/08/2017 16:50",""
"Unknown","Unknown","LCS 320-169764/2-A","","AQ","LCS 320-169764/2-
A","LCS","","-99","537","METHOD","RES","06/19/2017 09:24","06/23/2017
22:43","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170757","320-28916-1","06/19/2017 09:24","06/08/2017 16:50",""
"Unknown","Unknown","LCSD 320-169764/3-A","","AQ","LCSD 320-169764/3-
A","LCSD","","-99","537","METHOD","RES","06/19/2017 09:24","06/23/2017
22:48","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170757","320-28916-1","06/19/2017 09:24","06/08/2017 16:50",""
"Unknown","Unknown","LCSD 320-169764/3-A","","AQ","LCSD 320-169764/3-
A","LCSD","","-99","537","METHOD","RE2","06/19/2017 09:24","06/28/2017
17:22","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
171486","320-28916-1","06/19/2017 09:24","06/08/2017 16:50",""
"Unknown","Unknown","LLCS 320-172119/2-A","","AQ","LLCS 320-172119/2-
A","LCS","","-99","537","METHOD","RES","07/03/2017 09:49","07/07/2017
01:06","TALSAC","COA","WET","NA","1","NA","NA","","100","320-172119","320-172119","NA","320-
172925","320-28916-1","07/03/2017 09:49","06/08/2017 16:50",""
"Unknown","Unknown","LLCSD 320-172119/3-A","","AQ","LLCSD 320-172119/3-
A","LCSD","","-99","537","METHOD","RES","07/03/2017 09:49","07/07/2017
01:10","TALSAC","COA","WET","NA","1","NA","NA","","100","320-172119","320-172119","NA","320-
172925","320-28916-1","07/03/2017 09:49","06/08/2017 16:50",""
"Unknown","Unknown","MB 320-169764/1-A","","AQ","MB 320-169764/1-
A","MB","","-99","537","METHOD","RES","06/19/2017 09:24","06/23/2017
22:39","TALSAC","COA","WET","NA","1","NA","NA","","100","320-169764","320-169764","NA","320-
170757","320-28916-1","06/19/2017 09:24","06/08/2017 16:50",""
"Unknown","Unknown","MB 320-172119/1-A","","AQ","MB 320-172119/1-
A","MB","","-99","537","METHOD","RES","07/03/2017 09:49","07/07/2017
01:01","TALSAC","COA","WET","NA","1","NA","NA","","100","320-172119","320-172119","NA","320-
172925","320-28916-1","07/03/2017 09:49","06/08/2017 16:50",""



TETRA TECH

INTERNAL CORRESPONDENCE

TO: A. FREBOWITZ **DATE:** JULY 26, 2017

FROM: MICHELLE L. ALLEN **COPIES:** DV FILE

SUBJECT: ORGANIC DATA VALIDATION – POLYFLUOROALKYL SUBSTANCES (PFAS)
NAVAL AIR STATION JOINT BASE RESERVE (NASJRB) WILLOW GROVE
WILLOW GROVE, PENNSYLVANIA
SAMPLE DELIVERY GROUP (SDG) 320-28916-1

SAMPLES: 15/Aqueous/PFAS

NAWC-060717-DUP02	NAWC-060717-FRB-145
NAWC-060717-FRB-62	NAWC-060717-FRB-206A
NAWC-060717-FRB-258A	NAWC-060717-FRB-56
NAWC-060717-FRB-79	NAWC-060717-RW-145
NAWC-060717-RW-162	NAWC-060717-RW-206A
NAWC-060717-RW-206B	NAWC-060717-RW-258A
NAWC-060717-RW-258B	NAWC-060717-RW-56
NAWC-060717-RW-79	

Overview

The sample set for NASJRB Willow Grove, SDG 320-28916-1 consisted of nine (9) aqueous environmental samples and six (6) Field Reagent Blanks (FRBs). All fifteen (15) samples were analyzed for polyfluoroalkyl substances (PFAS). One field duplicate sample pair was included in this SDG: NAWC-060717-DUP02/NAWC-060717-RW-145.

The samples were collected by Tetra Tech, Inc. on June 7, 2017 and analyzed by Test America, Inc. All analyses were conducted in accordance with EPA Method 537 analytical and reporting protocols.

The data contained in this SDG was validated with regard to the following parameters: data completeness, hold times and sample preservation, LC/MS/MS system tuning and performance, initial and continuing calibrations, laboratory method blank results, field reagent blank results, isotope dilution analyte surrogate recoveries, laboratory control sample/laboratory control sample duplicate results, field duplicate precision, compound identification, compound quantitation, and detection limits.

Major

No major issues were identified.

Minor

- The Percent Recoveries (%Rs) for both surrogate spike compounds for samples NAWC-060717-FRB-79 and NAWC-060717-RW-258A were outside the quality control limits. In addition, the internal standards in sample NAWC-060717-RW-258A had areas that were below the lower quality control limits. The samples were re-extracted outside the 14 day holding time and reanalyzed. The surrogate spike %Rs and internal standard areas were acceptable in the re-extraction/reanalyses. The results from the re-extraction/reanalyses were selected for data validation because of the improved recoveries of the quality control parameters. The detected and non-detected results reported for the PFAS compounds in these samples were The detected and non-detected results reported for the

PFAS compounds in these samples were qualified as estimated, (J) and (UJ), respectively, due to the holding time exceedance. as estimated, (J) and (UJ), respectively, due to the holding time exceedance.

- The %Rs for the surrogate spike compound, 13C2-PFDA, were below the 70% quality control limit in samples NAWC-060717-RW-145 and NAWC-060717-RW-206B. The samples were re-extracted outside the 14 day holding time and reanalyzed. The surrogate spike %Rs were acceptable in the re-extraction/reanalyses, therefore, the results from the re-extraction/reanalyses were selected for use in data validation.

Notes

The initial analyses of sample NAWC-060717-RW-258A yielded results for all PFAS compounds which grossly exceeded the calibration range of the instrument. The recoveries of internal standards in the sample were very low. The low internal standard recoveries (approximately 3 orders of magnitude lower) caused the detections to be exaggerated with falsely high concentrations. The laboratory re-extracted (outside 14 day holding time) and reanalyzed the sample. According to the project manager, the results from the reanalysis were more representative of the sample when compared historical data. The laboratory was asked to reanalyze the sample extract once more for confirmation purposes. The 2nd reanalysis was consistent with the first reanalysis. The results from the first reanalysis were used in the data validation.

PFAS compounds were not detected in the FRBs contained in this SDG.

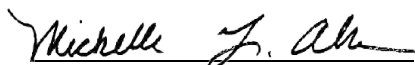
Detected results reported below the LOQ but above the Method Detection Limit (MDL) were qualified as estimated, (J). Non-detected results were reported to the LOD.

Executive Summary

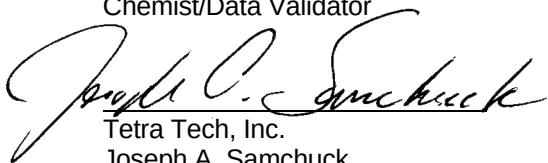
Laboratory Performance Issues: The extraction holding time was exceeded when the laboratory took corrective action for the re-extraction and reanalysis of several samples. Two PFAS compounds were detected in laboratory method blanks. Some samples had high %Rs for isotopic labeled surrogates.

Other Factors Affecting Data Quality: Detected results below the LOQ were estimated.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Superfund Methods Data Review" (January 2017), EPA Method 537 Modified, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (2017). The text of this report has been formulated to address only those areas affecting data quality.



Tetra Tech, Inc.
Michelle L. Allen
Chemist/Data Validator



Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:

Appendix A - Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Data Qualifier Definitions

The following definitions provide brief explanations of the validation qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted method detection limit for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the reporting limit).
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported detection limit is approximate and may be inaccurate or imprecise.
R	The sample result (detected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
UR	The sample result (nondetected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $< 30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

PROJ_NO: 08005-WE04 SDG: 320-28916-1 FRACTION: PFAS MEDIA: WATER	NSAMPLE	NAWC-060717-DUP02			NAWC-060717-FRB-145			NAWC-060717-FRB-162			NAWC-060717-FRB-206A		
	LAB_ID	320-28916-15			320-28916-8			320-28916-10			320-28916-2		
	SAMP_DATE	6/7/2017			6/7/2017			6/7/2017			6/7/2017		
	QC_TYPE	FD			FB			FB			FB		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	NAWC-060717-RW-145											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		20			7.5 U			7.6 U			7.6 U		
PERFLUOROBUTANE SULFONATE		33 U			34 U			34 U			34 U		
PERFLUOROHEPTANOIC ACID		6.2 J	P		3.7 U			3.8 U			3.8 U		
PERFLUOROHEXANESULFONIC ACID		7.8 J	P		11 U			11 U			11 U		
PERFLUORONONANOIC ACID		19 U			19 U			19 U			19 U		
PERFLUOROOCTANE SULFONIC ACID		17 J	P		15 U			15 U			15 U		

PROJ_NO: 08005-WE04 SDG: 320-28916-1 FRACTION: PFAS MEDIA: WATER	NSAMPLE	NAWC-060717-FRB-258A			NAWC-060717-FRB-56			NAWC-060717-FRB-79-RE			NAWC-060717-RW-145-RE		
	LAB_ID	320-28916-6			320-28916-14			320-28916-4			320-28916-7		
	SAMP_DATE	6/7/2017			6/7/2017			6/7/2017			6/7/2017		
	QC_TYPE	FB			FB			FB			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		7.8	U		7.5	U		7.7	UJ	H	20	J	H
PERFLUOROBUTANE SULFONATE		35	U		34	U		35	UJ	H	37	UJ	H
PERFLUOROHEPTANOIC ACID		3.9	U		3.7	U		3.9	UJ	H	6.1	J	HP
PERFLUOROHEXANESULFONIC ACID		12	U		11	U		12	UJ	H	8.4	J	HP
PERFLUORONONANOIC ACID		19	U		19	U		19	UJ	H	20	UJ	H
PERFLUOROOCTANE SULFONIC ACID		16	U		15	U		15	UJ	H	18	J	HP

PROJ_NO: 08005-WE04 SDG: 320-28916-1 FRACTION: PFAS MEDIA: WATER	NSAMPLE	NAWC-060717-RW-162			NAWC-060717-RW-206A			NAWC-060717-RW-206B-RE			NAWC-060717-RW-258A-RE		
	LAB_ID	320-28916-9			320-28916-1			320-28916-11			320-28916-5		
	SAMP_DATE	6/7/2017			6/7/2017			6/7/2017			6/7/2017		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		15	J	P	12	J	P	7.8	UJ	H	24	J	H
PERFLUOROBUTANE SULFONATE		35	U		35	U		35	UJ	H	35	UJ	H
PERFLUOROHEPTANOIC ACID		4.7	J	P	3.2	J	P	3.9	UJ	H	8	J	HP
PERFLUOROHEXANESULFONIC ACID		13	J	P	12	U		12	UJ	H	12	UJ	H
PERFLUORONONANOIC ACID		19	U		19	U		19	UJ	H	12	J	HP
PERFLUOROOCTANE SULFONIC ACID		28	J	P	13	J	P	16	UJ	H	17	J	HP

PROJ_NO: 08005-WE04 SDG: 320-28916-1 FRACTION: PFAS MEDIA: WATER	NSAMPLE	NAWC-060717-RW-258B			NAWC-060717-RW-56			NAWC-060717-RW-79		
	LAB_ID	320-28916-12			320-28916-13			320-28916-3		
	SAMP_DATE	6/7/2017			6/7/2017			6/7/2017		
	QC_TYPE	NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		7.6	U		26			16	J	P
PERFLUOROBUTANE SULFONATE		34	U		35	U		34	U	
PERFLUOROHEPTANOIC ACID		3.8	U		9.8		P	4.9	J	P
PERFLUOROHEXANESULFONIC ACID		11	U		9.6	J	P	11	J	P
PERFLUORONONANOIC ACID		19	U		19	U		19	U	
PERFLUOROOCTANE SULFONIC ACID		15	U		21	J	P	14	J	P

