UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE: 5/11/2018

SUBJECT: Region III Data QA Review

FROM: Brandon McDonald
Region III ESAT RPO (3EA22)

TO: EDUARDO ROVIRA

Attached is the data validation report for the PROCINO-BLADES PFAS site for DAS# R35321; SDG# C0AL3 completed by the Region III Environmental Services Assistance Team(ESAT) contractor, ICF International, under the direction of Region III EAID.

If you have any questions regarding this review, please call Brandon McDonald at (410) 305-2607 or you can call Eric Graybill at (410)-305-2665.

Attachment

cc: Ex. 4 CBI STON SOLUTIONS)
WESTON SOLUTIONS)

TO: #0002 TDF: #0318044

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ICF
ESAT Region 3
US Environmental Protection Agency Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Phone 410-305-3012

Date: April 6, 2018

To: Brandon McDonald
ESAT Region 3 Project Officer

From: Ex. 4 CBI
Validator

Ex. 4 CBI
Reviewer

Subject: Organic Data Validation (S4VM)
Procino-Blades PFAS
R35321 C0AL3

Overview

This data package consisted of six (6) Field Reagent Blanks (FRB) and six (6) potable water samples analyzed for perfluorinated alkyl acid compounds by Liquid Chromatography/Mass Spectrometry (LC/MS). This sample set included a field duplicate pair.

Analyses were performed by TestAmerica Sacramento according to EPA Method 537 utilizing a quantitative isotope dilution-internal standard technique.

Data were validated according to the National Functional Guidelines for Organic Superfund Methods Data Review and applicable USEPA Region 3 modifications. The validation report has been assigned the Superfund Data Validation Label S4VM (Stage_4_Validation_Manual).

Samples were submitted to the laboratory directly by the contractor and not through the EPA Technical Services Branch (TSB). Environmental Services Assistance Team (ESAT) has been tasked to evaluate laboratory reported data for the purpose of usability, based on the hardcopy data package provided to ESAT dated March 26, 2018.

The laboratory did not provide sufficient data to determine if branched chain isomers of PFOA were included in the reporting of this analyte in field samples. No data were qualified based on this finding.

Summary

No significant data quality outliers or technical deficiencies were identified that would require rejection or estimation of sample results.

Notes

Accuracy and precision criteria were met by the laboratory in the initial and continuing calibration verification standard analyses associated with the samples in this Sample Data Group (SDG).

Analytes detected below Reporting Limits (RLs) are estimated and have been qualified "J".

The method blanks and FRBs associated with the samples in this SDG were free from contamination. No data were qualified based on blank contamination.

Percent recoveries for target analytes in the Laboratory Control Sample (LCS) analysis were within control limits. No field sample data were qualified based on LCS accuracy.

Percent recoveries and Relative Percent Differences (RPDs) for target analytes in the Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) analyses were within control limits. No field sample data were qualified based on these findings.

Percent recoveries and Relative Percent Differences (RPDs) for target analytes in Matrix Spike/Duplicate Matrix Spike (MS/MSD) analyses of sample C0AM1 were within control limits. No data were qualified based on MS/MSD precision or accuracy.

Results reported for field duplicate pair C0AM0/C0AM4 were comparable. No data were qualified based on field duplicate precision.

The samples in this SDG were found to be free of residual chlorine at the time of sample preparation by the laboratory. No data were qualified based on this finding.

The samples in this SDG were preserved and reported pH within the optimum range. No data were qualified based on these findings.

Manual integrations were performed and identified by the laboratory. A subset of these was evaluated by the reviewer, and had been found to be accurate and consistent. No action was taken by the reviewer based on manual integrations.

Glossary of Organic Data Qualifier Codes

Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
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.

Additional Qualifiers	Additional qualifiers may be combined with other qualifiers.
N	The analyte has been “tentatively identified” or “presumptively” as present.
B	The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.
C	The target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatography/Mass Spectrometry (GC/MS). This qualifier may be added to other qualifiers.
X	The target Pesticide or Aroclor analyte identification was not confirmed when GC/MS analysis was performed. This qualifier may be added to other qualifiers.

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL3**

Lab Sample ID: 320-36607-1FB
Client Matrix: Water

Date Sampled: 02/27/2018 0930
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method: 537 DW
Prep Method: 537 DW
Dilution: 1.0
Analysis Date: 03/06/2018 2254
Prep Date: 03/03/2018 1252

Analysis Batch: 320-211579
Prep Batch: 320-211046

Instrument ID: A8_N
Lab File ID: 2018.03.06_537C_005
Initial Weight/Volume: 270.9 mL
Final Weight/Volume: 1.00 mL
Injection Volume: 2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.3	37
Perfluorooctanoic acid	ND		2.6	18
Perfluorononanoic acid	ND		7.4	18
Perfluorohexanesulfonic acid	ND		5.1	28
Perfluoroheptanoic acid	ND		1.8	9.2
Perfluorobutanesulfonic acid	ND		15	83

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	94		70 - 130
13C2 PFDA	118		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL4**

Lab Sample ID: 320-36607-2
Client Matrix: Water

Date Sampled: 02/27/2018 0930
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method: 537 DW
Prep Method: 537 DW
Dilution: 1.0
Analysis Date: 03/06/2018 2259
Prep Date: 03/03/2018 1252

Analysis Batch: 320-211579
Prep Batch: 320-211046

Instrument ID: A8_N
Lab File ID: 2018.03.06_537C_006
Initial Weight/Volume: 295.6 mL
Final Weight/Volume: 1.00 mL
Injection Volume: 2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	44		5.8	34
Perfluorooctanoic acid	3.7	J	2.4	17
Perfluorononanoic acid	ND		6.8	17
Perfluorohexanesulfonic acid	ND		4.7	25
Perfluoroheptanoic acid	1.6	J	1.6	8.5
Perfluorobutanesulfonic acid	ND		14	76

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	87		70 - 130
13C2 PFDA	113		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL5**

Lab Sample ID: 320-36607-3FB
Client Matrix: Water

Date Sampled: 02/27/2018 0950
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method: 537 DW
Prep Method: 537 DW
Dilution: 1.0
Analysis Date: 03/06/2018 2304
Prep Date: 03/03/2018 1252

Analysis Batch: 320-211579
Prep Batch: 320-211046

Instrument ID: A8_N
Lab File ID: 2018.03.06_537C_007
Initial Weight/Volume: 282.1 mL
Final Weight/Volume: 1.00 mL
Injection Volume: 2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.0	35
Perfluorooctanoic acid	ND		2.5	18
Perfluorononanoic acid	ND		7.1	18
Perfluorohexanesulfonic acid	ND		4.9	27
Perfluoroheptanoic acid	ND		1.7	8.9
Perfluorobutanesulfonic acid	ND		14	80

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	97		70 - 130
13C2 PFDA	114		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL6**

Lab Sample ID: 320-36607-4
Client Matrix: Water

Date Sampled: 02/27/2018 0950
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method: 537 DW
Prep Method: 537 DW
Dilution: 1.0
Analysis Date: 03/06/2018 2308
Prep Date: 03/03/2018 1252

Analysis Batch: 320-211579
Prep Batch: 320-211046

Instrument ID: A8_N
Lab File ID: 2018.03.06_537C_008
Initial Weight/Volume: 295.9 mL
Final Weight/Volume: 1.00 mL
Injection Volume: 2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		5.7	34
Perfluorooctanoic acid	2.4	J	2.4	17
Perfluorononanoic acid	ND		6.8	17
Perfluorohexanesulfonic acid	ND		4.6	25
Perfluoroheptanoic acid	ND		1.6	8.4
Perfluorobutanesulfonic acid	ND		14	76

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	86		70 - 130
13C2 PFDA	117		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL7**

Lab Sample ID: 320-36607-5FB
Client Matrix: Water

Date Sampled: 02/28/2018 1310
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method: 537 DW
Prep Method: 537 DW
Dilution: 1.0
Analysis Date: 03/09/2018 0921
Prep Date: 03/07/2018 1447

Analysis Batch: 320-212122
Prep Batch: 320-211748

Instrument ID: A8_N
Lab File ID: 2018.03.09_537A_010
Initial Weight/Volume: 257.5 mL
Final Weight/Volume: 1.00 mL
Injection Volume: 2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.6	39
Perfluorooctanoic acid	ND		2.7	19
Perfluorononanoic acid	ND		7.8	19
Perfluorohexanesulfonic acid	ND		5.3	29
Perfluoroheptanoic acid	ND		1.8	9.7
Perfluorobutanesulfonic acid	ND		16	87

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	91		70 - 130
13C2 PFDA	107		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL8**

Lab Sample ID: 320-36607-6FB
Client Matrix: Water

Date Sampled: 02/28/2018 1330
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211579	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_01C
Dilution:	1.0			Initial Weight/Volume:	274.7 mL
Analysis Date:	03/06/2018 2318			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.2	36
Perfluorooctanoic acid	ND		2.5	18
Perfluorononanoic acid	ND		7.3	18
Perfluorohexanesulfonic acid	ND		5.0	27
Perfluoroheptanoic acid	ND		1.7	9.1
Perfluorobutanesulfonic acid	ND		15	82

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	94		70 - 130
13C2 PFDA	113		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL9**

Lab Sample ID: 320-36607-7FB
Client Matrix: Water

Date Sampled: 02/28/2018 1342
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211579	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_011
Dilution:	1.0			Initial Weight/Volume:	282.3 mL
Analysis Date:	03/06/2018 2322			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.0	35
Perfluorooctanoic acid	ND		2.5	18
Perfluorononanoic acid	ND		7.1	18
Perfluorohexanesulfonic acid	ND		4.9	27
Perfluoroheptanoic acid	ND		1.7	8.9
Perfluorobutanesulfonic acid	ND		14	80

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	93		70 - 130
13C2 PFDA	113		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AM0**

Lab Sample ID: 320-36607-8
Client Matrix: Water

Date Sampled: 02/28/2018 1310
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method: 537 DW
Prep Method: 537 DW
Dilution: 1.0
Analysis Date: 03/12/2018 1644
Prep Date: 03/08/2018 1727

Analysis Batch: 320-212525
Prep Batch: 320-212004

Instrument ID: A8_N
Lab File ID: 2018.03.12_537AA_01
Initial Weight/Volume: 283 mL
Final Weight/Volume: 1.00 mL
Injection Volume: 2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.0	35
Perfluorooctanoic acid	2.8	J	2.5	18
Perfluorononanoic acid	ND		7.1	18
Perfluorohexanesulfonic acid	ND		4.9	27
Perfluoroheptanoic acid	ND		1.7	8.8
Perfluorobutanesulfonic acid	ND		14	80

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	85		70 - 130
13C2 PFDA	116		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AM1**

Lab Sample ID: 320-36607-9
Client Matrix: Water

Date Sampled: 02/28/2018 1330
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method: 537 DW
Prep Method: 537 DW
Dilution: 1.0
Analysis Date: 03/06/2018 2341
Prep Date: 03/03/2018 1252

Analysis Batch: 320-211581
Prep Batch: 320-211046

Instrument ID: A8_N
Lab File ID: 2018.03.06_537C_015
Initial Weight/Volume: 284.3 mL
Final Weight/Volume: 1.00 mL
Injection Volume: 2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	51		6.0	35
Perfluorooctanoic acid	5.0	J	2.5	18
Perfluorononanoic acid	ND		7.0	18
Perfluorohexanesulfonic acid	ND		4.8	26
Perfluoroheptanoic acid	1.7	J	1.7	8.8
Perfluorobutanesulfonic acid	ND		14	79

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	89		70 - 130
13C2 PFDA	121		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AM2**

Lab Sample ID: 320-36607-10
Client Matrix: Water

Date Sampled: 02/28/2018 1342
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211581	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_01E
Dilution:	1.0			Initial Weight/Volume:	290.1 mL
Analysis Date:	03/06/2018 2355			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	35		5.9	34
Perfluorooctanoic acid	23		2.4	17
Perfluorononanoic acid	14	J	6.9	17
Perfluorohexanesulfonic acid	7.6	J	4.7	26
Perfluoroheptanoic acid	9.9		1.6	8.6
Perfluorobutanesulfonic acid	ND		14	78

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	78		70 - 130
13C2 PFDA	112		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AM3**

Lab Sample ID: 320-36607-11FB
Client Matrix: Water

Date Sampled: 02/28/2018 1310
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211581	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_019
Dilution:	1.0			Initial Weight/Volume:	236.5 mL
Analysis Date:	03/07/2018 0000			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		7.2	42
Perfluorooctanoic acid	ND		3.0	21
Perfluorononanoic acid	ND		8.5	21
Perfluorohexanesulfonic acid	ND		5.8	32
Perfluoroheptanoic acid	ND		2.0	11
Perfluorobutanesulfonic acid	ND		17	95

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	86		70 - 130
13C2 PFDA	102		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: C0AM4

Lab Sample ID: 320-36607-12
Client Matrix: Water

Date Sampled: 02/28/2018 1310
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211581	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_02C
Dilution:	1.0			Initial Weight/Volume:	286.5 mL
Analysis Date:	03/07/2018 0004			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		5.9	35
Perfluorooctanoic acid	3.2	J	2.4	17
Perfluorononanoic acid	ND		7.0	17
Perfluorohexanesulfonic acid	ND		4.8	26
Perfluoroheptanoic acid	ND		1.7	8.7
Perfluorobutanesulfonic acid	ND		14	79

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	80		70 - 130
13C2 PFDA	109		70 - 130

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-36607-1

SDG Number: DAS R35321, SDG C0AL3

Job Description: DAS R35321, SDG C0AL3

For:
Weston Solutions, Inc.
1400 Weston Way
PO BOX 2653
West Chester, PA 19380
Attention: Ex. 4 CBI

Ex. 4 CBI

Ex. 4 CBI

Ex. 4 CBI Project Manager I
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Ex. 4 CBI @testamericainc.com
03/21/2018

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Job Narrative
320-36607-1

Receipt
The samples were received on 3/1/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

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

Organic Prep
Method(s) 537 DW: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-211748.

Method(s) 537 DW: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-212004.

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

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Ex. 4 CBI

3/21/18

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 208773

Lab Sample ID: IC 320-208773/4 Client Sample ID:

Date Analyzed: 02/16/18 08:55 Lab File ID: 2018.02.016_537ICAL_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	1.66	Assign Peak	Ex. 4 CBI	02/16/18 10:26
Perfluorooctane sulfonic acid	2.12	Assign Peak		02/16/18 10:26

Lab Sample ID: IC 320-208773/5 Client Sample ID:

Date Analyzed: 02/16/18 09:00 Lab File ID: 2018.02.016_537ICAL_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.12	Peak assignment corrected	Ex. 4 CBI	02/16/18 10:29

Lab Sample ID: IC 320-208773/6 Client Sample ID:

Date Analyzed: 02/16/18 09:05 Lab File ID: 2018.02.016_537ICAL_006.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.12	Peak assignment corrected	Ex. 4 CBI	02/16/18 10:29

Lab Sample ID: IC 320-208773/7 ICISAV Client Sample ID:

Date Analyzed: 02/16/18 09:09 Lab File ID: 2018.02.016_537ICAL_007.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.11	Peak assignment corrected	Ex. 4 CBI	02/16/18 10:30

Lab Sample ID: IC 320-208773/8 Client Sample ID:

Date Analyzed: 02/16/18 09:14 Lab File ID: 2018.02.016_537ICAL_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.11	Peak assignment corrected	Ex. 4 CBI	02/16/18 10:30

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 208773

Lab Sample ID: IC 320-208773/9 Client Sample ID:

Date Analyzed: 02/16/18 09:19 Lab File ID: 2018.02.016_537ICAL_009.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.11	Peak assignment corrected	Ex. 4 CBI	02/16/18 10:31

Lab Sample ID: CCVL 320-208773/11 Client Sample ID:

Date Analyzed: 02/16/18 09:28 Lab File ID: 2018.02.016_537ICAL_011.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.12	Peak assignment corrected	Ex. 4 CBI	02/16/18 10:36

Lab Sample ID: ICV 320-208773/13 Client Sample ID:

Date Analyzed: 02/16/18 09:37 Lab File ID: 2018.02.016_537ICAL_013.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.11	Peak assignment corrected	Ex. 4 CBI	02/16/18 10:37

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 211417

Lab Sample ID: CCVL 320-211417/1 Client Sample ID:

Date Analyzed: 03/06/18 09:24 Lab File ID: 2018.03.06_537A_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.07	Peak assignment corrected	Ex. 4 CBI	03/06/18 13:11

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 211579

Lab Sample ID: CCV 320-211579/1 CCVIS Client Sample ID:

Date Analyzed: 03/06/18 22:36 Lab File ID: 2018.03.06_537C_001.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Missed Peak	Ex. 4 CBI	03/07/18 10:44

Lab Sample ID: LCS 320-211046/2-A Client Sample ID:

Date Analyzed: 03/06/18 22:50 Lab File ID: 2018.03.06_537C_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Missed Peak	Ex. 4 CBI	03/07/18 10:45

Lab Sample ID: 320-36607-2 Client Sample ID: C0AL4

Date Analyzed: 03/06/18 22:59 Lab File ID: 2018.03.06_537C_006.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	1.62	Missed Peak	Ex. 4 CBI	03/07/18 10:39
Perfluorohexanesulfonic acid	1.62	Missed Peak		03/07/18 10:39
Perfluorooctane sulfonic acid	2.06	Missed Peak		03/07/18 10:39

Lab Sample ID: 320-36607-4 Client Sample ID: C0AL6

Date Analyzed: 03/06/18 23:08 Lab File ID: 2018.03.06_537C_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid	1.36	Missed Peak	Ex. 4 CBI	03/07/18 10:47
Perfluoroheptanoic acid	1.62	Missed Peak		03/07/18 10:47
Perfluorohexanesulfonic acid	1.62	Missed Peak		03/07/18 10:47
Perfluorooctane sulfonic acid	2.06	Missed Peak		03/07/18 10:47
13C2 PFDA	2.23	Incomplete Integration		03/07/18 10:46

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 211579

Lab Sample ID: CCV 320-211579/13 CCVIS Client Sample ID:

Date Analyzed: 03/06/18 23:32 Lab File ID: 2018.03.06_537C_013.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Missed Peak	Ex. 4 CBI	03/07/18 11:08

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 211581

Lab Sample ID: CCV 320-211581/13 CCVIS Client Sample ID:

Date Analyzed: 03/06/18 23:32 Lab File ID: 2018.03.06_537C_013.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Missed Peak	Ex. 4 CBI	03/07/18 11:08

Lab Sample ID: 320-36607-9 Client Sample ID: C0AM1

Date Analyzed: 03/06/18 23:41 Lab File ID: 2018.03.06_537C_015.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	1.62	Missed Peak	Ex. 4 CBI	03/07/18 11:01
Perfluorohexanesulfonic acid	1.62	Missed Peak		03/07/18 11:01
Perfluorooctane sulfonic acid	2.06	Missed Peak		03/07/18 11:01

Lab Sample ID: 320-36607-9 MS Client Sample ID: C0AM1 MS

Date Analyzed: 03/06/18 23:46 Lab File ID: 2018.03.06_537C_016.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Missed Peak	Ex. 4 CBI	03/07/18 11:02

Lab Sample ID: 320-36607-9 MSD Client Sample ID: C0AM1 MSD

Date Analyzed: 03/06/18 23:50 Lab File ID: 2018.03.06_537C_017.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Missed Peak	Ex. 4 CBI	03/07/18 11:03

Lab Sample ID: 320-36607-10 Client Sample ID: C0AM2

Date Analyzed: 03/06/18 23:55 Lab File ID: 2018.03.06_537C_018.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Missed Peak	Ex. 4 CBI	03/07/18 11:03

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 211581

Lab Sample ID: 320-36607-12 Client Sample ID: C0AM4

Date Analyzed: 03/07/18 00:04 Lab File ID: 2018.03.06_537C_020.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	1.62	Missed Peak	Ex. 4 CBI	03/07/18 11:05
Perfluorohexanesulfonic acid	1.62	Missed Peak		03/07/18 11:04
Perfluorooctane sulfonic acid	2.06	Missed Peak		03/07/18 11:05

Lab Sample ID: CCV 320-211581/24 CCVIS Client Sample ID:

Date Analyzed: 03/07/18 00:23 Lab File ID: 2018.03.06_537C_024.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Missed Peak	Ex. 4 CBI	03/07/18 11:09

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 212122

Lab Sample ID: CCVL 320-212122/1 Client Sample ID:

Date Analyzed: 03/09/18 08:53 Lab File ID: 2018.03.09_537A_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.10	Missed Peak	Ex. 4 CBI	03/09/18 10:50

Lab Sample ID: CCV 320-212122/2 CCVIS Client Sample ID:

Date Analyzed: 03/09/18 08:58 Lab File ID: 2018.03.09_537A_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.10	Peak assignment corrected	Ex. 4 CBI	03/09/18 10:37

Lab Sample ID: LCS 320-211748/2-A Client Sample ID:

Date Analyzed: 03/09/18 09:12 Lab File ID: 2018.03.09_537A_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.09	Peak assignment corrected	Ex. 4 CBI	03/09/18 10:37

Lab Sample ID: LCSD 320-211748/3-A Client Sample ID:

Date Analyzed: 03/09/18 09:17 Lab File ID: 2018.03.09_537A_009.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.09	Peak assignment corrected	Ex. 4 CBI	03/09/18 10:51

Lab Sample ID: CCV 320-212122/8 CCVIS Client Sample ID:

Date Analyzed: 03/09/18 09:26 Lab File ID: 2018.03.09_537A_011.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.09	Missed Peak	Ex. 4 CBI	03/09/18 10:51

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 212525

Lab Sample ID: CCVL 320-212525/1 Client Sample ID:

Date Analyzed: 03/12/18 16:16 Lab File ID: 2018.03.12_537AA_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.11	Peak assignment corrected	Ex. 4 CBI	03/12/18 16:44

Lab Sample ID: CCV 320-212525/2 CCVIS Client Sample ID:

Date Analyzed: 03/12/18 16:21 Lab File ID: 2018.03.12_537AA_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.09	Peak assignment corrected	Ex. 4 CBI	03/12/18 16:45

Lab Sample ID: LCS 320-212004/2-A Client Sample ID:

Date Analyzed: 03/12/18 16:35 Lab File ID: 2018.03.12_537AA_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.09	Peak assignment corrected	Ex. 4 CBI	03/12/18 16:47

Lab Sample ID: LCSD 320-212004/3-A Client Sample ID:

Date Analyzed: 03/12/18 16:40 Lab File ID: 2018.03.12_537AA_009.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.09	Peak assignment corrected	Ex. 4 CBI	03/12/18 16:47

Lab Sample ID: 320-36607-8 Client Sample ID: C0AM0

Date Analyzed: 03/12/18 16:44 Lab File ID: 2018.03.12_537AA_010.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanesulfonic acid	1.64	Missed Peak	Ex. 4 CBI	03/12/18 17:01
Perfluorooctanoic acid	1.82	Baseline		03/12/18 17:01

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Analysis Batch Number: 212525

Lab Sample ID: CCV 320-212525/8 CCVIS Client Sample ID:

Date Analyzed: 03/12/18 16:49 Lab File ID: 2018.03.12_537AA_011.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Peak assignment corrected	Ex. 4 CBI	03/12/18 17:02

537 DW

SAMPLE SUMMARY

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
320-36607-1FB	C0AL3	Water	02/27/2018 0930	03/01/2018 0950
320-36607-2	C0AL4	Water	02/27/2018 0930	03/01/2018 0950
320-36607-3FB	C0AL5	Water	02/27/2018 0950	03/01/2018 0950
320-36607-4	C0AL6	Water	02/27/2018 0950	03/01/2018 0950
320-36607-5FB	C0AL7	Water	02/28/2018 1310	03/01/2018 0950
320-36607-6FB	C0AL8	Water	02/28/2018 1330	03/01/2018 0950
320-36607-7FB	C0AL9	Water	02/28/2018 1342	03/01/2018 0950
320-36607-8	C0AM0	Water	02/28/2018 1310	03/01/2018 0950
320-36607-9	C0AM1	Water	02/28/2018 1330	03/01/2018 0950
320-36607-9MS	C0AM1	Water	02/28/2018 1330	03/01/2018 0950
320-36607-9MSD	C0AM1	Water	02/28/2018 1330	03/01/2018 0950
320-36607-10	C0AM2	Water	02/28/2018 1342	03/01/2018 0950
320-36607-11FB	C0AM3	Water	02/28/2018 1310	03/01/2018 0950
320-36607-12	C0AM4	Water	02/28/2018 1310	03/01/2018 0950

EXECUTIVE SUMMARY - Detections

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
320-36607-2	**C0AL4**					
Perfluorooctane sulfonic acid		44		34	ng/L	537 DW
Perfluorooctanoic acid		3.7	J	17	ng/L	537 DW
Perfluoroheptanoic acid		1.6	J	8.5	ng/L	537 DW
320-36607-4	**C0AL6**					
Perfluorooctanoic acid		2.4	J	17	ng/L	537 DW
320-36607-8	**C0AM0**					
Perfluorooctanoic acid		2.8	J	18	ng/L	537 DW
320-36607-9	**C0AM1**					
Perfluorooctane sulfonic acid		51		35	ng/L	537 DW
Perfluorooctanoic acid		5.0	J	18	ng/L	537 DW
Perfluoroheptanoic acid		1.7	J	8.8	ng/L	537 DW
320-36607-10	**C0AM2**					
Perfluorooctane sulfonic acid		35		34	ng/L	537 DW
Perfluorooctanoic acid		23		17	ng/L	537 DW
Perfluorononanoic acid		14	J	17	ng/L	537 DW
Perfluorohexanesulfonic acid		7.6	J	26	ng/L	537 DW
Perfluoroheptanoic acid		9.9		8.6	ng/L	537 DW
320-36607-12	**C0AM4**					
Perfluorooctanoic acid		3.2	J	17	ng/L	537 DW

METHOD SUMMARY

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Perfluorinated Alkyl Acids (LC/MS)	TAL SAC	EPA 537 DW	
Extraction of Perfluorinated Alkyl Acids	TAL SAC		EPA 537 DW

Lab References:

TAL SAC = TestAmerica Sacramento

Method References:

EPA = US Environmental Protection Agency

METHOD / ANALYST SUMMARY

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Method	Analyst	Analyst ID
EPA 537 DW	Ex. 4 CBI	JRB

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL3**

Lab Sample ID: 320-36607-1FB
Client Matrix: Water

Date Sampled: 02/27/2018 0930
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211579	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_005
Dilution:	1.0			Initial Weight/Volume:	270.9 mL
Analysis Date:	03/06/2018 2254			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.3	37
Perfluorooctanoic acid	ND		2.6	18
Perfluorononanoic acid	ND		7.4	18
Perfluorohexanesulfonic acid	ND		5.1	28
Perfluoroheptanoic acid	ND		1.8	9.2
Perfluorobutanesulfonic acid	ND		15	83

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	94		70 - 130
13C2 PFDA	118		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL4**

Lab Sample ID: 320-36607-2
Client Matrix: Water

Date Sampled: 02/27/2018 0930
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211579	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_006
Dilution:	1.0			Initial Weight/Volume:	295.6 mL
Analysis Date:	03/06/2018 2259			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	44		5.8	34
Perfluorooctanoic acid	3.7	J	2.4	17
Perfluorononanoic acid	ND		6.8	17
Perfluorohexanesulfonic acid	ND		4.7	25
Perfluoroheptanoic acid	1.6	J	1.6	8.5
Perfluorobutanesulfonic acid	ND		14	76

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	87		70 - 130
13C2 PFDA	113		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL5**

Lab Sample ID: 320-36607-3FB
Client Matrix: Water

Date Sampled: 02/27/2018 0950
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211579	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_007
Dilution:	1.0			Initial Weight/Volume:	282.1 mL
Analysis Date:	03/06/2018 2304			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.0	35
Perfluorooctanoic acid	ND		2.5	18
Perfluorononanoic acid	ND		7.1	18
Perfluorohexanesulfonic acid	ND		4.9	27
Perfluoroheptanoic acid	ND		1.7	8.9
Perfluorobutanesulfonic acid	ND		14	80

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	97		70 - 130
13C2 PFDA	114		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL6**

Lab Sample ID: 320-36607-4
Client Matrix: Water

Date Sampled: 02/27/2018 0950
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211579	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_008
Dilution:	1.0			Initial Weight/Volume:	295.9 mL
Analysis Date:	03/06/2018 2308			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		5.7	34
Perfluorooctanoic acid	2.4	J	2.4	17
Perfluorononanoic acid	ND		6.8	17
Perfluorohexanesulfonic acid	ND		4.6	25
Perfluoroheptanoic acid	ND		1.6	8.4
Perfluorobutanesulfonic acid	ND		14	76

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	86		70 - 130
13C2 PFDA	117		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL7**

Lab Sample ID: 320-36607-5FB
Client Matrix: Water

Date Sampled: 02/28/2018 1310
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-212122	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211748	Lab File ID:	2018.03.09_537A_010
Dilution:	1.0			Initial Weight/Volume:	257.5 mL
Analysis Date:	03/09/2018 0921			Final Weight/Volume:	1.00 mL
Prep Date:	03/07/2018 1447			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.6	39
Perfluorooctanoic acid	ND		2.7	19
Perfluorononanoic acid	ND		7.8	19
Perfluorohexanesulfonic acid	ND		5.3	29
Perfluoroheptanoic acid	ND		1.8	9.7
Perfluorobutanesulfonic acid	ND		16	87

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	91		70 - 130
13C2 PFDA	107		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL8**

Lab Sample ID: 320-36607-6FB
Client Matrix: Water

Date Sampled: 02/28/2018 1330
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211579	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_01C
Dilution:	1.0			Initial Weight/Volume:	274.7 mL
Analysis Date:	03/06/2018 2318			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.2	36
Perfluorooctanoic acid	ND		2.5	18
Perfluorononanoic acid	ND		7.3	18
Perfluorohexanesulfonic acid	ND		5.0	27
Perfluoroheptanoic acid	ND		1.7	9.1
Perfluorobutanesulfonic acid	ND		15	82

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	94		70 - 130
13C2 PFDA	113		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AL9**

Lab Sample ID: 320-36607-7FB
Client Matrix: Water

Date Sampled: 02/28/2018 1342
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211579	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_011
Dilution:	1.0			Initial Weight/Volume:	282.3 mL
Analysis Date:	03/06/2018 2322			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.0	35
Perfluorooctanoic acid	ND		2.5	18
Perfluorononanoic acid	ND		7.1	18
Perfluorohexanesulfonic acid	ND		4.9	27
Perfluoroheptanoic acid	ND		1.7	8.9
Perfluorobutanesulfonic acid	ND		14	80

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	93		70 - 130
13C2 PFDA	113		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AM0**

Lab Sample ID: 320-36607-8
Client Matrix: Water

Date Sampled: 02/28/2018 1310
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-212525	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-212004	Lab File ID:	2018.03.12_537AA_01
Dilution:	1.0			Initial Weight/Volume:	283 mL
Analysis Date:	03/12/2018 1644			Final Weight/Volume:	1.00 mL
Prep Date:	03/08/2018 1727			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.0	35
Perfluorooctanoic acid	2.8	J	2.5	18
Perfluorononanoic acid	ND		7.1	18
Perfluorohexanesulfonic acid	ND		4.9	27
Perfluoroheptanoic acid	ND		1.7	8.8
Perfluorobutanesulfonic acid	ND		14	80

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	85		70 - 130
13C2 PFDA	116		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AM1**

Lab Sample ID: 320-36607-9
Client Matrix: Water

Date Sampled: 02/28/2018 1330
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211581	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_015
Dilution:	1.0			Initial Weight/Volume:	284.3 mL
Analysis Date:	03/06/2018 2341			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	51		6.0	35
Perfluorooctanoic acid	5.0	J	2.5	18
Perfluorononanoic acid	ND		7.0	18
Perfluorohexanesulfonic acid	ND		4.8	26
Perfluoroheptanoic acid	1.7	J	1.7	8.8
Perfluorobutanesulfonic acid	ND		14	79

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	89		70 - 130
13C2 PFDA	121		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AM2**

Lab Sample ID: 320-36607-10
Client Matrix: Water

Date Sampled: 02/28/2018 1342
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211581	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_018
Dilution:	1.0			Initial Weight/Volume:	290.1 mL
Analysis Date:	03/06/2018 2355			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	35		5.9	34
Perfluorooctanoic acid	23		2.4	17
Perfluorononanoic acid	14	J	6.9	17
Perfluorohexanesulfonic acid	7.6	J	4.7	26
Perfluoroheptanoic acid	9.9		1.6	8.6
Perfluorobutanesulfonic acid	ND		14	78

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	78		70 - 130
13C2 PFDA	112		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AM3**

Lab Sample ID: 320-36607-11FB
Client Matrix: Water

Date Sampled: 02/28/2018 1310
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211581	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_019
Dilution:	1.0			Initial Weight/Volume:	236.5 mL
Analysis Date:	03/07/2018 0000			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		7.2	42
Perfluorooctanoic acid	ND		3.0	21
Perfluorononanoic acid	ND		8.5	21
Perfluorohexanesulfonic acid	ND		5.8	32
Perfluoroheptanoic acid	ND		2.0	11
Perfluorobutanesulfonic acid	ND		17	95

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	86		70 - 130
13C2 PFDA	102		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Client Sample ID: **C0AM4**

Lab Sample ID: 320-36607-12
Client Matrix: Water

Date Sampled: 02/28/2018 1310
Date Received: 03/01/2018 0950

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-211581	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_02(
Dilution:	1.0			Initial Weight/Volume:	286.5 mL
Analysis Date:	03/07/2018 0004			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		5.9	35
Perfluorooctanoic acid	3.2	J	2.4	17
Perfluorononanoic acid	ND		7.0	17
Perfluorohexanesulfonic acid	ND		4.8	26
Perfluoroheptanoic acid	ND		1.7	8.7
Perfluorobutanesulfonic acid	ND		14	79

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	80		70 - 130
13C2 PFDA	109		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Surrogate Recovery Report

537 DW Perfluorinated Alkyl Acids (LC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	PFHxA %Rec	PFDA %Rec
320-36607-1	C0AL3	94	118
320-36607-2	C0AL4	87	113
320-36607-3	C0AL5	97	114
320-36607-4	C0AL6	86	117
320-36607-5	C0AL7	91	107
320-36607-6	C0AL8	94	113
320-36607-7	C0AL9	93	113
320-36607-8	C0AM0	85	116
320-36607-9	C0AM1	89	121
320-36607-10	C0AM2	78	112
320-36607-11	C0AM3	86	102
320-36607-12	C0AM4	80	109
MB 320-211046/1-A		97	116
MB 320-211748/1-A		93	104
MB 320-212004/1-A		94	109
LCS 320-211046/2-A		99	120
LCS 320-211748/2-A		91	102
LCS 320-212004/2-A		94	113
LCSD 320-211748/3-A		94	112
LCSD 320-212004/3-A		86	107
320-36607-9 MS	C0AM1 MS	87	124
320-36607-9 MSD	C0AM1 MSD	78	116

Surrogate	Acceptance Limits
PFHxA = 13C2 PFHxA	70-130
PFDA = 13C2 PFDA	70-130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Method Blank - Batch: 320-211046

Method: 537 DW
Preparation: 537 DW

Lab Sample ID:	MB 320-211046/1-A	Analysis Batch:	320-211579	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_003.(
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250.00 mL
Analysis Date:	03/06/2018 2245	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Perfluorooctane sulfonic acid	ND		6.8	40
Perfluorooctanoic acid	ND		2.8	20
Perfluorononanoic acid	ND		8.0	20
Perfluorohexanesulfonic acid	ND		5.5	30
Perfluoroheptanoic acid	ND		1.9	10
Perfluorobutanesulfonic acid	ND		16	90

Surrogate	% Rec	Acceptance Limits
13C2 PFHxA	97	70 - 130
13C2 PFDA	116	70 - 130

Lab Control Sample - Batch: 320-211046

Method: 537 DW
Preparation: 537 DW

Lab Sample ID:	LCS 320-211046/2-A	Analysis Batch:	320-211579	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_004.(
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250.00 mL
Analysis Date:	03/06/2018 2250	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Perfluorooctane sulfonic acid	134	142	106	70 - 130	
Perfluorooctanoic acid	67.0	68.8	103	70 - 130	
Perfluorononanoic acid	66.7	76.1	114	70 - 130	
Perfluorohexanesulfonic acid	100	108	108	70 - 130	
Perfluoroheptanoic acid	33.3	36.4	109	70 - 130	
Perfluorobutanesulfonic acid	300	293	98	70 - 130	

Surrogate	% Rec	Acceptance Limits
13C2 PFHxA	99	70 - 130
13C2 PFDA	120	70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 320-211046

Method: 537 DW
Preparation: 537 DW

MS Lab Sample ID:	320-36607-9	Analysis Batch:	320-211581	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_016.c
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	282.7 mL
Analysis Date:	03/06/2018 2346			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL
Leach Date:	N/A				

MSD Lab Sample ID:	320-36607-9	Analysis Batch:	320-211581	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-211046	Lab File ID:	2018.03.06_537C_017.c
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	295.8 mL
Analysis Date:	03/06/2018 2350			Final Weight/Volume:	1.00 mL
Prep Date:	03/03/2018 1252			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Perfluorooctane sulfonic acid	105	95	70 - 130	10	30		
Perfluorooctanoic acid	99	85	70 - 130	18	30		
Perfluorononanoic acid	117	103	70 - 130	17	30		
Perfluorohexanesulfonic acid	105	92	70 - 130	18	30		
Perfluoroheptanoic acid	103	88	70 - 130	20	30		
Perfluorobutanesulfonic acid	95	86	70 - 130	14	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
13C2 PFHxA	87	78	70 - 130
13C2 PFDA	124	116	70 - 130

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 320-211046

Method: 537 DW
Preparation: 537 DW

MS Lab Sample ID:	320-36607-9	Units:	ng/L	MSD Lab Sample ID:	320-36607-9
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	03/06/2018 2346			Analysis Date:	03/06/2018 2350
Prep Date:	03/03/2018 1252			Prep Date:	03/03/2018 1252
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Perfluorooctane sulfonic acid	51		118	113	175	159
Perfluorooctanoic acid	5.0	J	59.3	56.7	63.5	53.1
Perfluorononanoic acid	ND		59.0	56.4	68.8	58.3
Perfluorohexanesulfonic acid	ND		88.5	84.6	93.2	77.4
Perfluoroheptanoic acid	1.7	J	29.5	28.2	30.4	24.8
Perfluorobutanesulfonic acid	ND		265	254	252	219

Quality Control Results

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Method Blank - Batch: 320-211748

Method: 537 DW
Preparation: 537 DW

Lab Sample ID:	MB 320-211748/1-A	Analysis Batch:	320-212122	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-211748	Lab File ID:	2018.03.09_537A_007.c
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	03/09/2018 0907	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	03/07/2018 1447			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Perfluorooctane sulfonic acid	ND		6.8	40
Perfluorooctanoic acid	ND		2.8	20
Perfluorononanoic acid	ND		8.0	20
Perfluorohexanesulfonic acid	ND		5.5	30
Perfluoroheptanoic acid	ND		1.9	10
Perfluorobutanesulfonic acid	ND		16	90

Surrogate	% Rec	Acceptance Limits
13C2 PFHxA	93	70 - 130
13C2 PFDA	104	70 - 130

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 320-211748

Method: 537 DW
Preparation: 537 DW

LCS Lab Sample ID:	LCS 320-211748/2-A	Analysis Batch:	320-212122	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-211748	Lab File ID:	2018.03.09_537A_008.c
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	03/09/2018 0912	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	03/07/2018 1447			Injection Volume:	2 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 320-211748/3-A	Analysis Batch:	320-212122	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-211748	Lab File ID:	2018.03.09_537A_009.c
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	03/09/2018 0917	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	03/07/2018 1447			Injection Volume:	2 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Perfluorooctane sulfonic acid	94	98	70 - 130	4	30		
Perfluorooctanoic acid	94	101	70 - 130	7	30		
Perfluorononanoic acid	99	108	70 - 130	8	30		
Perfluorohexanesulfonic acid	98	99	70 - 130	1	30		
Perfluoroheptanoic acid	98	103	70 - 130	4	30		
Perfluorobutanesulfonic acid	86	85	70 - 130	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
13C2 PFHxA	91	94	70 - 130
13C2 PFDA	102	112	70 - 130

Quality Control Results

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 320-211748

Method: 537 DW
Preparation: 537 DW

LCS Lab Sample ID:	LCS 320-211748/2-A	Units: ng/L		LCSD Lab Sample ID:	LCSD 320-211748/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	03/09/2018 0912			Analysis Date:	03/09/2018 0917
Prep Date:	03/07/2018 1447			Prep Date:	03/07/2018 1447
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Perfluorooctane sulfonic acid	134	134	126	132
Perfluorooctanoic acid	67.0	67.0	62.7	67.6
Perfluorononanoic acid	66.7	66.7	66.3	72.0
Perfluorohexanesulfonic acid	100	100	97.8	99.2
Perfluoroheptanoic acid	33.3	33.3	32.8	34.3
Perfluorobutanesulfonic acid	300	300	258	255

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Method Blank - Batch: 320-212004

Method: 537 DW
Preparation: 537 DW

Lab Sample ID:	MB 320-212004/1-A	Analysis Batch:	320-212525	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-212004	Lab File ID:	2018.03.12_537AA_007
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250.00 mL
Analysis Date:	03/12/2018 1630	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	03/08/2018 1727			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Perfluorooctane sulfonic acid	ND		6.8	40
Perfluorooctanoic acid	ND		2.8	20
Perfluorononanoic acid	ND		8.0	20
Perfluorohexanesulfonic acid	ND		5.5	30
Perfluoroheptanoic acid	ND		1.9	10
Perfluorobutanesulfonic acid	ND		16	90

Surrogate	% Rec	Acceptance Limits
13C2 PFHxA	94	70 - 130
13C2 PFDA	109	70 - 130

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 320-212004

Method: 537 DW
Preparation: 537 DW

LCS Lab Sample ID:	LCS 320-212004/2-A	Analysis Batch:	320-212525	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-212004	Lab File ID:	2018.03.12_537AA_008
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250.00 mL
Analysis Date:	03/12/2018 1635	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	03/08/2018 1727			Injection Volume:	2 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 320-212004/3-A	Analysis Batch:	320-212525	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-212004	Lab File ID:	2018.03.12_537AA_009
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250.00 mL
Analysis Date:	03/12/2018 1640	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	03/08/2018 1727			Injection Volume:	2 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Perfluorooctane sulfonic acid	105	97	70 - 130	8	30		
Perfluorooctanoic acid	104	90	70 - 130	15	30		
Perfluorononanoic acid	118	104	70 - 130	13	30		
Perfluorohexanesulfonic acid	107	94	70 - 130	12	30		
Perfluoroheptanoic acid	109	96	70 - 130	13	30		
Perfluorobutanesulfonic acid	94	83	70 - 130	13	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
13C2 PFHxA	94	86	70 - 130
13C2 PFDA	113	107	70 - 130

Quality Control Results

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 320-212004

Method: 537 DW
Preparation: 537 DW

LCS Lab Sample ID:	LCS 320-212004/2-A	Units: ng/L		LCSD Lab Sample ID:	LCSD 320-212004/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	03/12/2018 1635			Analysis Date:	03/12/2018 1640
Prep Date:	03/08/2018 1727			Prep Date:	03/08/2018 1727
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Perfluorooctane sulfonic acid	223	223	234	217
Perfluorooctanoic acid	112	112	117	100
Perfluorononanoic acid	111	111	132	116
Perfluorohexanesulfonic acid	167	167	178	157
Perfluoroheptanoic acid	55.6	55.6	60.6	53.4
Perfluorobutanesulfonic acid	500	500	471	416

DATA REPORTING QUALIFIERS

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

Lab Section	Qualifier	Description
LCMS		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Quality Control Results

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
LCMS					
Prep Batch: 320-211046					
LCS 320-211046/2-A	Lab Control Sample	T	Water	537 DW	
MB 320-211046/1-A	Method Blank	T	Water	537 DW	
320-36607-1FB	C0AL3	T	Water	537 DW	
320-36607-2	C0AL4	T	Water	537 DW	
320-36607-3FB	C0AL5	T	Water	537 DW	
320-36607-4	C0AL6	T	Water	537 DW	
320-36607-6FB	C0AL8	T	Water	537 DW	
320-36607-7FB	C0AL9	T	Water	537 DW	
320-36607-9	C0AM1	T	Water	537 DW	
320-36607-9MS	Matrix Spike	T	Water	537 DW	
320-36607-9MSD	Matrix Spike Duplicate	T	Water	537 DW	
320-36607-10	C0AM2	T	Water	537 DW	
320-36607-11FB	C0AM3	T	Water	537 DW	
320-36607-12	C0AM4	T	Water	537 DW	
Analysis Batch:320-211579					
LCS 320-211046/2-A	Lab Control Sample	T	Water	537 DW	320-211046
MB 320-211046/1-A	Method Blank	T	Water	537 DW	320-211046
320-36607-1FB	C0AL3	T	Water	537 DW	320-211046
320-36607-2	C0AL4	T	Water	537 DW	320-211046
320-36607-3FB	C0AL5	T	Water	537 DW	320-211046
320-36607-4	C0AL6	T	Water	537 DW	320-211046
320-36607-6FB	C0AL8	T	Water	537 DW	320-211046
320-36607-7FB	C0AL9	T	Water	537 DW	320-211046
Analysis Batch:320-211581					
320-36607-9	C0AM1	T	Water	537 DW	320-211046
320-36607-9MS	Matrix Spike	T	Water	537 DW	320-211046
320-36607-9MSD	Matrix Spike Duplicate	T	Water	537 DW	320-211046
320-36607-10	C0AM2	T	Water	537 DW	320-211046
320-36607-11FB	C0AM3	T	Water	537 DW	320-211046
320-36607-12	C0AM4	T	Water	537 DW	320-211046
Prep Batch: 320-211748					
LCS 320-211748/2-A	Lab Control Sample	T	Water	537 DW	
LCSD 320-211748/3-A	Lab Control Sample Duplicate	T	Water	537 DW	
MB 320-211748/1-A	Method Blank	T	Water	537 DW	
320-36607-5FB	C0AL7	T	Water	537 DW	
Prep Batch: 320-212004					
LCS 320-212004/2-A	Lab Control Sample	T	Water	537 DW	
LCSD 320-212004/3-A	Lab Control Sample Duplicate	T	Water	537 DW	
MB 320-212004/1-A	Method Blank	T	Water	537 DW	
320-36607-8	C0AM0	T	Water	537 DW	

Quality Control Results

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
Sdg Number: DAS R35321, SDG C0AL3

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
LCMS					
Analysis Batch:320-212122					
LCS 320-211748/2-A	Lab Control Sample	T	Water	537 DW	320-211748
LCSD 320-211748/3-A	Lab Control Sample Duplicate	T	Water	537 DW	320-211748
MB 320-211748/1-A	Method Blank	T	Water	537 DW	320-211748
320-36607-5FB	C0AL7	T	Water	537 DW	320-211748
Analysis Batch:320-212525					
LCS 320-212004/2-A	Lab Control Sample	T	Water	537 DW	320-212004
LCSD 320-212004/3-A	Lab Control Sample Duplicate	T	Water	537 DW	320-212004
MB 320-212004/1-A	Method Blank	T	Water	537 DW	320-212004
320-36607-8	C0AM0	T	Water	537 DW	320-212004

Report Basis
T = Total

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
SDG: DAS R35321, SDG C0AL3

Laboratory Chronicle

Lab ID: 320-36607-1 **Client ID: C0AL3**

Sample Date/Time: 02/27/2018 09:30 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-1-A		320-211579	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-1-A		320-211579	320-211046	03/06/2018 22:54	1	TAL SAC	JRB

Lab ID: 320-36607-2 **Client ID: C0AL4**

Sample Date/Time: 02/27/2018 09:30 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-2-A		320-211579	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-2-A		320-211579	320-211046	03/06/2018 22:59	1	TAL SAC	JRB

Lab ID: 320-36607-3 **Client ID: C0AL5**

Sample Date/Time: 02/27/2018 09:50 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-3-A		320-211579	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-3-A		320-211579	320-211046	03/06/2018 23:04	1	TAL SAC	JRB

Lab ID: 320-36607-4 **Client ID: C0AL6**

Sample Date/Time: 02/27/2018 09:50 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-4-A		320-211579	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-4-A		320-211579	320-211046	03/06/2018 23:08	1	TAL SAC	JRB

Lab ID: 320-36607-5 **Client ID: C0AL7**

Sample Date/Time: 02/28/2018 13:10 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-B-5-A		320-212122	320-211748	03/07/2018 14:47	1	TAL SAC	TWL
A:537 DW	320-36607-B-5-A		320-212122	320-211748	03/09/2018 09:21	1	TAL SAC	JRB

Lab ID: 320-36607-6 **Client ID: C0AL8**

Sample Date/Time: 02/28/2018 13:30 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-6-A		320-211579	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-6-A		320-211579	320-211046	03/06/2018 23:18	1	TAL SAC	JRB

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
SDG: DAS R35321, SDG C0AL3

Laboratory Chronicle

Lab ID: 320-36607-7 **Client ID: C0AL9**

Sample Date/Time: 02/28/2018 13:42 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-7-A		320-211579	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-7-A		320-211579	320-211046	03/06/2018 23:22	1	TAL SAC	JRB

Lab ID: 320-36607-8 **Client ID: C0AM0**

Sample Date/Time: 02/28/2018 13:10 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-B-8-A		320-212525	320-212004	03/08/2018 17:27	1	TAL SAC	JER
A:537 DW	320-36607-B-8-A		320-212525	320-212004	03/12/2018 16:44	1	TAL SAC	JRB

Lab ID: 320-36607-9 **Client ID: C0AM1**

Sample Date/Time: 02/28/2018 13:30 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-9-A		320-211581	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-9-A		320-211581	320-211046	03/06/2018 23:41	1	TAL SAC	JRB

Lab ID: 320-36607-9 **Client ID: C0AM1**

Sample Date/Time: 02/28/2018 13:30 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-9-B MS		320-211581	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-9-B MS		320-211581	320-211046	03/06/2018 23:46	1	TAL SAC	JRB

Lab ID: 320-36607-9 **Client ID: C0AM1**

Sample Date/Time: 02/28/2018 13:30 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-9-C MSD		320-211581	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-9-C MSD		320-211581	320-211046	03/06/2018 23:50	1	TAL SAC	JRB

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
SDG: DAS R35321, SDG C0AL3

Laboratory Chronicle

Lab ID: 320-36607-10 **Client ID: C0AM2**

Sample Date/Time: 02/28/2018 13:42 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-10-A		320-211581	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-10-A		320-211581	320-211046	03/06/2018 23:55	1	TAL SAC	JRB

Lab ID: 320-36607-11 **Client ID: C0AM3**

Sample Date/Time: 02/28/2018 13:10 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-11-A		320-211581	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-11-A		320-211581	320-211046	03/07/2018 00:00	1	TAL SAC	JRB

Lab ID: 320-36607-12 **Client ID: C0AM4**

Sample Date/Time: 02/28/2018 13:10 Received Date/Time: 03/01/2018 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36607-A-12-A		320-211581	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	320-36607-A-12-A		320-211581	320-211046	03/07/2018 00:04	1	TAL SAC	JRB

Lab ID: MB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	MB 320-211046/1-A		320-211579	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	MB 320-211046/1-A		320-211579	320-211046	03/06/2018 22:45	1	TAL SAC	JRB
P:537 DW	MB 320-211748/1-A		320-212122	320-211748	03/07/2018 14:47	1	TAL SAC	TWL
A:537 DW	MB 320-211748/1-A		320-212122	320-211748	03/09/2018 09:07	1	TAL SAC	JRB
P:537 DW	MB 320-212004/1-A		320-212525	320-212004	03/08/2018 17:27	1	TAL SAC	JER
A:537 DW	MB 320-212004/1-A		320-212525	320-212004	03/12/2018 16:30	1	TAL SAC	JRB

Lab ID: LCS **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	LCS 320-211046/2-A		320-211579	320-211046	03/03/2018 12:52	1	TAL SAC	JER
A:537 DW	LCS 320-211046/2-A		320-211579	320-211046	03/06/2018 22:50	1	TAL SAC	JRB
P:537 DW	LCS 320-211748/2-A		320-212122	320-211748	03/07/2018 14:47	1	TAL SAC	TWL
A:537 DW	LCS 320-211748/2-A		320-212122	320-211748	03/09/2018 09:12	1	TAL SAC	JRB
P:537 DW	LCS 320-212004/2-A		320-212525	320-212004	03/08/2018 17:27	1	TAL SAC	JER
A:537 DW	LCS 320-212004/2-A		320-212525	320-212004	03/12/2018 16:35	1	TAL SAC	JRB

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
SDG: DAS R35321, SDG C0AL3

Laboratory Chronicle

Lab ID: LCSD **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	LCSD 320-211748/3-A		320-212122	320-211748	03/07/2018 14:47	1	TAL SAC	TWL
A:537 DW	LCSD 320-211748/3-A		320-212122	320-211748	03/09/2018 09:17	1	TAL SAC	JRB
P:537 DW	LCSD 320-212004/3-A		320-212525	320-212004	03/08/2018 17:27	1	TAL SAC	JER
A:537 DW	LCSD 320-212004/3-A		320-212525	320-212004	03/12/2018 16:40	1	TAL SAC	JRB

Lab References:
TAL SAC = TestAmerica Sacramento

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
LC537-HSP_00026	04/01/18	01/30/18	Methanol, Lot 141039	40000 uL	LC537SPIM_00026	555.6 uL	Perfluorobutane Sulfonate	1250.1 ng/mL
							Perfluorobutanesulfonic acid	1250.1 ng/mL
							Perfluoroheptanoic acid	138.915 ng/mL
							Perfluorohexanesulfonic acid	416.802 ng/mL
							Perfluorononanoic acid	277.867 ng/mL
							Perfluorooctanoic acid	279.313 ng/mL
							Perfluorooctane sulfonic acid	557.928 ng/mL
.LC537SPIM_00026	04/01/18	01/30/18	Methanol, Lot 104453	20000 uL	LC537-PFBS_00009	900 uL	Perfluorobutane Sulfonate	90 ug/mL
							Perfluorobutanesulfonic acid	90 ug/mL
					LC537-PFHpA_00016	100 uL	Perfluoroheptanoic acid	10.0011 ug/mL
					LC537-PFHxS_00011	300 uL	Perfluorohexanesulfonic acid	30.0074 ug/mL
					LC537-PFNA_00014	400 uL	Perfluorononanoic acid	20.0048 ug/mL
					LC537-PFOA_00015	400 uL	Perfluorooctanoic acid	20.1089 ug/mL
					LC537-PFOS_00009	800 uL	Perfluorooctane sulfonic acid	40.1676 ug/mL
..LC537-PFBS_00009	04/01/18	01/30/18	Methanol, Lot 090285	48.7 mL	LC537_PFBS_00002	0.0974 g	Perfluorobutane Sulfonate	2 mg/mL
							Perfluorobutanesulfonic acid	2 mg/mL
...LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutane Sulfonate	1 g/g
							Perfluorobutanesulfonic acid	1 g/g
..LC537-PFHpA_00016	04/01/18	01/30/18	Methanol, Lot 090285	59.74 mL	LC537_PFHpA_00002	0.1207 g	Perfluoroheptanoic acid	2.00022 mg/mL
...LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
..LC537-PFHxS_00011	04/01/18	01/30/18	Methanol, Lot 090285	38.64 mL	LC537_PFHxS_00002	0.085 g	Perfluorohexanesulfonic acid	2.00049 mg/mL
...LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
..LC537-PFNA_00014	04/01/18	01/30/18	Methanol, Lot 090285	62.58 mL	LC537_PFNA_00002	0.065 g	Perfluorononanoic acid	1000.24 ug/mL
...LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
..LC537-PFOA_00015	07/30/18	01/30/18	Methanol, Lot 090285	31 mL	LC537_PFOA_00003	0.0312 g	Perfluorooctanoic acid	1.00545 mg/mL
...LC537_PFOA_00003	10/31/23	SIGMA ALDRICH, Lot BCBS1198V			(Purchased Reagent)		Perfluorooctanoic acid	0.999 g/g
..LC537-PFOS_00009	07/30/18	01/30/18	Methanol, Lot 090285	36 mL	LC537_PFOS_00003	0.0397 g	Perfluorooctane sulfonic acid	1.00419 mg/mL
...LC537_PFOS_00003	04/17/19	sigma alrich, Lot SZBE107XV			(Purchased Reagent)		Perfluorooctane sulfonic acid	0.9106 g/g
LC537-ICV_00030	07/30/18	02/15/18	MeOH/H2O, Lot 067374	10 mL	LC537-IS_00059	1000 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
.LC537-IS_00059	07/30/18	01/30/18	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00021	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_00021	12/12/21	Wellington Laboratories, Lot MPFOS1216			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
LC537-ICV_00030	07/30/18	02/15/18	MeOH/H2O, Lot 067374	10 mL	LC537-SU_00059	1000 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
					LC537ICIM2_00001	400 uL	Perfluorobutanesulfonic acid	100.092 ng/mL
							Perfluoroheptanoic acid	10 ng/mL
							Perfluorohexanesulfonic acid	20.1619 ng/mL
							Perfluorononanoic acid	20.1641 ng/mL
							Perfluorooctanoic acid	20.167 ng/mL
							Perfluorooctane sulfonic acid	20.1702 ng/mL
.LC537-SU_00059	07/30/18	01/30/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	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_00015	11/22/21	Wellington Laboratories, Lot MPFHxA1116			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
.LC537ICIM2_00001	08/15/18	02/15/18	Methanol, Lot 090285	10 mL	LC537ICIM_00020	0.5 mL	Perfluorobutanesulfonic acid	2.5023 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroheptanoic acid	0.25 ug/mL
							Perfluorohexanesulfonic acid	0.504047 ug/mL
							Perfluorononanoic acid	0.504103 ug/mL
							Perfluorooctanoic acid	0.504176 ug/mL
							Perfluorooctane sulfonic acid	0.504255 ug/mL
..LC537ICIM_00020	08/15/18	02/15/18	Methanol, Lot 090285	25 mL	LC537-PFBS2_00009	0.625 mL	Perfluorobutanesulfonic acid	50.0459 ug/mL
					LC537-PFHpA2_00012	0.0625 mL	Perfluoroheptanoic acid	5 ug/mL
					LC537-PFHxS2_00009	0.126 mL	Perfluorohexanesulfonic acid	10.0809 ug/mL
					LC537-PFNA2_00010	0.126 mL	Perfluorononanoic acid	10.0821 ug/mL
					LC537-PFOA2_00011	0.126 mL	Perfluorooctanoic acid	10.0835 ug/mL
					LC537-PFOS2_00011	0.126 mL	Perfluorooctane sulfonic acid	10.0851 ug/mL
...LC537-PFBS2_00009	08/15/18	02/15/18	Methanol, Lot 090285	17.1 mL	LC537_PFBS2_00002	0.0343 g	Perfluorobutanesulfonic acid	2001.84 ug/mL
....LC537_PFBS2_00002	09/08/22	Santa Cruz Biotechnology, Lot F0917			(Purchased Reagent)		Perfluorobutanesulfonic acid	0.998 g/g
...LC537-PFHpA2_00012	08/15/18	02/15/18	Methanol, Lot 09092	23.95 mL	LC537_PFHpA2_00002	0.0479 g	Perfluoroheptanoic acid	2000 ug/mL
....LC537_PFHpA2_00002	06/13/22	Afla Aesar, Lot 10200390			(Purchased Reagent)		Perfluoroheptanoic acid	1 g/g
...LC537-PFHxS2_00009	08/15/18	02/15/18	Methanol, Lot 090285	25.87 mL	LC537_PFHxS2_00002	0.0569 g	Perfluorohexanesulfonic acid	2000.19 ug/mL
....LC537_PFHxS2_00002	06/08/22	Santa Cruz Biotechnology, Lot G2516			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA2_00010	08/15/18	02/15/18	Methanol, Lot 090285	16.58 mL	LC537_PFNA2_00002	0.0333 g	Perfluorononanoic acid	2000.41 ug/mL
....LC537_PFNA2_00002	06/14/22	Aldrich, Lot MKCC0699			(Purchased Reagent)		Perfluorononanoic acid	0.996 g/g
...LC537-PFOA2_00011	08/15/18	02/15/18	Methanol, Lot 090285	22.96 mL	LC537_PFOA2_00002	0.0464 g	Perfluorooctanoic acid	2000.7 ug/mL
....LC537_PFOA2_00002	06/09/22	Afla Aesar, Lot 10199078			(Purchased Reagent)		Perfluorooctanoic acid	0.99 g/g
...LC537-PFOS2_00011	08/15/18	02/15/18	Methanol, Lot 090285	14.71 mL	LC537_PFOS2_00002	0.0378 g	Perfluorooctane sulfonic acid	2001.01 ug/mL
....LC537_PFOS2_00002	06/14/22	Sigma, Lot BCBQ0108V			(Purchased Reagent)		Perfluorooctane sulfonic acid	0.7787 g/g
LC537-IS_00062	08/27/18	02/27/18	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00021	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_00021	12/12/21	Wellington Laboratories, Lot MPFOS1216			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
LC537-L1_00021	04/01/18	02/15/18	MeOH/H2O, Lot 090285	5 mL	LC537-IS_00059	500 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-MSP_00032	60 uL	Perfluorobutanesulfonic acid	9.0018 ng/mL
							Perfluoroheptanoic acid	1.00031 ng/mL
							Perfluorohexanesulfonic acid	3.00134 ng/mL
							Perfluorononanoic acid	2.00088 ng/mL
							Perfluorooctanoic acid	2.01129 ng/mL
							Perfluorooctane sulfonic acid	4.01756 ng/mL
					LC537-SU_00059	500 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-IS_00059	07/30/18	01/30/18	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00021	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_00021	12/12/21	Wellington Laboratories, Lot MPFOS1216			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-MSP_00032	04/01/18	01/30/18	Methanol, Lot 141039	40000 uL	LC537SPIM_00026	333.4 uL	Perfluorobutanesulfonic acid	750.15 ng/mL
							Perfluoroheptanoic acid	83.3591 ng/mL

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanesulfonic acid	250.111 ng/mL
							Perfluorononanoic acid	166.74 ng/mL
							Perfluorooctanoic acid	167.608 ng/mL
							Perfluorooctane sulfonic acid	334.797 ng/mL
..LC537SPIM_00026	04/01/18	01/30/18	Methanol, Lot 104453	20000 uL	LC537-PFBS_00009	900 uL	Perfluorobutanesulfonic acid	90 ug/mL
					LC537-PFHpA_00016	100 uL	Perfluoroheptanoic acid	10.0011 ug/mL
					LC537-PFHxS_00011	300 uL	Perfluorohexanesulfonic acid	30.0074 ug/mL
					LC537-PFNA_00014	400 uL	Perfluorononanoic acid	20.0048 ug/mL
					LC537-PFOA_00015	400 uL	Perfluorooctanoic acid	20.1089 ug/mL
					LC537-PFOS_00009	800 uL	Perfluorooctane sulfonic acid	40.1676 ug/mL
...LC537-PFBS_00009	04/01/18	01/30/18	Methanol, Lot 090285	48.7 mL	LC537_PFBS_00002	0.0974 g	Perfluorobutanesulfonic acid	2 mg/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid	1 g/g
...LC537-PFHpA_00016	04/01/18	01/30/18	Methanol, Lot 090285	59.74 mL	LC537_PFHpA_00002	0.1207 g	Perfluoroheptanoic acid	2.00022 mg/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00011	04/01/18	01/30/18	Methanol, Lot 090285	38.64 mL	LC537_PFHxS_00002	0.085 g	Perfluorohexanesulfonic acid	2.00049 mg/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00014	04/01/18	01/30/18	Methanol, Lot 090285	62.58 mL	LC537_PFNA_00002	0.065 g	Perfluorononanoic acid	1000.24 ug/mL
....LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00015	07/30/18	01/30/18	Methanol, Lot 090285	31 mL	LC537_PFOA_00003	0.0312 g	Perfluorooctanoic acid	1.00545 mg/mL
....LC537_PFOA_00003	10/31/23	SIGMA ALDRICH, Lot BCBS1198V			(Purchased Reagent)		Perfluorooctanoic acid	0.999 g/g
...LC537-PFOS_00009	07/30/18	01/30/18	Methanol, Lot 090285	36 mL	LC537_PFOS_00003	0.0397 g	Perfluorooctane sulfonic acid	1.00419 mg/mL
....LC537_PFOS_00003	04/17/19	sigma alrich, Lot SZBE107XV			(Purchased Reagent)		Perfluorooctane sulfonic acid	0.9106 g/g
.LC537-SU_00059	07/30/18	01/30/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	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_00015	11/22/21	Wellington Laboratories, Lot MPFHxA1116			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L2_00021	04/01/18	02/05/18	MeOH/H2O, Lot 090285	20 mL	LC537-HSP_00027	320 uL	Perfluorobutanesulfonic acid	20.0016 ng/mL
							Perfluoroheptanoic acid	2.22264 ng/mL
							Perfluorohexanesulfonic acid	6.66884 ng/mL
							Perfluorononanoic acid	4.44587 ng/mL
							Perfluorooctanoic acid	4.469 ng/mL
							Perfluorooctane sulfonic acid	8.92684 ng/mL
					LC537-IS_00059	2 mL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00059	2 mL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00027	04/01/18	01/30/18	Methanol, Lot 141039	40000 uL	LC537SPIM_00026	555.6 uL	Perfluorobutanesulfonic acid	1250.1 ng/mL
							Perfluoroheptanoic acid	138.915 ng/mL
							Perfluorohexanesulfonic acid	416.802 ng/mL
							Perfluorononanoic acid	277.867 ng/mL
							Perfluorooctanoic acid	279.313 ng/mL
							Perfluorooctane sulfonic acid	557.928 ng/mL
..LC537SPIM_00026	04/01/18	01/30/18	Methanol, Lot 104453	20000 uL	LC537-PFBS_00009	900 uL	Perfluorobutanesulfonic acid	90 ug/mL
					LC537-PFHpA_00016	100 uL	Perfluoroheptanoic acid	10.0011 ug/mL
					LC537-PFHxS_00011	300 uL	Perfluorohexanesulfonic acid	30.0074 ug/mL
					LC537-PFNA_00014	400 uL	Perfluorononanoic acid	20.0048 ug/mL
					LC537-PFOA_00015	400 uL	Perfluorooctanoic acid	20.1089 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC537-PFOS_00009	800 uL	Perfluorooctane sulfonic acid	40.1676 ug/mL
...LC537-PFBS_00009	04/01/18	01/30/18	Methanol, Lot 090285	48.7 mL	LC537_PFBS_00002	0.0974 g	Perfluorobutanesulfonic acid	2 mg/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid	1 g/g
...LC537-PFHpA_00016	04/01/18	01/30/18	Methanol, Lot 090285	59.74 mL	LC537_PFHpA_00002	0.1207 g	Perfluoroheptanoic acid	2.00022 mg/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00011	04/01/18	01/30/18	Methanol, Lot 090285	38.64 mL	LC537_PFHxS_00002	0.085 g	Perfluorohexanesulfonic acid	2.00049 mg/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00014	04/01/18	01/30/18	Methanol, Lot 090285	62.58 mL	LC537_PFNA_00002	0.065 g	Perfluorononanoic acid	1000.24 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00015	07/30/18	01/30/18	Methanol, Lot 090285	31 mL	LC537_PFOA_00003	0.0312 g	Perfluorooctanoic acid	1.00545 mg/mL
....LC537_PFOA_00003	10/31/23		SIGMA ALDRICH, Lot BCBS1198V		(Purchased Reagent)		Perfluorooctanoic acid	0.999 g/g
...LC537-PFOS_00009	07/30/18	01/30/18	Methanol, Lot 090285	36 mL	LC537_PFOS_00003	0.0397 g	Perfluorooctane sulfonic acid	1.00419 mg/mL
....LC537_PFOS_00003	04/17/19		sigma alrich, Lot SZBE107XV		(Purchased Reagent)		Perfluorooctane sulfonic acid	0.9106 g/g
.LC537-IS_00059	07/30/18	01/30/18	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00021	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_00021	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00059	07/30/18	01/30/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	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_00015	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L3_00024	04/01/18	02/05/18	MeOH/H2O, Lot 090285	20 mL	LC537-HSP_00027	720 uL	Perfluorobutanesulfonic acid	45.0036 ng/mL
							Perfluoroheptanoic acid	5.00094 ng/mL
							Perfluorohexanesulfonic acid	15.0049 ng/mL
							Perfluorononanoic acid	10.0032 ng/mL
							Perfluorooctanoic acid	10.0553 ng/mL
							Perfluorooctane sulfonic acid	20.0854 ng/mL
					LC537-IS_00059	2 mL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00059	2 mL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00027	04/01/18	01/30/18	Methanol, Lot 141039	40000 uL	LC537SPIM_00026	555.6 uL	Perfluorobutanesulfonic acid	1250.1 ng/mL
							Perfluoroheptanoic acid	138.915 ng/mL
							Perfluorohexanesulfonic acid	416.802 ng/mL
							Perfluorononanoic acid	277.867 ng/mL
							Perfluorooctanoic acid	279.313 ng/mL
							Perfluorooctane sulfonic acid	557.928 ng/mL
..LC537SPIM_00026	04/01/18	01/30/18	Methanol, Lot 104453	20000 uL	LC537-PFBS_00009	900 uL	Perfluorobutanesulfonic acid	90 ug/mL
					LC537-PFHpA_00016	100 uL	Perfluoroheptanoic acid	10.0011 ug/mL
					LC537-PFHxS_00011	300 uL	Perfluorohexanesulfonic acid	30.0074 ug/mL
					LC537-PFNA_00014	400 uL	Perfluorononanoic acid	20.0048 ug/mL
					LC537-PFOA_00015	400 uL	Perfluorooctanoic acid	20.1089 ug/mL
					LC537-PFOS_00009	800 uL	Perfluorooctane sulfonic acid	40.1676 ug/mL
...LC537-PFBS_00009	04/01/18	01/30/18	Methanol, Lot 090285	48.7 mL	LC537_PFBS_00002	0.0974 g	Perfluorobutanesulfonic acid	2 mg/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid	1 g/g
...LC537-PFHpA_00016	04/01/18	01/30/18	Methanol, Lot 090285	59.74 mL	LC537_PFHpA_00002	0.1207 g	Perfluoroheptanoic acid	2.00022 mg/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC537-PFHxS_00011	04/01/18	01/30/18	Methanol, Lot 090285	38.64 mL	LC537_PFHxS_00002	0.085 g	Perfluorohexanesulfonic acid	2.00049 mg/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00014	04/01/18	01/30/18	Methanol, Lot 090285	62.58 mL	LC537_PFNA_00002	0.065 g	Perfluorononanoic acid	1000.24 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00015	07/30/18	01/30/18	Methanol, Lot 090285	31 mL	LC537_PFOA_00003	0.0312 g	Perfluorooctanoic acid	1.00545 mg/mL
....LC537_PFOA_00003	10/31/23		SIGMA ALDRICH, Lot BCBS1198V		(Purchased Reagent)		Perfluorooctanoic acid	0.999 g/g
...LC537-PFOS_00009	07/30/18	01/30/18	Methanol, Lot 090285	36 mL	LC537_PFOS_00003	0.0397 g	Perfluorooctane sulfonic acid	1.00419 mg/mL
....LC537_PFOS_00003	04/17/19		sigma alrich, Lot SZBE107XV		(Purchased Reagent)		Perfluorooctane sulfonic acid	0.9106 g/g
.LC537-IS_00059	07/30/18	01/30/18	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00021	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_00021	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00059	07/30/18	01/30/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	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_00015	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L4_00021	04/01/18	02/15/18	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00027	360 uL	Perfluorobutanesulfonic acid	90.0072 ng/mL
							Perfluoroheptanoic acid	10.0019 ng/mL
							Perfluorohexanesulfonic acid	30.0098 ng/mL
							Perfluorononanoic acid	20.0064 ng/mL
							Perfluorooctanoic acid	20.1105 ng/mL
							Perfluorooctane sulfonic acid	40.1708 ng/mL
					LC537-IS_00059	500 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00059	500 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00027	04/01/18	01/30/18	Methanol, Lot 141039	40000 uL	LC537SPIM_00026	555.6 uL	Perfluorobutanesulfonic acid	1250.1 ng/mL
							Perfluoroheptanoic acid	138.915 ng/mL
							Perfluorohexanesulfonic acid	416.802 ng/mL
							Perfluorononanoic acid	277.867 ng/mL
							Perfluorooctanoic acid	279.313 ng/mL
							Perfluorooctane sulfonic acid	557.928 ng/mL
..LC537SPIM_00026	04/01/18	01/30/18	Methanol, Lot 104453	20000 uL	LC537-PFBS_00009	900 uL	Perfluorobutanesulfonic acid	90 ug/mL
					LC537-PFHpA_00016	100 uL	Perfluoroheptanoic acid	10.0011 ug/mL
					LC537-PFHxS_00011	300 uL	Perfluorohexanesulfonic acid	30.0074 ug/mL
					LC537-PFNA_00014	400 uL	Perfluorononanoic acid	20.0048 ug/mL
					LC537-PFOA_00015	400 uL	Perfluorooctanoic acid	20.1089 ug/mL
					LC537-PFOS_00009	800 uL	Perfluorooctane sulfonic acid	40.1676 ug/mL
...LC537-PFBS_00009	04/01/18	01/30/18	Methanol, Lot 090285	48.7 mL	LC537_PFBS_00002	0.0974 g	Perfluorobutanesulfonic acid	2 mg/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid	1 g/g
...LC537-PFHpA_00016	04/01/18	01/30/18	Methanol, Lot 090285	59.74 mL	LC537_PFHpA_00002	0.1207 g	Perfluoroheptanoic acid	2.00022 mg/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00011	04/01/18	01/30/18	Methanol, Lot 090285	38.64 mL	LC537_PFHxS_00002	0.085 g	Perfluorohexanesulfonic acid	2.00049 mg/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00014	04/01/18	01/30/18	Methanol, Lot 090285	62.58 mL	LC537_PFNA_00002	0.065 g	Perfluorononanoic acid	1000.24 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00015	07/30/18	01/30/18	Methanol, Lot 090285	31 mL	LC537_PFOA_00003	0.0312 g	Perfluorooctanoic acid	1.00545 mg/mL

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LC537_PFOA_00003	10/31/23	SIGMA ALDRICH, Lot BCBS1198V			(Purchased Reagent)		Perfluorooctanoic acid	0.999 g/g
...LC537-PFOS_00009	07/30/18	01/30/18	Methanol, Lot 090285	36 mL	LC537_PFOS_00003	0.0397 g	Perfluorooctane sulfonic acid	1.00419 mg/mL
....LC537_PFOS_00003	04/17/19	sigma alrich, Lot SZBE107XV			(Purchased Reagent)		Perfluorooctane sulfonic acid	0.9106 g/g
.LC537-IS_00059	07/30/18	01/30/18	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00021	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_00021	12/12/21	Wellington Laboratories, Lot MPFOS1216			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00059	07/30/18	01/30/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	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_00015	11/22/21	Wellington Laboratories, Lot MPFHxA1116			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L5_00025	04/01/18	02/05/18	MeOH/H2O, Lot 090285	20 mL	LC537-HSP_00027	2160 uL	Perfluorobutanesulfonic acid	135.011 ng/mL
							Perfluoroheptanoic acid	15.0028 ng/mL
							Perfluorohexanesulfonic acid	45.0147 ng/mL
							Perfluorononanoic acid	30.0096 ng/mL
							Perfluorooctanoic acid	30.1658 ng/mL
							Perfluorooctane sulfonic acid	60.2562 ng/mL
					LC537-IS_00059	2 mL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00059	2 mL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00027	04/01/18	01/30/18	Methanol, Lot 141039	40000 uL	LC537SPIM_00026	555.6 uL	Perfluorobutanesulfonic acid	1250.1 ng/mL
							Perfluoroheptanoic acid	138.915 ng/mL
							Perfluorohexanesulfonic acid	416.802 ng/mL
							Perfluorononanoic acid	277.867 ng/mL
							Perfluorooctanoic acid	279.313 ng/mL
							Perfluorooctane sulfonic acid	557.928 ng/mL
..LC537SPIM_00026	04/01/18	01/30/18	Methanol, Lot 104453	20000 uL	LC537-PFBS_00009	900 uL	Perfluorobutanesulfonic acid	90 ug/mL
					LC537-PFHpA_00016	100 uL	Perfluoroheptanoic acid	10.0011 ug/mL
					LC537-PFHxS_00011	300 uL	Perfluorohexanesulfonic acid	30.0074 ug/mL
					LC537-PFNA_00014	400 uL	Perfluorononanoic acid	20.0048 ug/mL
					LC537-PFOA_00015	400 uL	Perfluorooctanoic acid	20.1089 ug/mL
					LC537-PFOS_00009	800 uL	Perfluorooctane sulfonic acid	40.1676 ug/mL
...LC537-PFBS_00009	04/01/18	01/30/18	Methanol, Lot 090285	48.7 mL	LC537_PFBS_00002	0.0974 g	Perfluorobutanesulfonic acid	2 mg/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid	1 g/g
...LC537-PFHpA_00016	04/01/18	01/30/18	Methanol, Lot 090285	59.74 mL	LC537_PFHpA_00002	0.1207 g	Perfluoroheptanoic acid	2.00022 mg/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00011	04/01/18	01/30/18	Methanol, Lot 090285	38.64 mL	LC537_PFHxS_00002	0.085 g	Perfluorohexanesulfonic acid	2.00049 mg/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00014	04/01/18	01/30/18	Methanol, Lot 090285	62.58 mL	LC537_PFNA_00002	0.065 g	Perfluorononanoic acid	1000.24 ug/mL
....LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00015	07/30/18	01/30/18	Methanol, Lot 090285	31 mL	LC537_PFOA_00003	0.0312 g	Perfluorooctanoic acid	1.00545 mg/mL
....LC537_PFOA_00003	10/31/23	SIGMA ALDRICH, Lot BCBS1198V			(Purchased Reagent)		Perfluorooctanoic acid	0.999 g/g
...LC537-PFOS_00009	07/30/18	01/30/18	Methanol, Lot 090285	36 mL	LC537_PFOS_00003	0.0397 g	Perfluorooctane sulfonic acid	1.00419 mg/mL
....LC537_PFOS_00003	04/17/19	sigma alrich, Lot SZBE107XV			(Purchased Reagent)		Perfluorooctane sulfonic acid	0.9106 g/g
.LC537-IS_00059	07/30/18	01/30/18	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00021	180 uL	13C4 PFOS	0.2868 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCM2PFOA_00007	02/12/21	Wellington Laboratories, Lot M2PFOA0216			(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00021	12/12/21	Wellington Laboratories, Lot MPFOS1216			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00059	07/30/18	01/30/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	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_00015	11/22/21	Wellington Laboratories, Lot MPFHxA1116			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L6_00021	04/01/18	02/15/18	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00027	720 uL	Perfluorobutanesulfonic acid	180.014 ng/mL
							Perfluoroheptanoic acid	20.0038 ng/mL
							Perfluorohexanesulfonic acid	60.0196 ng/mL
							Perfluorononanoic acid	40.0128 ng/mL
							Perfluorooctanoic acid	40.221 ng/mL
							Perfluorooctane sulfonic acid	80.3416 ng/mL
					LC537-IS_00059	500 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00059	500 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00027	04/01/18	01/30/18	Methanol, Lot 141039	40000 uL	LC537SPIM_00026	555.6 uL	Perfluorobutanesulfonic acid	1250.1 ng/mL
							Perfluoroheptanoic acid	138.915 ng/mL
							Perfluorohexanesulfonic acid	416.802 ng/mL
							Perfluorononanoic acid	277.867 ng/mL
							Perfluorooctanoic acid	279.313 ng/mL
							Perfluorooctane sulfonic acid	557.928 ng/mL
..LC537SPIM_00026	04/01/18	01/30/18	Methanol, Lot 104453	20000 uL	LC537-PFBS_00009	900 uL	Perfluorobutanesulfonic acid	90 ug/mL
					LC537-PFHpA_00016	100 uL	Perfluoroheptanoic acid	10.0011 ug/mL
					LC537-PFHxS_00011	300 uL	Perfluorohexanesulfonic acid	30.0074 ug/mL
					LC537-PFNA_00014	400 uL	Perfluorononanoic acid	20.0048 ug/mL
					LC537-PFOA_00015	400 uL	Perfluorooctanoic acid	20.1089 ug/mL
					LC537-PFOS_00009	800 uL	Perfluorooctane sulfonic acid	40.1676 ug/mL
...LC537-PFBS_00009	04/01/18	01/30/18	Methanol, Lot 090285	48.7 mL	LC537_PFBS_00002	0.0974 g	Perfluorobutanesulfonic acid	2 mg/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid	1 g/g
...LC537-PFHpA_00016	04/01/18	01/30/18	Methanol, Lot 090285	59.74 mL	LC537_PFHpA_00002	0.1207 g	Perfluoroheptanoic acid	2.00022 mg/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00011	04/01/18	01/30/18	Methanol, Lot 090285	38.64 mL	LC537_PFHxS_00002	0.085 g	Perfluorohexanesulfonic acid	2.00049 mg/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00014	04/01/18	01/30/18	Methanol, Lot 090285	62.58 mL	LC537_PFNA_00002	0.065 g	Perfluorononanoic acid	1000.24 ug/mL
....LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00015	07/30/18	01/30/18	Methanol, Lot 090285	31 mL	LC537_PFOA_00003	0.0312 g	Perfluorooctanoic acid	1.00545 mg/mL
....LC537_PFOA_00003	10/31/23	SIGMA ALDRICH, Lot BCBS1198V			(Purchased Reagent)		Perfluorooctanoic acid	0.999 g/g
...LC537-PFOS_00009	07/30/18	01/30/18	Methanol, Lot 090285	36 mL	LC537_PFOS_00003	0.0397 g	Perfluorooctane sulfonic acid	1.00419 mg/mL
....LC537_PFOS_00003	04/17/19	sigma alrich, Lot SZBE107XV			(Purchased Reagent)		Perfluorooctane sulfonic acid	0.9106 g/g
.LC537-IS_00059	07/30/18	01/30/18	Methanol, Lot 090285	30000 uL	LCM2PFOA_00007	60 uL	13C2-PFOA	0.1 ug/mL
					LCMPFOS_00021	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_00021	12/12/21	Wellington Laboratories, Lot MPFOS1216			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00059	07/30/18	01/30/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	60 uL	13C2 PFHxA	0.1 ug/mL
..LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)		13C2 PFDA	50 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCMPFHxA_00015	11/22/21	Wellington Laboratories, Lot MPFHxA1116			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-MSP_00032	04/01/18	01/30/18	Methanol, Lot 141039	40000 uL	LC537SPIM_00026	333.4 uL	Perfluorobutane Sulfonate	750.15 ng/mL
							Perfluorobutanesulfonic acid	750.15 ng/mL
							Perfluoroheptanoic acid	83.3591 ng/mL
							Perfluorohexanesulfonic acid	250.111 ng/mL
							Perfluorononanoic acid	166.74 ng/mL
							Perfluorooctanoic acid	167.608 ng/mL
							Perfluorooctane sulfonic acid	334.797 ng/mL
.LC537SPIM_00026	04/01/18	01/30/18	Methanol, Lot 104453	20000 uL	LC537-PFBS_00009	900 uL	Perfluorobutane Sulfonate	90 ug/mL
							Perfluorobutanesulfonic acid	90 ug/mL
					LC537-PFHpA_00016	100 uL	Perfluoroheptanoic acid	10.0011 ug/mL
					LC537-PFHxS_00011	300 uL	Perfluorohexanesulfonic acid	30.0074 ug/mL
					LC537-PFNA_00014	400 uL	Perfluorononanoic acid	20.0048 ug/mL
					LC537-PFOA_00015	400 uL	Perfluorooctanoic acid	20.1089 ug/mL
					LC537-PFOS_00009	800 uL	Perfluorooctane sulfonic acid	40.1676 ug/mL
..LC537-PFBS_00009	04/01/18	01/30/18	Methanol, Lot 090285	48.7 mL	LC537_PFBS_00002	0.0974 g	Perfluorobutane Sulfonate	2 mg/mL
							Perfluorobutanesulfonic acid	2 mg/mL
...LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutane Sulfonate	1 g/g
							Perfluorobutanesulfonic acid	1 g/g
..LC537-PFHpA_00016	04/01/18	01/30/18	Methanol, Lot 090285	59.74 mL	LC537_PFHpA_00002	0.1207 g	Perfluoroheptanoic acid	2.00022 mg/mL
...LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
..LC537-PFHxS_00011	04/01/18	01/30/18	Methanol, Lot 090285	38.64 mL	LC537_PFHxS_00002	0.085 g	Perfluorohexanesulfonic acid	2.00049 mg/mL
...LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
..LC537-PFNA_00014	04/01/18	01/30/18	Methanol, Lot 090285	62.58 mL	LC537_PFNA_00002	0.065 g	Perfluorononanoic acid	1000.24 ug/mL
...LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
..LC537-PFOA_00015	07/30/18	01/30/18	Methanol, Lot 090285	31 mL	LC537_PFOA_00003	0.0312 g	Perfluorooctanoic acid	1.00545 mg/mL
...LC537_PFOA_00003	10/31/23	SIGMA ALDRICH, Lot BCBS1198V			(Purchased Reagent)		Perfluorooctanoic acid	0.999 g/g
..LC537-PFOS_00009	07/30/18	01/30/18	Methanol, Lot 090285	36 mL	LC537_PFOS_00003	0.0397 g	Perfluorooctane sulfonic acid	1.00419 mg/mL
...LC537_PFOS_00003	04/17/19	sigma alrich, Lot SZBE107XV			(Purchased Reagent)		Perfluorooctane sulfonic acid	0.9106 g/g
LC537-SU_00058	07/30/18	01/30/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	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_00015	11/22/21	Wellington Laboratories, Lot MPFHxA1116			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-SU_00061	08/27/18	02/27/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	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_00015	11/22/21	Wellington Laboratories, Lot MPFHxA1116			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-SU_00063	08/27/18	02/27/18	Methanol, Lot 104453	30000 uL	LCMPFDA_00012	60 uL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA_00015	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_00015	11/22/21	Wellington Laboratories, Lot MPFHxA1116			(Purchased Reagent)		13C2 PFHxA	50 ug/mL

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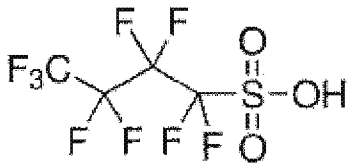
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

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 %

Ex. 4 CBI

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.

CERTIFICATE OF ANALYSIS

The Power to Question

Catalog Number:	sc-236187
Lot Number:	F0917
Product Name:	Nonafluorobutane-1-sulfonic acid
CAS Number:	375-73-5
Molecular Formula:	$C_4HF_9O_3S$
Molecular Weight:	300.10

Test	Specification	Result
Appearance	Colorless liquid	Complies
Identification (19F-NMR)	Conforms to structure	Complies
Purity (Sodium Hydroxide Titration)	≥ 97%	101.3%
Infrared Spectrum	Conforms to structure	Complies

Santa Cruz Biotechnology, Inc. 800.457.3801 831.457.3800 fax 831.457.3801 Europe +00800 4573 8000 49 62221 4503 0 www.scbt.com

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Certificate of Analysis

Product Name:	PERFLUOROHEPTANOIC ACID 99 %
Product Number:	342041
Batch Number:	BCBM2579V
Brand:	Aldrich
CAS Number:	375-85-9
Formula:	$CF_3(CF_2)_5CO_2H$
Formula Weight:	364.06
Quality Release Date:	06 DEC 2013
Recommended Retest Date:	OCT 2018

PFHpA

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

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Manager Quality Control
Buchs, Switzerland

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Certificate of analysis

r: 6.13.17 SW

PFHp A

Product No.: A12092

Product: Perfluoroheptanoic acid, 98+%

Lot No.: 10200390

Appearance: White fused solid

Water Content (Karl-Fischer): 0.30%

Melting Point: 32.0-34.3°C

Assay (Aqueous acid-base titration): 99.7%

Identification (FTIR): Conforms

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Certificate of Analysis

Product Name:	TRIDECAFLUOROHEXANE-1-SULFONIC ACID POTASSIUM SALT >= 98.0 % T
Product Number:	50929
Batch Number:	BCBL3545V
Brand:	Aldrich
CAS Number:	3871-99-6
Formula:	$C_6F_{13}KO_3S$
Formula Weight:	438.20
Quality Release Date:	20 JUN 2013

PFH_xS-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

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Manager Quality Control
Buchs, Switzerland

$$MW\ corr = \frac{(K\ form) - (K) + (H)}{(438.20 - 39.10 + 1.01)} = 0.91307$$
$$438.20\ (K\ form)$$
(cation form)

Purity = 90.94 % w/m.w correction

SKV 4/1/15

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CERTIFICATE OF ANALYSIS

Catalog Number:	sc-237289
Lot Number:	G2516
Product Name:	Tridecafluorohexane-1-sulfonic acid potassium salt
CAS Number:	3871-99-6
Molecular Formula:	$C_6F_{13}KO_3S$
Molecular Weight:	438.20

Test	Specification	Result
Appearance	White to faint beige powder or crystals	White powder
Identification (Infrared Spectrum)	Consistent with structure	Complies
Purity (Titration, Ion Exchange)	≥ 98.0%	100.4%

PFH_xS-K

$C_6F_{13}SO_3K$ 438.201

$C_6F_{13}SO_3H$ 400.111

MW correction = $\frac{400.11}{438.201}$ = 0.91307 PFH_xS CasA 355-46-4

Purity & MW correction = 90.9%

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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 CAS: 375-95-1	Lot: QN44F	

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

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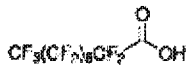
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
Perfluorononanoic acid - 97%

Product Number:	**394459**
Batch Number:	**MKCC0699**
Brand:	ALDRICH
CAS Number:	375-95-1
MDL Number:	MFCD00039605
Formula:	C9HF17O2
Formula Weight:	464.08 g/mol
Quality Release Date:	07 DEC 2016



Test	Specification	Result
Appearance (Color)	White to Off-White	White
Appearance (Form)	Powder or Crystals or Crystalline Chunk(s) or Granule or Flakes or Solid	Powder
Infrared Spectrum	Conforms to Structure	Conforms
GC (area %)	≥ 96.5 %	98.2 %

Ex. 4 CBI

PFNA

Quality Control
Milwaukee, WI US

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Version Number: 1

r: 11/30/18 SKV
PFOA

SIGMA-ALDRICH

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Certificate of Analysis

Product Name:	PENTADECAFLUOROOCTANOIC ACID analytical standard
Product Number:	33824
Batch Number:	BCBS1198V
Brand:	Sigma-Aldrich
CAS Number:	335-67-1
Formula:	$CF_3(CF_2)_6COOH$
Formula Weight:	414.07
Expiration Date:	OCT 2023
Quality Release Date:	12 MAY 2016

TEST	SPECIFICATION	RESULT
PURITY (HPLC AREA %)	≥ 98.0%	100.0%
IDENTIFICATION (LC-MS)	IDENTITY CONFORMS	CONFORMS

Ex. 4 CBI

Manager Quality Control
Buchs, Switzerland

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Certificate of analysis

P: 6/9/17 SK

PFOA

Product No.:	L08862
Product:	Perfluorooctanoic acid, 95%
Lot No.:	10199078

Appearance:	White powder
Water Content (Karl-Fischer):	1.30%
Melting Point:	47.6-54.0°C
Assay (Aqueous acid-base titration):	98.4%
Assay (GC Silyl Deriv):	97.2%

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r: 11/30/16 SV
PFOS

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CERTIFICATE OF ANALYSIS

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

Seelze, 22.04.2014/524107/14/08646

Order-No.:
Customer-No.:

Order-Code:

Quantity:

Production Date: 17.Apr.2014
Expiry Date: 17.Apr.2019

Article/Product: 33829 Batch : SZBE107XV

Heptadecafluorooctanesulfonic acid potassium salt OEKANAL®

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	complying
Assay (LC-MS)	98 %
Date of Analysis	22.Apr.2014

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 aliqout 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

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Certificate of Analysis

Product Name:	HEPTADECAFLUOROOCTANESULFONIC ACID TETRAETHYLAMMONIUM SALT 98 %
Product Number:	365289
Batch Number:	BCBQ0108V
Brand:	Aldrich
CAS Number:	56773-42-3
Formula:	$CF_3(CF_2)_6CF_2SO_3N(C_2H_5)_4$
Formula Weight:	629.37
Quality Release Date:	11 JUN 2015

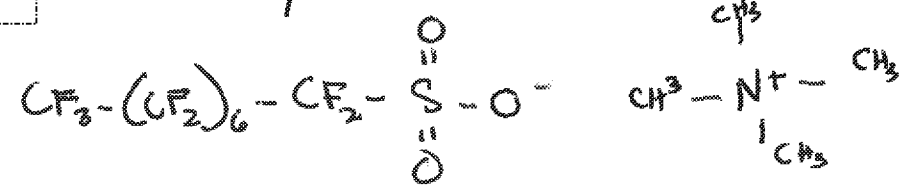
TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	WHITE TO OFF WHITE	OFF-WHITE
APPEARANCE (FORM)	POWDER OR POWDER WITH CHUNK(S)	POWDER
CARBON CONTENT	29.77 % - 31.29 %	29.97 %
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS

Ex. 4 CBI

Manager Quality Control
Buchs, Switzerland

MW correction: $\frac{500.125}{629.37} = 0.7946$

Purity & MW correction = 77.37%



	$C_8F_{17}SO_3^-H$	$C_8H_{20}N$
C = 12.011	96.088	96.088
F = 18.998	322.966	—
S = 32.066	32.066	—
O = 15.999	47.997	—
H = 1.008	1.008	20.160
N = 14.007	—	14.007
	500.125	130.255

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.

WELLINGTON LABORATORIES

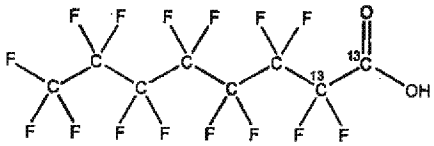
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFOA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid

LOT NUMBER: M2PFOA0216

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: $^{13}C_2{}^{12}C_6HF_{15}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/12/2016
EXPIRY DATE: (mm/dd/yyyy) 02/12/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 416.05
SOLVENT(S): Methanol
Water (<1%)

ISOTOPIC PURITY: ≥99% ^{13}C (1,2-$^{13}C_2$)

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: Ex. 4 CBI **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 $x_1, x_2, \ldots x_n$ on which it depends is:

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

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

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

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using 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:

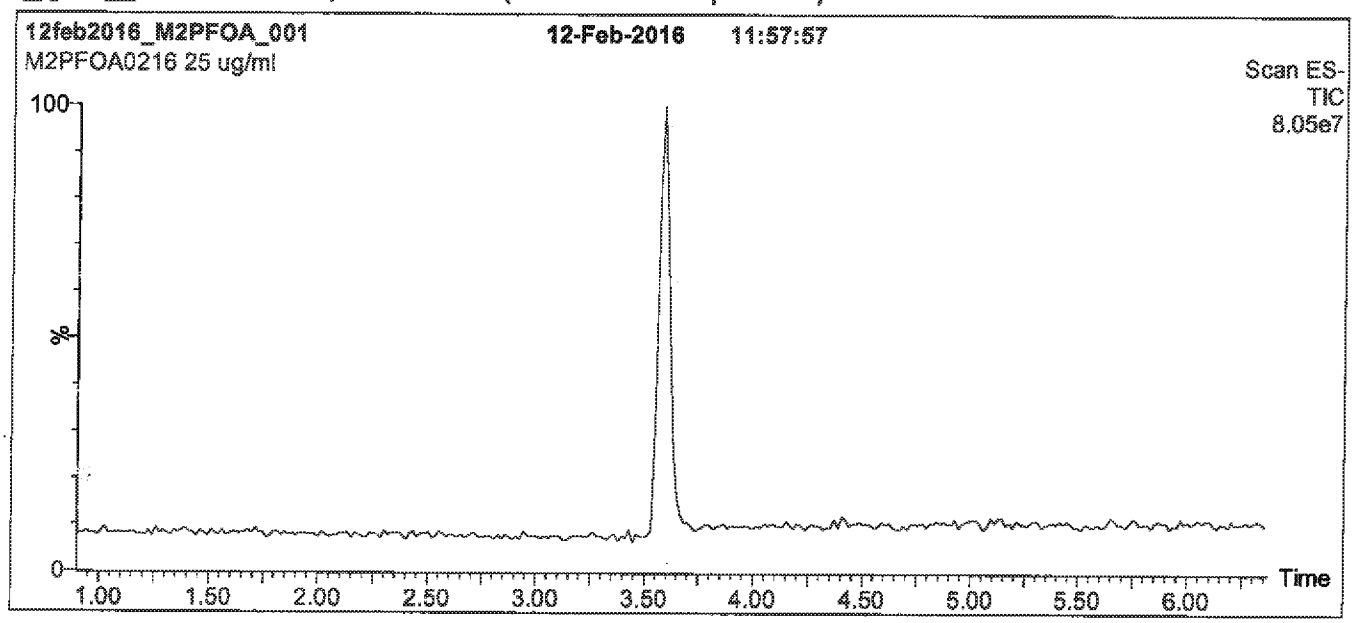
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

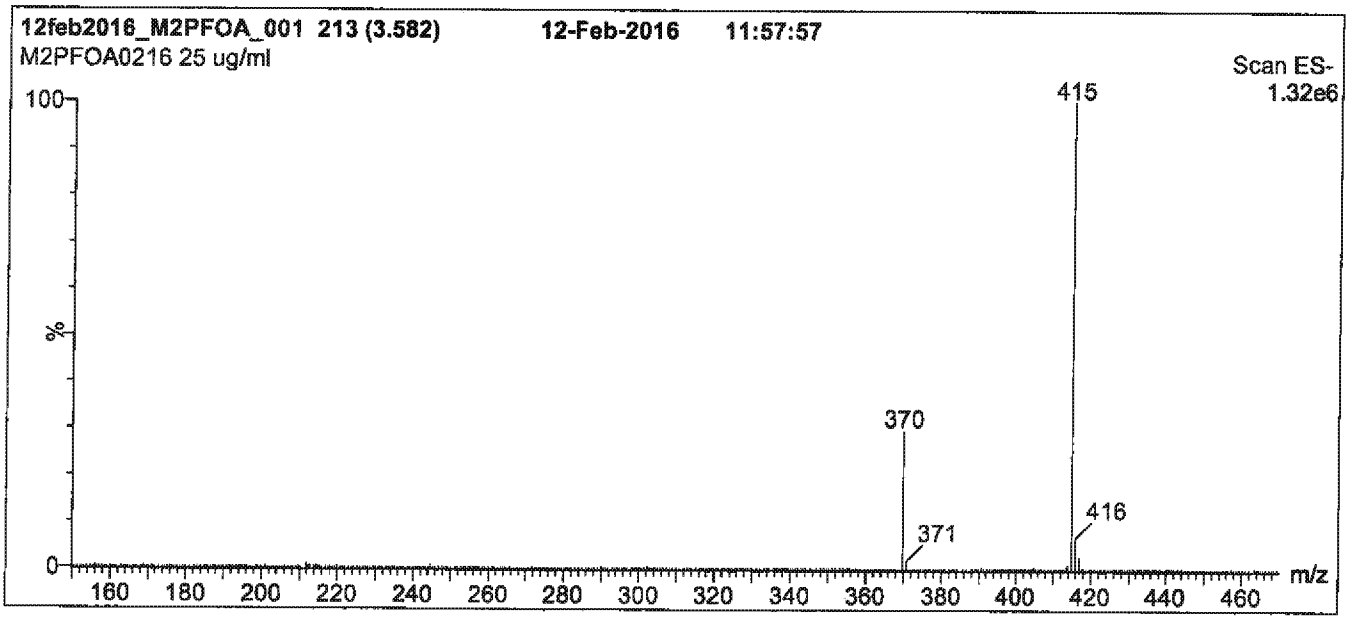
CALA

ANAB ACCREDITED

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

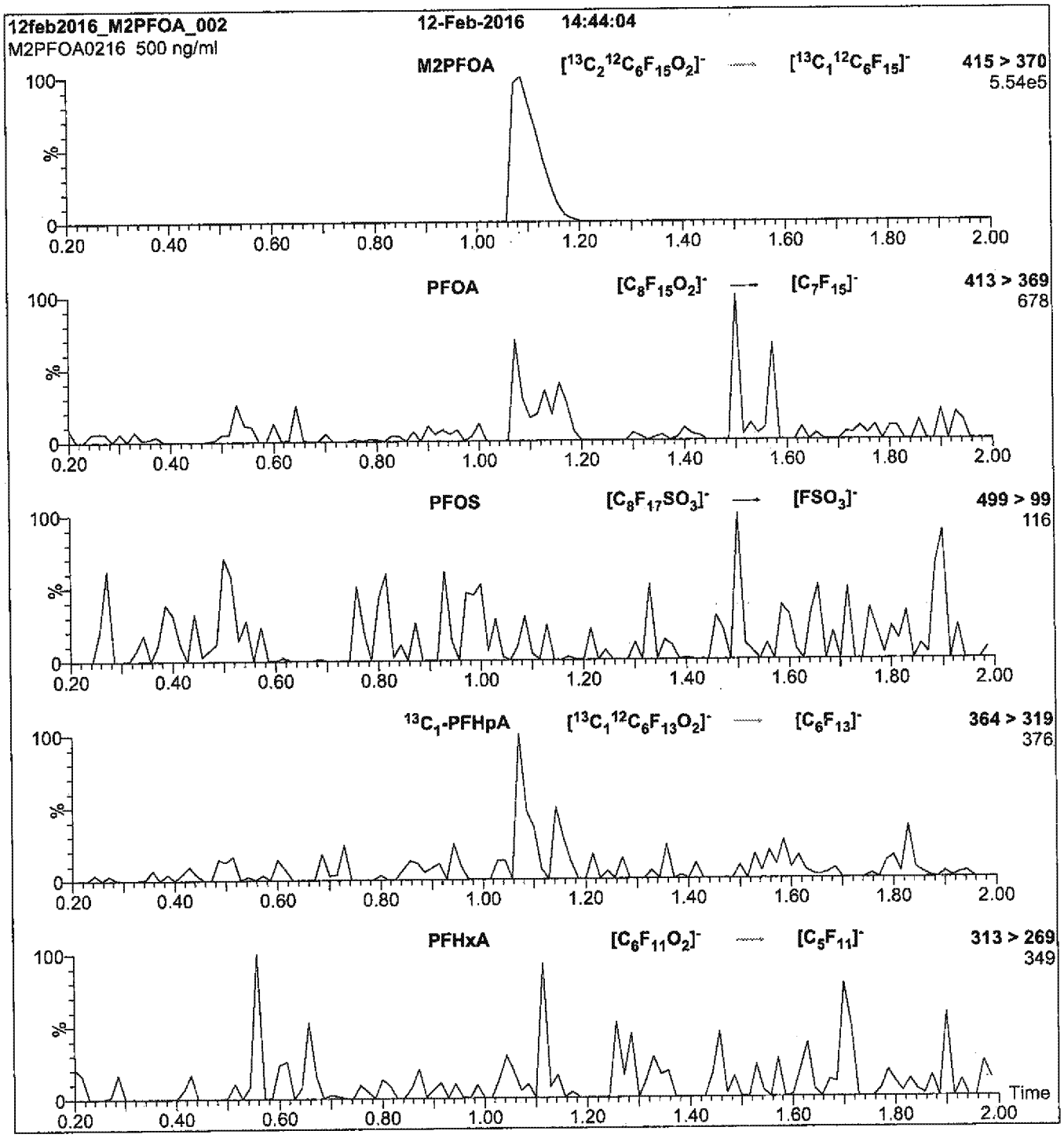
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 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 µl/min

MS Parameters

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

Form#:27, Issued 2004-11-10
Revision#:3, Revised 2015-03-24

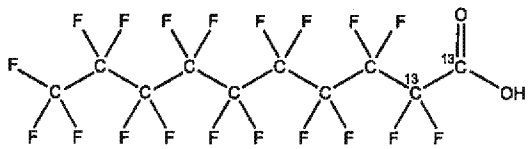
M2PFOA0216 (4 of 4)
rev0

814255
ID: LCMPFDA_00012
Exp: 09/30/21 Prpd: SBC
13C2-Perfluorodecanoic a

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFDA
LOT NUMBER: MPFDA0916
COMPOUND: Perfluoro-*n*-[1,2-$^{13}C_2$]decanoic acid
STRUCTURE:
CAS #: Not available



MOLECULAR FORMULA: $^{13}C_2{}^{12}C_8HF_{19}O_2$
MOLECULAR WEIGHT: 516.07
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)
CHEMICAL PURITY: >98%
ISOTOPIC PURITY: ≥99% ^{13}C (1,2-$^{13}C_2$)
LAST TESTED: (mm/dd/yyyy) 09/30/2016
EXPIRY DATE: (mm/dd/yyyy) 09/30/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of $^{13}C_1$-PFNA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: Ex. 4 CBI **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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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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ANAB ACCREDITED

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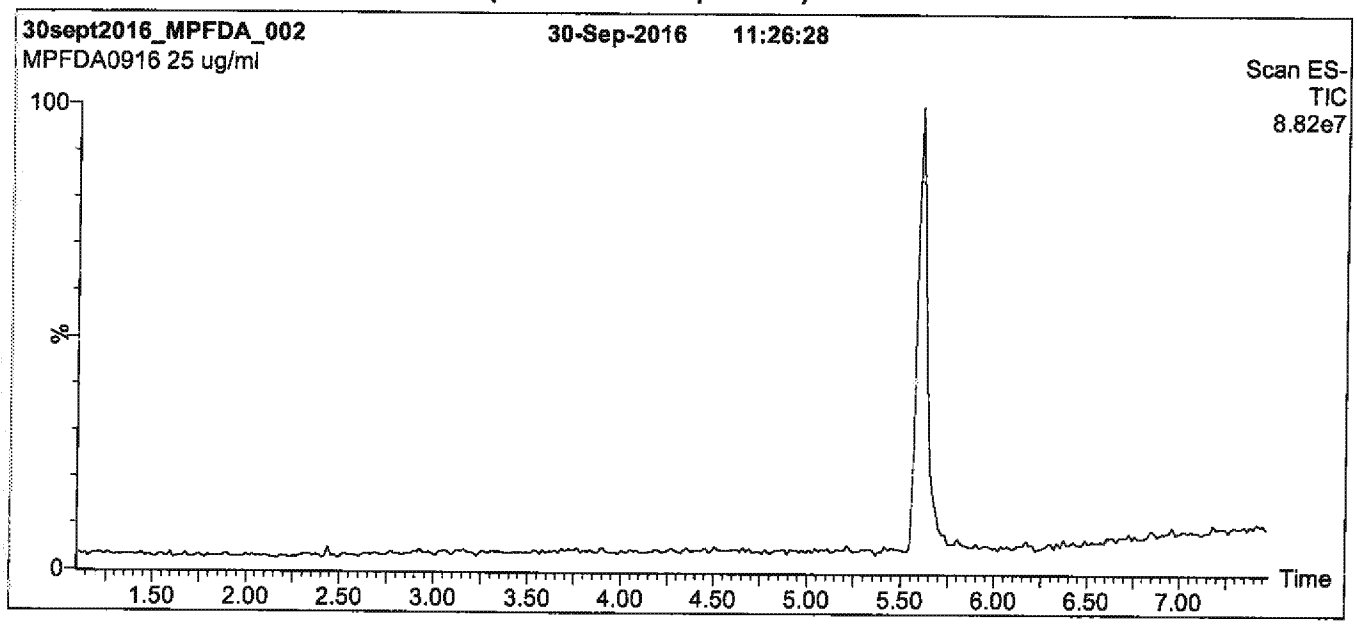
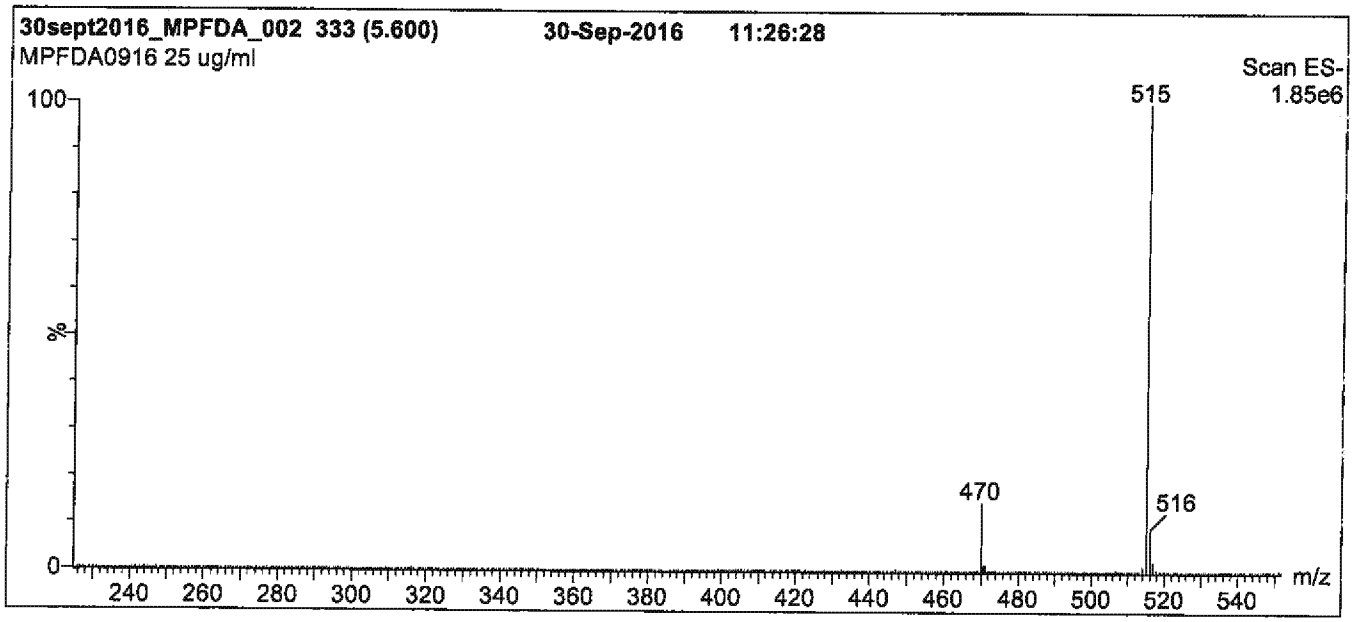
Figure 1: **MPFDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

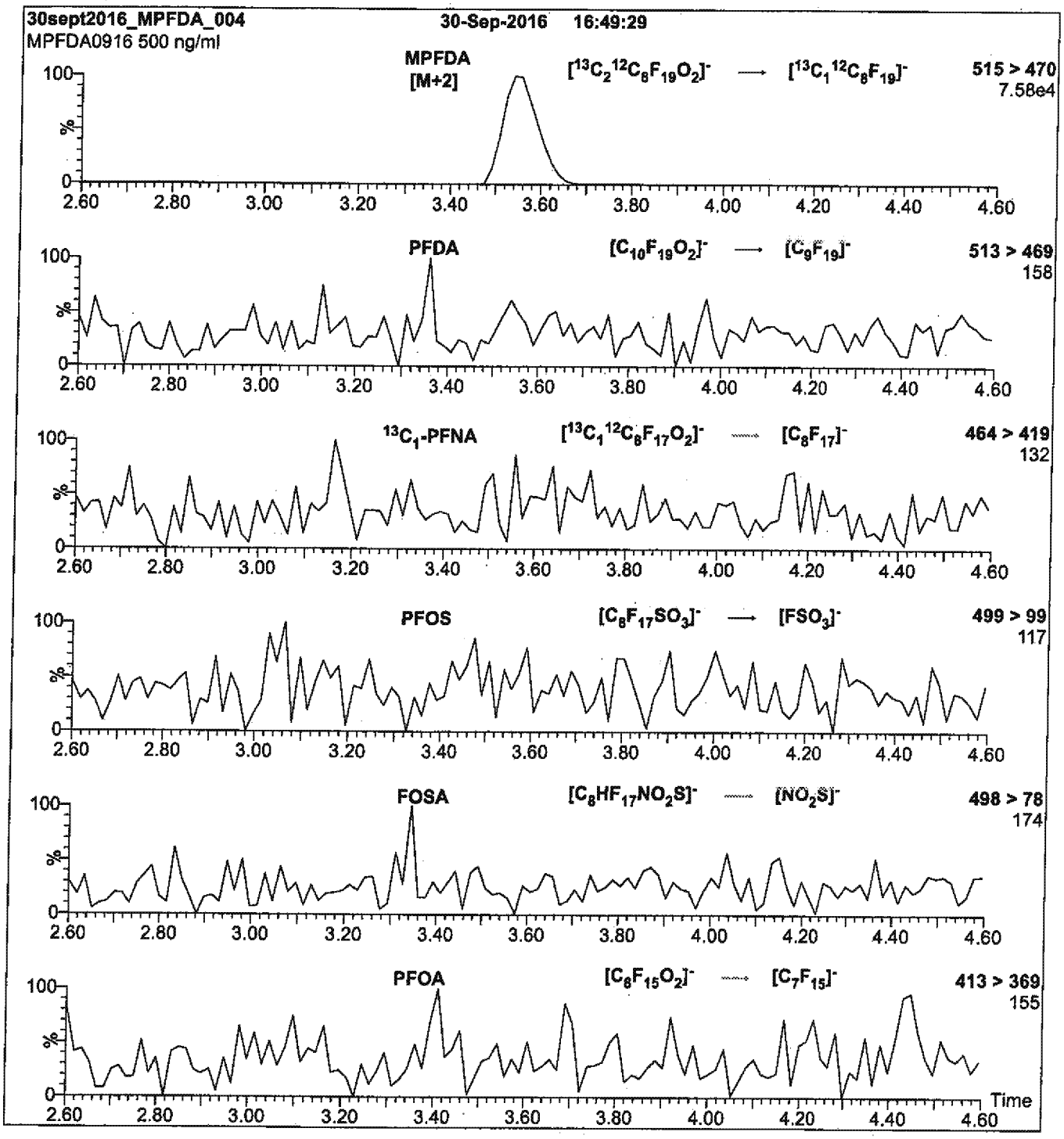
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

