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# C0AG8 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 ESTON SOLUTIONS)
WESTON SOLUTIONS)

TO: #0002 TDF: #0318030

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Customer Service Hotline: 1-800-438-2474

Date: March 30, 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 C0AG8

Overview

This data package consisted of five (5) Field Reagent Blanks (FRBs), one (1) drinking water sample and four (4) potable water samples analyzed for perfluorinated alkyl acid compounds by Liquid Chromatography/Mass Spectrometry (LC/MS).

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 usability, based on the hardcopy data package provided to ESAT dated March 16, 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).

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

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

Percent recoveries and Relative Percent Differences (RPDs) for target analytes in the Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses of sample C0AJ0 were within control limits. No field sample data were qualified based on these findings.

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

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: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AG8**

Lab Sample ID: 320-36235-1FB
Client Matrix: Water

Date Sampled: 02/19/2018 1000
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_042
Dilution:	1.0			Initial Weight/Volume:	268.3 mL
Analysis Date:	02/27/2018 1358			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.3	37
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.5	19
Perfluorohexanesulfonic acid	ND		5.1	28
Perfluoroheptanoic acid	ND		1.8	9.3
Perfluorobutanesulfonic acid	ND		15	84

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	86		70 - 130
13C2 PFDA	97		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AG9**

Lab Sample ID: 320-36235-2FB
Client Matrix: Water

Date Sampled: 02/19/2018 1025
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_043
Dilution:	1.0			Initial Weight/Volume:	266.9 mL
Analysis Date:	02/27/2018 1402			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.4	37
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.5	19
Perfluorohexanesulfonic acid	ND		5.2	28
Perfluoroheptanoic acid	ND		1.8	9.4
Perfluorobutanesulfonic acid	ND		15	84

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	87		70 - 130
13C2 PFDA	99		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AH0**

Lab Sample ID: 320-36235-3FB
Client Matrix: Water

Date Sampled: 02/19/2018 1130
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_044
Dilution:	1.0			Initial Weight/Volume:	265.2 mL
Analysis Date:	02/27/2018 1407			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.4	38
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.5	19
Perfluorohexanesulfonic acid	ND		5.2	28
Perfluoroheptanoic acid	ND		1.8	9.4
Perfluorobutanesulfonic acid	ND		15	85

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	90		70 - 130
13C2 PFDA	100		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AH1**

Lab Sample ID: 320-36235-4FB
Client Matrix: Water

Date Sampled: 02/19/2018 1235
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_045
Dilution:	1.0			Initial Weight/Volume:	265.8 mL
Analysis Date:	02/27/2018 1412			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.4	38
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.5	19
Perfluorohexanesulfonic acid	ND		5.2	28
Perfluoroheptanoic acid	ND		1.8	9.4
Perfluorobutanesulfonic acid	ND		15	85

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	94		70 - 130
13C2 PFDA	98		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AH2**

Lab Sample ID: 320-36235-5FB
Client Matrix: Water

Date Sampled: 02/19/2018 1305
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_046
Dilution:	1.0			Initial Weight/Volume:	269.3 mL
Analysis Date:	02/27/2018 1416			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.3	37
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.4	19
Perfluorohexanesulfonic acid	ND		5.1	28
Perfluoroheptanoic acid	ND		1.8	9.3
Perfluorobutanesulfonic acid	ND		15	84

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	92		70 - 130
13C2 PFDA	103		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AH4**

Lab Sample ID: 320-36235-6
Client Matrix: Water

Date Sampled: 02/19/2018 1130
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_047
Dilution:	1.0			Initial Weight/Volume:	272.6 mL
Analysis Date:	02/27/2018 1421			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.2	37
Perfluorooctanoic acid	ND		2.6	18
Perfluorononanoic acid	ND		7.3	18
Perfluorohexanesulfonic acid	ND		5.0	28
Perfluoroheptanoic acid	ND		1.7	9.2
Perfluorobutanesulfonic acid	ND		15	83

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	89		70 - 130
13C2 PFDA	98		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AJ0**

Lab Sample ID: 320-36235-7
Client Matrix: Water

Date Sampled: 02/19/2018 1000
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210263	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_050
Dilution:	1.0			Initial Weight/Volume:	290.3 mL
Analysis Date:	02/27/2018 1435			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		5.9	34
Perfluorooctanoic acid	4.2	J	2.4	17
Perfluorononanoic acid	ND		6.9	17
Perfluorohexanesulfonic acid	ND		4.7	26
Perfluoroheptanoic acid	1.6	J	1.6	8.6
Perfluorobutanesulfonic acid	ND		14	78

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	79		70 - 130
13C2 PFDA	90		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AJ1**

Lab Sample ID: 320-36235-8
Client Matrix: Water

Date Sampled: 02/19/2018 1025
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210263	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_053
Dilution:	1.0			Initial Weight/Volume:	296.8 mL
Analysis Date:	02/27/2018 1449			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	15	J	5.7	34
Perfluorooctanoic acid	7.5	J	2.4	17
Perfluorononanoic acid	ND		6.7	17
Perfluorohexanesulfonic acid	ND		4.6	25
Perfluoroheptanoic acid	3.5	J	1.6	8.4
Perfluorobutanesulfonic acid	ND		14	76

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	86		70 - 130
13C2 PFDA	106		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AJ2**

Lab Sample ID: 320-36235-9
Client Matrix: Water

Date Sampled: 02/19/2018 1235
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210263	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_054
Dilution:	1.0			Initial Weight/Volume:	285.3 mL
Analysis Date:	02/27/2018 1454			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	180		6.0	35
Perfluorooctanoic acid	16	J	2.5	18
Perfluorononanoic acid	ND		7.0	18
Perfluorohexanesulfonic acid	7.9	J	4.8	26
Perfluoroheptanoic acid	6.5	J	1.7	8.8
Perfluorobutanesulfonic acid	66	J	14	79

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	80		70 - 130
13C2 PFDA	98		70 - 130

Analytical Data

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AJ3**

Lab Sample ID: 320-36235-10
Client Matrix: Water

Date Sampled: 02/19/2018 1305
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210263	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_055
Dilution:	1.0			Initial Weight/Volume:	290 mL
Analysis Date:	02/27/2018 1458			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

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

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	90		70 - 130
13C2 PFDA	106		70 - 130

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-36235-1

SDG Number: DAS R35321, SDG C0AG8

Job Description: DAS R35321, SDG C0AG8

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

Attention: Ex. 4 CBI

Ex. 4 CBI

Approved for release.
David R Alltucker
Project Manager I
2/28/2018 9:21 AM

Ex. 4 CBI Project Manager I
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374- Ex. 6 Personal Privacy (PP)
Ex. 4 CBI r@testamericainc.com
02/28/2018

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Job Narrative
320-36235-1

Receipt
The samples were received on 2/20/2018 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.6° C.

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

Organic Prep
No analytical or quality issues were noted, other than those described 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

2/28/18

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Instrument ID: A8_N Analysis Batch Number: 210253

Lab Sample ID: CCVL 320-210253/1 Client Sample ID:

Date Analyzed: 02/27/18 08:48 Lab File ID: 2018.02.27_537B_002.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid	1.83	Baseline	Ex. 4 CBI	02/27/18 09:19
Perfluorooctane sulfonic acid	2.09	Baseline		02/27/18 09:19

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Instrument ID: A8_N Analysis Batch Number: 210262

Lab Sample ID: CCV 320-210262/1 CCVIS Client Sample ID:

Date Analyzed: 02/27/18 13:39 Lab File ID: 2018.02.27_537B_039F.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Assign Peak	Ex. 4 CBI	02/27/18 14:17

Lab Sample ID: LCS 320-209655/2-A Client Sample ID:

Date Analyzed: 02/27/18 13:53 Lab File ID: 2018.02.27_537B_041.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane sulfonic acid	2.06	Assign Peak	Ex. 4 CBI	02/27/18 14:18

Lab Sample ID: CCV 320-210262/11 CCVIS Client Sample ID:

Date Analyzed: 02/27/18 14:26 Lab File ID: 2018.02.27_537B_048.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	02/27/18 14:38

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Instrument ID: A8_N Analysis Batch Number: 210263

Lab Sample ID: CCV 320-210263/11 CCVIS Client Sample ID:

Date Analyzed: 02/27/18 14:26 Lab File ID: 2018.02.27_537B_048.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	02/27/18 14:38

Lab Sample ID: 320-36235-7 Client Sample ID: C0AJ0

Date Analyzed: 02/27/18 14:35 Lab File ID: 2018.02.27_537B_050.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	02/27/18 14:56
Perfluorohexanesulfonic acid	1.62	Missed Peak		02/27/18 14:56

Lab Sample ID: 320-36235-7 MS Client Sample ID: C0AJ0 MS

Date Analyzed: 02/27/18 14:40 Lab File ID: 2018.02.27_537B_051.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	02/27/18 14:56

Lab Sample ID: 320-36235-7 MSD Client Sample ID: C0AJ0 MSD

Date Analyzed: 02/27/18 14:44 Lab File ID: 2018.02.27_537B_052.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	02/27/18 14:57

Lab Sample ID: 320-36235-8 Client Sample ID: C0AJ1

Date Analyzed: 02/27/18 14:49 Lab File ID: 2018.02.27_537B_053.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid	1.81	Baseline	Ex. 4 CBI	02/27/18 15:11
Perfluorooctane sulfonic acid	2.06	Peak assignment corrected		02/27/18 15:10

537 DW

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Instrument ID: A8_N Analysis Batch Number: 210263

Lab Sample ID: 320-36235-9 Client Sample ID: C0AJ2

Date Analyzed: 02/27/18 14:54 Lab File ID: 2018.02.27_537B_054.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	02/27/18 15:12

Lab Sample ID: CCV 320-210263/19 CCVIS Client Sample ID:

Date Analyzed: 02/27/18 15:03 Lab File ID: 2018.02.27_537B_056.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	02/27/18 15:21

537 DW

SAMPLE SUMMARY

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
320-36235-1FB	C0AG8	Water	02/19/2018 1000	02/20/2018 1145
320-36235-2FB	C0AG9	Water	02/19/2018 1025	02/20/2018 1145
320-36235-3FB	C0AH0	Water	02/19/2018 1130	02/20/2018 1145
320-36235-4FB	C0AH1	Water	02/19/2018 1235	02/20/2018 1145
320-36235-5FB	C0AH2	Water	02/19/2018 1305	02/20/2018 1145
320-36235-6	C0AH4	Water	02/19/2018 1130	02/20/2018 1145
320-36235-7	C0AJ0	Water	02/19/2018 1000	02/20/2018 1145
320-36235-7MS	C0AJ0	Water	02/19/2018 1000	02/20/2018 1145
320-36235-7MSD	C0AJ0	Water	02/19/2018 1000	02/20/2018 1145
320-36235-8	C0AJ1	Water	02/19/2018 1025	02/20/2018 1145
320-36235-9	C0AJ2	Water	02/19/2018 1235	02/20/2018 1145
320-36235-10	C0AJ3	Water	02/19/2018 1305	02/20/2018 1145

EXECUTIVE SUMMARY - Detections

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
320-36235-7	**C0AJ0**					
Perfluorooctanoic acid		4.2	J	17	ng/L	537 DW
Perfluoroheptanoic acid		1.6	J	8.6	ng/L	537 DW
320-36235-8	**C0AJ1**					
Perfluorooctane sulfonic acid		15	J	34	ng/L	537 DW
Perfluorooctanoic acid		7.5	J	17	ng/L	537 DW
Perfluoroheptanoic acid		3.5	J	8.4	ng/L	537 DW
320-36235-9	**C0AJ2**					
Perfluorooctane sulfonic acid		180		35	ng/L	537 DW
Perfluorooctanoic acid		16	J	18	ng/L	537 DW
Perfluorohexanesulfonic acid		7.9	J	26	ng/L	537 DW
Perfluoroheptanoic acid		6.5	J	8.8	ng/L	537 DW
Perfluorobutanesulfonic acid		66	J	79	ng/L	537 DW

METHOD SUMMARY

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

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: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

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

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AG8**

Lab Sample ID: 320-36235-1FB
Client Matrix: Water

Date Sampled: 02/19/2018 1000
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_042
Dilution:	1.0			Initial Weight/Volume:	268.3 mL
Analysis Date:	02/27/2018 1358			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.3	37
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.5	19
Perfluorohexanesulfonic acid	ND		5.1	28
Perfluoroheptanoic acid	ND		1.8	9.3
Perfluorobutanesulfonic acid	ND		15	84

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	86		70 - 130
13C2 PFDA	97		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AG9**

Lab Sample ID: 320-36235-2FB
Client Matrix: Water

Date Sampled: 02/19/2018 1025
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_043
Dilution:	1.0			Initial Weight/Volume:	266.9 mL
Analysis Date:	02/27/2018 1402			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.4	37
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.5	19
Perfluorohexanesulfonic acid	ND		5.2	28
Perfluoroheptanoic acid	ND		1.8	9.4
Perfluorobutanesulfonic acid	ND		15	84

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	87		70 - 130
13C2 PFDA	99		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AH0**

Lab Sample ID: 320-36235-3FB
Client Matrix: Water

Date Sampled: 02/19/2018 1130
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_044
Dilution:	1.0			Initial Weight/Volume:	265.2 mL
Analysis Date:	02/27/2018 1407			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.4	38
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.5	19
Perfluorohexanesulfonic acid	ND		5.2	28
Perfluoroheptanoic acid	ND		1.8	9.4
Perfluorobutanesulfonic acid	ND		15	85

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	90		70 - 130
13C2 PFDA	100		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AH1**

Lab Sample ID: 320-36235-4FB
Client Matrix: Water

Date Sampled: 02/19/2018 1235
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_045
Dilution:	1.0			Initial Weight/Volume:	265.8 mL
Analysis Date:	02/27/2018 1412			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.4	38
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.5	19
Perfluorohexanesulfonic acid	ND		5.2	28
Perfluoroheptanoic acid	ND		1.8	9.4
Perfluorobutanesulfonic acid	ND		15	85

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	94		70 - 130
13C2 PFDA	98		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AH2**

Lab Sample ID: 320-36235-5FB
Client Matrix: Water

Date Sampled: 02/19/2018 1305
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_046
Dilution:	1.0			Initial Weight/Volume:	269.3 mL
Analysis Date:	02/27/2018 1416			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.3	37
Perfluorooctanoic acid	ND		2.6	19
Perfluorononanoic acid	ND		7.4	19
Perfluorohexanesulfonic acid	ND		5.1	28
Perfluoroheptanoic acid	ND		1.8	9.3
Perfluorobutanesulfonic acid	ND		15	84

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	92		70 - 130
13C2 PFDA	103		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AH4**

Lab Sample ID: 320-36235-6
Client Matrix: Water

Date Sampled: 02/19/2018 1130
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210262	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_047
Dilution:	1.0			Initial Weight/Volume:	272.6 mL
Analysis Date:	02/27/2018 1421			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		6.2	37
Perfluorooctanoic acid	ND		2.6	18
Perfluorononanoic acid	ND		7.3	18
Perfluorohexanesulfonic acid	ND		5.0	28
Perfluoroheptanoic acid	ND		1.7	9.2
Perfluorobutanesulfonic acid	ND		15	83

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	89		70 - 130
13C2 PFDA	98		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AJ0**

Lab Sample ID: 320-36235-7
Client Matrix: Water

Date Sampled: 02/19/2018 1000
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210263	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_050
Dilution:	1.0			Initial Weight/Volume:	290.3 mL
Analysis Date:	02/27/2018 1435			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	ND		5.9	34
Perfluorooctanoic acid	4.2	J	2.4	17
Perfluorononanoic acid	ND		6.9	17
Perfluorohexanesulfonic acid	ND		4.7	26
Perfluoroheptanoic acid	1.6	J	1.6	8.6
Perfluorobutanesulfonic acid	ND		14	78

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	79		70 - 130
13C2 PFDA	90		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AJ1**

Lab Sample ID: 320-36235-8
Client Matrix: Water

Date Sampled: 02/19/2018 1025
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210263	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_053
Dilution:	1.0			Initial Weight/Volume:	296.8 mL
Analysis Date:	02/27/2018 1449			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	15	J	5.7	34
Perfluorooctanoic acid	7.5	J	2.4	17
Perfluorononanoic acid	ND		6.7	17
Perfluorohexanesulfonic acid	ND		4.6	25
Perfluoroheptanoic acid	3.5	J	1.6	8.4
Perfluorobutanesulfonic acid	ND		14	76

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	86		70 - 130
13C2 PFDA	106		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AJ2**

Lab Sample ID: 320-36235-9
Client Matrix: Water

Date Sampled: 02/19/2018 1235
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210263	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_054
Dilution:	1.0			Initial Weight/Volume:	285.3 mL
Analysis Date:	02/27/2018 1454			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

Analyte	Result (ng/L)	Qualifier	MDL	RL
Perfluorooctane sulfonic acid	180		6.0	35
Perfluorooctanoic acid	16	J	2.5	18
Perfluorononanoic acid	ND		7.0	18
Perfluorohexanesulfonic acid	7.9	J	4.8	26
Perfluoroheptanoic acid	6.5	J	1.7	8.8
Perfluorobutanesulfonic acid	66	J	14	79

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	80		70 - 130
13C2 PFDA	98		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Client Sample ID: **C0AJ3**

Lab Sample ID: 320-36235-10
Client Matrix: Water

Date Sampled: 02/19/2018 1305
Date Received: 02/20/2018 1145

537 DW Perfluorinated Alkyl Acids (LC/MS)

Analysis Method:	537 DW	Analysis Batch:	320-210263	Instrument ID:	A8_N
Prep Method:	537 DW	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_055
Dilution:	1.0			Initial Weight/Volume:	290 mL
Analysis Date:	02/27/2018 1458			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL

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

Surrogate	%Rec	Qualifier	Acceptance Limits
13C2 PFHxA	90		70 - 130
13C2 PFDA	106		70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Surrogate Recovery Report

537 DW Perfluorinated Alkyl Acids (LC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	PFHxA %Rec	PFDA %Rec
320-36235-1	C0AG8	86	97
320-36235-2	C0AG9	87	99
320-36235-3	C0AH0	90	100
320-36235-4	C0AH1	94	98
320-36235-5	C0AH2	92	103
320-36235-6	C0AH4	89	98
320-36235-7	C0AJ0	79	90
320-36235-8	C0AJ1	86	106
320-36235-9	C0AJ2	80	98
320-36235-10	C0AJ3	90	106
MB 320-209655/1-A		98	107
LCS 320-209655/2-A		93	102
320-36235-7 MS	C0AJ0 MS	81	88
320-36235-7 MSD	C0AJ0 MSD	86	108

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

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Method Blank - Batch: 320-209655

Method: 537 DW
Preparation: 537 DW

Lab Sample ID:	MB 320-209655/1-A	Analysis Batch:	320-210262	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_040.c
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	02/27/2018 1348	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			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	98	70 - 130
13C2 PFDA	107	70 - 130

Lab Control Sample - Batch: 320-209655

Method: 537 DW
Preparation: 537 DW

Lab Sample ID:	LCS 320-209655/2-A	Analysis Batch:	320-210262	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_041.c
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	02/27/2018 1353	Units:	ng/L	Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Perfluorooctane sulfonic acid	223	215	97	70 - 130	
Perfluorooctanoic acid	112	106	95	70 - 130	
Perfluorononanoic acid	111	121	109	70 - 130	
Perfluorohexanesulfonic acid	167	161	97	70 - 130	
Perfluoroheptanoic acid	55.6	57.9	104	70 - 130	
Perfluorobutanesulfonic acid	500	410	82	70 - 130	

Surrogate	% Rec	Acceptance Limits
13C2 PFHxA	93	70 - 130
13C2 PFDA	102	70 - 130

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 320-209655

Method: 537 DW
Preparation: 537 DW

MS Lab Sample ID:	320-36235-7	Analysis Batch:	320-210263	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_051.c
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	290.3 mL
Analysis Date:	02/27/2018 1440			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL
Leach Date:	N/A				

MSD Lab Sample ID:	320-36235-7	Analysis Batch:	320-210263	Instrument ID:	A8_N
Client Matrix:	Water	Prep Batch:	320-209655	Lab File ID:	2018.02.27_537B_052.c
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	287.9 mL
Analysis Date:	02/27/2018 1444			Final Weight/Volume:	1.00 mL
Prep Date:	02/22/2018 1258			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Perfluorooctane sulfonic acid	84	96	70 - 130	14	30		
Perfluorooctanoic acid	97	94	70 - 130	2	30		
Perfluorononanoic acid	99	109	70 - 130	10	30		
Perfluorohexanesulfonic acid	92	94	70 - 130	3	30		
Perfluoroheptanoic acid	97	101	70 - 130	6	30		
Perfluorobutanesulfonic acid	77	80	70 - 130	5	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
13C2 PFHxA	81	86	70 - 130
13C2 PFDA	88	108	70 - 130

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 320-209655

Method: 537 DW
Preparation: 537 DW

MS Lab Sample ID:	320-36235-7	Units:	ng/L	MSD Lab Sample ID:	320-36235-7
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/27/2018 1440			Analysis Date:	02/27/2018 1444
Prep Date:	02/22/2018 1258			Prep Date:	02/22/2018 1258
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	ND		192	194	162	187
Perfluorooctanoic acid	4.2	J	96.2	97.0	97.6	95.5
Perfluorononanoic acid	ND		95.7	96.5	94.6	105
Perfluorohexanesulfonic acid	ND		144	145	132	136
Perfluoroheptanoic acid	1.6	J	47.9	48.3	46.3	49.0
Perfluorobutanesulfonic acid	ND		431	434	332	349

DATA REPORTING QUALIFIERS

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

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: 320-36235-1
Sdg Number: DAS R35321, SDG C0AG8

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
LCMS					
Prep Batch: 320-209655					
LCS 320-209655/2-A	Lab Control Sample	T	Water	537 DW	
MB 320-209655/1-A	Method Blank	T	Water	537 DW	
320-36235-1FB	C0AG8	T	Water	537 DW	
320-36235-2FB	C0AG9	T	Water	537 DW	
320-36235-3FB	C0AH0	T	Water	537 DW	
320-36235-4FB	C0AH1	T	Water	537 DW	
320-36235-5FB	C0AH2	T	Water	537 DW	
320-36235-6	C0AH4	T	Water	537 DW	
320-36235-7	C0AJ0	T	Water	537 DW	
320-36235-7MS	Matrix Spike	T	Water	537 DW	
320-36235-7MSD	Matrix Spike Duplicate	T	Water	537 DW	
320-36235-8	C0AJ1	T	Water	537 DW	
320-36235-9	C0AJ2	T	Water	537 DW	
320-36235-10	C0AJ3	T	Water	537 DW	
Analysis Batch:320-210262					
LCS 320-209655/2-A	Lab Control Sample	T	Water	537 DW	320-209655
MB 320-209655/1-A	Method Blank	T	Water	537 DW	320-209655
320-36235-1FB	C0AG8	T	Water	537 DW	320-209655
320-36235-2FB	C0AG9	T	Water	537 DW	320-209655
320-36235-3FB	C0AH0	T	Water	537 DW	320-209655
320-36235-4FB	C0AH1	T	Water	537 DW	320-209655
320-36235-5FB	C0AH2	T	Water	537 DW	320-209655
320-36235-6	C0AH4	T	Water	537 DW	320-209655
Analysis Batch:320-210263					
320-36235-7	C0AJ0	T	Water	537 DW	320-209655
320-36235-7MS	Matrix Spike	T	Water	537 DW	320-209655
320-36235-7MSD	Matrix Spike Duplicate	T	Water	537 DW	320-209655
320-36235-8	C0AJ1	T	Water	537 DW	320-209655
320-36235-9	C0AJ2	T	Water	537 DW	320-209655
320-36235-10	C0AJ3	T	Water	537 DW	320-209655

Report Basis
T = Total

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
SDG: DAS R35321, SDG C0AG8

Laboratory Chronicle

Lab ID: 320-36235-1 **Client ID: C0AG8**

Sample Date/Time: 02/19/2018 10:00 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-1-A		320-210262	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-1-A		320-210262	320-209655	02/27/2018 13:58	1	TAL SAC	JRB

Lab ID: 320-36235-2 **Client ID: C0AG9**

Sample Date/Time: 02/19/2018 10:25 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-2-A		320-210262	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-2-A		320-210262	320-209655	02/27/2018 14:02	1	TAL SAC	JRB

Lab ID: 320-36235-3 **Client ID: C0AH0**

Sample Date/Time: 02/19/2018 11:30 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-3-A		320-210262	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-3-A		320-210262	320-209655	02/27/2018 14:07	1	TAL SAC	JRB

Lab ID: 320-36235-4 **Client ID: C0AH1**

Sample Date/Time: 02/19/2018 12:35 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-4-A		320-210262	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-4-A		320-210262	320-209655	02/27/2018 14:12	1	TAL SAC	JRB

Lab ID: 320-36235-5 **Client ID: C0AH2**

Sample Date/Time: 02/19/2018 13:05 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-5-A		320-210262	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-5-A		320-210262	320-209655	02/27/2018 14:16	1	TAL SAC	JRB

Lab ID: 320-36235-6 **Client ID: C0AH4**

Sample Date/Time: 02/19/2018 11:30 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-6-A		320-210262	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-6-A		320-210262	320-209655	02/27/2018 14:21	1	TAL SAC	JRB

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
SDG: DAS R35321, SDG C0AG8

Laboratory Chronicle

Lab ID: 320-36235-7 **Client ID: C0AJ0**

Sample Date/Time: 02/19/2018 10:00 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-7-A		320-210263	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-7-A		320-210263	320-209655	02/27/2018 14:35	1	TAL SAC	JRB

Lab ID: 320-36235-7 **Client ID: C0AJ0**

Sample Date/Time: 02/19/2018 10:00 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-7-B MS		320-210263	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-7-B MS		320-210263	320-209655	02/27/2018 14:40	1	TAL SAC	JRB

Lab ID: 320-36235-7 **Client ID: C0AJ0**

Sample Date/Time: 02/19/2018 10:00 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-7-C MSD		320-210263	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-7-C MSD		320-210263	320-209655	02/27/2018 14:44	1	TAL SAC	JRB

Lab ID: 320-36235-8 **Client ID: C0AJ1**

Sample Date/Time: 02/19/2018 10:25 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-8-A		320-210263	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-8-A		320-210263	320-209655	02/27/2018 14:49	1	TAL SAC	JRB

Lab ID: 320-36235-9 **Client ID: C0AJ2**

Sample Date/Time: 02/19/2018 12:35 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-9-A		320-210263	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-9-A		320-210263	320-209655	02/27/2018 14:54	1	TAL SAC	JRB

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
SDG: DAS R35321, SDG C0AG8

Laboratory Chronicle

Lab ID: 320-36235-10 **Client ID: C0AJ3**

Sample Date/Time: 02/19/2018 13:05 Received Date/Time: 02/20/2018 11:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:537 DW	320-36235-A-10-A		320-210263	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	320-36235-A-10-A		320-210263	320-209655	02/27/2018 14:58	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 320-209655/1-A		320-210262	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	MB 320-209655/1-A		320-210262	320-209655	02/27/2018 13:48	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 320-209655/2-A		320-210262	320-209655	02/22/2018 12:58	1	TAL SAC	TWL
A:537 DW	LCS 320-209655/2-A		320-210262	320-209655	02/27/2018 13:53	1	TAL SAC	JRB

Lab References:
TAL SAC = TestAmerica Sacramento

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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_00058	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-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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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-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

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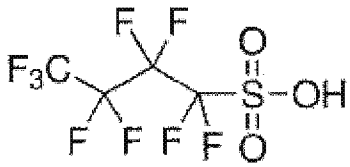
Outside USA: eurtechserv@sial.com

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

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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

Ex. 4 CBI

Manager Quality Control
Buchs, Switzerland

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

$$\frac{}{438.20\ (K\ form)}$$

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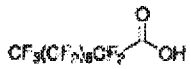
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

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 %

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PFNA

Quality Control
Milwaukee, WI US

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Version Number: 1

r: 11/30/16 SKV
PFOA

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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: 11/3/16 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

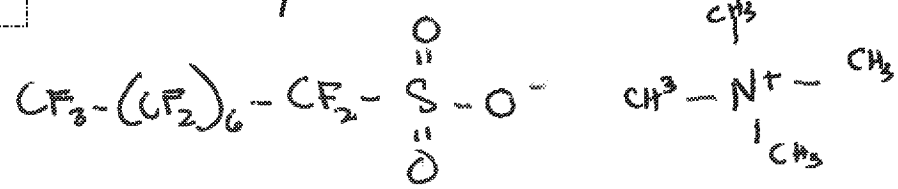
TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	WHITE TO OFF WHITE	OFF-WHITE
APPEARANCE (FORM)	POWDER OR POWDER WITH CHUNK(S)	POWDER
CARBON CONTENT	29.77 % - 31.29 %	29.97 %
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS

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

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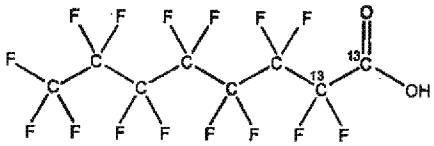
WELLINGTON LABORATORIES

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

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/12/2016
EXPIRY DATE: (mm/dd/yyyy) 02/12/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place
ISOTOPIC PURITY: ≥99% ^{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

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

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:

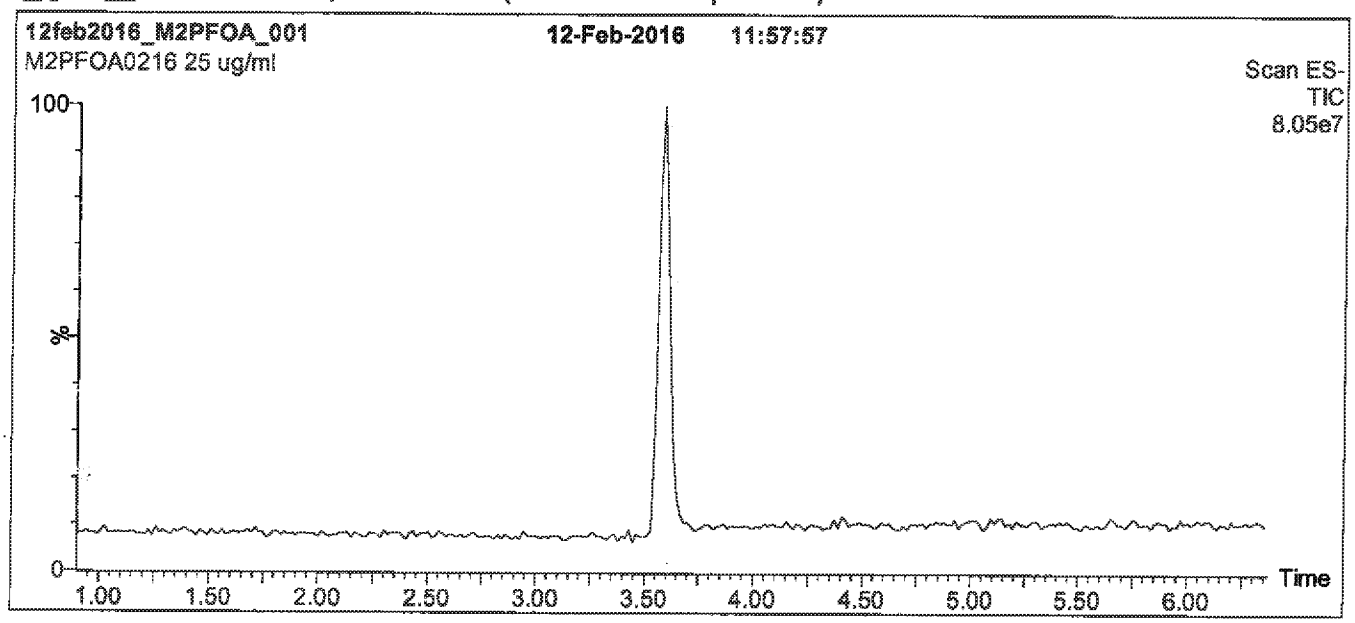
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

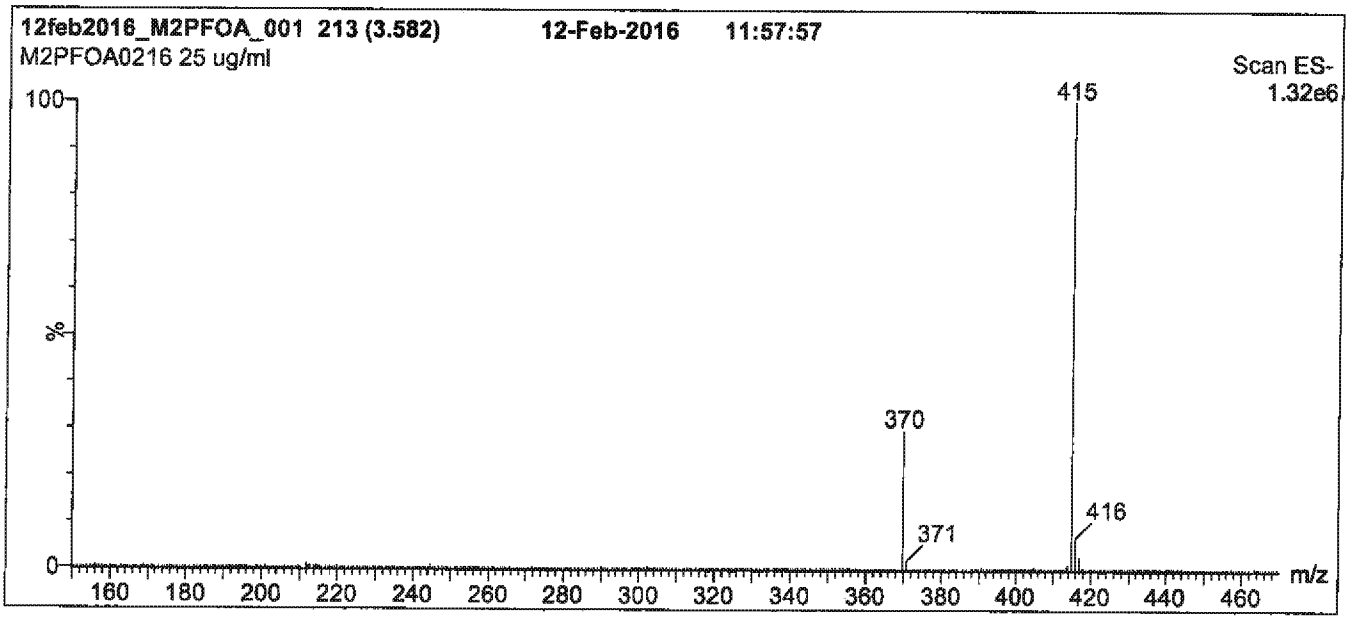
CALA

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

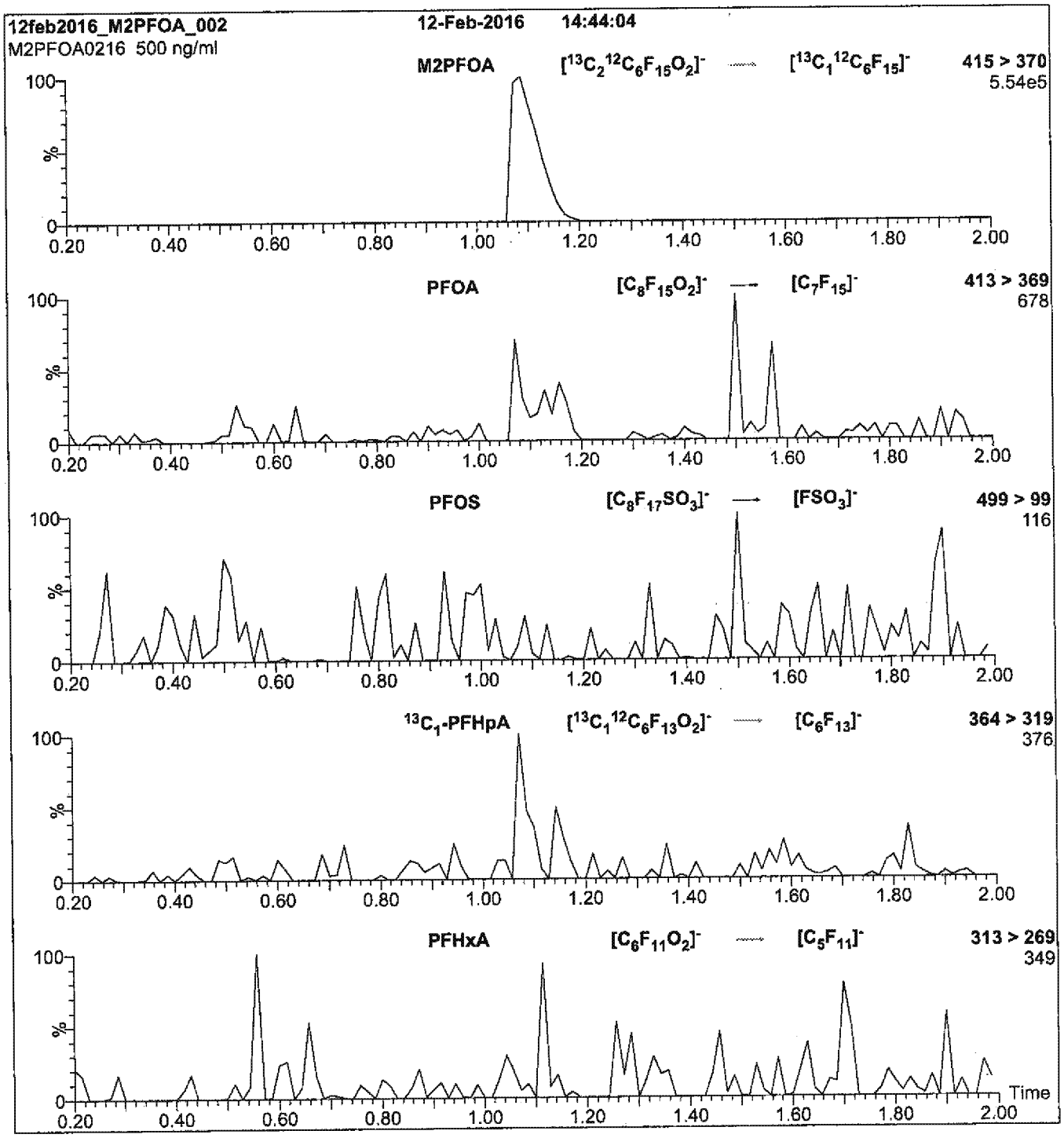
Flow: 300 µl/min

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

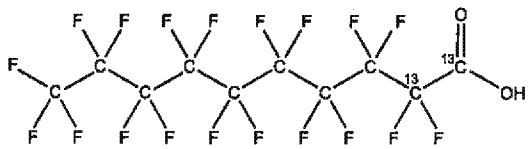
PRODUCT CODE: MPFDA

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:

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

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

HOMOGENEITY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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

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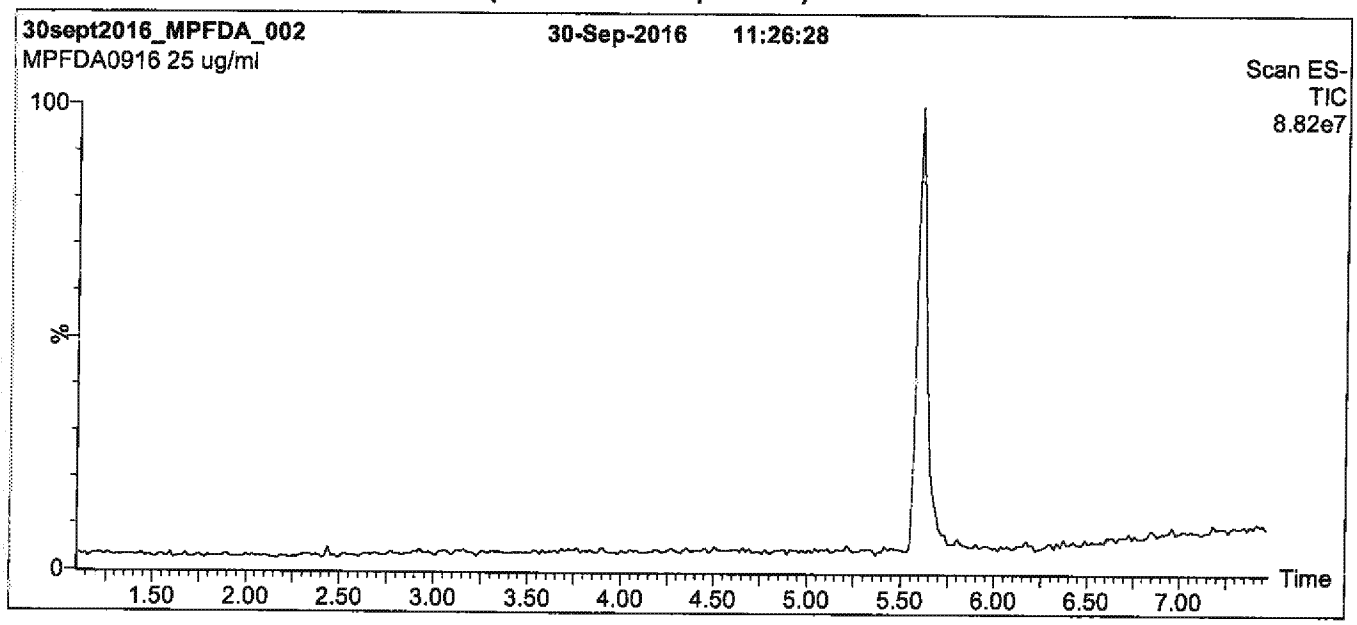
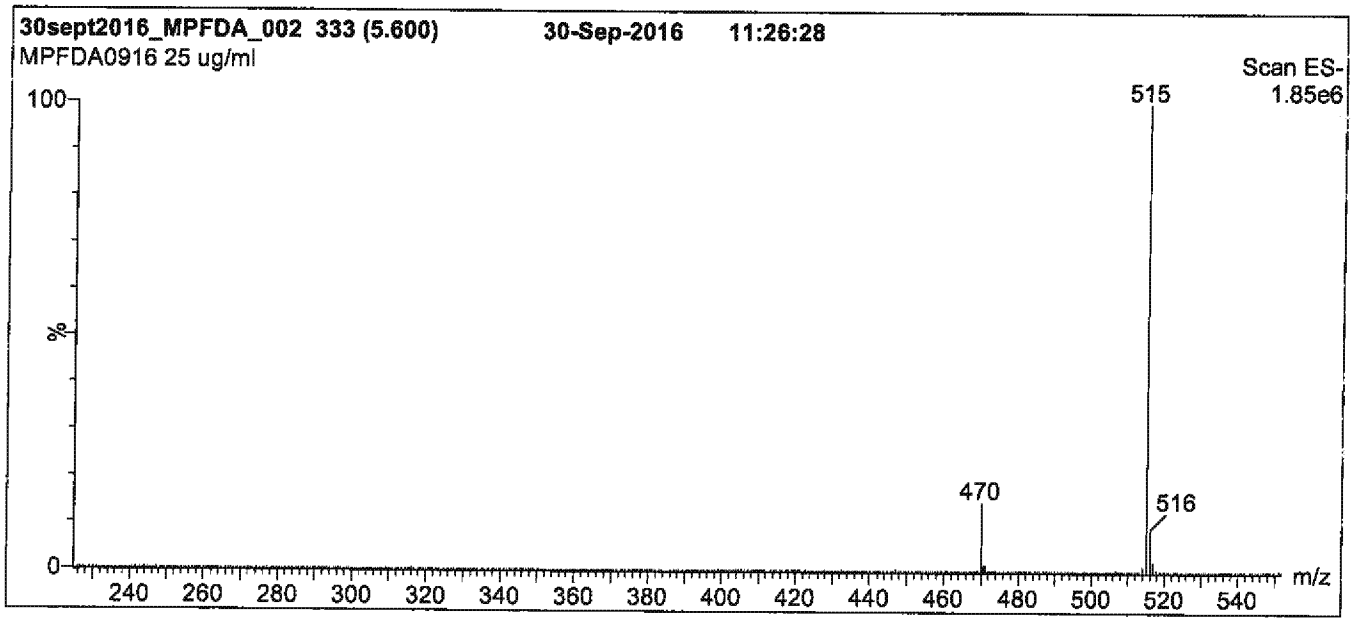
Figure 1: **MPFDA; LC/MS Data (TIC and Mass Spectrum)**





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

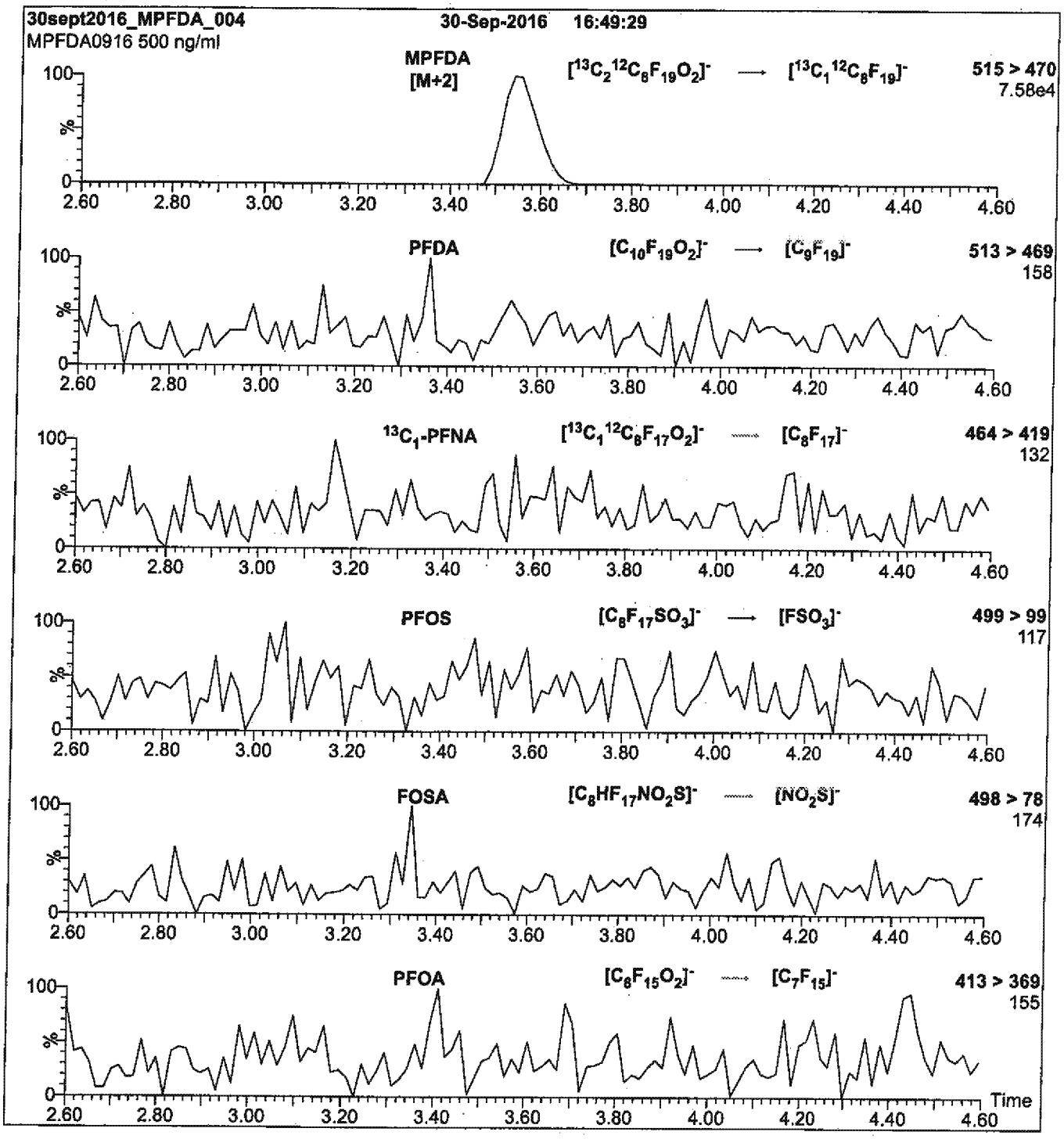
Flow: 300 µl/min

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

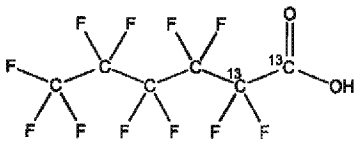
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 13

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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HAZARDS:

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

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LIMITED WARRANTY:

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CALA

ANAB ACCREDITED

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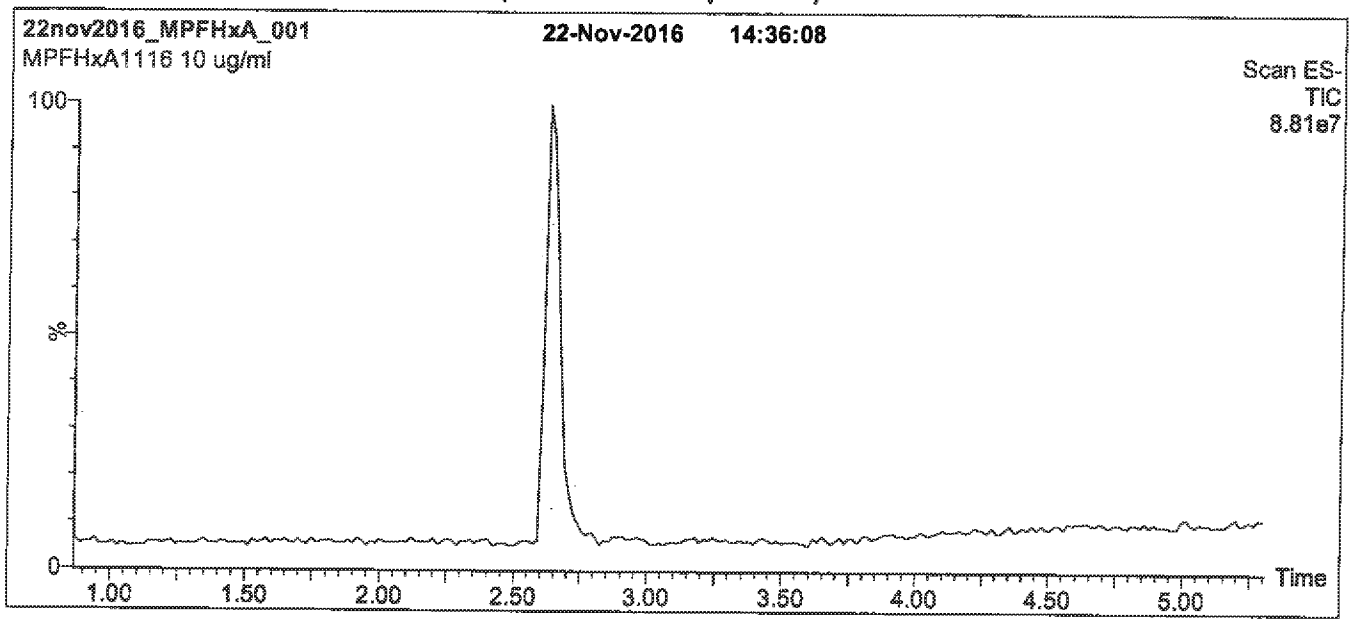
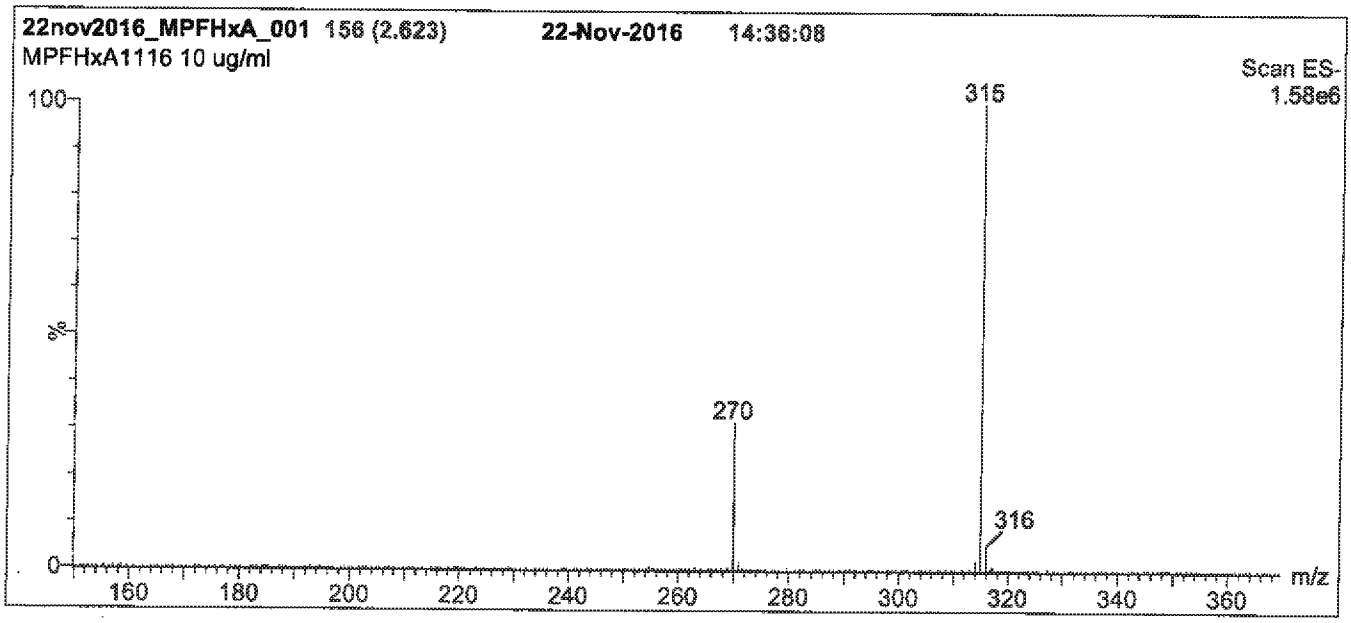
Figure 1: **MPFHxA; LC/MS Data (TIC and Mass Spectrum)**





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

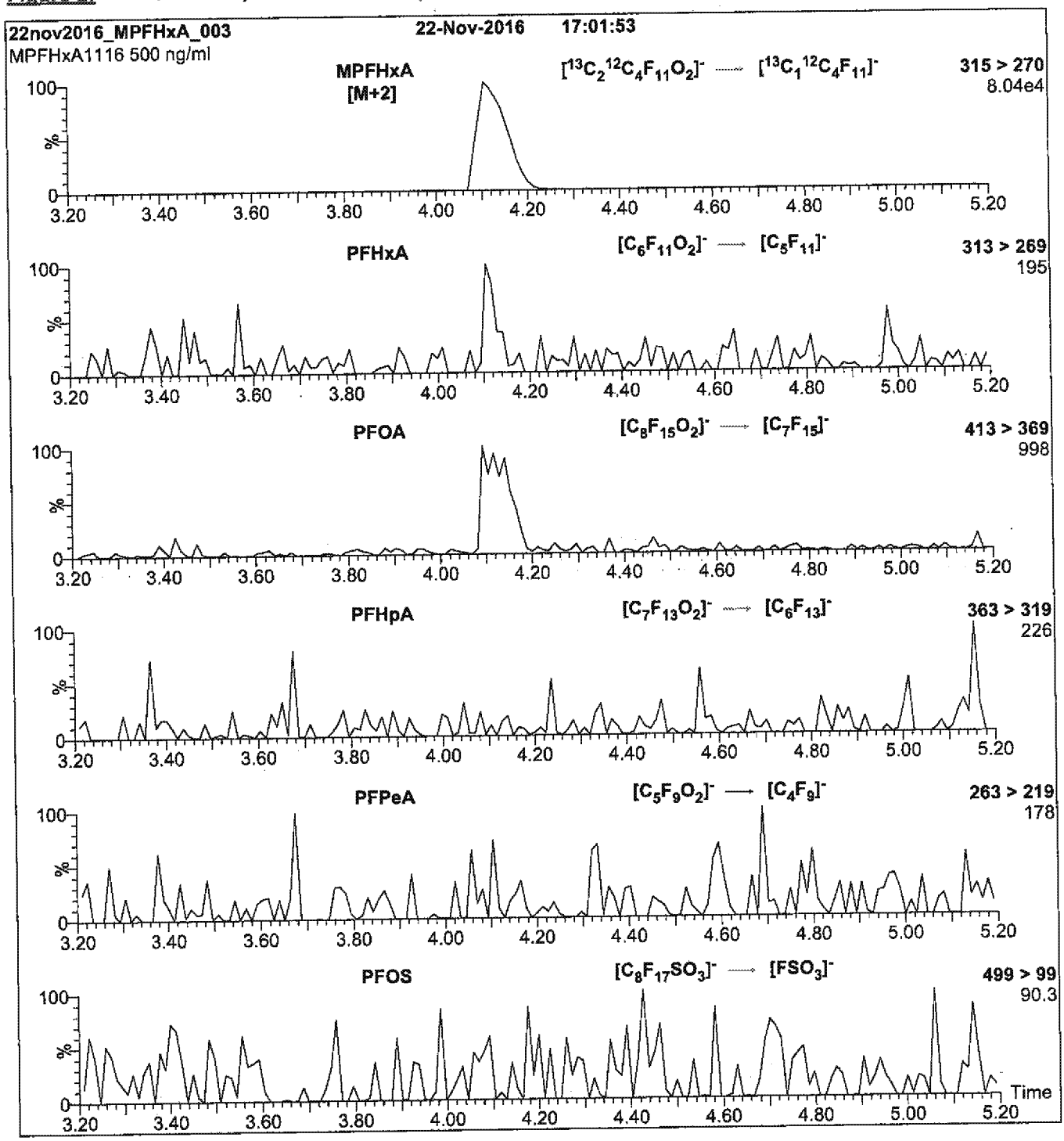
Flow: 300 µl/min

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

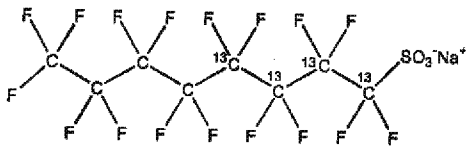
Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 10

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

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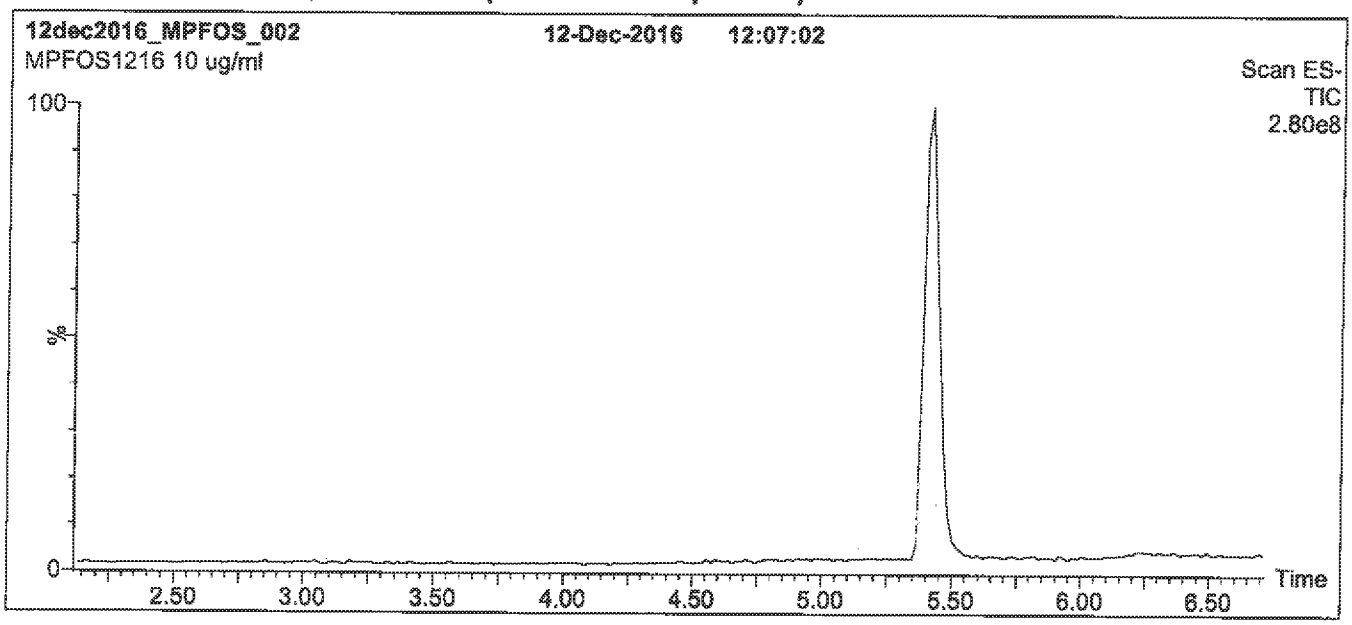
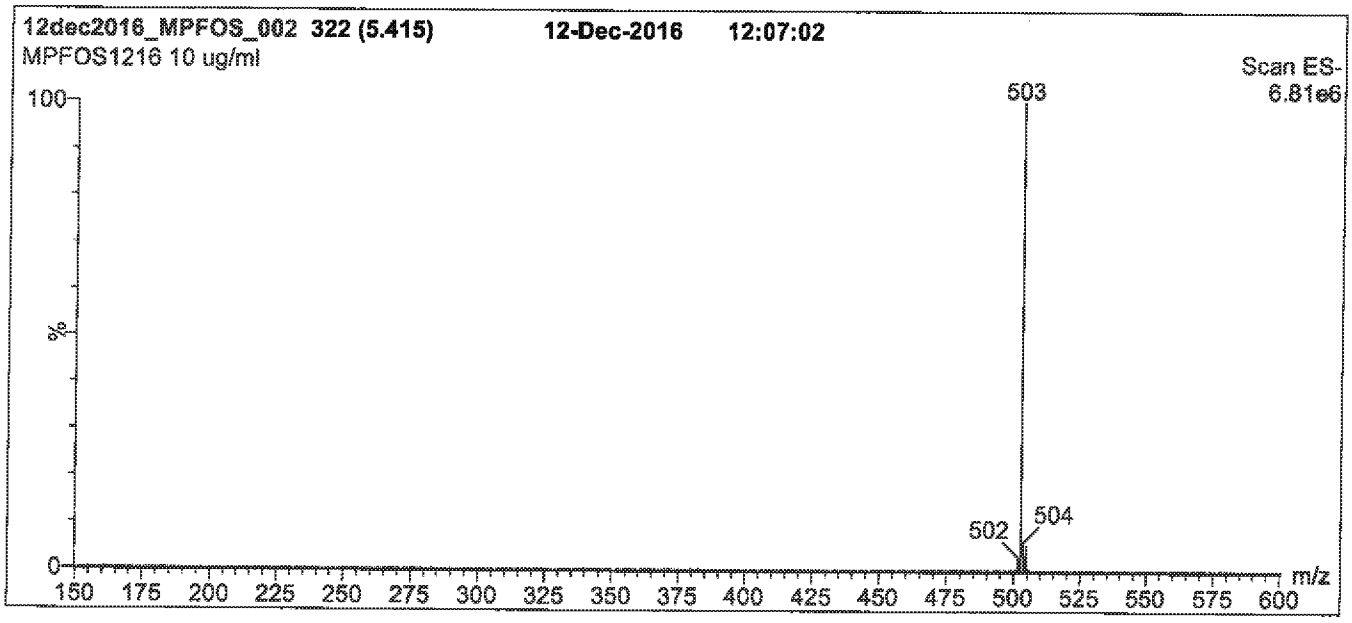