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-206A</u>	Lab Sample ID: <u>320-28916-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.23_537_021.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 08:10</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>257.5 (mL)</u>	Date Analyzed: <u>06/23/2017 22:53</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>170757</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	13	J	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	12	J	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.2	J	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U M	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	73		70-130
STL00996	13C2 PFDA	76		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-FRB-206A</u>	Lab Sample ID: <u>320-28916-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.28_537B_007.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 08:05</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>264.1 (mL)</u>	Date Analyzed: <u>06/28/2017 17:32</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>171486</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	38	15	6.4
335-67-1	Perfluorooctanoic acid (PFOA)	7.6	U	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	28	11	5.2
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.8	U	9.5	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	85	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	93		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-79</u>	Lab Sample ID: <u>320-28916-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.23_537_023.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:10</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>262.4 (mL)</u>	Date Analyzed: <u>06/23/2017 23:02</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>170757</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	14	J	38	15	6.5
335-67-1	Perfluorooctanoic acid (PFOA)	16	J	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	J	29	11	5.2
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.9	J	9.5	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U M	86	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	74		70-130
STL00996	13C2 PFDA	79		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: NAWC-060717-FRB-79 Lab Sample ID: 320-28916-4
 Matrix: Water Lab File ID: 2017.06.23_537_024.d
 Analysis Method: 537 Date Collected: 06/07/2017 09:05
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 270 (mL) Date Analyzed: 06/23/2017 23:07
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170757 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	37	15	6.3
335-67-1	Perfluorooctanoic acid (PFOA)	7.4	U	19	7.4	2.6
375-95-1	Perfluorononanoic acid (PFNA)	19	U	22	19	7.4
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	28	11	5.1
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.7	U	9.3	3.7	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	33	U	83	33	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	17	Q	70-130
STL00996	13C2 PFDA	16	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: NAWC-060717-FRB-79 RE Lab Sample ID: 320-28916-4 RE
 Matrix: Water Lab File ID: 2017.07.06_537A_026.d
 Analysis Method: 537 Date Collected: 06/07/2017 09:05
 Extraction Method: 537 Date Extracted: 07/03/2017 09:49
 Sample wt/vol: 258.9(mL) Date Analyzed: 07/07/2017 01:15
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 172925 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U H	39	15	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	7.7	U H	19	7.7	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U H	23	19	7.7
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.9	U H	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U H	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	90		70-130
STL00996	13C2 PFDA	93		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-258A</u>	Lab Sample ID: <u>320-28916-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.23_537_025.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:55</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>264(mL)</u>	Date Analyzed: <u>06/23/2017 23:12</u>
Con. Extract Vol.: <u>1.0(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>170757</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	7400	E	38	15	6.4
335-67-1	Perfluorooctanoic acid (PFOA)	15000	E	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	7100	E	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	730	E	28	11	5.2
375-85-9	Perfluoroheptanoic acid (PFHpA)	5600	E	9.5	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	4000	E	85	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	48236	Q	70-130
STL00996	13C2 PFDA	46396	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-258A RE</u>	Lab Sample ID: <u>320-28916-5 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.07.06_537A_027.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:55</u>
Extraction Method: <u>537</u>	Date Extracted: <u>07/03/2017 09:49</u>
Sample wt/vol: <u>256.7(mL)</u>	Date Analyzed: <u>07/07/2017 01:20</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>172925</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	17	J H M	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	24	H M	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	12	J H	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	12	5.4
375-85-9	Perfluoroheptanoic acid (PFHpA)	8.0	J H	9.7	3.9	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U H	88	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	97		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-FRB-258A</u>	Lab Sample ID: <u>320-28916-6</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.28_537B_011.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:50</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>257.3 (mL)</u>	Date Analyzed: <u>06/28/2017 17:51</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>171486</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	16	U	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	7.8	U	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.9	U	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	90		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Client Sample ID: NAWC-060717-RW-145 Lab Sample ID: 320-28916-7

Matrix: Water Lab File ID: 2017.06.23_537_027.d

Analysis Method: 537 Date Collected: 06/07/2017 13:05

Extraction Method: 537 Date Extracted: 06/19/2017 09:24

Sample wt/vol: 258.2 (mL) Date Analyzed: 06/23/2017 23:21

Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1

Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 170757 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	18	J	39	15	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	20		19	7.7	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.7
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.1	J	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	6.6	J	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U M	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	68	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-145 RE</u>	Lab Sample ID: <u>320-28916-7 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.07.06_537A_028.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 13:05</u>
Extraction Method: <u>537</u>	Date Extracted: <u>07/03/2017 09:49</u>
Sample wt/vol: <u>244.8 (mL)</u>	Date Analyzed: <u>07/07/2017 01:25</u>
Con. Extract Vol.: <u>1.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>172925</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	18	J H M	41	16	6.9
335-67-1	Perfluorooctanoic acid (PFOA)	20	H	20	8.2	2.9
375-95-1	Perfluorononanoic acid (PFNA)	20	U H	25	20	8.2
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.4	J H	31	12	5.6
375-85-9	Perfluoroheptanoic acid (PFHpA)	6.1	J H	10	4.1	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	37	U H	92	37	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	91		70-130
STL00996	13C2 PFDA	95		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Client Sample ID: NAWC-060717-FRB-145 Lab Sample ID: 320-28916-8

Matrix: Water Lab File ID: 2017.06.23_537_030.d

Analysis Method: 537 Date Collected: 06/07/2017 13:00

Extraction Method: 537 Date Extracted: 06/19/2017 09:24

Sample wt/vol: 267.2 (mL) Date Analyzed: 06/23/2017 23:36

Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1

Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 170758 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	37	15	6.4
335-67-1	Perfluorooctanoic acid (PFOA)	7.5	U	19	7.5	2.6
375-95-1	Perfluorononanoic acid (PFNA)	19	U	22	19	7.5
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	28	11	5.1
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.7	U	9.4	3.7	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	84	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	91		70-130
STL00996	13C2 PFDA	77		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: NAWC-060717-RW-162 Lab Sample ID: 320-28916-9
 Matrix: Water Lab File ID: 2017.06.23_537_031.d
 Analysis Method: 537 Date Collected: 06/07/2017 13:50
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 257.1(mL) Date Analyzed: 06/23/2017 23:40
 Con. Extract Vol.: 1.0(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170758 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	28	J	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	15	J	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	13	J	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.7	J	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U M	88	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	81		70-130
STL00996	13C2 PFDA	86		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Client Sample ID: NAWC-060717-FRB-162 Lab Sample ID: 320-28916-10

Matrix: Water Lab File ID: 2017.06.28_537B_017.d

Analysis Method: 537 Date Collected: 06/07/2017 13:45

Extraction Method: 537 Date Extracted: 06/19/2017 09:24

Sample wt/vol: 261.7(mL) Date Analyzed: 06/28/2017 18:19

Con. Extract Vol.: 1.0(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171487 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	38	15	6.5
335-67-1	Perfluorooctanoic acid (PFOA)	7.6	U	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	29	11	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.8	U	9.6	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	86	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	92		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Client Sample ID: NAWC-060717-RW-206B Lab Sample ID: 320-28916-11

Matrix: Water Lab File ID: 2017.06.23_537_033.d

Analysis Method: 537 Date Collected: 06/07/2017 08:10

Extraction Method: 537 Date Extracted: 06/19/2017 09:24

Sample wt/vol: 259.8 (mL) Date Analyzed: 06/23/2017 23:50

Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1

Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 170758 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	38	15	6.5
335-67-1	Perfluorooctanoic acid (PFOA)	7.7	U	19	7.7	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.7
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.8	U	9.6	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U	87	35	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	66	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-206B RE</u>	Lab Sample ID: <u>320-28916-11 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.07.06_537A_029.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 08:10</u>
Extraction Method: <u>537</u>	Date Extracted: <u>07/03/2017 09:49</u>
Sample wt/vol: <u>256.8 (mL)</u>	Date Analyzed: <u>07/07/2017 01:29</u>
Con. Extract Vol.: <u>1.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>172925</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	16	U H	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	7.8	U H	19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U H	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	12	5.4
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.9	U H	9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U H	88	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	92		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-RW-258B</u>	Lab Sample ID: <u>320-28916-12</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.28_537B_019.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 09:55</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>261.8 (mL)</u>	Date Analyzed: <u>06/28/2017 18:29</u>
Con. Extract Vol.: <u>1.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>171487</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	38	15	6.5
335-67-1	Perfluorooctanoic acid (PFOA)	7.6	U	19	7.6	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.6
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	29	11	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.8	U	9.5	3.8	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	86	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	89		70-130
STL00996	13C2 PFDA	91		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Client Sample ID: NAWC-060717-RW-56 Lab Sample ID: 320-28916-13

Matrix: Water Lab File ID: 2017.06.23_537_035.d

Analysis Method: 537 Date Collected: 06/07/2017 15:10

Extraction Method: 537 Date Extracted: 06/19/2017 09:24

Sample wt/vol: 258 (mL) Date Analyzed: 06/23/2017 23:59

Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1

Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 170758 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	21	J	39	16	6.6
335-67-1	Perfluorooctanoic acid (PFOA)	26		19	7.8	2.7
375-95-1	Perfluorononanoic acid (PFNA)	19	U	23	19	7.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	9.6	J	29	12	5.3
375-85-9	Perfluoroheptanoic acid (PFHpA)	9.8		9.7	3.9	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35	U M	87	35	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	75		70-130
STL00996	13C2 PFDA	78		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-28916-1</u>
SDG No.: _____	
Client Sample ID: <u>NAWC-060717-FRB-56</u>	Lab Sample ID: <u>320-28916-14</u>
Matrix: <u>Water</u>	Lab File ID: <u>2017.06.23_537_036.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>06/07/2017 15:05</u>
Extraction Method: <u>537</u>	Date Extracted: <u>06/19/2017 09:24</u>
Sample wt/vol: <u>268.3(mL)</u>	Date Analyzed: <u>06/24/2017 00:04</u>
Con. Extract Vol.: <u>1.0(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>170758</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	U	37	15	6.3
335-67-1	Perfluorooctanoic acid (PFOA)	7.5	U	19	7.5	2.6
375-95-1	Perfluorononanoic acid (PFNA)	19	U	22	19	7.5
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11	U	28	11	5.1
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.7	U	9.3	3.7	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34	U	84	34	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	85		70-130
STL00996	13C2 PFDA	70		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: NAWC-060717-DUP02 Lab Sample ID: 320-28916-15
 Matrix: Water Lab File ID: 2017.06.23_537_037.d
 Analysis Method: 537 Date Collected: 06/07/2017 07:00
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 269.9(mL) Date Analyzed: 06/24/2017 00:09
 Con. Extract Vol.: 1.0(mL) Dilution Factor: 1
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170758 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	17	J	37	15	6.3
335-67-1	Perfluorooctanoic acid (PFOA)	20		19	7.4	2.6
375-95-1	Perfluorononanoic acid (PFNA)	19	U	22	19	7.4
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	7.8	J	28	11	5.1
375-85-9	Perfluoroheptanoic acid (PFHpA)	6.2	J	9.3	3.7	1.8
375-73-5	Perfluorobutanesulfonic acid (PFBS)	33	U M	83	33	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	80		70-130
STL00996	13C2 PFDA	77		70-130

APPENDIX C

SUPPORT DOCUMENTATION

ANALYTE	ORIGINAL	DUPLICATE	RL	RPD	RPD > 30%
PENTADEC AFLUOROOCTANOIC ACID	7.5	20	19	90.91	TRUE
PERFLUOROBUTANE SULFONATE	34	33	84	2.99	FALSE
PERFLUOROHEPTANOIC ACID	3.7	6.2	9.4	50.51	TRUE
PERFLUOROHXANESULFONIC ACID	11	7.8	28	34.04	TRUE
PERFLUORONONANOIC ACID	19	19	22	0.00	FALSE
PERFLUOROOCTANE SULFONIC ACID	15	17	37	12.50	FALSE

ORIGINAL SAMPLE CONC >2xRL	DUPLICATE SAMPLE CONC >2xRL	DIFFERENCE >2xRL
FALSE	FALSE	FALSE
FALSE	FALSE	FALSE
FALSE	FALSE	FALSE
FALSE	FALSE	FALSE
FALSE	FALSE	FALSE
FALSE	FALSE	FALSE