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

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

Flow: 300 µl/min

MS Parameters

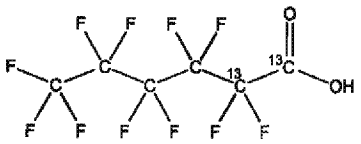
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 13

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxA
LOT NUMBER: MPFHxA1116
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]hexanoic acid

STRUCTURE:
CAS #: Not available



MOLECULAR FORMULA: $^{13}C_2{}^{12}C_4HF_{11}O_2$
MOLECULAR WEIGHT: 316.04
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol, Water (<1%)
CHEMICAL PURITY: >98%
ISOTOPIC PURITY: ≥99% ^{13}C (1,2-$^{13}C_2$)
LAST TESTED: (mm/dd/yyyy) 11/22/2016
EXPIRY DATE: (mm/dd/yyyy) 11/22/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-hexanoic acid and ~ 0.3% of perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: Ex. 4 CBI **Date:** 12/13/2016 (mm/dd/yyyy)

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

INTENDED USE:

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CALA

ANAB ACCREDITED

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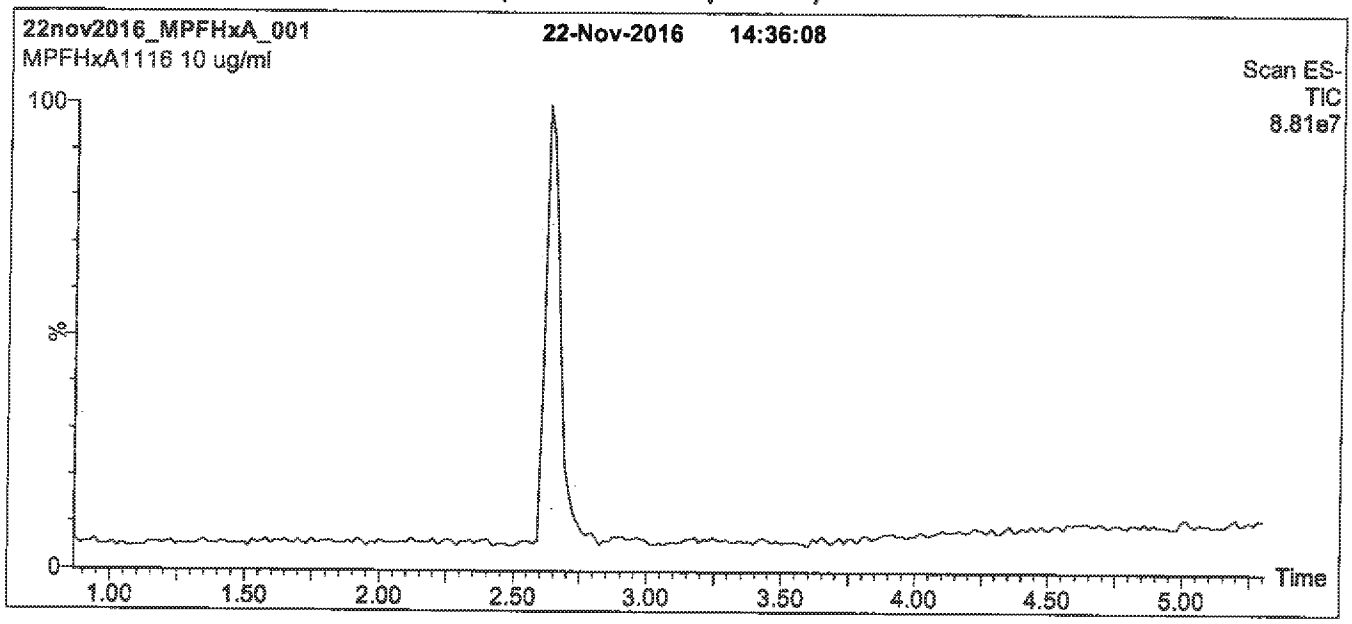
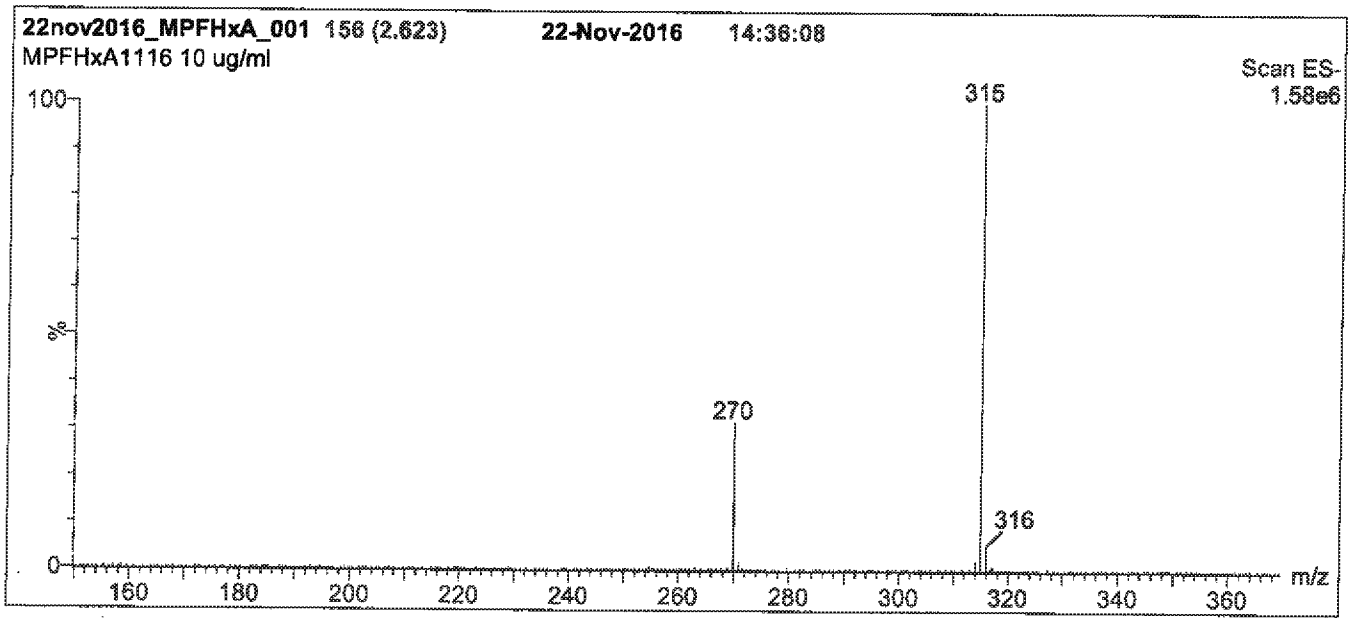
Figure 1: **MPFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min before returning to initial conditions over 0.5 min.
Time: 10 min

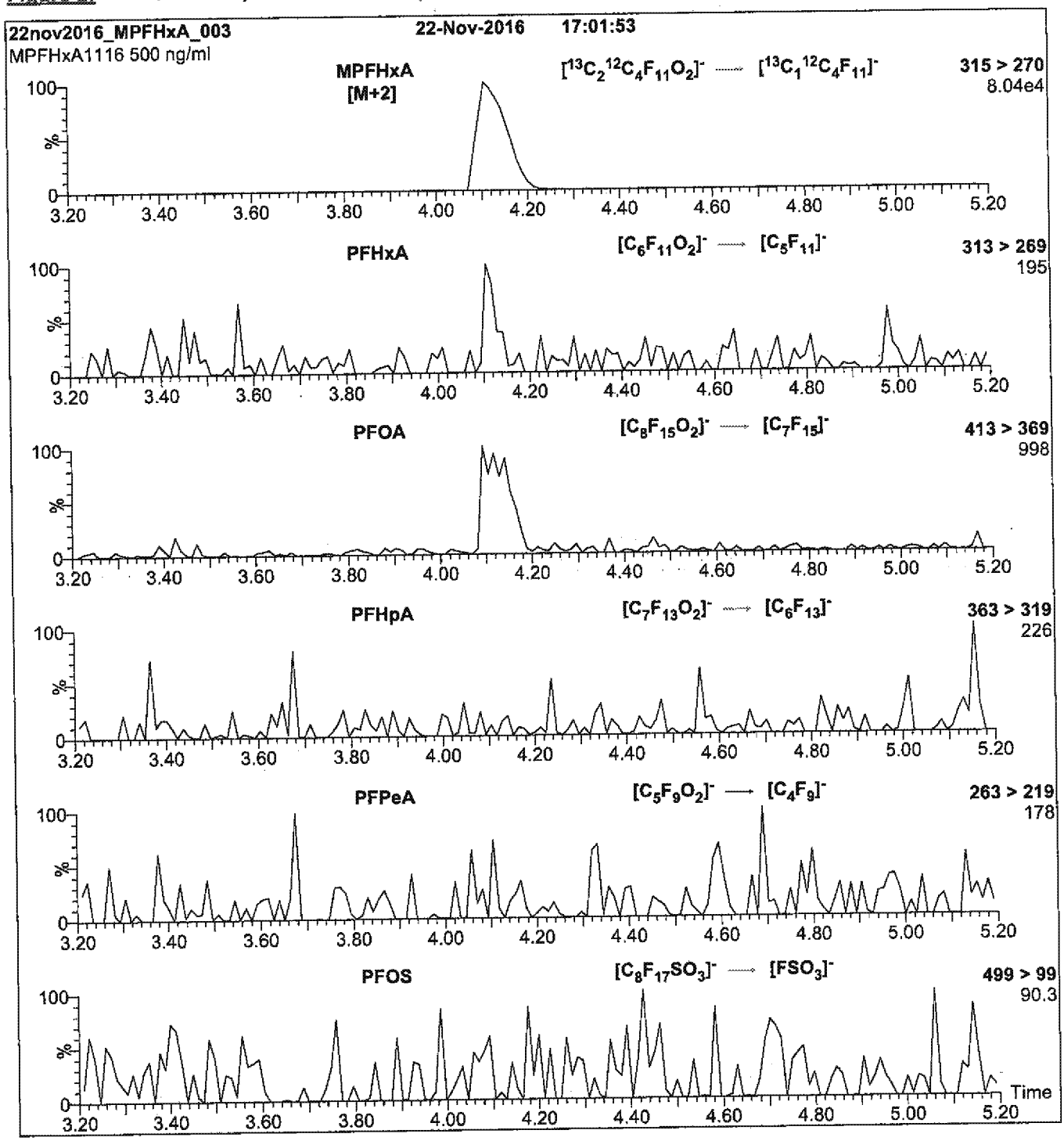
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 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 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 10

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

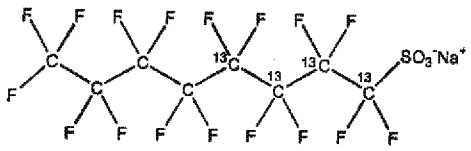
PRODUCT CODE: MPFOS

LOT NUMBER: MPFOS1216

COMPOUND: Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: $^{13}C_4{}^{12}C_4F_{17}SO_3Na$

MOLECULAR WEIGHT: 526.08

CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt)
47.8 ± 2.4 µg/ml (MPFOS anion)

SOLVENT(S): Methanol

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: ≥99% ^{13}C (1,2,3,4-$^{13}C_4$)

LAST TESTED: (mm/dd/yyyy) 12/12/2016

EXPIRY DATE: (mm/dd/yyyy) 12/12/2021

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 ~ 0.8% Sodium perfluoro-1-[1,2,3-$^{13}C_3$]heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: Ex. 4 CBI **Date:** 12/14/2016 (mm/dd/yyyy)

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

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 $x_1, x_2, \ldots x_n$ on which it depends is:

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

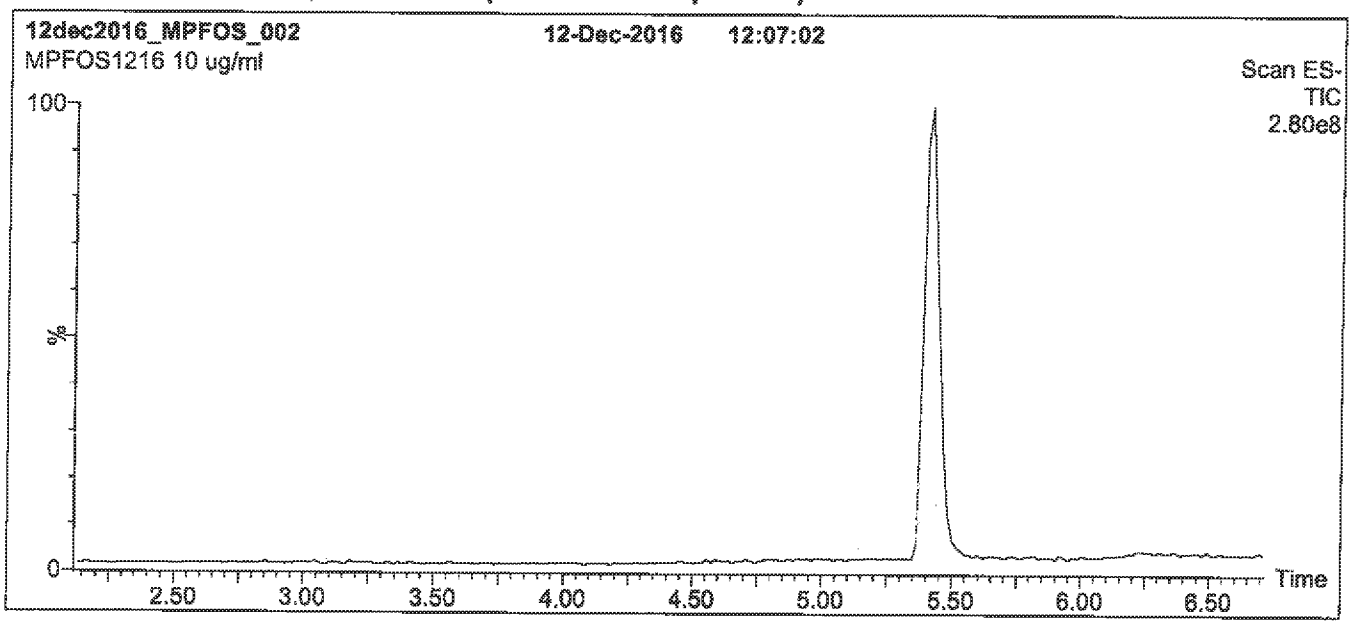
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

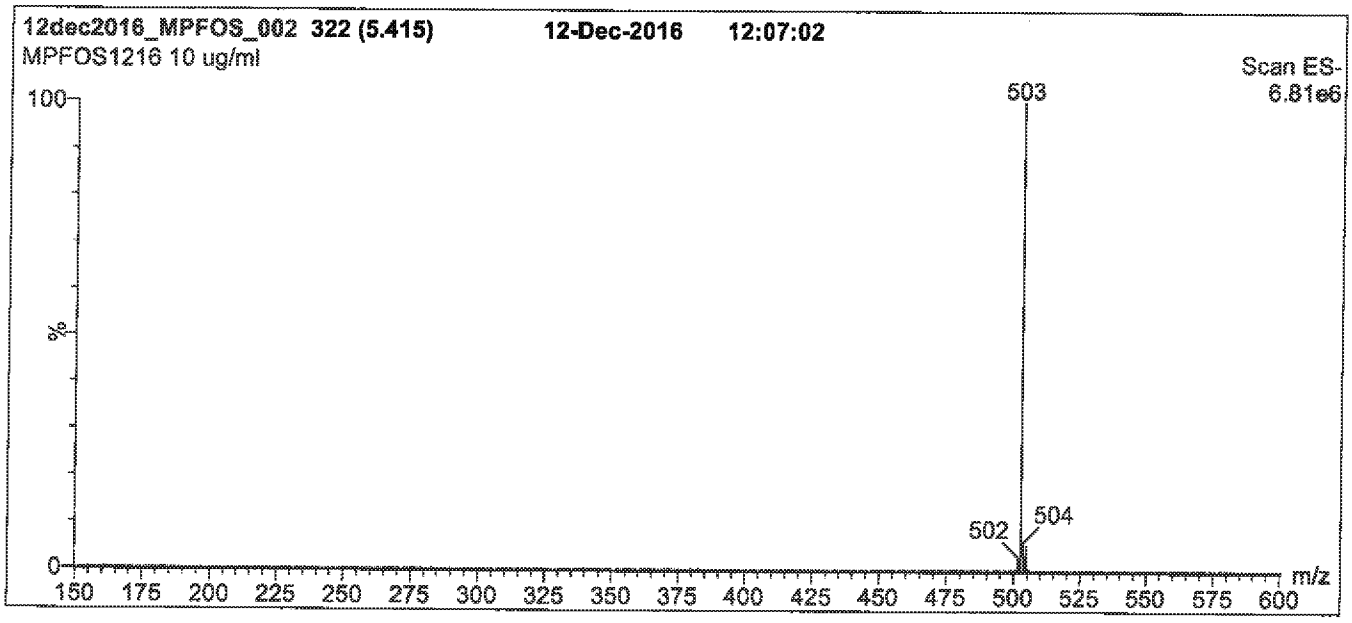
QUALITY MANAGEMENT:

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

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

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





Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 85% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

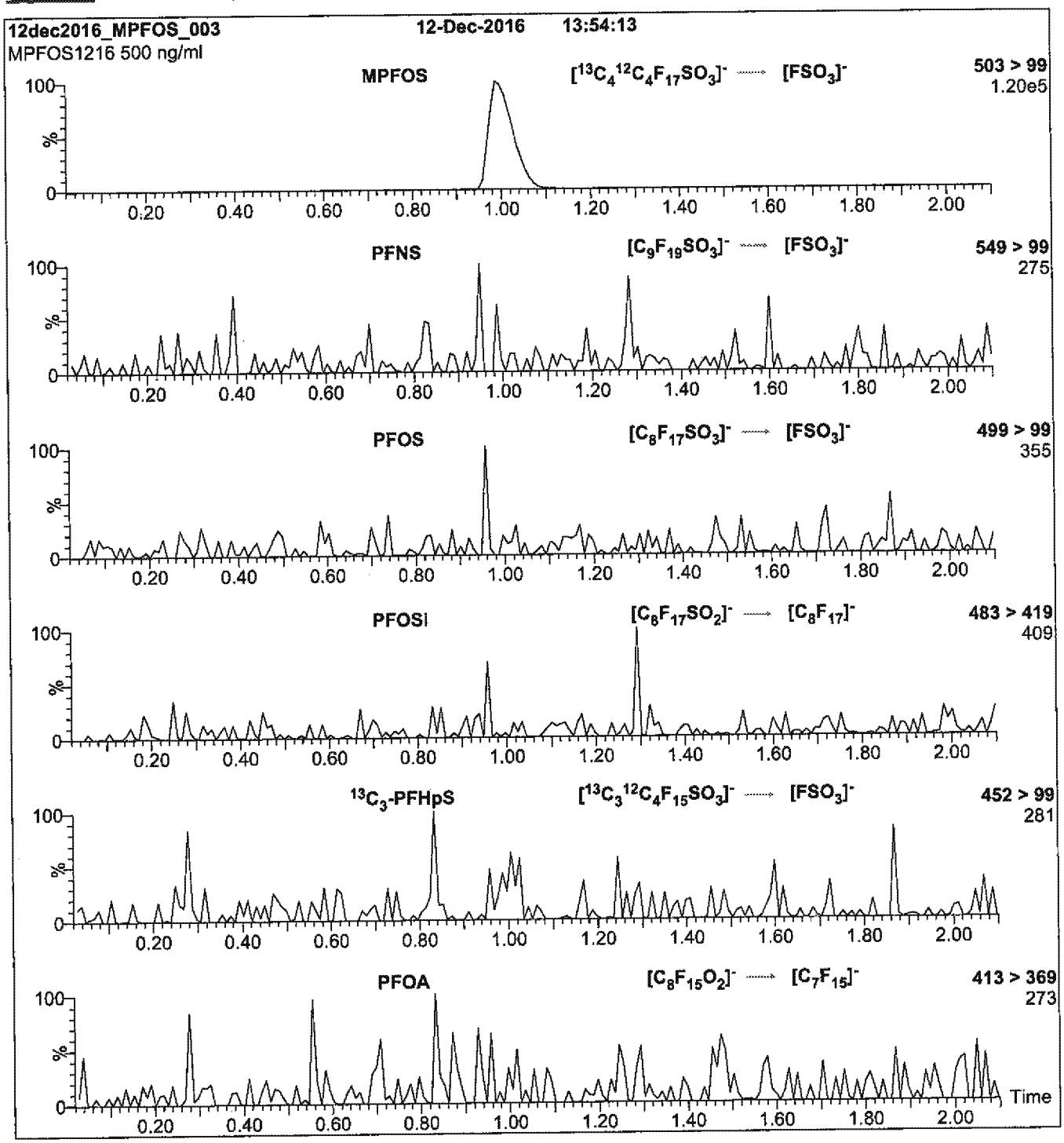
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

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



Conditions for Figure 2:

Injection: Direct loop injection
10 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 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 40

Form#:27, Issued 2004-11-10
Revision#:3, Revised 2015-03-24

MPFOS1216 (4 of 4)
rev0

Certification Summary

Client: Weston Solutions, Inc.
Project/Site: DAS R35321, SDG C0AL3

TestAmerica Job ID: 320-36607-1
SDG: DAS R35321, SDG C0AL3

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Sacramento	Alaska (UST)	State Program	10	17-020
TestAmerica Sacramento	Arizona	State Program	9	AZ0708
TestAmerica Sacramento	Arkansas DEQ	State Program	6	88-0691
TestAmerica Sacramento	California	State Program	9	2897
TestAmerica Sacramento	Colorado	State Program	8	CA00044
TestAmerica Sacramento	Connecticut	State Program	1	PH-0691
TestAmerica Sacramento	Florida	NELAP	4	E87570
TestAmerica Sacramento	Georgia	State Program	4	N/A
TestAmerica Sacramento	Hawaii	State Program	9	N/A
TestAmerica Sacramento	Illinois	NELAP	5	200060
TestAmerica Sacramento	Kansas	NELAP	7	E-10375
TestAmerica Sacramento	L-A-B	DoD ELAP		L2468
TestAmerica Sacramento	Louisiana	NELAP	6	30612
TestAmerica Sacramento	Maine	State Program	1	CA0004
TestAmerica Sacramento	Michigan	State Program	5	9947
TestAmerica Sacramento	Nevada	State Program	9	CA00044
TestAmerica Sacramento	New Hampshire	NELAP	1	2997
TestAmerica Sacramento	New Jersey	NELAP	2	CA005
TestAmerica Sacramento	New York	NELAP	2	11666
TestAmerica Sacramento	Oregon	NELAP	10	4040
TestAmerica Sacramento	Pennsylvania	NELAP	3	68-01272
TestAmerica Sacramento	Texas	NELAP	6	T104704399
TestAmerica Sacramento	US Fish & Wildlife	Federal		LE148388-0
TestAmerica Sacramento	USDA	Federal		P330-11-00436
TestAmerica Sacramento	USEPA UCMR	Federal	1	CA00044
TestAmerica Sacramento	Utah	NELAP	8	CA00044
TestAmerica Sacramento	Virginia	NELAP	3	460278
TestAmerica Sacramento	Washington	State Program	10	C581
TestAmerica Sacramento	West Virginia (DW)	State Program	3	9930C
TestAmerica Sacramento	Wyoming	State Program	8	8TMS-L

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method 537

Perfluorinated Alkyl Acids (LC/MS) by Method 537

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
C0AL3	320-36607-1	94	118
C0AL4	320-36607-2	87	113
C0AL5	320-36607-3	97	114
C0AL6	320-36607-4	86	117
C0AL7	320-36607-5	91	107
C0AL8	320-36607-6	94	113
C0AL9	320-36607-7	93	113
C0AM0	320-36607-8	85	116
C0AM1	320-36607-9	89	121
C0AM2	320-36607-10	78	112
C0AM3	320-36607-11	86	102
C0AM4	320-36607-12	80	109
	MB 320-211046/1-A	97	116
	MB 320-211748/1-A	93	104
	MB 320-212004/1-A	94	109
	LCS 320-211046/2-A	99	120
	LCS 320-211748/2-A	91	102
	LCS 320-212004/2-A	94	113
	LCSD 320-211748/3-A	94	112
	LCSD 320-212004/3-A	86	107
C0AM1 MS	320-36607-9 MS	87	124
C0AM1 MSD	320-36607-9 MSD	78	116

	QC LIMITS
PFHxA = 13C2 PFHxA	70-130
PFDA = 13C2 PFDA	70-130

Column to be used to flag recovery values

FORM II 537 DW

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Matrix: Water Level: Low Lab File ID: 2018.03.06_537C_004.d

Lab ID: LCS 320-211046/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctane sulfonic acid	134	142	106	70-130	
Perfluorooctanoic acid	67.0	68.8	103	70-130	
Perfluorononanoic acid	66.7	76.1	114	70-130	
Perfluorohexanesulfonic acid	100	108	108	70-130	
Perfluoroheptanoic acid	33.3	36.4	109	70-130	
Perfluorobutanesulfonic acid	300	293	98	70-130	

Column to be used to flag recovery and RPD values

FORM III 537 DW

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Matrix: Water Level: Low Lab File ID: 2018.03.09_537A_008.d

Lab ID: LCS 320-211748/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctane sulfonic acid	134	126	94	70-130	
Perfluorooctanoic acid	67.0	62.7	94	70-130	
Perfluorononanoic acid	66.7	66.3	99	70-130	
Perfluorohexanesulfonic acid	100	97.8	98	70-130	
Perfluoroheptanoic acid	33.3	32.8	98	70-130	
Perfluorobutanesulfonic acid	300	258	86	70-130	

Column to be used to flag recovery and RPD values

FORM III 537 DW

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Matrix: Water Level: Low Lab File ID: 2018.03.12_537AA_008.d

Lab ID: LCS 320-212004/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctane sulfonic acid	223	234	105	70-130	
Perfluorooctanoic acid	112	117	104	70-130	
Perfluorononanoic acid	111	132	118	70-130	
Perfluorohexanesulfonic acid	167	178	107	70-130	
Perfluoroheptanoic acid	55.6	60.6	109	70-130	
Perfluorobutanesulfonic acid	500	471	94	70-130	

Column to be used to flag recovery and RPD values

FORM III 537 DW

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Matrix: Water Level: Low Lab File ID: 2018.03.09_537A_009.d

Lab ID: LCSD 320-211748/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctane sulfonic acid	134	132	98	4	30	70-130	
Perfluorooctanoic acid	67.0	67.6	101	7	30	70-130	
Perfluorononanoic acid	66.7	72.0	108	8	30	70-130	
Perfluorohexanesulfonic acid	100	99.2	99	1	30	70-130	
Perfluoroheptanoic acid	33.3	34.3	103	4	30	70-130	
Perfluorobutanesulfonic acid	300	255	85	1	30	70-130	

Column to be used to flag recovery and RPD values

FORM III 537 DW

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Matrix: Water Level: Low Lab File ID: 2018.03.12_537AA_009.d

Lab ID: LCSD 320-212004/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctane sulfonic acid	223	217	97	8	30	70-130	
Perfluorooctanoic acid	112	100	90	15	30	70-130	
Perfluorononanoic acid	111	116	104	13	30	70-130	
Perfluorohexanesulfonic acid	167	157	94	12	30	70-130	
Perfluoroheptanoic acid	55.6	53.4	96	13	30	70-130	
Perfluorobutanesulfonic acid	500	416	83	13	30	70-130	

Column to be used to flag recovery and RPD values

FORM III 537 DW

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Matrix: Water Level: Low Lab File ID: 2018.03.06_537C_016.d

Lab ID: 320-36607-9 MS Client ID: C0AM1 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorooctane sulfonic acid	118	51	175	105	70-130	
Perfluorooctanoic acid	59.3	5.0 J	63.5	99	70-130	
Perfluorononanoic acid	59.0	ND	68.8	117	70-130	
Perfluorohexanesulfonic acid	88.5	ND	93.2	105	70-130	
Perfluoroheptanoic acid	29.5	1.7 J	30.4	103	70-130	
Perfluorobutanesulfonic acid	265	ND	252	95	70-130	

Column to be used to flag recovery and RPD values

FORM III 537 DW

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Matrix: Water Level: Low Lab File ID: 2018.03.06_537C_017.d

Lab ID: 320-36607-9 MSD Client ID: C0AM1 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctane sulfonic acid	113	159	95	10	30	70-130	
Perfluorooctanoic acid	56.7	53.1	85	18	30	70-130	
Perfluorononanoic acid	56.4	58.3	103	17	30	70-130	
Perfluorohexanesulfonic acid	84.6	77.4	92	18	30	70-130	
Perfluoroheptanoic acid	28.2	24.8	88	20	30	70-130	
Perfluorobutanesulfonic acid	254	219	86	14	30	70-130	

Column to be used to flag recovery and RPD values

FORM III 537 DW

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab File ID: 2018.03.06_537C_003.d Lab Sample ID: MB 320-211046/1-A

Matrix: Water Date Extracted: 03/03/2018 12:52

Instrument ID: A8_N Date Analyzed: 03/06/2018 22:45

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-211046/2-A	2018.03.06_537C_004.d	03/06/2018 22:50
C0AL3	320-36607-1	2018.03.06_537C_005.d	03/06/2018 22:54
C0AL4	320-36607-2	2018.03.06_537C_006.d	03/06/2018 22:59
C0AL5	320-36607-3	2018.03.06_537C_007.d	03/06/2018 23:04
C0AL6	320-36607-4	2018.03.06_537C_008.d	03/06/2018 23:08
C0AL8	320-36607-6	2018.03.06_537C_010.d	03/06/2018 23:18
C0AL9	320-36607-7	2018.03.06_537C_011.d	03/06/2018 23:22
C0AM1	320-36607-9	2018.03.06_537C_015.d	03/06/2018 23:41
C0AM1 MS	320-36607-9 MS	2018.03.06_537C_016.d	03/06/2018 23:46
C0AM1 MSD	320-36607-9 MSD	2018.03.06_537C_017.d	03/06/2018 23:50
C0AM2	320-36607-10	2018.03.06_537C_018.d	03/06/2018 23:55
C0AM3	320-36607-11	2018.03.06_537C_019.d	03/07/2018 00:00
C0AM4	320-36607-12	2018.03.06_537C_020.d	03/07/2018 00:04

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab File ID: 2018.03.09_537A_007.d Lab Sample ID: MB 320-211748/1-A

Matrix: Water Date Extracted: 03/07/2018 14:47

Instrument ID: A8_N Date Analyzed: 03/09/2018 09:07

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-211748/2-A	2018.03.09_537A_008.d	03/09/2018 09:12
	LCSD 320-211748/3-A	2018.03.09_537A_009.d	03/09/2018 09:17
C0AL7	320-36607-5	2018.03.09_537A_010.d	03/09/2018 09:21

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab File ID: 2018.03.12_537AA_007.d Lab Sample ID: MB 320-212004/1-A

Matrix: Water Date Extracted: 03/08/2018 17:27

Instrument ID: A8_N Date Analyzed: 03/12/2018 16:30

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-212004/2-A	2018.03.12_537AA_008.d	03/12/2018 16:35
	LCSD 320-212004/3-A	2018.03.12_537AA_009.d	03/12/2018 16:40
C0AM0	320-36607-8	2018.03.12_537AA_010.d	03/12/2018 16:44

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Calibration Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3(mm) Calibration End Date: 02/16/2018 09:19

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		937117	1.86	2726868	2.11		
UPPER LIMIT		1405676	2.36	4090302	2.61		
LOWER LIMIT		468559	1.36	1363434	1.61		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-208773/11		955394	1.87	2663428	2.12		
ICV 320-208773/13		890238	1.85	2703377	2.11		
CCVL 320-211417/1		851838	1.81	2523082	2.07		
CCV 320-211579/1 CCVIS		879714	1.81	2553100	2.06		
MB 320-211046/1-A		923176	1.81	2542437	2.06		
LCS 320-211046/2-A		864151	1.81	2490950	2.06		
320-36607-1	C0AL3	891423	1.81	2523589	2.06		
320-36607-2	C0AL4	895021	1.81	2576066	2.06		
320-36607-3	C0AL5	900101	1.81	2564630	2.06		
320-36607-4	C0AL6	884578	1.80	2635018	2.05		
320-36607-6	C0AL8	918595	1.81	2634892	2.06		
320-36607-7	C0AL9	862139	1.81	2432793	2.06		
CCV 320-211579/13 CCVIS		952212	1.81	2904446	2.06		
CCV 320-211581/13 CCVIS		952212	1.81	2904446	2.06		
320-36607-9	C0AM1	911938	1.81	2698223	2.06		
320-36607-9 MS	C0AM1 MS	867197	1.81	2522368	2.06		
320-36607-9 MSD	C0AM1 MSD	856551	1.80	2485712	2.06		
320-36607-10	C0AM2	918458	1.81	2678514	2.06		
320-36607-11	C0AM3	913938	1.80	2540405	2.06		
320-36607-12	C0AM4	900828	1.80	2526946	2.06		
CCV 320-211581/24 CCVIS		867372	1.81	2658438	2.06		
CCVL 320-212122/1		1054723	1.84	3033079	2.10		
CCV 320-212122/2 CCVIS		953378	1.84	2664407	2.10		
MB 320-211748/1-A		904303	1.84	2650176	2.09		
LCS 320-211748/2-A		940216	1.84	2715247	2.09		
LCSD 320-211748/3-A		964231	1.83	2838831	2.09		
320-36607-5	C0AL7	999840	1.83	2848943	2.09		

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

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Calibration Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3(mm) Calibration End Date: 02/16/2018 09:19

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		937117	1.86	2726868	2.11		
UPPER LIMIT		1405676	2.36	4090302	2.61		
LOWER LIMIT		468559	1.36	1363434	1.61		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCV 320-212122/8 CCVIS		870751	1.83	2649281	2.09		
CCVL 320-212525/1		839914	1.86	2407064	2.11		
CCV 320-212525/2 CCVIS		821398	1.84	2385426	2.09		
MB 320-212004/1-A		739786	1.83	2381218	2.06		
LCS 320-212004/2-A		760305	1.84	2462333	2.09		
LCSD 320-212004/3-A		838927	1.84	2692906	2.09		
320-36607-8	C0AM0	721933	1.82	2334685	2.06		
CCV 320-212525/8 CCVIS		763141	1.82	2557095	2.06		

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

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Sample No.: CCV 320-211579/1 Date Analyzed: 03/06/2018 22:36

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.06_537C_001 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		879714	1.81	2553100	2.06		
UPPER LIMIT		1231600	2.31	3574340	2.56		
LOWER LIMIT		615800	1.31	1787170	1.56		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-211046/1-A		923176	1.81	2542437	2.06		
LCS 320-211046/2-A		864151	1.81	2490950	2.06		
320-36607-1	C0AL3	891423	1.81	2523589	2.06		
320-36607-2	C0AL4	895021	1.81	2576066	2.06		
320-36607-3	C0AL5	900101	1.81	2564630	2.06		
320-36607-4	C0AL6	884578	1.80	2635018	2.05		
320-36607-6	C0AL8	918595	1.81	2634892	2.06		
320-36607-7	C0AL9	862139	1.81	2432793	2.06		

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

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Sample No.: CCV 320-211579/13 Date Analyzed: 03/06/2018 23:32

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.06_537C_013 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		952212	1.81	2904446	2.06		
UPPER LIMIT		1333097	2.31	4066224	2.56		
LOWER LIMIT		666548	1.31	2033112	1.56		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-211046/1-A		923176	1.81	2542437	2.06		
LCS 320-211046/2-A		864151	1.81	2490950	2.06		
320-36607-1	C0AL3	891423	1.81	2523589	2.06		
320-36607-2	C0AL4	895021	1.81	2576066	2.06		
320-36607-3	C0AL5	900101	1.81	2564630	2.06		
320-36607-4	C0AL6	884578	1.80	2635018	2.05		
320-36607-6	C0AL8	918595	1.81	2634892	2.06		
320-36607-7	C0AL9	862139	1.81	2432793	2.06		

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

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Sample No.: CCV 320-211581/13 Date Analyzed: 03/06/2018 23:32

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.06_537C_013 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		952212	1.81	2904446	2.06		
UPPER LIMIT		1333097	2.31	4066224	2.56		
LOWER LIMIT		666548	1.31	2033112	1.56		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-36607-9	C0AM1	911938	1.81	2698223	2.06		
320-36607-9 MS	C0AM1 MS	867197	1.81	2522368	2.06		
320-36607-9 MSD	C0AM1 MSD	856551	1.80	2485712	2.06		
320-36607-10	C0AM2	918458	1.81	2678514	2.06		
320-36607-11	C0AM3	913938	1.80	2540405	2.06		
320-36607-12	C0AM4	900828	1.80	2526946	2.06		

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

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Sample No.: CCV 320-211581/24 Date Analyzed: 03/07/2018 00:23

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.06_537C_024 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		867372	1.81	2658438	2.06		
UPPER LIMIT		1214321	2.31	3721813	2.56		
LOWER LIMIT		607160	1.31	1860907	1.56		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-36607-9	C0AM1	911938	1.81	2698223	2.06		
320-36607-9 MS	C0AM1 MS	867197	1.81	2522368	2.06		
320-36607-9 MSD	C0AM1 MSD	856551	1.80	2485712	2.06		
320-36607-10	C0AM2	918458	1.81	2678514	2.06		
320-36607-11	C0AM3	913938	1.80	2540405	2.06		
320-36607-12	C0AM4	900828	1.80	2526946	2.06		

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

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Sample No.: CCV 320-212122/2 Date Analyzed: 03/09/2018 08:58

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.09_537A_005 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		953378	1.84	2664407	2.10		
UPPER LIMIT		1334729	2.34	3730170	2.60		
LOWER LIMIT		667365	1.34	1865085	1.60		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-211748/1-A		904303	1.84	2650176	2.09		
LCS 320-211748/2-A		940216	1.84	2715247	2.09		
LCSD 320-211748/3-A		964231	1.83	2838831	2.09		
320-36607-5	C0AL7	999840	1.83	2848943	2.09		

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

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Sample No.: CCV 320-212122/8 Date Analyzed: 03/09/2018 09:26

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.09_537A_011 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		870751	1.83	2649281	2.09		
UPPER LIMIT		1219051	2.33	3708993	2.59		
LOWER LIMIT		609526	1.33	1854497	1.59		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-211748/1-A		904303	1.84	2650176	2.09		
LCS 320-211748/2-A		940216	1.84	2715247	2.09		
LCSD 320-211748/3-A		964231	1.83	2838831	2.09		
320-36607-5	C0AL7	999840	1.83	2848943	2.09		

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

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Sample No.: CCV 320-212525/2 Date Analyzed: 03/12/2018 16:21

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.12_537AA_00 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		821398	1.84	2385426	2.09		
UPPER LIMIT		1149957	2.34	3339596	2.59		
LOWER LIMIT		574979	1.34	1669798	1.59		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-212004/1-A		739786	1.83	2381218	2.06		
LCS 320-212004/2-A		760305	1.84	2462333	2.09		
LCSD 320-212004/3-A		838927	1.84	2692906	2.09		
320-36607-8	C0AM0	721933	1.82	2334685	2.06		

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

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Sample No.: CCV 320-212525/8 Date Analyzed: 03/12/2018 16:49

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.12_537AA_01 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		763141	1.82	2557095	2.06		
UPPER LIMIT		1068397	2.32	3579933	2.56		
LOWER LIMIT		534199	1.32	1789967	1.56		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-212004/1-A		739786	1.83	2381218	2.06		
LCS 320-212004/2-A		760305	1.84	2462333	2.09		
LCSD 320-212004/3-A		838927	1.84	2692906	2.09		
320-36607-8	C0AM0	721933	1.82	2334685	2.06		

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

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 DW

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AL3
Lab Sample ID: 320-36607-1
Matrix: Water
Lab File ID: 2018.03.06_537C_005.d
Analysis Method: 537 DW
Date Collected: 02/27/2018 09:30
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 270.9(mL)
Date Analyzed: 03/06/2018 22:54
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.: 211579
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		37	6.3
335-67-1	Perfluorooctanoic acid	ND		18	2.6
375-95-1	Perfluorononanoic acid	ND		18	7.4
355-46-4	Perfluorohexanesulfonic acid	ND		28	5.1
375-85-9	Perfluoroheptanoic acid	ND		9.2	1.8
375-73-5	Perfluorobutanesulfonic acid	ND		83	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	118		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_005.d
Lims ID: 320-36607-A-1-A
Client ID: C0AL3
Sample Type: Client
Inject. Date: 06-Mar-2018 22:54:47 ALS Bottle#: 3 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-1-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:07 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

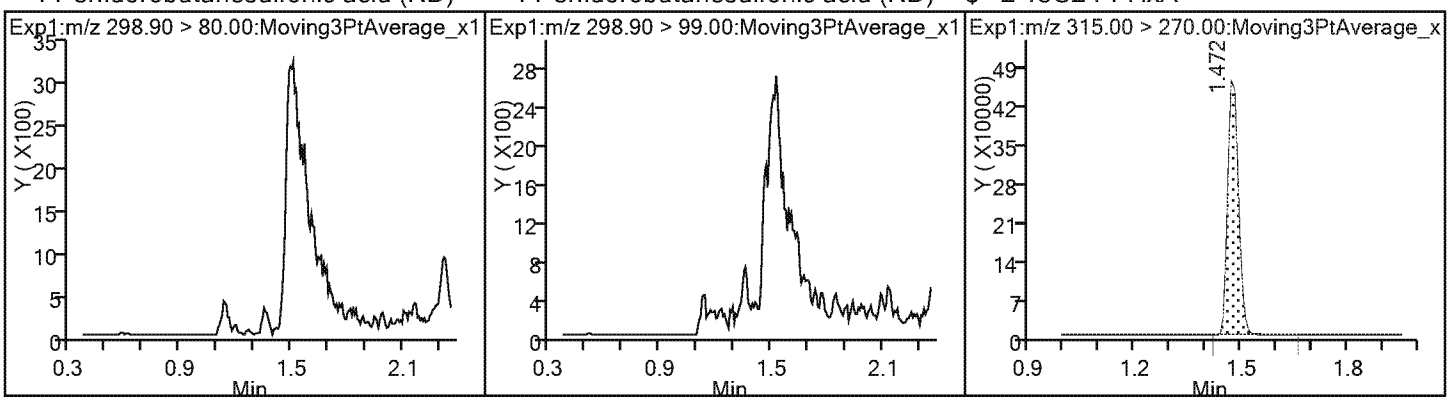
Column 1 : Det: EXP1
Process Host: XAWRK022

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.472	1.487	-0.015	1.000	918762	9.37		15257	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		891423	10.0		8003	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2523589	28.7		6732	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	550821	11.8		5541	

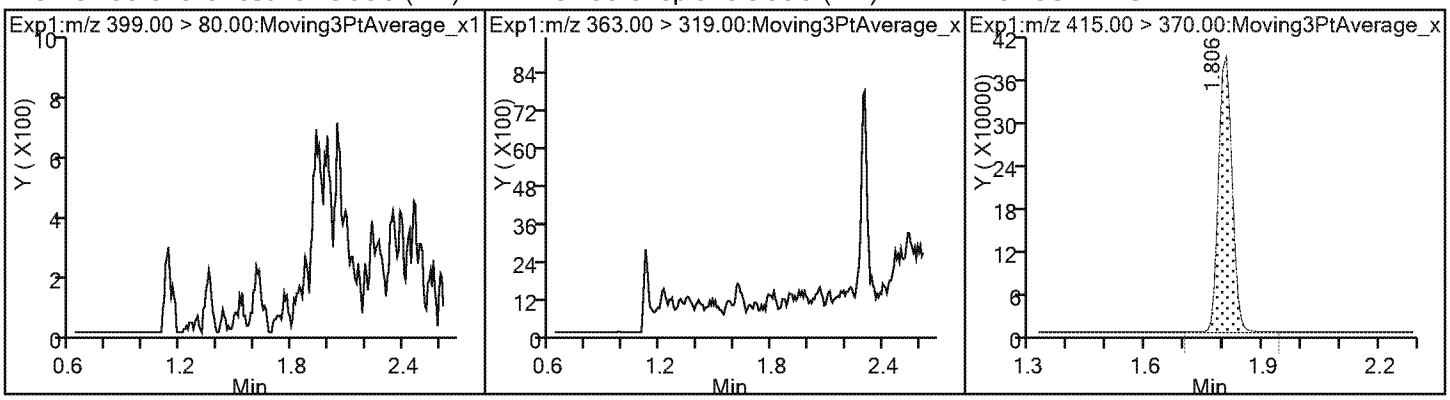
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_005.d				
Injection Date:	06-Mar-2018 22:54:47	Instrument ID:	A8_N		
Lims ID:	320-36607-A-1-A	Lab Sample ID:	320-36607-1		
Client ID:	C0AL3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

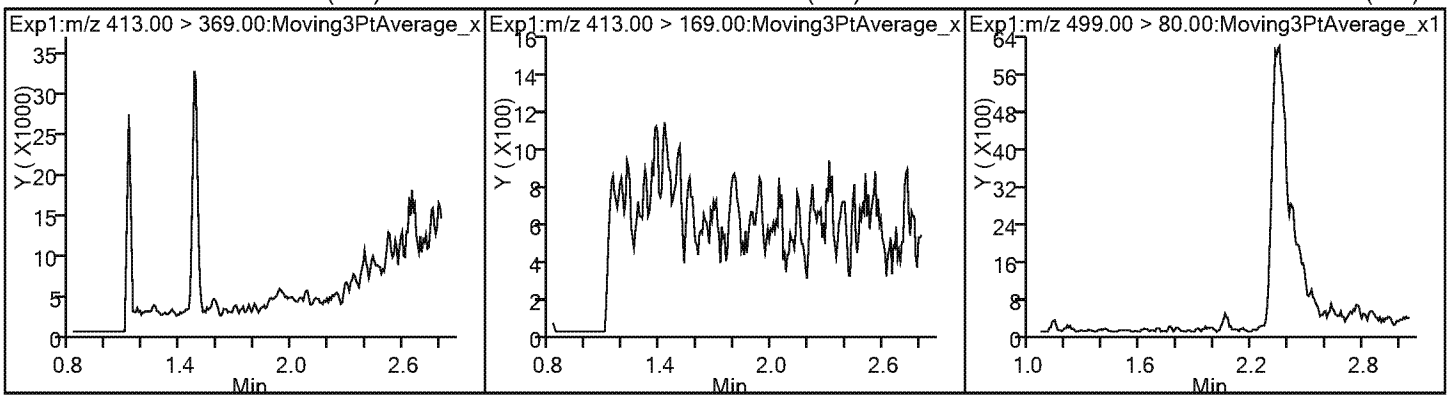
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



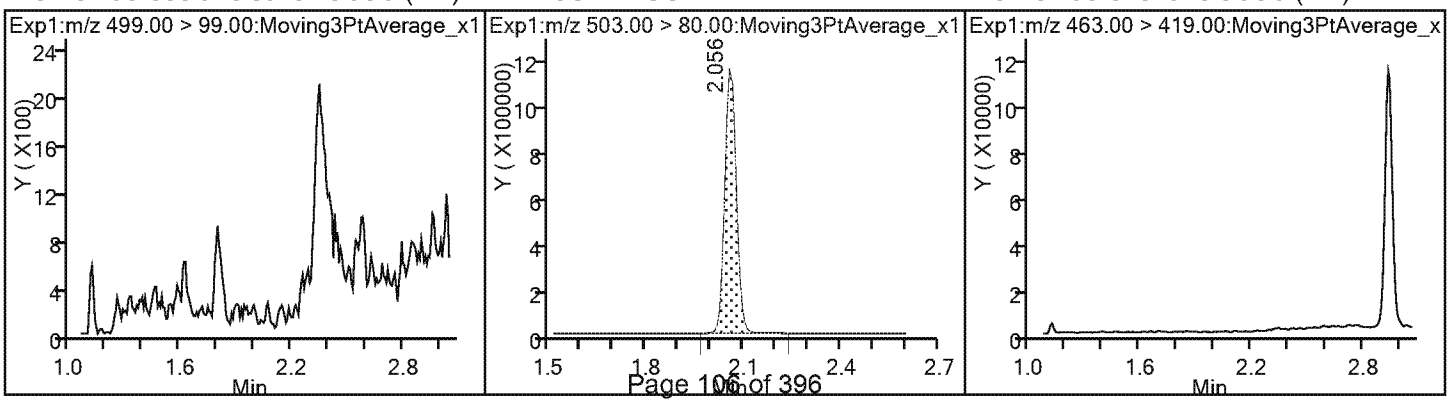
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



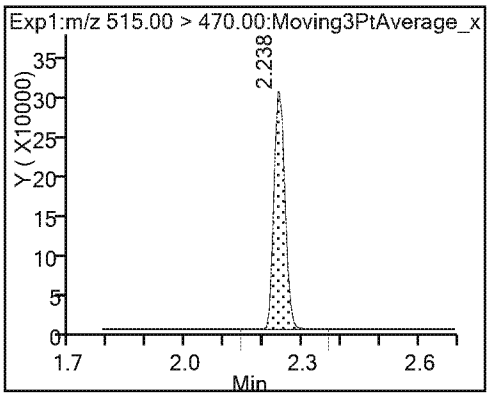
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AL4
Lab Sample ID: 320-36607-2
Matrix: Water
Lab File ID: 2018.03.06_537C_006.d
Analysis Method: 537 DW
Date Collected: 02/27/2018 09:30
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 295.6(mL)
Date Analyzed: 03/06/2018 22:59
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.: 211579
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	44		34	5.8
335-67-1	Perfluorooctanoic acid	3.7	J	17	2.4
375-95-1	Perfluorononanoic acid	ND		17	6.8
355-46-4	Perfluorohexanesulfonic acid	ND		25	4.7
375-85-9	Perfluoroheptanoic acid	1.6	J	8.5	1.6
375-73-5	Perfluorobutanesulfonic acid	ND		76	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	87		70-130
STL00996	13C2 PFDA	113		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_006.d
Lims ID: 320-36607-A-2-A
Client ID: C0AL4
Sample Type: Client
Inject. Date: 06-Mar-2018 22:59:28 ALS Bottle#: 4 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-2-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:07 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022
First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 10:39:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.366	0.0	1.000	368360	3.13		429	
298.90 > 99.00	1.366	1.366	0.0	1.000	275715		1.34(0.00-0.00)	417	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.487	-0.008	1.000	859572	8.73		10809	
3 Perfluorohexanesulfonic acid									M
399.00 > 80.00	1.624	1.624	0.0	1.000	55893	0.3866		36.8	M
4 Perfluoroheptanoic acid									M
363.00 > 319.00	1.624	1.624	0.0	1.000	40728	0.4686		8.8	M
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		895021	10.0		9408	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.813	-0.007	1.000	94686	1.10		3.4	
413.00 > 169.00	1.806	1.813	-0.007	1.000	60393		1.57(0.00-0.00)	36.7	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.056	2.056	0.0	1.000	1094313	12.9		343	a
499.00 > 99.00	2.056	2.056	0.0	1.000	199554		5.48(0.00-0.00)	101	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2576066	28.7		4008	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	529649	11.3		5030	

QC Flag Legend

Review Flags

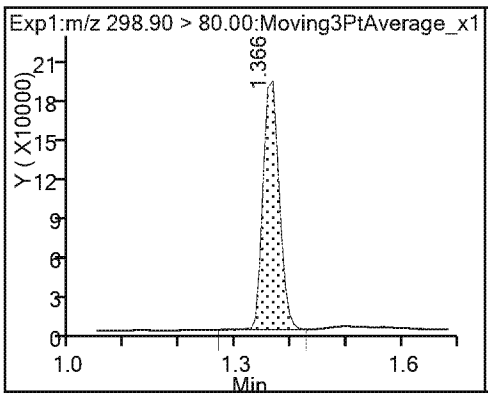
M - Manually Integrated

a - User Assigned ID

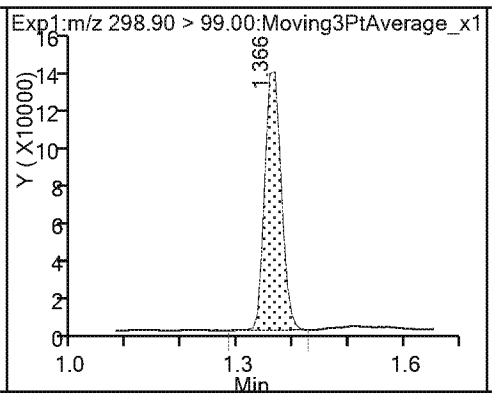
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_006.d				
Injection Date:	06-Mar-2018 22:59:28	Instrument ID:	A8_N		
Lims ID:	320-36607-A-2-A	Lab Sample ID:	320-36607-2		
Client ID:	C0AL4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	4	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

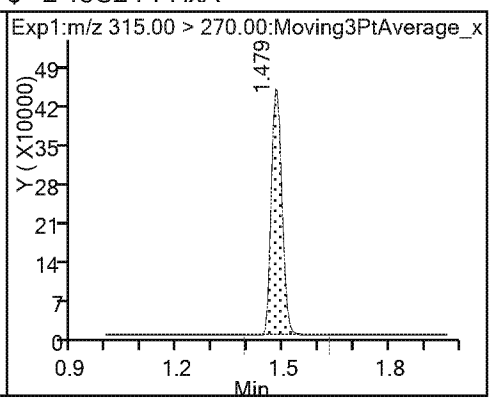
1 Perfluorobutanesulfonic acid



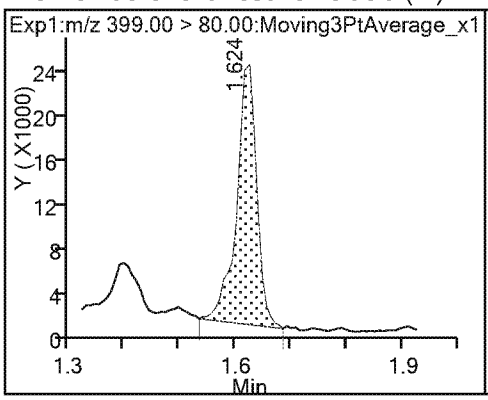
1 Perfluorobutanesulfonic acid



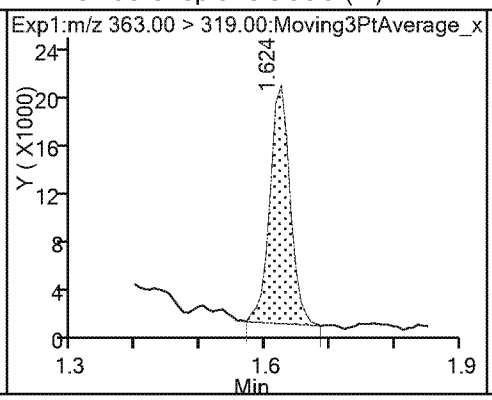
$ 2 13C2 PFHxA



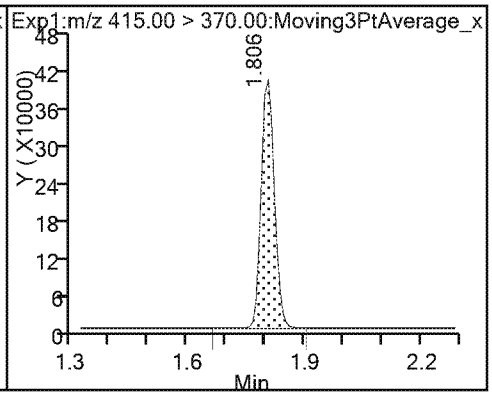
3 Perfluorohexanesulfonic acid (M)



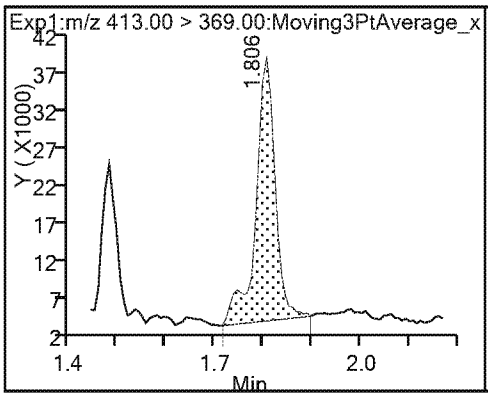
4 Perfluoroheptanoic acid (M)



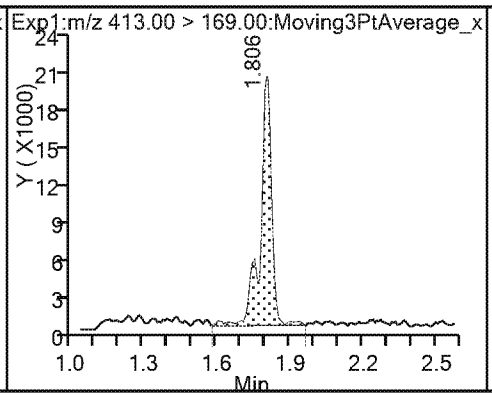
* 6 13C2-PFOA



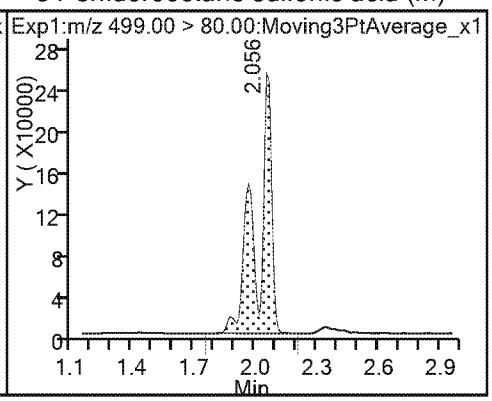
5 Perfluorooctanoic acid



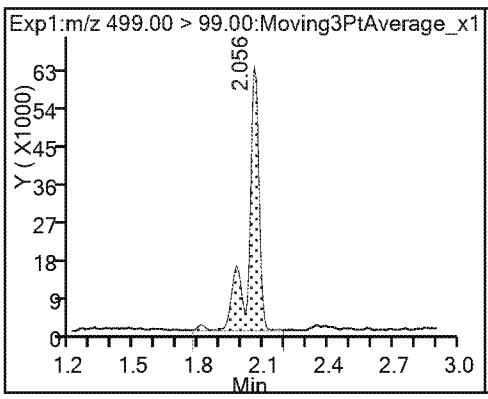
5 Perfluorooctanoic acid



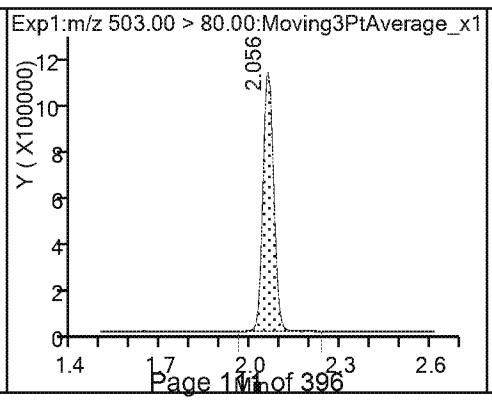
8 Perfluorooctane sulfonic acid (M)



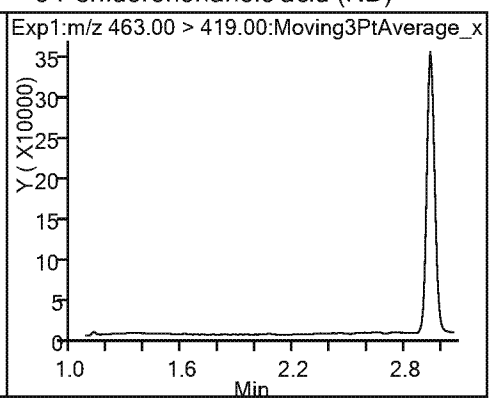
8 Perfluorooctane sulfonic acid



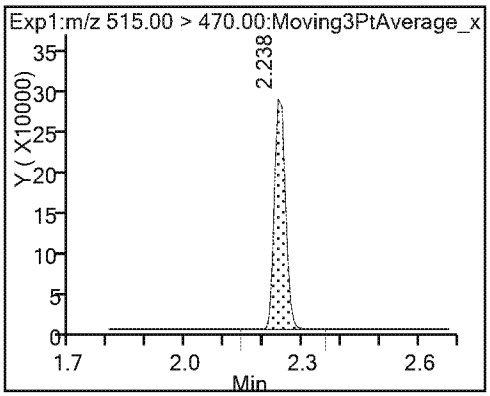
* 7 13C4 PFOS



9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

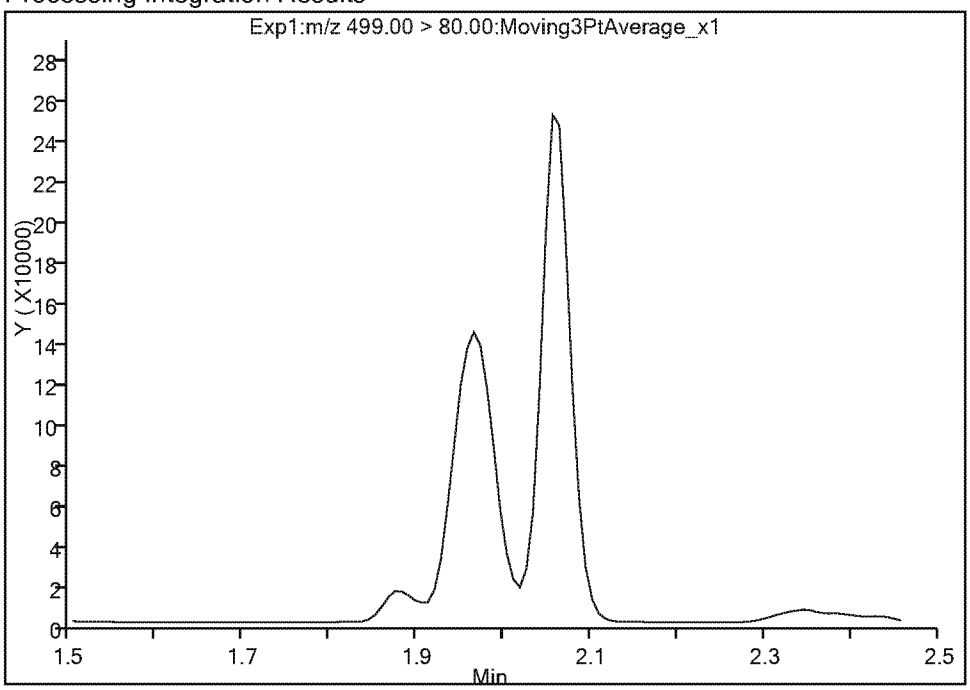
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_006.d				
Injection Date:	06-Mar-2018 22:59:28	Instrument ID:	A8_N		
Lims ID:	320-36607-A-2-A	Lab Sample ID:	320-36607-2		
Client ID:	C0AL4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	4	Worklist Smp#:	6
Injection Vol:	2.0 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

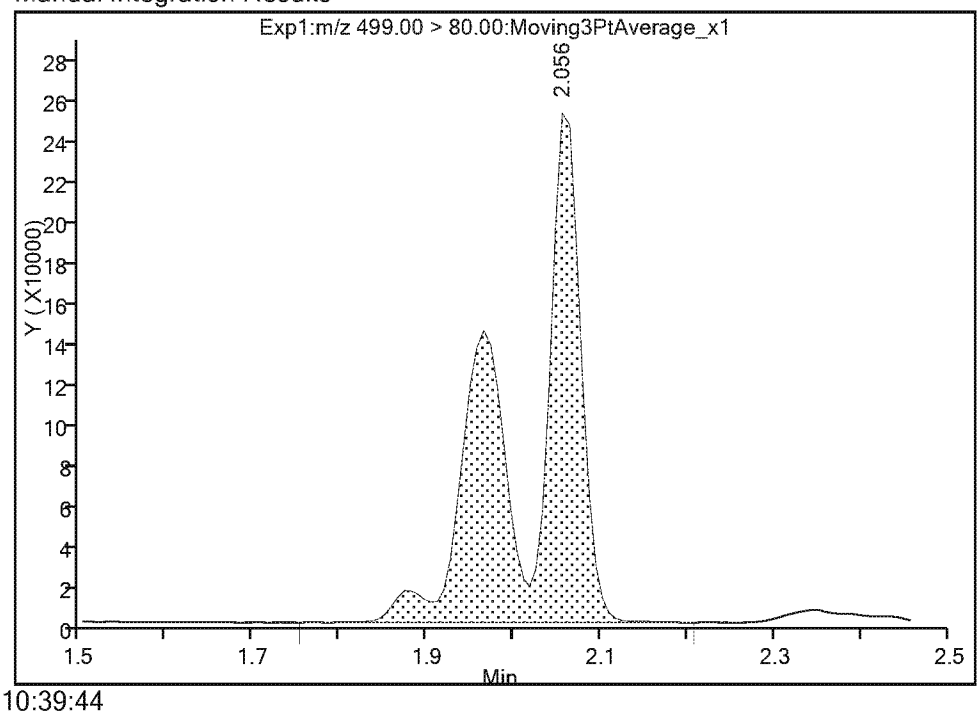
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 1094313
Amount: 12.885021
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:39:44
Audit Action: Assigned Compound ID Audit Reason: Missed Peak

TestAmerica Sacramento

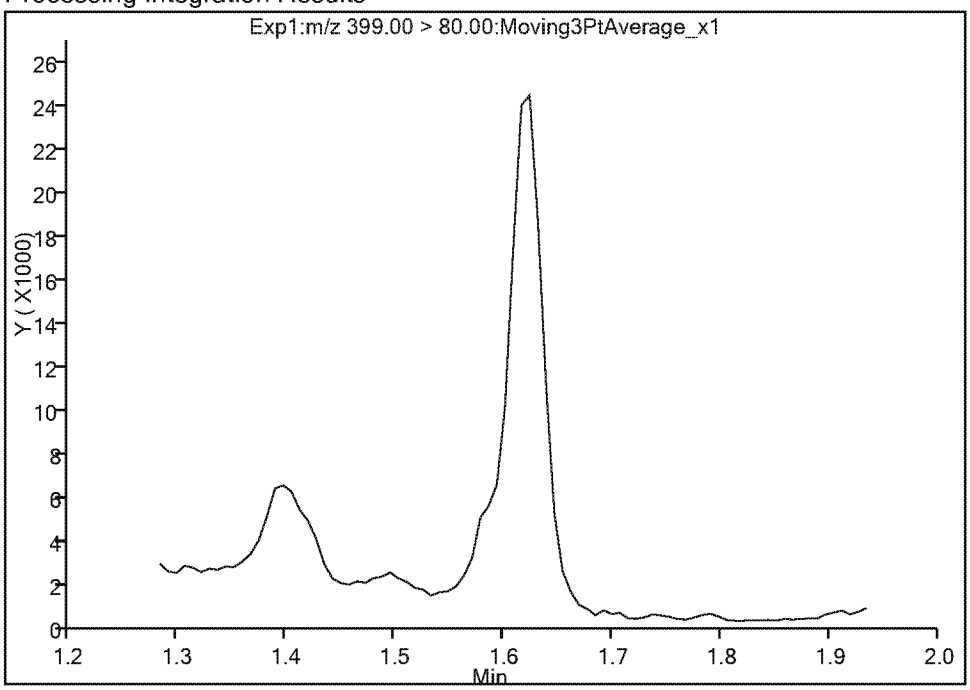
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_006.d				
Injection Date:	06-Mar-2018 22:59:28	Instrument ID:	A8_N		
Lims ID:	320-36607-A-2-A	Lab Sample ID:	320-36607-2		
Client ID:	C0AL4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	4	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

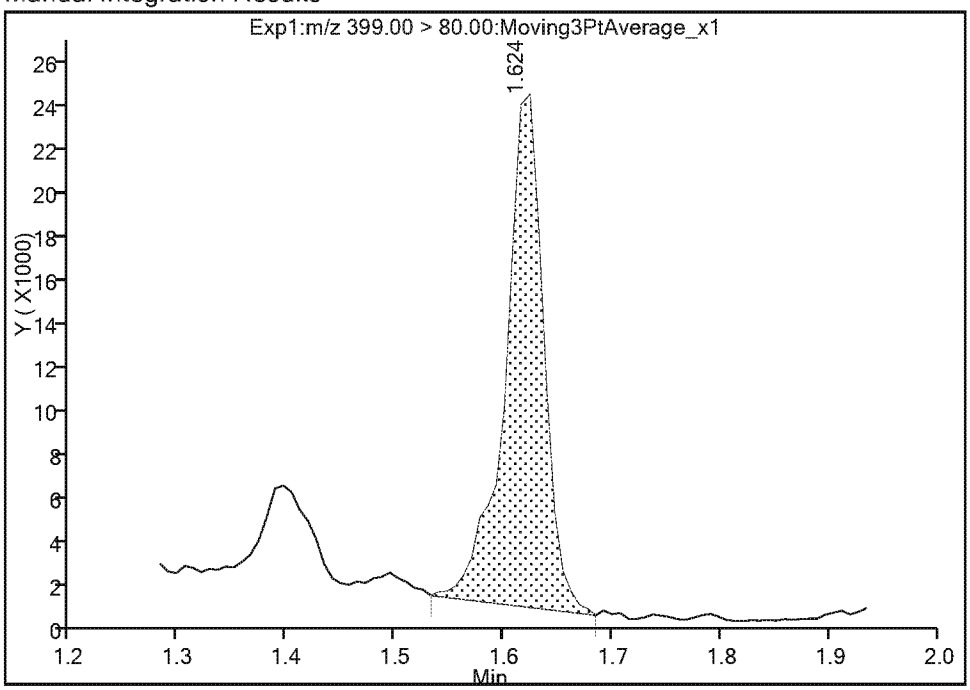
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 55893
Amount: 0.386562
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:39:23
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

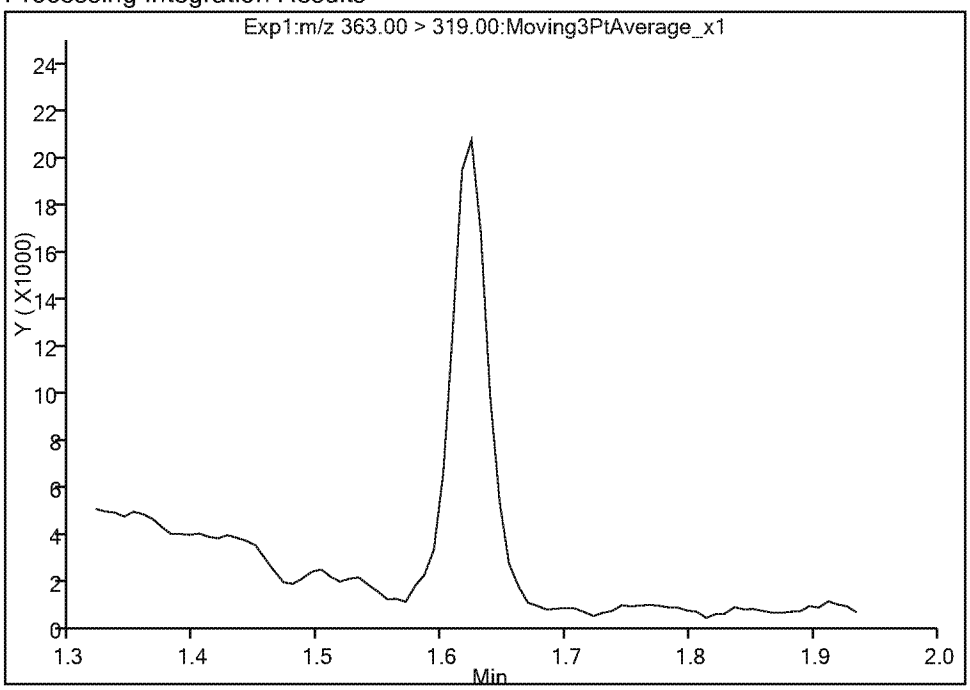
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_006.d				
Injection Date:	06-Mar-2018 22:59:28	Instrument ID:	A8_N		
Lims ID:	320-36607-A-2-A	Lab Sample ID:	320-36607-2		
Client ID:	C0AL4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	4	Worklist Smp#:	6
Injection Vol:	2.0 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

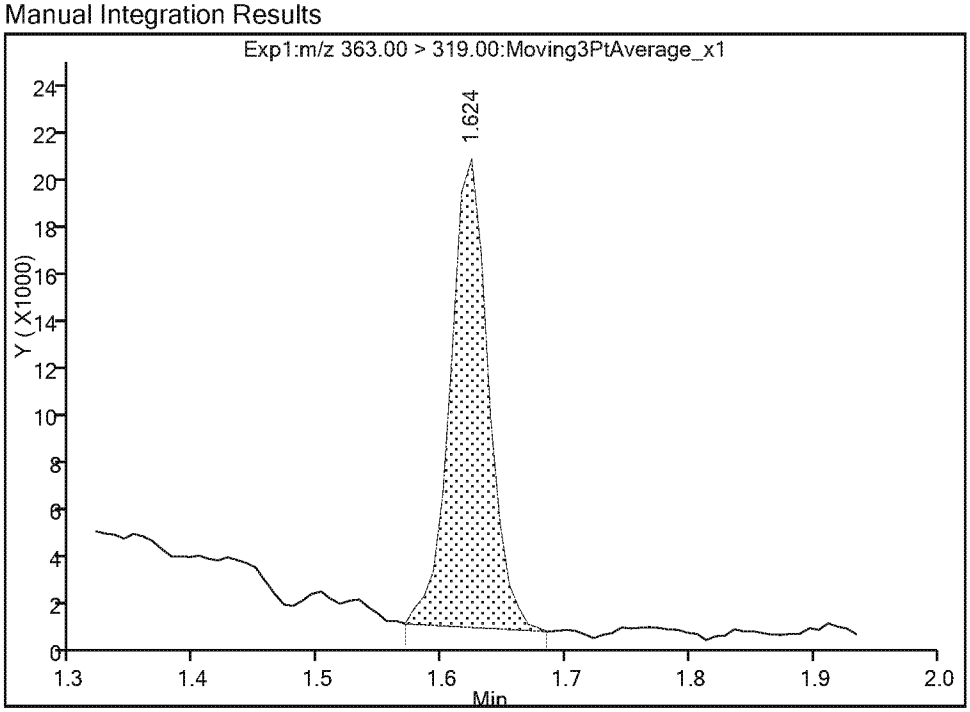
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 40728
Amount: 0.468577
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:39:33
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AL5
Lab Sample ID: 320-36607-3
Matrix: Water
Lab File ID: 2018.03.06_537C_007.d
Analysis Method: 537 DW
Date Collected: 02/27/2018 09:50
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 282.1(mL)
Date Analyzed: 03/06/2018 23:04
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.: 211579
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		35	6.0
335-67-1	Perfluorooctanoic acid	ND		18	2.5
375-95-1	Perfluorononanoic acid	ND		18	7.1
355-46-4	Perfluorohexanesulfonic acid	ND		27	4.9
375-85-9	Perfluoroheptanoic acid	ND		8.9	1.7
375-73-5	Perfluorobutanesulfonic acid	ND		80	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	97		70-130
STL00996	13C2 PFDA	114		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_007.d
Lims ID: 320-36607-A-3-A
Client ID: C0AL5
Sample Type: Client
Inject. Date: 06-Mar-2018 23:04:08 ALS Bottle#: 5 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-3-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:07 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

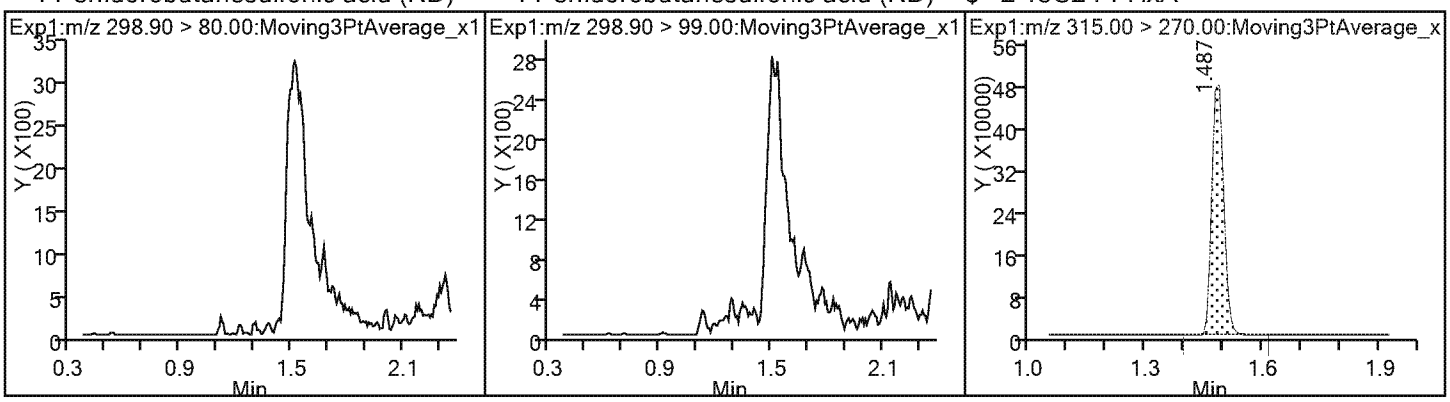
Column 1 : Det: EXP1
Process Host: XAWRK022

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.487	1.487	0.0	1.000	959333	9.69		14502	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		900101	10.0		9056	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2564630	28.7		6917	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	537441	11.4		5531	

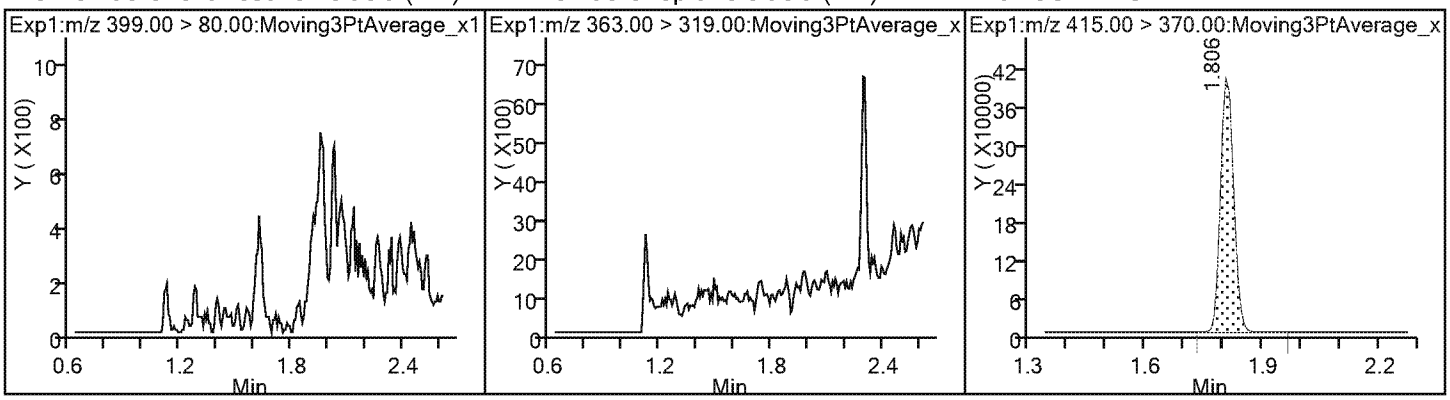
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_007.d				
Injection Date:	06-Mar-2018 23:04:08	Instrument ID:	A8_N		
Lims ID:	320-36607-A-3-A	Lab Sample ID:	320-36607-3		
Client ID:	C0AL5				
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		

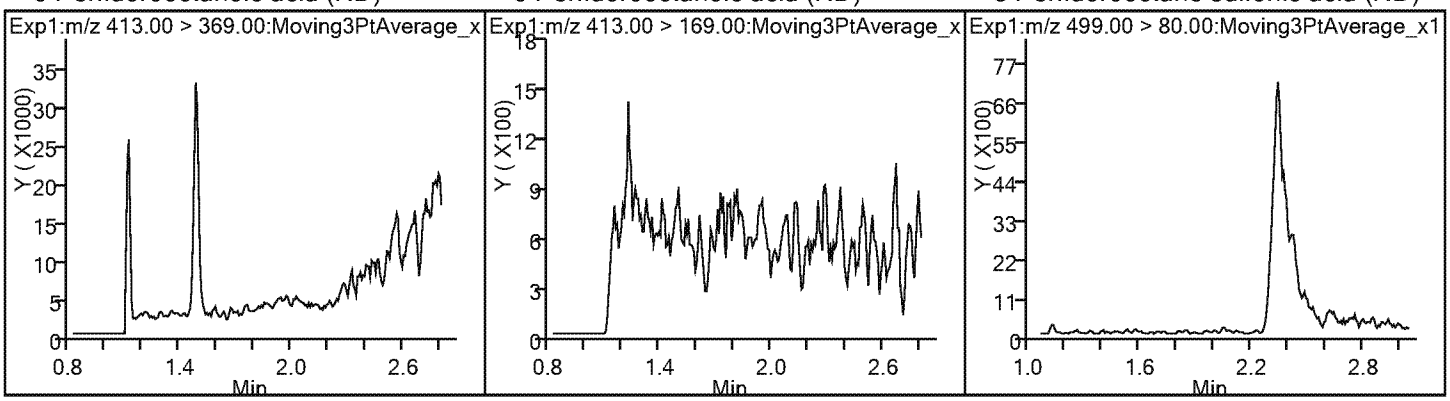
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



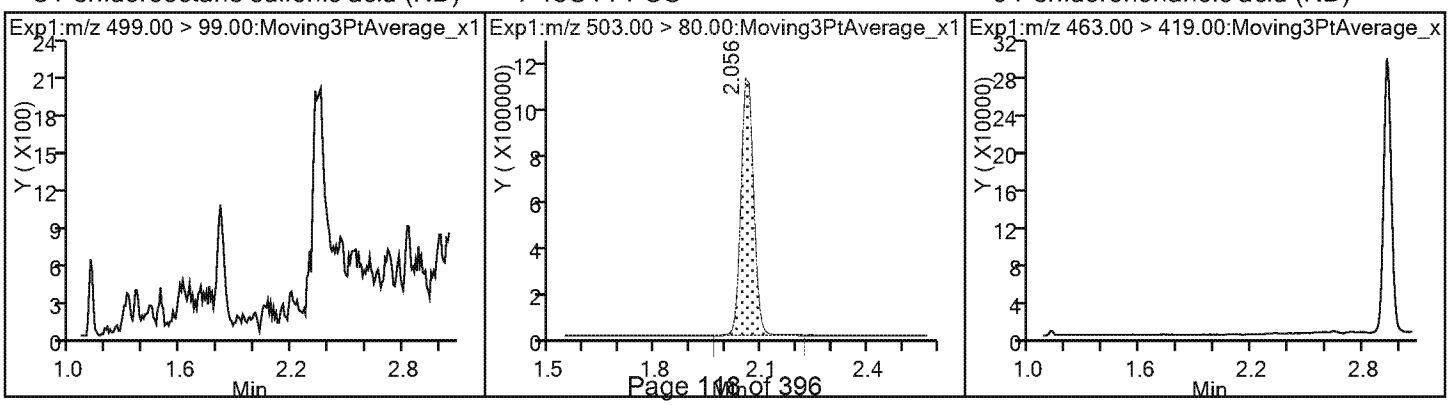
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



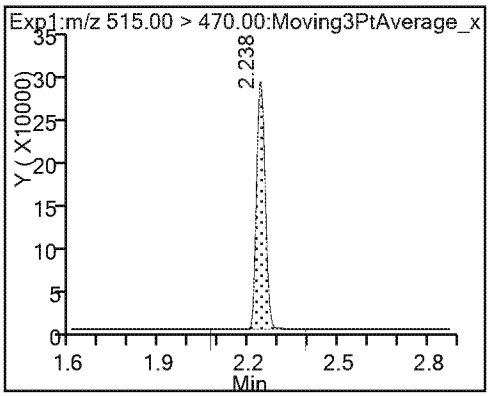
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.6
1.9
2.2
2.5
2.8
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AL6
Lab Sample ID: 320-36607-4
Matrix: Water
Lab File ID: 2018.03.06_537C_008.d
Analysis Method: 537 DW
Date Collected: 02/27/2018 09:50
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 295.9(mL)
Date Analyzed: 03/06/2018 23:08
Con. Extract Vol.: 1.00(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
GC Column: GeminiC18 3x100 ID: 3(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 211579
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		34	5.7
335-67-1	Perfluorooctanoic acid	2.4	J	17	2.4
375-95-1	Perfluorononanoic acid	ND		17	6.8
355-46-4	Perfluorohexanesulfonic acid	ND		25	4.6
375-85-9	Perfluoroheptanoic acid	ND		8.4	1.6
375-73-5	Perfluorobutanesulfonic acid	ND		76	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	86		70-130
STL00996	13C2 PFDA	117		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_008.d
Lims ID: 320-36607-A-4-A
Client ID: C0AL6
Sample Type: Client
Inject. Date: 06-Mar-2018 23:08:49 ALS Bottle#: 6 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-4-
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:07 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 10:48:19

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	1.358	1.366	-0.008	1.000	23514	0.1942		26.3	M
298.90 > 99.00	1.358	1.366	-0.008	1.000	17035		1.38(0.00-0.00)	28.6	M
$ 2 13C2 PFHxA									
315.00 > 270.00	1.472	1.487	-0.015	1.000	838066	8.61		11551	
3 Perfluorohexanesulfonic acid									M
399.00 > 80.00	1.616	1.624	-0.008	1.000	16185	0.1094		10.2	M
4 Perfluoroheptanoic acid									M
363.00 > 319.00	1.616	1.624	-0.008	1.000	31824	0.3705		6.6	M
* 6 13C2-PFOA									
415.00 > 370.00	1.798	1.806	-0.008		884578	10.0		8119	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.798	1.813	-0.015	1.000	60970	0.7165		2.2	
413.00 > 169.00	1.798	1.813	-0.015	1.000	36710		1.66(0.00-0.00)	22.1	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	123399	1.42		38.9	a
499.00 > 99.00	2.048	2.056	-0.008	0.996	23423		5.27(0.00-0.00)	12.9	M
* 7 13C4 PFOS									
503.00 > 80.00	2.048	2.064	-0.016		2635018	28.7		3919	
$ 10 13C2 PFDA									M
515.00 > 470.00	2.231	2.246	-0.015	1.000	540987	11.7		4497	M

QC Flag Legend

Review Flags

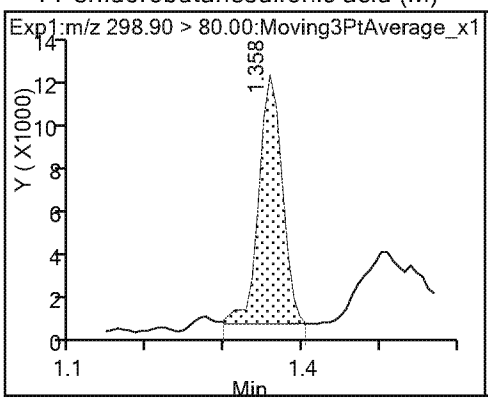
M - Manually Integrated

a - User Assigned ID

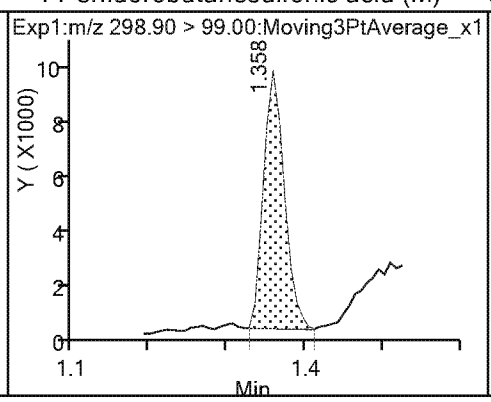
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_008.d				
Injection Date:	06-Mar-2018 23:08:49	Instrument ID:	A8_N		
Lims ID:	320-36607-A-4-A	Lab Sample ID:	320-36607-4		
Client ID:	C0AL6				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

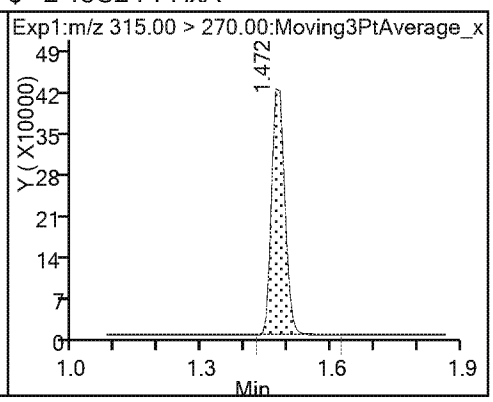
1 Perfluorobutanesulfonic acid (M)



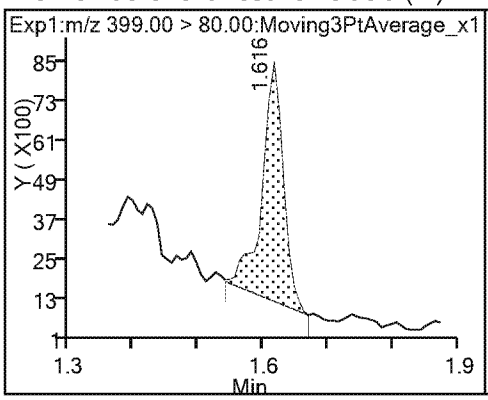
1 Perfluorobutanesulfonic acid (M)



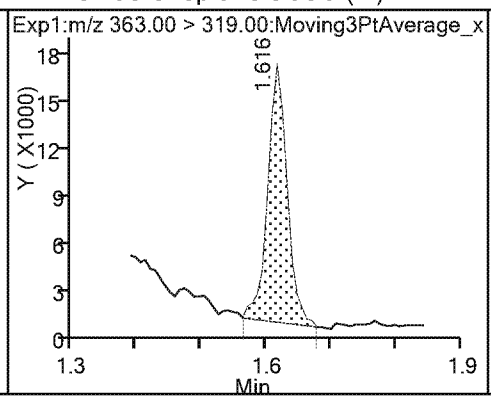
$ 2 13C2 PFHxA



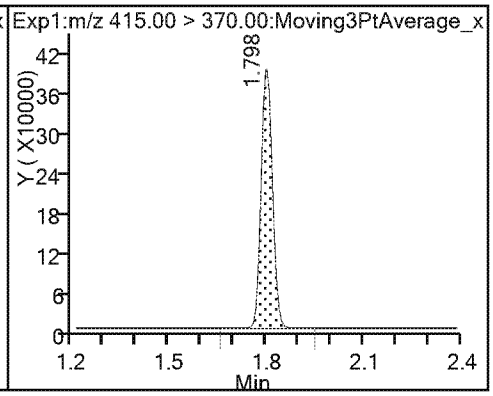
3 Perfluorohexanesulfonic acid (M)



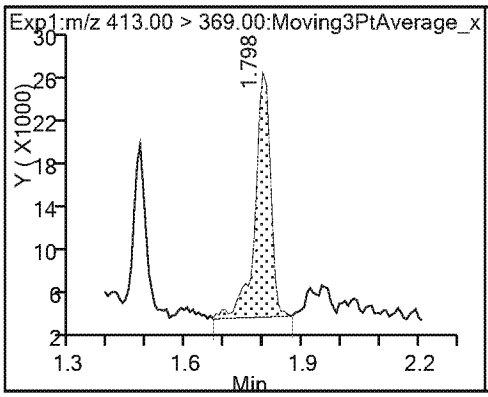
4 Perfluoroheptanoic acid (M)



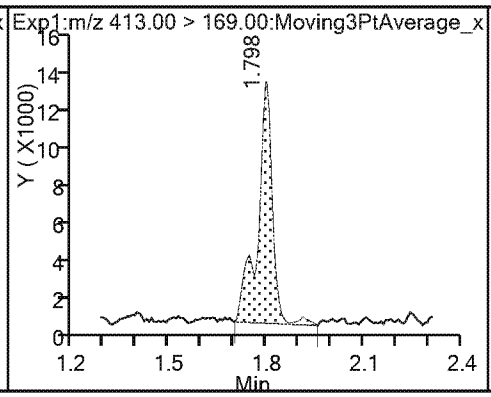
* 6 13C2-PFOA



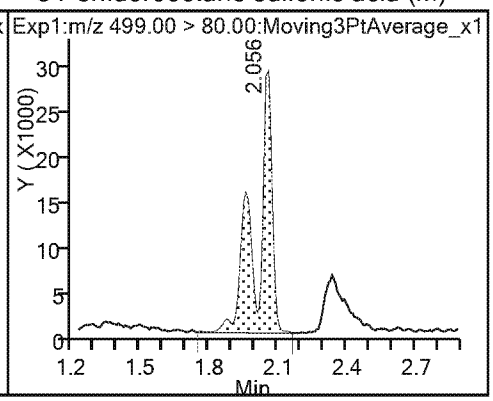
5 Perfluorooctanoic acid



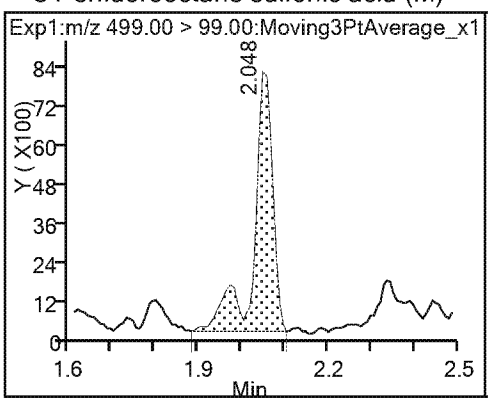
5 Perfluorooctanoic acid



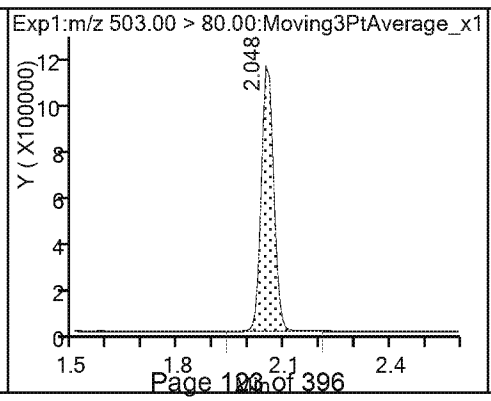
8 Perfluorooctane sulfonic acid (M)



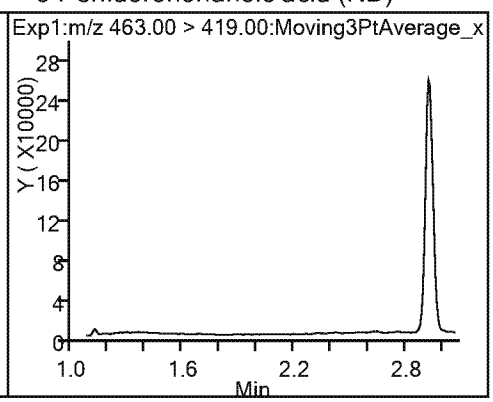
8 Perfluorooctane sulfonic acid (M)



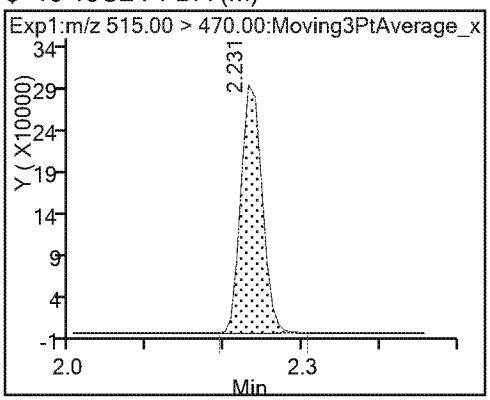
* 7 13C4 PFOS



9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA (M)



TestAmerica Sacramento

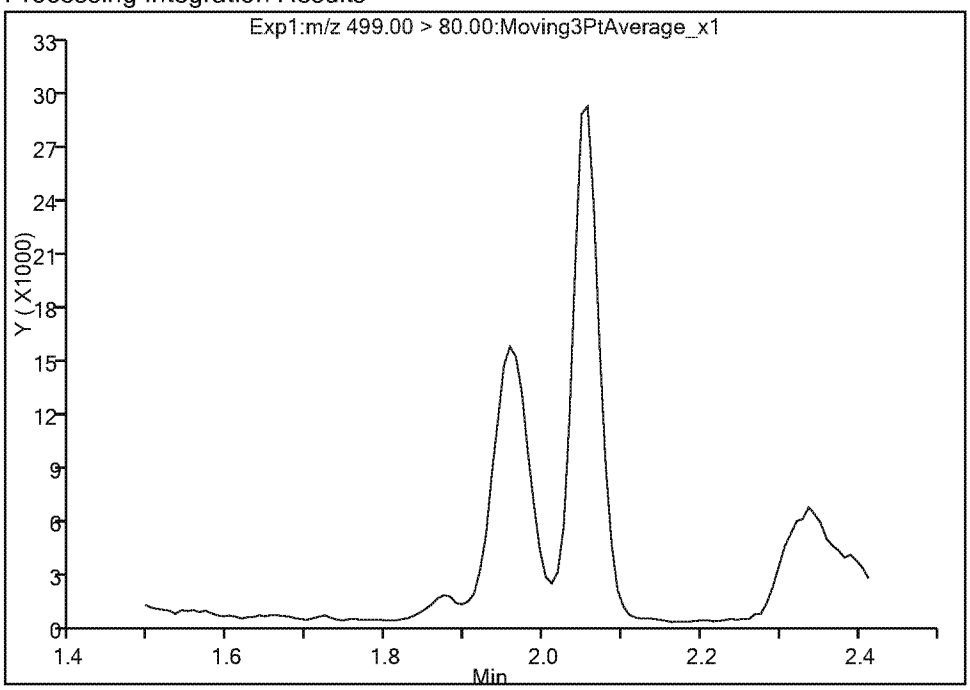
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_008.d				
Injection Date:	06-Mar-2018 23:08:49	Instrument ID:	A8_N		
Lims ID:	320-36607-A-4-A	Lab Sample ID:	320-36607-4		
Client ID:	C0AL6				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	8
Injection Vol:	2.0 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

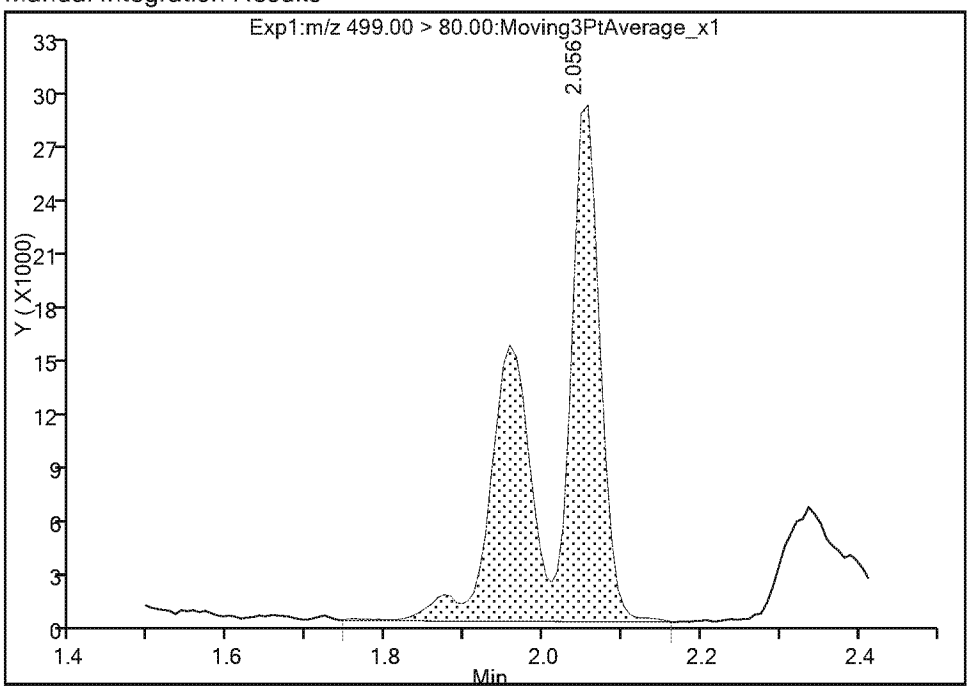
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 123399
Amount: 1.420459
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:47:59
Audit Action: Assigned Compound ID Audit Reason: Missed Peak

TestAmerica Sacramento

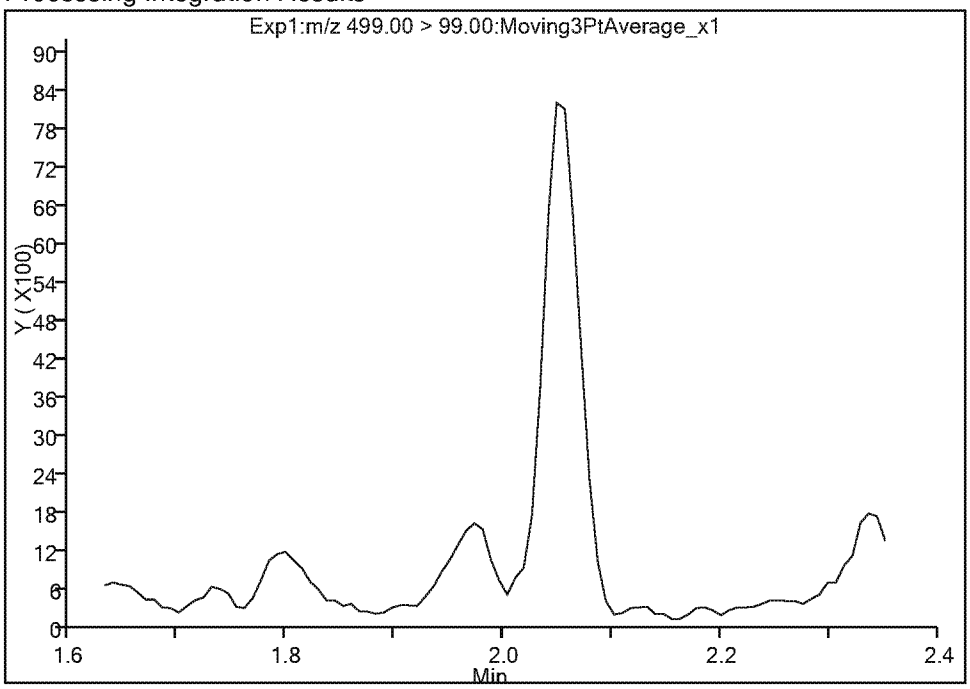
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_008.d				
Injection Date:	06-Mar-2018 23:08:49	Instrument ID:	A8_N		
Lims ID:	320-36607-A-4-A	Lab Sample ID:	320-36607-4		
Client ID:	C0AL6				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	8
Injection Vol:	2.0 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

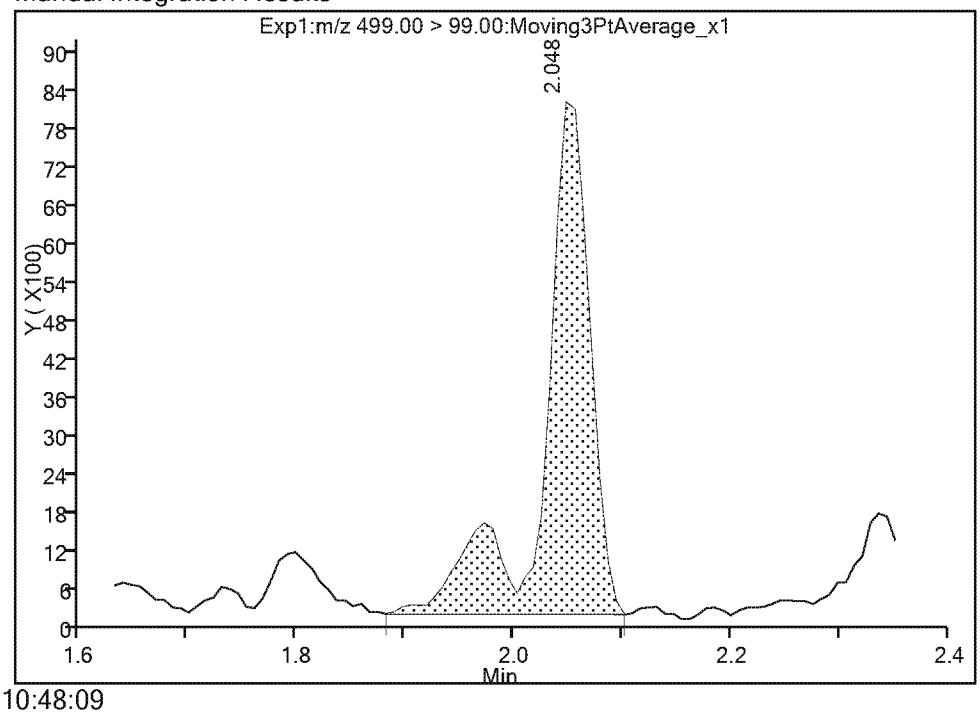
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.05
Area: 23423
Amount: 1.420459
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:48:09
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

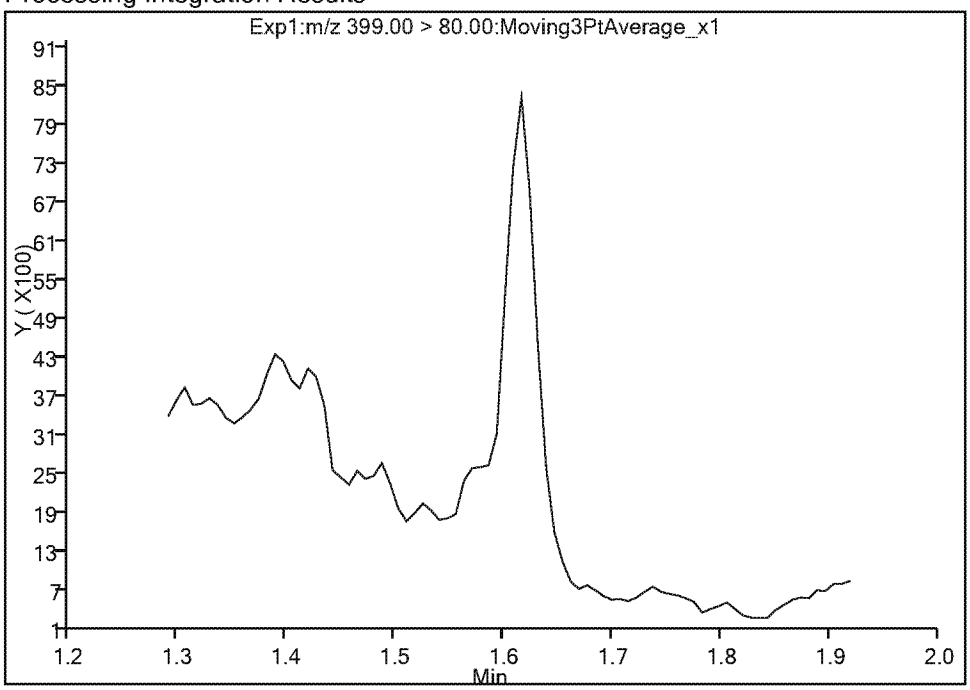
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_008.d				
Injection Date:	06-Mar-2018 23:08:49	Instrument ID:	A8_N		
Lims ID:	320-36607-A-4-A	Lab Sample ID:	320-36607-4		
Client ID:	C0AL6				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

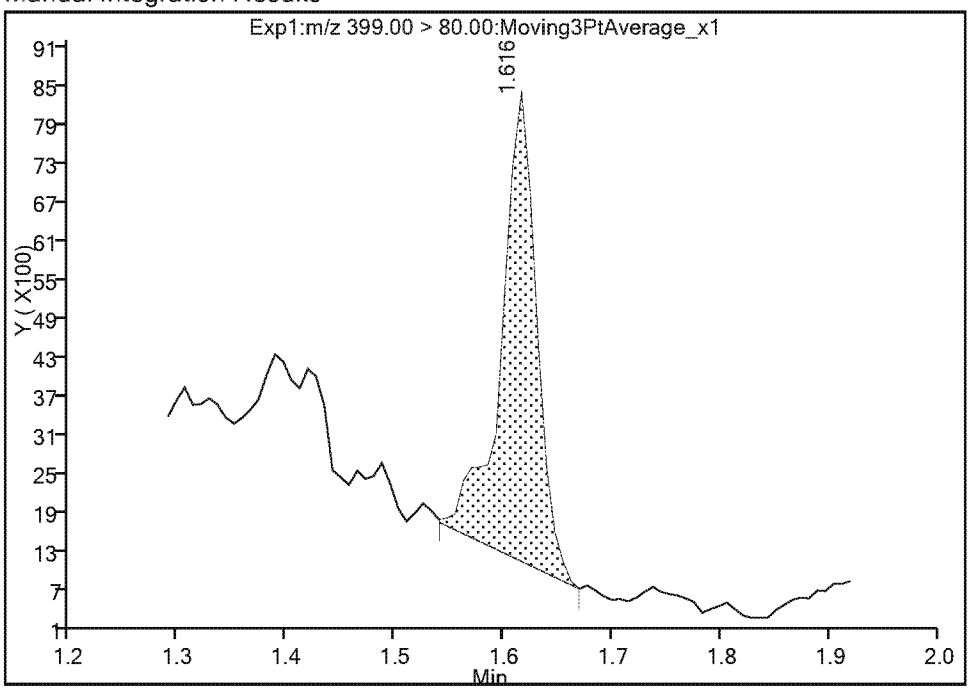
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 16185
Amount: 0.109433
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:47:39
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

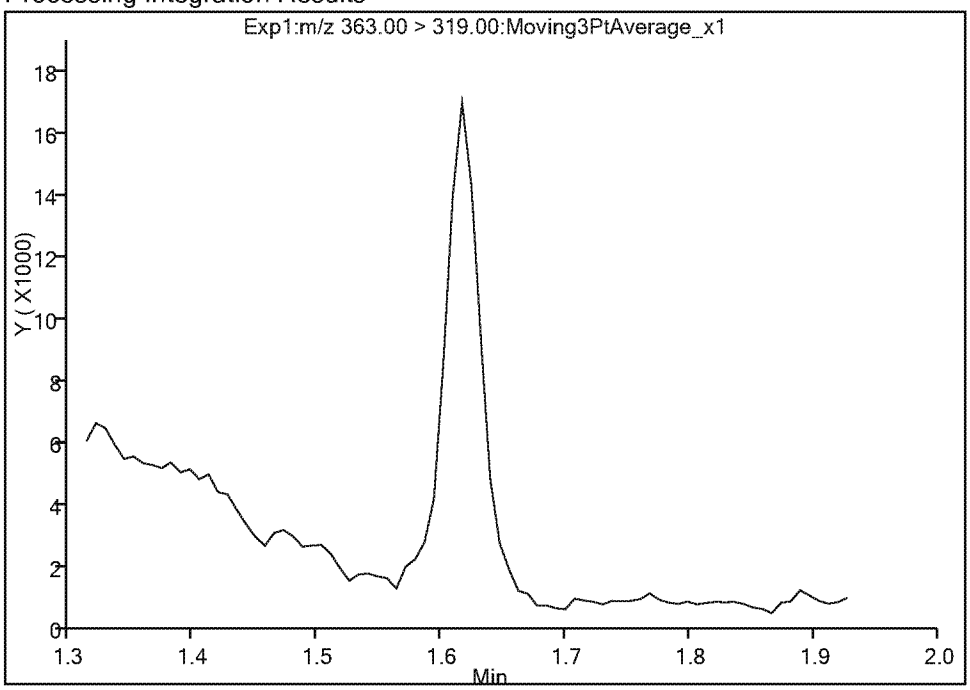
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_008.d				
Injection Date:	06-Mar-2018 23:08:49	Instrument ID:	A8_N		
Lims ID:	320-36607-A-4-A	Lab Sample ID:	320-36607-4		
Client ID:	C0AL6				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	8
Injection Vol:	2.0 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

