



**Off-Base Drinking Water Sample Results,
Level 2 Laboratory Report, Level 4 Laboratory Report,
Electronic Data Deliverable, Data Validation Report,
and the Sample Location Figure, SDG J23917-1**

*Naval Air Station Whidbey Island
Oak Harbor, Washington*

June 2019

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

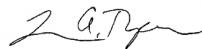
ANALYTICAL REPORT

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TestAmerica Sacramento
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TestAmerica Job ID: 320-23917-1
Client Project/Site: Whidbey Island
Revision: 1

For:
CH2M Hill Constructors, Inc.
1100 NE Circle Blvd
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Attn: Tiffany Hill



Authorized for release by:
12/9/2016 8:16:41 AM

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

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

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

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Definitions/Glossary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Qualifiers

LCMS

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

Glossary

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

Case Narrative

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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Laboratory: TestAmerica Sacramento

Narrative

CASE NARRATIVE

Client: CH2M Hill Constructors, Inc.

Project: Whidbey Island

Report Number: 320-23917-1

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

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

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

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

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

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

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

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

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

Revision

This report was revised December 9, 2016 to use the LOD/LOQ/DL reporting format. No data changed as a result of this revision.

RECEIPT

The samples were received on 12/01/2016; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 0.9° C.

PFOA/PFOS

Samples WI-CV-1RW01-1116 (320-23917-1), WI-CV-1FB01-1116 (320-23917-2), WI-CV-1RW02-1116 (320-23917-3), WI-CV-1FB02-1116 (320-23917-4), WI-CV-1RW03-1116 (320-23917-5), WI-CV-1FB03-1116 (320-23917-6), WI-CV-1RW04-1116 (320-23917-7), WI-CV-1FB04-1116 (320-23917-8), WI-CV-1RW05-1116 (320-23917-9), WI-CV-1FB05-1116 (320-23917-10), WI-CV-2RW01-1116 (320-23917-11), WI-CV-2FB01-1116 (320-23917-12), WI-CV-2RW02-1116 (320-23917-13), WI-CV-2FB02-1116 (320-23917-14),

Case Narrative

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Job ID: 320-23917-1 (Continued)

Laboratory: TestAmerica Sacramento (Continued)

WI-CV-2RW03-1116 (320-23917-15), WI-CV-2FB03-1116 (320-23917-16), WI-CV-2RW04-1116 (320-23917-17), WI-CV-2FB04-1116 (320-23917-18), WI-CV-3RW01-1116 (320-23917-19), WI-CV-3FB01-1116 (320-23917-20), WI-CV-3RW02-1116 (320-23917-21), WI-CV-3FB02-1116 (320-23917-22), WI-CV-3RW03-1116 (320-23917-23), WI-CV-3FB03-1116 (320-23917-24), WI-CV-3RW04-1116 (320-23917-25), WI-CV-3FB04-1116 (320-23917-26), WI-CV-3RW05-1116 (320-23917-27) and WI-CV-3FB05-1116 (320-23917-28) were analyzed for PFOA/PFOS in accordance with 537. The samples were prepared on 12/02/2016 and analyzed on 12/07/2016 and 12/08/2016.

The following samples have a pH 9:

WI-CV-1RW01-1116 (320-23917-1), WI-CV-1FB01-1116 (320-23917-2), WI-CV-1RW02-1116 (320-23917-3), WI-CV-1FB02-1116 (320-23917-4), WI-CV-1RW03-1116 (320-23917-5), WI-CV-1FB03-1116 (320-23917-6), WI-CV-1RW04-1116 (320-23917-7), WI-CV-1FB04-1116 (320-23917-8), WI-CV-1RW05-1116 (320-23917-9), WI-CV-1FB05-1116 (320-23917-10), WI-CV-2RW01-1116 (320-23917-11), WI-CV-2FB01-1116 (320-23917-12), WI-CV-2RW02-1116 (320-23917-13), WI-CV-2FB02-1116 (320-23917-14), WI-CV-2RW03-1116 (320-23917-15), WI-CV-2FB03-1116 (320-23917-16), WI-CV-2RW04-1116 (320-23917-17), WI-CV-2FB04-1116 (320-23917-18), WI-CV-3RW01-1116 (320-23917-19), WI-CV-3FB01-1116 (320-23917-20), WI-CV-3RW02-1116 (320-23917-21), WI-CV-3FB02-1116 (320-23917-22), WI-CV-3RW03-1116 (320-23917-23), WI-CV-3FB03-1116 (320-23917-24), WI-CV-3RW04-1116 (320-23917-25), WI-CV-3FB04-1116 (320-23917-26), WI-CV-3RW05-1116 (320-23917-27) and WI-CV-3FB05-1116 (320-23917-28)

Results for sample WI-CV-1RW01-1116 (320-23917-1) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

The following sample has very low recovery for the surrogate compounds possibly caused by a spike issue during the sample preparation. Re-preparation of the sample is not possible as there is no more volume available. This is a field blank sample and all the target analytes are non detect (ND). The surrogate recovery in the associated field sample is within criteria and it is ND for target analytes. WI-CV-3FB01-1116 (320-23917-20)

Sample WI-CV-1RW01-1116 (320-23917-1)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batches 320-140400 and 320-140280.

The laboratory control sample duplicate (LCSD) for preparation batch 320-140280 and analytical batch 320-140943 has an E flag because it is spiked at the upper level of the calibration curve as specified in the method. (LCSD 320-140280/3-A)

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

Detection Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1RW01-1116

Lab Sample ID: 320-23917-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA) - DL	0.44	D	0.14	0.044	ug/L	5		537	Total/NA

Client Sample ID: WI-CV-1FB01-1116

Lab Sample ID: 320-23917-2

No Detections.

Client Sample ID: WI-CV-1RW02-1116

Lab Sample ID: 320-23917-3

No Detections.

Client Sample ID: WI-CV-1FB02-1116

Lab Sample ID: 320-23917-4

No Detections.

Client Sample ID: WI-CV-1RW03-1116

Lab Sample ID: 320-23917-5

No Detections.

Client Sample ID: WI-CV-1FB03-1116

Lab Sample ID: 320-23917-6

No Detections.

Client Sample ID: WI-CV-1RW04-1116

Lab Sample ID: 320-23917-7

No Detections.

Client Sample ID: WI-CV-1FB04-1116

Lab Sample ID: 320-23917-8

No Detections.

Client Sample ID: WI-CV-1RW05-1116

Lab Sample ID: 320-23917-9

No Detections.

Client Sample ID: WI-CV-1FB05-1116

Lab Sample ID: 320-23917-10

No Detections.

Client Sample ID: WI-CV-2RW01-1116

Lab Sample ID: 320-23917-11

No Detections.

Client Sample ID: WI-CV-2FB01-1116

Lab Sample ID: 320-23917-12

No Detections.

Client Sample ID: WI-CV-2RW02-1116

Lab Sample ID: 320-23917-13

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.15		0.029	0.0091	ug/L	1		537	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB02-1116

Lab Sample ID: 320-23917-14

No Detections.

Client Sample ID: WI-CV-2RW03-1116

Lab Sample ID: 320-23917-15

No Detections.

Client Sample ID: WI-CV-2FB03-1116

Lab Sample ID: 320-23917-16

No Detections.

Client Sample ID: WI-CV-2RW04-1116

Lab Sample ID: 320-23917-17

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.022	J	0.056	0.015	ug/L	1		537	Total/NA
Perfluorooctanoic acid (PFOA)	0.015	J M	0.028	0.0088	ug/L	1		537	Total/NA

Client Sample ID: WI-CV-2FB04-1116

Lab Sample ID: 320-23917-18

No Detections.

Client Sample ID: WI-CV-3RW01-1116

Lab Sample ID: 320-23917-19

No Detections.

Client Sample ID: WI-CV-3FB01-1116

Lab Sample ID: 320-23917-20

No Detections.

Client Sample ID: WI-CV-3RW02-1116

Lab Sample ID: 320-23917-21

No Detections.

Client Sample ID: WI-CV-3FB02-1116

Lab Sample ID: 320-23917-22

No Detections.

Client Sample ID: WI-CV-3RW03-1116

Lab Sample ID: 320-23917-23

No Detections.

Client Sample ID: WI-CV-3FB03-1116

Lab Sample ID: 320-23917-24

No Detections.

Client Sample ID: WI-CV-3RW04-1116

Lab Sample ID: 320-23917-25

No Detections.

Client Sample ID: WI-CV-3FB04-1116

Lab Sample ID: 320-23917-26

No Detections.

Client Sample ID: WI-CV-3RW05-1116

Lab Sample ID: 320-23917-27

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB05-1116

Lab Sample ID: 320-23917-28

No Detections.

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This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1RW01-1116

Lab Sample ID: 320-23917-1

Date Collected: 11/28/16 13:25

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.045	U M	0.056	0.014	ug/L		12/02/16 07:42	12/07/16 13:32	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		12/02/16 07:42	12/07/16 13:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	111		70 - 130				12/02/16 07:42	12/07/16 13:32	1
13C2 PFDA	112		70 - 130				12/02/16 07:42	12/07/16 13:32	1

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.44	D	0.14	0.044	ug/L		12/02/16 07:42	12/07/16 10:34	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		70 - 130				12/02/16 07:42	12/07/16 10:34	5
13C2 PFDA	103		70 - 130				12/02/16 07:42	12/07/16 10:34	5

Client Sample ID: WI-CV-1FB01-1116

Lab Sample ID: 320-23917-2

Date Collected: 11/28/16 13:25

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 11:04	1
Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 11:04	1
Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 11:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130				12/02/16 07:42	12/07/16 11:04	1
13C2 PFDA	103		70 - 130				12/02/16 07:42	12/07/16 11:04	1

Client Sample ID: WI-CV-1RW02-1116

Lab Sample ID: 320-23917-3

Date Collected: 11/28/16 14:05

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 11:34	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 11:34	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 11:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	96		70 - 130				12/02/16 07:42	12/07/16 11:34	1
13C2 PFDA	89		70 - 130				12/02/16 07:42	12/07/16 11:34	1

Client Sample ID: WI-CV-1FB02-1116

Lab Sample ID: 320-23917-4

Date Collected: 11/28/16 14:04

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 12:03	1
Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 12:03	1

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1FB02-1116

Date Collected: 11/28/16 14:04

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-4

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 12:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		70 - 130				12/02/16 07:42	12/07/16 12:03	1
13C2 PFDA	105		70 - 130				12/02/16 07:42	12/07/16 12:03	1

Client Sample ID: WI-CV-1RW03-1116

Date Collected: 11/28/16 15:09

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-5

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.045	U	0.056	0.014	ug/L		12/02/16 07:42	12/07/16 12:33	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.0088	ug/L		12/02/16 07:42	12/07/16 12:33	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		12/02/16 07:42	12/07/16 12:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	120		70 - 130				12/02/16 07:42	12/07/16 12:33	1
13C2 PFDA	109		70 - 130				12/02/16 07:42	12/07/16 12:33	1

Client Sample ID: WI-CV-1FB03-1116

Date Collected: 11/28/16 15:08

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-6

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 13:02	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 13:02	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.042	ug/L		12/02/16 07:42	12/07/16 13:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		70 - 130				12/02/16 07:42	12/07/16 13:02	1
13C2 PFDA	99		70 - 130				12/02/16 07:42	12/07/16 13:02	1

Client Sample ID: WI-CV-1RW04-1116

Date Collected: 11/28/16 16:10

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-7

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.055	0.014	ug/L		12/02/16 07:42	12/07/16 15:30	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0086	ug/L		12/02/16 07:42	12/07/16 15:30	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 15:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	116		70 - 130				12/02/16 07:42	12/07/16 15:30	1
13C2 PFDA	117		70 - 130				12/02/16 07:42	12/07/16 15:30	1

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1FB04-1116

Lab Sample ID: 320-23917-8

Date Collected: 11/28/16 16:09

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.053	0.014	ug/L		12/02/16 07:42	12/07/16 16:00	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L		12/02/16 07:42	12/07/16 16:00	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		12/02/16 07:42	12/07/16 16:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	115		70 - 130				12/02/16 07:42	12/07/16 16:00	1
13C2 PFDA	112		70 - 130				12/02/16 07:42	12/07/16 16:00	1

Client Sample ID: WI-CV-1RW05-1116

Lab Sample ID: 320-23917-9

Date Collected: 11/28/16 17:17

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.055	0.014	ug/L		12/02/16 07:42	12/07/16 16:30	1
Perfluorooctanoic acid (PFOA)	0.022	U M	0.028	0.0087	ug/L		12/02/16 07:42	12/07/16 16:30	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		12/02/16 07:42	12/07/16 16:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		70 - 130				12/02/16 07:42	12/07/16 16:30	1
13C2 PFDA	101		70 - 130				12/02/16 07:42	12/07/16 16:30	1

Client Sample ID: WI-CV-1FB05-1116

Lab Sample ID: 320-23917-10

Date Collected: 11/28/16 17:16

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.014	ug/L		12/02/16 07:42	12/07/16 16:59	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0083	ug/L		12/02/16 07:42	12/07/16 16:59	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		12/02/16 07:42	12/07/16 16:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	114		70 - 130				12/02/16 07:42	12/07/16 16:59	1
13C2 PFDA	109		70 - 130				12/02/16 07:42	12/07/16 16:59	1

Client Sample ID: WI-CV-2RW01-1116

Lab Sample ID: 320-23917-11

Date Collected: 11/28/16 13:15

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.015	ug/L		12/02/16 07:42	12/07/16 17:29	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0093	ug/L		12/02/16 07:42	12/07/16 17:29	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		12/02/16 07:42	12/07/16 17:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	122		70 - 130				12/02/16 07:42	12/07/16 17:29	1
13C2 PFDA	119		70 - 130				12/02/16 07:42	12/07/16 17:29	1

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB01-1116

Lab Sample ID: 320-23917-12

Date Collected: 11/28/16 13:16

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L	-	12/02/16 07:42	12/07/16 17:58	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0085	ug/L	-	12/02/16 07:42	12/07/16 17:58	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.043	ug/L	-	12/02/16 07:42	12/07/16 17:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		70 - 130				12/02/16 07:42	12/07/16 17:58	1
13C2 PFDA	108		70 - 130				12/02/16 07:42	12/07/16 17:58	1

Client Sample ID: WI-CV-2RW02-1116

Lab Sample ID: 320-23917-13

Date Collected: 11/28/16 15:04

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.058	0.015	ug/L	-	12/02/16 07:42	12/07/16 19:57	1
Perfluorooctanoic acid (PFOA)	0.15		0.029	0.0091	ug/L	-	12/02/16 07:42	12/07/16 19:57	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.046	ug/L	-	12/02/16 07:42	12/07/16 19:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	112		70 - 130				12/02/16 07:42	12/07/16 19:57	1
13C2 PFDA	113		70 - 130				12/02/16 07:42	12/07/16 19:57	1

Client Sample ID: WI-CV-2FB02-1116

Lab Sample ID: 320-23917-14

Date Collected: 11/28/16 15:05

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L	-	12/02/16 07:42	12/07/16 18:58	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0084	ug/L	-	12/02/16 07:42	12/07/16 18:58	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.13	0.043	ug/L	-	12/02/16 07:42	12/07/16 18:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		70 - 130				12/02/16 07:42	12/07/16 18:58	1
13C2 PFDA	106		70 - 130				12/02/16 07:42	12/07/16 18:58	1

Client Sample ID: WI-CV-2RW03-1116

Lab Sample ID: 320-23917-15

Date Collected: 11/28/16 16:05

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.049	U	0.061	0.016	ug/L	-	12/02/16 07:42	12/07/16 19:27	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.031	0.0096	ug/L	-	12/02/16 07:42	12/07/16 19:27	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L	-	12/02/16 07:42	12/07/16 19:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	117		70 - 130				12/02/16 07:42	12/07/16 19:27	1
13C2 PFDA	111		70 - 130				12/02/16 07:42	12/07/16 19:27	1

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB03-1116

Date Collected: 11/28/16 16:06

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-16

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.053	0.014	ug/L		12/02/16 07:42	12/07/16 21:55	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 21:55	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.042	ug/L		12/02/16 07:42	12/07/16 21:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130				12/02/16 07:42	12/07/16 21:55	1
13C2 PFDA	107		70 - 130				12/02/16 07:42	12/07/16 21:55	1

Client Sample ID: WI-CV-2RW04-1116

Date Collected: 11/28/16 16:59

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-17

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.022	J	0.056	0.015	ug/L		12/02/16 07:42	12/07/16 22:25	1
Perfluorooctanoic acid (PFOA)	0.015	J M	0.028	0.0088	ug/L		12/02/16 07:42	12/07/16 22:25	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.045	ug/L		12/02/16 07:42	12/07/16 22:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	101		70 - 130				12/02/16 07:42	12/07/16 22:25	1
13C2 PFDA	114		70 - 130				12/02/16 07:42	12/07/16 22:25	1

Client Sample ID: WI-CV-2FB04-1116

Date Collected: 11/28/16 17:00

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-18

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.052	0.013	ug/L		12/02/16 07:42	12/07/16 22:54	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.026	0.0082	ug/L		12/02/16 07:42	12/07/16 22:54	1
Perfluorobutanesulfonic acid (PFBS)	0.095	U	0.12	0.041	ug/L		12/02/16 07:42	12/07/16 22:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		70 - 130				12/02/16 07:42	12/07/16 22:54	1
13C2 PFDA	107		70 - 130				12/02/16 07:42	12/07/16 22:54	1

Client Sample ID: WI-CV-3RW01-1116

Date Collected: 11/28/16 13:14

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-19

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 23:24	1
Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.0085	ug/L		12/02/16 07:42	12/07/16 23:24	1
Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 23:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	118		70 - 130				12/02/16 07:42	12/07/16 23:24	1
13C2 PFDA	110		70 - 130				12/02/16 07:42	12/07/16 23:24	1

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB01-1116

Lab Sample ID: 320-23917-20

Date Collected: 11/28/16 13:15

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.014	ug/L	-	12/02/16 07:42	12/07/16 23:54	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L	-	12/02/16 07:42	12/07/16 23:54	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L	-	12/02/16 07:42	12/07/16 23:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	0.1	M Q	70 - 130				12/02/16 07:42	12/07/16 23:54	1
13C2 PFDA	0.3	M Q	70 - 130				12/02/16 07:42	12/07/16 23:54	1

Client Sample ID: WI-CV-3RW02-1116

Lab Sample ID: 320-23917-21

Date Collected: 11/28/16 14:14

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.015	ug/L	-	12/02/16 15:27	12/08/16 01:52	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0092	ug/L	-	12/02/16 15:27	12/08/16 01:52	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.046	ug/L	-	12/02/16 15:27	12/08/16 01:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	106		70 - 130				12/02/16 15:27	12/08/16 01:52	1
13C2 PFDA	107		70 - 130				12/02/16 15:27	12/08/16 01:52	1

Client Sample ID: WI-CV-3FB02-1116

Lab Sample ID: 320-23917-22

Date Collected: 11/28/16 14:15

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.015	ug/L	-	12/02/16 15:27	12/08/16 02:22	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0092	ug/L	-	12/02/16 15:27	12/08/16 02:22	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.046	ug/L	-	12/02/16 15:27	12/08/16 02:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		70 - 130				12/02/16 15:27	12/08/16 02:22	1
13C2 PFDA	108		70 - 130				12/02/16 15:27	12/08/16 02:22	1

Client Sample ID: WI-CV-3RW03-1116

Lab Sample ID: 320-23917-23

Date Collected: 11/28/16 15:11

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.048	U M	0.060	0.015	ug/L	-	12/02/16 15:27	12/08/16 04:20	1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0094	ug/L	-	12/02/16 15:27	12/08/16 04:20	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L	-	12/02/16 15:27	12/08/16 04:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130				12/02/16 15:27	12/08/16 04:20	1
13C2 PFDA	108		70 - 130				12/02/16 15:27	12/08/16 04:20	1

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB03-1116

Lab Sample ID: 320-23917-24

Date Collected: 11/28/16 15:12

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U	0.058	0.015	ug/L		12/02/16 15:27	12/08/16 04:50	1
Perfluorooctanoic acid (PFOA)	0.023	U	0.029	0.0091	ug/L		12/02/16 15:27	12/08/16 04:50	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.046	ug/L		12/02/16 15:27	12/08/16 04:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	106		70 - 130				12/02/16 15:27	12/08/16 04:50	1
13C2 PFDA	105		70 - 130				12/02/16 15:27	12/08/16 04:50	1

Client Sample ID: WI-CV-3RW04-1116

Lab Sample ID: 320-23917-25

Date Collected: 11/28/16 16:17

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U	0.058	0.015	ug/L		12/02/16 15:27	12/08/16 05:19	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0091	ug/L		12/02/16 15:27	12/08/16 05:19	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.046	ug/L		12/02/16 15:27	12/08/16 05:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130				12/02/16 15:27	12/08/16 05:19	1
13C2 PFDA	108		70 - 130				12/02/16 15:27	12/08/16 05:19	1

Client Sample ID: WI-CV-3FB04-1116

Lab Sample ID: 320-23917-26

Date Collected: 11/28/16 16:18

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.057	0.015	ug/L		12/02/16 15:27	12/08/16 05:49	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0090	ug/L		12/02/16 15:27	12/08/16 05:49	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.046	ug/L		12/02/16 15:27	12/08/16 05:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	107		70 - 130				12/02/16 15:27	12/08/16 05:49	1
13C2 PFDA	108		70 - 130				12/02/16 15:27	12/08/16 05:49	1

Client Sample ID: WI-CV-3RW05-1116

Lab Sample ID: 320-23917-27

Date Collected: 11/28/16 18:08

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.015	ug/L		12/02/16 15:27	12/08/16 06:19	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0094	ug/L		12/02/16 15:27	12/08/16 06:19	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		12/02/16 15:27	12/08/16 06:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	130		70 - 130				12/02/16 15:27	12/08/16 06:19	1
13C2 PFDA	124		70 - 130				12/02/16 15:27	12/08/16 06:19	1

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB05-1116

Lab Sample ID: 320-23917-28

Date Collected: 11/28/16 18:09

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.057	0.015	ug/L		12/02/16 15:27	12/08/16 06:48	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0090	ug/L		12/02/16 15:27	12/08/16 06:48	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.046	ug/L		12/02/16 15:27	12/08/16 06:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130	12/02/16 15:27	12/08/16 06:48	1
13C2 PFDA	110		70 - 130	12/02/16 15:27	12/08/16 06:48	1



Surrogate Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		3C2 PFHx (70-130)	3C2 PFDA (70-130)
320-23917-1	WI-CV-1RW01-1116	111	112
320-23917-1 - DL	WI-CV-1RW01-1116	108	103
320-23917-2	WI-CV-1FB01-1116	109	103
320-23917-3	WI-CV-1RW02-1116	96	89
320-23917-4	WI-CV-1FB02-1116	98	105
320-23917-5	WI-CV-1RW03-1116	120	109
320-23917-6	WI-CV-1FB03-1116	95	99
320-23917-7	WI-CV-1RW04-1116	116	117
320-23917-8	WI-CV-1FB04-1116	115	112
320-23917-9	WI-CV-1RW05-1116	110	101
320-23917-10	WI-CV-1FB05-1116	114	109
320-23917-11	WI-CV-2RW01-1116	122	119
320-23917-12	WI-CV-2FB01-1116	108	108
320-23917-13	WI-CV-2RW02-1116	112	113
320-23917-14	WI-CV-2FB02-1116	105	106
320-23917-15	WI-CV-2RW03-1116	117	111
320-23917-16	WI-CV-2FB03-1116	109	107
320-23917-17	WI-CV-2RW04-1116	101	114
320-23917-18	WI-CV-2FB04-1116	105	107
320-23917-19	WI-CV-3RW01-1116	118	110
320-23917-20	WI-CV-3FB01-1116	0.1 M Q	0.3 M Q
320-23917-21	WI-CV-3RW02-1116	106	107
320-23917-22	WI-CV-3FB02-1116	105	108
320-23917-23	WI-CV-3RW03-1116	109	108
320-23917-24	WI-CV-3FB03-1116	106	105
320-23917-25	WI-CV-3RW04-1116	109	108
320-23917-26	WI-CV-3FB04-1116	107	108
320-23917-27	WI-CV-3RW05-1116	130	124
320-23917-28	WI-CV-3FB05-1116	109	110
LCS 320-140280/2-A	Lab Control Sample	113	101
LCSD 320-140280/3-A	Lab Control Sample Dup	117	112
LLCS 320-140400/2-A	Lab Control Sample	112	108
LLCSD 320-140400/3-A	Lab Control Sample Dup	112	108
MB 320-140280/1-A	Method Blank	111	106
MB 320-140400/1-A	Method Blank	123	120

Surrogate Legend

13C2 PFHxA = 13C2 PFHxA

13C2 PFDA = 13C2 PFDA

QC Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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

Lab Sample ID: MB 320-140280/1-A
Matrix: Water
Analysis Batch: 140943

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 140280

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.016	ug/L		12/02/16 07:42	12/07/16 09:06	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0094	ug/L		12/02/16 07:42	12/07/16 09:06	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		12/02/16 07:42	12/07/16 09:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	111		70 - 130	12/02/16 07:42	12/07/16 09:06	1
13C2 PFDA	106		70 - 130	12/02/16 07:42	12/07/16 09:06	1

Lab Sample ID: LCS 320-140280/2-A
Matrix: Water
Analysis Batch: 140943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 140280

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanesulfonic acid (PFOS)	0.300	0.315		ug/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	0.152	0.157		ug/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	0.673	0.582		ug/L		86	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	113		70 - 130
13C2 PFDA	101		70 - 130

Lab Sample ID: LCSD 320-140280/3-A
Matrix: Water
Analysis Batch: 140943

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 140280

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS)	0.300	0.322	E	ug/L		107	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	0.152	0.157		ug/L		103	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	0.673	0.645		ug/L		96	70 - 130	10	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
13C2 PFHxA	117		70 - 130
13C2 PFDA	112		70 - 130

Lab Sample ID: MB 320-140400/1-A
Matrix: Water
Analysis Batch: 140948

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 140400

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.048	U M	0.060	0.016	ug/L		12/02/16 15:27	12/08/16 11:41	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0094	ug/L		12/02/16 15:27	12/08/16 11:41	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		12/02/16 15:27	12/08/16 11:41	1

TestAmerica Sacramento

QC Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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

Lab Sample ID: MB 320-140400/1-A
Matrix: Water
Analysis Batch: 140948

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 140400

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	123		70 - 130	12/02/16 15:27	12/08/16 11:41	1
13C2 PFDA	120		70 - 130	12/02/16 15:27	12/08/16 11:41	1

Lab Sample ID: LLCS 320-140400/2-A
Matrix: Water
Analysis Batch: 140946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 140400

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	Limits	LLCS LLCS	
								%Recovery	Qualifier
Perfluorooctanesulfonic acid (PFOS)	0.0401	0.0318	J	ug/L		79	50 - 150		
Perfluorooctanoic acid (PFOA)	0.0198	0.0180	J	ug/L		90	50 - 150		
Perfluorobutanesulfonic acid (PFBS)	0.0898	0.0805	J	ug/L		90	50 - 150		

Surrogate	LLCS LLCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	112		70 - 130
13C2 PFDA	108		70 - 130

Lab Sample ID: LLCSD 320-140400/3-A
Matrix: Water
Analysis Batch: 140946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 140400

Analyte	Spike Added	LLCSD Result	LLCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanoic acid (PFOA)	0.0198	0.0185	J	ug/L		93	50 - 150	3	50
Perfluorobutanesulfonic acid (PFBS)	0.0898	0.0796	J	ug/L		89	50 - 150	1	50

Surrogate	LLCSD LLCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	112		70 - 130
13C2 PFDA	108		70 - 130

QC Association Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

LCMS

Prep Batch: 140280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-1 - DL	WI-CV-1RW01-1116	Total/NA	Water	537	
320-23917-1	WI-CV-1RW01-1116	Total/NA	Water	537	
320-23917-2	WI-CV-1FB01-1116	Total/NA	Water	537	
320-23917-3	WI-CV-1RW02-1116	Total/NA	Water	537	
320-23917-4	WI-CV-1FB02-1116	Total/NA	Water	537	
320-23917-5	WI-CV-1RW03-1116	Total/NA	Water	537	
320-23917-6	WI-CV-1FB03-1116	Total/NA	Water	537	
320-23917-7	WI-CV-1RW04-1116	Total/NA	Water	537	
320-23917-8	WI-CV-1FB04-1116	Total/NA	Water	537	
320-23917-9	WI-CV-1RW05-1116	Total/NA	Water	537	
320-23917-10	WI-CV-1FB05-1116	Total/NA	Water	537	
320-23917-11	WI-CV-2RW01-1116	Total/NA	Water	537	
320-23917-12	WI-CV-2FB01-1116	Total/NA	Water	537	
320-23917-13	WI-CV-2RW02-1116	Total/NA	Water	537	
320-23917-14	WI-CV-2FB02-1116	Total/NA	Water	537	
320-23917-15	WI-CV-2RW03-1116	Total/NA	Water	537	
320-23917-16	WI-CV-2FB03-1116	Total/NA	Water	537	
320-23917-17	WI-CV-2RW04-1116	Total/NA	Water	537	
320-23917-18	WI-CV-2FB04-1116	Total/NA	Water	537	
320-23917-19	WI-CV-3RW01-1116	Total/NA	Water	537	
320-23917-20	WI-CV-3FB01-1116	Total/NA	Water	537	
MB 320-140280/1-A	Method Blank	Total/NA	Water	537	
LCS 320-140280/2-A	Lab Control Sample	Total/NA	Water	537	
LCSD 320-140280/3-A	Lab Control Sample Dup	Total/NA	Water	537	

Prep Batch: 140400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-21	WI-CV-3RW02-1116	Total/NA	Water	537	
320-23917-22	WI-CV-3FB02-1116	Total/NA	Water	537	
320-23917-23	WI-CV-3RW03-1116	Total/NA	Water	537	
320-23917-24	WI-CV-3FB03-1116	Total/NA	Water	537	
320-23917-25	WI-CV-3RW04-1116	Total/NA	Water	537	
320-23917-26	WI-CV-3FB04-1116	Total/NA	Water	537	
320-23917-27	WI-CV-3RW05-1116	Total/NA	Water	537	
320-23917-28	WI-CV-3FB05-1116	Total/NA	Water	537	
MB 320-140400/1-A	Method Blank	Total/NA	Water	537	
LLCS 320-140400/2-A	Lab Control Sample	Total/NA	Water	537	
LLCSD 320-140400/3-A	Lab Control Sample Dup	Total/NA	Water	537	

Analysis Batch: 140943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-1 - DL	WI-CV-1RW01-1116	Total/NA	Water	537	140280
320-23917-1	WI-CV-1RW01-1116	Total/NA	Water	537	140280
320-23917-2	WI-CV-1FB01-1116	Total/NA	Water	537	140280
320-23917-3	WI-CV-1RW02-1116	Total/NA	Water	537	140280
320-23917-4	WI-CV-1FB02-1116	Total/NA	Water	537	140280
320-23917-5	WI-CV-1RW03-1116	Total/NA	Water	537	140280
320-23917-6	WI-CV-1FB03-1116	Total/NA	Water	537	140280
MB 320-140280/1-A	Method Blank	Total/NA	Water	537	140280
LCS 320-140280/2-A	Lab Control Sample	Total/NA	Water	537	140280
LCSD 320-140280/3-A	Lab Control Sample Dup	Total/NA	Water	537	140280

TestAmerica Sacramento

QC Association Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Analysis Batch: 140945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-7	WI-CV-1RW04-1116	Total/NA	Water	537	140280
320-23917-8	WI-CV-1FB04-1116	Total/NA	Water	537	140280
320-23917-9	WI-CV-1RW05-1116	Total/NA	Water	537	140280
320-23917-10	WI-CV-1FB05-1116	Total/NA	Water	537	140280
320-23917-11	WI-CV-2RW01-1116	Total/NA	Water	537	140280
320-23917-12	WI-CV-2FB01-1116	Total/NA	Water	537	140280
320-23917-13	WI-CV-2RW02-1116	Total/NA	Water	537	140280
320-23917-14	WI-CV-2FB02-1116	Total/NA	Water	537	140280
320-23917-15	WI-CV-2RW03-1116	Total/NA	Water	537	140280

Analysis Batch: 140946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-16	WI-CV-2FB03-1116	Total/NA	Water	537	140280
320-23917-17	WI-CV-2RW04-1116	Total/NA	Water	537	140280
320-23917-18	WI-CV-2FB04-1116	Total/NA	Water	537	140280
320-23917-19	WI-CV-3RW01-1116	Total/NA	Water	537	140280
320-23917-20	WI-CV-3FB01-1116	Total/NA	Water	537	140280
320-23917-21	WI-CV-3RW02-1116	Total/NA	Water	537	140400
320-23917-22	WI-CV-3FB02-1116	Total/NA	Water	537	140400
LLCS 320-140400/2-A	Lab Control Sample	Total/NA	Water	537	140400
LLCSD 320-140400/3-A	Lab Control Sample Dup	Total/NA	Water	537	140400