Conditions for Figure 1:

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

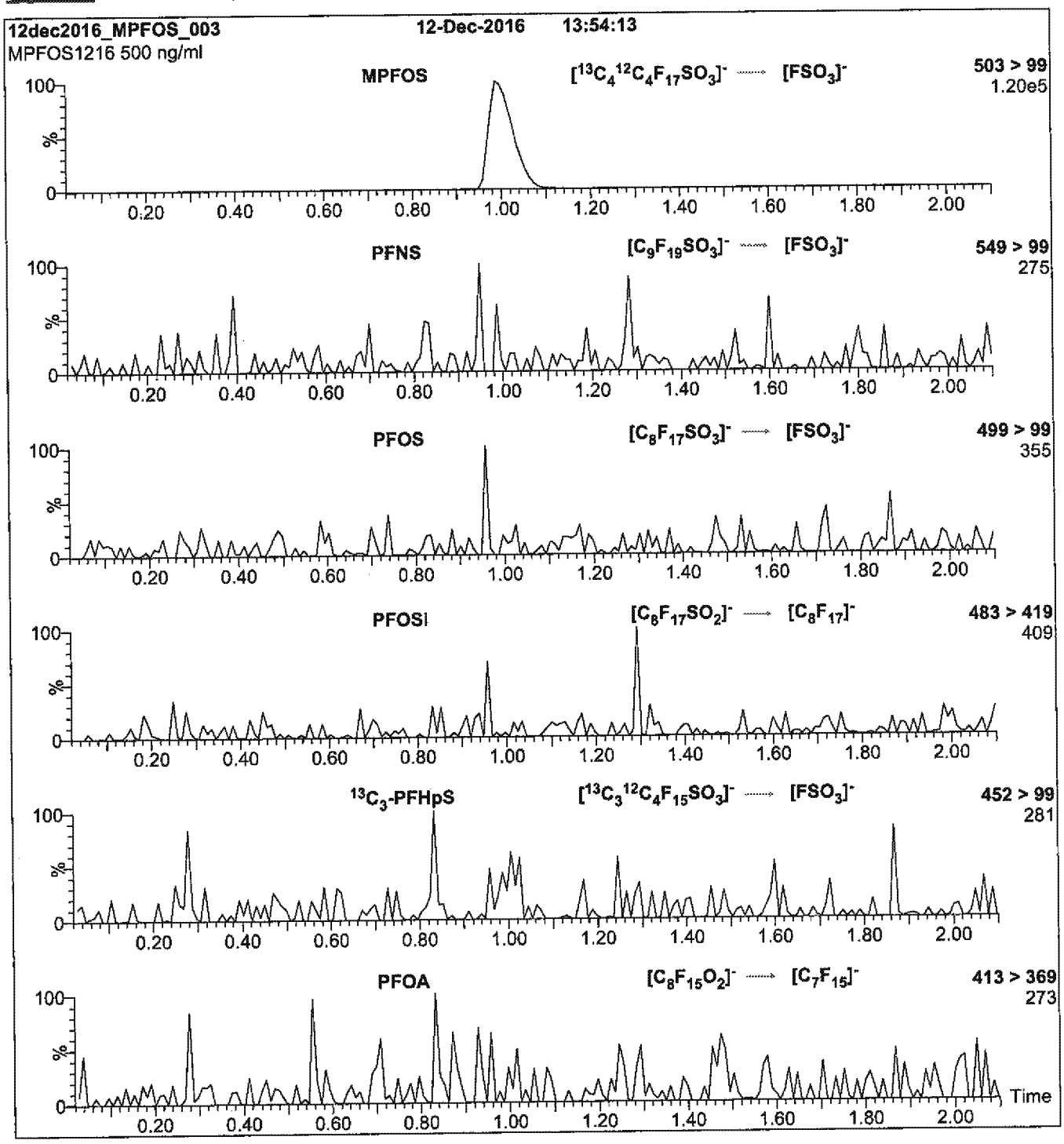
Flow: 300 µl/min

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 C0AG8

TestAmerica Job ID: 320-36235-1
SDG: DAS R35321, SDG C0AG8

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
C0AG8	320-36235-1	86	97
C0AG9	320-36235-2	87	99
C0AH0	320-36235-3	90	100
C0AH1	320-36235-4	94	98
C0AH2	320-36235-5	92	103
C0AH4	320-36235-6	89	98
C0AJ0	320-36235-7	79	90
C0AJ1	320-36235-8	86	106
C0AJ2	320-36235-9	80	98
C0AJ3	320-36235-10	90	106
	MB 320-209655/1-A	98	107
	LCS 320-209655/2-A	93	102
C0AJ0 MS	320-36235-7 MS	81	88
C0AJ0 MSD	320-36235-7 MSD	86	108

	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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Matrix: Water Level: Low Lab File ID: 2018.02.27_537B_041.d

Lab ID: LCS 320-209655/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctane sulfonic acid	223	215	97	70-130	
Perfluorooctanoic acid	112	106	95	70-130	
Perfluorononanoic acid	111	121	109	70-130	
Perfluorohexanesulfonic acid	167	161	97	70-130	
Perfluoroheptanoic acid	55.6	57.9	104	70-130	
Perfluorobutanesulfonic acid	500	410	82	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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Matrix: Water Level: Low Lab File ID: 2018.02.27_537B_051.d

Lab ID: 320-36235-7 MS Client ID: C0AJ0 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorooctane sulfonic acid	192	ND	162	84	70-130	
Perfluorooctanoic acid	96.2	4.2 J	97.6	97	70-130	
Perfluorononanoic acid	95.7	ND	94.6	99	70-130	
Perfluorohexanesulfonic acid	144	ND	132	92	70-130	
Perfluoroheptanoic acid	47.9	1.6 J	46.3	97	70-130	
Perfluorobutanesulfonic acid	431	ND	332	77	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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Matrix: Water Level: Low Lab File ID: 2018.02.27_537B_052.d

Lab ID: 320-36235-7 MSD Client ID: C0AJ0 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctane sulfonic acid	194	187	96	14	30	70-130	
Perfluorooctanoic acid	97.0	95.5	94	2	30	70-130	
Perfluorononanoic acid	96.5	105	109	10	30	70-130	
Perfluorohexanesulfonic acid	145	136	94	3	30	70-130	
Perfluoroheptanoic acid	48.3	49.0	101	6	30	70-130	
Perfluorobutanesulfonic acid	434	349	80	5	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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Lab File ID: 2018.02.27_537B_040.d Lab Sample ID: MB 320-209655/1-A

Matrix: Water Date Extracted: 02/22/2018 12:58

Instrument ID: A8_N Date Analyzed: 02/27/2018 13:48

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-209655/2-A	2018.02.27_537B_041.d	02/27/2018 13:53
C0AG8	320-36235-1	2018.02.27_537B_042.d	02/27/2018 13:58
C0AG9	320-36235-2	2018.02.27_537B_043.d	02/27/2018 14:02
C0AH0	320-36235-3	2018.02.27_537B_044.d	02/27/2018 14:07
C0AH1	320-36235-4	2018.02.27_537B_045.d	02/27/2018 14:12
C0AH2	320-36235-5	2018.02.27_537B_046.d	02/27/2018 14:16
C0AH4	320-36235-6	2018.02.27_537B_047.d	02/27/2018 14:21
C0AJ0	320-36235-7	2018.02.27_537B_050.d	02/27/2018 14:35
C0AJ0 MS	320-36235-7 MS	2018.02.27_537B_051.d	02/27/2018 14:40
C0AJ0 MSD	320-36235-7 MSD	2018.02.27_537B_052.d	02/27/2018 14:44
C0AJ1	320-36235-8	2018.02.27_537B_053.d	02/27/2018 14:49
C0AJ2	320-36235-9	2018.02.27_537B_054.d	02/27/2018 14:54
C0AJ3	320-36235-10	2018.02.27_537B_055.d	02/27/2018 14:58

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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 320-210253/1		940503	1.83	2636939	2.09		
CCV 320-210262/1 CCVIS		894024	1.81	2765673	2.06		
MB 320-209655/1-A		901596	1.81	2883823	2.06		
LCS 320-209655/2-A		907425	1.81	2814429	2.06		
320-36235-1	C0AG8	937820	1.81	2792116	2.06		
320-36235-2	C0AG9	975655	1.81	2980883	2.06		
320-36235-3	C0AH0	974961	1.81	2917624	2.06		
320-36235-4	C0AH1	924342	1.81	2911910	2.06		
320-36235-5	C0AH2	966797	1.80	2931211	2.06		
320-36235-6	C0AH4	950655	1.81	2890963	2.06		
CCV 320-210262/11 CCVIS		856857	1.81	2709916	2.06		
CCV 320-210263/11 CCVIS		856857	1.81	2709916	2.06		
320-36235-7	C0AJ0	905863	1.80	2816970	2.06		
320-36235-7 MS	C0AJ0 MS	855257	1.80	2665871	2.06		
320-36235-7 MSD	C0AJ0 MSD	872050	1.81	2744194	2.06		
320-36235-8	C0AJ1	1007854	1.80	3101706	2.06		
320-36235-9	C0AJ2	955700	1.81	2776897	2.06		
320-36235-10	C0AJ3	896172	1.80	2734265	2.06		
CCV 320-210263/19 CCVIS		871045	1.81	2692756	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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Sample No.: CCV 320-210262/1 Date Analyzed: 02/27/2018 13:39

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

Lab File ID (Standard): 2018.02.27_537B_039 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		894024	1.81	2765673	2.06		
UPPER LIMIT		1251634	2.31	3871942	2.56		
LOWER LIMIT		625817	1.31	1935971	1.56		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-209655/1-A		901596	1.81	2883823	2.06		
LCS 320-209655/2-A		907425	1.81	2814429	2.06		
320-36235-1	C0AG8	937820	1.81	2792116	2.06		
320-36235-2	C0AG9	975655	1.81	2980883	2.06		
320-36235-3	C0AH0	974961	1.81	2917624	2.06		
320-36235-4	C0AH1	924342	1.81	2911910	2.06		
320-36235-5	C0AH2	966797	1.80	2931211	2.06		
320-36235-6	C0AH4	950655	1.81	2890963	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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Sample No.: CCV 320-210262/11 Date Analyzed: 02/27/2018 14:26

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

Lab File ID (Standard): 2018.02.27_537B_048 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		856857	1.81	2709916	2.06		
UPPER LIMIT		1199600	2.31	3793882	2.56		
LOWER LIMIT		599800	1.31	1896941	1.56		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-209655/1-A		901596	1.81	2883823	2.06		
LCS 320-209655/2-A		907425	1.81	2814429	2.06		
320-36235-1	C0AG8	937820	1.81	2792116	2.06		
320-36235-2	C0AG9	975655	1.81	2980883	2.06		
320-36235-3	C0AH0	974961	1.81	2917624	2.06		
320-36235-4	C0AH1	924342	1.81	2911910	2.06		
320-36235-5	C0AH2	966797	1.80	2931211	2.06		
320-36235-6	C0AH4	950655	1.81	2890963	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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Sample No.: CCV 320-210263/11 Date Analyzed: 02/27/2018 14:26

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

Lab File ID (Standard): 2018.02.27_537B_048 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		856857	1.81	2709916	2.06		
UPPER LIMIT		1199600	2.31	3793882	2.56		
LOWER LIMIT		599800	1.31	1896941	1.56		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-36235-7	C0AJ0	905863	1.80	2816970	2.06		
320-36235-7 MS	C0AJ0 MS	855257	1.80	2665871	2.06		
320-36235-7 MSD	C0AJ0 MSD	872050	1.81	2744194	2.06		
320-36235-8	C0AJ1	1007854	1.80	3101706	2.06		
320-36235-9	C0AJ2	955700	1.81	2776897	2.06		
320-36235-10	C0AJ3	896172	1.80	2734265	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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Sample No.: CCV 320-210263/19 Date Analyzed: 02/27/2018 15:03

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

Lab File ID (Standard): 2018.02.27_537B_056 Heated Purge: (Y/N) N

Calibration ID: 37889

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		871045	1.81	2692756	2.06		
UPPER LIMIT		1219463	2.31	3769858	2.56		
LOWER LIMIT		609732	1.31	1884929	1.56		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-36235-7	C0AJ0	905863	1.80	2816970	2.06		
320-36235-7 MS	C0AJ0 MS	855257	1.80	2665871	2.06		
320-36235-7 MSD	C0AJ0 MSD	872050	1.81	2744194	2.06		
320-36235-8	C0AJ1	1007854	1.80	3101706	2.06		
320-36235-9	C0AJ2	955700	1.81	2776897	2.06		
320-36235-10	C0AJ3	896172	1.80	2734265	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.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AG8
Lab Sample ID: 320-36235-1
Matrix: Water
Lab File ID: 2018.02.27_537B_042.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 10:00
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 268.3(mL)
Date Analyzed: 02/27/2018 13:58
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.: 210262
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		19	2.6
375-95-1	Perfluorononanoic acid	ND		19	7.5
355-46-4	Perfluorohexanesulfonic acid	ND		28	5.1
375-85-9	Perfluoroheptanoic acid	ND		9.3	1.8
375-73-5	Perfluorobutanesulfonic acid	ND		84	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	86		70-130
STL00996	13C2 PFDA	97		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_042.d
Lims ID: 320-36235-A-1-A
Client ID: C0AG8
Sample Type: Client
Inject. Date: 27-Feb-2018 13:58:02 ALS Bottle#: 30 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-1-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:30 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

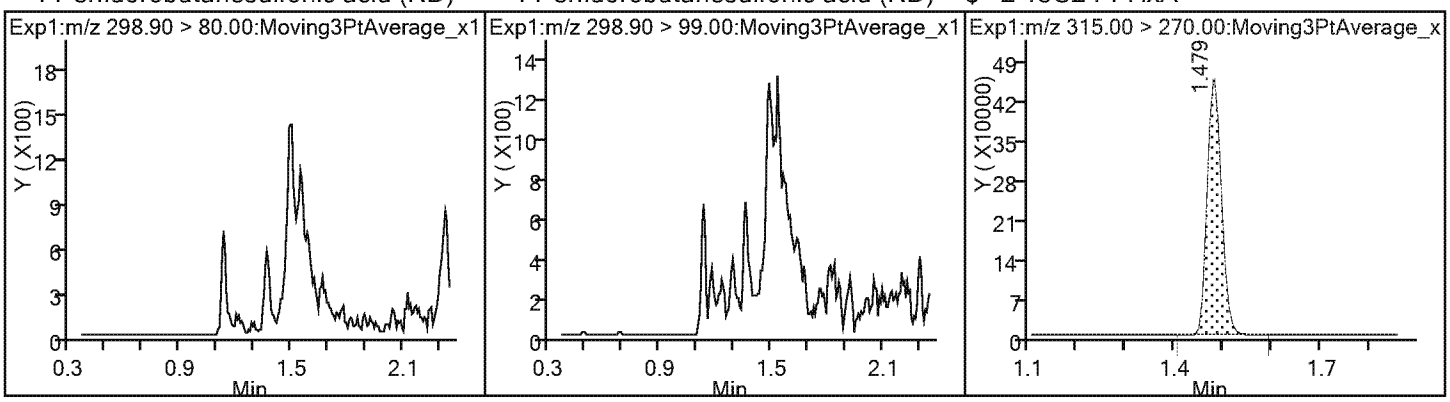
Column 1 : Det: EXP1
Process Host: XAWRK018

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	883482	8.57		14340	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		937820	10.0		9967	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2792116	28.7		5928	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	479096	9.74		3509	

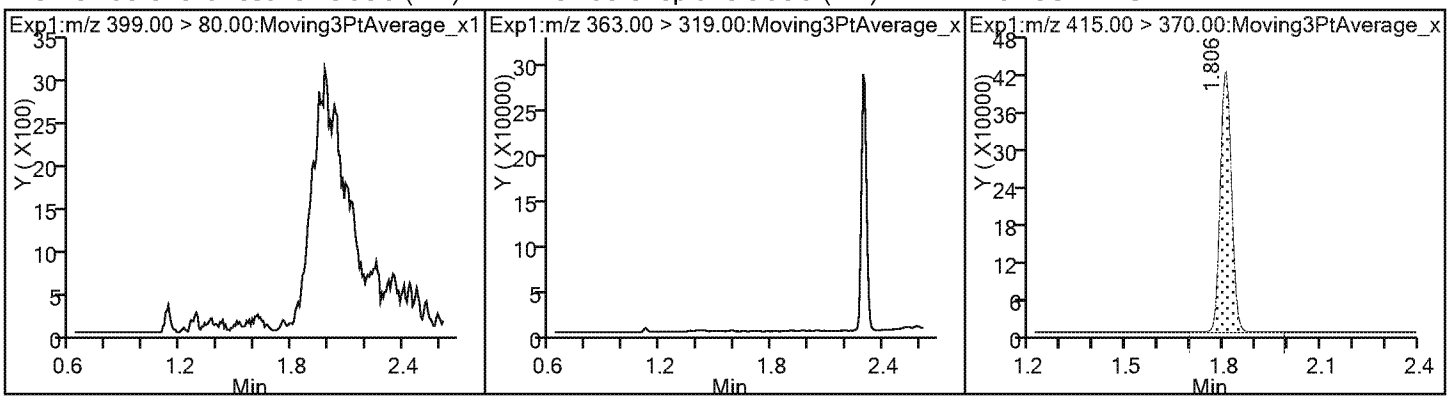
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_042.d				
Injection Date:	27-Feb-2018 13:58:02	Instrument ID:	A8_N		
Lims ID:	320-36235-A-1-A	Lab Sample ID:	320-36235-1		
Client ID:	C0AG8				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

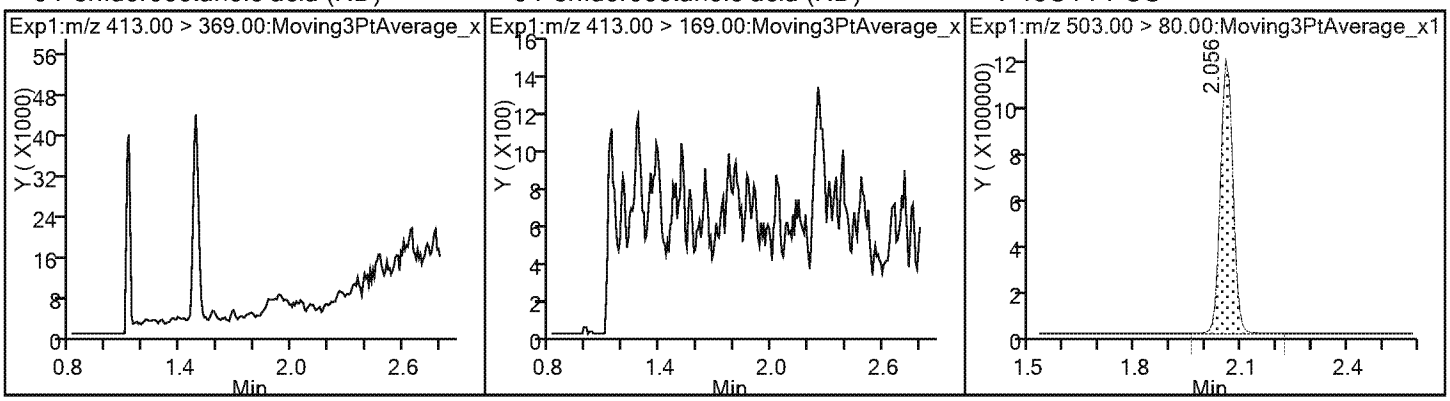
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



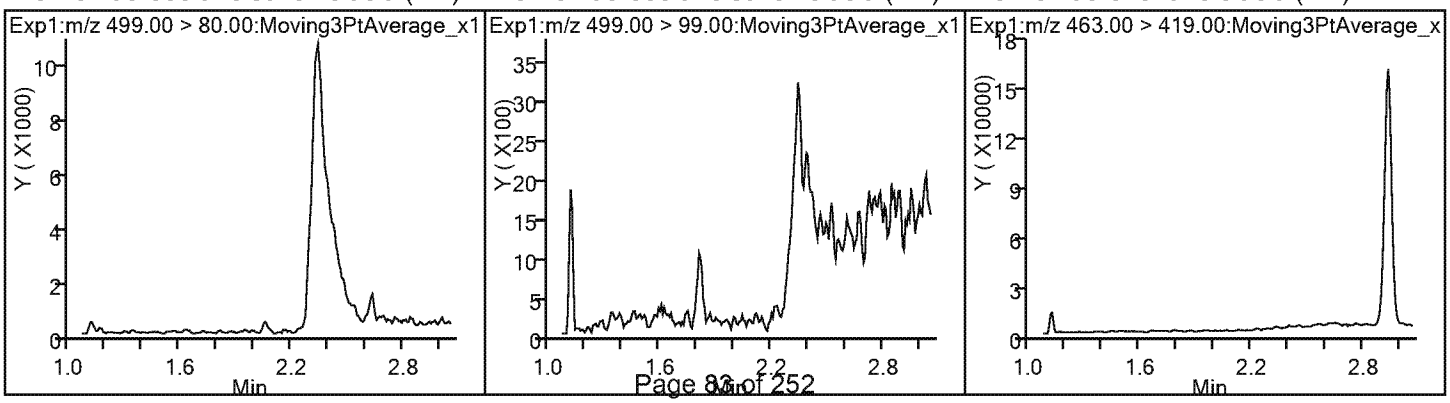
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



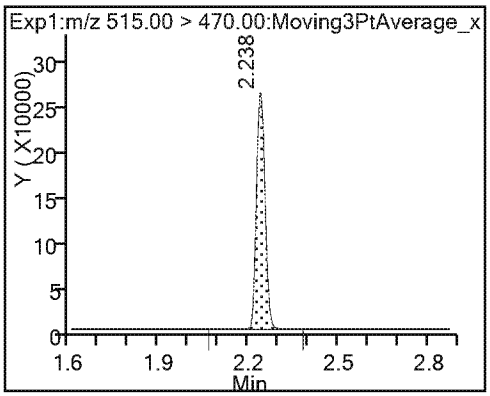
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 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
1.6
1.9
2.2
2.5
2.8
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AG9
Lab Sample ID: 320-36235-2
Matrix: Water
Lab File ID: 2018.02.27_537B_043.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 10:25
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 266.9(mL)
Date Analyzed: 02/27/2018 14:02
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.: 210262
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		37	6.4
335-67-1	Perfluorooctanoic acid	ND		19	2.6
375-95-1	Perfluorononanoic acid	ND		19	7.5
355-46-4	Perfluorohexanesulfonic acid	ND		28	5.2
375-85-9	Perfluoroheptanoic acid	ND		9.4	1.8
375-73-5	Perfluorobutanesulfonic acid	ND		84	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	87		70-130
STL00996	13C2 PFDA	99		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_043.d
Lims ID: 320-36235-A-2-A
Client ID: C0AG9
Sample Type: Client
Inject. Date: 27-Feb-2018 14:02:43 ALS Bottle#: 31 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-2-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:30 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

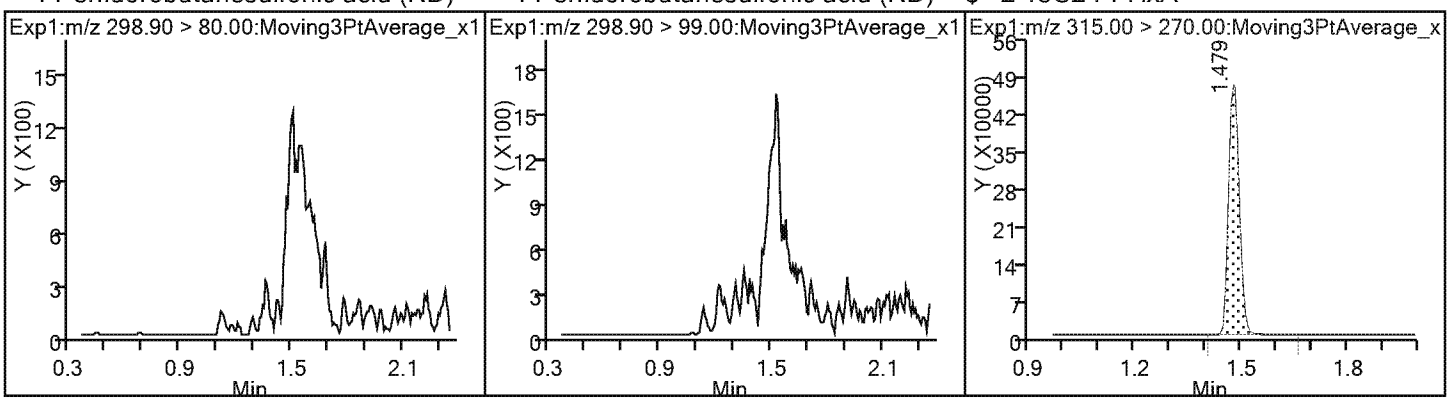
Column 1 : Det: EXP1
Process Host: XAWRK018

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	932401	8.69		16339	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		975655	10.0		9626	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2980883	28.7		6903	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	504983	9.87		2840	

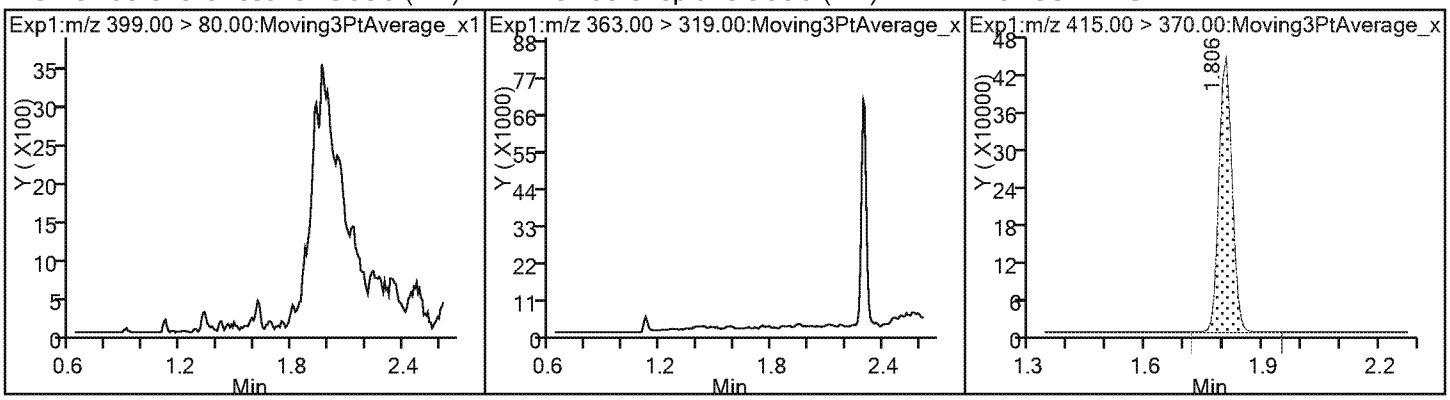
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_043.d				
Injection Date:	27-Feb-2018 14:02:43	Instrument ID:	A8_N		
Lims ID:	320-36235-A-2-A	Lab Sample ID:	320-36235-2		
Client ID:	C0AG9				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

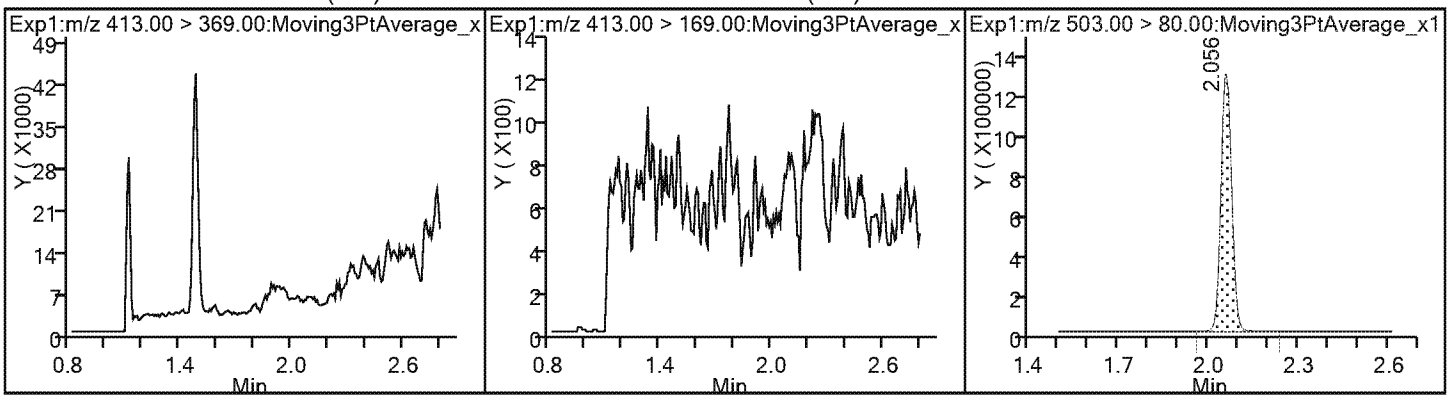
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



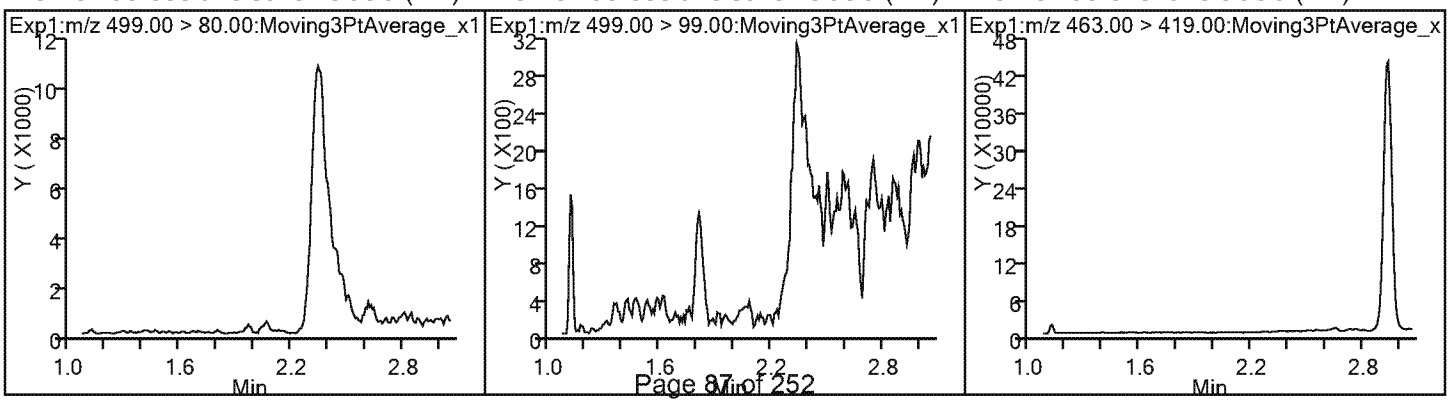
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



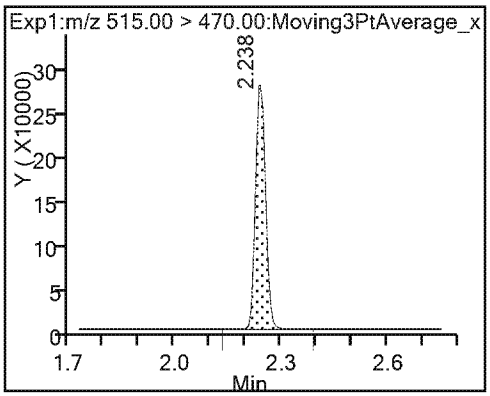
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 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.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AH0
Lab Sample ID: 320-36235-3
Matrix: Water
Lab File ID: 2018.02.27_537B_044.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 11:30
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 265.2(mL)
Date Analyzed: 02/27/2018 14:07
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.: 210262
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		38	6.4
335-67-1	Perfluorooctanoic acid	ND		19	2.6
375-95-1	Perfluorononanoic acid	ND		19	7.5
355-46-4	Perfluorohexanesulfonic acid	ND		28	5.2
375-85-9	Perfluoroheptanoic acid	ND		9.4	1.8
375-73-5	Perfluorobutanesulfonic acid	ND		85	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	90		70-130
STL00996	13C2 PFDA	100		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_044.d
Lims ID: 320-36235-A-3-A
Client ID: C0AH0
Sample Type: Client
Inject. Date: 27-Feb-2018 14:07:26 ALS Bottle#: 32 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-3-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:30 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

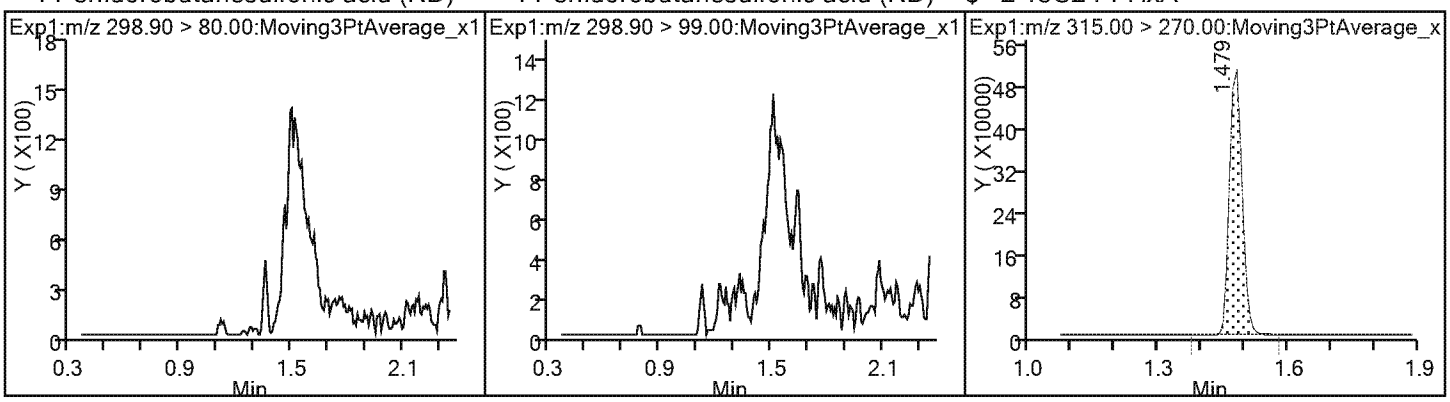
Column 1 : Det: EXP1
Process Host: XAWRK018

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	967189	9.02		12679	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		974961	10.0		9764	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2917624	28.7		7068	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	511611	10.0		3251	

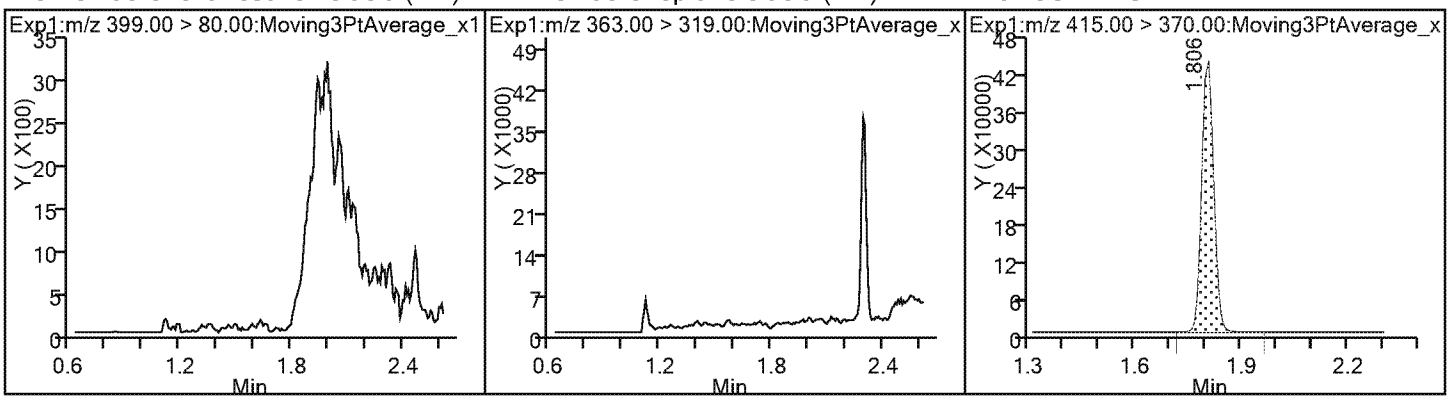
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_044.d				
Injection Date:	27-Feb-2018 14:07:26	Instrument ID:	A8_N		
Lims ID:	320-36235-A-3-A	Lab Sample ID:	320-36235-3		
Client ID:	C0AH0				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

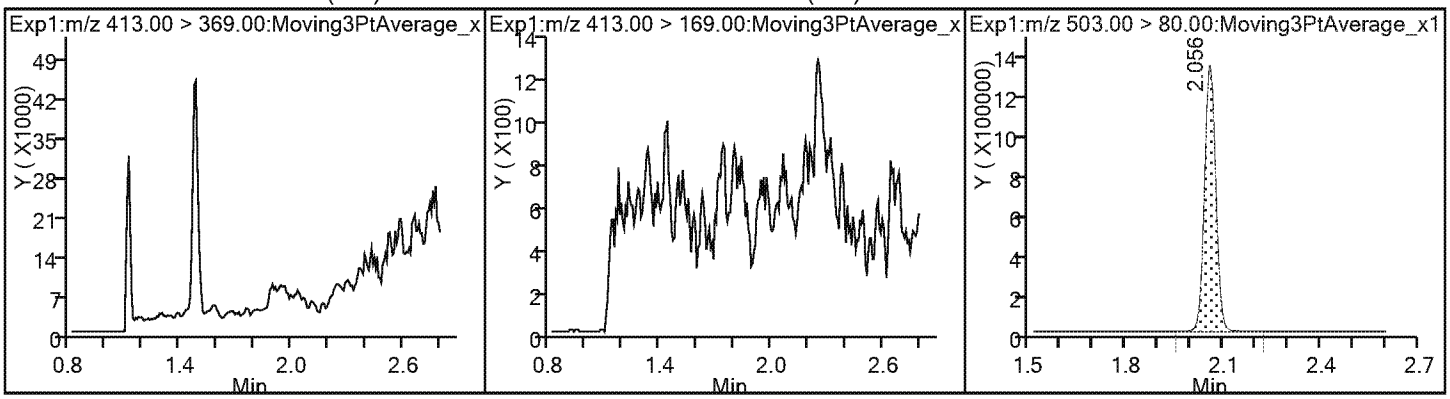
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



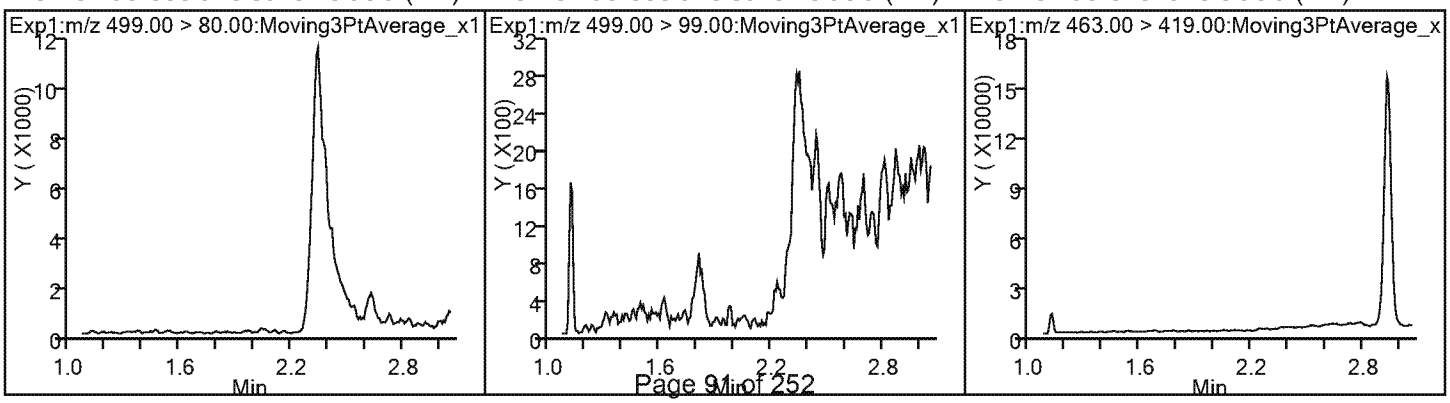
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



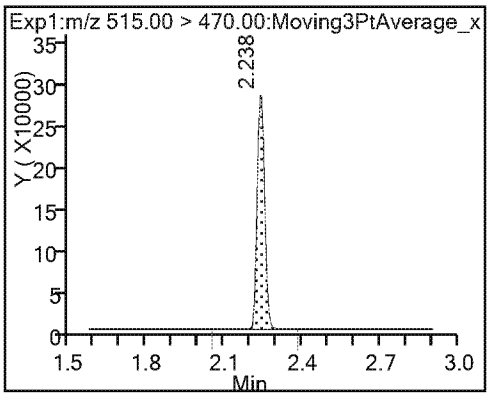
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 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.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AH1
Lab Sample ID: 320-36235-4
Matrix: Water
Lab File ID: 2018.02.27_537B_045.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 12:35
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 265.8(mL)
Date Analyzed: 02/27/2018 14:12
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.: 210262
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		38	6.4
335-67-1	Perfluorooctanoic acid	ND		19	2.6
375-95-1	Perfluorononanoic acid	ND		19	7.5
355-46-4	Perfluorohexanesulfonic acid	ND		28	5.2
375-85-9	Perfluoroheptanoic acid	ND		9.4	1.8
375-73-5	Perfluorobutanesulfonic acid	ND		85	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	98		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_045.d
Lims ID: 320-36235-A-4-A
Client ID: C0AH1
Sample Type: Client
Inject. Date: 27-Feb-2018 14:12:09 ALS Bottle#: 33 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-4-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:30 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

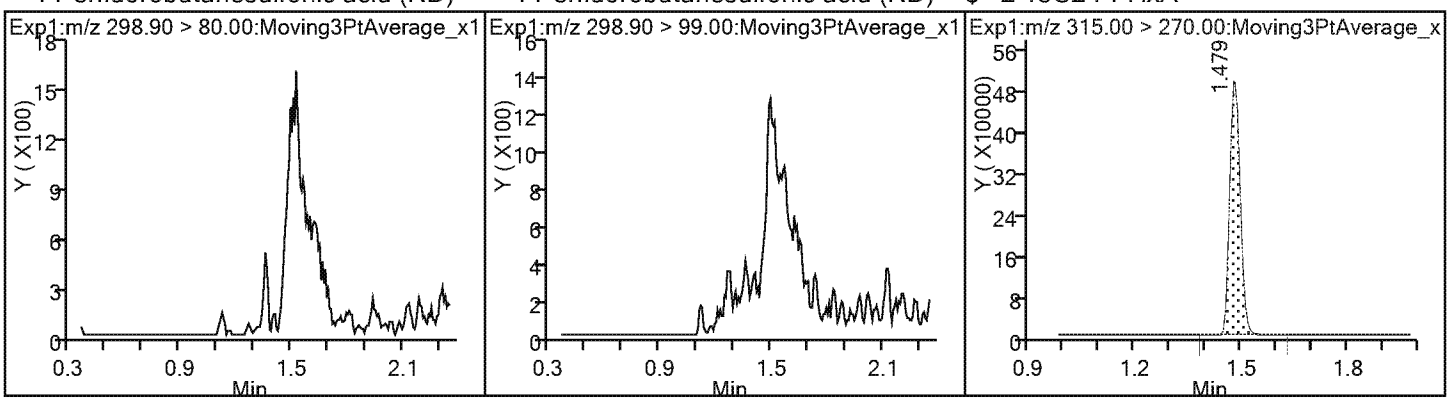
Column 1 : Det: EXP1
Process Host: XAWRK018

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	953020	9.37		14191	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		924342	10.0		8243	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2911910	28.7		7352	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	473874	9.78		2913	

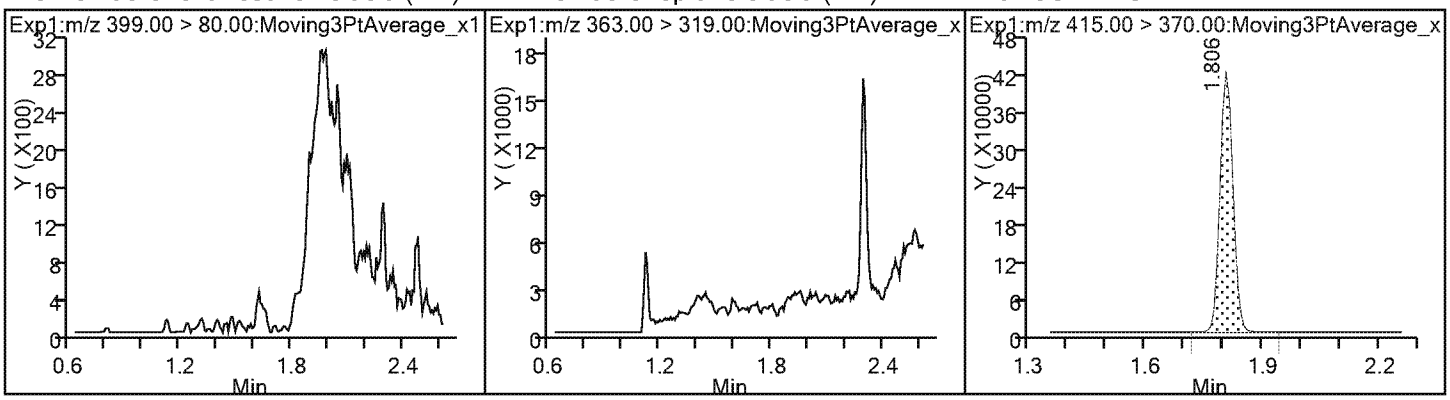
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_045.d				
Injection Date:	27-Feb-2018 14:12:09	Instrument ID:	A8_N		
Lims ID:	320-36235-A-4-A	Lab Sample ID:	320-36235-4		
Client ID:	C0AH1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	33	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

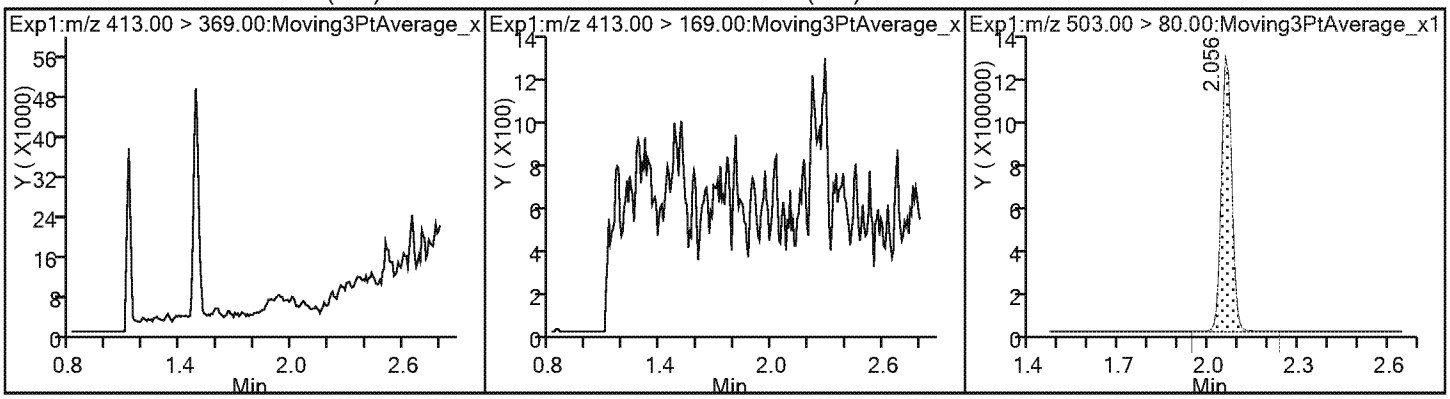
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



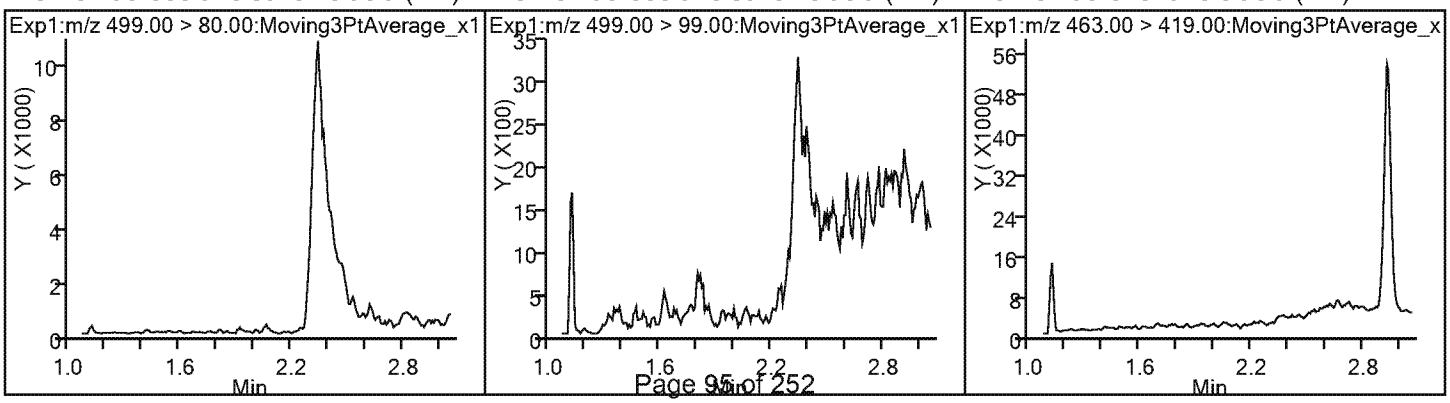
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



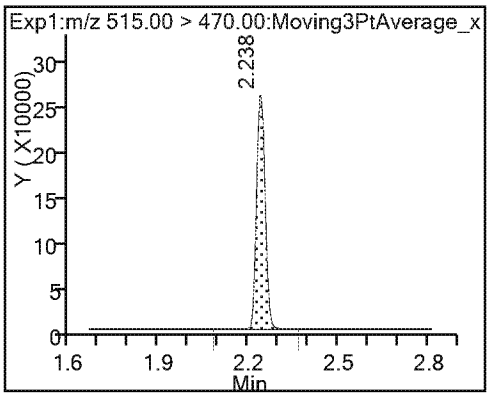
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 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
1.6
1.9
2.2
2.5
2.8
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AH2
Lab Sample ID: 320-36235-5
Matrix: Water
Lab File ID: 2018.02.27_537B_046.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 13:05
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 269.3(mL)
Date Analyzed: 02/27/2018 14:16
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.: 210262
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		19	2.6
375-95-1	Perfluorononanoic acid	ND		19	7.4
355-46-4	Perfluorohexanesulfonic acid	ND		28	5.1
375-85-9	Perfluoroheptanoic acid	ND		9.3	1.8
375-73-5	Perfluorobutanesulfonic acid	ND		84	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	103		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_046.d
Lims ID: 320-36235-A-5-A
Client ID: C0AH2
Sample Type: Client
Inject. Date: 27-Feb-2018 14:16:49 ALS Bottle#: 34 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-5-
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:30 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

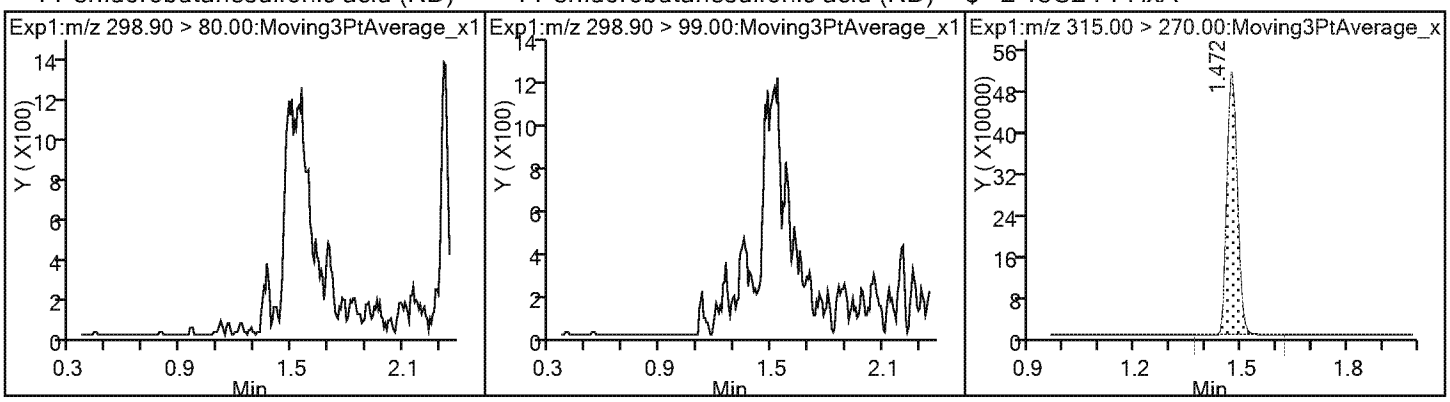
Column 1 : Det: EXP1
Process Host: XAWRK018

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.472	1.479	-0.007	1.000	978299	9.20		15397	
* 6 13C2-PFOA									
415.00 > 370.00	1.798	1.806	-0.008		966797	10.0		8890	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2931211	28.7		6054	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	523830	10.3		3235	

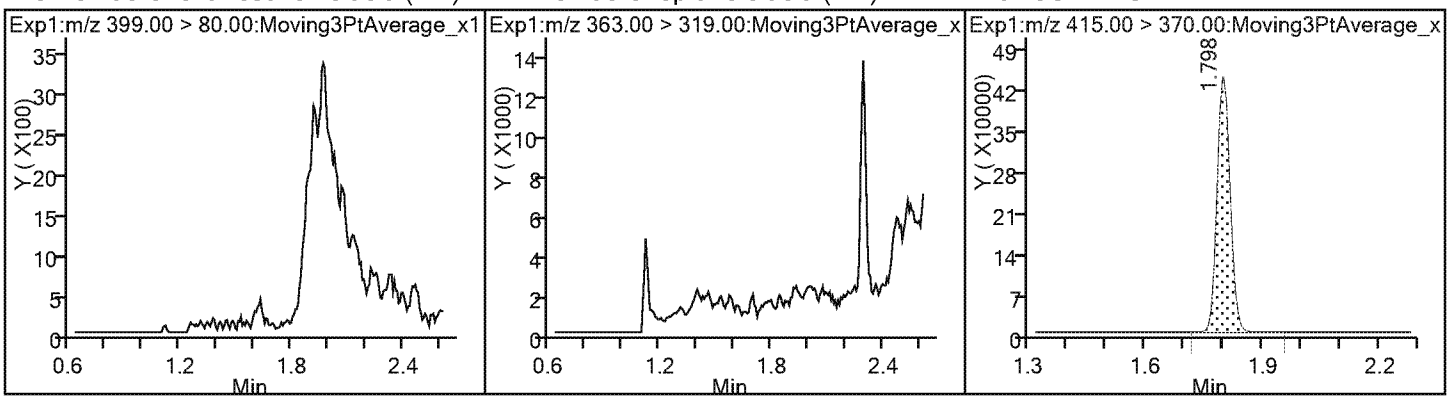
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_046.d				
Injection Date:	27-Feb-2018 14:16:49	Instrument ID:	A8_N		
Lims ID:	320-36235-A-5-A	Lab Sample ID:	320-36235-5		
Client ID:	C0AH2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	34	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

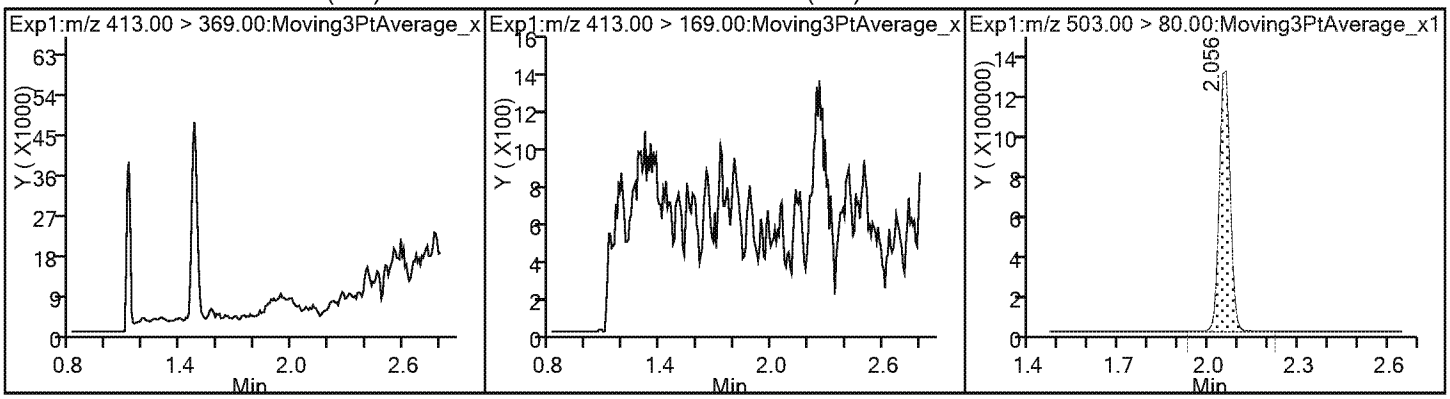
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



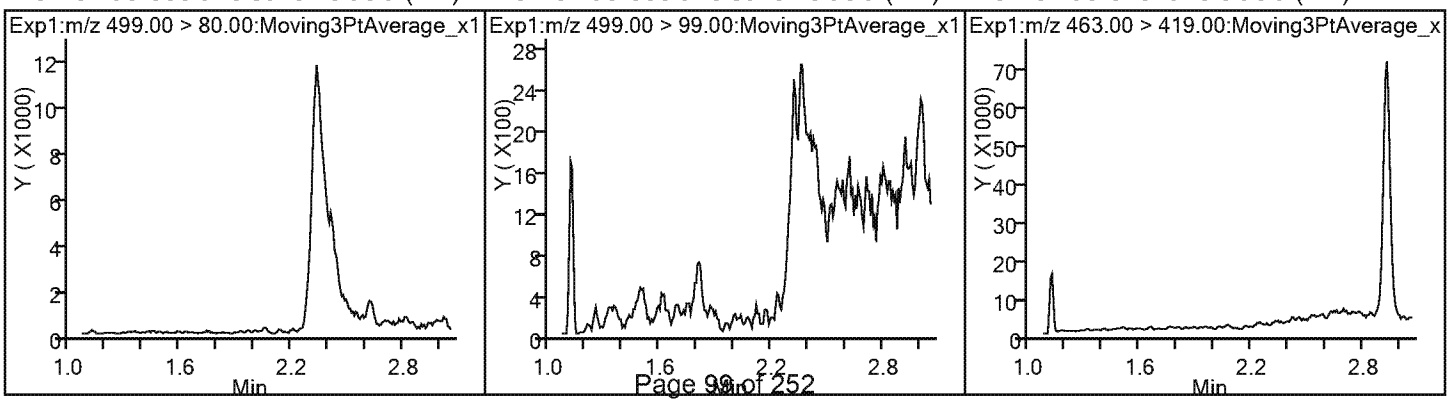
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



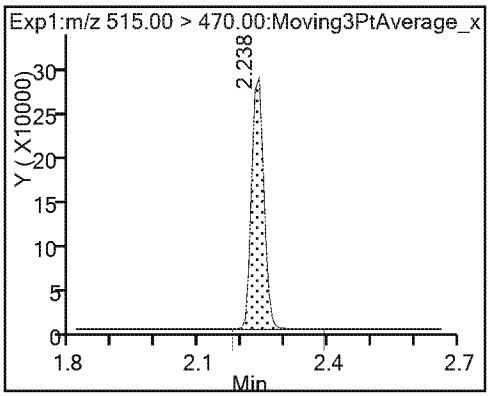
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 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
1.8
2.1
2.4
2.7
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AH4
Lab Sample ID: 320-36235-6
Matrix: Water
Lab File ID: 2018.02.27_537B_047.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 11:30
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 272.6(mL)
Date Analyzed: 02/27/2018 14:21
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.: 210262
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		37	6.2
335-67-1	Perfluorooctanoic acid	ND		18	2.6
375-95-1	Perfluorononanoic acid	ND		18	7.3
355-46-4	Perfluorohexanesulfonic acid	ND		28	5.0
375-85-9	Perfluoroheptanoic acid	ND		9.2	1.7
375-73-5	Perfluorobutanesulfonic acid	ND		83	15