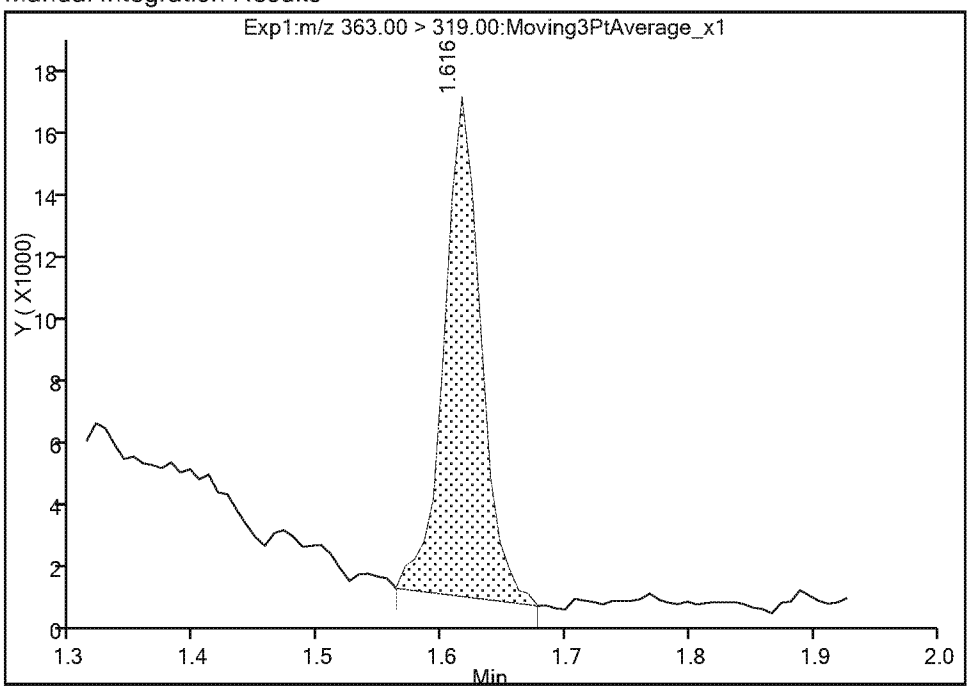
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 31824
Amount: 0.370459
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:47:51
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

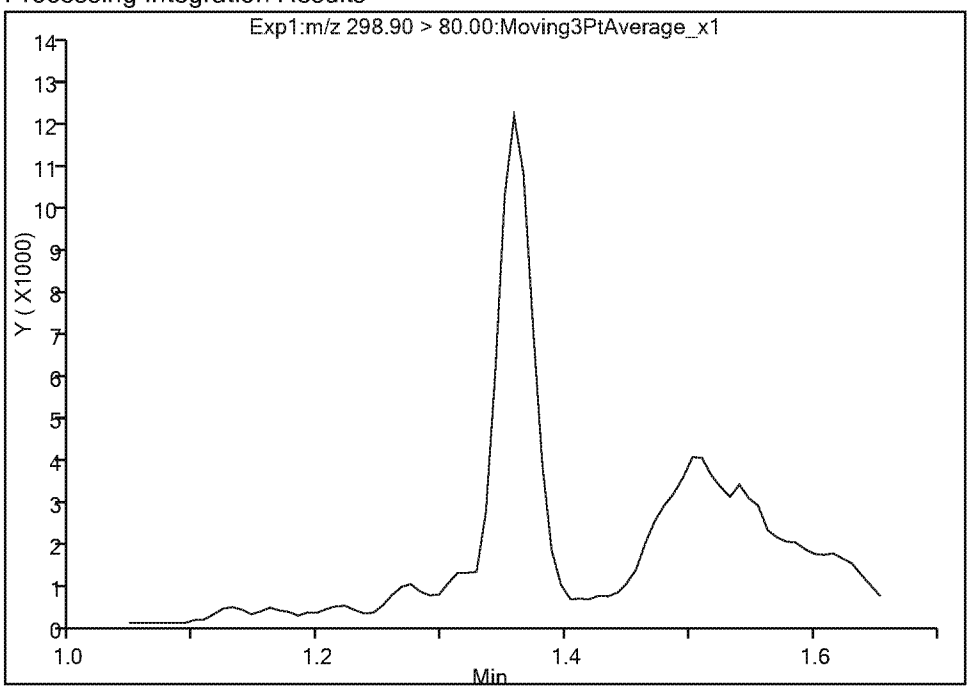
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_008.d				
Injection Date:	06-Mar-2018 23:08:49	Instrument ID:	A8_N		
Lims ID:	320-36607-A-4-A	Lab Sample ID:	320-36607-4		
Client ID:	C0AL6				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	8
Injection Vol:	2.0 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

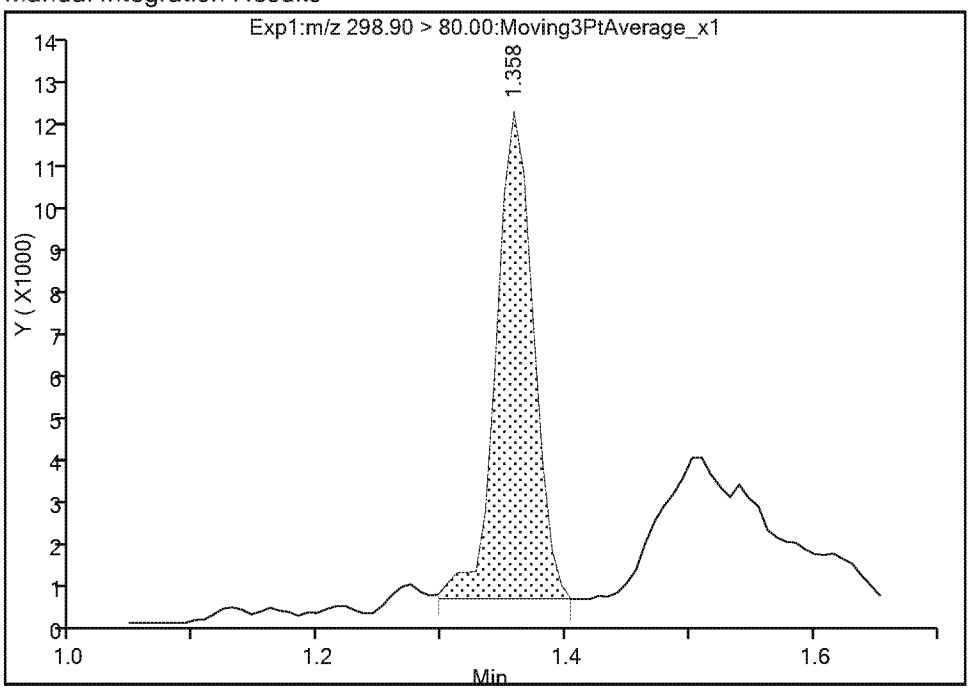
Processing Integration Results

Not Detected
Expected RT: 1.37



Manual Integration Results

RT: 1.36
Area: 23514
Amount: 0.194239
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:47:20
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

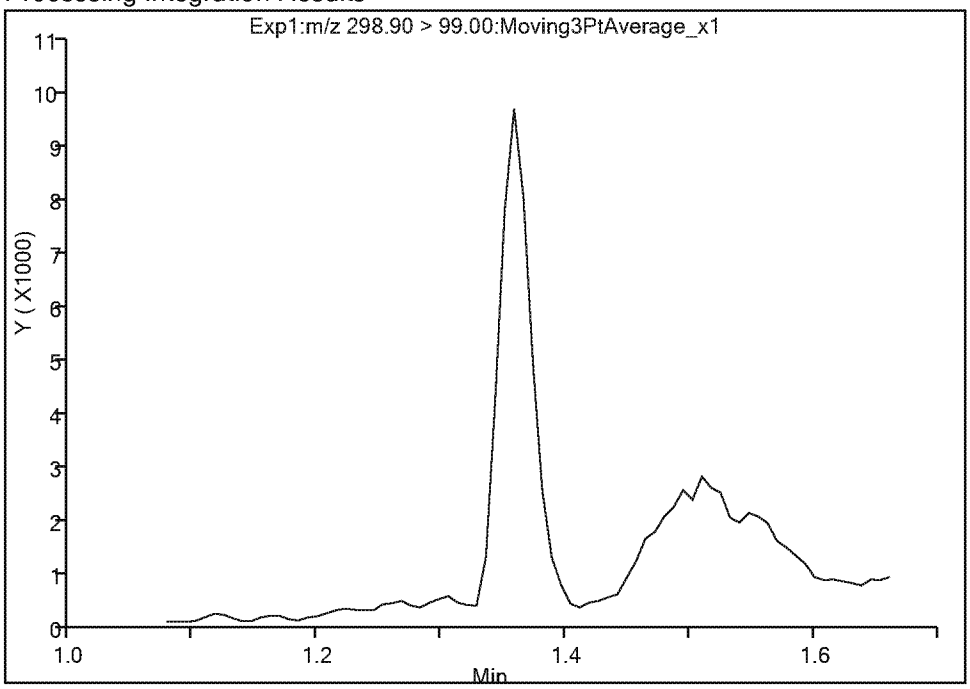
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_008.d				
Injection Date:	06-Mar-2018 23:08:49	Instrument ID:	A8_N		
Lims ID:	320-36607-A-4-A	Lab Sample ID:	320-36607-4		
Client ID:	C0AL6				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	8
Injection Vol:	2.0 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

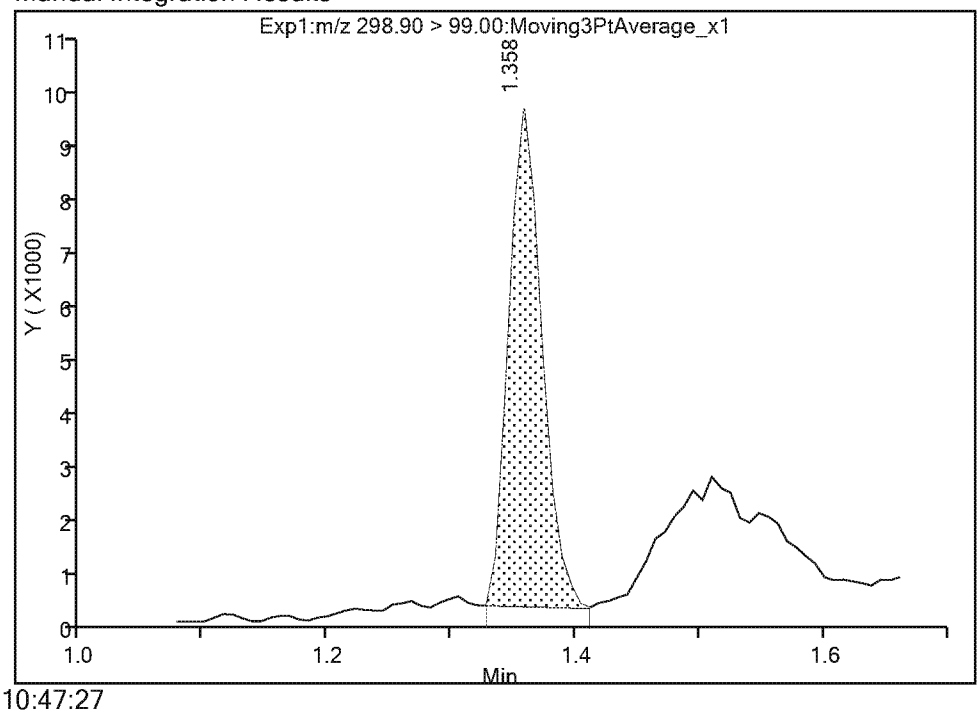
Processing Integration Results

Not Detected
Expected RT: 1.37



Manual Integration Results

RT: 1.36
Area: 17035
Amount: 0.194239
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:47:27
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

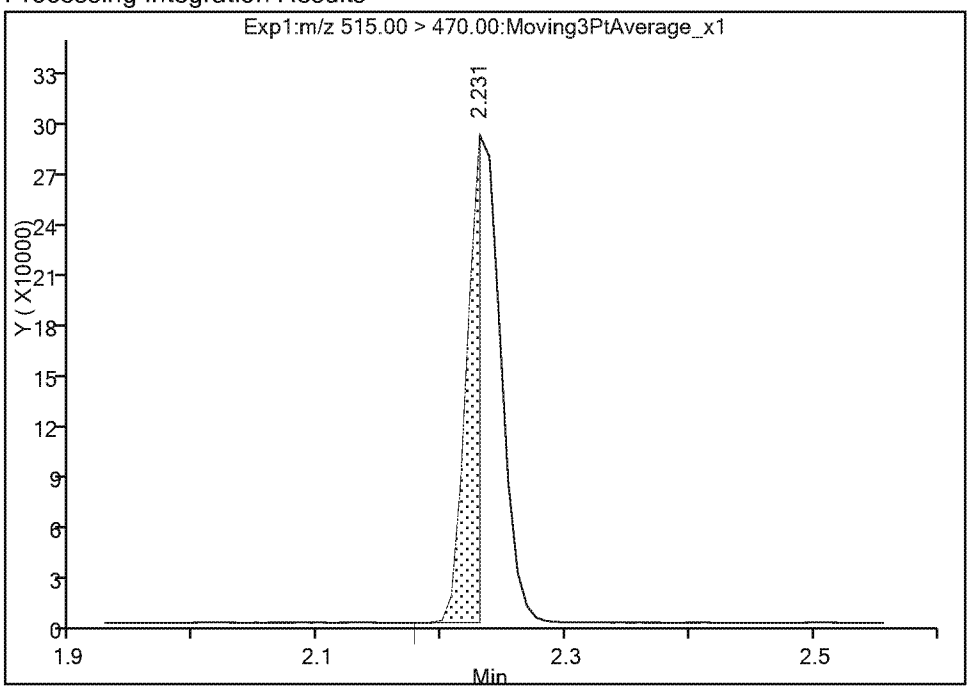
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_008.d				
Injection Date:	06-Mar-2018 23:08:49	Instrument ID:	A8_N		
Lims ID:	320-36607-A-4-A	Lab Sample ID:	320-36607-4		
Client ID:	C0AL6				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

$ 10 13C2 PFDA, CAS: STL00996

Signal: 1

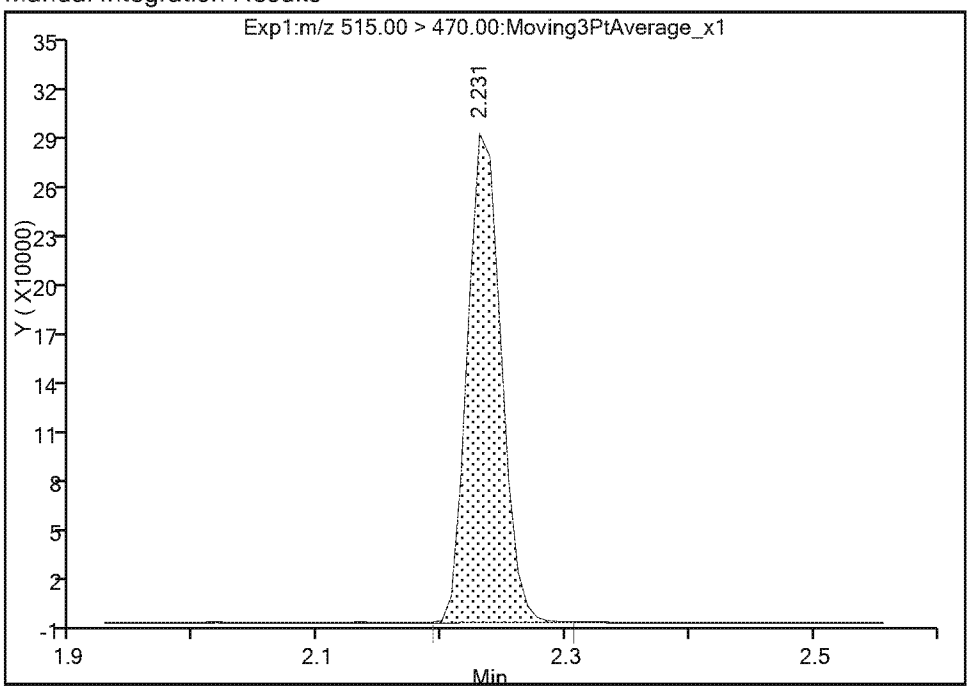
Processing Integration Results

RT: 2.23
Area: 204853
Amount: 4.417235
Amount Units: ng/ml



Manual Integration Results

RT: 2.23
Area: 540987
Amount: 11.665277
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:46:54
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AL7
Lab Sample ID: 320-36607-5
Matrix: Water
Lab File ID: 2018.03.09_537A_010.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:10
Extraction Method: 537 DW
Date Extracted: 03/07/2018 14:47
Sample wt/vol: 257.5(mL)
Date Analyzed: 03/09/2018 09:21
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.: 212122
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		39	6.6
335-67-1	Perfluorooctanoic acid	ND		19	2.7
375-95-1	Perfluorononanoic acid	ND		19	7.8
355-46-4	Perfluorohexanesulfonic acid	ND		29	5.3
375-85-9	Perfluoroheptanoic acid	ND		9.7	1.8
375-73-5	Perfluorobutanesulfonic acid	ND		87	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	91		70-130
STL00996	13C2 PFDA	107		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_010.d
Lims ID: 320-36607-B-5-A
Client ID: C0AL7
Sample Type: Client
Inject. Date: 09-Mar-2018 09:21:58 ALS Bottle#: 41 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-b-5-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 09-Mar-2018 11:02:10 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK018

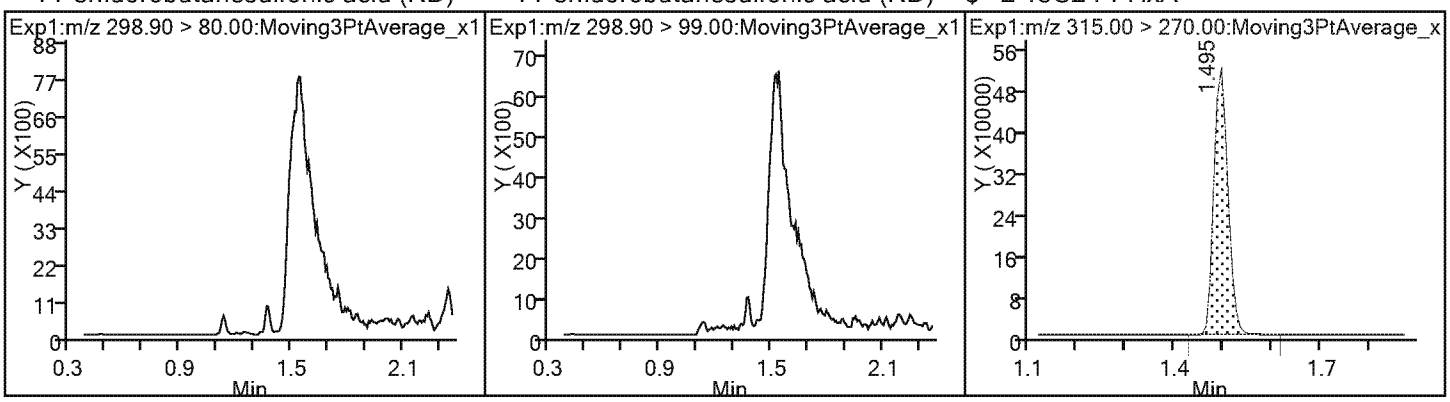
First Level Reviewer: Ex. 4 CBI Date: 09-Mar-2018 10:52:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.495	1.495	0.0	1.000	997812	9.07		14673	
* 6 13C2-PFOA									
415.00 > 370.00	1.828	1.844	-0.016		999840	10.0		9657	
* 7 13C4 PFOS									
503.00 > 80.00	2.086	2.102	-0.016		2848943	28.7		8255	
$ 10 13C2 PFDA									
515.00 > 470.00	2.253	2.269	-0.015	1.000	559673	10.7		4247	

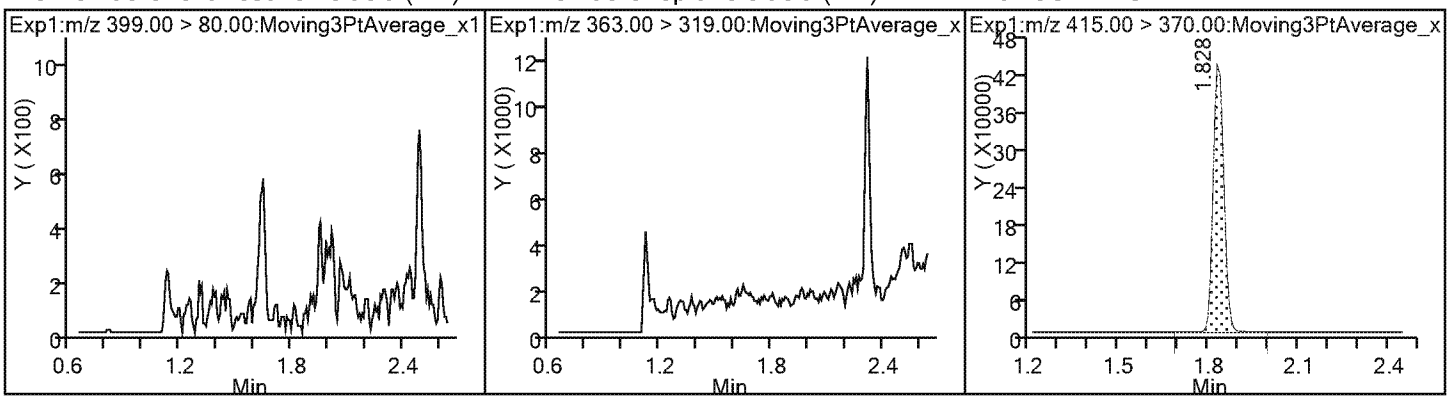
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_010.d				
Injection Date:	09-Mar-2018 09:21:58	Instrument ID:	A8_N		
Lims ID:	320-36607-B-5-A	Lab Sample ID:	320-36607-5		
Client ID:	C0AL7				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	41	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

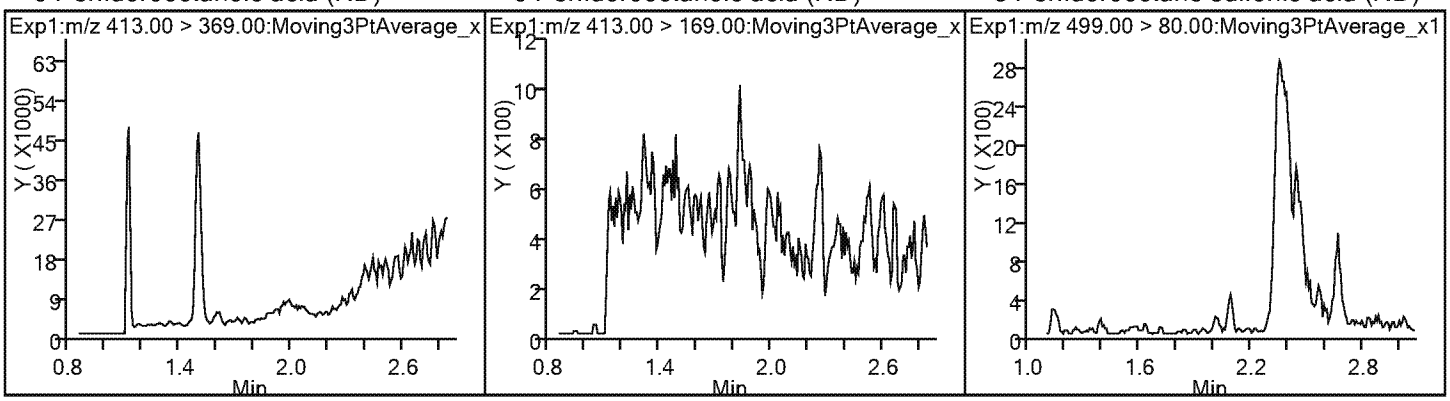
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



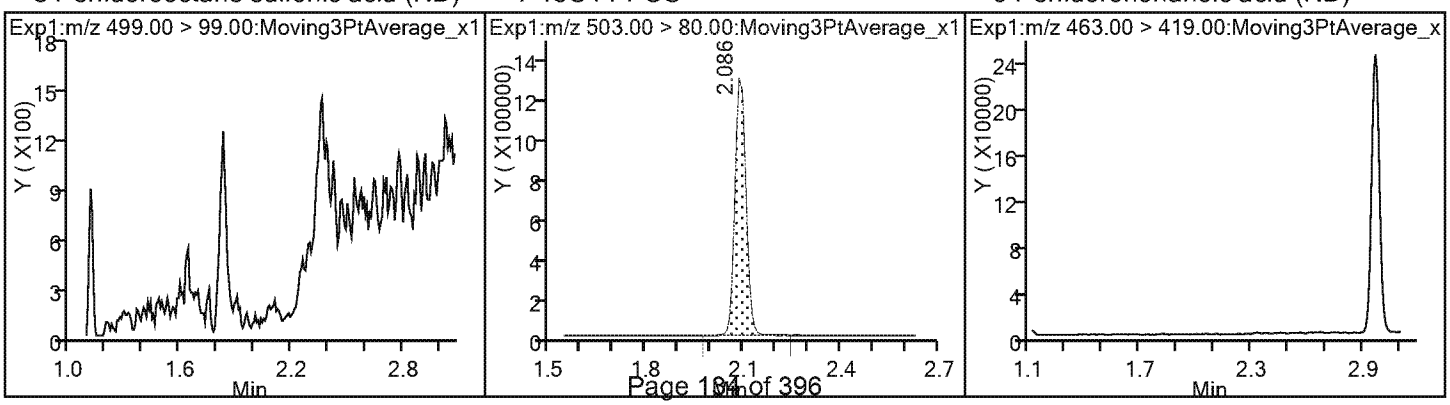
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



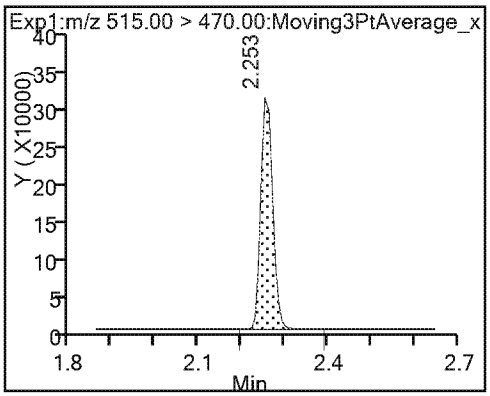
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.253
Y (X10000)
40
35
30
25
20
15
10
5
0
1.8
2.1
2.4
2.7
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AL8
Lab Sample ID: 320-36607-6
Matrix: Water
Lab File ID: 2018.03.06_537C_010.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:30
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 274.7(mL)
Date Analyzed: 03/06/2018 23:18
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.: 211579
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		36	6.2
335-67-1	Perfluorooctanoic acid	ND		18	2.5
375-95-1	Perfluorononanoic acid	ND		18	7.3
355-46-4	Perfluorohexanesulfonic acid	ND		27	5.0
375-85-9	Perfluoroheptanoic acid	ND		9.1	1.7
375-73-5	Perfluorobutanesulfonic acid	ND		82	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	113		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_010.d
Lims ID: 320-36607-A-6-A
Client ID: C0AL8
Sample Type: Client
Inject. Date: 06-Mar-2018 23:18:10 ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-6-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:07 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

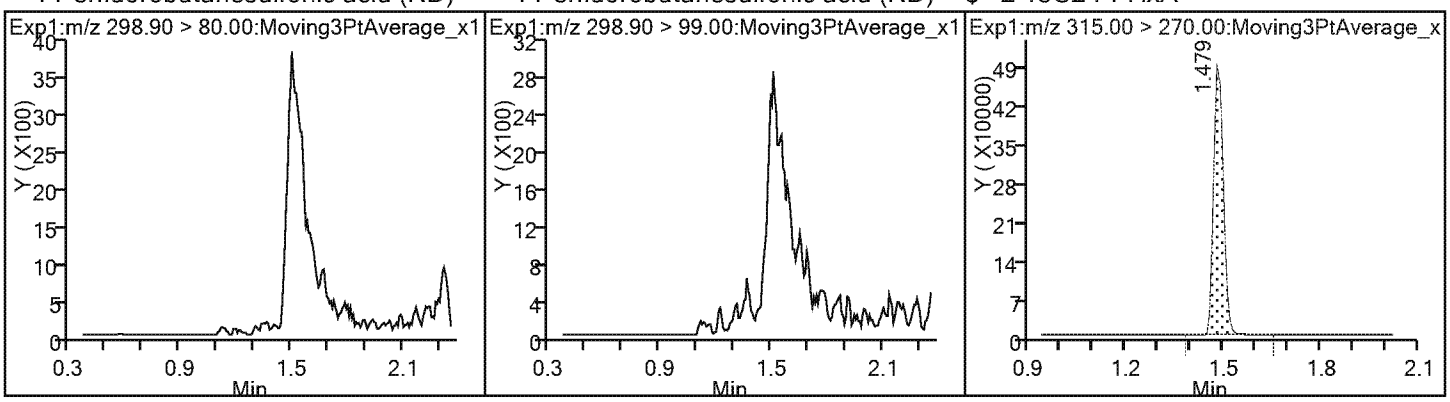
Column 1 : Det: EXP1
Process Host: XAWRK022

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.487	-0.008	1.000	950227	9.40		12974	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		918595	10.0		9954	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2634892	28.7		7368	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	545629	11.3		5916	

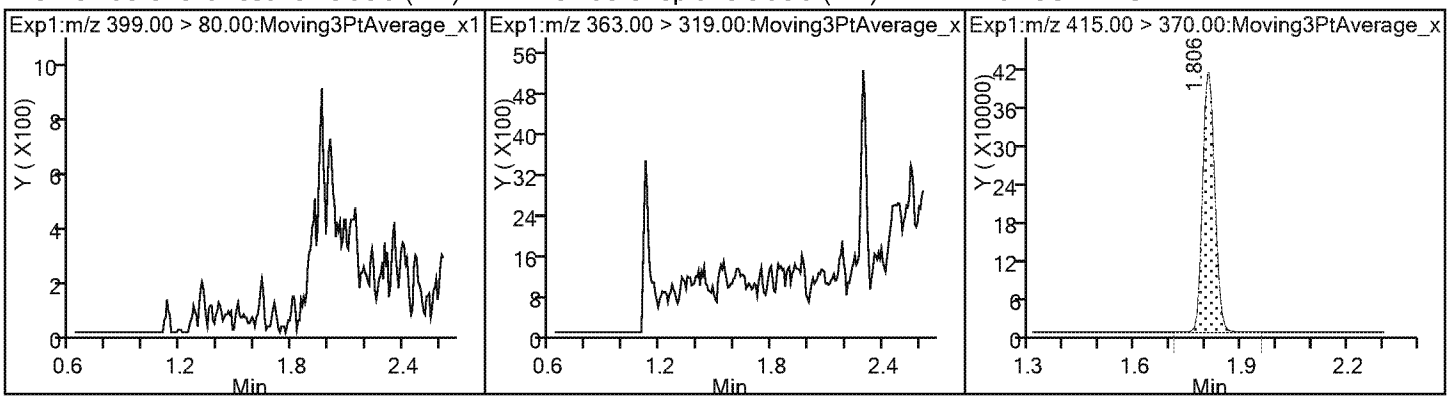
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_010.d				
Injection Date:	06-Mar-2018 23:18:10	Instrument ID:	A8_N		
Lims ID:	320-36607-A-6-A	Lab Sample ID:	320-36607-6		
Client ID:	C0AL8				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	8	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

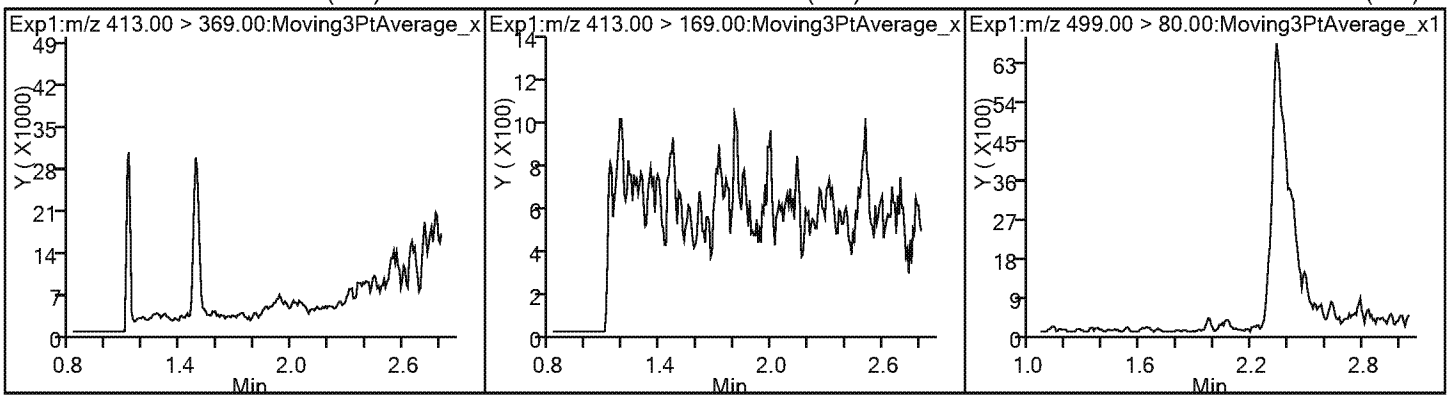
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



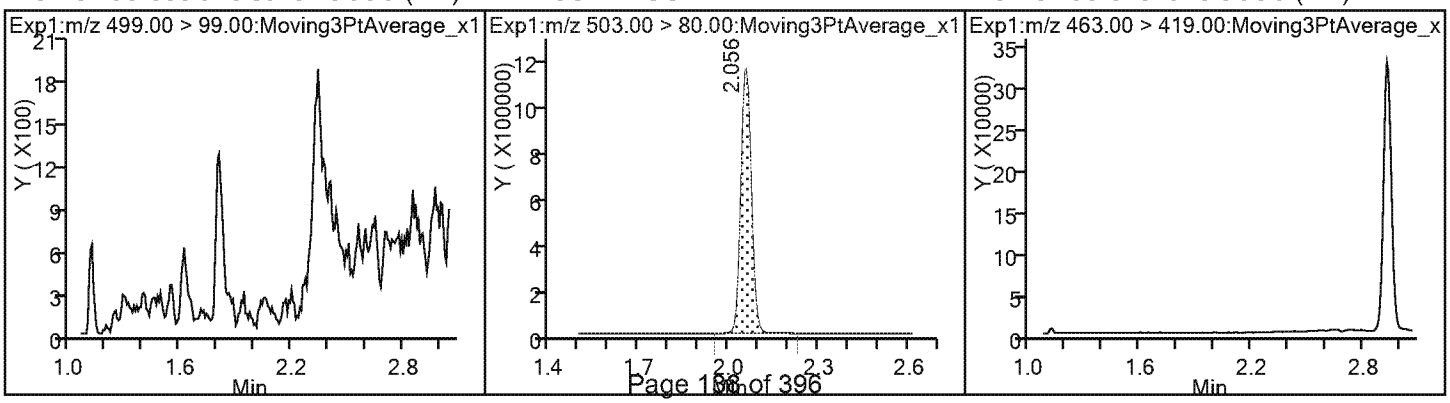
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



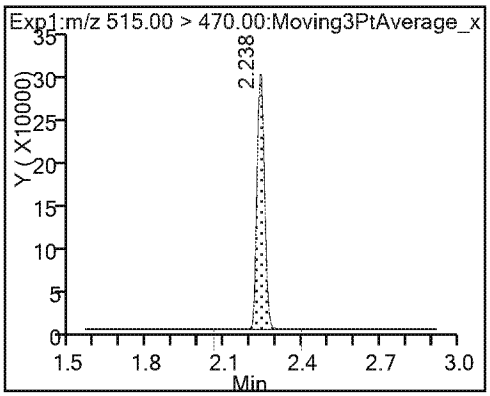
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.5
1.8
2.1
2.4
2.7
3.0
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AL9
Lab Sample ID: 320-36607-7
Matrix: Water
Lab File ID: 2018.03.06_537C_011.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:42
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 282.3(mL)
Date Analyzed: 03/06/2018 23:22
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.: 211579
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		35	6.0
335-67-1	Perfluorooctanoic acid	ND		18	2.5
375-95-1	Perfluorononanoic acid	ND		18	7.1
355-46-4	Perfluorohexanesulfonic acid	ND		27	4.9
375-85-9	Perfluoroheptanoic acid	ND		8.9	1.7
375-73-5	Perfluorobutanesulfonic acid	ND		80	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	113		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_011.d
Lims ID: 320-36607-A-7-A
Client ID: C0AL9
Sample Type: Client
Inject. Date: 06-Mar-2018 23:22:49 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-7-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:07 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

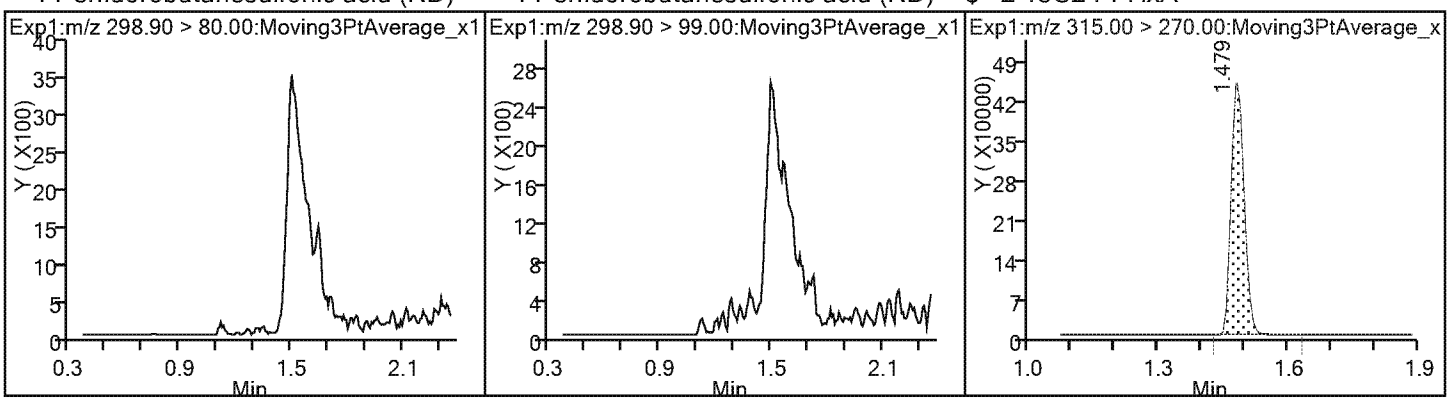
Column 1 : Det: EXP1
Process Host: XAWRK022

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.487	-0.008	1.000	884760	9.33		12448	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		862139	10.0		8075	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2432793	28.7		7635	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	509077	11.3		5227	

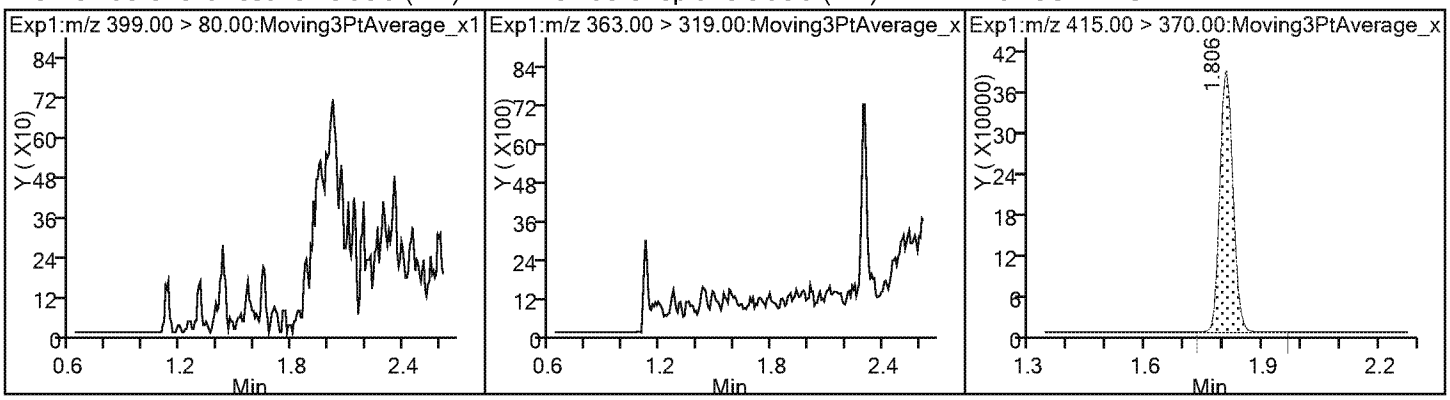
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_011.d				
Injection Date:	06-Mar-2018 23:22:49	Instrument ID:	A8_N		
Lims ID:	320-36607-A-7-A	Lab Sample ID:	320-36607-7		
Client ID:	C0AL9				
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		

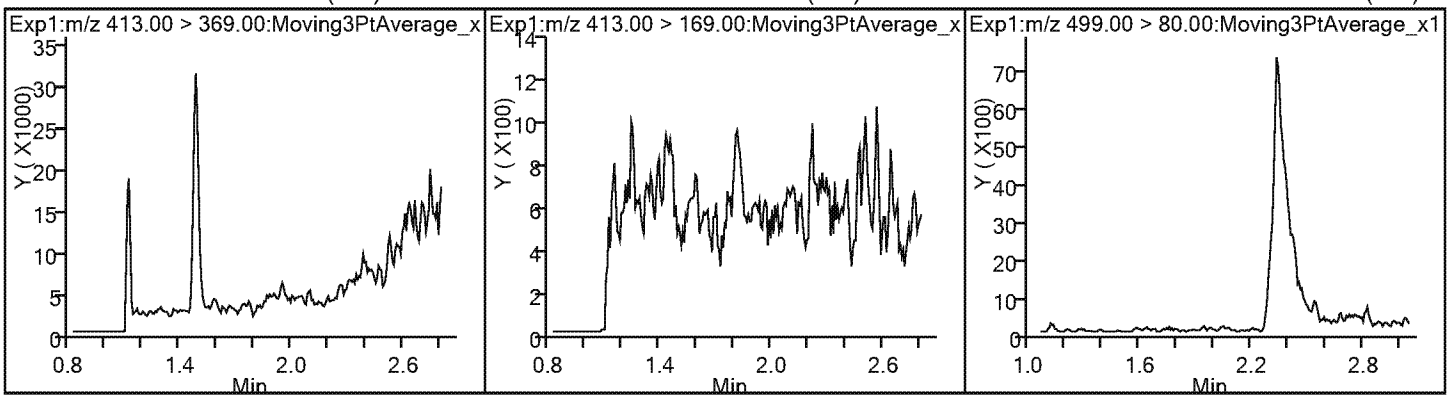
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



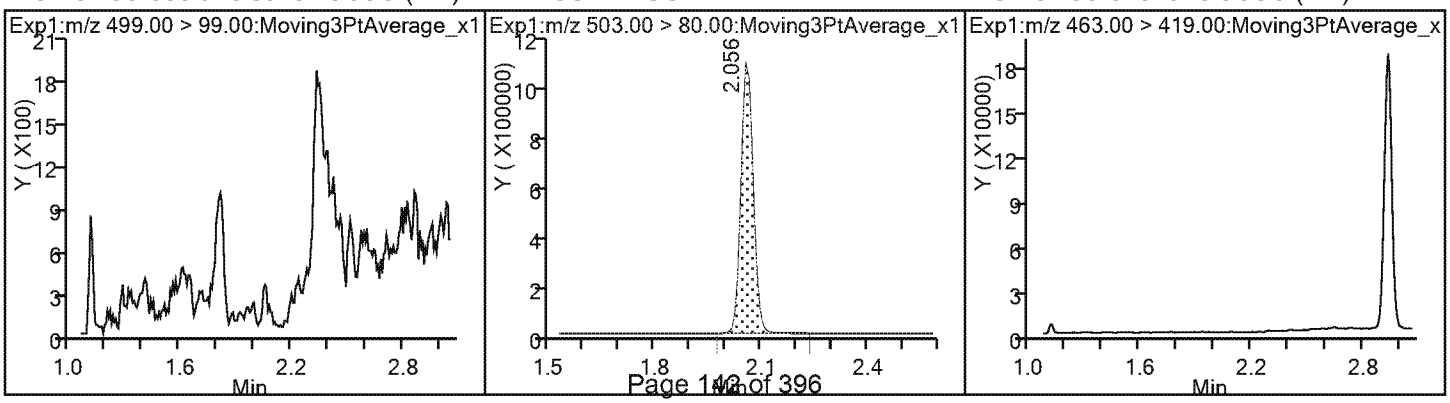
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



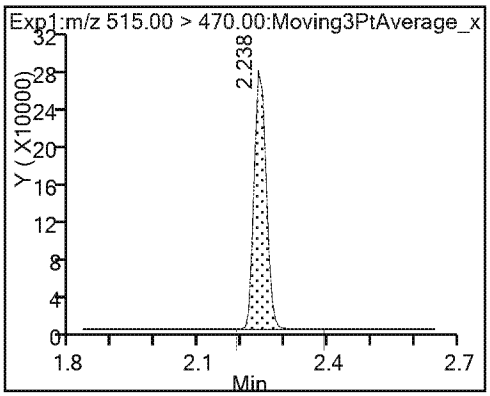
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
32
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AM0
Lab Sample ID: 320-36607-8
Matrix: Water
Lab File ID: 2018.03.12_537AA_010.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:10
Extraction Method: 537 DW
Date Extracted: 03/08/2018 17:27
Sample wt/vol: 283(mL)
Date Analyzed: 03/12/2018 16:44
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.: 212525
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		35	6.0
335-67-1	Perfluorooctanoic acid	2.8	J	18	2.5
375-95-1	Perfluorononanoic acid	ND		18	7.1
355-46-4	Perfluorohexanesulfonic acid	ND		27	4.9
375-85-9	Perfluoroheptanoic acid	ND		8.8	1.7
375-73-5	Perfluorobutanesulfonic acid	ND		80	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	85		70-130
STL00996	13C2 PFDA	116		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_010.d
Lims ID: 320-36607-B-8-A
Client ID: C0AM0
Sample Type: Client
Inject. Date: 12-Mar-2018 16:44:43 ALS Bottle#: 4 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-b-8-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 12-Mar-2018 17:04:05 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK030

First Level Reviewer: Ex. 4 CBI Date: 12-Mar-2018 17:02:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.502	1.510	-0.008	1.000	677816	8.54		7857	
3 Perfluorohexanesulfonic acid									M
399.00 > 80.00	1.639	1.654	-0.015	1.000	49331	0.3765		16.2	M
* 6 13C2-PFOA									
415.00 > 370.00	1.821	1.844	-0.023		721933	10.0		6039	
5 Perfluorooctanoic acid									M
413.00 > 369.00	1.821	1.844	-0.023	1.000	54711	0.7877		1.7	M
413.00 > 169.00	1.821	1.844	-0.023	1.000	40109		1.36(0.00-0.00)	21.4	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.086	-0.030		2334685	28.7		614	
$ 10 13C2 PFDA									
515.00 > 470.00	2.253	2.261	-0.008	1.000	439616	11.6		4942	

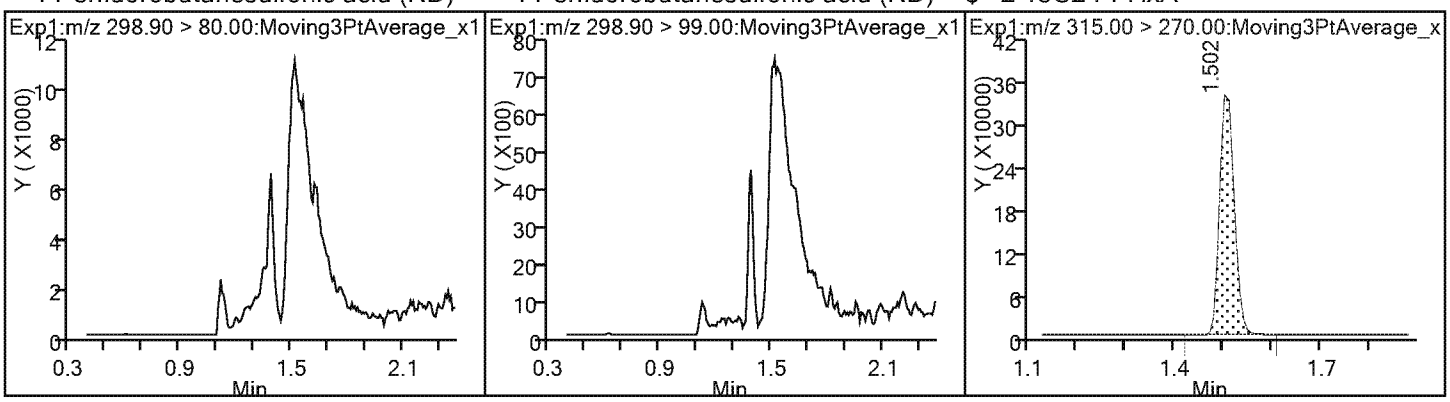
QC Flag Legend

Review Flags
M - Manually Integrated

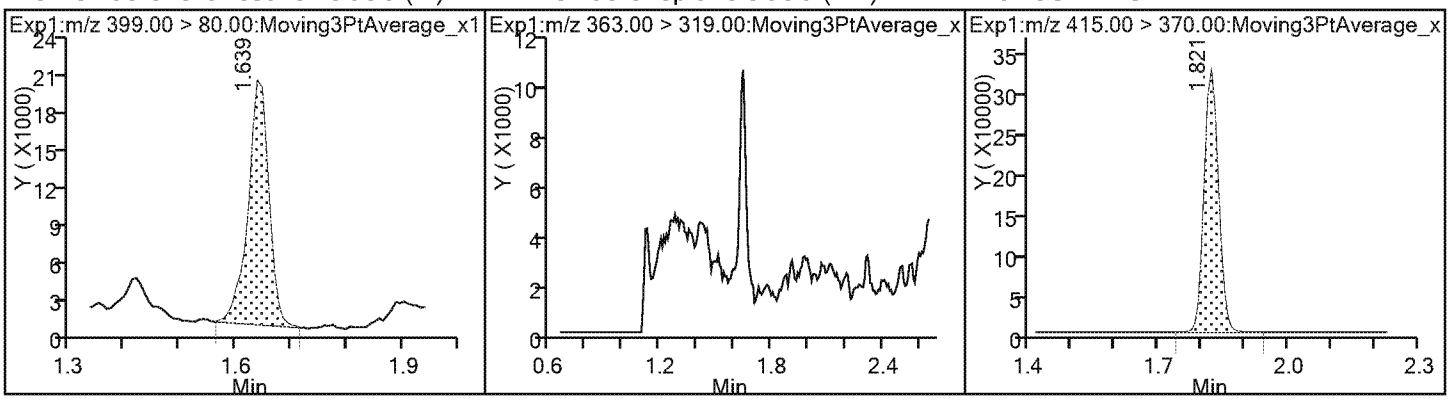
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_010.d				
Injection Date:	12-Mar-2018 16:44:43	Instrument ID:	A8_N		
Lims ID:	320-36607-B-8-A	Lab Sample ID:	320-36607-8		
Client ID:	C0AM0				
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		

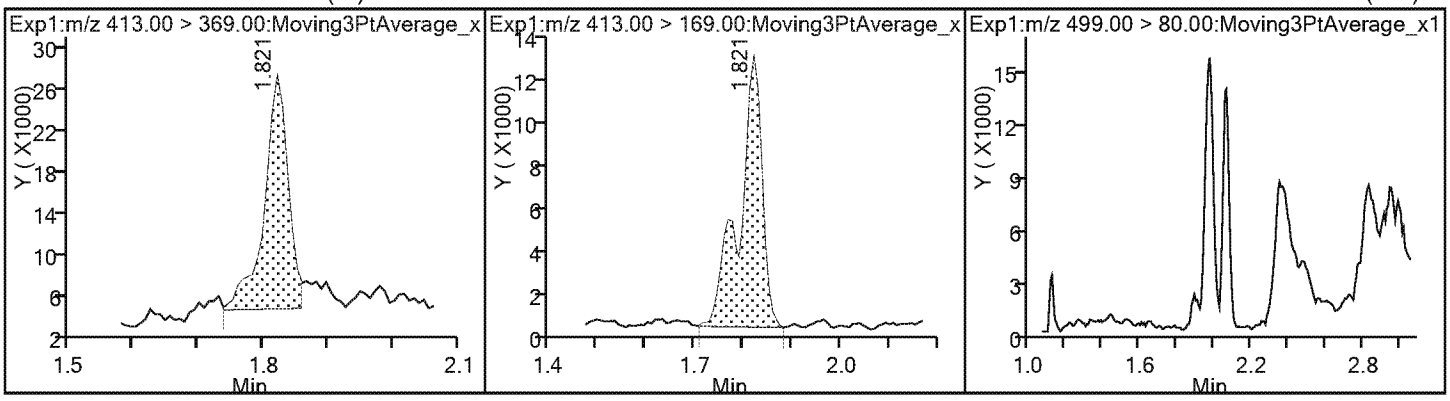
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



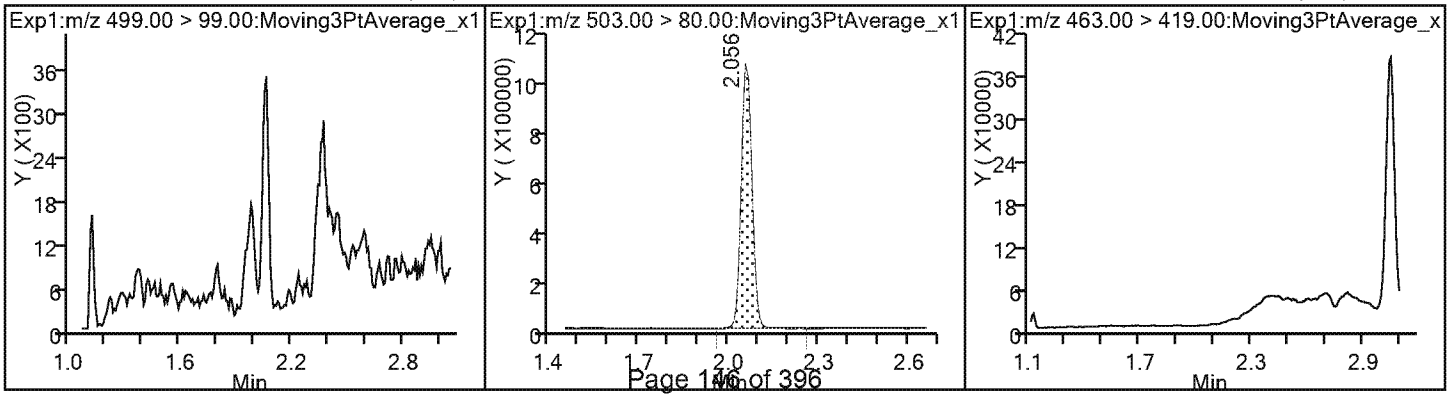
3 Perfluorohexanesulfonic acid (M) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



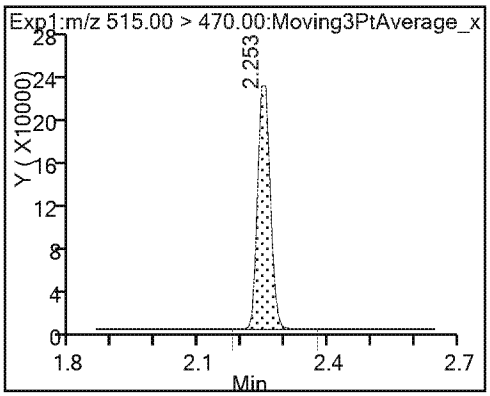
5 Perfluorooctanoic acid (M) 5 Perfluorooctanoic acid 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.253
Y (X10000)
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

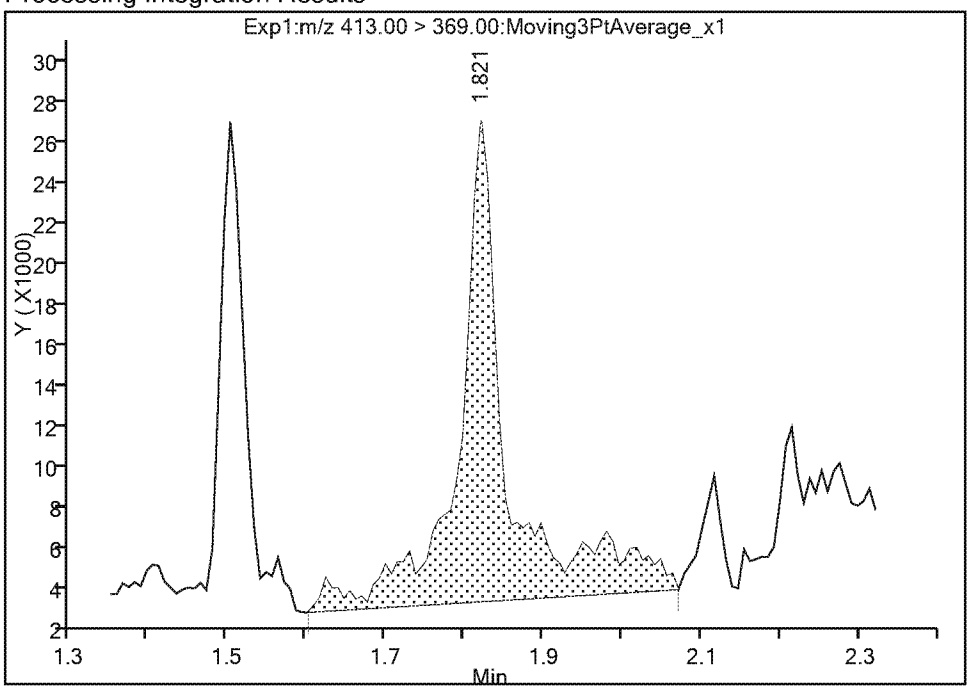
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_010.d				
Injection Date:	12-Mar-2018 16:44:43	Instrument ID:	A8_N		
Lims ID:	320-36607-B-8-A	Lab Sample ID:	320-36607-8		
Client ID:	C0AM0				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

5 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

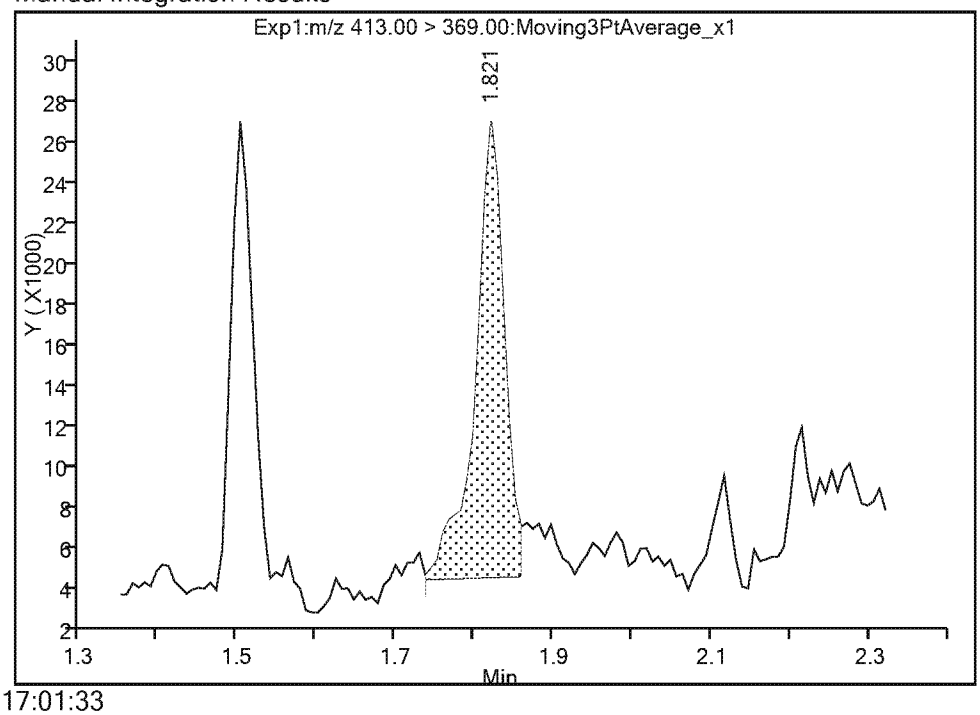
Processing Integration Results

RT: 1.82
Area: 99126
Amount: 1.427253
Amount Units: ng/ml



Manual Integration Results

RT: 1.82
Area: 54711
Amount: 0.787749
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 12-Mar-2018 17:01:33
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento

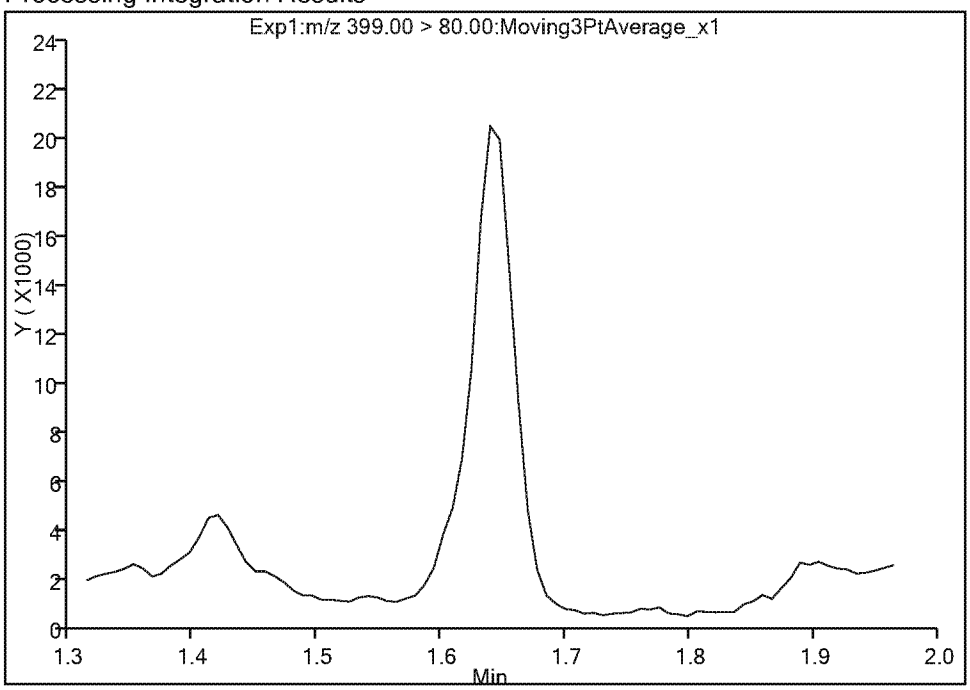
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_010.d				
Injection Date:	12-Mar-2018 16:44:43	Instrument ID:	A8_N		
Lims ID:	320-36607-B-8-A	Lab Sample ID:	320-36607-8		
Client ID:	C0AM0				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

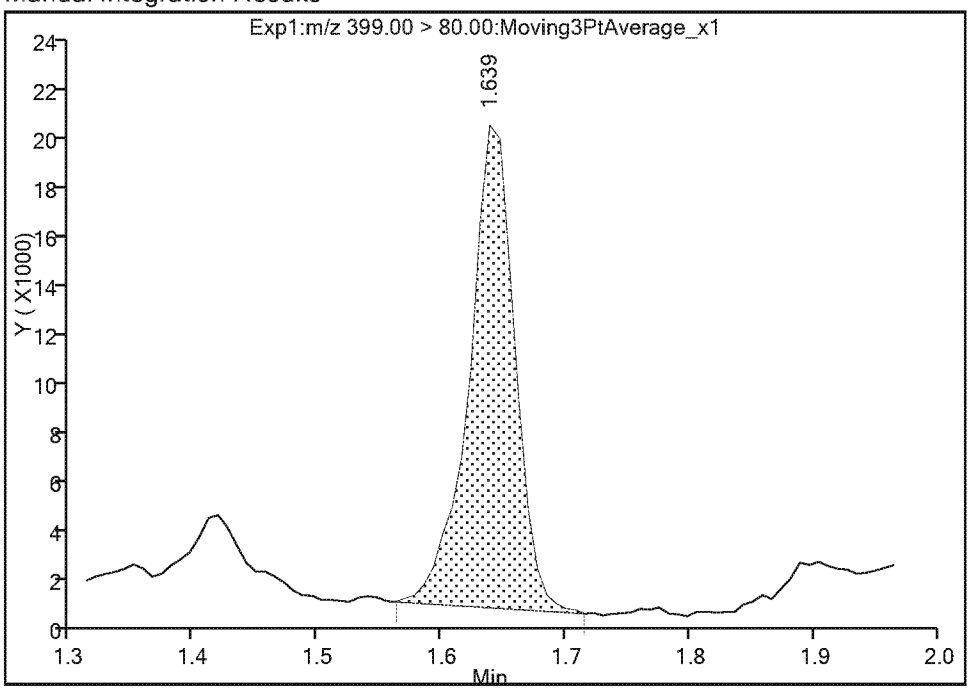
Not Detected
Expected RT: 1.65

Processing Integration Results



Manual Integration Results

RT: 1.64
Area: 49331
Amount: 0.376453
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 12-Mar-2018 17:01:09
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AM1
Lab Sample ID: 320-36607-9
Matrix: Water
Lab File ID: 2018.03.06_537C_015.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:30
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 284.3(mL)
Date Analyzed: 03/06/2018 23:41
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.: 211581
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	51		35	6.0
335-67-1	Perfluorooctanoic acid	5.0	J	18	2.5
375-95-1	Perfluorononanoic acid	ND		18	7.0
355-46-4	Perfluorohexanesulfonic acid	ND		26	4.8
375-85-9	Perfluoroheptanoic acid	1.7	J	8.8	1.7
375-73-5	Perfluorobutanesulfonic acid	ND		79	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	89		70-130
STL00996	13C2 PFDA	121		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_015.d
Lims ID: 320-36607-A-9-A
Client ID: C0AM1
Sample Type: Client
Inject. Date: 06-Mar-2018 23:41:30 ALS Bottle#: 11 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-9-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:17 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 11:00:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.366	0.0	1.000	316896	2.57		327	
298.90 > 99.00	1.366	1.366	0.0	1.000	233818		1.36(0.00-0.00)	372	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	890212	8.88		13439	
3 Perfluorohexanesulfonic acid									M
399.00 > 80.00	1.624	1.624	0.0	1.000	86928	0.5740		53.1	M
4 Perfluoroheptanoic acid									M
363.00 > 319.00	1.624	1.624	0.0	1.000	41844	0.4725		7.7	M
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		911938	10.0		7655	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	124452	1.42		4.3	
413.00 > 169.00	1.806	1.806	0.0	1.000	72027		1.73(0.00-0.00)	43.8	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	1291345	14.5		371	M
499.00 > 99.00	2.056	2.056	0.0	1.000	232251		5.56(0.00-0.00)	120	M
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2698223	28.7		3887	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	577423	12.1		5681	

QC Flag Legend

Review Flags

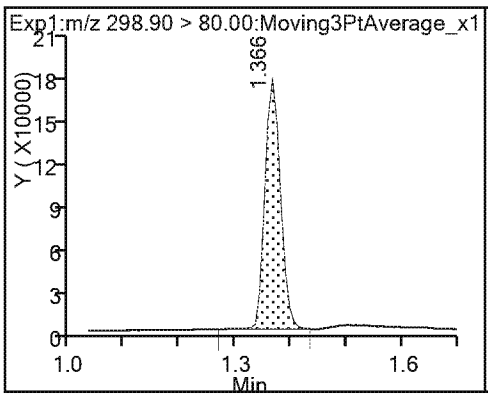
M - Manually Integrated

a - User Assigned ID

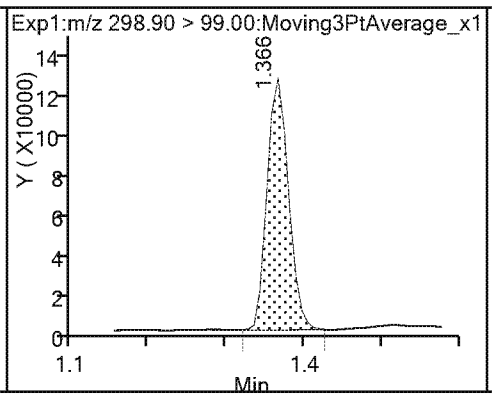
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_015.d				
Injection Date:	06-Mar-2018 23:41:30	Instrument ID:	A8_N		
Lims ID:	320-36607-A-9-A	Lab Sample ID:	320-36607-9		
Client ID:	C0AM1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

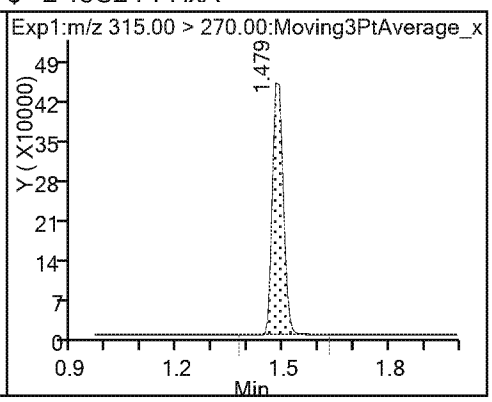
1 Perfluorobutanesulfonic acid



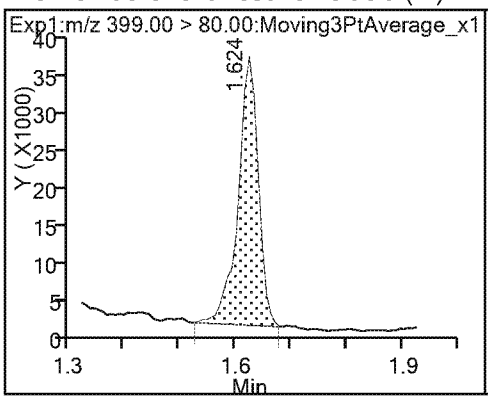
1 Perfluorobutanesulfonic acid



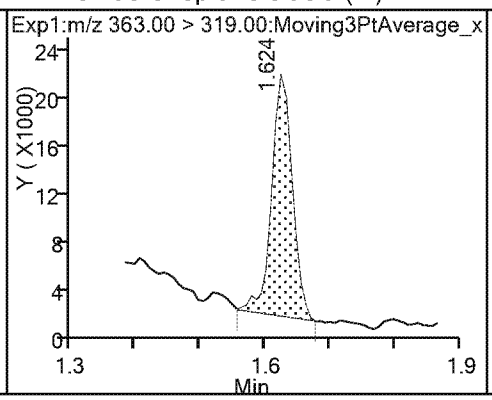
$ 2 13C2 PFHxA



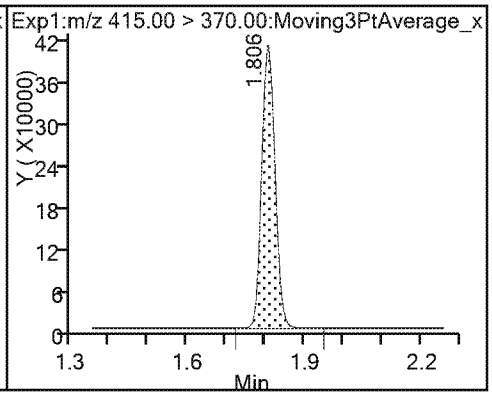
3 Perfluorohexanesulfonic acid (M)



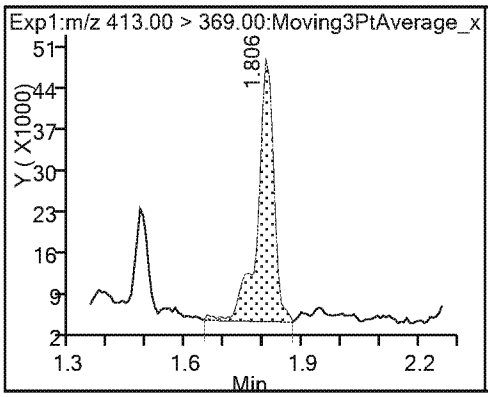
4 Perfluoroheptanoic acid (M)



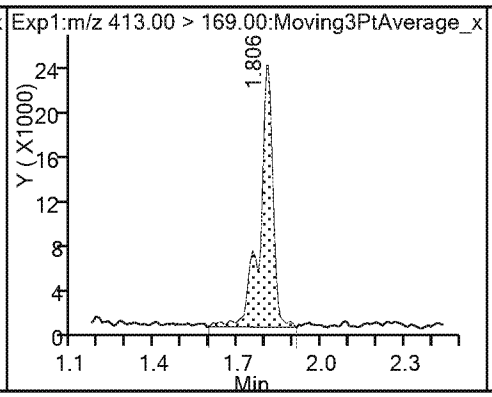
* 6 13C2-PFOA



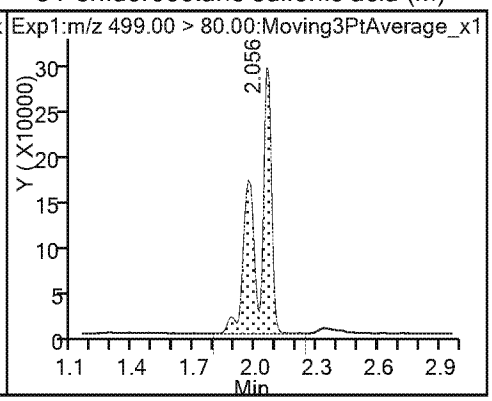
5 Perfluorooctanoic acid



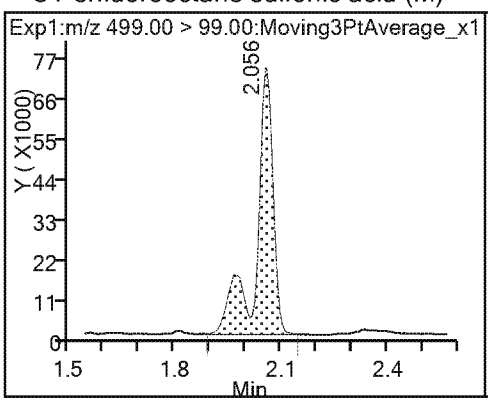
5 Perfluorooctanoic acid



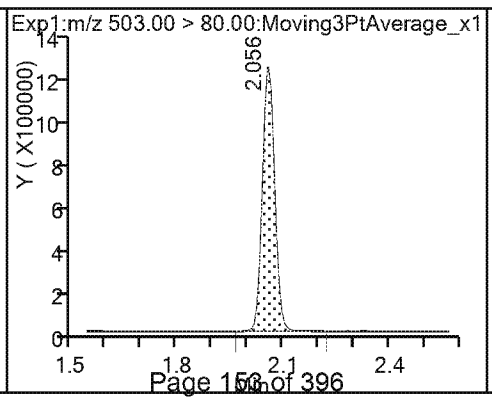
8 Perfluorooctane sulfonic acid (M)



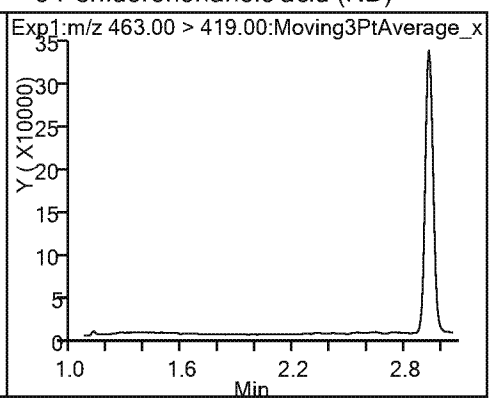
8 Perfluorooctane sulfonic acid (M)



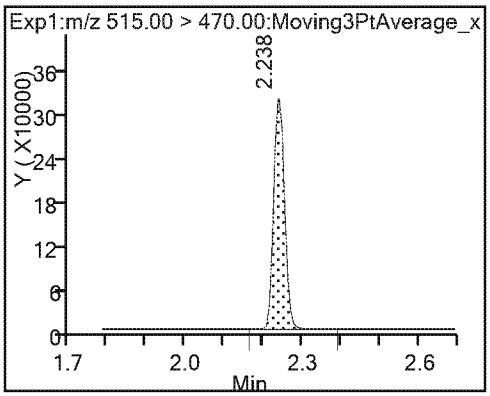
* 7 13C4 PFOS



9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
36
30
24
18
12
6
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

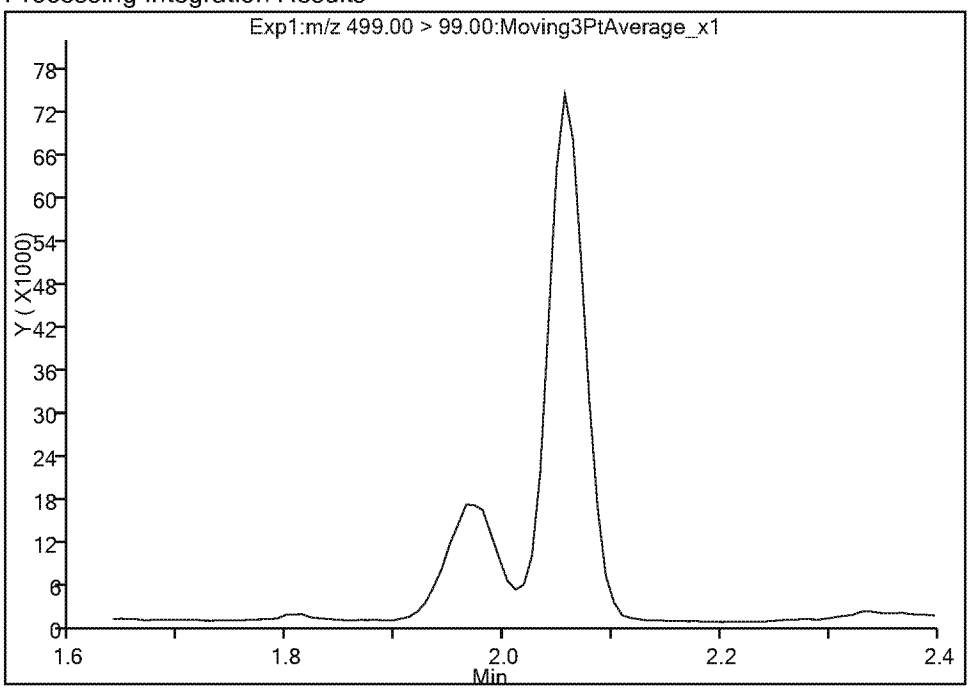
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_015.d				
Injection Date:	06-Mar-2018 23:41:30	Instrument ID:	A8_N		
Lims ID:	320-36607-A-9-A	Lab Sample ID:	320-36607-9		
Client ID:	C0AM1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	15
Injection Vol:	2.0 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

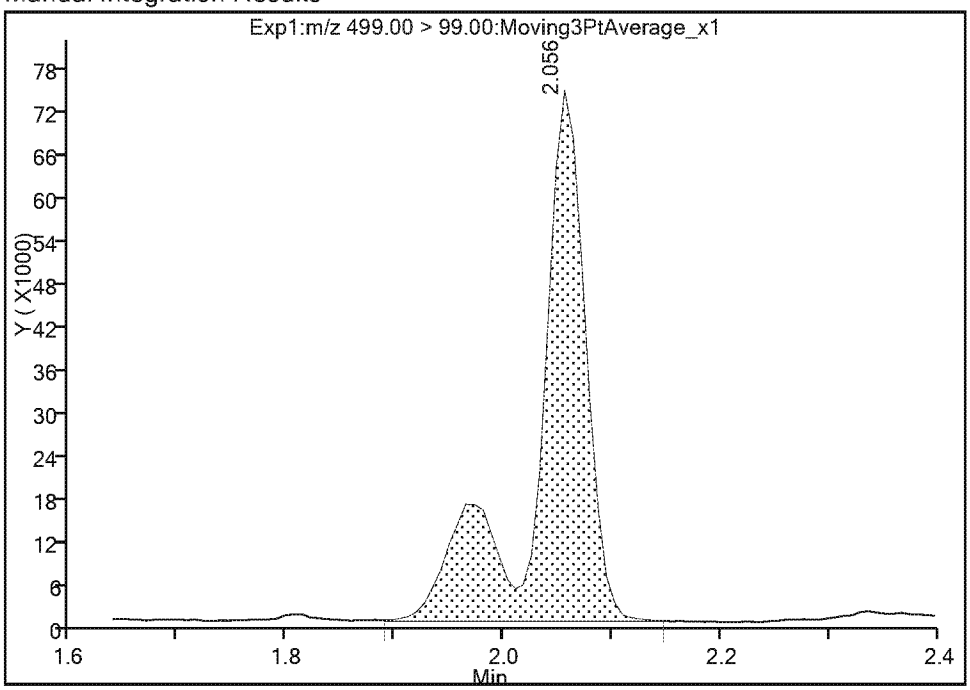
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 232251
Amount: 14.516603
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:01:37
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

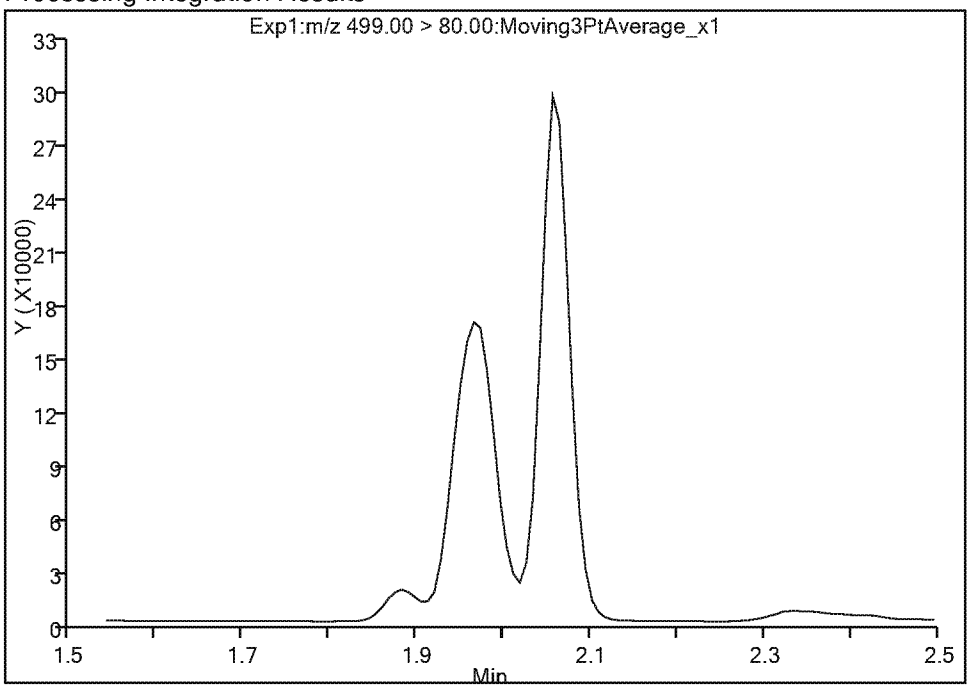
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_015.d				
Injection Date:	06-Mar-2018 23:41:30	Instrument ID:	A8_N		
Lims ID:	320-36607-A-9-A	Lab Sample ID:	320-36607-9		
Client ID:	C0AM1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	15
Injection Vol:	2.0 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

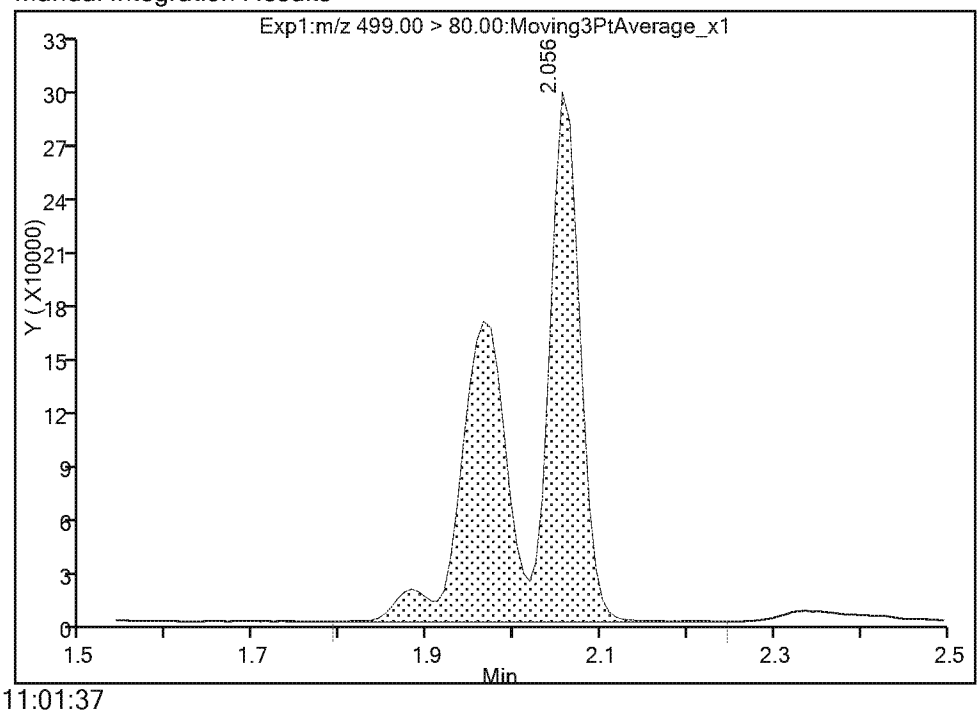
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 1291345
Amount: 14.516603
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:01:37
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

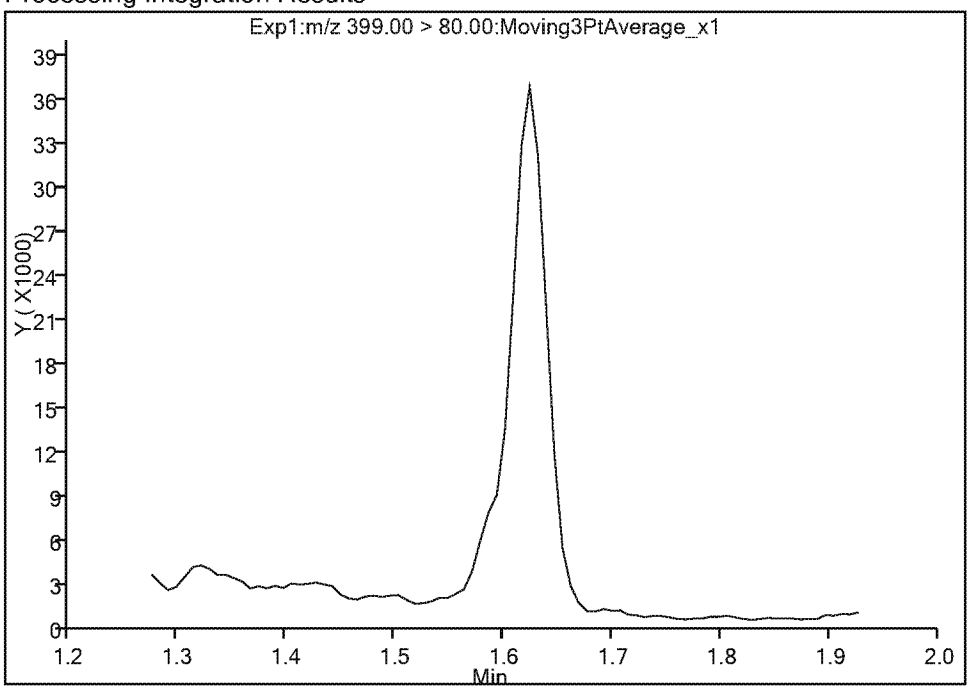
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_015.d				
Injection Date:	06-Mar-2018 23:41:30	Instrument ID:	A8_N		
Lims ID:	320-36607-A-9-A	Lab Sample ID:	320-36607-9		
Client ID:	C0AM1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

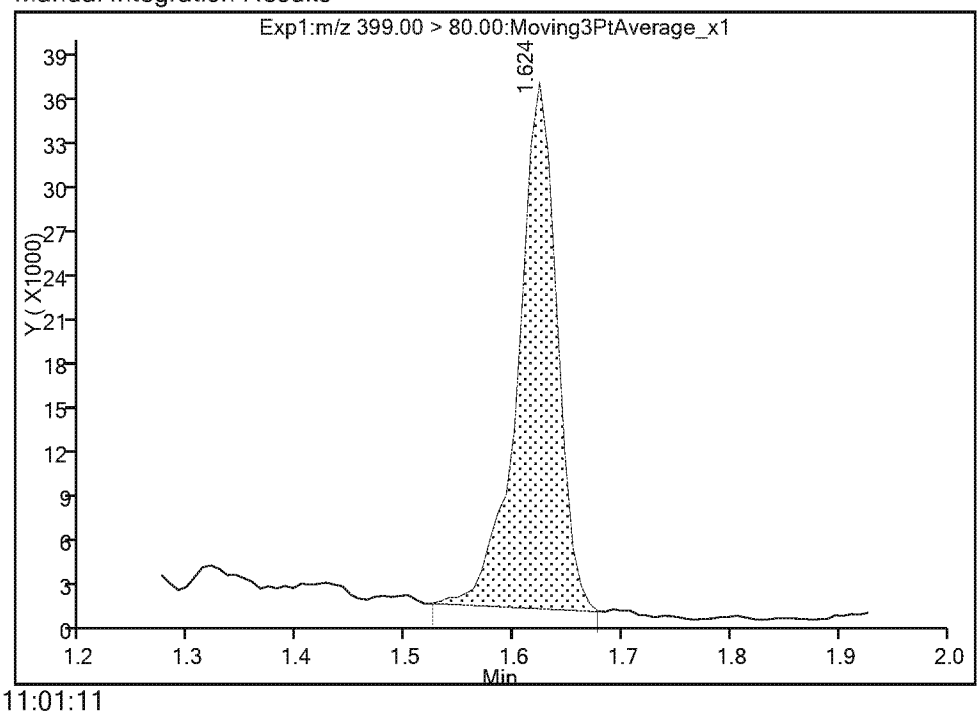
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 86928
Amount: 0.573985
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:01:11
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

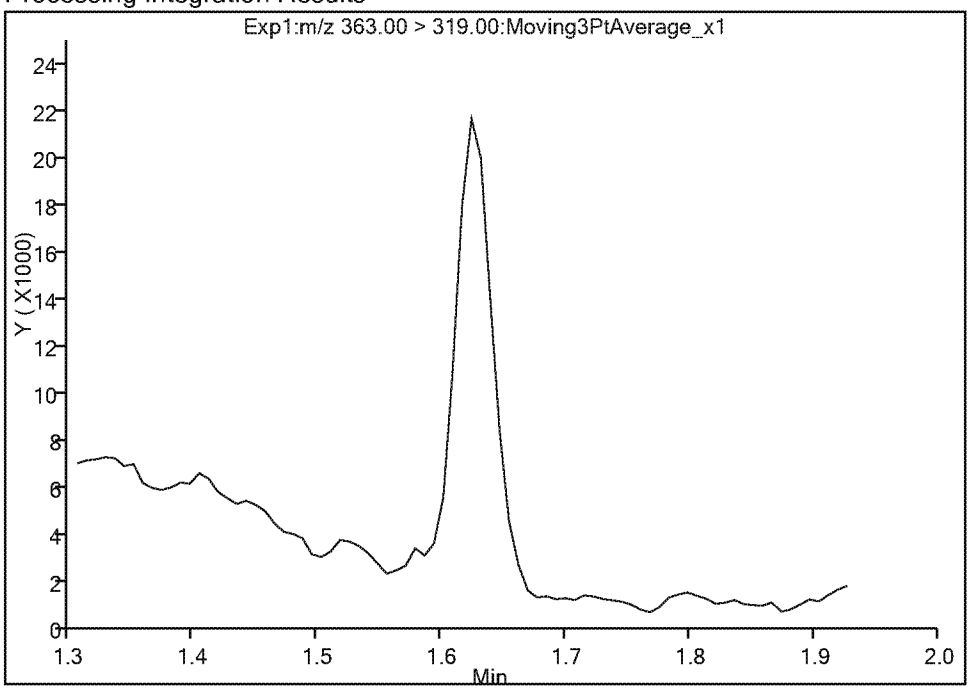
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_015.d				
Injection Date:	06-Mar-2018 23:41:30	Instrument ID:	A8_N		
Lims ID:	320-36607-A-9-A	Lab Sample ID:	320-36607-9		
Client ID:	C0AM1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	15
Injection Vol:	2.0 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

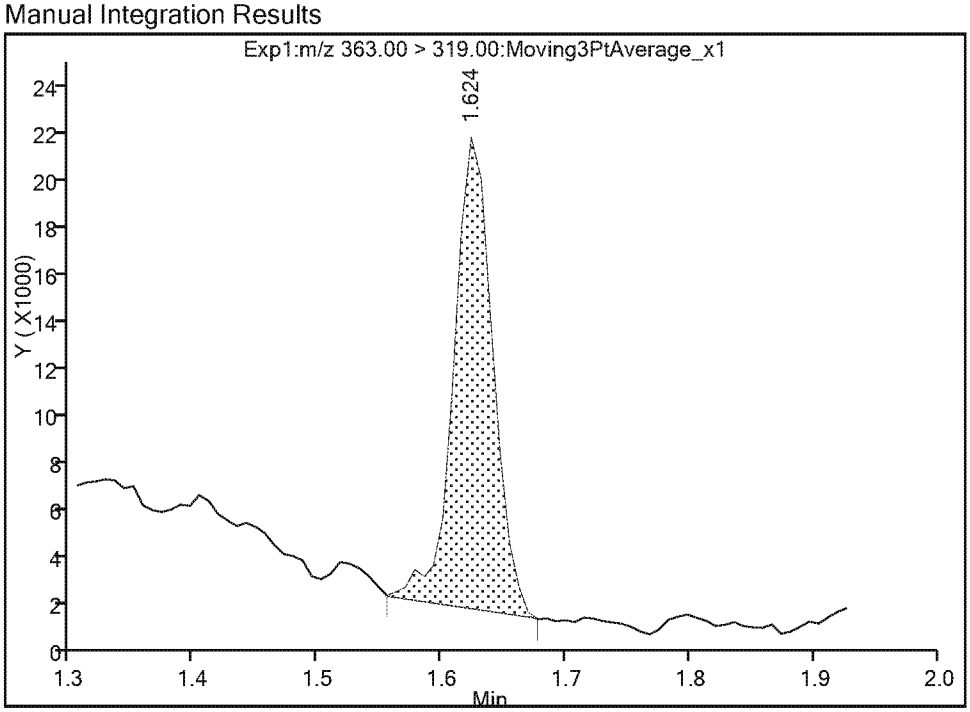
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 41844
Amount: 0.472486
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:01:20
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AM2
Lab Sample ID: 320-36607-10
Matrix: Water
Lab File ID: 2018.03.06_537C_018.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:42
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 290.1(mL)
Date Analyzed: 03/06/2018 23:55
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.: 211581
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	35		34	5.9
335-67-1	Perfluorooctanoic acid	23		17	2.4
375-95-1	Perfluorononanoic acid	14	J	17	6.9
355-46-4	Perfluorohexanesulfonic acid	7.6	J	26	4.7
375-85-9	Perfluoroheptanoic acid	9.9		8.6	1.6
375-73-5	Perfluorobutanesulfonic acid	ND		78	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	78		70-130
STL00996	13C2 PFDA	112		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_018.d
Lims ID: 320-36607-A-10-A
Client ID: C0AM2
Sample Type: Client
Inject. Date: 06-Mar-2018 23:55:31 ALS Bottle#: 14 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-10-
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:17 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022
First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 11:04:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.366	0.0	1.000	302688	2.47		274	
298.90 > 99.00	1.366	1.366	0.0	1.000	213101		1.42(0.00-0.00)	301	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	785634	7.78		11450	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.616	1.624	-0.008	1.000	330782	2.20		204	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	256996	2.88		45.8	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		918458	10.0		8527	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	579349	6.56		23.3	
413.00 > 169.00	1.806	1.806	0.0	1.000	334107		1.73(0.00-0.00)	234	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	903196	10.2		244	M
499.00 > 99.00	2.056	2.056	0.0	1.000	168562		5.36(0.00-0.00)	77.3	M
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2678514	28.7		3074	
9 Perfluorononanoic acid									
463.00 > 419.00	2.064	2.064	0.0	1.000	235405	4.16		11.5	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	538167	11.2		5026	

QC Flag Legend

Review Flags

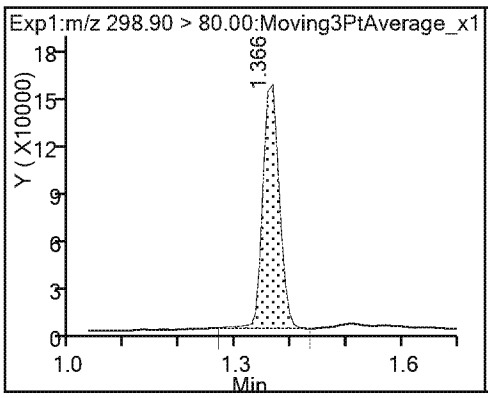
M - Manually Integrated

a - User Assigned ID

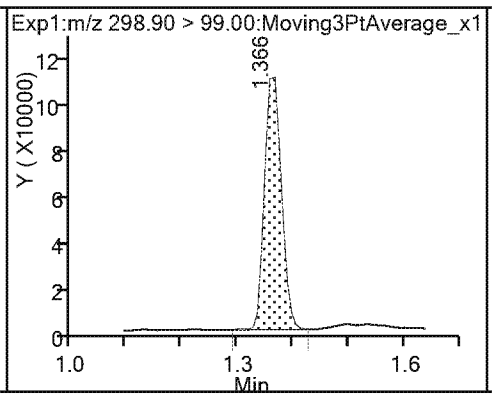
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_018.d				
Injection Date:	06-Mar-2018 23:55:31	Instrument ID:	A8_N		
Lims ID:	320-36607-A-10-A	Lab Sample ID:	320-36607-10		
Client ID:	C0AM2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	14	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

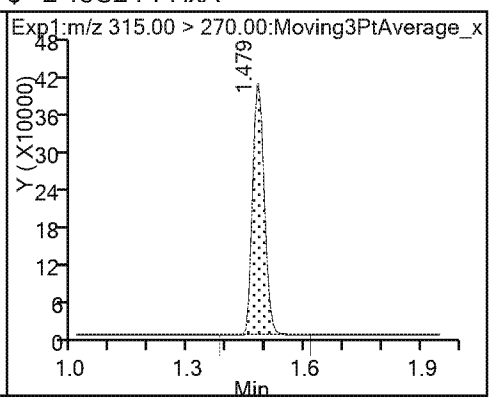
1 Perfluorobutanesulfonic acid



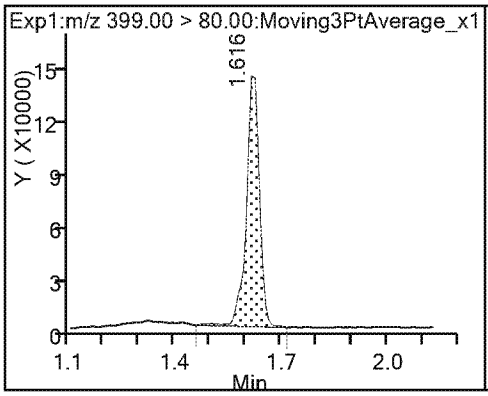
1 Perfluorobutanesulfonic acid



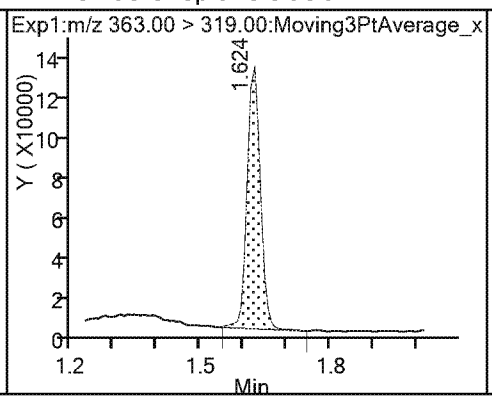
$ 2 13C2 PFHxA



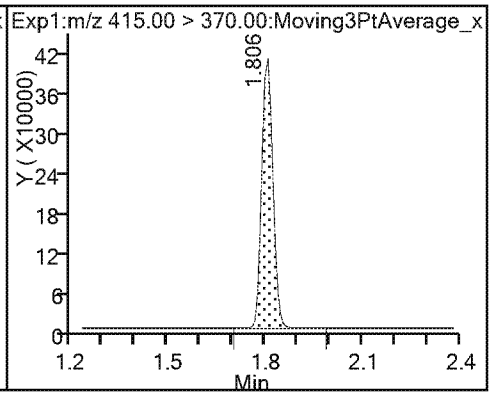
3 Perfluorohexanesulfonic acid



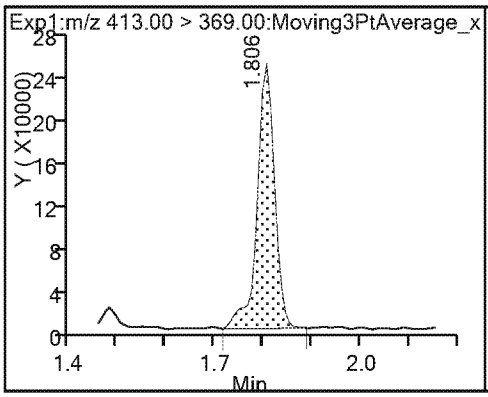
4 Perfluoroheptanoic acid



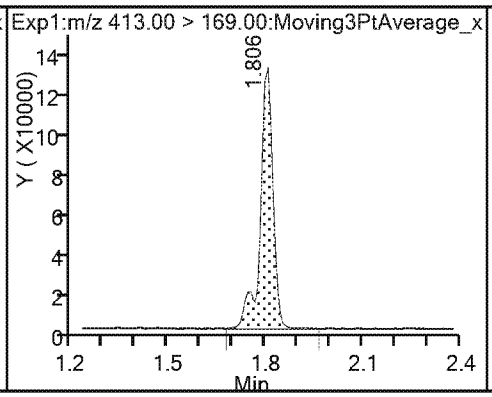
* 6 13C2-PFOA



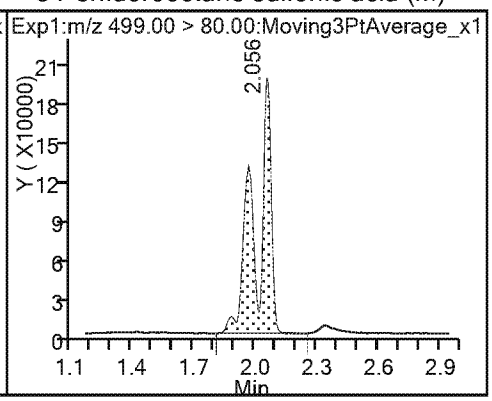
5 Perfluorooctanoic acid



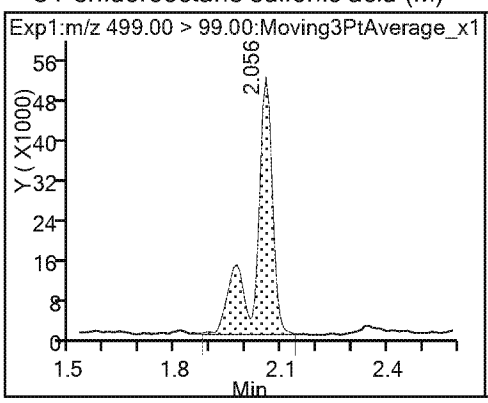
5 Perfluorooctanoic acid



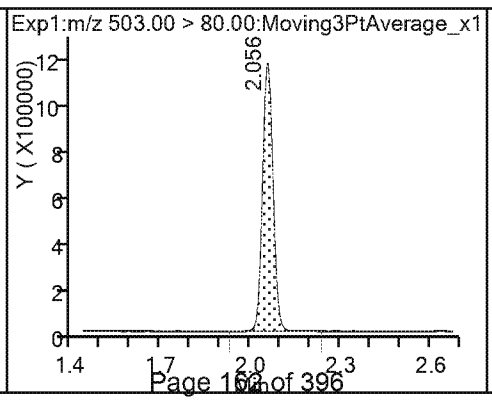
8 Perfluorooctane sulfonic acid (M)



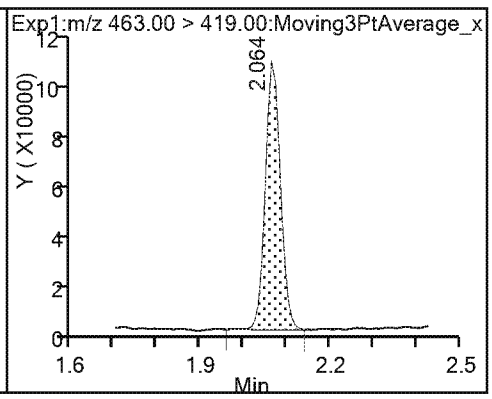
8 Perfluorooctane sulfonic acid (M)



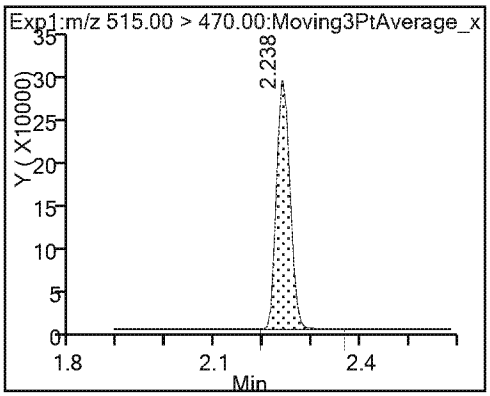
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.8
2.1
2.4
Min

TestAmerica Sacramento

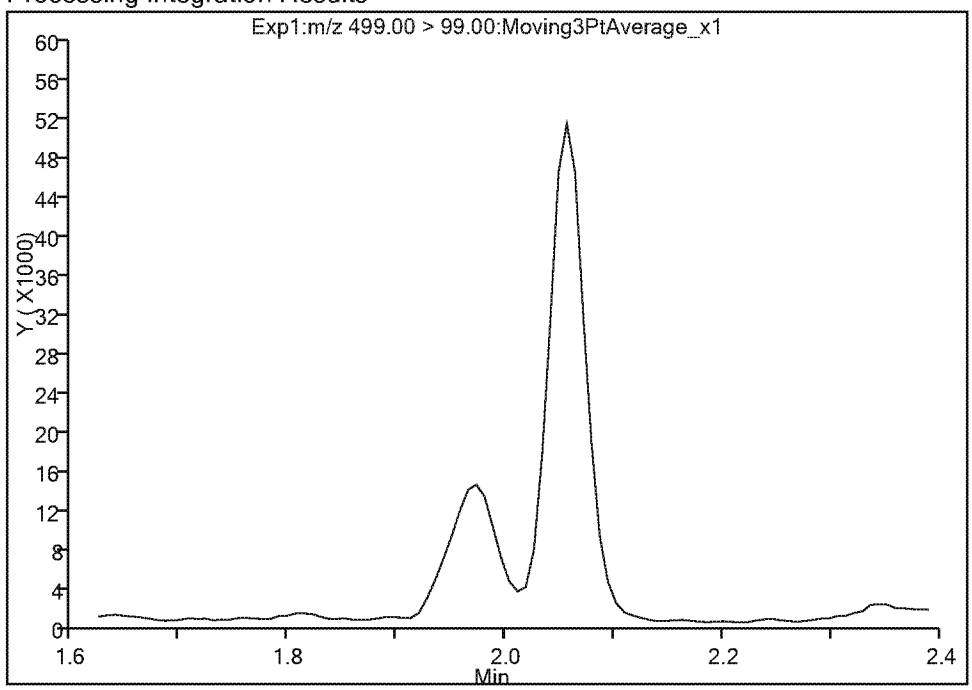
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_018.d				
Injection Date:	06-Mar-2018 23:55:31	Instrument ID:	A8_N		
Lims ID:	320-36607-A-10-A	Lab Sample ID:	320-36607-10		
Client ID:	C0AM2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	14	Worklist Smp#:	18
Injection Vol:	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

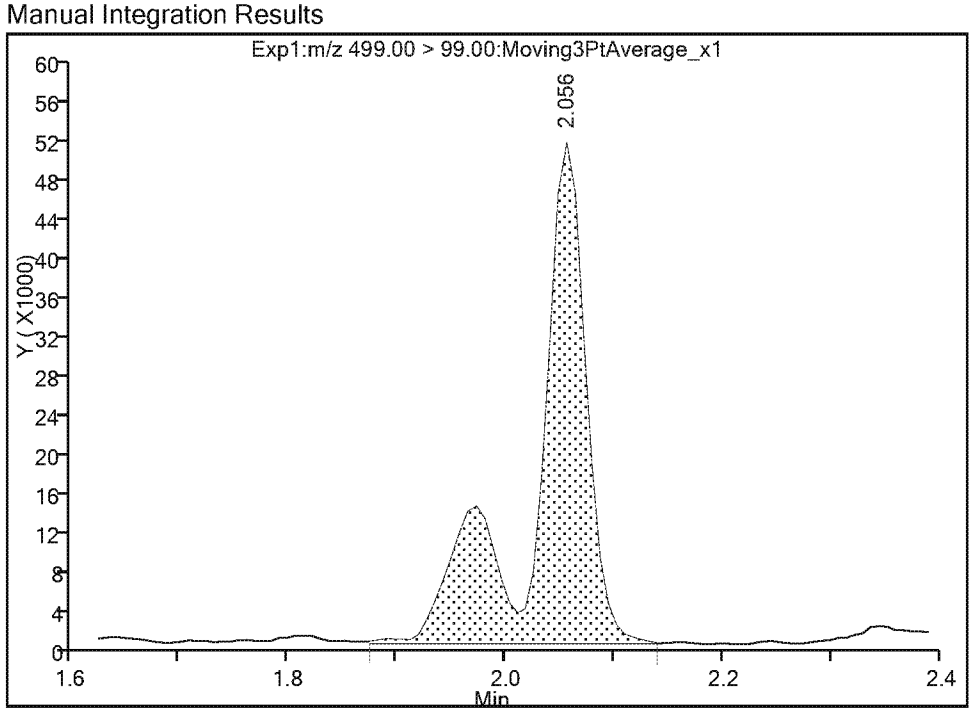
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 168562
Amount: 10.227951
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:03:40
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

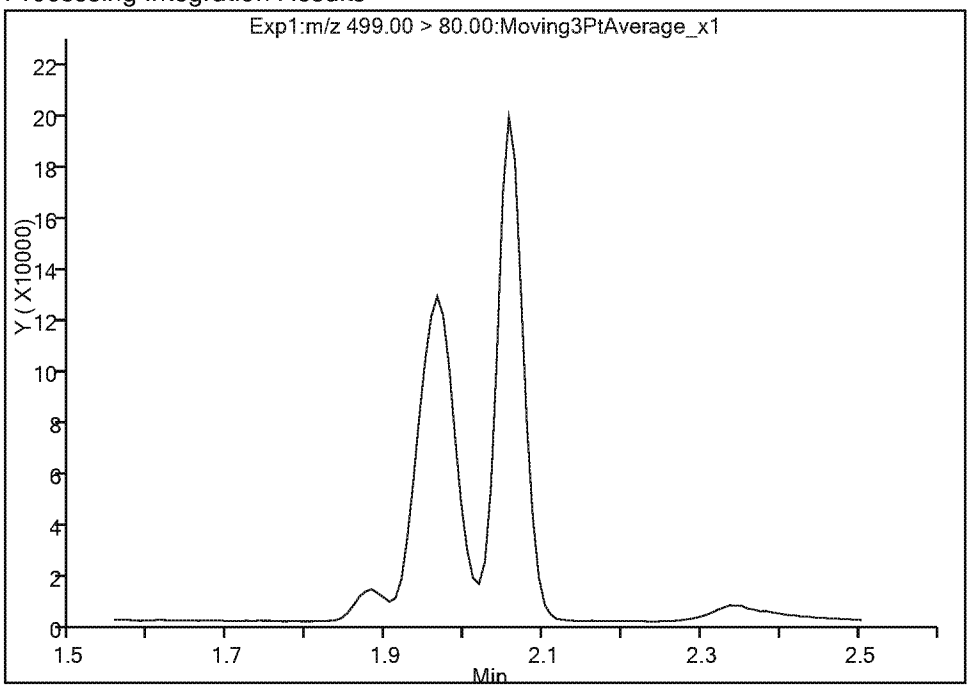
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_018.d				
Injection Date:	06-Mar-2018 23:55:31	Instrument ID:	A8_N		
Lims ID:	320-36607-A-10-A	Lab Sample ID:	320-36607-10		
Client ID:	C0AM2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	14	Worklist Smp#:	18
Injection Vol:	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