SDG 320-28916-1

NAWC-060717-DUP02/ NAWC-060717-RW-145

NASJRB WILLOW GROVE
SDG 320-28916-1

SAMPLE IDENTIFICATION

NAWC-060717-RW-56

COMPOUND

PENTADECAFLUOROOCTANOIC ACID

COMPOUND AREA	1988556
INTERNAL STANDARD AMOUNT (ng/ml)	10
DILUTION FACTOR	1
INTERNAL STANDARD AREA	3369243
AVERAGE RRF	0.8758
SAMPLE VOLUME (ml)	258
VOLUME EXTRACT (ml)	1
VOLUME INJECTED (μl)	1
ml to L	1000
CONCENTRATION =	26.12 μg/L

$1988556 \times 10\text{ng/ml} \times 1000\text{ml} \times 1/(3369243 \times 0.8758 \times 258\text{ml} \times 1\text{L})$

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\2017.06.23_537_035.d
 Lims ID: 320-28916-A-13-A
 Client ID: NAWC-060717-RW-56
 Sample Type: Client
 Inject. Date: 23-Jun-2017 23:59:45 ALS Bottle#: 25 Worklist Smp#: 35
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-28916-A-13-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20170623-44660.b\537_A8_N.m
 Limit Group: LC 537 ICAL
 Last Update: 29-Jun-2017 11:06:41 Calib Date: 19-Jun-2017 18:04:42
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170619-44448.b\2017.06.19_537A_ICAL_009.d

Column 1 : Det: EXP1
 Process Host: XAWRK033

First Level Reviewer: barnettj Date: 26-Jun-2017 13:40:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	2.322	2.183	0.139	1.000	745723	2.57		33.3	M
298.90 > 99.00	2.329	2.183	0.146	1.003	586789		1.27(0.00-0.00)	102	M
\$ 2 13C2 PFHxA									
315.00 > 270.00	2.534	2.381	0.153	1.000	2634053	7.53		4166	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	2.777	2.625	0.152	1.000	967519	2.47		37.7	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.784	2.630	0.154	1.000	719796	2.53		16.6	
* 6 13C2-PFOA									
415.00 > 370.00	2.997	2.859	0.138		3369243	10.0		6666	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.997	2.859	0.138	1.000	1988556	6.74		68.3	
413.00 > 169.00	2.997	2.859	0.138	1.000	1265726		1.57(0.00-0.00)	805	
* 7 13C4 PFOS									
503.00 > 80.00	3.126	2.991	0.135		9643905	28.7		1840	
9 Perfluorononanoic acid									
463.00 > 419.00	3.141	3.003	0.138	1.000	187891	0.6537		7.0	
\$ 10 13C2 PFDA									
515.00 > 470.00	3.270	3.123	0.147	1.000	2514303	7.76		4982	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	3.126	3.126	0.0	1.000	1827795	5.35		188	
499.00 > 99.00	3.126	3.126	0.0	1.000	322127		5.67(0.00-0.00)	135	

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☒ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact		Project Manager: Andy Frebowitz		Site Contact: Mary Kay Bond		Date: 6/7/2017		COC No:	
TetraTech		Tel/Fax: 610-382-1170		Lab Contact: Dave Alltucker		Carrier: FedEx		1 of 2 COCs	
234 Mall Boulevard Suite 260		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS/MSD (Y/N) EPA 537 UCMR3				Samplers: Andy Frebowitz, Mary Kay Bond	
King of Prussia, PA 19406		☒ CALENDAR DAYS ☐ WORKING DAYS						For Lab Use Only:	
(610) 382-1174 Phone		TAT if different from Below 21 days						Walk-in Client:	
(610) 491-9645 FAX		☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day						Lab Sampling:	
Project Name: Warminster								Job / SDG No.:	
Site: Warminster									
P O # 1132358 (through EarthToxics)									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.			Sample Specific Notes:
NAWC-060717-RW-206A		6/7/17	0810	G	DW	2	N	Y	
NAWC-060717-FRB-206A		6/7/17	0805	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-79		6/7/17	0910	G	DW	2	N	Y	
NAWC-060717-FRB-79		6/7/17	0905	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-258A		6/7/17	0955	G	DW	2	N	Y	
NAWC-060717-FRB-258A		6/7/17	0950	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-145		6/7/17	1305	G	DW	2	N	Y	
NAWC-060717-FRB-145		6/7/17	1300	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-162		6/7/17	1350	G	DW	2	N	Y	
NAWC-060717-FRB-162		6/7/17	1345	G	BLK	2	N	Y	Field Reagent Blank
NAWC-060717-RW-206B		6/7/17	0810	G	DW	2	N	Y	
NAWC-060717-RW-258B		6/7/17	0955	G	DW	2	N	Y	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other Trizma							6		
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.							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months		
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown									
Special Instructions/QC Requirements & Comments: FedEx Air Bill 6103-5153-0428 6612 1992 5905									
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: 1.3		Corr'd: -		Therm ID No.: AP-1	
Relinquished by: MK Bond		Company: TetraTech		Date/Time: 6/7/17 17:00		Received by: [Signature]		Company: J. Aug	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	

880 Riverside Parkway

Chain of Custody Record

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

[illegible]

Page 510 of 511

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 320-28916-1

Login Number: 28916

List Source: TestAmerica Sacramento

List Number: 1

Creator: Turpen, Troy

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

Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Qualifiers

LCMS

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
Q	One or more quality control criteria failed.
H	Sample was prepped or analyzed beyond the specified holding time
E	Result exceeded calibration range.

Glossary

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

Job Narrative
320-28916-1

Receipt

The samples were received on 6/8/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

LCMS

Method(s) 537: 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.

Method(s) 537: The surrogate recoveries for the following samples were very low. This indicates a problem in the extraction of these samples. The results are therefore not reliable. The samples were re-extracted out of hold time and both sets of data are reported. NAWC-060717-FRB-79 (320-28916-4) and NAWC-060717-RW-258A (320-28916-5)

Method(s) 537: Surrogate recovery for the following samples was outside control limits: NAWC-060717-RW-145 (320-28916-7) and NAWC-060717-RW-206B (320-28916-11). Re-extraction and re-analysis was performed and the surrogate recoveries were acceptable. Both sets of data have been reported.

Method(s) 537: Re-extraction and reanalysis of the following samples was performed outside of holding time due to low surrogate recoveries in the initial extraction and analysis. Both sets of data are reported. NAWC-060717-FRB-79 (320-28916-4), NAWC-060717-RW-258A (320-28916-5), NAWC-060717-RW-145 (320-28916-7) and NAWC-060717-RW-206B (320-28916-11)

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

Organic Prep

Method(s) 537: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-169764.

Method(s) 537: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-172119.

Method(s) 537: The following samples were re-prepared outside of preparation holding time. NAWC-060717-FRB-79 (320-28916-4), NAWC-060717-RW-258A (320-28916-5), NAWC-060717-RW-145 (320-28916-7), NAWC-060717-RW-206B (320-28916-11) and NAWC-060717-FRB-56 (320-28916-14).

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

Sample Summary

Client: Tetra Tech, Inc.

TestAmerica Job ID: 320-28916-1

Project/Site: TetraT: PFAS, NAS JRB Willow Grove

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-28916-1	NAWC-060717-RW-206A	Water	06/07/17 08:10	06/08/17 09:30
320-28916-2	NAWC-060717-FRB-206A	Water	06/07/17 08:05	06/08/17 09:30
320-28916-3	NAWC-060717-RW-79	Water	06/07/17 09:10	06/08/17 09:30
320-28916-4	NAWC-060717-FRB-79	Water	06/07/17 09:05	06/08/17 09:30
320-28916-5	NAWC-060717-RW-258A	Water	06/07/17 09:55	06/08/17 09:30
320-28916-6	NAWC-060717-FRB-258A	Water	06/07/17 09:50	06/08/17 09:30
320-28916-7	NAWC-060717-RW-145	Water	06/07/17 13:05	06/08/17 09:30
320-28916-8	NAWC-060717-FRB-145	Water	06/07/17 13:00	06/08/17 09:30
320-28916-9	NAWC-060717-RW-162	Water	06/07/17 13:50	06/08/17 09:30
320-28916-10	NAWC-060717-FRB-162	Water	06/07/17 13:45	06/08/17 09:30
320-28916-11	NAWC-060717-RW-206B	Water	06/07/17 08:10	06/08/17 09:30
320-28916-12	NAWC-060717-RW-258B	Water	06/07/17 09:55	06/08/17 09:30
320-28916-13	NAWC-060717-RW-56	Water	06/07/17 15:10	06/08/17 09:30
320-28916-14	NAWC-060717-FRB-56	Water	06/07/17 15:05	06/08/17 09:30
320-28916-15	NAWC-060717-DUP02	Water	06/07/17 07:00	06/08/17 09:30

Method Summary

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Method	Method Description	Protocol	Laboratory
537	Perfluorinated Alkyl Acids (LC/MS)	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Job ID: 320-28916-1

Laboratory: TestAmerica Sacramento

Narrative

Job Narrative 320-28916-1

Receipt

The samples were received on 6/8/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

LCMS

Method(s) 537: 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.

Method(s) 537: The Internal Standard (IS) recoveries for the following samples were very low indicating a problem in the extraction of these samples. The results are therefore not reliable as the low internal standard is causing sample concentrations to be over compensated and resulting in falsely high values, in sample NAWC-060717-RW-258A (320-28916-5). The samples were re-extracted out of hold time and the IS recoveries were within Quality Control (QC) limits. Both sets of data are reported. NAWC-060717-FRB-79 (320-28916-4) and NAWC-060717-RW-258A (320-28916-5)

Method(s) 537: Surrogate recovery for the following samples was outside control limits: NAWC-060717-RW-145 (320-28916-7) and NAWC-060717-RW-206B (320-28916-11). Re-extraction and re-analysis was performed and the surrogate recoveries were acceptable. <CHOOSE_ONE> Both sets of data have been reported.

Method(s) 537: Re-extraction and reanalysis of the following samples was performed outside of holding time due to low surrogate recoveries in the initial extraction and analysis. Both sets of data are reported. NAWC-060717-FRB-79 (320-28916-4), NAWC-060717-RW-258A (320-28916-5), NAWC-060717-RW-145 (320-28916-7) and NAWC-060717-RW-206B (320-28916-11)

Method(s) 537: Reanalysis of the following sample was performed outside of holding time due to client request: NAWC-060717-RW-258A (320-28916-5).

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

Organic Prep

Method(s) 537: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-169764.

Method(s) 537: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-172119.

Method(s) 537: The following samples were re-prepared outside of preparation holding time. NAWC-060717-FRB-79 (320-28916-4), NAWC-060717-RW-258A (320-28916-5), NAWC-060717-RW-145 (320-28916-7), NAWC-060717-RW-206B (320-28916-11) and NAWC-060717-FRB-56 (320-28916-14).