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	89		70-130
STL00996	13C2 PFDA	98		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_047.d
Lims ID: 320-36235-A-6-A
Client ID: C0AH4
Sample Type: Client
Inject. Date: 27-Feb-2018 14:21:29 ALS Bottle#: 35 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-6-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:30 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

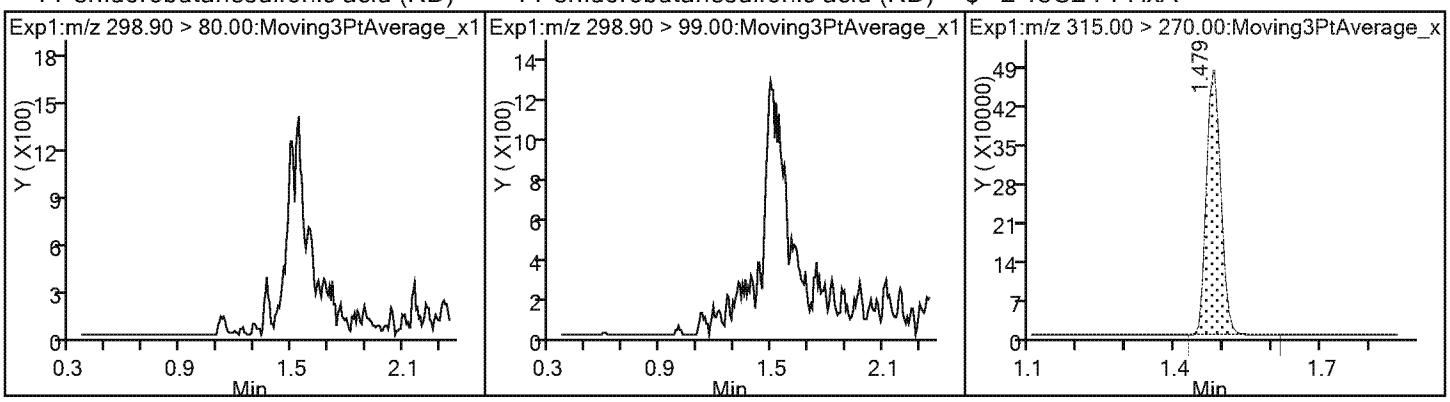
Column 1 : Det: EXP1
Process Host: XAWRK018

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	927302	8.87		12882	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		950655	10.0		8569	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2890963	28.7		6413	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	487553	9.78		3101	

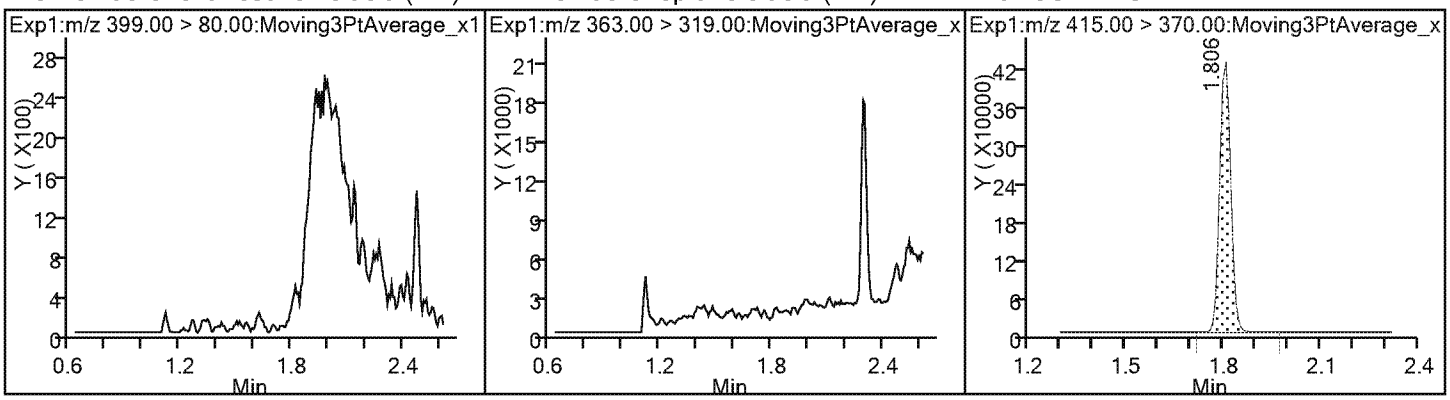
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_047.d				
Injection Date:	27-Feb-2018 14:21:29	Instrument ID:	A8_N		
Lims ID:	320-36235-A-6-A	Lab Sample ID:	320-36235-6		
Client ID:	C0AH4				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	35	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

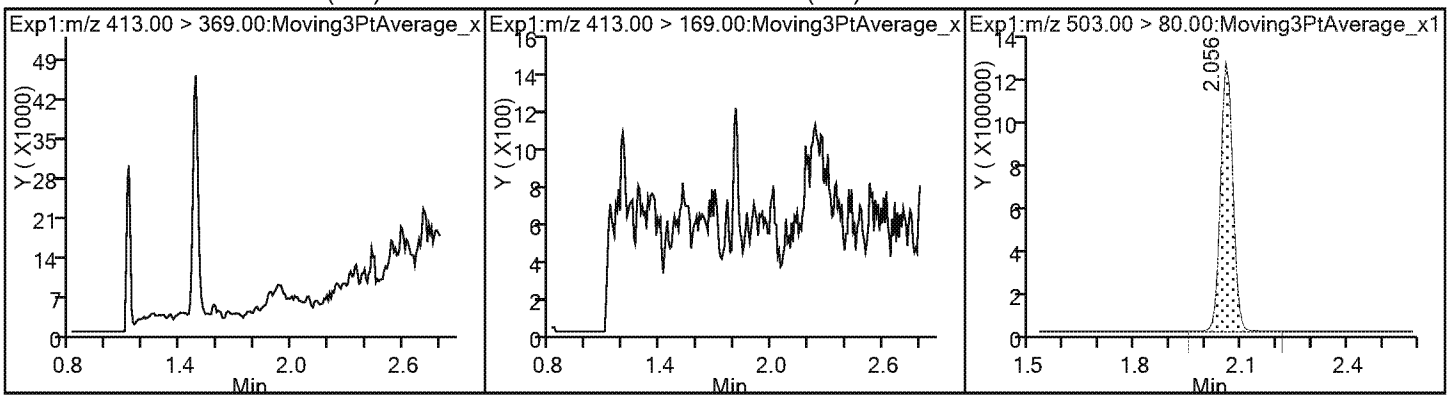
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



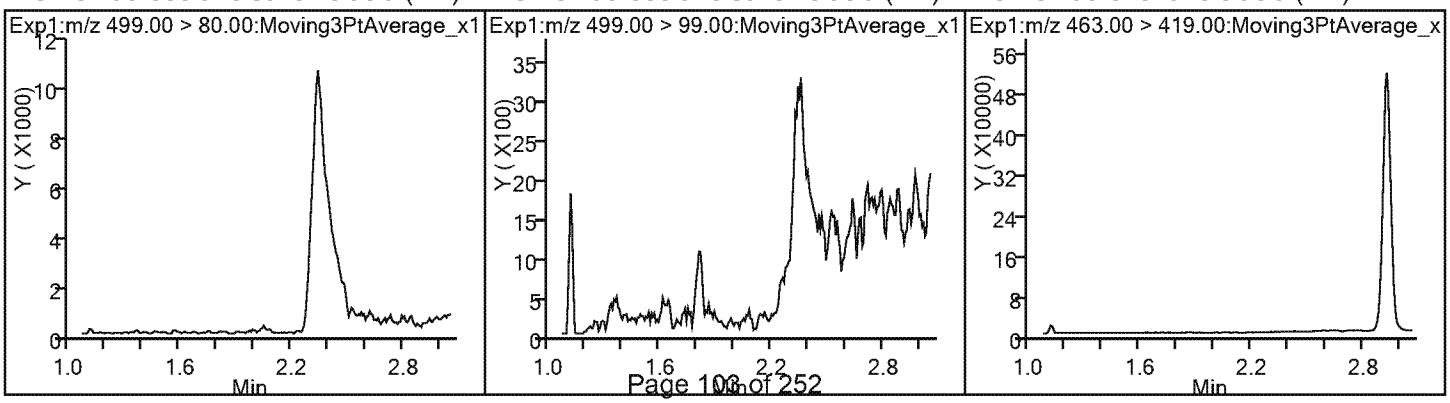
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



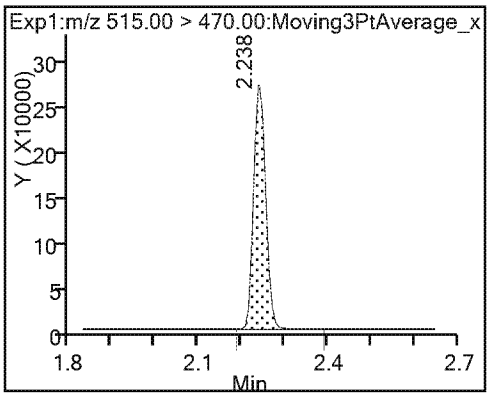
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 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
1.8
2.1
2.4
2.7
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AJ0
Lab Sample ID: 320-36235-7
Matrix: Water
Lab File ID: 2018.02.27_537B_050.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 10:00
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 290.3(mL)
Date Analyzed: 02/27/2018 14:35
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.: 210263
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	ND		34	5.9
335-67-1	Perfluorooctanoic acid	4.2	J	17	2.4
375-95-1	Perfluorononanoic acid	ND		17	6.9
355-46-4	Perfluorohexanesulfonic acid	ND		26	4.7
375-85-9	Perfluoroheptanoic acid	1.6	J	8.6	1.6
375-73-5	Perfluorobutanesulfonic acid	ND		78	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	79		70-130
STL00996	13C2 PFDA	90		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_050.d
Lims ID: 320-36235-A-7-A
Client ID: C0AJ0
Sample Type: Client
Inject. Date: 27-Feb-2018 14:35:31 ALS Bottle#: 36 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-7-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 15:24:11 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: 27-Feb-2018 14:56:49

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	787799	7.91		11548	
3 Perfluorohexanesulfonic acid									M
399.00 > 80.00	1.616	1.616	0.0	1.000	35113	0.2221		16.6	M
4 Perfluoroheptanoic acid									M
363.00 > 319.00	1.616	1.616	0.0	1.000	40801	0.4638		4.6	M
* 6 13C2-PFOA									
415.00 > 370.00	1.798	1.806	-0.008		905863	10.0		8989	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	106085	1.22		2.7	
413.00 > 169.00	1.806	1.806	0.0	1.000	80376		1.32(0.00-0.00)	36.8	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2816970	28.7		4140	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	429110	9.04		2994	

QC Flag Legend

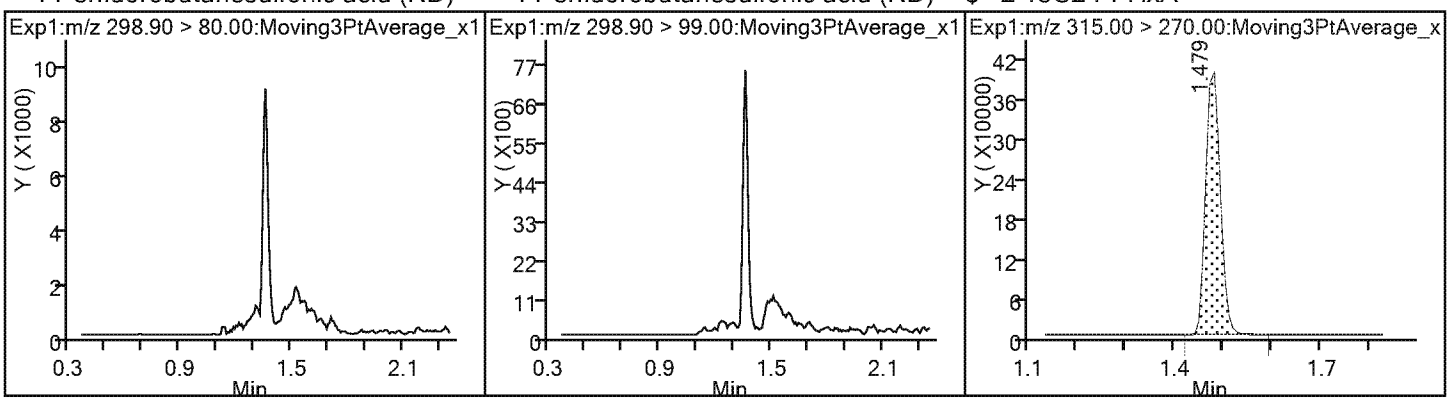
Review Flags

M - Manually Integrated

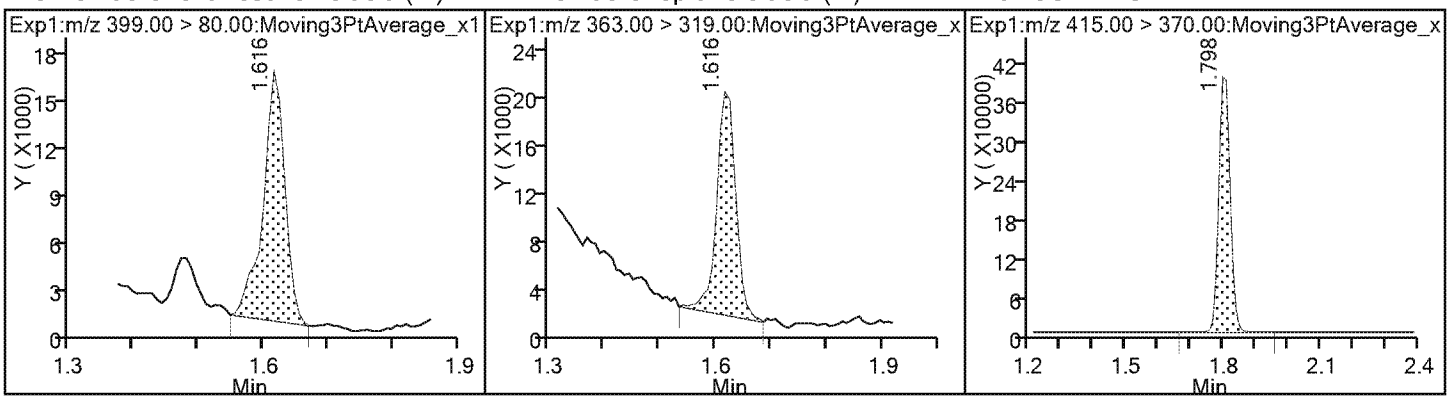
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_050.d				
Injection Date:	27-Feb-2018 14:35:31	Instrument ID:	A8_N		
Lims ID:	320-36235-A-7-A	Lab Sample ID:	320-36235-7		
Client ID:	C0AJ0				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	36	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

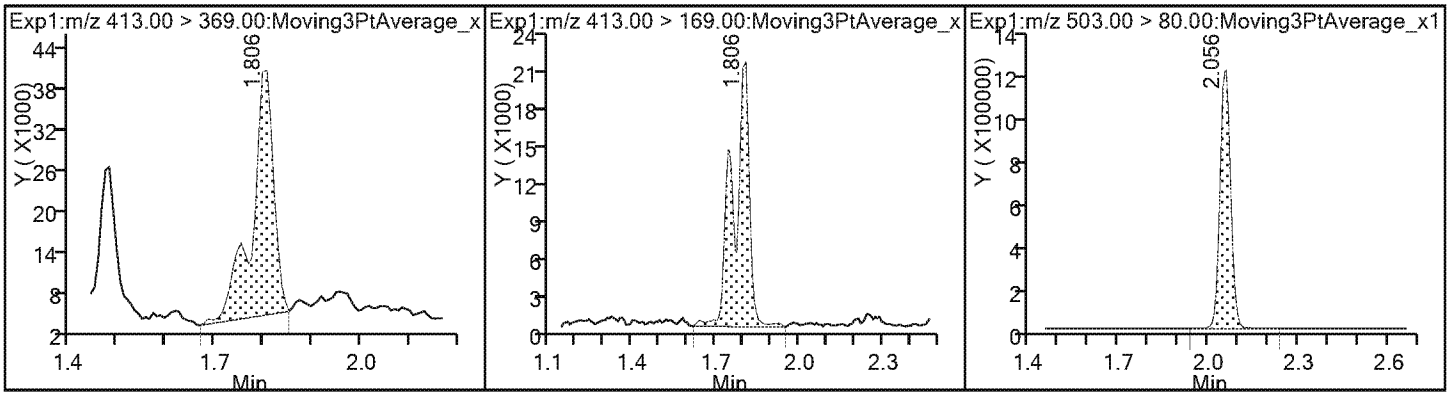
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



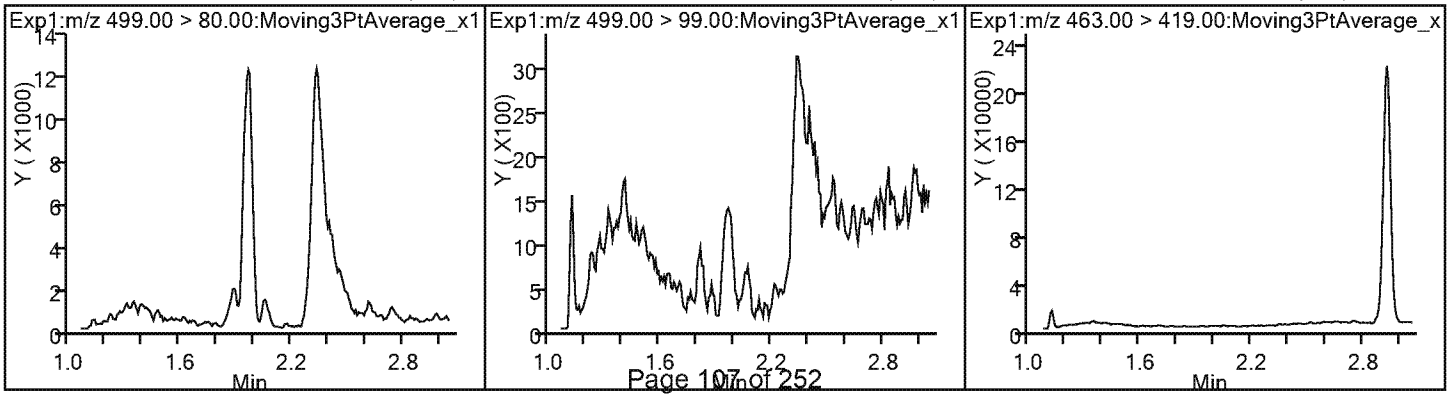
3 Perfluorohexanesulfonic acid (M) 4 Perfluoroheptanoic acid (M) * 6 13C2-PFOA



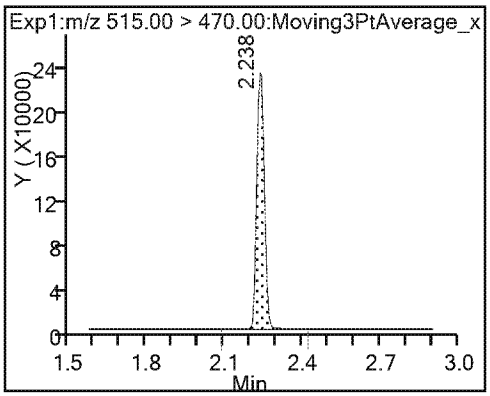
5 Perfluorooctanoic acid 5 Perfluorooctanoic acid * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
24
20
16
12
8
4
0
1.5
1.8
2.1
2.4
2.7
3.0
Min

TestAmerica Sacramento

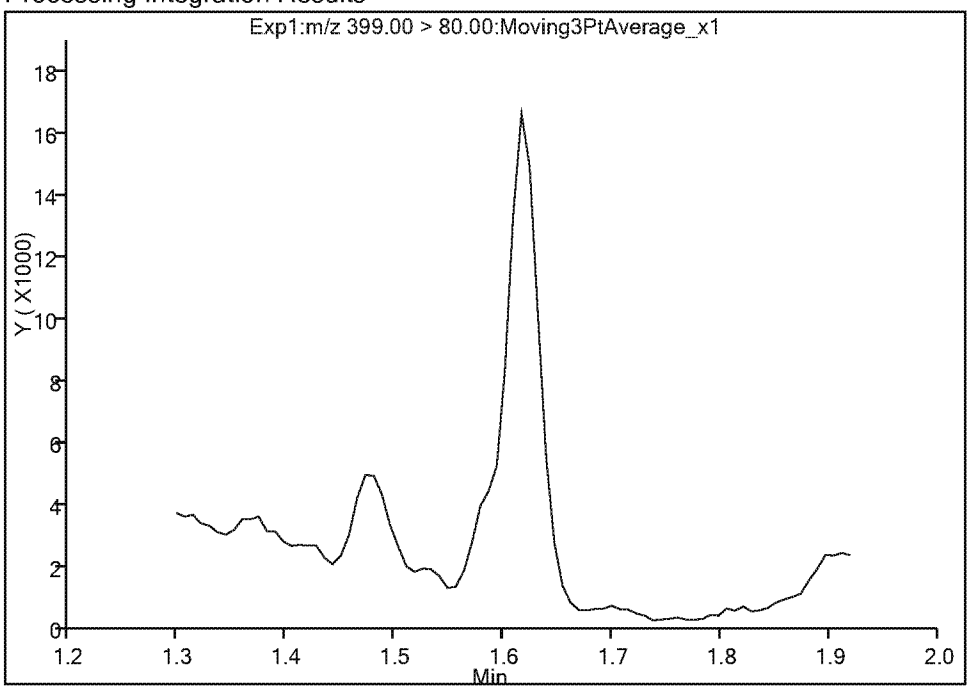
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_050.d				
Injection Date:	27-Feb-2018 14:35:31	Instrument ID:	A8_N		
Lims ID:	320-36235-A-7-A	Lab Sample ID:	320-36235-7		
Client ID:	C0AJ0				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	36	Worklist Smp#:	13
Injection Vol:	2.0 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

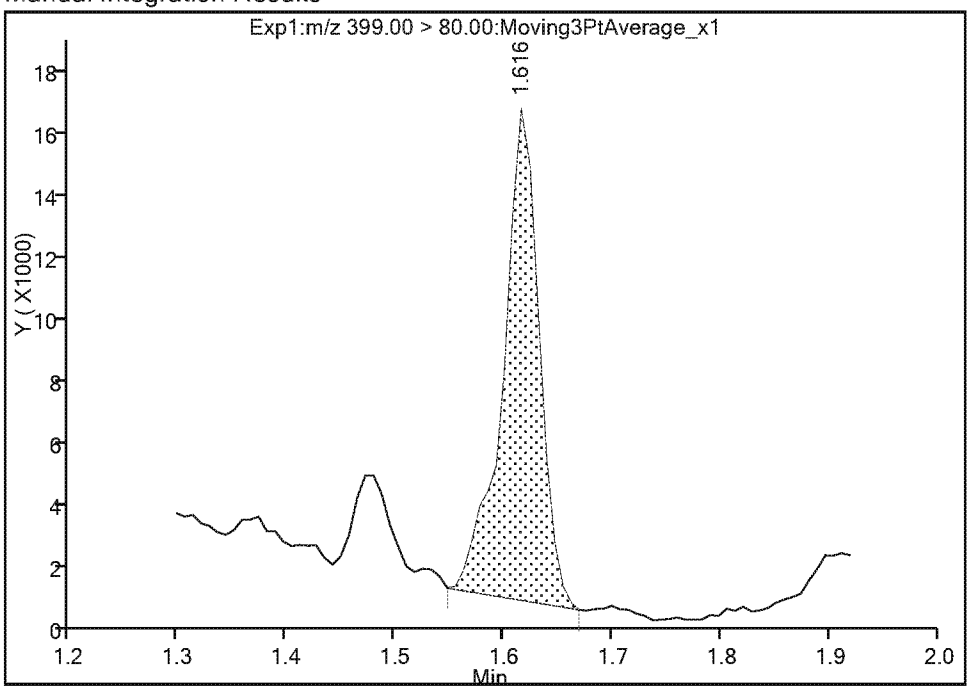
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 35113
Amount: 0.222077
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 14:56:22
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

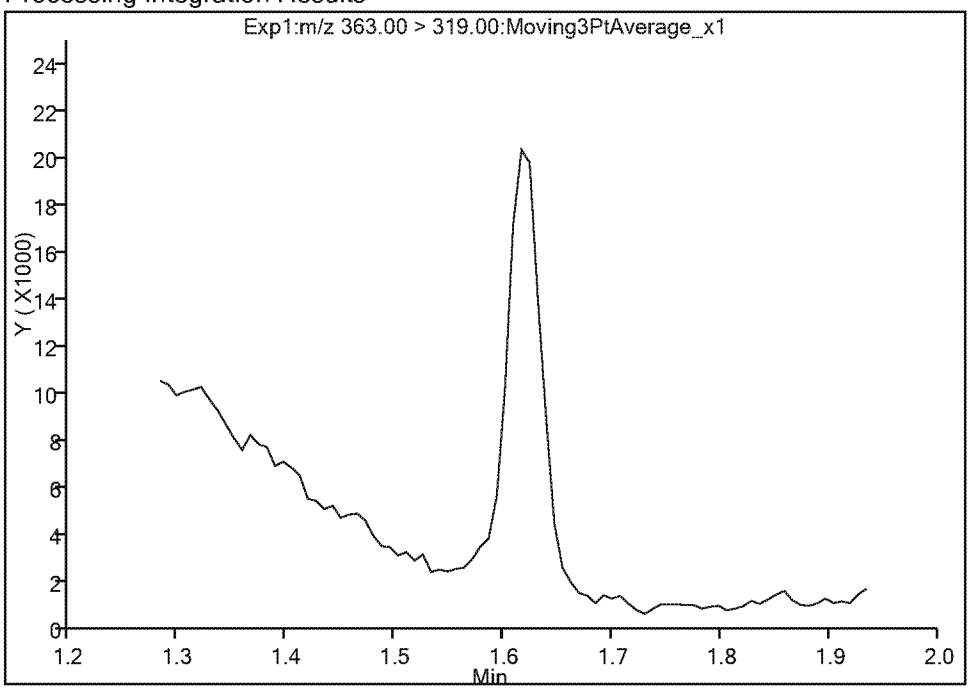
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_050.d				
Injection Date:	27-Feb-2018 14:35:31	Instrument ID:	A8_N		
Lims ID:	320-36235-A-7-A	Lab Sample ID:	320-36235-7		
Client ID:	C0AJ0				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	36	Worklist Smp#:	13
Injection Vol:	2.0 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

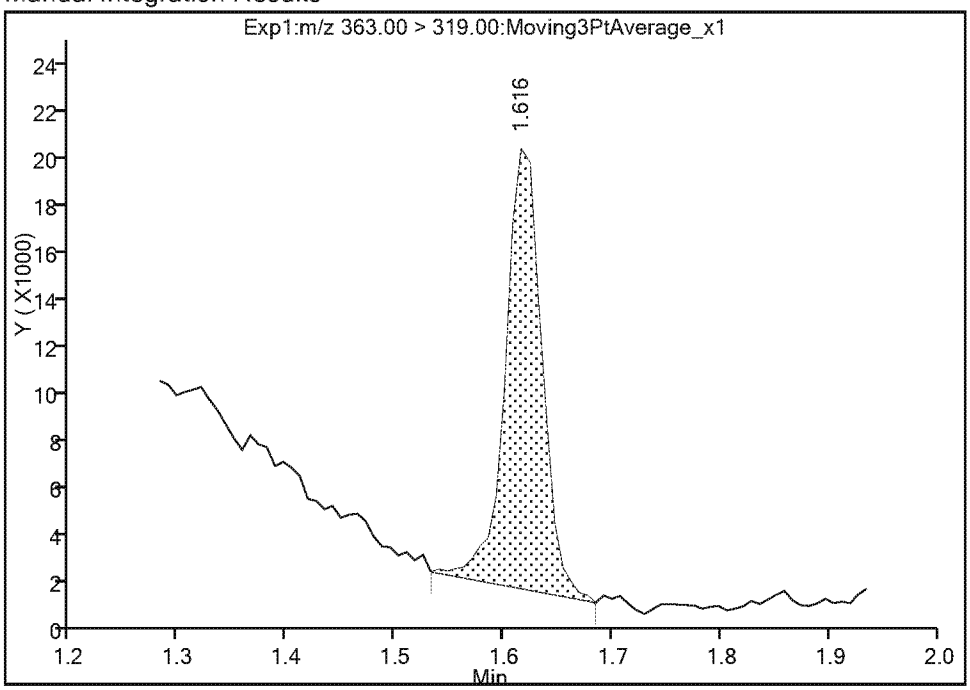
Processing Integration Results

Not Detected
Expected RT: 1.62



Manual Integration Results

RT: 1.62
Area: 40801
Amount: 0.463799
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 14:56:33
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AJ1
Lab Sample ID: 320-36235-8
Matrix: Water
Lab File ID: 2018.02.27_537B_053.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 10:25
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 296.8(mL)
Date Analyzed: 02/27/2018 14:49
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.: 210263
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	15	J	34	5.7
335-67-1	Perfluorooctanoic acid	7.5	J	17	2.4
375-95-1	Perfluorononanoic acid	ND		17	6.7
355-46-4	Perfluorohexanesulfonic acid	ND		25	4.6
375-85-9	Perfluoroheptanoic acid	3.5	J	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	106		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_053.d
Lims ID: 320-36235-A-8-A
Client ID: C0AJ1
Sample Type: Client
Inject. Date: 27-Feb-2018 14:49:35 ALS Bottle#: 39 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-8-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 15:24:11 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: 27-Feb-2018 15:11:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.358	1.358	0.0	1.000	511341	3.61		1043	
298.90 > 99.00	1.358	1.358	0.0	1.000	374172		1.37(0.00-0.00)	821	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	949756	8.57		14070	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.616	1.616	0.0	1.000	125064	0.7184		63.8	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.616	1.616	0.0	1.000	102692	1.05		15.0	
* 6 13C2-PFOA									
415.00 > 370.00	1.798	1.806	-0.008		1007854	10.0		10342	
5 Perfluorooctanoic acid									M
413.00 > 369.00	1.806	1.806	0.0	1.000	215434	2.22		6.7	M
413.00 > 169.00	1.806	1.806	0.0	1.000	137785		1.56(0.00-0.00)	84.3	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		3101706	28.7		4261	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.056	2.056	0.0	1.000	447097	4.37		76.0	a
499.00 > 99.00	2.056	2.056	0.0	1.000	73002		6.12(0.00-0.00)	18.5	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	562258	10.6		3585	

QC Flag Legend

Review Flags

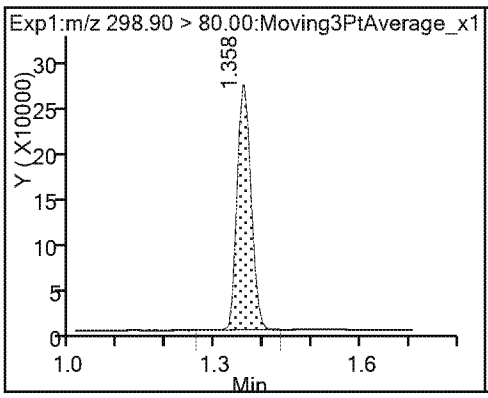
M - Manually Integrated

a - User Assigned ID

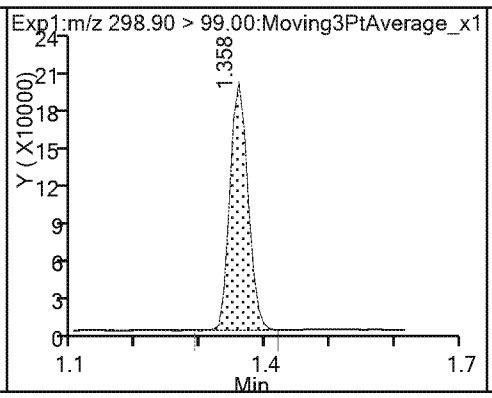
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_053.d				
Injection Date:	27-Feb-2018 14:49:35	Instrument ID:	A8_N		
Lims ID:	320-36235-A-8-A	Lab Sample ID:	320-36235-8		
Client ID:	C0AJ1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	39	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

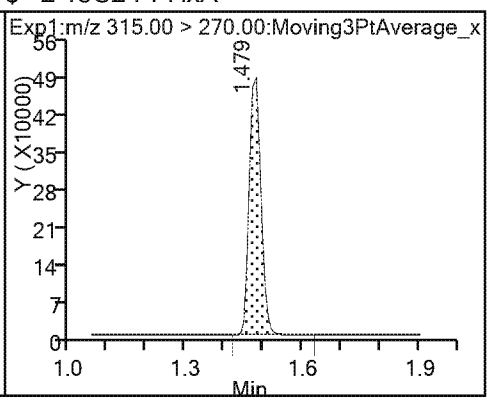
1 Perfluorobutanesulfonic acid



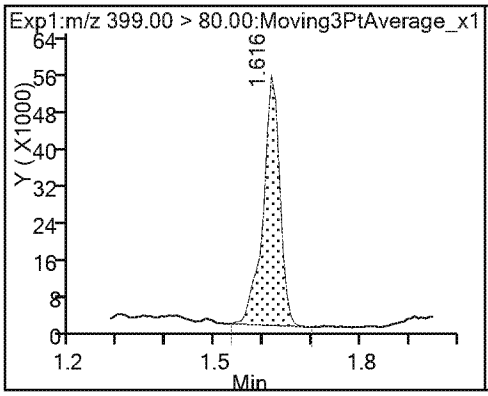
1 Perfluorobutanesulfonic acid



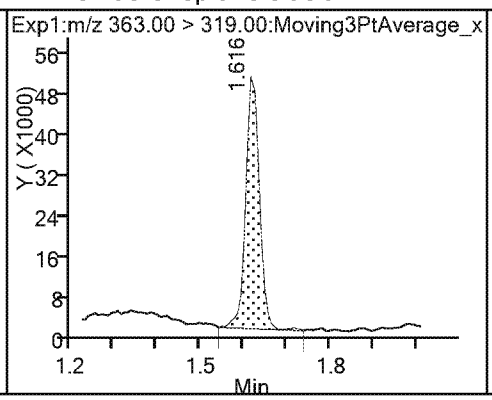
$ 2 13C2 PFHxA



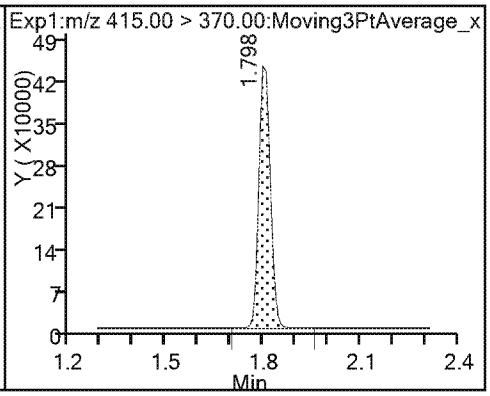
3 Perfluorohexanesulfonic acid



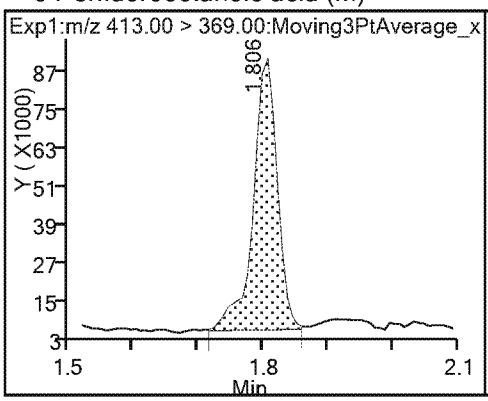
4 Perfluoroheptanoic acid



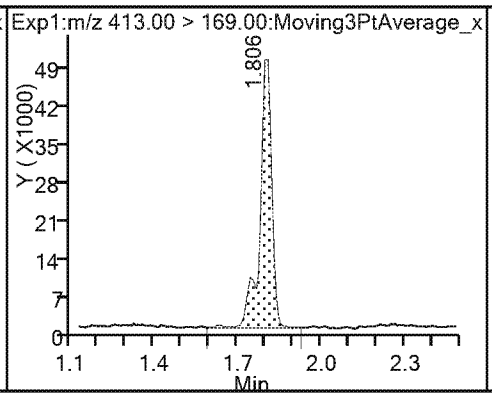
* 6 13C2-PFOA



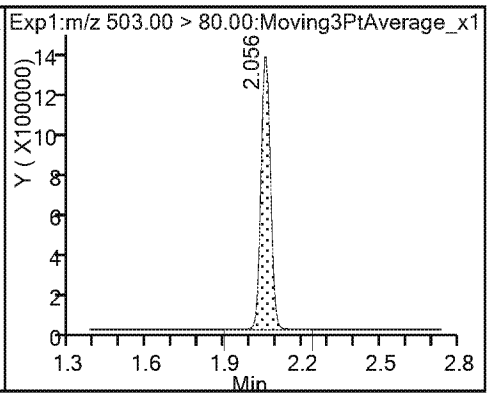
5 Perfluorooctanoic acid (M)



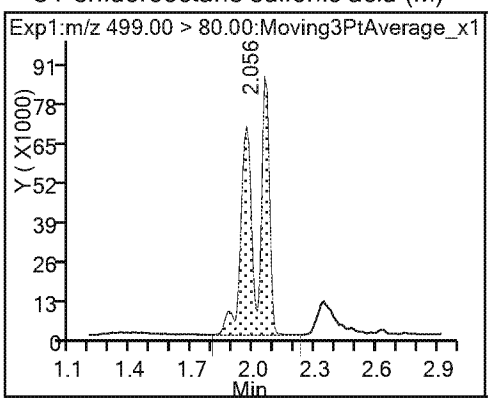
5 Perfluorooctanoic acid



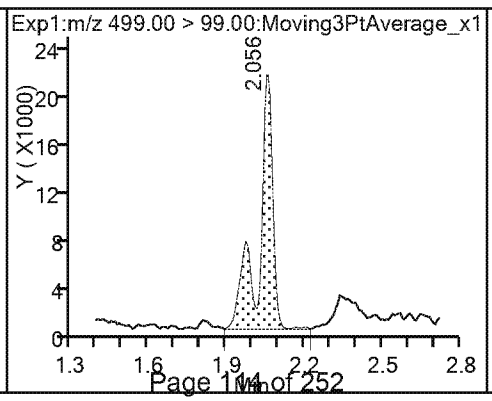
* 7 13C4 PFOS



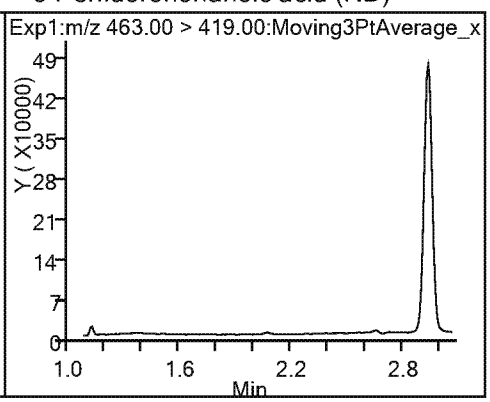
8 Perfluorooctane sulfonic acid (M)



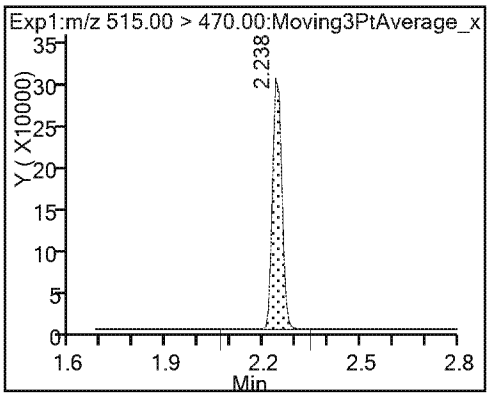
8 Perfluorooctane sulfonic acid



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

TestAmerica Sacramento

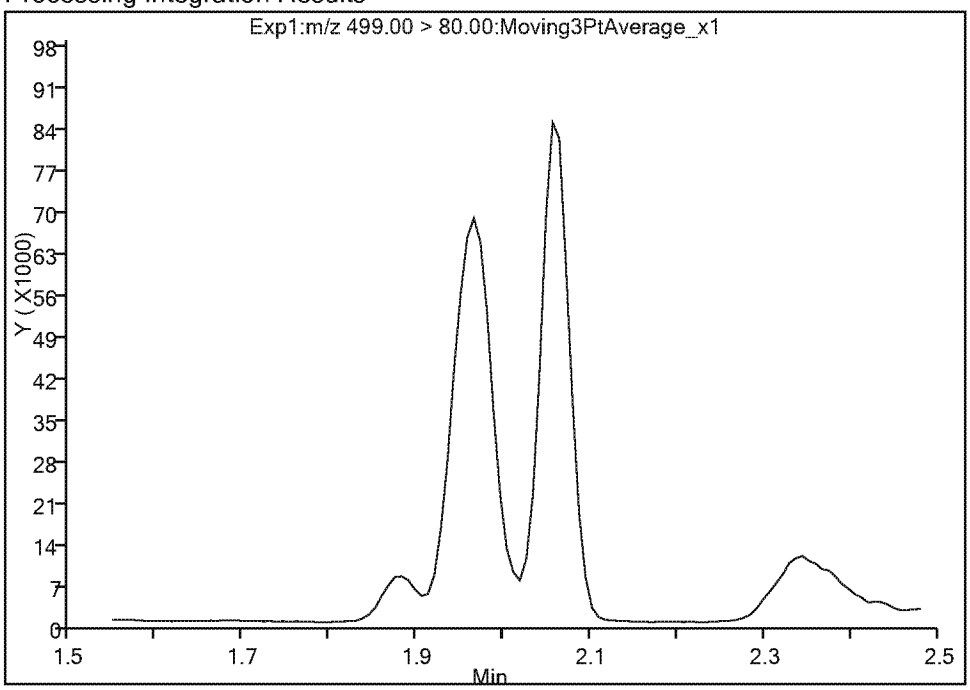
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_053.d				
Injection Date:	27-Feb-2018 14:49:35	Instrument ID:	A8_N		
Lims ID:	320-36235-A-8-A	Lab Sample ID:	320-36235-8		
Client ID:	C0AJ1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	39	Worklist Smp#:	16
Injection Vol:	2.0 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

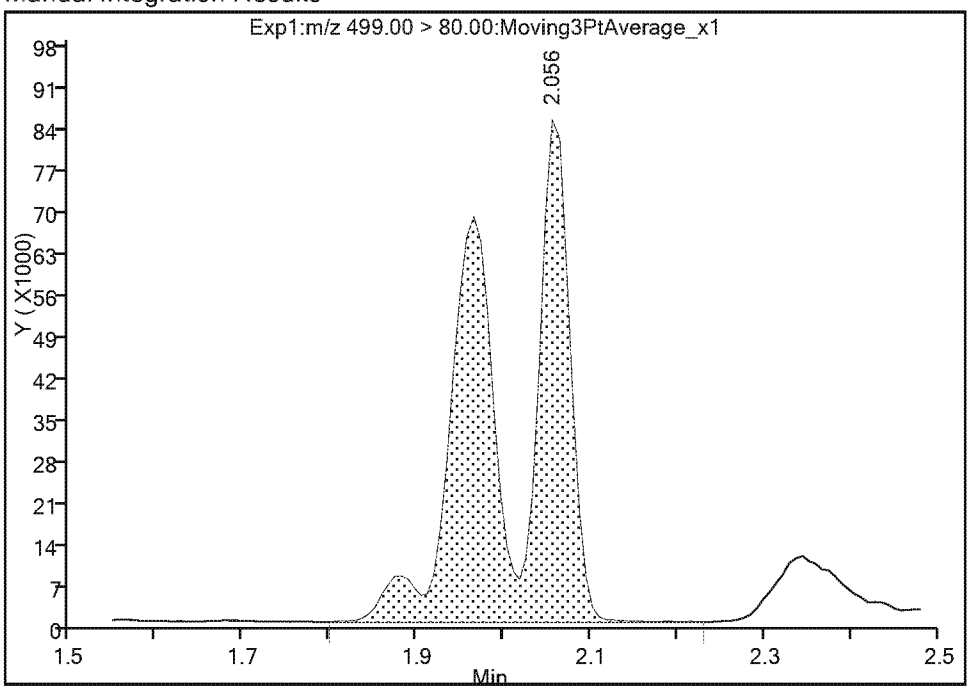
Not Detected
Expected RT: 2.06

Processing Integration Results



Manual Integration Results

RT: 2.06
Area: 447097
Amount: 4.372217
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 15:10:42
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

TestAmerica Sacramento

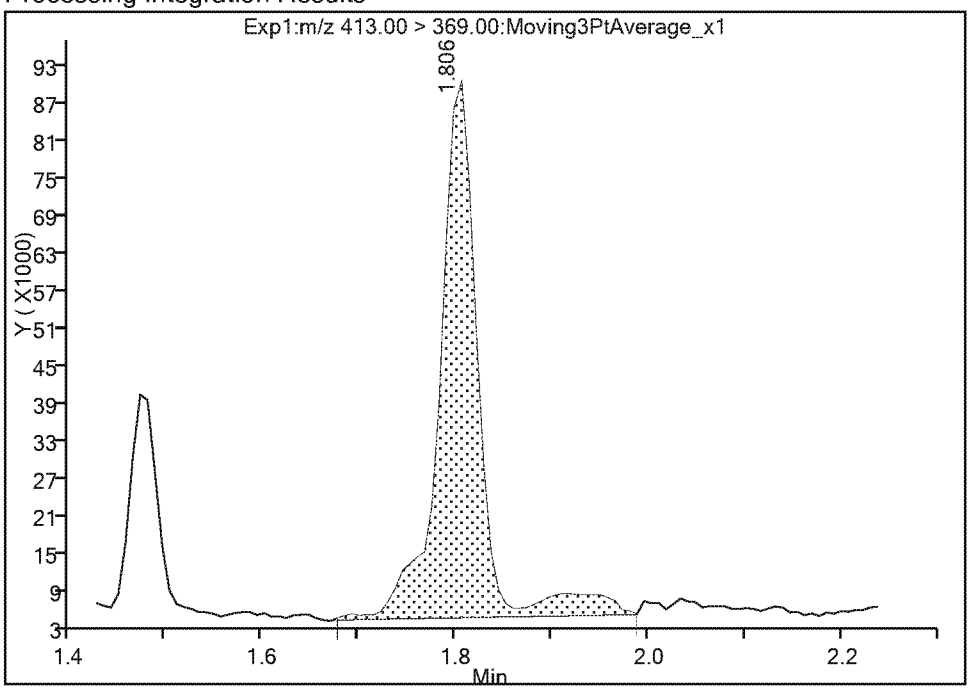
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_053.d				
Injection Date:	27-Feb-2018 14:49:35	Instrument ID:	A8_N		
Lims ID:	320-36235-A-8-A	Lab Sample ID:	320-36235-8		
Client ID:	C0AJ1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	39	Worklist Smp#:	16
Injection Vol:	2.0 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

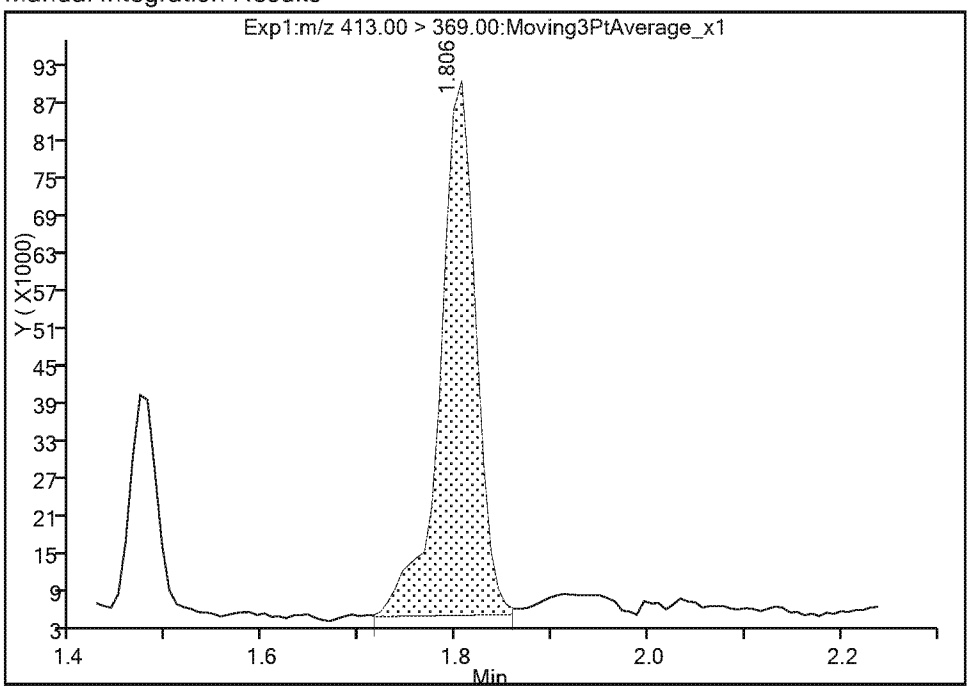
Processing Integration Results

RT: 1.81
Area: 238573
Amount: 2.460560
Amount Units: ng/ml



Manual Integration Results

RT: 1.81
Area: 215434
Amount: 2.221912
Amount Units: ng/ml



Reviewer: Ex. 4 CBI, 27-Feb-2018 15:11:12
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AJ2
Lab Sample ID: 320-36235-9
Matrix: Water
Lab File ID: 2018.02.27_537B_054.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 12:35
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 285.3(mL)
Date Analyzed: 02/27/2018 14:54
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.: 210263
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	180		35	6.0
335-67-1	Perfluorooctanoic acid	16	J	18	2.5
375-95-1	Perfluorononanoic acid	ND		18	7.0
355-46-4	Perfluorohexanesulfonic acid	7.9	J	26	4.8
375-85-9	Perfluoroheptanoic acid	6.5	J	8.8	1.7
375-73-5	Perfluorobutanesulfonic acid	66	J	79	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	80		70-130
STL00996	13C2 PFDA	98		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_054.d
Lims ID: 320-36235-A-9-A
Client ID: C0AJ2
Sample Type: Client
Inject. Date: 27-Feb-2018 14:54:16 ALS Bottle#: 40 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-9-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 15:24:11 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: 27-Feb-2018 15:12:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.358	0.008	1.000	2341998	18.9		2179	
298.90 > 99.00	1.358	1.358	0.0	0.994	1716749		1.36(0.00-0.00)	3520	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	841452	8.00		13857	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.616	0.008	1.000	352562	2.26		111	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.616	0.008	1.000	172782	1.86		21.0	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		955700	10.0		8083	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	427882	4.65		13.4	
413.00 > 169.00	1.806	1.806	0.0	1.000	261142		1.64(0.00-0.00)	165	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2776897	28.7		1922	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	4729039	51.7		795	M
499.00 > 99.00	2.056	2.056	0.0	1.000	824384		5.74(0.00-0.00)	227	M
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	492220	9.82		3253	

QC Flag Legend

Review Flags

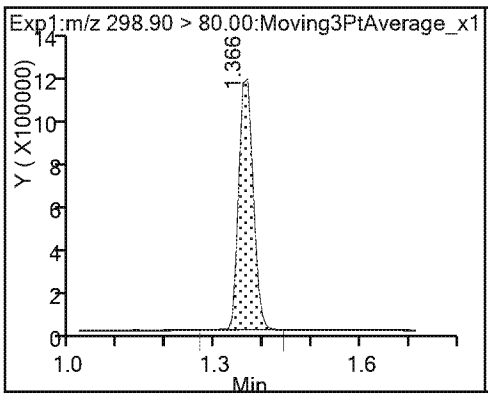
M - Manually Integrated

a - User Assigned ID

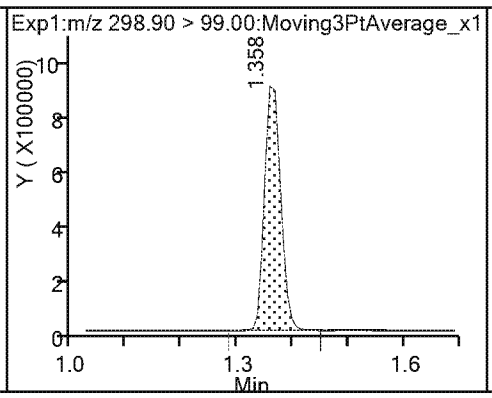
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_054.d				
Injection Date:	27-Feb-2018 14:54:16	Instrument ID:	A8_N		
Lims ID:	320-36235-A-9-A	Lab Sample ID:	320-36235-9		
Client ID:	C0AJ2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	40	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

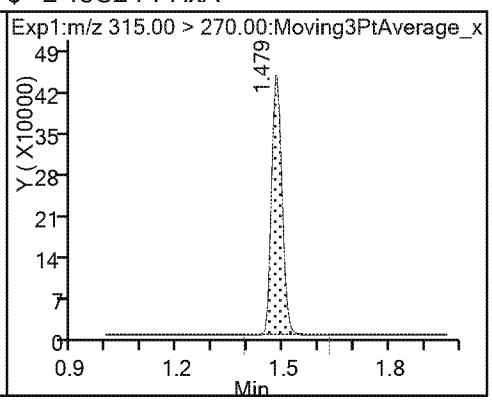
1 Perfluorobutanesulfonic acid



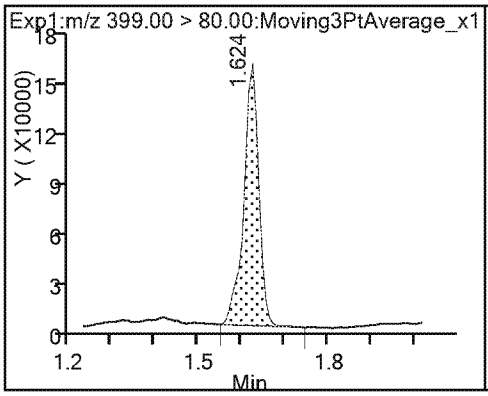
1 Perfluorobutanesulfonic acid



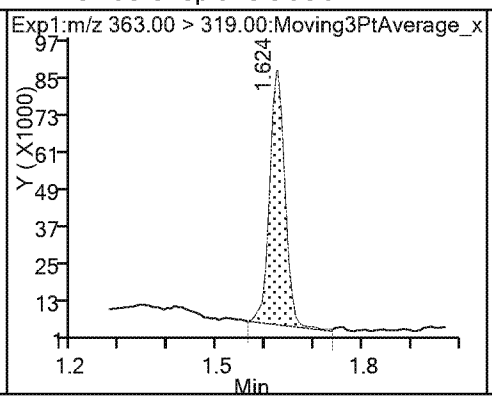
$ 2 13C2 PFHxA



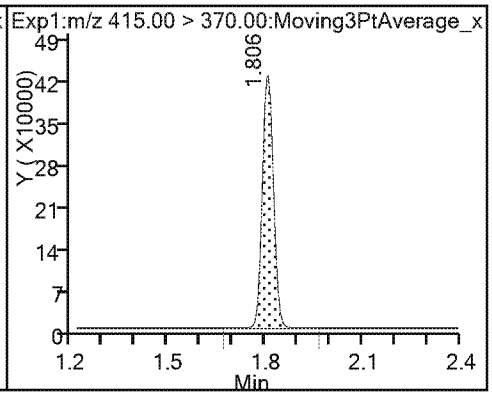
3 Perfluorohexanesulfonic acid



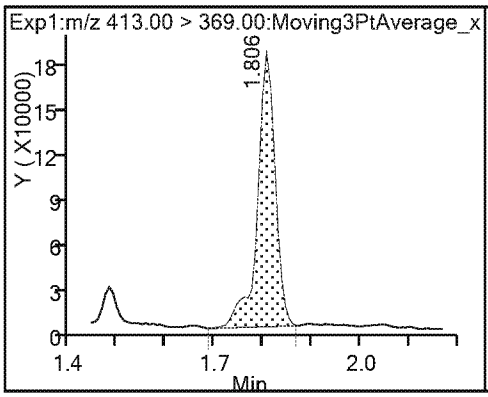
4 Perfluoroheptanoic acid



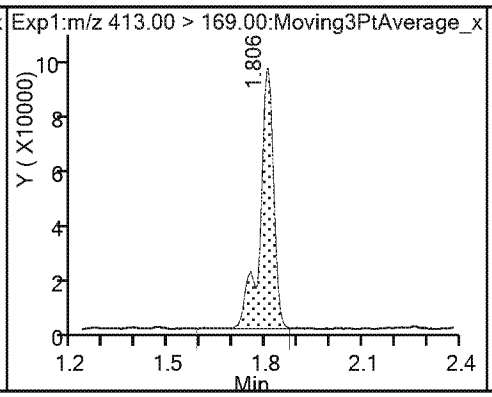
* 6 13C2-PFOA



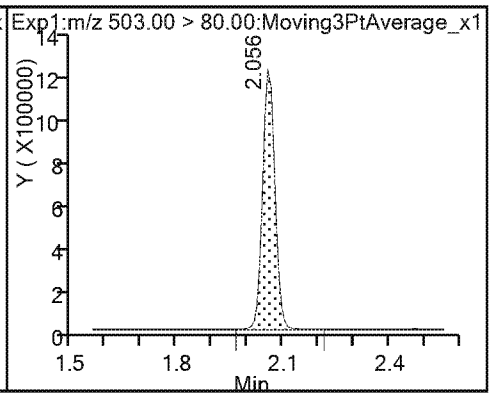
5 Perfluorooctanoic acid



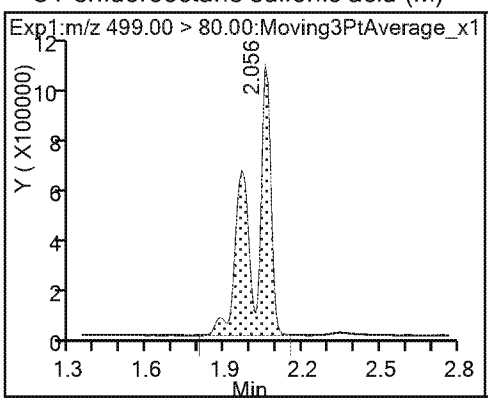
5 Perfluorooctanoic acid



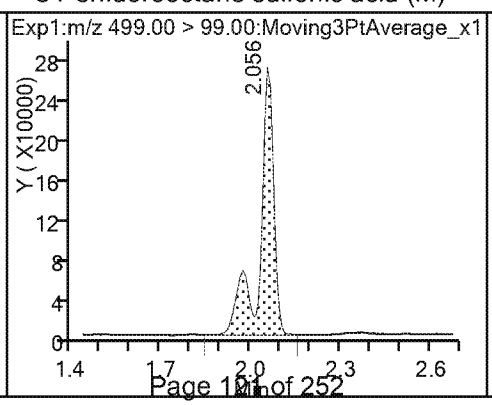
* 7 13C4 PFOS



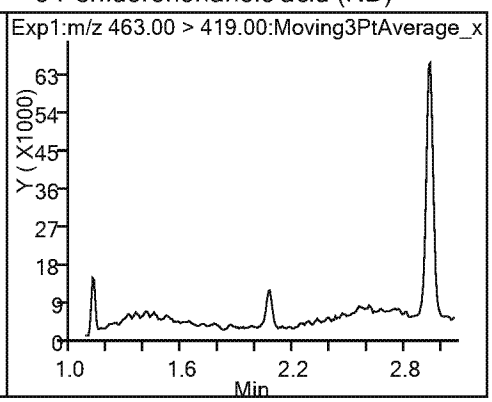
8 Perfluorooctane sulfonic acid (M)



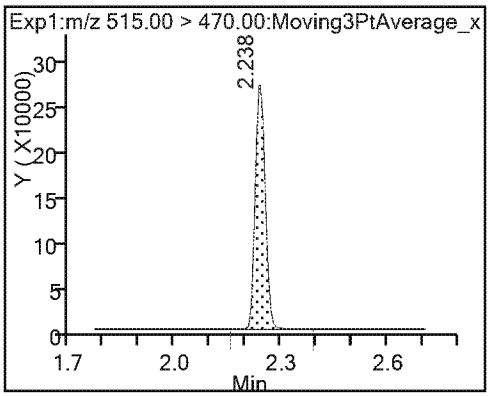
8 Perfluorooctane sulfonic acid (M)