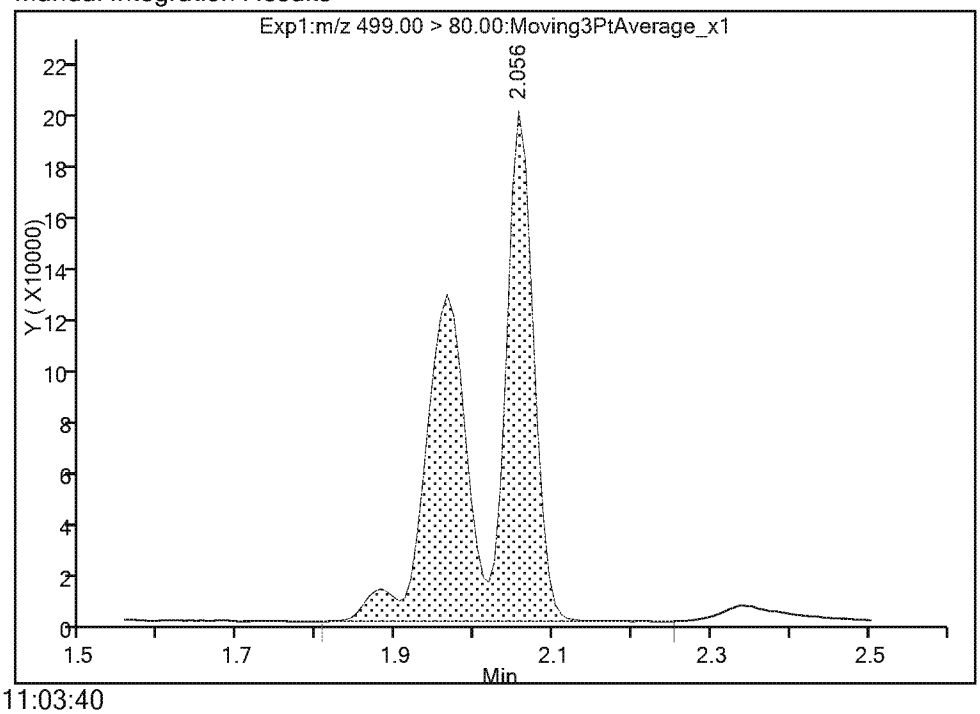
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 903196
Amount: 10.227951
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:03:40
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AM3
Lab Sample ID: 320-36607-11
Matrix: Water
Lab File ID: 2018.03.06_537C_019.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:10
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 236.5(mL)
Date Analyzed: 03/07/2018 00:00
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.: 211581
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		42	7.2
335-67-1	Perfluorooctanoic acid	ND		21	3.0
375-95-1	Perfluorononanoic acid	ND		21	8.5
355-46-4	Perfluorohexanesulfonic acid	ND		32	5.8
375-85-9	Perfluoroheptanoic acid	ND		11	2.0
375-73-5	Perfluorobutanesulfonic acid	ND		95	17

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	86		70-130
STL00996	13C2 PFDA	102		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_019.d
Lims ID: 320-36607-A-11-A
Client ID: C0AM3
Sample Type: Client
Inject. Date: 07-Mar-2018 00:00:13 ALS Bottle#: 15 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-11-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:17 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

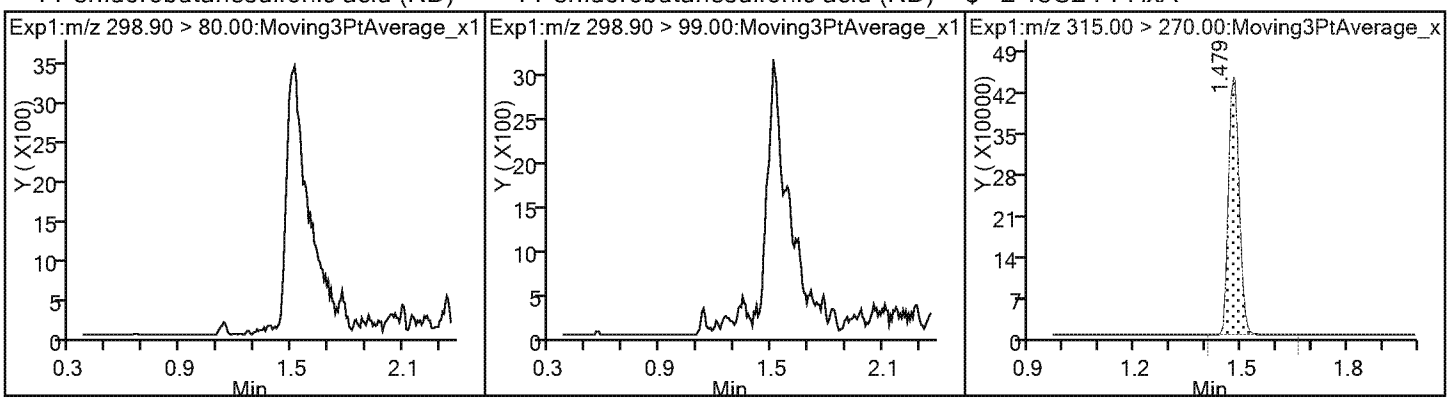
Column 1 : Det: EXP1
Process Host: XAWRK022

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	864799	8.60		13008	
* 6 13C2-PFOA									
415.00 > 370.00	1.798	1.806	-0.008		913938	10.0		8209	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2540405	28.7		6885	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	490886	10.2		4707	

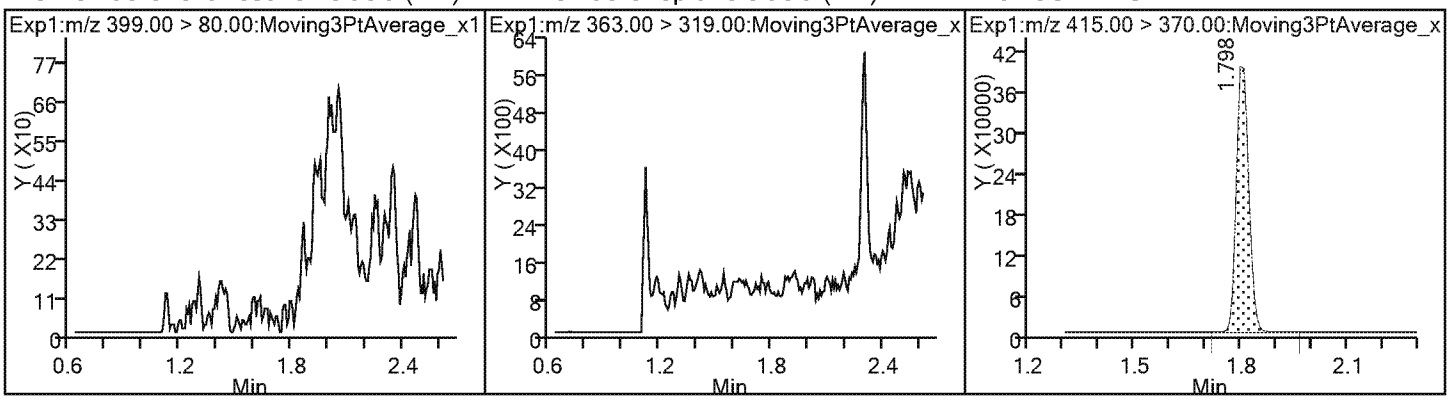
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_019.d				
Injection Date:	07-Mar-2018 00:00:13	Instrument ID:	A8_N		
Lims ID:	320-36607-A-11-A	Lab Sample ID:	320-36607-11		
Client ID:	C0AM3				
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		

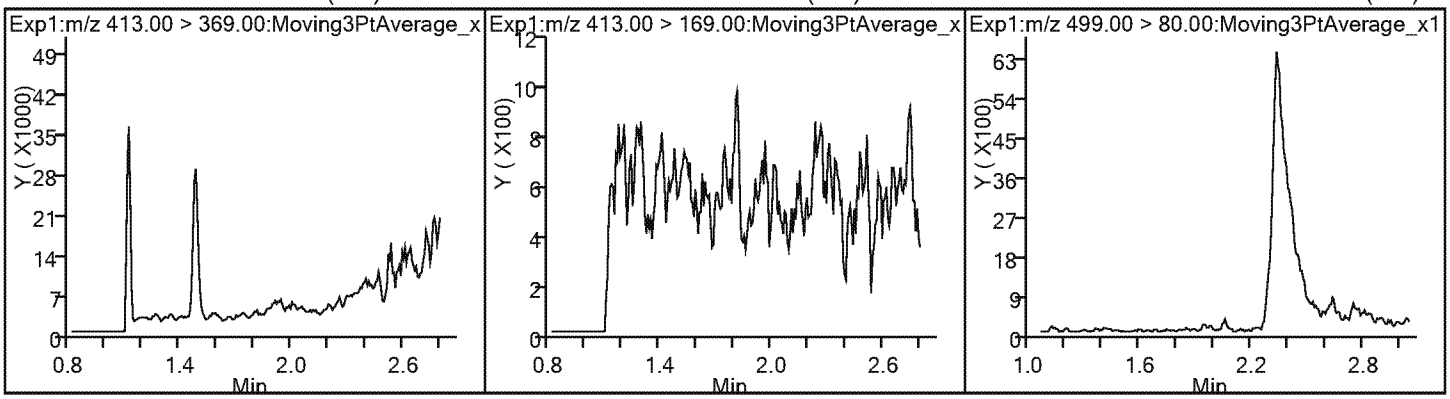
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



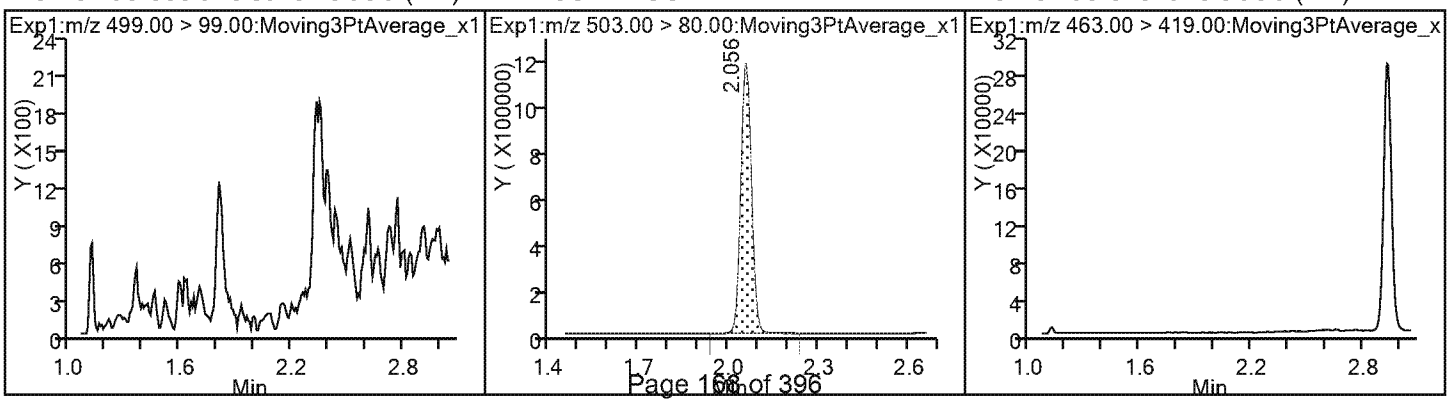
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



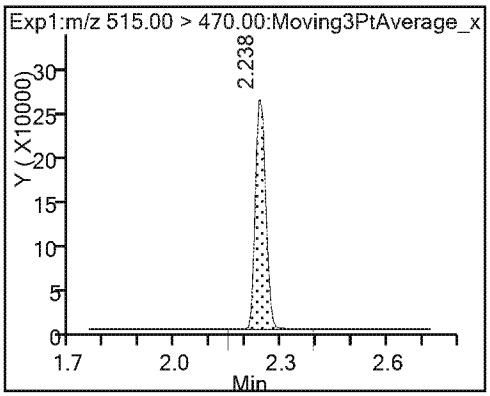
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AM4
Lab Sample ID: 320-36607-12
Matrix: Water
Lab File ID: 2018.03.06_537C_020.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:10
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 286.5(mL)
Date Analyzed: 03/07/2018 00:04
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.: 211581
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		35	5.9
335-67-1	Perfluorooctanoic acid	3.2	J	17	2.4
375-95-1	Perfluorononanoic acid	ND		17	7.0
355-46-4	Perfluorohexanesulfonic acid	ND		26	4.8
375-85-9	Perfluoroheptanoic acid	ND		8.7	1.7
375-73-5	Perfluorobutanesulfonic acid	ND		79	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	80		70-130
STL00996	13C2 PFDA	109		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_020.d
Lims ID: 320-36607-A-12-A
Client ID: C0AM4
Sample Type: Client
Inject. Date: 07-Mar-2018 00:04:53 ALS Bottle#: 16 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-12-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:17 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 11:05:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.472	1.479	-0.007	1.000	788075	7.95		10535	
3 Perfluorohexanesulfonic acid									M
399.00 > 80.00	1.616	1.624	-0.008	1.000	55289	0.3898		38.6	M
4 Perfluoroheptanoic acid									M
363.00 > 319.00	1.616	1.624	-0.008	1.000	21888	0.2502		4.8	M
* 6 13C2-PFOA									
415.00 > 370.00	1.798	1.806	-0.008		900828	10.0		8993	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.798	1.806	-0.008	1.000	80104	0.9243		3.0	
413.00 > 169.00	1.798	1.806	-0.008	1.000	52033		1.54(0.00-0.00)	31.3	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	87655	1.05		21.8	a
499.00 > 99.00	2.048	2.056	-0.008	0.996	14809		5.92(0.00-0.00)	7.4	M
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2526946	28.7		3969	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	513793	10.9		5255	

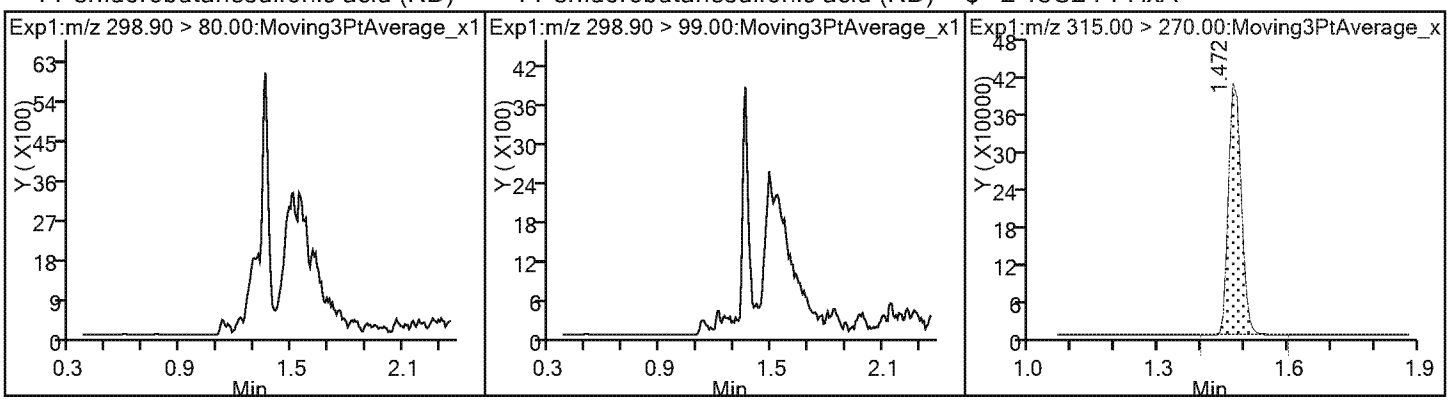
QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

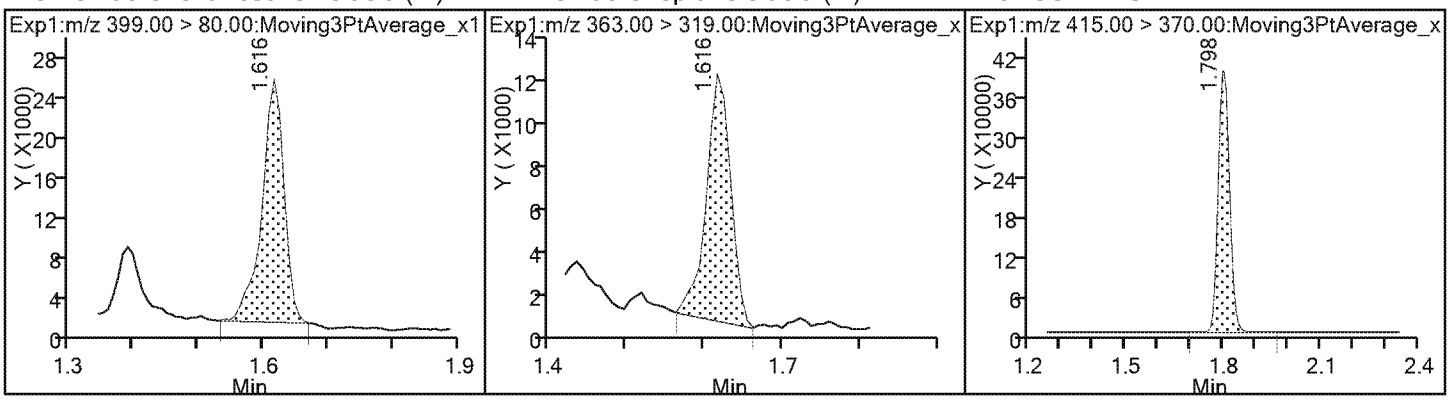
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_020.d				
Injection Date:	07-Mar-2018 00:04:53	Instrument ID:	A8_N		
Lims ID:	320-36607-A-12-A	Lab Sample ID:	320-36607-12		
Client ID:	C0AM4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

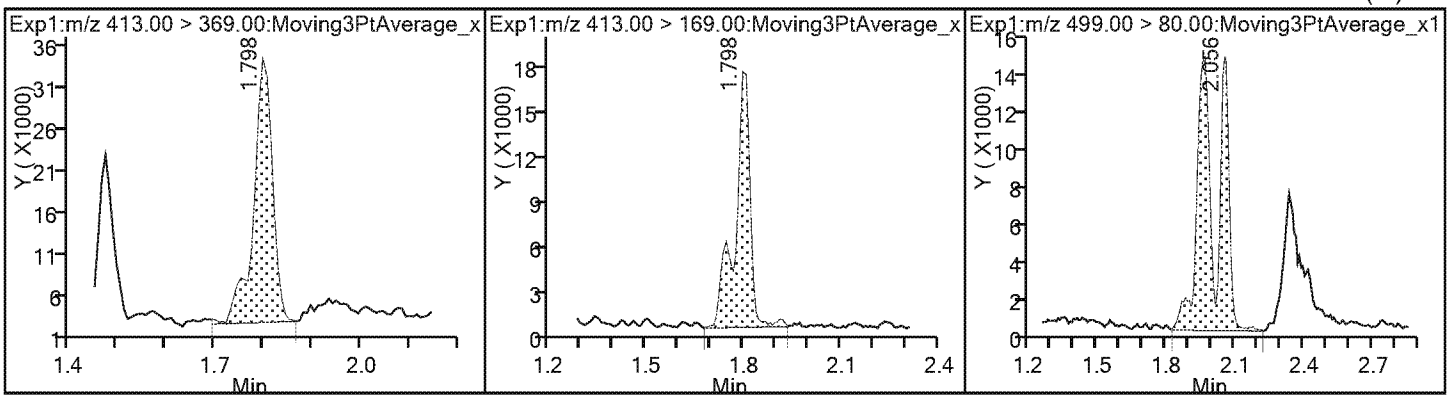
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



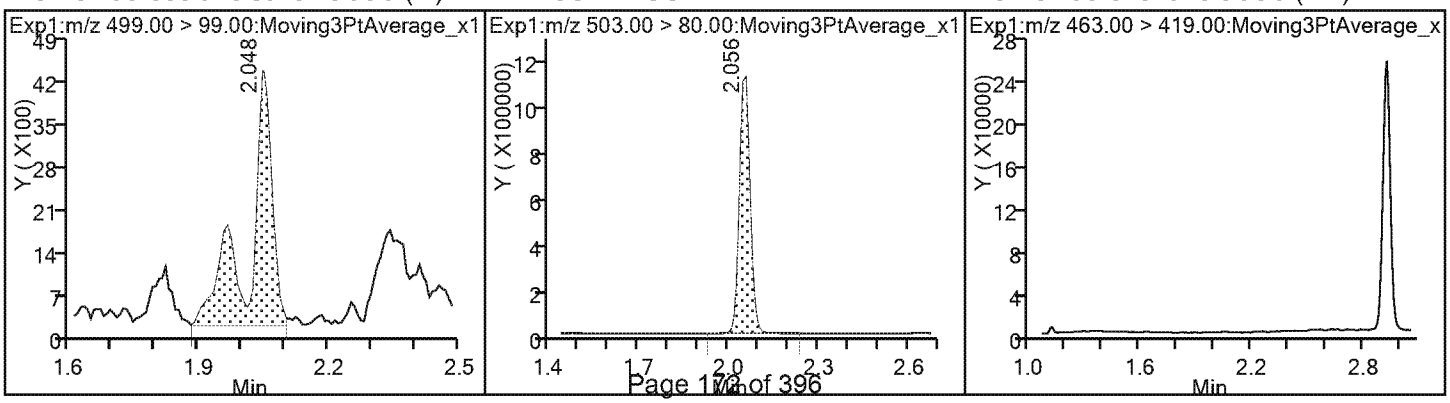
3 Perfluorohexanesulfonic acid (M) 4 Perfluoroheptanoic acid (M) * 6 13C2-PFOA



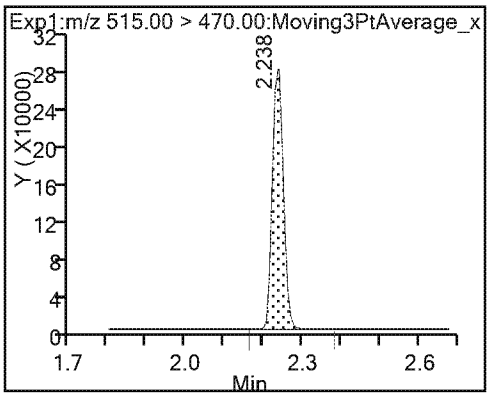
5 Perfluorooctanoic acid 5 Perfluorooctanoic acid 8 Perfluorooctane sulfonic acid (M)



8 Perfluorooctane sulfonic acid (M) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
32
28
24
20
16
12
8
4
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

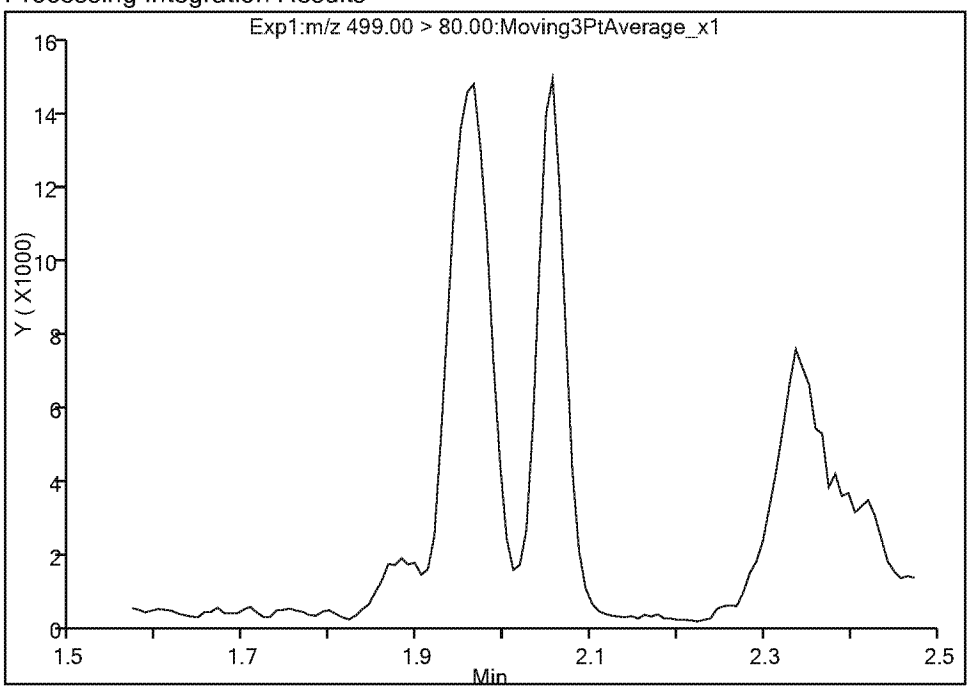
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_020.d				
Injection Date:	07-Mar-2018 00:04:53	Instrument ID:	A8_N		
Lims ID:	320-36607-A-12-A	Lab Sample ID:	320-36607-12		
Client ID:	C0AM4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	20
Injection Vol:	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

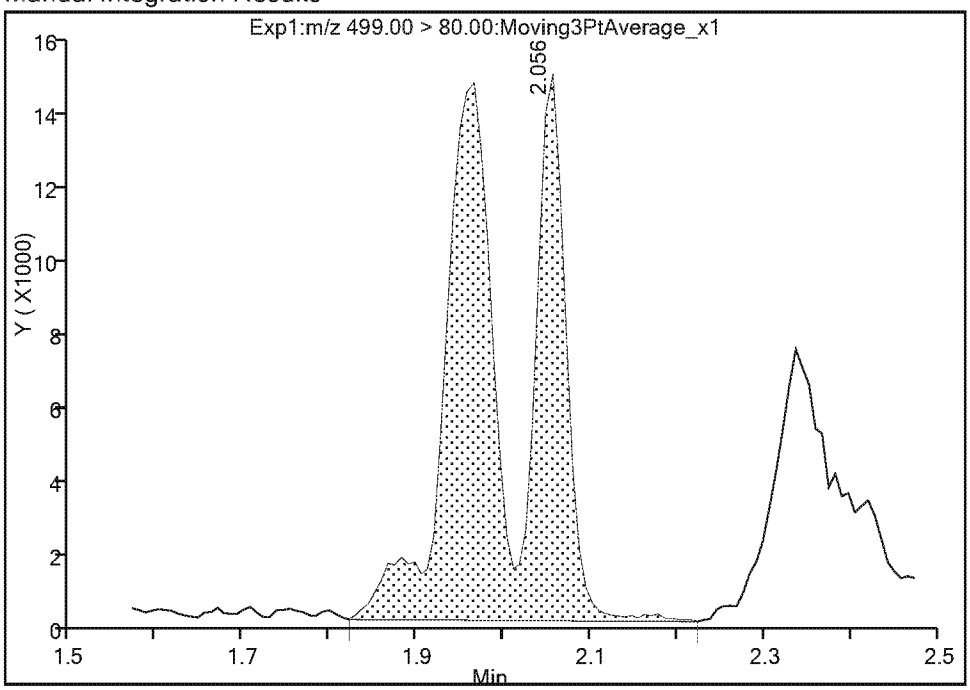
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 87655
Amount: 1.052159
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:05:09
Audit Action: Assigned Compound ID Audit Reason: Missed Peak

TestAmerica Sacramento

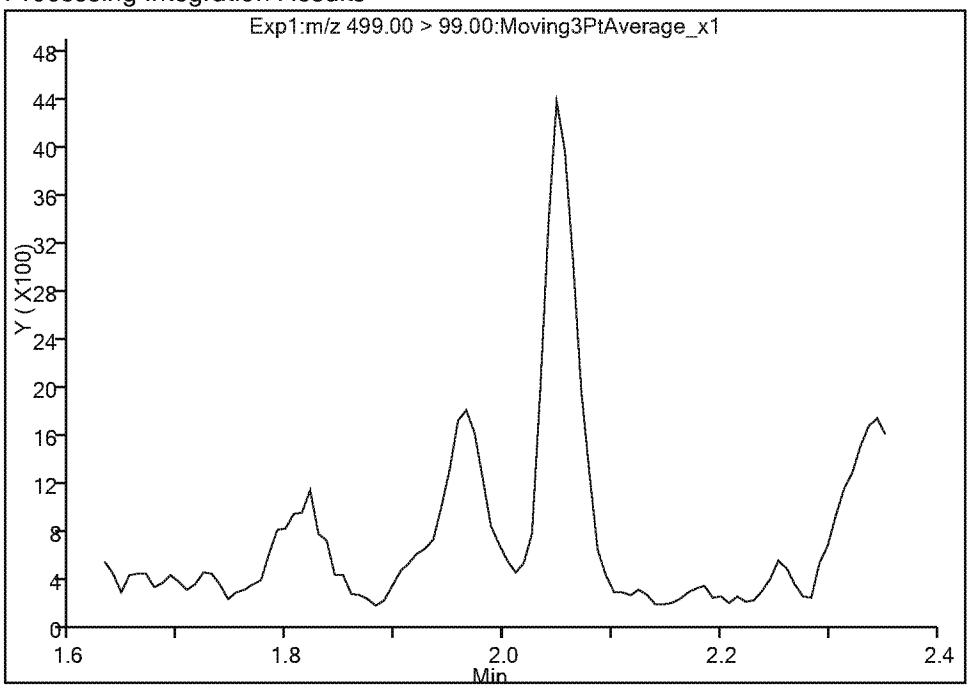
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_020.d				
Injection Date:	07-Mar-2018 00:04:53	Instrument ID:	A8_N		
Lims ID:	320-36607-A-12-A	Lab Sample ID:	320-36607-12		
Client ID:	C0AM4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	20
Injection Vol:	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

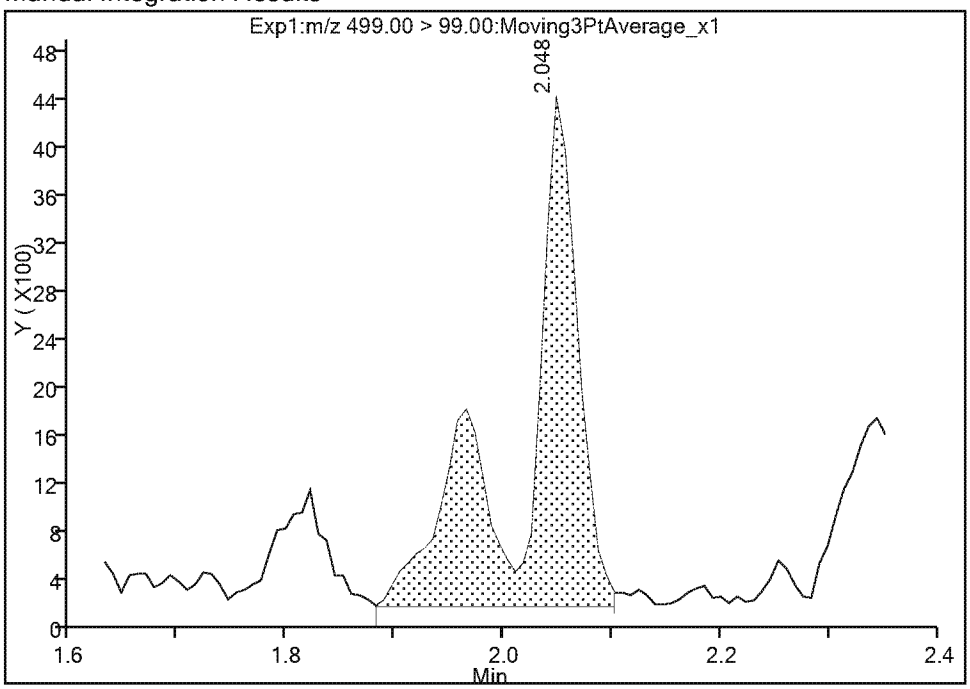
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.05
Area: 14809
Amount: 1.052159
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:05:16
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

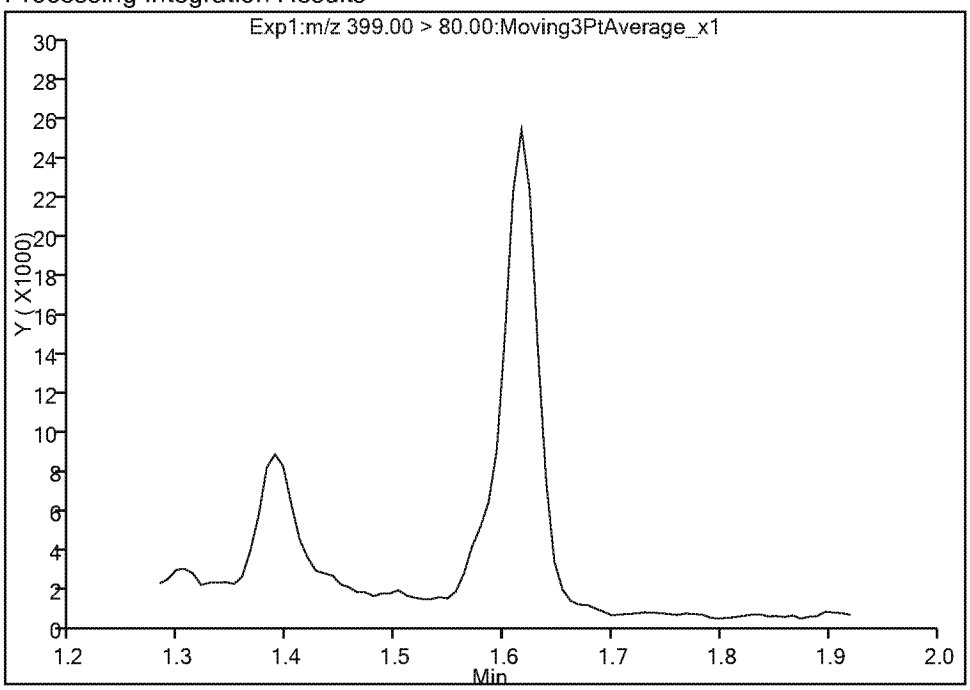
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_020.d				
Injection Date:	07-Mar-2018 00:04:53	Instrument ID:	A8_N		
Lims ID:	320-36607-A-12-A	Lab Sample ID:	320-36607-12		
Client ID:	C0AM4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

3 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

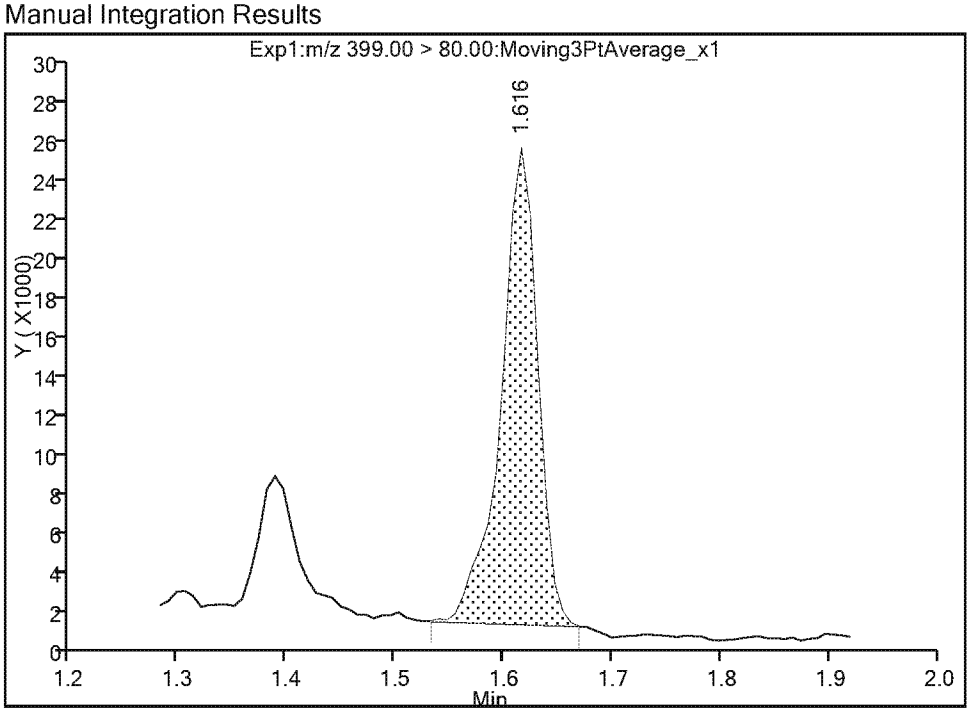
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 55289
Amount: 0.389818
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:04:47
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

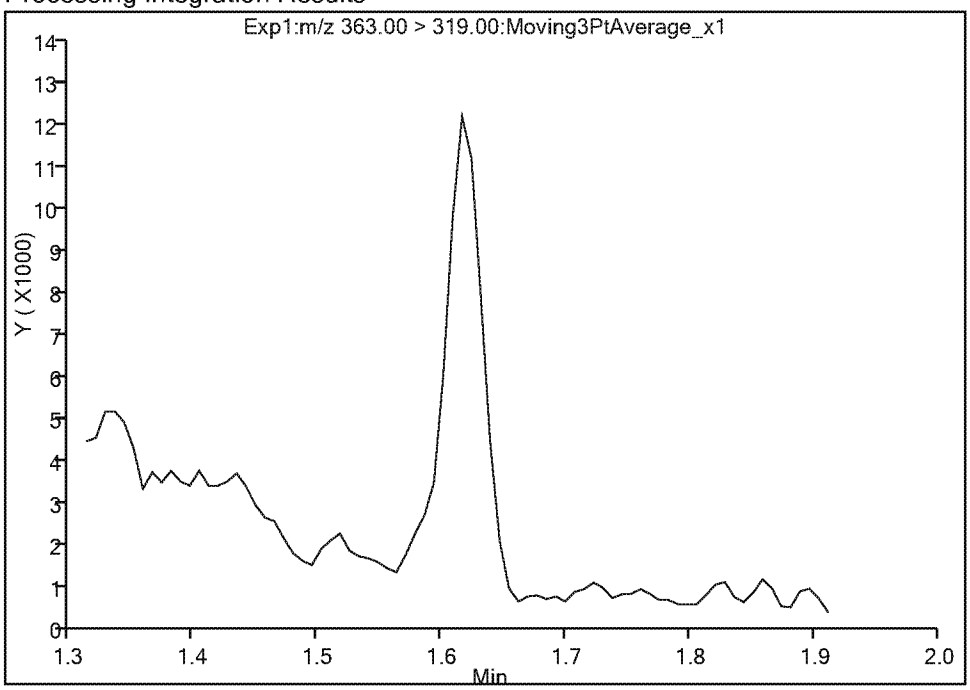
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_020.d				
Injection Date:	07-Mar-2018 00:04:53	Instrument ID:	A8_N		
Lims ID:	320-36607-A-12-A	Lab Sample ID:	320-36607-12		
Client ID:	C0AM4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	20
Injection Vol:	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

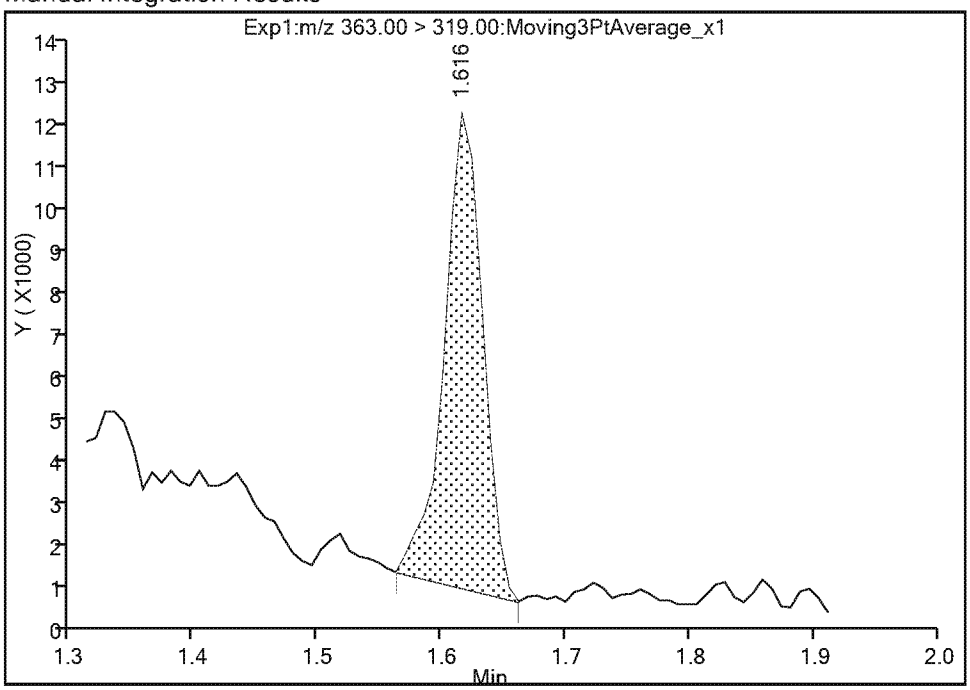
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 21888
Amount: 0.250199
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:05:02
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1 Analy Batch No.: 208773

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2018 08:55 Calibration End Date: 02/16/2018 09:19 Calibration ID: 37889

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-208773/4	2018.02.016_537ICAL_004.d
Level 2	IC 320-208773/5	2018.02.016_537ICAL_005.d
Level 3	IC 320-208773/6	2018.02.016_537ICAL_006.d
Level 4	IC 320-208773/7	2018.02.016_537ICAL_007.d
Level 5	IC 320-208773/8	2018.02.016_537ICAL_008.d
Level 6	IC 320-208773/9	2018.02.016_537ICAL_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	1.1922 0.9350	1.2685	1.2630	1.1053	1.0403	QuaF		1.3180	-0.002120						1.0000		0.9600
Perfluorohexanesulfonic acid	1.5376 1.6019	1.6461	1.6181	1.5963	1.6585	Ave		1.6098				2.7		30.0			
Perfluoroheptanoic acid	0.9596 0.9834	0.9488	0.9462	1.0388	0.9501	Ave		0.9711				3.7		30.0			
Perfluorooctanoic acid	0.9118 0.9514	1.0053	0.9624	0.9616	0.9798	Ave		0.9620				3.2		30.0			
Perfluorooctane sulfonic acid	0.9021 0.9430	0.9481	0.9569	0.9539	0.9692	Ave		0.9455				2.4		30.0			
Perfluorononanoic acid	0.6417 0.6193	0.5823	0.5991	0.6537	0.5962	Ave		0.6154				4.5		30.0			
13C2 PFHxA	1.1327 1.1621	1.0418	1.0430	1.1541	1.0657	Ave		1.0999				5.1		30.0			
13C2 PFDA	0.5790 0.5388	0.4974	0.4674	0.5464	0.5166	Ave		0.5243				7.5		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.: 320-36607-1 Analy Batch No.: 208773

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2018 08:55 Calibration End Date: 02/16/2018 09:19 Calibration ID: 37889

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-208773/4	2018.02.016_537ICAL_004.d
Level 2	IC 320-208773/5	2018.02.016_537ICAL_005.d
Level 3	IC 320-208773/6	2018.02.016_537ICAL_006.d
Level 4	IC 320-208773/7	2018.02.016_537ICAL_007.d
Level 5	IC 320-208773/8	2018.02.016_537ICAL_008.d
Level 6	IC 320-208773/9	2018.02.016_537ICAL_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	PFOS	QuaF	1004877 16112512	2401851	5386060	9625497	13334361	9.00 180	20.0	45.0	90.0	135
Perfluorohexanesulfonic acid	PFOS	Ave	432087 9203547	1039145	2300670	4635169	7088297	3.00 60.0	6.67	15.0	30.0	45.0
Perfluoroheptanoic acid	13PF OA	Ave	89434 1755879	208408	467875	919334	1334846	1.00 20.0	2.22	5.00	10.0	15.0
Perfluorooctanoic acid	13PF OA	Ave	170858 3415564	443975	956930	1711070	2767901	2.01 40.2	4.47	10.1	20.1	30.2
Perfluorooctane sulfonic acid	PFOS	Ave	339345 7252490	801200	1821248	3707450	5544581	4.02 80.3	8.93	20.1	40.2	60.3
Perfluorononanoic acid	13PF OA	Ave	119635 2211715	255853	592583	1157180	1675602	2.00 40.0	4.45	10.0	20.0	30.0
13C2 PFHxA	13PF OA	Ave	1055358 1037300	1029524	1031304	1021204	998008	10.0 10.0	10.0	10.0	10.0	10.0
13C2 PFDA	13PF OA	Ave	539488 480980	491558	462142	483499	483740	10.0 10.0	10.0	10.0	10.0	10.0

Curve Type Legend:

Ave = Average ISTD
QuaF = Quadratic ISTD forced zero

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_004.d
Lims ID: IC L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 16-Feb-2018 08:55:33 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\20180216-54164.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 16-Feb-2018 10:55:29 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK013

First Level Reviewer: Ex. 4 CBI Date: 16-Feb-2018 10:27:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.381	1.381	0.0	1.000	1004877	8.25		5011	
298.90 > 99.00	1.381	1.381	0.0	1.000	703519		1.43(0.00-0.00)	3183	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.510	1.505	0.005	1.000	1055358	10.3		16680	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.662	1.656	0.006	1.000	432087	2.87		1230	
4 Perfluoroheptanoic acid									M
363.00 > 319.00	1.662	1.658	0.004	1.000	89434	0.9884		25.8	M
* 6 13C2-PFOA									
415.00 > 370.00	1.866	1.859	0.007		931713	10.0		9317	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.866	1.860	0.006	1.000	170858	1.91		8.2	
413.00 > 169.00	1.866	1.860	0.006	1.000	97793		1.75(0.00-0.00)	20.1	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.124	2.109	0.015	1.000	339345	3.83		616	a
499.00 > 99.00	2.124	2.109	0.015	1.000	75172		4.51(0.00-0.00)	93.5	
* 7 13C4 PFOS									
503.00 > 80.00	2.124	2.114	0.010		2685321	28.7		10079	
9 Perfluorononanoic acid									
463.00 > 419.00	2.132	2.122	0.010	1.000	119635	2.09		13.5	
$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.270	0.006	1.000	539488	11.0		5616	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

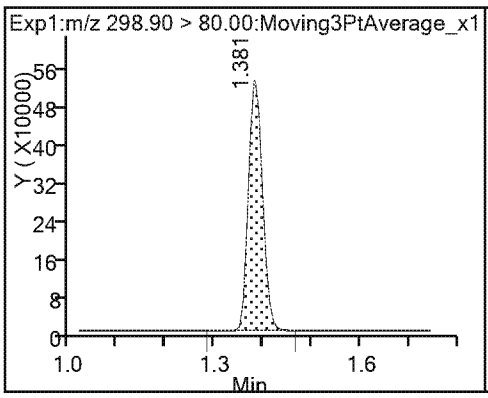
Reagents:

LC537-L1_00021 Amount Added: 1.00 Units: mL

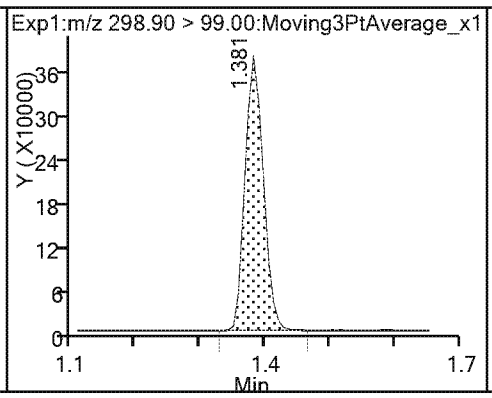
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_004.d
Injection Date: 16-Feb-2018 08:55:33 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

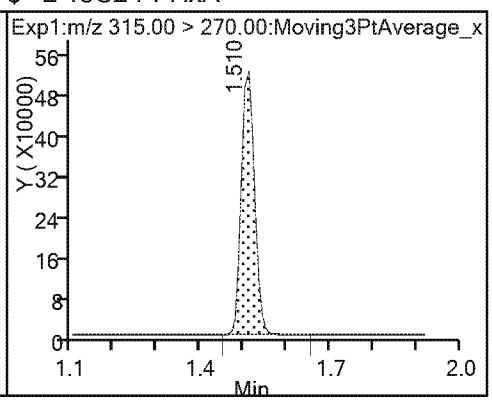
1 Perfluorobutanesulfonic acid



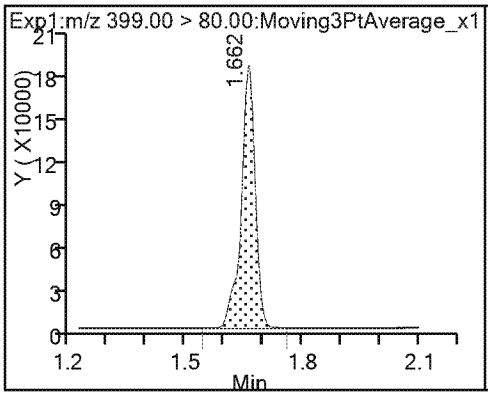
1 Perfluorobutanesulfonic acid



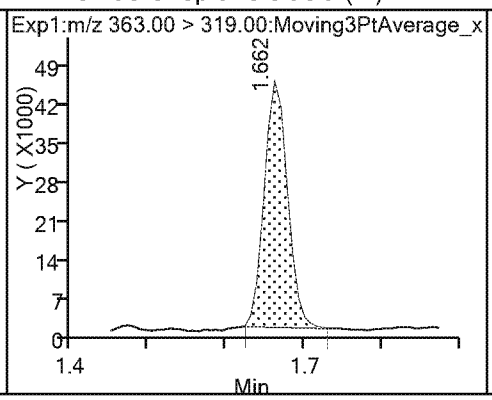
$ 2 13C2 PFHxA



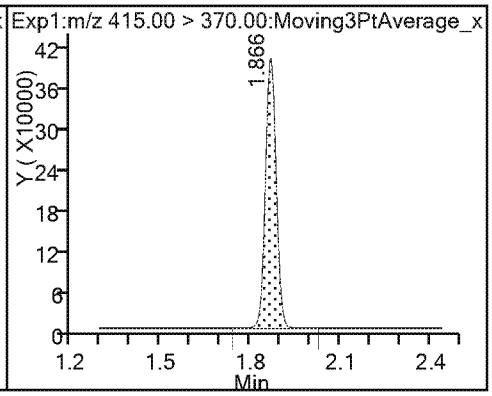
3 Perfluorohexanesulfonic acid



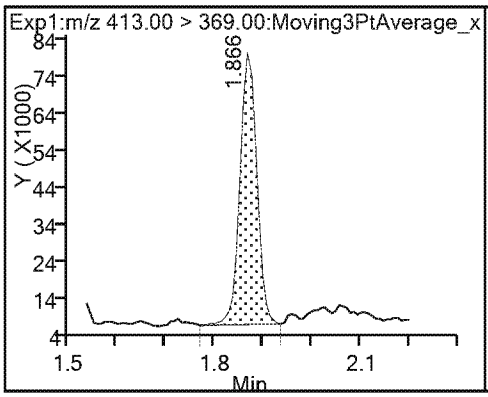
4 Perfluoroheptanoic acid (M)



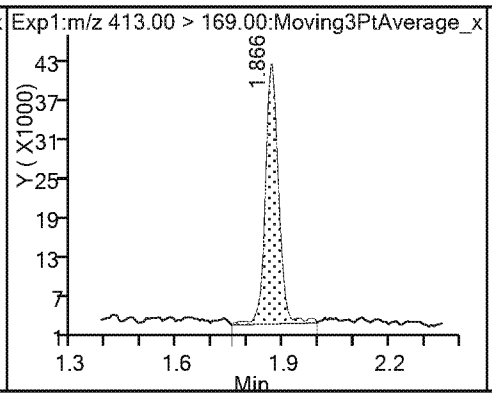
* 6 13C2-PFOA



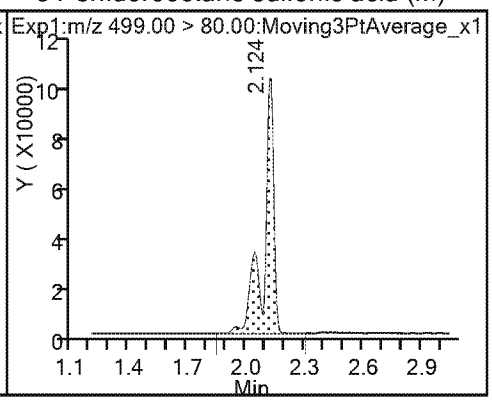
5 Perfluorooctanoic acid



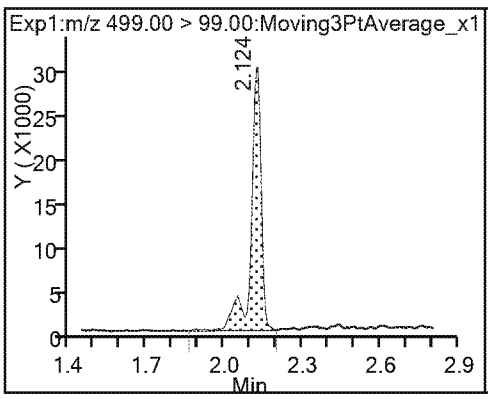
5 Perfluorooctanoic acid



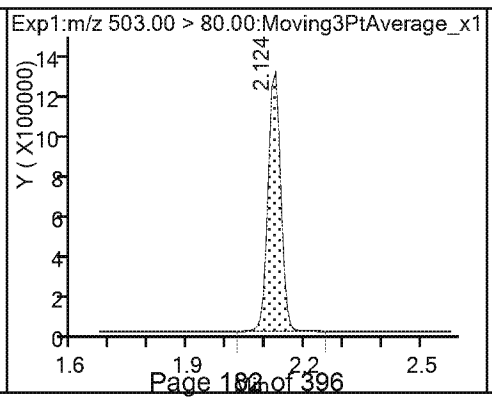
8 Perfluorooctane sulfonic acid (M)



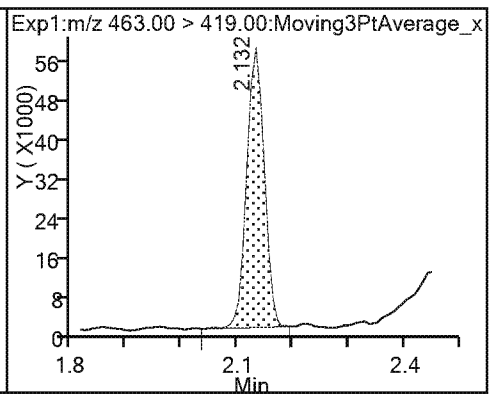
8 Perfluorooctane sulfonic acid



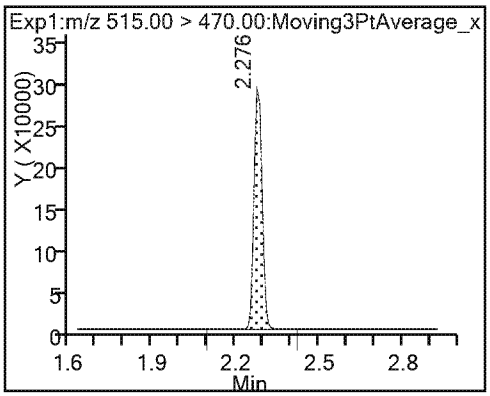
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.276
Y (X10000)
35
30
25
20
15
10
5
0
1.6
1.9
2.2
2.5
2.8
Min

TestAmerica Sacramento

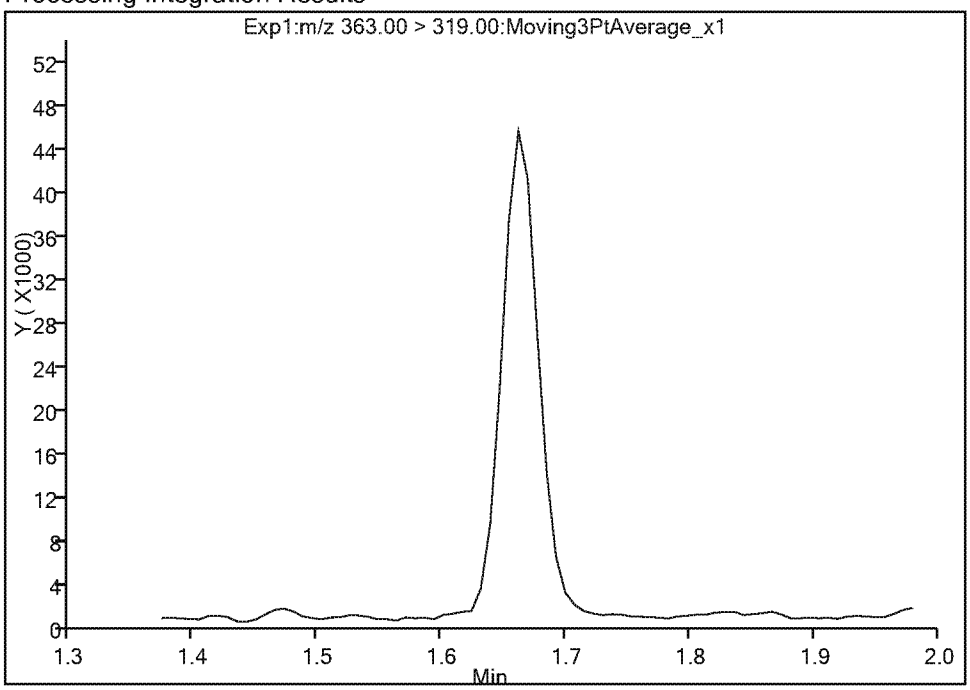
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_004.d				
Injection Date:	16-Feb-2018 08:55:33	Instrument ID:	A8_N		
Lims ID:	IC L1				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

4 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

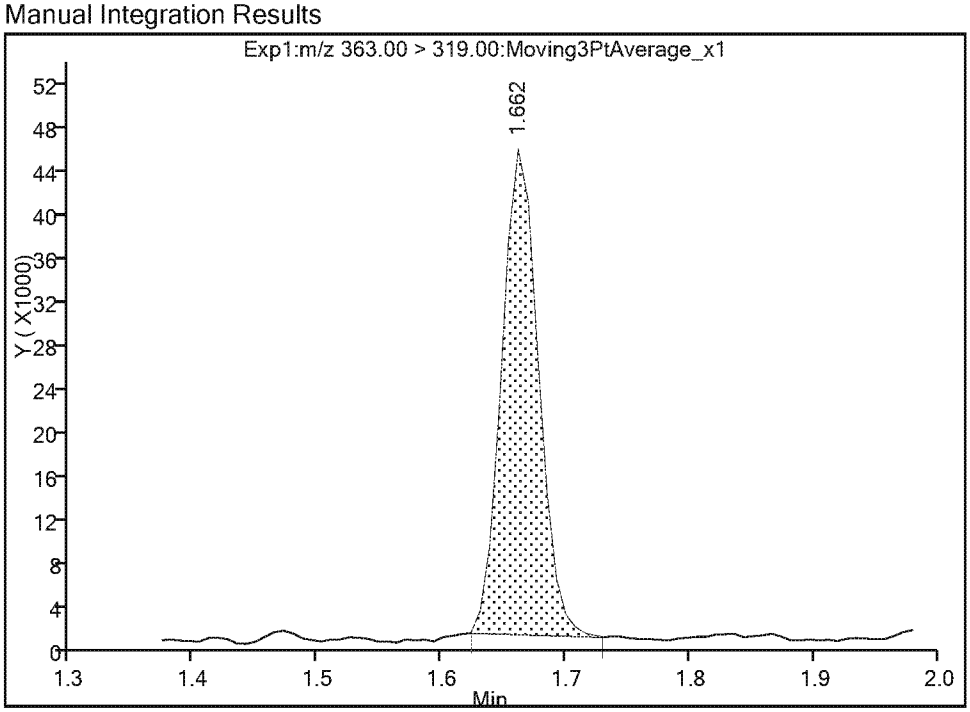
Processing Integration Results

Not Detected
Expected RT: 1.66



Manual Integration Results

RT: 1.66
Area: 89434
Amount: 0.988420
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 16-Feb-2018 10:26:41
Audit Action: Manually Integrated Audit Reason: Assign Peak

TestAmerica Sacramento

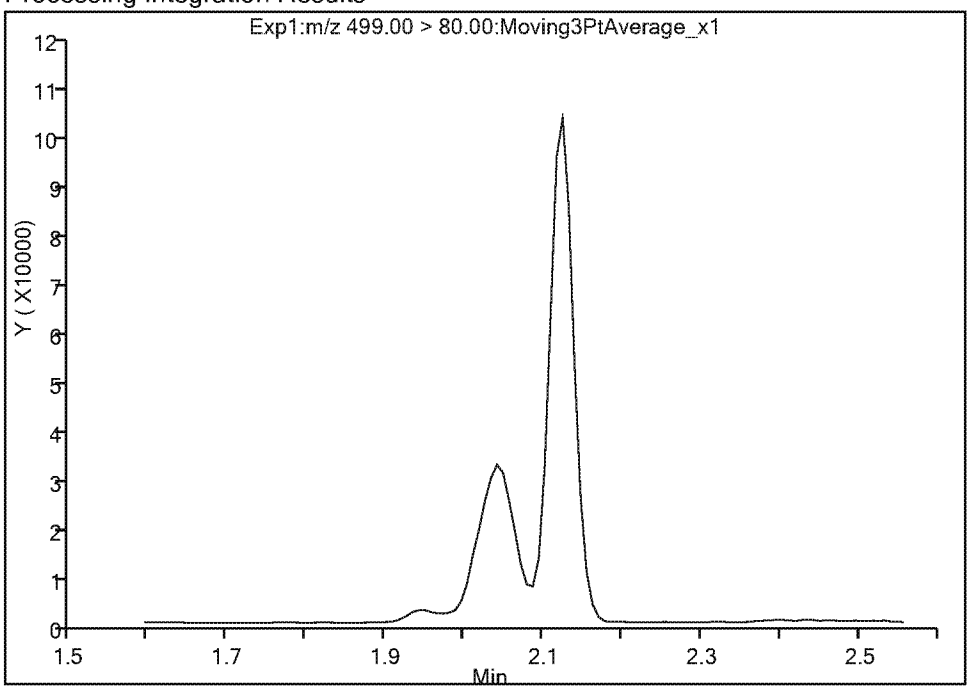
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_004.d				
Injection Date:	16-Feb-2018 08:55:33	Instrument ID:	A8_N		
Lims ID:	IC L1				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

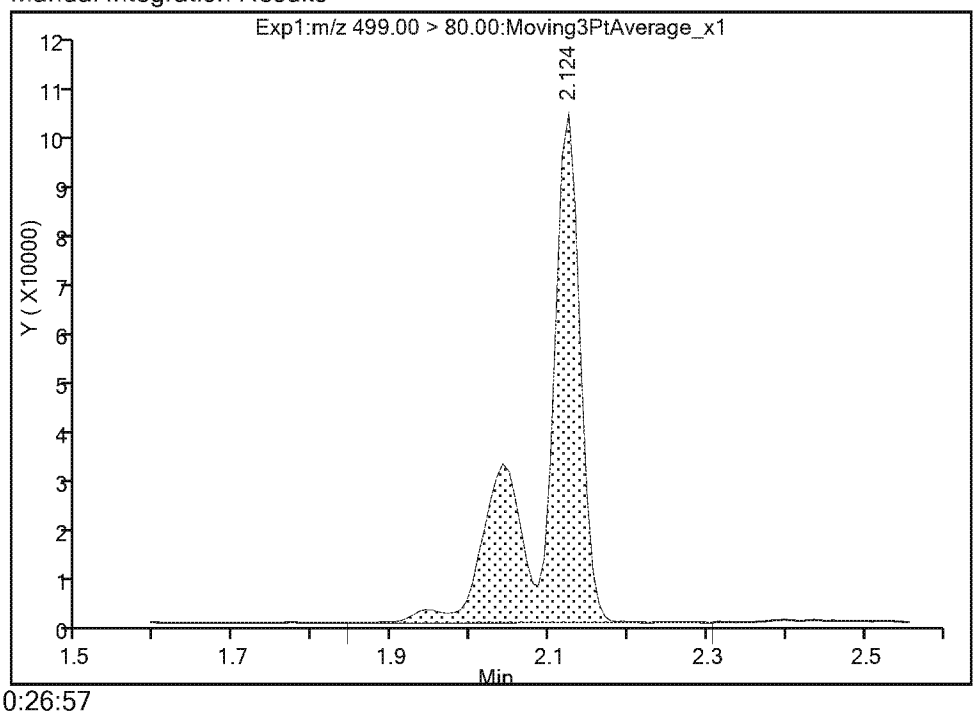
Processing Integration Results

Not Detected
Expected RT: 2.11



Manual Integration Results

RT: 2.12
Area: 339345
Amount: 3.833062
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 16-Feb-2018 10:26:57
Audit Action: Assigned Compound ID Audit Reason: Assign Peak

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_005.d
Lims ID: IC L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 16-Feb-2018 09:00:16 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\20180216-54164.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 16-Feb-2018 10:55:30 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK013

First Level Reviewer: Ex. 4 CBI Date: 16-Feb-2018 10:29:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.381	1.381	0.0	1.000	2401851	19.9		11847	
298.90 > 99.00	1.381	1.381	0.0	1.000	1648571		1.46(0.00-0.00)	6533	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.510	1.505	0.005	1.000	1029524	9.47		13087	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.662	1.656	0.006	1.000	1039145	6.82		2484	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.662	1.658	0.004	1.000	208408	2.17		62.0	
* 6 13C2-PFOA									
415.00 > 370.00	1.866	1.859	0.007		988244	10.0		9787	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.866	1.860	0.006	1.000	443975	4.67		19.7	
413.00 > 169.00	1.866	1.860	0.006	1.000	241410		1.84(0.00-0.00)	47.8	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.117	2.109	0.008	1.000	801200	8.95		1624	a
499.00 > 99.00	2.117	2.109	0.008	1.000	172636		4.64(0.00-0.00)	228	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.114	0.003		2714895	28.7		10005	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.122	0.002	1.000	255853	4.21		29.7	
$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.270	0.006	1.000	491558	9.49		5500	

QC Flag Legend

Review Flags

a - User Assigned ID

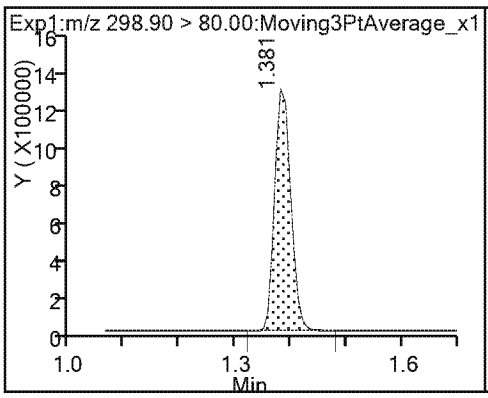
Reagents:

LC537-L2_00021 Amount Added: 1.00 Units: mL

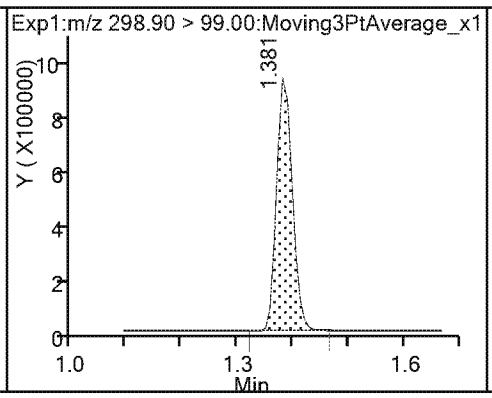
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_005.d
Injection Date: 16-Feb-2018 09:00:16 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

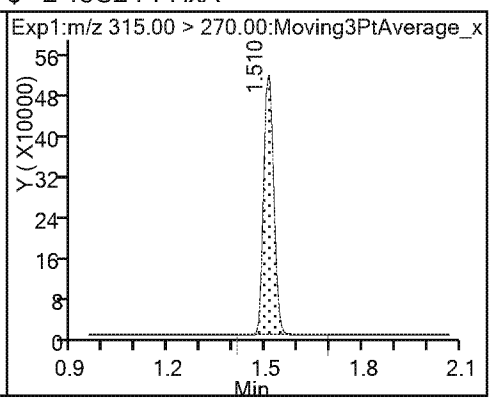
1 Perfluorobutanesulfonic acid



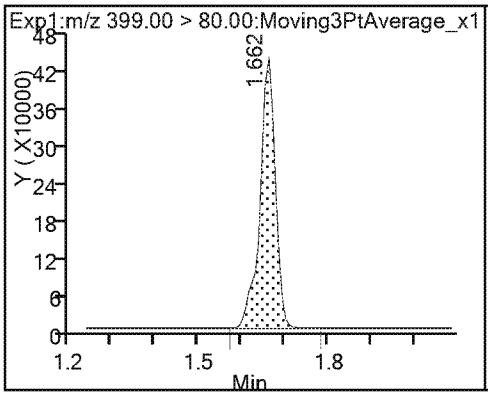
1 Perfluorobutanesulfonic acid



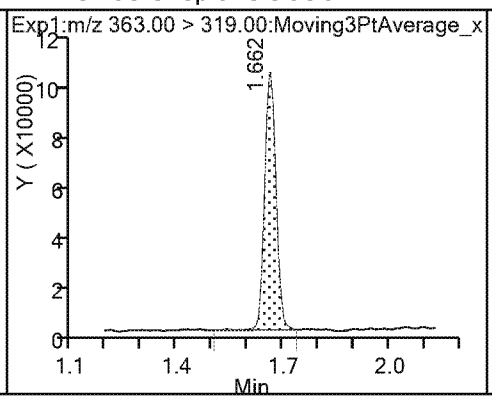
$ 2 13C2 PFHxA



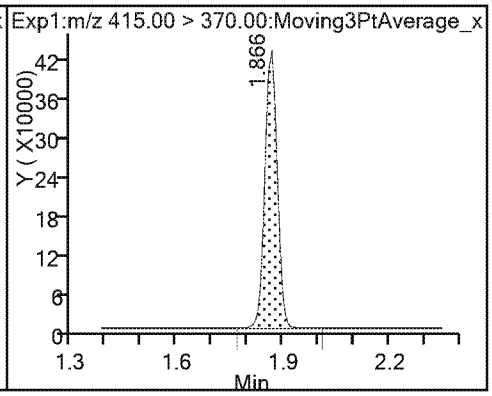
3 Perfluorohexanesulfonic acid



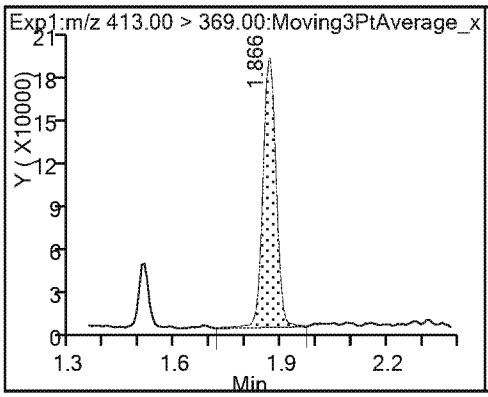
4 Perfluoroheptanoic acid



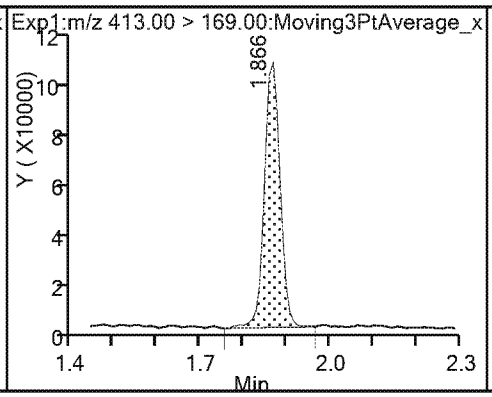
* 6 13C2-PFOA



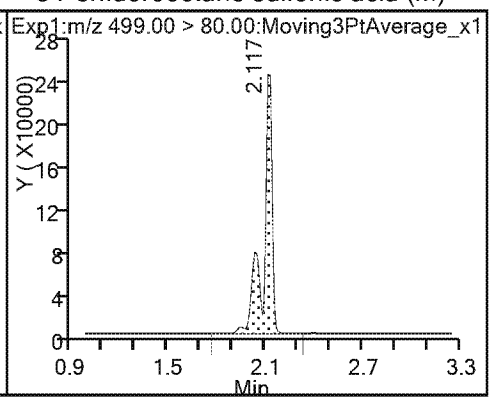
5 Perfluorooctanoic acid



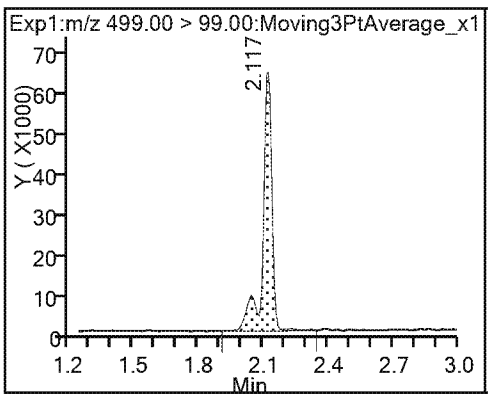
5 Perfluorooctanoic acid



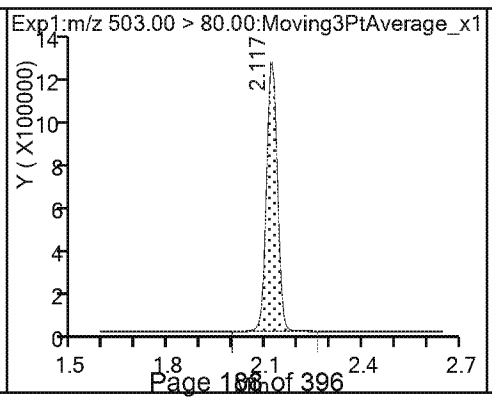
8 Perfluorooctane sulfonic acid (M)



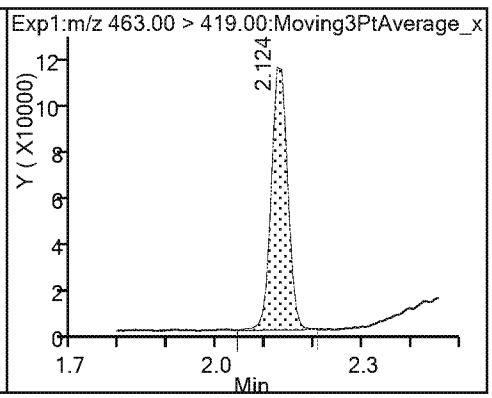
8 Perfluorooctane sulfonic acid



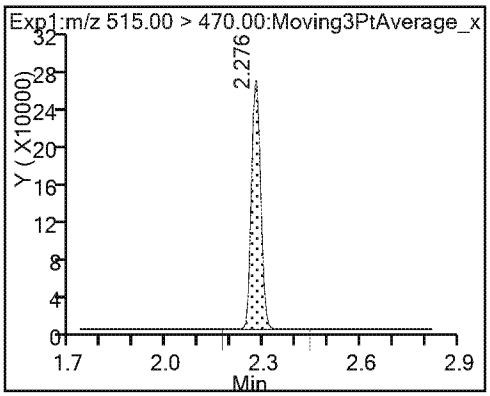
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.276
Y (X10000)
32
28
24
20
16
12
8
4
0
1.7
2.0
2.3
2.6
2.9
Min

TestAmerica Sacramento

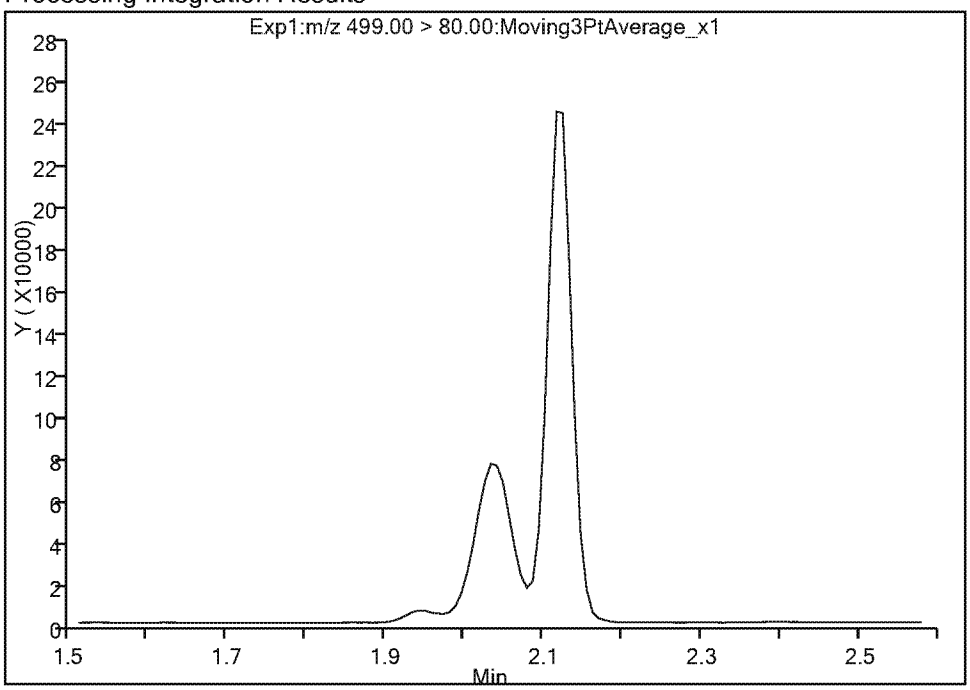
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_005.d				
Injection Date:	16-Feb-2018 09:00:16	Instrument ID:	A8_N		
Lims ID:	IC L2				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

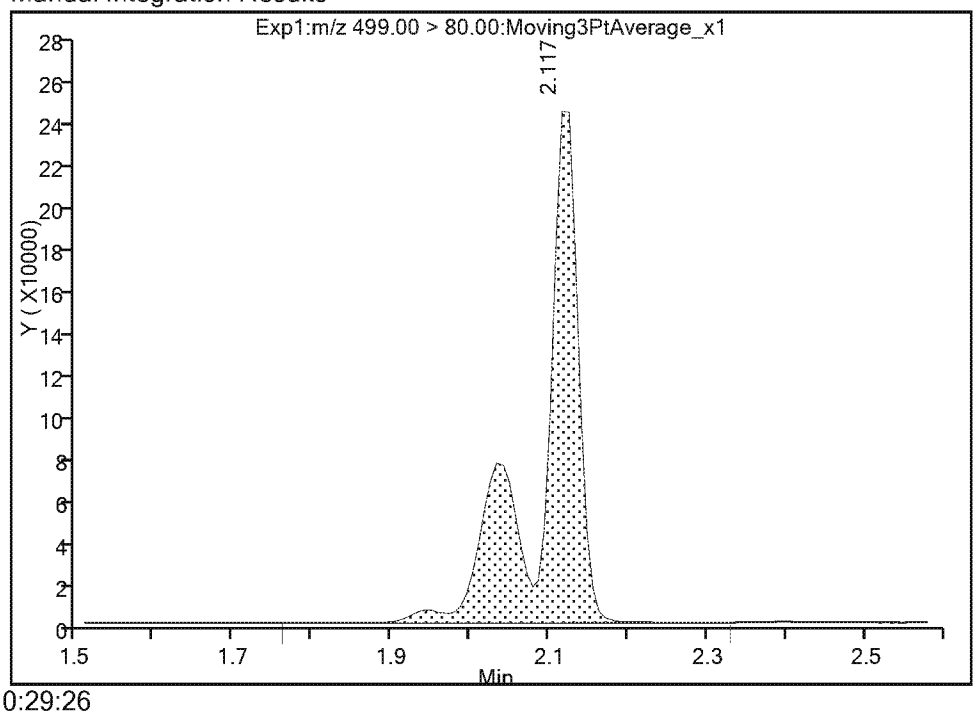
Not Detected
Expected RT: 2.11

Processing Integration Results



Manual Integration Results

RT: 2.12
Area: 801200
Amount: 8.951348
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 16-Feb-2018 10:29:26
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_006.d
Lims ID: IC L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 16-Feb-2018 09:05:01 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\20180216-54164.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 16-Feb-2018 10:55:31 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK013

First Level Reviewer: Ex. 4 CBI Date: 16-Feb-2018 10:30:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.381	1.381	0.0	1.000	5386060	46.6		24881	
298.90 > 99.00	1.381	1.381	0.0	1.000	3691119		1.46(0.00-0.00)	13454	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.502	1.505	-0.003	1.000	1031304	9.48		13749	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.654	1.656	-0.002	1.000	2300670	15.1		5477	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.662	1.658	0.004	1.000	467875	4.87		141	
* 6 13C2-PFOA									
415.00 > 370.00	1.859	1.859	0.0		988820	10.0		11038	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.859	1.860	-0.001	1.000	956930	10.1		43.8	
413.00 > 169.00	1.859	1.860	-0.001	1.000	520439		1.84(0.00-0.00)	103	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.117	2.109	0.008	1.000	1821248	20.3		3507	a
499.00 > 99.00	2.117	2.109	0.008	1.000	390582		4.66(0.00-0.00)	507	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.114	0.003		2717621	28.7		11170	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.122	0.002	1.000	592583	9.74		77.0	
$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.270	-0.002	1.000	462142	8.91		5257	

QC Flag Legend

Review Flags

a - User Assigned ID

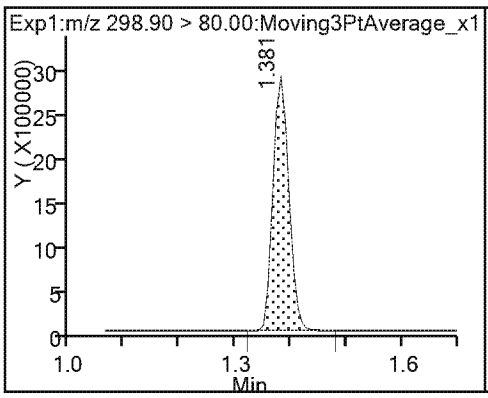
Reagents:

LC537-L3_00024 Amount Added: 1.00 Units: mL

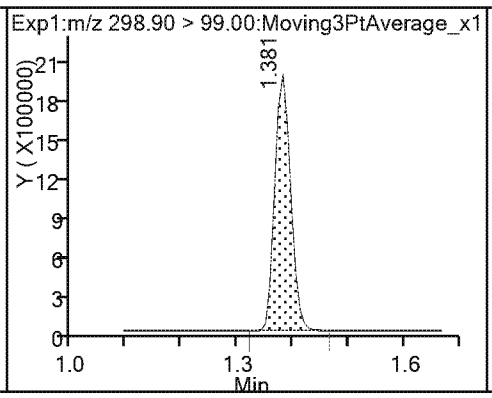
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_006.d
Injection Date: 16-Feb-2018 09:05:01 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

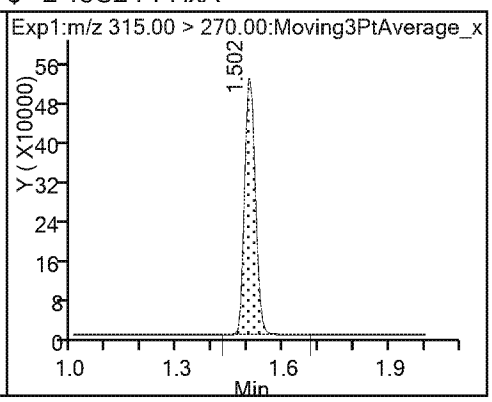
1 Perfluorobutanesulfonic acid



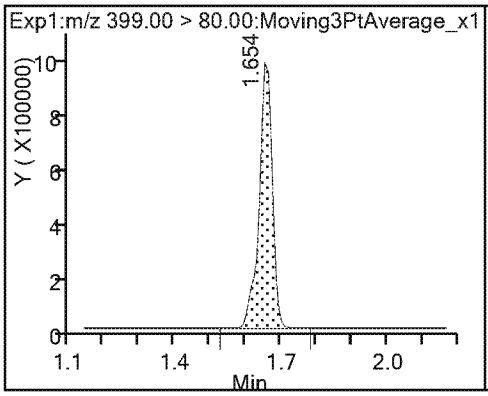
1 Perfluorobutanesulfonic acid



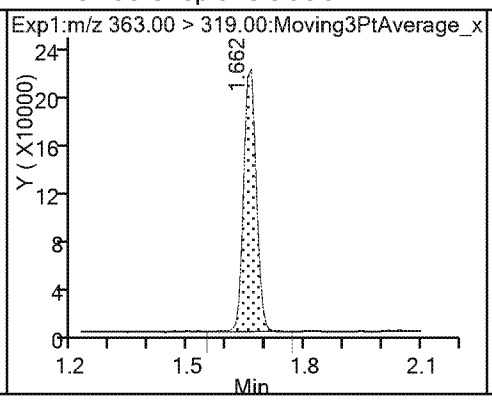
$ 2 13C2 PFHxA



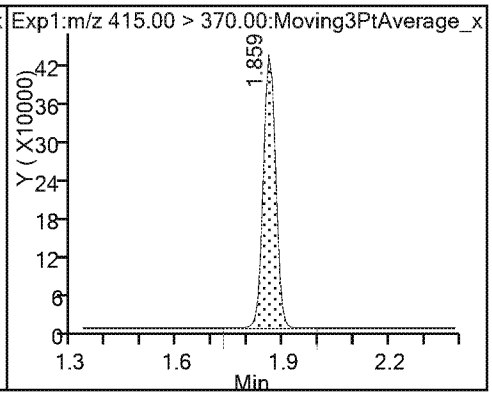
3 Perfluorohexanesulfonic acid



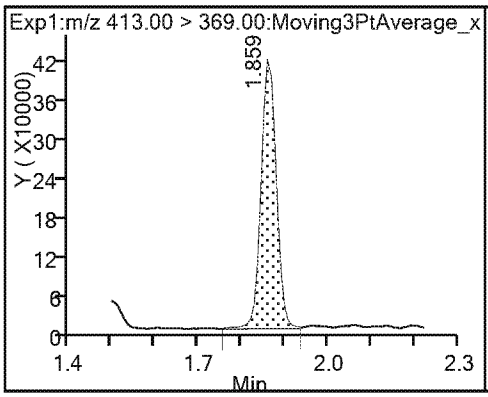
4 Perfluoroheptanoic acid



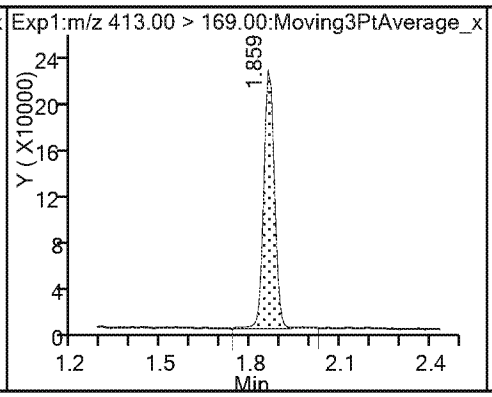
* 6 13C2-PFOA



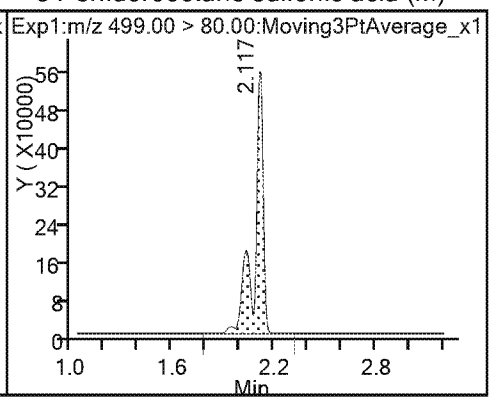
5 Perfluorooctanoic acid



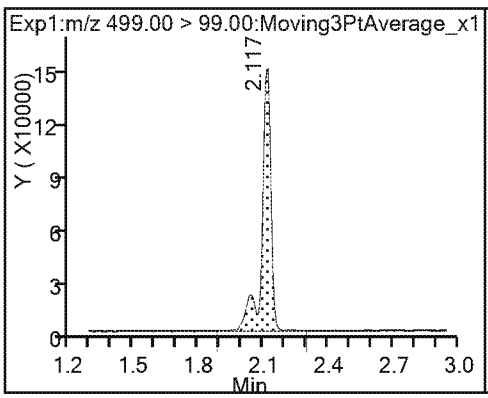
5 Perfluorooctanoic acid



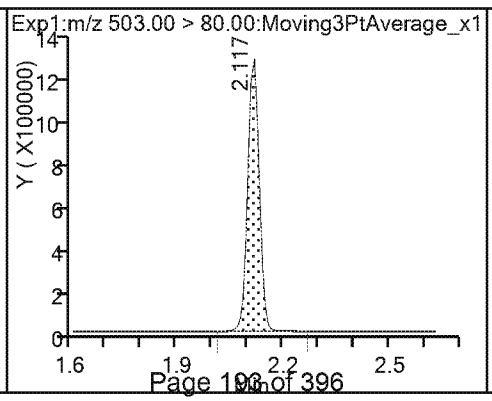
8 Perfluorooctane sulfonic acid (M)



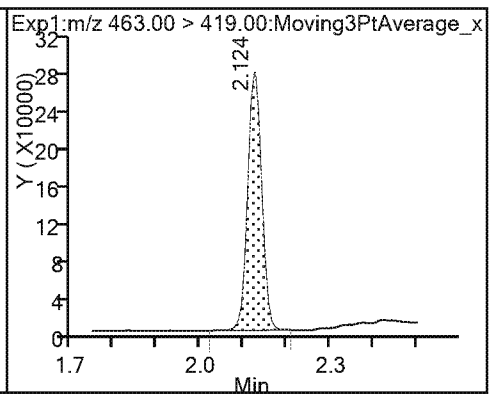
8 Perfluorooctane sulfonic acid



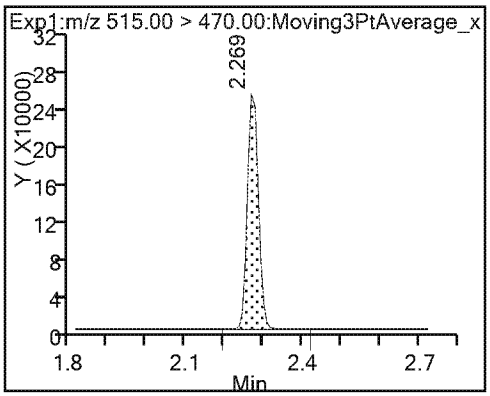
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.269
Y (X10000)
32
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

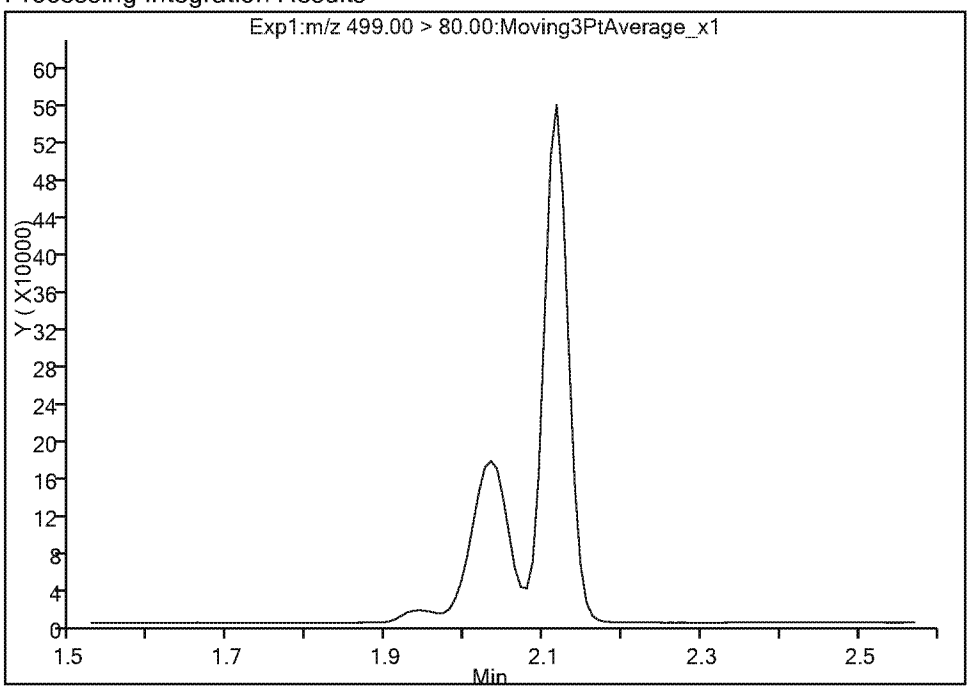
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_006.d				
Injection Date:	16-Feb-2018 09:05:01	Instrument ID:	A8_N		
Lims ID:	IC L3				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

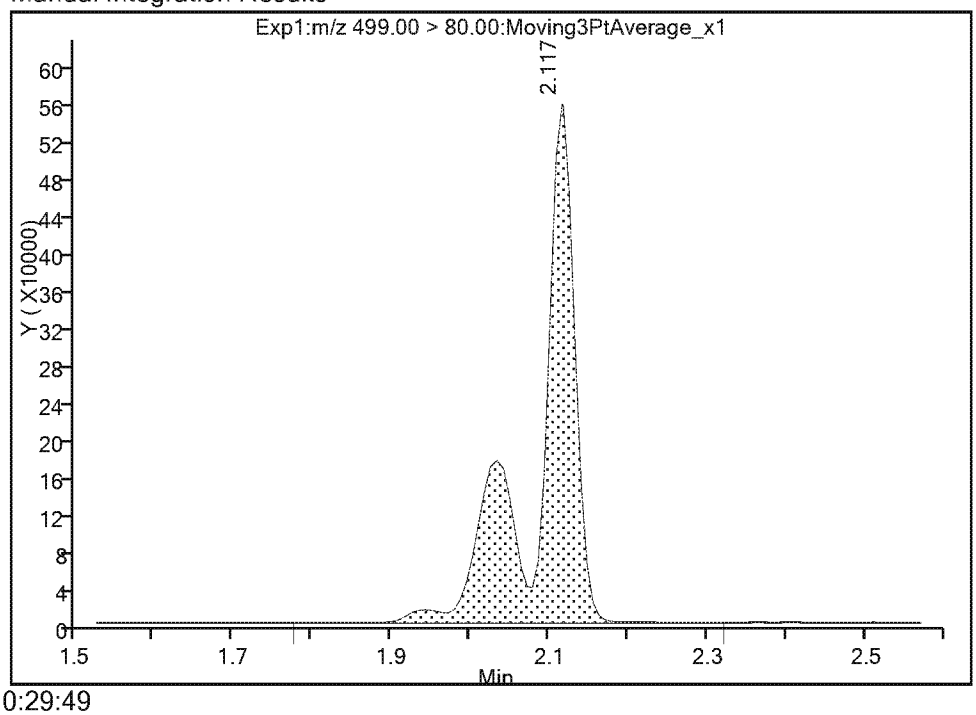
Processing Integration Results

Not Detected
Expected RT: 2.11



Manual Integration Results

RT: 2.12
Area: 1821248
Amount: 20.327349
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 16-Feb-2018 10:29:49
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_007.d
Lims ID: IC L4
Client ID:
Sample Type: ICISAV Calib Level: 4
Inject. Date: 16-Feb-2018 09:09:42 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\20180216-54164.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 16-Feb-2018 10:55:32 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK013

First Level Reviewer: Ex. 4 CBI Date: 16-Feb-2018 10:30:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.381	1.381	0.0	1.000	9625497	87.9		31459	
298.90 > 99.00	1.381	1.381	0.0	1.000	6951294		1.38(0.00-0.00)	19310	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.502	1.505	-0.003	1.000	1021204	10.5		12876	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.654	1.656	-0.002	1.000	4635169	29.8		9685	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.654	1.658	-0.004	1.000	919334	10.7		269	
* 6 13C2-PFOA									
415.00 > 370.00	1.851	1.859	-0.008		884854	10.0		8810	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.859	1.860	-0.001	1.000	1711070	20.1		75.8	
413.00 > 169.00	1.859	1.860	-0.001	1.000	935401		1.83(0.00-0.00)	172	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.109	2.109	0.0	1.000	3707450	40.5		7539	a
499.00 > 99.00	2.109	2.109	0.0	1.000	789268		4.70(0.00-0.00)	1168	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.114	-0.005		2774986	28.7		12601	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.122	-0.005	1.000	1157180	21.3		175	
$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.270	-0.002	1.000	483499	10.4		5556	

QC Flag Legend

Review Flags

a - User Assigned ID

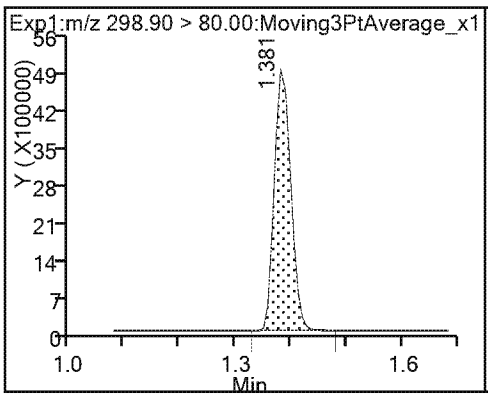
Reagents:

LC537-L4_00021 Amount Added: 1.00 Units: mL

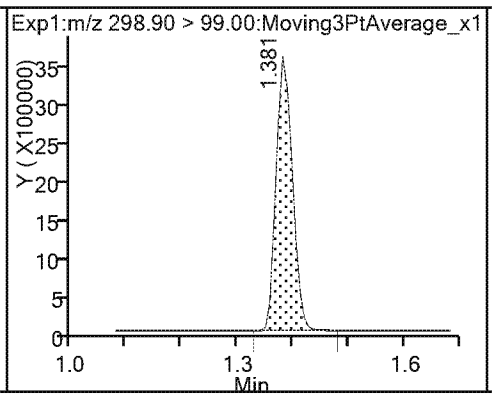
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_007.d
Injection Date: 16-Feb-2018 09:09:42 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

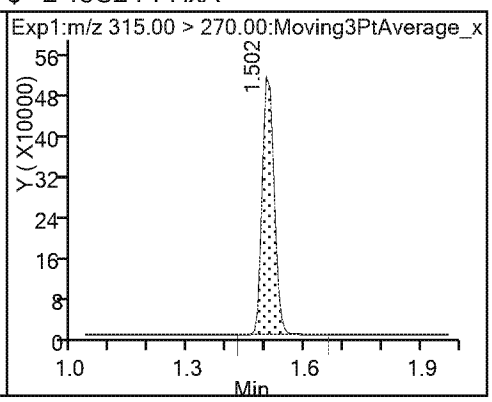
1 Perfluorobutanesulfonic acid



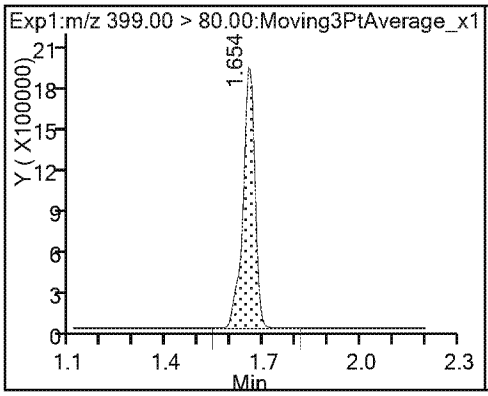
1 Perfluorobutanesulfonic acid



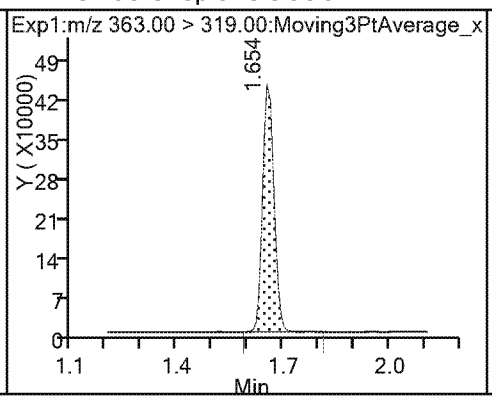
$ 2 13C2 PFHxA



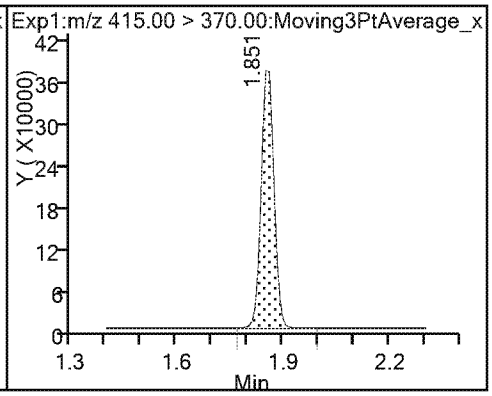
3 Perfluorohexanesulfonic acid



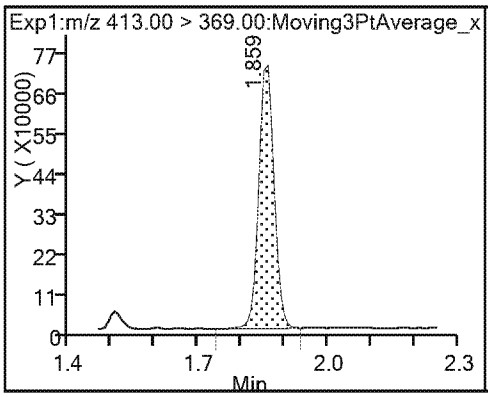
4 Perfluoroheptanoic acid



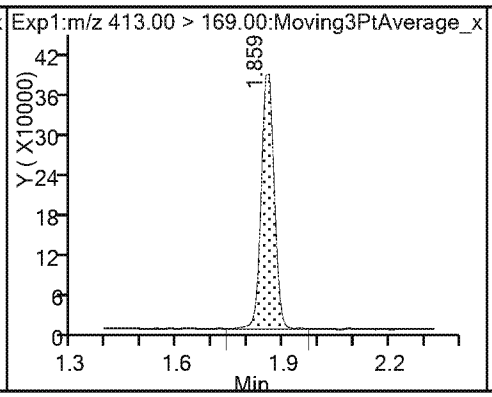
* 6 13C2-PFOA



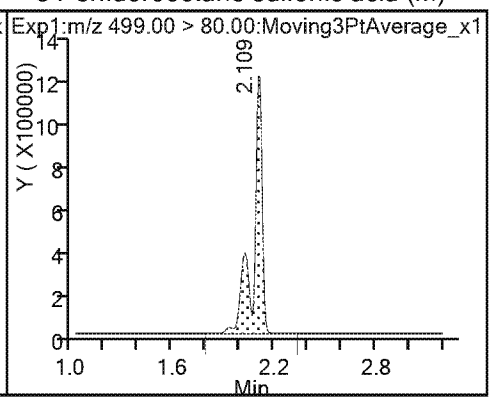
5 Perfluorooctanoic acid



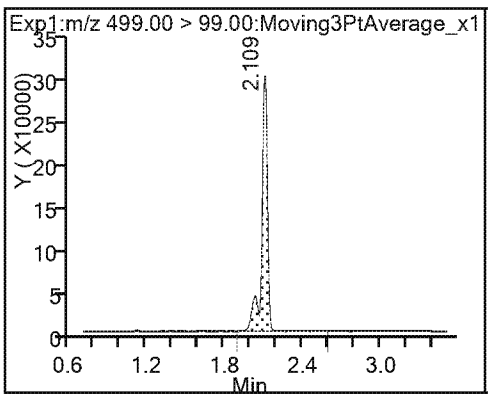
5 Perfluorooctanoic acid



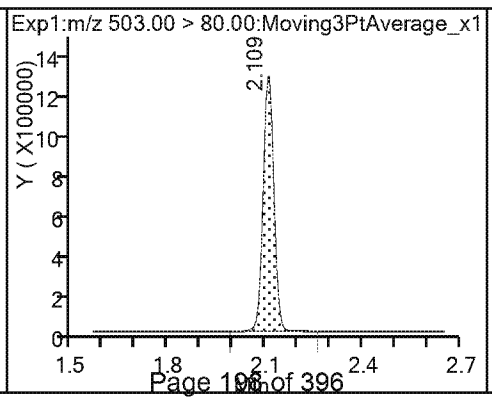
8 Perfluorooctane sulfonic acid (M)



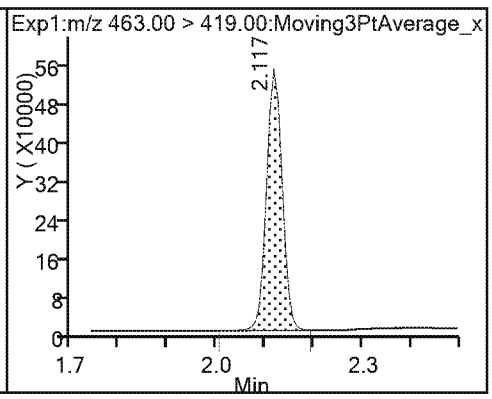
8 Perfluorooctane sulfonic acid



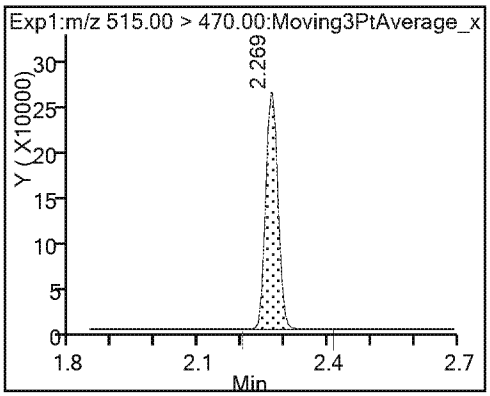
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.269
Y (X10000)
30
25
20
15
10
5
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

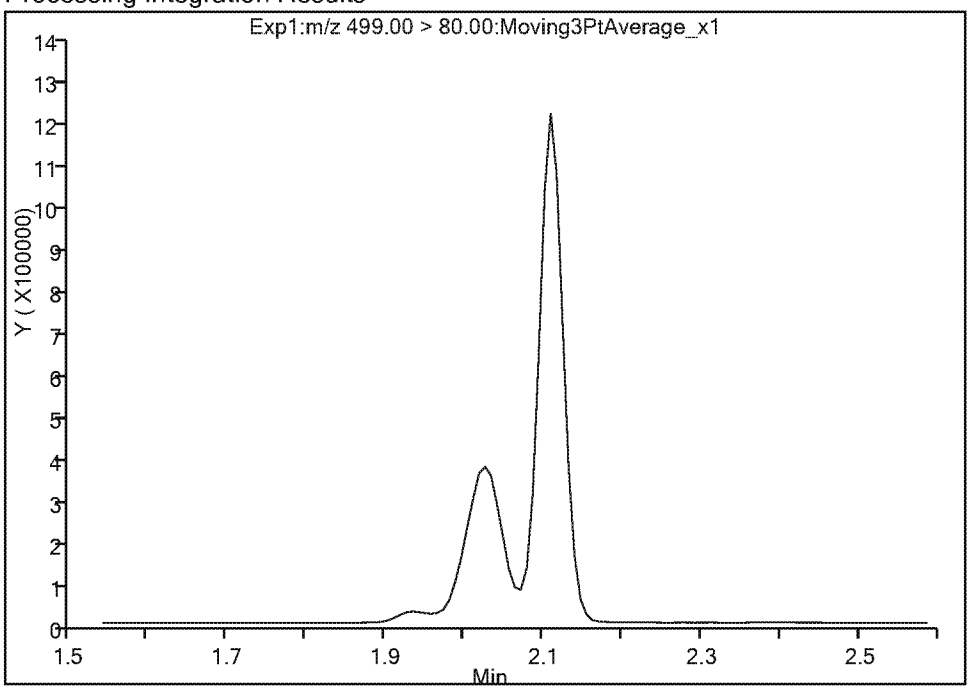
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_007.d				
Injection Date:	16-Feb-2018 09:09:42	Instrument ID:	A8_N		
Lims ID:	IC L4				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

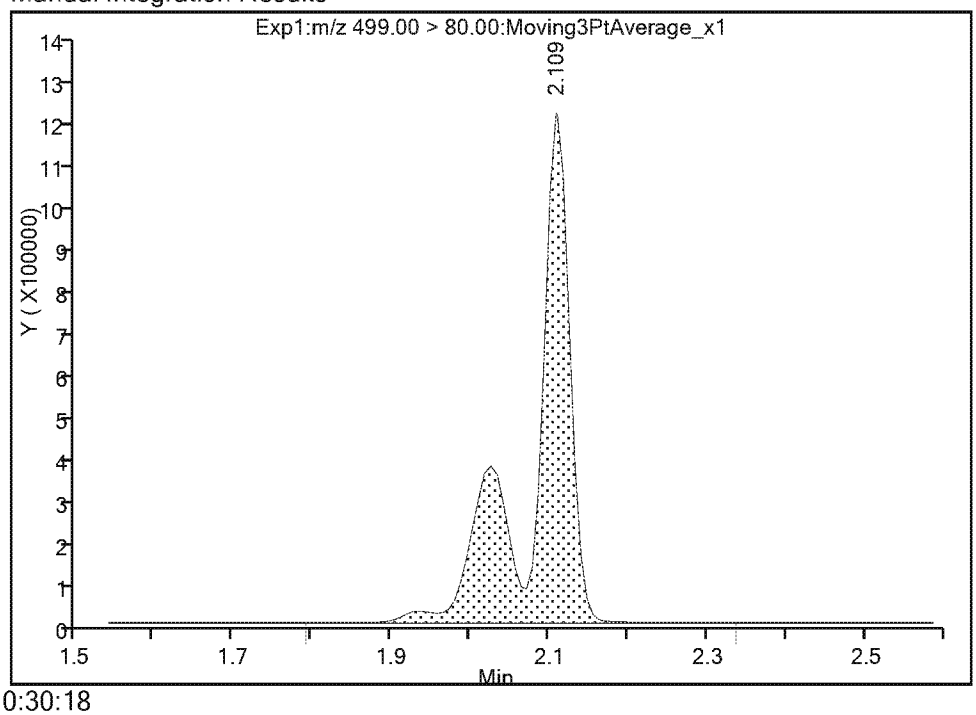
Not Detected
Expected RT: 2.11

Processing Integration Results



Manual Integration Results

RT: 2.11
Area: 3707450
Amount: 40.524256
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 16-Feb-2018 10:30:18
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_008.d
Lims ID: IC L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 16-Feb-2018 09:14:23 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\20180216-54164.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 16-Feb-2018 10:55:33 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK013

First Level Reviewer: Ex. 4 CBI Date: 16-Feb-2018 10:31:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.381	1.381	0.0	1.000	13334361	136.5		33692	
298.90 > 99.00	1.381	1.381	0.0	1.000	9982883		1.34(0.00-0.00)	24528	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.502	1.505	-0.003	1.000	998008	9.69		16387	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.654	1.656	-0.002	1.000	7088297	46.4		14215	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.654	1.658	-0.004	1.000	1334846	14.7		427	
* 6 13C2-PFOA									
415.00 > 370.00	1.851	1.859	-0.008		936458	10.0		9383	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.851	1.860	-0.009	1.000	2767901	30.7		125	
413.00 > 169.00	1.851	1.860	-0.009	1.000	1502671		1.84(0.00-0.00)	280	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.109	2.109	0.0	1.000	5544581	61.8		11632	a
499.00 > 99.00	2.109	2.109	0.0	1.000	1138506		4.87(0.00-0.00)	1480	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.114	-0.005		2722967	28.7		9525	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.122	-0.005	1.000	1675602	29.1		264	
$ 10 13C2 PFDA									
515.00 > 470.00	2.261	2.270	-0.009	1.000	483740	9.85		5874	

QC Flag Legend

Review Flags

a - User Assigned ID

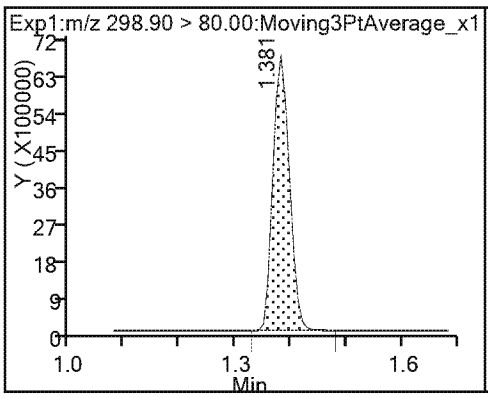
Reagents:

LC537-L5_00025 Amount Added: 1.00 Units: mL

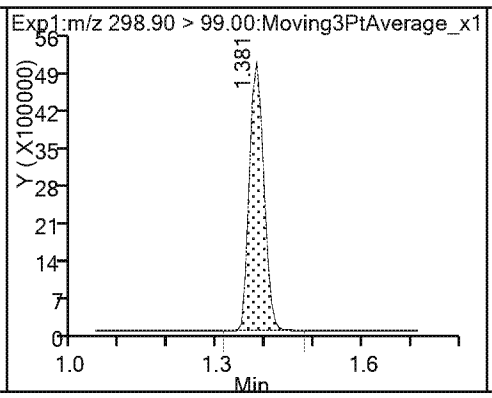
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_008.d
Injection Date: 16-Feb-2018 09:14:23 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