Analysis Batch: 140947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-23	WI-CV-3RW03-1116	Total/NA	Water	537	140400
320-23917-24	WI-CV-3FB03-1116	Total/NA	Water	537	140400
320-23917-25	WI-CV-3RW04-1116	Total/NA	Water	537	140400
320-23917-26	WI-CV-3FB04-1116	Total/NA	Water	537	140400
320-23917-27	WI-CV-3RW05-1116	Total/NA	Water	537	140400
320-23917-28	WI-CV-3FB05-1116	Total/NA	Water	537	140400

Analysis Batch: 140948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-140400/1-A	Method Blank	Total/NA	Water	537	140400

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1RW01-1116

Lab Sample ID: 320-23917-1

Date Collected: 11/28/16 13:25

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537	DL		269.1 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537	DL	5			140943	12/07/16 10:34	JRB	TAL SAC
Total/NA	Prep	537			269.1 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140943	12/07/16 13:32	JRB	TAL SAC

Client Sample ID: WI-CV-1FB01-1116

Lab Sample ID: 320-23917-2

Date Collected: 11/28/16 13:25

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			278.9 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140943	12/07/16 11:04	JRB	TAL SAC

Client Sample ID: WI-CV-1RW02-1116

Lab Sample ID: 320-23917-3

Date Collected: 11/28/16 14:05

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			279.3 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140943	12/07/16 11:34	JRB	TAL SAC

Client Sample ID: WI-CV-1FB02-1116

Lab Sample ID: 320-23917-4

Date Collected: 11/28/16 14:04

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			278.7 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140943	12/07/16 12:03	JRB	TAL SAC

Client Sample ID: WI-CV-1RW03-1116

Lab Sample ID: 320-23917-5

Date Collected: 11/28/16 15:09

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			267.4 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140943	12/07/16 12:33	JRB	TAL SAC

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1FB03-1116

Lab Sample ID: 320-23917-6

Date Collected: 11/28/16 15:08

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			280.2 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140943	12/07/16 13:02	JRB	TAL SAC

Client Sample ID: WI-CV-1RW04-1116

Lab Sample ID: 320-23917-7

Date Collected: 11/28/16 16:10

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			274.2 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140945	12/07/16 15:30	JRB	TAL SAC

Client Sample ID: WI-CV-1FB04-1116

Lab Sample ID: 320-23917-8

Date Collected: 11/28/16 16:09

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			283.3 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140945	12/07/16 16:00	JRB	TAL SAC

Client Sample ID: WI-CV-1RW05-1116

Lab Sample ID: 320-23917-9

Date Collected: 11/28/16 17:17

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			271.6 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140945	12/07/16 16:30	JRB	TAL SAC

Client Sample ID: WI-CV-1FB05-1116

Lab Sample ID: 320-23917-10

Date Collected: 11/28/16 17:16

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			282.6 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140945	12/07/16 16:59	JRB	TAL SAC

Client Sample ID: WI-CV-2RW01-1116

Lab Sample ID: 320-23917-11

Date Collected: 11/28/16 13:15

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			253.5 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140945	12/07/16 17:29	JRB	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB01-1116

Lab Sample ID: 320-23917-12

Date Collected: 11/28/16 13:16

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			276 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140945	12/07/16 17:58	JRB	TAL SAC

Client Sample ID: WI-CV-2RW02-1116

Lab Sample ID: 320-23917-13

Date Collected: 11/28/16 15:04

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			259.5 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140945	12/07/16 19:57	JRB	TAL SAC

Client Sample ID: WI-CV-2FB02-1116

Lab Sample ID: 320-23917-14

Date Collected: 11/28/16 15:05

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			279.6 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140945	12/07/16 18:58	JRB	TAL SAC

Client Sample ID: WI-CV-2RW03-1116

Lab Sample ID: 320-23917-15

Date Collected: 11/28/16 16:05

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			245.8 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140945	12/07/16 19:27	JRB	TAL SAC

Client Sample ID: WI-CV-2FB03-1116

Lab Sample ID: 320-23917-16

Date Collected: 11/28/16 16:06

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			280.7 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140946	12/07/16 21:55	JRB	TAL SAC

Client Sample ID: WI-CV-2RW04-1116

Lab Sample ID: 320-23917-17

Date Collected: 11/28/16 16:59

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			267.2 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140946	12/07/16 22:25	JRB	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB04-1116

Lab Sample ID: 320-23917-18

Date Collected: 11/28/16 17:00

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			288.6 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140946	12/07/16 22:54	JRB	TAL SAC

Client Sample ID: WI-CV-3RW01-1116

Lab Sample ID: 320-23917-19

Date Collected: 11/28/16 13:14

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			277.9 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140946	12/07/16 23:24	JRB	TAL SAC

Client Sample ID: WI-CV-3FB01-1116

Lab Sample ID: 320-23917-20

Date Collected: 11/28/16 13:15

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			283.5 mL	1.00 mL	140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1			140946	12/07/16 23:54	JRB	TAL SAC

Client Sample ID: WI-CV-3RW02-1116

Lab Sample ID: 320-23917-21

Date Collected: 11/28/16 14:14

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			256.4 mL	1 mL	140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1			140946	12/08/16 01:52	JRB	TAL SAC

Client Sample ID: WI-CV-3FB02-1116

Lab Sample ID: 320-23917-22

Date Collected: 11/28/16 14:15

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			255.9 mL	1 mL	140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1			140946	12/08/16 02:22	JRB	TAL SAC

Client Sample ID: WI-CV-3RW03-1116

Lab Sample ID: 320-23917-23

Date Collected: 11/28/16 15:11

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			250.2 mL	1 mL	140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1			140947	12/08/16 04:20	JRB	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB03-1116

Lab Sample ID: 320-23917-24

Date Collected: 11/28/16 15:12

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			259.4 mL	1 mL	140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1			140947	12/08/16 04:50	JRB	TAL SAC

Client Sample ID: WI-CV-3RW04-1116

Lab Sample ID: 320-23917-25

Date Collected: 11/28/16 16:17

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			258.4 mL	1 mL	140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1			140947	12/08/16 05:19	JRB	TAL SAC

Client Sample ID: WI-CV-3FB04-1116

Lab Sample ID: 320-23917-26

Date Collected: 11/28/16 16:18

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			261.1 mL	1 mL	140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1			140947	12/08/16 05:49	JRB	TAL SAC

Client Sample ID: WI-CV-3RW05-1116

Lab Sample ID: 320-23917-27

Date Collected: 11/28/16 18:08

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			251.8 mL	1 mL	140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1			140947	12/08/16 06:19	JRB	TAL SAC

Client Sample ID: WI-CV-3FB05-1116

Lab Sample ID: 320-23917-28

Date Collected: 11/28/16 18:09

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			261 mL	1 mL	140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1			140947	12/08/16 06:48	JRB	TAL SAC

Laboratory References:

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

Certification Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17

Analysis Method	Prep Method	Matrix	Analyte
-----------------	-------------	--------	---------

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

Method Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-23917-1	WI-CV-1RW01-1116	Water	11/28/16 13:25	12/01/16 09:50
320-23917-2	WI-CV-1FB01-1116	Water	11/28/16 13:25	12/01/16 09:50
320-23917-3	WI-CV-1RW02-1116	Water	11/28/16 14:05	12/01/16 09:50
320-23917-4	WI-CV-1FB02-1116	Water	11/28/16 14:04	12/01/16 09:50
320-23917-5	WI-CV-1RW03-1116	Water	11/28/16 15:09	12/01/16 09:50
320-23917-6	WI-CV-1FB03-1116	Water	11/28/16 15:08	12/01/16 09:50
320-23917-7	WI-CV-1RW04-1116	Water	11/28/16 16:10	12/01/16 09:50
320-23917-8	WI-CV-1FB04-1116	Water	11/28/16 16:09	12/01/16 09:50
320-23917-9	WI-CV-1RW05-1116	Water	11/28/16 17:17	12/01/16 09:50
320-23917-10	WI-CV-1FB05-1116	Water	11/28/16 17:16	12/01/16 09:50
320-23917-11	WI-CV-2RW01-1116	Water	11/28/16 13:15	12/01/16 09:50
320-23917-12	WI-CV-2FB01-1116	Water	11/28/16 13:16	12/01/16 09:50
320-23917-13	WI-CV-2RW02-1116	Water	11/28/16 15:04	12/01/16 09:50
320-23917-14	WI-CV-2FB02-1116	Water	11/28/16 15:05	12/01/16 09:50
320-23917-15	WI-CV-2RW03-1116	Water	11/28/16 16:05	12/01/16 09:50
320-23917-16	WI-CV-2FB03-1116	Water	11/28/16 16:06	12/01/16 09:50
320-23917-17	WI-CV-2RW04-1116	Water	11/28/16 16:59	12/01/16 09:50
320-23917-18	WI-CV-2FB04-1116	Water	11/28/16 17:00	12/01/16 09:50
320-23917-19	WI-CV-3RW01-1116	Water	11/28/16 13:14	12/01/16 09:50
320-23917-20	WI-CV-3FB01-1116	Water	11/28/16 13:15	12/01/16 09:50
320-23917-21	WI-CV-3RW02-1116	Water	11/28/16 14:14	12/01/16 09:50
320-23917-22	WI-CV-3FB02-1116	Water	11/28/16 14:15	12/01/16 09:50
320-23917-23	WI-CV-3RW03-1116	Water	11/28/16 15:11	12/01/16 09:50
320-23917-24	WI-CV-3FB03-1116	Water	11/28/16 15:12	12/01/16 09:50
320-23917-25	WI-CV-3RW04-1116	Water	11/28/16 16:17	12/01/16 09:50
320-23917-26	WI-CV-3FB04-1116	Water	11/28/16 16:18	12/01/16 09:50
320-23917-27	WI-CV-3RW05-1116	Water	11/28/16 18:08	12/01/16 09:50
320-23917-28	WI-CV-3FB05-1116	Water	11/28/16 18:09	12/01/16 09:50


West Sacramento, CA 95605
phone 916.373.5600 fax

Regulatory Program:

DW NPDES RCRA Other:

TestAmerica Laboratories, Inc.

Client Contact Titanium Hill 1100 NE Circle Blvd Ste 300 Corvallis, OR 97330 (541) 768-3109 (541) 908-3794 Project Name: CTO-08 Site: OLF Coupeville P O #: 100067106050 - 679580.09.FLFS	Project Manager: Katie Tippin Tel/Fax: (757) 671-6258	Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below: 7-Day <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	Site Contact: Eric Epple Lab Contact: Laura Turpen Carrier: FedEx Date: 11/ / 2016	COC No: 1 of 2 COCs
--	--	---	---	------------------------

Sample Identification	Sample Date	Sample Time	Sample Type (G=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)		Perform MS / MSD (Y/N)		USEPA Method 537 (PFOA, PFOS, and PFBS)	Sample Specific Notes:
						Y	N	Y	N		
WI-CV-1RW01-1116	11/28/16	1325	G	DW	1	N	N	X	X		 320-23917 Chain of Custody
WI-CV-1FB01-1116	11/28/16	1325	G	DW	1	N	N	X	X		
WI-CV-1RW02-1116	11/28/16	1405	G	DW	1	N	N	X	X		
WI-CV-1FB02-1116	11/28/16	1404	G	DW	1	N	N	X	X		
WI-CV-1RW03-1116	11/28/16	1508	G	DW	2	N	N	X	X		
WI-CV-1RW04-1116	11/28/16	1610	G	DW	2	N	N	X	X		
WI-CV-1FB04-1116	11/28/16	1609	G	DW	2	N	N	X	X		
WI-CV-1RW05-1116	11/28/16	1717	G	DW	2	N	N	X	X		
WI-CV-1FB05-1116	11/28/16	1716	G	DW	2	N	N	X	X		
WI-CV-2RW01-1116	11/28/16	1315	G	DW	1	N	N	X	X		
WI-CV-2FB01-1116	11/28/16	1316	G	DW	1	N	N	X	X		

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other
 Possible Hazard Identification:
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:
 Non-Hazard Flammable Skin Irritant Poison B Unknown
 Return to Client Disposal by Lab Archive for _____ Months

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temp. (°C): Obs'd. 1.8	Therm ID No.:
Relinquished by: Eric Epple	Company: CH2M	Received by: Roy A. Turpen	Company: HAS
Relinquished by:	Company:	Received in Laboratory by:	Company:
Relinquished by:	Company:	Received in Laboratory by:	Company:

Chain of Custody Record

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
phone 916.373.5600 fax

Client Contact
Tiffany Hill
Project Chemist
1100 NE Circle Blvd Ste 300 Corvallis, OR 97330
(541) 768-3109
(541) 908-3794
Project Name: CTO-08
Site: OLF Coupeville
P O #: 100067106050 - 679580.09.FLFS

Regulatory Program: DW HPCDS RCRA Other:
Project Manager: Katie Tippin
Tel/Fax: (757) 671-6258

Site Contact: Eric Epple
Lab Contact: Laura Turpen

Date: 11/20/16
Carrier: FedEx

TestAmerica Laboratories, Inc.
COC No: 1
2 of 3 COCs
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)		Perform MS / MSD (Y / N)		USEPA Method 537 (PFOA, PFOS, and PFBS)	Date: 11/20/16	Carrier: FedEx	COC No: 1	2 of 3 COCs
						Sample	Type	Sample	Type					
WI-CV-2RW02-1116	11/28/16	1504	G	DW	1	N	N	X						
1 WI-CV-2FB02-1116	11/28/16	1505	G	DW	1	N	N	X						
WI-CV-2RW03-1116	11/28/16	1605	G	DW	2	N	N	X						
WI-CV-2FB03-1116	11/28/16	1606	G	DW	2	N	N	X						
WI-CV-2RW04-1116	11/28/16	1659	G	DW	2	N	N	X						
WI-CV-2FB04-1116	11/28/16	1700	G	DW	2	N	N	X						
WI-CV-3RW01-1116	11/28/16	1314	G	DW	1	N	N	X						
WI-CV-3FB01-1116	11/28/16	1315	G	DW	1	N	N	X						
WI-CV-3RW02-1116	11/28/16	1414	G	DW	1	N	N	X						
WI-CV-3FB02-1116	11/28/16	1415	G	DW	1	N	N	X						
WI-CV-3RW03-1116	11/28/16	1511	G	DW	1	N	N	X						
WI-CV-3FB03-1116	11/28/16	1512	G	DW	1	N	N	X						

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below: 7-Day
2 weeks
1 week
2 days
1 day

Sample Specific Notes:

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

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

Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

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

Custody Seals Intact: Yes No
Custody Seal No.:
Company: CH2M
Date/Time: 11-27-16/1600
Received by: *Eric Epple*
Received in Laboratory by: *Troy E. Turpen*
Company: *THS*
Date/Time: 12/1/16 09250

Cooler Temp (°C): Obs'd: 1.6 Corr'd: 0.4 Therm ID No.: 72
Received by: *Eric Epple*
Received in Laboratory by: *Troy E. Turpen*
Company: *THS*
Date/Time: 12/1/16 09250

Relinquished by: *Eric Epple*
Relinquished by: *Troy E. Turpen*
Company:
Date/Time:

West Sacramento, CA 95605
880 Riverside Parkway
phone 916.373.5600 fax

Client Contact
Tiffany Hill

Project Manager: Katie Tippin
Tel/Fax: (757) 671-6258

Site Contact: Eric Epple
Lab Contact: Laura Turpen

Date: 11/20/16
Carrier: FedEx

COG No: 1
3 of 3 COGS
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Regulatory Program: DW NPDES RCRA Other:

TestAmerica Laboratories, Inc.

Project Chemist: 1100 NE Circle Blvd Ste 300 Corvallis, OR 97330
(541) 768-3109
(541) 908-3794
Project Name: CTO-08
Site: OLF Coupeville
P O #: 100067106050 - 679580.09.FLFS

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below: 7-Day

2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	USEPA Method 537 (PFOA, PFOS, and PFBS)
WL-CV-3RW04-1116	11/28/16	1617	G	DW	2	N	N	X
WL-CV-3FB04-1116	11/28/16	1618	G	DW	2	N	N	X
WL-CV-3RW05-1116	11/28/16	1808	G	DW	2	N	N	X
WL-CV-3FB05-1116	11/28/16	1809	G	DW	2	N	N	X

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

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

Special Instructions/QC Requirements & Comments:
 Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Custody Seal Intact: Yes No
Custody Seal No.:
Cooler Temp. (°C): Obs'd: 1.6 Corr'd: 0.7 Therm ID No.: 02
Relinquished by: *Eric Epple* Company: CH2M Date/Time: 11-20-16/1600 Received by: *Laura Turpen* Company: TMS Date/Time: 12/1/16 09:52
Relinquished by: Company: Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 320-23917-1

Login Number: 23917

List Number: 1

Creator: Hytrek, Cheryl

List Source: TestAmerica Sacramento

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

ANALYTICAL REPORT

Job Number: 320-23917-1
Job Description: Whidbey Island

For:
CH2M Hill Constructors, Inc.
1100 NE Circle Blvd
Corvallis, OR 97330
Attention: Tiffany Hill



Approved for release.
Laura Turpen
Project Manager I
12/9/2016 8:16 AM

Laura Turpen, Project Manager I
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4414
laura.turpen@testamericainc.com
12/09/2016
Revision: 1

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Definitions/Glossary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Qualifiers

LCMS

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

Glossary

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

CASE NARRATIVE

Client: CH2M Hill Constructors, Inc.

Project: Whidbey Island

Report Number: 320-23917-1

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

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

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

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

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

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

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

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

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

Revision

This report was revised December 9, 2016 to use the LOD/LOQ/DL reporting format. No data changed as a result of this revision.

RECEIPT

The samples were received on 12/01/2016; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 0.9° C.

PFOA/PFOS

Samples WI-CV-1RW01-1116 (320-23917-1), WI-CV-1FB01-1116 (320-23917-2), WI-CV-1RW02-1116 (320-23917-3), WI-CV-1FB02-1116 (320-23917-4), WI-CV-1RW03-1116 (320-23917-5), WI-CV-1FB03-1116 (320-23917-6), WI-CV-1RW04-1116 (320-23917-7), WI-CV-1FB04-1116 (320-23917-8), WI-CV-1RW05-1116 (320-23917-9), WI-CV-1FB05-1116 (320-23917-10), WI-CV-2RW01-1116 (320-23917-11), WI-CV-2FB01-1116 (320-23917-12), WI-CV-2RW02-1116 (320-23917-13), WI-CV-2FB02-1116 (320-23917-14), WI-CV-2RW03-1116 (320-23917-15), WI-CV-2FB03-1116 (320-23917-16), WI-CV-2RW04-1116 (320-23917-17), WI-CV-2FB04-1116 (320-23917-18), WI-CV-3RW01-1116 (320-23917-19), WI-CV-3FB01-1116 (320-23917-20), WI-CV-3RW02-1116 (320-23917-21), WI-CV-3FB02-1116 (320-23917-22), WI-CV-3RW03-1116 (320-23917-23), WI-CV-3FB03-1116 (320-23917-24), WI-CV-3RW04-1116 (320-23917-25), WI-CV-3FB04-1116 (320-23917-26), WI-CV-3RW05-1116 (320-23917-27) and WI-CV-3FB05-1116 (320-23917-28) were analyzed for PFOA/PFOS in accordance with 537. The samples were prepared on 12/02/2016 and analyzed on 12/07/2016 and 12/08/2016.

The following samples have a pH 9:

WI-CV-1RW01-1116 (320-23917-1), WI-CV-1FB01-1116 (320-23917-2), WI-CV-1RW02-1116 (320-23917-3), WI-CV-1FB02-1116 (320-23917-4), WI-CV-1RW03-1116 (320-23917-5), WI-CV-1FB03-1116 (320-23917-6), WI-CV-1RW04-1116 (320-23917-7), WI-CV-1FB04-1116 (320-23917-8), WI-CV-1RW05-1116 (320-23917-9), WI-CV-1FB05-1116 (320-23917-10), WI-CV-2RW01-1116 (320-23917-11), WI-CV-2FB01-1116 (320-23917-12), WI-CV-2RW02-1116 (320-23917-13), WI-CV-2FB02-1116 (320-23917-14), WI-CV-2RW03-1116 (320-23917-15), WI-CV-2FB03-1116 (320-23917-16), WI-CV-2RW04-1116 (320-23917-17), WI-CV-2FB04-1116 (320-23917-18), WI-CV-3RW01-1116 (320-23917-19), WI-CV-3FB01-1116 (320-23917-20), WI-CV-3RW02-1116 (320-23917-21),

WI-CV-3FB02-1116 (320-23917-22), WI-CV-3RW03-1116 (320-23917-23), WI-CV-3FB03-1116 (320-23917-24), WI-CV-3RW04-1116 (320-23917-25), WI-CV-3FB04-1116 (320-23917-26), WI-CV-3RW05-1116 (320-23917-27) and WI-CV-3FB05-1116 (320-23917-28)

Results for sample WI-CV-1RW01-1116 (320-23917-1) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

The following sample has very low recovery for the surrogate compounds possibly caused by a spike issue during the sample preparation. Re-preparation of the sample is not possible as there is no more volume available. This is a field blank sample and all the target analytes are non detect (ND). The surrogate recovery in the associated field sample is within criteria and it is ND for target analytes. WI-CV-3FB01-1116 (320-23917-20)

Sample WI-CV-1RW01-1116 (320-23917-1)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batches 320-140400 and 320-140280.

The laboratory control sample duplicate (LCSD) for preparation batch 320-140280 and analytical batch 320-140943 has an E flag because it is spiked at the upper level of the calibration curve as specified in the method. (LCSD 320-140280/3-A)

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

Detection Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1RW01-1116

Lab Sample ID: 320-23917-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA) - DL	0.44	D	0.14	0.044	ug/L	5		537	Total/NA

Client Sample ID: WI-CV-1FB01-1116

Lab Sample ID: 320-23917-2

No Detections.

Client Sample ID: WI-CV-1RW02-1116

Lab Sample ID: 320-23917-3

No Detections.

Client Sample ID: WI-CV-1FB02-1116

Lab Sample ID: 320-23917-4

No Detections.

Client Sample ID: WI-CV-1RW03-1116

Lab Sample ID: 320-23917-5

No Detections.

Client Sample ID: WI-CV-1FB03-1116

Lab Sample ID: 320-23917-6

No Detections.

Client Sample ID: WI-CV-1RW04-1116

Lab Sample ID: 320-23917-7

No Detections.

Client Sample ID: WI-CV-1FB04-1116

Lab Sample ID: 320-23917-8

No Detections.

Client Sample ID: WI-CV-1RW05-1116

Lab Sample ID: 320-23917-9

No Detections.

Client Sample ID: WI-CV-1FB05-1116

Lab Sample ID: 320-23917-10

No Detections.

Client Sample ID: WI-CV-2RW01-1116

Lab Sample ID: 320-23917-11

No Detections.

Client Sample ID: WI-CV-2FB01-1116

Lab Sample ID: 320-23917-12

No Detections.

Client Sample ID: WI-CV-2RW02-1116

Lab Sample ID: 320-23917-13

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.15		0.029	0.0091	ug/L	1		537	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB02-1116

Lab Sample ID: 320-23917-14

No Detections.

Client Sample ID: WI-CV-2RW03-1116

Lab Sample ID: 320-23917-15

No Detections.

Client Sample ID: WI-CV-2FB03-1116

Lab Sample ID: 320-23917-16

No Detections.

Client Sample ID: WI-CV-2RW04-1116

Lab Sample ID: 320-23917-17

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.022	J	0.056	0.015	ug/L	1			537	Total/NA
Perfluorooctanoic acid (PFOA)	0.015	J M	0.028	0.0088	ug/L	1			537	Total/NA

Client Sample ID: WI-CV-2FB04-1116

Lab Sample ID: 320-23917-18

No Detections.

Client Sample ID: WI-CV-3RW01-1116

Lab Sample ID: 320-23917-19

No Detections.

Client Sample ID: WI-CV-3FB01-1116

Lab Sample ID: 320-23917-20

No Detections.

Client Sample ID: WI-CV-3RW02-1116

Lab Sample ID: 320-23917-21

No Detections.

Client Sample ID: WI-CV-3FB02-1116

Lab Sample ID: 320-23917-22

No Detections.

Client Sample ID: WI-CV-3RW03-1116

Lab Sample ID: 320-23917-23

No Detections.

Client Sample ID: WI-CV-3FB03-1116

Lab Sample ID: 320-23917-24

No Detections.

Client Sample ID: WI-CV-3RW04-1116

Lab Sample ID: 320-23917-25

No Detections.

Client Sample ID: WI-CV-3FB04-1116

Lab Sample ID: 320-23917-26

No Detections.

Client Sample ID: WI-CV-3RW05-1116

Lab Sample ID: 320-23917-27

No Detections.

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB05-1116

Lab Sample ID: 320-23917-28

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1RW01-1116

Date Collected: 11/28/16 13:25

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-1

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.045	U M	0.056	0.014	ug/L		12/02/16 07:42	12/07/16 13:32	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		12/02/16 07:42	12/07/16 13:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	111		70 - 130				12/02/16 07:42	12/07/16 13:32	1
13C2 PFDA	112		70 - 130				12/02/16 07:42	12/07/16 13:32	1

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.44	D	0.14	0.044	ug/L		12/02/16 07:42	12/07/16 10:34	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		70 - 130				12/02/16 07:42	12/07/16 10:34	5
13C2 PFDA	103		70 - 130				12/02/16 07:42	12/07/16 10:34	5

Client Sample ID: WI-CV-1FB01-1116

Date Collected: 11/28/16 13:25

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-2

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 11:04	1
Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 11:04	1
Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 11:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130				12/02/16 07:42	12/07/16 11:04	1
13C2 PFDA	103		70 - 130				12/02/16 07:42	12/07/16 11:04	1

Client Sample ID: WI-CV-1RW02-1116

Date Collected: 11/28/16 14:05

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-3

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 11:34	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 11:34	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 11:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	96		70 - 130				12/02/16 07:42	12/07/16 11:34	1
13C2 PFDA	89		70 - 130				12/02/16 07:42	12/07/16 11:34	1

Client Sample ID: WI-CV-1FB02-1116

Date Collected: 11/28/16 14:04

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-4

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 12:03	1
Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 12:03	1

TestAmerica Sacramento

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1FB02-1116

Lab Sample ID: 320-23917-4

Date Collected: 11/28/16 14:04

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 12:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		70 - 130				12/02/16 07:42	12/07/16 12:03	1
13C2 PFDA	105		70 - 130				12/02/16 07:42	12/07/16 12:03	1

Client Sample ID: WI-CV-1RW03-1116

Lab Sample ID: 320-23917-5

Date Collected: 11/28/16 15:09

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.045	U	0.056	0.014	ug/L		12/02/16 07:42	12/07/16 12:33	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.0088	ug/L		12/02/16 07:42	12/07/16 12:33	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		12/02/16 07:42	12/07/16 12:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	120		70 - 130				12/02/16 07:42	12/07/16 12:33	1
13C2 PFDA	109		70 - 130				12/02/16 07:42	12/07/16 12:33	1

Client Sample ID: WI-CV-1FB03-1116

Lab Sample ID: 320-23917-6

Date Collected: 11/28/16 15:08

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 13:02	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 13:02	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.042	ug/L		12/02/16 07:42	12/07/16 13:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		70 - 130				12/02/16 07:42	12/07/16 13:02	1
13C2 PFDA	99		70 - 130				12/02/16 07:42	12/07/16 13:02	1

Client Sample ID: WI-CV-1RW04-1116

Lab Sample ID: 320-23917-7

Date Collected: 11/28/16 16:10

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.055	0.014	ug/L		12/02/16 07:42	12/07/16 15:30	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0086	ug/L		12/02/16 07:42	12/07/16 15:30	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 15:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	116		70 - 130				12/02/16 07:42	12/07/16 15:30	1
13C2 PFDA	117		70 - 130				12/02/16 07:42	12/07/16 15:30	1

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1FB04-1116

Lab Sample ID: 320-23917-8

Date Collected: 11/28/16 16:09

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.053	0.014	ug/L		12/02/16 07:42	12/07/16 16:00	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L		12/02/16 07:42	12/07/16 16:00	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		12/02/16 07:42	12/07/16 16:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	115		70 - 130				12/02/16 07:42	12/07/16 16:00	1
13C2 PFDA	112		70 - 130				12/02/16 07:42	12/07/16 16:00	1

Client Sample ID: WI-CV-1RW05-1116

Lab Sample ID: 320-23917-9

Date Collected: 11/28/16 17:17

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.055	0.014	ug/L		12/02/16 07:42	12/07/16 16:30	1
Perfluorooctanoic acid (PFOA)	0.022	U M	0.028	0.0087	ug/L		12/02/16 07:42	12/07/16 16:30	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		12/02/16 07:42	12/07/16 16:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		70 - 130				12/02/16 07:42	12/07/16 16:30	1
13C2 PFDA	101		70 - 130				12/02/16 07:42	12/07/16 16:30	1

Client Sample ID: WI-CV-1FB05-1116

Lab Sample ID: 320-23917-10

Date Collected: 11/28/16 17:16

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.014	ug/L		12/02/16 07:42	12/07/16 16:59	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0083	ug/L		12/02/16 07:42	12/07/16 16:59	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		12/02/16 07:42	12/07/16 16:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	114		70 - 130				12/02/16 07:42	12/07/16 16:59	1
13C2 PFDA	109		70 - 130				12/02/16 07:42	12/07/16 16:59	1

Client Sample ID: WI-CV-2RW01-1116

Lab Sample ID: 320-23917-11

Date Collected: 11/28/16 13:15

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.015	ug/L		12/02/16 07:42	12/07/16 17:29	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0093	ug/L		12/02/16 07:42	12/07/16 17:29	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		12/02/16 07:42	12/07/16 17:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	122		70 - 130				12/02/16 07:42	12/07/16 17:29	1
13C2 PFDA	119		70 - 130				12/02/16 07:42	12/07/16 17:29	1

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB01-1116

Lab Sample ID: 320-23917-12

Date Collected: 11/28/16 13:16

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 17:58	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0085	ug/L		12/02/16 07:42	12/07/16 17:58	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 17:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		70 - 130				12/02/16 07:42	12/07/16 17:58	1
13C2 PFDA	108		70 - 130				12/02/16 07:42	12/07/16 17:58	1

Client Sample ID: WI-CV-2RW02-1116

Lab Sample ID: 320-23917-13

Date Collected: 11/28/16 15:04

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.058	0.015	ug/L		12/02/16 07:42	12/07/16 19:57	1
Perfluorooctanoic acid (PFOA)	0.15		0.029	0.0091	ug/L		12/02/16 07:42	12/07/16 19:57	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.046	ug/L		12/02/16 07:42	12/07/16 19:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	112		70 - 130				12/02/16 07:42	12/07/16 19:57	1
13C2 PFDA	113		70 - 130				12/02/16 07:42	12/07/16 19:57	1

Client Sample ID: WI-CV-2FB02-1116

Lab Sample ID: 320-23917-14

Date Collected: 11/28/16 15:05

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 18:58	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 18:58	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 18:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		70 - 130				12/02/16 07:42	12/07/16 18:58	1
13C2 PFDA	106		70 - 130				12/02/16 07:42	12/07/16 18:58	1

Client Sample ID: WI-CV-2RW03-1116

Lab Sample ID: 320-23917-15

Date Collected: 11/28/16 16:05

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.049	U	0.061	0.016	ug/L		12/02/16 07:42	12/07/16 19:27	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.031	0.0096	ug/L		12/02/16 07:42	12/07/16 19:27	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		12/02/16 07:42	12/07/16 19:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	117		70 - 130				12/02/16 07:42	12/07/16 19:27	1
13C2 PFDA	111		70 - 130				12/02/16 07:42	12/07/16 19:27	1

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB03-1116

Lab Sample ID: 320-23917-16

Date Collected: 11/28/16 16:06

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.053	0.014	ug/L		12/02/16 07:42	12/07/16 21:55	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.0084	ug/L		12/02/16 07:42	12/07/16 21:55	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.042	ug/L		12/02/16 07:42	12/07/16 21:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130				12/02/16 07:42	12/07/16 21:55	1
13C2 PFDA	107		70 - 130				12/02/16 07:42	12/07/16 21:55	1

Client Sample ID: WI-CV-2RW04-1116

Lab Sample ID: 320-23917-17

Date Collected: 11/28/16 16:59

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.022	J	0.056	0.015	ug/L		12/02/16 07:42	12/07/16 22:25	1
Perfluorooctanoic acid (PFOA)	0.015	J M	0.028	0.0088	ug/L		12/02/16 07:42	12/07/16 22:25	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.045	ug/L		12/02/16 07:42	12/07/16 22:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	101		70 - 130				12/02/16 07:42	12/07/16 22:25	1
13C2 PFDA	114		70 - 130				12/02/16 07:42	12/07/16 22:25	1