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

TestAmerica Sacramento

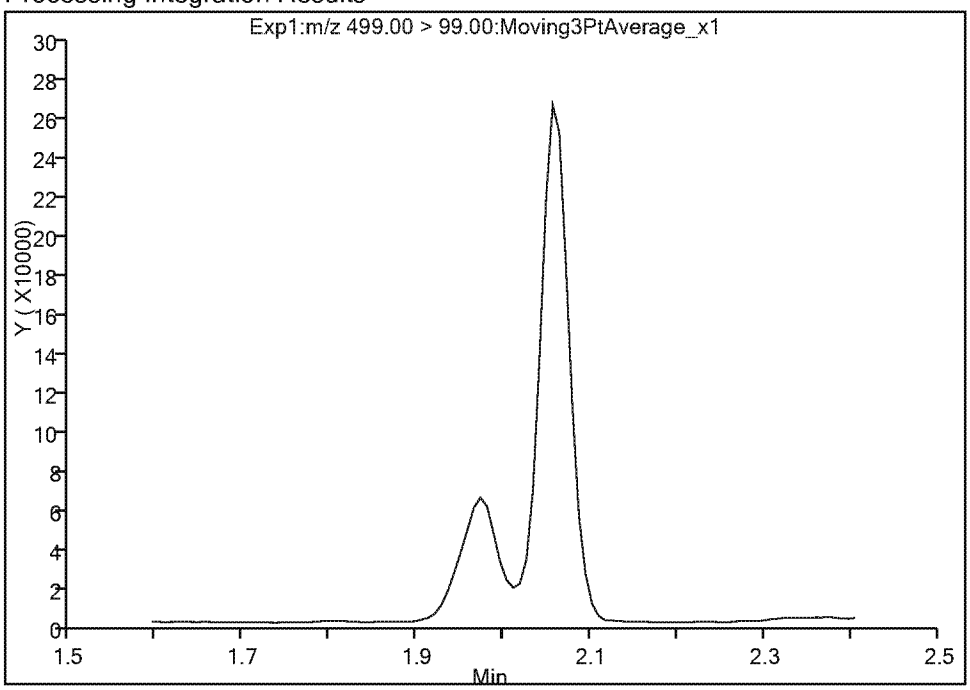
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_054.d				
Injection Date:	27-Feb-2018 14:54:16	Instrument ID:	A8_N		
Lims ID:	320-36235-A-9-A	Lab Sample ID:	320-36235-9		
Client ID:	C0AJ2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	40	Worklist Smp#:	17
Injection Vol:	2.0 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: 2

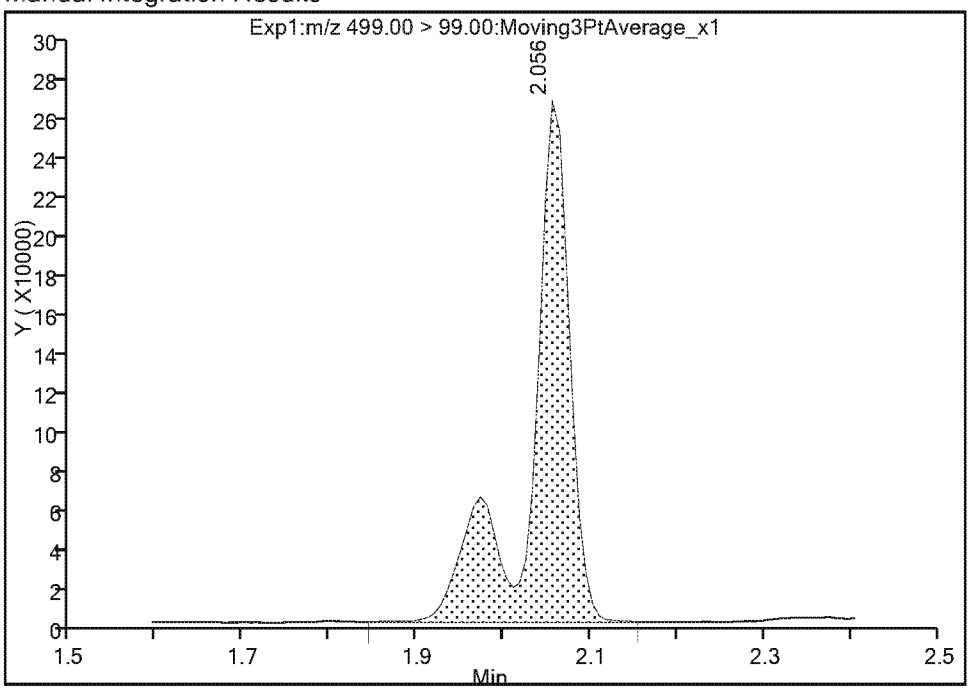
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 824384
Amount: 51.655155
Amount Units: ng/ml



Reviewer: Ex. 4 CBI, 27-Feb-2018 15:12:00
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Sacramento

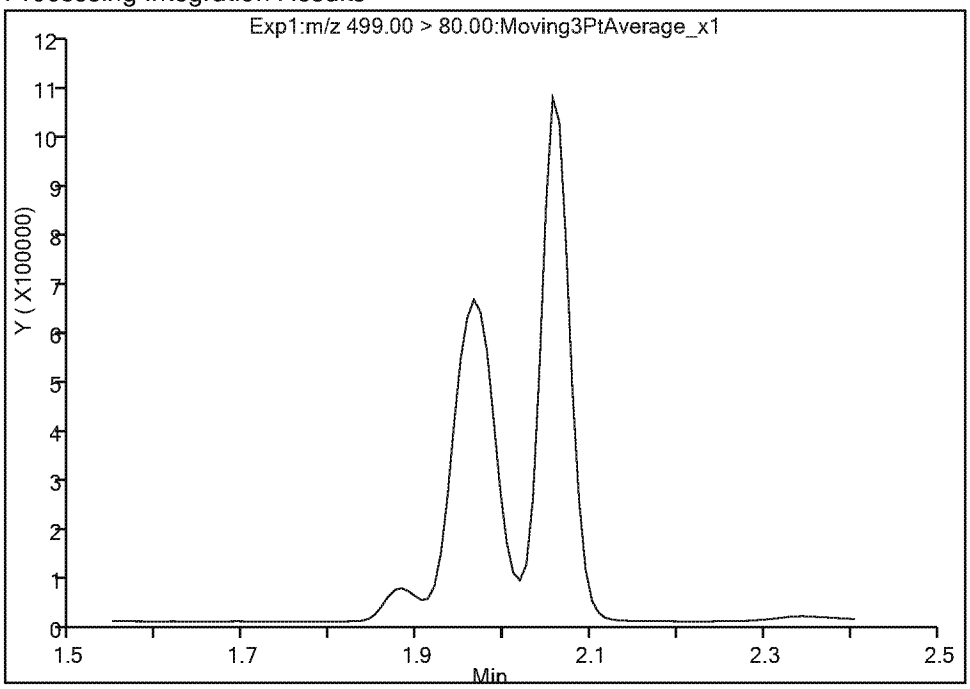
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_054.d				
Injection Date:	27-Feb-2018 14:54:16	Instrument ID:	A8_N		
Lims ID:	320-36235-A-9-A	Lab Sample ID:	320-36235-9		
Client ID:	C0AJ2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	40	Worklist Smp#:	17
Injection Vol:	2.0 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

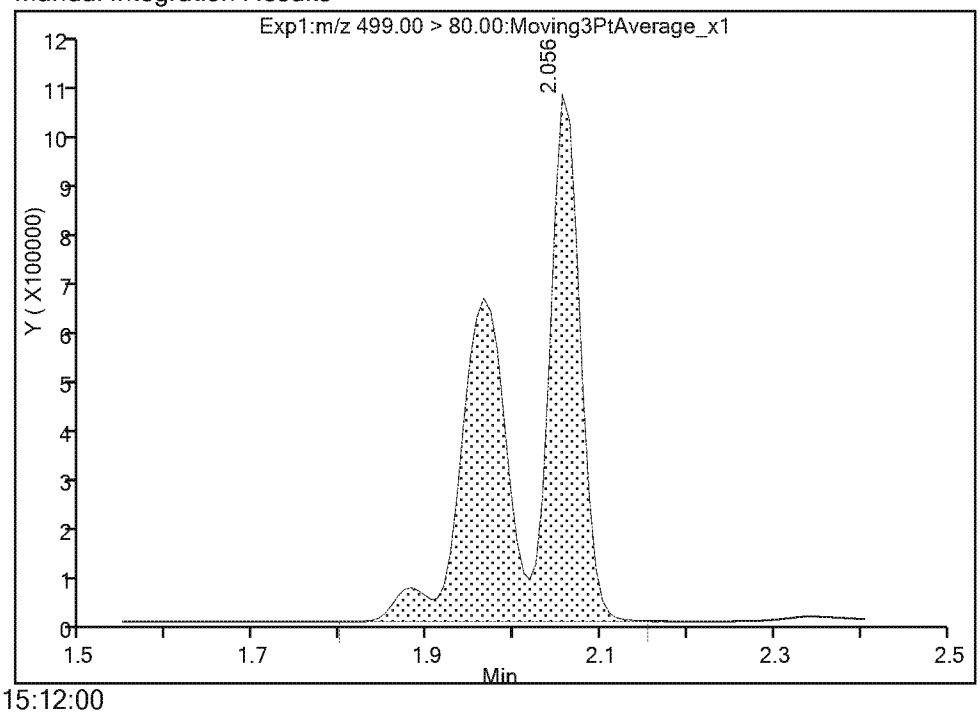
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 4729039
Amount: 51.655155
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 15:12:00
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AJ3
Lab Sample ID: 320-36235-10
Matrix: Water
Lab File ID: 2018.02.27_537B_055.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 13:05
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 290(mL)
Date Analyzed: 02/27/2018 14:58
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.: 210263
Units: ng/L

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

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	90		70-130
STL00996	13C2 PFDA	106		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_055.d
Lims ID: 320-36235-A-10-A
Client ID: C0AJ3
Sample Type: Client
Inject. Date: 27-Feb-2018 14:58:56 ALS Bottle#: 41 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-10-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 15:24:11 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

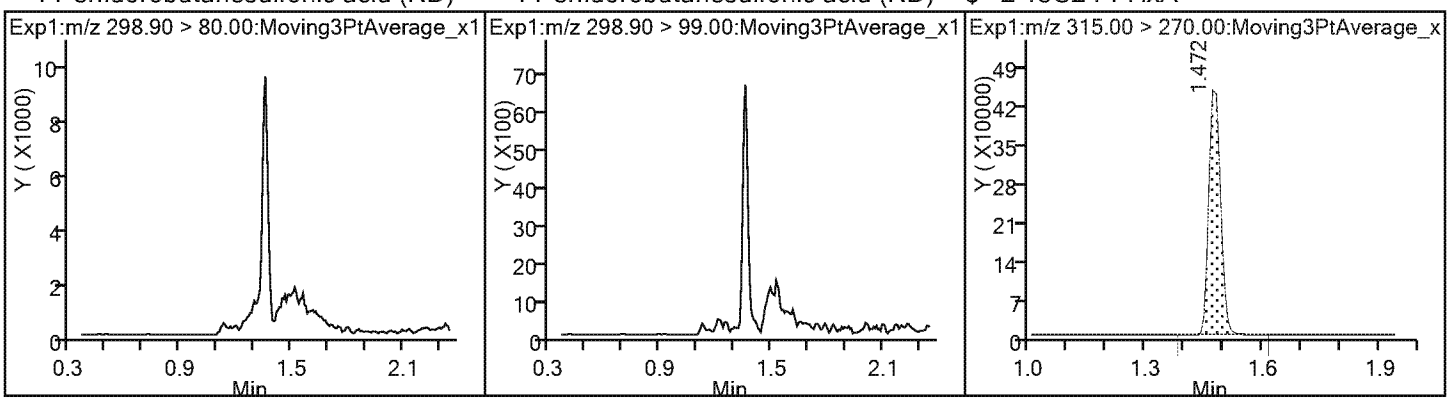
First Level Reviewer: Ex. 4 CBI Date: 27-Feb-2018 15:21:12

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	886864	9.00		10086	
* 6 13C2-PFOA									
415.00 > 370.00	1.798	1.806	-0.008		896172	10.0		9165	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.798	1.806	-0.008	1.000	47318	0.5488		1.4	
413.00 > 169.00	1.806	1.806	0.0	1.004	37399		1.27(0.00-0.00)	20.2	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2734265	28.7		3862	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	500064	10.6		2872	

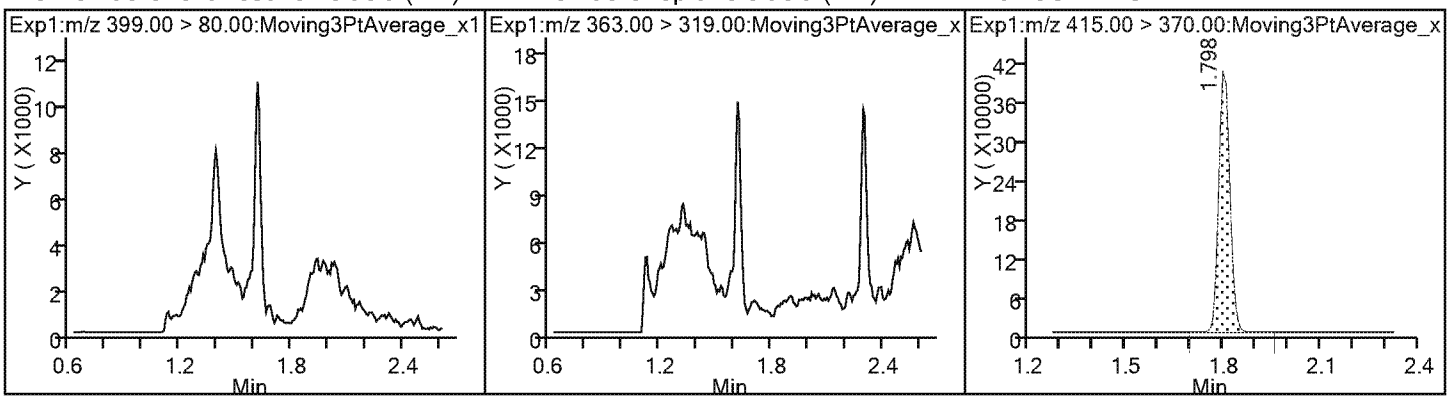
TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_055.d				
Injection Date:	27-Feb-2018 14:58:56	Instrument ID:	A8_N		
Lims ID:	320-36235-A-10-A	Lab Sample ID:	320-36235-10		
Client ID:	C0AJ3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	41	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		

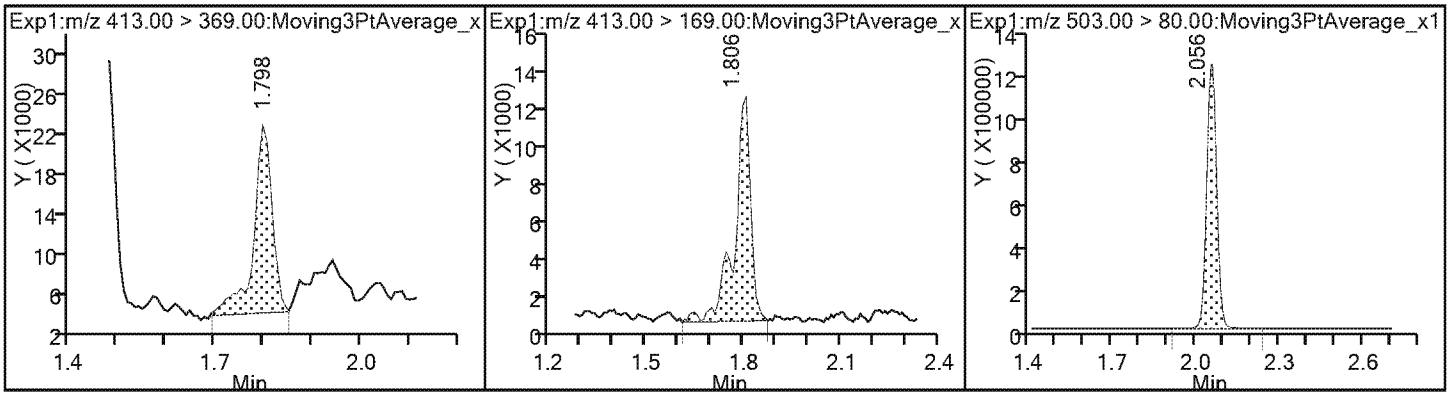
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



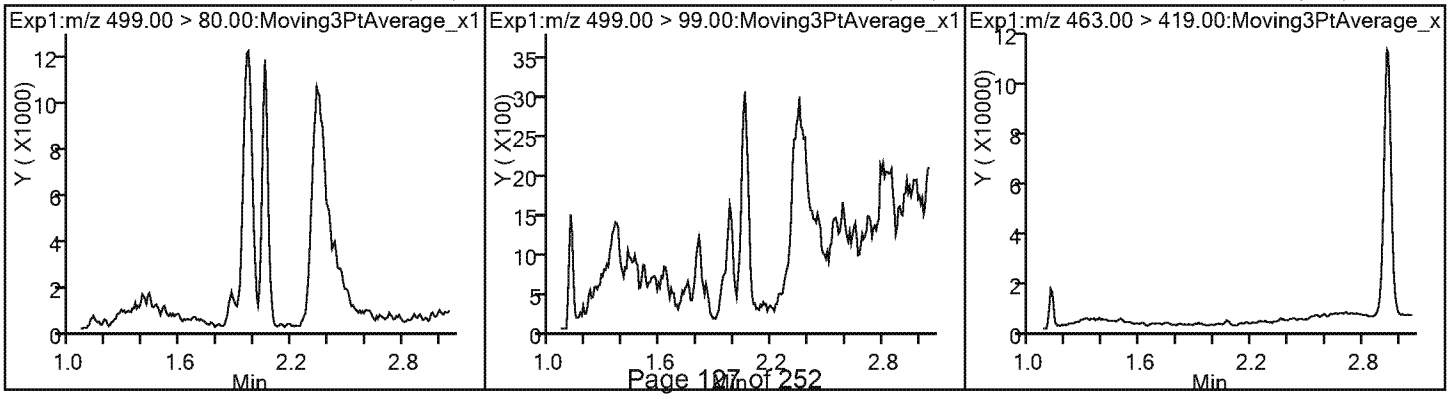
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



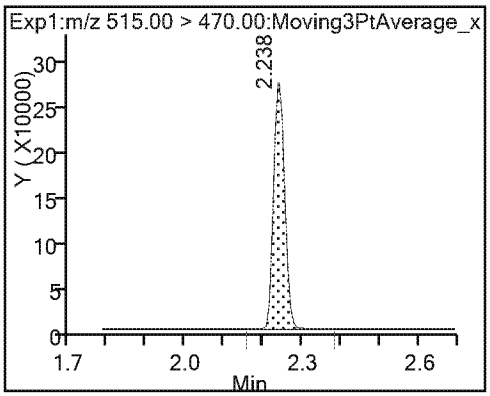
5 Perfluorooctanoic acid 5 Perfluorooctanoic acid * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 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 VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1 Analy Batch No.: 208773

SDG No.: DAS R35321, SDG C0AG8

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.: 320-36235-1 Analy Batch No.: 208773

SDG No.: DAS R35321, SDG C0AG8

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

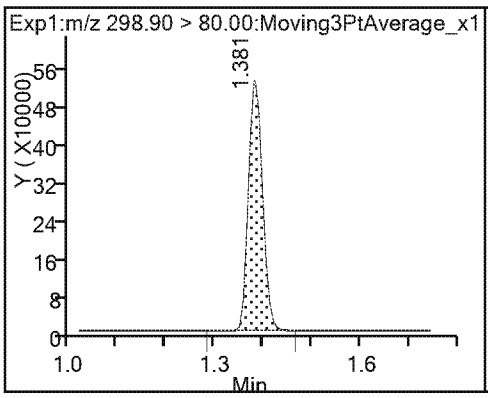
Reagents:

LC537-L1_00021 Amount Added: 1.00 Units: mL

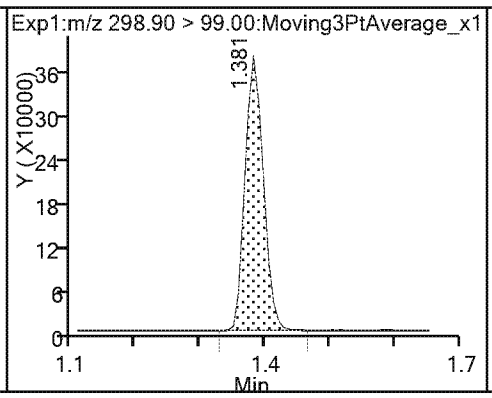
TestAmerica Sacramento

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

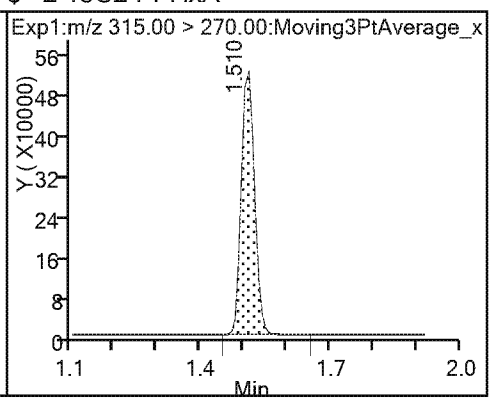
1 Perfluorobutanesulfonic acid



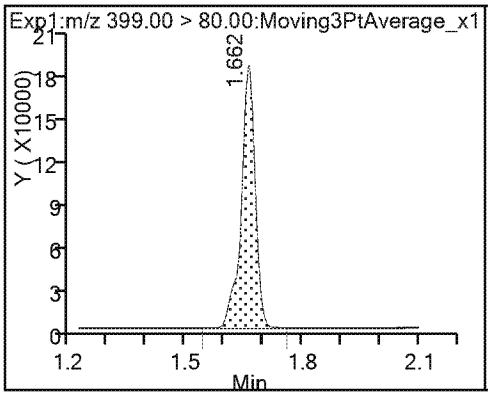
1 Perfluorobutanesulfonic acid



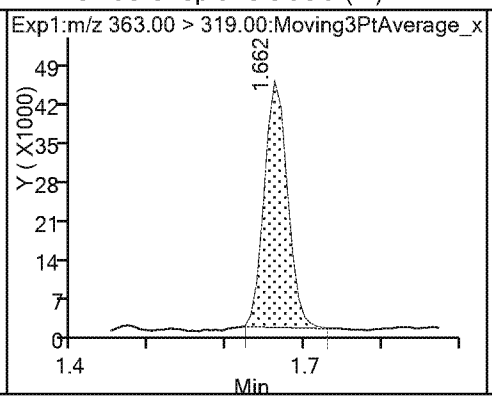
$ 2 13C2 PFHxA



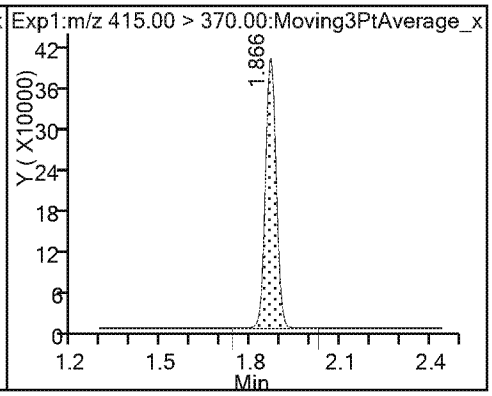
3 Perfluorohexanesulfonic acid



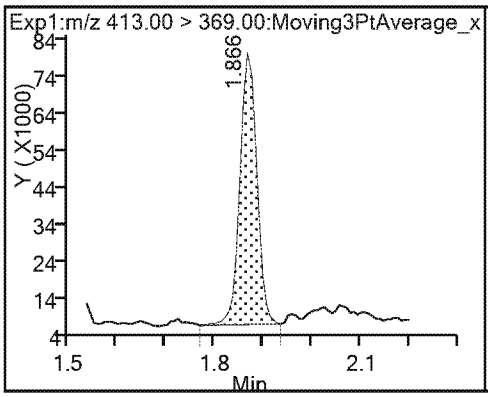
4 Perfluoroheptanoic acid (M)



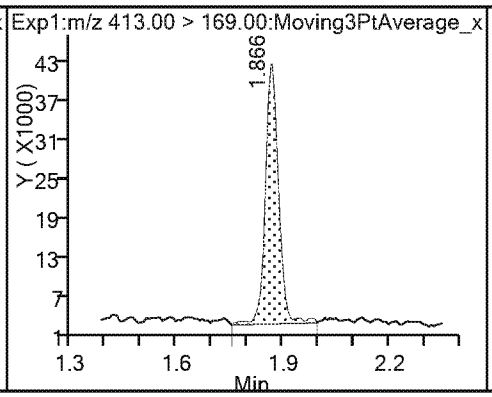
* 6 13C2-PFOA



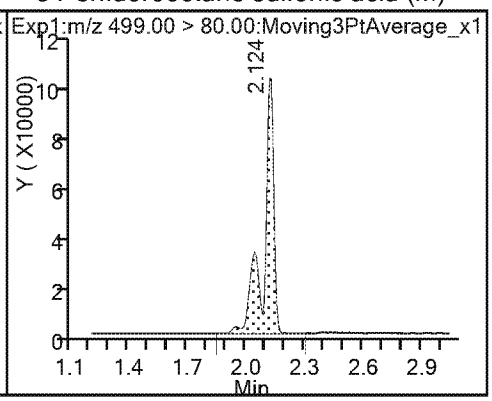
5 Perfluorooctanoic acid



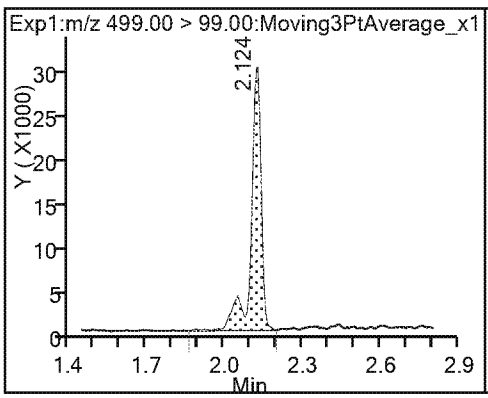
5 Perfluorooctanoic acid



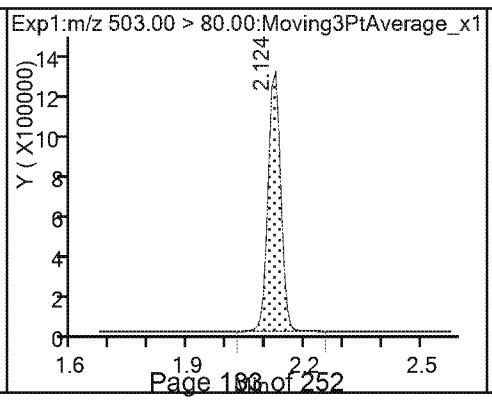
8 Perfluorooctane sulfonic acid (M)



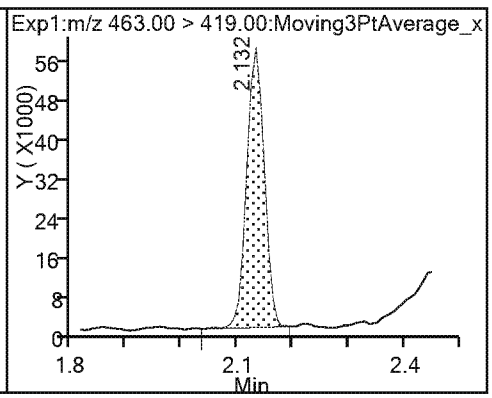
8 Perfluorooctane sulfonic acid



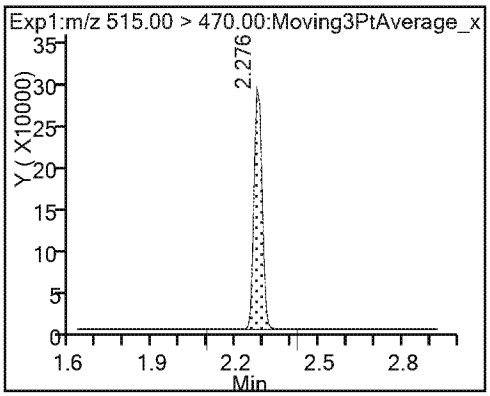
* 7 13C4 PFOS



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

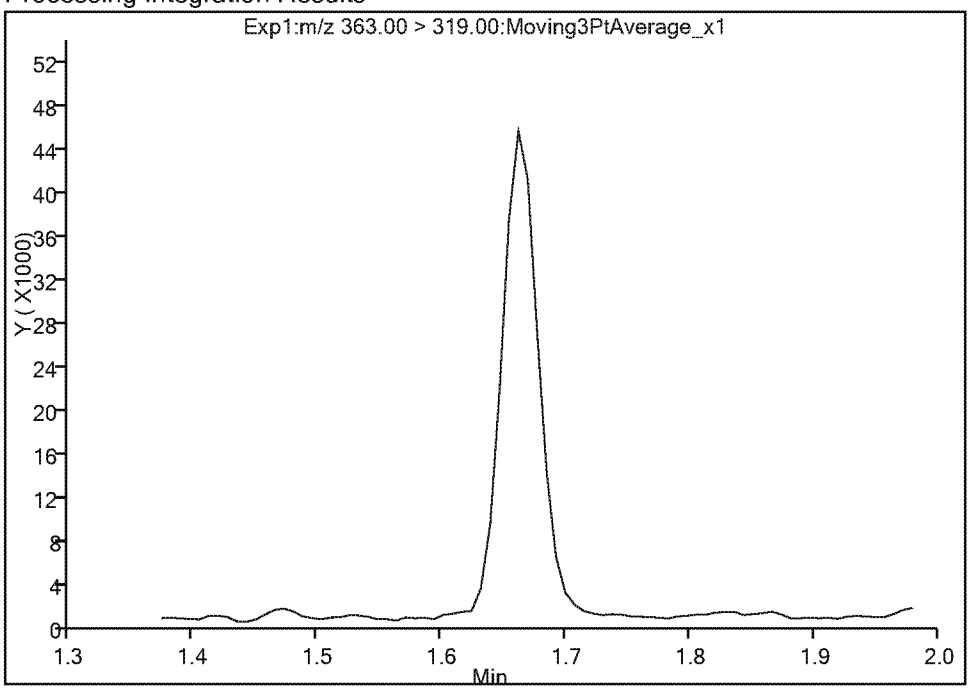
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_004.d				
Injection Date:	16-Feb-2018 08:55:33	Instrument ID:	A8_N		
Lims ID:	IC L1				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

4 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

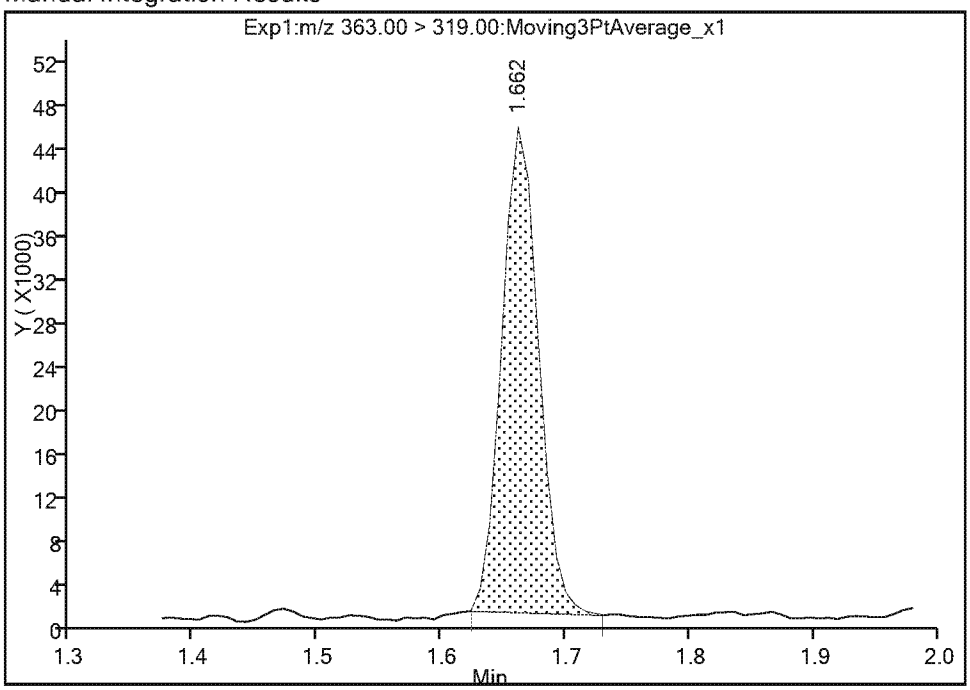
Processing Integration Results

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

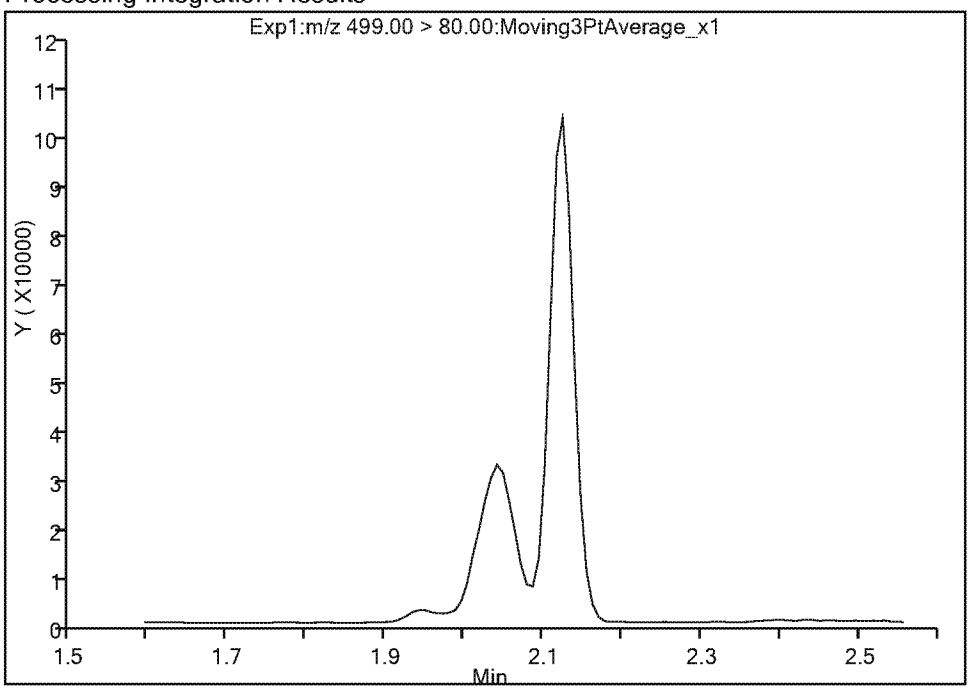
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_004.d				
Injection Date:	16-Feb-2018 08:55:33	Instrument ID:	A8_N		
Lims ID:	IC L1				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

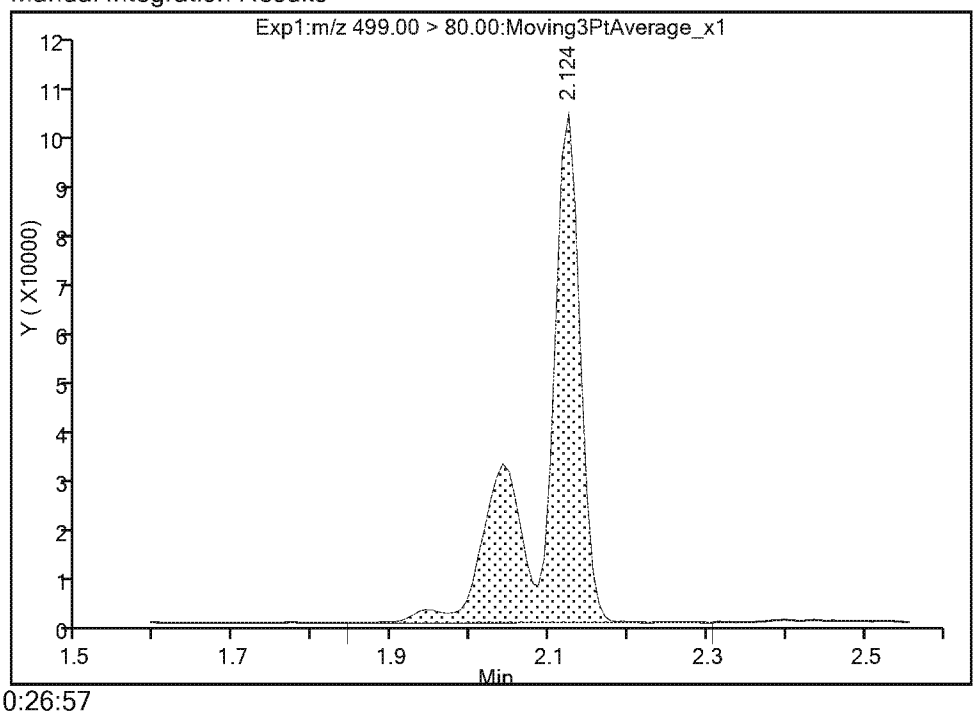
Processing Integration Results

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

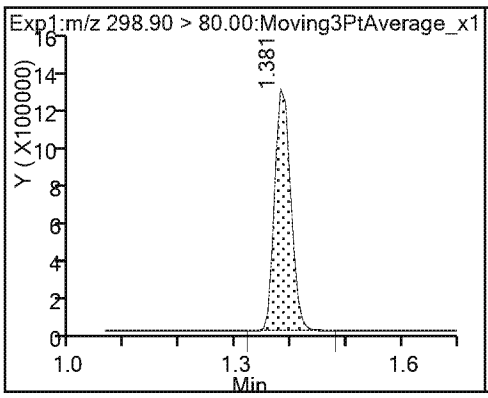
Reagents:

LC537-L2_00021 Amount Added: 1.00 Units: mL

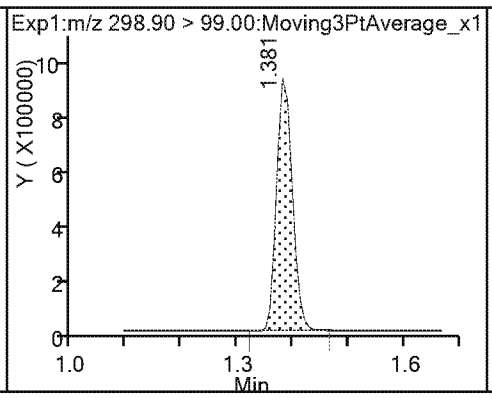
TestAmerica Sacramento

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

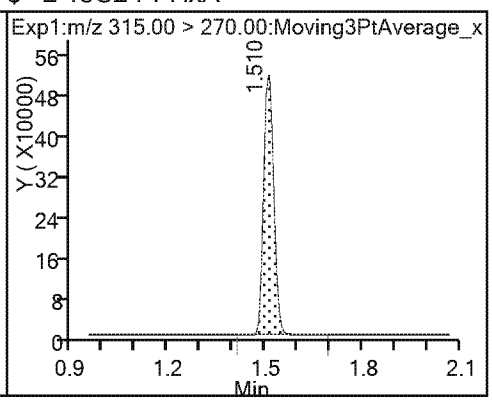
1 Perfluorobutanesulfonic acid



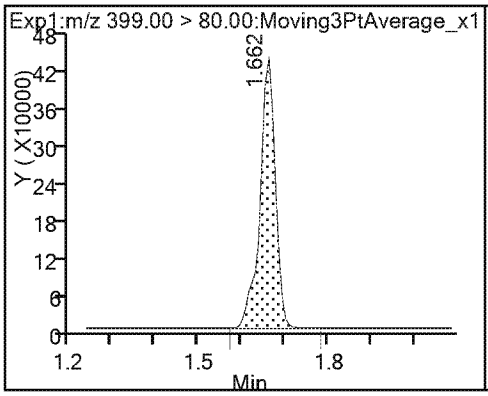
1 Perfluorobutanesulfonic acid



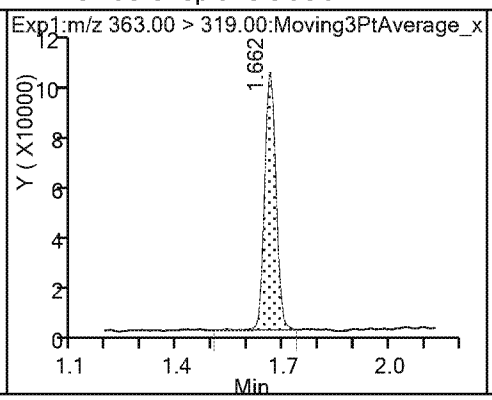
$ 2 13C2 PFHxA



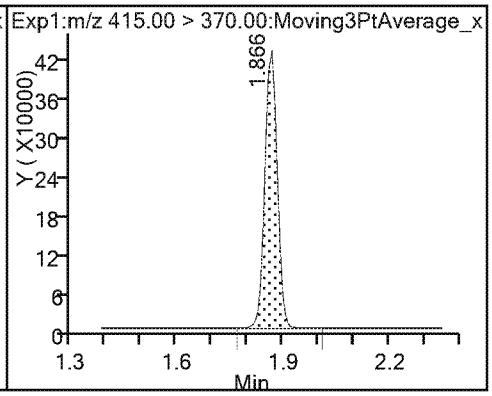
3 Perfluorohexanesulfonic acid



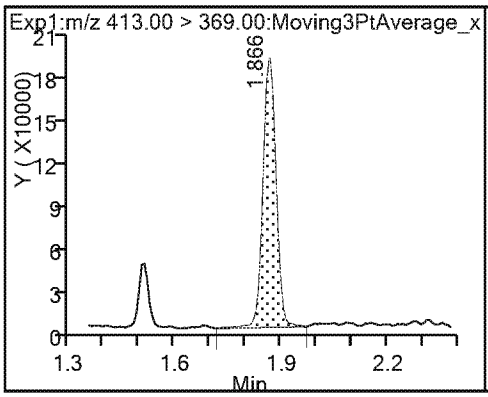
4 Perfluoroheptanoic acid



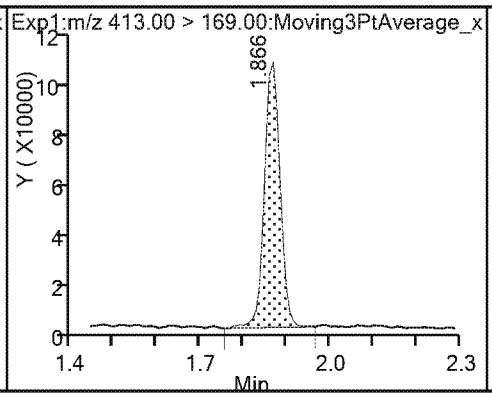
* 6 13C2-PFOA



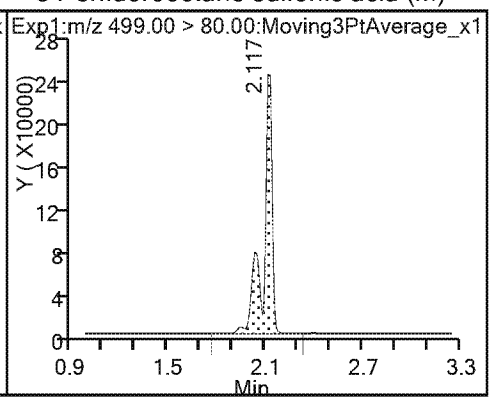
5 Perfluorooctanoic acid



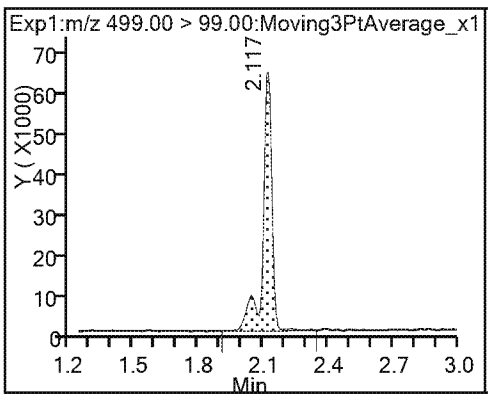
5 Perfluorooctanoic acid



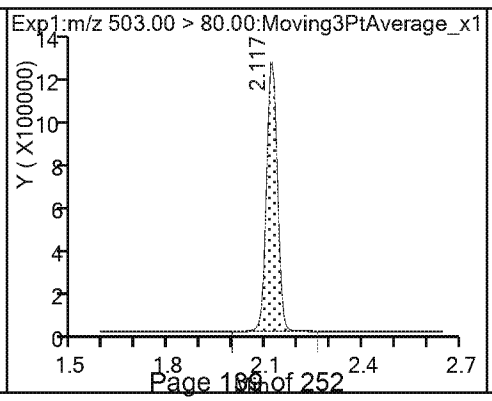
8 Perfluorooctane sulfonic acid (M)



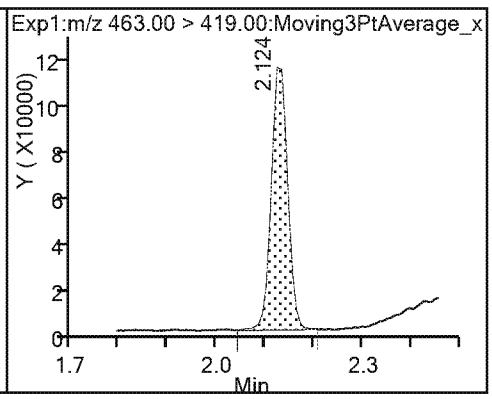
8 Perfluorooctane sulfonic acid



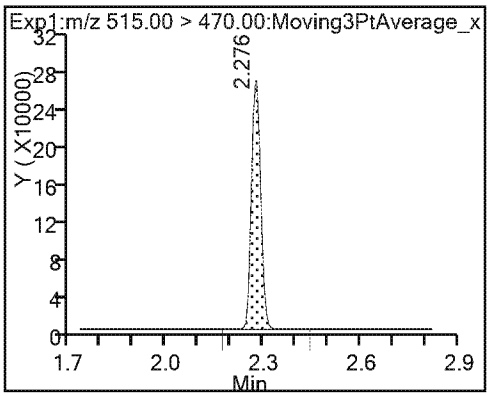
* 7 13C4 PFOS



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

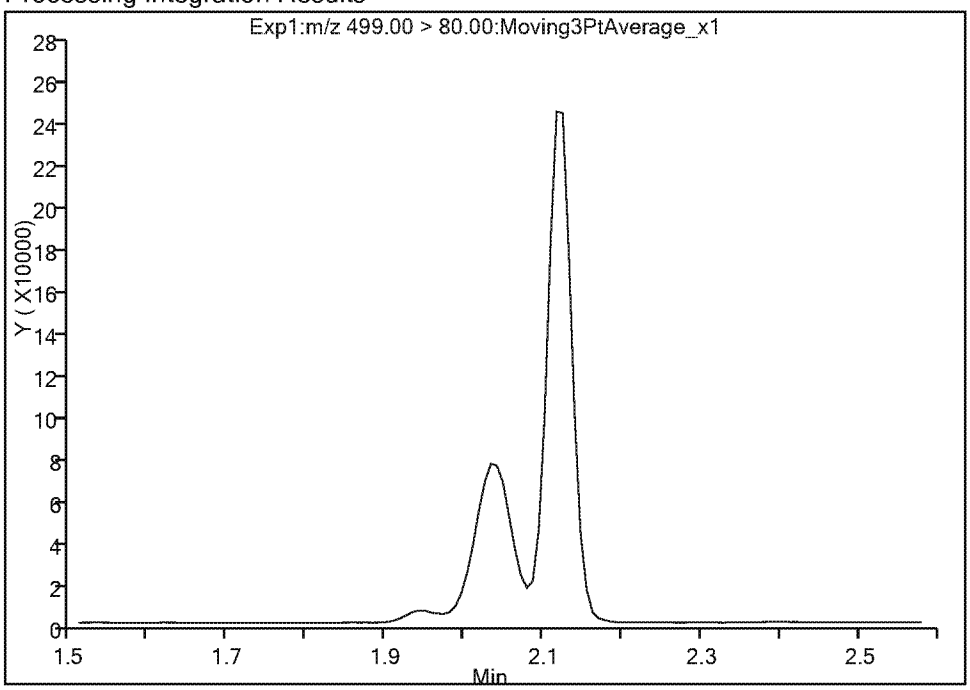
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_005.d				
Injection Date:	16-Feb-2018 09:00:16	Instrument ID:	A8_N		
Lims ID:	IC L2				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

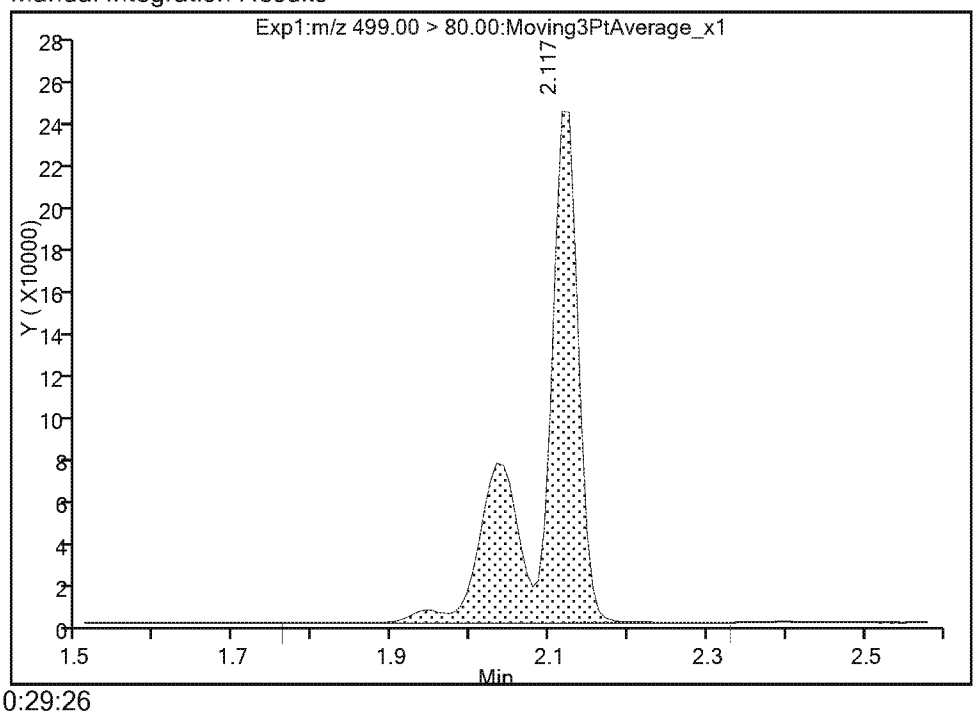
Processing Integration Results

Not Detected
Expected RT: 2.11



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

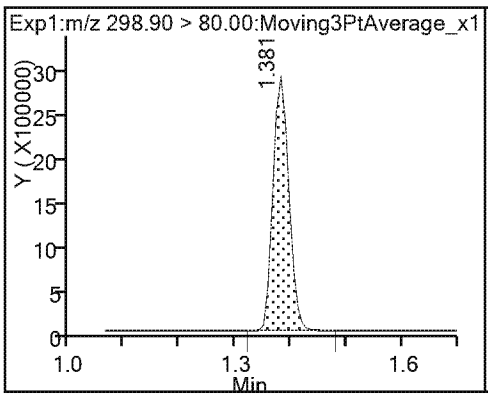
Reagents:

LC537-L3_00024 Amount Added: 1.00 Units: mL

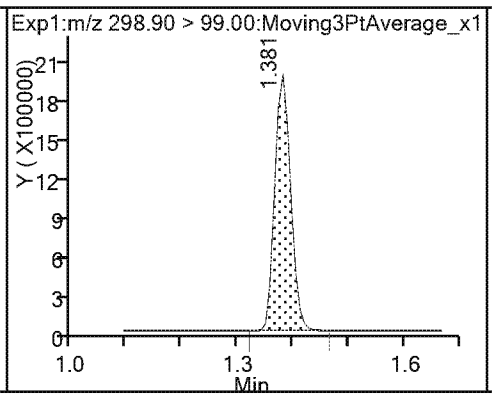
TestAmerica Sacramento

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

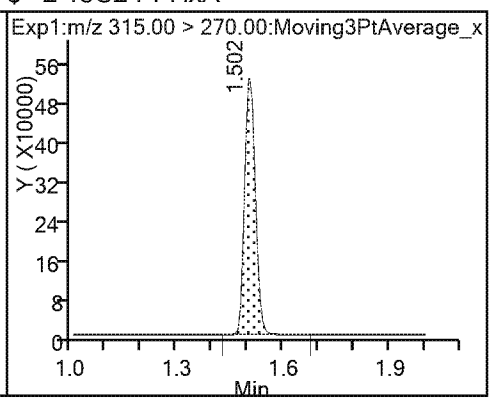
1 Perfluorobutanesulfonic acid



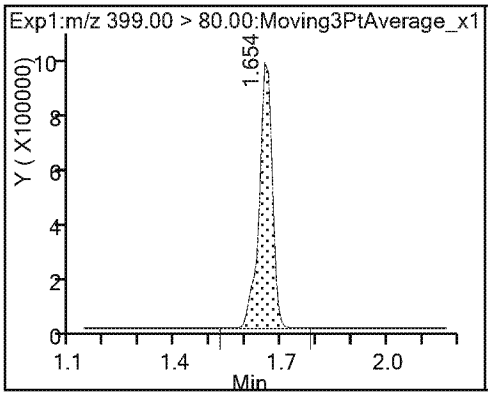
1 Perfluorobutanesulfonic acid



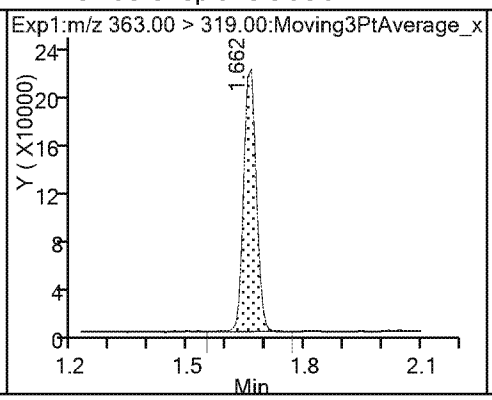
$ 2 13C2 PFHxA



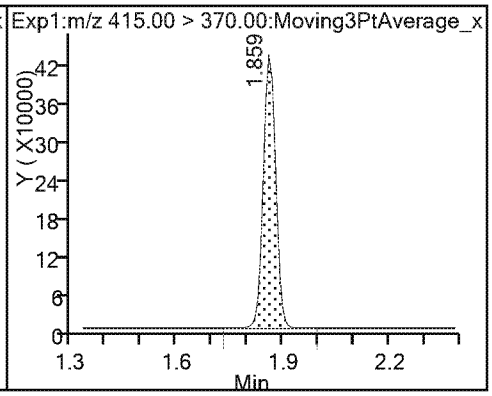
3 Perfluorohexanesulfonic acid



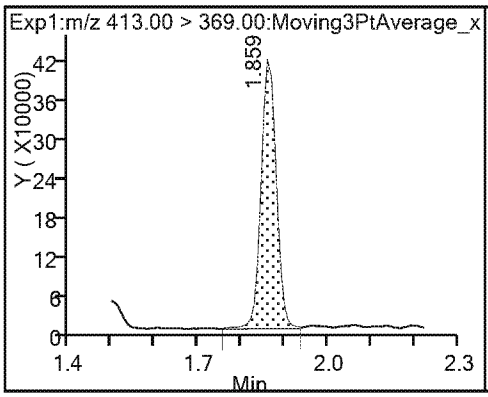
4 Perfluoroheptanoic acid



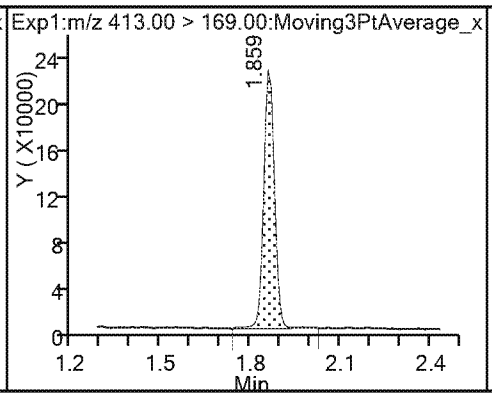
* 6 13C2-PFOA



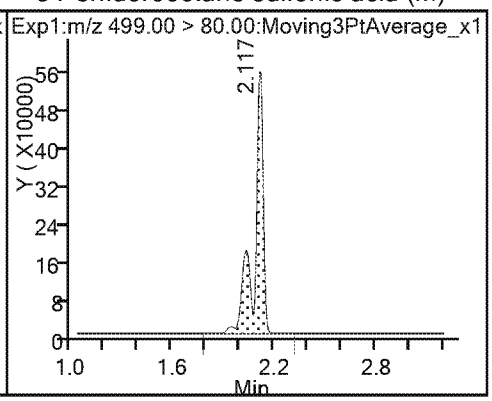
5 Perfluorooctanoic acid



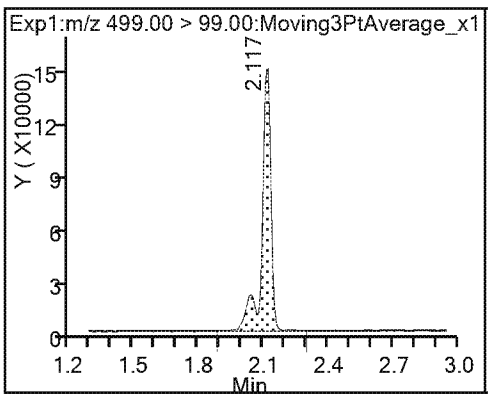
5 Perfluorooctanoic acid



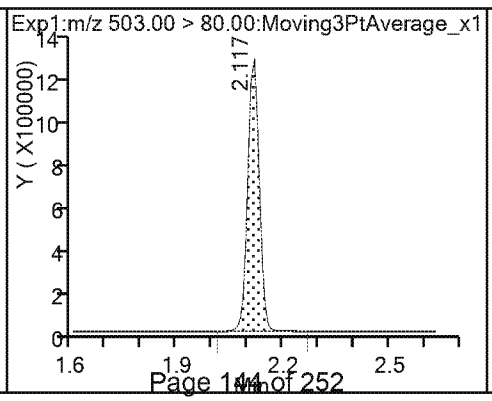
8 Perfluorooctane sulfonic acid (M)



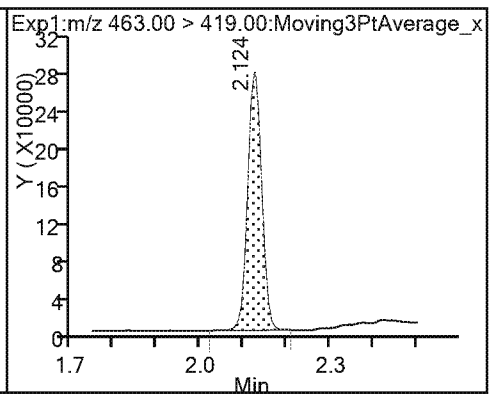
8 Perfluorooctane sulfonic acid



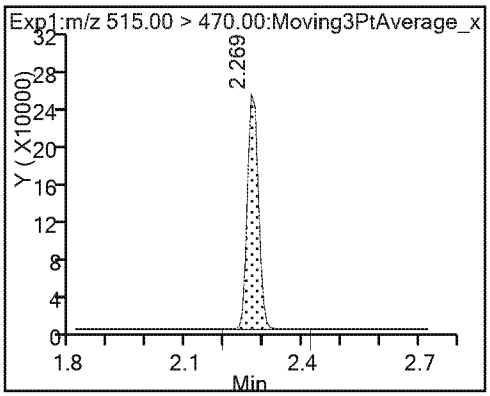
* 7 13C4 PFOS



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

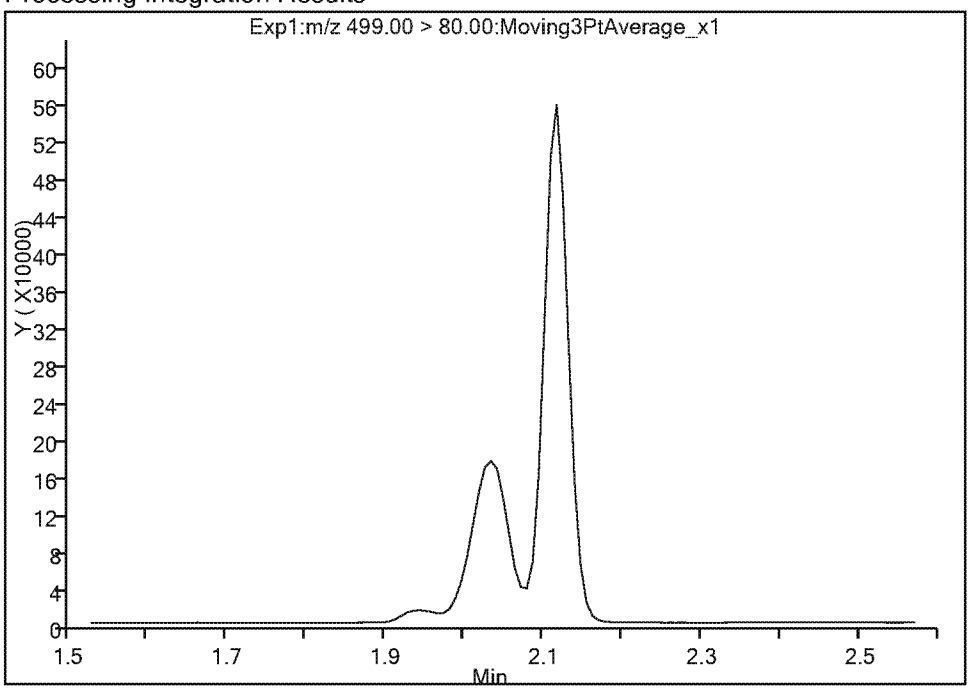
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_006.d				
Injection Date:	16-Feb-2018 09:05:01	Instrument ID:	A8_N		
Lims ID:	IC L3				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