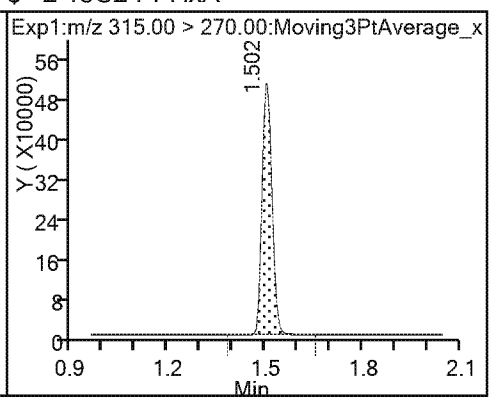
1 Perfluorobutanesulfonic acid



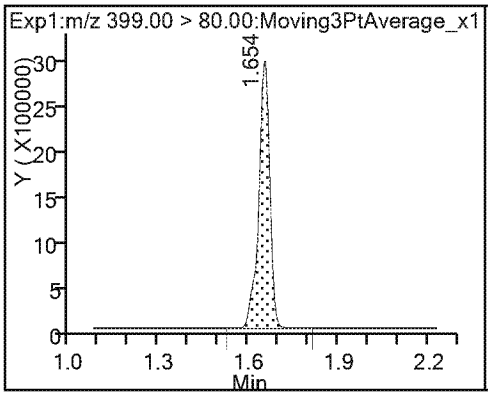
1 Perfluorobutanesulfonic acid



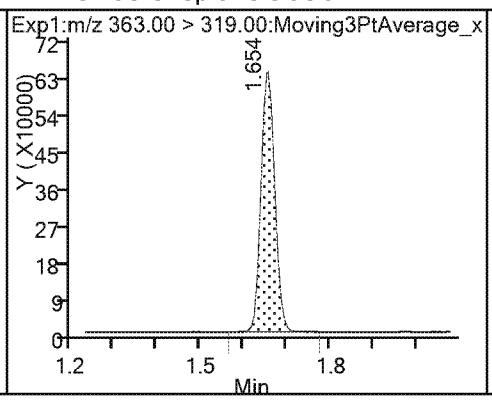
$ 2 13C2 PFHxA



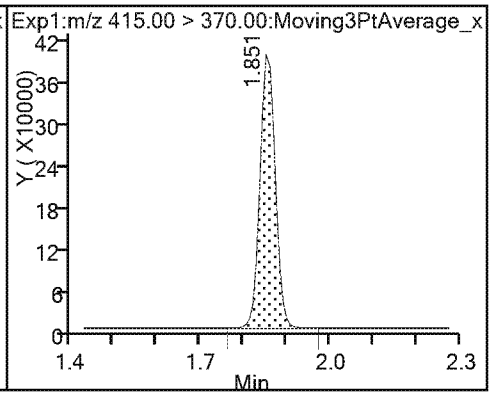
3 Perfluorohexanesulfonic acid



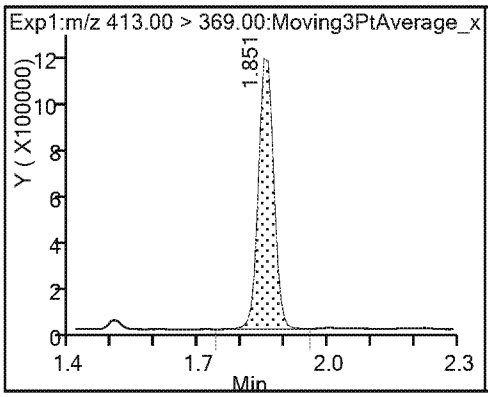
4 Perfluoroheptanoic acid



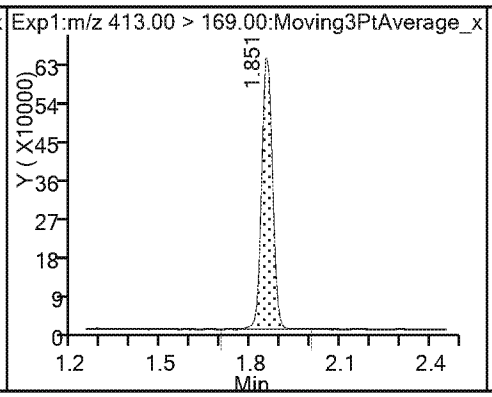
* 6 13C2-PFOA



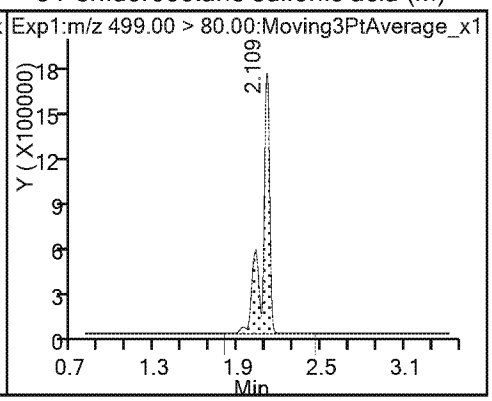
5 Perfluorooctanoic acid



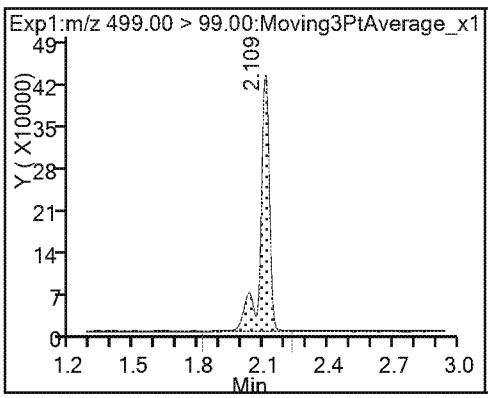
5 Perfluorooctanoic acid



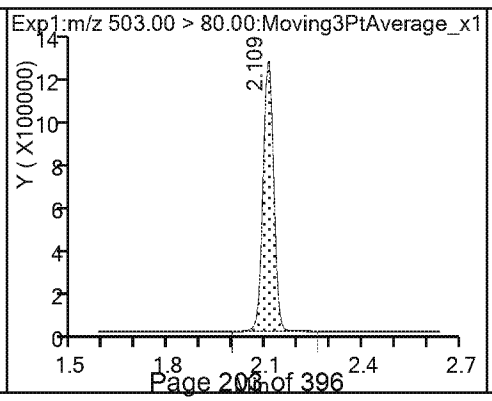
8 Perfluorooctane sulfonic acid (M)



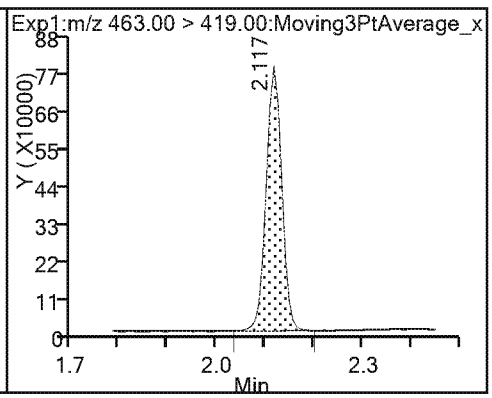
8 Perfluorooctane sulfonic acid



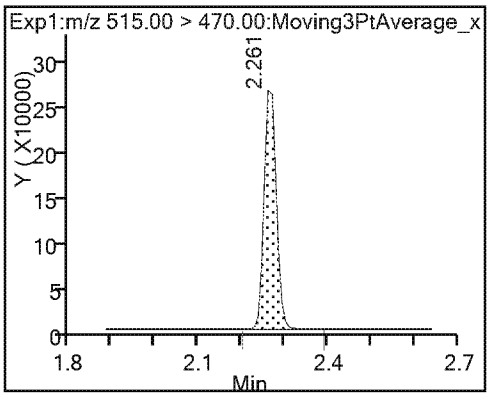
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.261
Y (X10000)
30
25
20
15
10
5
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

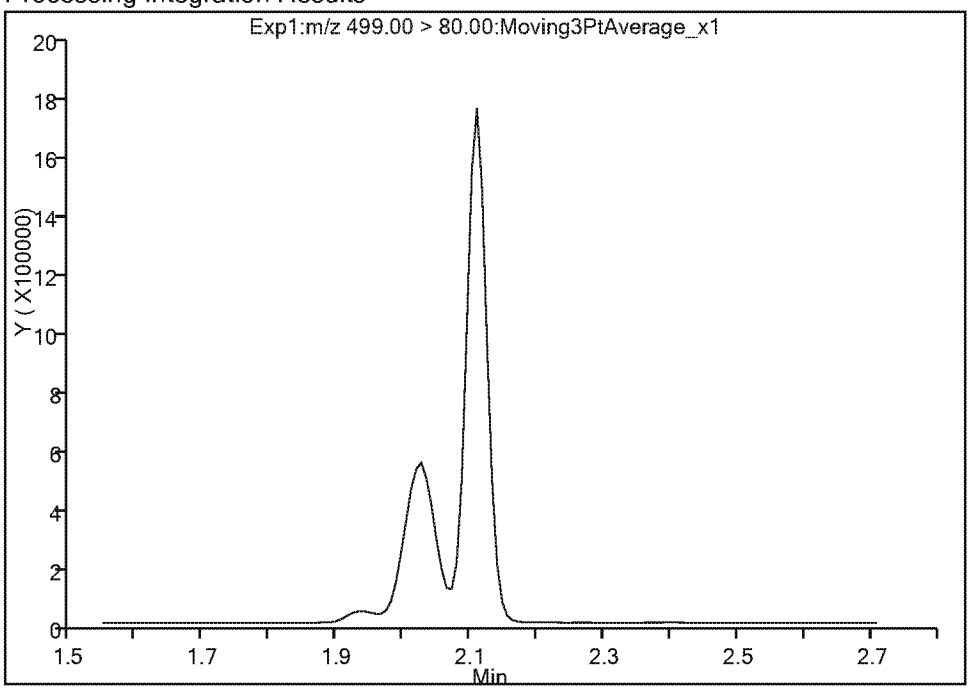
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_008.d				
Injection Date:	16-Feb-2018 09:14:23	Instrument ID:	A8_N		
Lims ID:	IC L5				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

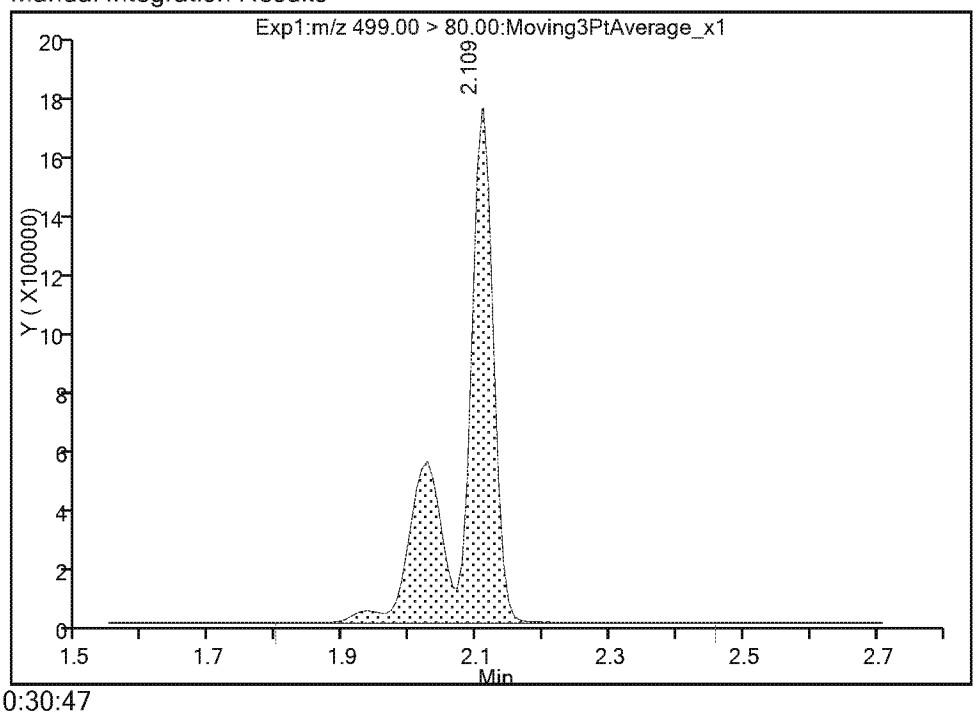
Processing Integration Results

Not Detected
Expected RT: 2.11



Manual Integration Results

RT:	2.11
Area:	5544581
Amount:	61.762790
Amount Units:	ng/ml



Reviewer: Ex. 4 CBI 6-Feb-2018 10:30:47
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d
Lims ID: IC L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 16-Feb-2018 09:19:04 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\20180216-54164.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 16-Feb-2018 10:55:34 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK013

First Level Reviewer: Ex. 4 CBI Date: 16-Feb-2018 10:31:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.381	1.381	0.0	1.000	16112512	179.6		29614	
298.90 > 99.00	1.381	1.381	0.0	1.000	12540779		1.28(0.00-0.00)	25956	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.502	1.505	-0.003	1.000	1037300	10.6		12797	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.654	1.656	-0.002	1.000	9203547	59.7		15723	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.654	1.658	-0.004	1.000	1755879	20.3		523	
* 6 13C2-PFOA									
415.00 > 370.00	1.859	1.859	0.0		892615	10.0		10354	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.859	1.860	-0.001	1.000	3415564	39.8		147	
413.00 > 169.00	1.859	1.860	-0.001	1.000	1839701		1.86(0.00-0.00)	325	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.109	2.109	0.0	1.000	7252490	80.1		13357	a
499.00 > 99.00	2.109	2.109	0.0	1.000	1559390		4.65(0.00-0.00)	2143	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.114	-0.005		2745419	28.7		10250	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.122	-0.005	1.000	2211715	40.3		388	
$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.270	-0.002	1.000	480980	10.3		5555	

QC Flag Legend

Review Flags

a - User Assigned ID

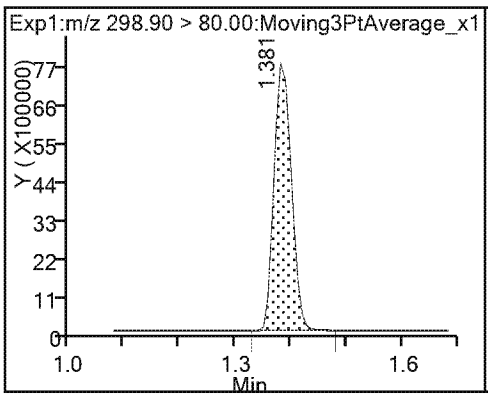
Reagents:

LC537-L6_00021 Amount Added: 1.00 Units: mL

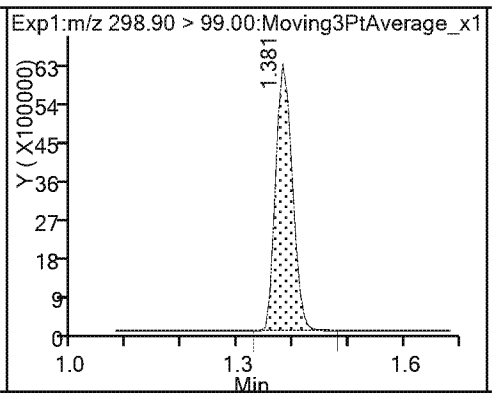
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d
Injection Date: 16-Feb-2018 09:19:04 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

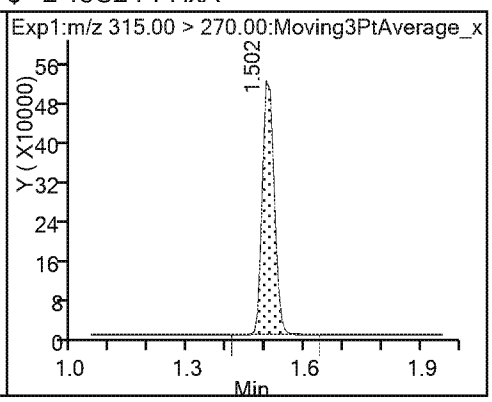
1 Perfluorobutanesulfonic acid



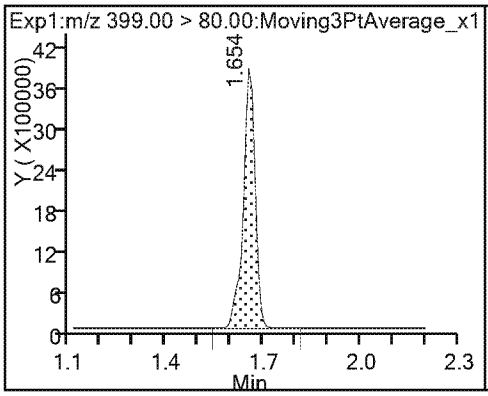
1 Perfluorobutanesulfonic acid



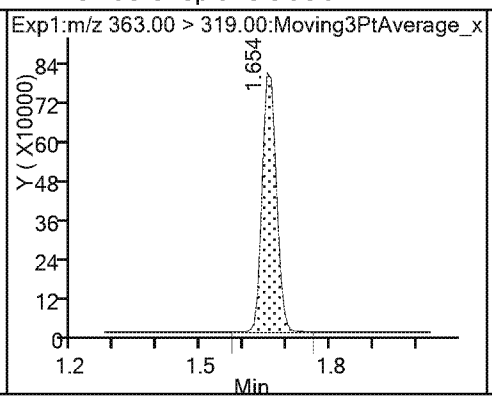
$ 2 13C2 PFHxA



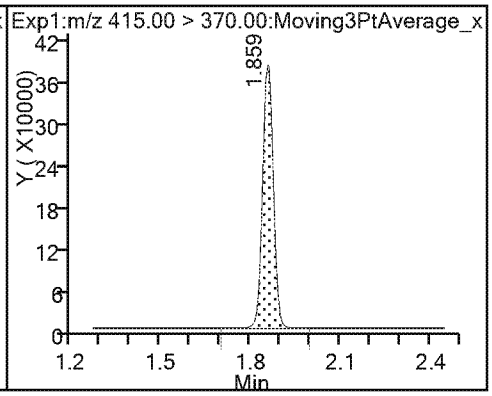
3 Perfluorohexanesulfonic acid



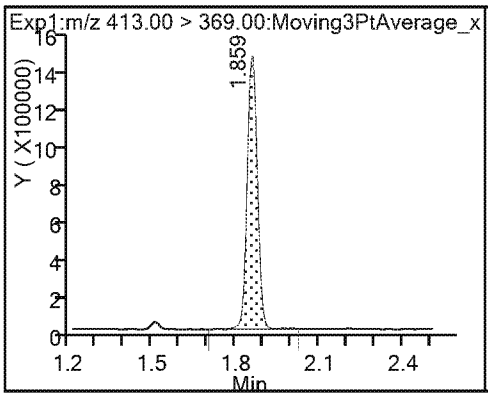
4 Perfluoroheptanoic acid



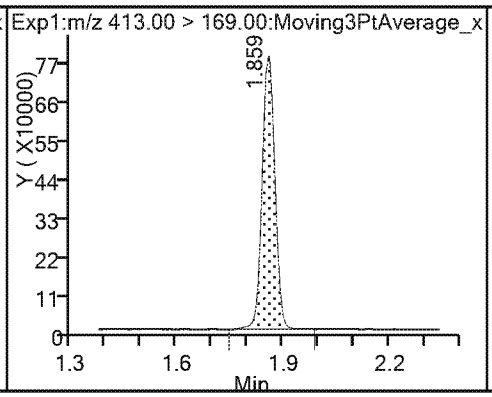
* 6 13C2-PFOA



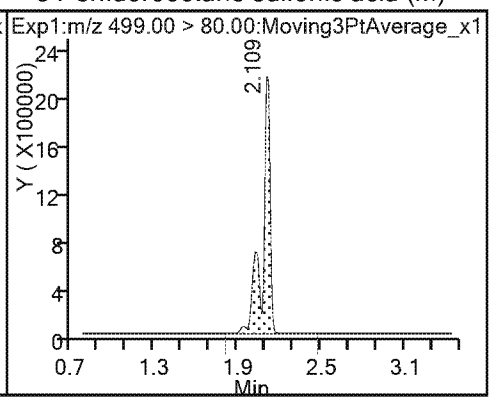
5 Perfluorooctanoic acid



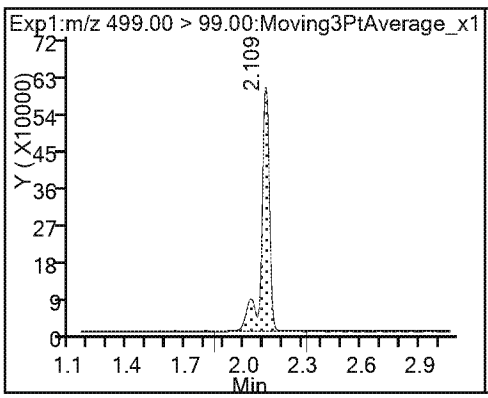
5 Perfluorooctanoic acid



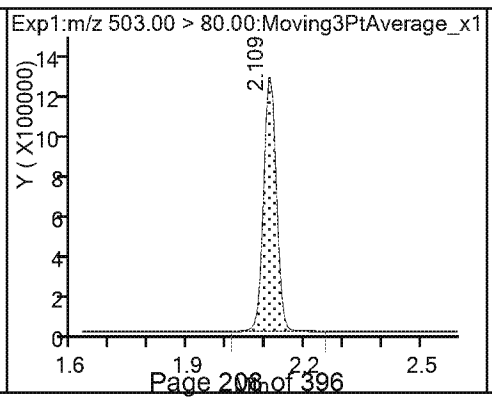
8 Perfluorooctane sulfonic acid (M)



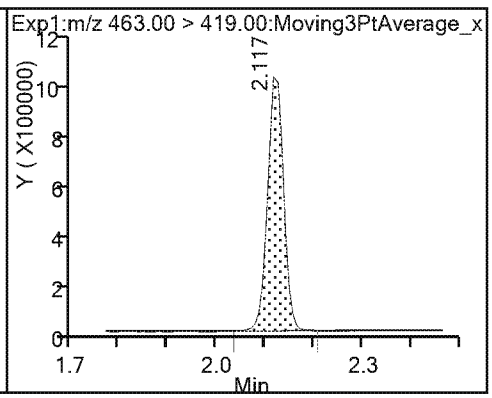
8 Perfluorooctane sulfonic acid



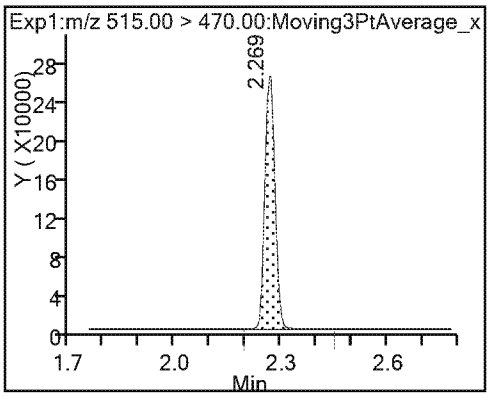
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.269
Y (X10000)
28
24
20
16
12
8
4
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

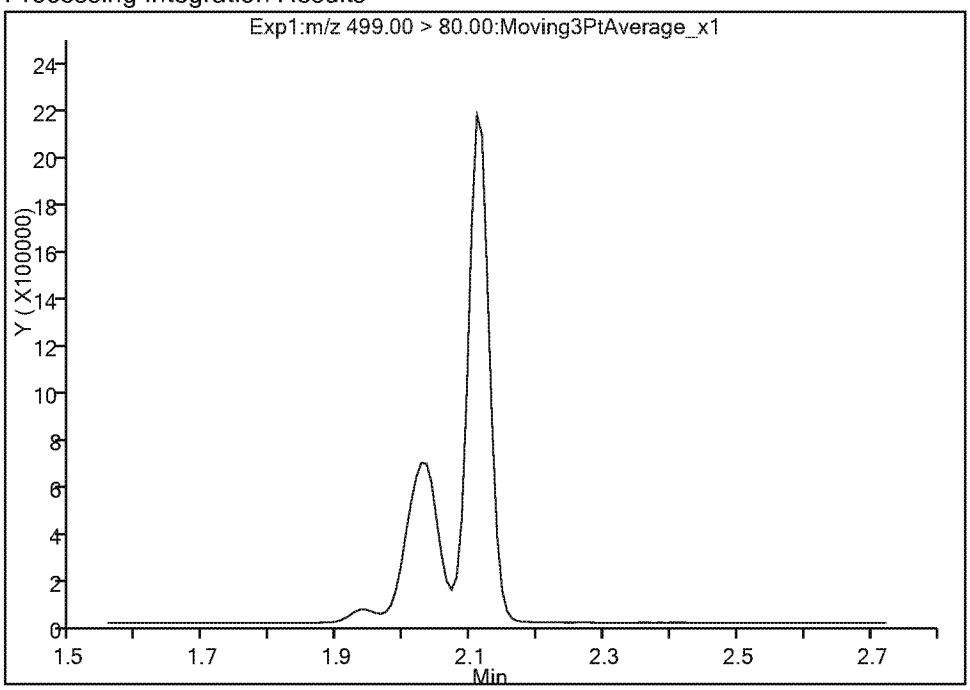
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d				
Injection Date:	16-Feb-2018 09:19:04	Instrument ID:	A8_N		
Lims ID:	IC L6				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

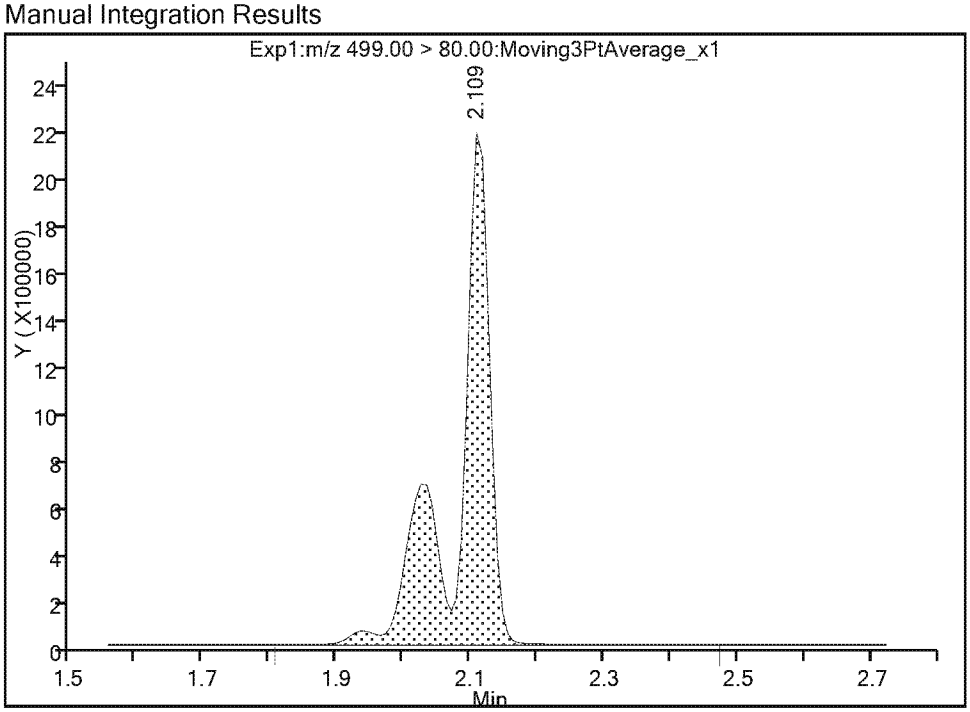
Processing Integration Results

Not Detected
Expected RT: 2.11



Manual Integration Results

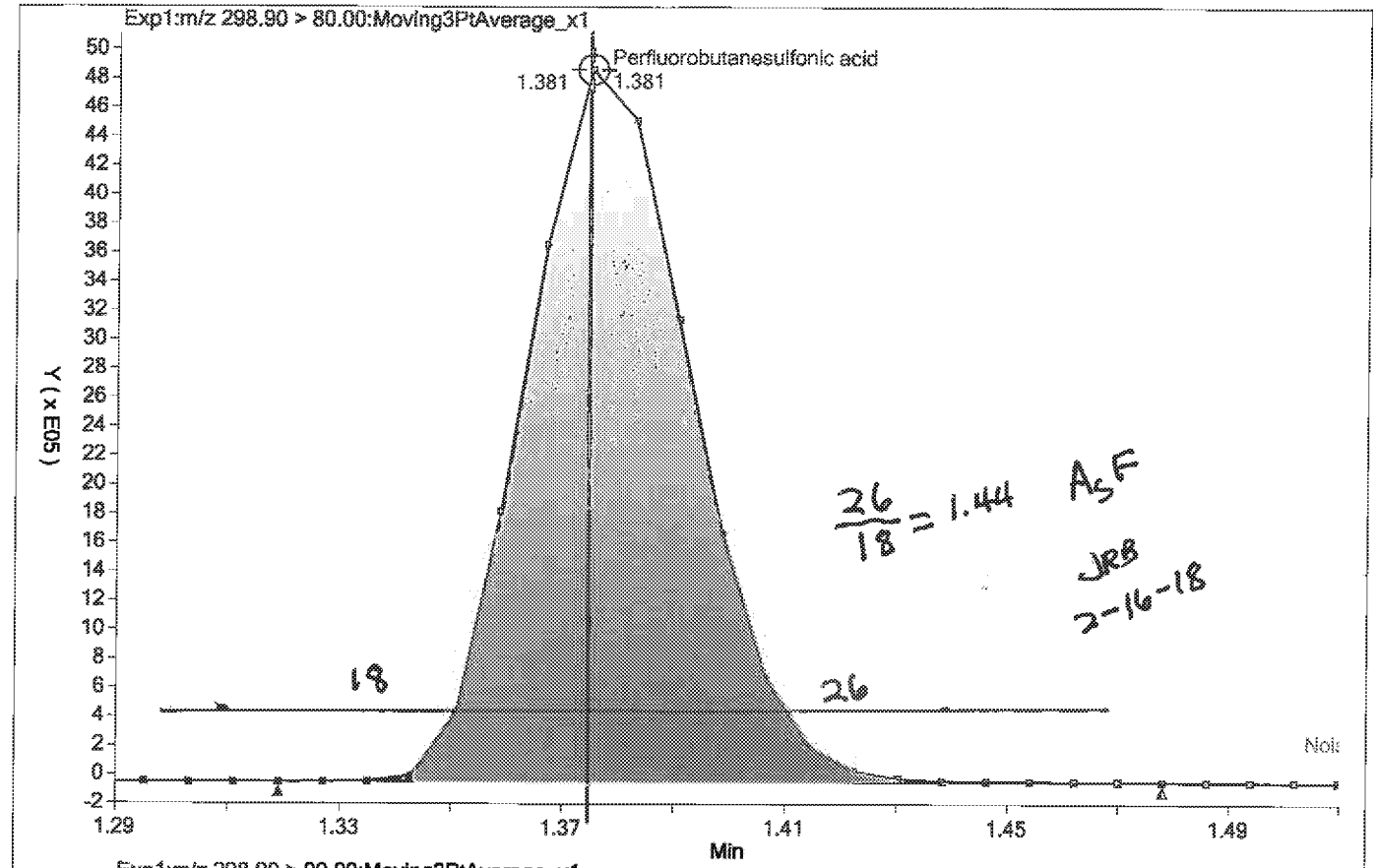
RT: 2.11
Area: 7252490
Amount: 80.127031
Amount Units: ng/ml

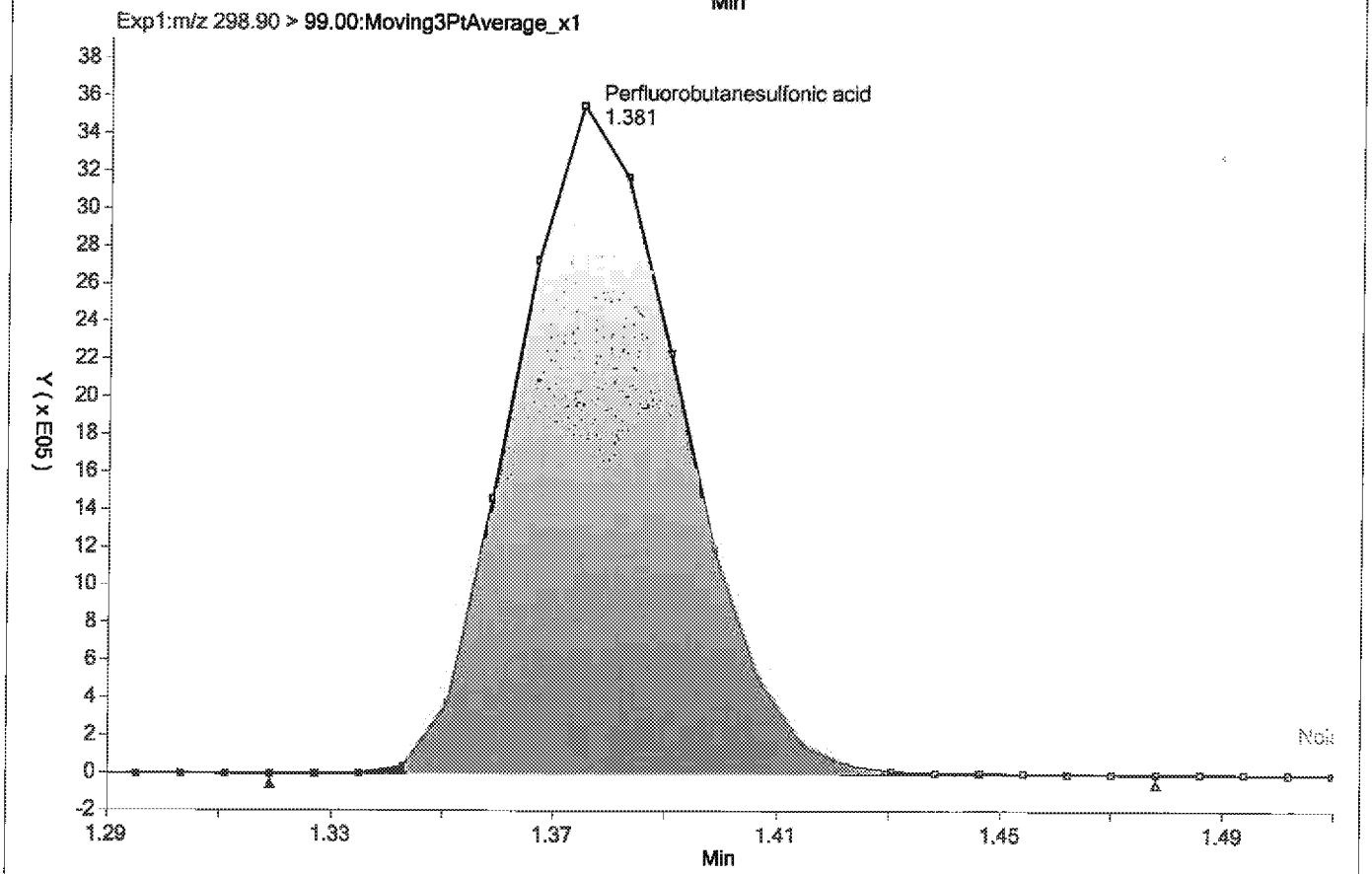


Reviewer: Ex. 4 CBI 16-Feb-2018 10:31:12
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Chromatogram

IC L4 EXP1



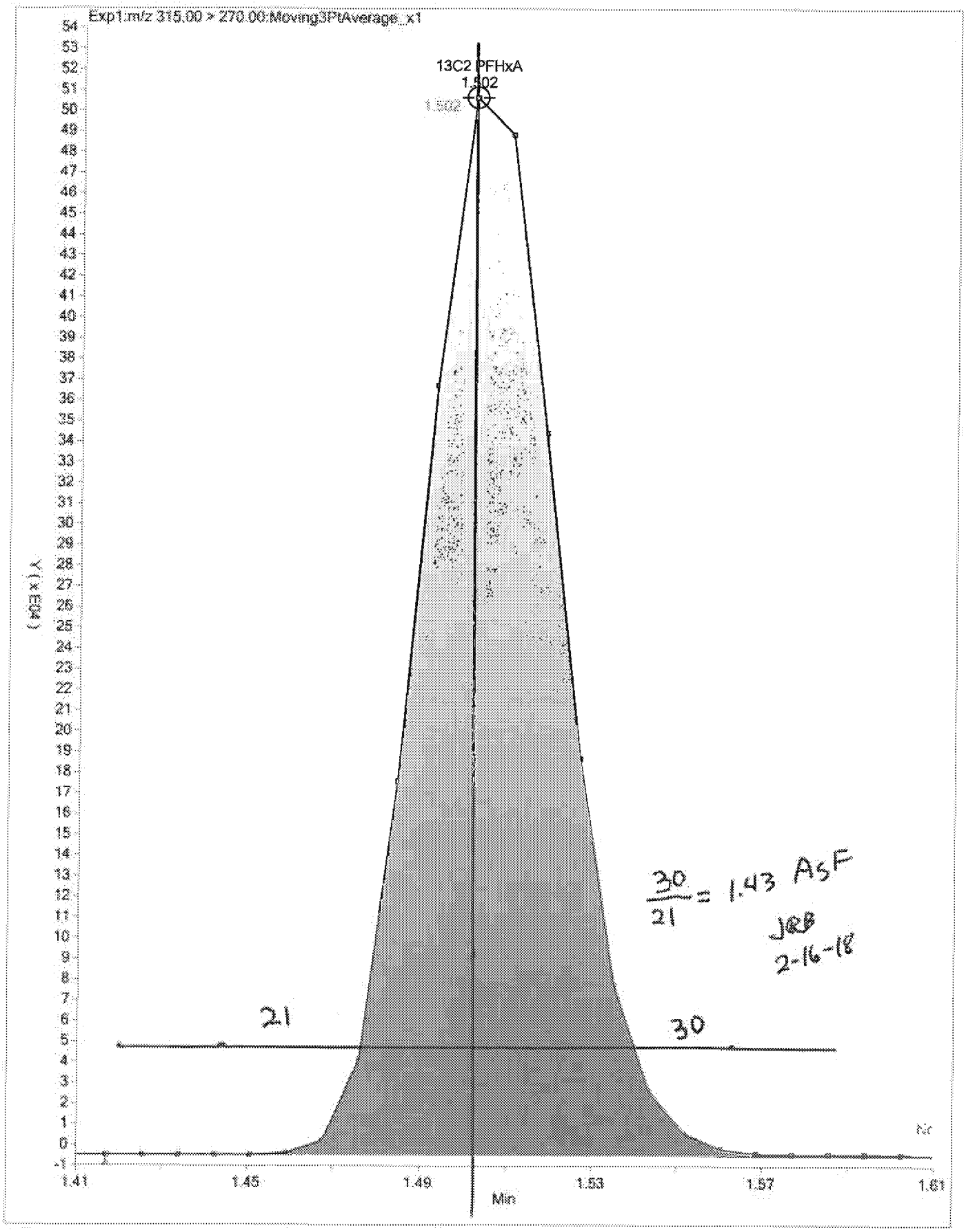


Chrom

Printed: 2/16/2018 10:46:33 AM

Chromatogram

IC L4 EXP1



Chrom

Printed: 2/16/2018 10:47:19 AM

TestAmerica Laboratories
Istd/Surrogate Recovery Report

Worklist Name: 16FEB2018_537_ICAL Worklist Num: 54164
Instrument: A8_N Method: 537_A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b
Limit Group: LC 537 ICAL
Analysis Type: SemiVOA
Inj Volume: 2.00 Inj Vol Units: ul

Lims Batch: 208773
CCV IS Mode: Select Ical Level, Cal Level: 3
Non-Cal IS Mode: Last Ccal Sample

$ 2 13C2 PFHxA
$ 10 13C2 PFDA

Lab ID Inj Date	$ 2	$ 10	* 6 13C2-PFOA	* 7 13C4 PFOS
IS Std			3628037 1 81	9733097 2 06
# 1 RB 16-Feb-2018 08:41:23			1.97 1076886< 29.7*	2.19 2716766< 27.9*
# 2 RB 16-Feb-2018 08:46:06			1.89 1019457< 28.1*	2.14 2755286< 28.3*
# 3 RB 16-Feb-2018 08:50:50			1.87 1105032< 30.5*	2.13 2805992< 28.8*
IS Std				
# 4 IC L1 16-Feb-2018 08:55:33	1.51 103.00	2.28 110.40	1.87 931713> 100.0*	2.12 2685321> 100.0*
# 5 IC L2 16-Feb-2018 09:00:16	1.51 94.72	2.28 94.88	1.87 988244> 106.1*	2.12 2714895> 101.1*
# 6 IC L3 16-Feb-2018 09:05:01	1.50 94.82	2.27 89.15	1.86 988820> 106.1*	2.12 2717621> 101.2*
# 7 IC L4 16-Feb-2018 09:09:42	1.50 104.90	2.27 104.20	1.85 884854> 95.0*	2.11 2774986> 103.3*
# 8 IC L5 16-Feb-2018 09:14:23	1.50 96.89	2.26 98.53	1.85 936458> 100.5*	2.11 2722967> 101.4*
# 9 IC L6 16-Feb-2018 09:19:04	1.50 105.70	2.27 102.80	1.86 892615> 95.8*	2.11 2745419> 102.2*
IS Std			988820 1 86	2717621 2 12
#10 RB 16-Feb-2018 09:23:44			1.85 878108 88.8	2.11 2705714 99.6
IS Std			884854 1 85	2774986 2 11
#11 CCVL 16-Feb-2018 09:28:24	1.51 94.27	2.27 95.61	1.87 955394 108.0	2.12 2663428 96.0
IS Std			955394 1 87	2663428 2 12
#12 RB 16-Feb-2018 09:33:05			1.86 966669 101.2	2.11 2704283 101.5
IS Std			884854 1 85	2774986 2 11
#13 ICV 16-Feb-2018 09:37:44	1.50 102.30	2.26 102.00	1.85 890238 100.6	2.11 2703377 97.4
IS Std				
#14 RB 16-Feb-2018 09:42:24				

13C2-PFOA

$$RPD = \frac{988820 - 884854}{\left(\frac{988820 + 884854}{2}\right)} \times 100 = 11.1$$

13C4-PFOS

$$RPD = \frac{2774986 - 2685321}{\left(\frac{2774986 + 2685321}{2}\right)} \times 100 = 3.28$$

JRB
2-16-18

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCVL 320-208773/11 Calibration Date: 02/16/2018 09:28

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.02.016_537ICAL_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.238		19.4	20.0	-3.0	50.0
Perfluoroheptanoic acid	Ave	0.9711	0.9284		2.12	2.22	-4.4	50.0
Perfluorohexanesulfonic acid	Ave	1.610	1.706		7.07	6.67	6.0	50.0
Perfluorooctanoic acid	Ave	0.9620	0.9302		4.32	4.47	-3.3	50.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9736		9.19	8.93	3.0	50.0
Perfluorononanoic acid	Ave	0.6154	0.5986		4.32	4.45	-2.7	50.0
13C2 PFHxA	Ave	1.100	1.037		9.43	10.0	-5.7	30.0
13C2 PFDA	Ave	0.5243	0.5013		9.56	10.0	-4.4	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_011.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 16-Feb-2018 09:28:24 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\20180216-54164.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 16-Feb-2018 10:55:36 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK013

First Level Reviewer: Ex. 4 CBI Date: 16-Feb-2018 10:36:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.388	1.381	0.007	1.000	2300149	19.4		12090	
298.90 > 99.00	1.388	1.381	0.007	1.000	1585029		1.45(0.00-0.00)	6015	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.510	1.505	0.005	1.000	990640	9.43		13893	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.662	1.656	0.006	1.000	1056475	7.07		2665	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.662	1.658	0.004	1.000	197137	2.12		57.0	
* 6 13C2-PFOA									
415.00 > 370.00	1.866	1.859	0.007		955394	10.0		10789	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.866	1.860	0.006	1.000	397164	4.32		16.3	
413.00 > 169.00	1.866	1.860	0.006	1.000	222384		1.79(0.00-0.00)	35.2	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.117	2.109	0.008	1.000	807120	9.19		1576	a
499.00 > 99.00	2.117	2.109	0.008	1.000	176184		4.58(0.00-0.00)	256	
* 7 13C4 PFOS									
503.00 > 80.00	2.117	2.114	0.003		2663428	28.7		10092	
9 Perfluorononanoic acid									
463.00 > 419.00	2.124	2.122	0.002	1.000	254268	4.32		47.5	
$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.270	-0.002	1.000	478905	9.56		4880	

QC Flag Legend

Review Flags

a - User Assigned ID

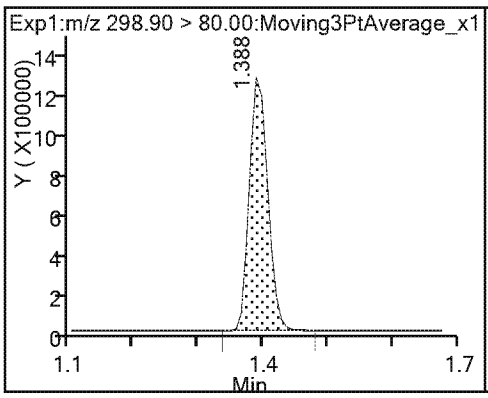
Reagents:

LC537-L2_00021 Amount Added: 1.00 Units: mL

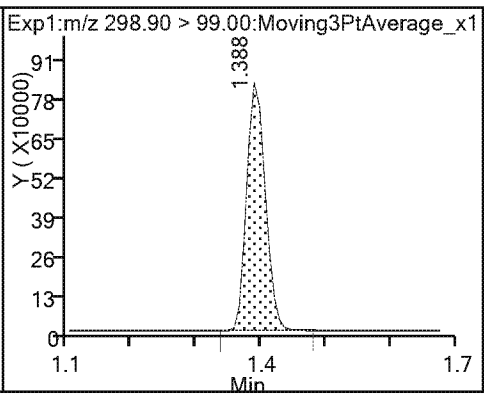
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_011.d
Injection Date: 16-Feb-2018 09:28:24 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

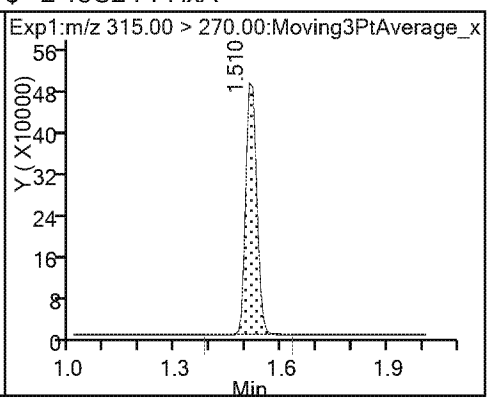
1 Perfluorobutanesulfonic acid



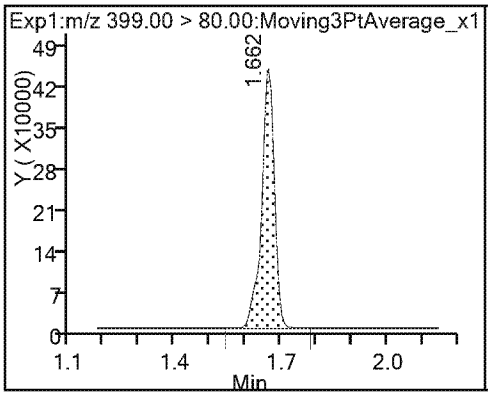
1 Perfluorobutanesulfonic acid



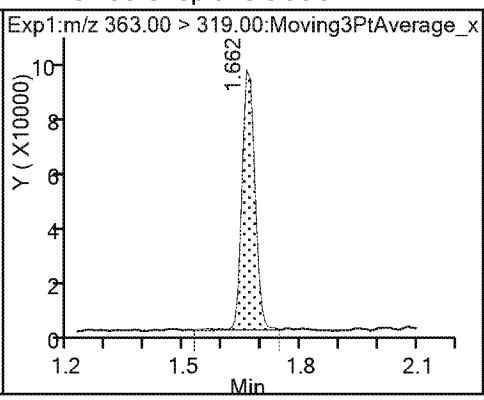
$ 2 13C2 PFHxA



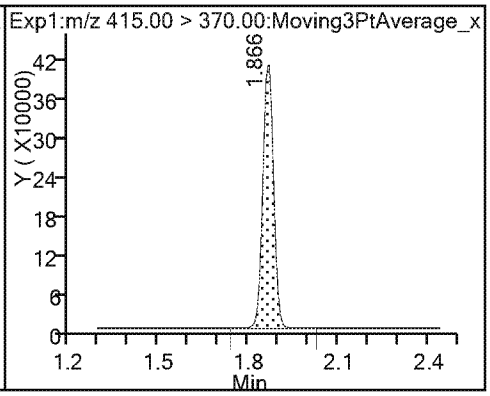
3 Perfluorohexanesulfonic acid



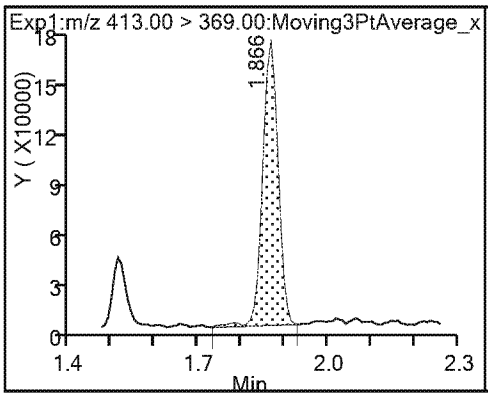
4 Perfluoroheptanoic acid



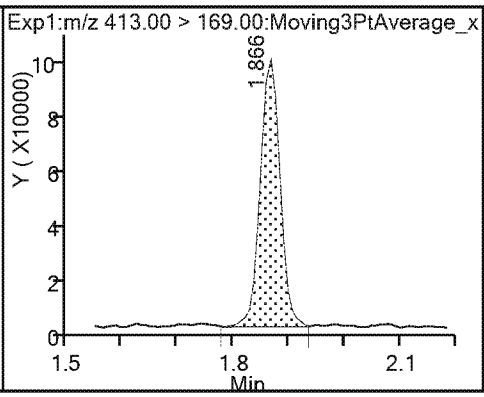
* 6 13C2-PFOA



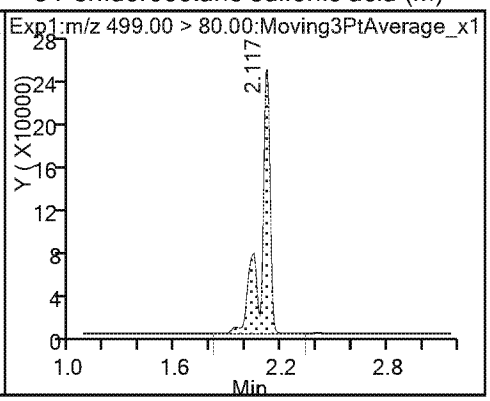
5 Perfluorooctanoic acid



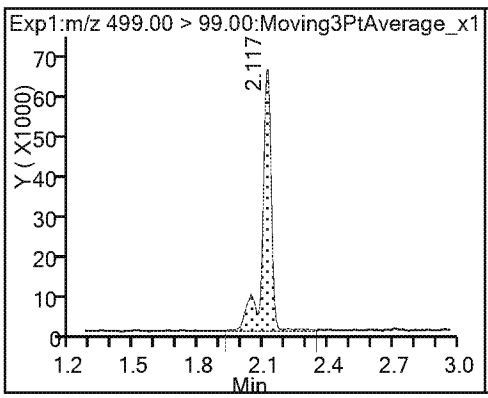
5 Perfluorooctanoic acid



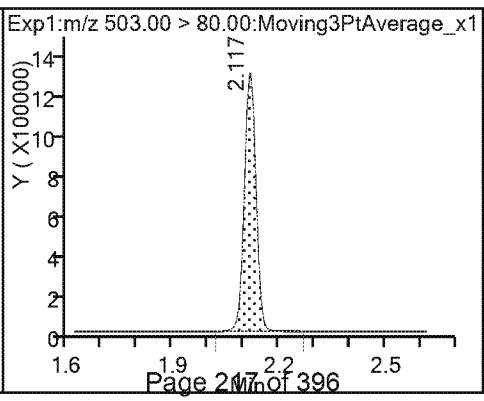
8 Perfluorooctane sulfonic acid (M)



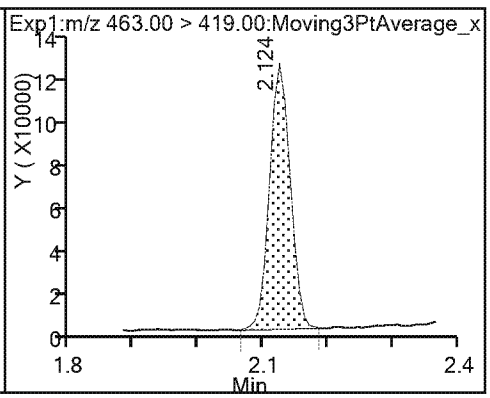
8 Perfluorooctane sulfonic acid



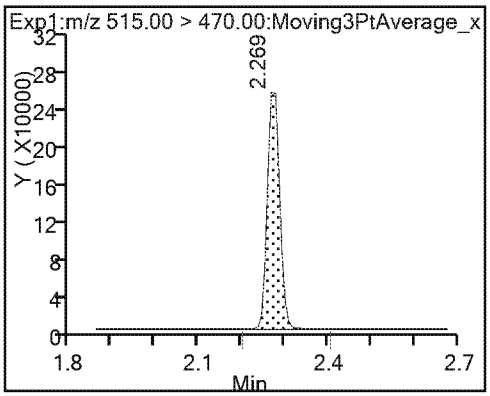
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.269
Y (X10000)
32
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

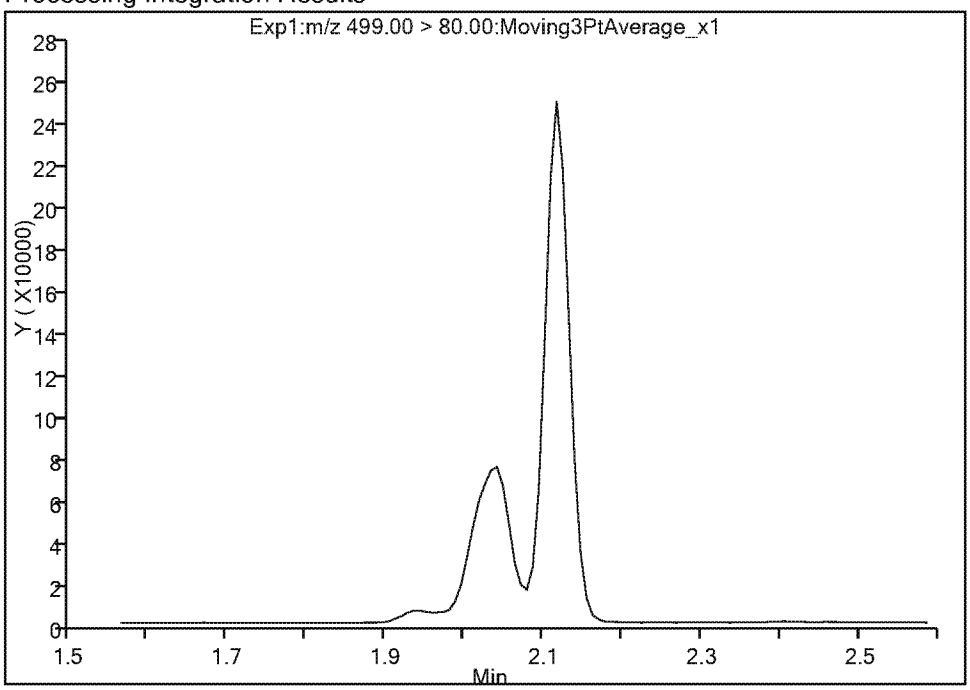
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_011.d				
Injection Date:	16-Feb-2018 09:28:24	Instrument ID:	A8_N		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

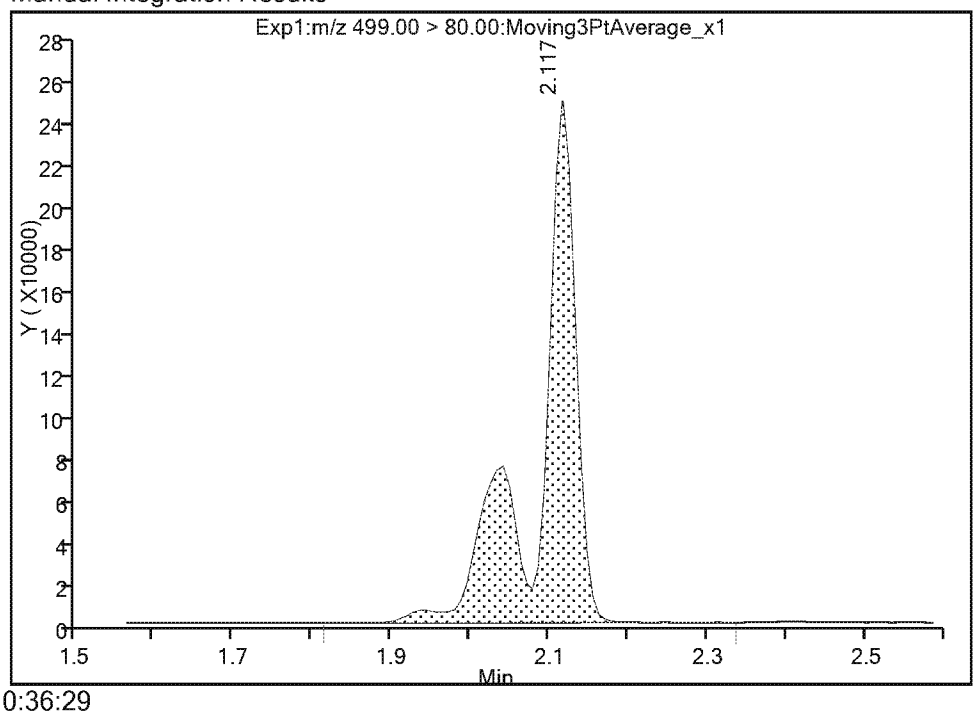
Processing Integration Results

Not Detected
Expected RT: 2.11



Manual Integration Results

RT: 2.12
Area: 807120
Amount: 9.191739
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 16-Feb-2018 10:36:29
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: ICV 320-208773/13 Calibration Date: 02/16/2018 09:37

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.02.016_537ICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.108		100	100	0.2	30.0
Perfluoroheptanoic acid	Ave	0.9711	0.997		10.3	10.0	2.6	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.686		21.1	20.2	4.8	30.0
Perfluorooctanoic acid	Ave	0.9620	0.8998		18.9	20.2	-6.5	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9852		21.0	20.2	4.2	30.0
Perfluorononanoic acid	Ave	0.6154	0.6774		22.2	20.2	10.1	30.0
13C2 PFHxA	Ave	1.100	1.125		10.2	10.0	2.3	30.0
13C2 PFDA	Ave	0.5243	0.5347		10.2	10.0	2.0	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_013.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 16-Feb-2018 09:37:44 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\20180216-54164.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 16-Feb-2018 10:55:38 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK013

First Level Reviewer: Ex. 4 CBI Date: 16-Feb-2018 10:38:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.381	1.381	0.0	1.000	10449615	100.3		32318	
298.90 > 99.00	1.381	1.381	0.0	1.000	7853681		1.33(0.00-0.00)	23897	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.502	1.505	-0.003	1.000	1001724	10.2		14259	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.654	1.656	-0.002	1.000	3204604	21.1		7050	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.654	1.658	-0.004	1.000	887129	10.3		270	
* 6 13C2-PFOA									
415.00 > 370.00	1.851	1.859	-0.008		890238	10.0		9142	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.851	1.860	-0.009	1.000	1615503	18.9		66.9	
413.00 > 169.00	1.851	1.860	-0.009	1.000	895357		1.80(0.00-0.00)	148	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.109	2.109	0.0	1.000	1873112	21.0		3471	a
499.00 > 99.00	2.109	2.109	0.0	1.000	375247		4.99(0.00-0.00)	509	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.114	-0.005		2703377	28.7		9042	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.122	-0.005	1.000	1215919	22.2		251	
$ 10 13C2 PFDA									
515.00 > 470.00	2.261	2.270	-0.009	1.000	475984	10.2		4647	

QC Flag Legend

Review Flags

a - User Assigned ID

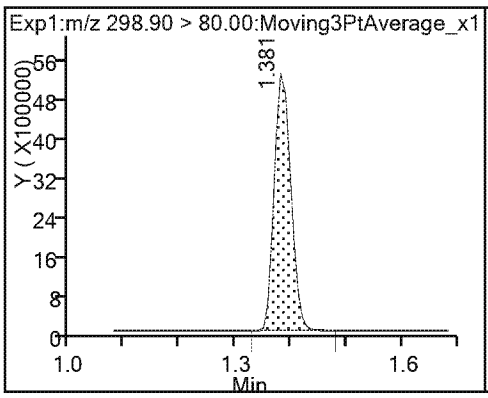
Reagents:

LC537-ICV_00030 Amount Added: 1.00 Units: mL

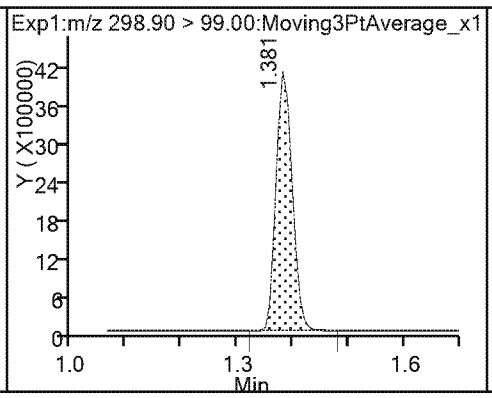
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_013.d
Injection Date: 16-Feb-2018 09:37:44 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

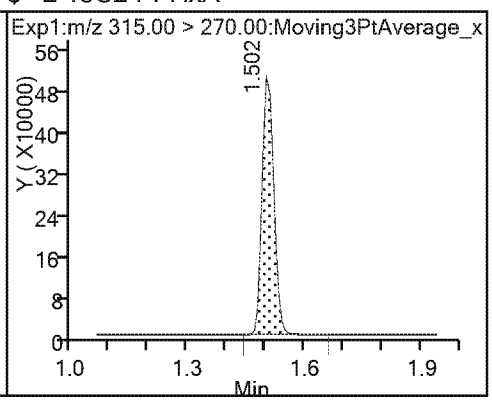
1 Perfluorobutanesulfonic acid



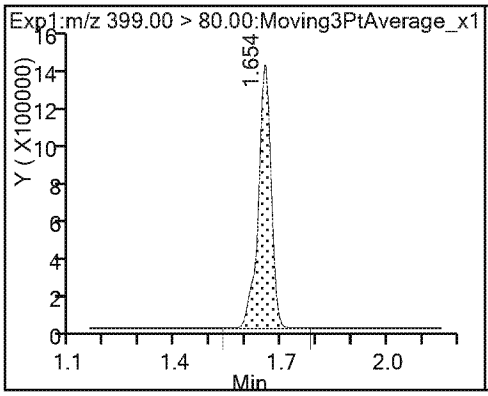
1 Perfluorobutanesulfonic acid



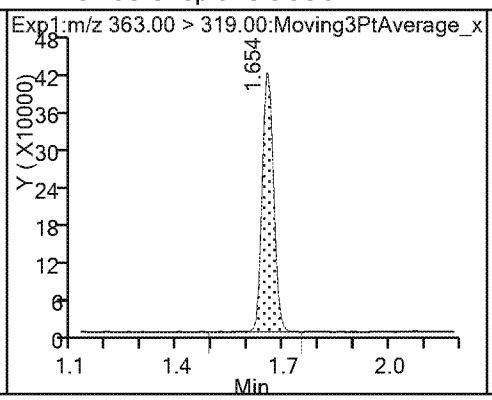
$ 2 13C2 PFHxA



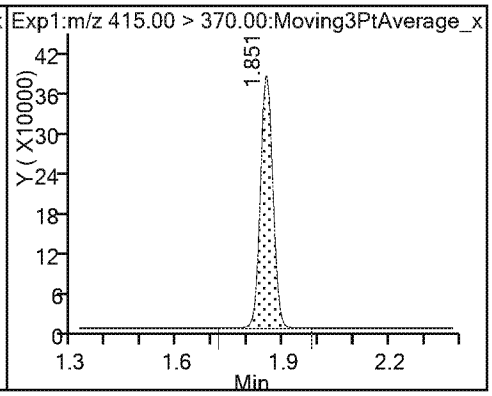
3 Perfluorohexanesulfonic acid



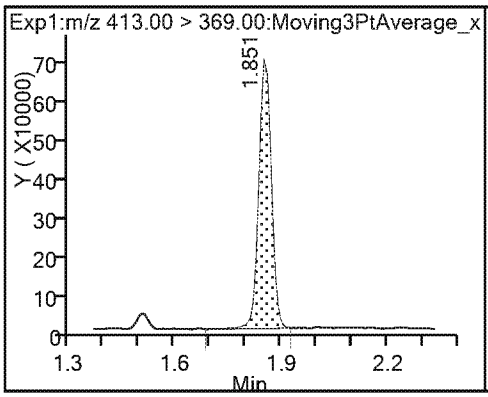
4 Perfluoroheptanoic acid



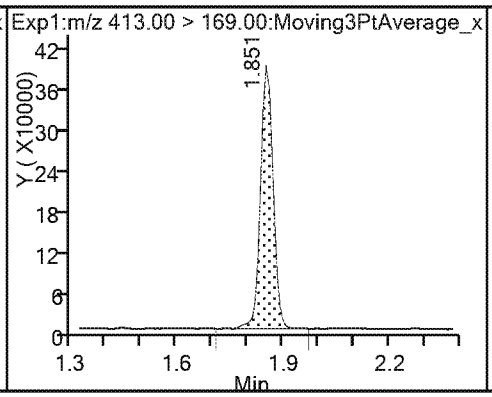
* 6 13C2-PFOA



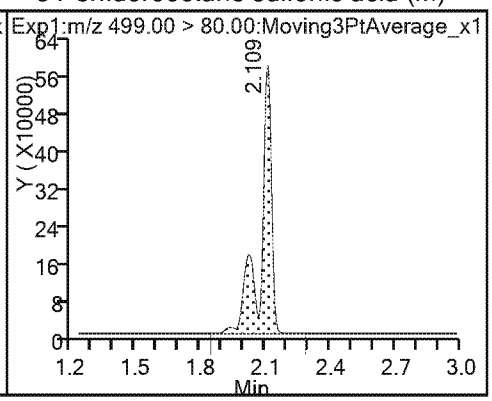
5 Perfluorooctanoic acid



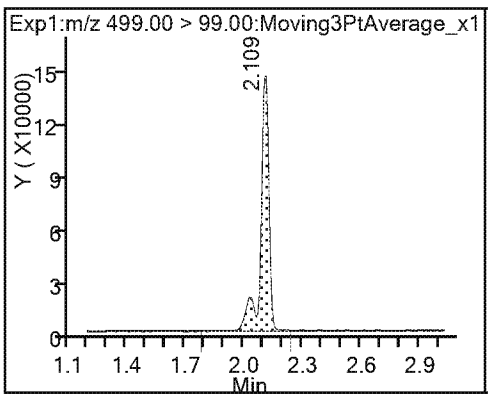
5 Perfluorooctanoic acid



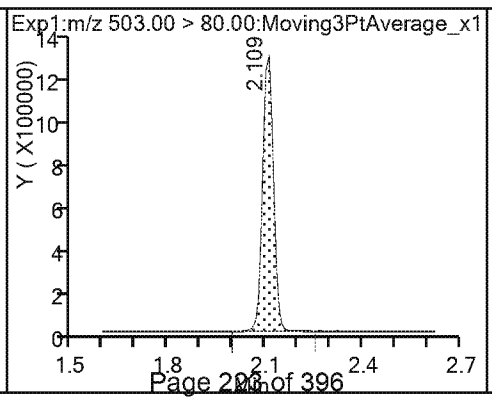
8 Perfluorooctane sulfonic acid (M)



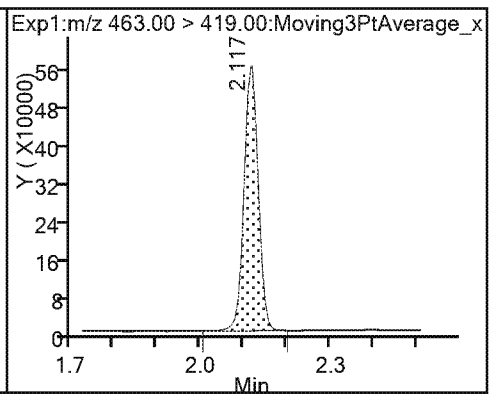
8 Perfluorooctane sulfonic acid



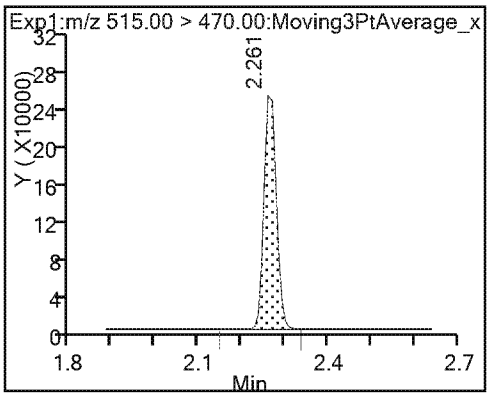
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.261
Y (X10000)
32
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

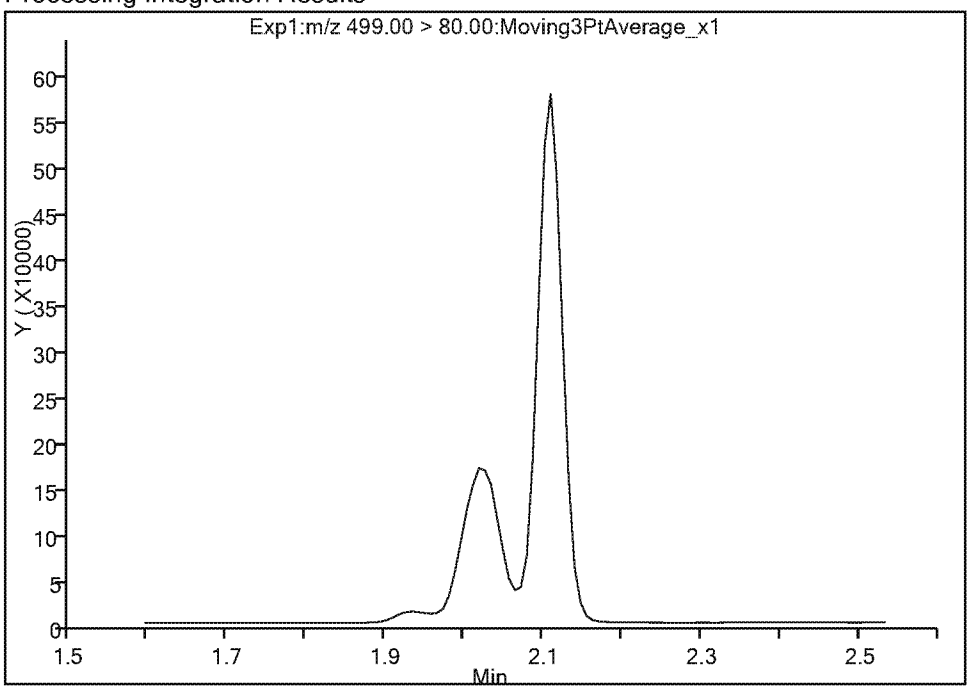
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_013.d				
Injection Date:	16-Feb-2018 09:37:44	Instrument ID:	A8_N		
Lims ID:	ICV				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	7	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

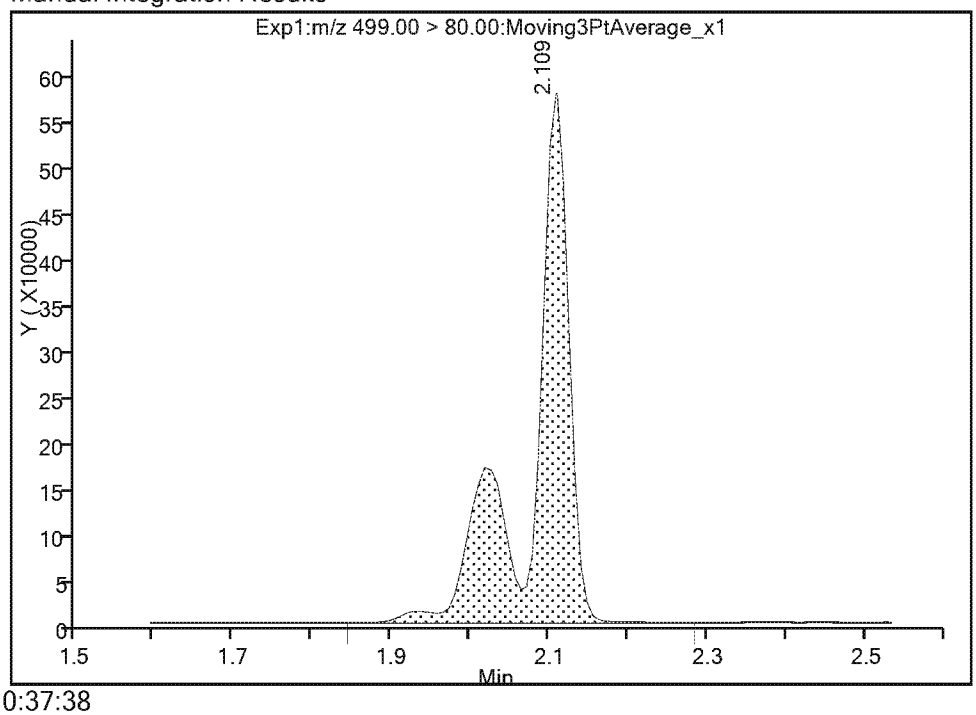
Processing Integration Results

Not Detected
Expected RT: 2.11



Manual Integration Results

RT: 2.11
Area: 1873112
Amount: 21.016369
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 16-Feb-2018 10:37:38
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCVL 320-211417/1 Calibration Date: 03/06/2018 09:24

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.06_537A_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.126		17.6	20.0	-12.1	50.0
Perfluoroheptanoic acid	Ave	0.9711	1.012		2.32	2.22	4.2	50.0
Perfluorohexanesulfonic acid	Ave	1.610	1.543		6.39	6.67	-4.1	50.0
Perfluorooctanoic acid	Ave	0.9620	0.9353		4.34	4.47	-2.8	50.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9523		8.99	8.93	0.7	50.0
Perfluorononanoic acid	Ave	0.6154	0.6945		5.02	4.45	12.9	50.0
13C2 PFHxA	Ave	1.100	1.092		9.92	10.0	-0.8	30.0
13C2 PFDA	Ave	0.5243	0.5700		10.9	10.0	8.7	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180306-54905.b\2018.03.06_537A_004.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 06-Mar-2018 09:24:55 ALS Bottle#: 2 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-537_A8_N*sub1

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180306-54905.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 06-Mar-2018 17:13:08 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: Ex. 4 CBI Date: 06-Mar-2018 13:11:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.358	1.358	0.0	1.000	1980515	17.6		803	
298.90 > 99.00	1.358	1.358	0.0	1.000	1426484		1.39(0.00-0.00)	758	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	929805	9.92		12746	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.624	0.0	1.000	905428	6.39		2039	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	191555	2.32		35.8	
* 6 13C2-PFOA									
415.00 > 370.00	1.813	1.806	0.007		851838	10.0		7428	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.813	1.806	0.007	1.000	356067	4.34		11.6	
413.00 > 169.00	1.813	1.806	0.007	1.000	205862		1.73(0.00-0.00)	186	
* 7 13C4 PFOS									
503.00 > 80.00	2.071	2.064	0.007		2523082	28.7		8492	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.071	2.064	0.007	1.000	747828	8.99		482	a
499.00 > 99.00	2.071	2.064	0.007	1.000	151324		4.94(0.00-0.00)	77.0	
9 Perfluorononanoic acid									
463.00 > 419.00	2.079	2.071	0.008	1.000	263026	5.02		35.9	
$ 10 13C2 PFDA									
515.00 > 470.00	2.246	2.246	0.0	1.000	485543	10.9		3769	

QC Flag Legend

Review Flags

a - User Assigned ID

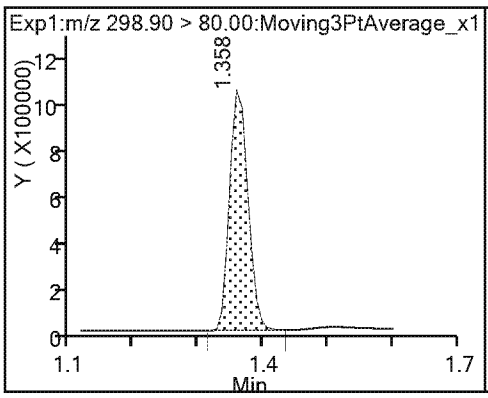
Reagents:

LC537-L2_00021 Amount Added: 1.00 Units: mL

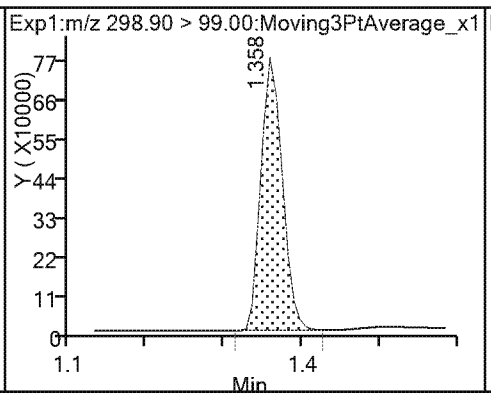
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180306-54905.b\2018.03.06_537A_004.d
Injection Date: 06-Mar-2018 09:24:55 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 2 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

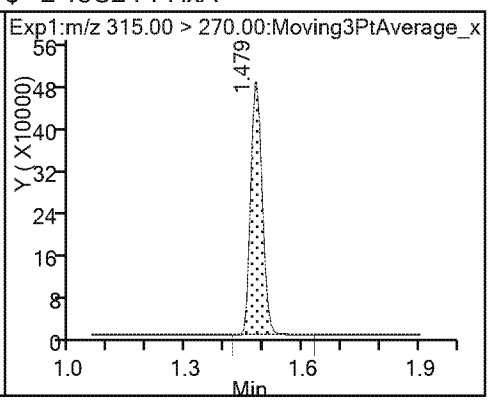
1 Perfluorobutanesulfonic acid



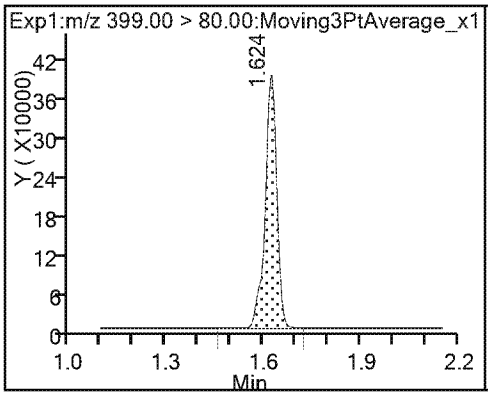
1 Perfluorobutanesulfonic acid



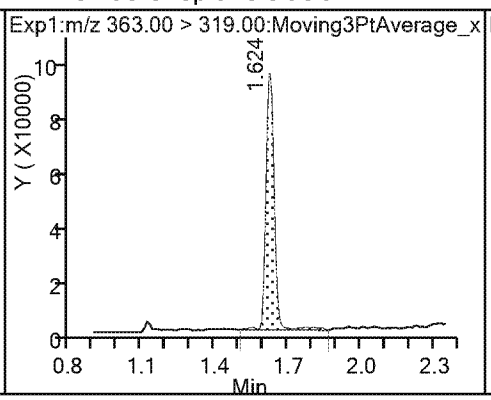
$ 2 13C2 PFHxA



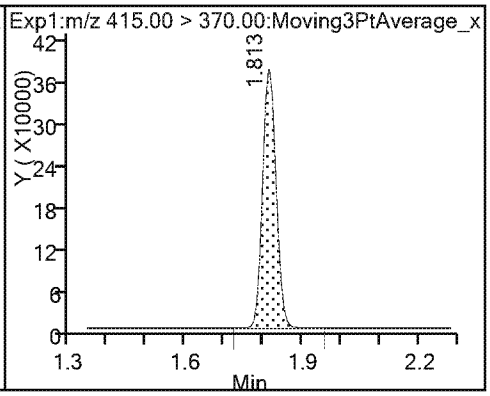
3 Perfluorohexanesulfonic acid



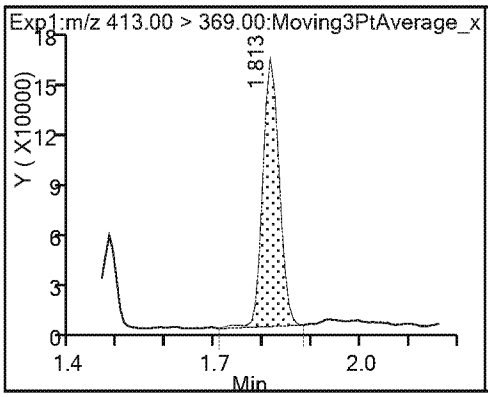
4 Perfluoroheptanoic acid



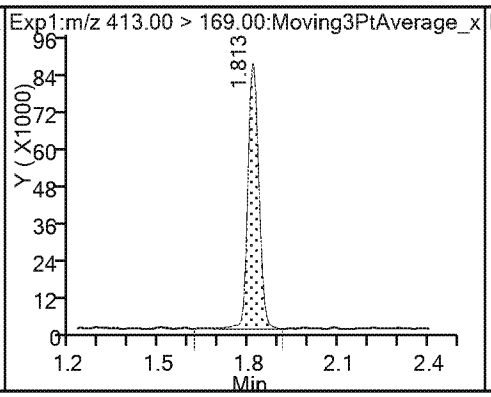
* 6 13C2-PFOA



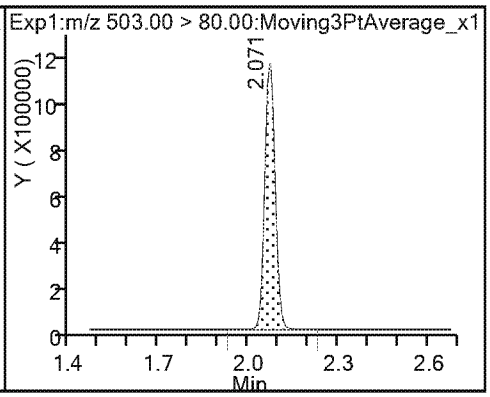
5 Perfluorooctanoic acid



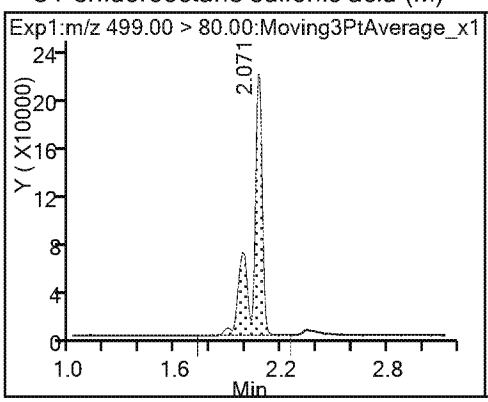
5 Perfluorooctanoic acid



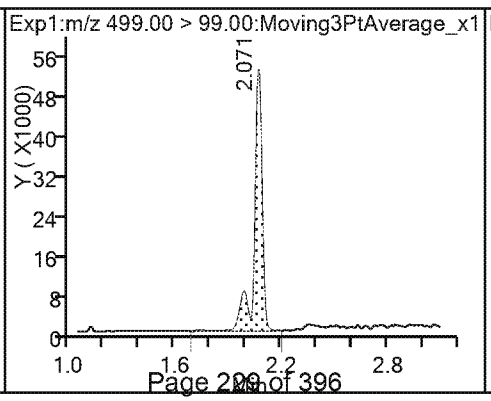
* 7 13C4 PFOS



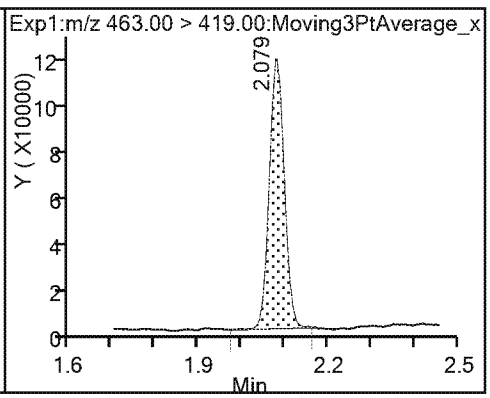
8 Perfluorooctane sulfonic acid (M)



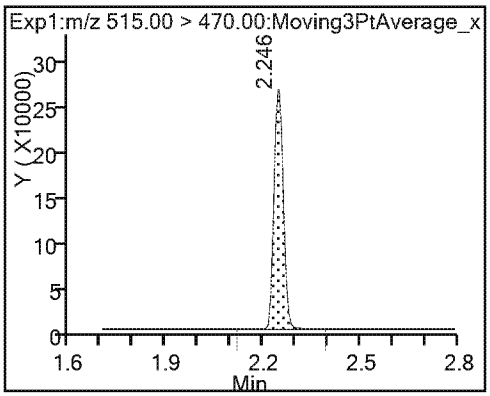
8 Perfluorooctane sulfonic acid



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.246
Y (X10000)
30
25
20
15
10
5
0
1.6
1.9
2.2
2.5
2.8
Min

TestAmerica Sacramento

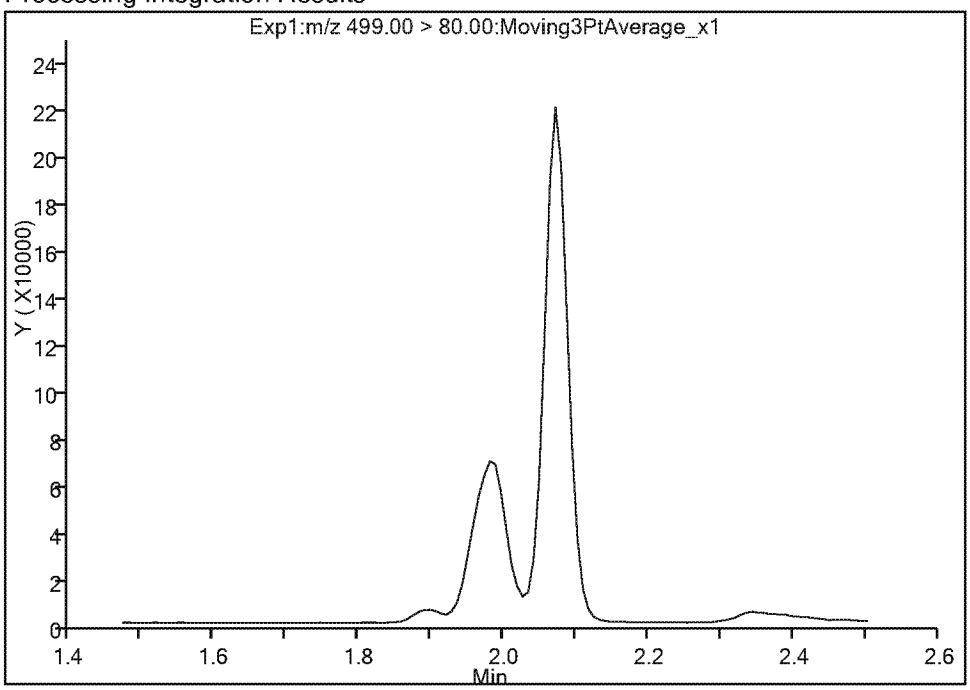
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180306-54905.b\2018.03.06_537A_004.d				
Injection Date:	06-Mar-2018 09:24:55	Instrument ID:	A8_N		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

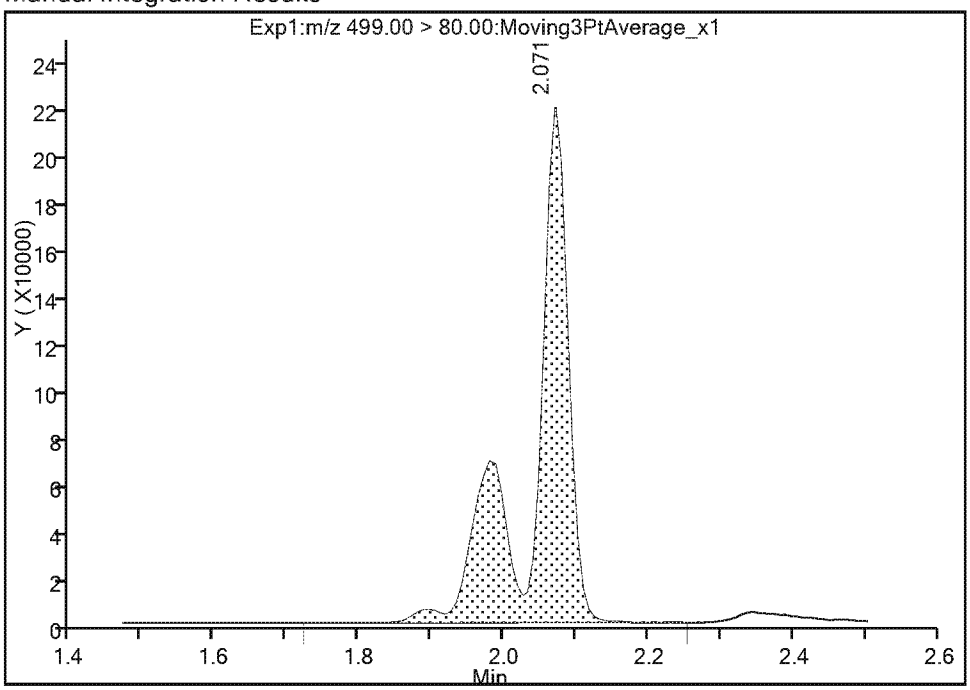
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.07
Area: 747828
Amount: 8.990232
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 06-Mar-2018 13:11:43
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCV 320-211579/1 Calibration Date: 03/06/2018 22:36

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.06_537C_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		0.9847		127	135	-6.2	30.0
Perfluoroheptanoic acid	Ave	0.9711	0.9745		15.1	15.0	0.3	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.648		46.1	45.0	2.4	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9536		29.9	30.2	-0.9	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9787		62.4	60.3	3.5	30.0
Perfluorononanoic acid	Ave	0.6154	0.6804		33.2	30.0	10.6	30.0
13C2 PFHxA	Ave	1.100	1.035		9.41	10.0	-5.9	30.0
13C2 PFDA	Ave	0.5243	0.5858		11.2	10.0	11.7	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_001.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 06-Mar-2018 22:36:05 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\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:07 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 10:44:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.366	0.0	1.000	11834744	126.7		13229	
298.90 > 99.00	1.366	1.366	0.0	1.000	8999310		1.32(0.00-0.00)	11688	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.487	1.487	0.0	1.000	910675	9.41		12176	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.624	0.0	1.000	6603190	46.1		11588	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	1286144	15.1		379	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		879714	10.0		9838	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.813	1.813	0.0	1.000	2530691	29.9		110	
413.00 > 169.00	1.813	1.813	0.0	1.000	1373339		1.84(0.00-0.00)	1056	
* 7 13C4 PFOS									
503.00 > 80.00	2.064	2.064	0.0		2553100	28.7		8590	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.064	2.056	0.008	1.000	5249561	62.4		2461	M
499.00 > 99.00	2.064	2.056	0.008	1.000	1111138		4.72(0.00-0.00)	765	
9 Perfluorononanoic acid									
463.00 > 419.00	2.071	2.071	0.0	1.000	1796266	33.2		333	
$ 10 13C2 PFDA									
515.00 > 470.00	2.246	2.246	0.0	1.000	515322	11.2		5262	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

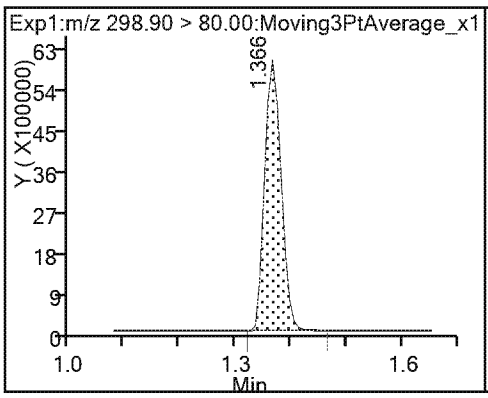
Reagents:

LC537-L5_00025 Amount Added: 1.00 Units: mL

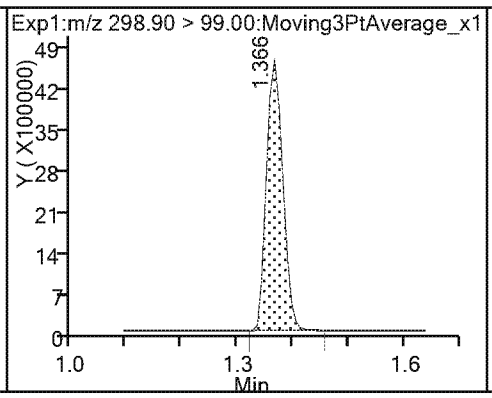
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_001.d
Injection Date: 06-Mar-2018 22:36:05 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

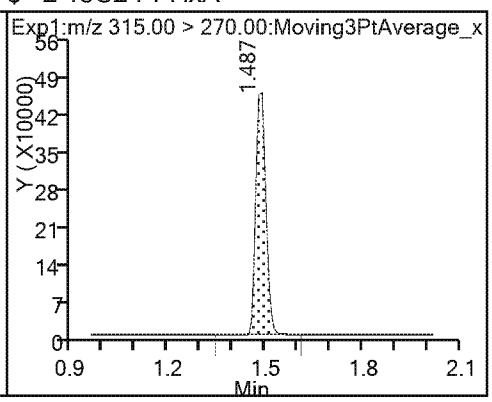
1 Perfluorobutanesulfonic acid



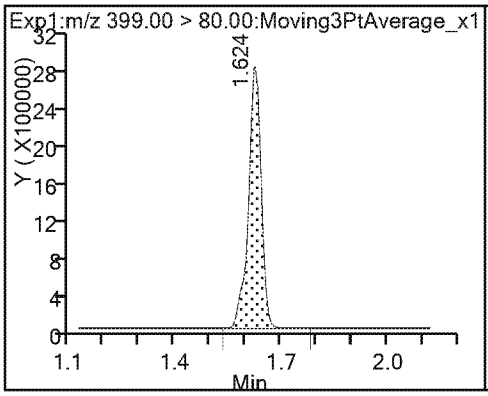
1 Perfluorobutanesulfonic acid



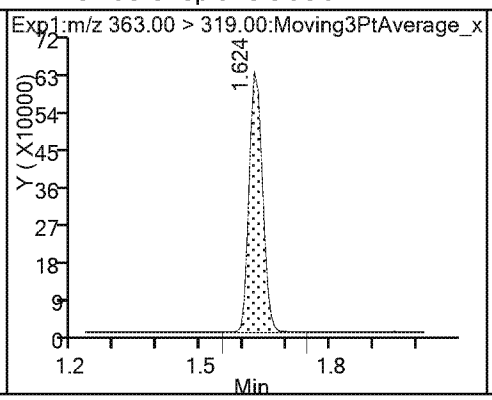
$ 2 13C2 PFHxA



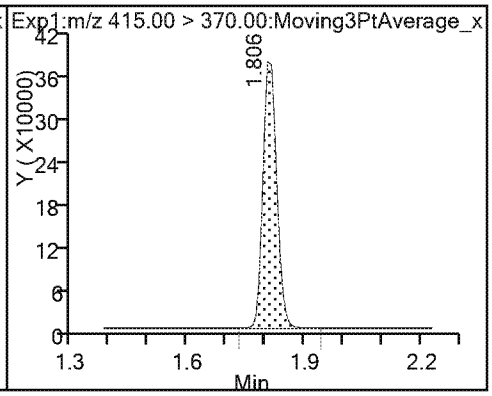
3 Perfluorohexanesulfonic acid



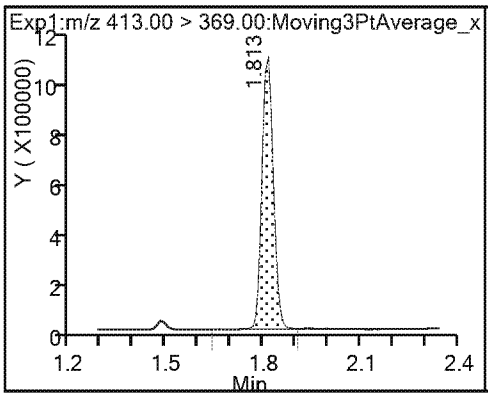
4 Perfluoroheptanoic acid



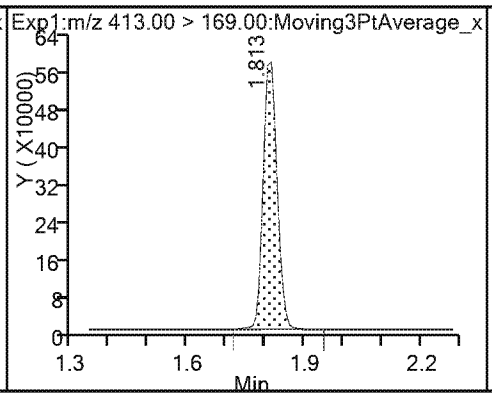
* 6 13C2-PFOA



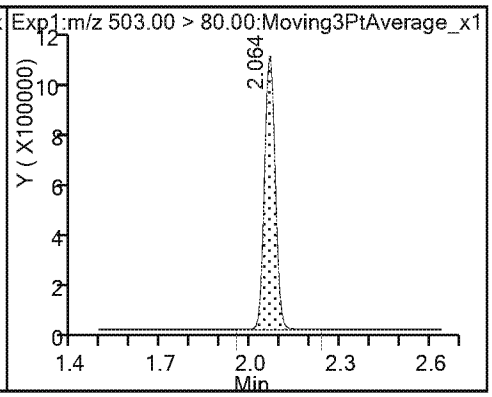
5 Perfluorooctanoic acid



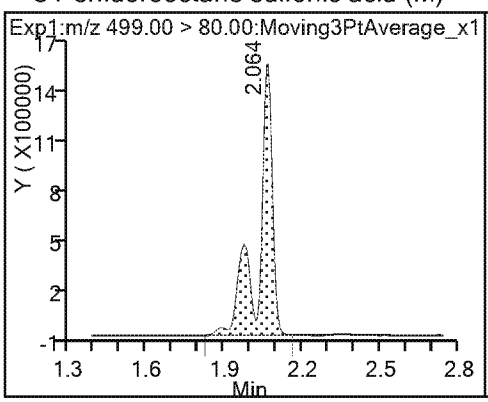
5 Perfluorooctanoic acid



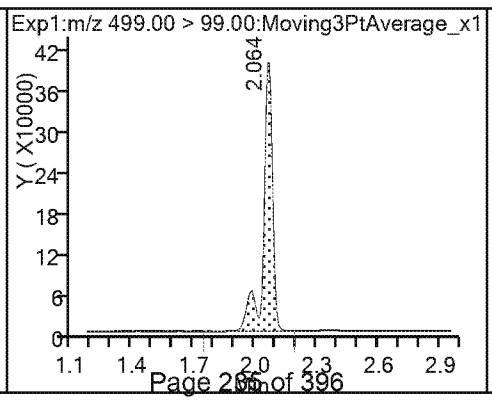
* 7 13C4 PFOS



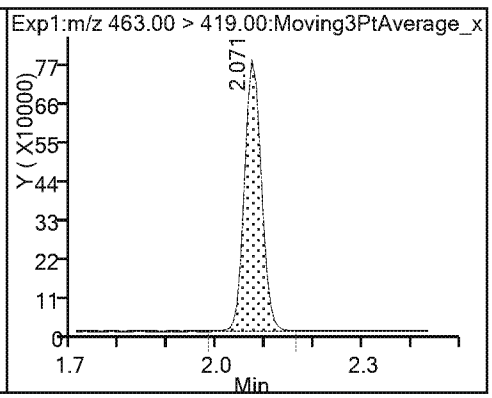
8 Perfluorooctane sulfonic acid (M)



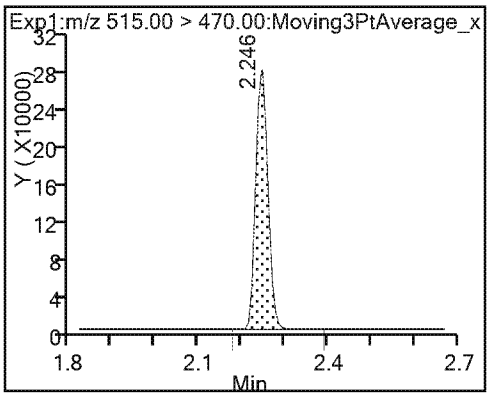
8 Perfluorooctane sulfonic acid



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.246
Y (X10000)
32
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

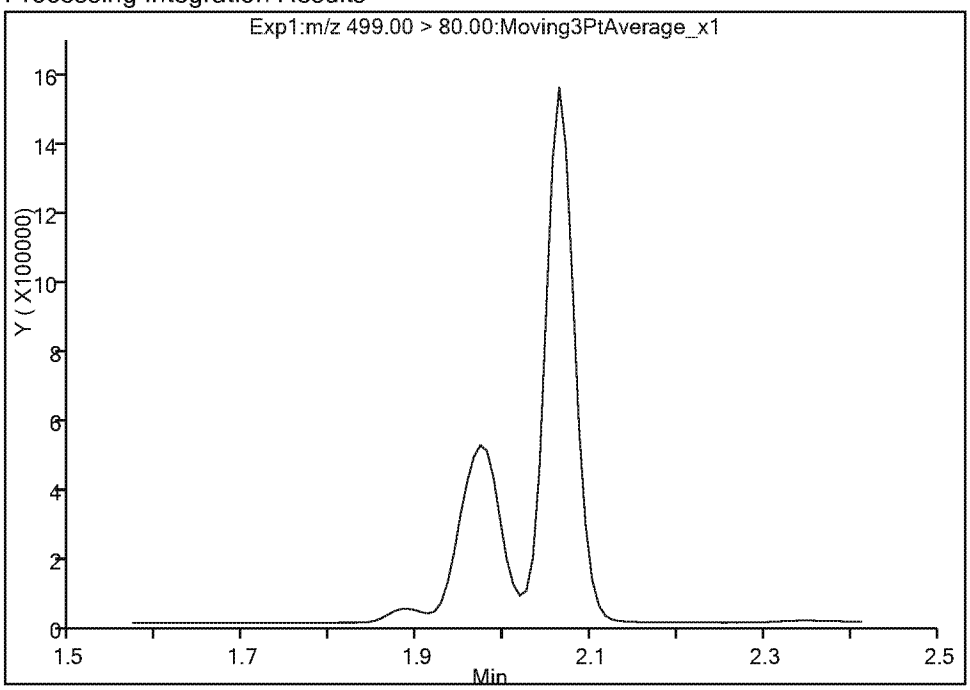
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_001.d				
Injection Date:	06-Mar-2018 22:36:05	Instrument ID:	A8_N		
Lims ID:	CCV L5				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

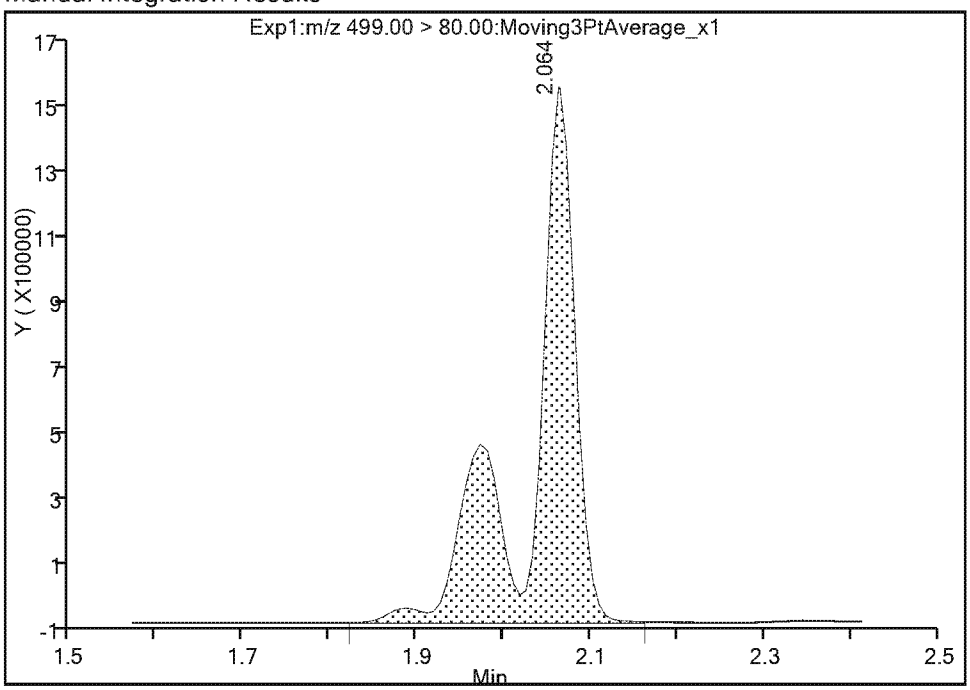
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 5249561
Amount: 62.367123
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:44:24
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCV 320-211579/13 Calibration Date: 03/06/2018 23:32

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.06_537C_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.073		39.1	45.0	-13.1	30.0
Perfluoroheptanoic acid	Ave	0.9711	1.028		5.29	5.00	5.9	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.612		15.0	15.0	0.1	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9768		10.2	10.1	1.5	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9472		20.1	20.1	0.2	30.0
Perfluorononanoic acid	Ave	0.6154	0.7108		11.6	10.0	15.5	30.0
13C2 PFHxA	Ave	1.100	1.064		9.67	10.0	-3.3	30.0
13C2 PFDA	Ave	0.5243	0.5992		11.4	10.0	14.3	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCV 320-211581/13 Calibration Date: 03/06/2018 23:32

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.06_537C_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.073		39.1	45.0	-13.1	30.0
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Perfluorohexanesulfonic acid	Ave	1.610	1.612		15.0	15.0	0.1	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9768		10.2	10.1	1.5	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9472		20.1	20.1	0.2	30.0
Perfluorononanoic acid	Ave	0.6154	0.7108		11.6	10.0	15.5	30.0
13C2 PFHxA	Ave	1.100	1.064		9.67	10.0	-3.3	30.0
13C2 PFDA	Ave	0.5243	0.5992		11.4	10.0	14.3	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_013.d
Lims ID: CCV L3
Client ID:
Sample Type: CCVIS
Inject. Date: 06-Mar-2018 23:32:09 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\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:17 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 11:09:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.366	0.0	1.000	4891237	39.1		6774	
298.90 > 99.00	1.366	1.366	0.0	1.000	3587325		1.36(0.00-0.00)	5657	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	1012825	9.67		13389	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.624	0.0	1.000	2449200	15.0		5588	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	489520	5.29		148	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		952212	10.0		11822	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	935259	10.2		37.8	
413.00 > 169.00	1.806	1.806	0.0	1.000	491932		1.90(0.00-0.00)	440	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	1926607	20.1		1048	M
499.00 > 99.00	2.056	2.056	0.0	1.000	422728		4.56(0.00-0.00)	293	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2904446	28.7		10697	
9 Perfluorononanoic acid									
463.00 > 419.00	2.064	2.064	0.0	1.000	677073	11.6		107	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	570577	11.4		5507	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LC537-L3_00024 Amount Added: 1.00 Units: mL

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_013.d
Lims ID: CCV L3
Client ID:
Sample Type: CCVIS
Inject. Date: 06-Mar-2018 23:32:09 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\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:17 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 11:09:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.366	0.0	1.000	4891237	39.1		6774	
298.90 > 99.00	1.366	1.366	0.0	1.000	3587325		1.36(0.00-0.00)	5657	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	1012825	9.67		13389	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.624	0.0	1.000	2449200	15.0		5588	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	489520	5.29		148	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		952212	10.0		11822	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	935259	10.2		37.8	
413.00 > 169.00	1.806	1.806	0.0	1.000	491932		1.90(0.00-0.00)	440	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	1926607	20.1		1048	M
499.00 > 99.00	2.056	2.056	0.0	1.000	422728		4.56(0.00-0.00)	293	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2904446	28.7		10697	
9 Perfluorononanoic acid									
463.00 > 419.00	2.064	2.064	0.0	1.000	677073	11.6		107	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	570577	11.4		5507	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

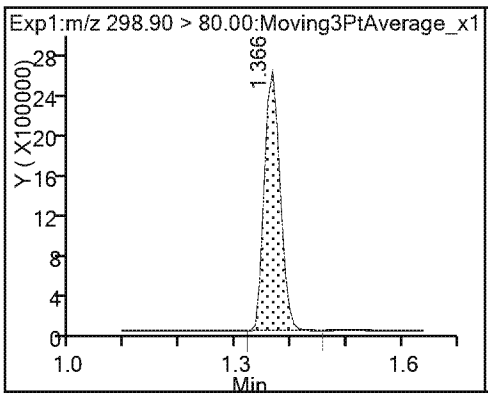
Reagents:

LC537-L3_00024 Amount Added: 1.00 Units: mL

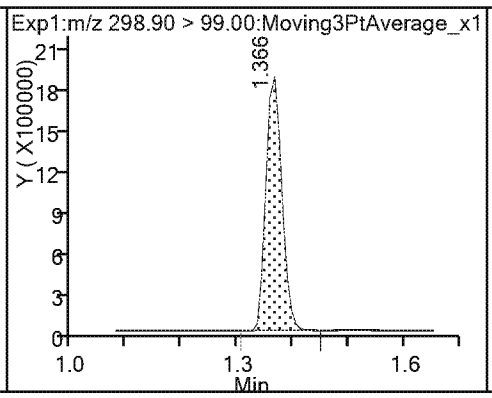
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_013.d
Injection Date: 06-Mar-2018 23:32:09 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

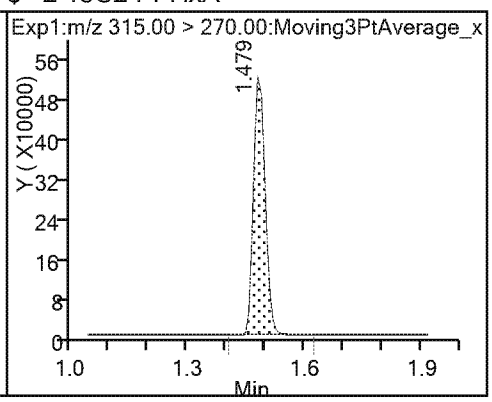
1 Perfluorobutanesulfonic acid



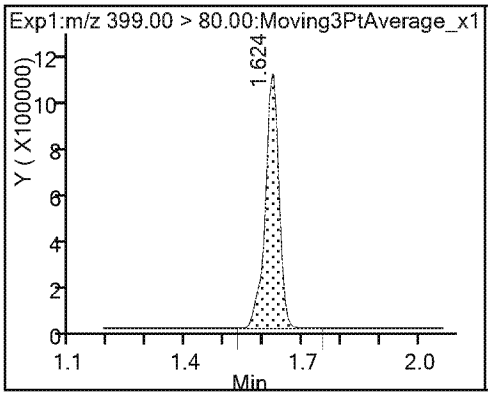
1 Perfluorobutanesulfonic acid



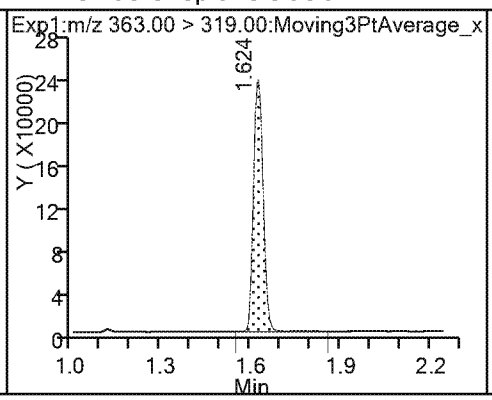
$ 2 13C2 PFHxA



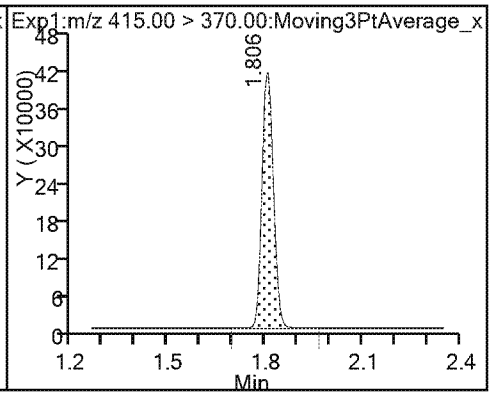
3 Perfluorohexanesulfonic acid



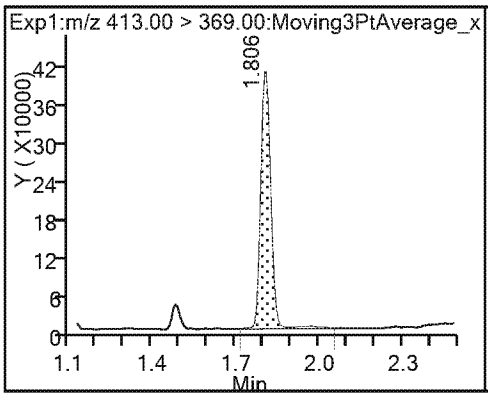
4 Perfluoroheptanoic acid



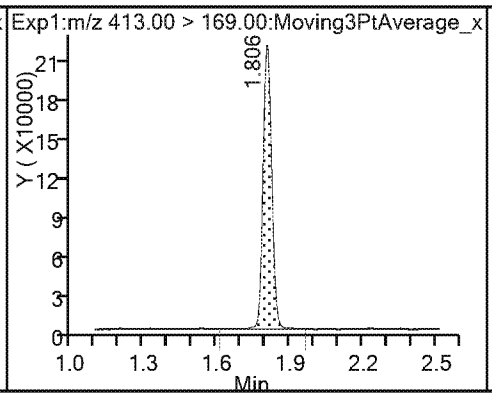
* 6 13C2-PFOA



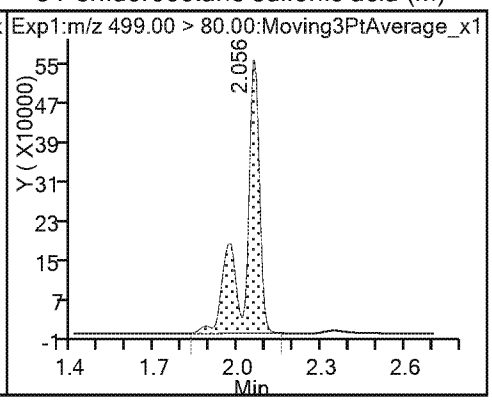
5 Perfluorooctanoic acid



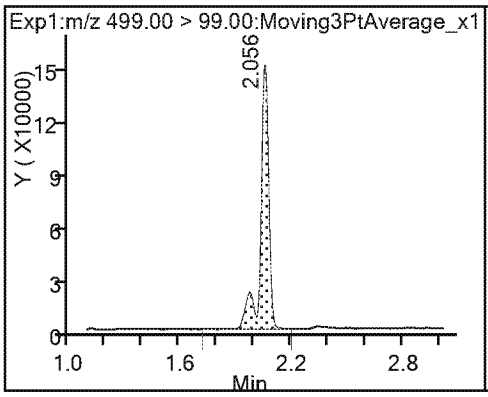
5 Perfluorooctanoic acid



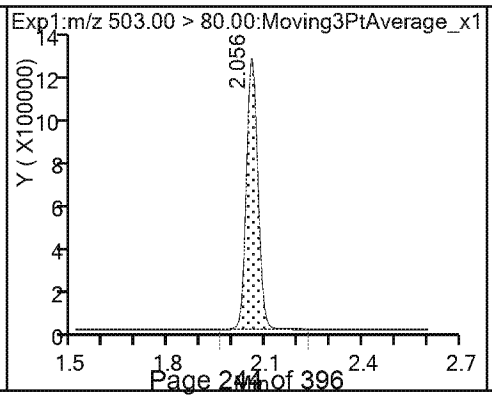
8 Perfluorooctane sulfonic acid (M)