Client Sample ID: WI-CV-2FB04-1116

Lab Sample ID: 320-23917-18

Date Collected: 11/28/16 17:00

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.052	0.013	ug/L		12/02/16 07:42	12/07/16 22:54	1
Perfluorooctanoic acid (PFOA)	0.021	U M	0.026	0.0082	ug/L		12/02/16 07:42	12/07/16 22:54	1
Perfluorobutanesulfonic acid (PFBS)	0.095	U	0.12	0.041	ug/L		12/02/16 07:42	12/07/16 22:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		70 - 130				12/02/16 07:42	12/07/16 22:54	1
13C2 PFDA	107		70 - 130				12/02/16 07:42	12/07/16 22:54	1

Client Sample ID: WI-CV-3RW01-1116

Lab Sample ID: 320-23917-19

Date Collected: 11/28/16 13:14

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.014	ug/L		12/02/16 07:42	12/07/16 23:24	1
Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.0085	ug/L		12/02/16 07:42	12/07/16 23:24	1
Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.043	ug/L		12/02/16 07:42	12/07/16 23:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	118		70 - 130				12/02/16 07:42	12/07/16 23:24	1
13C2 PFDA	110		70 - 130				12/02/16 07:42	12/07/16 23:24	1

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB01-1116

Lab Sample ID: 320-23917-20

Date Collected: 11/28/16 13:15

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.014	ug/L		12/02/16 07:42	12/07/16 23:54	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L		12/02/16 07:42	12/07/16 23:54	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		12/02/16 07:42	12/07/16 23:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	0.1	M Q	70 - 130				12/02/16 07:42	12/07/16 23:54	1
13C2 PFDA	0.3	M Q	70 - 130				12/02/16 07:42	12/07/16 23:54	1

Client Sample ID: WI-CV-3RW02-1116

Lab Sample ID: 320-23917-21

Date Collected: 11/28/16 14:14

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.015	ug/L		12/02/16 15:27	12/08/16 01:52	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0092	ug/L		12/02/16 15:27	12/08/16 01:52	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.046	ug/L		12/02/16 15:27	12/08/16 01:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	106		70 - 130				12/02/16 15:27	12/08/16 01:52	1
13C2 PFDA	107		70 - 130				12/02/16 15:27	12/08/16 01:52	1

Client Sample ID: WI-CV-3FB02-1116

Lab Sample ID: 320-23917-22

Date Collected: 11/28/16 14:15

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.015	ug/L		12/02/16 15:27	12/08/16 02:22	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0092	ug/L		12/02/16 15:27	12/08/16 02:22	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.046	ug/L		12/02/16 15:27	12/08/16 02:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		70 - 130				12/02/16 15:27	12/08/16 02:22	1
13C2 PFDA	108		70 - 130				12/02/16 15:27	12/08/16 02:22	1

Client Sample ID: WI-CV-3RW03-1116

Lab Sample ID: 320-23917-23

Date Collected: 11/28/16 15:11

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.048	U M	0.060	0.015	ug/L		12/02/16 15:27	12/08/16 04:20	1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0094	ug/L		12/02/16 15:27	12/08/16 04:20	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		12/02/16 15:27	12/08/16 04:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130				12/02/16 15:27	12/08/16 04:20	1
13C2 PFDA	108		70 - 130				12/02/16 15:27	12/08/16 04:20	1

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB03-1116

Lab Sample ID: 320-23917-24

Date Collected: 11/28/16 15:12

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U	0.058	0.015	ug/L		12/02/16 15:27	12/08/16 04:50	1
Perfluorooctanoic acid (PFOA)	0.023	U	0.029	0.0091	ug/L		12/02/16 15:27	12/08/16 04:50	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.046	ug/L		12/02/16 15:27	12/08/16 04:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	106		70 - 130				12/02/16 15:27	12/08/16 04:50	1
13C2 PFDA	105		70 - 130				12/02/16 15:27	12/08/16 04:50	1

Client Sample ID: WI-CV-3RW04-1116

Lab Sample ID: 320-23917-25

Date Collected: 11/28/16 16:17

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U	0.058	0.015	ug/L		12/02/16 15:27	12/08/16 05:19	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0091	ug/L		12/02/16 15:27	12/08/16 05:19	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.046	ug/L		12/02/16 15:27	12/08/16 05:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130				12/02/16 15:27	12/08/16 05:19	1
13C2 PFDA	108		70 - 130				12/02/16 15:27	12/08/16 05:19	1

Client Sample ID: WI-CV-3FB04-1116

Lab Sample ID: 320-23917-26

Date Collected: 11/28/16 16:18

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.057	0.015	ug/L		12/02/16 15:27	12/08/16 05:49	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0090	ug/L		12/02/16 15:27	12/08/16 05:49	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.046	ug/L		12/02/16 15:27	12/08/16 05:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	107		70 - 130				12/02/16 15:27	12/08/16 05:49	1
13C2 PFDA	108		70 - 130				12/02/16 15:27	12/08/16 05:49	1

Client Sample ID: WI-CV-3RW05-1116

Lab Sample ID: 320-23917-27

Date Collected: 11/28/16 18:08

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.015	ug/L		12/02/16 15:27	12/08/16 06:19	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0094	ug/L		12/02/16 15:27	12/08/16 06:19	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		12/02/16 15:27	12/08/16 06:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	130		70 - 130				12/02/16 15:27	12/08/16 06:19	1
13C2 PFDA	124		70 - 130				12/02/16 15:27	12/08/16 06:19	1

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB05-1116

Lab Sample ID: 320-23917-28

Date Collected: 11/28/16 18:09

Matrix: Water

Date Received: 12/01/16 09:50

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.057	0.015	ug/L		12/02/16 15:27	12/08/16 06:48	1
Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.0090	ug/L		12/02/16 15:27	12/08/16 06:48	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.046	ug/L		12/02/16 15:27	12/08/16 06:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	109		70 - 130				12/02/16 15:27	12/08/16 06:48	1
13C2 PFDA	110		70 - 130				12/02/16 15:27	12/08/16 06:48	1

Default Detection Limits

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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

Prep: 537

Analyte	LOQ	DL	Units	Method
Perfluorobutanesulfonic acid (PFBS)	0.14	0.048	ug/L	537
Perfluorooctanesulfonic acid (PFOS)	0.060	0.016	ug/L	537
Perfluorooctanoic acid (PFOA)	0.030	0.0094	ug/L	537

Surrogate Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		3C2 PFHx (70-130)	3C2 PFD _A (70-130)
320-23917-1	WI-CV-1RW01-1116	111	112
320-23917-1 - DL	WI-CV-1RW01-1116	108	103
320-23917-2	WI-CV-1FB01-1116	109	103
320-23917-3	WI-CV-1RW02-1116	96	89
320-23917-4	WI-CV-1FB02-1116	98	105
320-23917-5	WI-CV-1RW03-1116	120	109
320-23917-6	WI-CV-1FB03-1116	95	99
320-23917-7	WI-CV-1RW04-1116	116	117
320-23917-8	WI-CV-1FB04-1116	115	112
320-23917-9	WI-CV-1RW05-1116	110	101
320-23917-10	WI-CV-1FB05-1116	114	109
320-23917-11	WI-CV-2RW01-1116	122	119
320-23917-12	WI-CV-2FB01-1116	108	108
320-23917-13	WI-CV-2RW02-1116	112	113
320-23917-14	WI-CV-2FB02-1116	105	106
320-23917-15	WI-CV-2RW03-1116	117	111
320-23917-16	WI-CV-2FB03-1116	109	107
320-23917-17	WI-CV-2RW04-1116	101	114
320-23917-18	WI-CV-2FB04-1116	105	107
320-23917-19	WI-CV-3RW01-1116	118	110
320-23917-20	WI-CV-3FB01-1116	0.1 M Q	0.3 M Q
320-23917-21	WI-CV-3RW02-1116	106	107
320-23917-22	WI-CV-3FB02-1116	105	108
320-23917-23	WI-CV-3RW03-1116	109	108
320-23917-24	WI-CV-3FB03-1116	106	105
320-23917-25	WI-CV-3RW04-1116	109	108
320-23917-26	WI-CV-3FB04-1116	107	108
320-23917-27	WI-CV-3RW05-1116	130	124
320-23917-28	WI-CV-3FB05-1116	109	110
LCS 320-140280/2-A	Lab Control Sample	113	101
LCSD 320-140280/3-A	Lab Control Sample Dup	117	112
LLCS 320-140400/2-A	Lab Control Sample	112	108
LLCSD 320-140400/3-A	Lab Control Sample Dup	112	108
MB 320-140280/1-A	Method Blank	111	106
MB 320-140400/1-A	Method Blank	123	120

Surrogate Legend

13C2 PFHxA = 13C2 PFHxA

13C2 PFDA = 13C2 PFDA

QC Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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

Lab Sample ID: MB 320-140280/1-A
Matrix: Water
Analysis Batch: 140943

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 140280

Analyte	MB MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.016	ug/L		12/02/16 07:42	12/07/16 09:06	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0094	ug/L		12/02/16 07:42	12/07/16 09:06	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		12/02/16 07:42	12/07/16 09:06	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	111		70 - 130	12/02/16 07:42	12/07/16 09:06	1
13C2 PFDA	106		70 - 130	12/02/16 07:42	12/07/16 09:06	1

Lab Sample ID: LCS 320-140280/2-A
Matrix: Water
Analysis Batch: 140943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 140280

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanoic acid (PFOA)	0.152	0.157		ug/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	0.673	0.582		ug/L		86	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	113		70 - 130
13C2 PFDA	101		70 - 130

Lab Sample ID: LCSD 320-140280/3-A
Matrix: Water
Analysis Batch: 140943

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 140280

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanoic acid (PFOA)	0.152	0.157		ug/L		103	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	0.673	0.645		ug/L		96	70 - 130	10	30

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	117		70 - 130
13C2 PFDA	112		70 - 130

Lab Sample ID: MB 320-140400/1-A
Matrix: Water
Analysis Batch: 140948

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 140400

Analyte	MB MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanesulfonic acid (PFOS)	0.048	U M	0.060	0.016	ug/L		12/02/16 15:27	12/08/16 11:41	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0094	ug/L		12/02/16 15:27	12/08/16 11:41	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		12/02/16 15:27	12/08/16 11:41	1

QC Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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

Lab Sample ID: MB 320-140400/1-A
Matrix: Water
Analysis Batch: 140948

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 140400

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	123		70 - 130	12/02/16 15:27	12/08/16 11:41	1
13C2 PFDA	120		70 - 130	12/02/16 15:27	12/08/16 11:41	1

Lab Sample ID: LLCS 320-140400/2-A
Matrix: Water
Analysis Batch: 140946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 140400

Analyte	Spike Added	LLCS LLCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Perfluorooctanesulfonic acid (PFOS)	0.0401	0.0318	J	ug/L		79	50 - 150
Perfluorooctanoic acid (PFOA)	0.0198	0.0180	J	ug/L		90	50 - 150
Perfluorobutanesulfonic acid (PFBS)	0.0898	0.0805	J	ug/L		90	50 - 150

Surrogate	LLCS LLCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	112		70 - 130
13C2 PFDA	108		70 - 130

Lab Sample ID: LLCSD 320-140400/3-A
Matrix: Water
Analysis Batch: 140946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 140400

Analyte	Spike Added	LLCSD LLCSD		Unit	D	%Rec	Limits	RPD	
		Result	Qualifier					RPD	Limit
Perfluorooctanesulfonic acid (PFOS)	0.0401	0.0315	J	ug/L		79	50 - 150	0.7	50
Perfluorooctanoic acid (PFOA)	0.0198	0.0185	J	ug/L		93	50 - 150	3	50
Perfluorobutanesulfonic acid (PFBS)	0.0898	0.0796	J	ug/L		89	50 - 150	1	50

Surrogate	LLCSD LLCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	112		70 - 130
13C2 PFDA	108		70 - 130

QC Association Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

LCMS

Prep Batch: 140280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-1 - DL	WI-CV-1RW01-1116	Total/NA	Water	537	
320-23917-1	WI-CV-1RW01-1116	Total/NA	Water	537	
320-23917-2	WI-CV-1FB01-1116	Total/NA	Water	537	
320-23917-3	WI-CV-1RW02-1116	Total/NA	Water	537	
320-23917-4	WI-CV-1FB02-1116	Total/NA	Water	537	
320-23917-5	WI-CV-1RW03-1116	Total/NA	Water	537	
320-23917-6	WI-CV-1FB03-1116	Total/NA	Water	537	
320-23917-7	WI-CV-1RW04-1116	Total/NA	Water	537	
320-23917-8	WI-CV-1FB04-1116	Total/NA	Water	537	
320-23917-9	WI-CV-1RW05-1116	Total/NA	Water	537	
320-23917-10	WI-CV-1FB05-1116	Total/NA	Water	537	
320-23917-11	WI-CV-2RW01-1116	Total/NA	Water	537	
320-23917-12	WI-CV-2FB01-1116	Total/NA	Water	537	
320-23917-13	WI-CV-2RW02-1116	Total/NA	Water	537	
320-23917-14	WI-CV-2FB02-1116	Total/NA	Water	537	
320-23917-15	WI-CV-2RW03-1116	Total/NA	Water	537	
320-23917-16	WI-CV-2FB03-1116	Total/NA	Water	537	
320-23917-17	WI-CV-2RW04-1116	Total/NA	Water	537	
320-23917-18	WI-CV-2FB04-1116	Total/NA	Water	537	
320-23917-19	WI-CV-3RW01-1116	Total/NA	Water	537	
320-23917-20	WI-CV-3FB01-1116	Total/NA	Water	537	
MB 320-140280/1-A	Method Blank	Total/NA	Water	537	
LCS 320-140280/2-A	Lab Control Sample	Total/NA	Water	537	
LCSD 320-140280/3-A	Lab Control Sample Dup	Total/NA	Water	537	

Prep Batch: 140400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-21	WI-CV-3RW02-1116	Total/NA	Water	537	
320-23917-22	WI-CV-3FB02-1116	Total/NA	Water	537	
320-23917-23	WI-CV-3RW03-1116	Total/NA	Water	537	
320-23917-24	WI-CV-3FB03-1116	Total/NA	Water	537	
320-23917-25	WI-CV-3RW04-1116	Total/NA	Water	537	
320-23917-26	WI-CV-3FB04-1116	Total/NA	Water	537	
320-23917-27	WI-CV-3RW05-1116	Total/NA	Water	537	
320-23917-28	WI-CV-3FB05-1116	Total/NA	Water	537	
MB 320-140400/1-A	Method Blank	Total/NA	Water	537	
LLCS 320-140400/2-A	Lab Control Sample	Total/NA	Water	537	
LLCSD 320-140400/3-A	Lab Control Sample Dup	Total/NA	Water	537	

Analysis Batch: 140943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-1 - DL	WI-CV-1RW01-1116	Total/NA	Water	537	140280
320-23917-1	WI-CV-1RW01-1116	Total/NA	Water	537	140280
320-23917-2	WI-CV-1FB01-1116	Total/NA	Water	537	140280
320-23917-3	WI-CV-1RW02-1116	Total/NA	Water	537	140280
320-23917-4	WI-CV-1FB02-1116	Total/NA	Water	537	140280
320-23917-5	WI-CV-1RW03-1116	Total/NA	Water	537	140280
320-23917-6	WI-CV-1FB03-1116	Total/NA	Water	537	140280
MB 320-140280/1-A	Method Blank	Total/NA	Water	537	140280
LCS 320-140280/2-A	Lab Control Sample	Total/NA	Water	537	140280
LCSD 320-140280/3-A	Lab Control Sample Dup	Total/NA	Water	537	140280

QC Association Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Analysis Batch: 140945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-7	WI-CV-1RW04-1116	Total/NA	Water	537	140280
320-23917-8	WI-CV-1FB04-1116	Total/NA	Water	537	140280
320-23917-9	WI-CV-1RW05-1116	Total/NA	Water	537	140280
320-23917-10	WI-CV-1FB05-1116	Total/NA	Water	537	140280
320-23917-11	WI-CV-2RW01-1116	Total/NA	Water	537	140280
320-23917-12	WI-CV-2FB01-1116	Total/NA	Water	537	140280
320-23917-13	WI-CV-2RW02-1116	Total/NA	Water	537	140280
320-23917-14	WI-CV-2FB02-1116	Total/NA	Water	537	140280
320-23917-15	WI-CV-2RW03-1116	Total/NA	Water	537	140280

Analysis Batch: 140946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-16	WI-CV-2FB03-1116	Total/NA	Water	537	140280
320-23917-17	WI-CV-2RW04-1116	Total/NA	Water	537	140280
320-23917-18	WI-CV-2FB04-1116	Total/NA	Water	537	140280
320-23917-19	WI-CV-3RW01-1116	Total/NA	Water	537	140280
320-23917-20	WI-CV-3FB01-1116	Total/NA	Water	537	140280
320-23917-21	WI-CV-3RW02-1116	Total/NA	Water	537	140400
320-23917-22	WI-CV-3FB02-1116	Total/NA	Water	537	140400
LLCS 320-140400/2-A	Lab Control Sample	Total/NA	Water	537	140400
LLCSD 320-140400/3-A	Lab Control Sample Dup	Total/NA	Water	537	140400

Analysis Batch: 140947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23917-23	WI-CV-3RW03-1116	Total/NA	Water	537	140400
320-23917-24	WI-CV-3FB03-1116	Total/NA	Water	537	140400
320-23917-25	WI-CV-3RW04-1116	Total/NA	Water	537	140400
320-23917-26	WI-CV-3FB04-1116	Total/NA	Water	537	140400
320-23917-27	WI-CV-3RW05-1116	Total/NA	Water	537	140400
320-23917-28	WI-CV-3FB05-1116	Total/NA	Water	537	140400

Analysis Batch: 140948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-140400/1-A	Method Blank	Total/NA	Water	537	140400

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1RW01-1116

Date Collected: 11/28/16 13:25

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537	DL		140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537	DL	5	140943	12/07/16 10:34	JRB	TAL SAC
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140943	12/07/16 13:32	JRB	TAL SAC

Client Sample ID: WI-CV-1FB01-1116

Date Collected: 11/28/16 13:25

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140943	12/07/16 11:04	JRB	TAL SAC

Client Sample ID: WI-CV-1RW02-1116

Date Collected: 11/28/16 14:05

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140943	12/07/16 11:34	JRB	TAL SAC

Client Sample ID: WI-CV-1FB02-1116

Date Collected: 11/28/16 14:04

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140943	12/07/16 12:03	JRB	TAL SAC

Client Sample ID: WI-CV-1RW03-1116

Date Collected: 11/28/16 15:09

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140943	12/07/16 12:33	JRB	TAL SAC

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-1FB03-1116

Date Collected: 11/28/16 15:08

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140943	12/07/16 13:02	JRB	TAL SAC

Client Sample ID: WI-CV-1RW04-1116

Date Collected: 11/28/16 16:10

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140945	12/07/16 15:30	JRB	TAL SAC

Client Sample ID: WI-CV-1FB04-1116

Date Collected: 11/28/16 16:09

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140945	12/07/16 16:00	JRB	TAL SAC

Client Sample ID: WI-CV-1RW05-1116

Date Collected: 11/28/16 17:17

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140945	12/07/16 16:30	JRB	TAL SAC

Client Sample ID: WI-CV-1FB05-1116

Date Collected: 11/28/16 17:16

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140945	12/07/16 16:59	JRB	TAL SAC

Client Sample ID: WI-CV-2RW01-1116

Date Collected: 11/28/16 13:15

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140945	12/07/16 17:29	JRB	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB01-1116

Lab Sample ID: 320-23917-12

Date Collected: 11/28/16 13:16

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140945	12/07/16 17:58	JRB	TAL SAC

Client Sample ID: WI-CV-2RW02-1116

Lab Sample ID: 320-23917-13

Date Collected: 11/28/16 15:04

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140945	12/07/16 19:57	JRB	TAL SAC

Client Sample ID: WI-CV-2FB02-1116

Lab Sample ID: 320-23917-14

Date Collected: 11/28/16 15:05

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140945	12/07/16 18:58	JRB	TAL SAC

Client Sample ID: WI-CV-2RW03-1116

Lab Sample ID: 320-23917-15

Date Collected: 11/28/16 16:05

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140945	12/07/16 19:27	JRB	TAL SAC

Client Sample ID: WI-CV-2FB03-1116

Lab Sample ID: 320-23917-16

Date Collected: 11/28/16 16:06

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140946	12/07/16 21:55	JRB	TAL SAC

Client Sample ID: WI-CV-2RW04-1116

Lab Sample ID: 320-23917-17

Date Collected: 11/28/16 16:59

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140946	12/07/16 22:25	JRB	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-2FB04-1116

Lab Sample ID: 320-23917-18

Date Collected: 11/28/16 17:00

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140946	12/07/16 22:54	JRB	TAL SAC

Client Sample ID: WI-CV-3RW01-1116

Lab Sample ID: 320-23917-19

Date Collected: 11/28/16 13:14

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140946	12/07/16 23:24	JRB	TAL SAC

Client Sample ID: WI-CV-3FB01-1116

Lab Sample ID: 320-23917-20

Date Collected: 11/28/16 13:15

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140280	12/02/16 07:42	HJA	TAL SAC
Total/NA	Analysis	537		1	140946	12/07/16 23:54	JRB	TAL SAC

Client Sample ID: WI-CV-3RW02-1116

Lab Sample ID: 320-23917-21

Date Collected: 11/28/16 14:14

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1	140946	12/08/16 01:52	JRB	TAL SAC

Client Sample ID: WI-CV-3FB02-1116

Lab Sample ID: 320-23917-22

Date Collected: 11/28/16 14:15

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1	140946	12/08/16 02:22	JRB	TAL SAC

Client Sample ID: WI-CV-3RW03-1116

Lab Sample ID: 320-23917-23

Date Collected: 11/28/16 15:11

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1	140947	12/08/16 04:20	JRB	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Client Sample ID: WI-CV-3FB03-1116

Date Collected: 11/28/16 15:12

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-24

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1	140947	12/08/16 04:50	JRB	TAL SAC

Client Sample ID: WI-CV-3RW04-1116

Date Collected: 11/28/16 16:17

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1	140947	12/08/16 05:19	JRB	TAL SAC

Client Sample ID: WI-CV-3FB04-1116

Date Collected: 11/28/16 16:18

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-26

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1	140947	12/08/16 05:49	JRB	TAL SAC

Client Sample ID: WI-CV-3RW05-1116

Date Collected: 11/28/16 18:08

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-27

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1	140947	12/08/16 06:19	JRB	TAL SAC

Client Sample ID: WI-CV-3FB05-1116

Date Collected: 11/28/16 18:09

Date Received: 12/01/16 09:50

Lab Sample ID: 320-23917-28

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			140400	12/02/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537		1	140947	12/08/16 06:48	JRB	TAL SAC

Laboratory References:

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

Certification Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Laboratory: TestAmerica Sacramento

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

<u>Authority</u>	<u>Program</u>	<u>EPA Region</u>	<u>Certification ID</u>	<u>Expiration Date</u>
A2LA	DoD ELAP		2928-01	01-31-17

<u>Analysis Method</u>	<u>Prep Method</u>	<u>Matrix</u>	<u>Analyte</u>
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Method Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

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

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-23917-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-23917-1	WI-CV-1RW01-1116	Water	11/28/16 13:25	12/01/16 09:50
320-23917-2	WI-CV-1FB01-1116	Water	11/28/16 13:25	12/01/16 09:50
320-23917-3	WI-CV-1RW02-1116	Water	11/28/16 14:05	12/01/16 09:50
320-23917-4	WI-CV-1FB02-1116	Water	11/28/16 14:04	12/01/16 09:50
320-23917-5	WI-CV-1RW03-1116	Water	11/28/16 15:09	12/01/16 09:50
320-23917-6	WI-CV-1FB03-1116	Water	11/28/16 15:08	12/01/16 09:50
320-23917-7	WI-CV-1RW04-1116	Water	11/28/16 16:10	12/01/16 09:50
320-23917-8	WI-CV-1FB04-1116	Water	11/28/16 16:09	12/01/16 09:50
320-23917-9	WI-CV-1RW05-1116	Water	11/28/16 17:17	12/01/16 09:50
320-23917-10	WI-CV-1FB05-1116	Water	11/28/16 17:16	12/01/16 09:50
320-23917-11	WI-CV-2RW01-1116	Water	11/28/16 13:15	12/01/16 09:50
320-23917-12	WI-CV-2FB01-1116	Water	11/28/16 13:16	12/01/16 09:50
320-23917-13	WI-CV-2RW02-1116	Water	11/28/16 15:04	12/01/16 09:50
320-23917-14	WI-CV-2FB02-1116	Water	11/28/16 15:05	12/01/16 09:50
320-23917-15	WI-CV-2RW03-1116	Water	11/28/16 16:05	12/01/16 09:50
320-23917-16	WI-CV-2FB03-1116	Water	11/28/16 16:06	12/01/16 09:50
320-23917-17	WI-CV-2RW04-1116	Water	11/28/16 16:59	12/01/16 09:50
320-23917-18	WI-CV-2FB04-1116	Water	11/28/16 17:00	12/01/16 09:50
320-23917-19	WI-CV-3RW01-1116	Water	11/28/16 13:14	12/01/16 09:50
320-23917-20	WI-CV-3FB01-1116	Water	11/28/16 13:15	12/01/16 09:50
320-23917-21	WI-CV-3RW02-1116	Water	11/28/16 14:14	12/01/16 09:50
320-23917-22	WI-CV-3FB02-1116	Water	11/28/16 14:15	12/01/16 09:50
320-23917-23	WI-CV-3RW03-1116	Water	11/28/16 15:11	12/01/16 09:50
320-23917-24	WI-CV-3FB03-1116	Water	11/28/16 15:12	12/01/16 09:50
320-23917-25	WI-CV-3RW04-1116	Water	11/28/16 16:17	12/01/16 09:50
320-23917-26	WI-CV-3FB04-1116	Water	11/28/16 16:18	12/01/16 09:50
320-23917-27	WI-CV-3RW05-1116	Water	11/28/16 18:08	12/01/16 09:50
320-23917-28	WI-CV-3FB05-1116	Water	11/28/16 18:09	12/01/16 09:50

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140688

Lab Sample ID: STD 320-140688/2 IC Client Sample ID: _____

Date Analyzed: 12/05/16 17:26 Lab File ID: 05DEC2016A6A_004.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	19.37	Split Peak	barnettj	12/06/16 10:00
Perfluorooctanoic acid (PFOA)	20.05	Split Peak	barnettj	12/06/16 10:00

Lab Sample ID: STD 320-140688/3 IC Client Sample ID: _____

Date Analyzed: 12/05/16 17:55 Lab File ID: 05DEC2016A6A_005.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	19.38	Split Peak	barnettj	12/06/16 10:03
Perfluorooctanoic acid (PFOA)	20.05	Split Peak	barnettj	12/06/16 10:03

Lab Sample ID: CCV 320-140688/9 CCVL Client Sample ID: _____

Date Analyzed: 12/05/16 20:53 Lab File ID: 05DEC2016A6A_011.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	19.38	Split Peak	barnettj	12/06/16 10:08
Perfluorooctanoic acid (PFOA)	20.05	Split Peak	barnettj	12/06/16 10:08

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140943

Lab Sample ID: MB 320-140280/1-A Client Sample ID: _____

Date Analyzed: 12/07/16 09:06 Lab File ID: 05DEC2016A6A_084.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.08	Split Peak	barnettj	12/07/16 15:18

Lab Sample ID: 320-23917-2 Client Sample ID: WI-CV-1FB01-1116

Date Analyzed: 12/07/16 11:04 Lab File ID: 05DEC2016A6A_088.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.07	Split Peak	barnettj	12/07/16 15:26

Lab Sample ID: 320-23917-3 Client Sample ID: WI-CV-1RW02-1116

Date Analyzed: 12/07/16 11:34 Lab File ID: 05DEC2016A6A_089.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.07	Baseline	barnettj	12/07/16 15:28

Lab Sample ID: 320-23917-4 Client Sample ID: WI-CV-1FB02-1116

Date Analyzed: 12/07/16 12:03 Lab File ID: 05DEC2016A6A_090.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.06	Baseline	barnettj	12/07/16 15:30
Perfluorooctanesulfonic acid (PFOS)	20.66	Missed Peak	barnettj	12/07/16 15:30

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140943

Lab Sample ID: 320-23917-6 Client Sample ID: WI-CV-1FB03-1116

Date Analyzed: 12/07/16 13:02 Lab File ID: 05DEC2016A6A_092.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.07	Split Peak	barnettj	12/07/16 15:32
Perfluorooctanesulfonic acid (PFOS)	20.70	Missed Peak	barnettj	12/07/16 15:32

Lab Sample ID: 320-23917-1 Client Sample ID: WI-CV-1RW01-1116

Date Analyzed: 12/07/16 13:32 Lab File ID: 05DEC2016A6A_093.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	20.39	Missed Peak	barnettj	12/07/16 15:34

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140945

Lab Sample ID: 320-23917-7 Client Sample ID: WI-CV-1RW04-1116

Date Analyzed: 12/07/16 15:30 Lab File ID: 05DEC2016A6A_097.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	20.66	Missed Peak	barnettj	12/07/16 17:00

Lab Sample ID: 320-23917-8 Client Sample ID: WI-CV-1FB04-1116

Date Analyzed: 12/07/16 16:00 Lab File ID: 05DEC2016A6A_098.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	20.67	Missed Peak	barnettj	12/07/16 17:01

Lab Sample ID: 320-23917-9 Client Sample ID: WI-CV-1RW05-1116

Date Analyzed: 12/07/16 16:30 Lab File ID: 05DEC2016A6A_099.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.07	Split Peak	barnettj	12/07/16 17:02

Lab Sample ID: 320-23917-10 Client Sample ID: WI-CV-1FB05-1116

Date Analyzed: 12/07/16 16:59 Lab File ID: 05DEC2016A6A_100.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.05	Baseline	barnettj	12/08/16 09:53

Lab Sample ID: 320-23917-11 Client Sample ID: WI-CV-2RW01-1116

Date Analyzed: 12/07/16 17:29 Lab File ID: 05DEC2016A6A_101.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.05	Baseline	barnettj	12/08/16 09:54

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140945

Lab Sample ID: 320-23917-14 Client Sample ID: WI-CV-2FB02-1116

Date Analyzed: 12/07/16 18:58 Lab File ID: 05DEC2016A6A_104.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.05	Split Peak	barnettj	12/08/16 09:57

Lab Sample ID: 320-23917-15 Client Sample ID: WI-CV-2RW03-1116

Date Analyzed: 12/07/16 19:27 Lab File ID: 05DEC2016A6A_105.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.08	Split Peak	barnettj	12/08/16 09:59

Lab Sample ID: 320-23917-13 Client Sample ID: WI-CV-2RW02-1116

Date Analyzed: 12/07/16 19:57 Lab File ID: 05DEC2016A6A_106.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	20.67	Missed Peak	barnettj	12/08/16 10:00

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140946

Lab Sample ID: 320-23917-16 Client Sample ID: WI-CV-2FB03-1116

Date Analyzed: 12/07/16 21:55 Lab File ID: 05DEC2016A6A_110.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.09	Split Peak	barnettj	12/08/16 10:04
Perfluorooctanesulfonic acid (PFOS)	20.39	Missed Peak	barnettj	12/08/16 10:04

Lab Sample ID: 320-23917-17 Client Sample ID: WI-CV-2RW04-1116

Date Analyzed: 12/07/16 22:25 Lab File ID: 05DEC2016A6A_111.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.04	Split Peak	barnettj	12/08/16 10:05

Lab Sample ID: 320-23917-18 Client Sample ID: WI-CV-2FB04-1116

Date Analyzed: 12/07/16 22:54 Lab File ID: 05DEC2016A6A_112.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.04	Missed Peak	barnettj	12/08/16 10:06
Perfluorooctanesulfonic acid (PFOS)	20.67	Missed Peak	barnettj	12/08/16 10:06

Lab Sample ID: 320-23917-19 Client Sample ID: WI-CV-3RW01-1116

Date Analyzed: 12/07/16 23:24 Lab File ID: 05DEC2016A6A_113.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.04	Baseline	barnettj	12/08/16 10:07
Perfluorooctanesulfonic acid (PFOS)	20.67	Missed Peak	barnettj	12/08/16 10:07

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140946

Lab Sample ID: 320-23917-20 Client Sample ID: WI-CV-3FB01-1116

Date Analyzed: 12/07/16 23:54 Lab File ID: 05DEC2016A6A_114.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C2 PFHxA	18.56	Missed Peak	barnettj	12/08/16 11:32
13C2 PFDA	21.45	Missed Peak	barnettj	12/08/16 11:32