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

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-FRB-79

Lab Sample ID: 320-28916-4

Date Collected: 06/07/17 09:05

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U	37	6.3	ng/L	-	06/19/17 09:24	06/23/17 23:07	1
Perfluorooctanoic acid (PFOA)	7.4	U	19	2.6	ng/L	-	06/19/17 09:24	06/23/17 23:07	1
Perfluorononanoic acid (PFNA)	19	U	22	7.4	ng/L	-	06/19/17 09:24	06/23/17 23:07	1
Perfluorohexanesulfonic acid (PFHxS)	11	U	28	5.1	ng/L	-	06/19/17 09:24	06/23/17 23:07	1
Perfluoroheptanoic acid (PFHpA)	3.7	U	9.3	1.8	ng/L	-	06/19/17 09:24	06/23/17 23:07	1
Perfluorobutanesulfonic acid (PFBS)	33	U	83	15	ng/L	-	06/19/17 09:24	06/23/17 23:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	17	Q	70 - 130	06/19/17 09:24	06/23/17 23:07	1
13C2 PFDA	16	Q	70 - 130	06/19/17 09:24	06/23/17 23:07	1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RE

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	15	U H	39	6.6	ng/L	-	07/03/17 09:49	07/07/17 01:15	1
Perfluorooctanoic acid (PFOA)	7.7	U H	19	2.7	ng/L	-	07/03/17 09:49	07/07/17 01:15	1
Perfluorononanoic acid (PFNA)	19	U H	23	7.7	ng/L	-	07/03/17 09:49	07/07/17 01:15	1
Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	5.3	ng/L	-	07/03/17 09:49	07/07/17 01:15	1
Perfluoroheptanoic acid (PFHpA)	3.9	U H	9.7	1.8	ng/L	-	07/03/17 09:49	07/07/17 01:15	1
Perfluorobutanesulfonic acid (PFBS)	35	U H	87	16	ng/L	-	07/03/17 09:49	07/07/17 01:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		70 - 130	07/03/17 09:49	07/07/17 01:15	1
13C2 PFDA	93		70 - 130	07/03/17 09:49	07/07/17 01:15	1

Client Sample ID: NAWC-060717-RW-258A

Lab Sample ID: 320-28916-5

Date Collected: 06/07/17 09:55

Matrix: Water

Date Received: 06/08/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	7400	E	38	6.4	ng/L	-	06/19/17 09:24	06/23/17 23:12	1
Perfluorooctanoic acid (PFOA)	15000	E	19	2.7	ng/L	-	06/19/17 09:24	06/23/17 23:12	1
Perfluorononanoic acid (PFNA)	7100	E	23	7.6	ng/L	-	06/19/17 09:24	06/23/17 23:12	1
Perfluorohexanesulfonic acid (PFHxS)	730	E	28	5.2	ng/L	-	06/19/17 09:24	06/23/17 23:12	1
Perfluoroheptanoic acid (PFHpA)	5600	E	9.5	1.8	ng/L	-	06/19/17 09:24	06/23/17 23:12	1
Perfluorobutanesulfonic acid (PFBS)	4000	E	85	15	ng/L	-	06/19/17 09:24	06/23/17 23:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	48236	Q	70 - 130	06/19/17 09:24	06/23/17 23:12	1
13C2 PFDA	46396	Q	70 - 130	06/19/17 09:24	06/23/17 23:12	1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RE

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	17	J H M	39	6.6	ng/L	-	07/03/17 09:49	07/07/17 01:20	1
Perfluorooctanoic acid (PFOA)	24	H M	19	2.7	ng/L	-	07/03/17 09:49	07/07/17 01:20	1
Perfluorononanoic acid (PFNA)	12	J H	23	7.8	ng/L	-	07/03/17 09:49	07/07/17 01:20	1
Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	5.4	ng/L	-	07/03/17 09:49	07/07/17 01:20	1
Perfluoroheptanoic acid (PFHpA)	8.0	J H	9.7	1.9	ng/L	-	07/03/17 09:49	07/07/17 01:20	1

TestAmerica Sacramento

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: TetraT: PFAS, NAS JRB Willow Grove

TestAmerica Job ID: 320-28916-1

Client Sample ID: NAWC-060717-RW-258A

Date Collected: 06/07/17 09:55

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-5

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RE (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	35	U H	88	16	ng/L		07/03/17 09:49	07/07/17 01:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		70 - 130				07/03/17 09:49	07/07/17 01:20	1
13C2 PFDA	97		70 - 130				07/03/17 09:49	07/07/17 01:20	1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) - RERA

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	18	J H M	39	6.6	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluorooctanoic acid (PFOA)	26	H	19	2.7	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluorononanoic acid (PFNA)	14	J H	23	7.8	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluorohexanesulfonic acid (PFHxS)	12	U H	29	5.4	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluoroheptanoic acid (PFHpA)	9.0	J H	9.7	1.9	ng/L		07/03/17 09:49	07/19/17 18:40	1
Perfluorobutanesulfonic acid (PFBS)	35	U H	88	16	ng/L		07/03/17 09:49	07/19/17 18:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	75		70 - 130				07/03/17 09:49	07/19/17 18:40	1
13C2 PFDA	91		70 - 130				07/03/17 09:49	07/19/17 18:40	1

Client Sample ID: NAWC-060717-FRB-258A

Date Collected: 06/07/17 09:50

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-6

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	16	U	39	6.6	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluorooctanoic acid (PFOA)	7.8	U	19	2.7	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluorononanoic acid (PFNA)	19	U	23	7.8	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluorohexanesulfonic acid (PFHxS)	12	U	29	5.3	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluoroheptanoic acid (PFHpA)	3.9	U	9.7	1.8	ng/L		06/19/17 09:24	06/28/17 17:51	1
Perfluorobutanesulfonic acid (PFBS)	35	U	87	16	ng/L		06/19/17 09:24	06/28/17 17:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		70 - 130				06/19/17 09:24	06/28/17 17:51	1
13C2 PFDA	90		70 - 130				06/19/17 09:24	06/28/17 17:51	1

Client Sample ID: NAWC-060717-RW-145

Date Collected: 06/07/17 13:05

Date Received: 06/08/17 09:30

Lab Sample ID: 320-28916-7

Matrix: Water

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	18	J	39	6.6	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluorooctanoic acid (PFOA)	20		19	2.7	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluorononanoic acid (PFNA)	19	U	23	7.7	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluorohexanesulfonic acid (PFHxS)	8.1	J	29	5.3	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluoroheptanoic acid (PFHpA)	6.6	J	9.7	1.8	ng/L		06/19/17 09:24	06/23/17 23:21	1
Perfluorobutanesulfonic acid (PFBS)	35	U M	87	16	ng/L		06/19/17 09:24	06/23/17 23:21	1

TestAmerica Sacramento

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 320-28916-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
NAWC-060717-RW-206 A	320-28916-1	73	76
NAWC-060717-FRB-206 A	320-28916-2	83	93
NAWC-060717-RW-79	320-28916-3	74	79
NAWC-060717-FRB-79	320-28916-4	17 Q	16 Q
NAWC-060717-FRB-79 RE	320-28916-4 RE	90	93
NAWC-060717-RW-258 A	320-28916-5	48236 Q	46396 Q
NAWC-060717-RW-258 A RE	320-28916-5 RE	84	97
NAWC-060717-FRB-258 A	320-28916-6	82	90
NAWC-060717-RW-145	320-28916-7	83	68 Q
NAWC-060717-RW-145 RE	320-28916-7 RE	91	95
NAWC-060717-FRB-145	320-28916-8	91	77
NAWC-060717-RW-162	320-28916-9	81	86
NAWC-060717-FRB-162	320-28916-10	84	92
NAWC-060717-RW-206 B	320-28916-11	92	66 Q
NAWC-060717-RW-206 B RE	320-28916-11 RE	92	92
NAWC-060717-RW-258 B	320-28916-12	89	91
NAWC-060717-RW-56	320-28916-13	75	78
NAWC-060717-FRB-56	320-28916-14	85	70
NAWC-060717-DUP02	320-28916-15	80	77
	MB 320-169764/1-A	90	72
	MB 320-172119/1-A	92	91
	LCS 320-169764/2-A	91	81
	LCSD 320-169764/3-A	82	92
	LLCS 320-172119/2-A	91	94
	LLCSD 320-172119/3-A	97	97

PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA

QC LIMITS
70-130
70-130

Column to be used to flag recovery values

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Instrument ID: A8_N Calibration Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3(mm) Calibration End Date: 06/19/2017 18:04
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		3870975	2.86	9204122	2.99		
UPPER LIMIT		5806463	3.36	13806183	3.49		
LOWER LIMIT		1935488	2.36	4602061	2.49		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-169955/11		3724287	2.86	8759638	2.99		
ICV 320-169955/13		3818724	2.85	9420237	2.99		
CCVL 320-170756/4		3324713	2.97	9202106	3.10		
CCV 320-170757/16 CCVIS		3755516	3.00	10146250	3.13		
MB 320-169764/1-A		3675107	2.99	9517190	3.13		
LCS 320-169764/2-A		3410881	3.00	8977613	3.13		
320-28916-1	NAWC-060717-RW-206A	3430791	3.00	9562787	3.13		
320-28916-3	NAWC-060717-RW-79	3252034	3.00	9259264	3.13		
320-28916-4	NAWC-060717-FRB-79	3305372	3.00	9018633	3.13		
320-28916-5	NAWC-060717-RW-258A	6096Q	2.99	28231Q	3.12		
320-28916-7	NAWC-060717-RW-145	3472036	3.00	9551542	3.13		
CCV 320-170757/28 CCVIS		3741048	3.00	10476733	3.13		
CCV 320-170758/28 CCVIS		3741048	3.00	10476733	3.13		
320-28916-8	NAWC-060717-FRB-145	3611365	2.99	9737019	3.13		
320-28916-9	NAWC-060717-RW-162	3247640	3.00	9698322	3.13		
320-28916-11	NAWC-060717-RW-206B	3595082	3.00	9532883	3.13		
320-28916-13	NAWC-060717-RW-56	3369243	3.00	9643905	3.13		
320-28916-14	NAWC-060717-FRB-56	3390484	3.00	9264399	3.13		
320-28916-15	NAWC-060717-DUP02	3504602	2.99	9894345	3.13		
CCV 320-170758/40 CCVIS		3800811	3.00	10834949	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-170757/16 Date Analyzed: 06/23/2017 22:29
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.23_537_016. Heated Purge: (Y/N) N
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3755516	3.00	10146250	3.13		
UPPER LIMIT		5257722	3.50	14204750	3.63		
LOWER LIMIT		2628861	2.50	7102375	2.63		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-169764/1-A		3675107	2.99	9517190	3.13		
LCS 320-169764/2-A		3410881	3.00	8977613	3.13		
LCSD 320-169764/3-A		3275235	3.00	8450857	3.13		
320-28916-1	NAWC-060717-RW-206A	3430791	3.00	9562787	3.13		
320-28916-3	NAWC-060717-RW-79	3252034	3.00	9259264	3.13		
320-28916-4	NAWC-060717-FRB-79	3305372	3.00	9018633	3.13		
320-28916-5	NAWC-060717-RW-258A	6096Q	2.99	28231Q	3.12		
320-28916-7	NAWC-060717-RW-145	3472036	3.00	9551542	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-170757/28 Date Analyzed: 06/23/2017 23:26
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.23_537_028. Heated Purge: (Y/N) N
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3741048	3.00	10476733	3.13		
UPPER LIMIT		5237467	3.50	14667426	3.63		
LOWER LIMIT		2618734	2.50	7333713	2.63		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-169764/1-A		3675107	2.99	9517190	3.13		
LCS 320-169764/2-A		3410881	3.00	8977613	3.13		
320-28916-1	NAWC-060717-RW-206A	3430791	3.00	9562787	3.13		
320-28916-3	NAWC-060717-RW-79	3252034	3.00	9259264	3.13		
320-28916-4	NAWC-060717-FRB-79	3305372	3.00	9018633	3.13		
320-28916-5	NAWC-060717-RW-258A	6096Q	2.99	28231Q	3.12		
320-28916-7	NAWC-060717-RW-145	3472036	3.00	9551542	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-170758/28 Date Analyzed: 06/23/2017 23:26
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.23_537_028. Heated Purge: (Y/N) N
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3741048	3.00	10476733	3.13		
UPPER LIMIT		5237467	3.50	14667426	3.63		
LOWER LIMIT		2618734	2.50	7333713	2.63		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-28916-8	NAWC-060717-FRB-145	3611365	2.99	9737019	3.13		
320-28916-9	NAWC-060717-RW-162	3247640	3.00	9698322	3.13		
320-28916-11	NAWC-060717-RW-206B	3595082	3.00	9532883	3.13		
320-28916-13	NAWC-060717-RW-56	3369243	3.00	9643905	3.13		
320-28916-14	NAWC-060717-FRB-56	3390484	3.00	9264399	3.13		
320-28916-15	NAWC-060717-DUP02	3504602	2.99	9894345	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-170758/40 Date Analyzed: 06/24/2017 00:23
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.23_537_040. Heated Purge: (Y/N) N
 Calibration ID: 31800

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3800811	3.00	10834949	3.13		
UPPER LIMIT		5321135	3.50	15168929	3.63		
LOWER LIMIT		2660568	2.50	7584464	2.63		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-28916-8	NAWC-060717-FRB-145	3611365	2.99	9737019	3.13		
320-28916-9	NAWC-060717-RW-162	3247640	3.00	9698322	3.13		
320-28916-11	NAWC-060717-RW-206B	3595082	3.00	9532883	3.13		
320-28916-13	NAWC-060717-RW-56	3369243	3.00	9643905	3.13		
320-28916-14	NAWC-060717-FRB-56	3390484	3.00	9264399	3.13		
320-28916-15	NAWC-060717-DUP02	3504602	2.99	9894345	3.13		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Instrument ID: A8_N Calibration Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3 (mm) Calibration End Date: 06/28/2017 16:35
 Calibration ID: 32056