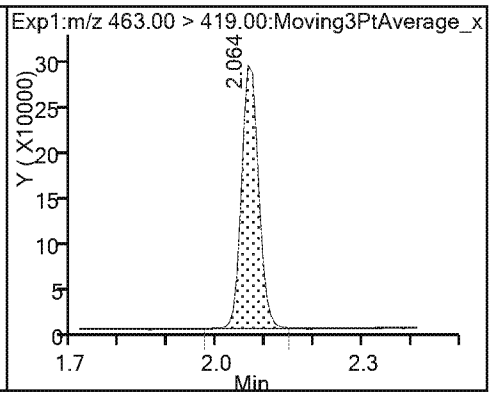
8 Perfluorooctane sulfonic acid



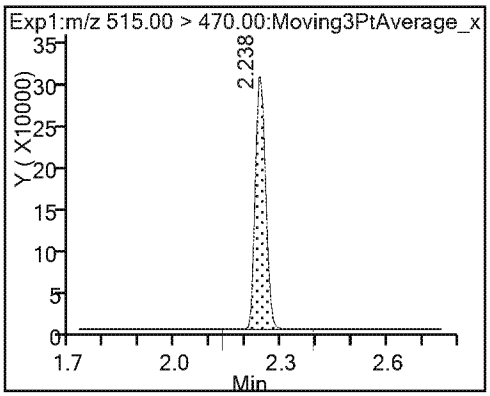
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA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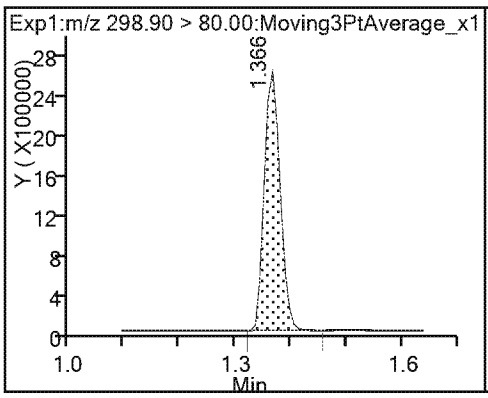
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

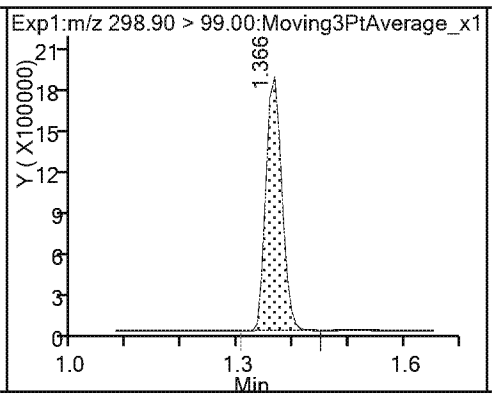
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_013.d
Injection Date: 06-Mar-2018 23:32:09 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

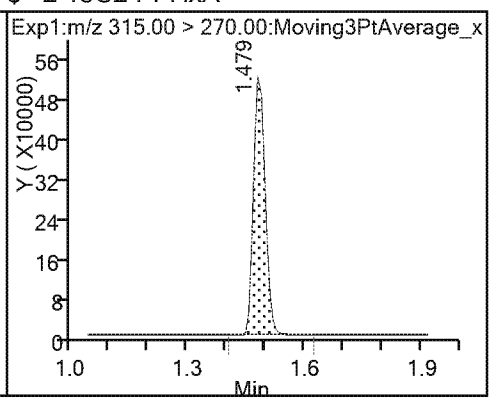
1 Perfluorobutanesulfonic acid



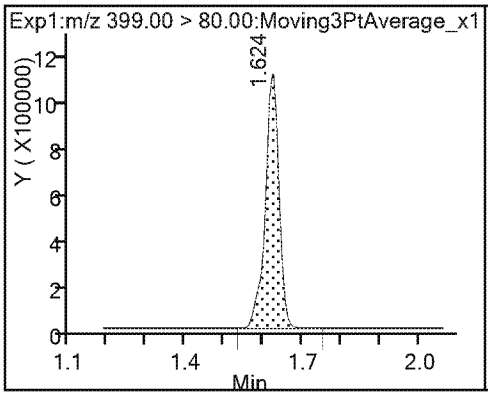
1 Perfluorobutanesulfonic acid



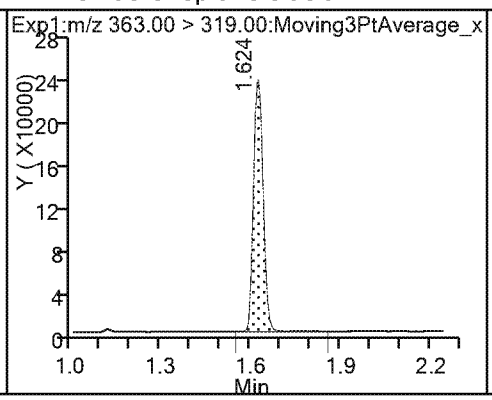
$ 2 13C2 PFHxA



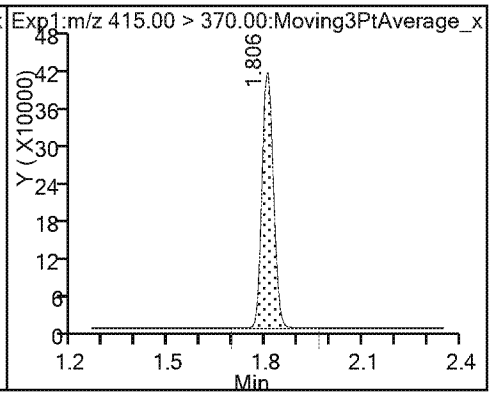
3 Perfluorohexanesulfonic acid



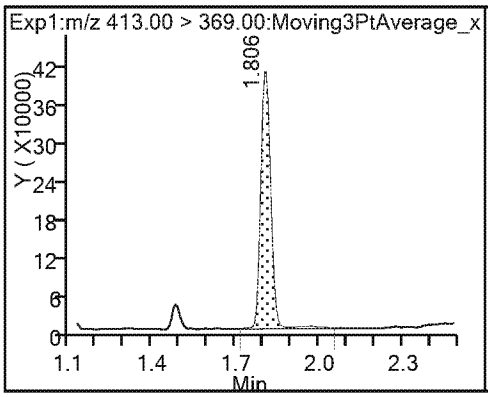
4 Perfluoroheptanoic acid



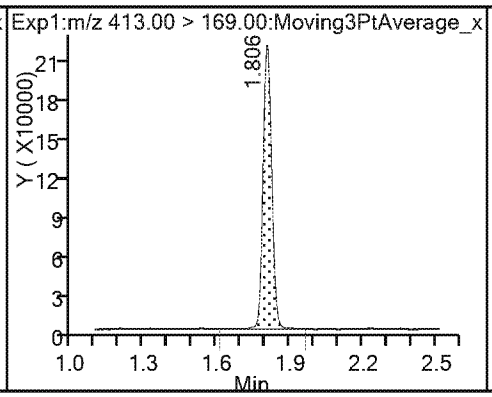
* 6 13C2-PFOA



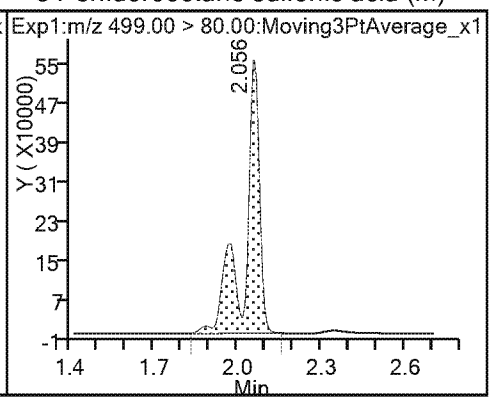
5 Perfluorooctanoic acid



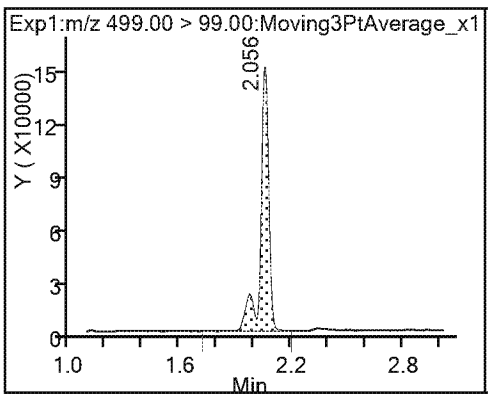
5 Perfluorooctanoic acid



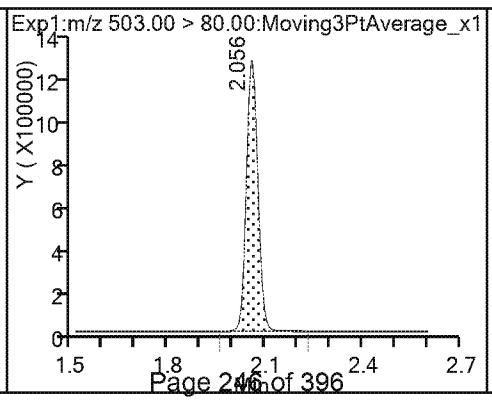
8 Perfluorooctane sulfonic acid (M)



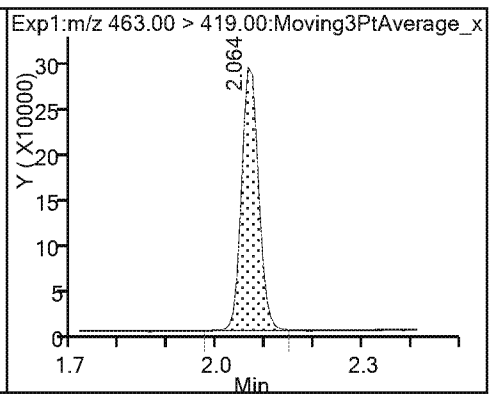
8 Perfluorooctane sulfonic acid



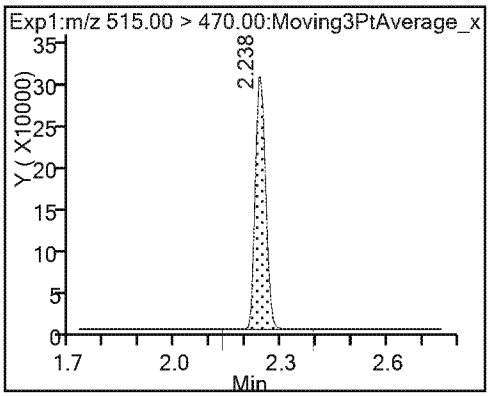
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

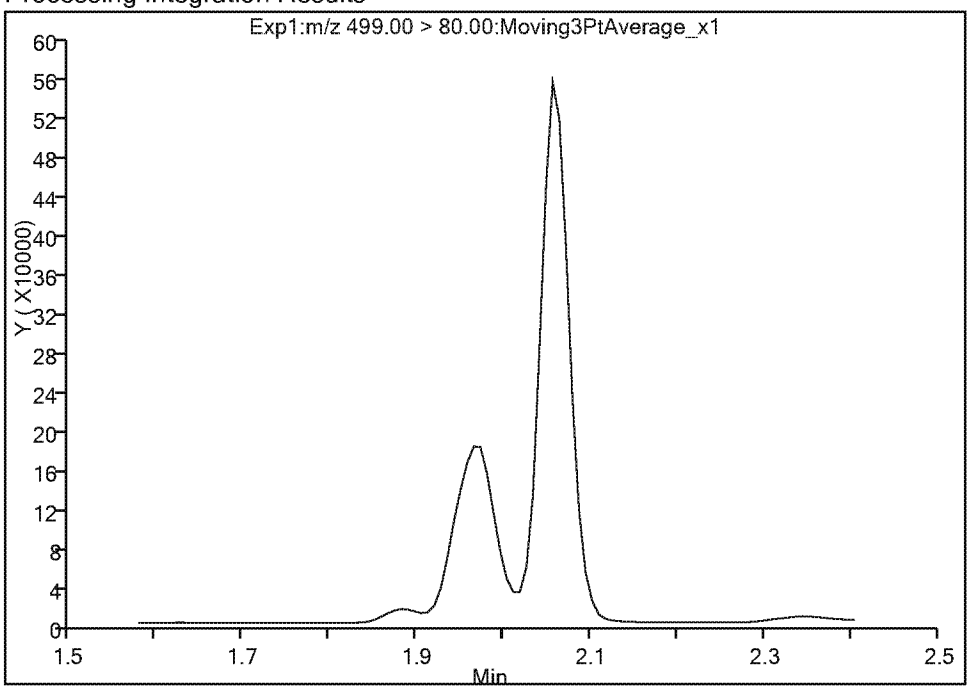
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_013.d				
Injection Date:	06-Mar-2018 23:32:09	Instrument ID:	A8_N		
Lims ID:	CCV L3				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

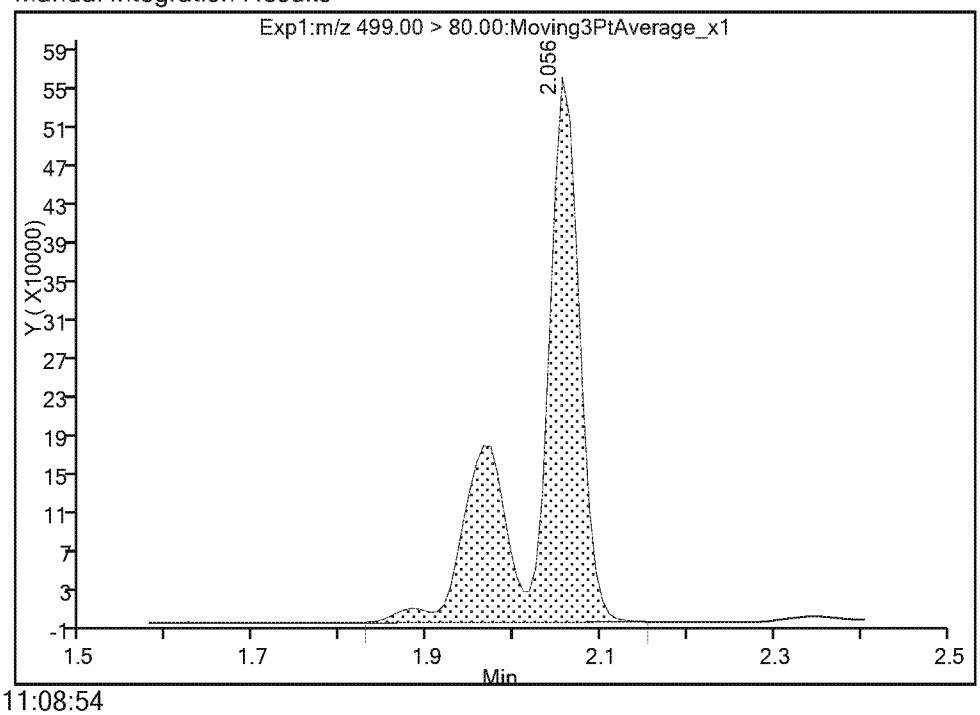
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 1926607
Amount: 20.120111
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:08:54
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

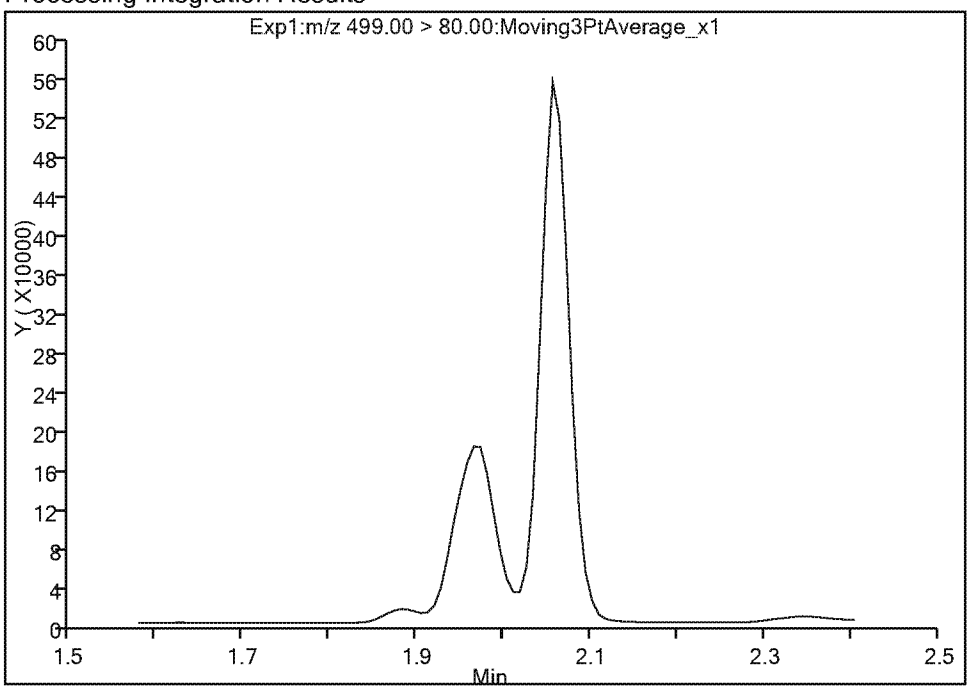
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_013.d				
Injection Date:	06-Mar-2018 23:32:09	Instrument ID:	A8_N		
Lims ID:	CCV L3				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

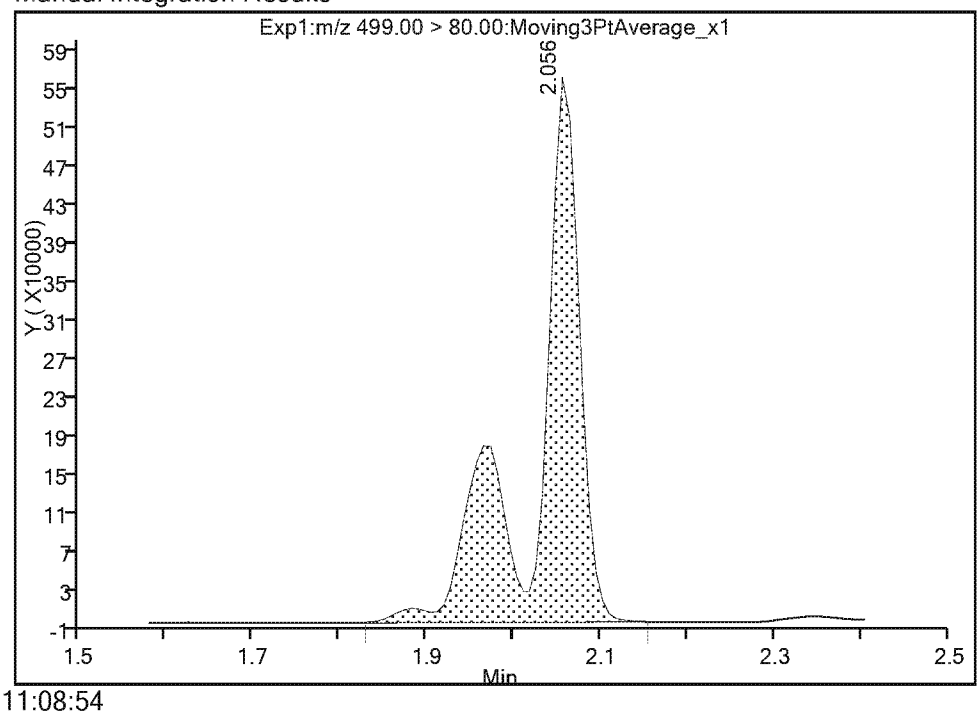
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 1926607
Amount: 20.120111
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:08:54
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCV 320-211581/24 Calibration Date: 03/07/2018 00:23

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.06_537C_024.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		0.9782		126	135	-7.0	30.0
Perfluoroheptanoic acid	Ave	0.9711	1.032		15.9	15.0	6.2	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.629		45.5	45.0	1.2	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9735		30.5	30.2	1.2	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9656		61.5	60.3	2.1	30.0
Perfluorononanoic acid	Ave	0.6154	0.7000		34.1	30.0	13.7	30.0
13C2 PFHxA	Ave	1.100	1.106		10.1	10.0	0.6	30.0
13C2 PFDA	Ave	0.5243	0.6350		12.1	10.0	21.1	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_024.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 07-Mar-2018 00:23:34 ALS Bottle#: 5 Worklist Smp#: 24
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\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:25 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 11:10:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.366	0.0	1.000	12241095	125.5		13409	
298.90 > 99.00	1.358	1.366	-0.008	0.994	8994537		1.36(0.00-0.00)	11810	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	959524	10.1		13344	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.624	0.0	1.000	6796450	45.5		11812	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	1342566	15.9		366	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		867372	10.0		8126	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	2547174	30.5		100	
413.00 > 169.00	1.806	1.806	0.0	1.000	1338052		1.90(0.00-0.00)	1101	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	5393360	61.5		2585	M
499.00 > 99.00	2.056	2.056	0.0	1.000	1119201		4.82(0.00-0.00)	732	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2658438	28.7		9108	
9 Perfluorononanoic acid									
463.00 > 419.00	2.064	2.064	0.0	1.000	1821977	34.1		301	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	550804	12.1		5314	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

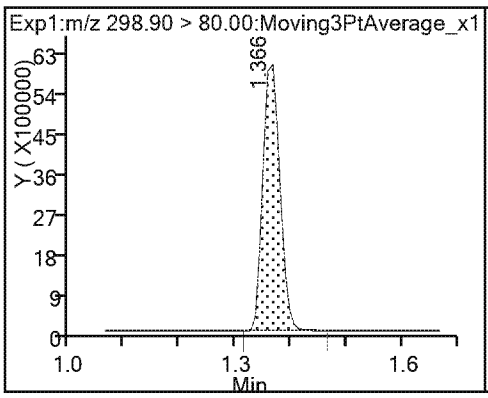
Reagents:

LC537-L5_00025 Amount Added: 1.00 Units: mL

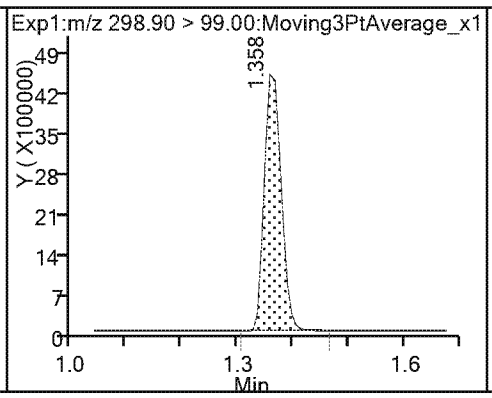
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_024.d
Injection Date: 07-Mar-2018 00:23:34 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

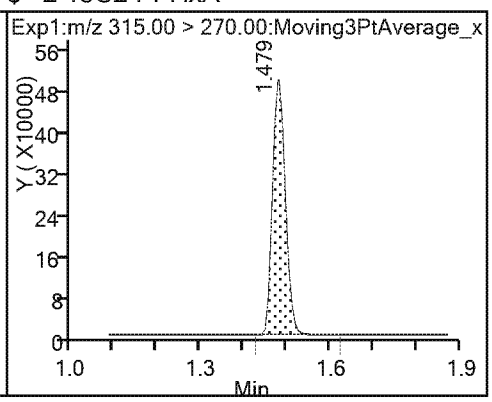
1 Perfluorobutanesulfonic acid



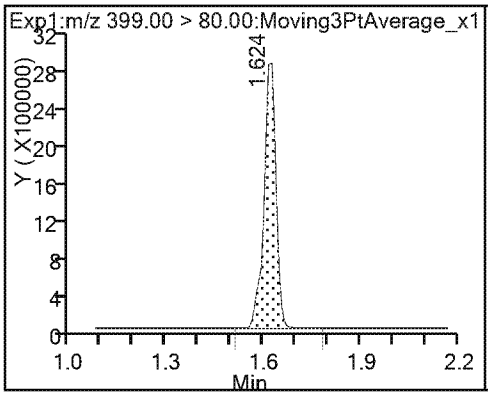
1 Perfluorobutanesulfonic acid



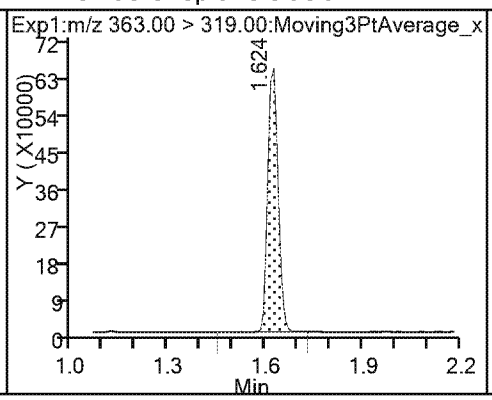
$ 2 13C2 PFHxA



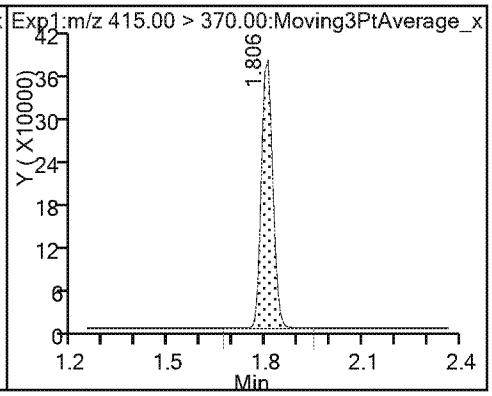
3 Perfluorohexanesulfonic acid



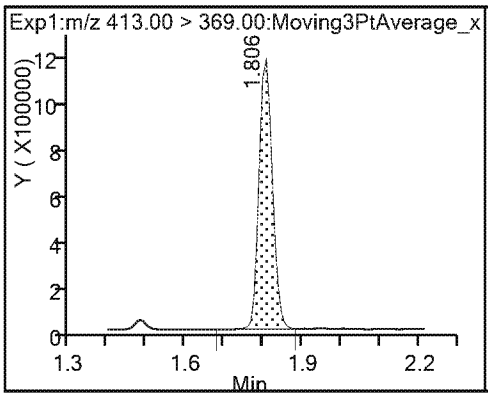
4 Perfluoroheptanoic acid



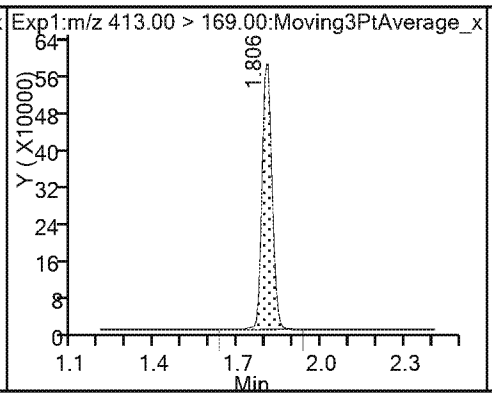
* 6 13C2-PFOA



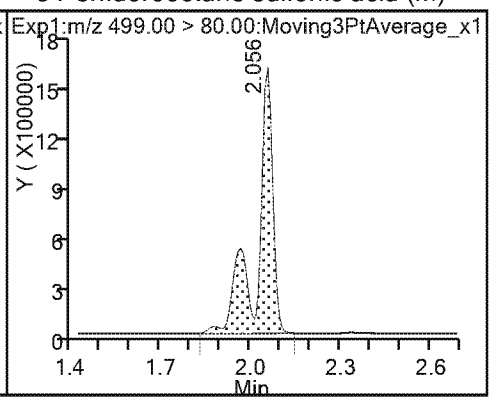
5 Perfluorooctanoic acid



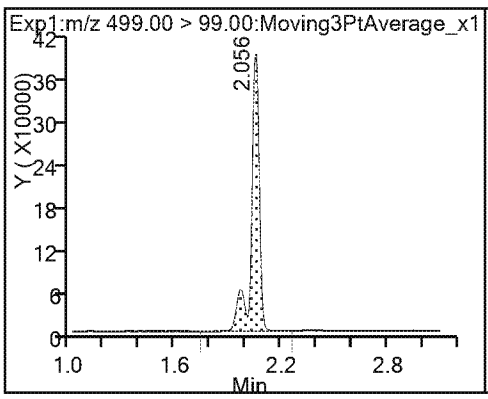
5 Perfluorooctanoic acid



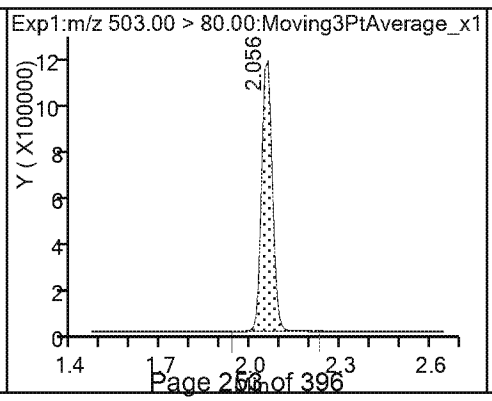
8 Perfluorooctane sulfonic acid (M)



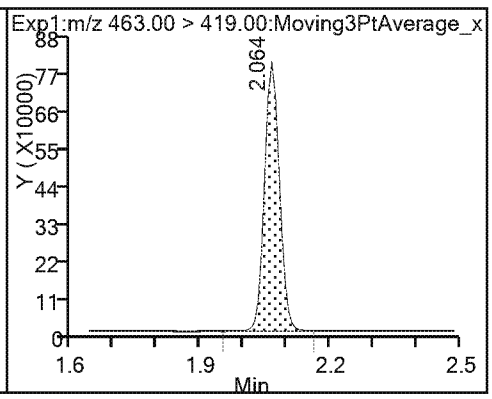
8 Perfluorooctane sulfonic acid



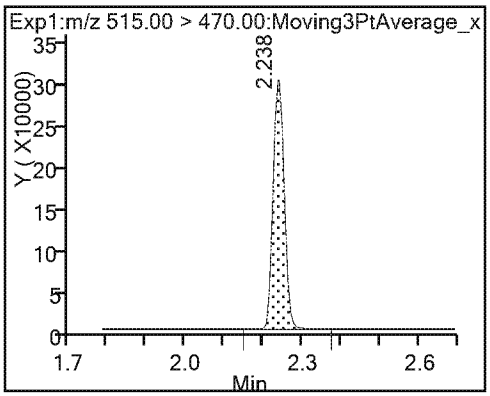
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

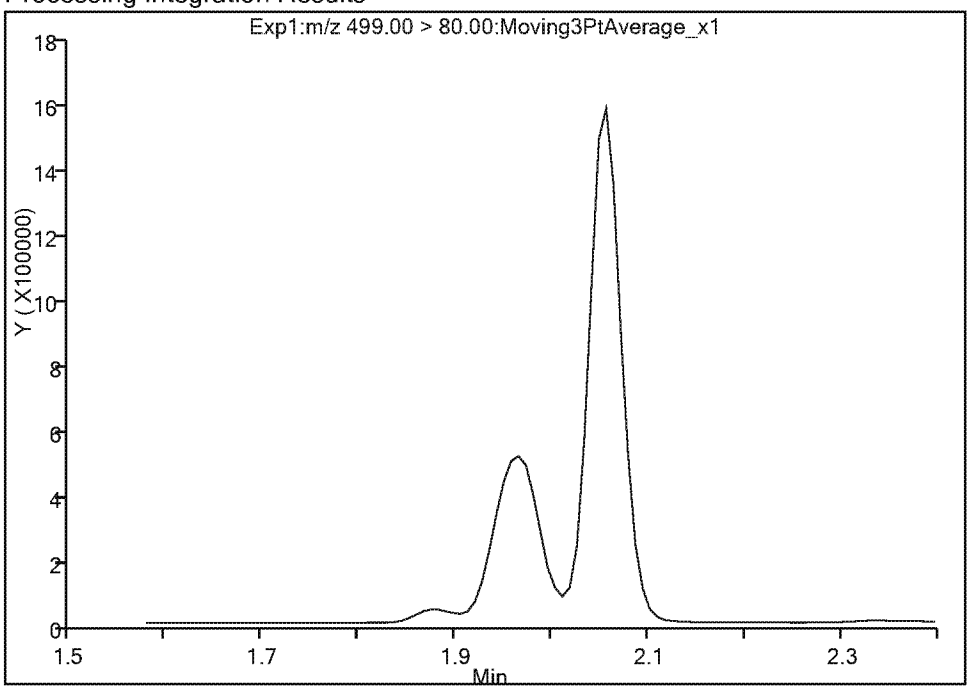
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_024.d				
Injection Date:	07-Mar-2018 00:23:34	Instrument ID:	A8_N		
Lims ID:	CCV L5				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	24
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

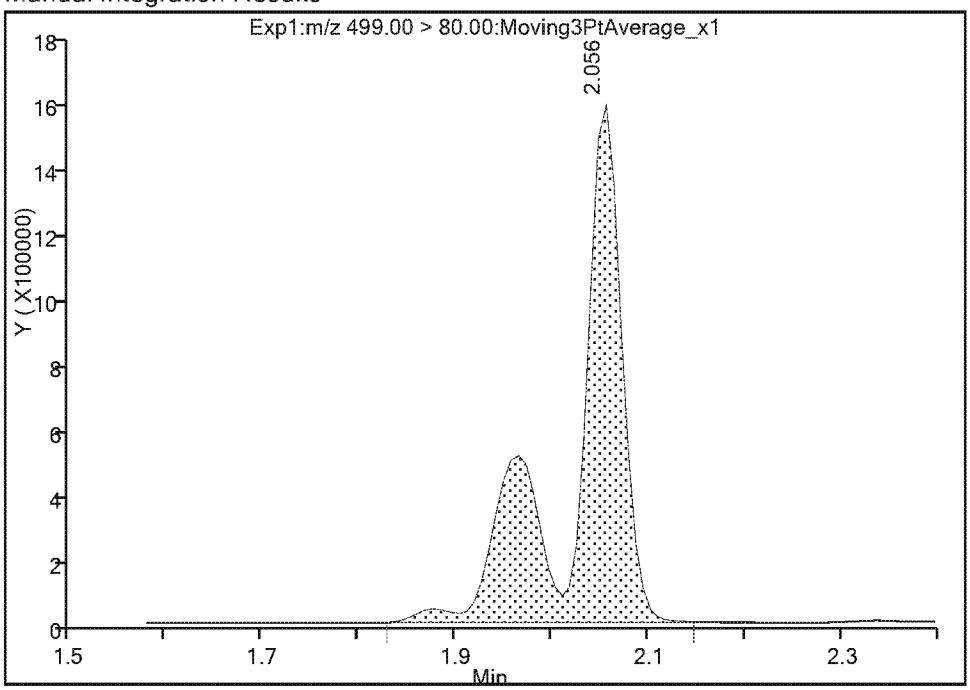
Not Detected
Expected RT: 2.06

Processing Integration Results



Manual Integration Results

RT: 2.06
Area: 5393360
Amount: 61.536589
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:09:22
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCVL 320-212122/1 Calibration Date: 03/09/2018 08:53

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.09_537A_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.120		17.5	20.0	-12.6	50.0
Perfluoroheptanoic acid	Ave	0.9711	0.9772		2.24	2.22	0.6	50.0
Perfluorohexanesulfonic acid	Ave	1.610	1.599		6.62	6.67	-0.7	50.0
Perfluorooctanoic acid	Ave	0.9620	0.9698		4.51	4.47	0.8	50.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9325		8.80	8.93	-1.4	50.0
Perfluorononanoic acid	Ave	0.6154	0.6387		4.61	4.45	3.8	50.0
13C2 PFHxA	Ave	1.100	1.000		9.09	10.0	-9.1	30.0
13C2 PFDA	Ave	0.5243	0.5277		10.1	10.0	0.7	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_004.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 09-Mar-2018 08:53:57 ALS Bottle#: 2 Worklist Smp#: 1
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\20180309-55099.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 09-Mar-2018 11:02:08 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK018

First Level Reviewer: Ex. 4 CBI Date: 09-Mar-2018 10:37:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.373	1.373	0.0	1.000	2368411	17.5		1694	
298.90 > 99.00	1.373	1.373	0.0	1.000	1698957		1.39(0.00-0.00)	1425	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.495	1.495	0.0	1.000	1054748	9.09		15169	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.646	1.639	0.007	1.000	1127835	6.62		4491	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.646	1.639	0.007	1.000	229084	2.24		53.6	
* 6 13C2-PFOA									
415.00 > 370.00	1.844	1.828	0.016		1054723	10.0		8357	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.844	1.828	0.016	1.000	457134	4.51		14.8	
413.00 > 169.00	1.844	1.828	0.016	1.000	236952		1.93(0.00-0.00)	241	
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.086	0.016		3033079	28.7		12827	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.102	2.086	0.016	1.000	880314	8.80		890	M
499.00 > 99.00	2.102	2.086	0.016	1.000	191814		4.59(0.00-0.00)	127	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.094	0.023	1.000	299489	4.61		51.0	
$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.253	0.015	1.000	556557	10.1		4537	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

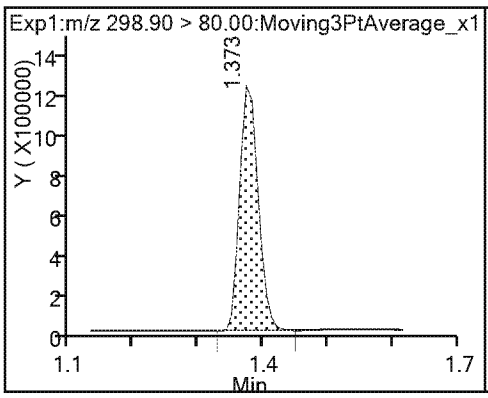
Reagents:

LC537-L2_00021 Amount Added: 1.00 Units: mL

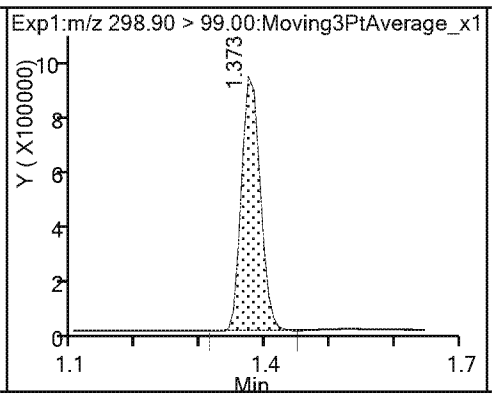
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_004.d
Injection Date: 09-Mar-2018 08:53:57 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 2 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

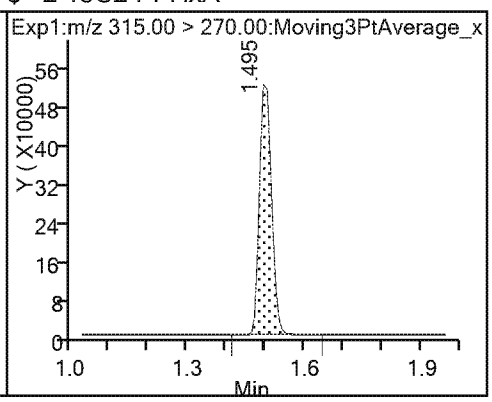
1 Perfluorobutanesulfonic acid



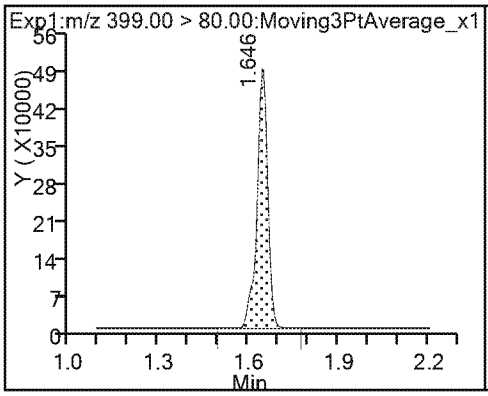
1 Perfluorobutanesulfonic acid



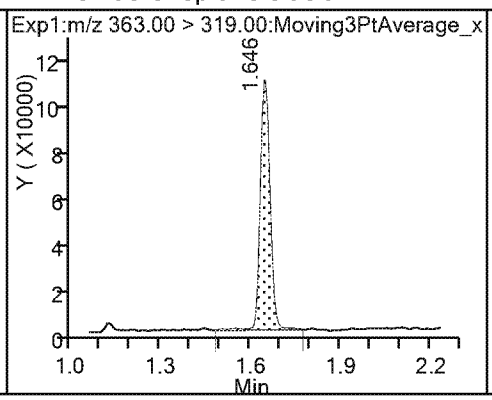
$ 2 13C2 PFHxA



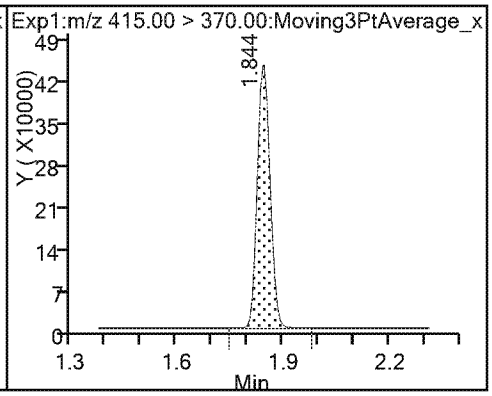
3 Perfluorohexanesulfonic acid



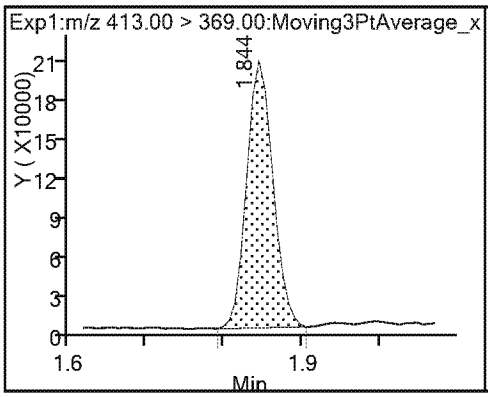
4 Perfluoroheptanoic acid



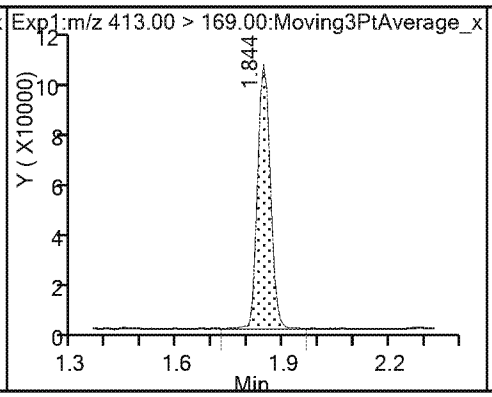
* 6 13C2-PFOA



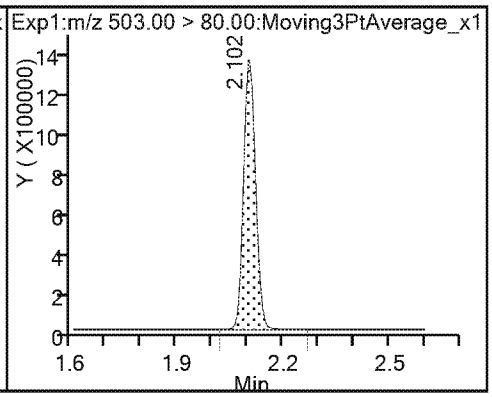
5 Perfluorooctanoic acid



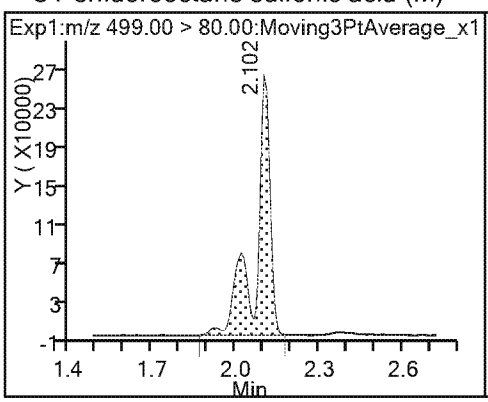
5 Perfluorooctanoic acid



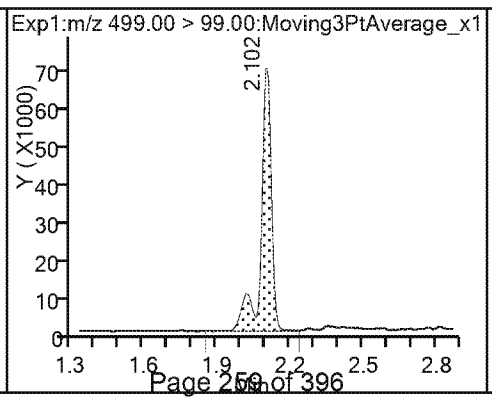
* 7 13C4 PFOS



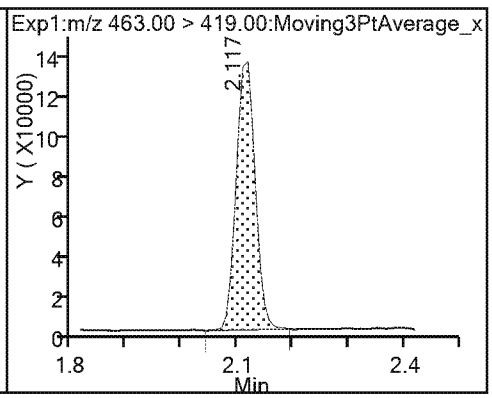
8 Perfluorooctane sulfonic acid (M)



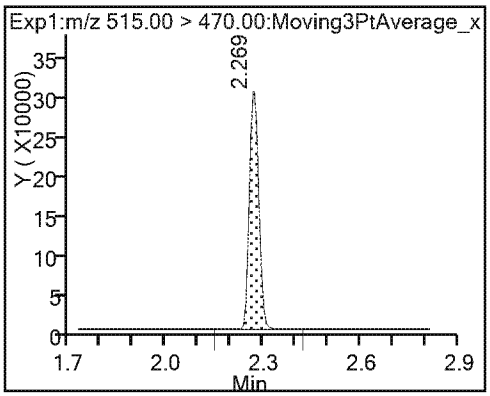
8 Perfluorooctane sulfonic acid



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.269
Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
2.9
Min

TestAmerica Sacramento

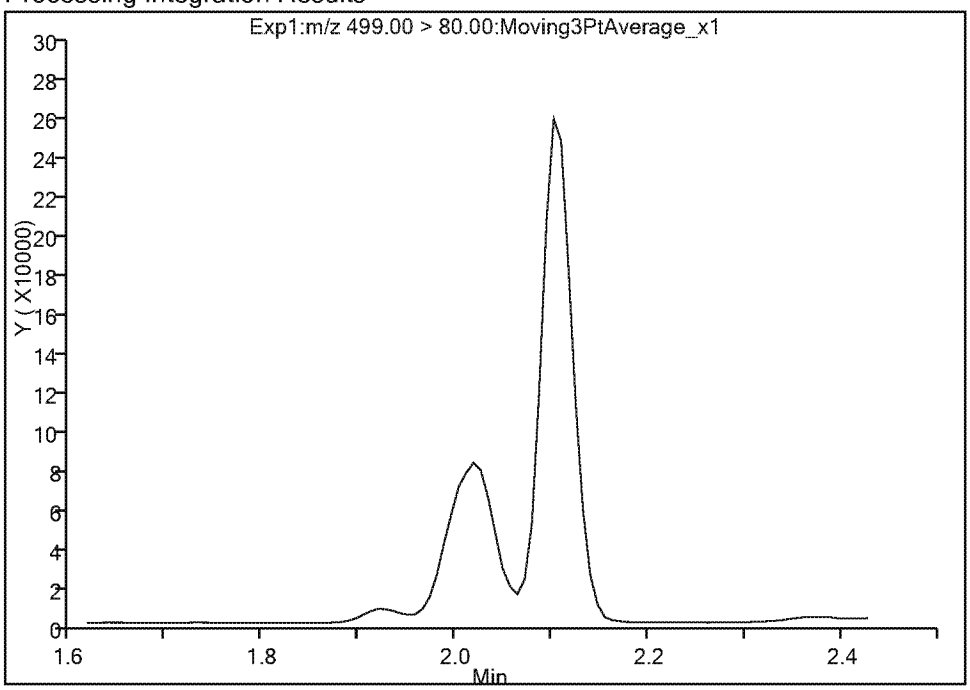
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_004.d				
Injection Date:	09-Mar-2018 08:53:57	Instrument ID:	A8_N		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

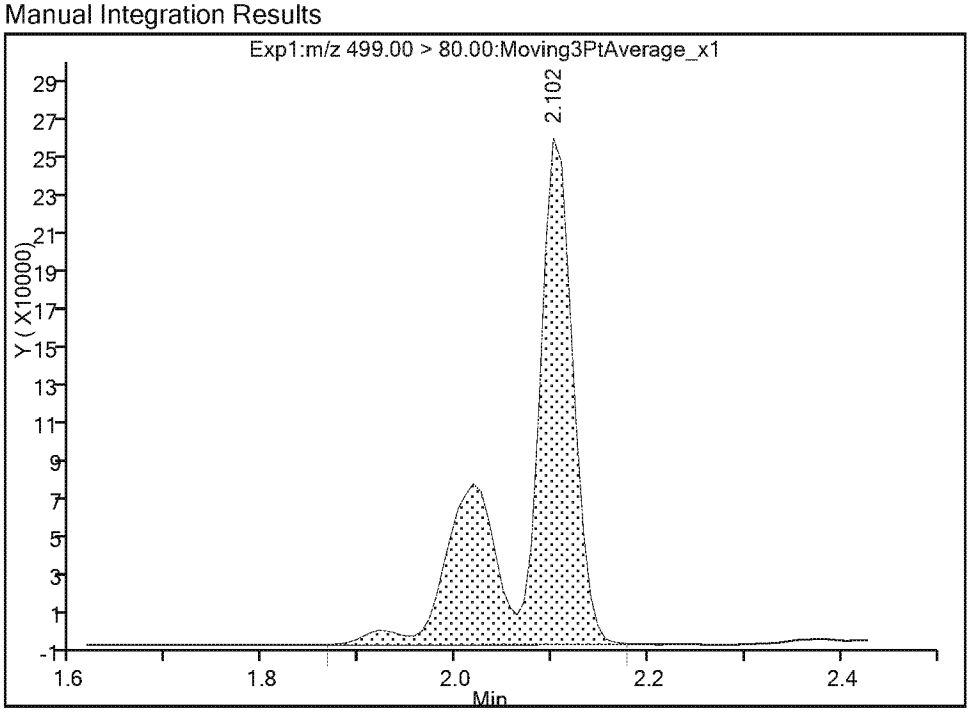
Not Detected
Expected RT: 2.09

Processing Integration Results



Manual Integration Results

RT: 2.10
Area: 880314
Amount: 8.803481
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 09-Mar-2018 10:50:05
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCV 320-212122/2 Calibration Date: 03/09/2018 08:58

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.09_537A_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		0.9924		128	135	-5.2	30.0
Perfluoroheptanoic acid	Ave	0.9711	0.9617		14.9	15.0	-1.0	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.673		46.8	45.0	3.9	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9580		30.0	30.2	-0.4	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	1.008		64.3	60.3	6.6	30.0
Perfluorononanoic acid	Ave	0.6154	0.6564		32.0	30.0	6.7	30.0
13C2 PFHxA	Ave	1.100	1.048		9.53	10.0	-4.7	30.0
13C2 PFDA	Ave	0.5243	0.5768		11.0	10.0	10.0	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_005.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 09-Mar-2018 08:58:38 ALS Bottle#: 5 Worklist Smp#: 2
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\20180309-55099.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 09-Mar-2018 11:02:10 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK018

First Level Reviewer: Ex. 4 CBI Date: 09-Mar-2018 10:37:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.373	1.373	0.0	1.000	12447724	128.0		7387	
298.90 > 99.00	1.373	1.373	0.0	1.000	9494307		1.31(0.00-0.00)	7362	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.495	1.495	0.0	1.000	999467	9.53		12026	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.646	1.646	0.0	1.000	6996257	46.8		19107	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.646	1.646	0.0	1.000	1375593	14.9		328	
* 6 13C2-PFOA									
415.00 > 370.00	1.844	1.844	0.0		953378	10.0		9038	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.844	1.844	0.0	1.000	2755263	30.0		79.6	
413.00 > 169.00	1.844	1.844	0.0	1.000	1532923		1.80(0.00-0.00)	1696	
* 7 13C4 PFOS									
503.00 > 80.00	2.102	2.102	0.0		2664407	28.7		10165	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.102	2.086	0.016	1.000	5644055	64.3		14484	a
499.00 > 99.00	2.102	2.086	0.016	1.000	1195413		4.72(0.00-0.00)	747	
9 Perfluorononanoic acid									
463.00 > 419.00	2.109	2.109	0.0	1.000	1878062	32.0		355	
$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.269	0.0	1.000	549917	11.0		3912	

QC Flag Legend

Review Flags

a - User Assigned ID

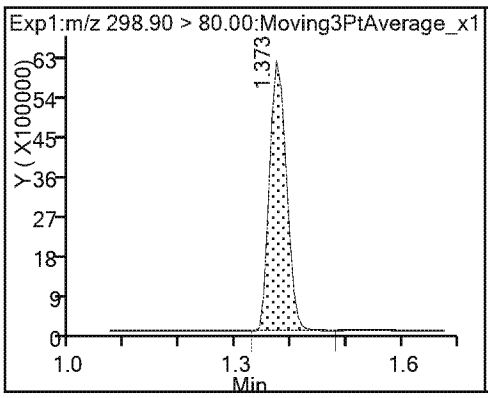
Reagents:

LC537-L5_00025 Amount Added: 1.00 Units: mL

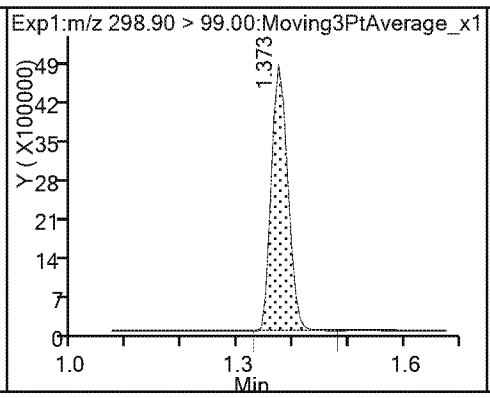
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_005.d
Injection Date: 09-Mar-2018 08:58:38 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

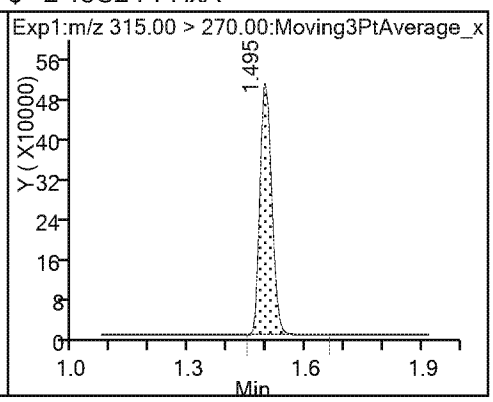
1 Perfluorobutanesulfonic acid



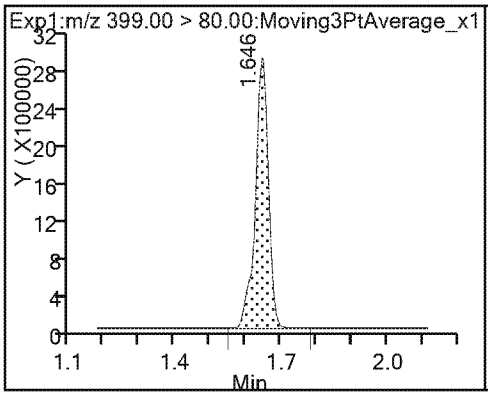
1 Perfluorobutanesulfonic acid



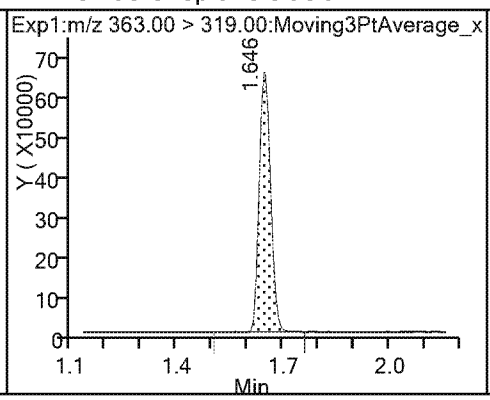
$ 2 13C2 PFHxA



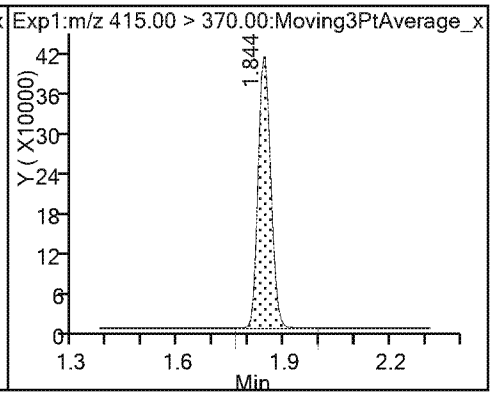
3 Perfluorohexanesulfonic acid



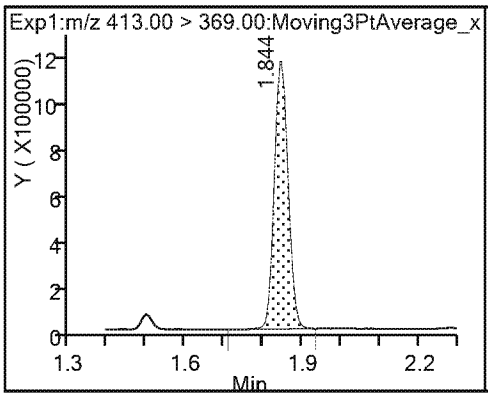
4 Perfluoroheptanoic acid



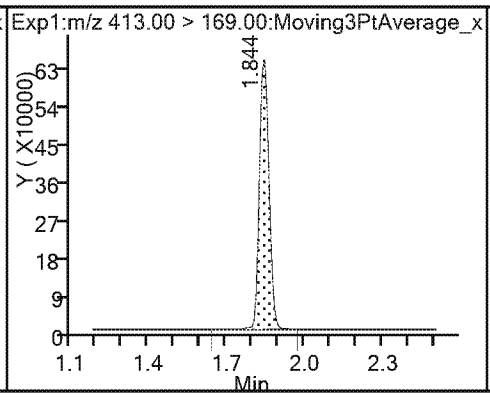
* 6 13C2-PFOA



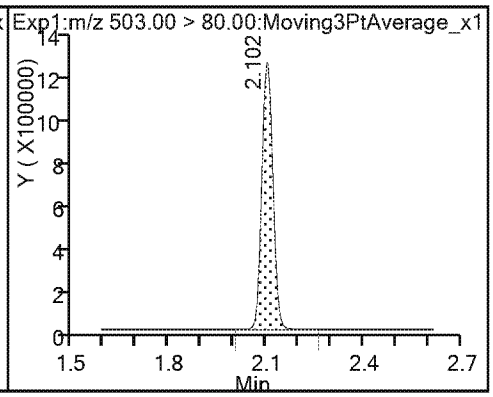
5 Perfluorooctanoic acid



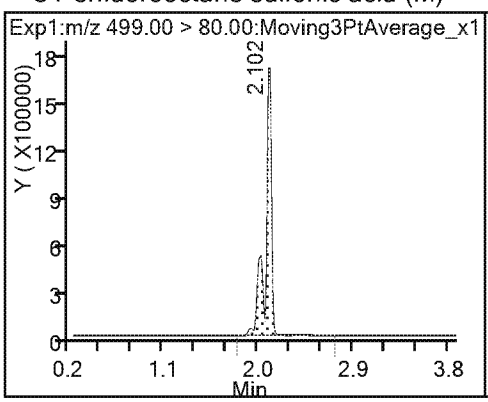
5 Perfluorooctanoic acid



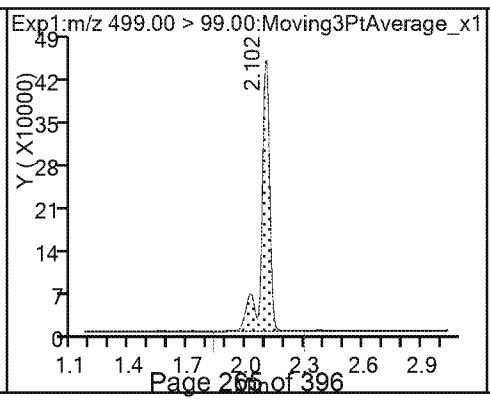
* 7 13C4 PFOS



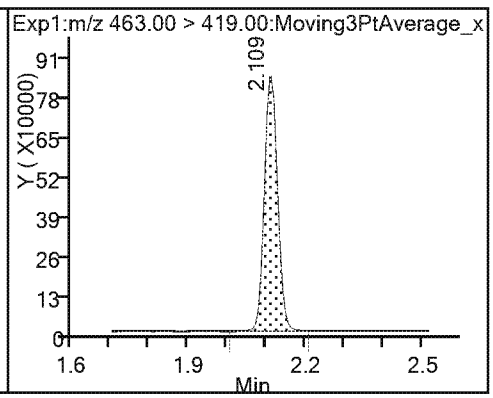
8 Perfluorooctane sulfonic acid (M)



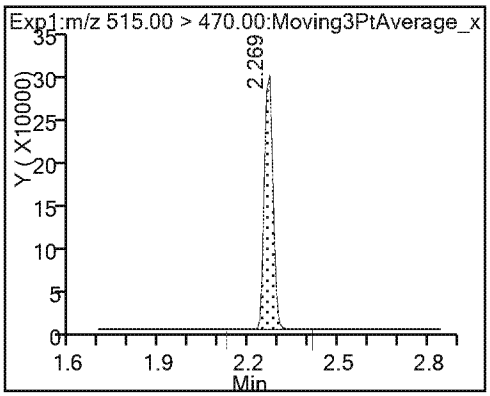
8 Perfluorooctane sulfonic acid



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.269
Y (X10000)
35
30
25
20
15
10
5
0
1.6
1.9
2.2
2.5
2.8
Min

TestAmerica Sacramento

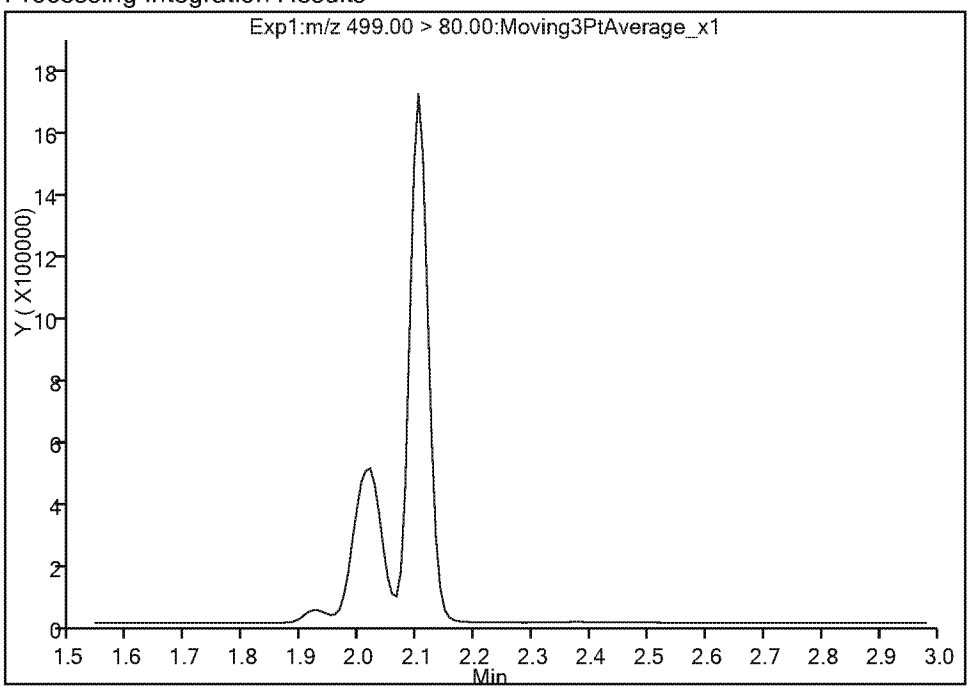
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_005.d				
Injection Date:	09-Mar-2018 08:58:38	Instrument ID:	A8_N		
Lims ID:	CCV L5				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

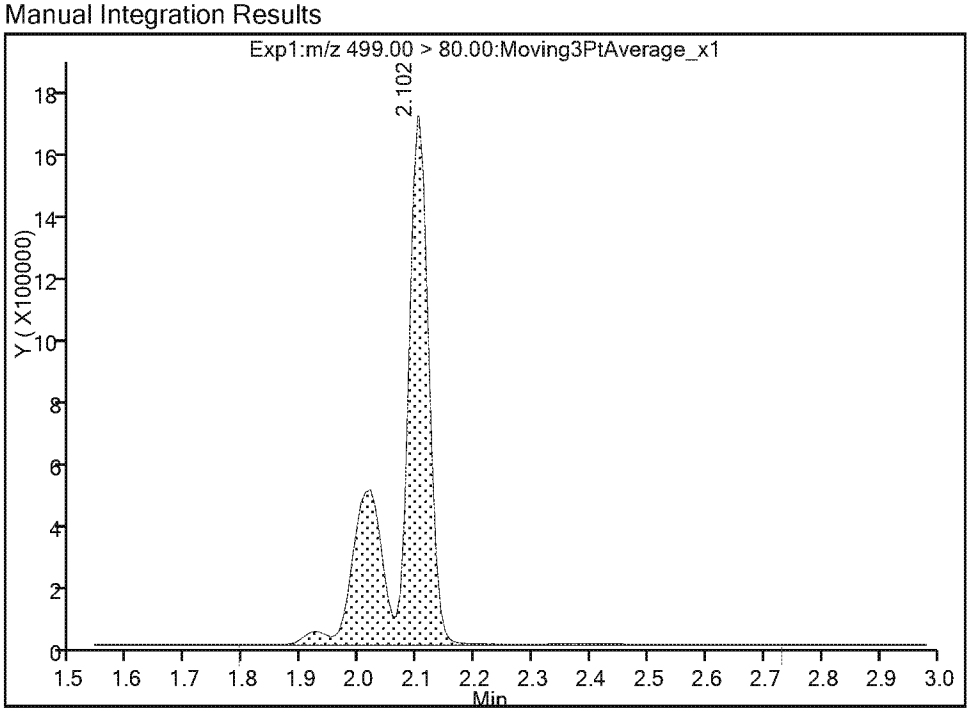
Processing Integration Results

Not Detected
Expected RT: 2.09



Manual Integration Results

RT: 2.10
Area: 5644055
Amount: 64.252676
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 09-Mar-2018 10:37:12
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCV 320-212122/8 Calibration Date: 03/09/2018 09:26

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.09_537A_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.104		40.3	45.0	-10.4	30.0
Perfluoroheptanoic acid	Ave	0.9711	1.001		5.15	5.00	3.1	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.599		14.9	15.0	-0.7	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9415		9.84	10.1	-2.1	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9412		20.0	20.1	-0.5	30.0
Perfluorononanoic acid	Ave	0.6154	0.6887		11.2	10.0	11.9	30.0
13C2 PFHxA	Ave	1.100	1.078		9.80	10.0	-2.0	30.0
13C2 PFDA	Ave	0.5243	0.5843		11.1	10.0	11.5	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_011.d
Lims ID: CCV L3
Client ID:
Sample Type: CCVIS
Inject. Date: 09-Mar-2018 09:26:38 ALS Bottle#: 3 Worklist Smp#: 8
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\20180309-55099.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 09-Mar-2018 11:02:21 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK018

First Level Reviewer: Ex. 4 CBI Date: 09-Mar-2018 10:51:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.373	1.373	0.0	1.000	4589578	40.3		3203	
298.90 > 99.00	1.373	1.373	0.0	1.000	3238535		1.42(0.00-0.00)	2671	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.495	1.495	0.0	1.000	938640	9.80		10573	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.639	1.639	0.0	1.000	2216641	14.9		8432	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.639	1.639	0.0	1.000	435824	5.15		104	
* 6 13C2-PFOA									
415.00 > 370.00	1.828	1.828	0.0		870751	10.0		8358	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.828	1.828	0.0	1.000	824325	9.84		23.3	
413.00 > 169.00	1.828	1.828	0.0	1.000	452037		1.82(0.00-0.00)	484	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.086	2.086	0.0	1.000	1746175	20.0		1745	M
499.00 > 99.00	2.086	2.086	0.0	1.000	363001		4.81(0.00-0.00)	215	
* 7 13C4 PFOS									
503.00 > 80.00	2.086	2.086	0.0		2649281	28.7		12183	
9 Perfluorononanoic acid									
463.00 > 419.00	2.094	2.094	0.0	1.000	599890	11.2		123	
$ 10 13C2 PFDA									
515.00 > 470.00	2.261	2.261	0.0	1.000	508788	11.1		3885	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

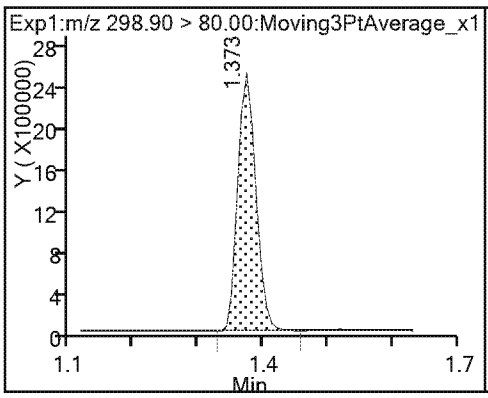
Reagents:

LC537-L3_00024 Amount Added: 1.00 Units: mL

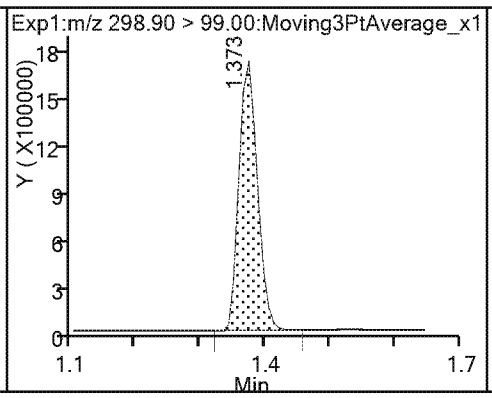
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_011.d
Injection Date: 09-Mar-2018 09:26:38 Instrument ID: A8_N
Lims ID: CCV L3
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

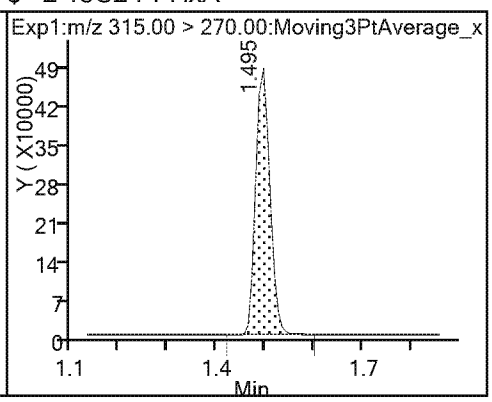
1 Perfluorobutanesulfonic acid



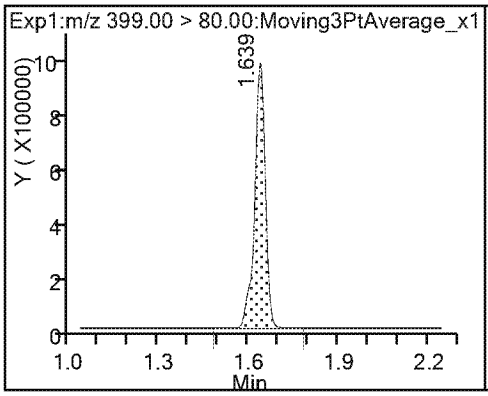
1 Perfluorobutanesulfonic acid



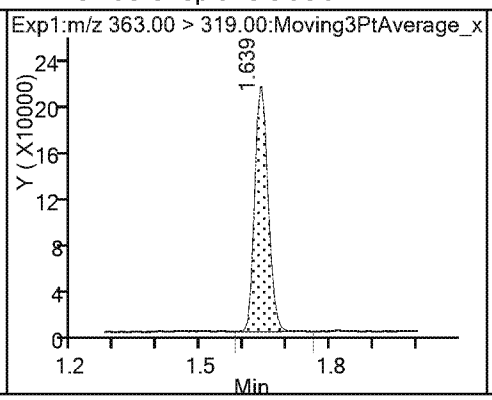
$ 2 13C2 PFHxA



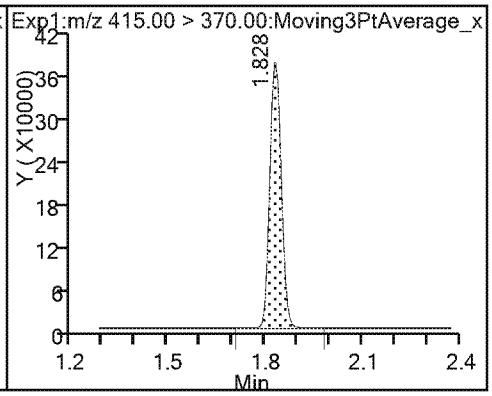
3 Perfluorohexanesulfonic acid



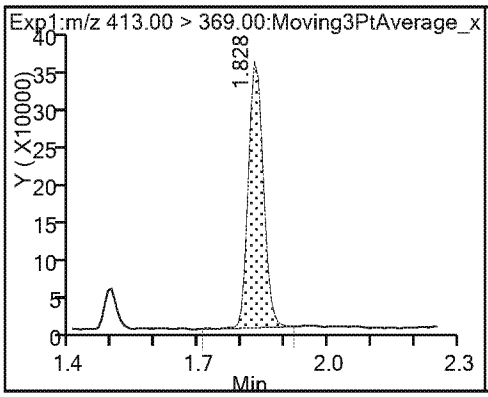
4 Perfluoroheptanoic acid



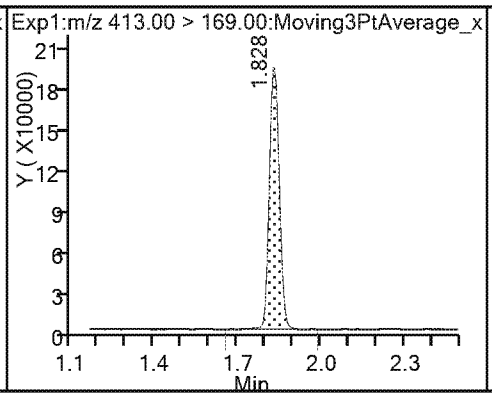
* 6 13C2-PFOA



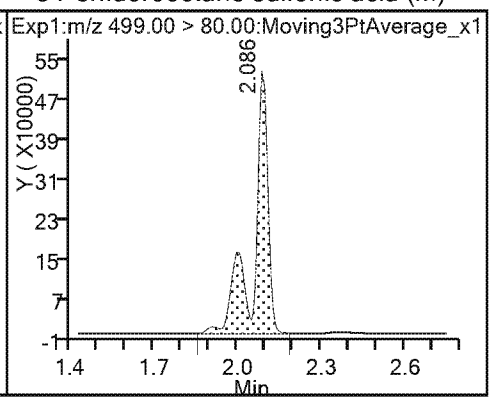
5 Perfluorooctanoic acid



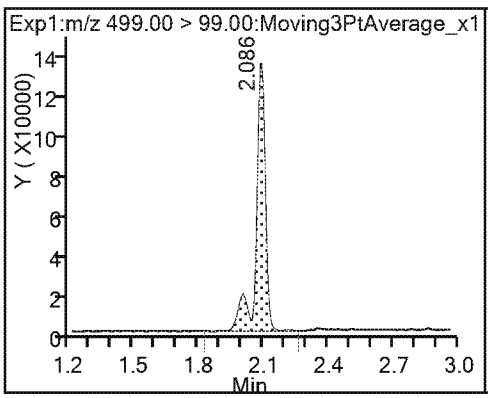
5 Perfluorooctanoic acid



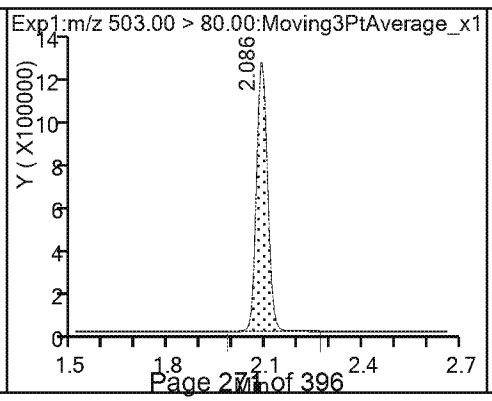
8 Perfluorooctane sulfonic acid (M)



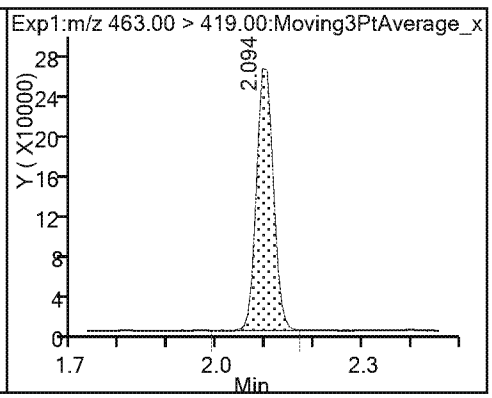
8 Perfluorooctane sulfonic acid



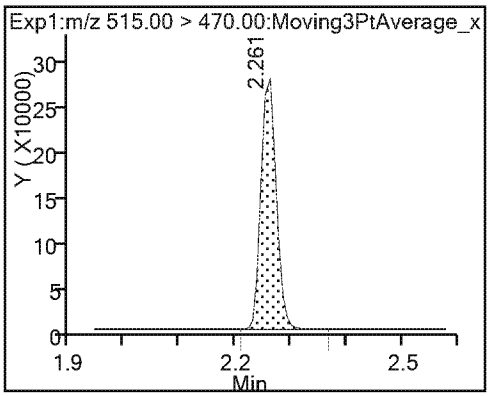
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.261
Y (X10000)
30
25
20
15
10
5
0
1.9
2.2
2.5
Min

TestAmerica Sacramento

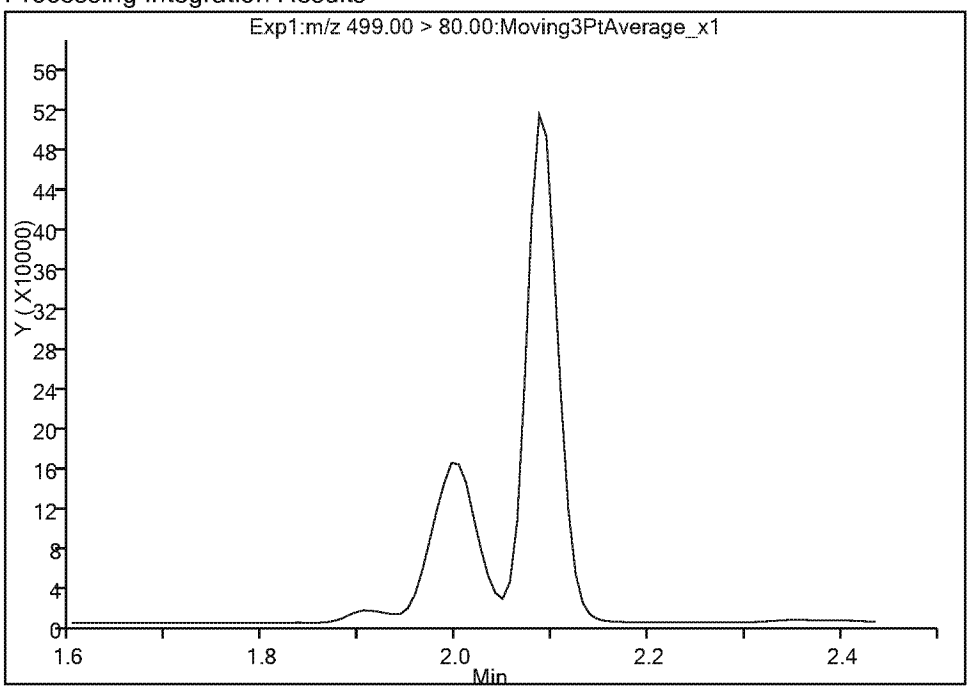
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_011.d				
Injection Date:	09-Mar-2018 09:26:38	Instrument ID:	A8_N		
Lims ID:	CCV L3				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

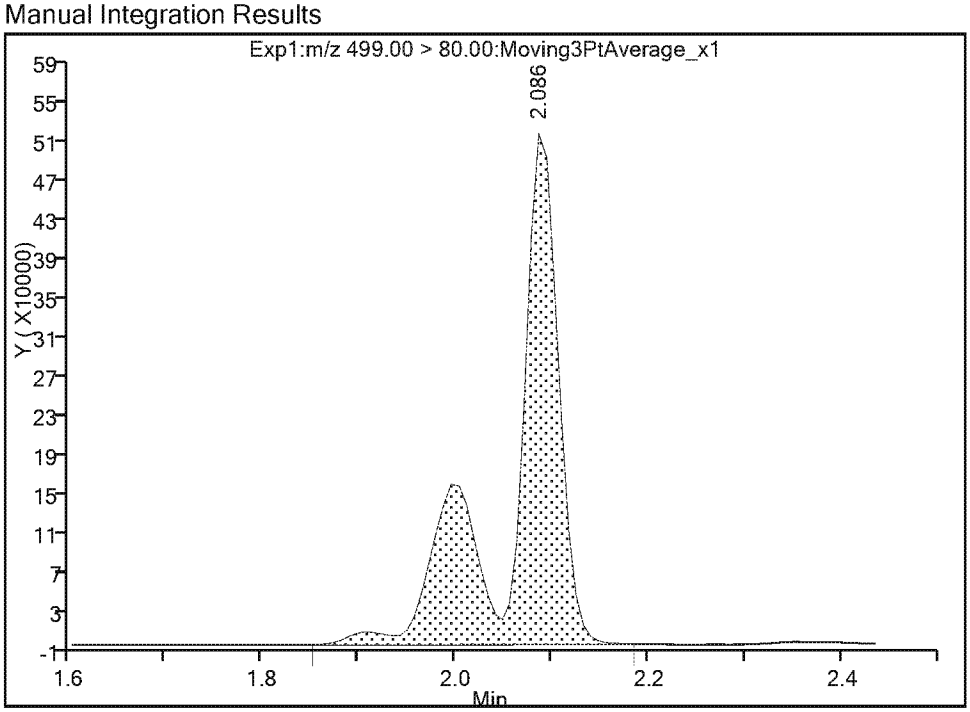
Processing Integration Results

Not Detected
Expected RT: 2.09



Manual Integration Results

RT: 2.09
Area: 1746175
Amount: 19.992186
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 09-Mar-2018 10:51:06
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCVL 320-212525/1 Calibration Date: 03/12/2018 16:16

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.12_537AA_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.063		16.6	20.0	-17.1	50.0
Perfluoroheptanoic acid	Ave	0.9711	0.8604		1.97	2.22	-11.4	50.0
Perfluorohexanesulfonic acid	Ave	1.610	1.551		6.42	6.67	-3.7	50.0
Perfluorooctanoic acid	Ave	0.9620	0.9247		4.30	4.47	-3.9	50.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9648		9.11	8.93	2.0	50.0
Perfluorononanoic acid	Ave	0.6154	0.6166		4.45	4.45	0.2	50.0
13C2 PFHxA	Ave	1.100	0.9177		8.34	10.0	-16.6	30.0
13C2 PFDA	Ave	0.5243	0.5102		9.73	10.0	-2.7	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_004.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 12-Mar-2018 16:16:41 ALS Bottle#: 2 Worklist Smp#: 1
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\20180312-55198.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 12-Mar-2018 17:03:59 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK030

First Level Reviewer: Ex. 4 CBI Date: 12-Mar-2018 16:45:12

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	1.388	0.008	1.000	1784619	16.6		261	
298.90 > 99.00	1.396	1.388	0.008	1.000	1289224		1.38(0.00-0.00)	700	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.517	1.510	0.007	1.000	770824	8.34		8951	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.669	1.646	0.023	1.000	867857	6.42		428	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.669	1.646	0.023	1.000	160620	1.97		35.2	
* 6 13C2-PFOA									
415.00 > 370.00	1.859	1.821	0.038		839914	10.0		8037	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.859	1.821	0.038	1.000	347093	4.30		11.3	
413.00 > 169.00	1.859	1.821	0.038	1.000	189391		1.83(0.00-0.00)	131	
* 7 13C4 PFOS									
503.00 > 80.00	2.109	2.064	0.045		2407064	28.7		1175	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.109	2.064	0.045	1.000	722870	9.11		76.0	a
499.00 > 99.00	2.109	2.064	0.045	1.000	155138		4.66(0.00-0.00)	82.9	
9 Perfluorononanoic acid									
463.00 > 419.00	2.117	2.071	0.046	1.000	230251	4.45		4.1	
$ 10 13C2 PFDA									
515.00 > 470.00	2.276	2.253	0.023	1.000	428517	9.73		4271	

QC Flag Legend

Review Flags

a - User Assigned ID

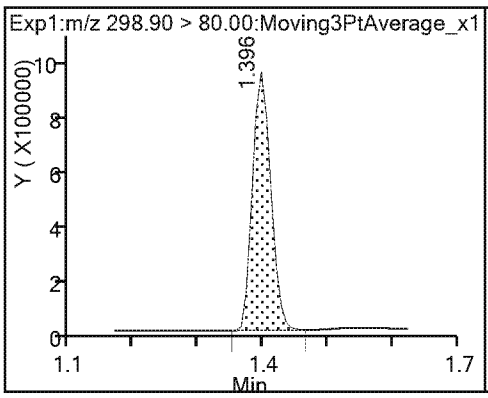
Reagents:

LC537-L2_00021 Amount Added: 1.00 Units: mL

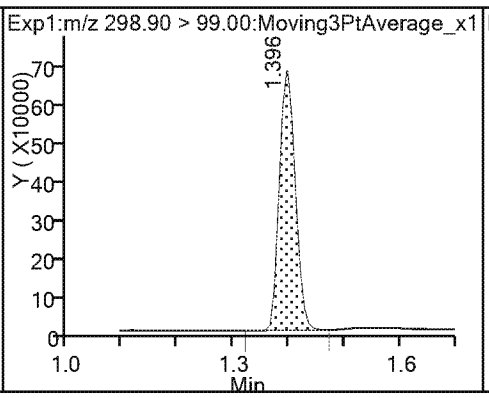
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_004.d
Injection Date: 12-Mar-2018 16:16:41 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 2 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

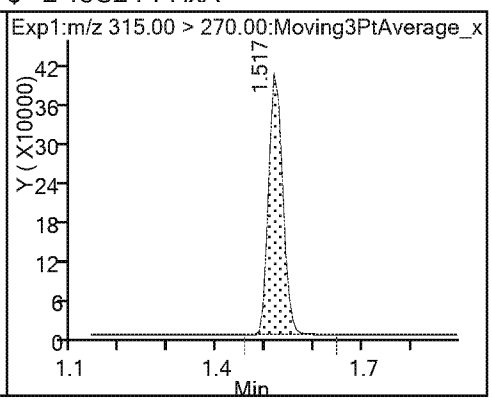
1 Perfluorobutanesulfonic acid



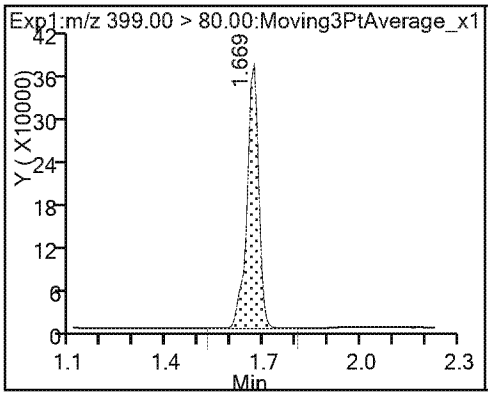
1 Perfluorobutanesulfonic acid



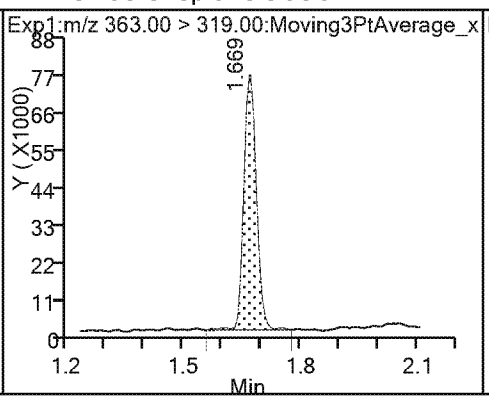
$ 2 13C2 PFHxA



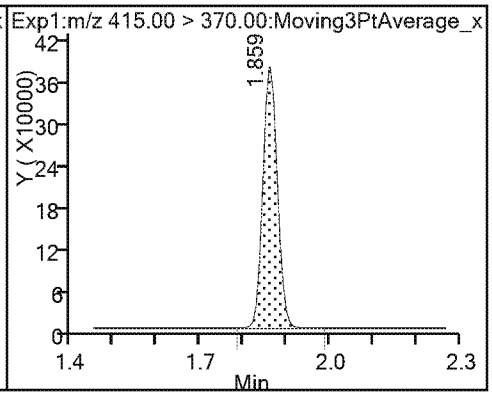
3 Perfluorohexanesulfonic acid



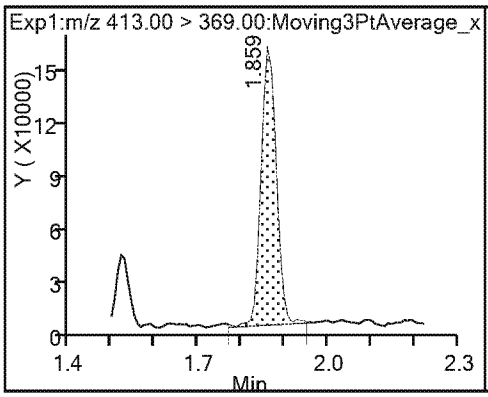
4 Perfluoroheptanoic acid



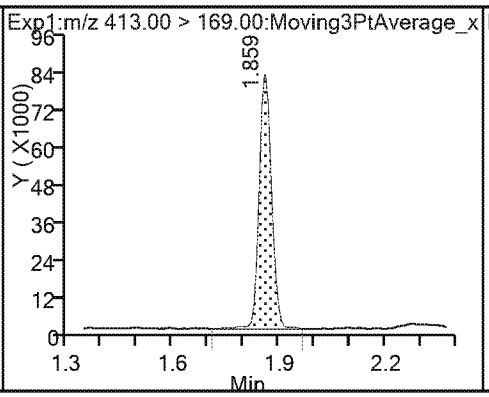
* 6 13C2-PFOA



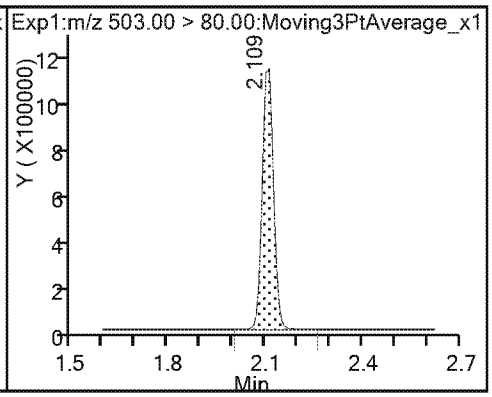
5 Perfluorooctanoic acid



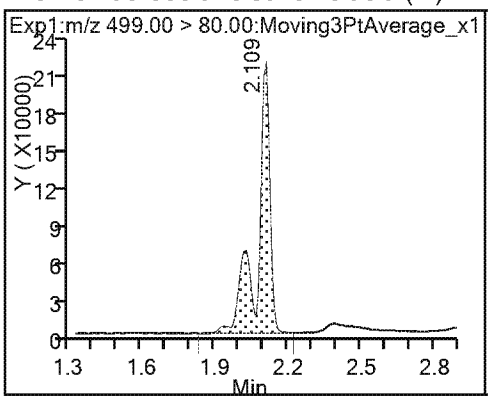
5 Perfluorooctanoic acid



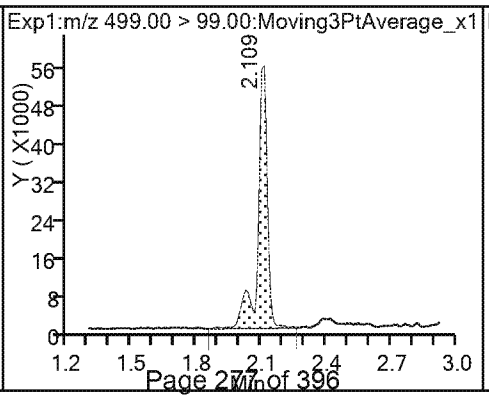
* 7 13C4 PFOS



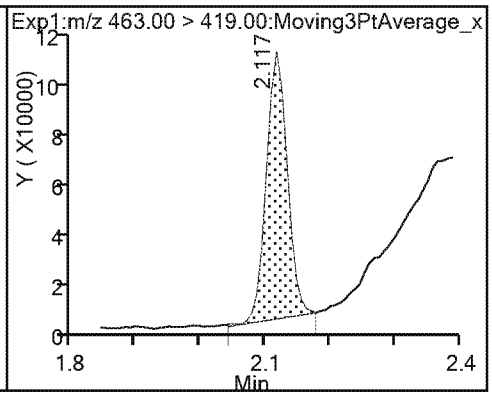
8 Perfluorooctane sulfonic acid (M)



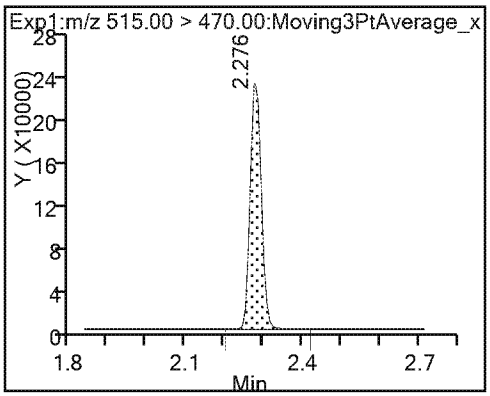
8 Perfluorooctane sulfonic acid



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.276
Y (X10000)
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

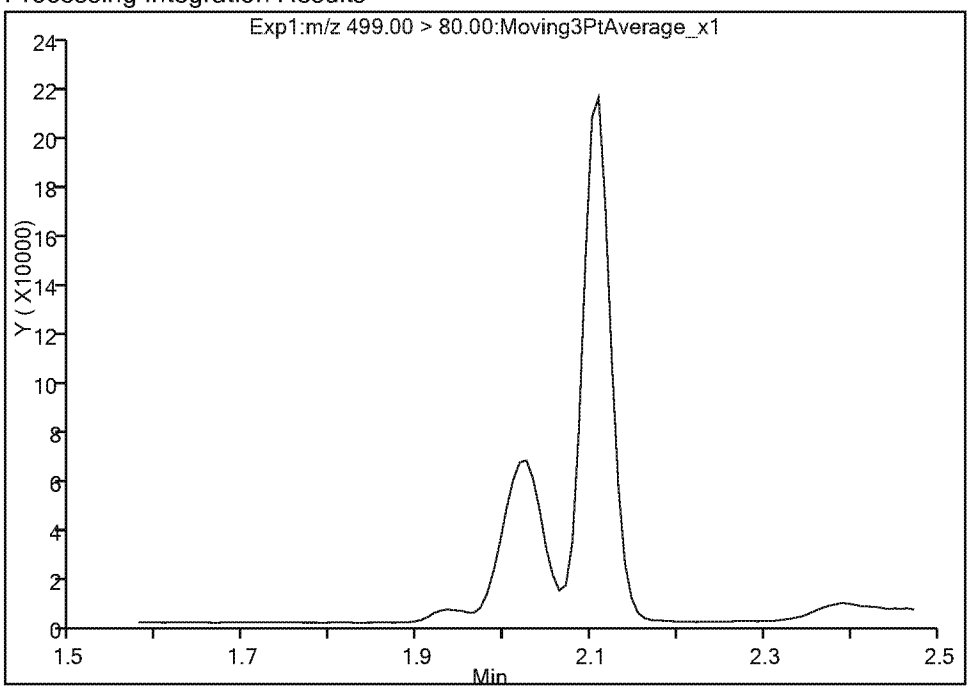
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_004.d				
Injection Date:	12-Mar-2018 16:16:41	Instrument ID:	A8_N		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

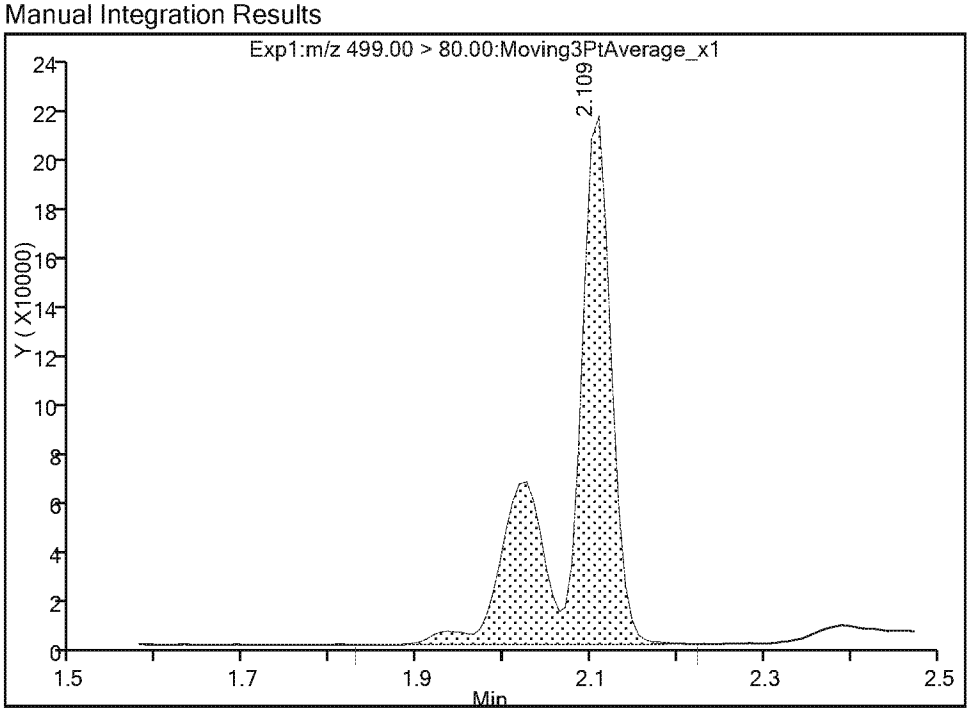
Not Detected
Expected RT: 2.06

Processing Integration Results



Manual Integration Results

RT: 2.11
Area: 722870
Amount: 9.109051
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 12-Mar-2018 16:44:37
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCV 320-212525/2 Calibration Date: 03/12/2018 16:21

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.12_537AA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		0.9345		118	135	-12.5	30.0
Perfluoroheptanoic acid	Ave	0.9711	0.8349		12.9	15.0	-14.0	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.586		44.3	45.0	-1.5	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9687		30.4	30.2	0.7	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9816		62.6	60.3	3.8	30.0
Perfluorononanoic acid	Ave	0.6154	0.6059		29.5	30.0	-1.5	30.0
13C2 PFHxA	Ave	1.100	0.9099		8.27	10.0	-17.3	30.0
13C2 PFDA	Ave	0.5243	0.5189		9.90	10.0	-1.0	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_005.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 12-Mar-2018 16:21:22 ALS Bottle#: 5 Worklist Smp#: 2
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\20180312-55198.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 12-Mar-2018 17:04:05 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK030

First Level Reviewer: Ex. 4 CBI Date: 12-Mar-2018 16:45:43

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.388	1.388	0.0	1.000	10493950	118.2		1560	
298.90 > 99.00	1.388	1.388	0.0	1.000	7986595		1.31(0.00-0.00)	4072	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.510	1.510	0.0	1.000	747399	8.27		12378	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.654	1.654	0.0	1.000	5937898	44.3		2864	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.654	1.654	0.0	1.000	1028859	12.9		223	
* 6 13C2-PFOA									
415.00 > 370.00	1.844	1.844	0.0		821398	10.0		7502	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.844	1.844	0.0	1.000	2400268	30.4		90.3	
413.00 > 169.00	1.844	1.844	0.0	1.000	1267751		1.89(0.00-0.00)	945	
* 7 13C4 PFOS									
503.00 > 80.00	2.086	2.086	0.0		2385426	28.7		796	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.094	2.064	0.030	1.000	4919585	62.6		504	a
499.00 > 99.00	2.086	2.064	0.022	0.996	1019101		4.83(0.00-0.00)	536	
9 Perfluorononanoic acid									
463.00 > 419.00	2.102	2.102	0.0	1.000	1493564	29.5		27.1	
$ 10 13C2 PFDA									
515.00 > 470.00	2.261	2.261	0.0	1.000	426184	9.90		4877	

QC Flag Legend

Review Flags

a - User Assigned ID

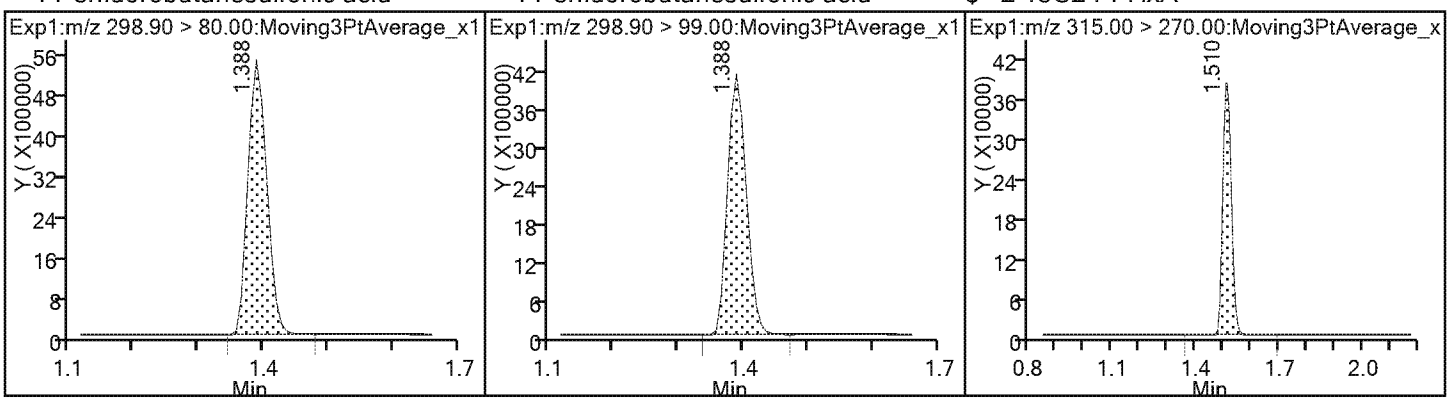
Reagents:

LC537-L5_00025 Amount Added: 1.00 Units: mL

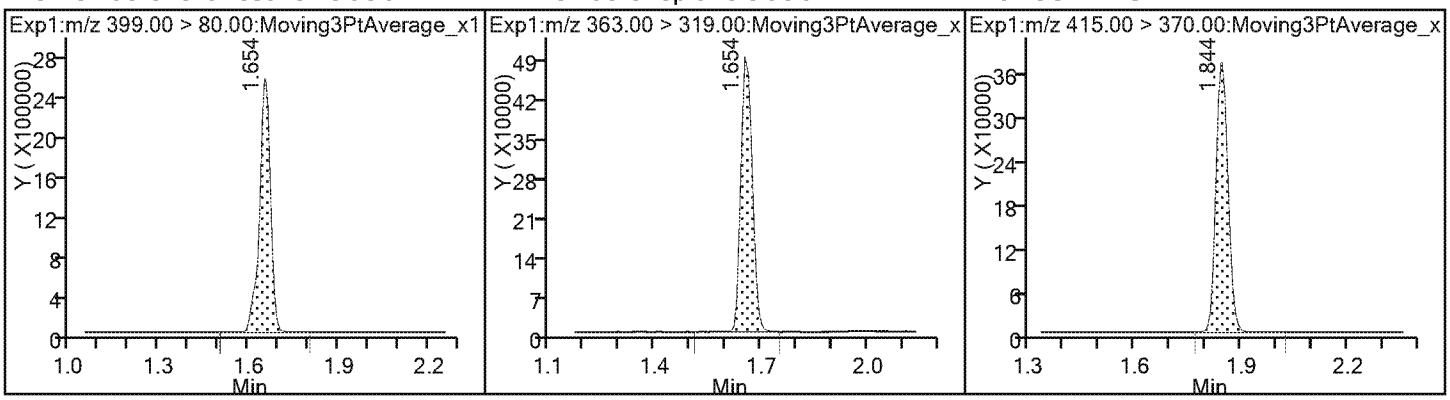
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_005.d
Injection Date: 12-Mar-2018 16:21:22 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

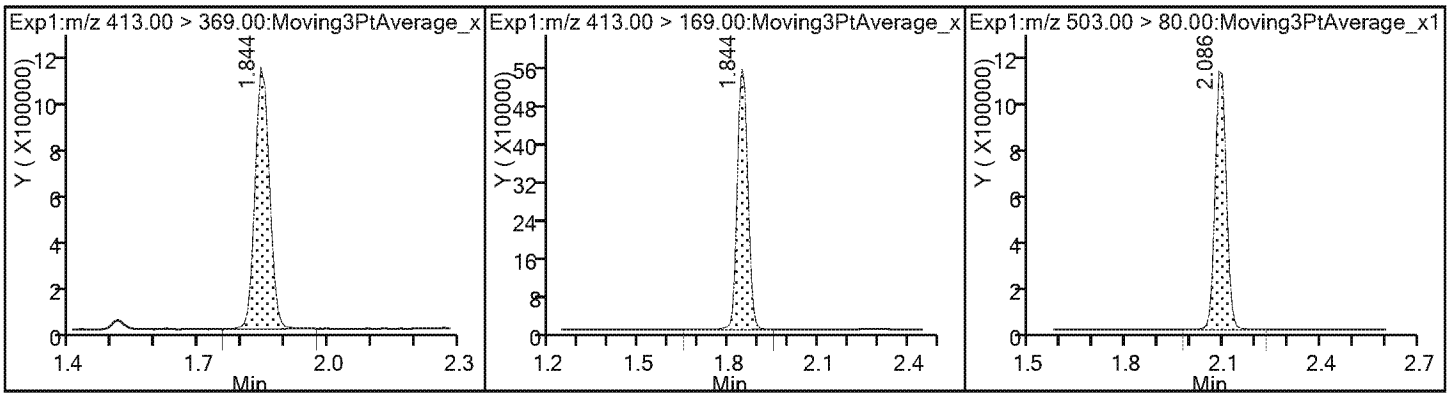
1 Perfluorobutanesulfonic acid | 1 Perfluorobutanesulfonic acid | $ 2 13C2 PFHxA



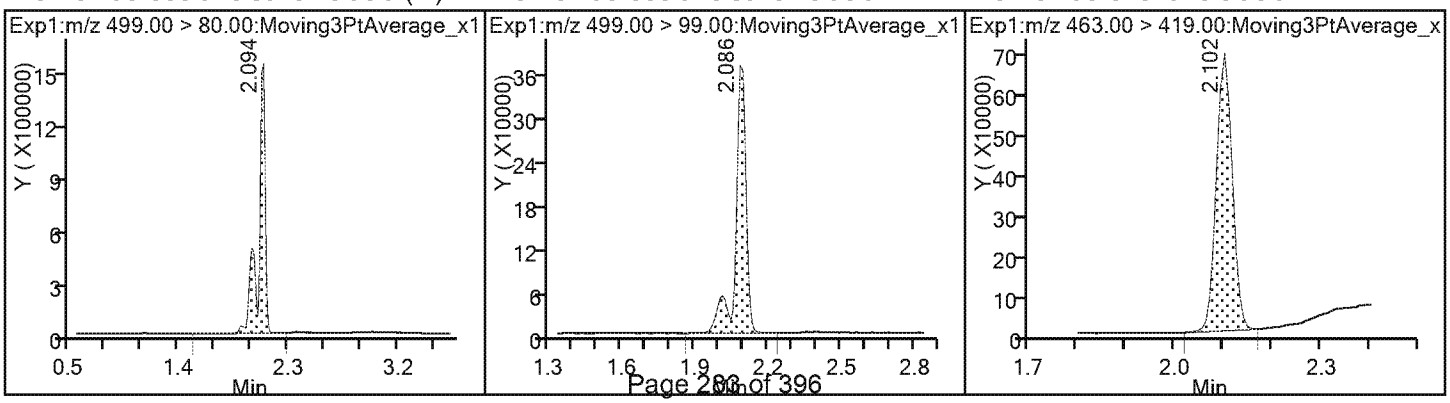
3 Perfluorohexanesulfonic acid | 4 Perfluoroheptanoic acid | * 6 13C2-PFOA



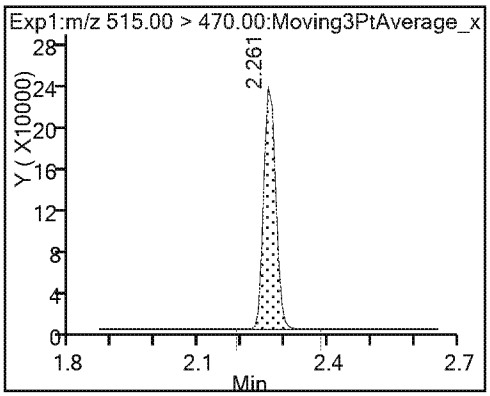
5 Perfluorooctanoic acid | 5 Perfluorooctanoic acid | * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (M) | 8 Perfluorooctane sulfonic acid | 9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.261
Y (X10000)
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

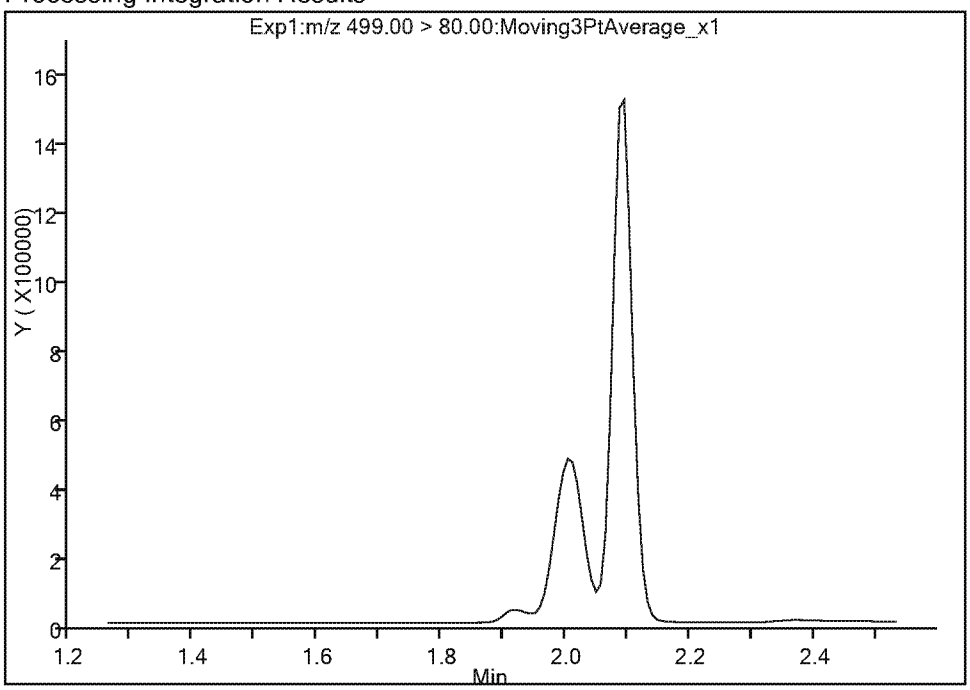
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_005.d				
Injection Date:	12-Mar-2018 16:21:22	Instrument ID:	A8_N		
Lims ID:	CCV L5				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