Lab Sample ID: 320-23917-21 Client Sample ID: WI-CV-3RW02-1116

Date Analyzed: 12/08/16 01:52 Lab File ID: 05DEC2016A6A_118.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.08	Missed Peak	barnettj	12/08/16 10:13
Perfluorooctanesulfonic acid (PFOS)	20.68	Missed Peak	barnettj	12/08/16 10:13

Lab Sample ID: 320-23917-22 Client Sample ID: WI-CV-3FB02-1116

Date Analyzed: 12/08/16 02:22 Lab File ID: 05DEC2016A6A_119.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.02	Split Peak	barnettj	12/08/16 10:15
Perfluorooctanesulfonic acid (PFOS)	20.64	Missed Peak	barnettj	12/08/16 10:15

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140947

Lab Sample ID: 320-23917-23 Client Sample ID: WI-CV-3RW03-1116

Date Analyzed: 12/08/16 04:20 Lab File ID: 05DEC2016A6A_123.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	20.66	Missed Peak	barnettj	12/08/16 10:50

Lab Sample ID: 320-23917-25 Client Sample ID: WI-CV-3RW04-1116

Date Analyzed: 12/08/16 05:19 Lab File ID: 05DEC2016A6A_125.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.08	Missed Peak	barnettj	12/08/16 10:55

Lab Sample ID: 320-23917-26 Client Sample ID: WI-CV-3FB04-1116

Date Analyzed: 12/08/16 05:49 Lab File ID: 05DEC2016A6A_126.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.04	Missed Peak	barnettj	12/08/16 10:57
Perfluorooctanesulfonic acid (PFOS)	20.64	Missed Peak	barnettj	12/08/16 10:57

Lab Sample ID: 320-23917-27 Client Sample ID: WI-CV-3RW05-1116

Date Analyzed: 12/08/16 06:19 Lab File ID: 05DEC2016A6A_127.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.08	Missed Peak	barnettj	12/08/16 10:58

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140947

Lab Sample ID: 320-23917-28 Client Sample ID: WI-CV-3FB05-1116

Date Analyzed: 12/08/16 06:48 Lab File ID: 05DEC2016A6A_128.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.07	Missed Peak	barnettj	12/08/16 10:59
Perfluorooctanesulfonic acid (PFOS)	20.64	Missed Peak	barnettj	12/08/16 10:59

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Analysis Batch Number: 140948

Lab Sample ID: MB 320-140400/1-A Client Sample ID: _____

Date Analyzed: 12/08/16 11:41 Lab File ID: 05DEC2016A6A_138.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.07	Split Peak	barnettj	12/08/16 13:53
Perfluorooctanesulfonic acid (PFOS)	20.67	Missed Peak	barnettj	12/08/16 13:53

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
LC537-HSP_00010	01/28/17	07/28/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00012	375 uL	Perfluorobutane Sulfonate	3366 ng/mL		
							Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL		
							Perfluoroheptanoic acid	381.857 ng/mL		
							Perfluorohexanesulfonic acid	1134.68 ng/mL		
							Perfluorononanoic acid	736.695 ng/mL		
							Perfluorooctanoic acid (PFOA)	760.489 ng/mL		
Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL									
.LC537SPIM_00012	01/28/17	07/28/16	Methanol, Lot 104453	10 mL	LC537-PFBS_00006	0.44 mL	Perfluorobutane Sulfonate	89.76 ug/mL		
							Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL		
							LC537-PFHpa_00010	0.1 mL	Perfluoroheptanoic acid	10.1829 ug/mL
							LC537-PFHxS_00008	0.3 mL	Perfluorohexanesulfonic acid	30.2582 ug/mL
							LC537-PFNA_00008	0.2 mL	Perfluorononanoic acid	19.6452 ug/mL
							LC537-PFOA_00009	0.098 mL	Perfluorooctanoic acid (PFOA)	20.2797 ug/mL
LC537-PFOS_00006	0.4 mL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL							
..LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutane Sulfonate	2040 ug/mL		
							Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL		
...LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V				(Purchased Reagent)	Perfluorobutane Sulfonate	1 g/g	
								Perfluorobutanesulfonic acid (PFBS)	1 g/g	
..LC537-PFHpa_00010	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFHpa_00002	0.0072 g	Perfluoroheptanoic acid	1018.29 ug/mL		
...LC537_PFHpa_00002	04/01/18		Aldrich, Lot BCBM2579V				(Purchased Reagent)	Perfluoroheptanoic acid	0.99 g/g	
..LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL		
..LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V				(Purchased Reagent)	Perfluorohexanesulfonic acid	0.9094 g/g	
..LC537-PFNA_00008	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFNA_00002	0.0051 g	Perfluorononanoic acid	982.26 ug/mL		
..LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F				(Purchased Reagent)	Perfluorononanoic acid	0.963 g/g	
..LC537-PFOA_00009	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFOA_00002	0.0145 g	Perfluorooctanoic acid (PFOA)	2069.36 ug/mL		
..LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV				(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	0.999 g/g	
..LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL		
..LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV				(Purchased Reagent)	Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g	
LC537-ICV_00017	01/13/17	08/09/16	MeOH/H2O, Lot 067374	10 mL	LC537-IS_00018	200 uL	13C2-PFOA	10 ng/mL		
							13C4 PFOS	28.68 ng/mL		
.LC537-IS_00018	01/13/17	07/13/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00004	100 uL	13C2-PFOA	0.5 ug/mL		
							LCMPFOS_00013	300 uL	13C4 PFOS	1.434 ug/mL
..LCM2PFOA_00004	03/19/17		Wellington Laboratories, Lot M2PFOA0312				(Purchased Reagent)	13C2-PFOA	50 ug/mL	
..LCMPFOS_00013	01/22/21		Wellington Laboratories, Lot MPFOS0116				(Purchased Reagent)	13C4 PFOS	47.8 ug/mL	
LC537-ICV_00017	01/13/17	08/09/16	MeOH/H2O, Lot 067374	10 mL	LC537-SU_00017	500 uL	13C2 PFDA	10 ng/mL		
							13C2 PFHxA	10 ng/mL		
							LC537ICIM_00013	25 uL	Perfluorobutanesulfonic acid (PFBS)	114.77 ng/mL
							Perfluorooctanoic acid (PFOA)	25.0965 ng/mL		

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorooctanesulfonic acid (PFOS)	27.2389 ng/mL
.LC537-SU_00017	01/19/17	07/19/16	Methanol, Lot 104453	25000 uL	LCMPFDA 00008	100 uL	13C2 PFDA	0.2 ug/mL
..LCMPFDA 00008	08/19/20	Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA 00009	04/09/20	Wellington Laboratories, Lot MPFHxA0415			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
.LC537ICIM_00013	02/05/17	08/09/16	Methanol, Lot 090285	25 mL	LC537-PFBS2_00005	0.5 mL	Perfluorobutanesulfonic acid (PFBS)	45.908 ug/mL
					LC537-PFOA2_00007	0.13 mL	Perfluorooctanoic acid (PFOA)	10.0386 ug/mL
					LC537-PFOS2_00005	0.22 mL	Perfluorooctanesulfonic acid (PFOS)	10.8956 ug/mL
..LC537-PFBS2_00005	03/01/17	02/29/16	Methanol, Lot 090285	10 mL	LC537_PFBS2_00001	0.023 g	Perfluorobutanesulfonic acid (PFBS)	2295.4 ug/mL
...LC537_PFBS2_00001	08/09/17	Santa Cruz Biotechnology, Lot H0112			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	0.998 g/g
..LC537-PFOA2_00007	07/25/17	08/05/16	Methanol, Lot 090285	10 mL	LC537 PFOA2 00001	0.0195 g	Perfluorooctanoic acid (PFOA)	1930.5 ug/mL
..LC537 PFOA2 00001	07/25/17	Afla Aesar, Lot D24Y026			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.99 g/g
..LC537-PFOS2_00005	03/01/17	02/29/16	Methanol, Lot 090285	10 mL	LC537_PFOS2_00001	0.0159 g	Perfluorooctanesulfonic acid (PFOS)	1238.13 ug/mL
...LC537_PFOS2_00001	07/26/17	Sigma, Lot BCBF5116V			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.7787 g/g
LC537-IS_00025	03/19/17	11/21/16	Methanol, Lot 090285	10000 uL	LCM2PFOA 00003	100 uL	13C2-PFOA	0.5 ug/mL
.LCM2PFOA 00003	03/19/17	Wellington Laboratories, Lot M2PFOA0312			LCMPFOS 00018	300 uL	13C4 PFOS	1.434 ug/mL
.LCMPFOS 00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C2-PFOA	50 ug/mL
					(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
LC537-L1_00015	01/13/17	07/28/16	MeOH/H2O, Lot 090285	5 mL	LC537-IS_00018	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-MSP_00012	24.4 uL	Perfluorobutanesulfonic acid (PFBS)	8.76058 ng/mL
							Perfluoroheptanoic acid	0.993847 ng/mL
							Perfluorohexanesulfonic acid	2.9532 ng/mL
							Perfluorononanoic acid	1.91737 ng/mL
							Perfluorooctanoic acid (PFOA)	1.9793 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	3.91048 ng/mL
					LC537-SU_00017	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-IS_00018	01/13/17	07/13/16	Methanol, Lot 090285	10000 uL	LCM2PFOA 00004	100 uL	13C2-PFOA	0.5 ug/mL
..LCM2PFOA 00004	03/19/17	Wellington Laboratories, Lot M2PFOA0312			LCMPFOS 00013	300 uL	13C4 PFOS	1.434 ug/mL
..LCMPFOS 00013	01/22/21	Wellington Laboratories, Lot MPFOS0116			(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LC537-MSP_00012	01/28/17	07/28/16	Methanol, Lot 090285	10000 uL	(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
					LC537SPIM_00012	200 uL	Perfluorobutanesulfonic acid (PFBS)	1795.2 ng/mL
							Perfluoroheptanoic acid	203.657 ng/mL
							Perfluorohexanesulfonic acid	605.164 ng/mL
							Perfluorononanoic acid	392.904 ng/mL
							Perfluorooctanoic acid (PFOA)	405.594 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration	
					Reagent ID	Volume Added			
							Perfluorooctanesulfonic acid (PFOS)	801.328 ng/mL	
..LC537SPIM_00012	01/28/17	07/28/16	Methanol, Lot 104453	10 mL	LC537-PFBS_00006	0.44 mL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL	
					LC537-PFHpA_00010	0.1 mL	Perfluoroheptanoic acid	10.1829 ug/mL	
					LC537-PFHxS_00008	0.3 mL	Perfluorohexanesulfonic acid	30.2582 ug/mL	
					LC537-PFNA_00008	0.2 mL	Perfluorononanoic acid	19.6452 ug/mL	
					LC537-PFOA_00009	0.098 mL	Perfluorooctanoic acid (PFOA)	20.2797 ug/mL	
					LC537-PFOS_00006	0.4 mL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL	
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL	
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V				(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00010	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFHpA_00002	0.0072 g	Perfluoroheptanoic acid	1018.29 ug/mL	
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCM2579V				(Purchased Reagent)	Perfluoroheptanoic acid	0.99 g/g
..LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL	
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V				(Purchased Reagent)	Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00008	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFNA_00002	0.0051 g	Perfluorononanoic acid	982.26 ug/mL	
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F				(Purchased Reagent)	Perfluorononanoic acid	0.963 g/g
..LC537-PFOA_00009	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFOA_00002	0.0145 g	Perfluorooctanoic acid (PFOA)	2069.36 ug/mL	
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV				(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL	
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV				(Purchased Reagent)	Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-SU_00017	01/19/17	07/19/16	Methanol, Lot 104453	25000 uL	LCMPFDA_00008	100 uL	13C2 PFDA	0.2 ug/mL	
					LCMPFHxA_00009	100 uL	13C2 PFHxA	0.2 ug/mL	
..LCMPFDA_00008	08/19/20		Wellington Laboratories, Lot MPFDA0815				(Purchased Reagent)	13C2 PFDA	50 ug/mL
..LCMPFHxA_00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415				(Purchased Reagent)	13C2 PFHxA	50 ug/mL
LC537-L2_00014	01/13/17	07/28/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00010	34 uL	Perfluorobutanesulfonic acid (PFBS)	22.8888 ng/mL	
							Perfluoroheptanoic acid	2.59663 ng/mL	
							Perfluorohexanesulfonic acid	7.71585 ng/mL	
							Perfluorononanoic acid	5.00953 ng/mL	
							Perfluorooctanoic acid (PFOA)	5.17132 ng/mL	
							Perfluorooctanesulfonic acid (PFOS)	10.2169 ng/mL	
LC537-IS_00018	100 uL	13C2-PFOA	10 ng/mL						
		13C4 PFOS	28.68 ng/mL						
LC537-SU_00017	250 uL	13C2 PFDA	10 ng/mL						
		13C2 PFHxA	10 ng/mL						
.LC537-HSP_00010	01/28/17	07/28/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00012	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL	
							Perfluoroheptanoic acid	381.857 ng/mL	
							Perfluorohexanesulfonic acid	1134.68 ng/mL	
							Perfluorononanoic acid	736.695 ng/mL	
							Perfluorooctanoic acid (PFOA)	760.489 ng/mL	

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration	
					Reagent ID	Volume Added			
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL	
..LC537SPIM_00012	01/28/17	07/28/16	Methanol, Lot 104453	10 mL	LC537-PFBS_00006	0.44 mL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL	
					LC537-PFHpA_00010	0.1 mL	Perfluoroheptanoic acid	10.1829 ug/mL	
					LC537-PFHxS_00008	0.3 mL	Perfluorohexanesulfonic acid	30.2582 ug/mL	
					LC537-PFNA_00008	0.2 mL	Perfluorononanoic acid	19.6452 ug/mL	
					LC537-PFOA_00009	0.098 mL	Perfluorooctanoic acid (PFOA)	20.2797 ug/mL	
					LC537-PFOS_00006	0.4 mL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL	
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL	
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V				(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	1 g/g
..LC537-PFHpA_00010	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFHpA_00002	0.0072 g	Perfluoroheptanoic acid	1018.29 ug/mL	
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V				(Purchased Reagent)	Perfluoroheptanoic acid	0.99 g/g
..LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL	
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V				(Purchased Reagent)	Perfluorohexanesulfonic acid	0.9094 g/g
..LC537-PFNA_00008	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFNA_00002	0.0051 g	Perfluorononanoic acid	982.26 ug/mL	
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F				(Purchased Reagent)	Perfluorononanoic acid	0.963 g/g
..LC537-PFOA_00009	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFOA_00002	0.0145 g	Perfluorooctanoic acid (PFOA)	2069.36 ug/mL	
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV				(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	0.999 g/g
..LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL	
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV				(Purchased Reagent)	Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00018	01/13/17	07/13/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00004	100 uL	13C2-PFOA	0.5 ug/mL	
					LCMPFOS_00013	300 uL	13C4 PFOS	1.434 ug/mL	
..LCM2PFOA_00004	03/19/17		Wellington Laboratories, Lot M2PFOA0312				(Purchased Reagent)	13C2-PFOA	50 ug/mL
..LCMPFOS_00013	01/22/21		Wellington Laboratories, Lot MPFOS0116				(Purchased Reagent)	13C4 PFOS	47.8 ug/mL
.LC537-SU_00017	01/19/17	07/19/16	Methanol, Lot 104453	25000 uL	LCMPFDA_00008	100 uL	13C2 PFDA	0.2 ug/mL	
					LCMPFHxA_00009	100 uL	13C2 PFHxA	0.2 ug/mL	
..LCMPFDA_00008	08/19/20		Wellington Laboratories, Lot MPFDA0815				(Purchased Reagent)	13C2 PFDA	50 ug/mL
..LCMPFHxA_00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415				(Purchased Reagent)	13C2 PFHxA	50 ug/mL
LC537-L3_00016	01/28/17	11/07/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00010	67 uL	Perfluorobutanesulfonic acid (PFBS)	45.1044 ng/mL	
							Perfluoroheptanoic acid	5.11689 ng/mL	
							Perfluorohexanesulfonic acid	15.2048 ng/mL	
							Perfluorononanoic acid	9.87171 ng/mL	
							Perfluorooctanoic acid (PFOA)	10.1905 ng/mL	
							Perfluorooctanesulfonic acid (PFOS)	20.1334 ng/mL	
LC537-IS_00024	100 uL	13C2-PFOA	10 ng/mL						
		13C4 PFOS	28.68 ng/mL						
LC537-SU_00020	250 uL	13C2 PFDA	10 ng/mL						
		13C2 PFHxA	10 ng/mL						
.LC537-HSP_00010	01/28/17	07/28/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00012	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL	
							Perfluoroheptanoic acid	381.857 ng/mL	

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanesulfonic acid	1134.68 ng/mL
							Perfluorononanoic acid	736.695 ng/mL
							Perfluorooctanoic acid (PFOA)	760.489 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL
..LC537SPIM_00012	01/28/17	07/28/16	Methanol, Lot 104453	10 mL	LC537-PFBS_00006	0.44 mL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00010	0.1 mL	Perfluoroheptanoic acid	10.1829 ug/mL
					LC537-PFHxS_00008	0.3 mL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00008	0.2 mL	Perfluorononanoic acid	19.6452 ug/mL
					LC537-PFOA_00009	0.098 mL	Perfluorooctanoic acid (PFOA)	20.2797 ug/mL
					LC537-PFOS_00006	0.4 mL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00010	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537 PFHpA_00002	0.0072 g	Perfluoroheptanoic acid	1018.29 ug/mL
...LC537 PFHpA_00002	04/01/18		Aldrich, Lot BCM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537 PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
...LC537 PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00008	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537 PFNA_00002	0.0051 g	Perfluorononanoic acid	982.26 ug/mL
...LC537 PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00009	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537 PFOA_00002	0.0145 g	Perfluorooctanoic acid (PFOA)	2069.36 ug/mL
...LC537 PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00024	03/19/17	11/03/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00003	100 uL	13C2-PFOA	0.5 ug/mL
..LCM2PFOA_00003	03/19/17		Wellington Laboratories, Lot M2PFOA0312		LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCMPFOS_00018	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LC537-SU_00020	04/07/17	10/07/16	Methanol, Lot 104453	25000 uL	LCMPFDA_00008	100 uL	13C2 PFDA	0.2 ug/mL
..LCMPFDA_00008	08/19/20		Wellington Laboratories, Lot MPFDA0815		LCMPFHxA_00009	100 uL	13C2 PFHxA	0.2 ug/mL
..LCMPFHxA_00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415		(Purchased Reagent)		13C2 PFDA	50 ug/mL
							13C2 PFHxA	50 ug/mL
LC537-L4_00015	01/13/17	07/28/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00010	135 uL	Perfluorobutanesulfonic acid (PFBS)	90.882 ng/mL
							Perfluoroheptanoic acid	10.3101 ng/mL
							Perfluorohexanesulfonic acid	30.6364 ng/mL
							Perfluorononanoic acid	19.8908 ng/mL
							Perfluorooctanoic acid (PFOA)	20.5332 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	40.5672 ng/mL
					LC537-IS_00018	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00017	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
.LC537-HSP_00010	01/28/17	07/28/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00012	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL		
							Perfluoroheptanoic acid	381.857 ng/mL		
							Perfluorohexanesulfonic acid	1134.68 ng/mL		
							Perfluorononanoic acid	736.695 ng/mL		
							Perfluorooctanoic acid (PFOA)	760.489 ng/mL		
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL		
..LC537SPIM_00012	01/28/17	07/28/16	Methanol, Lot 104453	10 mL	LC537-PFBS_00006	0.44 mL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL		
							LC537-PFHpA_00010	0.1 mL	Perfluoroheptanoic acid	10.1829 ug/mL
							LC537-PFHxS_00008	0.3 mL	Perfluorohexanesulfonic acid	30.2582 ug/mL
							LC537-PFNA_00008	0.2 mL	Perfluorononanoic acid	19.6452 ug/mL
							LC537-PFOA_00009	0.098 mL	Perfluorooctanoic acid (PFOA)	20.2797 ug/mL
							LC537-PFOS_00006	0.4 mL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL		
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g		
...LC537-PFHpA_00010	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFHpA_00002	0.0072 g	Perfluoroheptanoic acid	1018.29 ug/mL		
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g		
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL		
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g		
...LC537-PFNA_00008	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFNA_00002	0.0051 g	Perfluorononanoic acid	982.26 ug/mL		
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g		
...LC537-PFOA_00009	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFOA_00002	0.0145 g	Perfluorooctanoic acid (PFOA)	2069.36 ug/mL		
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g		
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL		
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g		
.LC537-IS_00018	01/13/17	07/13/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00004	100 uL	13C2-PFOA	0.5 ug/mL		
					LCMPFOS_00013	300 uL	13C4 PFOS	1.434 ug/mL		
..LCM2PFOA_00004	03/19/17		Wellington Laboratories, Lot M2PFOA0312		(Purchased Reagent)		13C2-PFOA	50 ug/mL		
..LCMPFOS_00013	01/22/21		Wellington Laboratories, Lot MPFOS0116		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL		
.LC537-SU_00017	01/19/17	07/19/16	Methanol, Lot 104453	25000 uL	LCMPFDA_00008	100 uL	13C2 PFDA	0.2 ug/mL		
					LCMPFHxA_00009	100 uL	13C2 PFHxA	0.2 ug/mL		
..LCMPFDA_00008	08/19/20		Wellington Laboratories, Lot MPFDA0815		(Purchased Reagent)		13C2 PFDA	50 ug/mL		
..LCMPFHxA_00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415		(Purchased Reagent)		13C2 PFHxA	50 ug/mL		
LC537-L5_00017	01/28/17	11/07/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00010	200 uL	Perfluorobutanesulfonic acid (PFBS)	134.64 ng/mL		
							Perfluoroheptanoic acid	15.2743 ng/mL		
							Perfluorohexanesulfonic acid	45.3873 ng/mL		
							Perfluorononanoic acid	29.4678 ng/mL		
							Perfluorooctanoic acid (PFOA)	30.4196 ng/mL		
							Perfluorooctanesulfonic acid (PFOS)	60.0996 ng/mL		
					LC537-IS_00024	100 uL	13C2-PFOA	10 ng/mL		

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00020	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00010	01/28/17	07/28/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00012	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL
							Perfluoroheptanoic acid	381.857 ng/mL
							Perfluorohexanesulfonic acid	1134.68 ng/mL
							Perfluorononanoic acid	736.695 ng/mL
							Perfluorooctanoic acid (PFOA)	760.489 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL
.LC537SPIM_00012	01/28/17	07/28/16	Methanol, Lot 104453	10 mL	LC537-PFBS_00006	0.44 mL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00010	0.1 mL	Perfluoroheptanoic acid	10.1829 ug/mL
					LC537-PFHxS_00008	0.3 mL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00008	0.2 mL	Perfluorononanoic acid	19.6452 ug/mL
					LC537-PFOA_00009	0.098 mL	Perfluorooctanoic acid (PFOA)	20.2797 ug/mL
					LC537-PFOS_00006	0.4 mL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V			(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00010	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFHpA_00002	0.0072 g	Perfluoroheptanoic acid	1018.29 ug/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCM2579V			(Purchased Reagent)	Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V			(Purchased Reagent)	Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00008	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFNA_00002	0.0051 g	Perfluorononanoic acid	982.26 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F			(Purchased Reagent)	Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00009	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFOA_00002	0.0145 g	Perfluorooctanoic acid (PFOA)	2069.36 ug/mL
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV			(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV			(Purchased Reagent)	Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00024	03/19/17	11/03/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00003	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCM2PFOA_00003	03/19/17		Wellington Laboratories, Lot M2PFOA0312			(Purchased Reagent)	13C2-PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21		Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)	13C4 PFOS	47.8 ug/mL
.LC537-SU_00020	04/07/17	10/07/16	Methanol, Lot 104453	25000 uL	LCMPFDA_00008	100 uL	13C2 PFDA	0.2 ug/mL
					LCMPFHxA_00009	100 uL	13C2 PFHxA	0.2 ug/mL
..LCMPFDA_00008	08/19/20		Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)	13C2 PFDA	50 ug/mL
..LCMPFHxA_00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415			(Purchased Reagent)	13C2 PFHxA	50 ug/mL
LC537-L6_00014	01/13/17	07/28/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00010	265 uL	Perfluorobutanesulfonic acid (PFBS)	178.398 ng/mL
							Perfluoroheptanoic acid	20.2384 ng/mL
							Perfluorohexanesulfonic acid	60.1382 ng/mL
							Perfluorononanoic acid	39.0448 ng/mL
							Perfluorooctanoic acid (PFOA)	40.3059 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorooctanesulfonic acid (PFOS)	79.632 ng/mL
					LC537-IS_00018	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00017	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00010	01/28/17	07/28/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00012	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL
							Perfluoroheptanoic acid	381.857 ng/mL
							Perfluorohexanesulfonic acid	1134.68 ng/mL
							Perfluorononanoic acid	736.695 ng/mL
							Perfluorooctanoic acid (PFOA)	760.489 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL
.LC537SPIM_00012	01/28/17	07/28/16	Methanol, Lot 104453	10 mL	LC537-PFBS_00006	0.44 mL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHxA_00010	0.1 mL	Perfluoroheptanoic acid	10.1829 ug/mL
					LC537-PFHxS_00008	0.3 mL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00008	0.2 mL	Perfluorononanoic acid	19.6452 ug/mL
					LC537-PFOA_00009	0.098 mL	Perfluorooctanoic acid (PFOA)	20.2797 ug/mL
					LC537-PFOS_00006	0.4 mL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
.LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
.LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
.LC537-PFHxA_00010	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFHxA_00002	0.0072 g	Perfluoroheptanoic acid	1018.29 ug/mL
.LC537_PFHxA_00002	04/01/18		Aldrich, Lot BCM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
.LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
.LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
.LC537-PFNA_00008	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFNA_00002	0.0051 g	Perfluorononanoic acid	982.26 ug/mL
.LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
.LC537-PFOA_00009	07/28/17	07/28/16	Methanol, Lot 090285	7 mL	LC537_PFOA_00002	0.0145 g	Perfluorooctanoic acid (PFOA)	2069.36 ug/mL
.LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
.LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
.LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00018	01/13/17	07/13/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00004	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00013	300 uL	13C4 PFOS	1.434 ug/mL
.LCM2PFOA_00004	03/19/17		Wellington Laboratories, Lot M2PFOA0312		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCMPFOS_00013	01/22/21		Wellington Laboratories, Lot MPFOS0116		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00017	01/19/17	07/19/16	Methanol, Lot 104453	25000 uL	LCMPFDA_00008	100 uL	13C2 PFDA	0.2 ug/mL
					LCMPFHxA_00009	100 uL	13C2 PFHxA	0.2 ug/mL
.LCMPFDA_00008	08/19/20		Wellington Laboratories, Lot MPFDA0815		(Purchased Reagent)		13C2 PFDA	50 ug/mL
.LCMPFHxA_00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-LSP_00016	05/04/17	11/04/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00015	50 uL	Perfluorobutane Sulfonate	448.8 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	448.8 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroheptanoic acid	53.7429 ng/mL
							Perfluorohexanesulfonic acid	151.291 ng/mL
							Perfluorononanoic acid	101.553 ng/mL
							Perfluorooctanoic acid (PFOA)	99.234 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	200.332 ng/mL
.LC537SPIM_00015	05/04/17	11/04/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutane Sulfonate	89.76 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpa 00011	100 uL	Perfluoroheptanoic acid	10.7486 ug/mL
					LC537-PFHxS 00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA 00009	200 uL	Perfluorononanoic acid	20.3105 ug/mL
					LC537-PFOA 00010	100 uL	Perfluorooctanoic acid (PFOA)	19.8468 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
..LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutane Sulfonate	2040 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
...LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutane Sulfonate	1 g/g
							Perfluorobutanesulfonic acid (PFBS)	1 g/g
..LC537-PFHpa 00011	11/04/17	11/04/16	Methanol, Lot 090285	7 mL	LC537 PFHpA 00002	0.0076 g	Perfluoroheptanoic acid	1074.86 ug/mL
..LC537 PFHpA 00002	04/01/18		Aldrich, Lot BCM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
..LC537-PFHxS 00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537 PFHxS 00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
..LC537 PFHxS 00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
..LC537-PFNA 00009	11/04/17	11/04/16	Methanol, Lot 090285	5.5 mL	LC537 PFNA 00002	0.0058 g	Perfluorononanoic acid	1015.53 ug/mL
..LC537 PFNA 00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
..LC537-PFOA 00010	11/04/17	11/04/16	Methanol, Lot 090285	7.5 mL	LC537 PFOA 00002	0.0149 g	Perfluorooctanoic acid (PFOA)	1984.68 ug/mL
..LC537 PFOA 00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
..LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
...LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
LC537-SU_00022	05/21/17	11/21/16	Methanol, Lot 104453	20000 uL	LCMPFDA 00008	80 uL	13C2 PFDA	0.2 ug/mL
					LCMPFHxA 00009	80 uL	13C2 PFHxA	0.2 ug/mL
.LCMPFDA 00008	08/19/20		Wellington Laboratories, Lot MPFDA0815		(Purchased Reagent)		13C2 PFDA	50 ug/mL
.LCMPFHxA 00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415		(Purchased Reagent)		13C2 PFHxA	50 ug/mL

Reagent

LC537_PFB_00002

4/1/15 SPV

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.com

Email USA: techserv@sial.com

Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Nonafluorobutane-1-sulfonic acid - 97%

Product Number:

562629

Batch Number:

MKBP8842V

Brand:

ALDRICH

CAS Number:

375-73-5

MDL Number:

MFCD01320794

Formula:

C₄HF₉O₃S

Formula Weight:

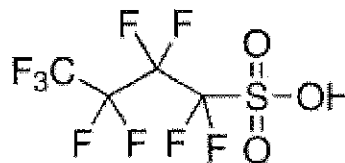
300.10 g/mol

Storage Temperature:

Store at 2 - 8 °C

Quality Release Date:

11 OCT 2013



PFBS

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

Jamie Gleason, Manager
Quality Control
Milwaukee, Wisconsin US

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

Reagent

LC537_PFB2_00001



The Power to Question

CERTIFICATE OF ANALYSIS

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

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

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

Reagent

LC537_PFHpA_00002

R: 4/1/15 4V

Certificate of Analysis

Product Name: PERFLUOROHEPTANOIC ACID
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

Dr. Claudia Geitner
Manager Quality Control
Buchs, Switzerland

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

Reagent

LC537_PFHxS_00002

r: 4/1/15 stw

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: C₆F₁₃KO₃S

Formula Weight: 438.20

Quality Release Date: 20 JUN 2013

PFH₁₃S-K

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

Dr. Claudia Geitner
Manager Quality Control
Buchs, Switzerland

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

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

stw 4/1/15

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

Reagent

LC537_PENA_00002

R: 4/1/15 SKV



Certificate of Analysis

Apr 2, 2015 (JST)

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

Chemical Name: Heptadecafluorononanoic Acid		
Product Number: H0843 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

Reagent

LC537_PFOA_00002

3/21/15

SIGMA-ALDRICH

CERTIFICATE OF ANALYSIS

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

Seelze, 13.11.2013/505378/13/24029
Order-No.:
Customer-No.:
Order-Code:
Quantity:
Production Date: 04.Nov.2013
Expiry Date: 04.Nov.2018

Article/Product: 33824	Batch : SZBD308XV	PFOA
Pentadecafluorooctanoic acid OEKANAL®		

Reference Material (RM)

1. General Information

Formula: C₈HF₁₅O₂
CAS-No.: [335-67-1]
Usage : PFOA

Molar mass: 414.07 g/Mole
Recomm. storage temp.: roomtemp.