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		1994745	1.88	5921908	2.12		
UPPER LIMIT		2992118	2.38	8882862	2.62		
LOWER LIMIT		997373	1.38	2960954	1.62		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-171480/11		1582044	1.88	4789035	2.12		
ICV 320-171480/13		1851564	1.87	5746016	2.12		
CCV 320-171486/1 CCVIS		2273492	1.88	7068921	2.12		
LCSD 320-169764/3-A		1735559	1.88	4861097Q	2.12		
320-28916-2	NAWC-060717-FRB-206A	1730623	1.87	5122339	2.12		
320-28916-6	NAWC-060717-FRB-258A	1642678	1.87	5026090	2.12		
CCV 320-171486/13 CCVIS		2250330	1.87	6965525	2.11		
CCV 320-171487/13 CCVIS		2250330	1.87	6965525	2.11		
320-28916-10	NAWC-060717-FRB-162	1787242	1.87	5229286	2.10		
320-28916-12	NAWC-060717-RW-258B	1752750	1.87	5073699	2.11		
CCV 320-171487/25 CCVIS		2130233	1.87	6980804	2.11		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-171486/1 Date Analyzed: 06/28/2017 17:03
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.28_537B_001 Heated Purge: (Y/N) N
 Calibration ID: 32056

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	2273492	1.88	7068921	2.12		
UPPER LIMIT	3182889	2.38	9896489	2.62		
LOWER LIMIT	1591444	1.38	4948245	1.62		
LAB SAMPLE ID	CLIENT SAMPLE ID					
LCSD 320-169764/3-A		1735559	1.88	4861097Q	2.12	
320-28916-2	NAWC-060717-FRB-206A	1730623	1.87	5122339	2.12	
320-28916-6	NAWC-060717-FRB-258A	1642678	1.87	5026090	2.12	

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-171486/13 Date Analyzed: 06/28/2017 18:00
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.28_537B_013 Heated Purge: (Y/N) N
 Calibration ID: 32056

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	2250330	1.87	6965525	2.11		
UPPER LIMIT	3150462	2.37	9751735	2.61		
LOWER LIMIT	1575231	1.37	4875868	1.61		
LAB SAMPLE ID	CLIENT SAMPLE ID					
LCSD 320-169764/3-A		1735559	1.88	4861097Q	2.12	
320-28916-2	NAWC-060717-FRB-206A	1730623	1.87	5122339	2.12	
320-28916-6	NAWC-060717-FRB-258A	1642678	1.87	5026090	2.12	

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-171487/13 Date Analyzed: 06/28/2017 18:00
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.28_537B_013 Heated Purge: (Y/N) N
 Calibration ID: 32056

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	2250330	1.87	6965525	2.11		
UPPER LIMIT	3150462	2.37	9751735	2.61		
LOWER LIMIT	1575231	1.37	4875868	1.61		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-28916-10	NAWC-060717-FRB-162		1787242	1.87	5229286	2.10
320-28916-12	NAWC-060717-RW-258B		1752750	1.87	5073699	2.11

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-171487/25 Date Analyzed: 06/28/2017 18:57
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.06.28_537B_025 Heated Purge: (Y/N) N
 Calibration ID: 32056

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	2130233	1.87	6980804	2.11		
UPPER LIMIT	2982326	2.37	9773126	2.61		
LOWER LIMIT	1491163	1.37	4886563	1.61		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-28916-10	NAWC-060717-FRB-162		1787242	1.87	5229286	2.10
320-28916-12	NAWC-060717-RW-258B		1752750	1.87	5073699	2.11

13PFOA = 13C2-PFOA
 PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Instrument ID: A8_N Calibration Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3 (mm) Calibration End Date: 07/05/2017 20:13
 Calibration ID: 32198

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		966867	1.88	2790947	2.12		
UPPER LIMIT		1450301	2.38	4186421	2.62		
LOWER LIMIT		483434	1.38	1395474	1.62		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-172646/11		960063	1.87	2831967	2.11		
ICV 320-172646/13		920859	1.87	2667731	2.11		
CCV 320-172925/21 CCVIS		950253	1.87	2836262	2.10		
MB 320-172119/1-A		1083015	1.87	3110942	2.10		
LLCS 320-172119/2-A		1053354	1.86	3003980	2.10		
LLCSD 320-172119/3-A		1029303	1.87	3025587	2.10		
320-28916-4 RE	NAWC-060717-FRB-79 RE	1099242	1.86	3057297	2.09		
320-28916-5 RE	NAWC-060717-RW-258A RE	1083388	1.87	3020215	2.10		
320-28916-7 RE	NAWC-060717-RW-145 RE	1045604	1.86	2855283	2.10		
320-28916-11 RE	NAWC-060717-RW-206B RE	1046919	1.87	2909172	2.10		
CCV 320-172925/31 CCVIS		962177	1.86	2769042	2.10		

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-172925/21 Date Analyzed: 07/07/2017 00:51
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.07.06_537A_021 Heated Purge: (Y/N) N
 Calibration ID: 32198

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	950253	1.87	2836262	2.10		
UPPER LIMIT	1330354	2.37	3970767	2.60		
LOWER LIMIT	665177	1.37	1985383	1.60		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-172119/1-A		1083015	1.87	3110942	2.10	
LLCS 320-172119/2-A		1053354	1.86	3003980	2.10	
LLCSD 320-172119/3-A		1029303	1.87	3025587	2.10	
320-28916-4 RE	NAWC-060717-FRB-79 RE	1099242	1.86	3057297	2.09	
320-28916-5 RE	NAWC-060717-RW-258A RE	1083388	1.87	3020215	2.10	
320-28916-7 RE	NAWC-060717-RW-145 RE	1045604	1.86	2855283	2.10	
320-28916-11 RE	NAWC-060717-RW-206B RE	1046919	1.87	2909172	2.10	

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Sample No.: CCV 320-172925/31 Date Analyzed: 07/07/2017 01:39
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2017.07.06_537A_031 Heated Purge: (Y/N) N
 Calibration ID: 32198

	13PFOA		PFOS			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	962177	1.86	2769042	2.10		
UPPER LIMIT	1347048	2.36	3876659	2.60		
LOWER LIMIT	673524	1.36	1938329	1.60		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-172119/1-A		1083015	1.87	3110942	2.10	
LLCS 320-172119/2-A		1053354	1.86	3003980	2.10	
LLCSD 320-172119/3-A		1029303	1.87	3025587	2.10	
320-28916-4 RE	NAWC-060717-FRB-79 RE	1099242	1.86	3057297	2.09	
320-28916-5 RE	NAWC-060717-RW-258A RE	1083388	1.87	3020215	2.10	
320-28916-7 RE	NAWC-060717-RW-145 RE	1045604	1.86	2855283	2.10	
320-28916-11 RE	NAWC-060717-RW-206B RE	1046919	1.87	2909172	2.10	

13PFOA = 13C2-PFOA

PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab File ID: 2017.06.23_537_018.d Lab Sample ID: MB 320-169764/1-A
 Matrix: Water Date Extracted: 06/19/2017 09:24
 Instrument ID: A8_N Date Analyzed: 06/23/2017 22:39
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-169764/2-A	2017.06.23_537_019.d	06/23/2017 22:43
	LCSD 320-169764/3-A	2017.06.23_537_020.d	06/23/2017 22:48
NAWC-060717-RW-206A	320-28916-1	2017.06.23_537_021.d	06/23/2017 22:53
NAWC-060717-RW-79	320-28916-3	2017.06.23_537_023.d	06/23/2017 23:02
NAWC-060717-FRB-79	320-28916-4	2017.06.23_537_024.d	06/23/2017 23:07
NAWC-060717-RW-258A	320-28916-5	2017.06.23_537_025.d	06/23/2017 23:12
NAWC-060717-RW-145	320-28916-7	2017.06.23_537_027.d	06/23/2017 23:21
NAWC-060717-FRB-145	320-28916-8	2017.06.23_537_030.d	06/23/2017 23:36
NAWC-060717-RW-162	320-28916-9	2017.06.23_537_031.d	06/23/2017 23:40
NAWC-060717-RW-206B	320-28916-11	2017.06.23_537_033.d	06/23/2017 23:50
NAWC-060717-RW-56	320-28916-13	2017.06.23_537_035.d	06/23/2017 23:59
NAWC-060717-FRB-56	320-28916-14	2017.06.23_537_036.d	06/24/2017 00:04
NAWC-060717-DUP02	320-28916-15	2017.06.23_537_037.d	06/24/2017 00:09
	LCSD 320-169764/3-A	2017.06.28_537B_005.d	06/28/2017 17:22
NAWC-060717-FRB-206A	320-28916-2	2017.06.28_537B_007.d	06/28/2017 17:32
NAWC-060717-FRB-258A	320-28916-6	2017.06.28_537B_011.d	06/28/2017 17:51
NAWC-060717-FRB-162	320-28916-10	2017.06.28_537B_017.d	06/28/2017 18:19
NAWC-060717-RW-258B	320-28916-12	2017.06.28_537B_019.d	06/28/2017 18:29

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-169764/1-A
 Matrix: Water Lab File ID: 2017.06.23_537_018.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 06/19/2017 09:24
 Sample wt/vol: 250 (mL) Date Analyzed: 06/23/2017 22:39
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 170757 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	16	U	40	16	6.8
335-67-1	Perfluorooctanoic acid (PFOA)	8.0	U	20	8.0	2.8
375-95-1	Perfluorononanoic acid (PFNA)	20	U	24	20	8.0
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	30	12	5.5
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.0	U	10	4.0	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36	U	90	36	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	90		70-130
STL00996	13C2 PFDA	72		70-130

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.06.23_537_019.d
 Lab ID: LCS 320-169764/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	160	157	98	70-130	
Perfluorooctanoic acid (PFOA)	79.9	82.3	103	70-130	
Perfluorononanoic acid (PFNA)	77.0	66.1	86	70-130	
Perfluorohexanesulfonic acid (PFHxS)	120	122	102	70-130	
Perfluoroheptanoic acid (PFHpA)	39.6	45.4	115	70-130	
Perfluorobutanesulfonic acid (PFBS)	353	383	108	70-130	

Column to be used to flag recovery and RPD values

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.06.23_537_020.d
 Lab ID: LCSD 320-169764/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanesulfonic acid (PFOS)	160	152					
Perfluorooctanoic acid (PFOA)	79.9	79.6					
Perfluorononanoic acid (PFNA)	77.0	61.8					
Perfluorohexanesulfonic acid (PFHxS)	120	123					
Perfluoroheptanoic acid (PFHpA)	39.6	44.5					
Perfluorobutanesulfonic acid (PFBS)	353	393					

Column to be used to flag recovery and RPD values

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.06.28_537B_005.d
 Lab ID: LCSD 320-169764/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanesulfonic acid (PFOS)	160	148	93	6	30	70-130	
Perfluorooctanoic acid (PFOA)	79.9	75.0	94	9	30	70-130	
Perfluorononanoic acid (PFNA)	77.0	71.6	93	8	30	70-130	
Perfluorohexanesulfonic acid (PFHxS)	120	116	97	5	30	70-130	
Perfluoroheptanoic acid (PFHpA)	39.6	40.3	102	12	30	70-130	
Perfluorobutanesulfonic acid (PFBS)	353	365	103	5	30	70-130	

Column to be used to flag recovery and RPD values

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab File ID: 2017.07.06_537A_023.d Lab Sample ID: MB 320-172119/1-A
 Matrix: Water Date Extracted: 07/03/2017 09:49
 Instrument ID: A8_N Date Analyzed: 07/07/2017 01:01
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LLCS 320-172119/2-A	2017.07.06_537A_024.d	07/07/2017 01:06
	LLCSD 320-172119/3-A	2017.07.06_537A_025.d	07/07/2017 01:10
NAWC-060717-FRB-79 RE	320-28916-4 RE	2017.07.06_537A_026.d	07/07/2017 01:15
NAWC-060717-RW-258A RE	320-28916-5 RE	2017.07.06_537A_027.d	07/07/2017 01:20
NAWC-060717-RW-145 RE	320-28916-7 RE	2017.07.06_537A_028.d	07/07/2017 01:25
NAWC-060717-RW-206B RE	320-28916-11 RE	2017.07.06_537A_029.d	07/07/2017 01:29