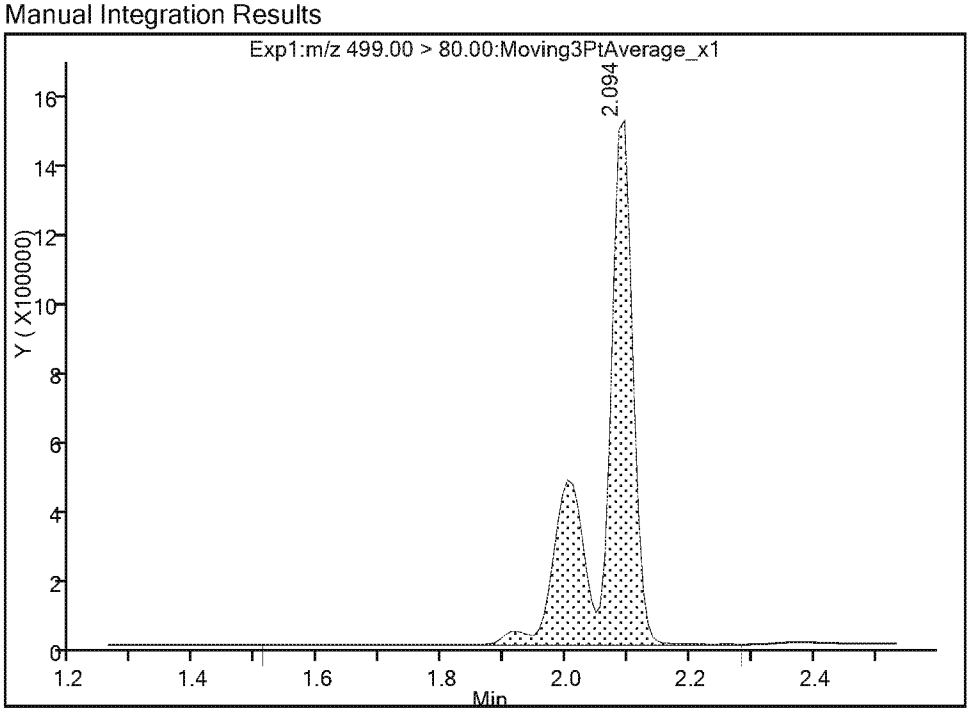
Not Detected
Expected RT: 2.06

Processing Integration Results



Manual Integration Results

RT: 2.09
Area: 4919585
Amount: 62.555150
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 12-Mar-2018 16:45:24
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Lab Sample ID: CCV 320-212525/8 Calibration Date: 03/12/2018 16:49

Instrument ID: A8_N Calib Start Date: 02/16/2018 08:55

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 02/16/2018 09:19

Lab File ID: 2018.03.12_537AA_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.008		36.6	45.0	-18.8	30.0
Perfluoroheptanoic acid	Ave	0.9711	0.996		5.13	5.00	2.6	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.591		14.8	15.0	-1.1	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9781		10.2	10.1	1.7	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9424		20.0	20.1	-0.3	30.0
Perfluorononanoic acid	Ave	0.6154	0.6942		11.3	10.0	12.8	30.0
13C2 PFHxA	Ave	1.100	1.017		9.25	10.0	-7.5	30.0
13C2 PFDA	Ave	0.5243	0.5999		11.4	10.0	14.4	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_011.d
Lims ID: CCV L3
Client ID:
Sample Type: CCVIS
Inject. Date: 12-Mar-2018 16:49:23 ALS Bottle#: 3 Worklist Smp#: 8
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\20180312-55198.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 12-Mar-2018 17:04:25 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK030

First Level Reviewer: Ex. 4 CBI Date: 12-Mar-2018 17:03:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.388	1.388	0.0	1.000	4042903	36.6		620	
298.90 > 99.00	1.388	1.388	0.0	1.000	3030419		1.33(0.00-0.00)	1668	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.510	1.510	0.0	1.000	776414	9.25		10129	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.646	1.646	0.0	1.000	2129131	14.8		1105	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.646	1.646	0.0	1.000	380169	5.13		81.9	
* 6 13C2-PFOA									
415.00 > 370.00	1.821	1.821	0.0		763141	10.0		6433	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.821	1.821	0.0	1.000	750571	10.2		24.2	
413.00 > 169.00	1.821	1.821	0.0	1.000	399151		1.88(0.00-0.00)	292	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.064	2.064	0.0	1.000	1687719	20.0		162	a
499.00 > 99.00	2.064	2.064	0.0	1.000	363017		4.65(0.00-0.00)	170	
* 7 13C4 PFOS									
503.00 > 80.00	2.064	2.064	0.0		2557095	28.7		818	
9 Perfluorononanoic acid									
463.00 > 419.00	2.071	2.071	0.0	1.000	529918	11.3		12.2	
$ 10 13C2 PFDA									
515.00 > 470.00	2.253	2.253	0.0	1.000	457795	11.4		4375	

QC Flag Legend

Review Flags

a - User Assigned ID

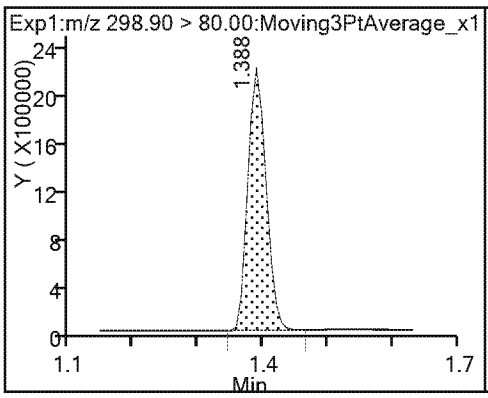
Reagents:

LC537-L3_00024 Amount Added: 1.00 Units: mL

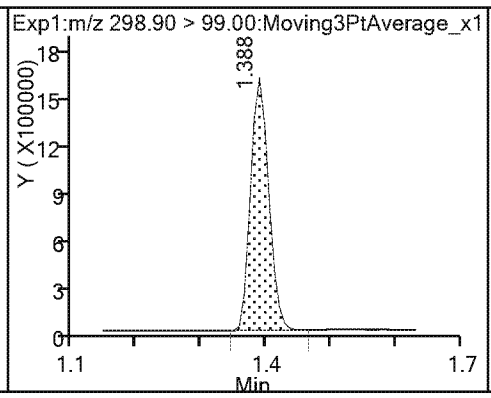
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_011.d
Injection Date: 12-Mar-2018 16:49:23 Instrument ID: A8_N
Lims ID: CCV L3
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

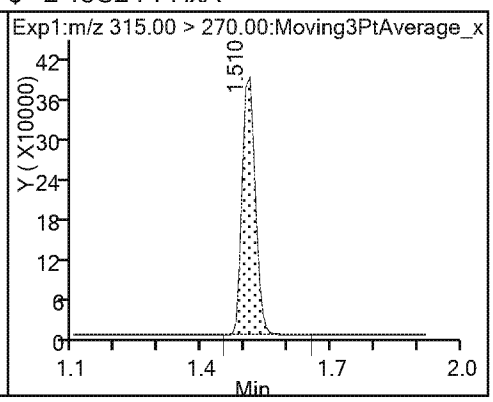
1 Perfluorobutanesulfonic acid



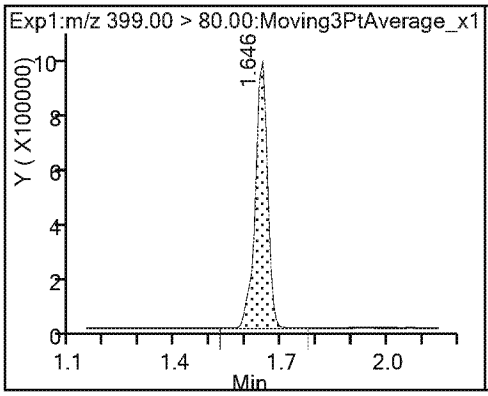
1 Perfluorobutanesulfonic acid



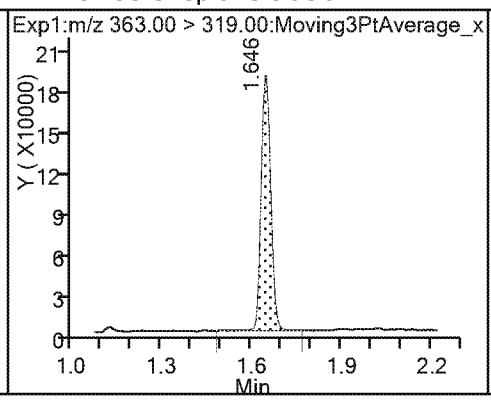
$ 2 13C2 PFHxA



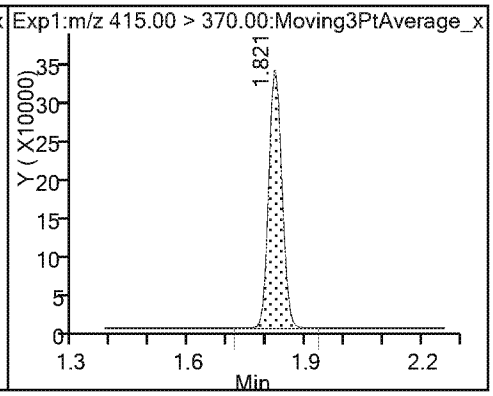
3 Perfluorohexanesulfonic acid



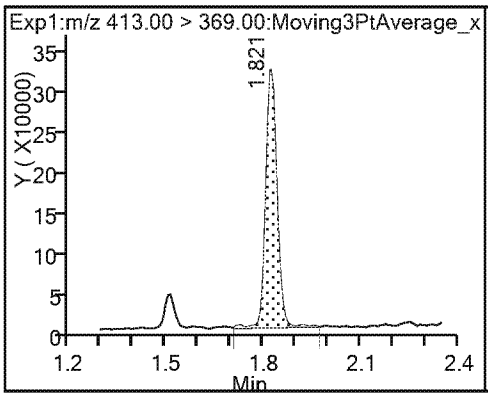
4 Perfluoroheptanoic acid



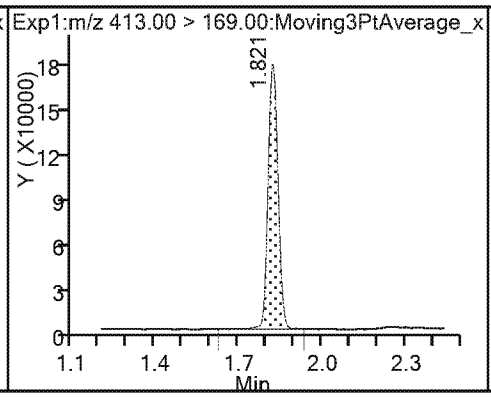
* 6 13C2-PFOA



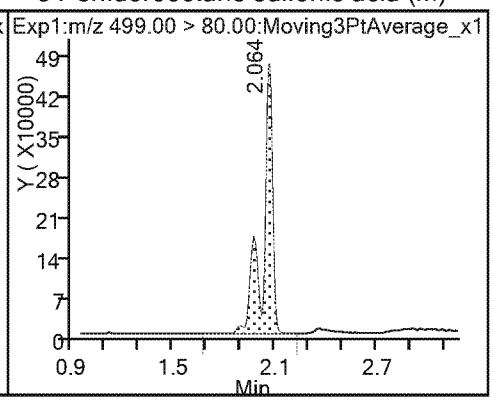
5 Perfluorooctanoic acid



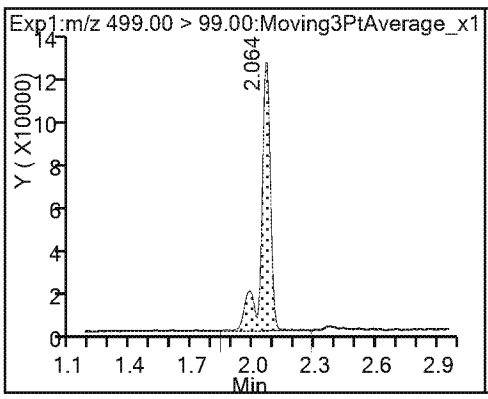
5 Perfluorooctanoic acid



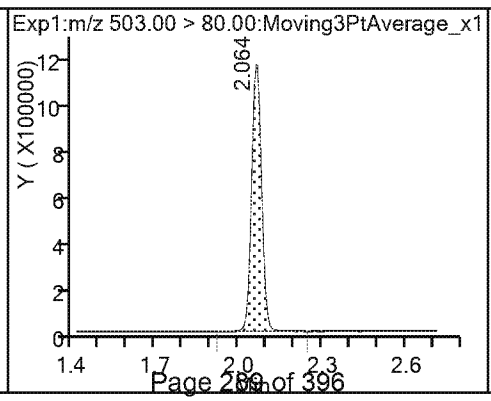
8 Perfluorooctane sulfonic acid (M)



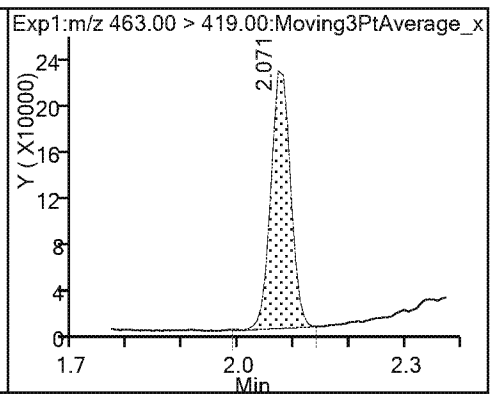
8 Perfluorooctane sulfonic acid



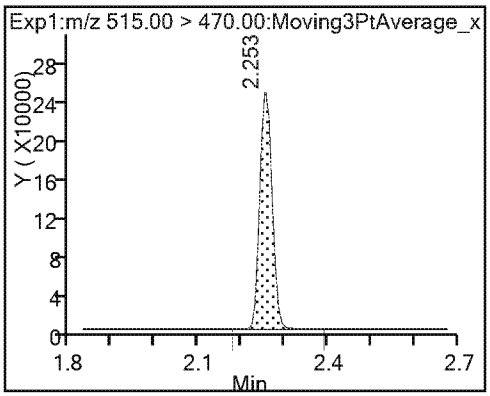
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.253
Y (X10000)
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

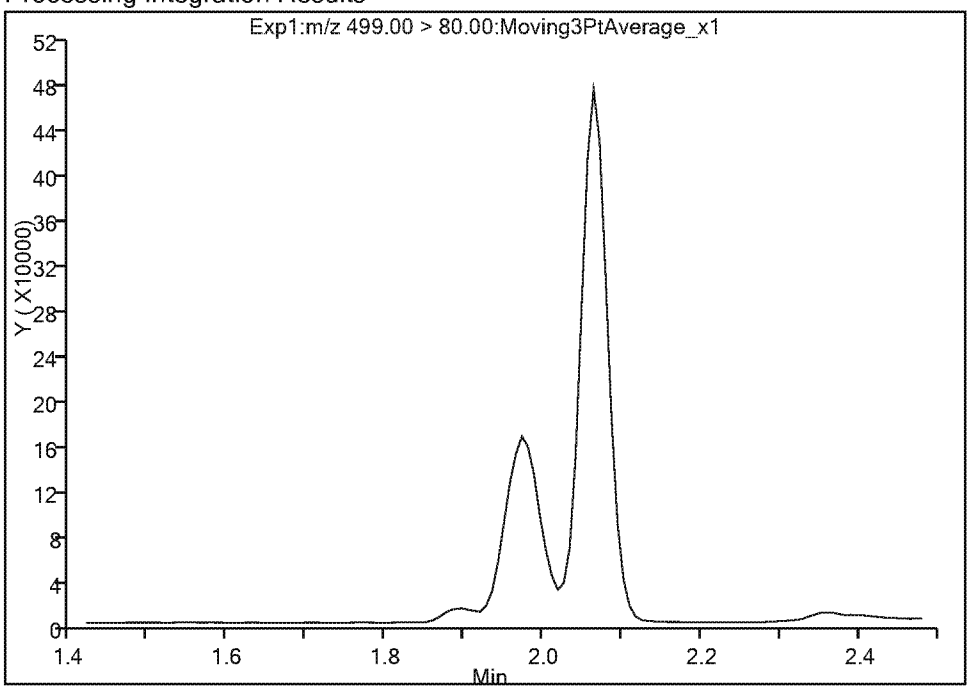
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_011.d				
Injection Date:	12-Mar-2018 16:49:23	Instrument ID:	A8_N		
Lims ID:	CCV L3				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

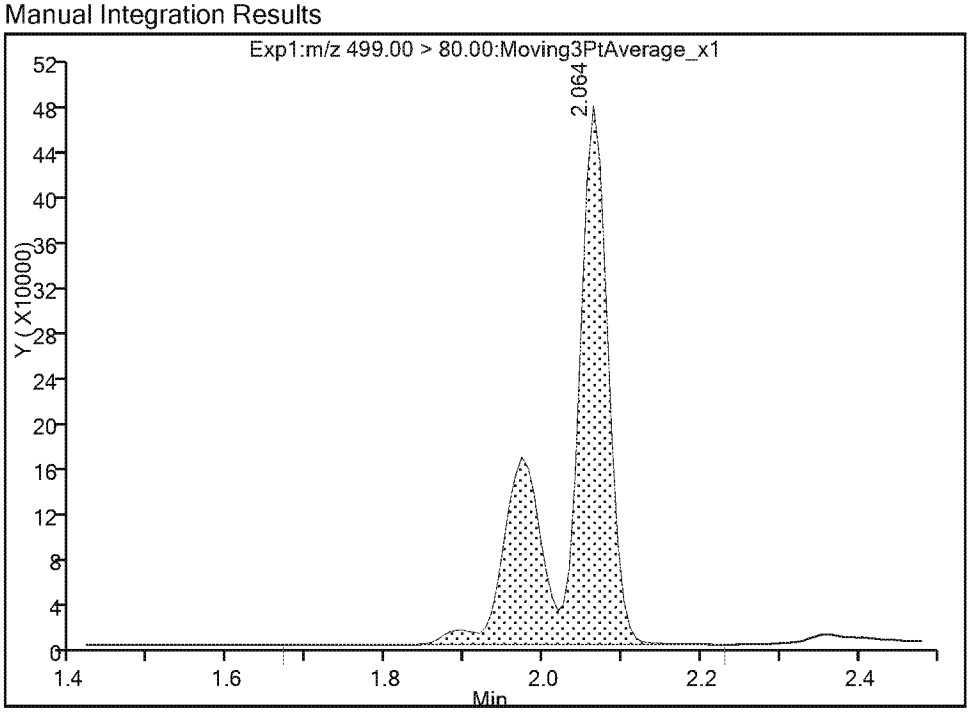
Not Detected
Expected RT: 2.06

Processing Integration Results



Manual Integration Results

RT: 2.06
Area: 1687719
Amount: 20.019528
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 12-Mar-2018 17:02:45
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID:
Lab Sample ID: MB 320-211046/1-A
Matrix: Water
Lab File ID: 2018.03.06_537C_003.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 250.00(mL)
Date Analyzed: 03/06/2018 22:45
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.: 211579
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		40	6.8
335-67-1	Perfluorooctanoic acid	ND		20	2.8
375-95-1	Perfluorononanoic acid	ND		20	8.0
355-46-4	Perfluorohexanesulfonic acid	ND		30	5.5
375-85-9	Perfluoroheptanoic acid	ND		10	1.9
375-73-5	Perfluorobutanesulfonic acid	ND		90	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	97		70-130
STL00996	13C2 PFDA	116		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_003.d
Lims ID: MB 320-211046/1-A
Client ID:
Sample Type: MB
Inject. Date: 06-Mar-2018 22:45:26 ALS Bottle#: 1 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-211046/1-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:07 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

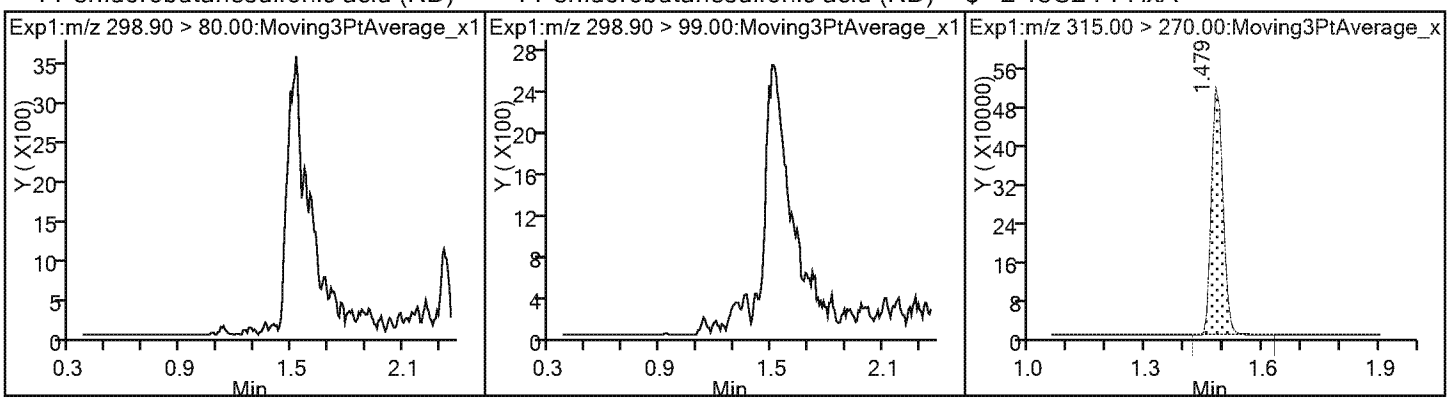
Column 1 : Det: EXP1
Process Host: XAWRK022

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.487	-0.008	1.000	987990	9.73		14382	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		923176	10.0		12114	
* 7 13C4 PFOS									
503.00 > 80.00	2.064	2.064	0.0		2542437	28.7		6607	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	559257	11.6		6251	

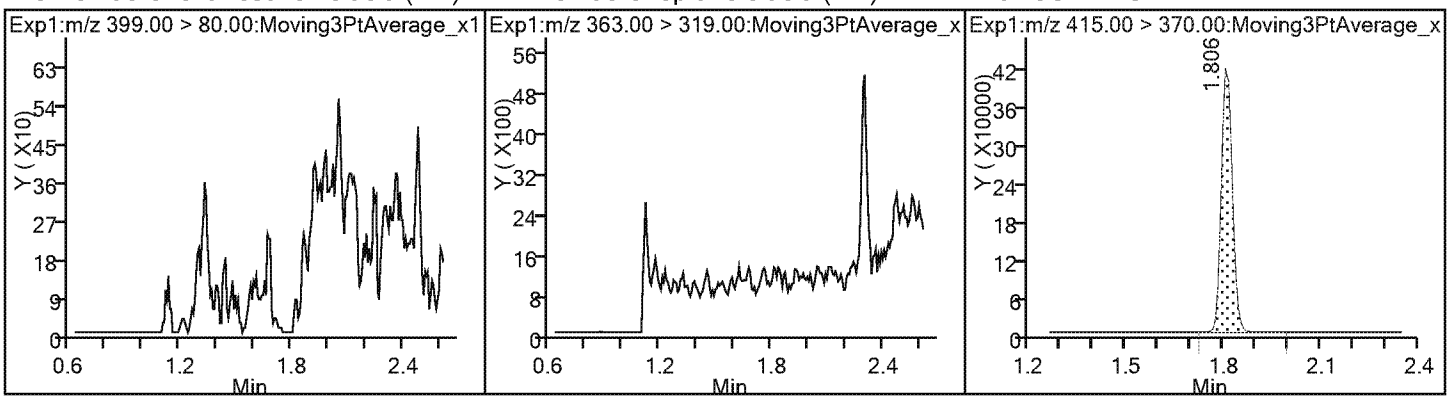
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_003.d
Injection Date: 06-Mar-2018 22:45:26 Instrument ID: A8_N
Lims ID: MB 320-211046/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

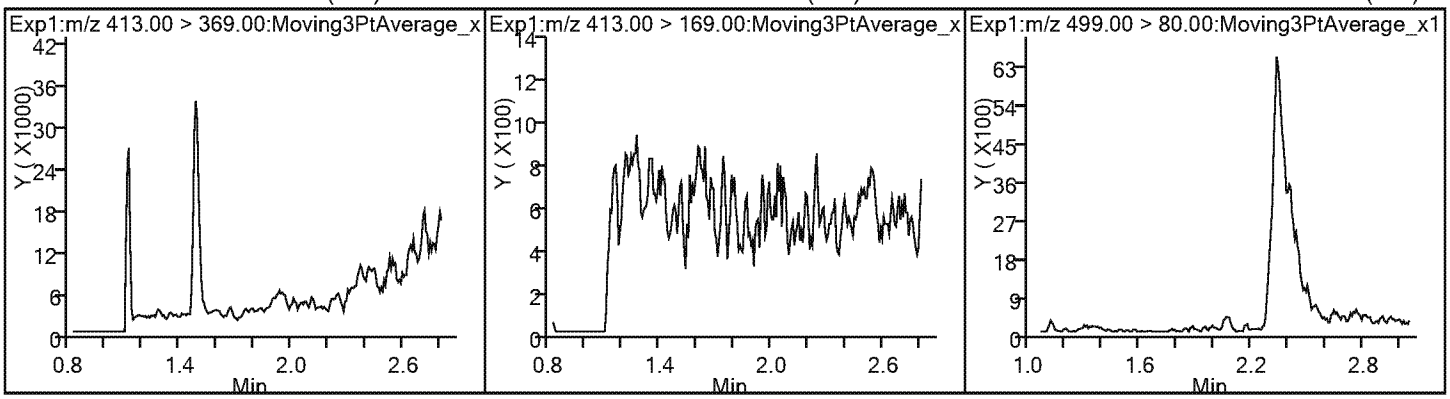
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



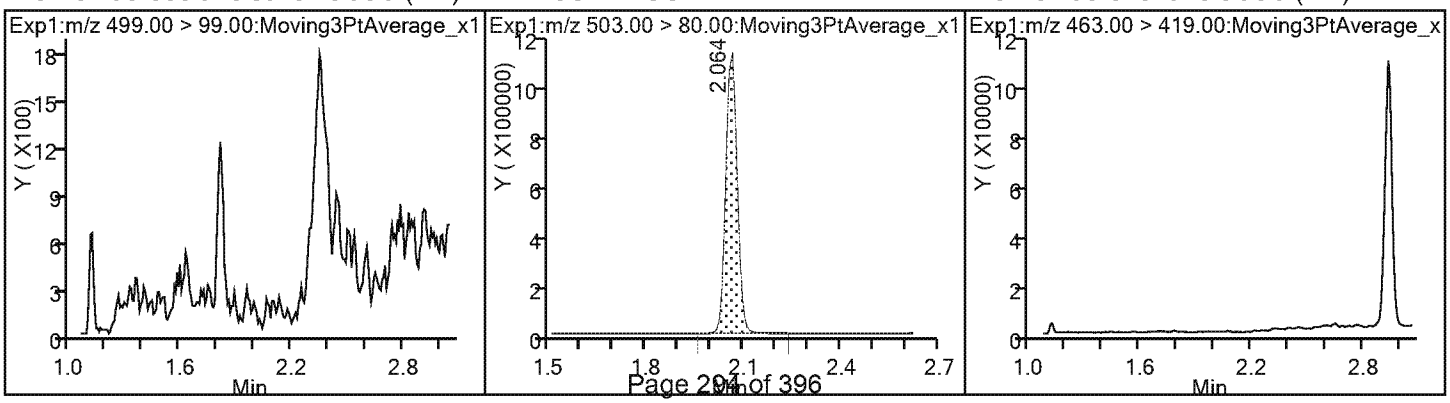
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



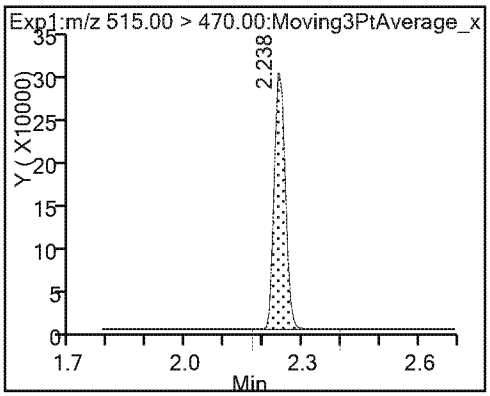
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
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Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID:
Lab Sample ID: MB 320-211748/1-A
Matrix: Water
Lab File ID: 2018.03.09_537A_007.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 03/07/2018 14:47
Sample wt/vol: 250(mL)
Date Analyzed: 03/09/2018 09:07
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.: 212122
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		40	6.8
335-67-1	Perfluorooctanoic acid	ND		20	2.8
375-95-1	Perfluorononanoic acid	ND		20	8.0
355-46-4	Perfluorohexanesulfonic acid	ND		30	5.5
375-85-9	Perfluoroheptanoic acid	ND		10	1.9
375-73-5	Perfluorobutanesulfonic acid	ND		90	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	104		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_007.d
Lims ID: MB 320-211748/1-A
Client ID:
Sample Type: MB
Inject. Date: 09-Mar-2018 09:07:57 ALS Bottle#: 38 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-211748/1-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 09-Mar-2018 11:02:10 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

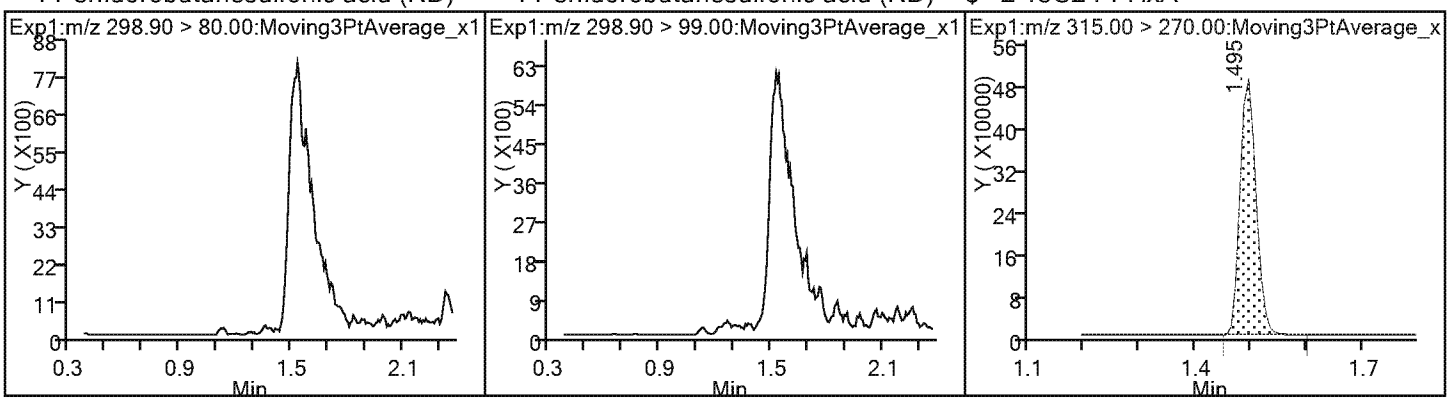
Column 1 : Det: EXP1
Process Host: XAWRK018

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.495	1.495	0.0	1.000	929267	9.34		10396	
* 6 13C2-PFOA									
415.00 > 370.00	1.836	1.844	-0.008		904303	10.0		7748	
* 7 13C4 PFOS									
503.00 > 80.00	2.094	2.102	-0.008		2650176	28.7		7513	
$ 10 13C2 PFDA									
515.00 > 470.00	2.261	2.269	-0.007	1.000	493030	10.4		4140	

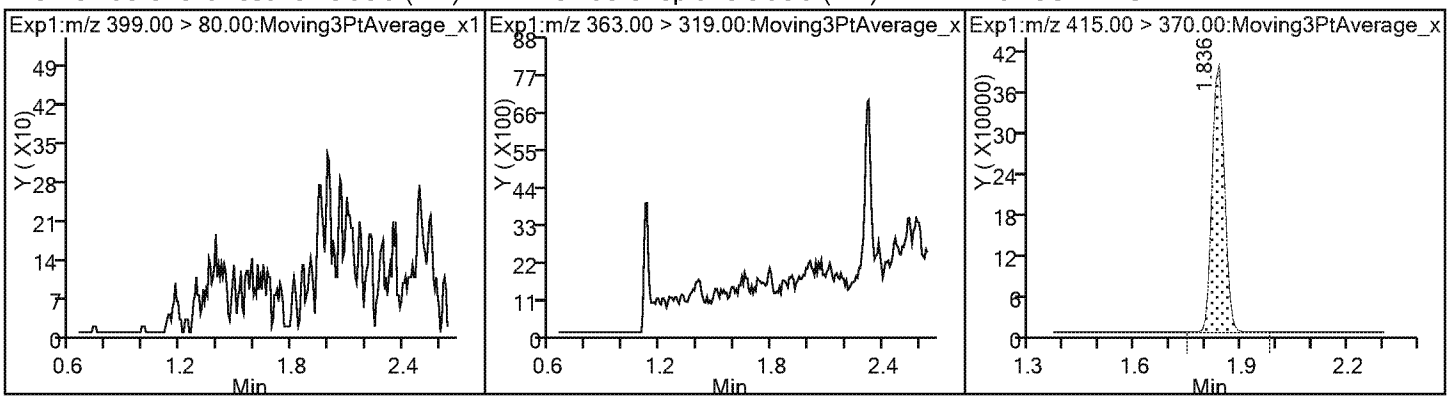
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_007.d
Injection Date: 09-Mar-2018 09:07:57 Instrument ID: A8_N
Lims ID: MB 320-211748/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 38 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

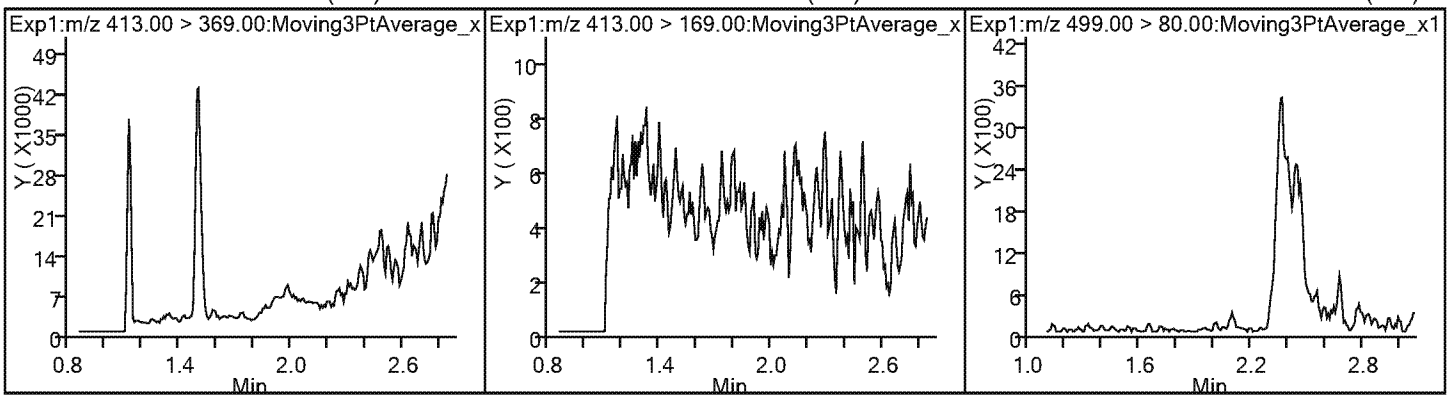
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



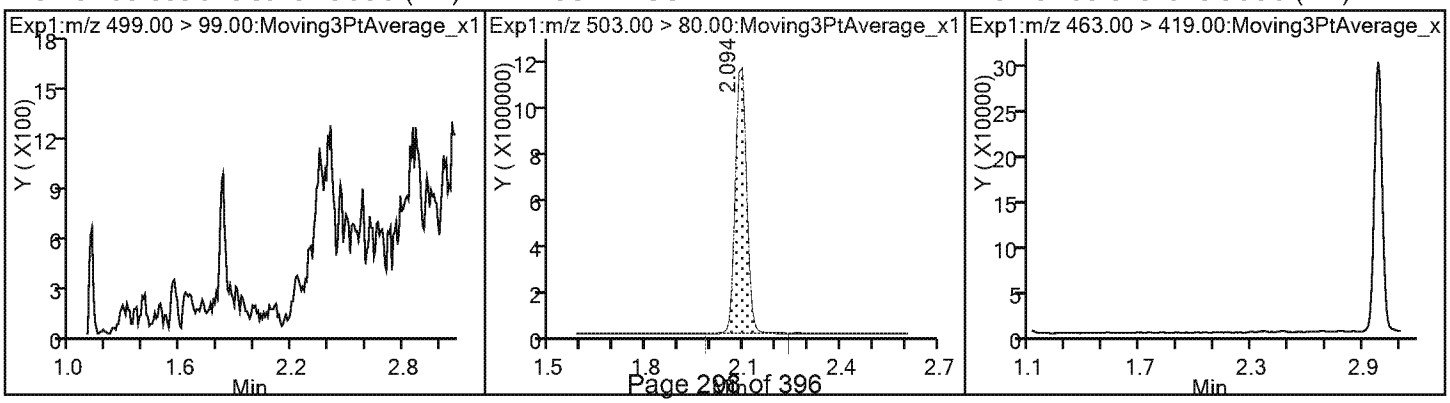
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



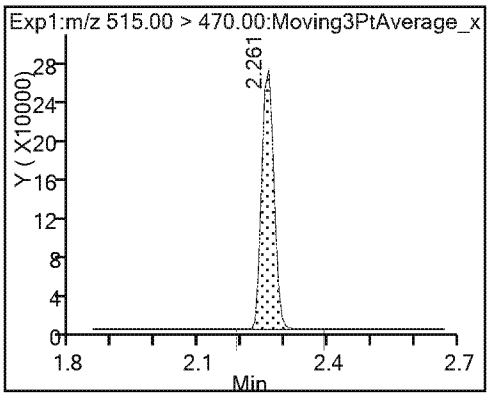
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.261
Y (X10000)
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID:
Lab Sample ID: MB 320-212004/1-A
Matrix: Water
Lab File ID: 2018.03.12_537AA_007.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 03/08/2018 17:27
Sample wt/vol: 250.00(mL)
Date Analyzed: 03/12/2018 16:30
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.: 212525
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		40	6.8
335-67-1	Perfluorooctanoic acid	ND		20	2.8
375-95-1	Perfluorononanoic acid	ND		20	8.0
355-46-4	Perfluorohexanesulfonic acid	ND		30	5.5
375-85-9	Perfluoroheptanoic acid	ND		10	1.9
375-73-5	Perfluorobutanesulfonic acid	ND		90	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	109		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_007.d
Lims ID: MB 320-212004/1-A
Client ID:
Sample Type: MB
Inject. Date: 12-Mar-2018 16:30:40 ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-212004/1-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 12-Mar-2018 17:04:05 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

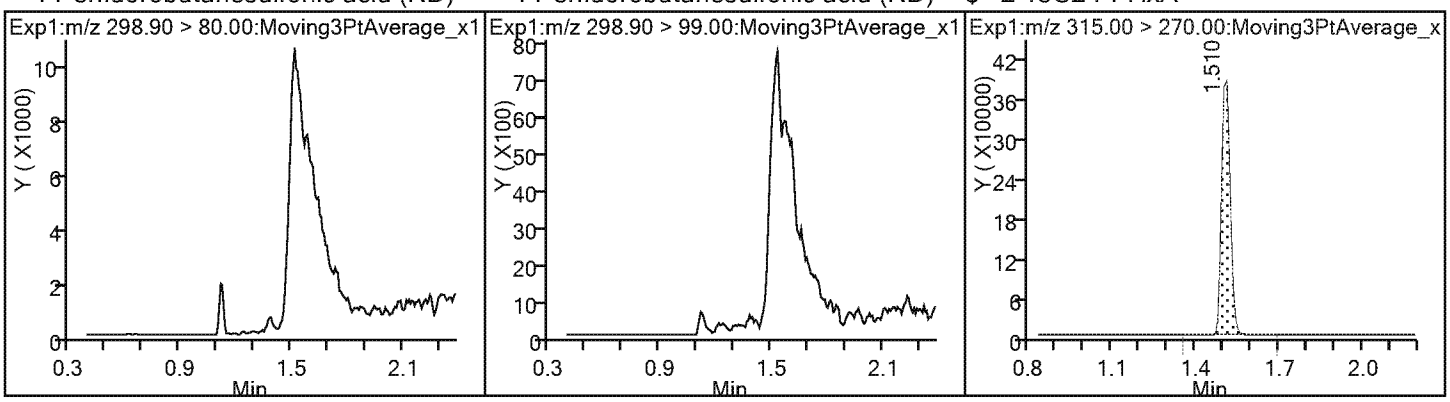
Column 1 : Det: EXP1
Process Host: XAWRK030

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.510	1.510	0.0	1.000	764224	9.39		11159	
* 6 13C2-PFOA									
415.00 > 370.00	1.828	1.844	-0.016		739786	10.0		5801	
* 7 13C4 PFOS									
503.00 > 80.00	2.064	2.086	-0.022		2381218	28.7		879	
$ 10 13C2 PFDA									
515.00 > 470.00	2.253	2.261	-0.008	1.000	423910	10.9		4182	

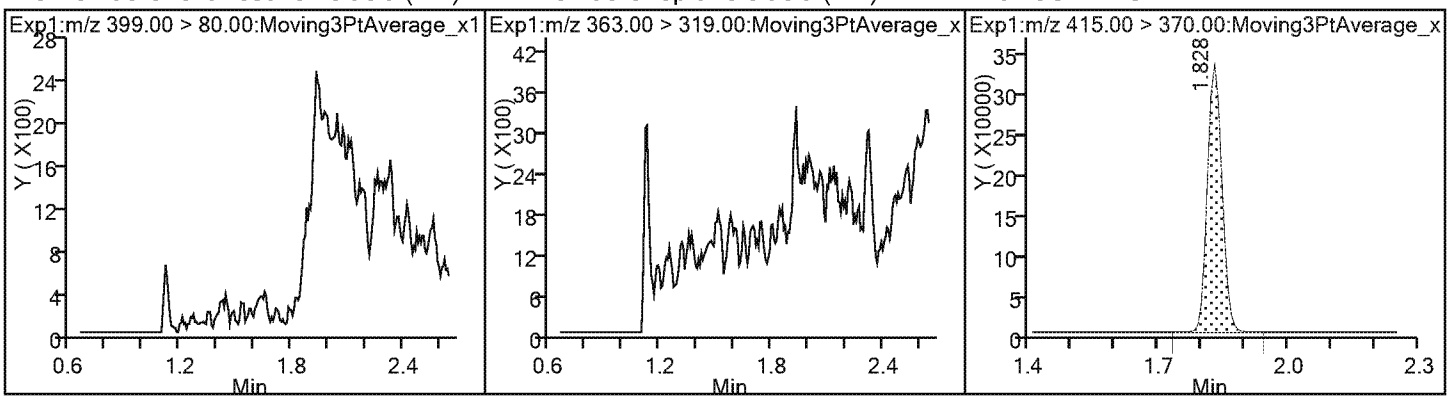
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_007.d
Injection Date: 12-Mar-2018 16:30:40 Instrument ID: A8_N
Lims ID: MB 320-212004/1-A
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

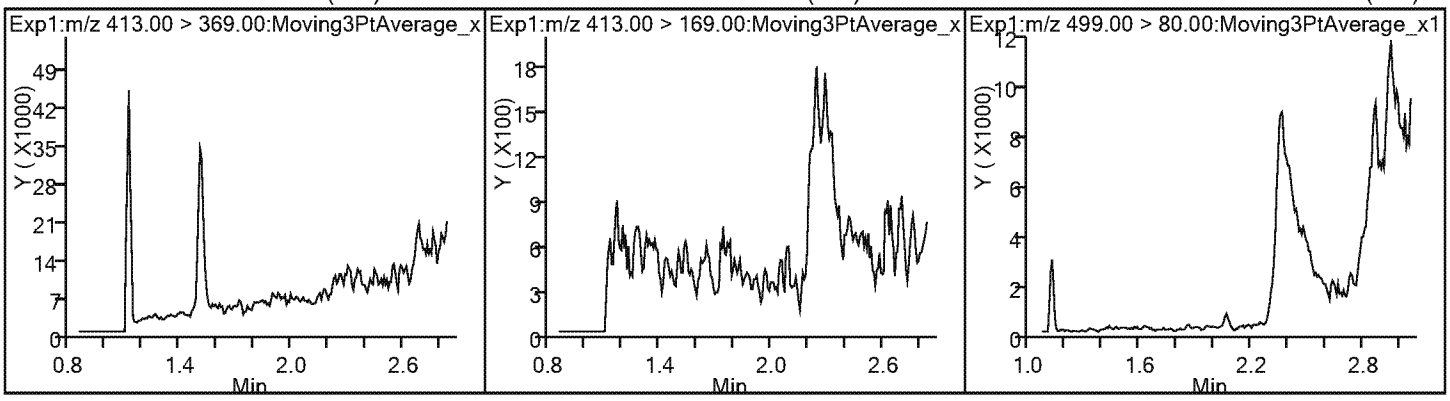
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



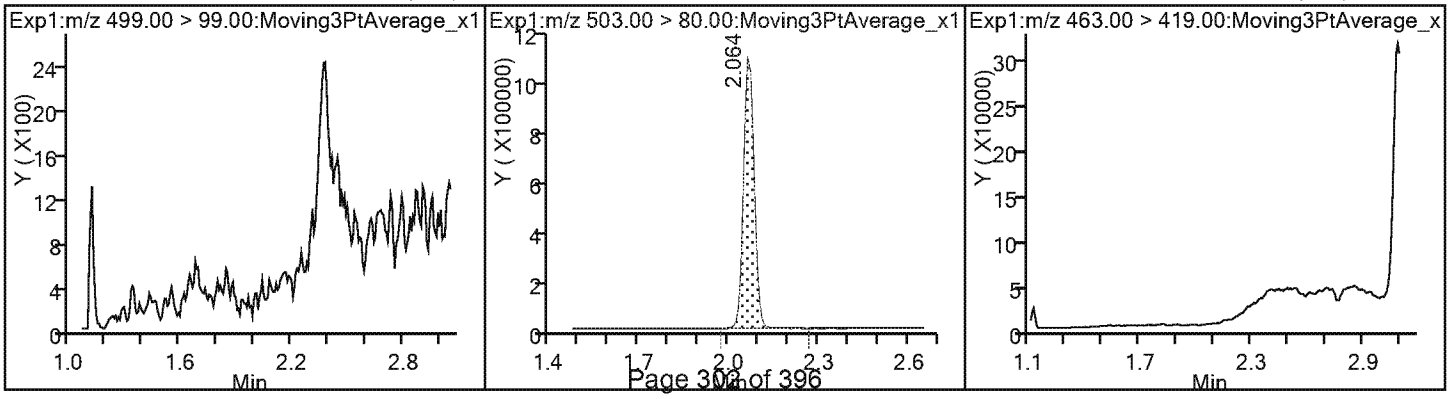
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



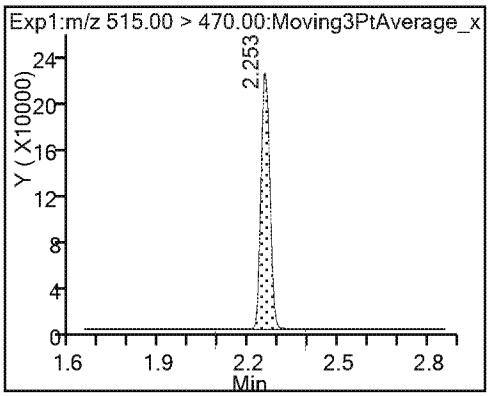
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



8 Perfluorooctane sulfonic acid (ND) * 7 13C4 PFOS 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.253
Y (X10000)
24
20
16
12
8
4
0
1.6
1.9
2.2
2.5
2.8
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID:
Lab Sample ID: LCS 320-211046/2-A
Matrix: Water
Lab File ID: 2018.03.06_537C_004.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 250.00(mL)
Date Analyzed: 03/06/2018 22:50
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.: 211579
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	142		40	6.8
335-67-1	Perfluorooctanoic acid	68.8		20	2.8
375-95-1	Perfluorononanoic acid	76.1		20	8.0
355-46-4	Perfluorohexanesulfonic acid	108		30	5.5
375-85-9	Perfluoroheptanoic acid	36.4		10	1.9
375-73-5	Perfluorobutanesulfonic acid	293		90	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	99		70-130
STL00996	13C2 PFDA	120		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_004.d
Lims ID: LCS 320-211046/2-A
Client ID:
Sample Type: LCS
Inject. Date: 06-Mar-2018 22:50:06 ALS Bottle#: 2 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-211046/2-
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:07 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 10:45:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.366	0.0	1.000	7391985	73.2		8819	
298.90 > 99.00	1.366	1.366	0.0	1.000	5523980		1.34(0.00-0.00)	8206	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.487	1.487	0.0	1.000	937816	9.87		11176	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.624	0.0	1.000	3777818	27.0		7292	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	763198	9.09		224	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		864151	10.0		9426	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.813	-0.007	1.000	1429929	17.2		66.2	
413.00 > 169.00	1.813	1.813	0.0	1.004	769456		1.86(0.00-0.00)	612	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.064	2.056	0.008	1.000	2921287	35.6		1459	M
499.00 > 99.00	2.064	2.056	0.008	1.000	615040		4.75(0.00-0.00)	422	
* 7 13C4 PFOS									
503.00 > 80.00	2.064	2.064	0.0		2490950	28.7		6831	
9 Perfluorononanoic acid									
463.00 > 419.00	2.071	2.071	0.0	1.000	1012293	19.0		147	
$ 10 13C2 PFDA									
515.00 > 470.00	2.246	2.246	0.0	1.000	544017	12.0		5453	

QC Flag Legend

Review Flags

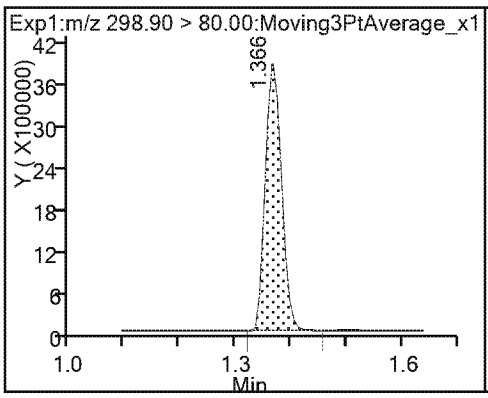
M - Manually Integrated

a - User Assigned ID

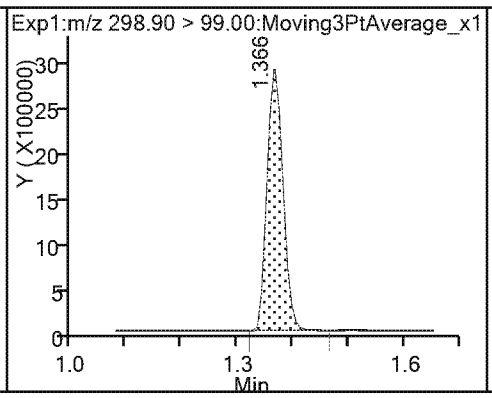
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_004.d
Injection Date: 06-Mar-2018 22:50:06 Instrument ID: A8_N
Lims ID: LCS 320-211046/2-A
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

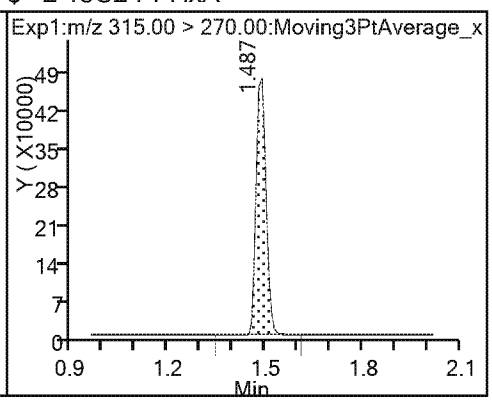
1 Perfluorobutanesulfonic acid



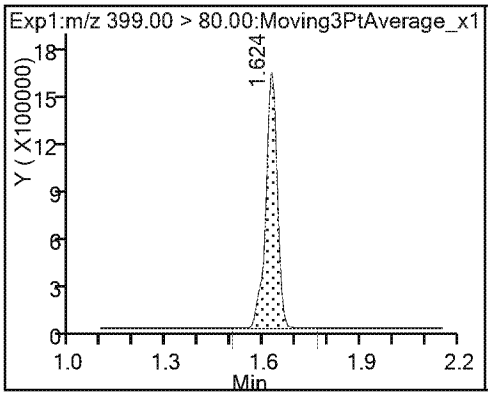
1 Perfluorobutanesulfonic acid



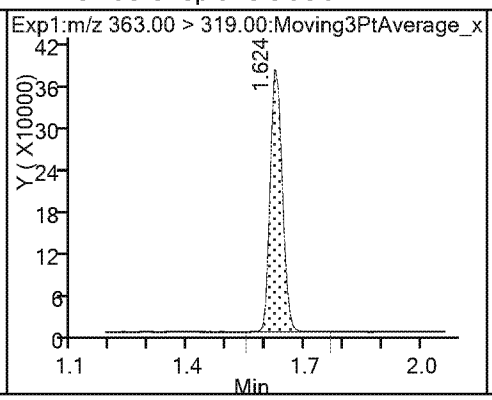
$ 2 13C2 PFHxA



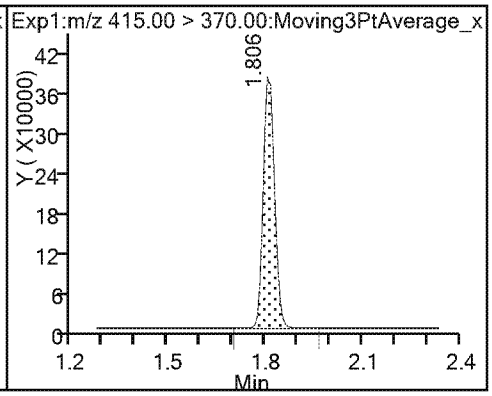
3 Perfluorohexanesulfonic acid



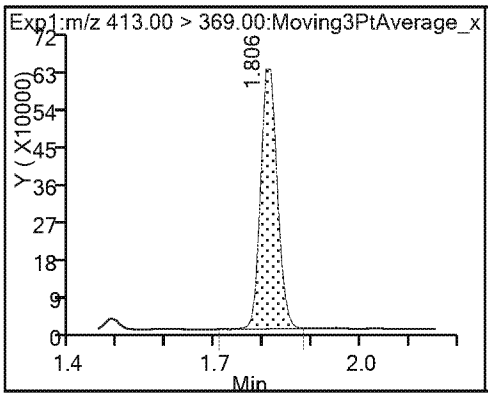
4 Perfluoroheptanoic acid



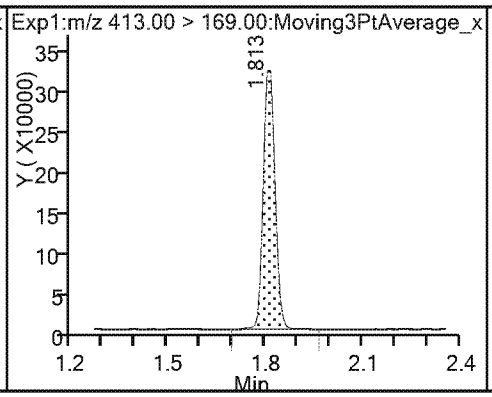
* 6 13C2-PFOA



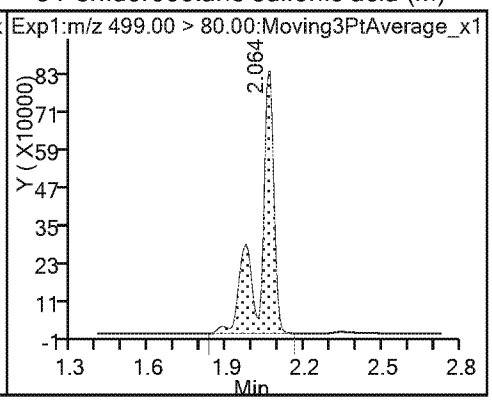
5 Perfluorooctanoic acid



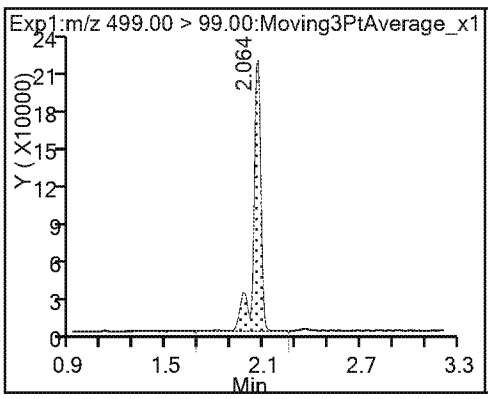
5 Perfluorooctanoic acid



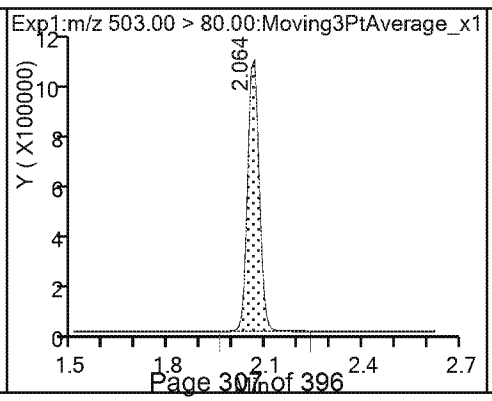
8 Perfluorooctane sulfonic acid (M)



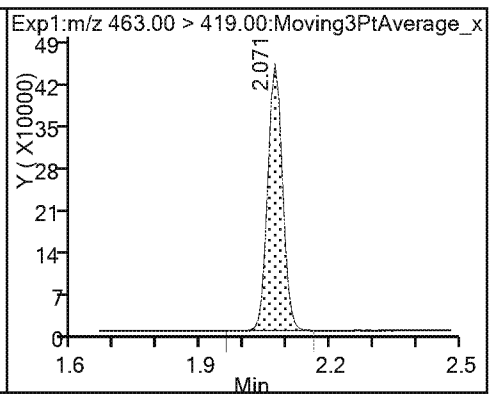
8 Perfluorooctane sulfonic acid



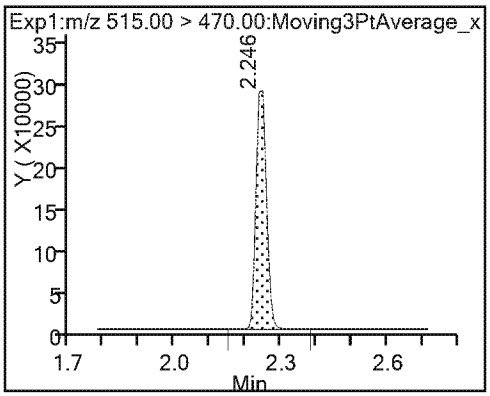
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.246
Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

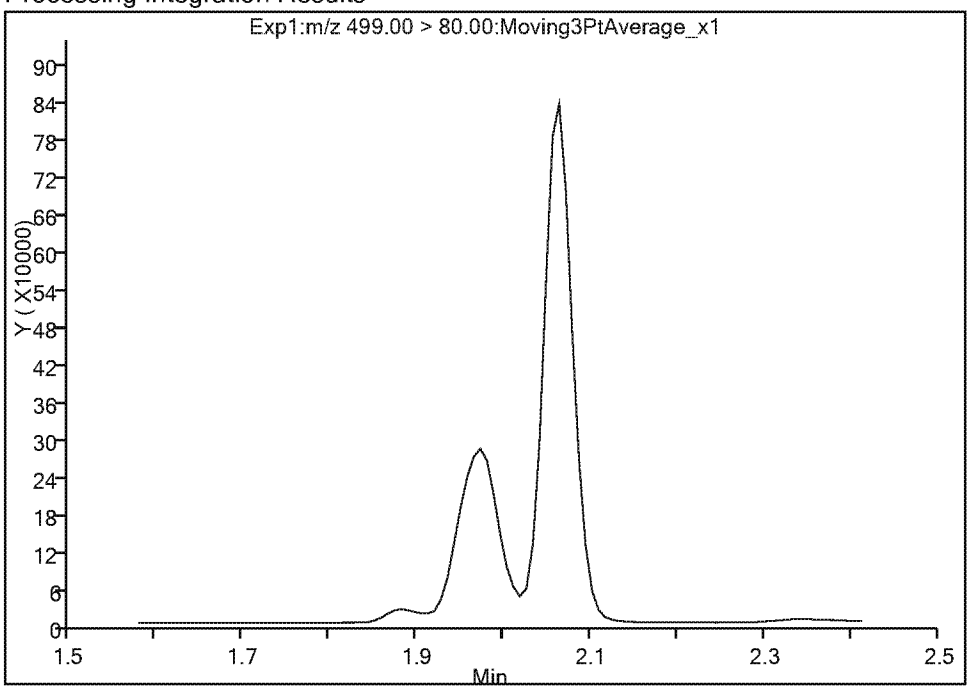
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_004.d				
Injection Date:	06-Mar-2018 22:50:06	Instrument ID:	A8_N		
Lims ID:	LCS 320-211046/2-A				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

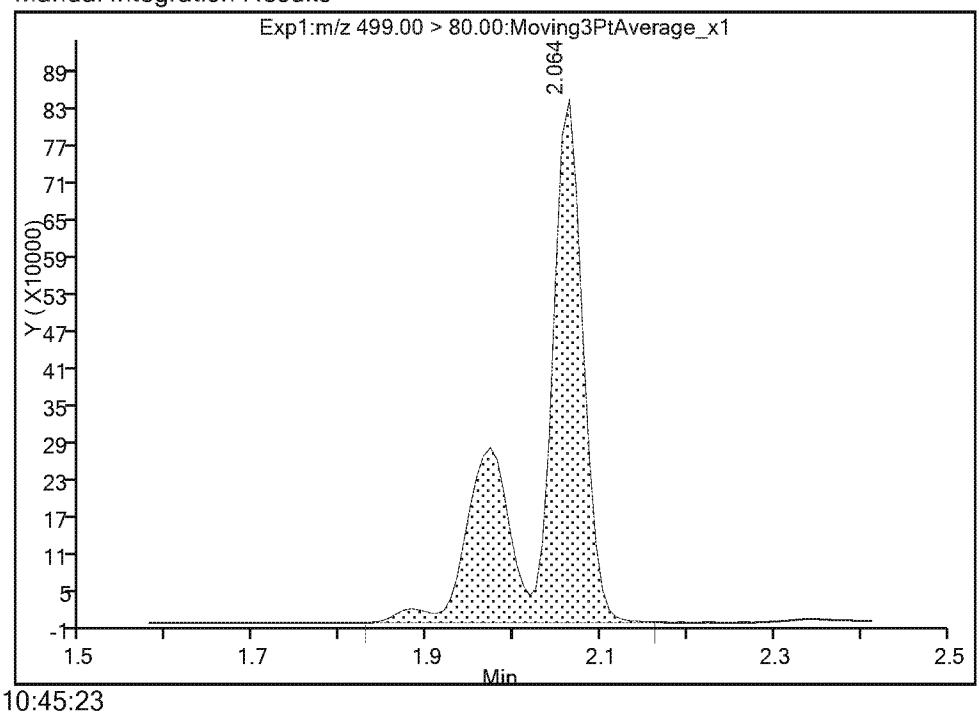
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 2921287
Amount: 35.572121
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 10:45:23
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID:
Lab Sample ID: LCS 320-211748/2-A
Matrix: Water
Lab File ID: 2018.03.09_537A_008.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 03/07/2018 14:47
Sample wt/vol: 250(mL)
Date Analyzed: 03/09/2018 09:12
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.: 212122
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	126		40	6.8
335-67-1	Perfluorooctanoic acid	62.7		20	2.8
375-95-1	Perfluorononanoic acid	66.3		20	8.0
355-46-4	Perfluorohexanesulfonic acid	97.8		30	5.5
375-85-9	Perfluoroheptanoic acid	32.8		10	1.9
375-73-5	Perfluorobutanesulfonic acid	258		90	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	91		70-130
STL00996	13C2 PFDA	102		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_008.d
Lims ID: LCS 320-211748/2-A
Client ID:
Sample Type: LCS
Inject. Date: 09-Mar-2018 09:12:38 ALS Bottle#: 39 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-211748/2-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 09-Mar-2018 11:02:10 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK018

First Level Reviewer: Ex. 4 CBI Date: 09-Mar-2018 10:37:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.373	1.373	0.0	1.000	7207413	64.4		4462	
298.90 > 99.00	1.373	1.373	0.0	1.000	5389874		1.34(0.00-0.00)	4382	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.495	1.495	0.0	1.000	937507	9.07		13254	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.639	1.646	-0.007	1.000	3724647	24.4		11576	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.639	1.646	-0.007	1.000	749236	8.21		168	
* 6 13C2-PFOA									
415.00 > 370.00	1.836	1.844	-0.008		940216	10.0		7674	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.836	1.844	-0.008	1.000	1417951	15.7		45.1	
413.00 > 169.00	1.836	1.844	-0.008	1.000	775183		1.83(0.00-0.00)	803	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.094	2.086	0.008	1.000	2825465	31.6		9839	a
499.00 > 99.00	2.094	2.086	0.008	1.000	589010		4.80(0.00-0.00)	340	
* 7 13C4 PFOS									
503.00 > 80.00	2.094	2.102	-0.008		2715247	28.7		7961	
9 Perfluorononanoic acid									
463.00 > 419.00	2.102	2.109	-0.007	1.000	958796	16.6		35.3	
$ 10 13C2 PFDA									
515.00 > 470.00	2.261	2.269	-0.007	1.000	503948	10.2		4243	

QC Flag Legend

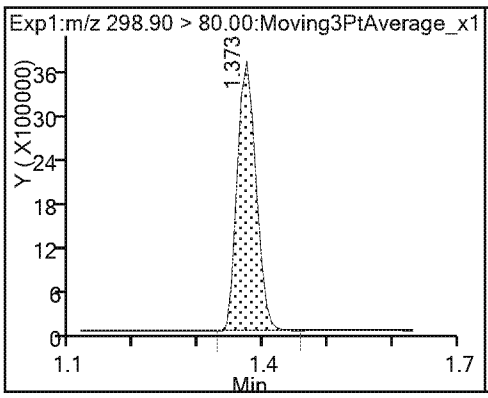
Review Flags

a - User Assigned ID

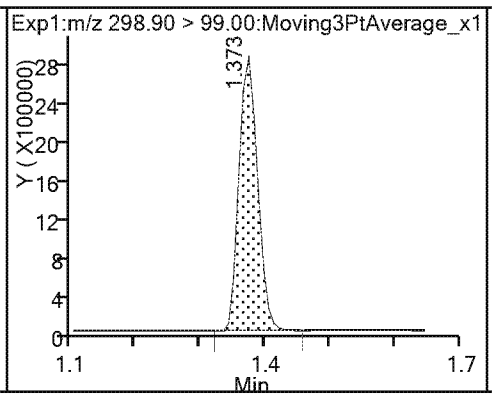
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_008.d
Injection Date: 09-Mar-2018 09:12:38 Instrument ID: A8_N
Lims ID: LCS 320-211748/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 39 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

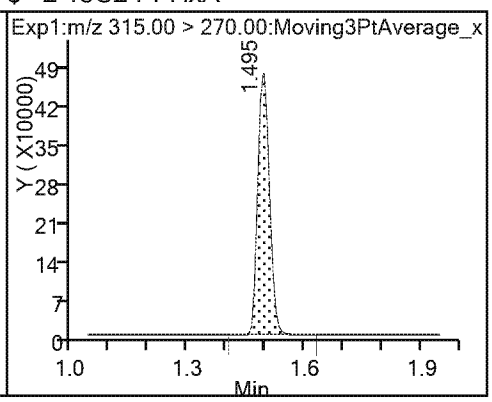
1 Perfluorobutanesulfonic acid



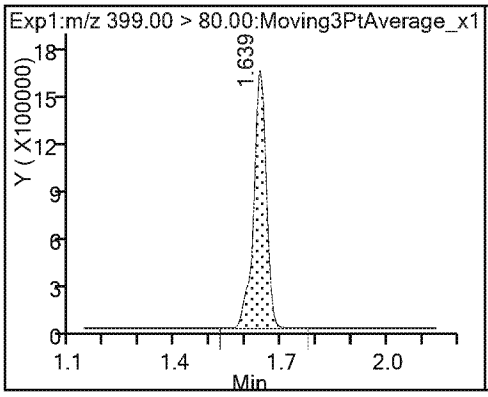
1 Perfluorobutanesulfonic acid



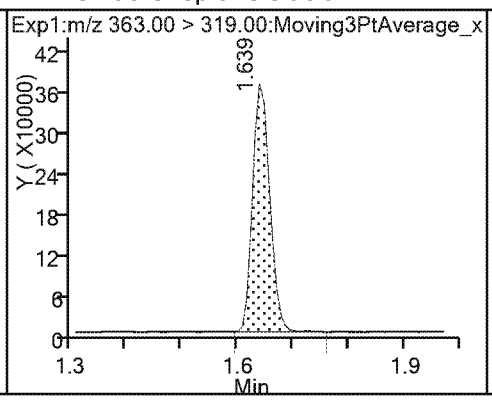
$ 2 13C2 PFHxA



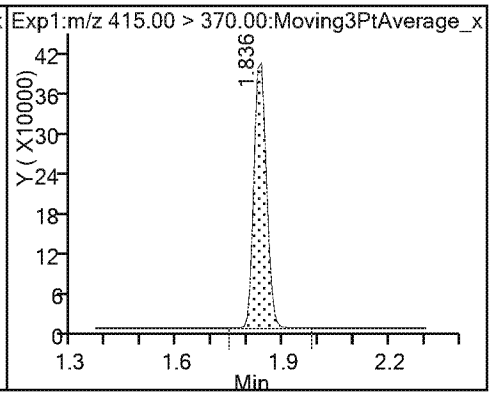
3 Perfluorohexanesulfonic acid



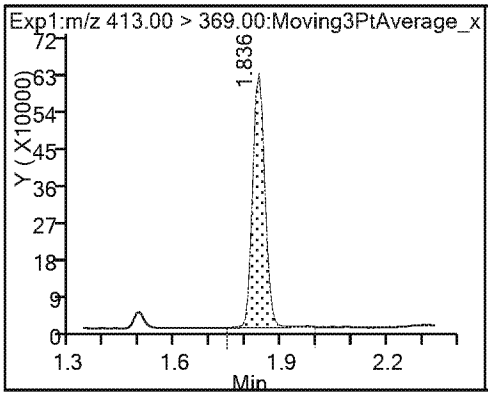
4 Perfluoroheptanoic acid



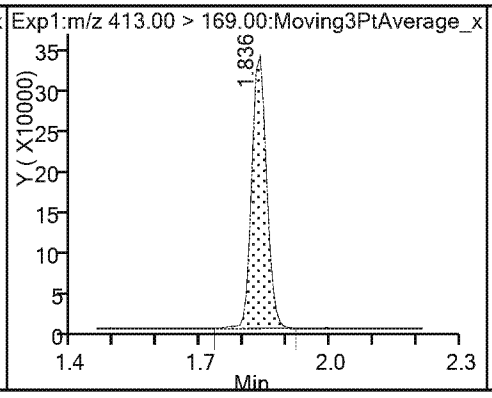
* 6 13C2-PFOA



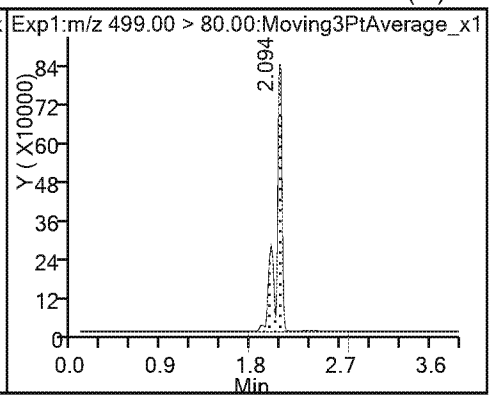
5 Perfluorooctanoic acid



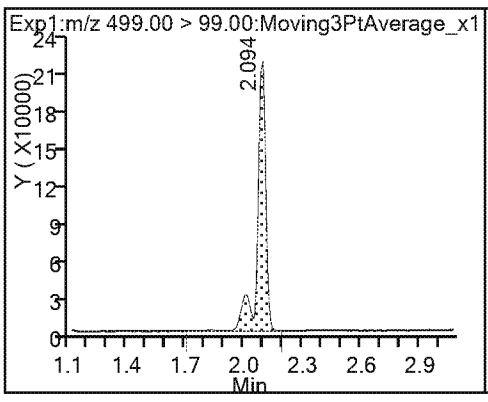
5 Perfluorooctanoic acid



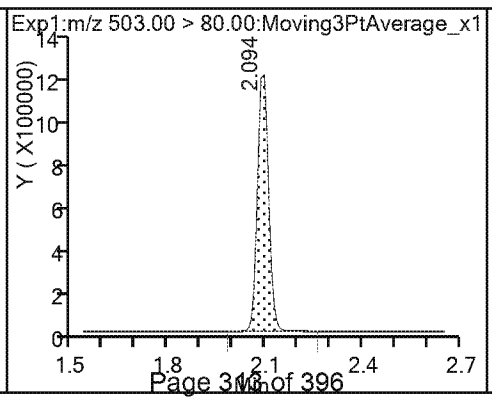
8 Perfluorooctane sulfonic acid (M)



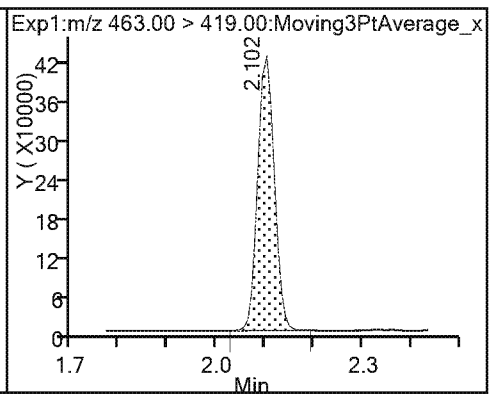
8 Perfluorooctane sulfonic acid



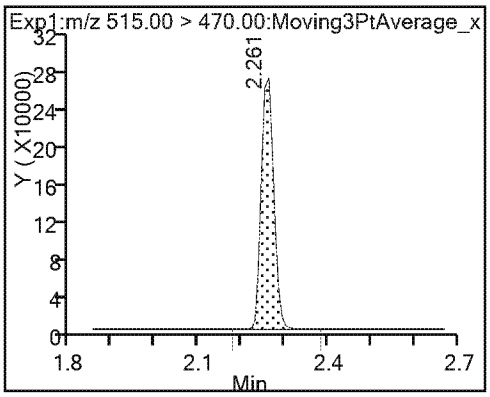
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.261
Y (X10000)
32
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

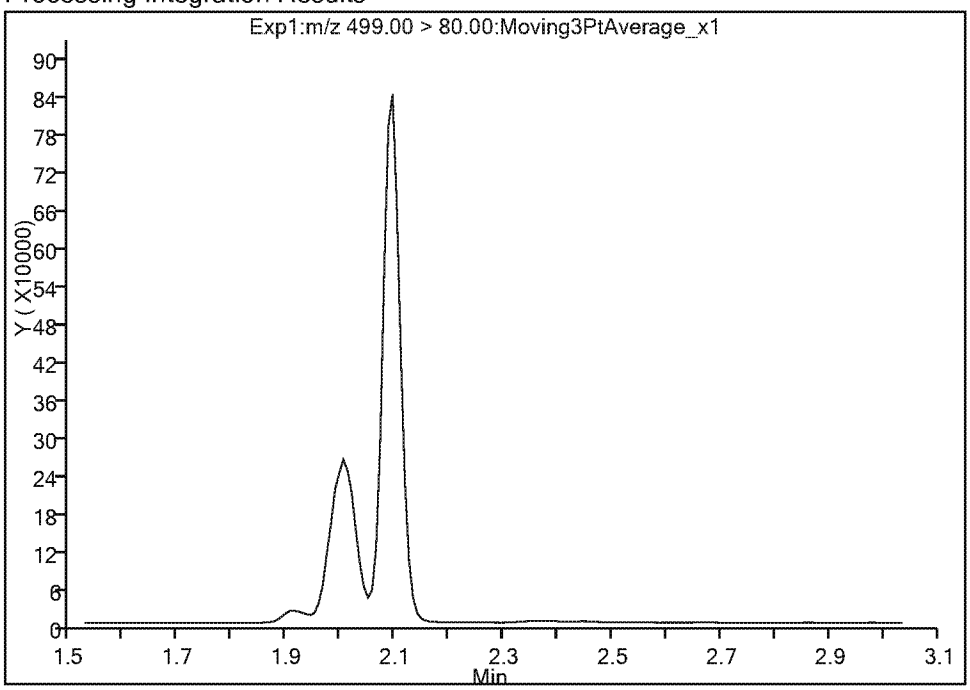
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_008.d				
Injection Date:	09-Mar-2018 09:12:38	Instrument ID:	A8_N		
Lims ID:	LCS 320-211748/2-A				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	39	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

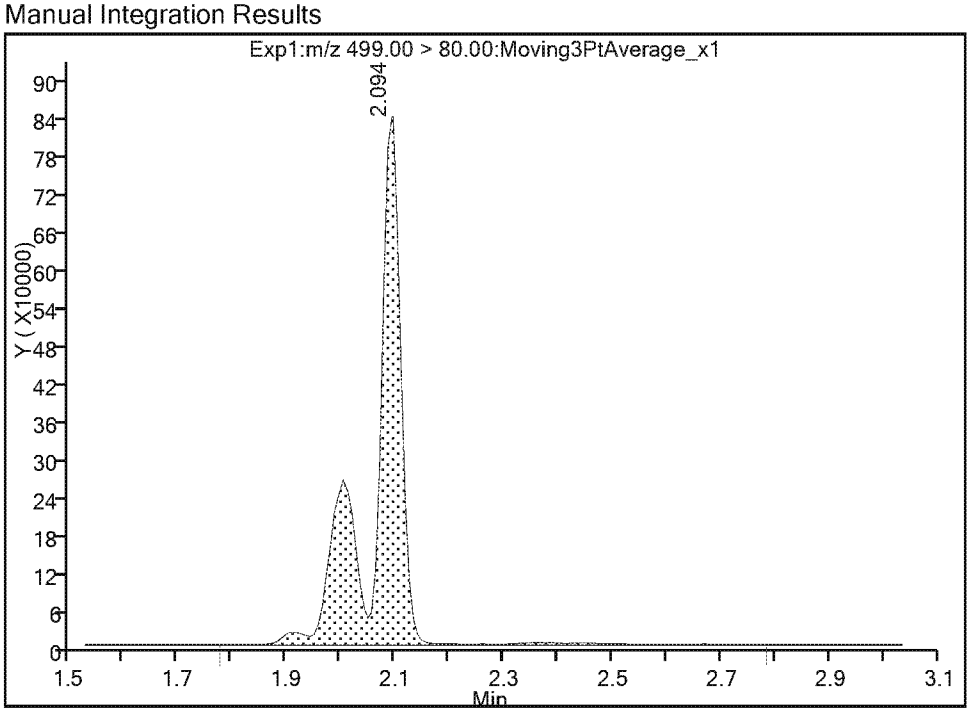
Processing Integration Results

Not Detected
Expected RT: 2.09



Manual Integration Results

RT: 2.09
Area: 2825465
Amount: 31.563208
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 09-Mar-2018 10:37:42
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID:
Lab Sample ID: LCS 320-212004/2-A
Matrix: Water
Lab File ID: 2018.03.12_537AA_008.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 03/08/2018 17:27
Sample wt/vol: 250.00(mL)
Date Analyzed: 03/12/2018 16:35
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.: 212525
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	234		40	6.8
335-67-1	Perfluorooctanoic acid	117		20	2.8
375-95-1	Perfluorononanoic acid	132		20	8.0
355-46-4	Perfluorohexanesulfonic acid	178		30	5.5
375-85-9	Perfluoroheptanoic acid	60.6		10	1.9
375-73-5	Perfluorobutanesulfonic acid	471		90	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	113		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_008.d
Lims ID: LCS 320-212004/2-A
Client ID:
Sample Type: LCS
Inject. Date: 12-Mar-2018 16:35:21 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-212004/2-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 12-Mar-2018 17:04:05 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK030

First Level Reviewer: Ex. 4 CBI Date: 12-Mar-2018 16:47:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.388	1.388	0.0	1.000	10809404	117.9		1533	
298.90 > 99.00	1.388	1.388	0.0	1.000	8319025		1.30(0.00-0.00)	4151	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.510	1.510	0.0	1.000	788511	9.43		10469	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.654	1.654	0.0	1.000	6136705	44.4		2838	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.662	1.654	0.008	1.000	1118893	15.2		235	
* 6 13C2-PFOA									
415.00 > 370.00	1.844	1.844	0.0		760305	10.0		6307	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.851	1.844	0.007	1.000	2133220	29.2		74.6	
413.00 > 169.00	1.851	1.844	0.007	1.000	1110919		1.92(0.00-0.00)	780	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.094	2.064	0.030	1.000	4757664	58.6		467	a
499.00 > 99.00	2.094	2.064	0.030	1.000	1040227		4.57(0.00-0.00)	498	
* 7 13C4 PFOS									
503.00 > 80.00	2.094	2.086	0.008		2462333	28.7		881	
9 Perfluorononanoic acid									
463.00 > 419.00	2.109	2.102	0.007	1.000	1539800	32.9		22.7	
$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.261	0.007	1.000	450567	11.3		4300	

QC Flag Legend

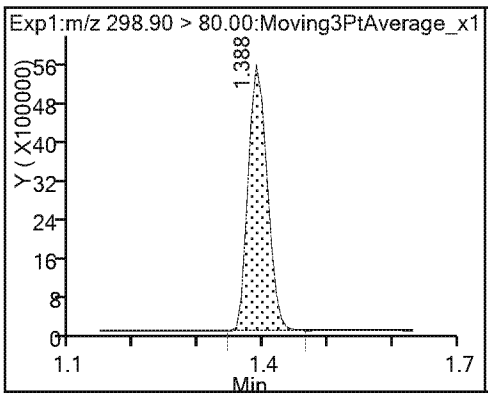
Review Flags

a - User Assigned ID

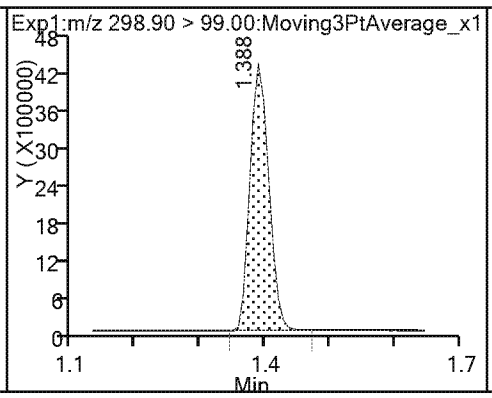
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_008.d
Injection Date: 12-Mar-2018 16:35:21 Instrument ID: A8_N
Lims ID: LCS 320-212004/2-A
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

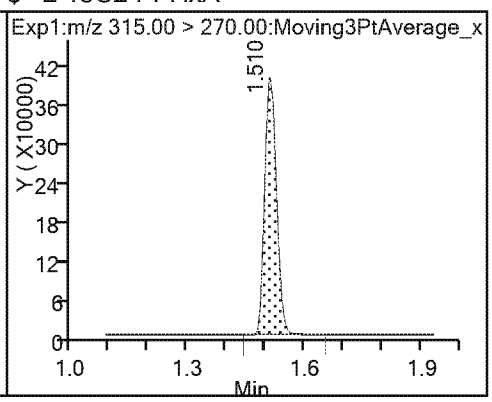
1 Perfluorobutanesulfonic acid



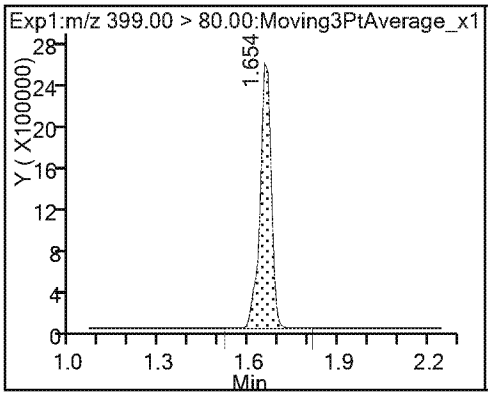
1 Perfluorobutanesulfonic acid



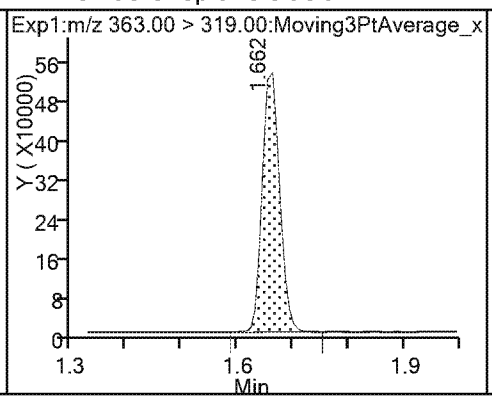
$ 2 13C2 PFHxA



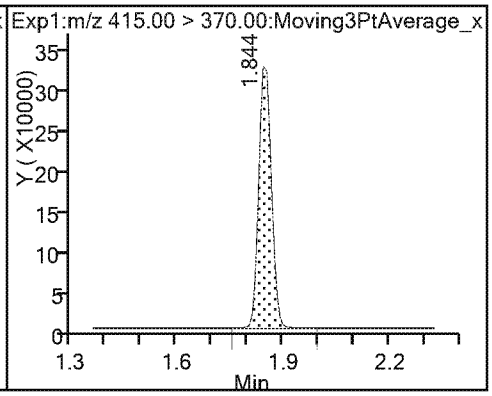
3 Perfluorohexanesulfonic acid



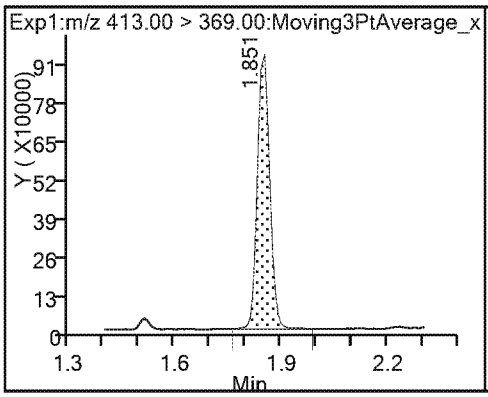
4 Perfluoroheptanoic acid



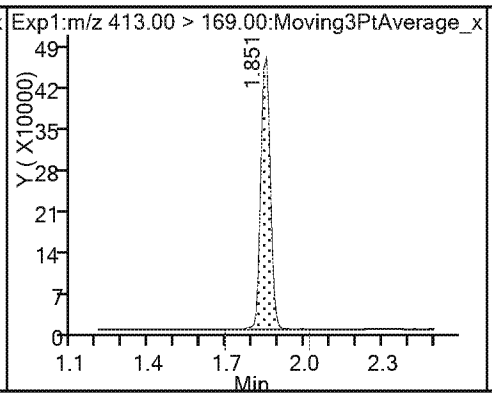
* 6 13C2-PFOA



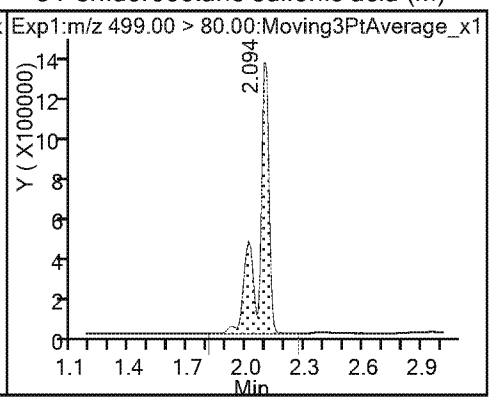
5 Perfluorooctanoic acid



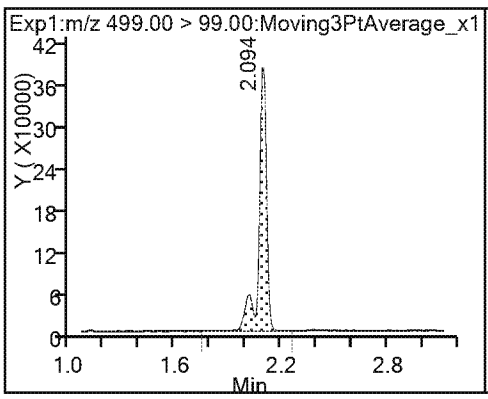
5 Perfluorooctanoic acid



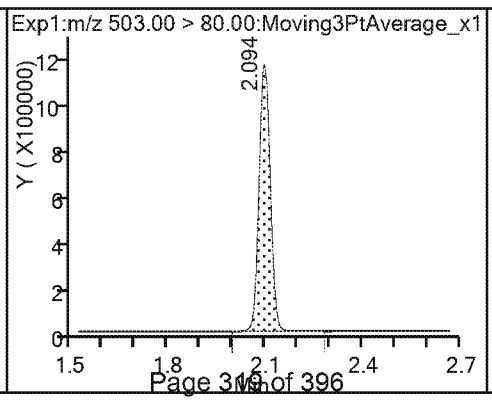
8 Perfluorooctane sulfonic acid (M)



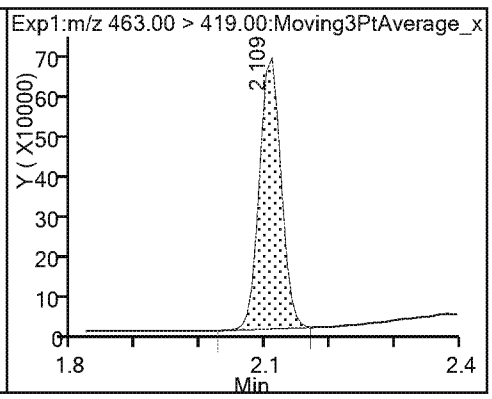
8 Perfluorooctane sulfonic acid



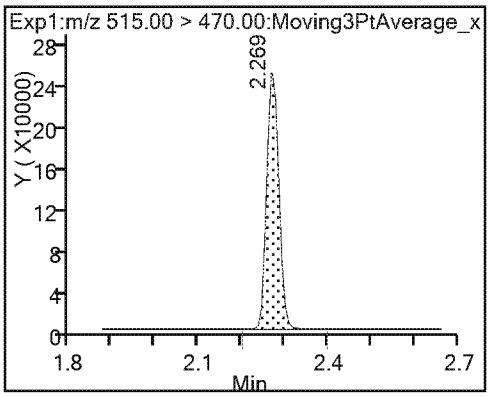
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.269
Y (X10000)
28
24
20
16
12
8
4
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

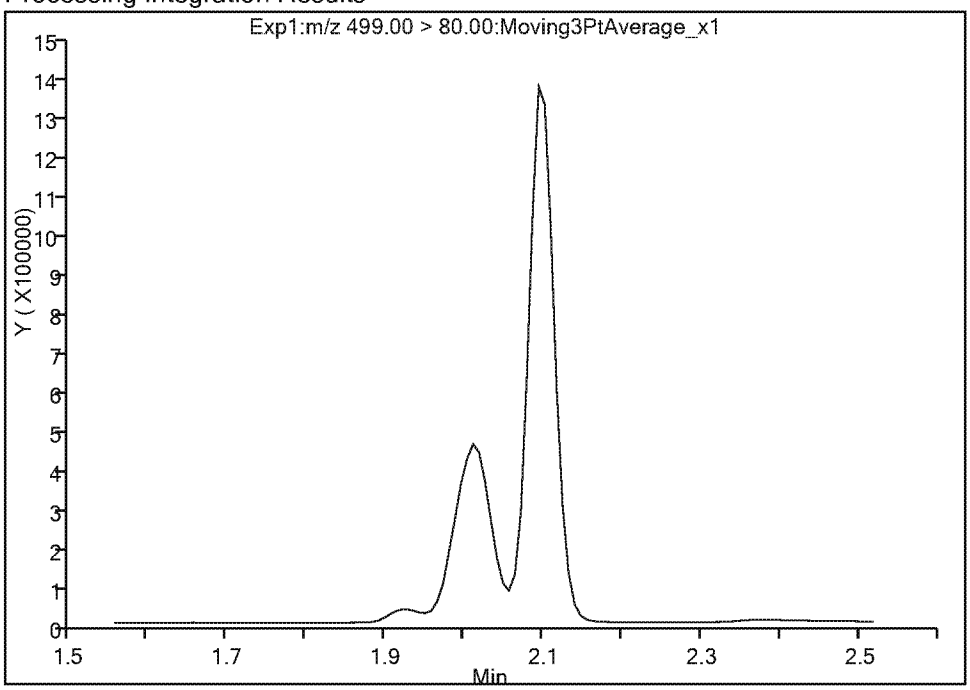
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_008.d				
Injection Date:	12-Mar-2018 16:35:21	Instrument ID:	A8_N		
Lims ID:	LCS 320-212004/2-A				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

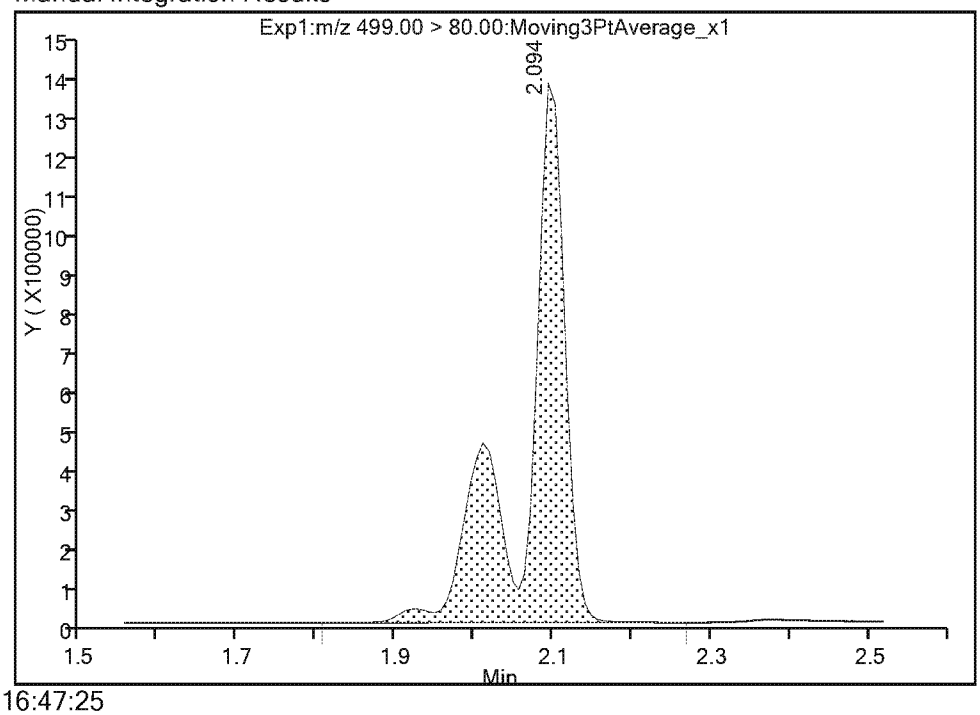
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.09
Area: 4757664
Amount: 58.606735
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 12-Mar-2018 16:47:25
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID:
Lab Sample ID: LCSD 320-211748/3-A
Matrix: Water
Lab File ID: 2018.03.09_537A_009.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 03/07/2018 14:47
Sample wt/vol: 250(mL)
Date Analyzed: 03/09/2018 09:17
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.: 212122
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	132		40	6.8
335-67-1	Perfluorooctanoic acid	67.6		20	2.8
375-95-1	Perfluorononanoic acid	72.0		20	8.0
355-46-4	Perfluorohexanesulfonic acid	99.2		30	5.5
375-85-9	Perfluoroheptanoic acid	34.3		10	1.9
375-73-5	Perfluorobutanesulfonic acid	255		90	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	112		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_009.d
Lims ID: LCSD 320-211748/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 09-Mar-2018 09:17:19 ALS Bottle#: 40 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-211748/3-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 09-Mar-2018 11:02:10 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK018

First Level Reviewer: Ex. 4 CBI Date: 09-Mar-2018 10:52:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.373	1.373	0.0	1.000	7469380	63.8		4785	
298.90 > 99.00	1.373	1.373	0.0	1.000	5625991		1.33(0.00-0.00)	4749	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.495	1.495	0.0	1.000	997697	9.41		14285	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.639	1.646	-0.007	1.000	3951234	24.8		12086	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.639	1.646	-0.007	1.000	802092	8.57		180	
* 6 13C2-PFOA									
415.00 > 370.00	1.828	1.844	-0.016		964231	10.0		8312	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.836	1.844	-0.008	1.000	1566554	16.9		40.6	
413.00 > 169.00	1.836	1.844	-0.008	1.000	816548		1.92(0.00-0.00)	862	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.094	2.086	0.008	1.000	3079937	32.9		8975	a
499.00 > 99.00	2.094	2.086	0.008	1.000	639698		4.81(0.00-0.00)	384	
* 7 13C4 PFOS									
503.00 > 80.00	2.094	2.102	-0.008		2838831	28.7		7187	
9 Perfluorononanoic acid									
463.00 > 419.00	2.102	2.109	-0.007	1.000	1068367	18.0		60.5	
$ 10 13C2 PFDA									
515.00 > 470.00	2.261	2.269	-0.007	1.000	566037	11.2		4246	

QC Flag Legend

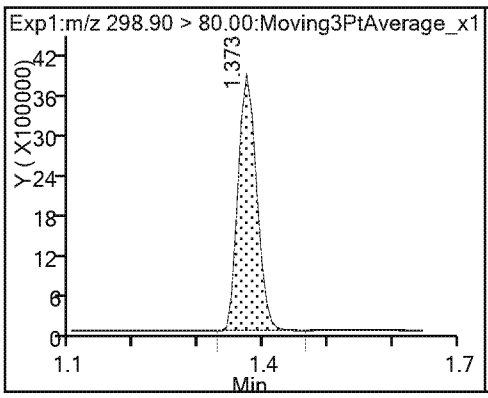
Review Flags

a - User Assigned ID

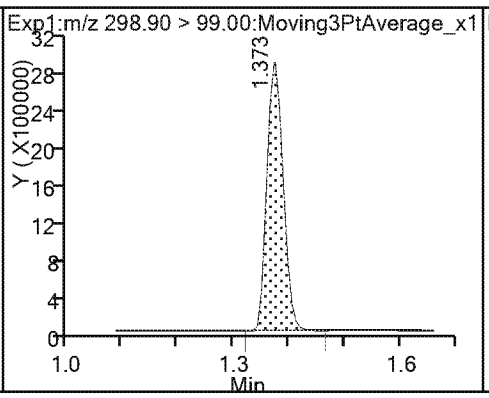
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_009.d
Injection Date: 09-Mar-2018 09:17:19 Instrument ID: A8_N
Lims ID: LCSD 320-211748/3-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 40 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

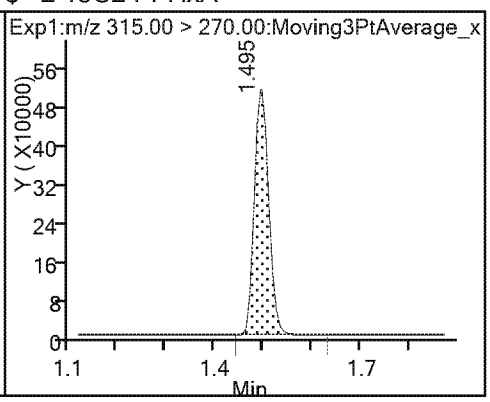
1 Perfluorobutanesulfonic acid



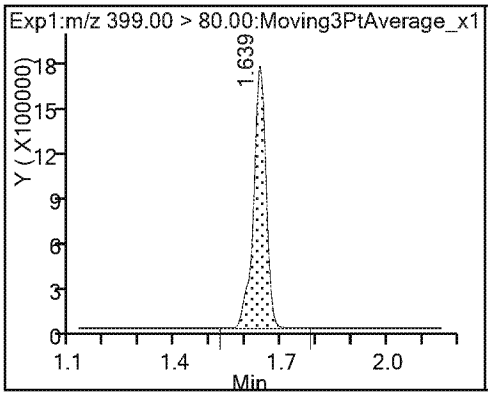
1 Perfluorobutanesulfonic acid



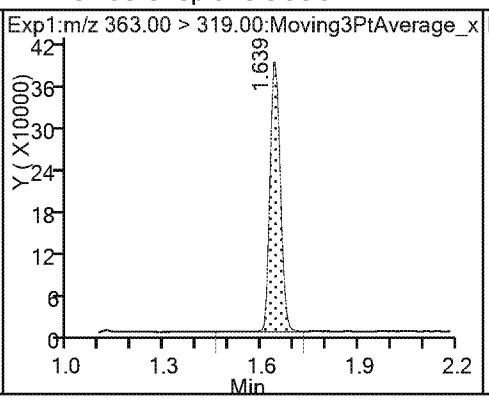
$ 2 13C2 PFHxA



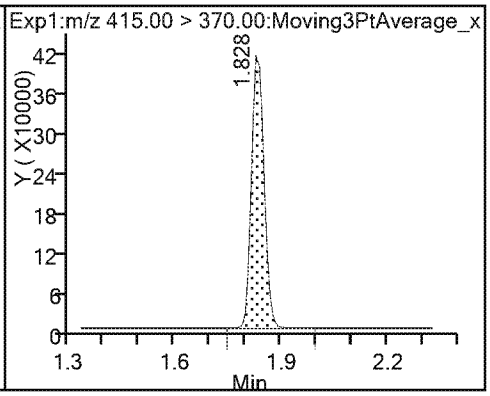
3 Perfluorohexanesulfonic acid



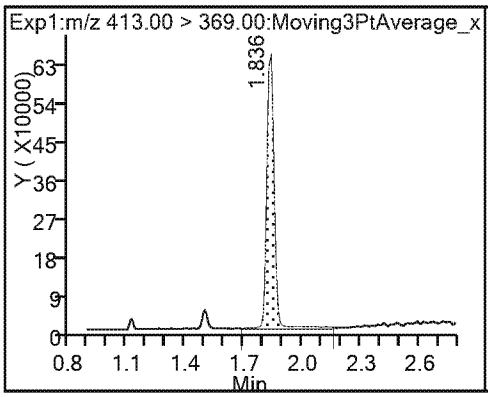
4 Perfluoroheptanoic acid



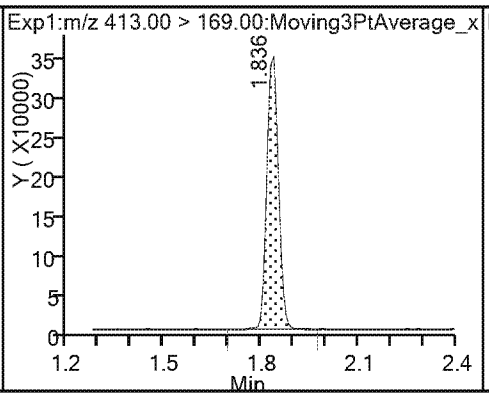
* 6 13C2-PFOA



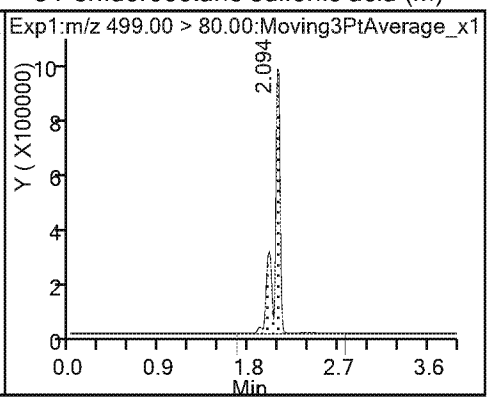
5 Perfluorooctanoic acid



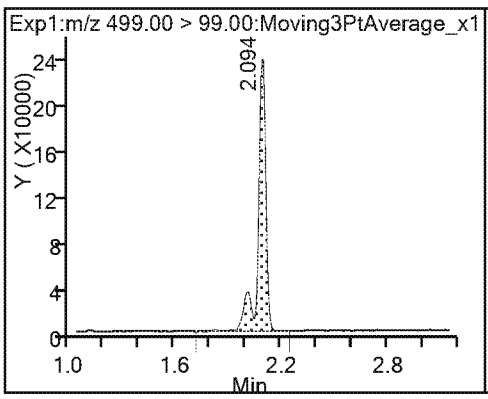
5 Perfluorooctanoic acid



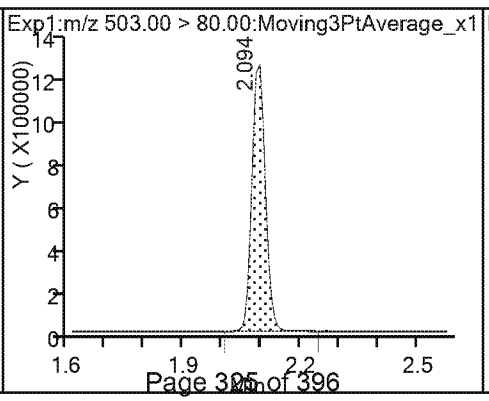
8 Perfluorooctane sulfonic acid (M)



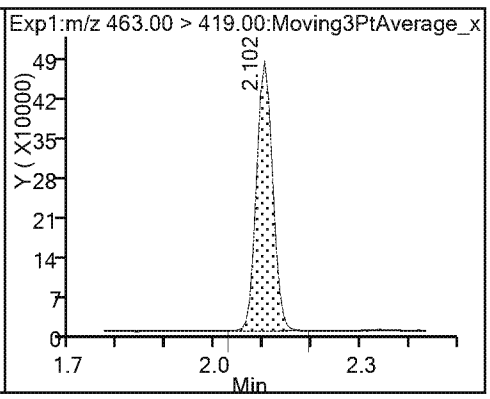
8 Perfluorooctane sulfonic acid



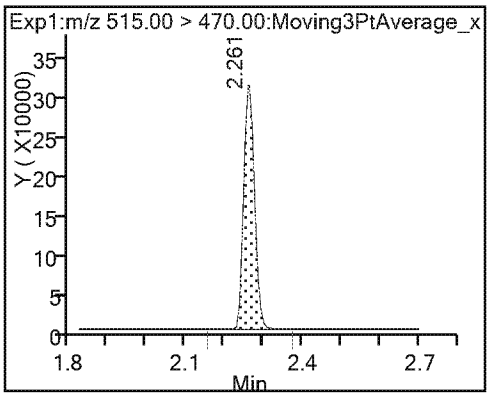
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.261
Y (X10000)
35
30
25
20
15
10
5
0
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

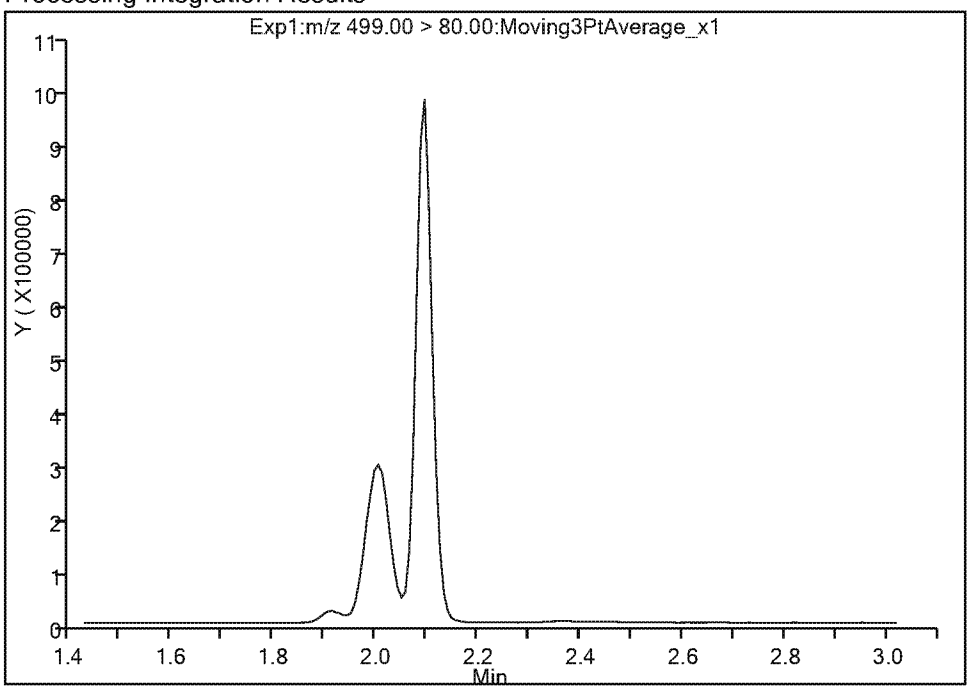
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b\2018.03.09_537A_009.d				
Injection Date:	09-Mar-2018 09:17:19	Instrument ID:	A8_N		
Lims ID:	LCSD 320-211748/3-A				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	40	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

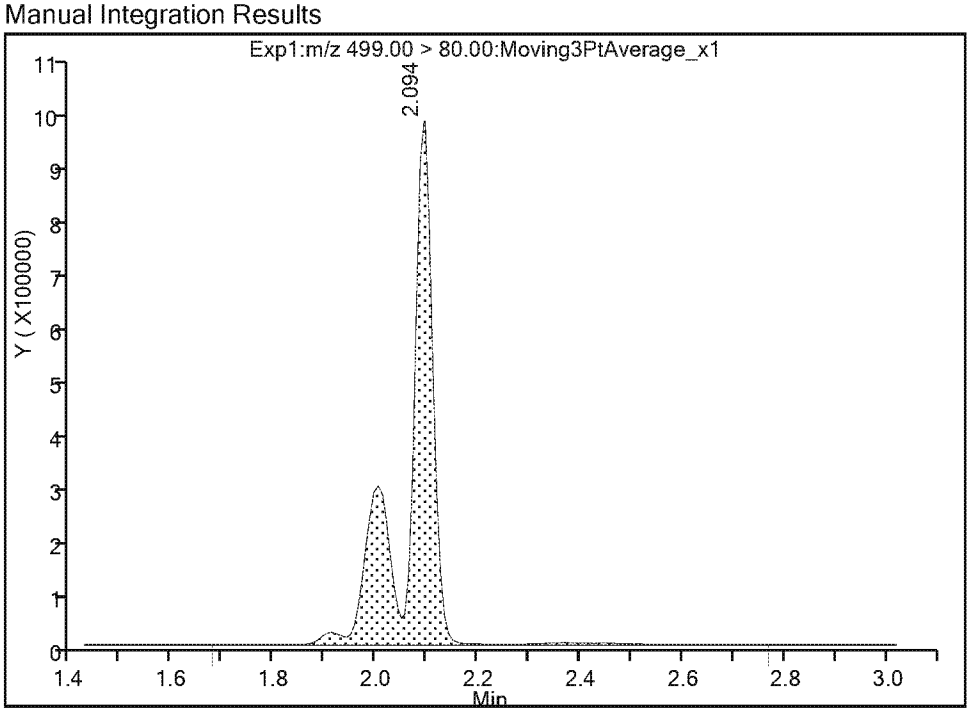
Processing Integration Results

Not Detected
Expected RT: 2.09



Manual Integration Results

RT: 2.09
Area: 3079937
Amount: 32.908103
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 09-Mar-2018 10:51:59
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID:
Lab Sample ID: LCSD 320-212004/3-A
Matrix: Water
Lab File ID: 2018.03.12_537AA_009.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 03/08/2018 17:27
Sample wt/vol: 250.00(mL)
Date Analyzed: 03/12/2018 16:40
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.: 212525
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	217		40	6.8
335-67-1	Perfluorooctanoic acid	100		20	2.8
375-95-1	Perfluorononanoic acid	116		20	8.0
355-46-4	Perfluorohexanesulfonic acid	157		30	5.5
375-85-9	Perfluoroheptanoic acid	53.4		10	1.9
375-73-5	Perfluorobutanesulfonic acid	416		90	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	86		70-130
STL00996	13C2 PFDA	107		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_009.d
Lims ID: LCSD 320-212004/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 12-Mar-2018 16:40:02 ALS Bottle#: 3 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-212004/3-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 12-Mar-2018 17:04:05 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK030