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

2. Batch Analysis

identity (GC-MS)
Assay (GCMS)
Date of Analysis

complying
99.4 %
13.Nov.2013

3. Advice and Remarks

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

Sigma-Aldrich Laborchemikalien GmbH
Quality Management SA-LC

This document was produced electronically and is valid without a signature

GC/MS-Method

Analytical Department

Article: Pentadecafluorooctanoic acid OEKANAL

Article-No.: 33824

Batch: SZBD308XV

Column: XTI-5 (Restek); 30 m; fs cap.; I.D.:0.25 mm; 1 µm df

Injector: Split mode

Injection: approx. 1 µl of reaction mixture with MSTFA (approx. 10 mg + 200 µl MSTFA)

Inj.-temp.: 280°C

Oven-temp.: 40°C (for 2 min) to 320°C (6°C/min) hold for 2 min

Split: 1:100

Flow: 1 ml He/min (Constant flow mode)

Detector: MSD

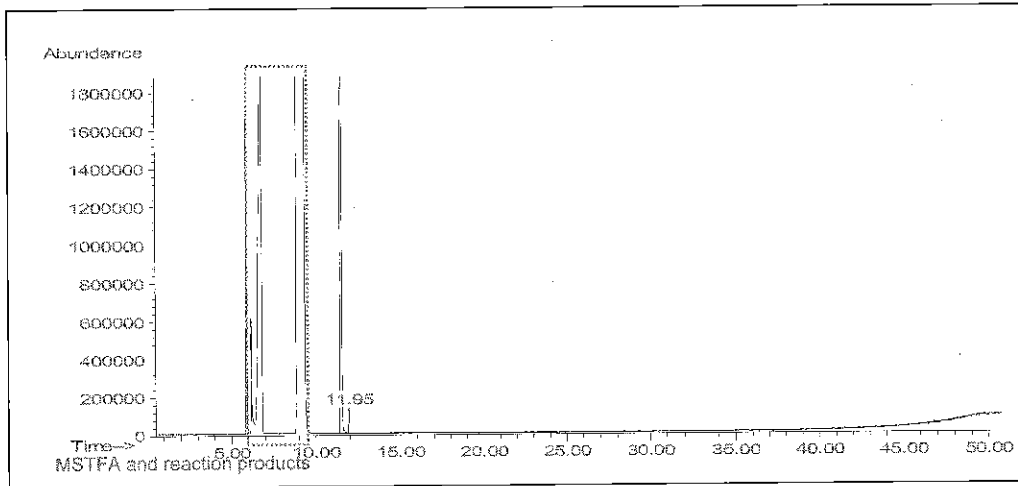
Mass range: 10-600 amu (Scan mode)

Evaluation: Purity: Total Ion Chromatogram
(MSTFA and reaction products blinded out in report)

Identity: Mass spectrum complies

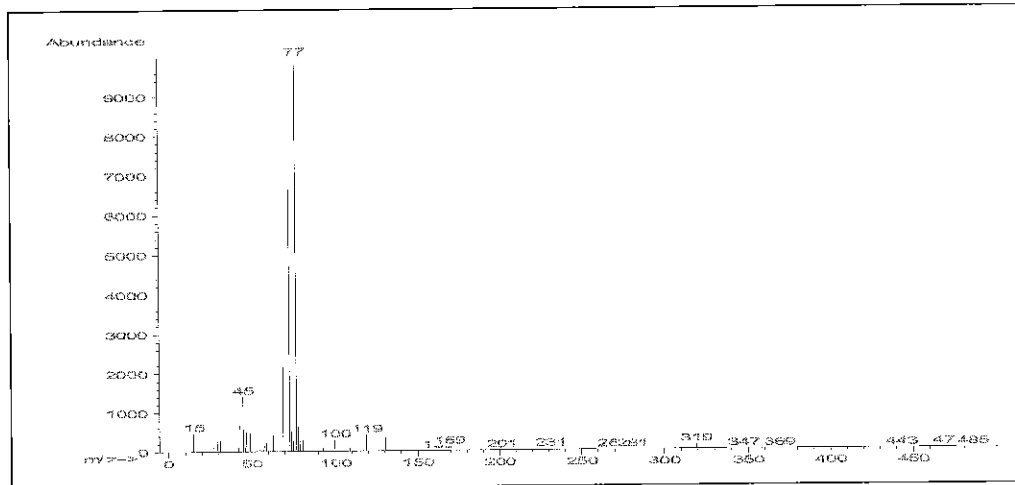
Operator: Ahrens / 2013-11-13

Total Ion Chromatogram:



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

Mass spectrum (rt = 11.54 min):



Reagent

LC537_PFOA2_00001

Certificate of Analysis

Alfa Aesar
A Johnson Matthey Company

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

PFOA

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

This document has been electronically generated and does not require a signature.

www.alfa.com

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Fax: 0800 10 20 67 or
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Email: saleskorea@alfa-asia.com

Reagent

LC537_PFOs_00002

SIGMA-ALDRICH®

CERTIFICATE OF ANALYSIS

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

Seelze, 13.08.2012/419060/12/17583
Order-No.:
Customer-No.:
Order-Code:
Quantity:
Production Date: 09.Aug.2012
Expiry Date: 09.Aug.2017 - <i>ex date</i>

Article/Product: 33829	Batch : SZBC222XV
Heptadecafluorooctanesulfonic acid potassium salt OEKANAL®	
	PFOS-K ⁺

Reference Material (RM)

1. General Information

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

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

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

2. Batch Analysis

Identity	complying
Assay (LC-MS)	98.00 %
Date of Analysis	10.Aug.2012

FW-Correction:

$$\frac{538.22 - 39.10 + 1.01}{538.22} = \frac{500.13}{538.22} = 0.92923$$

Purity = 91.06%

3. Advice and Remarks

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

Sigma-Aldrich Laborchemikalien GmbH
 Quality Management SA-LC

Reagent

LC537_PFO2_00001

Certificate of Analysis

Inw 820
12LCMS 0579

Product Name: HEPTADEC AFLUORO OCTANESULFONIC ACID TETRAETHYLAMMONIUM SALT
98 %
Product Number: 365289
Product Brand: Aldrich
Molecular Formula: C₁₆H₂₀F₁₇NO₃S
Molecular Mass: 629.37
CAS Number: 56773-42-3

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

QC RELEASE DATE 13/APR/11

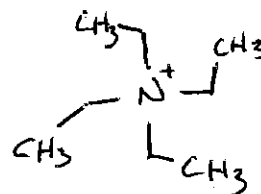
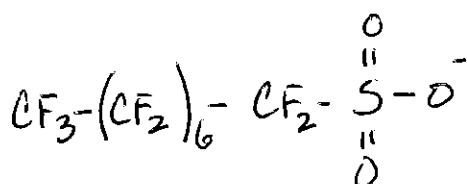
$$\text{Mw correction} = \frac{500.125}{629.37} = 0.7946$$

~~79.46%~~ det 7-26-12

E. Schwarzler

Purity + Mw Correction = 77.87%

Edeltraud Schwarzler, Manager
Quality Control
Buchs, Switzerland



	<u>C₈F₁₇SO₃H</u>	<u>C₈H₂₀N</u>
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
	<u>500.125</u>	<u>130.255</u> →

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

Certificate of Origin

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

Country of Origin China

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

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

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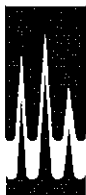
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For further questions please contact your local Sigma-Aldrich representative.

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

Reagent

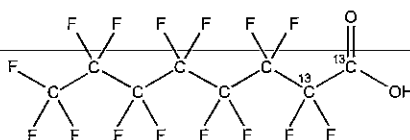
LCM2PFOA_00003



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFOA **LOT NUMBER:** M2PFOA0312
COMPOUND: Perfluoro-n-[1,2-¹³C₂]octanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₆HF₁₅O₂ **MOLECULAR WEIGHT:** 416.05
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
(1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 03/19/2012
EXPIRY DATE: (mm/dd/yyyy) 03/19/2017
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____

B.G. Chittim

Date: 01/09/2013
(mm/dd/yyyy)

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

INTENDED USE:

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

HAZARDS:

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

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

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

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

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

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external, ISO/IEC 17025:2005 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

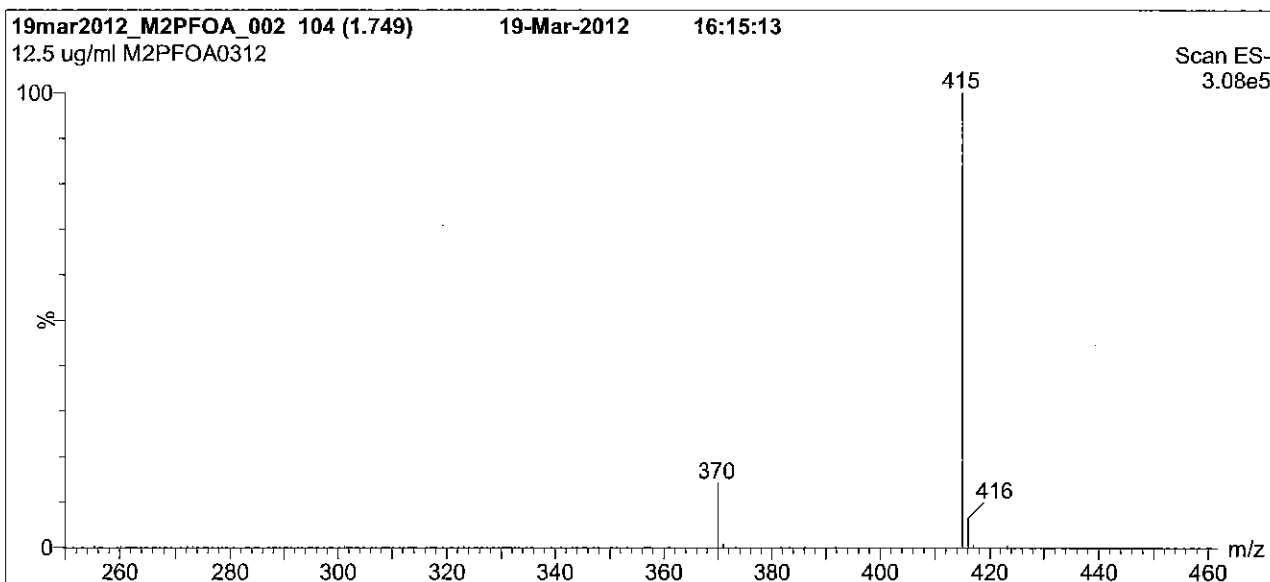
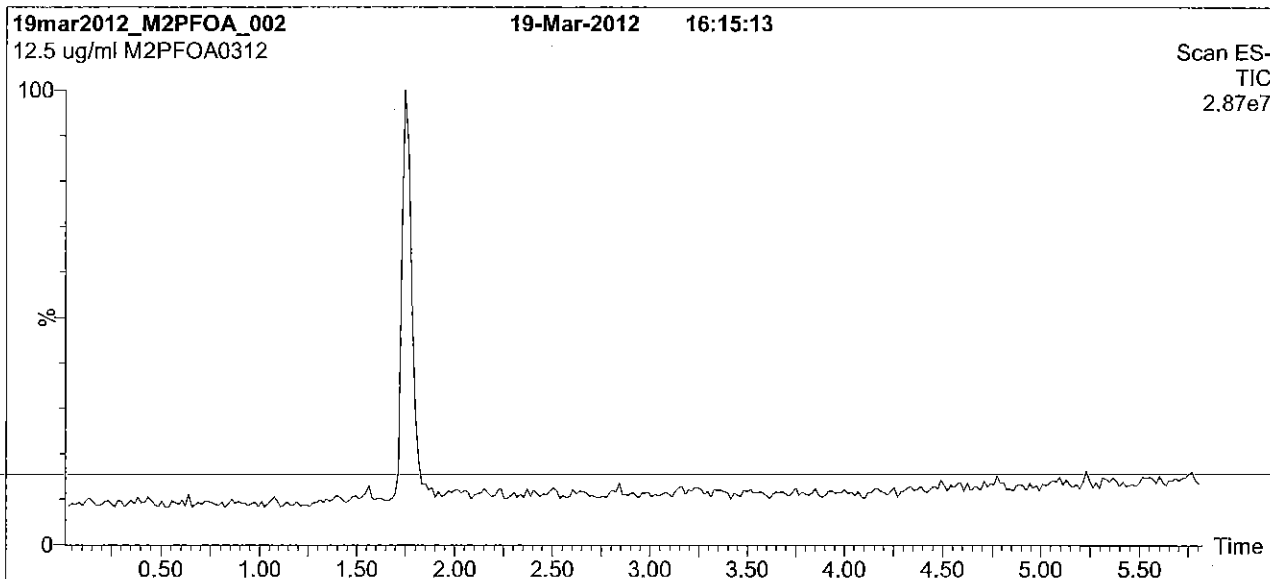
QUALITY MANAGEMENT:

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



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



Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
 Start: 60% (80:20 MeOH:ACN) / 40% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 6.5 min and hold for 2 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

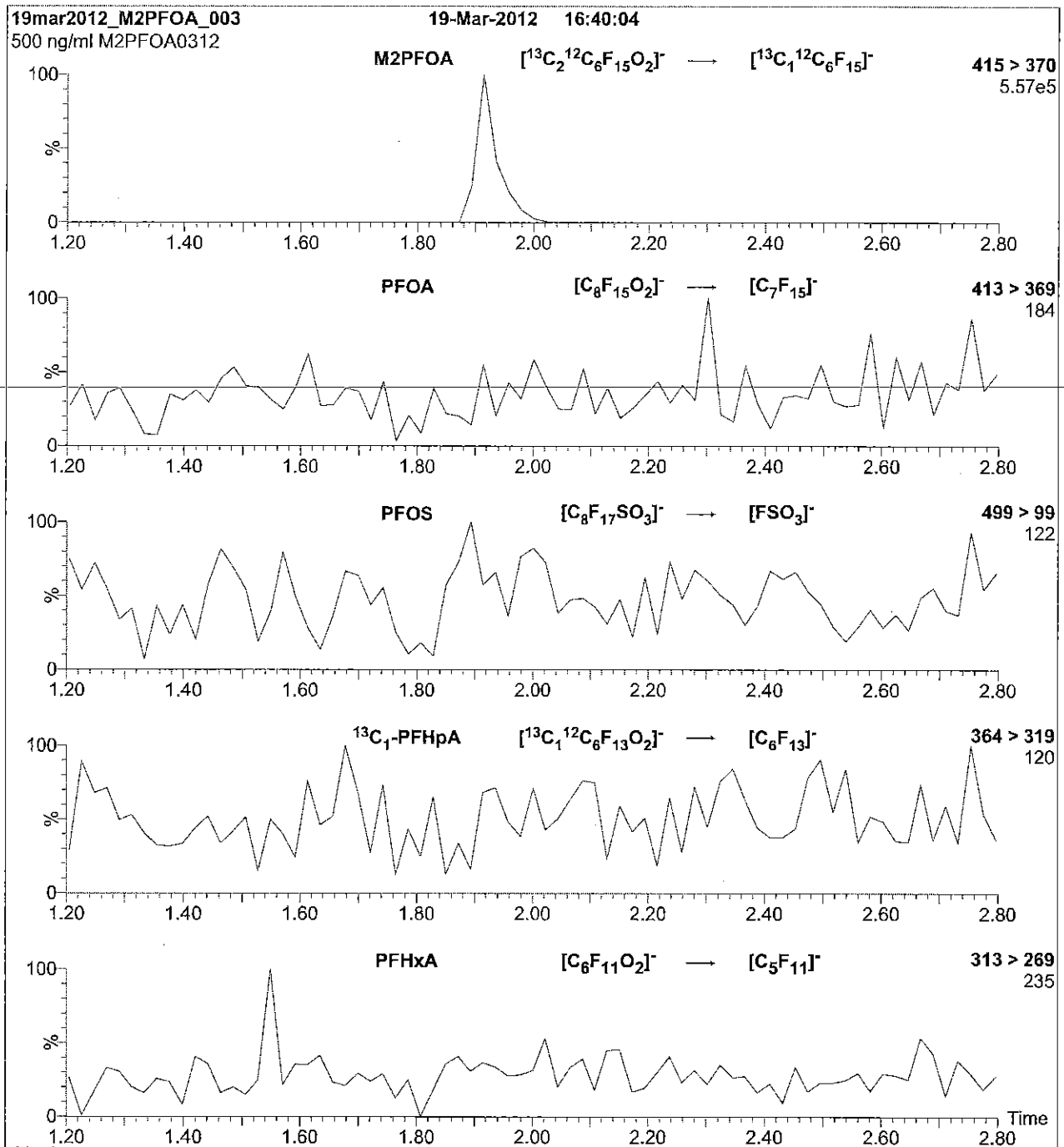
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.00
 Cone Voltage (V) = 15.00
 Cone Gas Flow (l/hr) = 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 70% (80:20 MeOH:ACN) / 30% H_2O
(both with 10 mM NH_4OAc buffer)

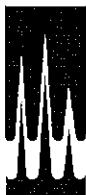
Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = $3.35\text{e-}3$
Collision Energy (eV) = 11

Reagent

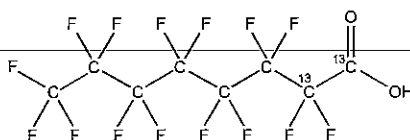
LCM2PFOA_00004



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFOA **LOT NUMBER:** M2PFOA0312
COMPOUND: Perfluoro-n-[1,2-¹³C₂]octanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₆HF₁₅O₂ **MOLECULAR WEIGHT:** 416.05
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
(1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 03/19/2012
EXPIRY DATE: (mm/dd/yyyy) 03/19/2017
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____

B.G. Chittim

Date: 01/09/2013
(mm/dd/yyyy)

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

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

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

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

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

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external, ISO/IEC 17025:2005 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

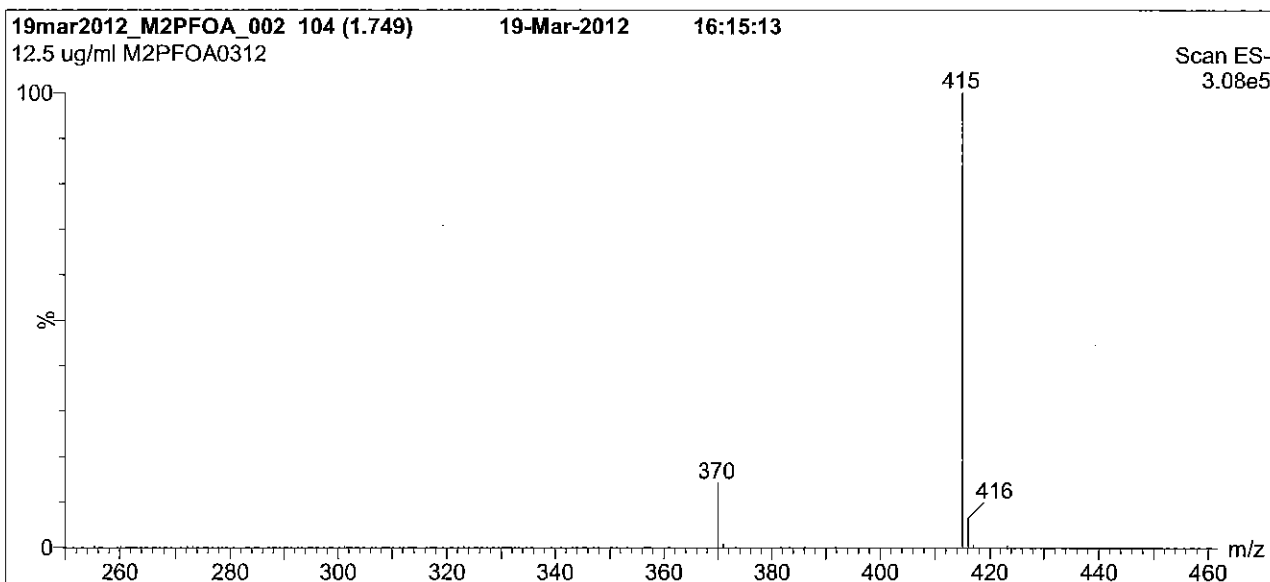
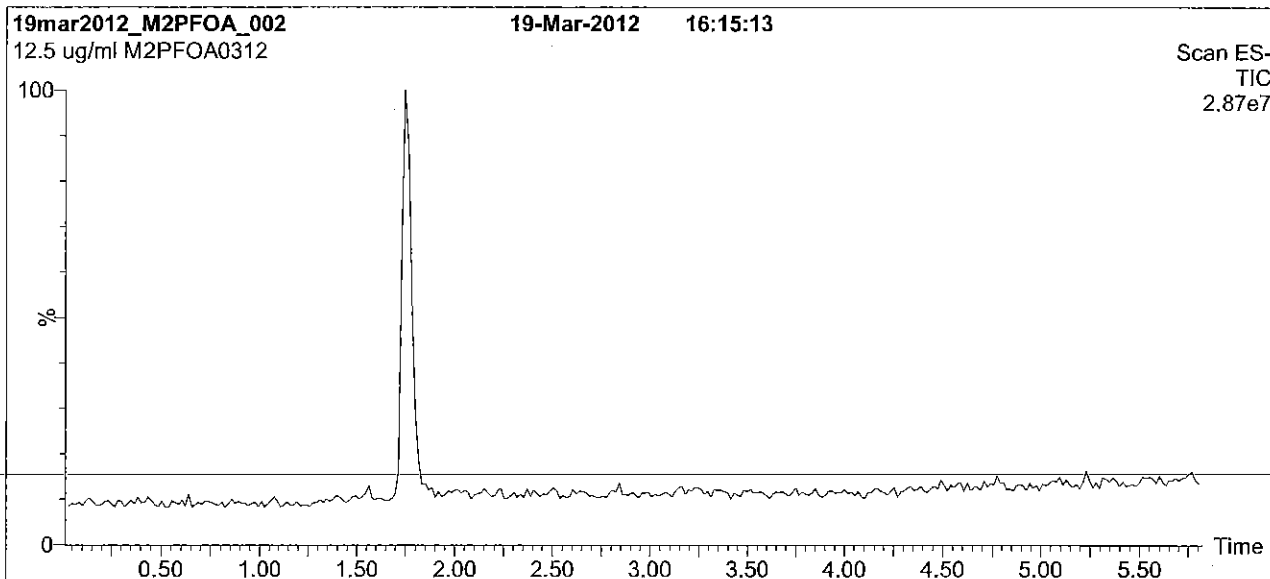
QUALITY MANAGEMENT:

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



Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
 Start: 60% (80:20 MeOH:ACN) / 40% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 6.5 min and hold for 2 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

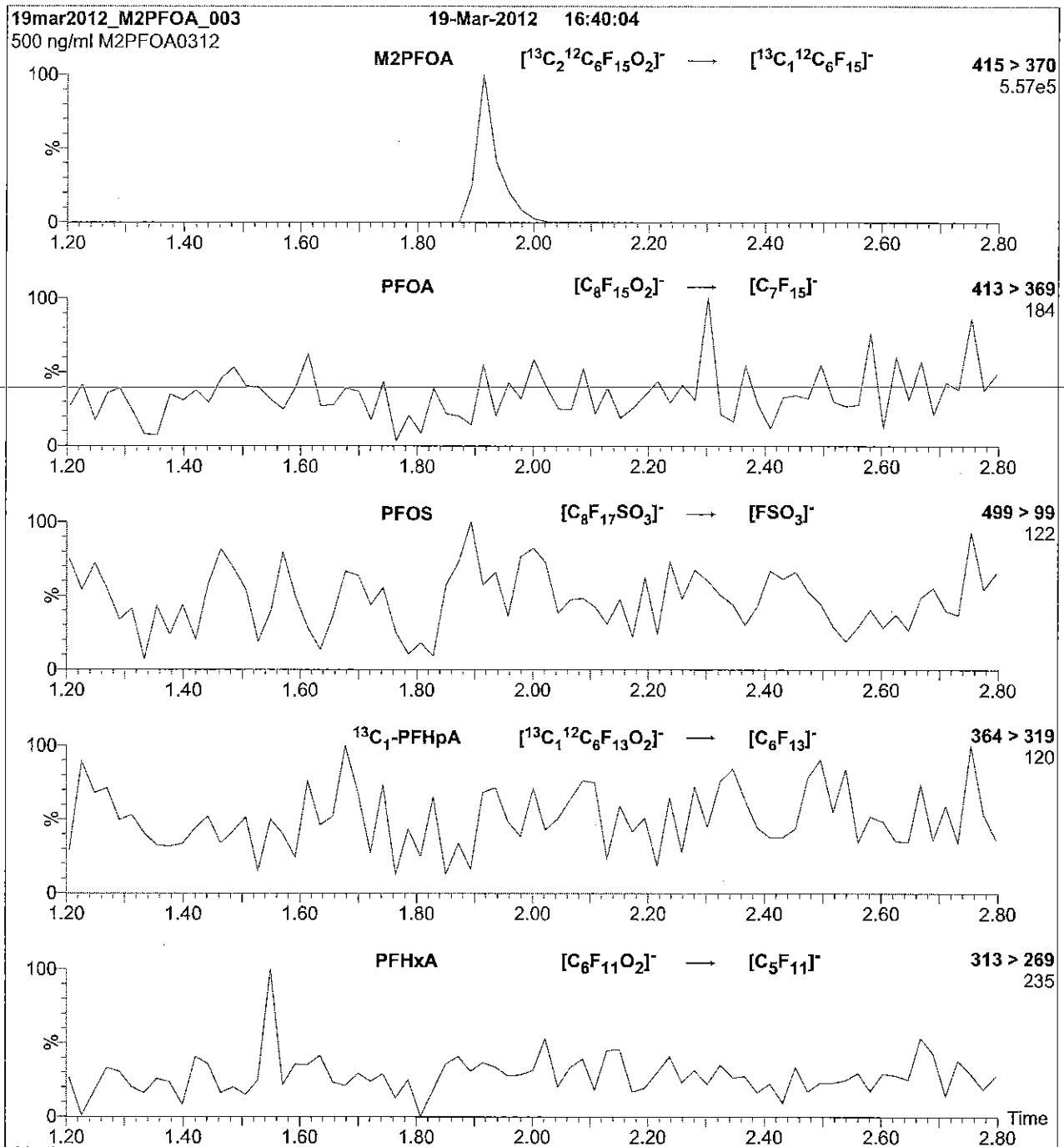
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.00
 Cone Voltage (V) = 15.00
 Cone Gas Flow (l/hr) = 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 70% (80:20 MeOH:ACN) / 30% H_2O
(both with 10 mM NH_4OAc buffer)

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

MS Parameters

Collision Gas (mbar) = $3.35\text{e-}3$
Collision Energy (eV) = 11

Reagent

LCMPFDA_00008



605243

ID: LCMPFDA_00008

Exp: 08/19/20 Pptd: CBW

13C2-Perfluorodecanoic acid

Rec. 3/29/16 JEB ✓



WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:

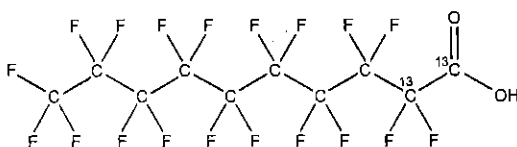
MPFDA

LOT NUMBER:

MPFDA0815

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

Not available

**MOLECULAR FORMULA:**¹³C₂¹²C₈HF₁₉O₂**MOLECULAR WEIGHT:**

516.07

CONCENTRATION:

50 ± 2.5 µg/ml

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

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

08/19/2015

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

08/19/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim

Date: 08/21/2015

(mm/dd/yyyy)

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

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HAZARDS:

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LIMITED WARRANTY:

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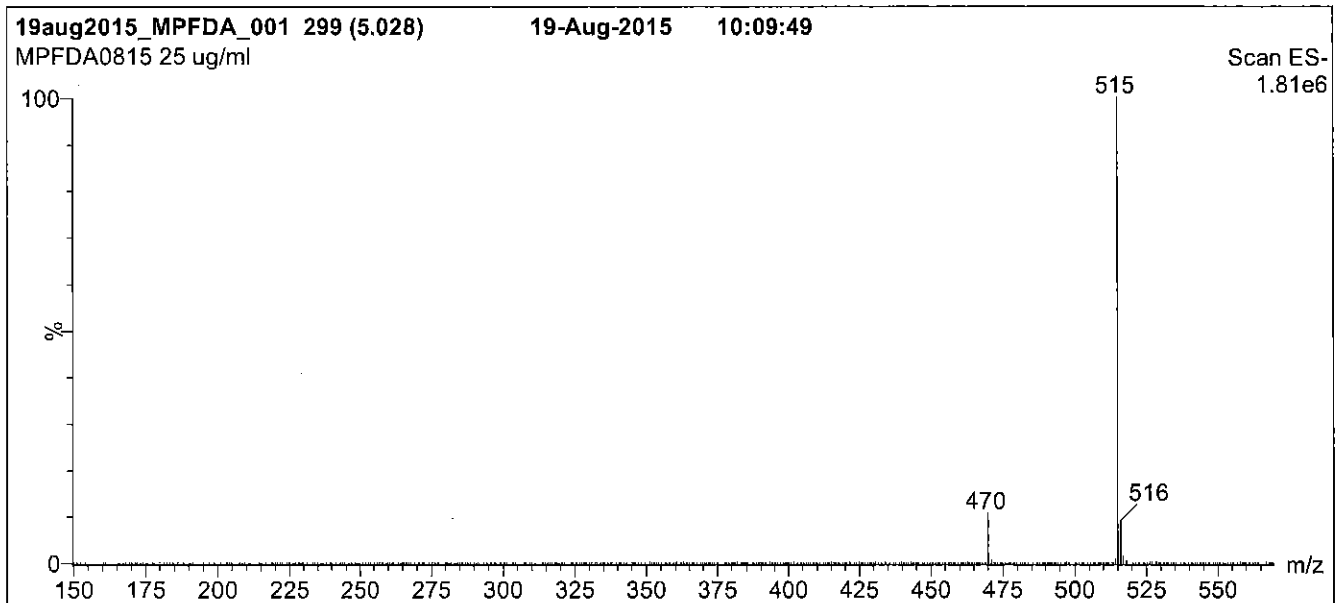
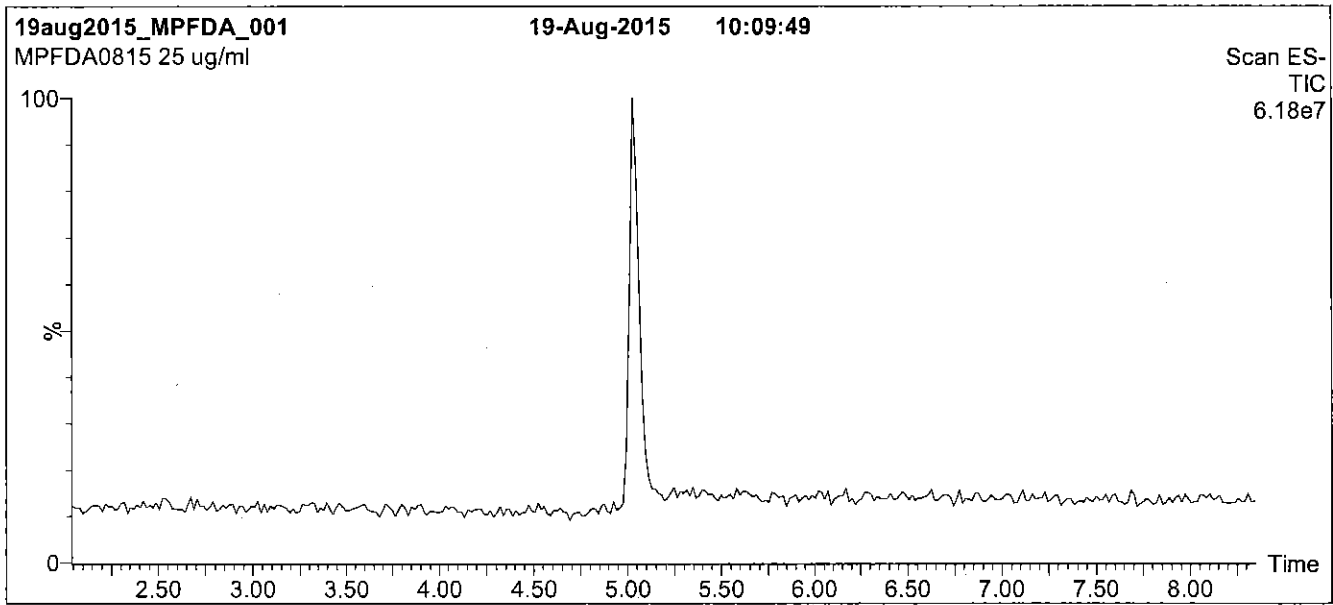
QUALITY MANAGEMENT:

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



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



Conditions for Figure 1:

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

Chromatographic Conditions

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

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

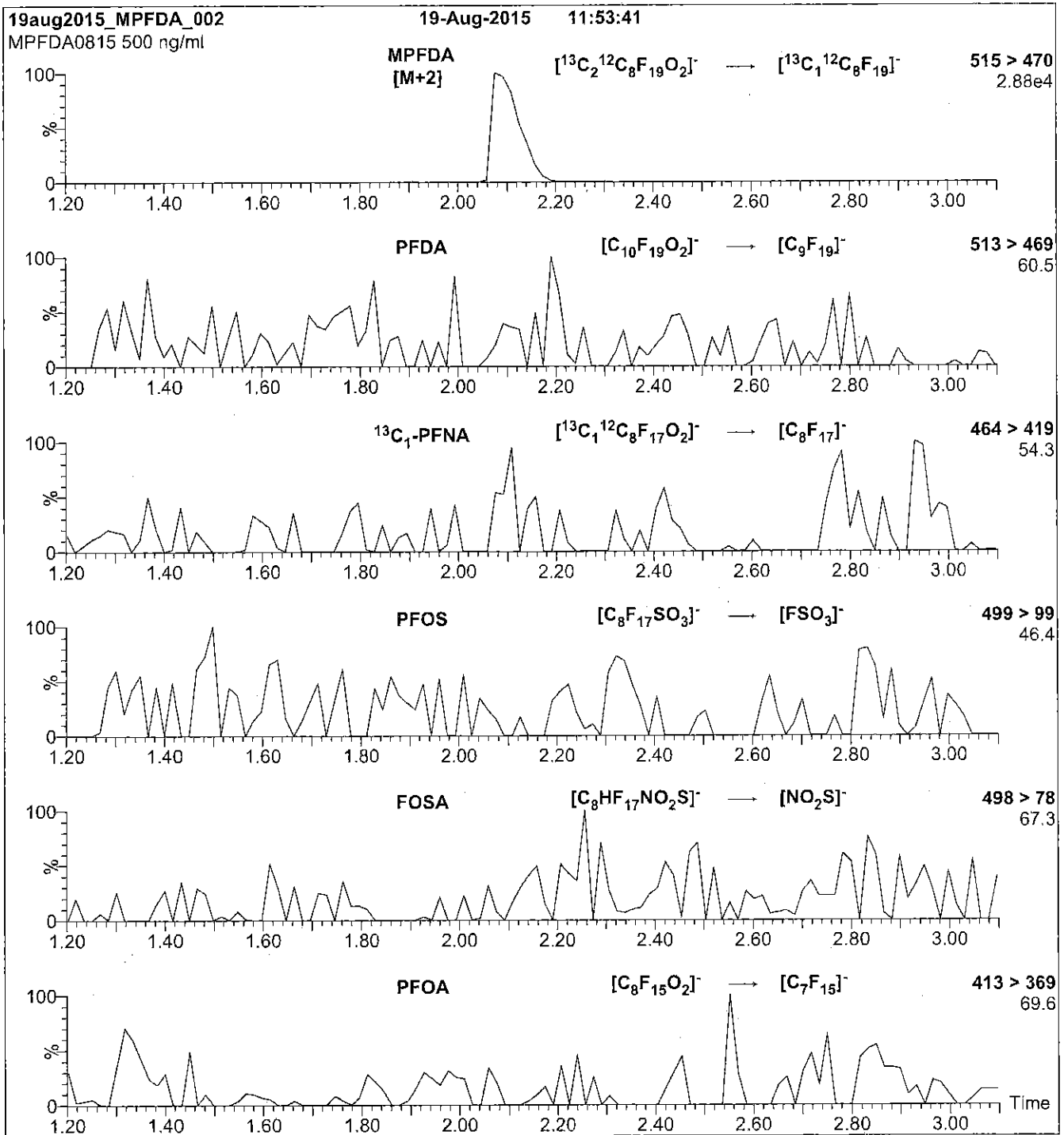
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

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



Conditions for Figure 2:

Injection: Direct loop injection
 10 μ l (500 ng/ml MPFDA)

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

Flow: 300 μ l/min

MS Parameters

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

Reagent

LCMPFHxA_00009



605244
 ID: LCMPFHxA_00009
 Exp: 04/09/20 Prpd: CBW
¹³C₂-Perfluorohexanoic ac

Rec. 3/29/16 JRB ✓



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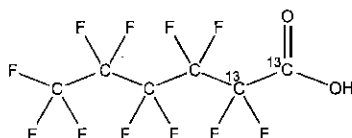
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxA
COMPOUND: Perfluoro-n-[1,2-¹³C₂]hexanoic acid

LOT NUMBER: MPFHxA0415

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: ¹³C₂¹²C₄HF₁₁O₂
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 316.04
SOLVENT(S): Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 04/09/2015

ISOTOPIC PURITY: ≥99%¹³C
 (1,2-¹³C₂)

EXPIRY DATE: (mm/dd/yyyy) 04/09/2020

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:
 B.G. Chittim

Date: 04/14/2015
 (mm/dd/yyyy)

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

INTENDED USE:

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HAZARDS:

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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HOMOGENEITY:

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

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

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

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TRACEABILITY:

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

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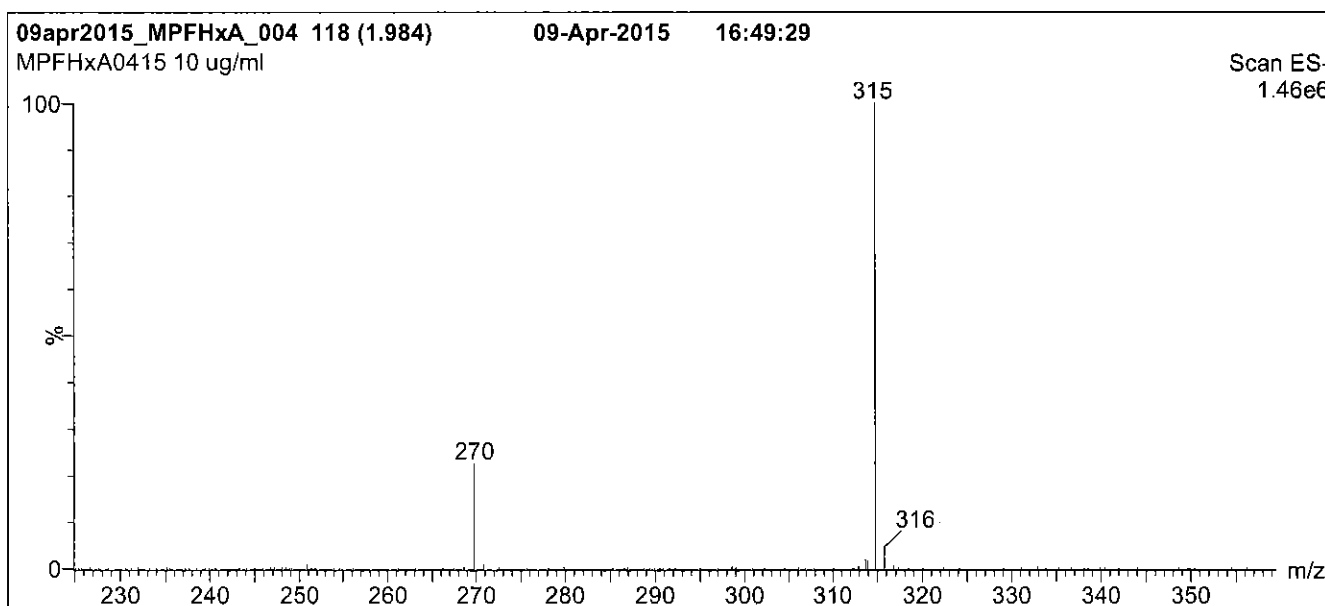
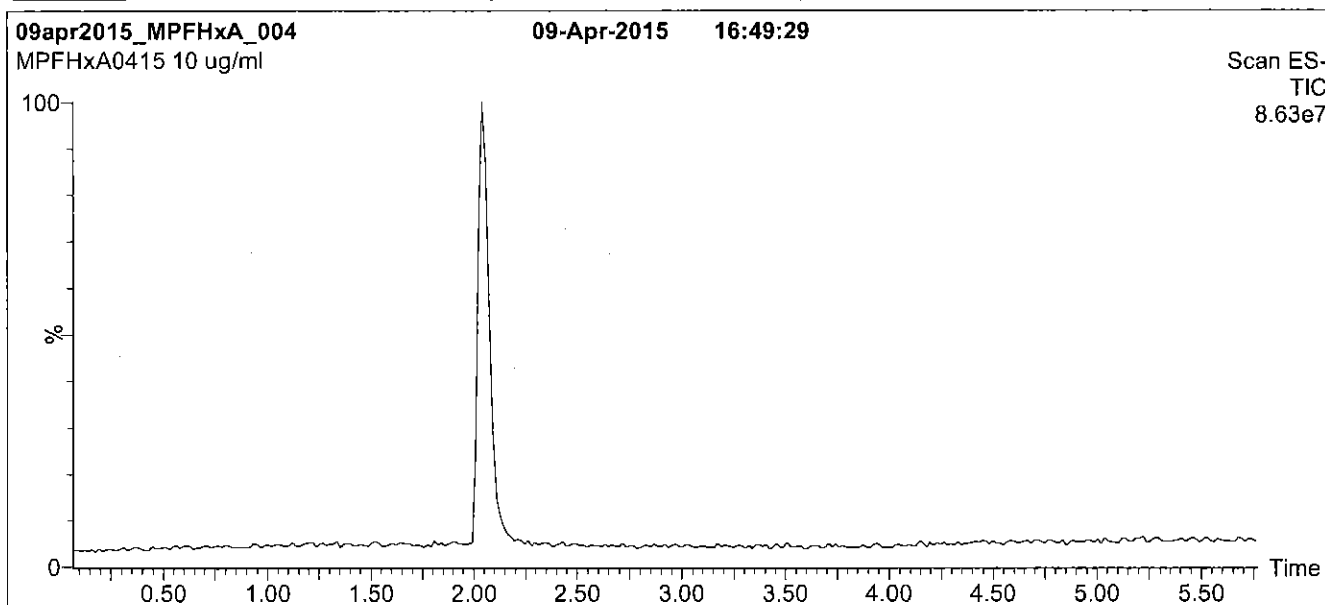
QUALITY MANAGEMENT:

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



Conditions for Figure 1:

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

Chromatographic Conditions

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

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

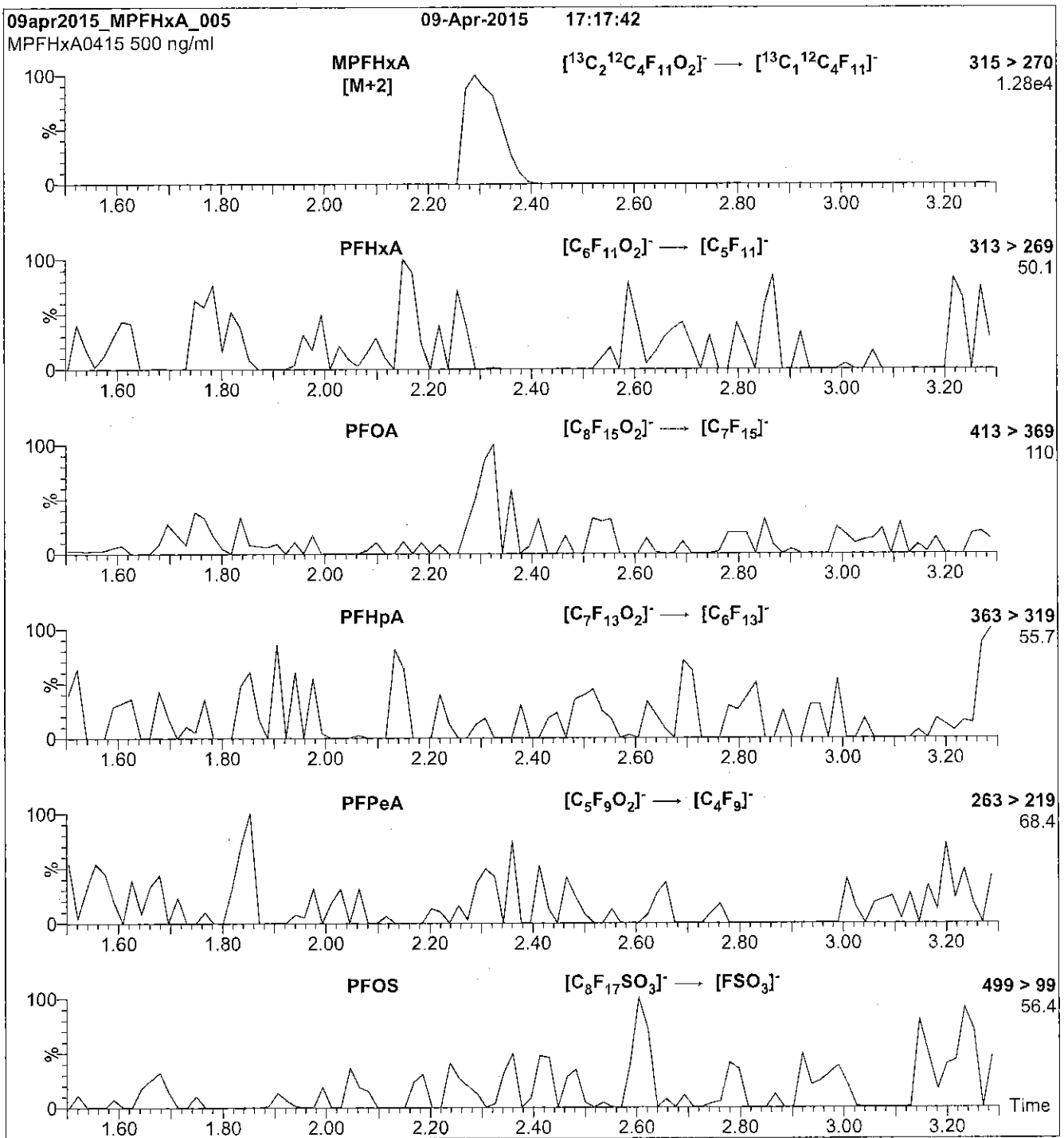
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

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

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

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 10

Reagent

LCMPFOS_00013

605227
ID: LCMFOS_00012
Exp: 01/22/21 Prpd: CBW
13C4-Perfluorooctanesulfo

Rec 3/29/16 JRB ✓

606228
ID: LCMFOS_00013
Exp: 01/22/21 Prpd: CBW
13C4-Perfluorooctanesulfo

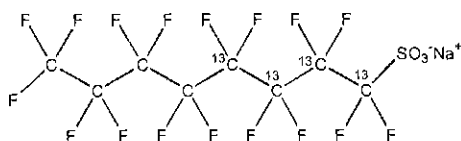


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0116
COMPOUND: Sodium perfluoro-1-[1,2,3,4-¹³C₄]octanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₄¹²C₄F₁₇SO₃Na **MOLECULAR WEIGHT:** 526.08
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
47.8 ± 2.4 µg/ml (MPFOS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
(1,2,3,4-¹³C₄)
LAST TESTED: (mm/dd/yyyy) 01/22/2016
EXPIRY DATE: (mm/dd/yyyy) 01/22/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

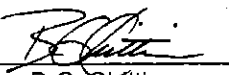
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.8% Sodium perfluoro-1-[1,2,3-¹³C₃]heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim Date: 02/01/2016
(mm/dd/yyyy)

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

INTENDED USE:

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HAZARDS:

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

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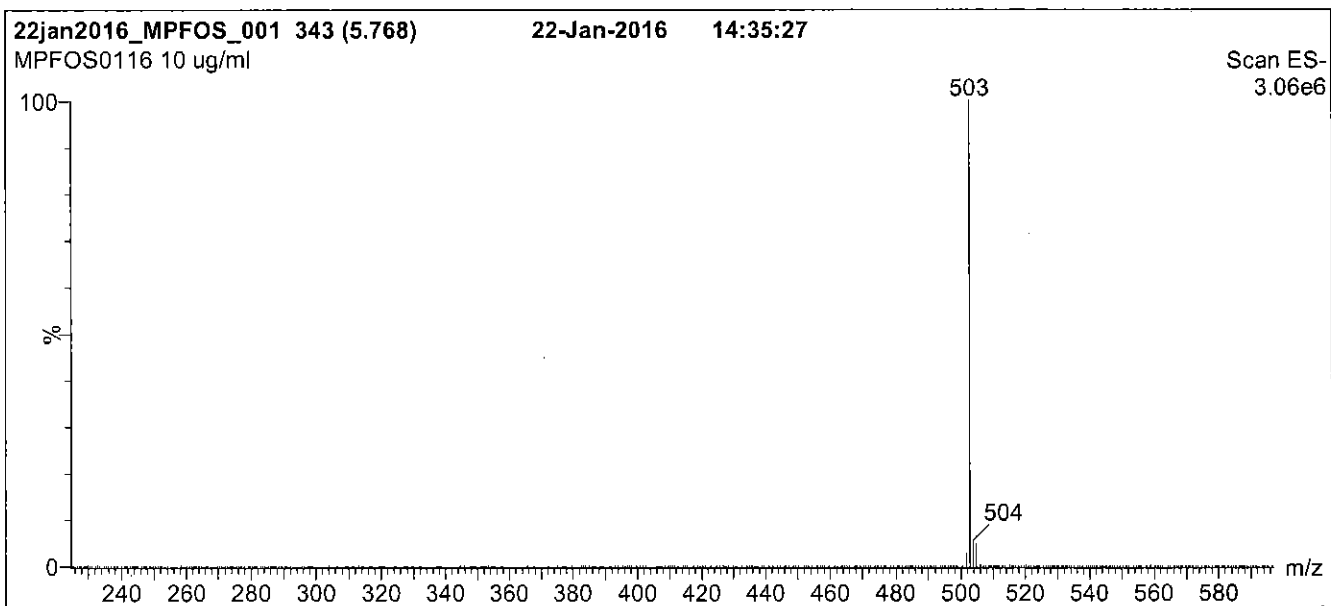
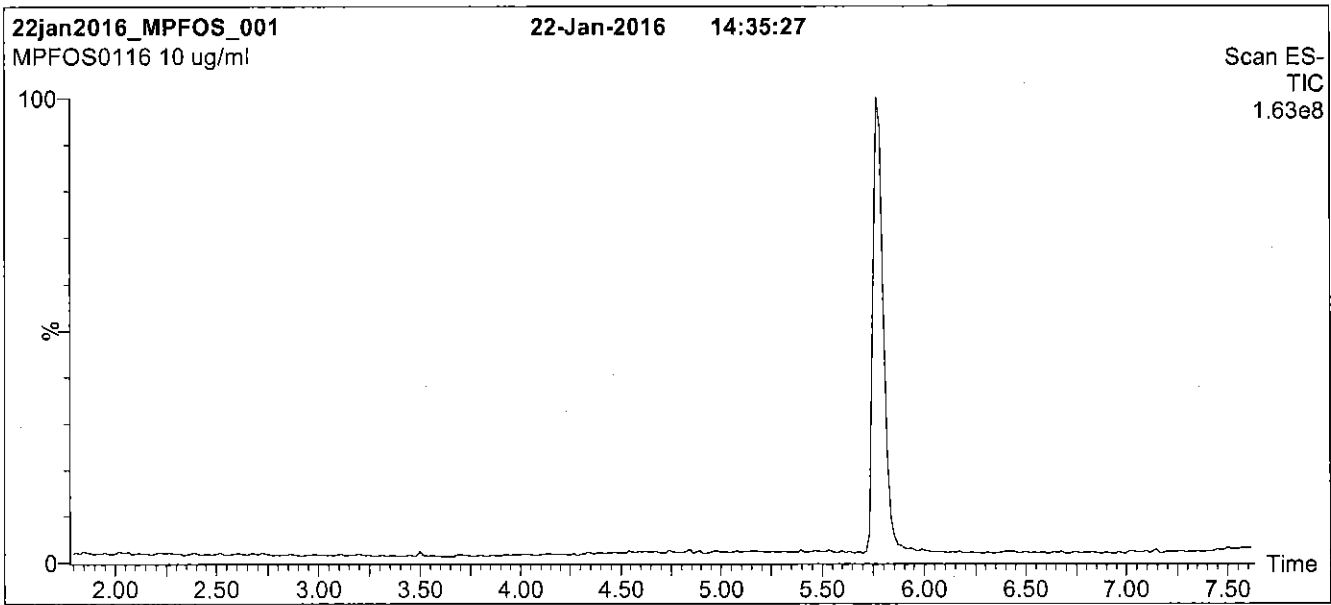
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Figure 1: MPFOS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
 Start: 55% (80:20 MeOH:ACN) / 45% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 2 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

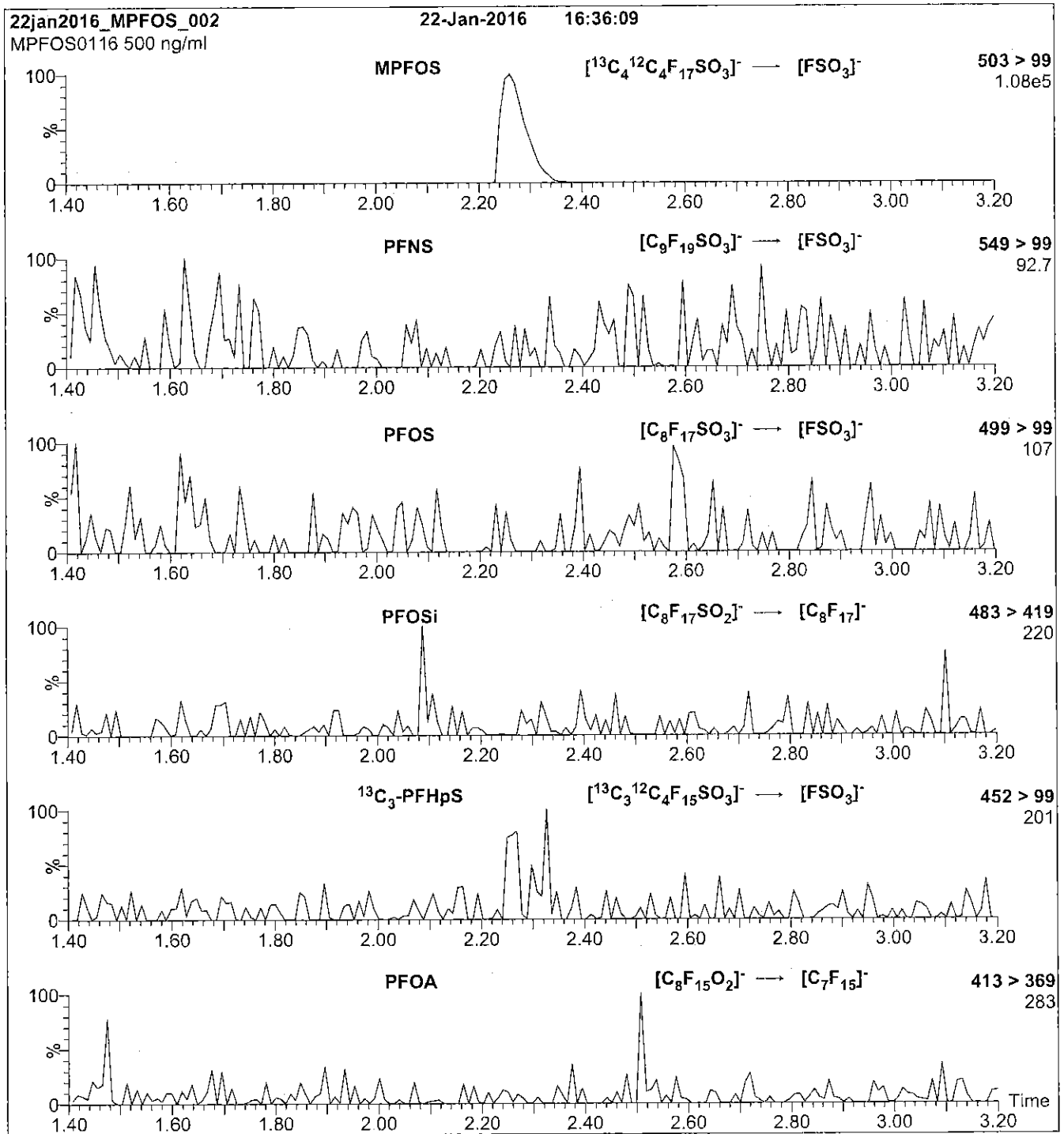
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.00
 Cone Voltage (V) = 60.00
 Cone Gas Flow (l/hr) = 50
 Desolvation Gas Flow (l/hr) = 750

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



Conditions for Figure 2:

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

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

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

MS Parameters

Collision Gas (mbar) = 3.70e-3
 Collision Energy (eV) = 40

Reagent

LCMPFOS_00018

R: SBC 9/22/16



738686
ID: LCMFOS_00018
Exp: 08/03/21 Papi: SBC
13C4-Perfluorooctanesulfo

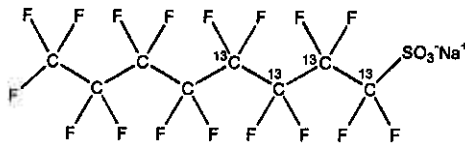


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0816
COMPOUND: Sodium perfluoro-1-[1,2,3,4-¹³C]₄octanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₄¹²C₄F₁₇SO₃Na **MOLECULAR WEIGHT:** 526.08
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
47.8 ± 2.4 µg/ml (MPFOS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 08/03/2016 (1,2,3,4-¹³C)
EXPIRY DATE: (mm/dd/yyyy) 08/03/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place


DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.8% Sodium perfluoro-1-[1,2,3-¹³C]₃heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim **Date:** 08/05/2016
(mm/dd/yyyy)

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

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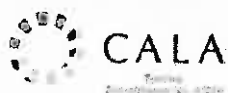
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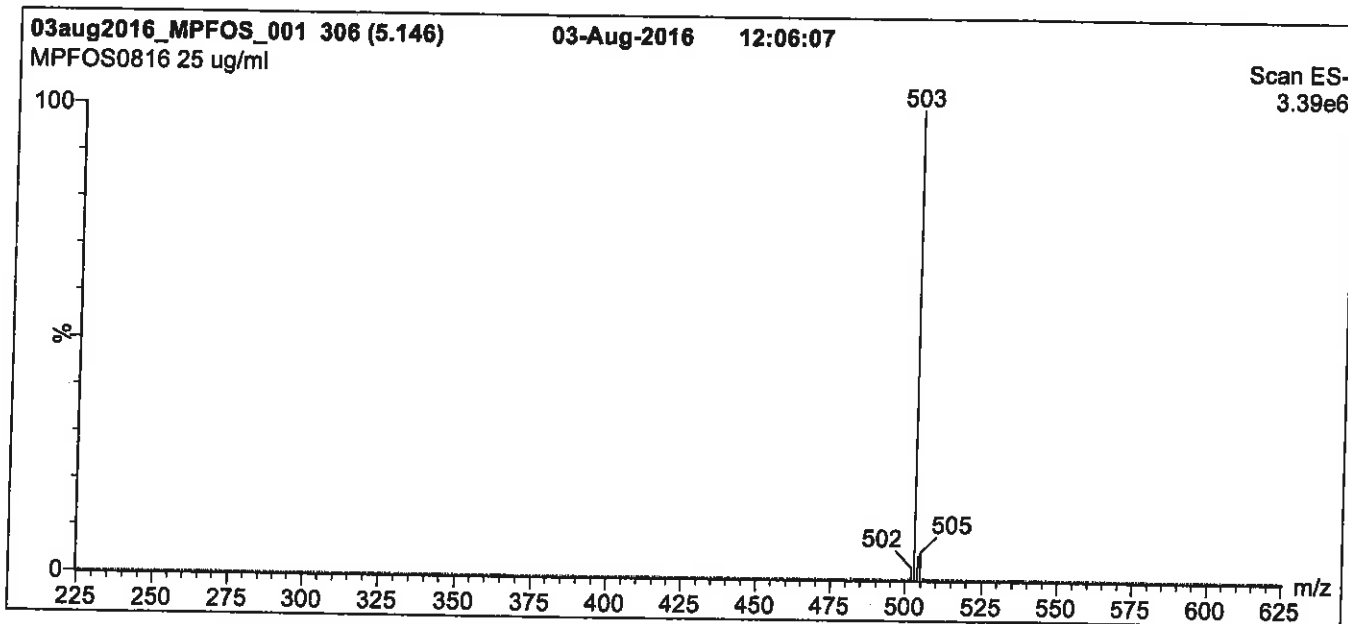
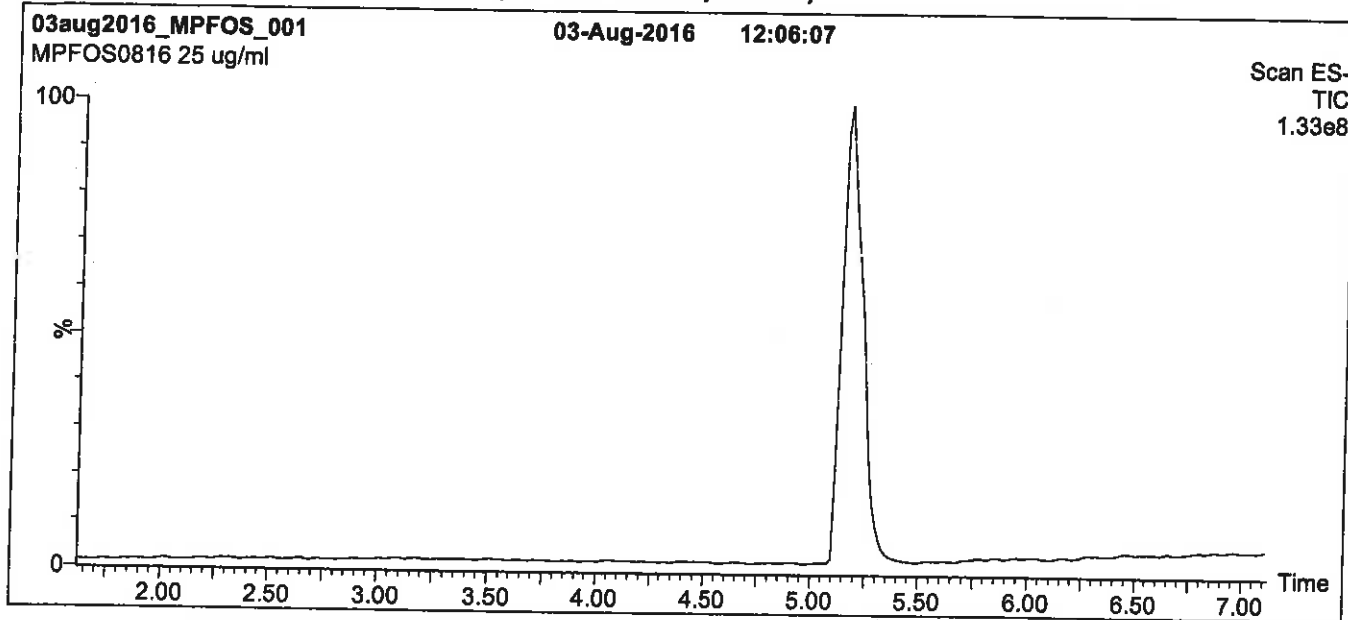
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Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
 Start: 45% (80:20 MeOH:ACN) / 55% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 10 min

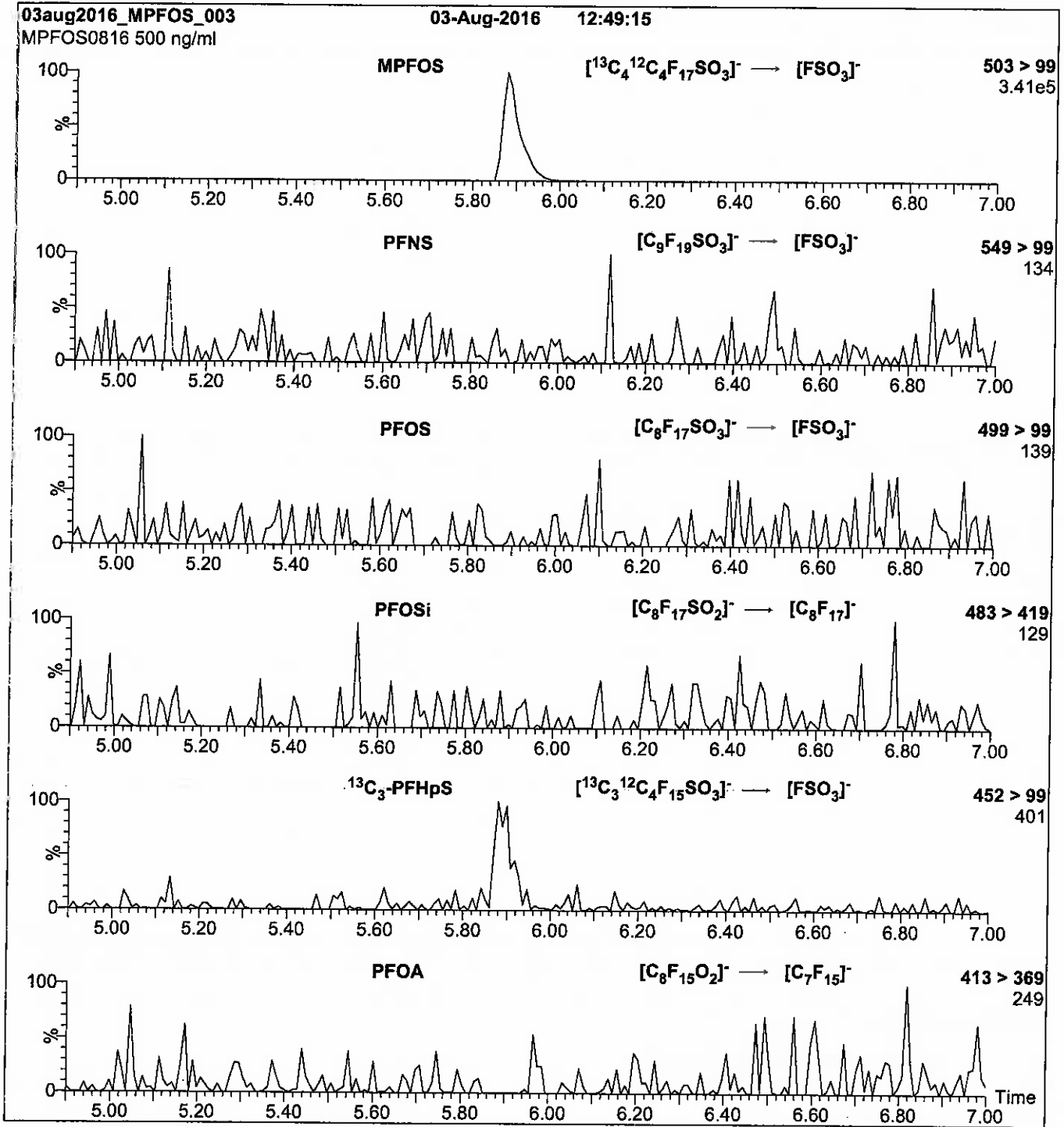
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