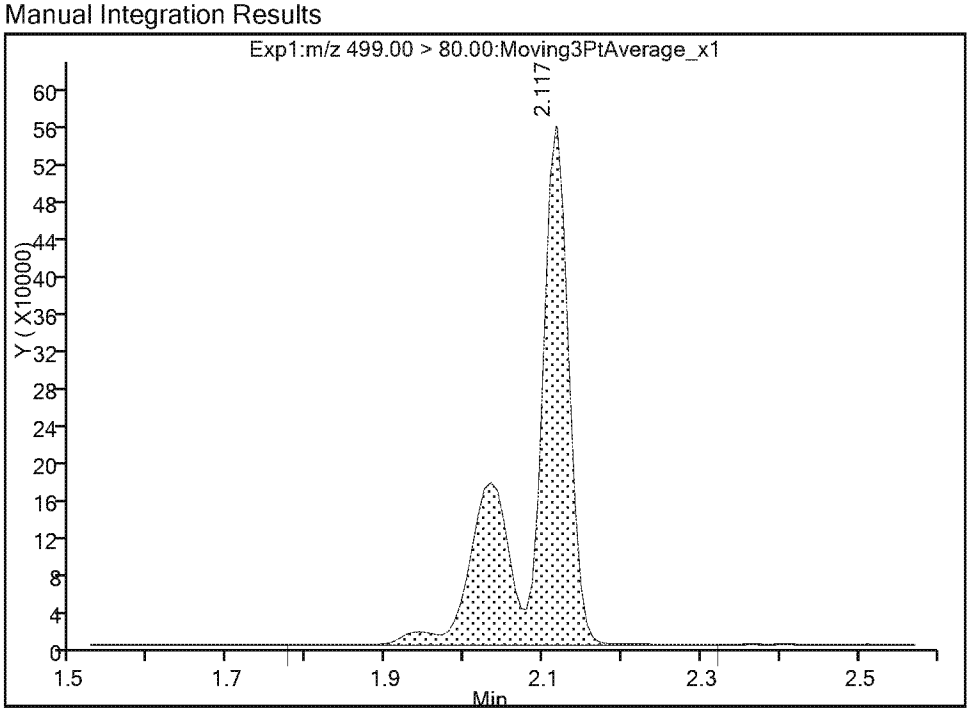
Processing Integration Results

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

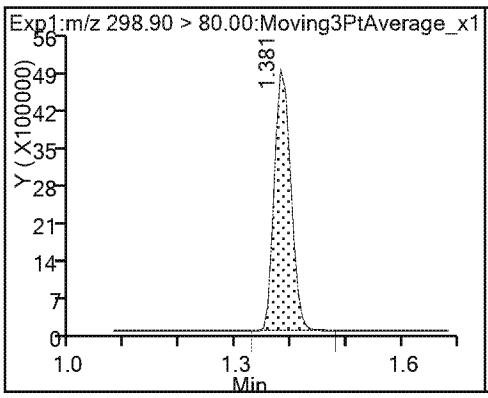
Reagents:

LC537-L4_00021 Amount Added: 1.00 Units: mL

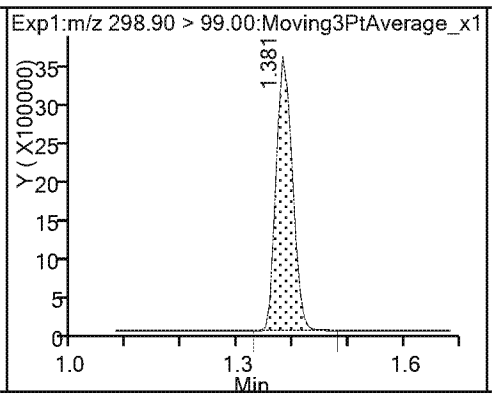
TestAmerica Sacramento

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

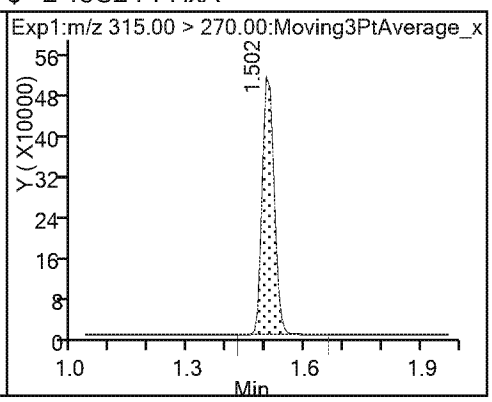
1 Perfluorobutanesulfonic acid



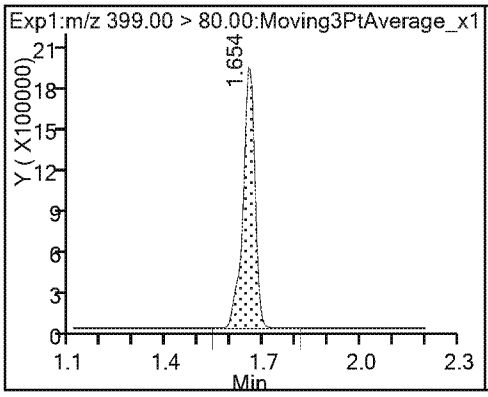
1 Perfluorobutanesulfonic acid



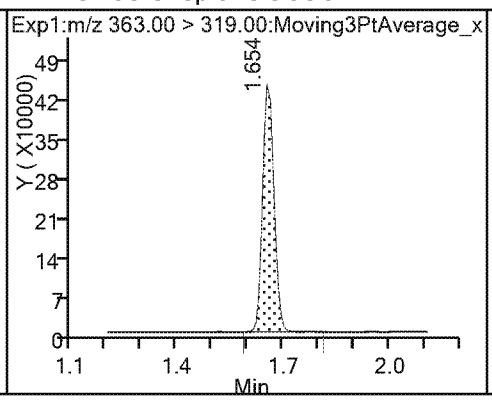
$ 2 13C2 PFHxA



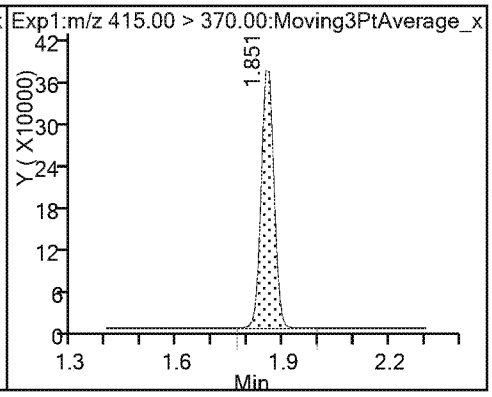
3 Perfluorohexanesulfonic acid



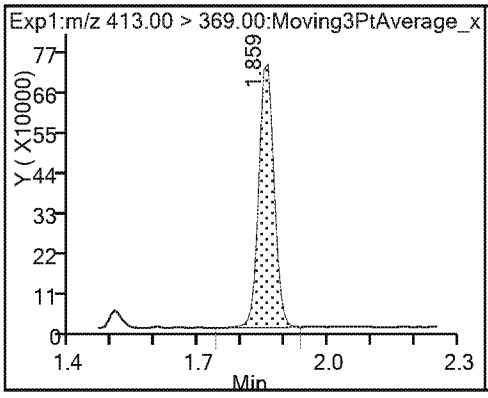
4 Perfluoroheptanoic acid



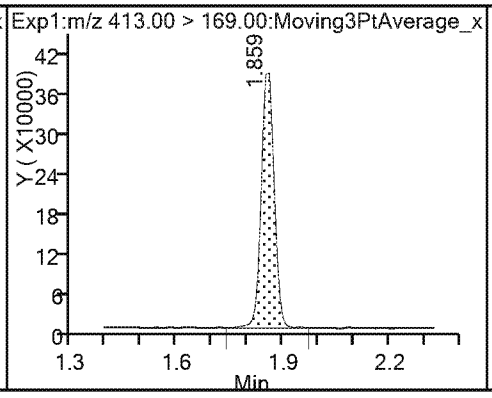
* 6 13C2-PFOA



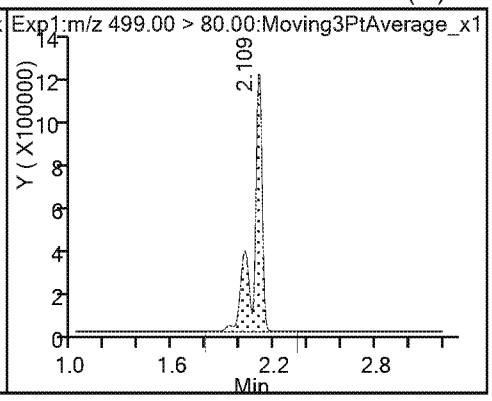
5 Perfluorooctanoic acid



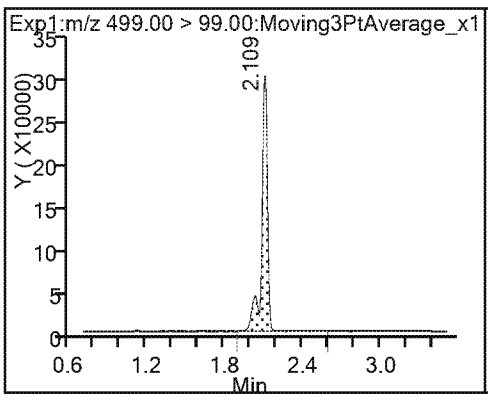
5 Perfluorooctanoic acid



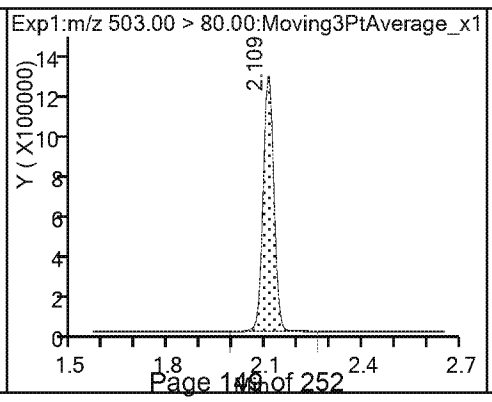
8 Perfluorooctane sulfonic acid (M)



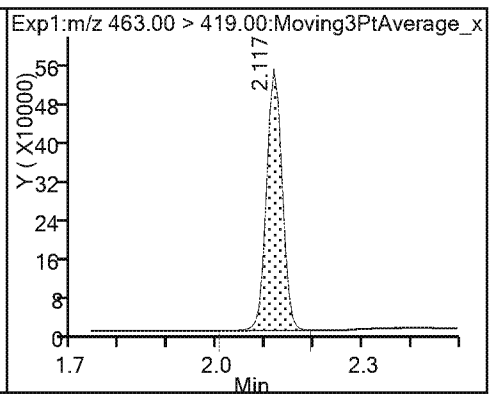
8 Perfluorooctane sulfonic acid



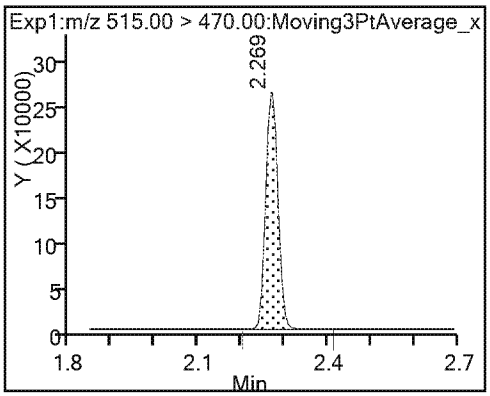
* 7 13C4 PFOS



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

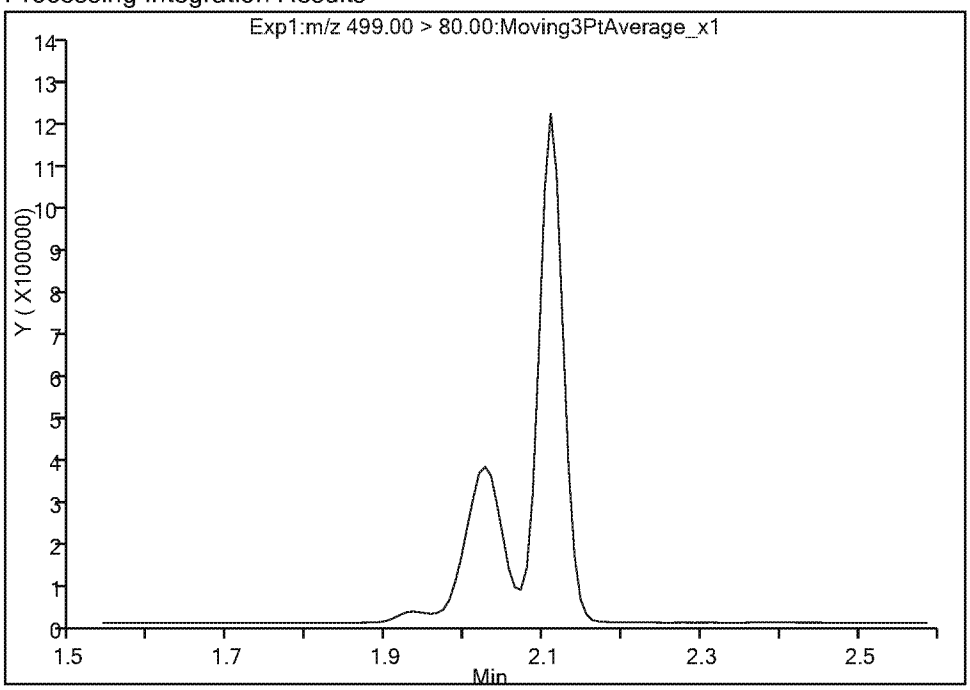
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_007.d				
Injection Date:	16-Feb-2018 09:09:42	Instrument ID:	A8_N		
Lims ID:	IC L4				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

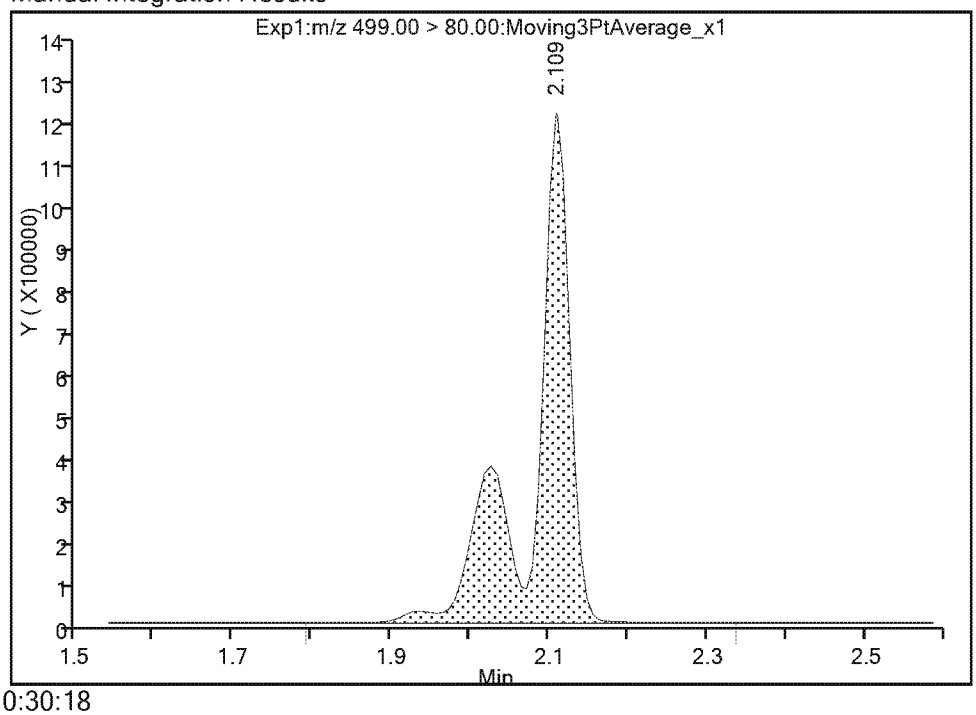
Not Detected
Expected RT: 2.11

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

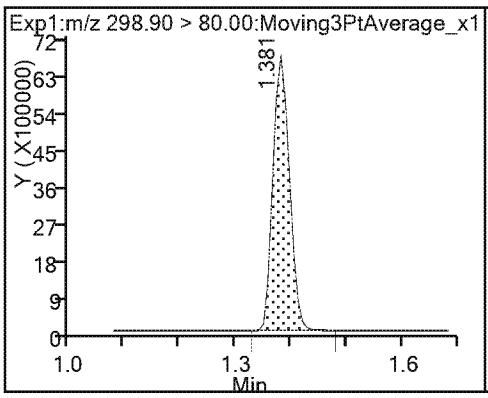
Reagents:

LC537-L5_00025 Amount Added: 1.00 Units: mL

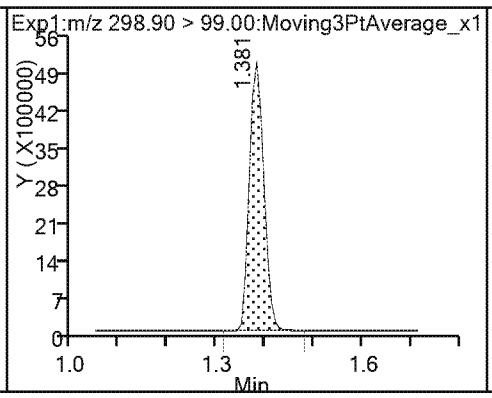
TestAmerica Sacramento

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

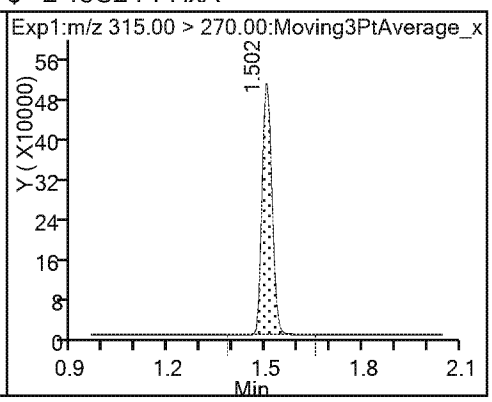
1 Perfluorobutanesulfonic acid



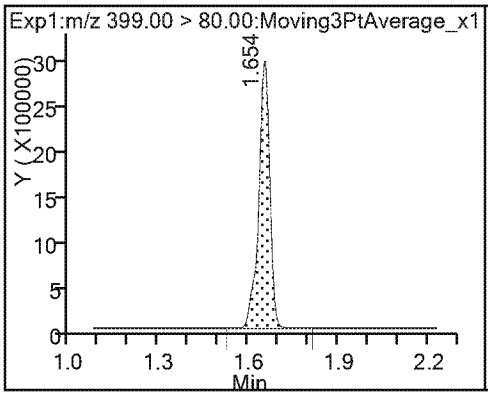
1 Perfluorobutanesulfonic acid



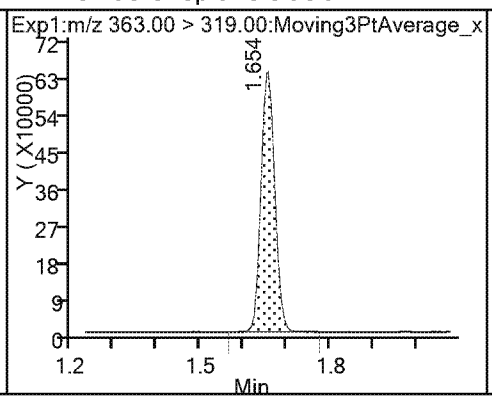
$ 2 13C2 PFHxA



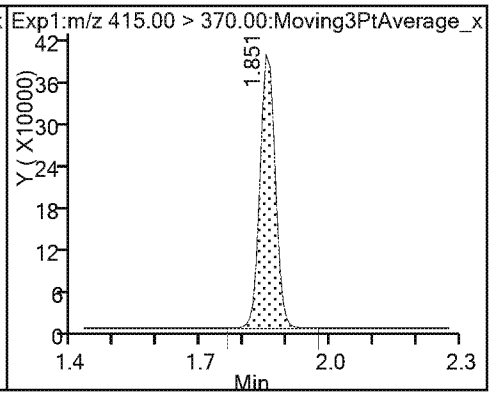
3 Perfluorohexanesulfonic acid



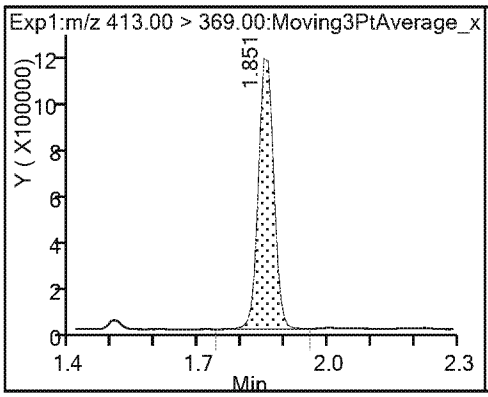
4 Perfluoroheptanoic acid



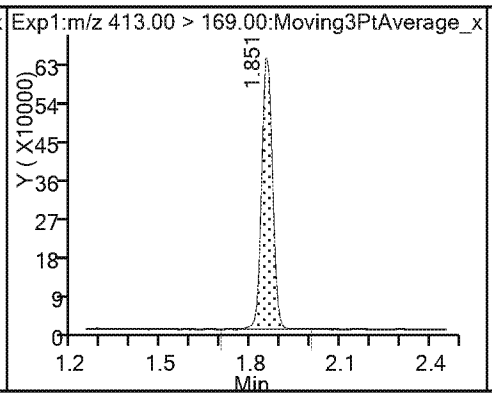
* 6 13C2-PFOA



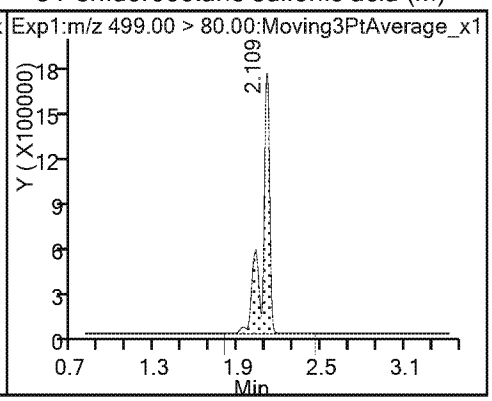
5 Perfluorooctanoic acid



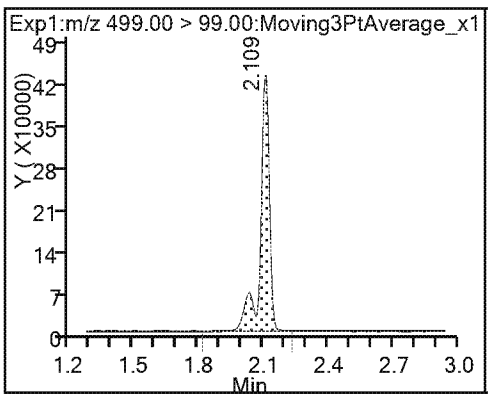
5 Perfluorooctanoic acid



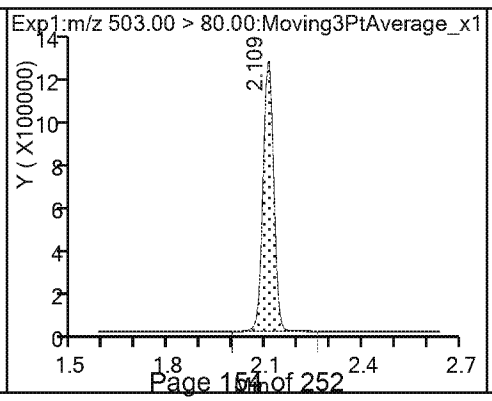
8 Perfluorooctane sulfonic acid (M)



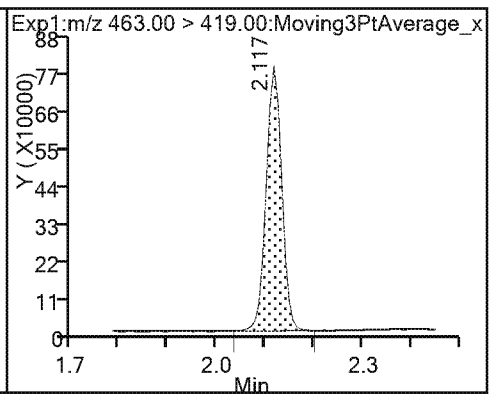
8 Perfluorooctane sulfonic acid



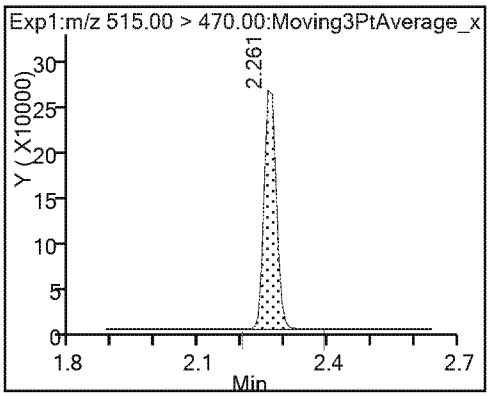
* 7 13C4 PFOS



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

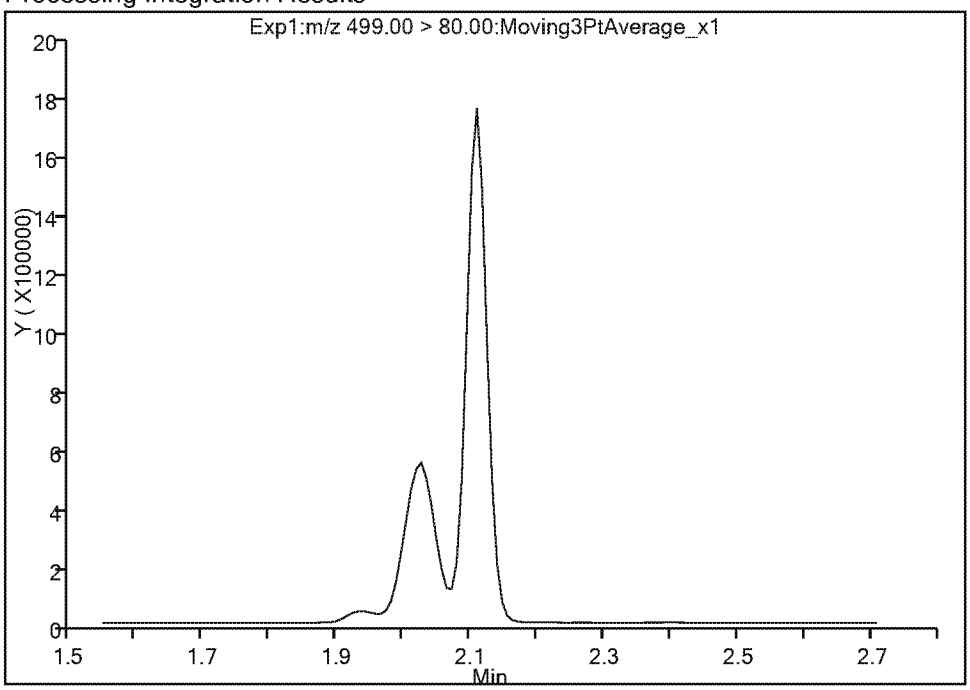
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_008.d				
Injection Date:	16-Feb-2018 09:14:23	Instrument ID:	A8_N		
Lims ID:	IC L5				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

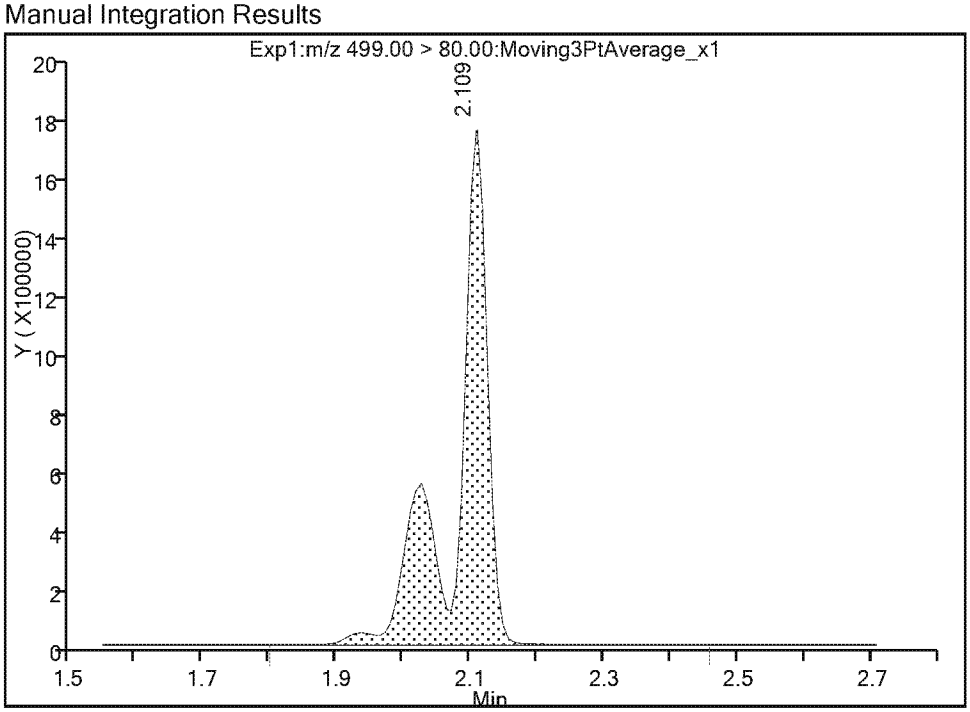
Processing Integration Results

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

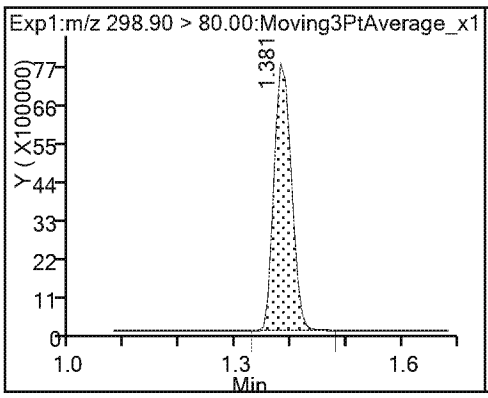
Reagents:

LC537-L6_00021 Amount Added: 1.00 Units: mL

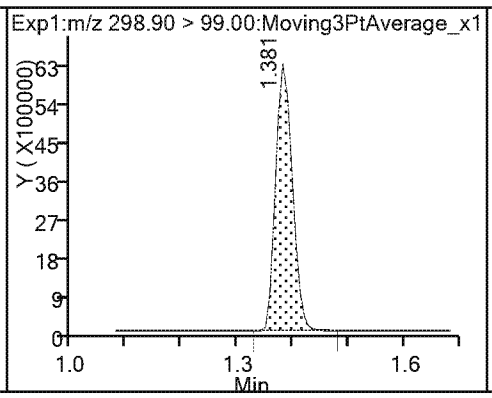
TestAmerica Sacramento

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

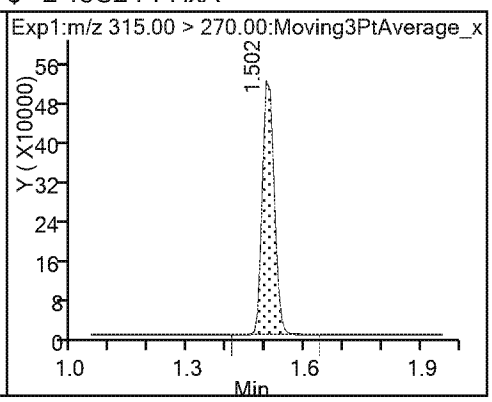
1 Perfluorobutanesulfonic acid



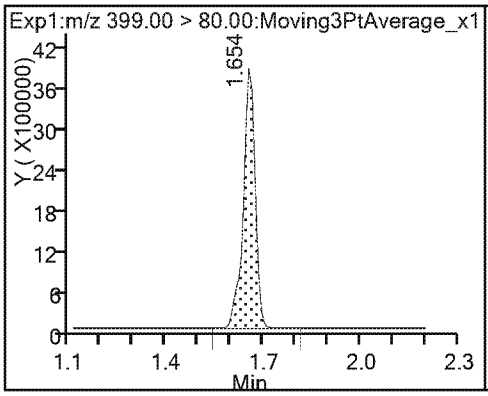
1 Perfluorobutanesulfonic acid



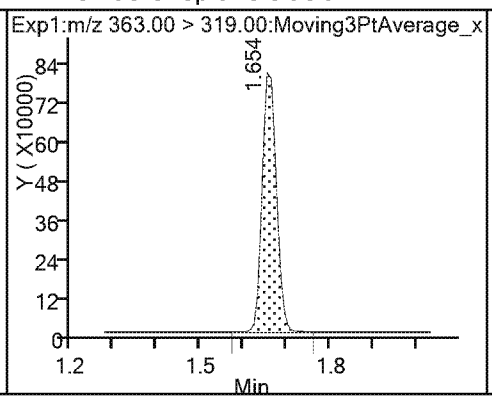
$ 2 13C2 PFHxA



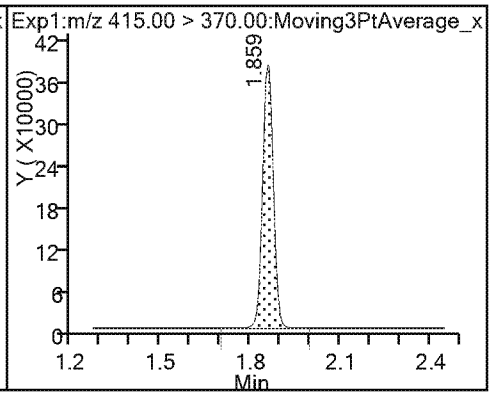
3 Perfluorohexanesulfonic acid



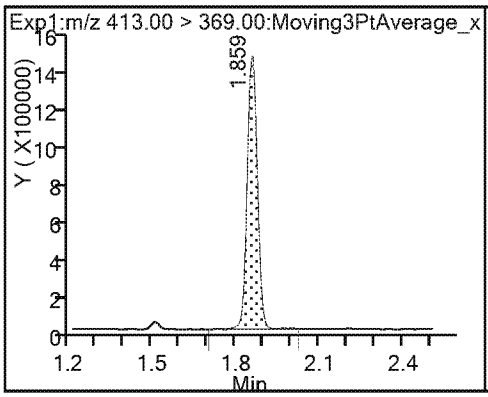
4 Perfluoroheptanoic acid



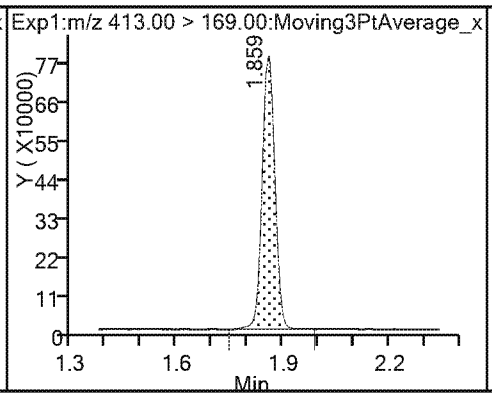
* 6 13C2-PFOA



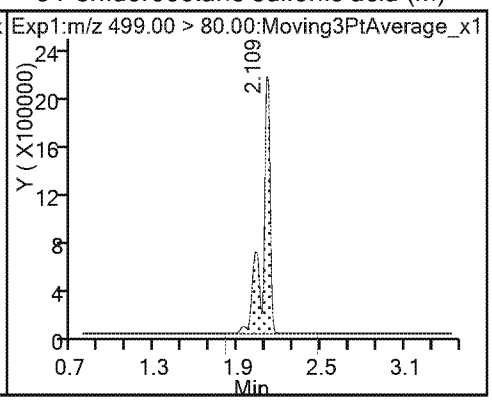
5 Perfluorooctanoic acid



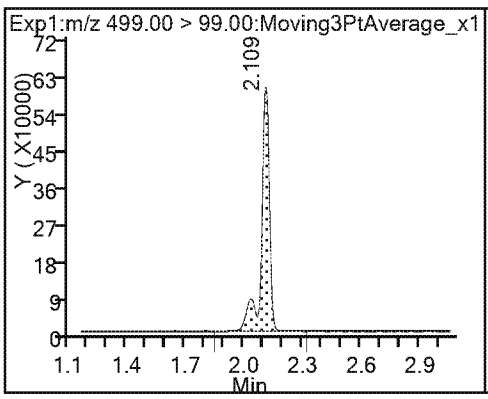
5 Perfluorooctanoic acid



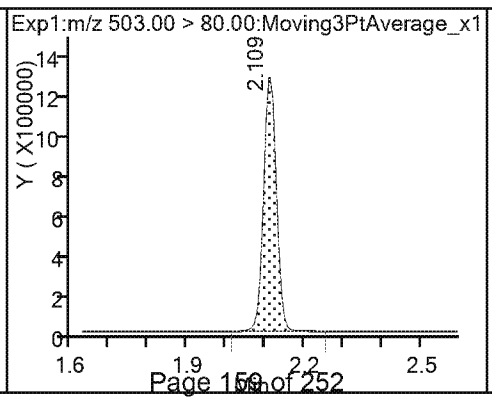
8 Perfluorooctane sulfonic acid (M)



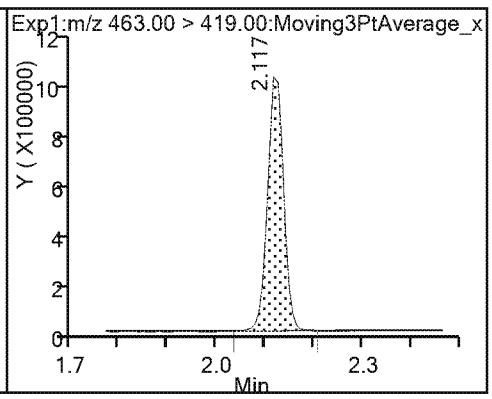
8 Perfluorooctane sulfonic acid



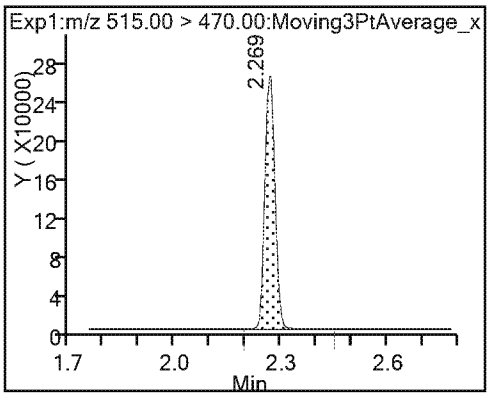
* 7 13C4 PFOS



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

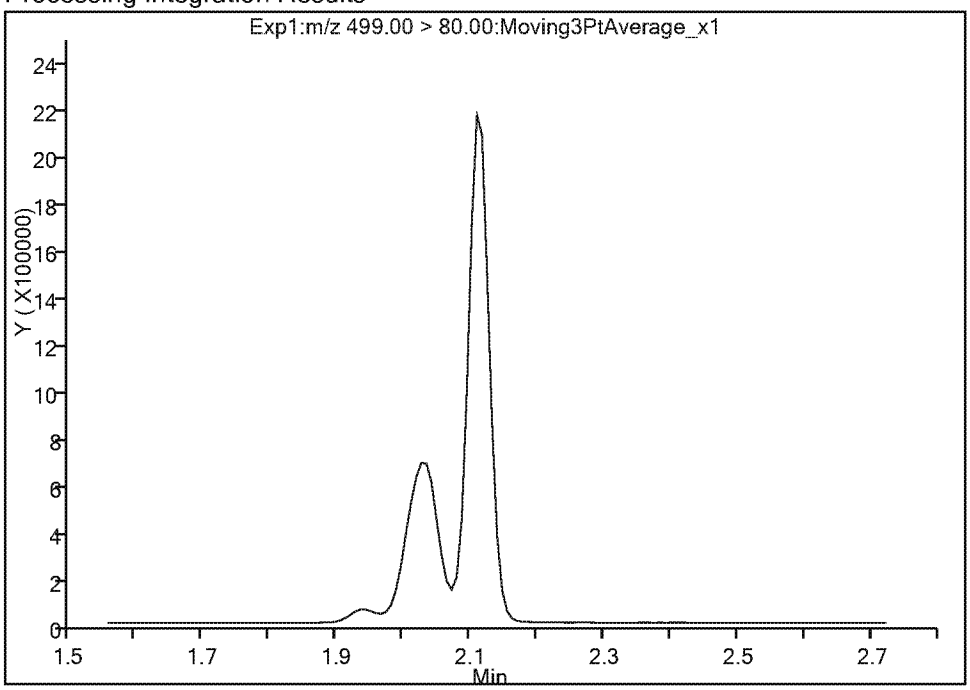
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_009.d				
Injection Date:	16-Feb-2018 09:19:04	Instrument ID:	A8_N		
Lims ID:	IC L6				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

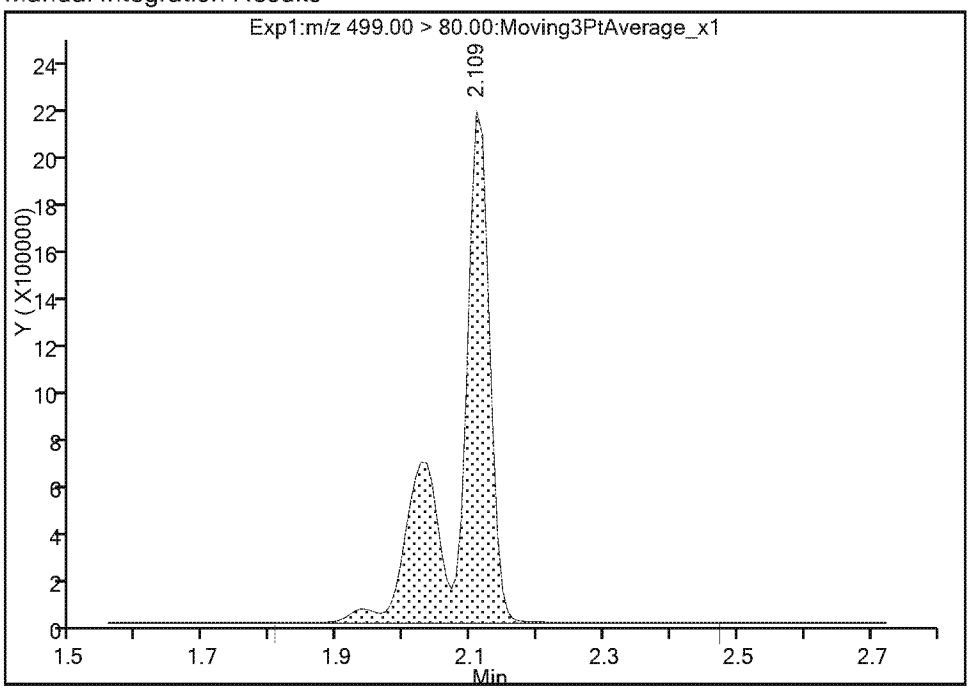
Processing Integration Results

Not Detected
Expected RT: 2.11



Manual Integration Results

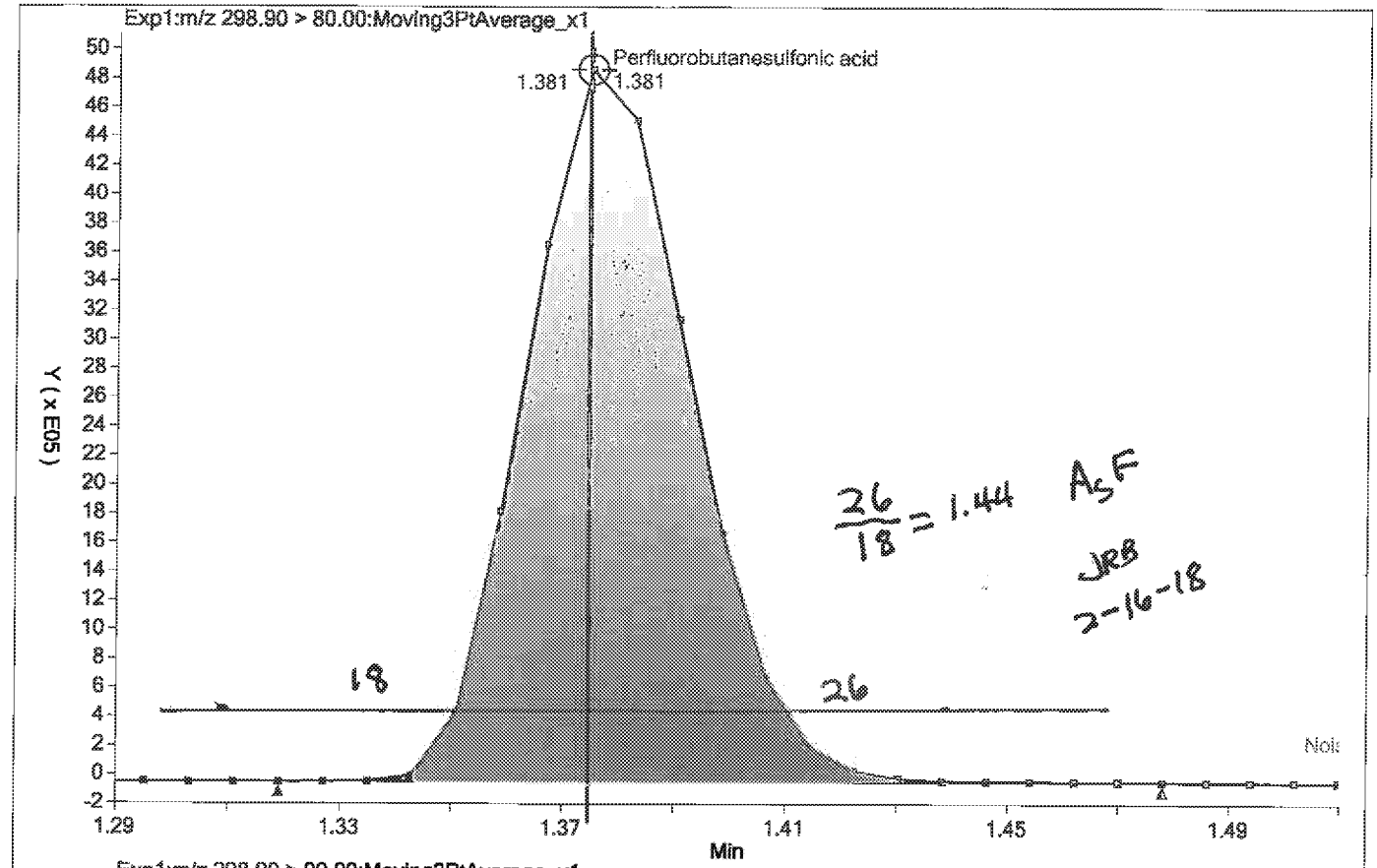
RT: 2.11
Area: 7252490
Amount: 80.127031
Amount Units: ng/ml

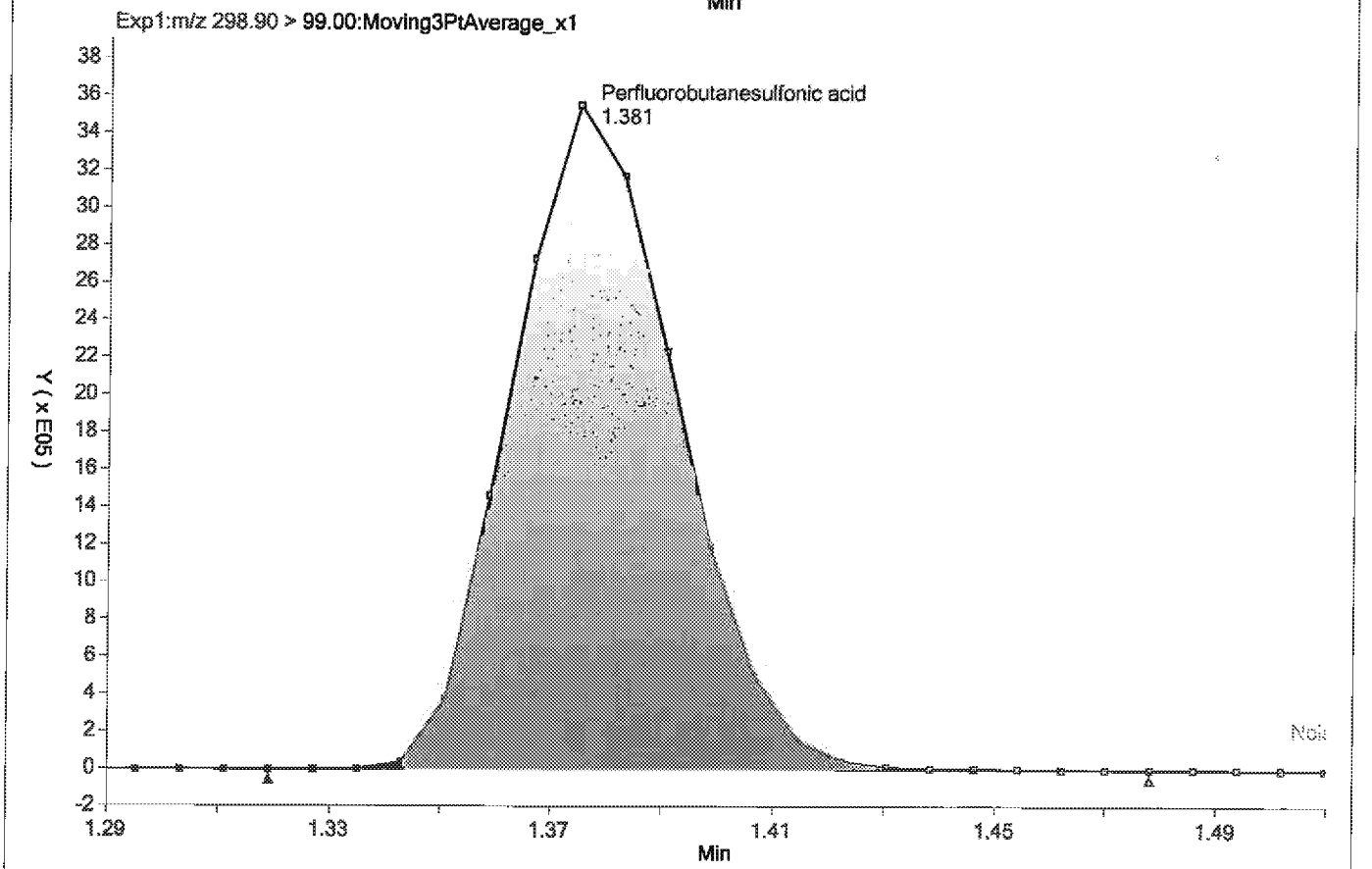


Reviewer: Ex. 4 CBI 16-Feb-2018 10:31:12
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Chromatogram

IC L4 EXP1



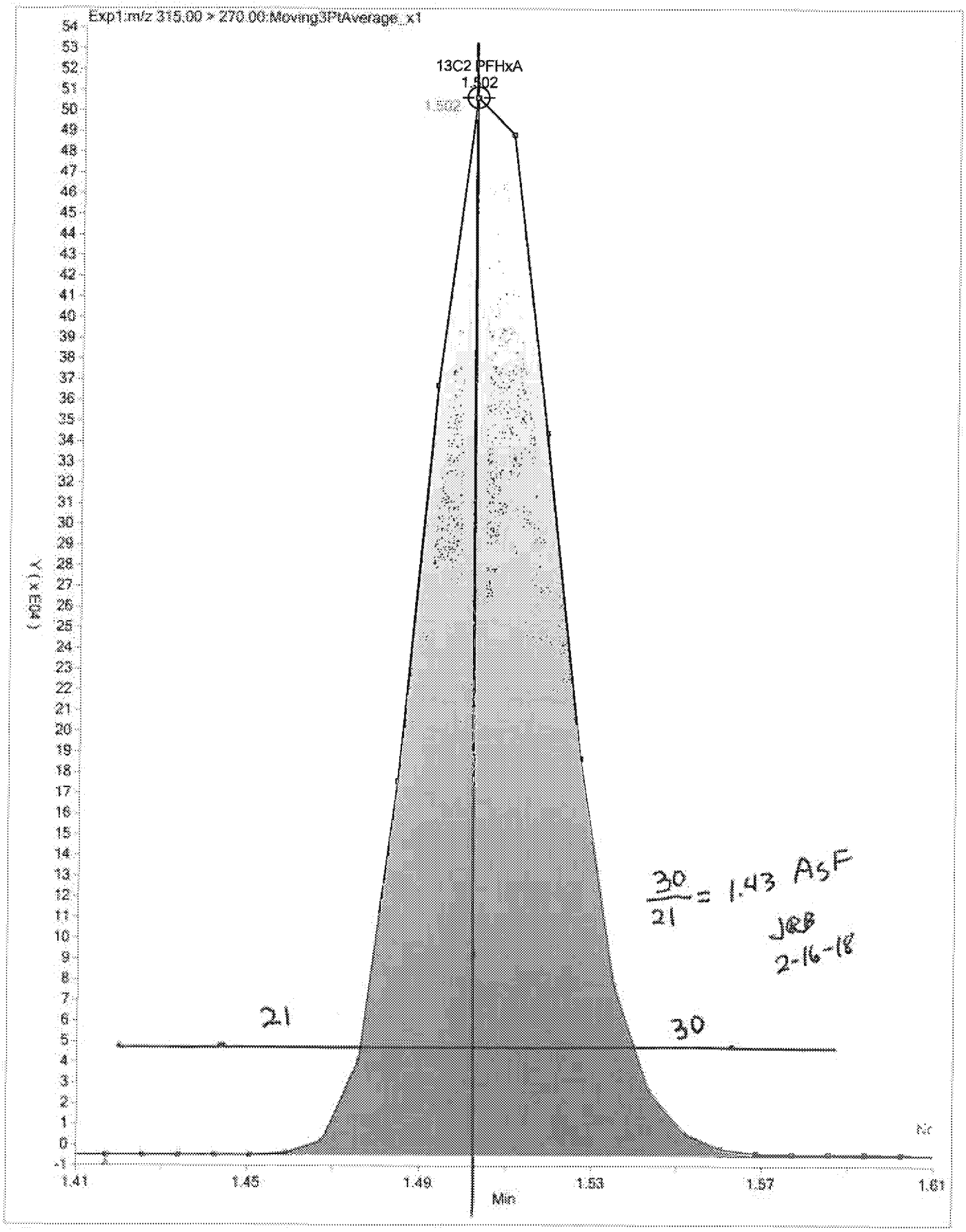


Chrom

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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

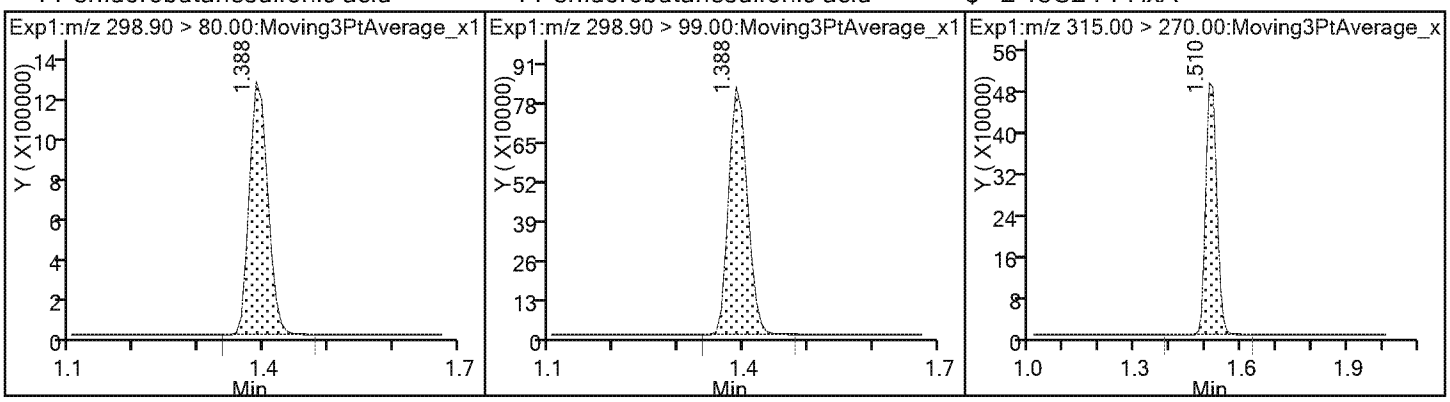
Reagents:

LC537-L2_00021 Amount Added: 1.00 Units: mL

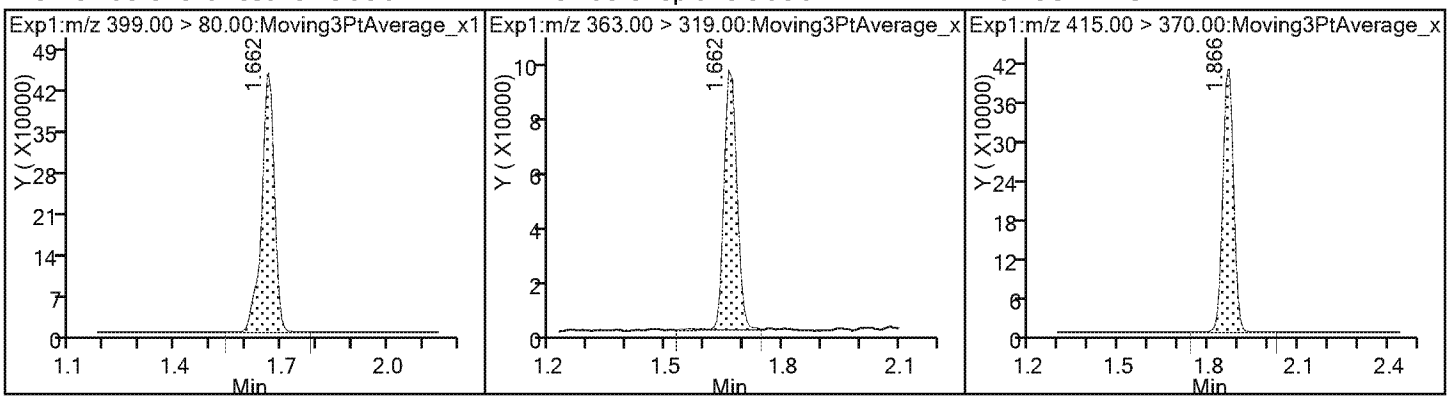
TestAmerica Sacramento

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

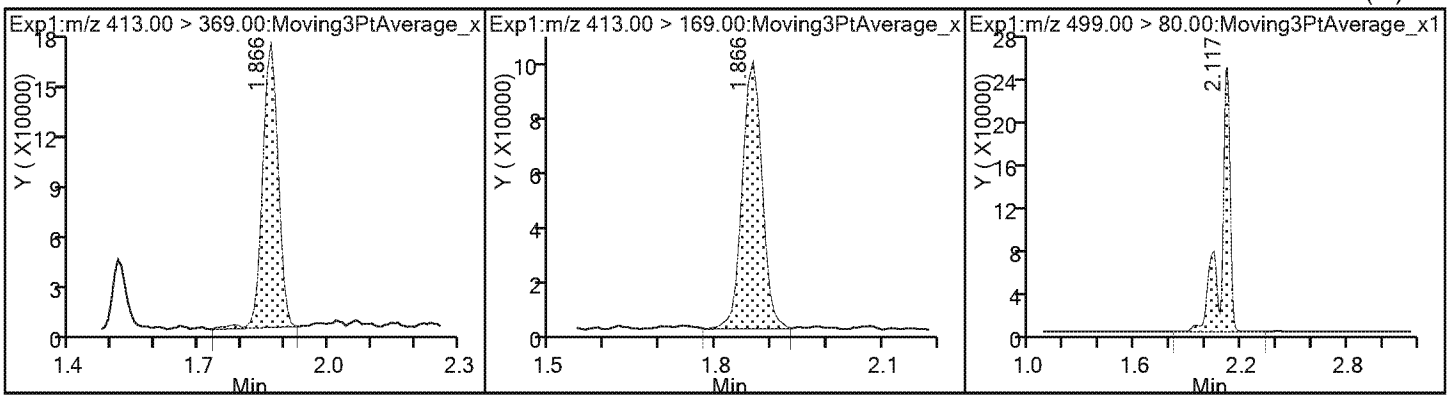
1 Perfluorobutanesulfonic acid | 1 Perfluorobutanesulfonic acid | $ 2 13C2 PFHxA



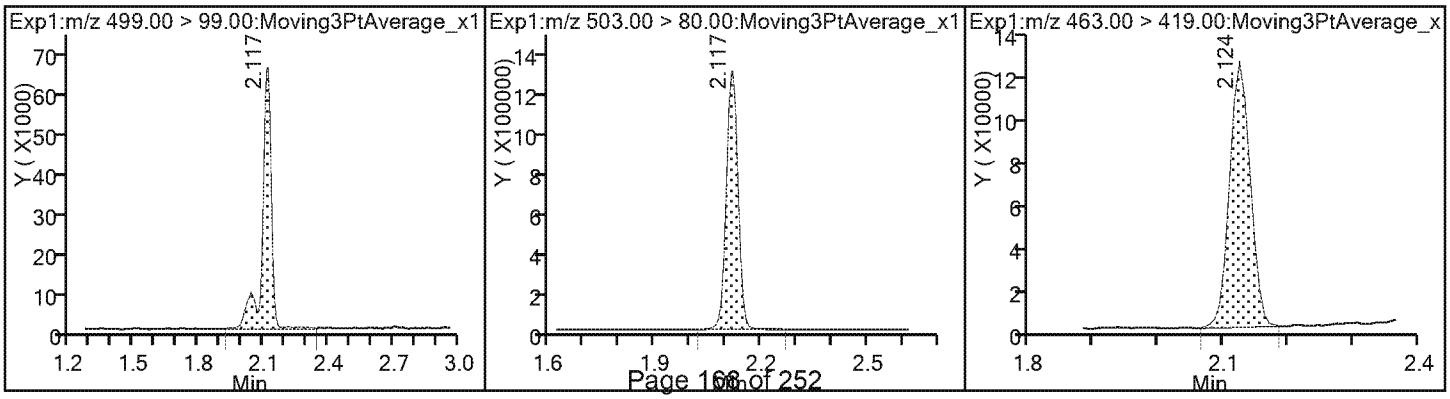
3 Perfluorohexanesulfonic acid | 4 Perfluoroheptanoic acid | * 6 13C2-PFOA