First Level Reviewer: Ex. 4 CBI Date: 12-Mar-2018 16:48:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.388	1.388	0.0	1.000	10709586	103.9		1509	
298.90 > 99.00	1.381	1.388	-0.007	0.995	8184775		1.31(0.00-0.00)	3581	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.510	1.510	0.0	1.000	792442	8.59		9887	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.654	1.654	0.0	1.000	5950616	39.4		2838	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.654	1.654	0.0	1.000	1087343	13.3		227	
* 6 13C2-PFOA									
415.00 > 370.00	1.844	1.844	0.0		838927	10.0		7917	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.844	1.844	0.0	1.000	2019014	25.0		65.2	
413.00 > 169.00	1.844	1.844	0.0	1.000	1081485		1.87(0.00-0.00)	729	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.086	2.064	0.022	1.000	4816631	54.3		518	a
499.00 > 99.00	2.086	2.064	0.022	1.000	1006791		4.78(0.00-0.00)	460	
* 7 13C4 PFOS									
503.00 > 80.00	2.086	2.086	0.0		2692906	28.7		939	
9 Perfluorononanoic acid									
463.00 > 419.00	2.094	2.102	-0.008	1.000	1496408	29.0		22.5	
$ 10 13C2 PFDA									
515.00 > 470.00	2.269	2.261	0.007	1.000	470339	10.7		4236	

QC Flag Legend

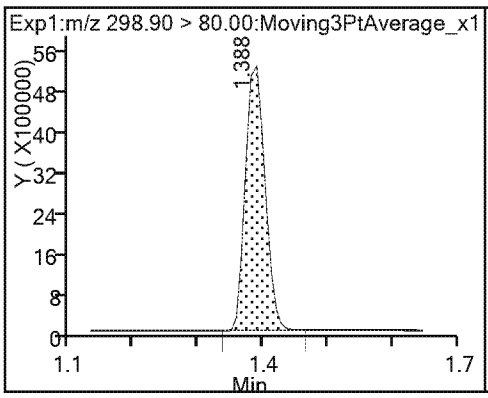
Review Flags

a - User Assigned ID

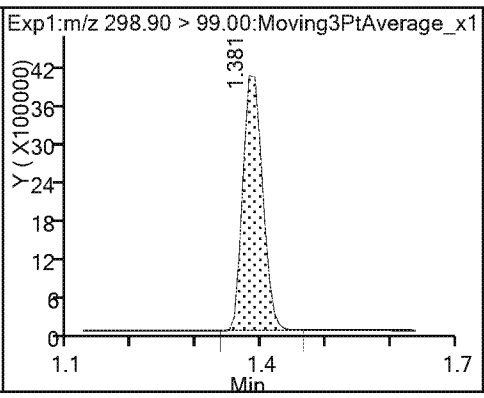
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_009.d
Injection Date: 12-Mar-2018 16:40:02 Instrument ID: A8_N
Lims ID: LCSD 320-212004/3-A
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

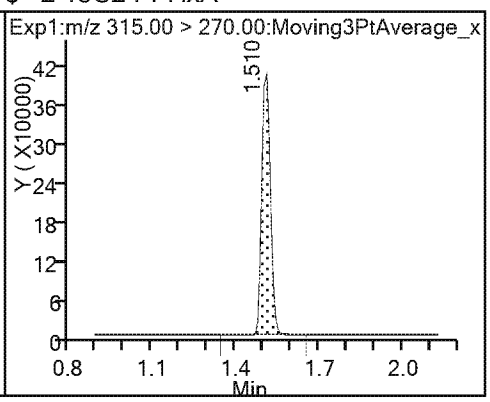
1 Perfluorobutanesulfonic acid



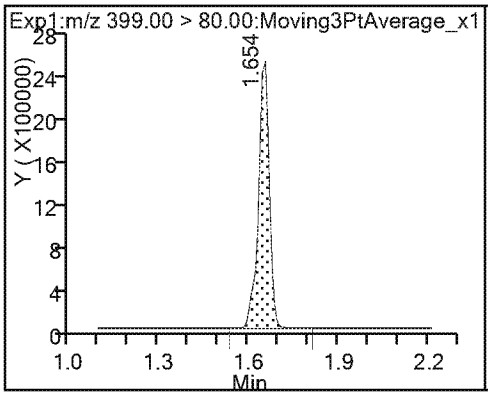
1 Perfluorobutanesulfonic acid



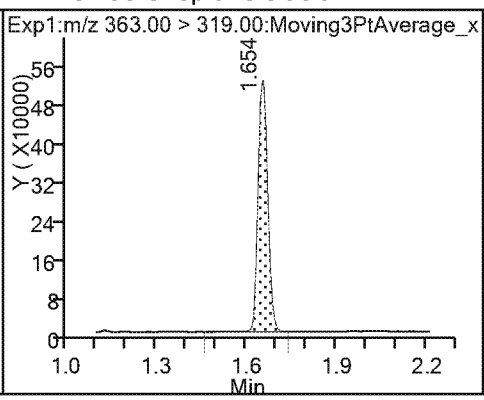
$ 2 13C2 PFHxA



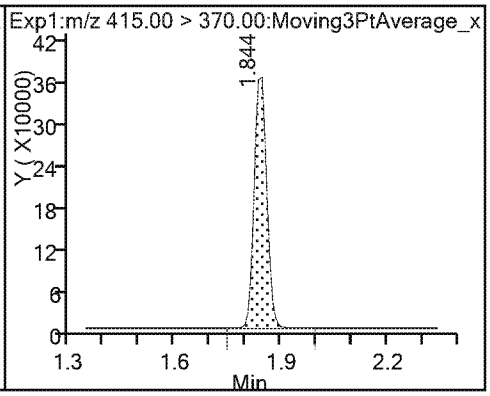
3 Perfluorohexanesulfonic acid



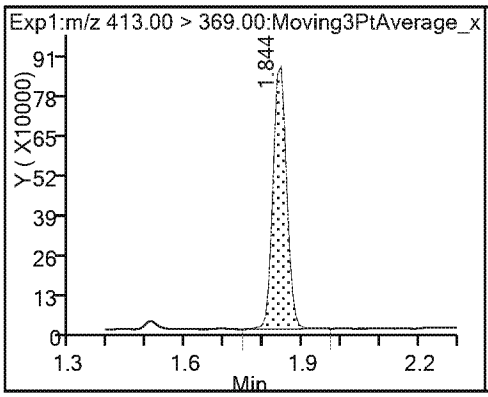
4 Perfluoroheptanoic acid



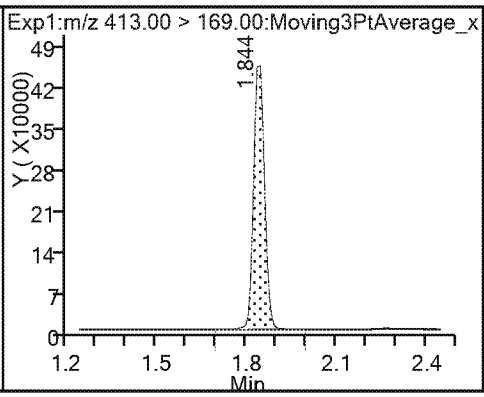
* 6 13C2-PFOA



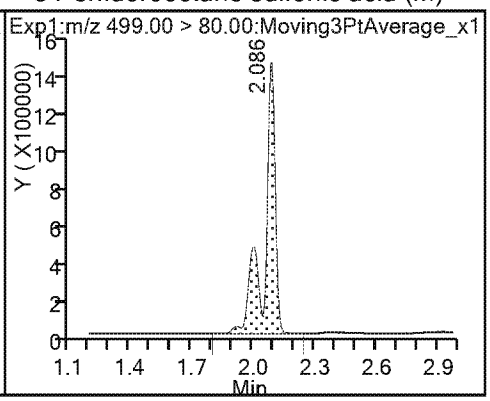
5 Perfluorooctanoic acid



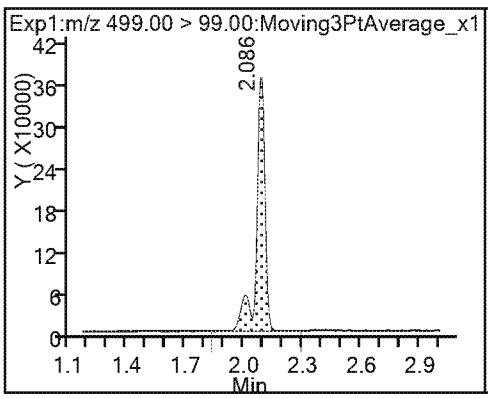
5 Perfluorooctanoic acid



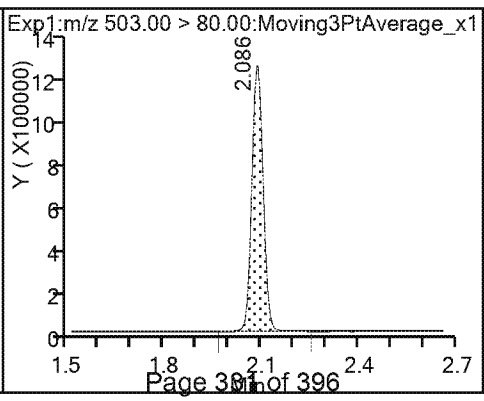
8 Perfluorooctane sulfonic acid (M)



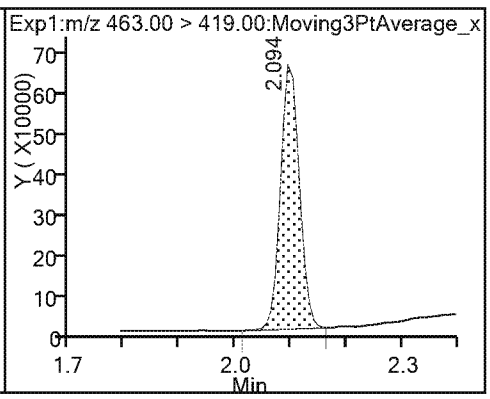
8 Perfluorooctane sulfonic acid



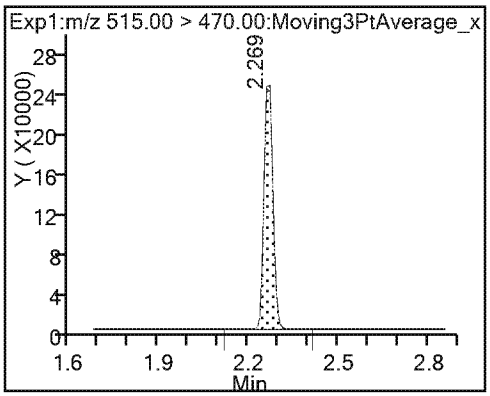
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.269
Y (X10000)
28
24
20
16
12
8
4
0
1.6
1.9
2.2
2.5
2.8
Min

TestAmerica Sacramento

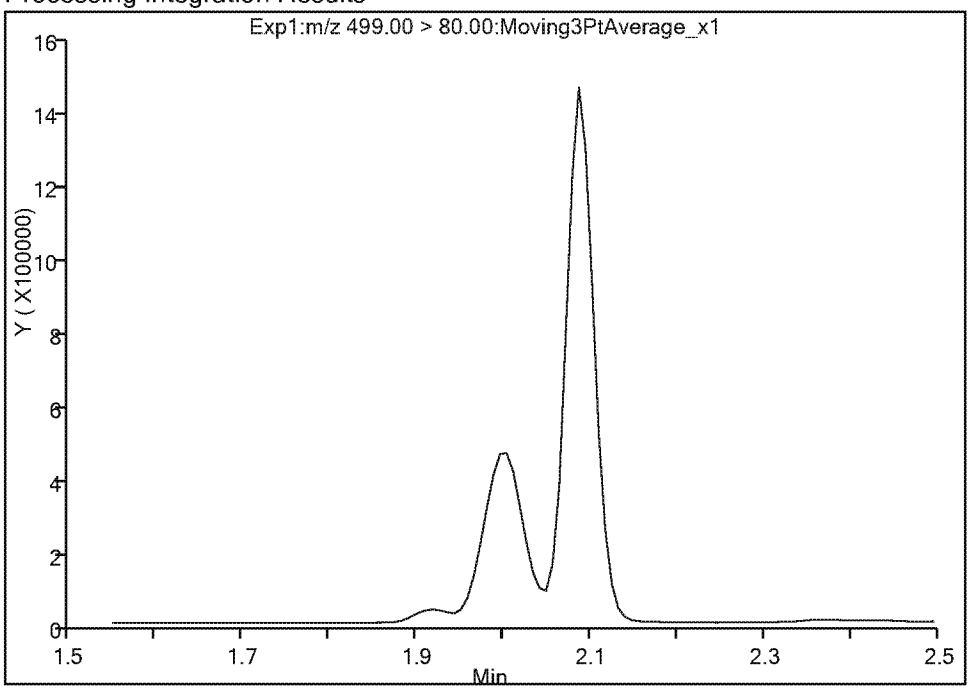
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b\2018.03.12_537AA_009.d				
Injection Date:	12-Mar-2018 16:40:02	Instrument ID:	A8_N		
Lims ID:	LCSD 320-212004/3-A				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

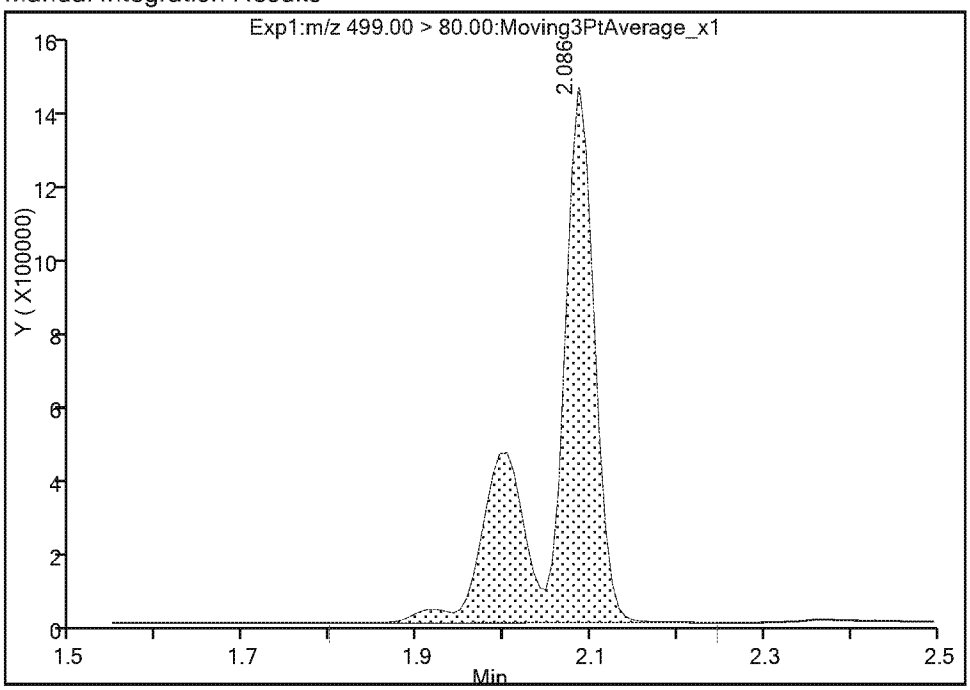
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.09
Area: 4816631
Amount: 54.252872
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 12-Mar-2018 16:47:48
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AM1 MS
Lab Sample ID: 320-36607-9 MS
Matrix: Water
Lab File ID: 2018.03.06_537C_016.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:30
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 282.7(mL)
Date Analyzed: 03/06/2018 23:46
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.: 211581
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	175		35	6.0
335-67-1	Perfluorooctanoic acid	63.5		18	2.5
375-95-1	Perfluorononanoic acid	68.8		18	7.1
355-46-4	Perfluorohexanesulfonic acid	93.2		27	4.9
375-85-9	Perfluoroheptanoic acid	30.4		8.8	1.7
375-73-5	Perfluorobutanesulfonic acid	252		80	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	87		70-130
STL00996	13C2 PFDA	124		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_016.d
Lims ID: 320-36607-A-9-B MS
Client ID: C0AM1
Sample Type: MS
Inject. Date: 06-Mar-2018 23:46:10 ALS Bottle#: 12 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-9
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:17 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 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	1.366	1.366	0.0	1.000	7318415	71.3		11153	
298.90 > 99.00	1.366	1.366	0.0	1.000	5253063		1.39(0.00-0.00)	7258	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	828018	8.68		12140	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.624	0.0	1.000	3729553	26.3		2525	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	723952	8.60		138	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		867197	10.0		8351	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	1497398	17.9		62.3	
413.00 > 169.00	1.806	1.806	0.0	1.000	830086		1.80(0.00-0.00)	683	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.064	2.056	0.008	1.000	4122378	49.6		1433	M
499.00 > 99.00	2.064	2.056	0.008	1.000	829796		4.97(0.00-0.00)	416	
* 7 13C4 PFOS									
503.00 > 80.00	2.064	2.056	0.008		2522368	28.7		3314	
9 Perfluorononanoic acid									
463.00 > 419.00	2.071	2.064	0.007	1.000	1038079	19.5		48.8	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	562673	12.4		6080	

QC Flag Legend

Review Flags

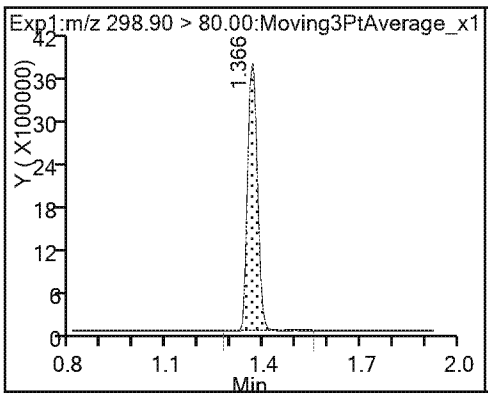
M - Manually Integrated

a - User Assigned ID

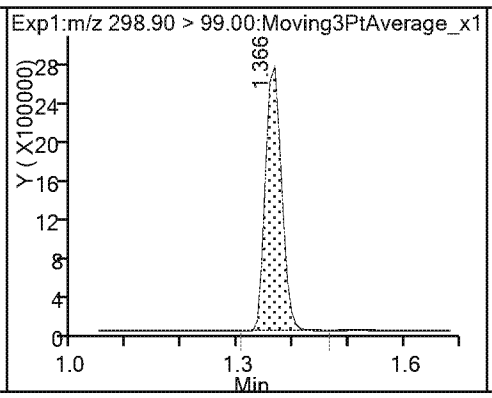
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_016.d
Injection Date: 06-Mar-2018 23:46:10 Instrument ID: A8_N
Lims ID: 320-36607-A-9-B MS
Client ID: C0AM1
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

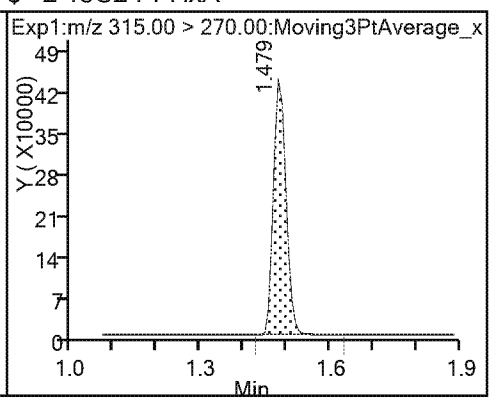
1 Perfluorobutanesulfonic acid



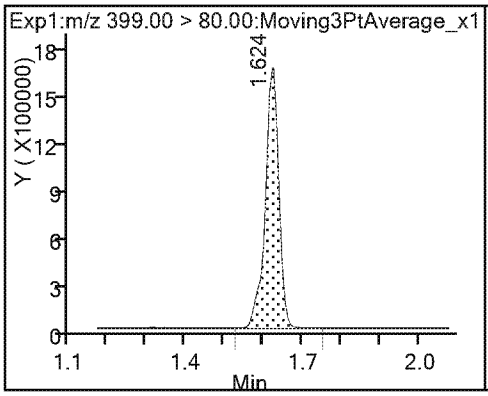
1 Perfluorobutanesulfonic acid



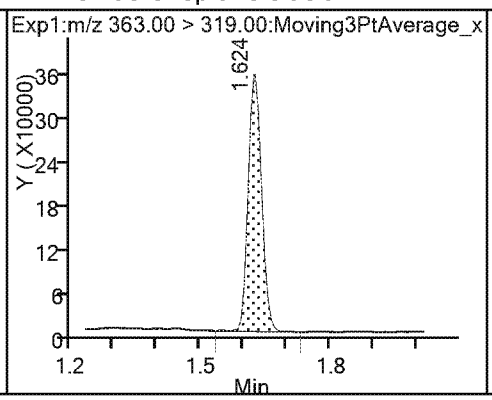
$ 2 13C2 PFHxA



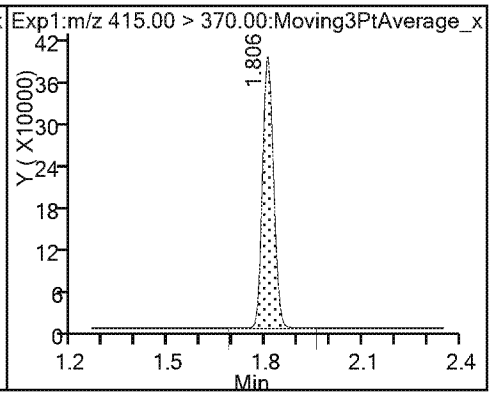
3 Perfluorohexanesulfonic acid



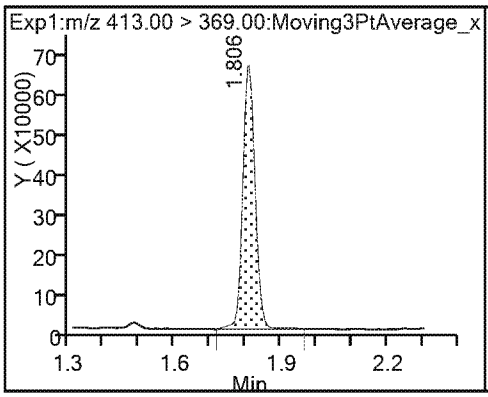
4 Perfluoroheptanoic acid



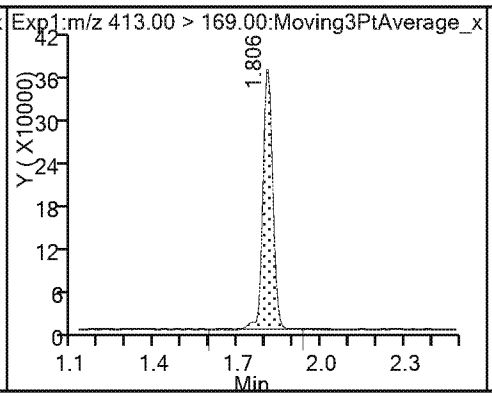
* 6 13C2-PFOA



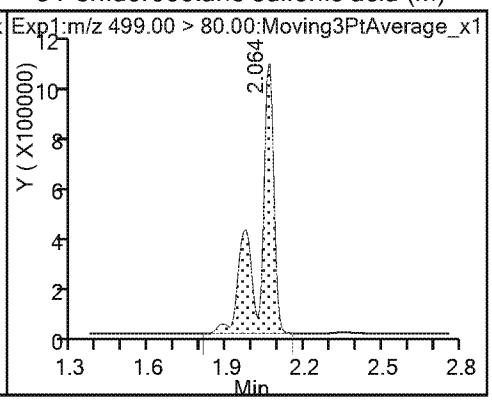
5 Perfluorooctanoic acid



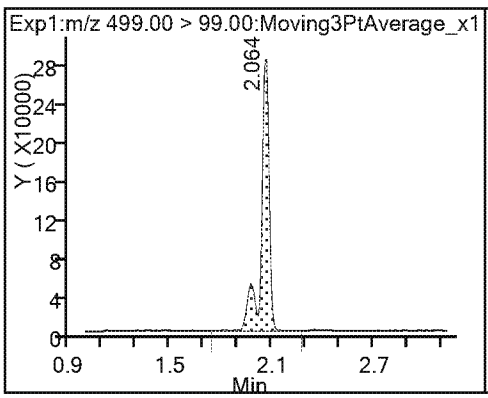
5 Perfluorooctanoic acid



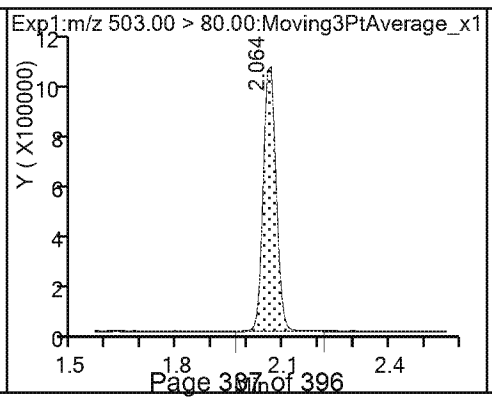
8 Perfluorooctane sulfonic acid (M)



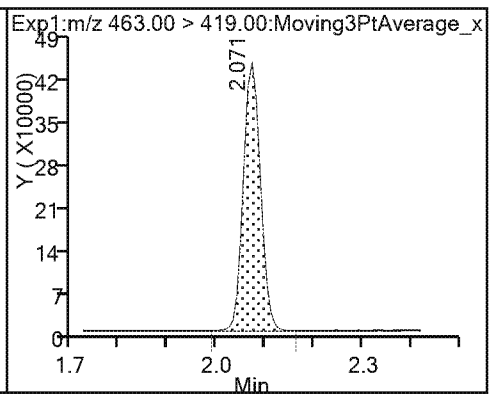
8 Perfluorooctane sulfonic acid



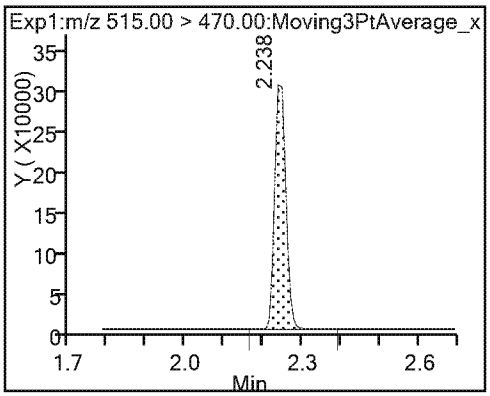
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

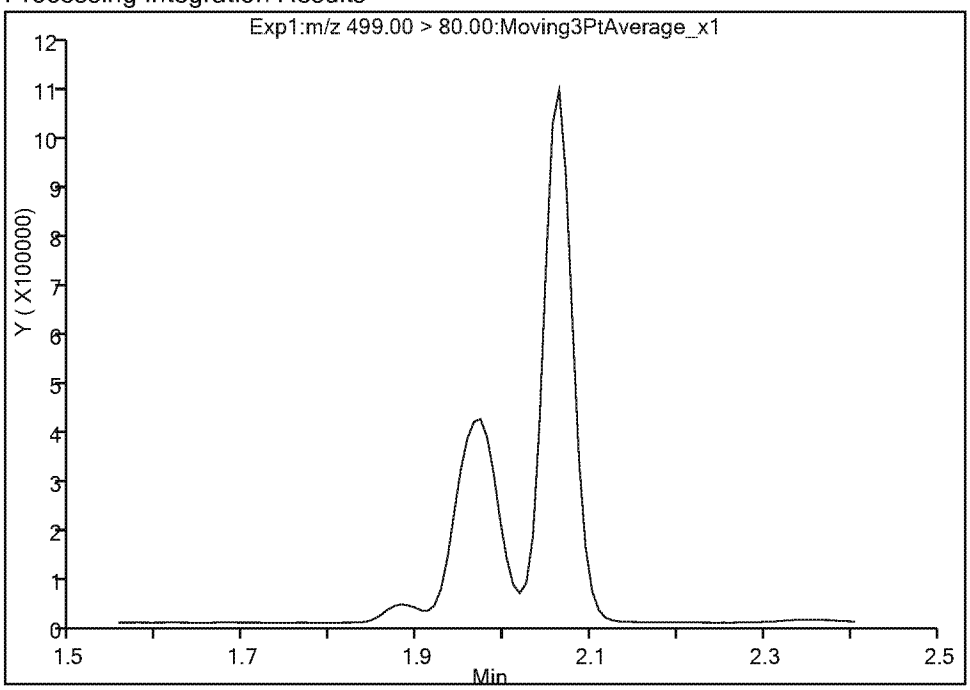
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_016.d				
Injection Date:	06-Mar-2018 23:46:10	Instrument ID:	A8_N		
Lims ID:	320-36607-A-9-B MS				
Client ID:	C0AM1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	12	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

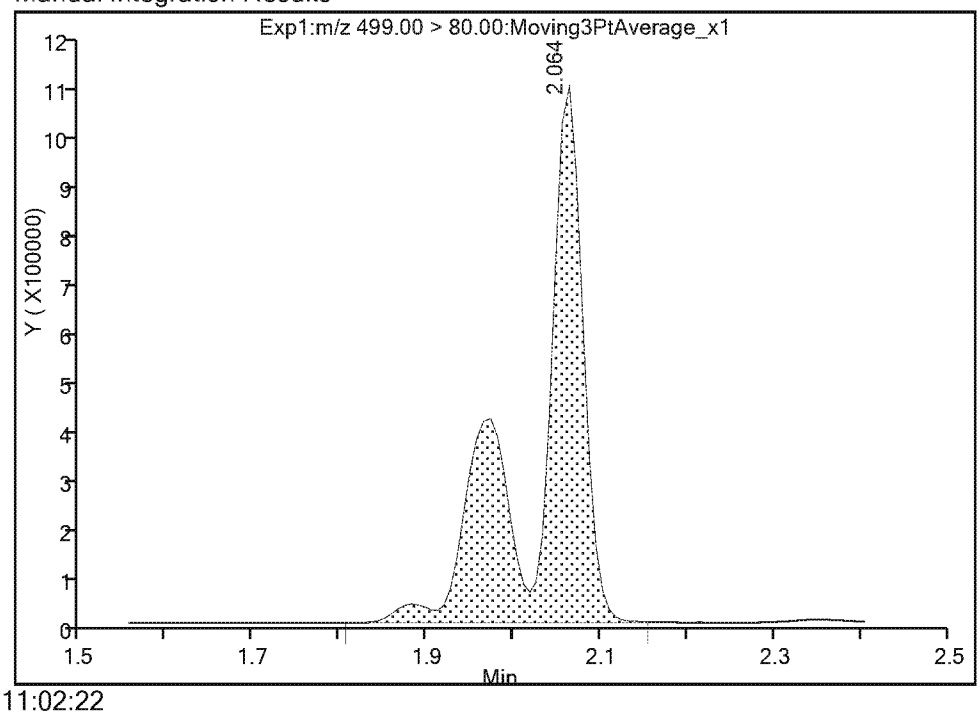
Not Detected
Expected RT: 2.06

Processing Integration Results



Manual Integration Results

RT: 2.06
Area: 4122378
Amount: 49.572396
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:02:22
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36607-1
SDG No.: DAS R35321, SDG C0AL3
Client Sample ID: C0AM1 MSD
Lab Sample ID: 320-36607-9 MSD
Matrix: Water
Lab File ID: 2018.03.06_537C_017.d
Analysis Method: 537 DW
Date Collected: 02/28/2018 13:30
Extraction Method: 537 DW
Date Extracted: 03/03/2018 12:52
Sample wt/vol: 295.8(mL)
Date Analyzed: 03/06/2018 23:50
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.: 211581
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	159		34	5.7
335-67-1	Perfluorooctanoic acid	53.1		17	2.4
375-95-1	Perfluorononanoic acid	58.3		17	6.8
355-46-4	Perfluorohexanesulfonic acid	77.4		25	4.6
375-85-9	Perfluoroheptanoic acid	24.8		8.5	1.6
375-73-5	Perfluorobutanesulfonic acid	219		76	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	78		70-130
STL00996	13C2 PFDA	116		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_017.d
Lims ID: 320-36607-A-9-C MSD
Client ID: C0AM1
Sample Type: MSD
Inject. Date: 06-Mar-2018 23:50:51 ALS Bottle#: 13 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36607-a-9-c
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 07-Mar-2018 11:13:17 Calib Date: 16-Feb-2018 09:19:04
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: XAWRK022

First Level Reviewer: Ex. 4 CBI Date: 07-Mar-2018 11:03:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.358	1.366	-0.008	1.000	6636681	64.9		6769	
298.90 > 99.00	1.358	1.366	-0.008	1.000	4839688		1.37(0.00-0.00)	6329	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	737643	7.83		10634	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.616	1.624	-0.008	1.000	3195260	22.9		2349	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	609713	7.33		121	
* 6 13C2-PFOA									
415.00 > 370.00	1.798	1.806	-0.008		856551	10.0		7831	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	1293779	15.7		54.5	
413.00 > 169.00	1.806	1.806	0.0	1.000	708338		1.83(0.00-0.00)	521	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	3856028	47.1		1446	M
499.00 > 99.00	2.056	2.056	0.0	1.000	770832		5.00(0.00-0.00)	386	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2485712	28.7		3571	
9 Perfluorononanoic acid									
463.00 > 419.00	2.064	2.064	0.0	1.000	908698	17.2		52.9	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	520104	11.6		4679	

QC Flag Legend

Review Flags

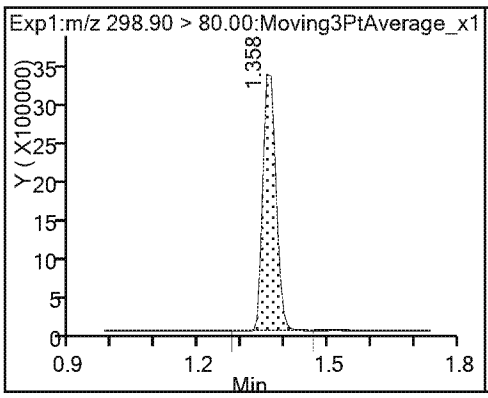
M - Manually Integrated

a - User Assigned ID

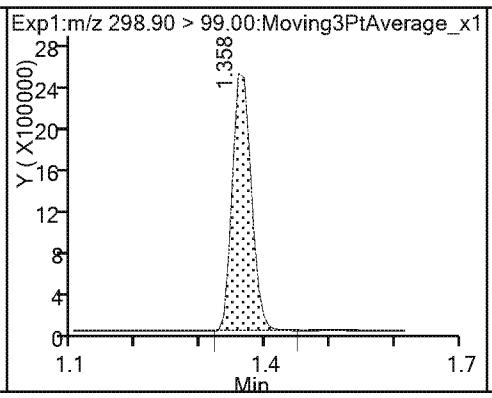
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_017.d
Injection Date: 06-Mar-2018 23:50:51 Instrument ID: A8_N
Lims ID: 320-36607-A-9-C MSD
Client ID: C0AM1
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

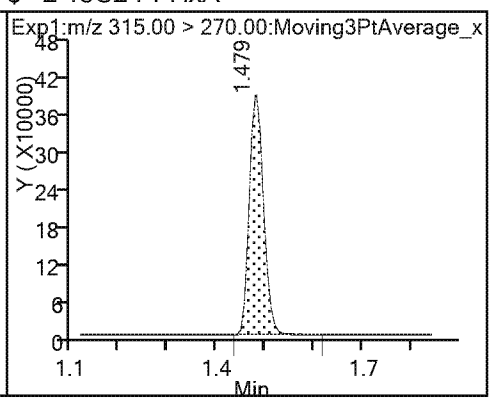
1 Perfluorobutanesulfonic acid



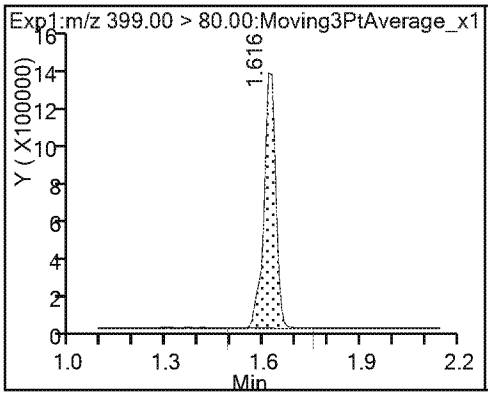
1 Perfluorobutanesulfonic acid



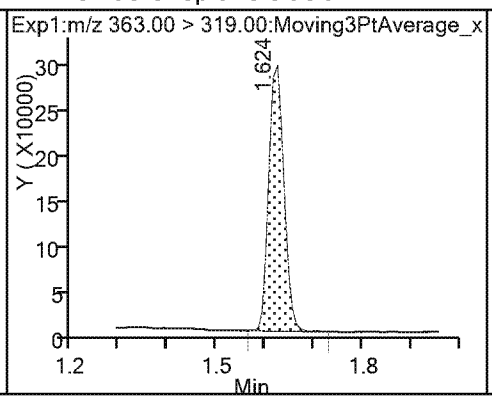
$ 2 13C2 PFHxA



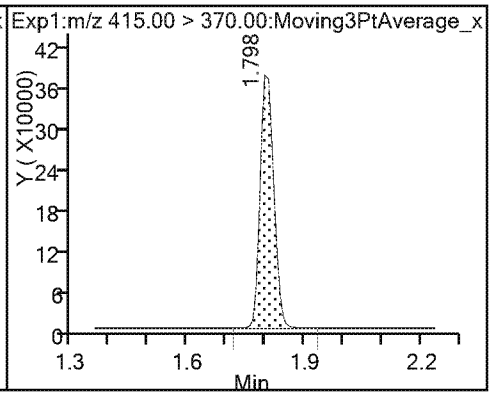
3 Perfluorohexanesulfonic acid



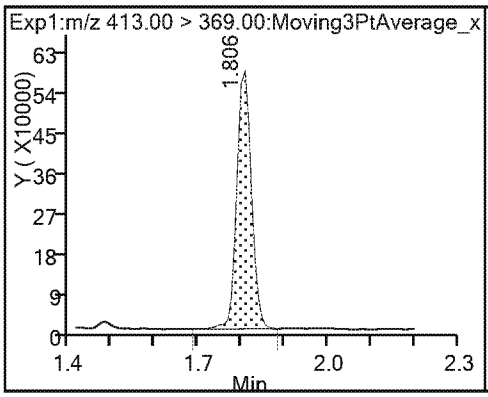
4 Perfluoroheptanoic acid



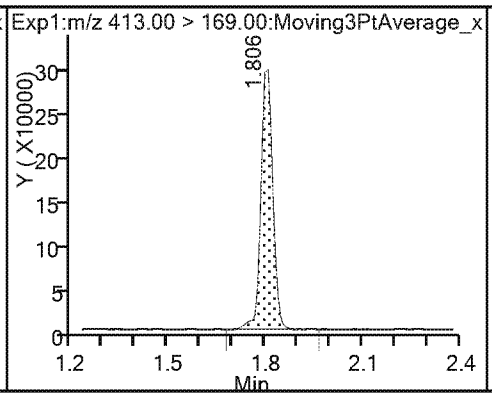
* 6 13C2-PFOA



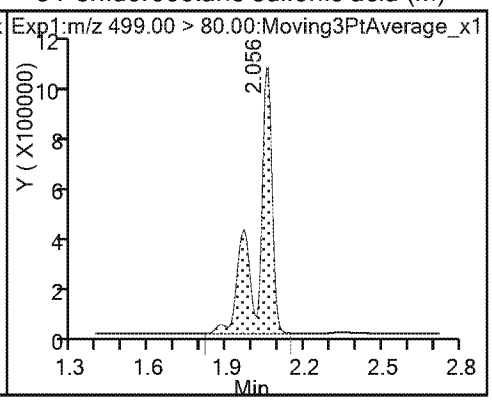
5 Perfluorooctanoic acid



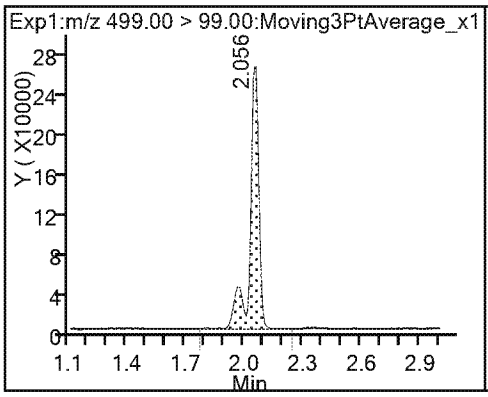
5 Perfluorooctanoic acid



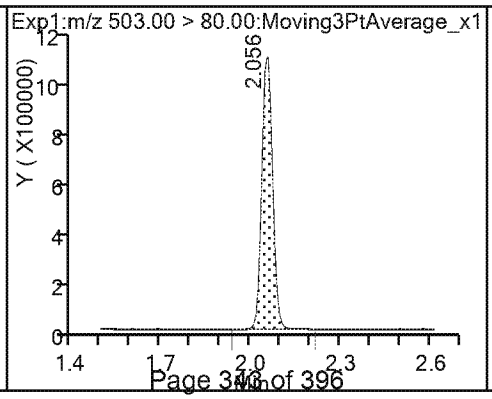
8 Perfluorooctane sulfonic acid (M)



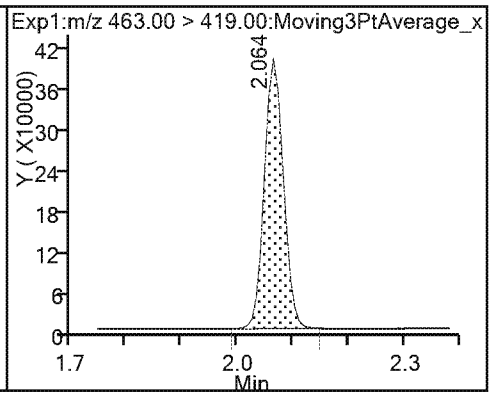
8 Perfluorooctane sulfonic acid



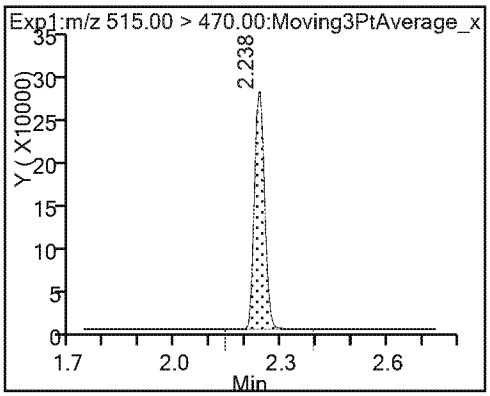
* 7 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
35
30
25
20
15
10
5
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

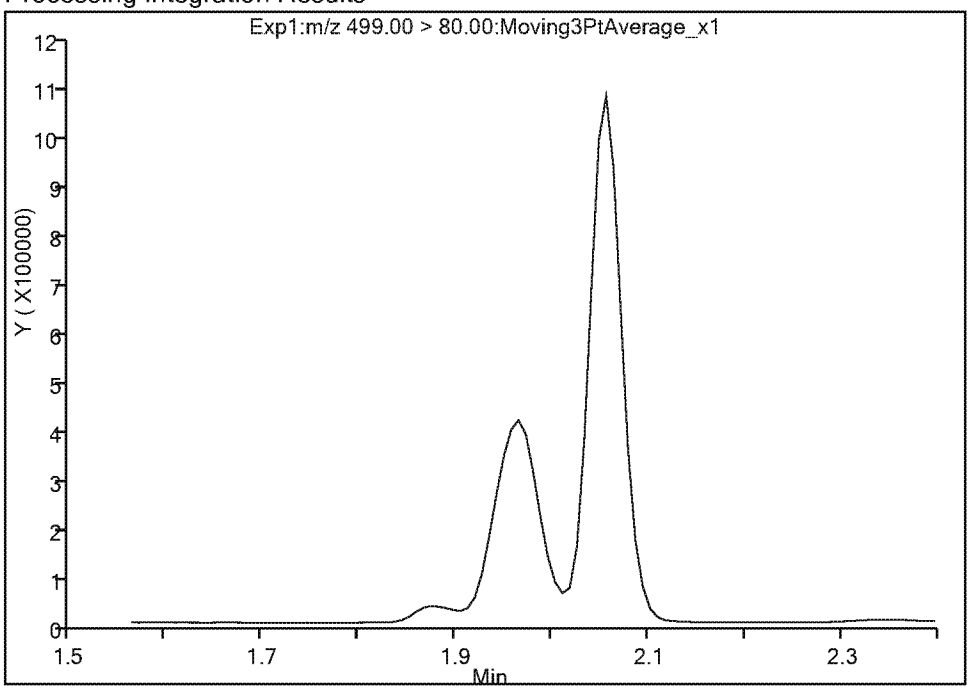
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b\2018.03.06_537C_017.d				
Injection Date:	06-Mar-2018 23:50:51	Instrument ID:	A8_N		
Lims ID:	320-36607-A-9-C MSD				
Client ID:	C0AM1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	13	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

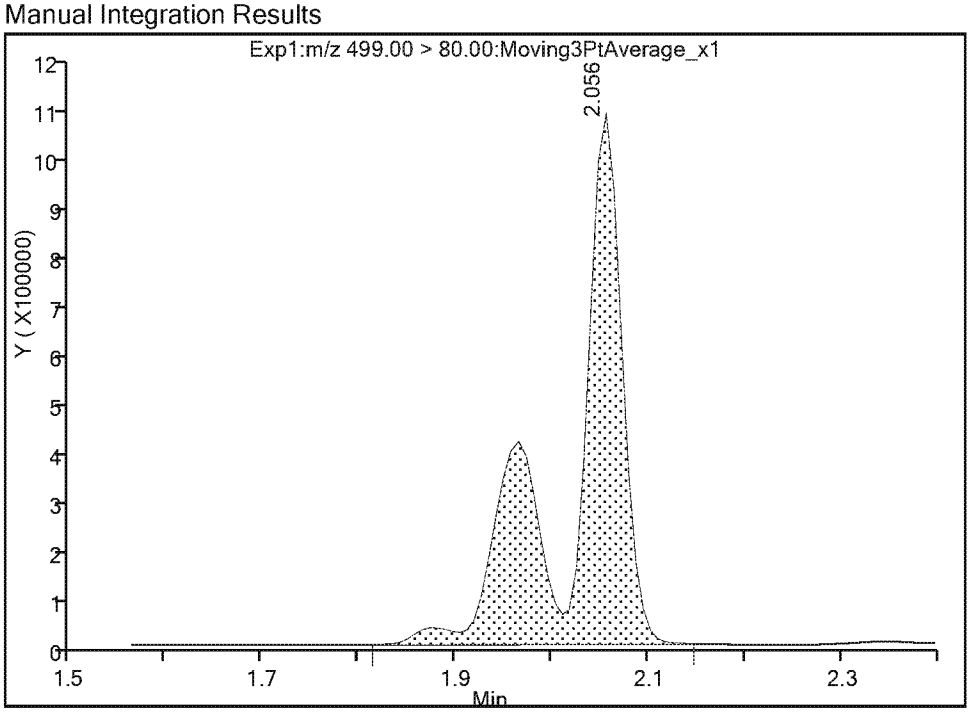
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 3856028
Amount: 47.053282
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 07-Mar-2018 11:03:00
Audit Action: Manually Integrated Audit Reason: Missed Peak

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Start Date: 02/16/2018 08:55

Analysis Batch Number: 208773 End Date: 02/16/2018 09:37

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-208773/4		02/16/2018 08:55	1	2018.02.016_537 ICAL_004.d	GeminiC18 3x100 3(mm)
IC 320-208773/5		02/16/2018 09:00	1	2018.02.016_537 ICAL_005.d	GeminiC18 3x100 3(mm)
IC 320-208773/6		02/16/2018 09:05	1	2018.02.016_537 ICAL_006.d	GeminiC18 3x100 3(mm)
IC 320-208773/7 ICISAV		02/16/2018 09:09	1	2018.02.016_537 ICAL_007.d	GeminiC18 3x100 3(mm)
IC 320-208773/8		02/16/2018 09:14	1	2018.02.016_537 ICAL_008.d	GeminiC18 3x100 3(mm)
IC 320-208773/9		02/16/2018 09:19	1	2018.02.016_537 ICAL_009.d	GeminiC18 3x100 3(mm)
ZZZZZ		02/16/2018 09:23	1		GeminiC18 3x100 3(mm)
CCVL 320-208773/11		02/16/2018 09:28	1	2018.02.016_537 ICAL_011.d	GeminiC18 3x100 3(mm)
ZZZZZ		02/16/2018 09:33	1		GeminiC18 3x100 3(mm)
ICV 320-208773/13		02/16/2018 09:37	1	2018.02.016_537 ICAL_013.d	GeminiC18 3x100 3(mm)

537 DW

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Start Date: 03/06/2018 09:24

Analysis Batch Number: 211417 End Date: 03/06/2018 10:25

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-211417/1		03/06/2018 09:24	1	2018.03.06_537A_004.d	GeminiC18 3x100 3(mm)
CCV 320-211417/2 CCVIS		03/06/2018 09:29	1		GeminiC18 3x100 3(mm)
CCV 320-211417/14 CCVIS		03/06/2018 10:25	1		GeminiC18 3x100 3(mm)

537 DW

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Start Date: 03/06/2018 22:36

Analysis Batch Number: 211579 End Date: 03/06/2018 23:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-211579/1 CCVIS		03/06/2018 22:36	1	2018.03.06_537C_001.d	GeminiC18 3x100 3(mm)
MB 320-211046/1-A		03/06/2018 22:45	1	2018.03.06_537C_003.d	GeminiC18 3x100 3(mm)
LCS 320-211046/2-A		03/06/2018 22:50	1	2018.03.06_537C_004.d	GeminiC18 3x100 3(mm)
320-36607-1		03/06/2018 22:54	1	2018.03.06_537C_005.d	GeminiC18 3x100 3(mm)
320-36607-2		03/06/2018 22:59	1	2018.03.06_537C_006.d	GeminiC18 3x100 3(mm)
320-36607-3		03/06/2018 23:04	1	2018.03.06_537C_007.d	GeminiC18 3x100 3(mm)
320-36607-4		03/06/2018 23:08	1	2018.03.06_537C_008.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2018 23:13	1		GeminiC18 3x100 3(mm)
320-36607-6		03/06/2018 23:18	1	2018.03.06_537C_010.d	GeminiC18 3x100 3(mm)
320-36607-7		03/06/2018 23:22	1	2018.03.06_537C_011.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/06/2018 23:27	1		GeminiC18 3x100 3(mm)
CCV 320-211579/13 CCVIS		03/06/2018 23:32	1	2018.03.06_537C_013.d	GeminiC18 3x100 3(mm)

537 DW

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Start Date: 03/06/2018 23:32

Analysis Batch Number: 211581 End Date: 03/07/2018 00:23

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-211581/13 CCVIS		03/06/2018 23:32	1	2018.03.06_537C_013.d	GeminiC18 3x100 3(mm)
320-36607-9		03/06/2018 23:41	1	2018.03.06_537C_015.d	GeminiC18 3x100 3(mm)
320-36607-9 MS		03/06/2018 23:46	1	2018.03.06_537C_016.d	GeminiC18 3x100 3(mm)
320-36607-9 MSD		03/06/2018 23:50	1	2018.03.06_537C_017.d	GeminiC18 3x100 3(mm)
320-36607-10		03/06/2018 23:55	1	2018.03.06_537C_018.d	GeminiC18 3x100 3(mm)
320-36607-11		03/07/2018 00:00	1	2018.03.06_537C_019.d	GeminiC18 3x100 3(mm)
320-36607-12		03/07/2018 00:04	1	2018.03.06_537C_020.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/07/2018 00:09	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/07/2018 00:14	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/07/2018 00:18	1		GeminiC18 3x100 3(mm)
CCV 320-211581/24 CCVIS		03/07/2018 00:23	1	2018.03.06_537C_024.d	GeminiC18 3x100 3(mm)

537 DW

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Start Date: 03/09/2018 08:53

Analysis Batch Number: 212122 End Date: 03/09/2018 09:26

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-212122/1		03/09/2018 08:53	1	2018.03.09_537A_004.d	GeminiC18 3x100 3(mm)
CCV 320-212122/2 CCVIS		03/09/2018 08:58	1	2018.03.09_537A_005.d	GeminiC18 3x100 3(mm)
MB 320-211748/1-A		03/09/2018 09:07	1	2018.03.09_537A_007.d	GeminiC18 3x100 3(mm)
LCS 320-211748/2-A		03/09/2018 09:12	1	2018.03.09_537A_008.d	GeminiC18 3x100 3(mm)
LCSD 320-211748/3-A		03/09/2018 09:17	1	2018.03.09_537A_009.d	GeminiC18 3x100 3(mm)
320-36607-5		03/09/2018 09:21	1	2018.03.09_537A_010.d	GeminiC18 3x100 3(mm)
CCV 320-212122/8 CCVIS		03/09/2018 09:26	1	2018.03.09_537A_011.d	GeminiC18 3x100 3(mm)

537 DW

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Instrument ID: A8_N Start Date: 03/12/2018 16:16

Analysis Batch Number: 212525 End Date: 03/12/2018 16:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-212525/1		03/12/2018 16:16	1	2018.03.12_537A A_004.d	GeminiC18 3x100 3(mm)
CCV 320-212525/2 CCVIS		03/12/2018 16:21	1	2018.03.12_537A A_005.d	GeminiC18 3x100 3(mm)
MB 320-212004/1-A		03/12/2018 16:30	1	2018.03.12_537A A_007.d	GeminiC18 3x100 3(mm)
LCS 320-212004/2-A		03/12/2018 16:35	1	2018.03.12_537A A_008.d	GeminiC18 3x100 3(mm)
LCSD 320-212004/3-A		03/12/2018 16:40	1	2018.03.12_537A A_009.d	GeminiC18 3x100 3(mm)
320-36607-8		03/12/2018 16:44	1	2018.03.12_537A A_010.d	GeminiC18 3x100 3(mm)
CCV 320-212525/8 CCVIS		03/12/2018 16:49	1	2018.03.12_537A A_011.d	GeminiC18 3x100 3(mm)

537 DW

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Batch Number: 211046 Batch Start Date: 03/03/18 12:52 Batch Analyst: Ex. 4 CBI

Batch Method: 537 DW Batch End Date: 03/05/18 17:41

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00062
MB 320-211046/1		537 DW, 537 DW				250.00 mL	1.00 mL	7 SU	100 uL
LCS 320-211046/2		537 DW, 537 DW				250.00 mL	1.00 mL	7 SU	100 uL
320-36607-A-1	C0AL3	537 DW, 537 DW	T	299.76 g	28.83 g	270.9 mL	1.00 mL	7 SU	100 uL
320-36607-A-2	C0AL4	537 DW, 537 DW	T	324.03 g	28.40 g	295.6 mL	1.00 mL	7 SU	100 uL
320-36607-A-3	C0AL5	537 DW, 537 DW	T	310.56 g	28.46 g	282.1 mL	1.00 mL	7 SU	100 uL
320-36607-A-4	C0AL6	537 DW, 537 DW	T	324.66 g	28.73 g	295.9 mL	1.00 mL	7 SU	100 uL
320-36607-A-6	C0AL8	537 DW, 537 DW	T	302.97 g	28.23 g	274.7 mL	1.00 mL	7 SU	100 uL
320-36607-A-7	C0AL9	537 DW, 537 DW	T	311.45 g	29.12 g	282.3 mL	1.00 mL	7 SU	100 uL
320-36607-A-9	C0AM1	537 DW, 537 DW	T	313.27 g	29.02 g	284.3 mL	1.00 mL	7 SU	100 uL
320-36607-A-9 MS	C0AM1	537 DW, 537 DW	T	310.98 g	28.25 g	282.7 mL	1.00 mL	7 SU	100 uL
320-36607-A-9 MSD	C0AM1	537 DW, 537 DW	T	324.73 g	28.93 g	295.8 mL	1.00 mL	7 SU	100 uL
320-36607-A-10	C0AM2	537 DW, 537 DW	T	319.26 g	29.16 g	290.1 mL	1.00 mL	7 SU	100 uL
320-36607-A-11	C0AM3	537 DW, 537 DW	T	264.61 g	28.07 g	236.5 mL	1.00 mL	7 SU	100 uL
320-36607-A-12	C0AM4	537 DW, 537 DW	T	316.93 g	30.48 g	286.5 mL	1.00 mL	7 SU	100 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-MSP 00032	LC537-SU 00058	AnalysisComment			
MB 320-211046/1		537 DW, 537 DW			100 uL	Chlorine: ND			
LCS 320-211046/2		537 DW, 537 DW		100 uL	100 uL	Chlorine: ND			
320-36607-A-1	C0AL3	537 DW, 537 DW	T		100 uL	Chlorine: ND			
320-36607-A-2	C0AL4	537 DW, 537 DW	T		100 uL	Chlorine: ND			
320-36607-A-3	C0AL5	537 DW, 537 DW	T		100 uL	Chlorine: ND			
320-36607-A-4	C0AL6	537 DW, 537 DW	T		100 uL	Chlorine: 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.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Batch Number: 211046 Batch Start Date: 03/03/18 12:52 Batch Analyst: Ex. 4 CBI

Batch Method: 537 DW Batch End Date: 03/05/18 17:41

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-MSP 00032	LC537-SU 00058	AnalysisComment			
320-36607-A-6	C0AL8	537 DW, 537 DW	T		100 uL	Chlorine: ND			
320-36607-A-7	C0AL9	537 DW, 537 DW	T		100 uL	Chlorine: ND			
320-36607-A-9	C0AM1	537 DW, 537 DW	T		100 uL	Chlorine: ND			
320-36607-A-9 MS	C0AM1	537 DW, 537 DW	T	100 uL	100 uL	Chlorine: ND			
320-36607-A-9 MSD	C0AM1	537 DW, 537 DW	T	100 uL	100 uL	Chlorine: ND			
320-36607-A-10	C0AM2	537 DW, 537 DW	T		100 uL	Chlorine: ND			
320-36607-A-11	C0AM3	537 DW, 537 DW	T		100 uL	Chlorine: ND			
320-36607-A-12	C0AM4	537 DW, 537 DW	T		100 uL	Chlorine: 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.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Batch Number: 211046 Batch Start Date: 03/03/18 12:52 Batch Analyst: Ex. 4 CBI

Batch Method: 537 DW Batch End Date: 03/05/18 17:41

Batch Notes	
Analyst ID - Aliquot Step	KMK
Batch Comment	Sample labels match client IDs JER 3/03/18
Analyst ID - Concentration	SKD/KMK
Analyst ID - Final Volume Step	KMK
Internal Standard ID#	1169780
Manifold ID	4, 1
Methanol ID	1158745
pH Indicator ID	3817
Pipette ID	M163879
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	KMK
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	SKD
Analyst ID - TA Reagent Drop	JER
Analyst ID - TA Reagent Drop Witness	SKD
SPE Cartridge Lot ID	6369499-06
Trizma ID	SLBR430V
Reagent Water ID	2/27/18

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.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Batch Number: 211748 Batch Start Date: 03/07/18 14:46 Batch Analyst: Ex. 4 CBI

Batch Method: 537 DW Batch End Date: 03/08/18 16:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00062
MB 320-211748/1		537 DW, 537 DW				250 mL	1.00 mL	7 SU	100 uL
LCS 320-211748/2		537 DW, 537 DW				250 mL	1.00 mL	7 SU	100 uL
LCSD 320-211748/3		537 DW, 537 DW				250 mL	1.00 mL	7 SU	100 uL
320-36607-B-5	C0AL7	537 DW, 537 DW	T	285.44 g	27.90 g	257.5 mL	1.00 mL	7 SU	100 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-MSP 00032	LC537-SU 00061	AnalysisComment			
MB 320-211748/1		537 DW, 537 DW			100 uL	Chlorine ND			
LCS 320-211748/2		537 DW, 537 DW		100 uL	100 uL	Chlorine ND			
LCSD 320-211748/3		537 DW, 537 DW		100 uL	100 uL	Chlorine ND			
320-36607-B-5	C0AL7	537 DW, 537 DW	T		100 uL	Chlorine 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.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Batch Number: 211748 Batch Start Date: 03/07/18 14:46 Batch Analyst: Ex. 4 CBI

Batch Method: 537 DW Batch End Date: 03/08/18 16:30

Batch Notes	
Analyst ID - Aliquot Step	TWL
Batch Comment	Client labels match sample ID's: TWL 3/7/18
Analyst ID - Concentration	KMK
Analyst ID - Final Volume Step	TWL
Internal Standard ID#	1169780
Manifold ID	9
Methanol ID	1167500
pH Indicator ID	3817
Pipette ID	M16387D
Analyst ID - IS Reagent Drop	TWL
Analyst ID - IS Reagent Drop Witness	KMK
Analyst ID - SU Reagent Drop	TWL
Analyst ID - SU Reagent Drop Witness	JER
Analyst ID - TA Reagent Drop	TWL
Analyst ID - TA Reagent Drop Witness	JER
SPE Cartridge Lot ID	6369499-08
Trizma ID	SLBR5241V
Reagent Water ID	03/03/18

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.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Batch Number: 212004 Batch Start Date: 03/08/18 17:27 Batch Analyst: Ex. 4 CBI

Batch Method: 537 DW Batch End Date: 03/10/18 12:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-HSP 00026
MB 320-212004/1		537 DW, 537 DW				250.00 mL	1.00 mL	7 SU	
LCS 320-212004/2		537 DW, 537 DW				250.00 mL	1.00 mL	7 SU	100 uL
LCSD 320-212004/3		537 DW, 537 DW				250.00 mL	1.00 mL	7 SU	100 uL
320-36607-B-8	C0AM0	537 DW, 537 DW	T	310.97 g	27.99 g	283 mL	1.00 mL	7 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-IS 00062	LC537-SU 00063	AnalysisComment			
MB 320-212004/1		537 DW, 537 DW		100 uL	100 uL	Chlorine: ND			
LCS 320-212004/2		537 DW, 537 DW		100 uL	100 uL	Chlorine: ND			
LCSD 320-212004/3		537 DW, 537 DW		100 uL	100 uL	Chlorine: ND			
320-36607-B-8	C0AM0	537 DW, 537 DW	T	100 uL	100 uL	Chlorine: 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.: 320-36607-1

SDG No.: DAS R35321, SDG C0AL3

Batch Number: 212004 Batch Start Date: 03/08/18 17:27 Batch Analyst: Ex. 4 CBI

Batch Method: 537 DW Batch End Date: 03/10/18 12:40

Batch Notes	
Analyst ID - Aliquot Step	SKD
Batch Comment	Sample label matches client ID JER 3/08/18
Analyst ID - Concentration	SKD
Analyst ID - Final Volume Step	SKD
Internal Standard ID#	1169780
Manifold ID	9
Methanol ID	1167497
pH Indicator ID	3817
Pipette ID	H14930F
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	GXL
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	TWL
Analyst ID - TA Reagent Drop	JER
Analyst ID - TA Reagent Drop Witness	TWL
SPE Cartridge Lot ID	6369499-09
Trizma ID	SLBR5241V
Reagent Water ID	3/08/18

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.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

Method 537 CCV/Data Review Checklist

A8

Job No: 36607, 36660 Instrument ID & Date: 3-6-18 ICAL Batch: 208773
Extraction Batch: 211046 Worklist #: 54954, 54981 TALS Batch: 211579, 211581, 211715

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2
Initial Calibration				
1. Is ICAL verified and locked in Chrom & TALS?	✓			✓
2. Is ICV properly linked in TALS?	✓			✓
Continuing Calibration				
1. **Low-range CCV injected at start of analytical run?** CCV injected after every 10 samples and at the end of the analytical run and alternated between Low-range, Mid-range and High-range?	✓			✓
2. If sequence was not after an ICAL was a low and mid range CCV injected at the start of the analytical run?	✓			✓
3. Native compounds and surrogates in control? Low-range within ±50% of true value Mid and High-range within ±30% of true value	✓			✓
4. Internal Standard areas in control? Areas ≥ 50% of average area of the ICal and 70-140% of the most recent CCV.	✓			✓
Client Samples & QC Sample Results				
1. Were preparation and analysis done within holding times?	✓			✓
2. Are Chromatograms reviewed and spectra verified?	✓			✓
3. Are positive results within calibration range?	✓			✓
4. Dilutions due to target cpds? ____ Dilutions due to non-targets? ____			✓	
5. All target compounds in MB < 1/3 RL ? **(Requires NCM if "no.")**	✓			✓
6. Are target constituents in LCS/LCSD within method control limits?	✓			✓
7. Internal Standard areas in control for all samples and QC reported? ±50% from the average area of the ICAL and 70-140% of the most recent CCV	✓			✓
8. Do results (e.g., dilutions/trip blanks) make sense?	✓			✓
9. Are MS/MSD recoveries and RPDs within method control limits?	✓			✓
10. Are all QC samples properly linked in TALS?	✓			✓
11. All manual integrations appropriate and completely documented?	✓			✓
12. Are nonconformances documented as NCMs?	✓			✓
13. Are all Chrom graphics uploaded?	✓			✓

1st Level Reviewer / Date: JRB 3-8-18 2nd Level Reviewer / Date: CBW 3/8/18

NCM # and Comments: 118357

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

Method 537 ICAL Checklist

Instrument ID & Date: A8 2-16-18 Worklist#: 54164

ICAL Batch: 208773, 208774 Calibration ID number: 37889, 37890

Review Items	— Level 1 — Yes	No	N/A	Level 2
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): (Average) Linear (1/x²)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 (2nd source) ± 30% of true value?	✓			✓
11. Is ICV (2nd 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 2-16-18 2nd Level Reviewer / Date: CBW 2-16-18

NCM # and Comments:

Report Date: 07-Mar-2018 11:11:55 Chrom Revision: 2.2 08-Feb-2018 13:38:40 Page: 1

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 06MAR2018_537D Worklist Number: 54954
Instrument Name: A8_N Chrom Method: 537_A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b
QC Batching: Enabled Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 211579
# 1 CCV L5	# 1 CCV L5
# 2 RB	# 2 RB
# 3 MB 320-211046/1-A	# 3 MB 320-211046/1-A
# 4 LCS 320-211046/2-A	# 4 LCS 320-211046/2-A
# 5 320-36607-A-1-A	# 5 320-36607-A-1-A
# 6 320-36607-A-2-A	# 6 320-36607-A-2-A
# 7 320-36607-A-3-A	# 7 320-36607-A-3-A
# 8 320-36607-A-4-A	# 8 320-36607-A-4-A
# 9 320-36607-A-5-A	# 9 320-36607-A-5-A
#10 320-36607-A-6-A	#10 320-36607-A-6-A
#11 320-36607-A-7-A	#11 320-36607-A-7-A
#12 320-36607-A-8-A	#12 320-36607-A-8-A
#13 CCV L3	#13 CCV L3

QC Batch: 2	LC 537 ICAL Raw Batch: 211581
#13 CCV L3	#13 CCV L3
#14 RB	#14 RB
#15 320-36607-A-9-A	#15 320-36607-A-9-A
#16 320-36607-A-9-B MS	#16 320-36607-A-9-B MS
#17 320-36607-A-9-C MSD	#17 320-36607-A-9-C MSD
#18 320-36607-A-10-A	#18 320-36607-A-10-A
#19 320-36607-A-11-A	#19 320-36607-A-11-A
#20 320-36607-A-12-A	#20 320-36607-A-12-A
#21 320-36660-A-1-A	#21 320-36660-A-1-A
#22 320-36660-A-2-A	#22 320-36660-A-2-A
#23 320-36660-A-3-A	#23 320-36660-A-3-A
#24 CCV L5	#24 CCV L5
#25 RB	#25 RB

CCVL in AB 211417

Report Date: 07-Mar-2018 11:09:29 Chrom Revision: 2.2 08-Feb-2018 13:38:40 Page: 1

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 06MAR2018_537D Worklist Num: 54954
Instrument: A8_N Method: 537_A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54954.b
Anaylysis Type: SemiVOA Creator: Ex. 4 CBI
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L5	320-0054954-001	CCVIS	06-Mar-2018 22:36:05	2018.03.06_537C_001.d	5	1.0		sv
RB	320-0054954-002	RB	06-Mar-2018 22:40:45	2018.03.06_537C_002.d	8	1.0		sv
MB 320-211046/1-A	320-0054954-003	MB	06-Mar-2018 22:45:26	2018.03.06_537C_003.d	1	1.0		sv
LCS 320-211046/2-A	320-0054954-004	LCS	06-Mar-2018 22:50:06	2018.03.06_537C_004.d	2	1.0		sv
320-36607-A-1-A	320-0054954-005	Client	06-Mar-2018 22:54:47	2018.03.06_537C_005.d	3	1.0	C0AL3	sv
320-36607-A-2-A	320-0054954-006	Client	06-Mar-2018 22:59:28	2018.03.06_537C_006.d	4	1.0	C0AL4	sv
320-36607-A-3-A	320-0054954-007	Client	06-Mar-2018 23:04:08	2018.03.06_537C_007.d	5	1.0	C0AL5	sv
320-36607-A-4-A	320-0054954-008	Client	06-Mar-2018 23:08:49	2018.03.06_537C_008.d	6	1.0	C0AL6	sv
320-36607-A-5-A	320-0054954-009	Client	06-Mar-2018 23:13:30	2018.03.06_537C_009.d	7	1.0	C0AL7	sv
320-36607-A-6-A	320-0054954-010	Client	06-Mar-2018 23:18:10	2018.03.06_537C_010.d	8	1.0	C0AL8	sv
320-36607-A-7-A	320-0054954-011	Client	06-Mar-2018 23:22:49	2018.03.06_537C_011.d	9	1.0	C0AL9	sv
320-36607-A-8-A	320-0054954-012	Client	06-Mar-2018 23:27:29	2018.03.06_537C_012.d	10	1.0	C0AM0	sv
CCV L3	320-0054954-013	CCVIS	06-Mar-2018 23:32:09	2018.03.06_537C_013.d	3	1.0		sv
RB	320-0054954-014	RB	06-Mar-2018 23:36:49	2018.03.06_537C_014.d	8	1.0		sv
320-36607-A-9-A	320-0054954-015	Client	06-Mar-2018 23:41:30	2018.03.06_537C_015.d	11	1.0	C0AM1	sv
320-36607-A-9-B MS	320-0054954-016	MS	06-Mar-2018 23:46:10	2018.03.06_537C_016.d	12	1.0	C0AM1	sv
320-36607-A-9-C MSD	320-0054954-017	MSD	06-Mar-2018 23:50:51	2018.03.06_537C_017.d	13	1.0	C0AM1	sv
320-36607-A-10-A	320-0054954-018	Client	06-Mar-2018 23:55:31	2018.03.06_537C_018.d	14	1.0	C0AM2	sv
320-36607-A-11-A	320-0054954-019	Client	07-Mar-2018 00:00:13	2018.03.06_537C_019.d	15	1.0	C0AM3	sv
320-36607-A-12-A	320-0054954-020	Client	07-Mar-2018 00:04:53	2018.03.06_537C_020.d	16	1.0	C0AM4	sv
320-36660-A-1-A	320-0054954-021	Client	07-Mar-2018 00:09:33	2018.03.06_537C_021.d	17	1.0	SEA-DULANEY-DW-001	sv
320-36660-A-2-A	320-0054954-022	Client	07-Mar-2018 00:14:14	2018.03.06_537C_022.d	18	1.0	SEA-DULANEY-DW-101	sv
320-36660-A-3-A	320-0054954-023	Client	07-Mar-2018 00:18:53	2018.03.06_537C_023.d	19	1.0	SEA-DULANEY-DW-201	sv
CCV L5	320-0054954-024	CCVIS	07-Mar-2018 00:23:34	2018.03.06_537C_024.d	5	1.0		sv
RB	320-0054954-025	RB	07-Mar-2018 00:28:14	2018.03.06_537C_025.d	8	1.0		sv

Report Date: 07-Mar-2018 11:10:12 Chrom Revision: 2.2 08-Feb-2018 13:38:40 Page: 1

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 06MAR2018_537A Worklist Num: 54905
Instrument: A8_N Method: 537_A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180306-54905.b
Anaylysis Type: SemiVOA Creator: Ex. 4 CBI
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCVL	320-0054905-001	CCVL	06-Mar-2018 09:24:55	2018.03.06_537A_004.d	2	1.0		sv
CCV L3	320-0054905-002	CCVIS	06-Mar-2018 09:29:35	2018.03.06_537A_005.d	3	1.0		sv
RB	320-0054905-003	RB	06-Mar-2018 09:34:15	2018.03.06_537A_006.d	8	1.0		sv
MB 320-211026/1-A	320-0054905-004	MB	06-Mar-2018 09:38:55	2018.03.06_537A_007.d	1	1.0		sv
LLCS 320-211026/2-A	320-0054905-005	LLCS	06-Mar-2018 09:43:37	2018.03.06_537A_008.d	2	1.0		sv
LLCSD 320-211026/3-A	320-0054905-006	LLCSD	06-Mar-2018 09:48:18	2018.03.06_537A_009.d	3	1.0		sv
320-36239-B-7-A	320-0054905-007	Client	06-Mar-2018 09:53:00	2018.03.06_537A_010.d	4	1.0	FB-VPSD1-021918	sv
320-36263-B-1-A	320-0054905-008	Client	06-Mar-2018 09:57:42	2018.03.06_537A_011.d	5	1.0	GC0218-TPPSD-BED1N-LE	sv
320-36263-B-2-A	320-0054905-009	Client	06-Mar-2018 10:02:24	2018.03.06_537A_012.d	6	1.0	GC0218-TPPSD-BED2N-LA	sv
320-36263-B-2-B LMS	320-0054905-010	LMS	06-Mar-2018 10:07:05	2018.03.06_537A_013.d	7	1.0		sv
320-36263-B-2-C LMSD	320-0054905-011	LMSD	06-Mar-2018 10:11:46	2018.03.06_537A_014.d	8	1.0		sv
320-36263-B-3-A	320-0054905-012	Client	06-Mar-2018 10:16:27	2018.03.06_537A_015.d	9	1.0	GC0218-TPPSD-BED1S-LE	sv
320-36263-B-4-A	320-0054905-013	Client	06-Mar-2018 10:21:07	2018.03.06_537A_016.d	10	1.0	GC0218-TPPSD-BED2S-LA	sv
CCV L5	320-0054905-014	CCVIS	06-Mar-2018 10:25:48	2018.03.06_537A_017.d	5	1.0		sv
RB	320-0054905-015	RB	06-Mar-2018 10:30:28	2018.03.06_537A_018.d	8	1.0		sv
320-36263-B-5-A	320-0054905-016	Client	06-Mar-2018 10:35:08	2018.03.06_537A_019.d	11	1.0	GC0218-TPPSD-PT	sv
320-36263-B-6-A	320-0054905-017	Client	06-Mar-2018 10:39:50	2018.03.06_537A_020.d	12	1.0	FB-TPPSD-022018	sv
CCV L3	320-0054905-018	CCVIS	06-Mar-2018 10:44:31	2018.03.06_537A_021.d	3	1.0		sv
RB	320-0054905-019	RB	06-Mar-2018 10:49:11	2018.03.06_537A_022.d	8	1.0		sv

Report Date: 08-Mar-2018 09:54:48 Chrom Revision: 2.2 08-Feb-2018 13:38:40 Page: 1

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 07MAR2018_537B Worklist Number: 54991
Instrument Name: A8_N Chrom Method: 537_A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54991.b
QC Batching: Enabled Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 211715	LC 537 CS ICAL Raw Batch: 211716
# 1 CCV L3	# 1 CCV L3	# 1 CCV L3
# 2 RB	# 2 RB	# 2 RB
# 3 320-36607-A-5-A	# 3 320-36607-A-5-A	
# 4 320-36607-A-8-A	# 4 320-36607-A-8-A	
# 5 320-36391-A-1-B MS		# 5 320-36391-A-1-B MS
# 6 CCV L5	# 6 CCV L5	# 6 CCV L5
# 7 RB	# 7 RB	# 7 RB

CCV in AB 211661

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 07MAR2018_537B Worklist Num: 54991
Instrument: A8_N Method: 537_A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54991.b
Anaylysis Type: SemiVOA Creator: Ex. 4 CBI
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L3	320-0054991-001	CCVIS	07-Mar-2018 12:45:16	2018.03.07_537AA_022.d	3	1.0		sv
RB	320-0054991-002	RB	07-Mar-2018 12:49:57	2018.03.07_537AA_023.d	8	1.0		sv
320-36607-A-5-A	320-0054991-003	Client	07-Mar-2018 12:54:37	2018.03.07_537AA_024.d	14	1.0	C0AL7	sv
320-36607-A-8-A	320-0054991-004	Client	07-Mar-2018 12:59:19	2018.03.07_537AA_025.d	15	1.0	C0AM0	sv
320-36391-A-1-B MS	320-0054991-005	MS	07-Mar-2018 13:04:00	2018.03.07_537AA_026.d	16	1.0	BW022318-VOP-BACKWAS	sv
CCV L5	320-0054991-006	CCVIS	07-Mar-2018 13:08:43	2018.03.07_537AA_027.d	5	1.0		sv
RB	320-0054991-007	RB	07-Mar-2018 13:13:23	2018.03.07_537AA_028.d	8	1.0		sv

Report Date: 08-Mar-2018 09:58:02 Chrom Revision: 2.2 08-Feb-2018 13:38:40 Page: 1

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 07MAR2018_537A Worklist Num: 54977
Instrument: A8_N Method: 537_A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180307-54977.b
Anaylysis Type: SemiVOA Creator: Ex. 4 CBI
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCVL	320-0054977-001	CCVL	07-Mar-2018 08:49:21	2018.03.07_537A_004.d	2	1.0		sv
CCV L3	320-0054977-002	CCVIS	07-Mar-2018 08:54:02	2018.03.07_537A_005.d	3	1.0		sv
RB	320-0054977-003	RB	07-Mar-2018 08:58:43	2018.03.07_537A_006.d	8	1.0		sv
MB 320-211025/1-A	320-0054977-004	MB	07-Mar-2018 09:03:22	2018.03.07_537A_007.d	1	1.0		sv
LCS 320-211025/2-A	320-0054977-005	LCS	07-Mar-2018 09:08:02	2018.03.07_537A_008.d	2	1.0		sv
320-36577-A-1-A	320-0054977-006	Client	07-Mar-2018 09:12:43	2018.03.07_537A_009.d	3	1.0	WS-130	sv
320-36577-A-1-B MS	320-0054977-007	MS	07-Mar-2018 09:17:25	2018.03.07_537A_010.d	4	1.0	WS-130	sv
320-36577-A-1-C MSD	320-0054977-008	MSD	07-Mar-2018 09:22:06	2018.03.07_537A_011.d	5	1.0	WS-130	sv
320-36577-A-2-A	320-0054977-009	Client	07-Mar-2018 09:26:47	2018.03.07_537A_012.d	6	1.0	WS-131	sv
320-36577-A-3-A	320-0054977-010	Client	07-Mar-2018 09:31:28	2018.03.07_537A_013.d	7	1.0	DUP-031	sv
320-36577-A-4-A	320-0054977-011	Client	07-Mar-2018 09:36:10	2018.03.07_537A_014.d	8	1.0	FIELD BLANK	sv
CCV L5	320-0054977-012	CCVIS	07-Mar-2018 09:40:52	2018.03.07_537A_015.d	5	1.0		sv
RB	320-0054977-013	RB	07-Mar-2018 09:45:33	2018.03.07_537A_016.d	8	1.0		sv
320-36577-A-5-A	320-0054977-014	Client	07-Mar-2018 09:50:13	2018.03.07_537A_017.d	9	1.0	WS-058	sv
320-36577-A-5-B MS	320-0054977-015	MS	07-Mar-2018 09:54:54	2018.03.07_537A_018.d	10	1.0	WS-058	sv
320-36577-A-5-C MSD	320-0054977-016	MSD	07-Mar-2018 09:59:35	2018.03.07_537A_019.d	11	1.0	WS-058	sv
320-36577-A-6-A	320-0054977-017	Client	07-Mar-2018 10:04:16	2018.03.07_537A_020.d	12	1.0	POET-1-MID	sv
320-36577-A-7-A	320-0054977-018	Client	07-Mar-2018 10:08:57	2018.03.07_537A_021.d	13	1.0	DUP-032	sv
CCV L3	320-0054977-019	CCVIS	07-Mar-2018 10:13:39	2018.03.07_537A_022.d	3	1.0		sv
RB	320-0054977-020	RB	07-Mar-2018 10:18:19	2018.03.07_537A_023.d	8	1.0		sv

36607

USEPA CLP COC (LAB
DateShipped: 2/28/2018
CarrierName: FedEx
AirbillNo: 771628707303

320-36607 Chain of Custody

CHAIN OF CUSTODY RECORD

DAS #: R35321

No: 3-022818-075659-0011
Lab: TestAmerica Laboratories, Inc. - Sacremento
Lab Contact: Ex. 4 CBI
Lab Phone: 916-374-4383

	Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
1	PMW-02272018-FRB-0115	C0AL3	Aqueous Blank/ START	Grab	PFCs(5 day)	1266 (trizma), 1267 (trizma) (2)	0115	02/27/2018 09:30	
2	PMW-02272018-RW-0115	C0AL4	Potable Water/ START	Grab	PFCs(5 day)	1268 (trizma), 1269 (trizma) (2)	0115	02/27/2018 09:30	
3	PMW-02272018-FRB-0269	C0AL5	Aqueous Blank/ START	Grab	PFCs(5 day)	1270 (trizma), 1271 (trizma) (2)	0269	02/27/2018 09:50	
4	PMW-02272018-RW-0269	C0AL6	Potable Water/ START	Grab	PFCs(5 day)	1272 (trizma), 1273 (trizma) (2)	0269	02/27/2018 09:50	
5	PMW-02282018-FRB-0272	C0AL7	Aqueous Blank/ START	Grab	PFCs(5 day)	1274 (trizma), 1275 (trizma) (2)	0272	02/28/2018 13:10	
6	PMW-02282018-FRB-0275	C0AL8	Aqueous Blank/ START	Grab	PFCs(5 day)	1276 (trizma), 1277 (trizma) (2)	0275	02/28/2018 13:30	
7	PMW-02282018-FRB-0142	C0AL9	Aqueous Blank/ START	Grab	PFCs(5 day)	1278 (trizma), 1279 (trizma) (2)	0142	02/28/2018 13:42	
8	PMW-02282018-RW-0272	C0AM0	Potable Water/ START	Grab	PFCs(5 day)	1280 (trizma), 1281 (trizma) (2)	0272	02/28/2018 13:10	
9	PMW-02282018-RW-0275	C0AM1	Potable Water/ START	Grab	PFCs(5 day)	1282 (trizma), 1283 (trizma), 1290 (trizma), 1291 (trizma), 1292 (trizma), 1293 (trizma) (6)	0275	02/28/2018 13:30	
10	PMW-02282018-RW-0142	C0AM2	Potable Water/ START	Grab	PFCs(5 day)	1284 (trizma), 1285 (trizma) (2)	0142	02/28/2018 13:42	

Sample(s) to be used for Lab QC: PMW-02282018-RW-0275 Tag 1290, PMW-02282018-RW-0275 Tag 1291, PMW-02282018-RW-0275 Tag 1292, PMW-02282018-RW-0275 Tag 1293 - Special Instructions: 5-day TAT for preliminary results/21 day TAT hard copy data package.

C0AL3 is FRB for C0AL4, C0AL5 is FRB for C0AL6, C0AL9 is FRB for C0AM2, C0AL7 is FRB for C0AM0. C0AL8 is FRB for C0AM1, C0AM3 is FRB for C0AM4.

Analysis Key: PFCs=PFCs (TAT 5 day)

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples for Analysis	Ex. 4 CBI Weston Solutions	2/28/18 1800	Ex. 4 CBI	3/1/18 950	Intact @ 0.9°

USEPA CLP COC (LAB COPY)

DateShipped: 2/28/2018
CarrierName: FedEx
AirbillNo: 771628707303

CHAIN OF CUSTODY RECORD

DAS #: R35321

No: 3-022818-075659-0011

Lab: TestAmerica Laboratories, Inc. - Sacremento
Lab Contact: Ex. 4 CBI
Lab Phone: 916-374-4383

	Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
11	PMW-02282018-FRB-0272-D	C0AM3	Aqueous Blank/ START	Grab	PFCs(5 day)	1286 (trizma), 1287 (trizma) (2)	0272	02/28/2018 13:10	
12	PMW-02282018-RW-0272-D	C0AM4	Potable Water/ START	Grab	PFCs(5 day)	1288 (trizma), 1289 (trizma) (2)	0272	02/28/2018 13:10	

Ex. 4 CBI

Special Instructions: 5-day TAT for preliminary results/21 day TAT hard copy data package.
C0AL3 is FRB for C0AL4, C0AL5 is FRB for C0AL6, C0AL9 is FRB for C0AM2, C0AL7 is FRB for C0AM0, C0AL8 is FRB for C0AM1, C0AM3 is FRB for C0AM4

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: PFCs=PFCs (TAT 5 day)

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples for Analysis	Ex. 4 CBI Weston Solutions	2/28/18 1800	Ex. 4 CBI	3/1/18 9:00	Intact @ 0.9°C

MB 3/6/18
AB 3/7/18

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

4

Batch Number: 320-211046 ✓

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 3/3/2018 12:52:00PM

Batch End: 3/5/2018 5:41:00PM

Extraction of Perfluorinated Alkyl Acids

Due: 3/8

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1	MB~320-211046/1 N/A	N/A		250.00 mL	7			N/A	N/A	N/A	Chlorine: ND	
				1.00 mL								
2	LCS~320-211046/2 N/A	N/A		250.00 mL	7			N/A	N/A	N/A	Chlorine: ND	
				1.00 mL								
3	320-36607-A-1 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	299.76 g	270.9 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	
			28.83 g	1.00 mL								
4	320-36607-A-2 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	324.03 g	295.6 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	
			28.40 g	1.00 mL								
5	320-36607-A-3 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	310.56 g	282.1 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	
			28.46 g	1.00 mL								
6	320-36607-A-4 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	324.66 g	295.9 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	
			28.73 g	1.00 mL								
7	320-36607-A-5 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	317.15 g	288.9 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND RI	
			28.21 g	1.00 mL								
8	320-36607-A-6 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	302.97 g	274.7 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	
			28.23 g	1.00 mL								
9	320-36607-A-7 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	311.45 g	282.3 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	
			29.12 g	1.00 mL								
10	320-36607-A-8 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	301.05 g	272.3 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND RI	
			28.76 g	1.00 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-211046

Analyst:

Batch Open: 3/3/2018 12:52:00PM

Method Code: 320-537_DW_Prep-320

Batch End: 3/5/2018 5:41:00PM

11	320-36607-A-9 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	313.27 g	284.3 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	320-36607-A-9-A
			29.02 g	1.00 mL								
12	320-36607-A-9~MS (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	310.98 g	282.7 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	320-36607-A-9-B MS
			28.25 g	1.00 mL								
13	320-36607-A-9~MSD (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	324.73 g	295.8 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	320-36607-A-9-C MSD
			28.93 g	1.00 mL								
14	320-36607-A-10 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	319.26 g	290.1 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	320-36607-A-10-A
			29.16 g	1.00 mL								
15	320-36607-A-11 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	264.61 g	236.5 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	320-36607-A-11-A
			28.07 g	1.00 mL								
16	320-36607-A-12 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	316.93 g	286.5 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	320-36607-A-12-A
			30.48 g	1.00 mL								
17	320-36660-A-1 (537_DW)	N/A (320-36660-1)	273.52 g	245.4 mL	7			3/7/18	3_Day_RUSH	4	Chlorine: ND	320-36660-A-1-A
			28.16 g	1.00 mL								
18	320-36660-A-2 (537_DW)	N/A (320-36660-1)	287.63 g	259.9 mL	7			3/7/18	3_Day_RUSH	4	Chlorine: ND	320-36660-A-2-A
			27.73 g	1.00 mL								
19	320-36660-A-3 (537_DW)	N/A (320-36660-1)	305.44 g	276.3 mL	7			3/7/18	3_Day_RUSH	4	Chlorine: ND	320-36660-A-3-A
			29.14 g	1.00 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-211046

Analyst: Ex. 4 CBI

Batch Open: 3/3/2018 12:52:00PM

Method Code: 320-537_DW_Prep-320

Batch End: 3/5/2018 5:41:00PM

Batch Notes

pH Indicator ID	3817
Manifold ID	4, 1
Trizma ID	SLBR430V
SPE Cartridge Lot ID	6369499-06
Methanol ID	1158745
Reagent Water ID	2/27/18
Internal Standard ID#	1169780
Pipette ID	M163879
Analyst ID - TA Reagent Drop	JER
Analyst ID - TA Reagent Drop Witness	SKD
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	SKD
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	KMK
Analyst ID - Concentration	SKD/KMK
Analyst ID - Aliquot Step	KMK
Analyst ID - Final Volume Step	KMK
Batch Comment	Sample labels match client IDs JER 3/03/18

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-211046

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 3/3/2018 12:52:00PM

Batch End:

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-211046

Analyst: Ex. 4 CBI

Batch Open: 3/3/2018 12:52:00PM

Method Code: 320-537_DW_Prep-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-211046/1	LC537-SU_00058	100 uL	1.00 mL	Ex. 4 CBI 3/03/18	SKD 3/3/18
LCS 320-211046/2	LC537-MSP_00032	100 uL	1.00 mL		
LCS 320-211046/2	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-1	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-2	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-3	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-4	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-5	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-6	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-7	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-8	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-9	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-9 MS	LC537-MSP_00032	100 uL	1.00 mL		
320-36607-A-9 MS	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-9 MSD	LC537-MSP_00032	100 uL	1.00 mL		
320-36607-A-9 MSD	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-10	LC537-SU_00058	100 uL	1.00 mL		
320-36607-A-11	LC537-SU_00058	100 uL	1.00 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-211046

Analyst: Ex. 4 CBI

Batch Open: 3/3/2018 12:52:00PM

Method Code: 320-537_DW_Prep-320

Batch End:

320-36607-A-12	LC537-SU_00058	100 uL	1.00 mL	Ex. 4 CBI	3/03/18	SKD 3/3/18
320-36660-A-1	LC537-SU_00058	100 uL	1.00 mL			
320-36660-A-2	LC537-SU_00058	100 uL	1.00 mL			
320-36660-A-3	LC537-SU_00058	100 uL	1.00 mL			

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 211046 Test 537_DW_Prep

Earliest Holding Time 3/13/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	✓	✓
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed properly in TALS	✓	✓
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: KMK Date: 3-5-18

2nd Level Reviewer: VPM Date: 3/5/18

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

Method 537 CCV/Data Review Checklist

A8

Job No: 36607 Instrument ID & Date: 3-9-18 ICAL Batch: 208773
Extraction Batch: 211748 Worklist #: 55099, 55198 TALS Batch: 212122, 212525

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2
Initial Calibration				
1. Is ICAL verified and locked in Chrom & TALS?	✓			✓
2. Is ICV properly linked in TALS?	✓			✓
Continuing Calibration				
1. **Low-range CCV injected at start of analytical run?** CCV injected after every 10 samples and at the end of the analytical run and alternated between Low-range, Mid-range and High-range?	✓			✓
2. If sequence was not after an ICAL was a low and mid range CCV injected at the start of the analytical run?	✓			✓
3. Native compounds and surrogates in control? Low-range within ±50% of true value Mid and High-range within ±30% of true value	✓			✓
4. Internal Standard areas in control? Areas ≥ 50% of average area of the ICal and 70-140% of the most recent CCV.	✓			✓
Client Samples & QC Sample Results				
1. Were preparation and analysis done within holding times?	✓			✓
2. Are Chromatograms reviewed and spectra verified?	✓			✓
3. Are positive results within calibration range?	✓			✓
4. Dilutions due to target cpds? ____ Dilutions due to non-targets? ____			✓	
5. All target compounds in MB < 1/3 RL ? **(Requires NCM if "no.")**	✓			✓
6. Are target constituents in LCS/LCSD within method control limits?	✓			✓
7. Internal Standard areas in control for all samples and QC reported? ±50% from the average area of the ICAL and 70-140% of the most recent CCV	✓			✓
8. Do results (e.g., dilutions/trip blanks) make sense?	✓			✓
9. Are MS/MSD recoveries and RPDs within method control limits?			✓	
10. Are all QC samples properly linked in TALS?	✓			✓
11. All manual integrations appropriate and completely documented?	✓			✓
12. Are nonconformances documented as NCMs?			✓	
13. Are all Chrom graphics uploaded?	✓			✓

1st Level Reviewer / Date: JRB 3-9-18 3-12-18 2nd Level Reviewer / Date: C.Bw 3/13/18

NCM # and Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

Method 537 ICAL Checklist

Instrument ID & Date: A8 2-16-18 Worklist#: 54164

ICAL Batch: 208773, 208774 Calibration ID number: 37889, 37890

Review Items	--- Level 1 --- Yes	No	N/A	Level 2
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): (Average) Linear (1/x²)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 (2nd source) ± 30% of true value?	✓			✓
11. Is ICV (2nd 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 2-16-18 2nd Level Reviewer / Date: CBW 2-16-18

NCM # and Comments:

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 09MAR2018_537A Worklist Number: 55099
Instrument Name: A8_N Chrom Method: 537_A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b
QC Batching: Enabled Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 212122	LC 537 CS ICAL Raw Batch: 212123
# 1 CCVL	# 1 CCVL	# 1 CCVL
# 2 CCV L5	# 2 CCV L5	
# 3 RB	# 3 RB	
# 4 MB 320-211748/1-A	# 4 MB 320-211748/1-A	
# 5 LCS 320-211748/2-A	# 5 LCS 320-211748/2-A	
# 6 LCSD 320-211748/3-A	# 6 LCSD 320-211748/3-A	
# 7 320-36607-B-5-A	# 7 320-36607-B-5-A	
# 8 CCV L3	# 8 CCV L3	

QC Batch: 2	LC 537 ICAL Raw Batch: 212124
# 8 CCV L3	# 8 CCV L3
# 9 RB	# 9 RB
#10 MB 320-211311/1-A	#10 MB 320-211311/1-A
#11 LCS 320-211311/2-A	#11 LCS 320-211311/2-A
#12 LCSD 320-211311/3-A	#12 LCSD 320-211311/3-A
#13 320-36091-B-10-A	#13 320-36091-B-10-A
#14 320-36091-B-17-A	#14 320-36091-B-17-A
#15 MB 320-211530/1-A	#15 MB 320-211530/1-A
#16 LCS 320-211530/2-A	#16 LCS 320-211530/2-A
#17 LCSD 320-211530/3-A	#17 LCSD 320-211530/3-A
#18 320-36091-B-16-A	#18 320-36091-B-16-A
#19 CCV L5	#19 CCV L5
#20 RB	#20 RB

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 09MAR2018_537A Worklist Num: 55099
Instrument: A8_N Method: 537_A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180309-55099.b
Anaylysis Type: SemiVOA Creator: Ex. 4 CBI
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCVL	320-0055099-001	CCVL	09-Mar-2018 08:53:57	2018.03.09_537A_004.d	2	1.0		sv
CCV L5	320-0055099-002	CCVIS	09-Mar-2018 08:58:38	2018.03.09_537A_005.d	5	1.0		sv
RB	320-0055099-003	RB	09-Mar-2018 09:03:17	2018.03.09_537A_006.d	8	1.0		sv
MB 320-211748/1-A	320-0055099-004	MB	09-Mar-2018 09:07:57	2018.03.09_537A_007.d	38	1.0		sv
LCS 320-211748/2-A	320-0055099-005	LCS	09-Mar-2018 09:12:38	2018.03.09_537A_008.d	39	1.0		sv
LCSD 320-211748/3-A	320-0055099-006	LCSD	09-Mar-2018 09:17:19	2018.03.09_537A_009.d	40	1.0		sv
320-36607-B-5-A	320-0055099-007	Client	09-Mar-2018 09:21:58	2018.03.09_537A_010.d	41	1.0	C0AL7	sv
CCV L3	320-0055099-008	CCVIS	09-Mar-2018 09:26:38	2018.03.09_537A_011.d	3	1.0		sv
RB	320-0055099-009	RB	09-Mar-2018 09:31:18	2018.03.09_537A_012.d	8	1.0		sv
MB 320-211311/1-A	320-0055099-010	MB	09-Mar-2018 09:35:57	2018.03.09_537A_013.d	42	1.0		sv
LCS 320-211311/2-A	320-0055099-011	LCS	09-Mar-2018 09:40:37	2018.03.09_537A_014.d	43	1.0		sv
LCSD 320-211311/3-A	320-0055099-012	LCSD	09-Mar-2018 09:45:17	2018.03.09_537A_015.d	44	1.0		sv
320-36091-B-10-A	320-0055099-013	Client	09-Mar-2018 09:49:57	2018.03.09_537A_016.d	45	1.0	WGNA-021318-RW-3933	sv
320-36091-B-17-A	320-0055099-014	Client	09-Mar-2018 09:54:38	2018.03.09_537A_017.d	46	1.0	NAWC-021318-FRB-290	sv
MB 320-211530/1-A	320-0055099-015	MB	09-Mar-2018 09:59:19	2018.03.09_537A_018.d	47	1.0		sv
LCS 320-211530/2-A	320-0055099-016	LCS	09-Mar-2018 10:03:59	2018.03.09_537A_019.d	48	1.0		sv
LCSD 320-211530/3-A	320-0055099-017	LCSD	09-Mar-2018 10:08:41	2018.03.09_537A_020.d	49	1.0		sv
320-36091-B-16-A	320-0055099-018	Client	09-Mar-2018 10:13:22	2018.03.09_537A_021.d	50	1.0	NAWC-021318-RW-290	sv
CCV L5	320-0055099-019	CCVIS	09-Mar-2018 10:18:02	2018.03.09_537A_022.d	5	1.0		sv
RB	320-0055099-020	RB	09-Mar-2018 10:22:42	2018.03.09_537A_023.d	8	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 12MAR2018_537A Worklist Number: 55198
Instrument Name: A8_N Chrom Method: 537_A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b
QC Batching: Enabled Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 212525	LC 537 CS ICAL Raw Batch: 212526
# 1 CCVL	# 1 CCVL	# 1 CCVL
# 2 CCV L5	# 2 CCV L5	
# 3 RB	# 3 RB	
# 4 MB 320-212004/1-A	# 4 MB 320-212004/1-A	
# 5 LCS 320-212004/2-A	# 5 LCS 320-212004/2-A	
# 6 LCSD 320-212004/3-A	# 6 LCSD 320-212004/3-A	
# 7 320-36607-B-8-A	# 7 320-36607-B-8-A	
# 8 CCV L3	# 8 CCV L3	# 8 CCV L3

QC Batch: 2	LC 537 ICAL Raw Batch: 212527	LC 537 CS ICAL Raw Batch: 212528
# 8 CCV L3	# 8 CCV L3	# 8 CCV L3
# 9 RB		# 9 RB
#10 MB 320-211644/1-A		#10 MB 320-211644/1-A
#11 320-36611-A-3-A		#11 320-36611-A-3-A
#12 CCV L3		#12 CCV L3
#13 RB		#13 RB

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 12MAR2018_537A Worklist Num: 55198
Instrument: A8_N Method: 537_A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180312-55198.b
Anaylysis Type: SemiVOA Creator: Ex. 4 CBI
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCVL	320-0055198-001	CCVL	12-Mar-2018 16:16:41	2018.03.12_537AA_004.d	2	1.0		sv
CCV L5	320-0055198-002	CCVIS	12-Mar-2018 16:21:22	2018.03.12_537AA_005.d	5	1.0		sv
RB	320-0055198-003	RB	12-Mar-2018 16:26:02	2018.03.12_537AA_006.d	8	1.0		sv
MB 320-212004/1-A	320-0055198-004	MB	12-Mar-2018 16:30:40	2018.03.12_537AA_007.d	1	1.0		sv
LCS 320-212004/2-A	320-0055198-005	LCS	12-Mar-2018 16:35:21	2018.03.12_537AA_008.d	2	1.0		sv
LCSD 320-212004/3-A	320-0055198-006	LCSD	12-Mar-2018 16:40:02	2018.03.12_537AA_009.d	3	1.0		sv
320-36607-B-8-A	320-0055198-007	Client	12-Mar-2018 16:44:43	2018.03.12_537AA_010.d	4	1.0	C0AM0	sv
CCV L3	320-0055198-008	CCVIS	12-Mar-2018 16:49:23	2018.03.12_537AA_011.d	3	1.0		sv
RB	320-0055198-009	RB	12-Mar-2018 16:54:04	2018.03.12_537AA_012.d	8	1.0		sv
MB 320-211644/1-A	320-0055198-010	MB	12-Mar-2018 16:58:44	2018.03.12_537B_026.d	39	1.0		sv
320-36611-A-3-A	320-0055198-011	Client	12-Mar-2018 17:03:25	2018.03.12_537B_027.d	40	10.0	BW022718-C-STALL-LHWA	sv
CCV L3	320-0055198-012	CCVIS	12-Mar-2018 17:08:05	2018.03.12_537B_028.d	3	1.0		sv
RB	320-0055198-013	RB	12-Mar-2018 17:12:45	2018.03.12_537B_029.d	8	1.0		sv

9 AB 3/9/18

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-211748

Method Code: 320-537_DW_Prep-320

Analyst:

Batch Open: 3/7/2018 2:46:00PM

Batch End: 3/8/2018 4:30:00PM

Extraction of Perfluorinated Alkyl Acids

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1	MB~320-211748/1 N/A	N/A		250 mL	7			N/A	N/A	N/A	Chlorine ND	MB 320-211748/1-A
				1.00 mL								
2	LCS~320-211748/2 N/A	N/A		250 mL	7			N/A	N/A	N/A	Chlorine ND	LCS 320-211748/2-A
				1.00 mL								
3	LCSD~320-211748/3 N/A	N/A		250 mL	7			N/A	N/A	N/A	Chlorine ND	LCSD 320-211748/3-A
				1.00 mL								
4	320-36607-B-5 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	285.44 g	257.5 mL	7			3/6/18	3_Day_RUSH	4	Chlorine ND	320-36607-B-5-A
			27.90 g	1.00 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-211748

Analyst:

Batch Open: 3/7/2018 2:46:00PM

Method Code: 320-537_DW_Prep-320

Batch End: 3/8/2018 4:30:00PM

Batch Notes

pH Indicator ID	3817
Manifold ID	9
Trizma ID	SLBR5241V
SPE Cartridge Lot ID	6369499-08
Methanol ID	1167500
Reagent Water ID	03/03/18
Internal Standard ID#	1169780
Pipette ID	M16387D
Analyst ID - TA Reagent Drop	TWL
Analyst ID - TA Reagent Drop Witness	JER
Analyst ID - SU Reagent Drop	TWL
Analyst ID - SU Reagent Drop Witness	JER
Analyst ID - IS Reagent Drop	TWL
Analyst ID - IS Reagent Drop Witness	KMK
Analyst ID - Concentration	KMK
Analyst ID - Aliquot Step	TWL
Analyst ID - Final Volume Step	TWL
Batch Comment	Client labels match sample ID's: TWL 3/7/18

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-211748

Analyst:

Batch Open: 3/7/2018 2:46:00PM

Method Code: 320-537_DW_Prep-320

Batch End: 3/8/2018 4:30:00PM

Comments

320-36607-B-5

Rework Comments: Positive PFOA result for field blank

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-211748

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 3/7/2018 2:46:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-211748/1	LC537-SU_00061	100 uL	1.00 mL	3/7/18	Ex. 4 CBI 3/07/18
LCS 320-211748/2	LC537-MSP_00032	100 uL	1.00 mL		
LCS 320-211748/2	LC537-SU_00061	100 uL	1.00 mL		
LCSD 320-211748/3	LC537-MSP_00032	100 uL	1.00 mL		
LCSD 320-211748/3	LC537-SU_00061	100 uL	1.00 mL		
320-36607-B-5	LC537-SU_00061	100 uL	1.00 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 211748 Test 537_DW_Prep

Earliest Holding Time 3/14/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	✓	✓
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed properly in TALS	✓	✓
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: [signature] Date: 3/8/18

2nd Level Reviewer: VPM Date: 3/9/18

Comments:

RX

AB 3/12/18

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212004 ✓

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 3/8/2018 5:27:00PM

Batch End: 3/10/2018 12:40:00PM

Extraction of Perfluorinated Alkyl Acids

3/8

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1	MB-320-212004/1 N/A	N/A		250.00 mL	7			N/A	N/A	N/A	Chlorine: ND	MB 320-212004/1-A
				1.00 mL								
2	LCS-320-212004/2 N/A	N/A		250.00 mL	7			N/A	N/A	N/A	Chlorine: ND	LCS 320-212004/2-A
				1.00 mL								
3	LCSD-320-212004/3 N/A	N/A		250.00 mL	7			N/A	N/A	N/A	Chlorine: ND	LCSD 320-212004/3-A
				1.00 mL								
4	320-36607-B-8 (537_DW)	DAS R35321, SDG C9AL3 (320-36607-1)	310.97 g	283 mL	7			3/6/18	3_Day_RUSH	4	Chlorine: ND	320-36607-B-8-A
			27.99 g	1.00 mL								

NEG

ASAP

RX 3/12/18

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212004

Analyst:

Batch Open: 3/8/2018 5:27:00PM

Method Code: 320-537_DW_Prep-320

Batch End: 3/10/2018 12:40:00PM

Batch Notes

pH Indicator ID	3817
Manifold ID	9
Trizma ID	SLBR5241V
SPE Cartridge Lot ID	6369499-09
Methanol ID	1167497
Reagent Water ID	3/08/18
Internal Standard ID#	1169780
Pipette ID	H14930F
Analyst ID - TA Reagent Drop	JER
Analyst ID - TA Reagent Drop Witness	TWL
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	TWL
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	GXL
Analyst ID - Concentration	SKD
Analyst ID - Aliquot Step	SKD
Analyst ID - Final Volume Step	SKD
Batch Comment	Sample label matches client ID JER 3/08/18

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212004

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 3/8/2018 5:27:00PM

Batch End: 3/10/2018 12:40:00PM

Comments

320-36607-B-8

Rework Comments: Suspected sample switch with 36607-5

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212004

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 3/8/2018 5:27:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-212004/1	LC537-SU_00063	100 uL	1.00 mL	Ex. 4 CBI 3/08/18	TWR 3/8/18
LCS 320-212004/2	LC537-HSP_00026	100 uL	1.00 mL		
LCS 320-212004/2	LC537-SU_00063	100 uL	1.00 mL		
LCSD 320-212004/3	LC537-HSP_00026	100 uL	1.00 mL		
LCSD 320-212004/3	LC537-SU_00063	100 uL	1.00 mL		
320-36607-B-8	LC537-SU_00063	100 uL	1.00 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 212004 Test 537-DW-prep-320

Earliest Holding Time 3/14/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	N/A	NA
MS/MSD or MS/DU NCM filed	N/A	NA
NCM for any anomalies filed	N/A	NA
All NCMs include method code, matrix, and prep batch	N/A	NA
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed properly in TALS	✓	✓
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: SKD Date: 3/10/18

2nd Level Reviewer: VPM Date: 3/12/18

Comments:

Shipping and Receiving Documents

USEPA CLP COC (LAB
DateShipped: 2/28/2018
CarrierName: FedEx
AirbillNo: 771628707303

320-36607 Chain of Custody

CHAIN OF CUSTODY RECORD

DAS #: R35321

No: 3-022818-075659-0011
Lab: TestAmerica Laboratories, Inc. - Sacramento
Lab Contact: Ex. 4 CBI
Lab Phone: 916-374-4383

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
PMW-02272018-FRB-0115	C0AL3	Aqueous Blank/ START	Grab	PFCs(5 day)	1266 (trizma), 1267 (trizma) (2)	0115	02/27/2018 09:30	
PMW-02272018-RW-0115	C0AL4	Potable Water/ START	Grab	PFCs(5 day)	1268 (trizma), 1269 (trizma) (2)	0115	02/27/2018 09:30	
PMW-02272018-FRB-0269	C0AL5	Aqueous Blank/ START	Grab	PFCs(5 day)	1270 (trizma), 1271 (trizma) (2)	0269	02/27/2018 09:50	
PMW-02272018-RW-0269	C0AL6	Potable Water/ START	Grab	PFCs(5 day)	1272 (trizma), 1273 (trizma) (2)	0269	02/27/2018 09:50	
PMW-02282018-FRB-0272	C0AL7	Aqueous Blank/ START	Grab	PFCs(5 day)	1274 (trizma), 1275 (trizma) (2)	0272	02/28/2018 13:10	
PMW-02282018-FRB-0275	C0AL8	Aqueous Blank/ START	Grab	PFCs(5 day)	1276 (trizma), 1277 (trizma) (2)	0275	02/28/2018 13:30	
PMW-02282018-FRB-0142	C0AL9	Aqueous Blank/ START	Grab	PFCs(5 day)	1278 (trizma), 1279 (trizma) (2)	0142	02/28/2018 13:42	
PMW-02282018-RW-0272	C0AM0	Potable Water/ START	Grab	PFCs(5 day)	1280 (trizma), 1281 (trizma) (2)	0272	02/28/2018 13:10	
PMW-02282018-RW-0275	C0AM1	Potable Water/ START	Grab	PFCs(5 day)	1282 (trizma), 1283 (trizma), 1290 (trizma), 1291 (trizma), 1292 (trizma), 1293 (trizma) (6)	0275	02/28/2018 13:30	
PMW-02282018-RW-0142	C0AM2	Potable Water/ START	Grab	PFCs(5 day)	1284 (trizma), 1285 (trizma) (2)	0142	02/28/2018 13:42	

Sample(s) to be used for Lab QC: PMW-02282018-RW-0275 Tag 1290, PMW-02282018-RW-0275 Tag 1291, PMW-02282018-RW-0275 Tag 1292, PMW-02282018-RW-0275 Tag 1293 - Special Instructions: 5-day TAT for preliminary results/21 day TAT hard copy data package.

C0AL3 is FRB for C0AL4, C0AL5 is FRB for C0AL6, C0AL9 is FRB for C0AM2, C0AL7 is FRB for C0AM0, C0AL8 is FRB for C0AM1, C0AM3 is FRB for C0AM4.

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: PFCs=PFCs (TAT 5 day)

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples for Analysis	Ex. 4 CBI Weston Solutions	2/28/18 1800	Ex. 4 CBI	3/1/18 950	Intact @ 0.9°

USEPA CLP COC (LAB COPY)

DateShipped: 2/28/2018
CarrierName: FedEx
AirbillNo: 771628707303

CHAIN OF CUSTODY RECORD

DAS #: R35321

No: 3-022818-075659-0011

Lab: TestAmerica Laboratories, Inc. - Sacremento
Lab Contact: Ex. 4 CBI
Lab Phone: 916-374-4383

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
PMW-02282018-FRB-0272-D	C0AM3	Aqueous Blank/ START	Grab	PFCs(5 day)	1286 (trizma), 1287 (trizma) (2)	0272	02/28/2018 13:10	
PMW-02282018-RW-0272-D	C0AM4	Potable Water/ START	Grab	PFCs(5 day)	1288 (trizma), 1289 (trizma) (2)	0272	02/28/2018 13:10	

Ex. 4 CBI

Special Instructions: 5-day TAT for preliminary results/21 day TAT hard copy data package.
C0AL3 is FRB for C0AL4, C0AL5 is FRB for C0AL6, C0AL9 is FRB for C0AM2, C0AL7 is FRB for C0AM0, C0AL8 is FRB for C0AM1, C0AM3 is FRB for C0AM4.

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: PFCs=PFCs (TAT 5 day)

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples for Analysis	Ex. 4 CBI Western Solutions	2/28/18 1800	Ex. 4 CBI	3/1/18 9:00	Intact @ 0.9°C

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 320-36607-1
SDG Number: DAS R35321, SDG C0AL3

Login Number: 36607
List Number: 1
Creator: Ex. 4 CBI

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

SAMPLE LOG-IN SHEET
FORM DC-1

Lab Name	TestAmerica Sacramento			Page 1 of 1
Received By (Print Name)	Ex. 4 CBI			Log - in Date
				3/1/2018
Received By (Signa	Ex. 4 CBI			
Case Number	R35321	Sample Delivery Group No.	C0AL3	Mod. Ref. No.

Remarks:

		EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc.
1. Custody Seal (s)	Present	C0AL3	1266, 1267	320-36607-1	
2. Custody Seal Nos.	Intact N/A	C0AL4	1268, 1269	320-36607-2	
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present	C0AL5	1270, 1271	320-36607-3	
		C0AL6	1272, 1273	320-36607-4	
4. Airbill	Present Sticker	C0AL7	1274, 1275	320-36607-5	
5. Airbill No.	7716-2870-7303	C0AL8	1276, 1277	320-36607-6	
6. Sample Tags Sample Tags Numbers	Absent Listed on COC	C0AL9	1278, 1279	320-36607-7	
		C0AM0	1280, 1281	320-36607-8	
7. Sample Condition	Intact	C0AM1	1282, 1283	320-36607-9	
8. Cooler Temperature Indicator Bottle	Absent	C0AM1	1290, 1291	320-36607-9MS	
9. Cooler Temperature	0.9 °C	C0AM1	1292, 1293	320-36607-9MSD	
10. Does information on TR/COCs and sample tags agree?	Yes	C0AM2	1284, 1285	320-36607-10	
11. Date Received at Laboratory	3/1/2018	C0AM3	1286, 1287	320-36607-11	
12. Time Received	9:50	C0AM4	1288, 1289	320-36607-12	

Sample Transfer			
Fraction SVOA/SVSIM/PEST/ARO		Fraction TVOA/TVSIM	
Area #	Walk-in	Area #	
By	KN	By	
On	3/1/2018	On	

* Contact SMO and attach record of resolution.

Reviewed By	Ex. 4 CBI	Logbook No.	
Date	3/2/18	Logbook Page No.	

SOM01.2 (4/2007)