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

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



Conditions for Figure 2:

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

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

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

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 40

Method 537 DOD

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

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
WI-CV-1RW01-1116	320-23917-1	111	112
WI-CV-1RW01-1116 DL	320-23917-1 DL	108	103
WI-CV-1FB01-1116	320-23917-2	109	103
WI-CV-1RW02-1116	320-23917-3	96	89
WI-CV-1FB02-1116	320-23917-4	98	105
WI-CV-1RW03-1116	320-23917-5	120	109
WI-CV-1FB03-1116	320-23917-6	95	99
WI-CV-1RW04-1116	320-23917-7	116	117
WI-CV-1FB04-1116	320-23917-8	115	112
WI-CV-1RW05-1116	320-23917-9	110	101
WI-CV-1FB05-1116	320-23917-10	114	109
WI-CV-2RW01-1116	320-23917-11	122	119
WI-CV-2FB01-1116	320-23917-12	108	108
WI-CV-2RW02-1116	320-23917-13	112	113
WI-CV-2FB02-1116	320-23917-14	105	106
WI-CV-2RW03-1116	320-23917-15	117	111
WI-CV-2FB03-1116	320-23917-16	109	107
WI-CV-2RW04-1116	320-23917-17	101	114
WI-CV-2FB04-1116	320-23917-18	105	107
WI-CV-3RW01-1116	320-23917-19	118	110
WI-CV-3FB01-1116	320-23917-20	0.1 M Q	0.3 M Q
WI-CV-3RW02-1116	320-23917-21	106	107
WI-CV-3FB02-1116	320-23917-22	105	108
WI-CV-3RW03-1116	320-23917-23	109	108
WI-CV-3FB03-1116	320-23917-24	106	105
WI-CV-3RW04-1116	320-23917-25	109	108
WI-CV-3FB04-1116	320-23917-26	107	108
WI-CV-3RW05-1116	320-23917-27	130	124
WI-CV-3FB05-1116	320-23917-28	109	110
	MB 320-140280/1-A	111	106
	MB 320-140400/1-A	123	120
	LCS 320-140280/2-A	113	101

PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA

QC LIMITS
70-130
70-130

Column to be used to flag recovery values

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
	LCSD 320-140280/3-A	117	112
	LLCS 320-140400/2-A	112	108
	LLCSD 320-140400/3-A	112	108

PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA

QC LIMITS
70-130
70-130

Column to be used to flag recovery values

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 05DEC2016A6A_085.d
 Lab ID: LCS 320-140280/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.300	0.315	105	70-130	
Perfluorooctanoic acid (PFOA)	0.152	0.157	103	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.673	0.582	86	70-130	

Column to be used to flag recovery and RPD values

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: 05DEC2016A6A_086.d

Lab ID: LCSD 320-140280/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanesulfonic acid (PFOS)	0.300	0.322	107	2	30	70-130	E
Perfluorooctanoic acid (PFOA)	0.152	0.157	103	0	30	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.673	0.645	96	10	30	70-130	

Column to be used to flag recovery and RPD values

FORM III
LCMS LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: 05DEC2016A6A_116.d

Lab ID: LLCS 320-140400/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LLCS CONCENTRATION (ug/L)	LLCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.0401	0.0318 J	79	50-150	
Perfluorooctanoic acid (PFOA)	0.0198	0.0180 J	90	50-150	
Perfluorobutanesulfonic acid (PFBS)	0.0898	0.0805 J	90	50-150	

Column to be used to flag recovery and RPD values

FORM III
LCMS LOW LEVEL CONTROL STANDARD DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 05DEC2016A6A_117.d
 Lab ID: LLCSD 320-140400/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LLCSD CONCENTRATION (ug/L)	LLCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanesulfonic acid (PFOS)	0.0401	0.0315 J	79	0.7	50	50-150	
Perfluorooctanoic acid (PFOA)	0.0198	0.0185 J	93	3	50	50-150	
Perfluorobutanesulfonic acid (PFBS)	0.0898	0.0796 J	89	1	50	50-150	

Column to be used to flag recovery and RPD values

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-23917-1

SDG No.: _____

Lab File ID: 05DEC2016A6A_084.d

Lab Sample ID: MB 320-140280/1-A

Matrix: Water

Date Extracted: 12/02/2016 07:42

Instrument ID: A6

Date Analyzed: 12/07/2016 09:06

Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-140280/2-A	05DEC2016A6 A 085.d	12/07/2016 09:35
	LCSD 320-140280/3-A	05DEC2016A6 A 086.d	12/07/2016 10:05
WI-CV-1RW01-1116 DL	320-23917-1 DL	05DEC2016A6 A 087.d	12/07/2016 10:34
WI-CV-1FB01-1116	320-23917-2	05DEC2016A6 A 088.d	12/07/2016 11:04
WI-CV-1RW02-1116	320-23917-3	05DEC2016A6 A 089.d	12/07/2016 11:34
WI-CV-1FB02-1116	320-23917-4	05DEC2016A6 A 090.d	12/07/2016 12:03
WI-CV-1RW03-1116	320-23917-5	05DEC2016A6 A 091.d	12/07/2016 12:33
WI-CV-1FB03-1116	320-23917-6	05DEC2016A6 A 092.d	12/07/2016 13:02
WI-CV-1RW01-1116	320-23917-1	05DEC2016A6 A 093.d	12/07/2016 13:32
WI-CV-1RW04-1116	320-23917-7	05DEC2016A6 A 097.d	12/07/2016 15:30
WI-CV-1FB04-1116	320-23917-8	05DEC2016A6 A 098.d	12/07/2016 16:00
WI-CV-1RW05-1116	320-23917-9	05DEC2016A6 A 099.d	12/07/2016 16:30
WI-CV-1FB05-1116	320-23917-10	05DEC2016A6 A 100.d	12/07/2016 16:59
WI-CV-2RW01-1116	320-23917-11	05DEC2016A6 A 101.d	12/07/2016 17:29
WI-CV-2FB01-1116	320-23917-12	05DEC2016A6 A 102.d	12/07/2016 17:58
WI-CV-2FB02-1116	320-23917-14	05DEC2016A6 A 104.d	12/07/2016 18:58
WI-CV-2RW03-1116	320-23917-15	05DEC2016A6 A 105.d	12/07/2016 19:27
WI-CV-2RW02-1116	320-23917-13	05DEC2016A6 A 106.d	12/07/2016 19:57
WI-CV-2FB03-1116	320-23917-16	05DEC2016A6 A 110.d	12/07/2016 21:55
WI-CV-2RW04-1116	320-23917-17	05DEC2016A6 A 111.d	12/07/2016 22:25
WI-CV-2FB04-1116	320-23917-18	05DEC2016A6 A 112.d	12/07/2016 22:54
WI-CV-3RW01-1116	320-23917-19	05DEC2016A6 A 113.d	12/07/2016 23:24

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
SDG No.: _____
Lab File ID: 05DEC2016A6A_084.d Lab Sample ID: MB 320-140280/1-A
Matrix: Water Date Extracted: 12/02/2016 07:42
Instrument ID: A6 Date Analyzed: 12/07/2016 09:06
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
WI-CV-3FB01-1116	320-23917-20	05DEC2016A6 A 114.d	12/07/2016 23:54

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab File ID: 05DEC2016A6A_138.d Lab Sample ID: MB 320-140400/1-A
 Matrix: Water Date Extracted: 12/02/2016 15:27
 Instrument ID: A6 Date Analyzed: 12/08/2016 11:41
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LLCS 320-140400/2-A	05DEC2016A6 A 116.d	12/08/2016 00:53
	LLCSD 320-140400/3-A	05DEC2016A6 A 117.d	12/08/2016 01:23
WI-CV-3RW02-1116	320-23917-21	05DEC2016A6 A 118.d	12/08/2016 01:52
WI-CV-3FB02-1116	320-23917-22	05DEC2016A6 A 119.d	12/08/2016 02:22
WI-CV-3RW03-1116	320-23917-23	05DEC2016A6 A 123.d	12/08/2016 04:20
WI-CV-3FB03-1116	320-23917-24	05DEC2016A6 A 124.d	12/08/2016 04:50
WI-CV-3RW04-1116	320-23917-25	05DEC2016A6 A 125.d	12/08/2016 05:19
WI-CV-3FB04-1116	320-23917-26	05DEC2016A6 A 126.d	12/08/2016 05:49
WI-CV-3RW05-1116	320-23917-27	05DEC2016A6 A 127.d	12/08/2016 06:19
WI-CV-3FB05-1116	320-23917-28	05DEC2016A6 A 128.d	12/08/2016 06:48

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Instrument ID: A6 Calibration Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.1(mm) Calibration End Date: 12/05/2016 19:54
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
INITIAL CALIBRATION MEAN AREA AND MEAN RT	965911	20.05	2046916	20.67		
UPPER LIMIT	1448867	20.55	3070374	21.17		
LOWER LIMIT	482956	19.55	1023458	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCV 320-140688/9 CCVL	1025187	20.05	2358079	20.67		
ICV 320-140688/11	877210	20.05	2015178	20.67		
CCV 320-140943/2 CCVIS	906467	20.05	1947617	20.67		
MB 320-140280/1-A	837319	20.05	2249484	20.67		
LCS 320-140280/2-A	878576	20.05	1939291	20.67		
LCSD 320-140280/3-A	851824	20.05	1841068	20.67		
320-23917-1 DL	WI-CV-1RW01-1116 DL	164221Q	469605Q	20.67		
320-23917-2	WI-CV-1FB01-1116	880256	2317930	20.67		
320-23917-3	WI-CV-1RW02-1116	915612	2490666	20.67		
320-23917-4	WI-CV-1FB02-1116	874651	2345309	20.67		
320-23917-5	WI-CV-1RW03-1116	809603	2261398	20.67		
320-23917-6	WI-CV-1FB03-1116	965788	2376641	20.67		
320-23917-1	WI-CV-1RW01-1116	734718	2311386	20.67		
CCV 320-140943/16 CCVIS		819185	1762144	20.67		
CCV 320-140945/16 CCVIS		819185	1762144	20.67		
320-23917-7	WI-CV-1RW04-1116	747317	2301619	20.67		
320-23917-8	WI-CV-1FB04-1116	824997	2275605	20.67		
320-23917-9	WI-CV-1RW05-1116	840942	2233743	20.67		
320-23917-10	WI-CV-1FB05-1116	838291	2298985	20.67		
320-23917-11	WI-CV-2RW01-1116	709899	1990413	20.67		
320-23917-12	WI-CV-2FB01-1116	720925	1970032	20.67		
320-23917-14	WI-CV-2FB02-1116	747447	2091990	20.67		
320-23917-15	WI-CV-2RW03-1116	681096	1933726	20.67		
320-23917-13	WI-CV-2RW02-1116	764157	2223513	20.67		
CCV 320-140945/29 CCVIS		825149	1824739	20.67		
CCV 320-140946/29 CCVIS		825149	1824739	20.67		
320-23917-16	WI-CV-2FB03-1116	793639	2230807	20.67		

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Instrument ID: A6 Calibration Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.1(mm) Calibration End Date: 12/05/2016 19:54
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
INITIAL CALIBRATION MEAN AREA AND MEAN RT	965911	20.05	2046916	20.67		
UPPER LIMIT	1448867	20.55	3070374	21.17		
LOWER LIMIT	482956	19.55	1023458	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-23917-17	WI-CV-2RW04-1116	648087	20.04	1955336	20.67	
320-23917-18	WI-CV-2FB04-1116	737940	20.04	2040614	20.66	
320-23917-19	WI-CV-3RW01-1116	681732	20.04	1951241	20.66	
320-23917-20	WI-CV-3FB01-1116	766412	20.04	1880853	20.66	
LLCS 320-140400/2-A		827196	20.04	2275824	20.66	
LLCSD 320-140400/3-A		830936	20.05	2269539	20.67	
320-23917-21	WI-CV-3RW02-1116	728502	20.04	2037218	20.66	
320-23917-22	WI-CV-3FB02-1116	869080	20.04	2386910	20.66	
CCV 320-140946/42 CCVIS		815069	20.04	1721192	20.67	
CCV 320-140947/42 CCVIS		815069	20.04	1721192	20.67	
320-23917-23	WI-CV-3RW03-1116	790761	20.04	2168020	20.66	
320-23917-24	WI-CV-3FB03-1116	722199	20.04	1919881	20.66	
320-23917-25	WI-CV-3RW04-1116	708716	20.04	1947937	20.66	
320-23917-26	WI-CV-3FB04-1116	718627	20.04	1923117	20.66	
320-23917-27	WI-CV-3RW05-1116	657718	20.04	1861489	20.66	
320-23917-28	WI-CV-3FB05-1116	773809	20.04	2146082	20.66	
CCV 320-140947/55 CCVIS		852422	20.04	1761773	20.67	
CCV 320-140948/55 CCVIS		852422	20.04	1761773	20.67	
MB 320-140400/1-A		730789	20.05	1996434	20.67	
CCV 320-140948/101 CCVIS		907626	20.04	1887289	20.66	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140943/2 Date Analyzed: 12/07/2016 07:26
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_081.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	906467	20.05	1947617	20.67		
UPPER LIMIT	1269054	20.55	2726664	21.17		
LOWER LIMIT	634527	19.55	1363332	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-140280/1-A		837319	20.05	2249484	20.67	
LCS 320-140280/2-A		878576	20.05	1939291	20.67	
LCSD 320-140280/3-A		851824	20.05	1841068	20.67	
320-23917-1 DL	WI-CV-1RW01-1116 DL	164221Q	20.05	469605Q	20.67	
320-23917-2	WI-CV-1FB01-1116	880256	20.05	2317930	20.67	
320-23917-3	WI-CV-1RW02-1116	915612	20.05	2490666	20.67	
320-23917-4	WI-CV-1FB02-1116	874651	20.05	2345309	20.67	
320-23917-5	WI-CV-1RW03-1116	809603	20.05	2261398	20.67	
320-23917-6	WI-CV-1FB03-1116	965788	20.05	2376641	20.67	
320-23917-1	WI-CV-1RW01-1116	734718	20.04	2311386	20.67	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140943/16 Date Analyzed: 12/07/2016 14:31
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_095.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	819185	20.05	1762144	20.67		
UPPER LIMIT	1146859	20.55	2467002	21.17		
LOWER LIMIT	573430	19.55	1233501	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-140280/1-A		837319	20.05	2249484	20.67	
LCS 320-140280/2-A		878576	20.05	1939291	20.67	
LCSD 320-140280/3-A		851824	20.05	1841068	20.67	
320-23917-1 DL	WI-CV-1RW01-1116 DL	164221Q	20.05	469605Q	20.67	
320-23917-2	WI-CV-1FB01-1116	880256	20.05	2317930	20.67	
320-23917-3	WI-CV-1RW02-1116	915612	20.05	2490666	20.67	
320-23917-4	WI-CV-1FB02-1116	874651	20.05	2345309	20.67	
320-23917-5	WI-CV-1RW03-1116	809603	20.05	2261398	20.67	
320-23917-6	WI-CV-1FB03-1116	965788	20.05	2376641	20.67	
320-23917-1	WI-CV-1RW01-1116	734718	20.04	2311386	20.67	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140945/16 Date Analyzed: 12/07/2016 14:31
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_095.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	819185	20.05	1762144	20.67		
UPPER LIMIT	1146859	20.55	2467002	21.17		
LOWER LIMIT	573430	19.55	1233501	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-23917-7	WI-CV-1RW04-1116	747317	20.05	2301619	20.67	
320-23917-8	WI-CV-1FB04-1116	824997	20.05	2275605	20.67	
320-23917-9	WI-CV-1RW05-1116	840942	20.05	2233743	20.67	
320-23917-10	WI-CV-1FB05-1116	838291	20.05	2298985	20.67	
320-23917-11	WI-CV-2RW01-1116	709899	20.05	1990413	20.67	
320-23917-12	WI-CV-2FB01-1116	720925	20.05	1970032	20.67	
320-23917-14	WI-CV-2FB02-1116	747447	20.05	2091990	20.67	
320-23917-15	WI-CV-2RW03-1116	681096	20.05	1933726	20.67	
320-23917-13	WI-CV-2RW02-1116	764157	20.05	2223513	20.67	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140945/29 Date Analyzed: 12/07/2016 20:56
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_108.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	825149	20.05	1824739	20.67		
UPPER LIMIT	1155209	20.55	2554635	21.17		
LOWER LIMIT	577604	19.55	1277317	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-23917-7	WI-CV-1RW04-1116	747317	20.05	2301619	20.67	
320-23917-8	WI-CV-1FB04-1116	824997	20.05	2275605	20.67	
320-23917-9	WI-CV-1RW05-1116	840942	20.05	2233743	20.67	
320-23917-10	WI-CV-1FB05-1116	838291	20.05	2298985	20.67	
320-23917-11	WI-CV-2RW01-1116	709899	20.05	1990413	20.67	
320-23917-12	WI-CV-2FB01-1116	720925	20.05	1970032	20.67	
320-23917-14	WI-CV-2FB02-1116	747447	20.05	2091990	20.67	
320-23917-15	WI-CV-2RW03-1116	681096	20.05	1933726	20.67	
320-23917-13	WI-CV-2RW02-1116	764157	20.05	2223513	20.67	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140946/29 Date Analyzed: 12/07/2016 20:56
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_108.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	825149	20.05	1824739	20.67		
UPPER LIMIT	1155209	20.55	2554635	21.17		
LOWER LIMIT	577604	19.55	1277317	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-23917-16	WI-CV-2FB03-1116	793639	20.05	2230807	20.67	
320-23917-17	WI-CV-2RW04-1116	648087	20.04	1955336	20.67	
320-23917-18	WI-CV-2FB04-1116	737940	20.04	2040614	20.66	
320-23917-19	WI-CV-3RW01-1116	681732	20.04	1951241	20.66	
320-23917-20	WI-CV-3FB01-1116	766412	20.04	1880853	20.66	
LLCS 320-140400/2-A		827196	20.04	2275824	20.66	
LLCSD 320-140400/3-A		830936	20.05	2269539	20.67	
320-23917-21	WI-CV-3RW02-1116	728502	20.04	2037218	20.66	
320-23917-22	WI-CV-3FB02-1116	869080	20.04	2386910	20.66	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140946/42 Date Analyzed: 12/08/2016 03:21
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_121.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	815069	20.04	1721192	20.67		
UPPER LIMIT	1141097	20.54	2409669	21.17		
LOWER LIMIT	570548	19.54	1204834	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-23917-16	WI-CV-2FB03-1116	793639	20.05	2230807	20.67	
320-23917-17	WI-CV-2RW04-1116	648087	20.04	1955336	20.67	
320-23917-18	WI-CV-2FB04-1116	737940	20.04	2040614	20.66	
320-23917-19	WI-CV-3RW01-1116	681732	20.04	1951241	20.66	
320-23917-20	WI-CV-3FB01-1116	766412	20.04	1880853	20.66	
LLCS 320-140400/2-A		827196	20.04	2275824	20.66	
LLCSD 320-140400/3-A		830936	20.05	2269539	20.67	
320-23917-21	WI-CV-3RW02-1116	728502	20.04	2037218	20.66	
320-23917-22	WI-CV-3FB02-1116	869080	20.04	2386910	20.66	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140947/42 Date Analyzed: 12/08/2016 03:21
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_121.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	815069	20.04	1721192	20.67		
UPPER LIMIT	1141097	20.54	2409669	21.17		
LOWER LIMIT	570548	19.54	1204834	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-23917-23	WI-CV-3RW03-1116	790761	20.04	2168020	20.66	
320-23917-24	WI-CV-3FB03-1116	722199	20.04	1919881	20.66	
320-23917-25	WI-CV-3RW04-1116	708716	20.04	1947937	20.66	
320-23917-26	WI-CV-3FB04-1116	718627	20.04	1923117	20.66	
320-23917-27	WI-CV-3RW05-1116	657718	20.04	1861489	20.66	
320-23917-28	WI-CV-3FB05-1116	773809	20.04	2146082	20.66	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140947/55 Date Analyzed: 12/08/2016 09:46
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_134.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	852422	20.04	1761773	20.67		
UPPER LIMIT	1193391	20.54	2466482	21.17		
LOWER LIMIT	596695	19.54	1233241	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-23917-23	WI-CV-3RW03-1116	790761	20.04	2168020	20.66	
320-23917-24	WI-CV-3FB03-1116	722199	20.04	1919881	20.66	
320-23917-25	WI-CV-3RW04-1116	708716	20.04	1947937	20.66	
320-23917-26	WI-CV-3FB04-1116	718627	20.04	1923117	20.66	
320-23917-27	WI-CV-3RW05-1116	657718	20.04	1861489	20.66	
320-23917-28	WI-CV-3FB05-1116	773809	20.04	2146082	20.66	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140948/55 Date Analyzed: 12/08/2016 09:46
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_134.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	852422	20.04	1761773	20.67		
UPPER LIMIT	1193391	20.54	2466482	21.17		
LOWER LIMIT	596695	19.54	1233241	20.17		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-140400/1-A		730789	20.05	1996434	20.67	

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
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Sample No.: CCV 320-140948/101 Date Analyzed: 12/08/2016 12:14
 Instrument ID: A6 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 05DEC2016A6A_139.d Heated Purge: (Y/N) N
 Calibration ID: 26888

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	907626	20.04	1887289	20.66		
UPPER LIMIT	1270676	20.54	2642205	21.16		
LOWER LIMIT	635338	19.54	1321102	20.16		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-140400/1-A	730789	20.05	1996434	20.67		

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 I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1RW01-1116 Lab Sample ID: 320-23917-1
 Matrix: Water Lab File ID: 05DEC2016A6A_093.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:25
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 269.1(mL) Date Analyzed: 12/07/2016 13:32
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.045	U M	0.056	0.045	0.014
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	111		70-130
STL00996	13C2 PFDA	112		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_093.d
 Lims ID: 320-23917-A-1-A
 Client ID: WI-CV-1RW01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 13:32:32 ALS Bottle#: 34 Worklist Smp#: 14
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-1-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:27:03 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 16:26:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.573	17.576	-0.003	1.000	366341	6.48	245
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	954554	11.1	30766
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	2550994	35.2	11961
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.368	0.0	1.000	1073975	12.0	136 M
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.047	-0.012		734718	10.0	18937
6 Perfluorooctanoic acid	413.0 > 369.0	20.035	20.047	-0.012	1.000	8715667	114.0	1729 E
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.394	20.619	-0.225	1.000	5091	0.0605	116 M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2311386	28.7	47999
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	9056	0.1087	134 M
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.462	0.0	1.000	719052	11.2	22577

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

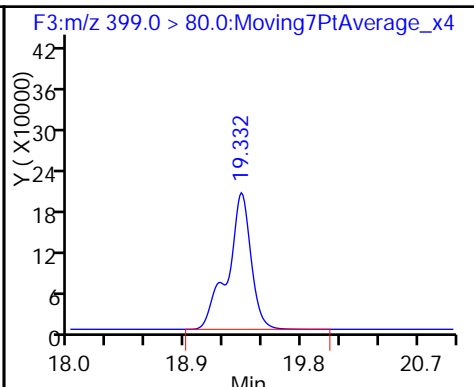
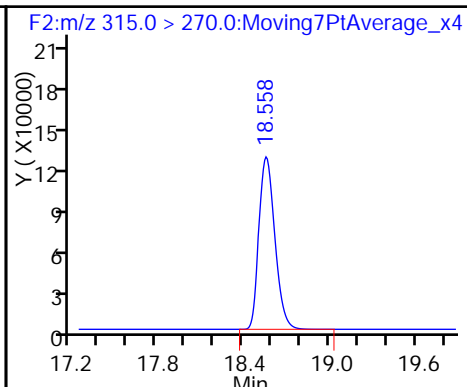
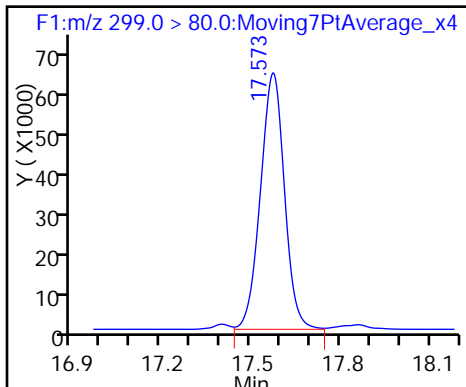
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_093.d
Injection Date: 07-Dec-2016 13:32:32 Instrument ID: A6
Lims ID: 320-23917-A-1-A Lab Sample ID: 320-23917-1
Client ID: WI-CV-1RW01-1116
Operator ID: CBW ALS Bottle#: 34 Worklist Smp#: 14
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

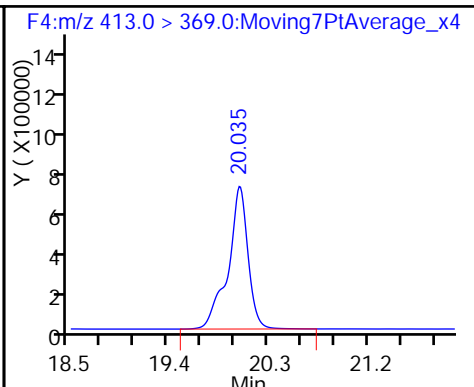
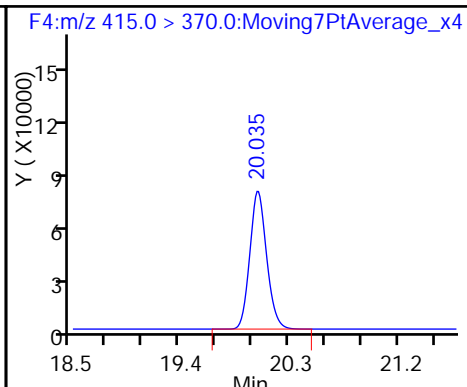
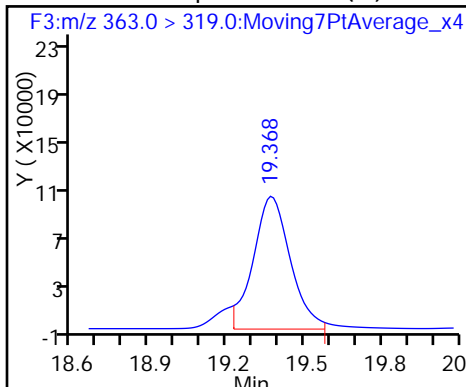
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid (M)

* 5 13C2-PFOA

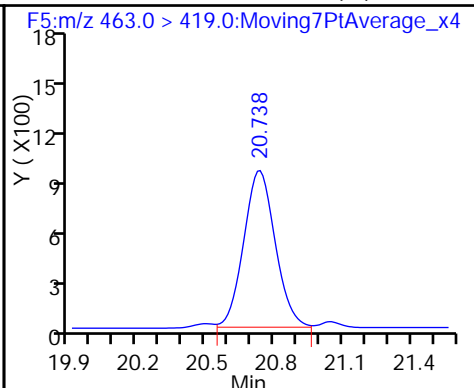
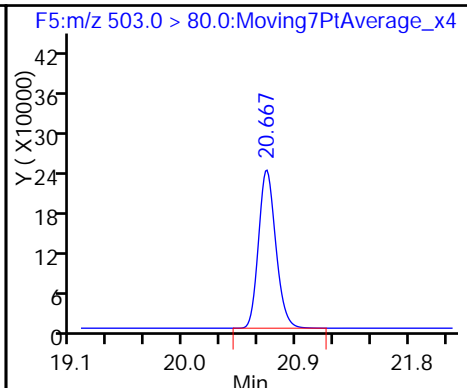
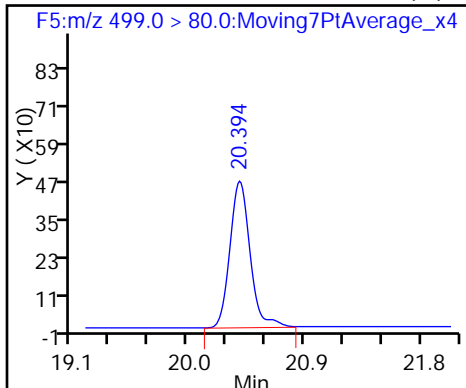
6 Perfluorooctanoic acid



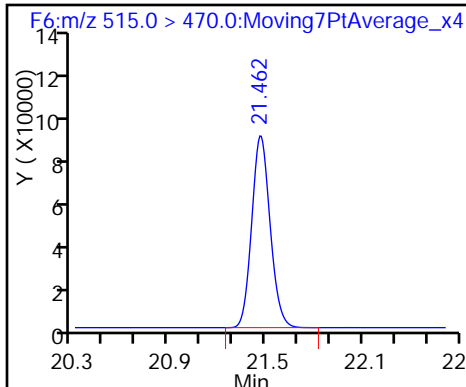
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_093.d
 Lims ID: 320-23917-A-1-A
 Client ID: WI-CV-1RW01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 13:32:32 ALS Bottle#: 34 Worklist Smp#: 14
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-1-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:27:03 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 16:26:49

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.1	111.37
\$ 10 13C2 PFDA	10.0	11.2	111.69

TestAmerica Sacramento

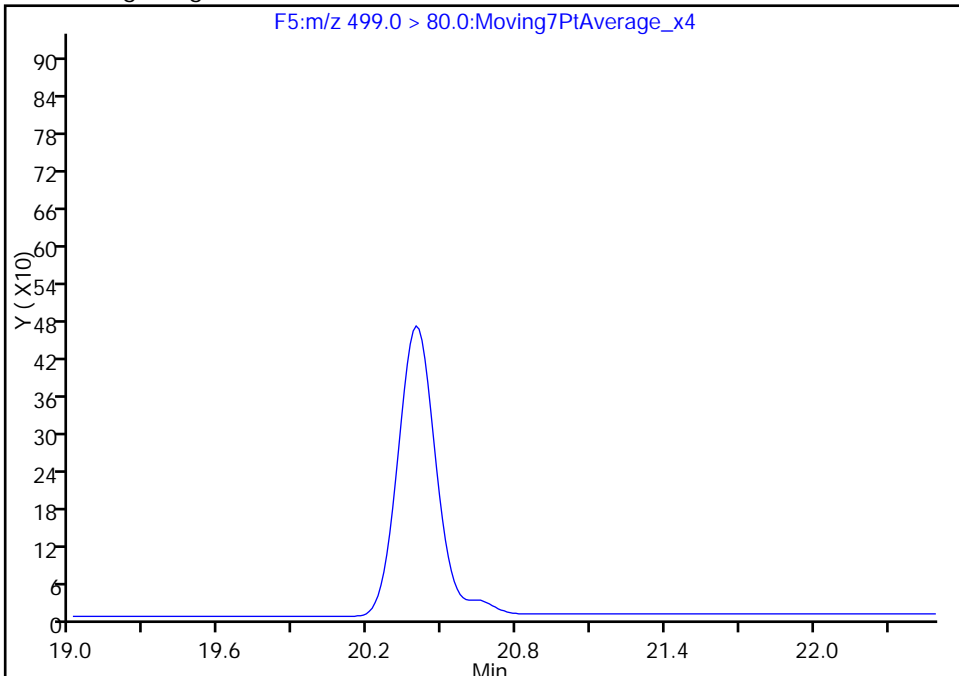
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_093.d
Injection Date: 07-Dec-2016 13:32:32 Instrument ID: A6
Lims ID: 320-23917-A-1-A Lab Sample ID: 320-23917-1
Client ID: WI-CV-1RW01-1116
Operator ID: CBW ALS Bottle#: 34 Worklist Smp#: 14
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