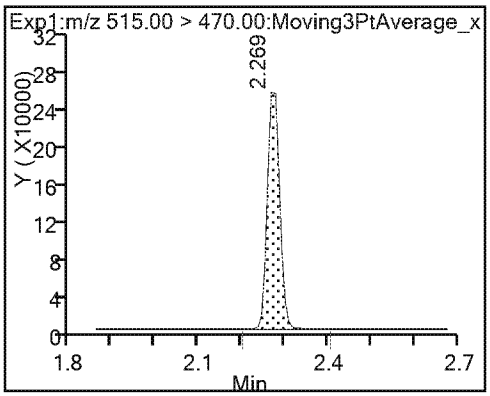
5 Perfluorooctanoic acid | 5 Perfluorooctanoic acid | 8 Perfluorooctane sulfonic acid (M)



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

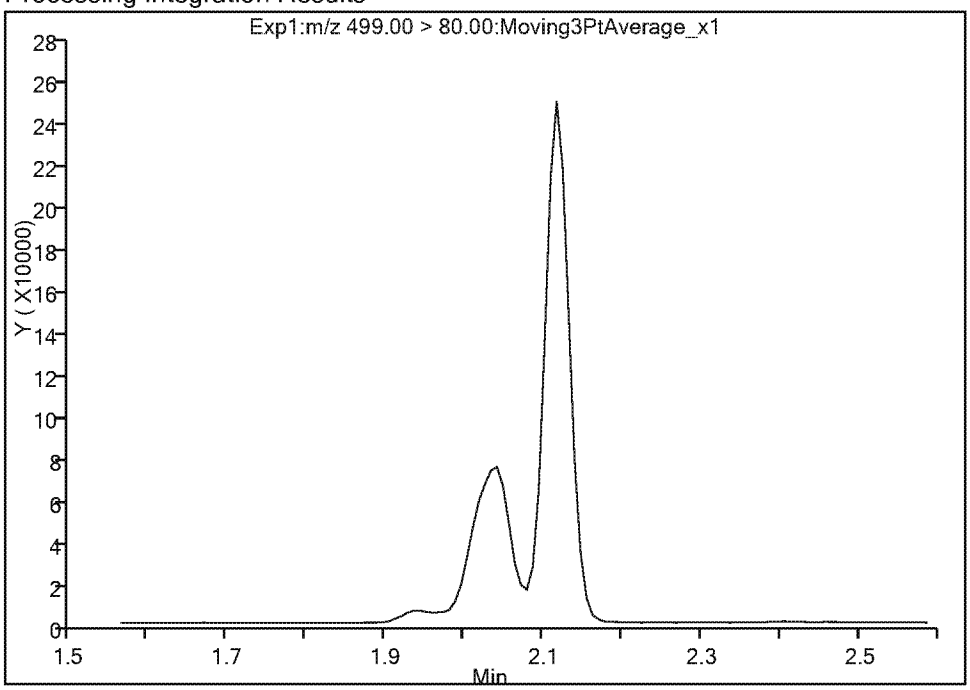
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_011.d				
Injection Date:	16-Feb-2018 09:28:24	Instrument ID:	A8_N		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

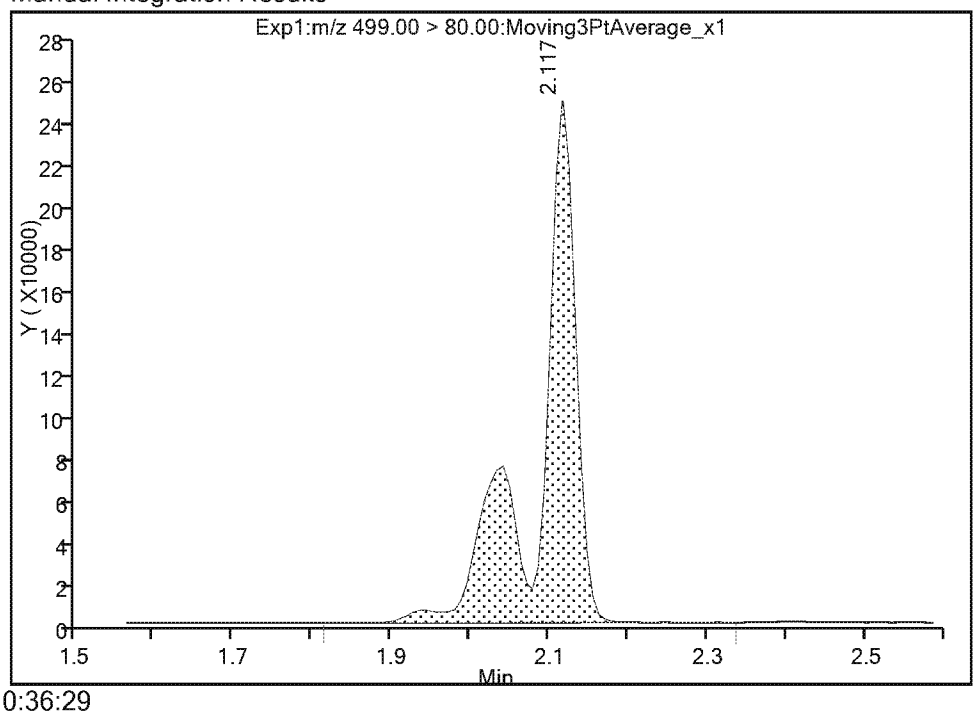
Processing Integration Results

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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

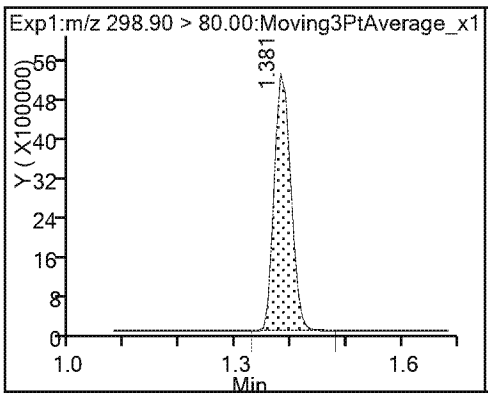
Reagents:

LC537-ICV_00030 Amount Added: 1.00 Units: mL

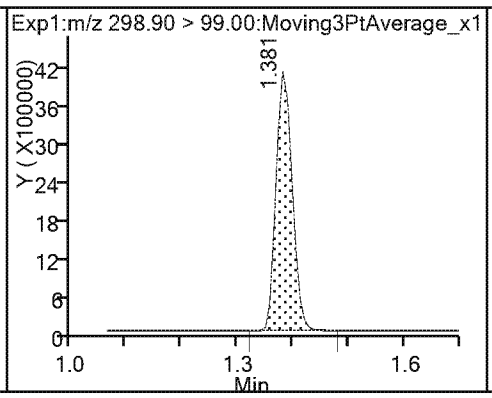
TestAmerica Sacramento

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

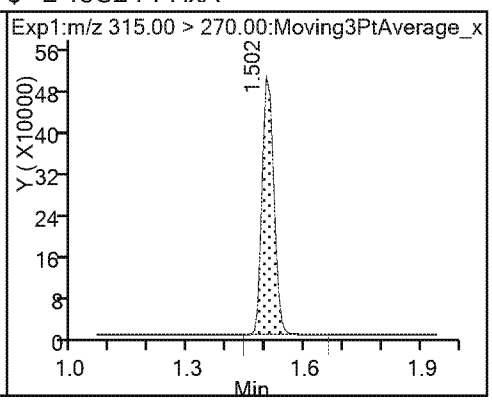
1 Perfluorobutanesulfonic acid



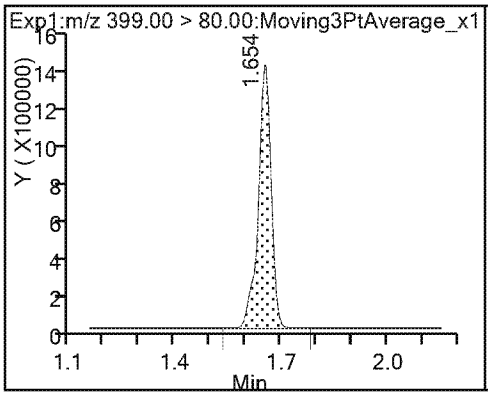
1 Perfluorobutanesulfonic acid



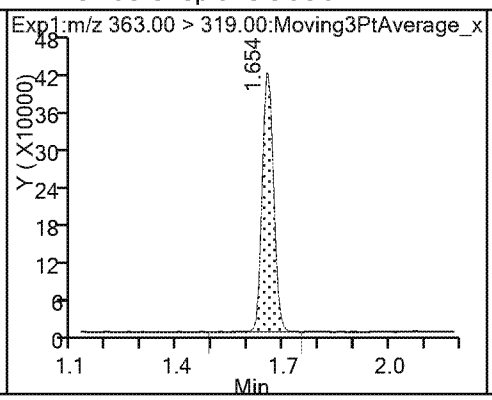
$ 2 13C2 PFHxA



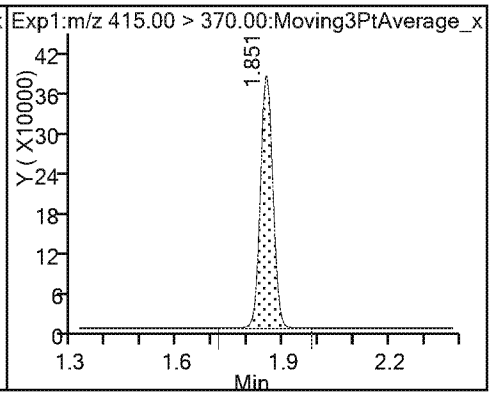
3 Perfluorohexanesulfonic acid



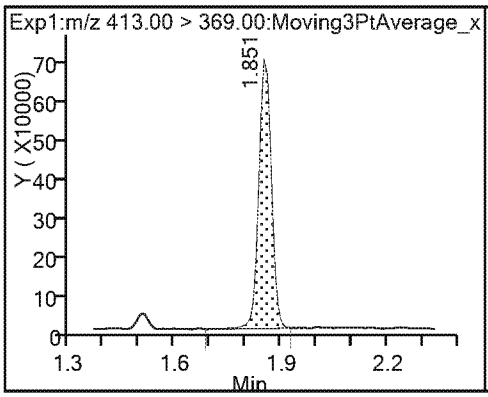
4 Perfluoroheptanoic acid



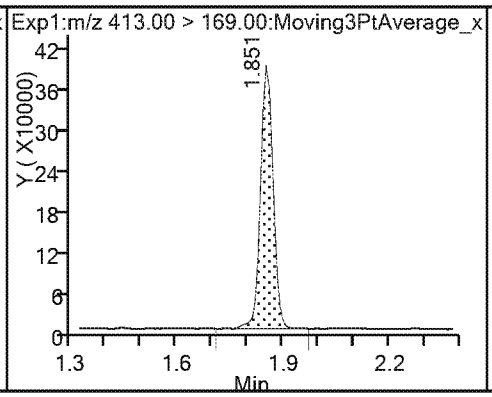
* 6 13C2-PFOA



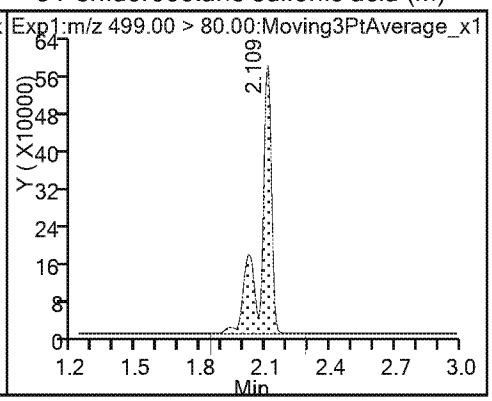
5 Perfluorooctanoic acid



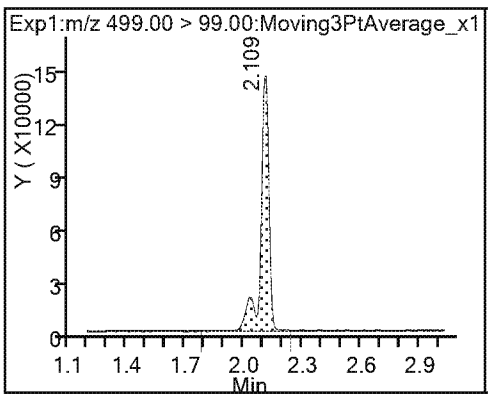
5 Perfluorooctanoic acid



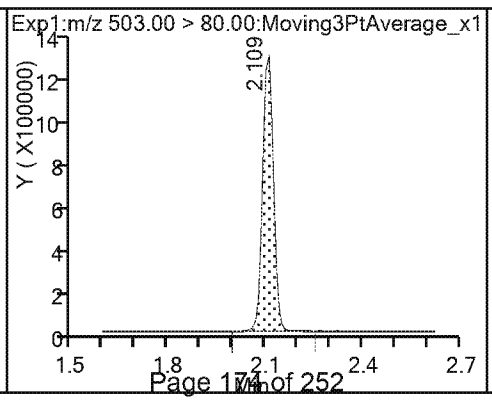
8 Perfluorooctane sulfonic acid (M)



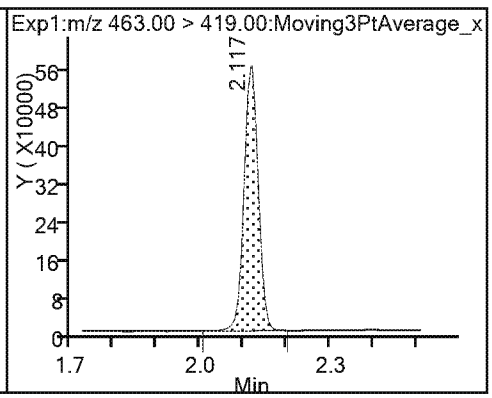
8 Perfluorooctane sulfonic acid



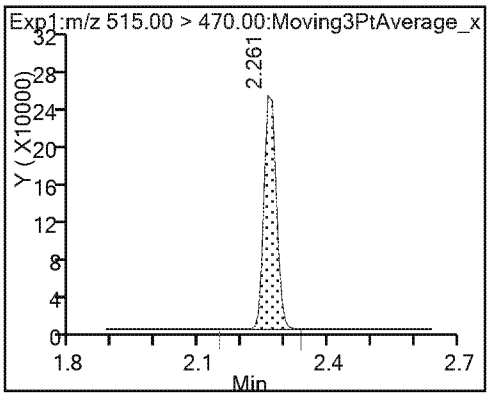
* 7 13C4 PFOS



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

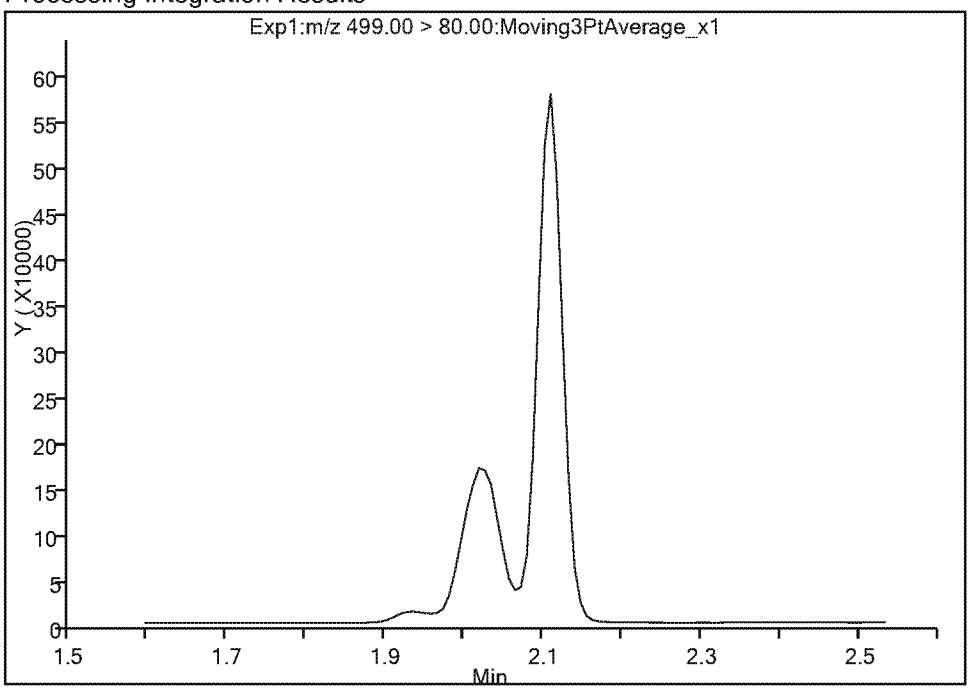
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180216-54164.b\2018.02.016_537ICAL_013.d				
Injection Date:	16-Feb-2018 09:37:44	Instrument ID:	A8_N		
Lims ID:	ICV				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	7	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

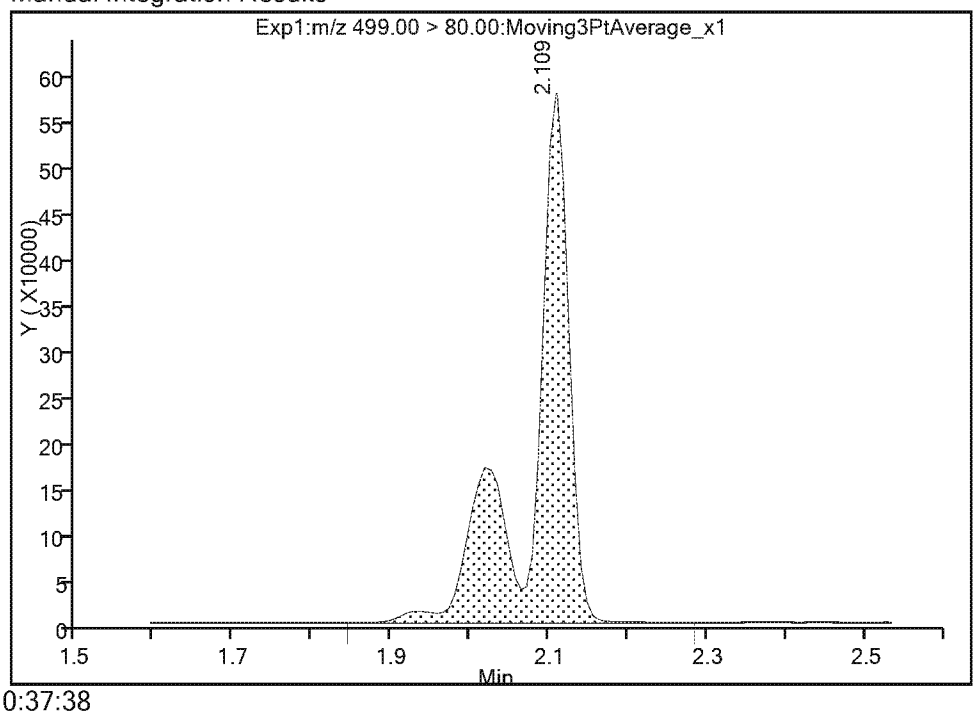
Processing Integration Results

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Lab Sample ID: CCVL 320-210253/1 Calibration Date: 02/27/2018 08:48

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: 2018.02.27_537B_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.110		17.3	20.0	-13.4	50.0
Perfluoroheptanoic acid	Ave	0.9711	0.9571		2.19	2.22	-1.4	50.0
Perfluorohexanesulfonic acid	Ave	1.610	1.608		6.66	6.67	-0.1	50.0
Perfluorooctanoic acid	Ave	0.9620	0.9237		4.29	4.47	-4.0	50.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9288		8.77	8.93	-1.8	50.0
Perfluorononanoic acid	Ave	0.6154	0.6673		4.82	4.45	8.4	50.0
13C2 PFHxA	Ave	1.100	1.024		9.31	10.0	-6.9	30.0
13C2 PFDA	Ave	0.5243	0.5428		10.4	10.0	3.5	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54582.b\2018.02.27_537B_002.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 27-Feb-2018 08:48:18 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\20180227-54582.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 09:49:16 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: XAWRK003

First Level Reviewer: Ex. 4 CBI Date: 27-Feb-2018 09:19:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.358	0.008	1.000	2041527	17.3		4583	
298.90 > 99.00	1.366	1.358	0.008	1.000	1478006		1.38(0.00-0.00)	3873	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.487	1.479	0.008	1.000	963427	9.31		15489	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.631	1.624	0.007	1.000	985689	6.66		852	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.631	1.631	0.0	1.000	200071	2.19		24.8	
* 6 13C2-PFOA									
415.00 > 370.00	1.828	1.821	0.007		940503	10.0		10276	
5 Perfluorooctanoic acid									M
413.00 > 369.00	1.828	1.821	0.007	1.000	388243	4.29		14.8	M
413.00 > 169.00	1.828	1.821	0.007	1.000	215969		1.80(0.00-0.00)	157	
* 7 13C4 PFOS									
503.00 > 80.00	2.086	2.079	0.007		2636939	28.7		7718	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.086	2.079	0.007	1.000	762286	8.77		256	a
499.00 > 99.00	2.086	2.079	0.007	1.000	168995		4.51(0.00-0.00)	63.1	
9 Perfluorononanoic acid									
463.00 > 419.00	2.094	2.086	0.008	1.000	279014	4.82		28.2	
$ 10 13C2 PFDA									
515.00 > 470.00	2.253	2.253	0.0	1.000	510519	10.4		2955	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

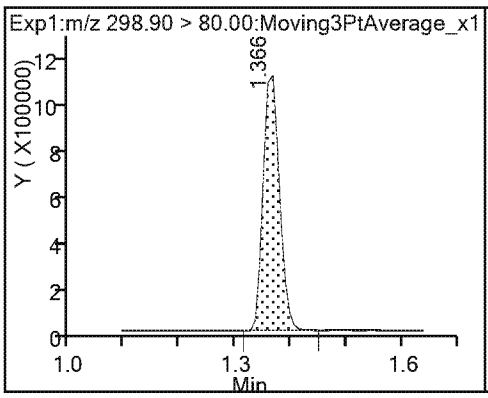
Reagents:

LC537-L2_00021 Amount Added: 1.00 Units: mL

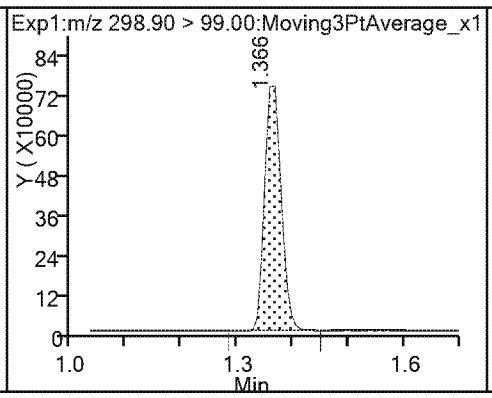
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54582.b\2018.02.27_537B_002.d
Injection Date: 27-Feb-2018 08:48:18 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

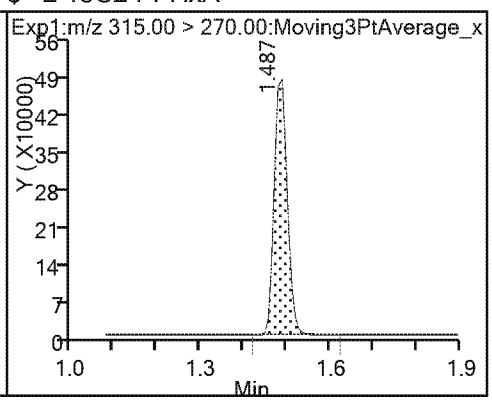
1 Perfluorobutanesulfonic acid



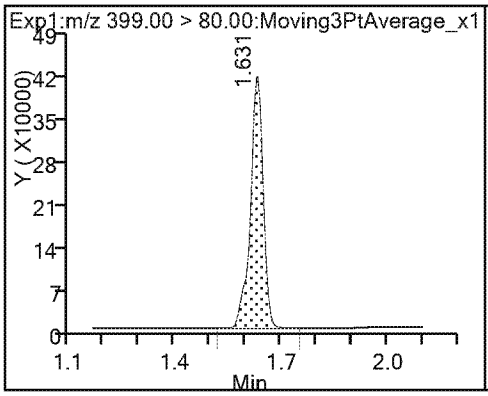
1 Perfluorobutanesulfonic acid



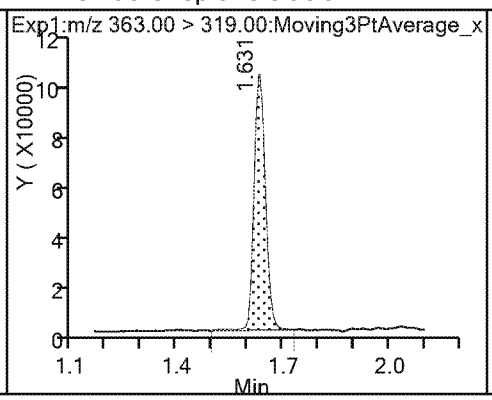
$ 2 13C2 PFHxA



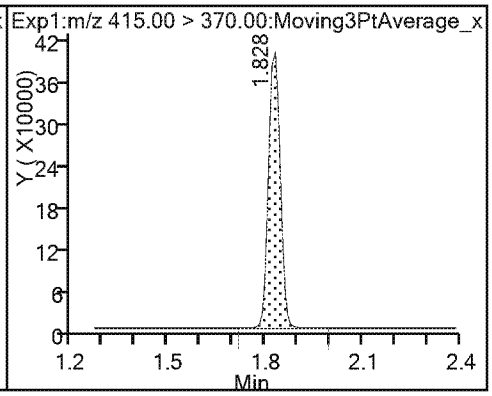
3 Perfluorohexanesulfonic acid



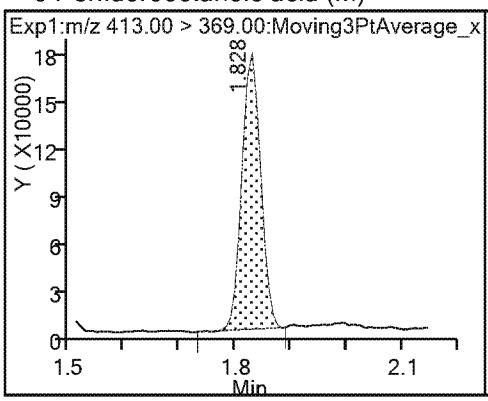
4 Perfluoroheptanoic acid



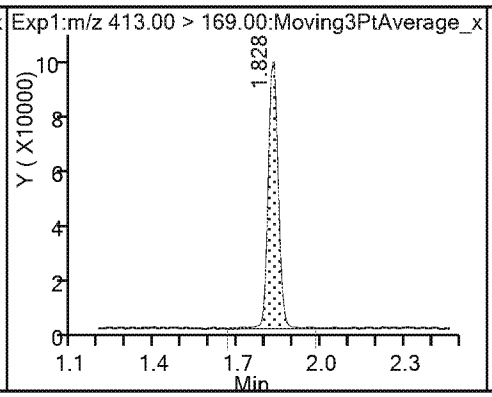
* 6 13C2-PFOA



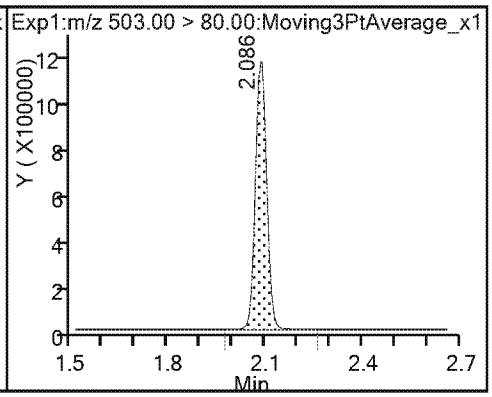
5 Perfluorooctanoic acid (M)



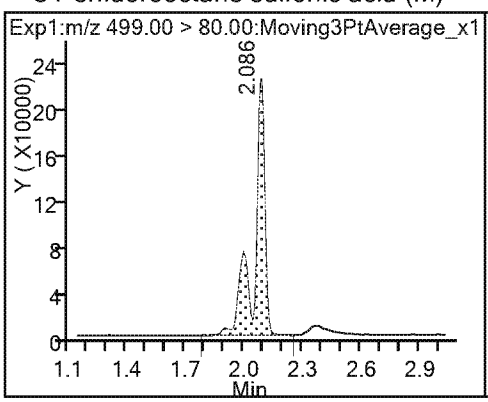
5 Perfluorooctanoic acid



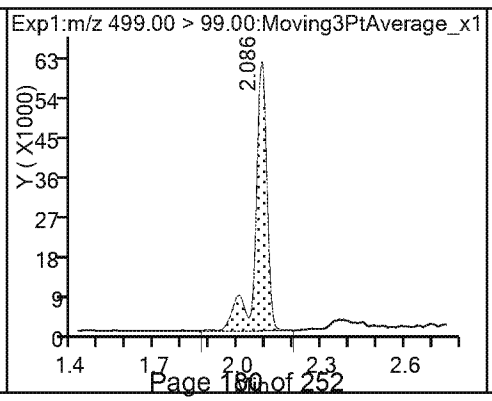
* 7 13C4 PFOS



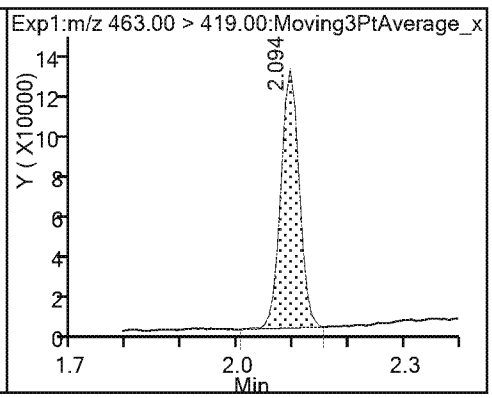
8 Perfluorooctane sulfonic acid (M)



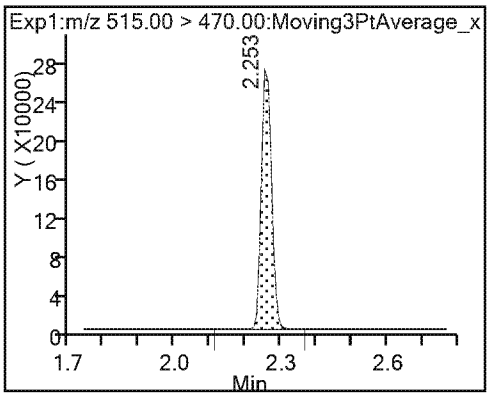
8 Perfluorooctane sulfonic acid



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.253
Y (X10000)
28
24
20
16
12
8
4
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

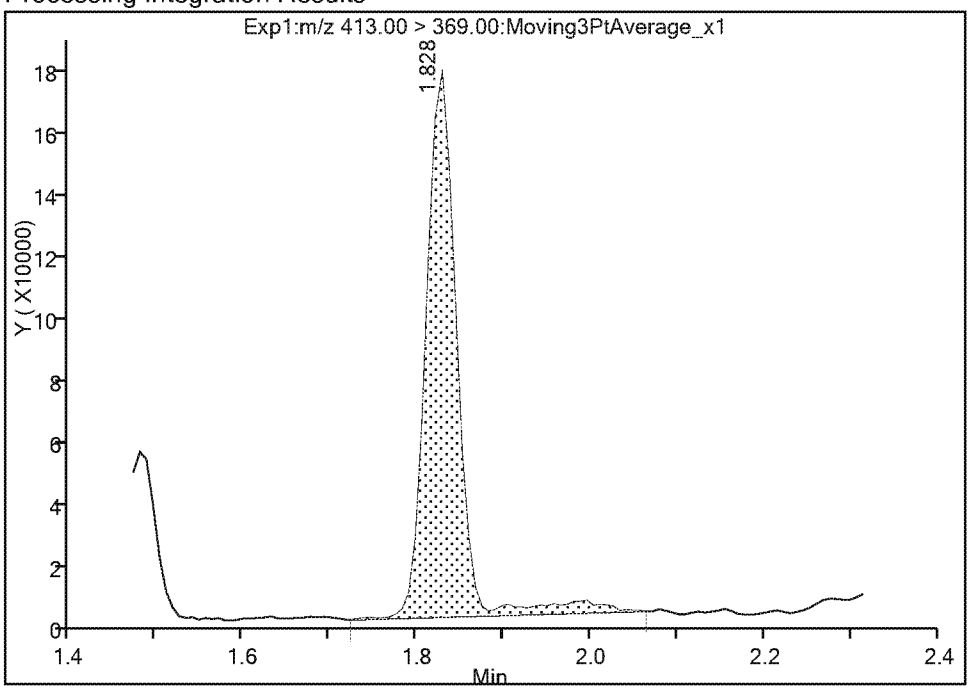
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54582.b\2018.02.27_537B_002.d				
Injection Date:	27-Feb-2018 08:48:18	Instrument ID:	A8_N		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

5 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

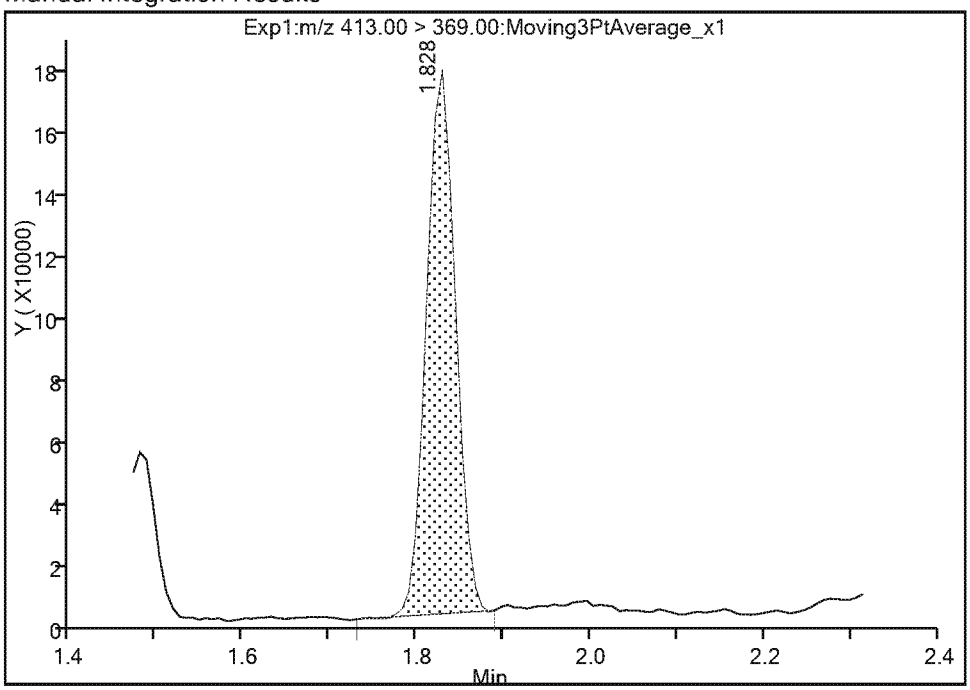
Processing Integration Results

RT: 1.83
Area: 422447
Amount: 4.668983
Amount Units: ng/ml



Manual Integration Results

RT: 1.83
Area: 388243
Amount: 4.290953
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 09:19:36
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento

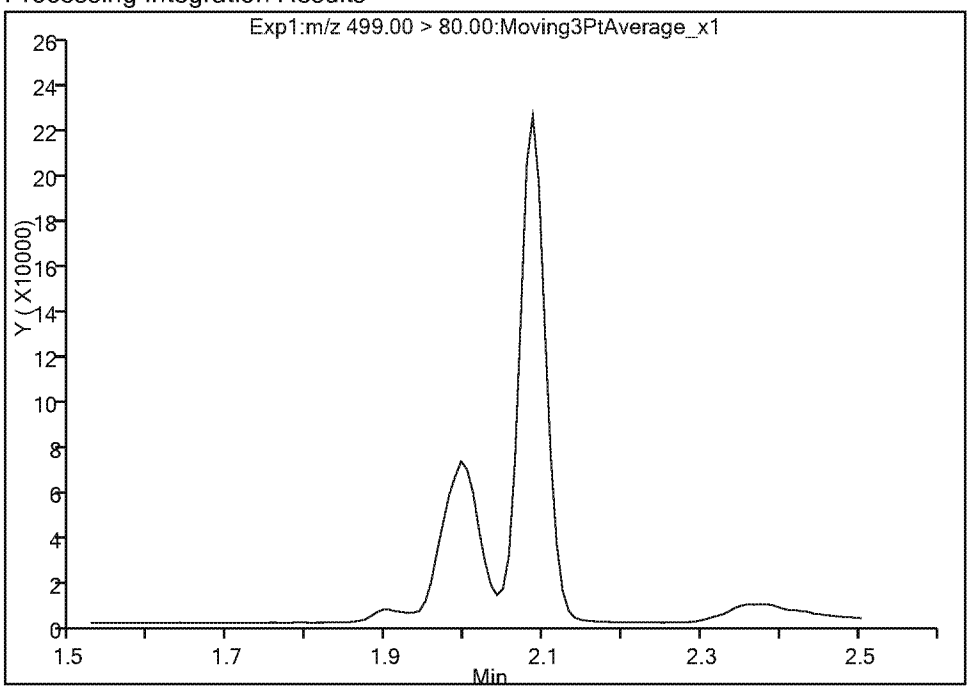
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54582.b\2018.02.27_537B_002.d				
Injection Date:	27-Feb-2018 08:48:18	Instrument ID:	A8_N		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

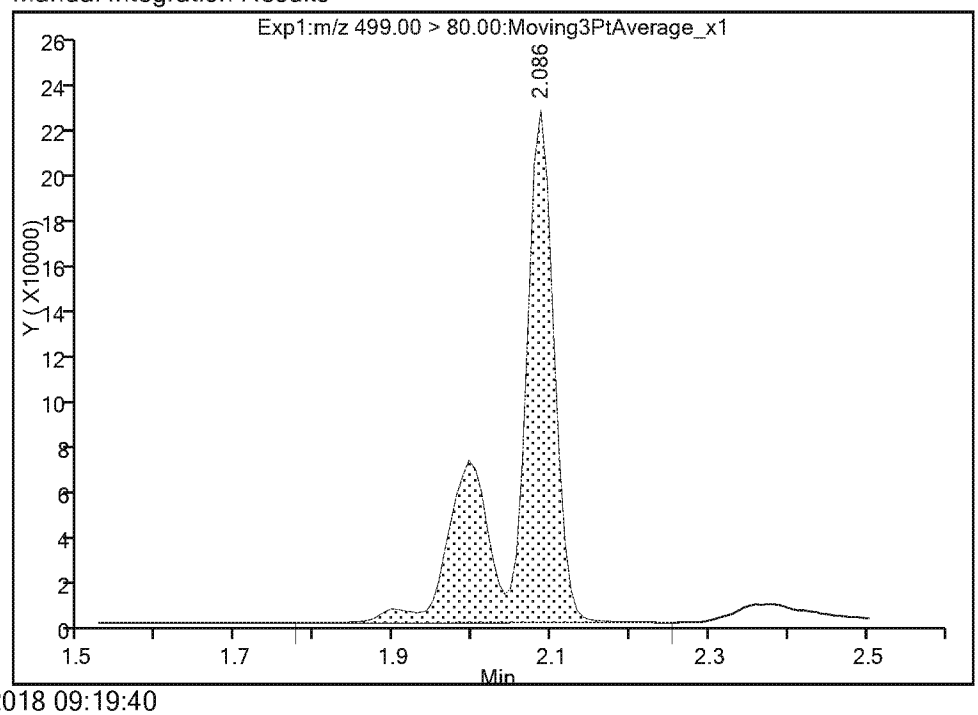
Processing Integration Results

Not Detected
Expected RT: 2.08



Manual Integration Results

RT: 2.09
Area: 762286
Amount: 8.768361
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 09:19:40
Audit Action: Assigned Compound ID Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Lab Sample ID: CCV 320-210262/1 Calibration Date: 02/27/2018 13:39

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: 2018.02.27_537B_039F.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		0.9512		121	135	-10.4	30.0
Perfluoroheptanoic acid	Ave	0.9711	1.001		15.5	15.0	3.1	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.584		44.3	45.0	-1.6	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9549		29.9	30.2	-0.7	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9669		61.6	60.3	2.3	30.0
Perfluorononanoic acid	Ave	0.6154	0.7009		34.2	30.0	13.9	30.0
13C2 PFHxA	Ave	1.100	1.119		10.2	10.0	1.8	30.0
13C2 PFDA	Ave	0.5243	0.5868		11.2	10.0	11.9	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_039F.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 27-Feb-2018 13:39:19 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\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:30 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: XAWRK018

First Level Reviewer: Ex. 4 CBI Date: 27-Feb-2018 14:17:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.358	1.358	0.0	1.000	12383370	121.0		21278	
298.90 > 99.00	1.358	1.358	0.0	1.000	9576209		1.29(0.00-0.00)	19843	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	1000674	10.2		19245	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.624	0.0	1.000	6875665	44.3		5293	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	1343023	15.5		249	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		894024	10.0		8391	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	2575238	29.9		87.2	
413.00 > 169.00	1.806	1.806	0.0	1.000	1361800		1.89(0.00-0.00)	1110	
* 7 13C4 PFOS									
503.00 > 80.00	2.064	2.064	0.0		2765673	28.7		6840	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.064	2.064	0.0	1.000	5618541	61.6		1736	M
499.00 > 99.00	2.056	2.064	-0.008	0.996	1216985		4.62(0.00-0.00)	407	
9 Perfluorononanoic acid									
463.00 > 419.00	2.071	2.071	0.0	1.000	1880415	34.2		199	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	524586	11.2		3279	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

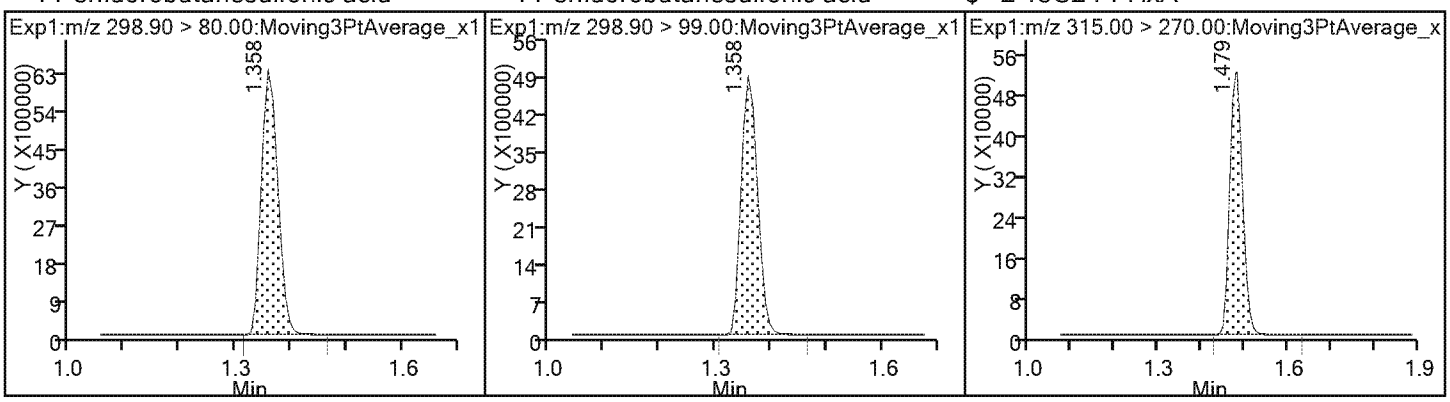
Reagents:

LC537-L5_00025 Amount Added: 1.00 Units: mL

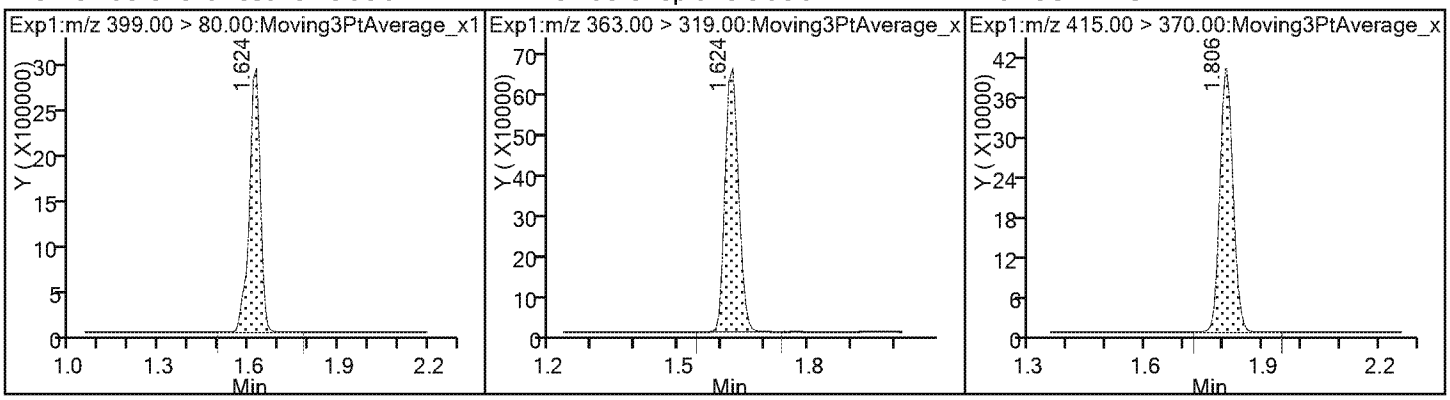
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_039F.d
Injection Date: 27-Feb-2018 13:39:19 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

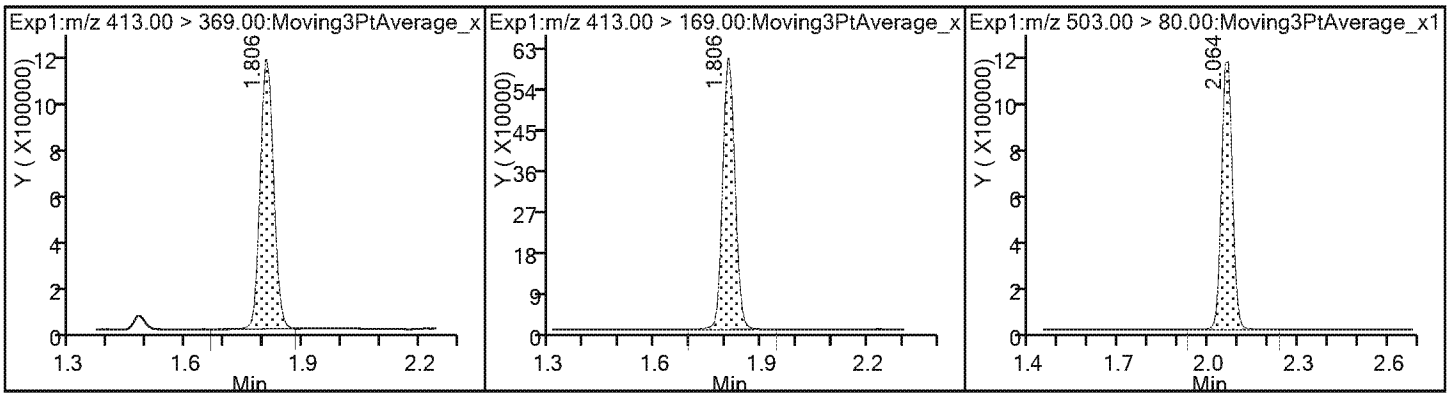
1 Perfluorobutanesulfonic acid | 1 Perfluorobutanesulfonic acid | $ 2 13C2 PFHxA



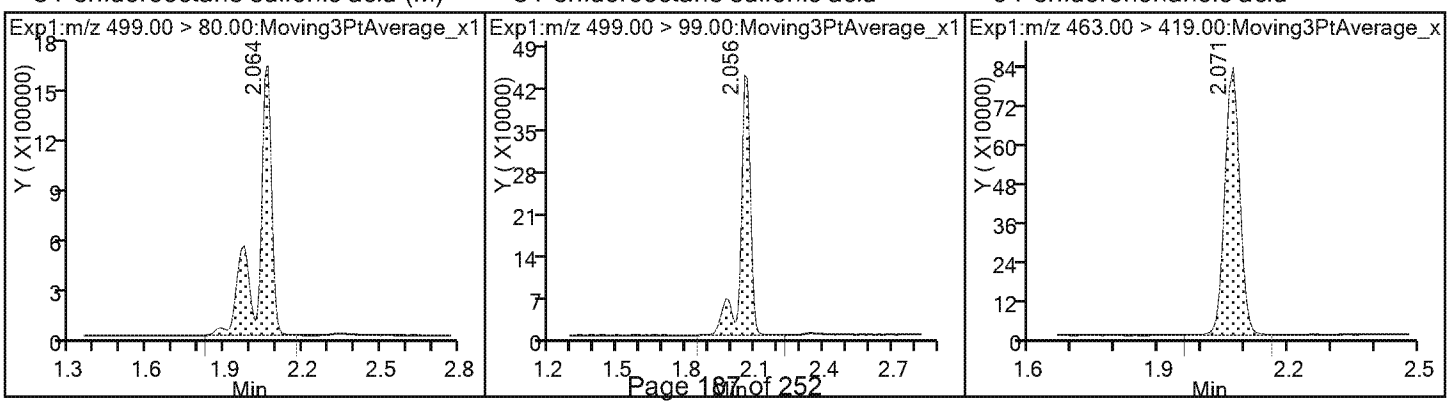
3 Perfluorohexanesulfonic acid | 4 Perfluoroheptanoic acid | * 6 13C2-PFOA



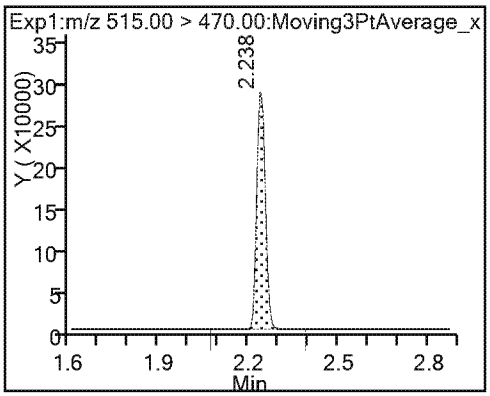
5 Perfluorooctanoic acid | 5 Perfluorooctanoic acid | * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (M) | 8 Perfluorooctane sulfonic acid | 9 Perfluorononanoic acid



$ 10 13C2 PFDA


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

TestAmerica Sacramento

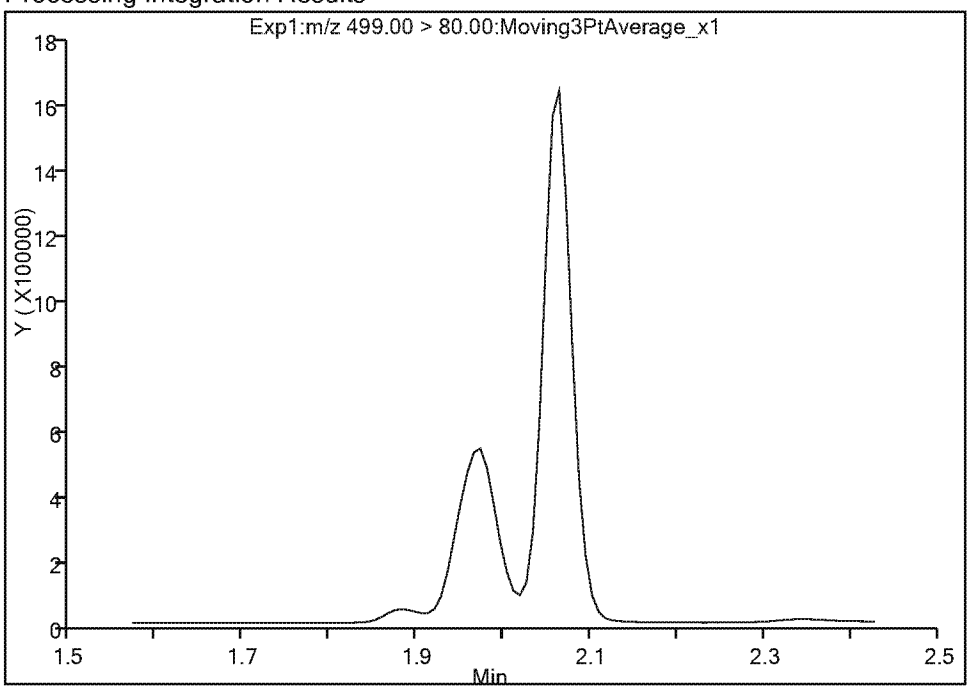
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_039F.d				
Injection Date:	27-Feb-2018 13:39:19	Instrument ID:	A8_N		
Lims ID:	CCV L5				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

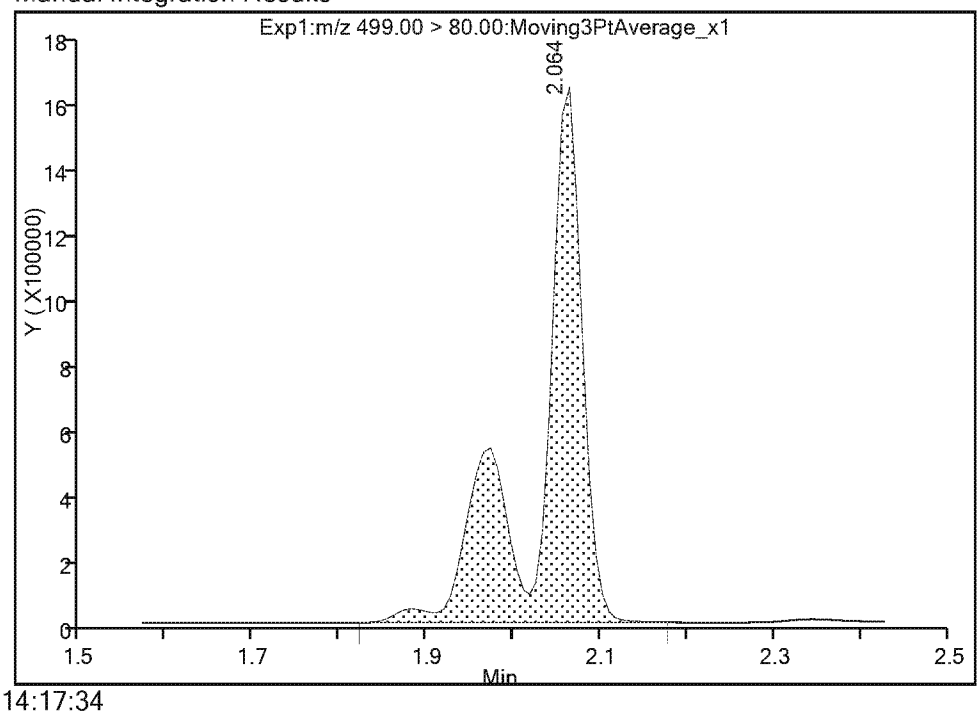
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 5618541
Amount: 61.620224
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 14:17:34
Audit Action: Manually Integrated Audit Reason: Assign Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Lab Sample ID: CCV 320-210262/11 Calibration Date: 02/27/2018 14:26

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: 2018.02.27_537B_048.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.076		39.2	45.0	-12.9	30.0
Perfluoroheptanoic acid	Ave	0.9711	1.030		5.30	5.00	6.1	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.593		14.8	15.0	-1.1	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9425		9.85	10.1	-2.0	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9565		20.3	20.1	1.2	30.0
Perfluorononanoic acid	Ave	0.6154	0.7234		11.8	10.0	17.5	30.0
13C2 PFHxA	Ave	1.100	1.099		9.99	10.0	-0.0	30.0
13C2 PFDA	Ave	0.5243	0.5980		11.4	10.0	14.1	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Lab Sample ID: CCV 320-210263/11 Calibration Date: 02/27/2018 14:26

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: 2018.02.27_537B_048.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.076		39.2	45.0	-12.9	30.0
Perfluoroheptanoic acid	Ave	0.9711	1.030		5.30	5.00	6.1	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.593		14.8	15.0	-1.1	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9425		9.85	10.1	-2.0	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9565		20.3	20.1	1.2	30.0
Perfluorononanoic acid	Ave	0.6154	0.7234		11.8	10.0	17.5	30.0
13C2 PFHxA	Ave	1.100	1.099		9.99	10.0	-0.0	30.0
13C2 PFDA	Ave	0.5243	0.5980		11.4	10.0	14.1	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_048.d
Lims ID: CCV L3
Client ID:
Sample Type: CCVIS
Inject. Date: 27-Feb-2018 14:26:11 ALS Bottle#: 3 Worklist Smp#: 11
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\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:41 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: 27-Feb-2018 14:38:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.358	1.358	0.0	1.000	4574569	39.2		10270	
298.90 > 99.00	1.358	1.358	0.0	1.000	3407712		1.34(0.00-0.00)	8597	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	941955	10.0		16914	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.616	1.616	0.0	1.000	2258150	14.8		1866	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.616	1.616	0.0	1.000	441334	5.30		67.7	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		856857	10.0		8570	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	812012	9.85		26.4	
413.00 > 169.00	1.806	1.806	0.0	1.000	468027		1.73(0.00-0.00)	352	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2709916	28.7		6289	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.064	2.064	0.0	1.000	1815320	20.3		552	a
499.00 > 99.00	2.064	2.064	0.0	1.000	384428		4.72(0.00-0.00)	122	
9 Perfluorononanoic acid									
463.00 > 419.00	2.071	2.071	0.0	1.000	620029	11.8		59.0	
$ 10 13C2 PFDA									
515.00 > 470.00	2.246	2.246	0.0	1.000	512393	11.4		2860	

QC Flag Legend

Review Flags

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\20180227-54585.b\2018.02.27_537B_048.d
Lims ID: CCV L3
Client ID:
Sample Type: CCVIS
Inject. Date: 27-Feb-2018 14:26:11 ALS Bottle#: 3 Worklist Smp#: 11
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\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 15:24:11 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
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.358	1.358	0.0	1.000	4574569	39.2		10270	
298.90 > 99.00	1.358	1.358	0.0	1.000	3407712		1.34(0.00-0.00)	8597	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	941955	10.0		16914	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.616	1.616	0.0	1.000	2258150	14.8		1866	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.616	1.616	0.0	1.000	441334	5.30		67.7	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		856857	10.0		8570	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	812012	9.85		26.4	
413.00 > 169.00	1.806	1.806	0.0	1.000	468027		1.73(0.00-0.00)	352	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2709916	28.7		6289	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.064	2.056	0.008	1.000	1815320	20.3		552	a
499.00 > 99.00	2.064	2.056	0.008	1.000	384428		4.72(0.00-0.00)	122	
9 Perfluorononanoic acid									
463.00 > 419.00	2.071	2.071	0.0	1.000	620029	11.8		59.0	
$ 10 13C2 PFDA									
515.00 > 470.00	2.246	2.246	0.0	1.000	512393	11.4		2860	

QC Flag Legend

Review Flags

a - User Assigned ID

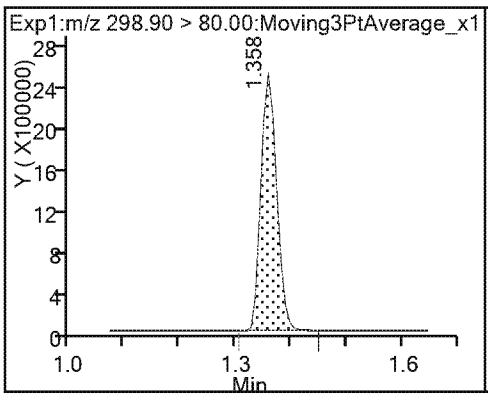
Reagents:

LC537-L3_00024 Amount Added: 1.00 Units: mL

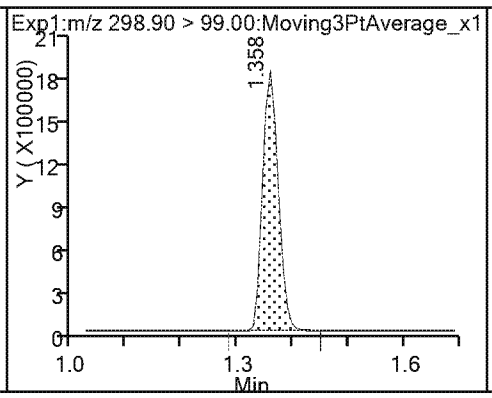
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_048.d
Injection Date: 27-Feb-2018 14:26:11 Instrument ID: A8_N
Lims ID: CCV L3
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