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-172119/1-A
 Matrix: Water Lab File ID: 2017.07.06_537A_023.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 07/03/2017 09:49
 Sample wt/vol: 250 (mL) Date Analyzed: 07/07/2017 01:01
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 172925 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	16	U	40	16	6.8
335-67-1	Perfluorooctanoic acid (PFOA)	8.0	U	20	8.0	2.8
375-95-1	Perfluorononanoic acid (PFNA)	20	U	24	20	8.0
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	U	30	12	5.5
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.0	U	10	4.0	1.9
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36	U	90	36	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	91		70-130

FORM III
LCMS LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.07.06_537A_024.d
 Lab ID: LLCS 320-172119/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LLCS CONCENTRATION (ng/L)	LLCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	40.0	38.5 J	96	50-150	M
Perfluorooctanoic acid (PFOA)	20.0	19.9 J	99	50-150	
Perfluorononanoic acid (PFNA)	19.3	19.4 J	101	50-150	
Perfluorohexanesulfonic acid (PFHxS)	30.1	29.3 J	97	50-150	
Perfluoroheptanoic acid (PFHpA)	9.90	10.7	109	50-150	
Perfluorobutanesulfonic acid (PFBS)	88.3	94.1	107	50-150	

Column to be used to flag recovery and RPD values

FORM III
LCMS LOW LEVEL CONTROL STANDARD DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2017.07.06_537A_025.d
 Lab ID: LLCSD 320-172119/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LLCSD CONCENTRATION (ng/L)	LLCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanesulfonic acid (PFOS)	40.0	39.4 J	98	2	50	50-150	M
Perfluorooctanoic acid (PFOA)	20.0	20.9	105	5	50	50-150	
Perfluorononanoic acid (PFNA)	19.3	19.4 J	101	0	50	50-150	
Perfluorohexanesulfonic acid (PFHxS)	30.1	28.3 J	94	3	50	50-150	
Perfluoroheptanoic acid (PFHpA)	9.90	11.1	112	3	50	50-150	
Perfluorobutanesulfonic acid (PFBS)	88.3	94.2	107	0.07	50	50-150	

Column to be used to flag recovery and RPD values

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
SDG No.: _____
Instrument ID: A8_N Start Date: 06/19/2017 17:40
Analysis Batch Number: 169955 End Date: 06/19/2017 18:23

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-169955/4		06/19/2017 17:40	1	2017.06.19_537A ICAL 004.d	GeminiC18 3x100 3(mm)
IC 320-169955/5		06/19/2017 17:45	1	2017.06.19_537A ICAL 005.d	GeminiC18 3x100 3(mm)
IC 320-169955/6		06/19/2017 17:50	1	2017.06.19_537A ICAL 006.d	GeminiC18 3x100 3(mm)
IC 320-169955/7 ICISAV		06/19/2017 17:55	1	2017.06.19_537A ICAL 007.d	GeminiC18 3x100 3(mm)
IC 320-169955/8		06/19/2017 17:59	1	2017.06.19_537A ICAL 008.d	GeminiC18 3x100 3(mm)
IC 320-169955/9		06/19/2017 18:04	1	2017.06.19_537A ICAL 009.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/19/2017 18:09	1		GeminiC18 3x100 3(mm)
CCVL 320-169955/11		06/19/2017 18:14	1	2017.06.19_537A ICAL 011.d	GeminiC18 3x100 3(mm)
ICV 320-169955/13		06/19/2017 18:23	1	2017.06.19_537A ICAL 013.d	GeminiC18 3x100 3(mm)

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 169955

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/19/2017 17:40 Calibration End Date: 06/19/2017 18:04 Calibration ID: 31800

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-169955/4	2017.06.19_537A_ICAL_004.d
Level 2	IC 320-169955/5	2017.06.19_537A_ICAL_005.d
Level 3	IC 320-169955/6	2017.06.19_537A_ICAL_006.d
Level 4	IC 320-169955/7	2017.06.19_537A_ICAL_007.d
Level 5	IC 320-169955/8	2017.06.19_537A_ICAL_008.d
Level 6	IC 320-169955/9	2017.06.19_537A_ICAL_009.d

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								
Perfluorobutanesulfonic acid (PFBS)	0.8507 0.7713	0.9245	0.9209	0.8993	0.8202	Ave		0.8645				7.1		30.0			
Perfluorohexanesulfonic acid (PFHxS)	1.0986 1.2032	1.1398	1.1650	1.2147	1.1817	Ave		1.1672				3.7		30.0			
Perfluoroheptanoic acid (PFHpA)	0.7891 0.8718	0.8248	0.8229	0.8642	0.8866	Ave		0.8433				4.4		30.0			
Perfluorooctanoic acid (PFOA)	0.8301 0.8992	0.8817	0.8545	0.8779	0.9114	Ave		0.8758				3.4		30.0			
Perfluorooctanesulfonic acid (PFOS)	0.9620 1.0275	1.0017	1.0209	1.0440	1.0387	Ave		1.0158				3.0		30.0			
Perfluorononanoic acid (PFNA)	0.8823 0.8046	0.8981	0.8287	0.8656	0.8391	Ave		0.8531				4.1		30.0			
13C2 PFHxA	0.9940 1.0771	1.0270	1.0324	1.0293	1.0661	Ave		1.0377				2.9		30.0			
13C2 PFDA	0.9372 1.0284	0.9499	0.8947	0.9980	0.9652	Ave		0.9622				4.9		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-169955/11 Calibration Date: 06/19/2017 18:14
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.19_537A_ICAL_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	0.9450		23.2	21.2	9.3	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.179		7.29	7.21	1.0	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.8532		2.40	2.38	1.2	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.8753		4.79	4.80	-0.0	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.024		9.69	9.61	0.8	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.8772		4.75	4.62	2.8	50.0
13C2 PFHxA	Ave	1.038	1.019		9.82	10.0	-1.8	30.0
13C2 PFDA	Ave	0.9622	0.9654		10.0	10.0	0.3	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Lab Sample ID: ICV 320-169955/13 Calibration Date: 06/19/2017 18:23

Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04

Lab File ID: 2017.06.19_537A_ICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	0.8921		104	101	3.2	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.265		23.0	21.2	8.4	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.8190		9.79	10.1	-2.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.9521		21.8	20.0	8.7	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.080		22.0	20.7	6.3	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.8825		20.7	20.0	3.5	30.0
13C2 PFHxA	Ave	1.038	1.057		10.2	10.0	1.8	30.0
13C2 PFDA	Ave	0.9622	1.049		10.9	10.0	9.0	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 06/23/2017 21:32Analysis Batch Number: 170756End Date: 06/23/2017 22:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-170756/4		06/23/2017 21:32	1	2017.06.23_537_004.d	GeminiC18 3x100 3(mm)
CCV 320-170756/5 CCVIS		06/23/2017 21:37	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 21:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 21:46	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 21:51	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 21:56	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:01	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:10	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:15	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:24	1		GeminiC18 3x100 3(mm)
CCV 320-170756/16 CCVIS		06/23/2017 22:29	1		GeminiC18 3x100 3(mm)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-170756/4 Calibration Date: 06/23/2017 21:32
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	1.002		24.6	21.2	15.9	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.202		7.43	7.21	3.0	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.8996		2.53	2.38	6.7	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.8735		4.78	4.80	-0.3	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.009		9.54	9.61	-0.7	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.7965		4.32	4.62	-6.6	50.0
13C2 PFHxA	Ave	1.038	1.061		10.2	10.0	2.2	30.0
13C2 PFDA	Ave	0.9622	0.7546		7.84	10.0	-21.6	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 06/23/2017 22:29Analysis Batch Number: 170757End Date: 06/23/2017 23:26

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-170757/16 CCVIS		06/23/2017 22:29	1	2017.06.23_537_ 016.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:34	1		GeminiC18 3x100 3(mm)
MB 320-169764/1-A		06/23/2017 22:39	1	2017.06.23_537_ 018.d	GeminiC18 3x100 3(mm)
LCS 320-169764/2-A		06/23/2017 22:43	1	2017.06.23_537_ 019.d	GeminiC18 3x100 3(mm)
LCSD 320-169764/3-A		06/23/2017 22:48	1	2017.06.23_537_ 020.d	GeminiC18 3x100 3(mm)
320-28916-1		06/23/2017 22:53	1	2017.06.23_537_ 021.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 22:58	1		GeminiC18 3x100 3(mm)
320-28916-3		06/23/2017 23:02	1	2017.06.23_537_ 023.d	GeminiC18 3x100 3(mm)
320-28916-4		06/23/2017 23:07	1	2017.06.23_537_ 024.d	GeminiC18 3x100 3(mm)
320-28916-5		06/23/2017 23:12	1	2017.06.23_537_ 025.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 23:17	1		GeminiC18 3x100 3(mm)
320-28916-7		06/23/2017 23:21	1	2017.06.23_537_ 027.d	GeminiC18 3x100 3(mm)
CCV 320-170757/28 CCVIS		06/23/2017 23:26	1	2017.06.23_537_ 028.d	GeminiC18 3x100 3(mm)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-170757/16 Calibration Date: 06/23/2017 22:29
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_016.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	1.009		51.8	44.4	16.7	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.238		16.0	15.1	6.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.9020		5.32	4.97	7.0	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.8757		10.0	10.0	-0.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.029		20.4	20.1	1.3	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.7570		8.59	9.68	-11.3	30.0
13C2 PFHxA	Ave	1.038	1.071		10.3	10.0	3.2	30.0
13C2 PFDA	Ave	0.9622	0.7334		7.62	10.0	-23.8	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 06/23/2017 23:26Analysis Batch Number: 170758End Date: 06/24/2017 00:23

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-170758/28 CCVIS		06/23/2017 23:26	1	2017.06.23_537_ 028.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 23:31	1		GeminiC18 3x100 3(mm)
320-28916-8		06/23/2017 23:36	1	2017.06.23_537_ 030.d	GeminiC18 3x100 3(mm)
320-28916-9		06/23/2017 23:40	1	2017.06.23_537_ 031.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 23:45	1		GeminiC18 3x100 3(mm)
320-28916-11		06/23/2017 23:50	1	2017.06.23_537_ 033.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/23/2017 23:55	1		GeminiC18 3x100 3(mm)
320-28916-13		06/23/2017 23:59	1	2017.06.23_537_ 035.d	GeminiC18 3x100 3(mm)
320-28916-14		06/24/2017 00:04	1	2017.06.23_537_ 036.d	GeminiC18 3x100 3(mm)
320-28916-15		06/24/2017 00:09	1	2017.06.23_537_ 037.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/24/2017 00:13	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/24/2017 00:18	1		GeminiC18 3x100 3(mm)
CCV 320-170758/40 CCVIS		06/24/2017 00:23	1	2017.06.23_537_ 040.d	GeminiC18 3x100 3(mm)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-170757/28 Calibration Date: 06/23/2017 23:26
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	0.8619		132	133	-0.3	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.272		49.1	45.1	9.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.9206		16.2	14.9	9.2	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.9112		31.2	30.0	4.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.030		60.9	60.0	1.4	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.8118		27.5	28.9	-4.8	30.0
13C2 PFHxA	Ave	1.038	1.114		10.7	10.0	7.3	30.0
13C2 PFDA	Ave	0.9622	0.7612		7.91	10.0	-20.9	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-170758/28 Calibration Date: 06/23/2017 23:26
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	0.8619		132	133	-0.3	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.272		49.1	45.1	9.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.9206		16.2	14.9	9.2	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.9112		31.2	30.0	4.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.030		60.9	60.0	1.4	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.8118		27.5	28.9	-4.8	30.0
13C2 PFHxA	Ave	1.038	1.114		10.7	10.0	7.3	30.0
13C2 PFDA	Ave	0.9622	0.7612		7.91	10.0	-20.9	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-170758/40 Calibration Date: 06/24/2017 00:23
 Instrument ID: A8_N Calib Start Date: 06/19/2017 17:40
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/19/2017 18:04
 Lab File ID: 2017.06.23_537_040.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8645	1.021		52.4	44.4	18.1	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.167	1.238		16.0	15.1	6.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.8433	0.9034		5.33	4.97	7.1	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8758	0.9028		10.3	10.0	3.1	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.016	1.013		20.1	20.1	-0.3	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8531	0.7437		8.44	9.68	-12.8	30.0
13C2 PFHxA	Ave	1.038	1.047		10.1	10.0	0.9	30.0
13C2 PFDA	Ave	0.9622	0.7496		7.79	10.0	-22.1	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Start Date: 06/28/2017 16:11Analysis Batch Number: 171480 End Date: 06/28/2017 16:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-171480/4		06/28/2017 16:11	1	2017.06.28_537_ CURVE 004.d	GeminiC18 3x100 3(mm)
IC 320-171480/5		06/28/2017 16:16	1	2017.06.28_537_ CURVE 005.d	GeminiC18 3x100 3(mm)
IC 320-171480/6		06/28/2017 16:20	1	2017.06.28_537_ CURVE 006.d	GeminiC18 3x100 3(mm)
IC 320-171480/7 ICISAV		06/28/2017 16:25	1	2017.06.28_537_ CURVE 007.d	GeminiC18 3x100 3(mm)
IC 320-171480/8		06/28/2017 16:30	1	2017.06.28_537_ CURVE 008.d	GeminiC18 3x100 3(mm)
IC 320-171480/9		06/28/2017 16:35	1	2017.06.28_537_ CURVE 009.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 16:39	1		GeminiC18 3x100 3(mm)
CCVL 320-171480/11		06/28/2017 16:44	1	2017.06.28_537_ CURVE 011.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 16:49	1		GeminiC18 3x100 3(mm)
ICV 320-171480/13		06/28/2017 16:54	1	2017.06.28_537_ CURVE 013.d	GeminiC18 3x100 3(mm)

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 171480

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 16:11 Calibration End Date: 06/28/2017 16:35 Calibration ID: 32056

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171480/4	2017.06.28_537_CURVE_004.d
Level 2	IC 320-171480/5	2017.06.28_537_CURVE_005.d
Level 3	IC 320-171480/6	2017.06.28_537_CURVE_006.d
Level 4	IC 320-171480/7	2017.06.28_537_CURVE_007.d
Level 5	IC 320-171480/8	2017.06.28_537_CURVE_008.d
Level 6	IC 320-171480/9	2017.06.28_537_CURVE_009.d

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								
Perfluorobutanesulfonic acid (PFBS)	1.0542 0.7747	1.1911	1.1019	0.9631	0.8595	QuaF		1.1739	-0.002299						0.9990		0.9600
Perfluoroheptanoic acid (PFHpA)	0.9802 0.9208	1.0349	0.9965	1.0023	0.9814	Ave		0.9860				3.8		30.0			
Perfluorohexanesulfonic acid (PFHxS)	1.4453 1.4041	1.5145	1.5704	1.4814	1.4492	Ave		1.4774				4.0		30.0			
Perfluorooctanoic acid (PFOA)	0.7781 0.8844	0.9090	0.8846	0.8950	0.9189	Ave		0.8783				5.8		30.0			
Perfluorooctanesulfonic acid (PFOS)	1.0077 1.0654	1.0142	1.0631	1.0030	1.0482	Ave		1.0336				2.8		30.0			
Perfluorononanoic acid (PFNA)	0.6497 0.6570	0.7320	0.7099	0.6959	0.6634	Ave		0.6847				4.8		30.0			
13C2 PFHxA	1.1301 1.2157	1.2214	1.2083	1.2062	1.2378	Ave		1.2033				3.1		30.0			
13C2 PFDA	0.6178 0.6956	0.6701	0.6547	0.6457	0.6660	Ave		0.6583				4.0		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-171480/11 Calibration Date: 06/28/2017 16:44
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537_CURVE_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.110		20.9	21.2	-1.4	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	1.011		2.44	2.38	2.5	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.461		7.13	7.21	-1.1	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.8953		4.89	4.80	1.9	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034	0.9935		9.24	9.61	-3.9	50.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.7253		4.90	4.62	5.9	50.0
13C2 PFHxA	Ave	1.203	1.147		9.53	10.0	-4.7	30.0
13C2 PFDA	Ave	0.6583	0.6379		9.69	10.0	-3.1	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: ICV 320-171480/13 Calibration Date: 06/28/2017 16:54
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537_CURVE_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.008		110	101	9.4	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	0.9330		9.54	10.1	-5.4	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.657		23.8	21.2	12.1	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.9424		21.5	20.0	7.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034	1.098		22.0	20.7	6.2	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.7209		21.1	20.0	5.3	30.0
13C2 PFHxA	Ave	1.203	1.187		9.86	10.0	-1.4	30.0
13C2 PFDA	Ave	0.6583	0.6889		10.5	10.0	4.7	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 06/28/2017 17:03Analysis Batch Number: 171486End Date: 06/28/2017 18:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-171486/1 CCVIS		06/28/2017 17:03	1	2017.06.28_537B 001.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:08	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:13	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:17	1		GeminiC18 3x100 3(mm)
LCSD 320-169764/3-A		06/28/2017 17:22	1	2017.06.28_537B 005.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:27	1		GeminiC18 3x100 3(mm)
320-28916-2		06/28/2017 17:32	1	2017.06.28_537B 007.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:36	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:46	1		GeminiC18 3x100 3(mm)
320-28916-6		06/28/2017 17:51	1	2017.06.28_537B 011.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 17:55	1		GeminiC18 3x100 3(mm)
CCV 320-171486/13 CCVIS		06/28/2017 18:00	1	2017.06.28_537B 013.d	GeminiC18 3x100 3(mm)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-171486/1 Calibration Date: 06/28/2017 17:03
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537B_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		0.8414		126	133	-4.8	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	1.007		15.2	14.9	2.1	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.428		43.6	45.1	-3.3	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.9314		31.8	30.0	6.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034	1.059		61.5	60.0	2.5	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.6633		28.0	28.9	-3.1	30.0
13C2 PFHxA	Ave	1.203	1.240		10.3	10.0	3.0	30.0
13C2 PFDA	Ave	0.6583	0.6727		10.2	10.0	2.2	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Start Date: 06/28/2017 18:00Analysis Batch Number: 171487 End Date: 06/28/2017 18:57

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-171487/13 CCVIS		06/28/2017 18:00	1	2017.06.28_537B 013.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:10	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:14	1		GeminiC18 3x100 3(mm)
320-28916-10		06/28/2017 18:19	1	2017.06.28_537B 017.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:24	1		GeminiC18 3x100 3(mm)
320-28916-12		06/28/2017 18:29	1	2017.06.28_537B 019.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:33	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:38	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:43	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:48	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 18:52	1		GeminiC18 3x100 3(mm)
CCV 320-171487/25 CCVIS		06/28/2017 18:57	1	2017.06.28_537B 025.d	GeminiC18 3x100 3(mm)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-171486/13 Calibration Date: 06/28/2017 18:00
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537B_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.120		46.6	44.4	5.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	0.9860		4.97	4.97	0.0	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.562		16.0	15.1	5.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.8867		10.1	10.0	0.9	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.6692		9.46	9.68	-2.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034			4.00	20.1		
13C2 PFHxA	Ave	1.203	1.196		9.94	10.0	-0.6	30.0
13C2 PFDA	Ave	0.6583	0.6190		9.40	10.0	-6.0	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-171487/13 Calibration Date: 06/28/2017 18:00
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537B_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.120		46.6	44.4	5.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	0.9860		4.97	4.97	0.0	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.562		16.0	15.1	5.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.8867		10.1	10.0	0.9	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.6692		9.46	9.68	-2.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034			4.00	20.1		
13C2 PFHxA	Ave	1.203	1.196		9.94	10.0	-0.6	30.0
13C2 PFDA	Ave	0.6583	0.6190		9.40	10.0	-6.0	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-171487/25 Calibration Date: 06/28/2017 18:57
 Instrument ID: A8_N Calib Start Date: 06/28/2017 16:11
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 16:35
 Lab File ID: 2017.06.28_537B_025.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		0.8337		124	133	-6.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	0.9860	0.9887		14.9	14.9	0.3	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.477	1.420		43.3	45.1	-3.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.8783	0.9415		32.1	30.0	7.2	30.0
Perfluorononanoic acid (PFNA)	Ave	0.6847	0.6883		29.0	28.9	0.5	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.034			4.00	60.0		
13C2 PFHxA	Ave	1.203	1.272		10.6	10.0	5.7	30.0
13C2 PFDA	Ave	0.6583	0.6711		10.2	10.0	1.9	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Start Date: 07/05/2017 19:50Analysis Batch Number: 172646 End Date: 07/05/2017 20:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-172646/4		07/05/2017 19:50	1	2017.07.05_537C URVE 004.d	GeminiC18 3x100 3(mm)
IC 320-172646/5		07/05/2017 19:54	1	2017.07.05_537C URVE 005.d	GeminiC18 3x100 3(mm)
IC 320-172646/6		07/05/2017 19:59	1	2017.07.05_537C URVE 006.d	GeminiC18 3x100 3(mm)
IC 320-172646/7 ICISAV		07/05/2017 20:04	1	2017.07.05_537C URVE 007.d	GeminiC18 3x100 3(mm)
IC 320-172646/8		07/05/2017 20:09	1	2017.07.05_537C URVE 008.d	GeminiC18 3x100 3(mm)
IC 320-172646/9		07/05/2017 20:13	1	2017.07.05_537C URVE 009.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/05/2017 20:18	1		GeminiC18 3x100 3(mm)
CCVL 320-172646/11		07/05/2017 20:23	1	2017.07.05_537C URVE 011.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/05/2017 20:28	1		GeminiC18 3x100 3(mm)
ICV 320-172646/13		07/05/2017 20:32	1	2017.07.05_537C URVE 013.d	GeminiC18 3x100 3(mm)

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1 Analy Batch No.: 172646

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/05/2017 19:50 Calibration End Date: 07/05/2017 20:13 Calibration ID: 32198

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-172646/4	2017.07.05_537CURVE_004.d
Level 2	IC 320-172646/5	2017.07.05_537CURVE_005.d
Level 3	IC 320-172646/6	2017.07.05_537CURVE_006.d
Level 4	IC 320-172646/7	2017.07.05_537CURVE_007.d
Level 5	IC 320-172646/8	2017.07.05_537CURVE_008.d
Level 6	IC 320-172646/9	2017.07.05_537CURVE_009.d

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								
Perfluorobutanesulfonic acid (PFBS)	0.9481 0.7897	0.9454	0.9006	0.8560	0.9067	Ave		0.8911				6.7		30.0			
Perfluoroheptanoic acid (PFHpA)	1.0233 1.0518	1.1219	1.0105	1.0079	1.0586	Ave		1.0457				4.1		30.0			
Perfluorohexanesulfonic acid (PFHxS)	1.4151 1.3485	1.4140	1.3485	1.3337	1.5012	Ave		1.3935				4.6		30.0			
Perfluorooctanoic acid (PFOA)	0.8653 0.9458	0.9483	0.8907	0.9155	0.9646	Ave		0.9217				4.1		30.0			
Perfluorooctanesulfonic acid (PFOS)	1.0233 0.9990	1.0180	1.0066	1.0023	1.0955	Ave		1.0241				3.5		30.0			
Perfluorononanoic acid (PFNA)	0.8166 0.8011	0.8671	0.8018	0.8165	0.8416	Ave		0.8241				3.1		30.0			
13C2 PFHxA	1.0491 1.1558	1.1981	1.1291	1.1054	1.1794	Ave		1.1362				4.8		30.0			
13C2 PFDA	0.8223 0.8325	0.8717	0.8508	0.8171	0.8428	Ave		0.8395				2.4		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-172646/11 Calibration Date: 07/05/2017 20:23
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.05_537CURVE_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.9450		22.5	21.2	6.0	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	1.013		2.30	2.38	-3.1	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.375		7.12	7.21	-1.3	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9158		4.76	4.80	-0.6	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	0.9585		8.99	9.61	-6.4	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.8346		4.68	4.62	1.3	50.0
13C2 PFHxA	Ave	1.136	1.093		9.62	10.0	-3.8	30.0
13C2 PFDA	Ave	0.8395	0.8398		10.0	10.0	0.0	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: ICV 320-172646/13 Calibration Date: 07/05/2017 20:32
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.05_537CURVE_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.9309		105	101	4.5	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	0.9545		9.20	10.1	-8.7	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.547		23.5	21.2	11.0	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9807		21.3	20.0	6.4	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	1.035		20.9	20.7	1.0	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.8757		21.3	20.0	6.3	30.0
13C2 PFHxA	Ave	1.136	1.143		10.1	10.0	0.6	30.0
13C2 PFDA	Ave	0.8395	0.8348		9.94	10.0	-0.6	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_N Start Date: 07/06/2017 23:31Analysis Batch Number: 172919 End Date: 07/07/2017 00:18