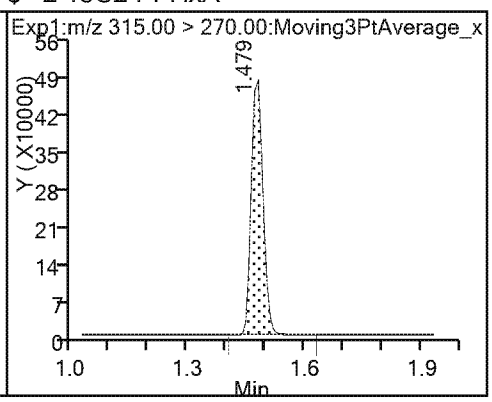
1 Perfluorobutanesulfonic acid



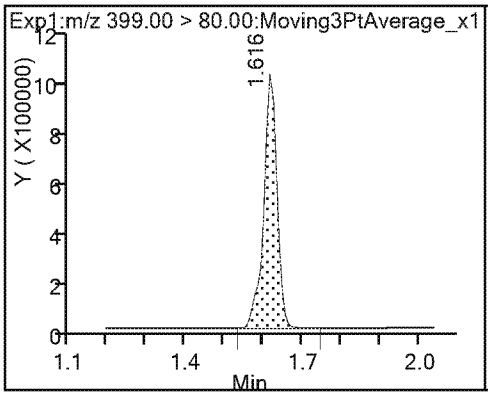
1 Perfluorobutanesulfonic acid



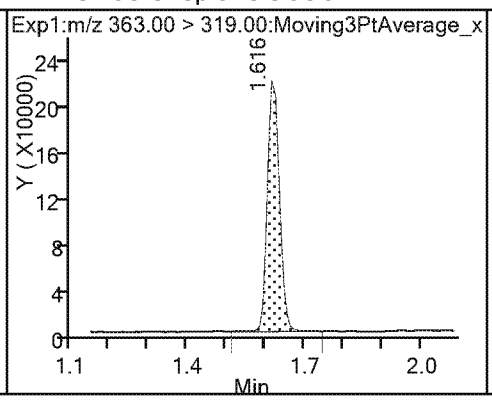
$ 2 13C2 PFHxA



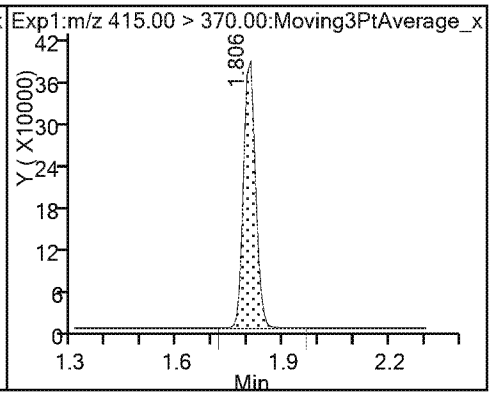
3 Perfluorohexanesulfonic acid



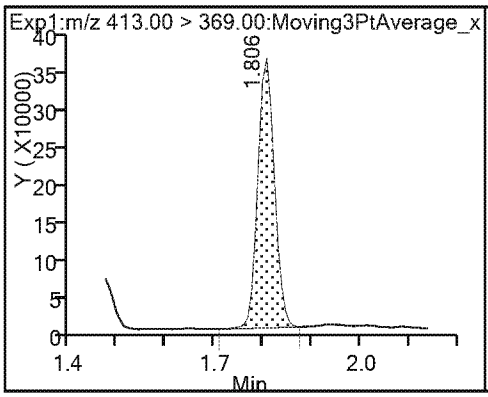
4 Perfluoroheptanoic acid



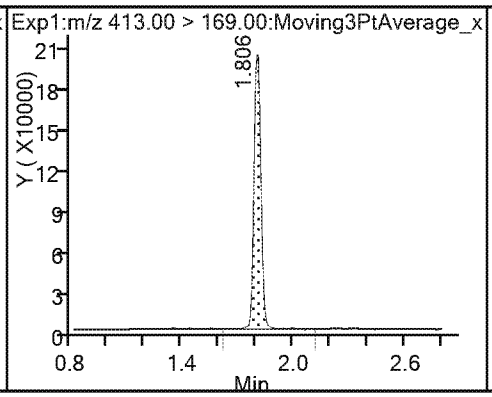
* 6 13C2-PFOA



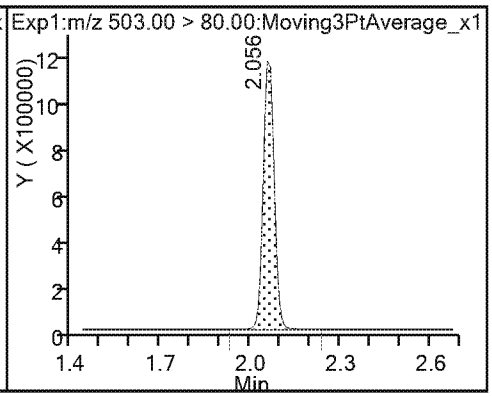
5 Perfluorooctanoic acid



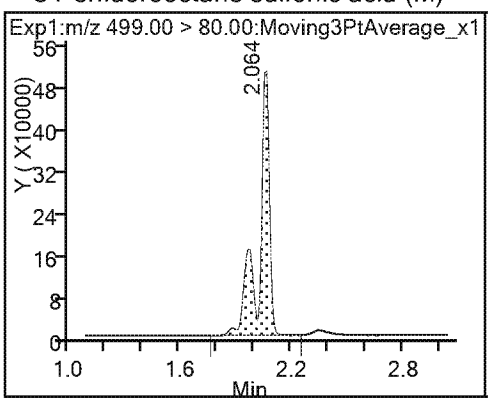
5 Perfluorooctanoic acid



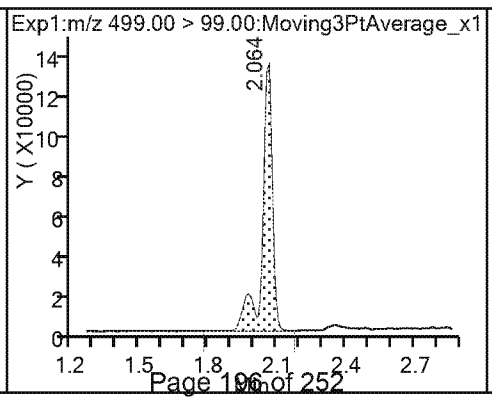
* 7 13C4 PFOS



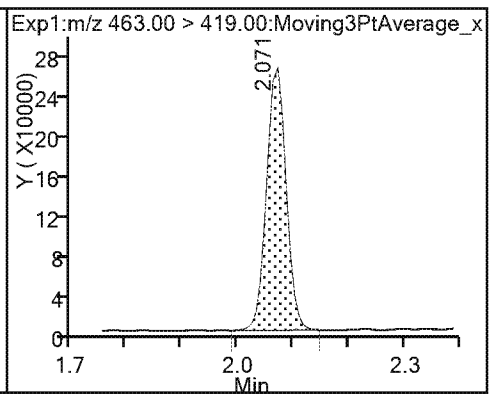
8 Perfluorooctane sulfonic acid (M)



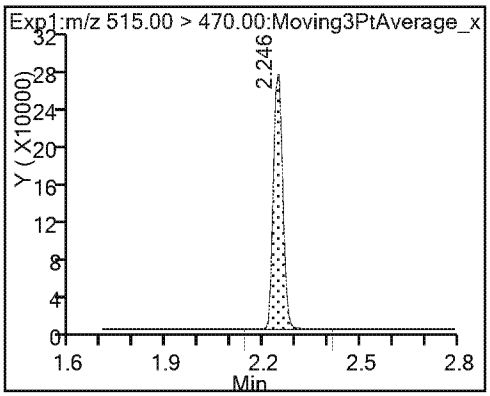
8 Perfluorooctane sulfonic acid



9 Perfluorononanoic acid



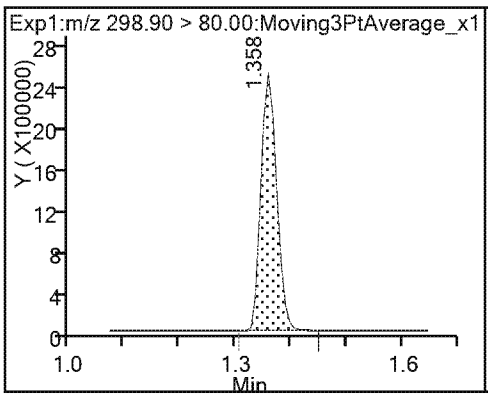
$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.246
Y (X10000)
32
28
24
20
16
12
8
4
0
1.6
1.9
2.2
2.5
2.8
Min

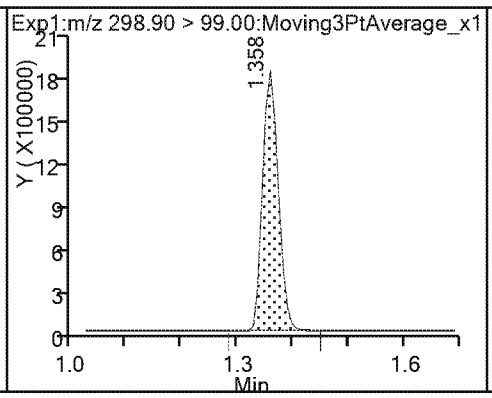
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_048.d
Injection Date: 27-Feb-2018 14:26:11 Instrument ID: A8_N
Lims ID: CCV L3
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

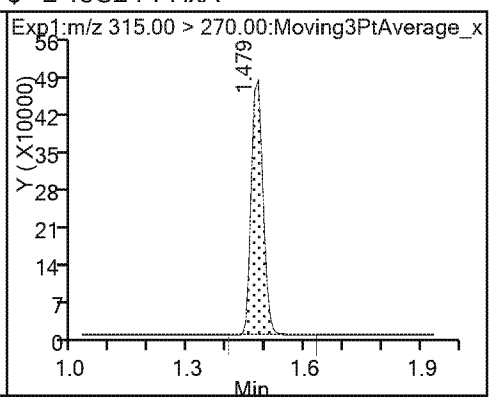
1 Perfluorobutanesulfonic acid



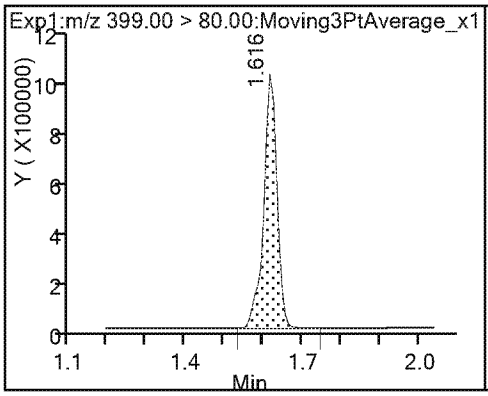
1 Perfluorobutanesulfonic acid



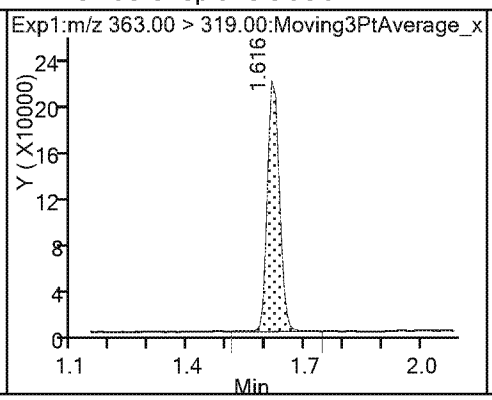
$ 2 13C2 PFHxA



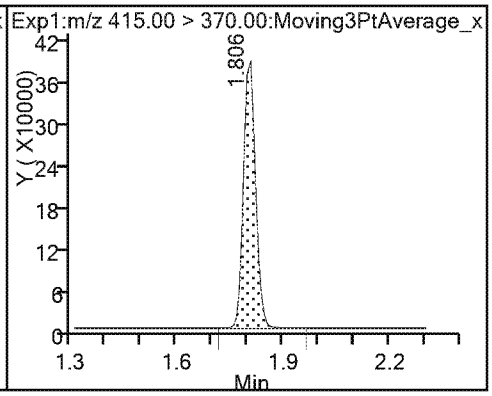
3 Perfluorohexanesulfonic acid



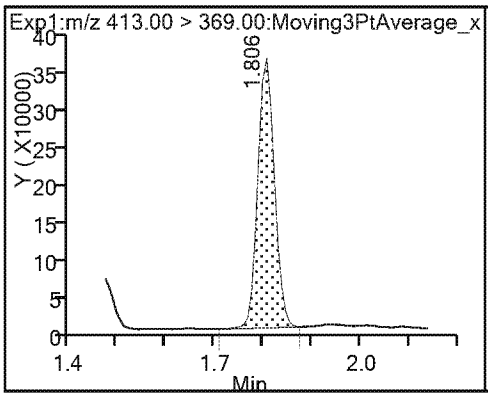
4 Perfluoroheptanoic acid



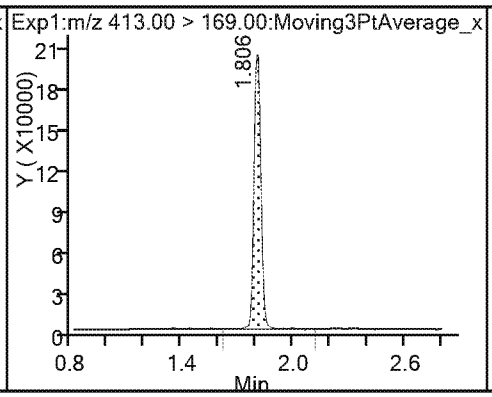
* 6 13C2-PFOA



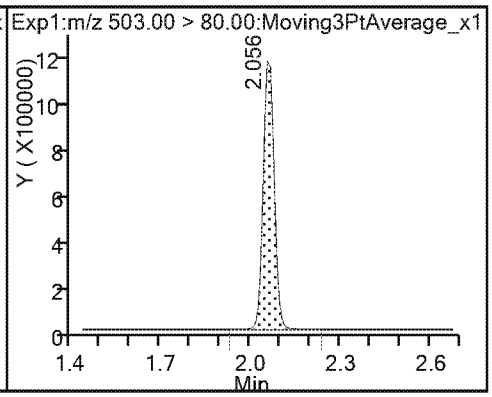
5 Perfluorooctanoic acid



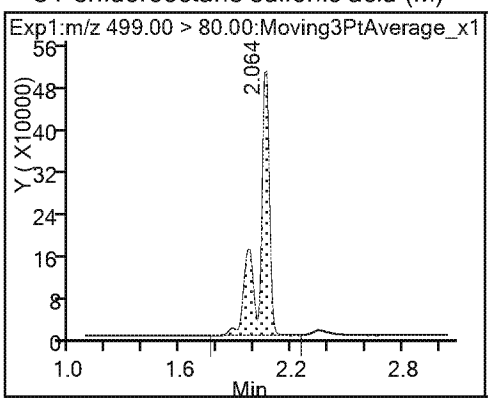
5 Perfluorooctanoic acid



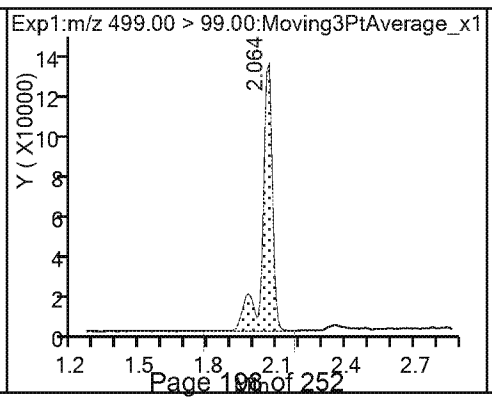
* 7 13C4 PFOS



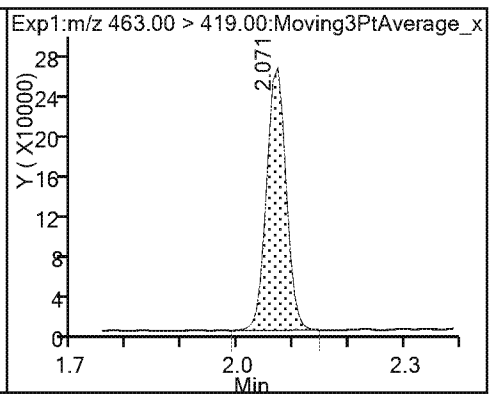
8 Perfluorooctane sulfonic acid (M)



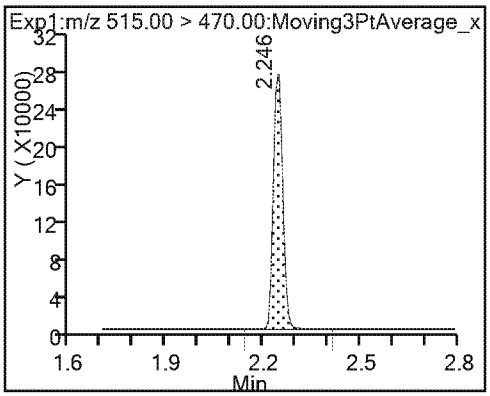
8 Perfluorooctane sulfonic acid



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
1.6
1.9
2.2
2.5
2.8
Min

TestAmerica Sacramento

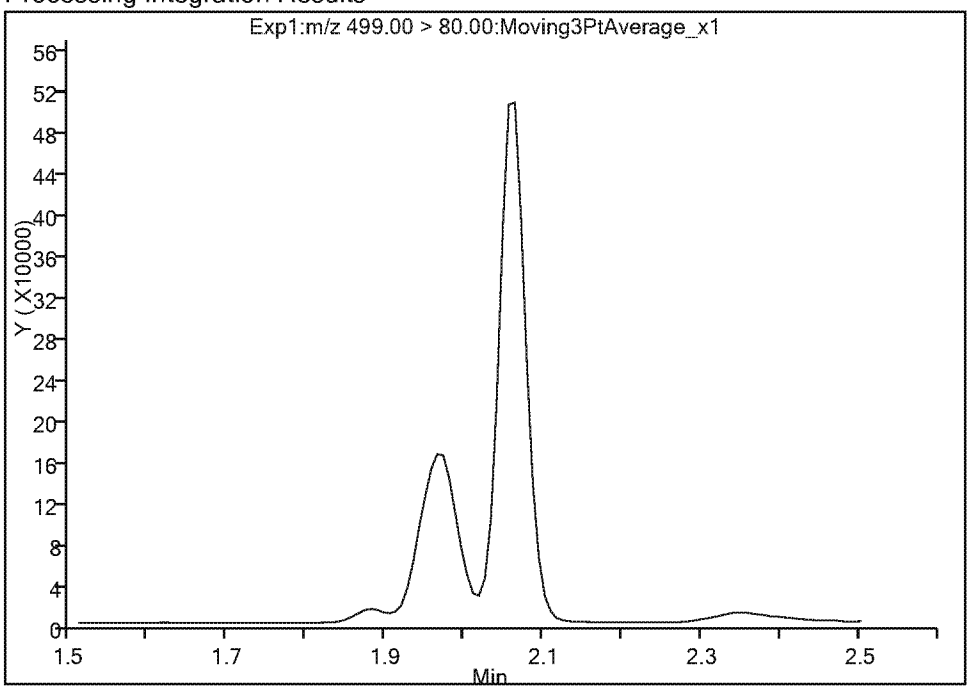
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_048.d				
Injection Date:	27-Feb-2018 14:26:11	Instrument ID:	A8_N		
Lims ID:	CCV L3				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

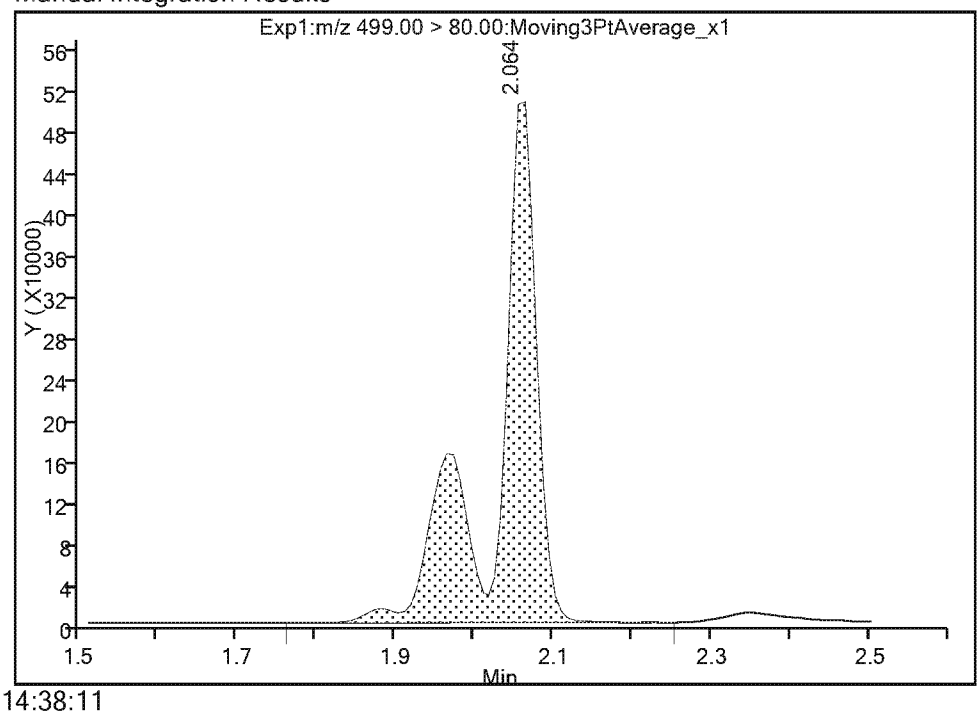
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 1815320
Amount: 20.318793
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 14:38:11
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

TestAmerica Sacramento

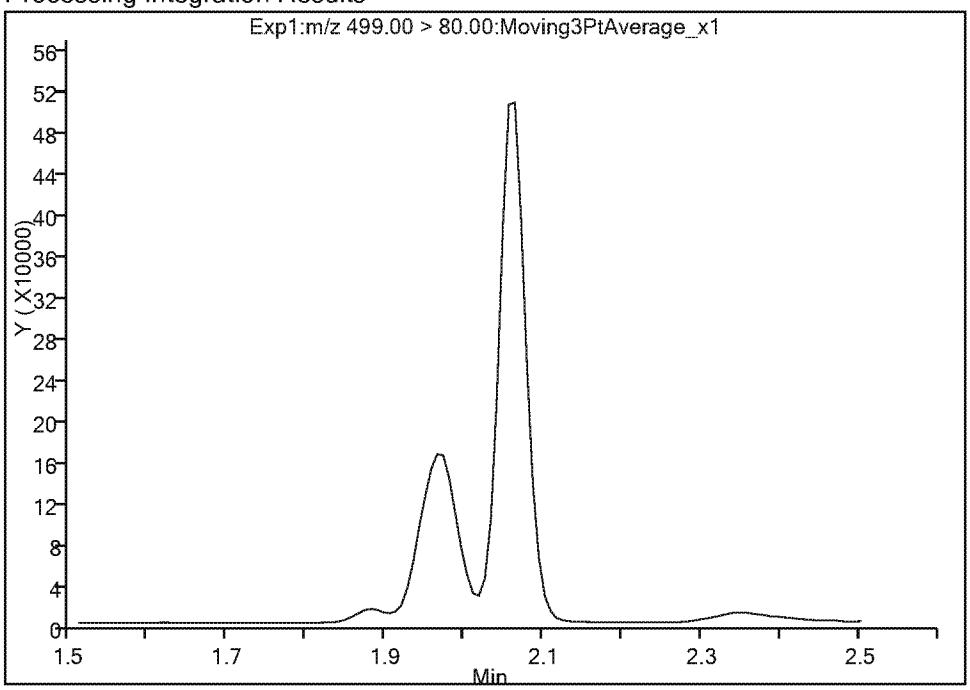
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_048.d				
Injection Date:	27-Feb-2018 14:26:11	Instrument ID:	A8_N		
Lims ID:	CCV L3				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

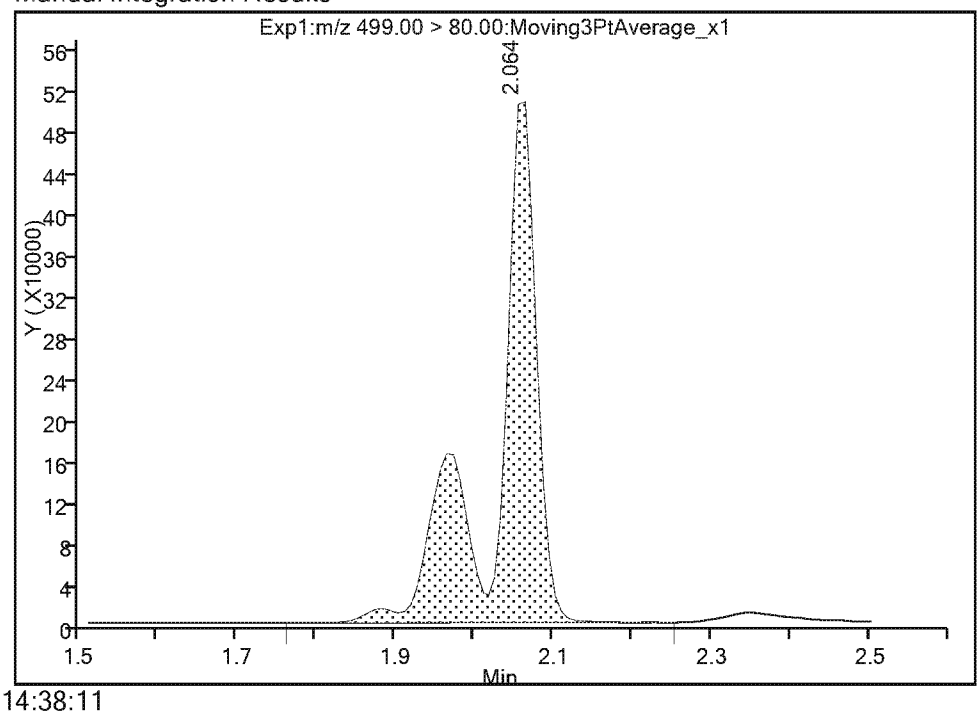
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 1815320
Amount: 20.318793
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 14:38:11
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Lab Sample ID: CCV 320-210263/19 Calibration Date: 02/27/2018 15:03

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: 2018.02.27_537B_056.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid	QuaF		1.093		39.9	45.0	-11.4	30.0
Perfluoroheptanoic acid	Ave	0.9711	1.003		5.16	5.00	3.3	30.0
Perfluorohexanesulfonic acid	Ave	1.610	1.607		15.0	15.0	-0.2	30.0
Perfluorooctanoic acid	Ave	0.9620	0.9295		9.72	10.1	-3.4	30.0
Perfluorooctane sulfonic acid	Ave	0.9455	0.9415		20.0	20.1	-0.4	30.0
Perfluorononanoic acid	Ave	0.6154	0.6912		11.2	10.0	12.3	30.0
13C2 PFHxA	Ave	1.100	1.093		9.94	10.0	-0.6	30.0
13C2 PFDA	Ave	0.5243	0.5821		11.1	10.0	11.0	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_056.d
Lims ID: CCV L3
Client ID:
Sample Type: CCVIS
Inject. Date: 27-Feb-2018 15:03:37 ALS Bottle#: 3 Worklist Smp#: 19
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\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 15:24:45 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: 27-Feb-2018 15:22:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.366	1.366	0.0	1.000	4619624	39.9		9514	
298.90 > 99.00	1.358	1.366	-0.008	0.994	3436011		1.34(0.00-0.00)	8633	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	951899	9.94		14544	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.624	0.0	1.000	2264303	15.0		2002	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.624	0.0	1.000	436803	5.16		79.9	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		871045	10.0		8416	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	814115	9.72		29.6	
413.00 > 169.00	1.806	1.806	0.0	1.000	451014		1.81(0.00-0.00)	362	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2692756	28.7		6615	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.056	2.056	0.0	1.000	1775527	20.0		562	a
499.00 > 99.00	2.056	2.056	0.0	1.000	375201		4.73(0.00-0.00)	135	
9 Perfluorononanoic acid									
463.00 > 419.00	2.064	2.064	0.0	1.000	602259	11.2		61.7	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	507068	11.1		2934	

QC Flag Legend

Review Flags

a - User Assigned ID

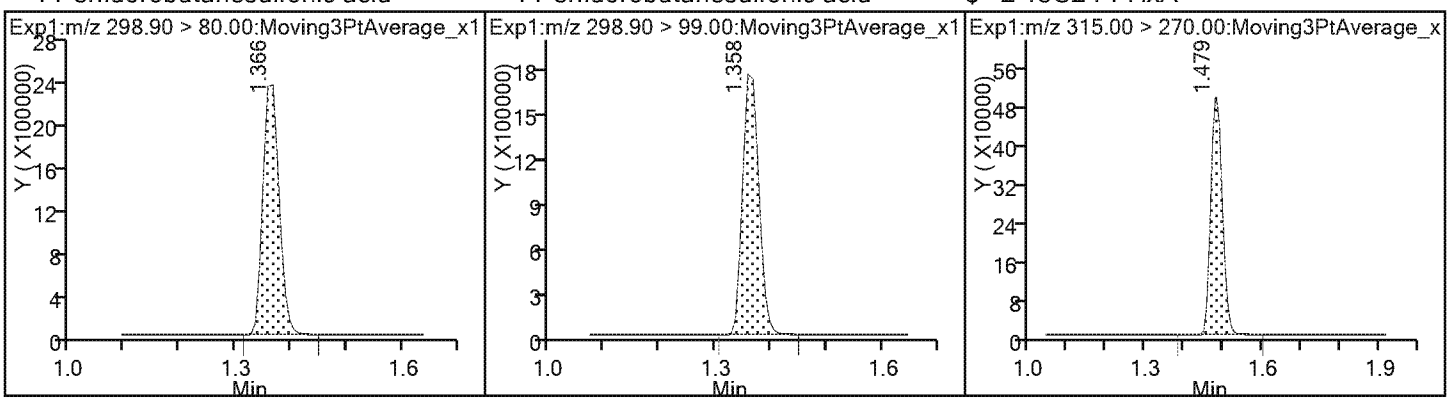
Reagents:

LC537-L3_00024 Amount Added: 1.00 Units: mL

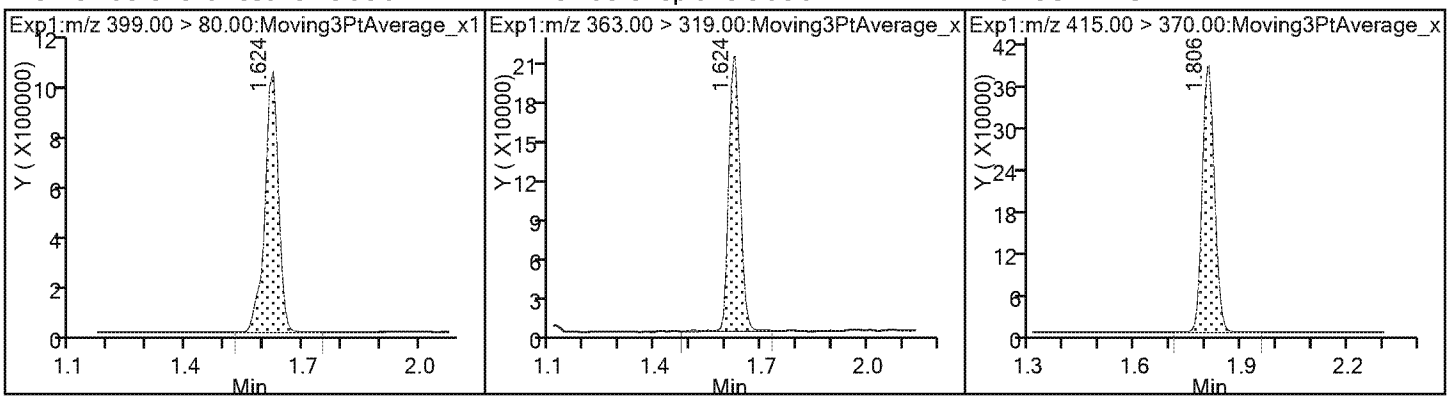
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_056.d
Injection Date: 27-Feb-2018 15:03:37 Instrument ID: A8_N
Lims ID: CCV L3
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

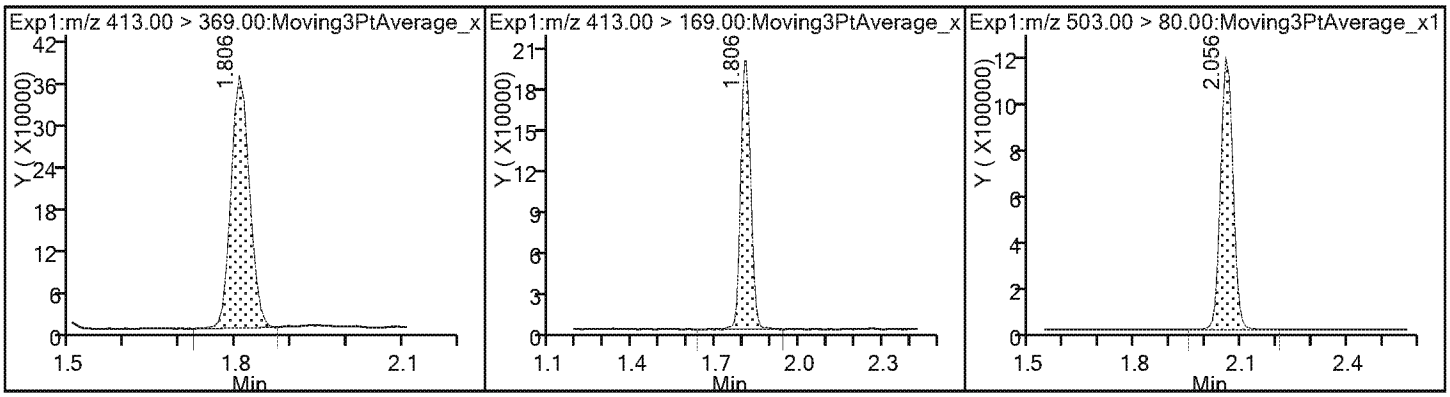
1 Perfluorobutanesulfonic acid | 1 Perfluorobutanesulfonic acid | $ 2 13C2 PFHxA



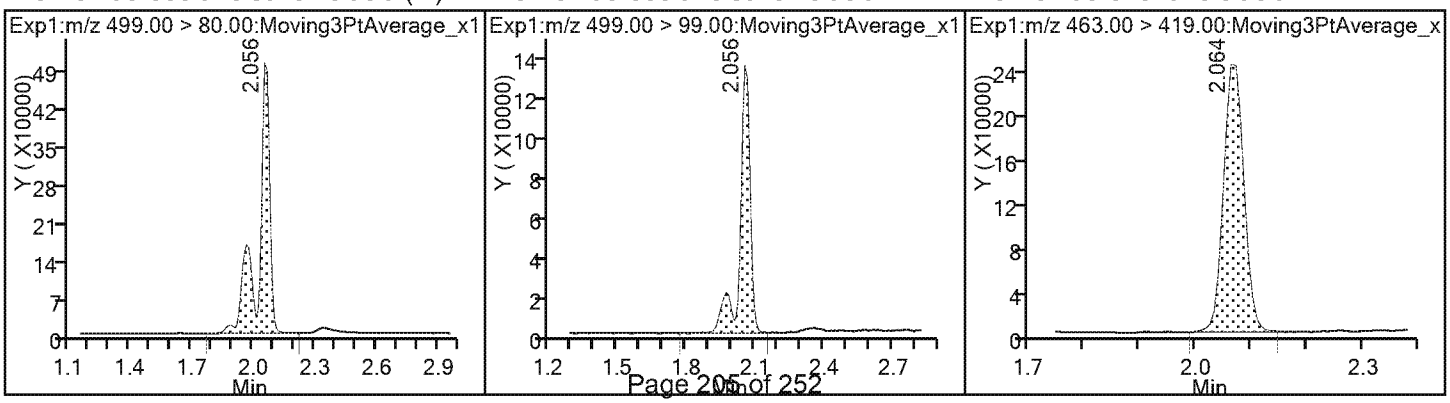
3 Perfluorohexanesulfonic acid | 4 Perfluoroheptanoic acid | * 6 13C2-PFOA



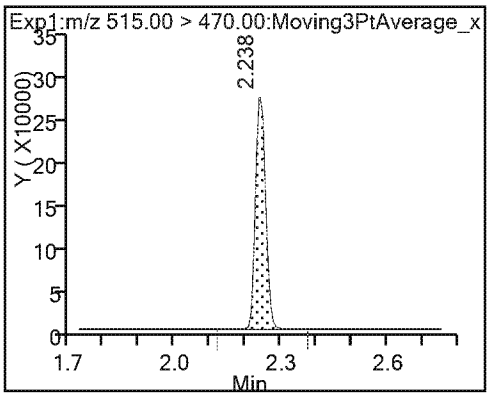
5 Perfluorooctanoic acid | 5 Perfluorooctanoic acid | * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (M) | 8 Perfluorooctane sulfonic acid | 9 Perfluorononanoic acid



$ 10 13C2 PFDA


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

TestAmerica Sacramento

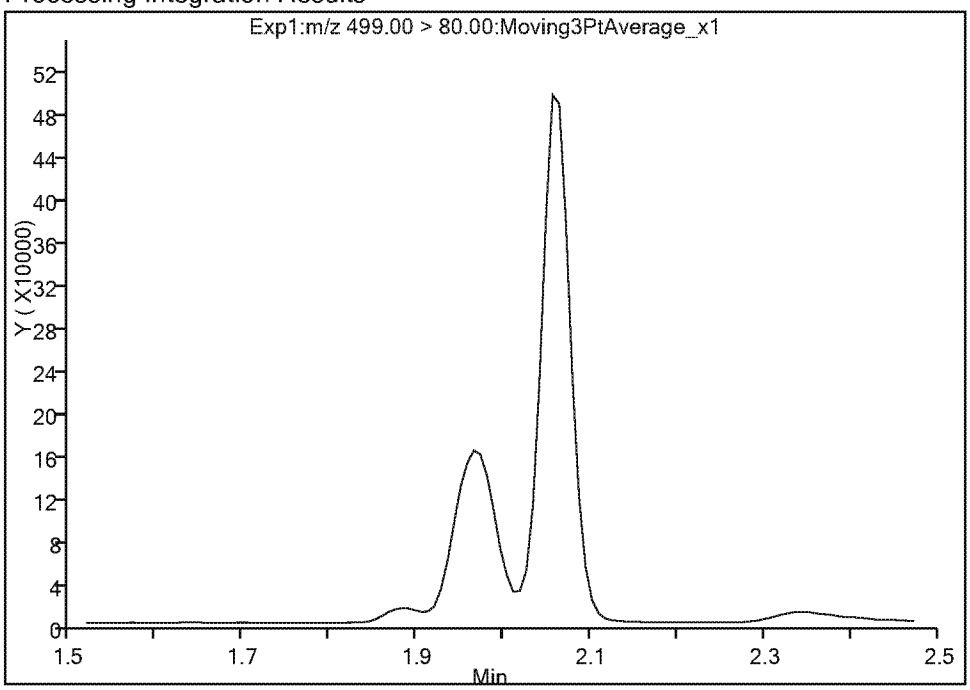
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_056.d				
Injection Date:	27-Feb-2018 15:03:37	Instrument ID:	A8_N		
Lims ID:	CCV L3				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

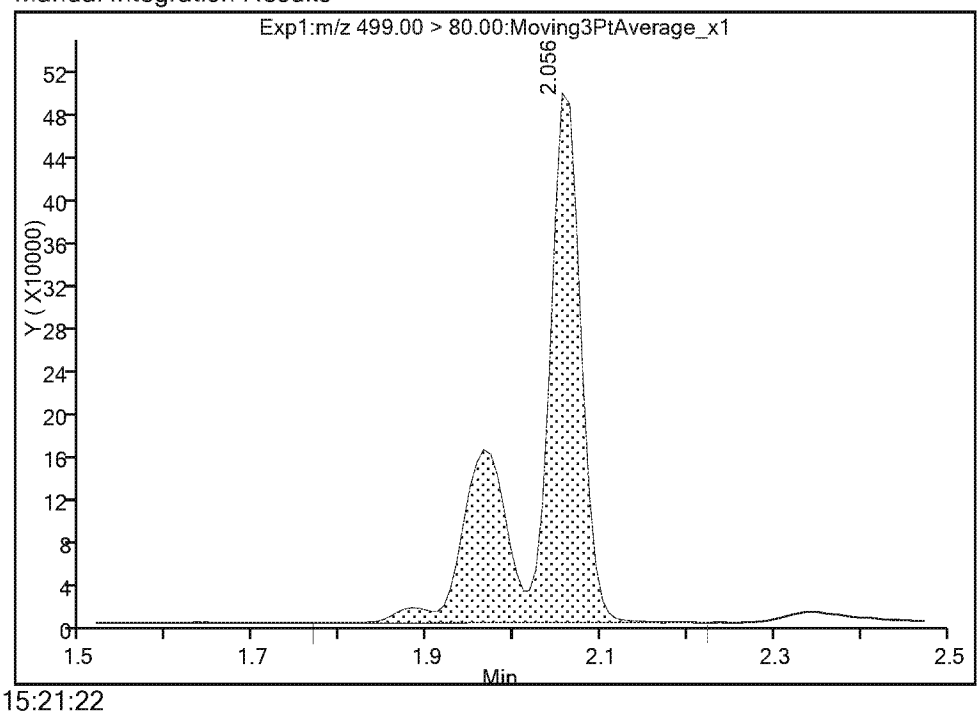
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT:	2.06
Area:	1775527
Amount:	20.000038
Amount Units:	ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 15:21:22
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID:
Lab Sample ID: MB 320-209655/1-A
Matrix: Water
Lab File ID: 2018.02.27_537B_040.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 250(mL)
Date Analyzed: 02/27/2018 13:48
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.: 210262
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	98		70-130
STL00996	13C2 PFDA	107		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_040.d
Lims ID: MB 320-209655/1-A
Client ID:
Sample Type: MB
Inject. Date: 27-Feb-2018 13:48:38 ALS Bottle#: 28 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-209655/1-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:30 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: XAWRK018

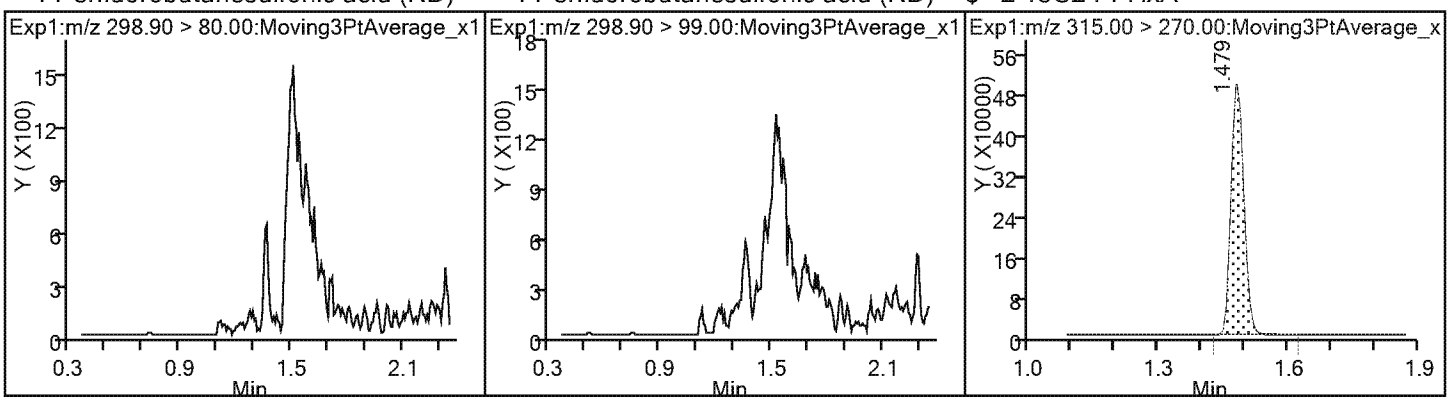
First Level Reviewer: Ex. 4 CBI Date: 27-Feb-2018 14:18:05

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	967422	9.76		16002	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		901596	10.0		8986	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.064	-0.008		2883823	28.7		6944	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.238	0.0	1.000	505886	10.7		3104	

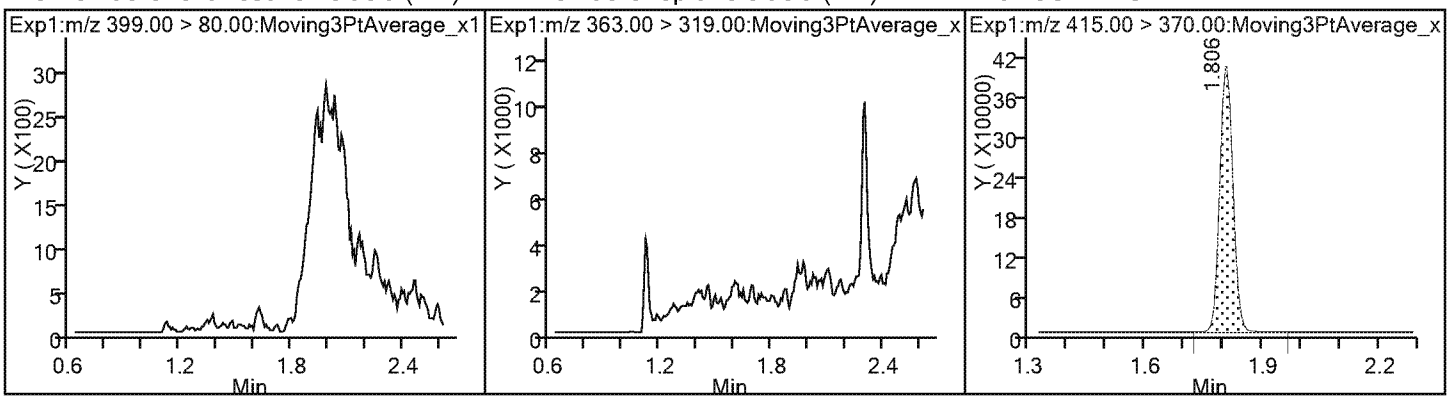
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_040.d
Injection Date: 27-Feb-2018 13:48:38 Instrument ID: A8_N
Lims ID: MB 320-209655/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

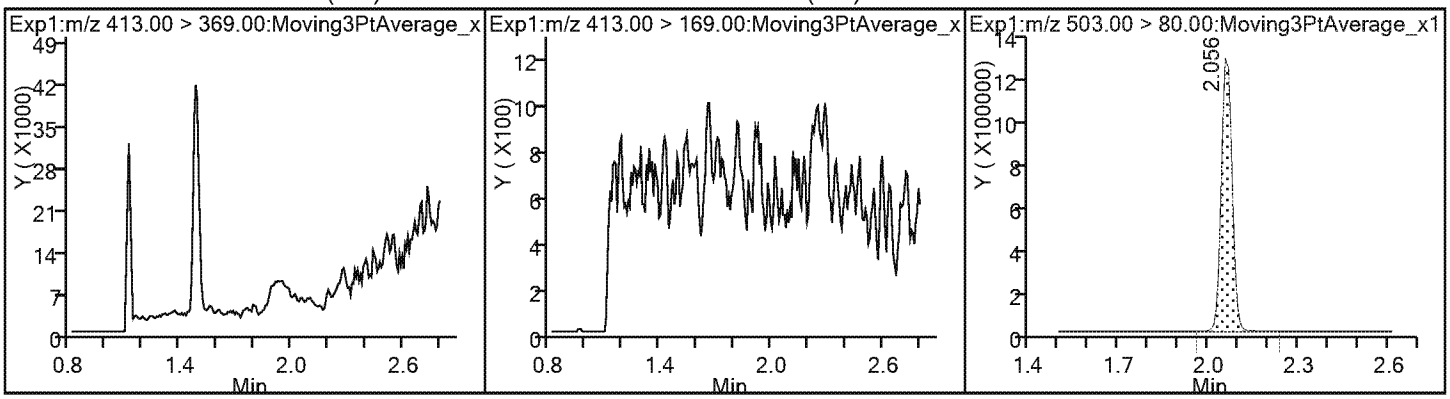
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) $ 2 13C2 PFHxA



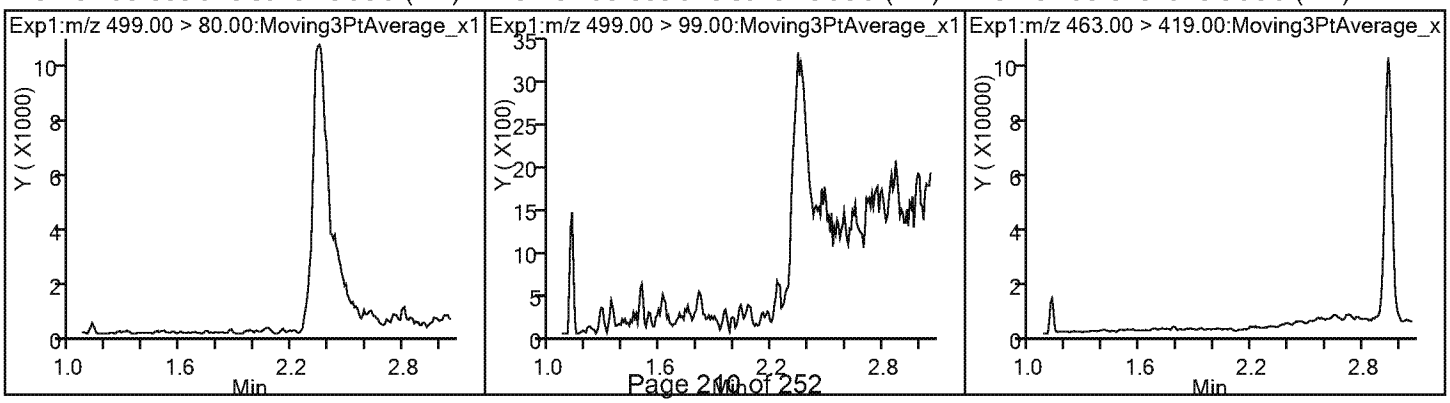
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) * 6 13C2-PFOA



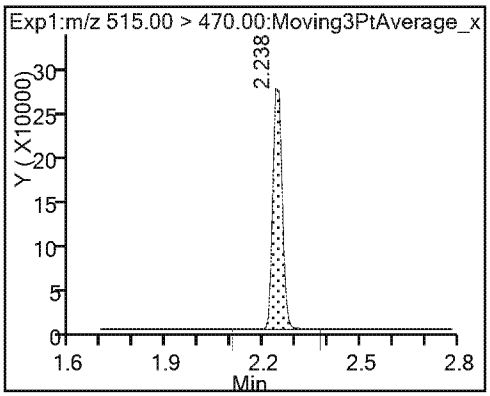
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 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
1.6
1.9
2.2
2.5
2.8
Min

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID:
Lab Sample ID: LCS 320-209655/2-A
Matrix: Water
Lab File ID: 2018.02.27_537B_041.d
Analysis Method: 537 DW
Date Collected:
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 250(mL)
Date Analyzed: 02/27/2018 13:53
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.: 210262
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	215		40	6.8
335-67-1	Perfluorooctanoic acid	106		20	2.8
375-95-1	Perfluorononanoic acid	121		20	8.0
355-46-4	Perfluorohexanesulfonic acid	161		30	5.5
375-85-9	Perfluoroheptanoic acid	57.9		10	1.9
375-73-5	Perfluorobutanesulfonic acid	410		90	16

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	102		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_041.d
Lims ID: LCS 320-209655/2-A
Client ID:
Sample Type: LCS
Inject. Date: 27-Feb-2018 13:53:19 ALS Bottle#: 29 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-209655/2-
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 14:43:41 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: 27-Feb-2018 14:44:26

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	1.358	0.008	1.000	11072168	102.5		17790	
298.90 > 99.00	1.366	1.358	0.008	1.000	8703033		1.27(0.00-0.00)	15241	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	929855	9.32		14779	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.624	1.616	0.008	1.000	6359418	40.3		5114	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.616	0.008	1.000	1275322	14.5		227	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		907425	10.0		8681	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	2320371	26.6		80.4	
413.00 > 169.00	1.806	1.806	0.0	1.000	1294181		1.79(0.00-0.00)	988	
* 7 13C4 PFOS									
503.00 > 80.00	2.064	2.056	0.008		2814429	28.7		6302	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.064	2.064	0.0	1.000	4997940	53.9		1522	M
499.00 > 99.00	2.064	2.064	0.0	1.000	1052843		4.75(0.00-0.00)	340	
9 Perfluorononanoic acid									
463.00 > 419.00	2.071	2.071	0.0	1.000	1688161	30.2		131	
$ 10 13C2 PFDA									
515.00 > 470.00	2.246	2.246	0.0	1.000	487061	10.2		3295	

QC Flag Legend

Review Flags

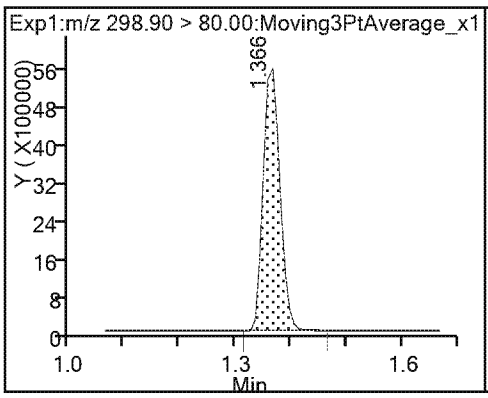
M - Manually Integrated

a - User Assigned ID

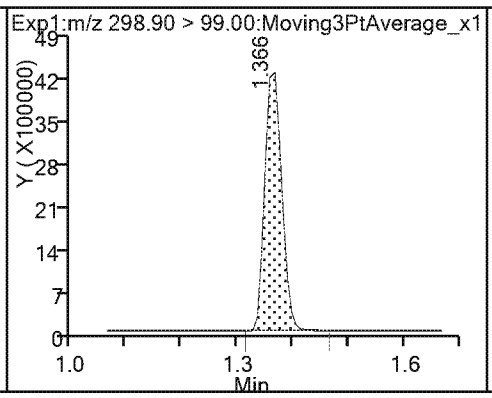
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_041.d
Injection Date: 27-Feb-2018 13:53:19 Instrument ID: A8_N
Lims ID: LCS 320-209655/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

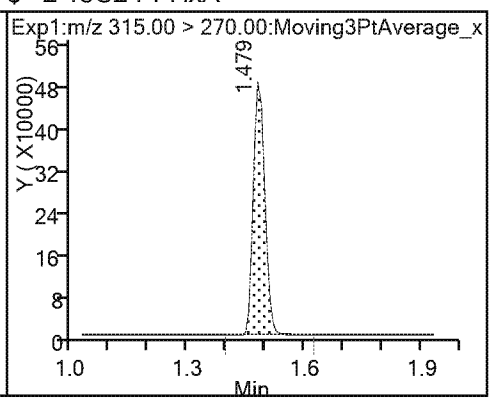
1 Perfluorobutanesulfonic acid



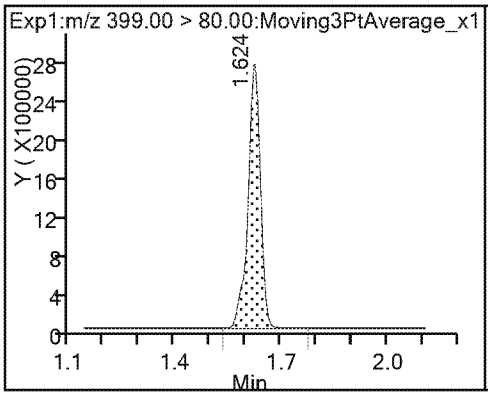
1 Perfluorobutanesulfonic acid



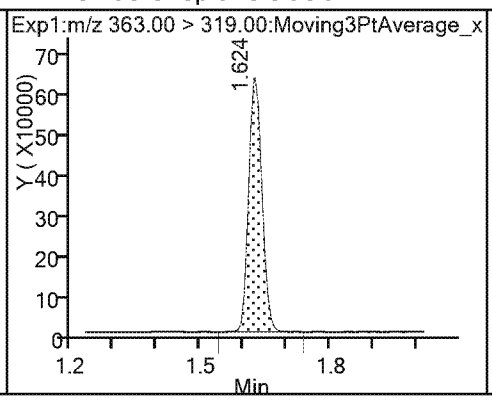
$ 2 13C2 PFHxA



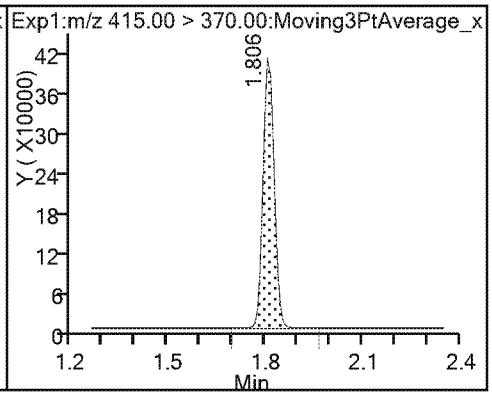
3 Perfluorohexanesulfonic acid



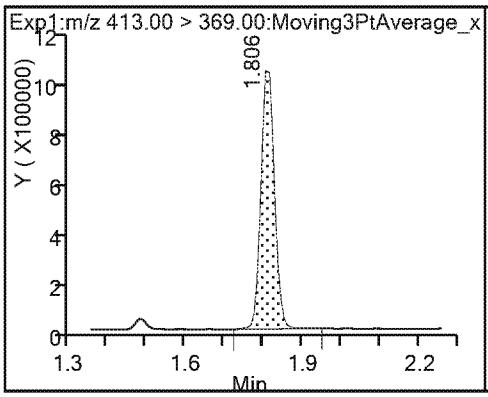
4 Perfluoroheptanoic acid



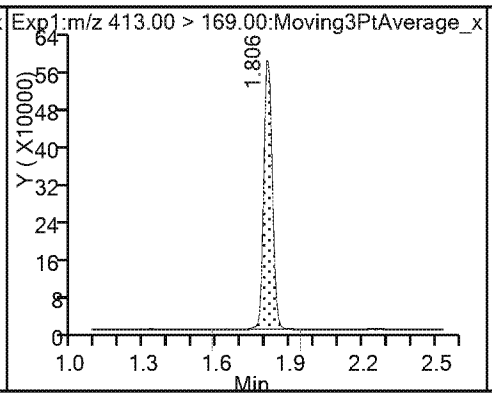
* 6 13C2-PFOA



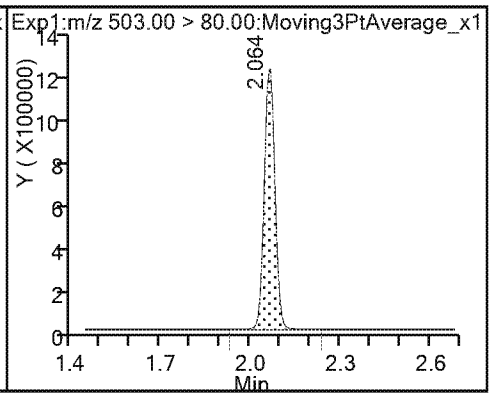
5 Perfluorooctanoic acid



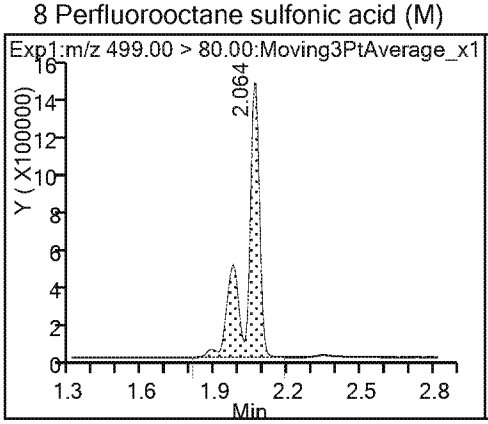
5 Perfluorooctanoic acid



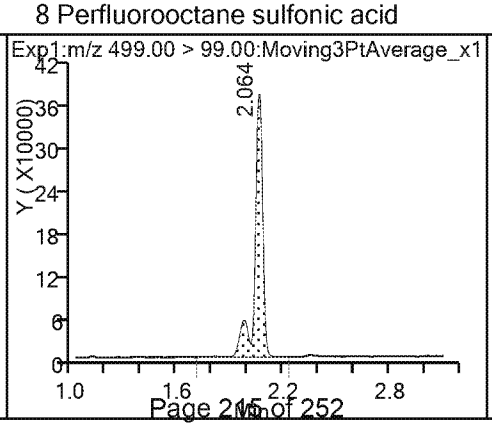
* 7 13C4 PFOS



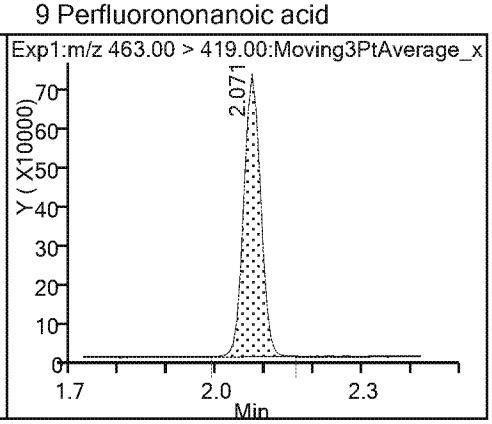
8 Perfluorooctane sulfonic acid (M)



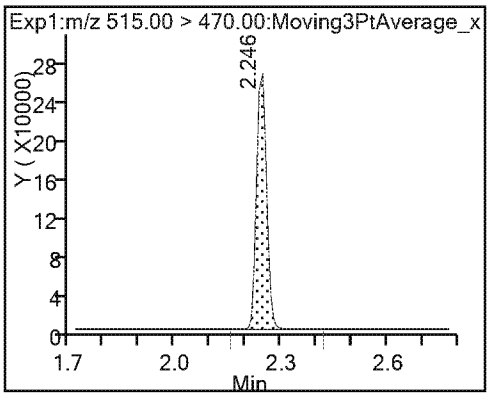
8 Perfluorooctane sulfonic acid



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.246
Y (X10000)
28
24
20
16
12
8
4
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