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-172919/4		07/06/2017 23:31	1	2017.07.06_537A 004.d	GeminiC18 3x100 3(mm)
CCV 320-172919/5 CCVIS		07/06/2017 23:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/06/2017 23:40	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/06/2017 23:45	2		GeminiC18 3x100 3(mm)
CCV 320-172919/14 CCVIS		07/07/2017 00:18	1		GeminiC18 3x100 3(mm)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-172919/4 Calibration Date: 07/06/2017 23:31
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.06_537A_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.9095		21.6	21.2	2.1	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	1.065		2.42	2.38	1.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.361		7.05	7.21	-2.3	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9312		4.84	4.80	1.0	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	1.015		9.52	9.61	-0.9	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.8413		4.72	4.62	2.1	50.0
13C2 PFHxA	Ave	1.136	1.111		9.78	10.0	-2.2	30.0
13C2 PFDA	Ave	0.8395	0.8721		10.4	10.0	3.9	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-28916-1

SDG No.: _____

Instrument ID: A8_NStart Date: 07/07/2017 00:51Analysis Batch Number: 172925End Date: 07/07/2017 01:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-172925/21 CCVIS		07/07/2017 00:51	1	2017.07.06_537A 021.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/07/2017 00:56	1		GeminiC18 3x100 3(mm)
MB 320-172119/1-A		07/07/2017 01:01	1	2017.07.06_537A 023.d	GeminiC18 3x100 3(mm)
LLCS 320-172119/2-A		07/07/2017 01:06	1	2017.07.06_537A 024.d	GeminiC18 3x100 3(mm)
LLCSD 320-172119/3-A		07/07/2017 01:10	1	2017.07.06_537A 025.d	GeminiC18 3x100 3(mm)
320-28916-4 RE		07/07/2017 01:15	1	2017.07.06_537A 026.d	GeminiC18 3x100 3(mm)
320-28916-5 RE		07/07/2017 01:20	1	2017.07.06_537A 027.d	GeminiC18 3x100 3(mm)
320-28916-7 RE		07/07/2017 01:25	1	2017.07.06_537A 028.d	GeminiC18 3x100 3(mm)
320-28916-11 RE		07/07/2017 01:29	1	2017.07.06_537A 029.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/07/2017 01:34	1		GeminiC18 3x100 3(mm)
CCV 320-172925/31 CCVIS		07/07/2017 01:39	1	2017.07.06_537A 031.d	GeminiC18 3x100 3(mm)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-172925/21 Calibration Date: 07/07/2017 00:51
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.06_537A_021.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.8822		131	133	-1.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	1.025		14.6	14.9	-2.0	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.380		44.7	45.1	-0.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9608		31.2	30.0	4.2	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	1.043		61.2	60.0	1.8	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.7904		27.7	28.9	-4.1	30.0
13C2 PFHxA	Ave	1.136	1.145		10.1	10.0	0.7	30.0
13C2 PFDA	Ave	0.8395	0.8603		10.2	10.0	2.5	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1
 SDG No.: _____
 Lab Sample ID: CCV 320-172925/31 Calibration Date: 07/07/2017 01:39
 Instrument ID: A8_N Calib Start Date: 07/05/2017 19:50
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/05/2017 20:13
 Lab File ID: 2017.07.06_537A_031.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.8911	0.9177		45.7	44.4	3.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.046	1.043		4.96	4.97	-0.2	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.394	1.374		14.9	15.1	-1.4	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9217	0.9082		9.89	10.0	-1.5	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.024	1.010		19.8	20.1	-1.4	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8241	0.7875		9.25	9.68	-4.4	30.0
13C2 PFHxA	Ave	1.136	1.139		10.0	10.0	0.3	30.0
13C2 PFDA	Ave	0.8395	0.8636		10.3	10.0	2.9	30.0

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28916-1

SDG No.: _____

Batch Number: 169764 Batch Start Date: 06/19/17 09:24 Batch Analyst: Sharifi, NooshinBatch Method: 537 Batch End Date: 06/20/17 19:18

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00038
MB 320-169764/1		537, 537				250 mL	1.0 mL	7 SU	100 uL
LCS 320-169764/2		537, 537				250 mL	1.0 mL	7 SU	100 uL
LCSD 320-169764/3		537, 537				250 mL	1.0 mL	7 SU	100 uL
320-28916-A-1	NAWC-060717-RW-206A	537, 537	T	284.82 g	27.36 g	257.5 mL	1.0 mL	7 SU	100 uL
320-28916-A-2	NAWC-060717-FRB-206A	537, 537	T	290.73 g	26.64 g	264.1 mL	1.0 mL	7 SU	100 uL
320-28916-A-3	NAWC-060717-RW-79	537, 537	T	290.03 g	27.61 g	262.4 mL	1.0 mL	7 SU	100 uL
320-28916-A-4	NAWC-060717-FRB-79	537, 537	T	297.40 g	27.45 g	270 mL	1.0 mL	7 SU	100 uL
320-28916-A-5	NAWC-060717-RW-258A	537, 537	T	291.29 g	27.27 g	264 mL	1.0 mL	7 SU	100 uL
320-28916-A-6	NAWC-060717-FRB-258A	537, 537	T	284.91 g	27.63 g	257.3 mL	1.0 mL	7 SU	100 uL
320-28916-A-7	NAWC-060717-RW-145	537, 537	T	285.67 g	27.44 g	258.2 mL	1.0 mL	7 SU	100 uL
320-28916-A-8	NAWC-060717-FRB-145	537, 537	T	294.30 g	27.13 g	267.2 mL	1.0 mL	7 SU	100 uL
320-28916-A-9	NAWC-060717-RW-162	537, 537	T	284.71 g	27.62 g	257.1 mL	1.0 mL	7 SU	100 uL
320-28916-A-10	NAWC-060717-FRB-162	537, 537	T	288.47 g	26.74 g	261.7 mL	1.0 mL	7 SU	100 uL
320-28916-A-11	NAWC-060717-RW-206B	537, 537	T	287.74 g	27.98 g	259.8 mL	1.0 mL	7 SU	100 uL
320-28916-A-12	NAWC-060717-RW-258B	537, 537	T	289.91 g	28.15 g	261.8 mL	1.0 mL	7 SU	100 uL
320-28916-A-13	NAWC-060717-RW-56	537, 537	T	286.04 g	28.00 g	258 mL	1.0 mL	7 SU	100 uL
320-28916-A-14	NAWC-060717-FRB-56	537, 537	T	295.46 g	27.15 g	268.3 mL	1.0 mL	7 SU	100 uL
320-28916-A-15	NAWC-060717-DUP02	537, 537	T	296.93 g	27.08 g	269.9 mL	1.0 mL	7 SU	100 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-MSP 00021	LC537-SU 00042	AnalysisComment			
MB 320-169764/1		537, 537			100 uL	CH ND			
LCS 320-169764/2		537, 537		100 uL	100 uL	CH ND			

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.: 320-28916-1

SDG No.: _____

Batch Number: 169764 Batch Start Date: 06/19/17 09:24 Batch Analyst: Sharifi, NooshinBatch Method: 537 Batch End Date: 06/20/17 19:18

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-MSP 00021	LC537-SU 00042	AnalysisComment			
LCSD 320-169764/3		537, 537		100 uL	100 uL	CH ND			
320-28916-A-1	NAWC-060717-RW-2 06A	537, 537	T		100 uL	CH ND			
320-28916-A-2	NAWC-060717-FRB- 206A	537, 537	T		100 uL	CH ND			
320-28916-A-3	NAWC-060717-RW-7 9	537, 537	T		100 uL	CH ND			
320-28916-A-4	NAWC-060717-FRB- 79	537, 537	T		100 uL	CH ND			
320-28916-A-5	NAWC-060717-RW-2 58A	537, 537	T		100 uL	CH ND			
320-28916-A-6	NAWC-060717-FRB- 258A	537, 537	T		100 uL	CH ND			
320-28916-A-7	NAWC-060717-RW-1 45	537, 537	T		100 uL	CH ND			
320-28916-A-8	NAWC-060717-FRB- 145	537, 537	T		100 uL	CH ND			
320-28916-A-9	NAWC-060717-RW-1 62	537, 537	T		100 uL	CH ND			
320-28916-A-10	NAWC-060717-FRB- 162	537, 537	T		100 uL	CH ND			
320-28916-A-11	NAWC-060717-RW-2 06B	537, 537	T		100 uL	CH ND			
320-28916-A-12	NAWC-060717-RW-2 58B	537, 537	T		100 uL	CH ND			
320-28916-A-13	NAWC-060717-RW-5 6	537, 537	T		100 uL	CH ND			
320-28916-A-14	NAWC-060717-FRB- 56	537, 537	T		100 uL	CH ND			
320-28916-A-15	NAWC-060717-DUP0 2	537, 537	T		100 uL	CH ND			

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.: 320-28916-1

SDG No.: _____

Batch Number: 169764 Batch Start Date: 06/19/17 09:24 Batch Analyst: Sharifi, NooshinBatch Method: 537 Batch End Date: 06/20/17 19:18

Batch Notes	
Batch Comment	IS: 911914
Manifold ID	4, 1
Methanol ID	952645
Pipette ID	M16387D
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	TN
Analyst ID - SU Reagent Drop	NSH
Analyst ID - SU Reagent Drop Witness	JNS
Analyst ID - TA Reagent Drop	NSH
Analyst ID - TA Reagent Drop Witness	JNS
SPE Cartridge ID	6346595-04
Trizma ID	SLBR4303V
Reagent Water ID	6-14-17

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.: 320-28916-1

SDG No.: _____

Batch Number: 172119 Batch Start Date: 07/03/17 09:49 Batch Analyst: Branscum, CassieBatch Method: 537 Batch End Date: 07/05/17 22:25

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00043
MB 320-172119/1		537, 537				250 mL	1.00 mL	7 SU	100 uL
LLCS 320-172119/2		537, 537				250 mL	1.00 mL	7 SU	100 uL
LLCSD 320-172119/3		537, 537				250 mL	1.00 mL	7 SU	100 uL
320-28916-B-4	NAWC-060717-FRB-79	537, 537	T	286.38 g	27.44 g	258.9 mL	1.00 mL	7 SU	100 uL
320-28916-B-5	NAWC-060717-RW-258A	537, 537	T	285.18 g	28.52 g	256.7 mL	1.00 mL	7 SU	100 uL
320-28916-B-7	NAWC-060717-RW-145	537, 537	T	272.54 g	27.76 g	244.8 mL	1.00 mL	7 SU	100 uL
320-28916-B-11	NAWC-060717-RW-206B	537, 537	T	284.30 g	27.51 g	256.8 mL	1.00 mL	7 SU	100 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-LSP 00020	LC537-SU 00044	AnalysisComment			
MB 320-172119/1		537, 537			100 uL	ch nd			
LLCS 320-172119/2		537, 537		100 uL	100 uL	ch nd			
LLCSD 320-172119/3		537, 537		100 uL	100 uL	ch nd			
320-28916-B-4	NAWC-060717-FRB-79	537, 537	T		100 uL	ch nd			
320-28916-B-5	NAWC-060717-RW-258A	537, 537	T		100 uL	ch nd			
320-28916-B-7	NAWC-060717-RW-145	537, 537	T		100 uL	ch nd			
320-28916-B-11	NAWC-060717-RW-206B	537, 537	T		100 uL	ch nd			

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.: 320-28916-1

SDG No.: _____

Batch Number: 172119 Batch Start Date: 07/03/17 09:49 Batch Analyst: Branscum, CassieBatch Method: 537 Batch End Date: 07/05/17 22:25

Batch Notes	
Batch Comment	IS:960784
Manifold ID	3
Methanol ID	973181
Pipette ID	MD05306
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	JER
Analyst ID - SU Reagent Drop	CCB
Analyst ID - SU Reagent Drop Witness	NSH
Analyst ID - TA Reagent Drop	CCB
Analyst ID - TA Reagent Drop Witness	NSH
SPE Cartridge ID	6357081-01
Trizma ID	SLBR4303V
Reagent Water ID	6-27-17

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.

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