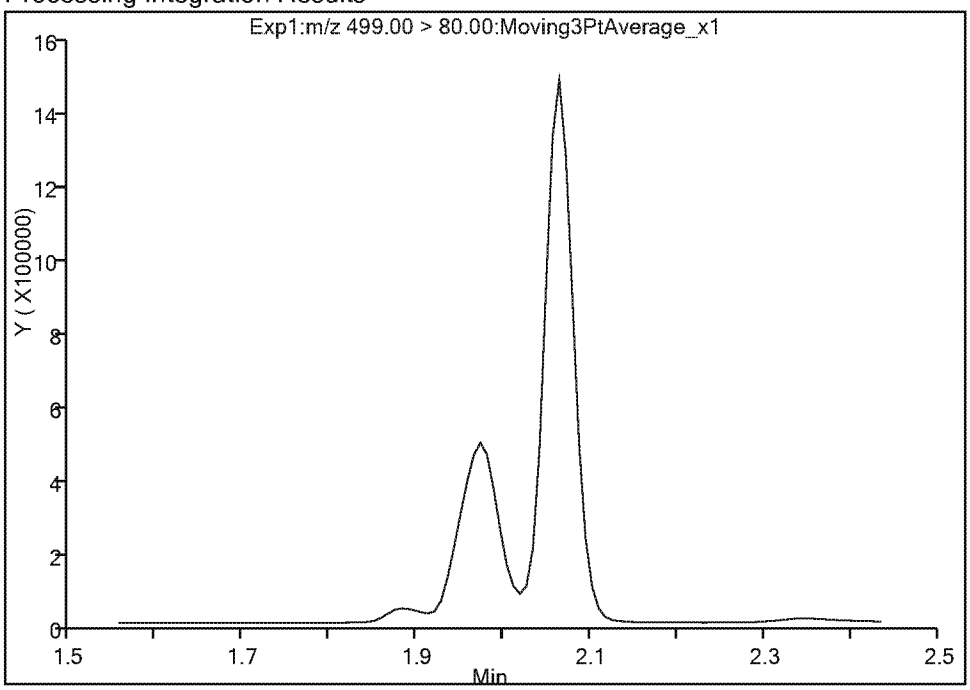
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_041.d				
Injection Date:	27-Feb-2018 13:53:19	Instrument ID:	A8_N		
Lims ID:	LCS 320-209655/2-A				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	29	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

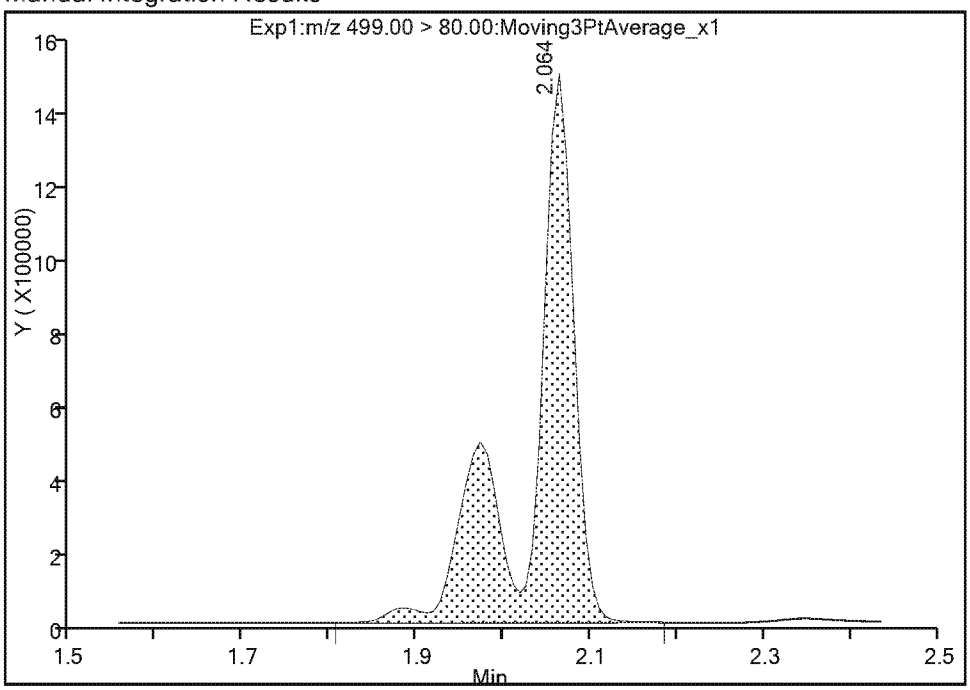
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 4997940
Amount: 53.864333
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 14:18:29
Audit Action: Manually Integrated Audit Reason: Assign Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AJ0 MS
Lab Sample ID: 320-36235-7 MS
Matrix: Water
Lab File ID: 2018.02.27_537B_051.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 10:00
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 290.3(mL)
Date Analyzed: 02/27/2018 14:40
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.: 210263
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	162		34	5.9
335-67-1	Perfluorooctanoic acid	97.6		17	2.4
375-95-1	Perfluorononanoic acid	94.6		17	6.9
355-46-4	Perfluorohexanesulfonic acid	132		26	4.7
375-85-9	Perfluoroheptanoic acid	46.3		8.6	1.6
375-73-5	Perfluorobutanesulfonic acid	332		78	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	81		70-130
STL00996	13C2 PFDA	88		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_051.d
Lims ID: 320-36235-A-7-B MS
Client ID: C0AJ0
Sample Type: MS
Inject. Date: 27-Feb-2018 14:40:12 ALS Bottle#: 37 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-7-b
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 15:24:11 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: 27-Feb-2018 14:57:04

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	9981252	96.4		16269	
298.90 > 99.00	1.358	1.358	0.0	1.000	7495646		1.33(0.00-0.00)	14031	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	759270	8.07		11820	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.616	1.616	0.0	1.000	5714327	38.2		2497	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.616	0.008	1.000	1117401	13.5		148	
* 6 13C2-PFOA									
415.00 > 370.00	1.798	1.806	-0.008		855257	10.0		7696	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	2330737	28.3		81.3	
413.00 > 169.00	1.798	1.806	-0.008	0.996	1292353		1.80(0.00-0.00)	910	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2665871	28.7		4038	
8 Perfluorooctane sulfonic acid									a
499.00 > 80.00	2.056	2.056	0.0	1.000	4121524	46.9		1051	a
499.00 > 99.00	2.056	2.056	0.0	1.000	861182		4.79(0.00-0.00)	252	
9 Perfluorononanoic acid									
463.00 > 419.00	2.064	2.071	-0.007	1.000	1444832	27.5		80.9	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	394125	8.79		2718	

QC Flag Legend

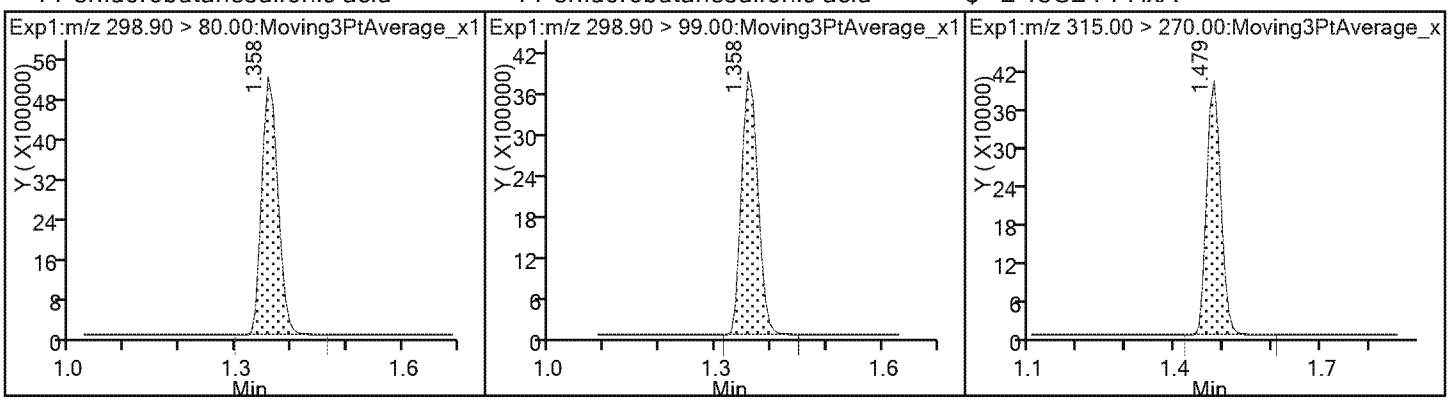
Review Flags

a - User Assigned ID

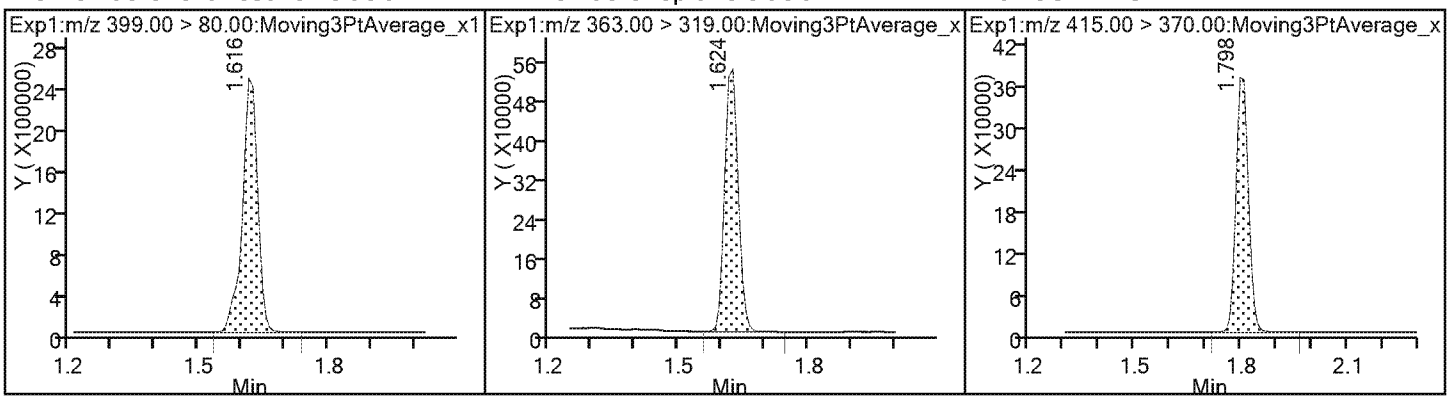
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_051.d
Injection Date: 27-Feb-2018 14:40:12 Instrument ID: A8_N
Lims ID: 320-36235-A-7-B MS
Client ID: C0AJ0
Operator ID: SACINSTLCMS01 ALS Bottle#: 37 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

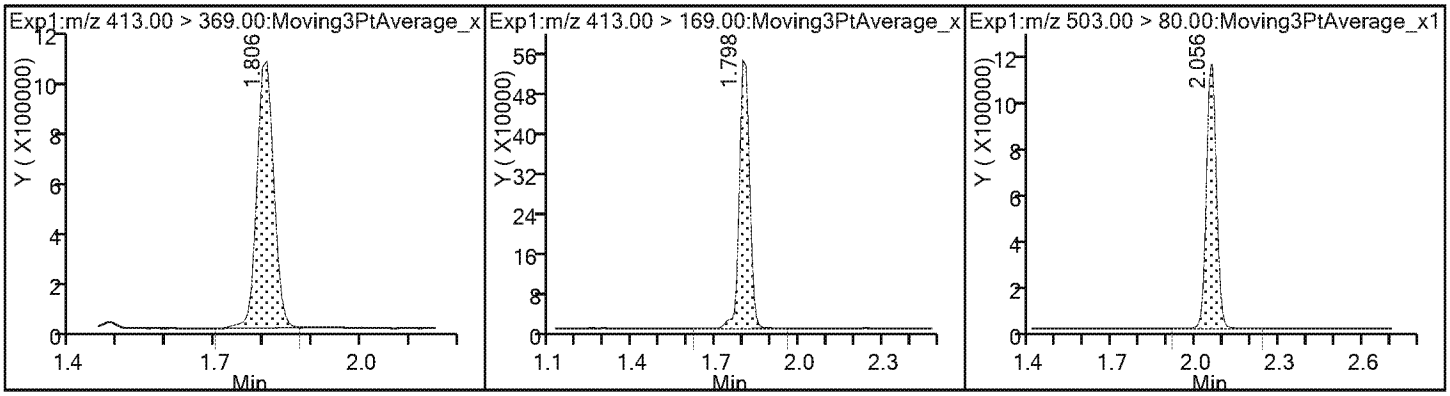
1 Perfluorobutanesulfonic acid | 1 Perfluorobutanesulfonic acid | $ 2 13C2 PFHxA



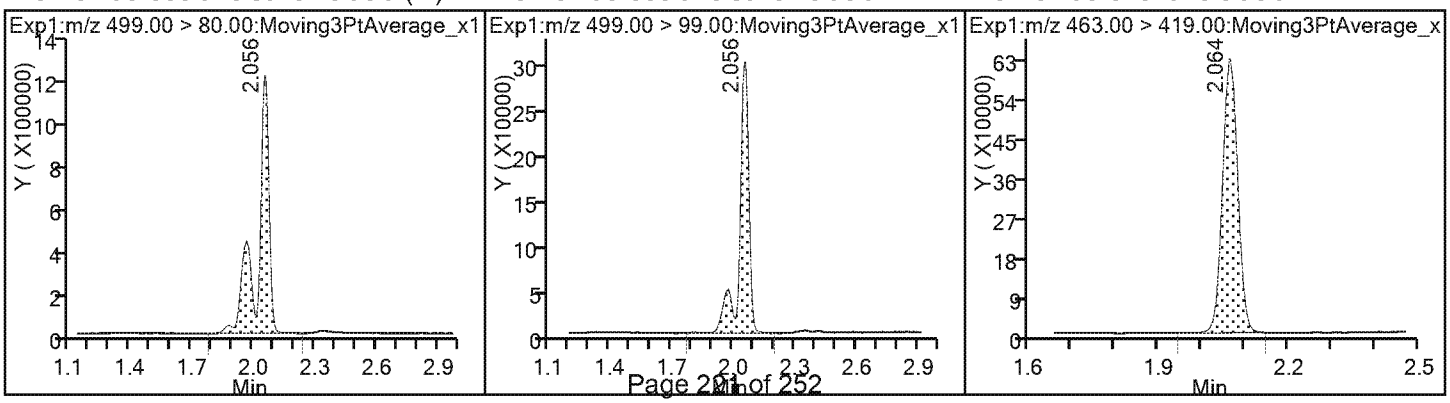
3 Perfluorohexanesulfonic acid | 4 Perfluoroheptanoic acid | * 6 13C2-PFOA



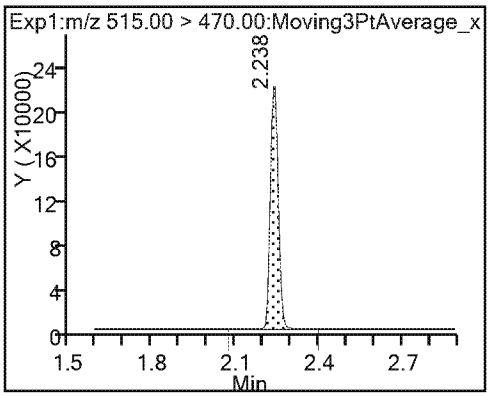
5 Perfluorooctanoic acid | 5 Perfluorooctanoic acid | * 7 13C4 PFOS



8 Perfluorooctane sulfonic acid (M) | 8 Perfluorooctane sulfonic acid | 9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
24
20
16
12
8
4
0
1.5
1.8
2.1
2.4
2.7
Min

TestAmerica Sacramento

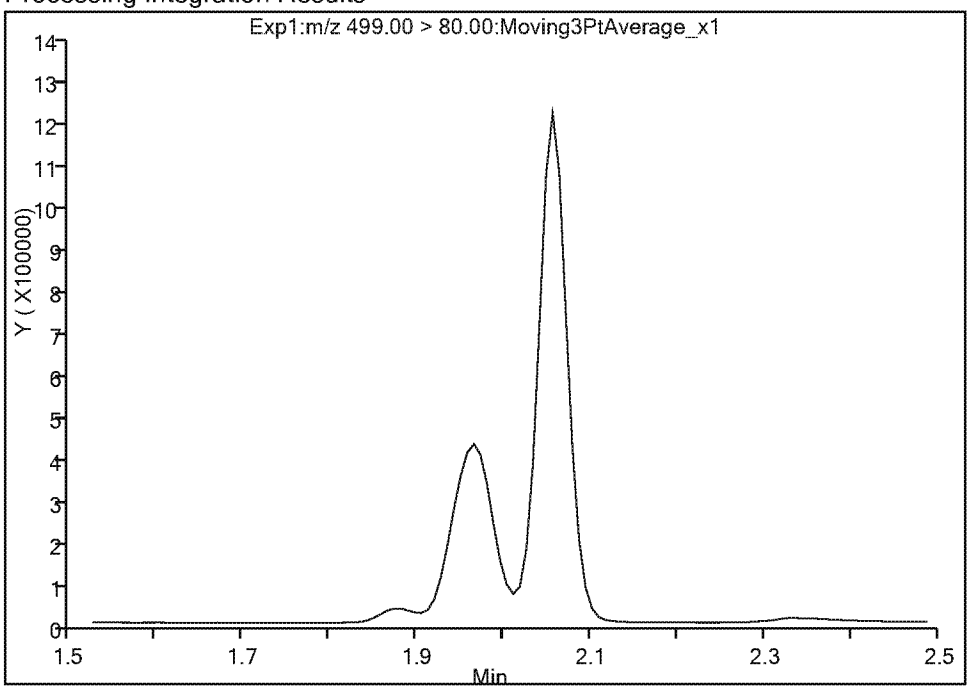
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_051.d				
Injection Date:	27-Feb-2018 14:40:12	Instrument ID:	A8_N		
Lims ID:	320-36235-A-7-B MS				
Client ID:	C0AJ0				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	37	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

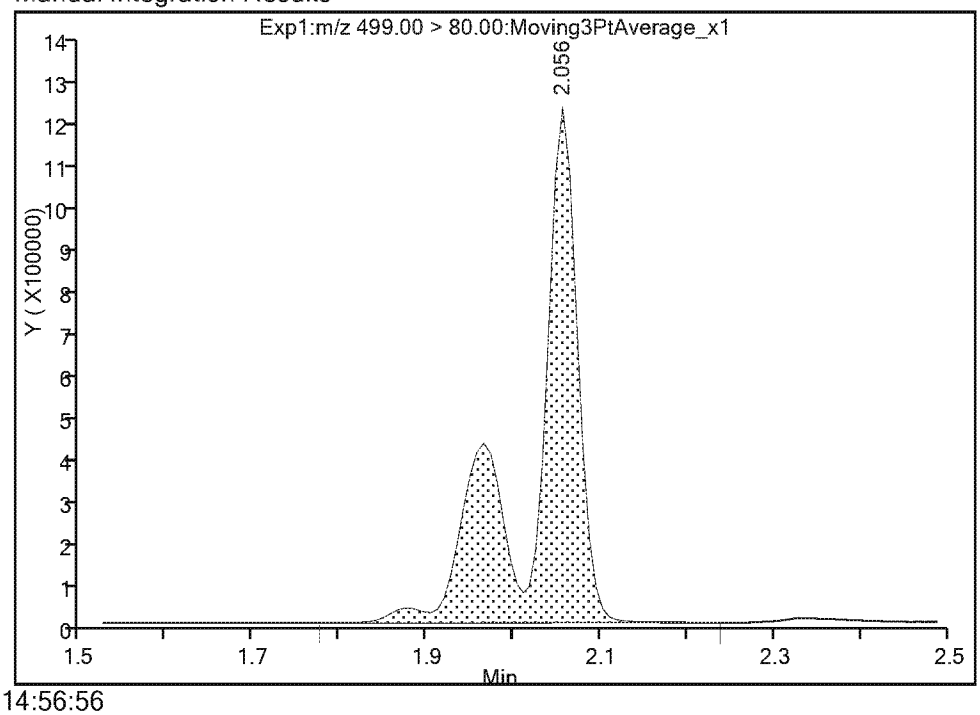
Not Detected
Expected RT: 2.06

Processing Integration Results



Manual Integration Results

RT: 2.06
Area: 4121524
Amount: 46.894213
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 14:56:56
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento
Job No.: 320-36235-1
SDG No.: DAS R35321, SDG C0AG8
Client Sample ID: C0AJ0 MSD
Lab Sample ID: 320-36235-7 MSD
Matrix: Water
Lab File ID: 2018.02.27_537B_052.d
Analysis Method: 537 DW
Date Collected: 02/19/2018 10:00
Extraction Method: 537 DW
Date Extracted: 02/22/2018 12:58
Sample wt/vol: 287.9(mL)
Date Analyzed: 02/27/2018 14:44
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.: 210263
Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctane sulfonic acid	187		35	5.9
335-67-1	Perfluorooctanoic acid	95.5		17	2.4
375-95-1	Perfluorononanoic acid	105		17	6.9
355-46-4	Perfluorohexanesulfonic acid	136		26	4.8
375-85-9	Perfluoroheptanoic acid	49.0		8.7	1.6
375-73-5	Perfluorobutanesulfonic acid	349		78	14

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	86		70-130
STL00996	13C2 PFDA	108		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_052.d
Lims ID: 320-36235-A-7-C MSD
Client ID: C0AJ0
Sample Type: MSD
Inject. Date: 27-Feb-2018 14:44:53 ALS Bottle#: 38 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36235-a-7-c msd
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 27-Feb-2018 15:24:11 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: 27-Feb-2018 14:59:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.358	1.358	0.0	1.000	10620064	100.4		15442	
298.90 > 99.00	1.358	1.358	0.0	1.000	8154031		1.30(0.00-0.00)	14882	
$ 2 13C2 PFHxA									
315.00 > 270.00	1.479	1.479	0.0	1.000	822307	8.57		15339	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.616	1.616	0.0	1.000	6019197	39.1		2607	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.624	1.616	0.008	1.000	1193884	14.1		154	
* 6 13C2-PFOA									
415.00 > 370.00	1.806	1.806	0.0		872050	10.0		6970	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.806	1.806	0.0	1.000	2307557	27.5		85.9	
413.00 > 169.00	1.806	1.806	0.0	1.000	1293387		1.78(0.00-0.00)	974	
* 7 13C4 PFOS									
503.00 > 80.00	2.056	2.056	0.0		2744194	28.7		4201	
8 Perfluorooctane sulfonic acid									Ma
499.00 > 80.00	2.056	2.056	0.0	1.000	4861615	53.7		1349	M
499.00 > 99.00	2.056	2.056	0.0	1.000	1023284		4.75(0.00-0.00)	311	
9 Perfluorononanoic acid									
463.00 > 419.00	2.064	2.071	-0.007	1.000	1618638	30.2		40.2	
$ 10 13C2 PFDA									
515.00 > 470.00	2.238	2.246	-0.008	1.000	491690	10.8		3213	

QC Flag Legend

Review Flags

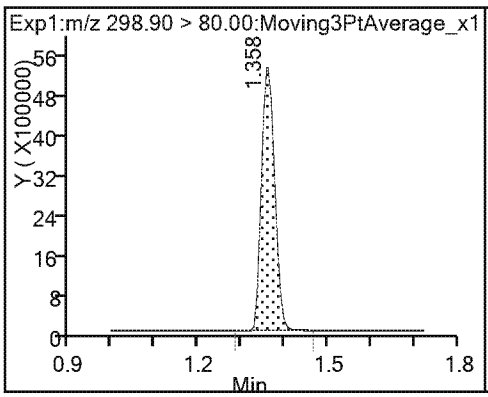
M - Manually Integrated

a - User Assigned ID

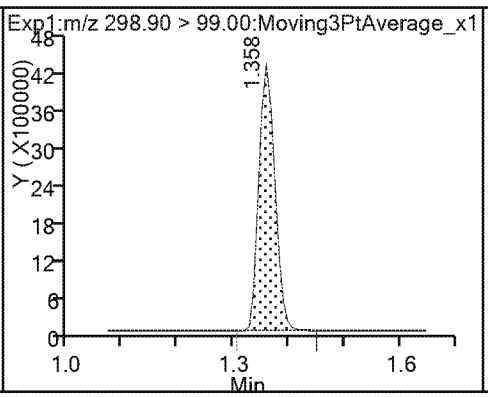
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_052.d
Injection Date: 27-Feb-2018 14:44:53 Instrument ID: A8_N
Lims ID: 320-36235-A-7-C MSD
Client ID: C0AJ0
Operator ID: SACINSTLCMS01 ALS Bottle#: 38 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: 537_A8_N Limit Group: LC 537 ICAL

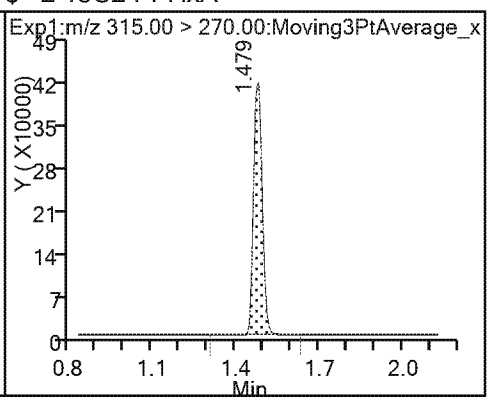
1 Perfluorobutanesulfonic acid



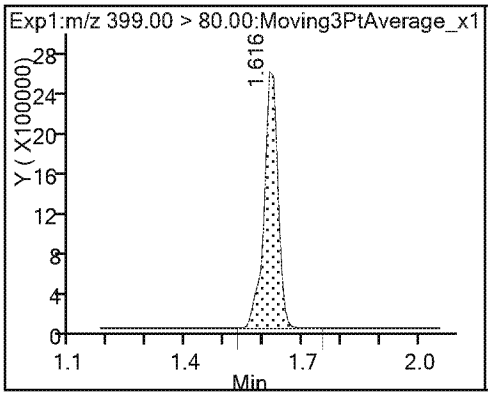
1 Perfluorobutanesulfonic acid



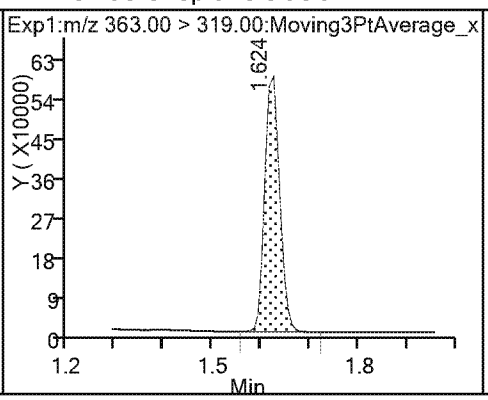
$ 2 13C2 PFHxA



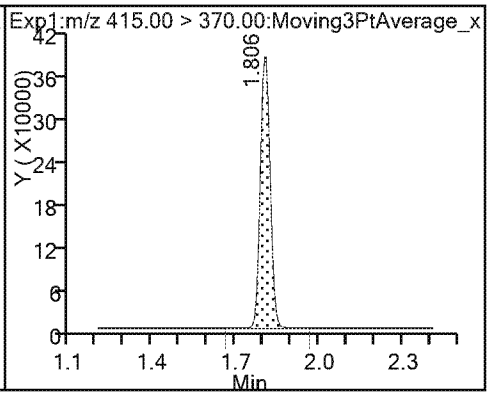
3 Perfluorohexanesulfonic acid



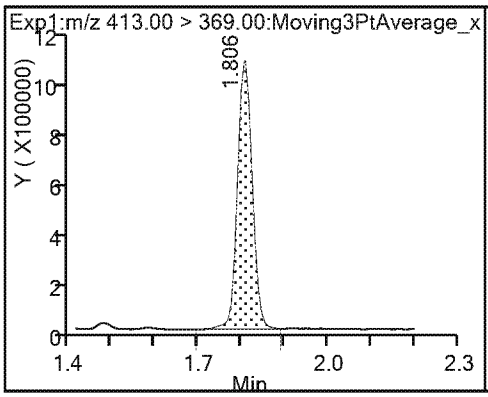
4 Perfluoroheptanoic acid



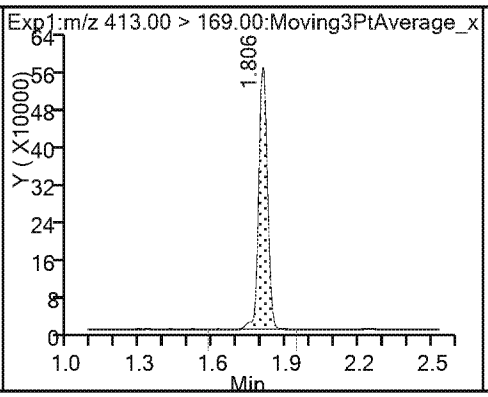
* 6 13C2-PFOA



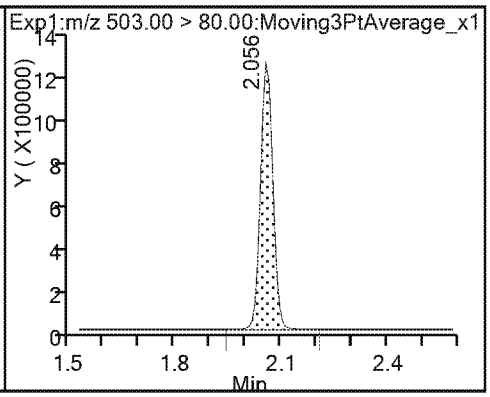
5 Perfluorooctanoic acid



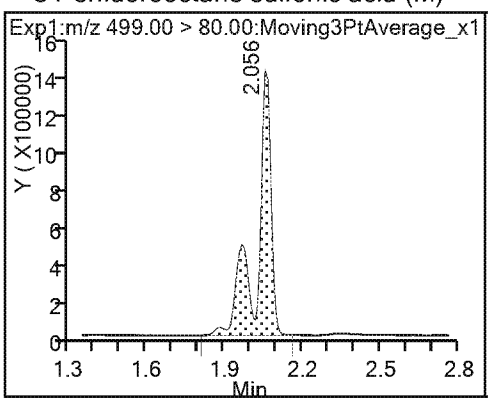
5 Perfluorooctanoic acid



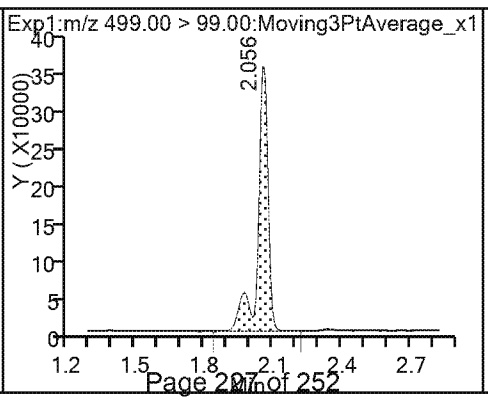
* 7 13C4 PFOS



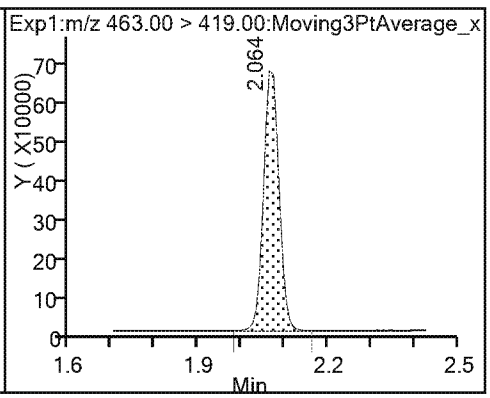
8 Perfluorooctane sulfonic acid (M)



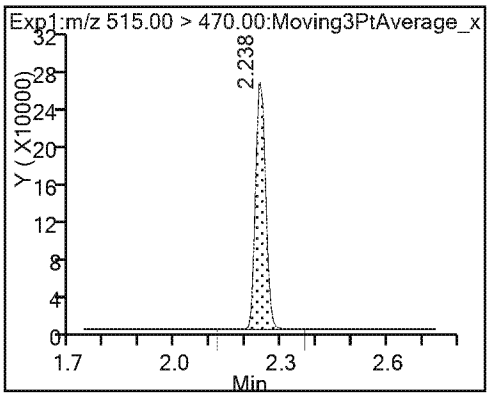
8 Perfluorooctane sulfonic acid



9 Perfluorononanoic acid



$ 10 13C2 PFDA


Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x
2.238
Y (X10000)
32
28
24
20
16
12
8
4
0
1.7
2.0
2.3
2.6
Min

TestAmerica Sacramento

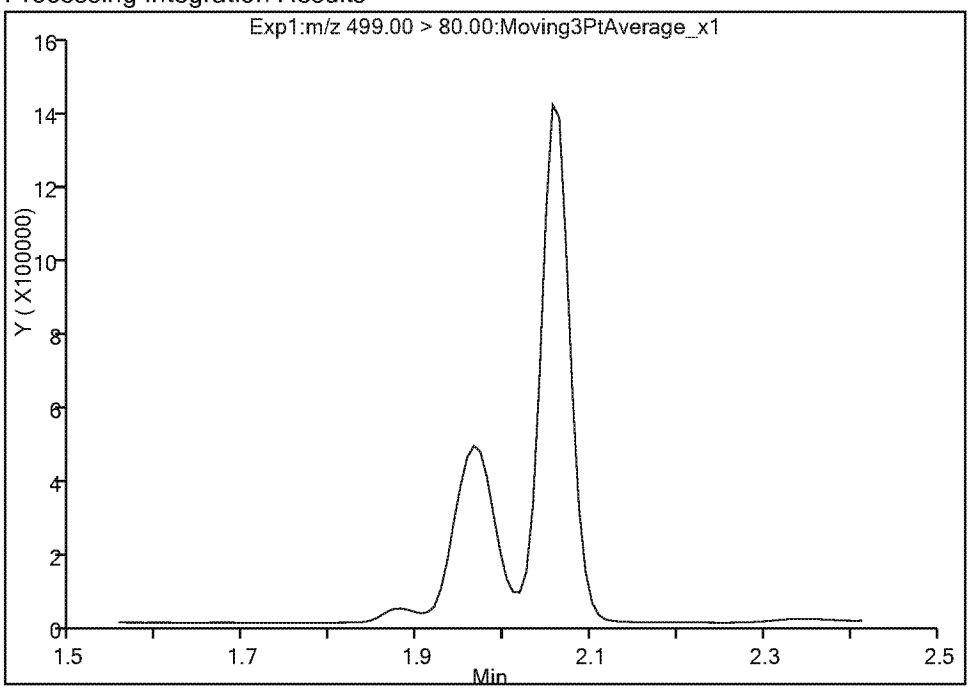
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b\2018.02.27_537B_052.d				
Injection Date:	27-Feb-2018 14:44:53	Instrument ID:	A8_N		
Lims ID:	320-36235-A-7-C MSD				
Client ID:	C0AJ0				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	38	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	537_A8_N	Limit Group:	LC 537 ICAL		
Column:		Detector	EXP1		

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

Signal: 1

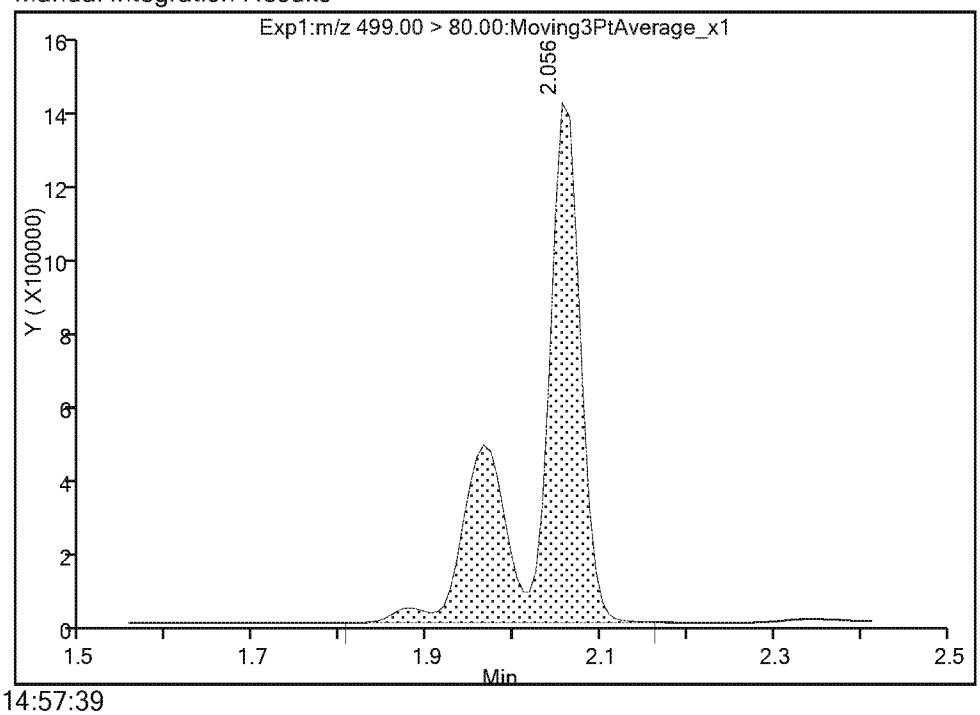
Processing Integration Results

Not Detected
Expected RT: 2.06



Manual Integration Results

RT: 2.06
Area: 4861615
Amount: 53.736120
Amount Units: ng/ml



Reviewer: Ex. 4 CBI 27-Feb-2018 14:57:39
Audit Action: Manually Integrated Audit Reason: Missed Peak

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Instrument ID: A8_N Start Date: 02/27/2018 08:48

Analysis Batch Number: 210253 End Date: 02/27/2018 09:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-210253/1		02/27/2018 08:48	1	2018.02.27_537B_002.d	GeminiC18 3x100 3(mm)
CCV 320-210253/2 CCVIS		02/27/2018 08:52	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:02	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:06	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:16	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:21	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:25	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:30	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:39	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2018 09:44	1		GeminiC18 3x100 3(mm)
CCV 320-210253/14 CCVIS		02/27/2018 09:49	1		GeminiC18 3x100 3(mm)

537 DW

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Instrument ID: A8_N Start Date: 02/27/2018 13:39

Analysis Batch Number: 210262 End Date: 02/27/2018 14:26

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-210262/1 CCVIS		02/27/2018 13:39	1	2018.02.27_537B_039F.d	GeminiC18 3x100 3(mm)
MB 320-209655/1-A		02/27/2018 13:48	1	2018.02.27_537B_040.d	GeminiC18 3x100 3(mm)
LCS 320-209655/2-A		02/27/2018 13:53	1	2018.02.27_537B_041.d	GeminiC18 3x100 3(mm)
320-36235-1		02/27/2018 13:58	1	2018.02.27_537B_042.d	GeminiC18 3x100 3(mm)
320-36235-2		02/27/2018 14:02	1	2018.02.27_537B_043.d	GeminiC18 3x100 3(mm)
320-36235-3		02/27/2018 14:07	1	2018.02.27_537B_044.d	GeminiC18 3x100 3(mm)
320-36235-4		02/27/2018 14:12	1	2018.02.27_537B_045.d	GeminiC18 3x100 3(mm)
320-36235-5		02/27/2018 14:16	1	2018.02.27_537B_046.d	GeminiC18 3x100 3(mm)
320-36235-6		02/27/2018 14:21	1	2018.02.27_537B_047.d	GeminiC18 3x100 3(mm)
CCV 320-210262/11 CCVIS		02/27/2018 14:26	1	2018.02.27_537B_048.d	GeminiC18 3x100 3(mm)

537 DW

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Instrument ID: A8_N Start Date: 02/27/2018 14:26

Analysis Batch Number: 210263 End Date: 02/27/2018 15:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-210263/11 CCVIS		02/27/2018 14:26	1	2018.02.27_537B_048.d	GeminiC18 3x100 3(mm)
320-36235-7		02/27/2018 14:35	1	2018.02.27_537B_050.d	GeminiC18 3x100 3(mm)
320-36235-7 MS		02/27/2018 14:40	1	2018.02.27_537B_051.d	GeminiC18 3x100 3(mm)
320-36235-7 MSD		02/27/2018 14:44	1	2018.02.27_537B_052.d	GeminiC18 3x100 3(mm)
320-36235-8		02/27/2018 14:49	1	2018.02.27_537B_053.d	GeminiC18 3x100 3(mm)
320-36235-9		02/27/2018 14:54	1	2018.02.27_537B_054.d	GeminiC18 3x100 3(mm)
320-36235-10		02/27/2018 14:58	1	2018.02.27_537B_055.d	GeminiC18 3x100 3(mm)
CCV 320-210263/19 CCVIS		02/27/2018 15:03	1	2018.02.27_537B_056.d	GeminiC18 3x100 3(mm)

537 DW

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Batch Number: 209655 Batch Start Date: 02/22/18 12:54 Batch Analyst: Long, Tyrel W

Batch Method: 537 DW Batch End Date: 02/26/18 20:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-HSP 00026
MB 320-209655/1		537 DW, 537 DW				250 mL	1.00 mL	7 SU	
LCS 320-209655/2		537 DW, 537 DW				250 mL	1.00 mL	7 SU	100 uL
320-36235-A-1	C0AG8	537 DW, 537 DW	T	296.38 g	28.13 g	268.3 mL	1.00 mL	7 SU	
320-36235-A-2	C0AG9	537 DW, 537 DW	T	295.88 g	29.00 g	266.9 mL	1.00 mL	7 SU	
320-36235-A-3	C0AH0	537 DW, 537 DW	T	293.74 g	28.57 g	265.2 mL	1.00 mL	7 SU	
320-36235-A-4	C0AH1	537 DW, 537 DW	T	294.51 g	28.73 g	265.8 mL	1.00 mL	7 SU	
320-36235-A-5	C0AH2	537 DW, 537 DW	T	297.49 g	28.20 g	269.3 mL	1.00 mL	7 SU	
320-36235-A-6	C0AH4	537 DW, 537 DW	T	300.72 g	28.13 g	272.6 mL	1.00 mL	7 SU	
320-36235-A-7	C0AJ0	537 DW, 537 DW	T	319.09 g	28.76 g	290.3 mL	1.00 mL	7 SU	
320-36235-A-7 MS	C0AJ0	537 DW, 537 DW	T	319.51 g	29.23 g	290.3 mL	1.00 mL	7 SU	100 uL
320-36235-A-7 MSD	C0AJ0	537 DW, 537 DW	T	315.52 g	27.61 g	287.9 mL	1.00 mL	7 SU	100 uL
320-36235-A-8	C0AJ1	537 DW, 537 DW	T	326.90 g	30.10 g	296.8 mL	1.00 mL	7 SU	
320-36235-A-9	C0AJ2	537 DW, 537 DW	T	316.84 g	31.56 g	285.3 mL	1.00 mL	7 SU	
320-36235-A-10	C0AJ3	537 DW, 537 DW	T	318.74 g	28.76 g	290 mL	1.00 mL	7 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-IS 00058	LC537-SU 00058	AnalysisComment			
MB 320-209655/1		537 DW, 537 DW		100 uL	100 uL	Chlorine ND			
LCS 320-209655/2		537 DW, 537 DW		100 uL	100 uL	Chlorine ND			
320-36235-A-1	C0AG8	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-2	C0AG9	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-3	C0AH0	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-4	C0AH1	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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Batch Number: 209655 Batch Start Date: 02/22/18 12:54 Batch Analyst: Long, Tyrel W

Batch Method: 537 DW Batch End Date: 02/26/18 20:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-IS 00058	LC537-SU 00058	AnalysisComment			
320-36235-A-5	C0AH2	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-6	C0AH4	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-7	C0AJ0	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-7 MS	C0AJ0	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-7 MSD	C0AJ0	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-8	C0AJ1	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-9	C0AJ2	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			
320-36235-A-10	C0AJ3	537 DW, 537 DW	T	100 uL	100 uL	Chlorine ND			

Batch Notes	
Analyst ID - Aliquot Step	VPM
Batch Comment	Client labels match TA label, 02/22/18 TWL
Analyst ID - Concentration	SKD/ABH/VPM
Analyst ID - Final Volume Step	VPM
Internal Standard ID#	1145842
Manifold ID	3,10
Methanol ID	1158744
pH Indicator ID	2517
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	JER
Analyst ID - SU Reagent Drop	TWL
Analyst ID - SU Reagent Drop Witness	MA
Analyst ID - TA Reagent Drop	TWL
Analyst ID - TA Reagent Drop Witness	MA
SPE Cartridge Lot ID	6369499-06
Trizma ID	SLBR4303V
Reagent Water ID	02/21/18

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.: 320-36235-1

SDG No.: DAS R35321, SDG C0AG8

Batch Number: 209655 Batch Start Date: 02/22/18 12:54 Batch Analyst: Long, Tyrel W

Batch Method: 537 DW Batch End Date: 02/26/18 20:40

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: 36235 Instrument ID & Date: 2-27-18 ICAL Batch: 208773
Extraction Batch: 209655 Worklist #: 54585 TALS Batch: 210262, 210263

Review Items	— Level 1 — Yes	No	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 2-27-18 2nd Level Reviewer / Date: Ex. 4 CBI 2/27/2018

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 $R^2 \geq 0.990$ for Linear $R^2 \geq 0.990$ 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: 27FEB2018_537D Worklist Number: 54585
Instrument Name: A8_N Chrom Method: 537_A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.b
QC Batching: Enabled Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 210262
# 1 CCV L5	# 1 CCV L5
# 2 RB	# 2 RB
# 3 MB 320-209655/1-A	# 3 MB 320-209655/1-A
# 4 LCS 320-209655/2-A	# 4 LCS 320-209655/2-A
# 5 320-36235-A-1-A	# 5 320-36235-A-1-A
# 6 320-36235-A-2-A	# 6 320-36235-A-2-A
# 7 320-36235-A-3-A	# 7 320-36235-A-3-A
# 8 320-36235-A-4-A	# 8 320-36235-A-4-A
# 9 320-36235-A-5-A	# 9 320-36235-A-5-A
#10 320-36235-A-6-A	#10 320-36235-A-6-A
#11 CCV L3	#11 CCV L3

QC Batch: 2	LC 537 ICAL Raw Batch: 210263
#11 CCV L3	#11 CCV L3
#12 RB	#12 RB
#13 320-36235-A-7-A	#13 320-36235-A-7-A
#14 320-36235-A-7-B MS	#14 320-36235-A-7-B MS
#15 320-36235-A-7-C MSD	#15 320-36235-A-7-C MSD
#16 320-36235-A-8-A	#16 320-36235-A-8-A
#17 320-36235-A-9-A	#17 320-36235-A-9-A
#18 320-36235-A-10-A	#18 320-36235-A-10-A
#19 CCV L3	#19 CCV L3
#20 RB	#20 RB

CCVL in AB 210253

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 27FEB2018_537D Worklist Num: 54585
Instrument: A8_N Method: 537_A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54585.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	320-0054585-001	CCVIS	27-Feb-2018 13:39:19	2018.02.27_537B_039F.d	5	1.0		sv
RB	320-0054585-002	RB	27-Feb-2018 13:43:59	2018.02.27_537B_039G.d	8	1.0		sv
MB 320-209655/1-A	320-0054585-003	MB	27-Feb-2018 13:48:38	2018.02.27_537B_040.d	28	1.0		sv
LCS 320-209655/2-A	320-0054585-004	LCS	27-Feb-2018 13:53:19	2018.02.27_537B_041.d	29	1.0		sv
320-36235-A-1-A	320-0054585-005	Client	27-Feb-2018 13:58:02	2018.02.27_537B_042.d	30	1.0	C0AG8	sv
320-36235-A-2-A	320-0054585-006	Client	27-Feb-2018 14:02:43	2018.02.27_537B_043.d	31	1.0	C0AG9	sv
320-36235-A-3-A	320-0054585-007	Client	27-Feb-2018 14:07:26	2018.02.27_537B_044.d	32	1.0	C0AH0	sv
320-36235-A-4-A	320-0054585-008	Client	27-Feb-2018 14:12:09	2018.02.27_537B_045.d	33	1.0	C0AH1	sv
320-36235-A-5-A	320-0054585-009	Client	27-Feb-2018 14:16:49	2018.02.27_537B_046.d	34	1.0	C0AH2	sv
320-36235-A-6-A	320-0054585-010	Client	27-Feb-2018 14:21:29	2018.02.27_537B_047.d	35	1.0	C0AH4	sv
CCV L3	320-0054585-011	CCVIS	27-Feb-2018 14:26:11	2018.02.27_537B_048.d	3	1.0		sv
RB	320-0054585-012	RB	27-Feb-2018 14:30:51	2018.02.27_537B_049.d	8	1.0		sv
320-36235-A-7-A	320-0054585-013	Client	27-Feb-2018 14:35:31	2018.02.27_537B_050.d	36	1.0	C0AJ0	sv
320-36235-A-7-B MS	320-0054585-014	MS	27-Feb-2018 14:40:12	2018.02.27_537B_051.d	37	1.0	C0AJ0	sv
320-36235-A-7-C MSD	320-0054585-015	MSD	27-Feb-2018 14:44:53	2018.02.27_537B_052.d	38	1.0	C0AJ0	sv
320-36235-A-8-A	320-0054585-016	Client	27-Feb-2018 14:49:35	2018.02.27_537B_053.d	39	1.0	C0AJ1	sv
320-36235-A-9-A	320-0054585-017	Client	27-Feb-2018 14:54:16	2018.02.27_537B_054.d	40	1.0	C0AJ2	sv
320-36235-A-10-A	320-0054585-018	Client	27-Feb-2018 14:58:56	2018.02.27_537B_055.d	41	1.0	C0AJ3	sv
CCV L3	320-0054585-019	CCVIS	27-Feb-2018 15:03:37	2018.02.27_537B_056.d	3	1.0		sv
RB	320-0054585-020	RB	27-Feb-2018 15:08:17	2018.02.27_537B_057.d	8	1.0		sv

Report Date: 27-Feb-2018 15:25:23 Chrom Revision: 2.2 08-Feb-2018 13:38:40 Page: 1

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 27FEB2018_537A Worklist Num: 54582
Instrument: A8_N Method: 537_A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180227-54582.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	320-0054582-001	CCVL	27-Feb-2018 08:48:18	2018.02.27_537B_002.d	2	1.0		sv
CCV L3	320-0054582-002	CCVIS	27-Feb-2018 08:52:58	2018.02.27_537B_003.d	3	1.0		sv
RB	320-0054582-003	RB	27-Feb-2018 08:57:37	2018.02.27_537B_004.d	8	1.0		sv
MB 320-209735/1-A	320-0054582-004	MB	27-Feb-2018 09:02:16	2018.02.27_537B_060.d	42	1.0		sv
LCS 320-209735/2-A	320-0054582-005	LCS	27-Feb-2018 09:06:57	2018.02.27_537B_061.d	43	1.0		sv
320-36188-A-1-A	320-0054582-006	Client	27-Feb-2018 09:11:38	2018.02.27_537B_062.d	44	1.0	WS-052	sv
320-36188-A-2-A	320-0054582-007	Client	27-Feb-2018 09:16:20	2018.02.27_537B_063.d	45	1.0	POET-2-MID	sv
320-36188-A-3-A	320-0054582-008	Client	27-Feb-2018 09:21:00	2018.02.27_537B_064.d	46	1.0	POET-2-POST	sv
320-36188-A-4-A	320-0054582-009	Client	27-Feb-2018 09:25:41	2018.02.27_537B_065.d	47	1.0	WS-036	sv
320-36188-A-5-A	320-0054582-010	Client	27-Feb-2018 09:30:22	2018.02.27_537B_066.d	48	1.0	POET-3-MID	sv
320-36188-A-5-B MS	320-0054582-011	MS	27-Feb-2018 09:35:03	2018.02.27_537B_067.d	49	1.0	POET-3-MID	sv
320-36188-A-5-C MSD	320-0054582-012	MSD	27-Feb-2018 09:39:45	2018.02.27_537B_068.d	50	1.0	POET-3-MID	sv
320-36188-A-6-A	320-0054582-013	Client	27-Feb-2018 09:44:25	2018.02.27_537B_069.d	51	1.0	POET-3-POST	sv
CCV L5	320-0054582-014	CCVIS	27-Feb-2018 09:49:07	2018.02.27_537B_070.d	5	1.0		sv
RB	320-0054582-015	RB	27-Feb-2018 09:53:47	2018.02.27_537B_071.d	8	1.0		sv
320-36188-A-7-A	320-0054582-016	Client	27-Feb-2018 09:58:27	2018.02.27_537B_072.d	52	1.0	DUP-027	sv
320-36188-A-8-A	320-0054582-017	Client	27-Feb-2018 10:03:08	2018.02.27_537B_073.d	53	1.0	FIELD BLANK	sv
320-36188-A-1-A	320-0054582-018	Client	27-Feb-2018 10:07:49	2018.02.27_537B_074.d	54	10.0	WS-052	sv
CCV L3	320-0054582-019	CCVIS	27-Feb-2018 10:12:30	2018.02.27_537B_075.d	3	1.0		sv
RB	320-0054582-020	RB						

no 2/27/18
94

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-209655

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 2/22/2018 12:54:00PM

Batch End: 2/26/2018 8:40:00PM

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~320-209655/1 N/A	N/A		250 mL	7			N/A	N/A	N/A	Chlorine ND	MB 320-209655/1-A
				1.00 mL								
2	LCS~320-209655/2 N/A	N/A		250 mL	7			N/A	N/A	N/A	Chlorine ND	LCS 320-209655/2-A
				1.00 mL								
3	320-36235-A-1 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	296.38 g	268.3 mL	7			2/27/18	5_Day_RUSH	4	Chlorine ND	320-36235-A-1-A
			28.13 g	1.00 mL								
4	320-36235-A-2 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	295.88 g	266.9 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-2-A
			29.00 g	1.00 mL								
5	320-36235-A-3 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	293.74 g	265.2 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-3-A
			28.57 g	1.00 mL								
6	320-36235-A-4 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	294.51 g	265.8 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-4-A
			28.73 g	1.00 mL								
7	320-36235-A-5 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	297.49 g	269.3 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-5-A
			28.20 g	1.00 mL								
8	320-36235-A-6 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	300.72 g	272.6 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-6-A
			28.13 g	1.00 mL								
9	320-36235-A-7 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	319.09 g	290.3 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-7-A
			28.76 g	1.00 mL								
10	320-36235-A-7~MS (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	319.51 g	290.3 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-7-B MS
			29.23 g	1.00 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-209655

Analyst: Ex. 4 CBI

Batch Open: 2/22/2018 12:54:00PM

Method Code: 320-537_DW_Prep-320

Batch End: 2/26/2018 8:40:00PM

11	320-36235-A-7~MSD (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	315.52 g	287.9 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-7-C MSD
			27.61 g	1.00 mL								
12	320-36235-A-8 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	326.90 g	296.8 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-8-A
			30.10 g	1.00 mL								
13	320-36235-A-9 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	316.84 g	285.3 mL	7			2/23/18	3_Day_RUSH	4	Chlorine ND	320-36235-A-9-A
			31.56 g	1.00 mL								
14	320-36235-A-10 (537_DW)	DAS R35321, SDG C9AC8 (320-36235-1)	318.74 g	290 mL	7			2/27/18	5_Day_RUSH	4	Chlorine ND	320-36235-A-10-A
			28.76 g	1.00 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-209655

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 2/22/2018 12:54:00PM

Batch End: 2/26/2018 8:40:00PM

Batch Notes

pH Indicator ID	2517
Manifold ID	3,10
Trizma ID	SLBR4303V
SPE Cartridge Lot ID	6369499-06
Methanol ID	1158744
Reagent Water ID	02/21/18
Internal Standard ID#	1145842
Pipette ID	NA
Analyst ID - TA Reagent Drop	TWL
Analyst ID - TA Reagent Drop Witness	MA
Analyst ID - SU Reagent Drop	TWL
Analyst ID - SU Reagent Drop Witness	MA
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	JER
Analyst ID - Concentration	SKD/ABH/VPM
Analyst ID - Aliquot Step	VPM
Analyst ID - Final Volume Step	VPM
Batch Comment	Client labels match TA label, 02/22/18 TWL

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-209655

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 2/22/2018 12:54:00PM

Batch End:

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-209655

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 2/22/2018 12:54:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-209655/1	LC537-SU_00058	100 uL	1.00 mL	[illegible] 2-22-18	
LCS 320-209655/2	LC537-HSP_00026	100 uL	1.00 mL		
LCS 320-209655/2	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-1	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-2	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-3	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-4	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-5	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-6	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-7	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-7 MS	LC537-HSP_00026	100 uL	1.00 mL		
320-36235-A-7 MS	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-7 MSD	LC537-HSP_00026	100 uL	1.00 mL		
320-36235-A-7 MSD	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-8	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-9	LC537-SU_00058	100 uL	1.00 mL		
320-36235-A-10	LC537-SU_00058	100 uL	1.00 mL		

Ex. 4 CBI not here 2/27/18

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-209655

Method Code: 320-537_DW_Prep-320

Analyst: Ex. 4 CBI

Batch Open: 2/22/2018 12:54:00PM

Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 2094055 Test 537DW

Earliest Holding Time 3/5/18

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	NA	NA
All NCMs include method code, matrix, and prep batch	NA	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: VPM Date: 2/20/18

2nd Level Reviewer: JRB Date: 2-27-18

Comments:

Shipping and Receiving Documents

USEPA CLP COC (LAB
DateShipped: 2/19/2018
CarrierName: FedEx
AirbillNo: 771516197283

320-36235 Chain of Custody

CHAIN OF CUSTODY RECORD

DAS #: R35321

No: 3-021918-165045-0009
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-02192018-FRB-0191	C0AG8	Aqueous Blank/ START	Grab	PFCs(5 day)	1192 (trizma), 1193 (trizma) (2)	0191	02/19/2018 10:00	
PMW-02192018-FRB-0194	C0AG9	Aqueous Blank/ START	Grab	PFCs(5 day)	1194 (trizma), 1195 (trizma) (2)	0194	02/19/2018 10:25	
PMW-02192018-FRB-04	C0AH0	Aqueous Blank/ START	Grab	PFCs(5 day)	1196 (trizma), 1197 (trizma) (2)	PW-04	02/19/2018 11:30	
PMW-02192018-FRB-0197	C0AH1	Aqueous Blank/ START	Grab	PFCs(5 day)	1198 (trizma), 1199 (trizma) (2)	0197	02/19/2018 12:35	
PMW-02192018-FRB-0200	C0AH2	Aqueous Blank/ START	Grab	PFCs(5 day)	1200 (trizma), 1201 (trizma) (2)	0200	02/19/2018 13:05	
PMW-02192018-PW-04	C0AH4	Drinking Water/ START	Grab	PFCs(3 day)	1204 (trizma), 1205 (trizma) (2)	PW-04	02/19/2018 11:30	
PMW-02192018-RW-0191	C0AJ0	Potable Water/ START	Grab	PFCs(5 day)	1216 (trizma), 1217 (trizma), 1226 (trizma), 1227 (trizma), 1228 (trizma), 1229 (trizma) (6)	0191	02/19/2018 10:00	
PMW-02192018-RW-0194	C0AJ1	Potable Water/ START	Grab	PFCs(5 day)	1218 (trizma), 1219 (trizma) (2)	0194	02/19/2018 10:25	
PMW-02192018-RW-0197	C0AJ2	Potable Water/ START	Grab	PFCs(5 day)	1220 (trizma), 1221 (trizma) (2)	0197	02/19/2018 12:35	
PMW-02192018-RW-0200	C0AJ3	Potable Water/ START	Grab	PFCs(5 day)	1222 (trizma), 1223 (trizma) (2)	0200	02/19/2018 13:05	

Sample(s) to be used for Lab QC: PMW-02192018-RW-0191 Tag 1226, PMW-02192018-RW-0191 Tag 1227, PMW-02192018-RW-0191 Tag 1228, PMW-02192018-RW-0191 Tag 1229 - Special Instructions: 5-day TAT for preliminary results/21 day TAT hard copy data package.

Samples C0AH0 and C0AH4 are for 3-day TAT.

C0AG8 is FRB for C0AJ0, C0AG9 is FRB for C0AJ1, C0AH0 is FRB for C0AH4, C0AH1 is FRB for C0AJ2, C0AH2 is FRB for C0AJ3.

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	2/19/18 1900	Ex. 4 CBI / TA Sac	2/20/18 926	4.6C

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 320-36235-1
SDG Number: DAS R35321, SDG C0AG8

Login Number: 36235
List Nu Ex. 4 CBI
Creator: Her, David A

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").	True	
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
				2/20/2018
Received By (Signature)				
Case Number	R35321	Sample Delivery Group No.	C0AG8	Mod. Ref. No.

Remarks:		EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc.
1. Custody Seal (s)	Present	C0AG8	1192, 1193	320-36235-1	Samples received in one box. The TR/COC and sample ID labels do not list the sample collection dates or times. The samples were logged in with a sample collection date of 08/21/2013 and without sample collection times.
2. Custody Seal Nos.	Intact N/A	C0AG9	1194, 1195	320-36235-2	
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present	C0AH0	1196, 1197	320-36235-3	
		C0AH1	1198, 1199	320-36235-4	
4. Airbill	Present	C0AH2	1200, 1201	320-36235-5	
5. Airbill No.	Sticker 7715-1619-7283	C0AH4	1204, 1205	320-36235-6	
6. Sample Tags Sample Tags Numbers	Absent Listed on COC	C0AJ0	1216, 1217	320-36235-7	
		C0AJ0	1226, 1227	320-36235-7MS	
7. Sample Condition	Intact	C0AJ0	1228, 1229	320-36235-7MSD	
8. Cooler Temperature Indicator Bottle	Absent	C0AJ1	1218, 1219	320-36235-8	
9. Cooler Temperature	4.6 °C	C0AJ2	1220, 1221	320-36235-9	
10. Does information on TR/COCs and sample tags agree?	Yes	C0AJ3	1222, 1223	320-36235-10	
11. Date Received at Laboratory	2/20/2018				
12. Time Received	9:20				

Sample Transfer			
Fraction SVOA/SVSIM/PEST/ARO		Fraction TVOA/TVSIM	
Area #	Walk-in	Area #	
By	KN	By	
On	2/20/2018	On	

* Contact SMO and attach record of resolution.

Reviewed By	Ex. 4 CBI	Logbook No.	
Date	2/28/18	Logbook Page No.	

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