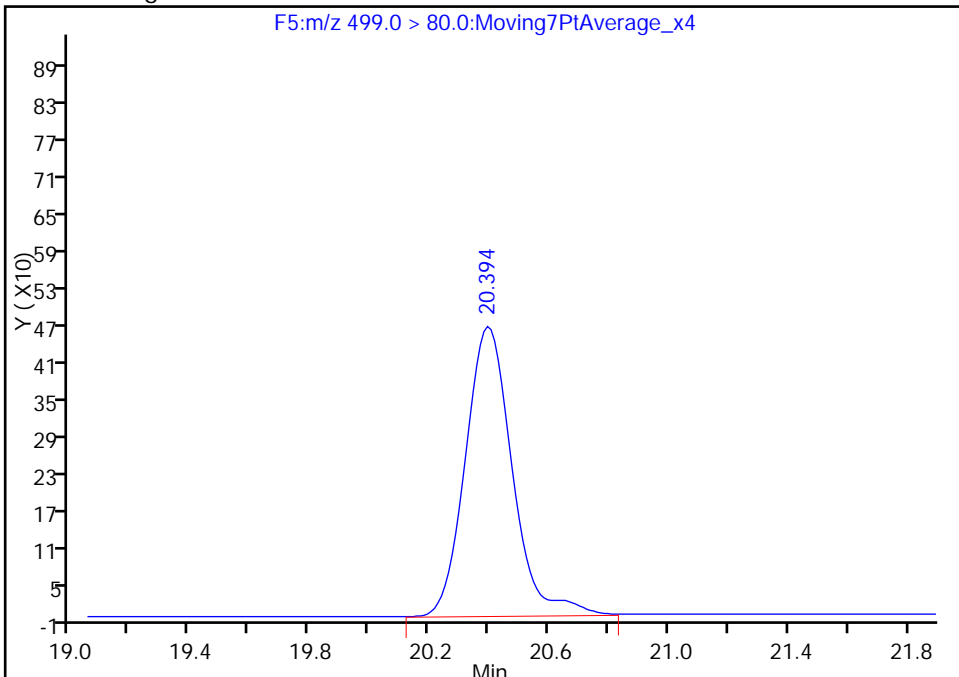
Not Detected
Expected RT: 20.62

Processing Integration Results



RT: 20.39
Area: 5091
Amount: 0.060508
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Dec-2016 15:34:37
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1RW01-1116 DL Lab Sample ID: 320-23917-1 DL
 Matrix: Water Lab File ID: 05DEC2016A6A_087.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:25
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 269.1(mL) Date Analyzed: 12/07/2016 10:34
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 5
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.44	D	0.14	0.11	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	108		70-130
STL00996	13C2 PFDA	103		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_087.d
 Lims ID: 320-23917-A-1-A
 Client ID: WI-CV-1RW01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 10:34:55 ALS Bottle#: 28 Worklist Smp#: 8
 Injection Vol: 10.0 ul Dil. Factor: 5.0000
 Sample Info: 320-23917-a-1-a 5X
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:20:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.576	17.576	0.0	1.000	65118	1.13	93.1
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	207439	2.17	6748
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	504022	6.86	10261
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.368	0.0	1.000	254661	2.55	137 M
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		164221	2.00	4307
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	2041306	23.9	834
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		469605	5.74	12470
9 Perfluorononanoic acid	463.0 > 419.0	20.726	20.738	-0.012	1.000	1754	0.0188	52.0 M
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.462	0.009	1.000	148484	2.06	4807

QC Flag Legend

Review Flags

M - Manually Integrated

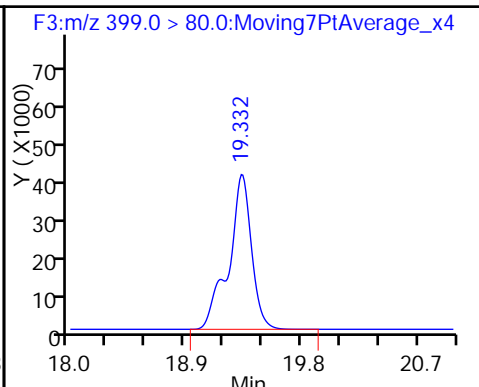
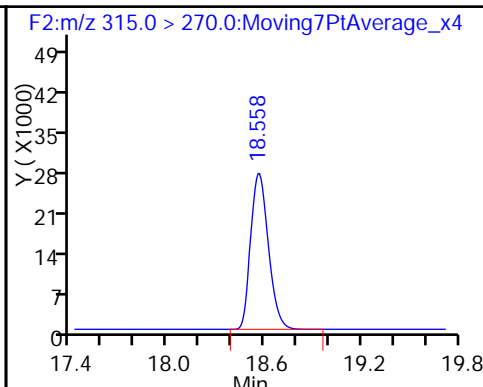
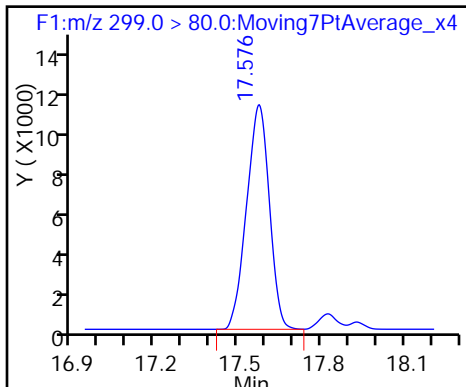
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_087.d
Injection Date: 07-Dec-2016 10:34:55 Instrument ID: A6
Lims ID: 320-23917-A-1-A Lab Sample ID: 320-23917-1
Client ID: WI-CV-1RW01-1116
Operator ID: CBW ALS Bottle#: 28 Worklist Smp#: 8
Injection Vol: 10.0 ul Dil. Factor: 5.0000
Method: 537_A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

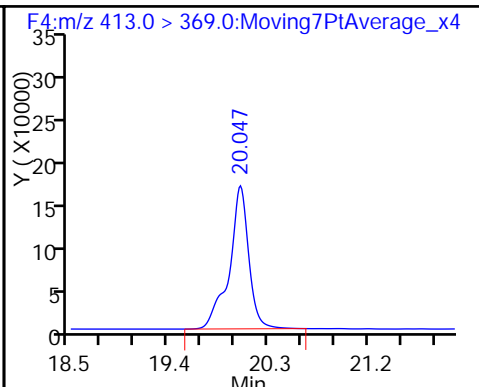
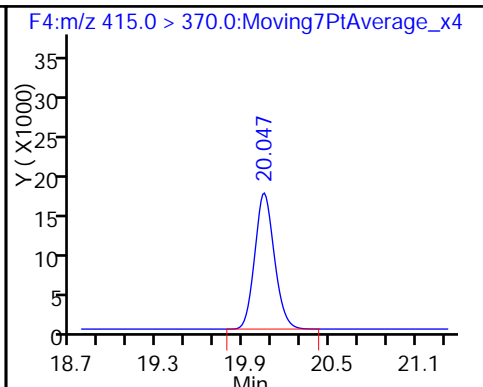
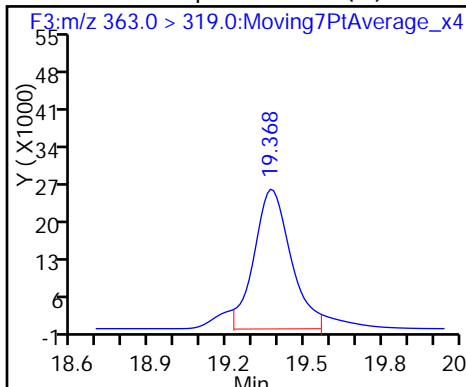
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid (M)

* 5 13C2-PFOA

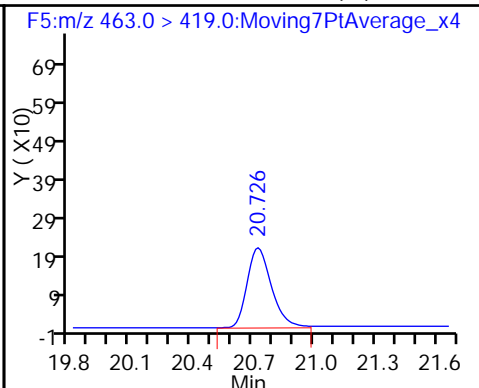
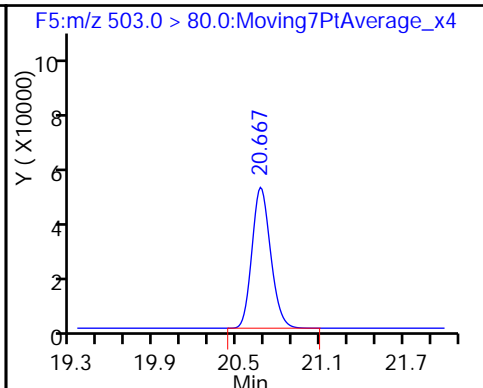
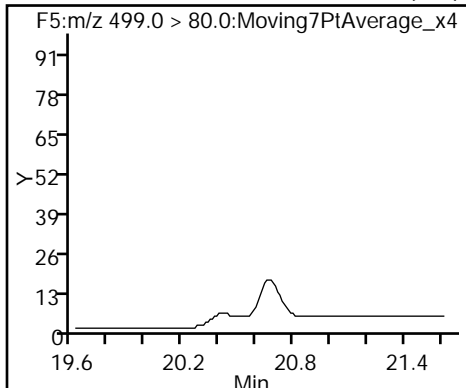
6 Perfluorooctanoic acid



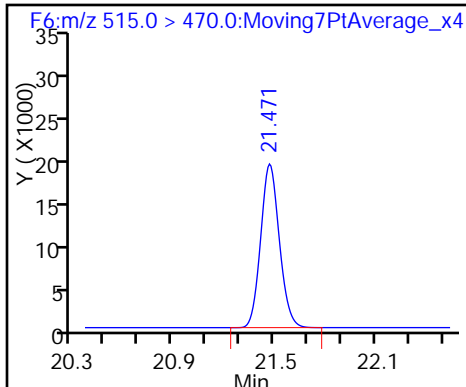
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_087.d
 Lims ID: 320-23917-A-1-A
 Client ID: WI-CV-1RW01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 10:34:55 ALS Bottle#: 28 Worklist Smp#: 8
 Injection Vol: 10.0 ul Dil. Factor: 5.0000
 Sample Info: 320-23917-a-1-a 5X
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:20:18

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	2.17	108.28
\$ 10 13C2 PFDA	10.0	2.06	103.18

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1FB01-1116 Lab Sample ID: 320-23917-2
 Matrix: Water Lab File ID: 05DEC2016A6A_088.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:25
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 278.9(mL) Date Analyzed: 12/07/2016 11:04
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.022	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.099	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	103		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_088.d
 Lims ID: 320-23917-A-2-A
 Client ID: WI-CV-1FB01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 11:04:33 ALS Bottle#: 29 Worklist Smp#: 9
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-2-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:26:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1117561	10.9	36248
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		880256	10.0	23228
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.070	20.047	0.023	1.000	159	0.001736	0.2	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2317930	28.7	60368
9 Perfluorononanoic acid								
463.0 > 419.0	20.750	20.738	0.012	1.000	8891	0.0891	331	
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.462	0.009	1.000	797700	10.3	25036

QC Flag Legend

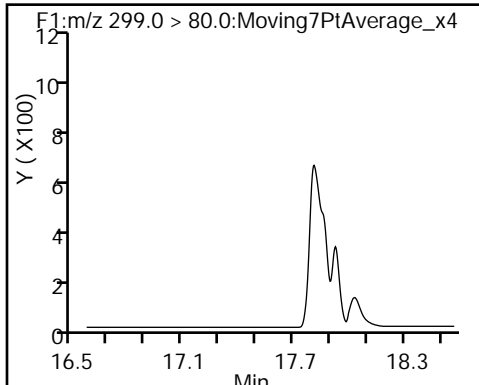
Review Flags

M - Manually Integrated

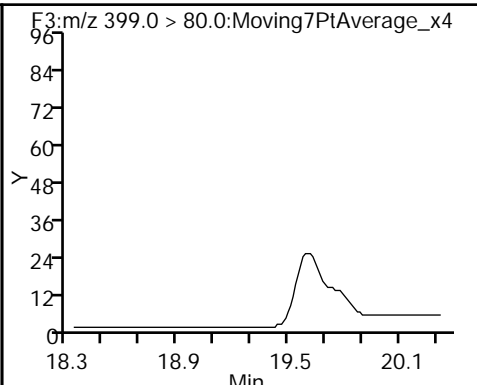
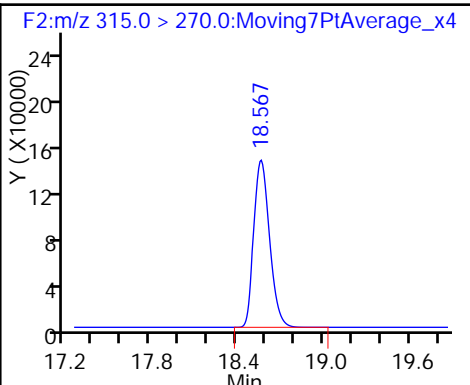
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_088.d
Injection Date: 07-Dec-2016 11:04:33 Instrument ID: A6
Lims ID: 320-23917-A-2-A Lab Sample ID: 320-23917-2
Client ID: WI-CV-1FB01-1116
Operator ID: CBW ALS Bottle#: 29 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

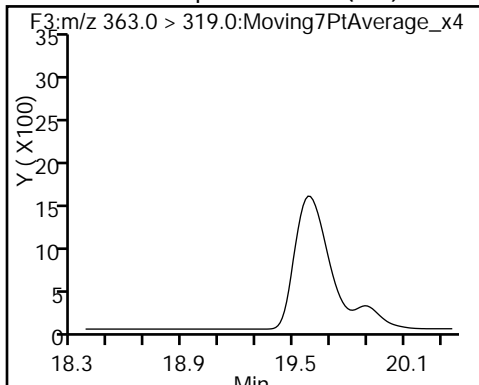
1 Perfluorobutanesulfonic acid (ND) \$ 2 13C2 PFHxA



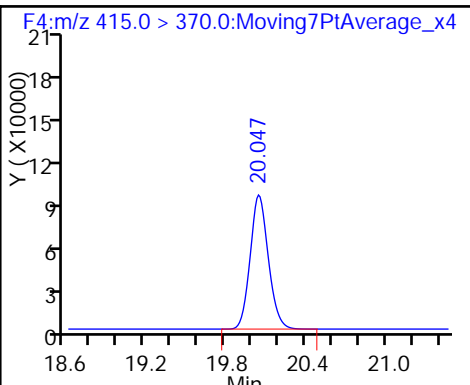
3 Perfluorohexanesulfonic acid (ND)



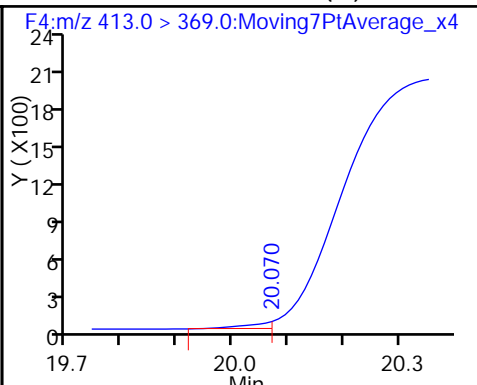
4 Perfluoroheptanoic acid (ND)



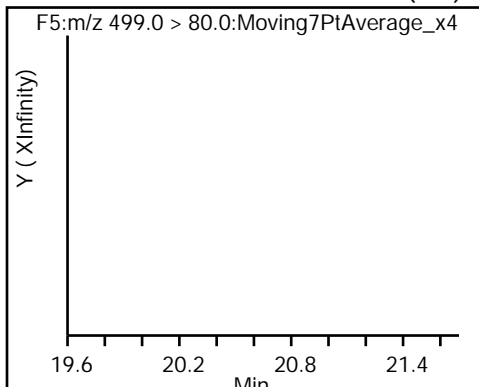
* 5 13C2-PFOA



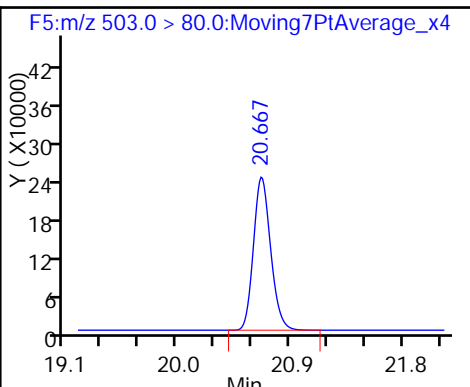
6 Perfluorooctanoic acid (M)



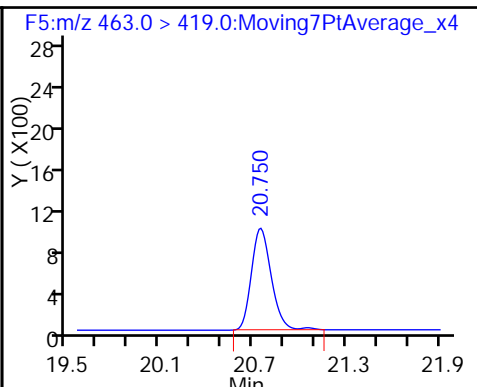
7 Perfluorooctane sulfonic acid (ND)



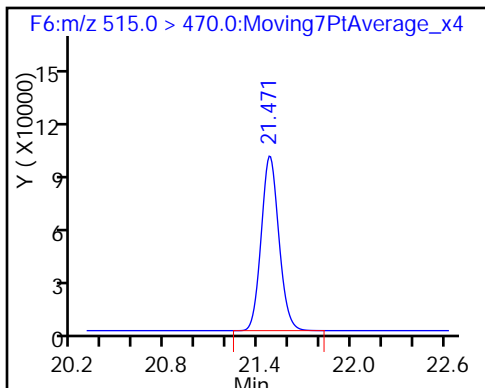
* 8 13C4 PFOS



9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_088.d
 Lims ID: 320-23917-A-2-A
 Client ID: WI-CV-1FB01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 11:04:33 ALS Bottle#: 29 Worklist Smp#: 9
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-2-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:26:50

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.9	108.83
\$ 10 13C2 PFDA	10.0	10.3	103.42

TestAmerica Sacramento

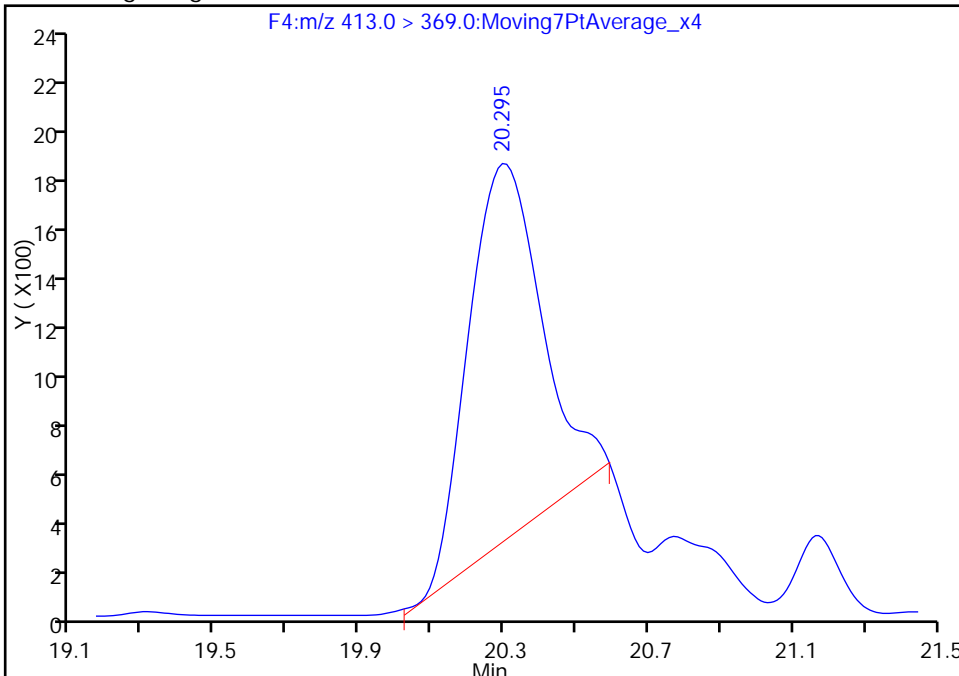
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_088.d
Injection Date: 07-Dec-2016 11:04:33 Instrument ID: A6
Lims ID: 320-23917-A-2-A Lab Sample ID: 320-23917-2
Client ID: WI-CV-1FB01-1116
Operator ID: CBW ALS Bottle#: 29 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

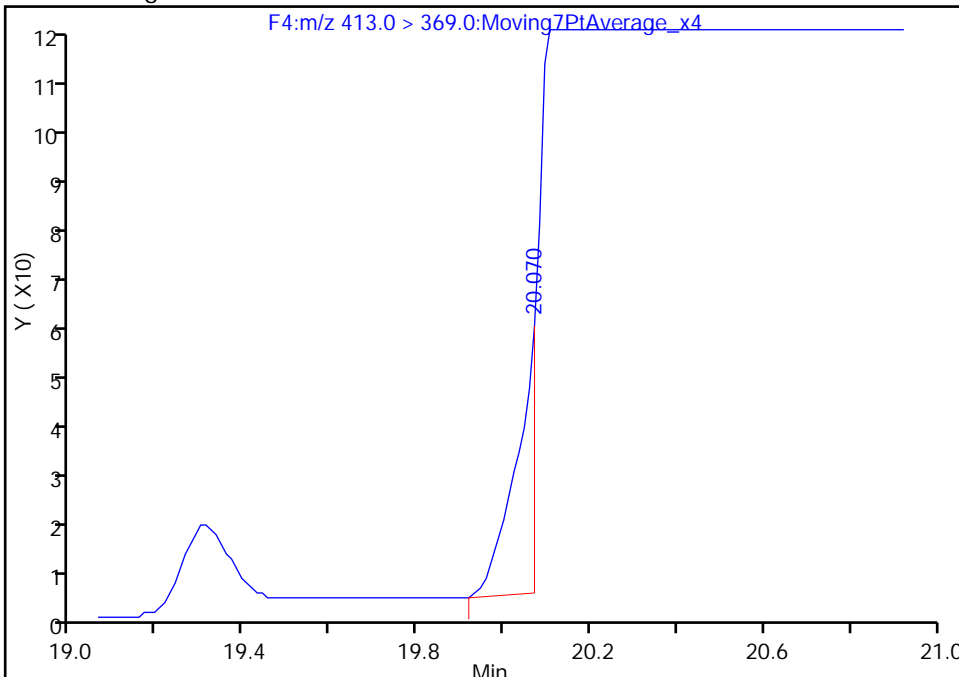
RT: 20.30
Area: 21412
Amount: 0.233796
Amount Units: ng/ml

Processing Integration Results



RT: 20.07
Area: 159
Amount: 0.001736
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Dec-2016 15:26:50
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1RW02-1116 Lab Sample ID: 320-23917-3
 Matrix: Water Lab File ID: 05DEC2016A6A_089.d
 Analysis Method: 537 Date Collected: 11/28/2016 14:05
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 279.3(mL) Date Analyzed: 12/07/2016 11:34
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.13	0.098	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	96		70-130
STL00996	13C2 PFDA	89		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_089.d
 Lims ID: 320-23917-A-3-A
 Client ID: WI-CV-1RW02-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 11:34:08 ALS Bottle#: 30 Worklist Smp#: 10
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-3-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:28:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1021092	9.56	32837
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.344	19.332	0.012	1.000	1189	0.0152	7.0	M
4 Perfluoroheptanoic acid								M
363.0 > 319.0	19.415	19.368	0.047	1.000	532	0.004782	0.6	M
* 5 13C2-PFOA								
415.0 > 370.0	20.047	20.047	0.0		915612	10.0	23882	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.070	20.047	0.023	1.000	5744	0.0603	2.0	M
* 8 13C4 PFOS								
503.0 > 80.0	20.667	20.667	0.0		2490666	28.7	51975	
9 Perfluorononanoic acid								
463.0 > 419.0	20.750	20.738	0.012	1.000	10634	0.1024	43.1	
\$ 10 13C2 PFDA								
515.0 > 470.0	21.471	21.462	0.009	1.000	716973	8.94	22523	

QC Flag Legend

Review Flags

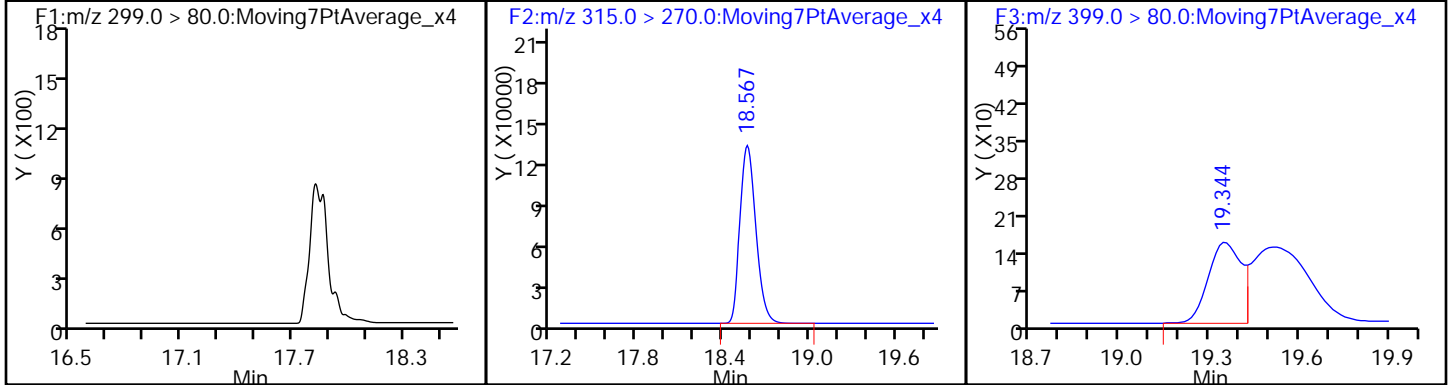
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_089.d
Injection Date: 07-Dec-2016 11:34:08 Instrument ID: A6
Lims ID: 320-23917-A-3-A Lab Sample ID: 320-23917-3
Client ID: WI-CV-1RW02-1116
Operator ID: CBW ALS Bottle#: 30 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

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

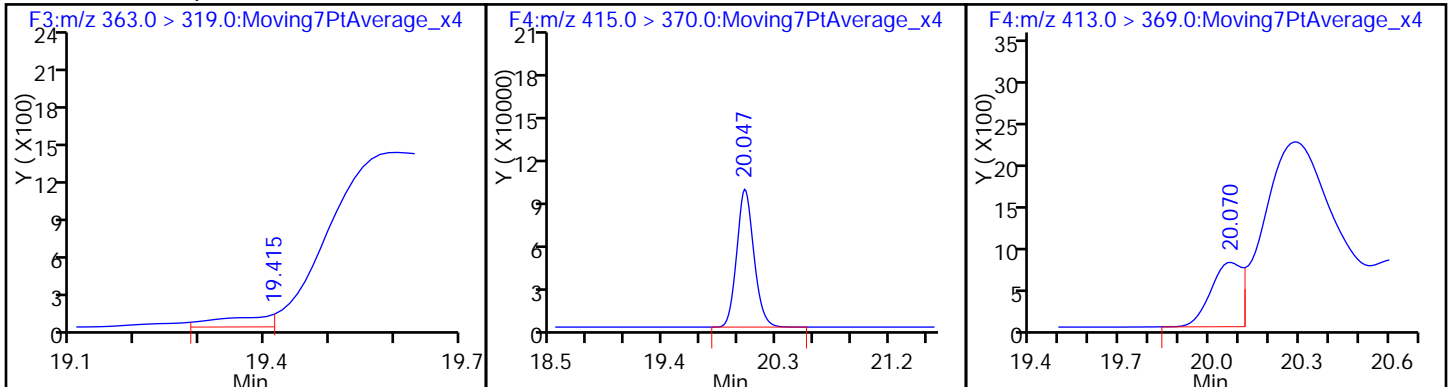
3 Perfluorohexanesulfonic acid (M)



4 Perfluoroheptanoic acid (M)

* 5 13C2-PFOA

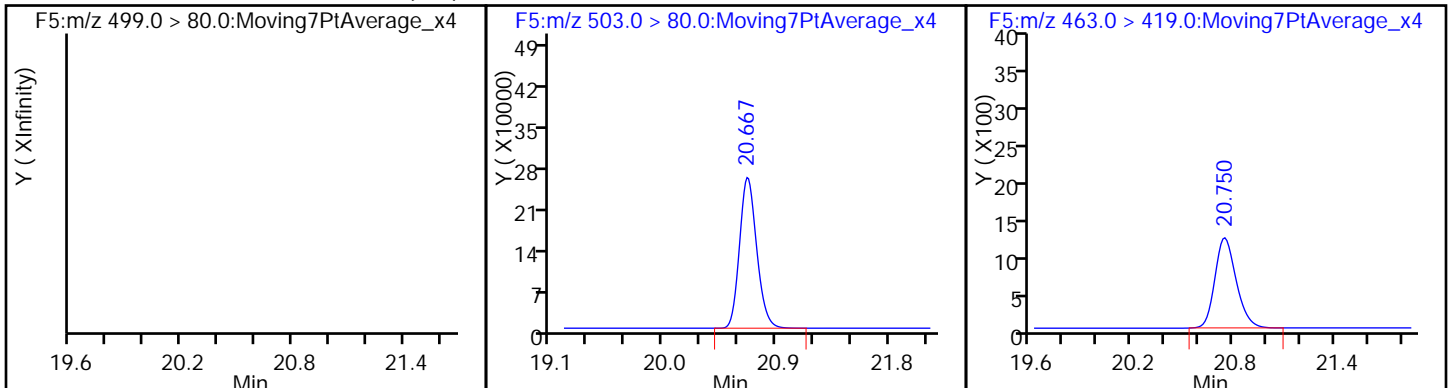
6 Perfluorooctanoic acid (M)



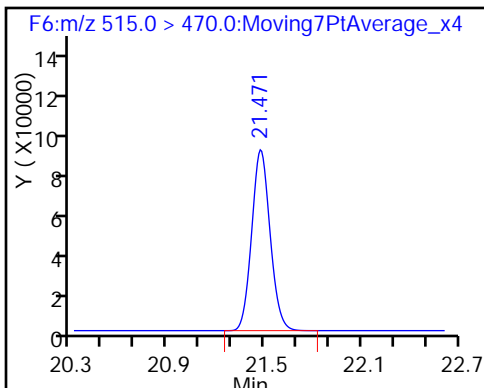
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_089.d
 Lims ID: 320-23917-A-3-A
 Client ID: WI-CV-1RW02-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 11:34:08 ALS Bottle#: 30 Worklist Smp#: 10
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-3-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:28:47

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.56	95.60
\$ 10 13C2 PFDA	10.0	8.94	89.36

TestAmerica Sacramento

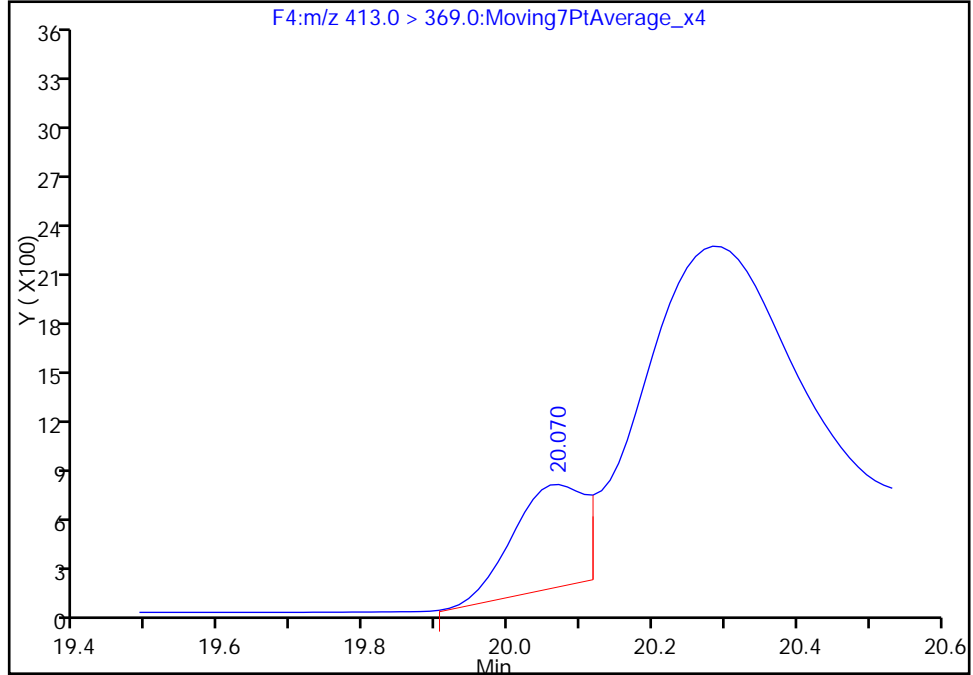
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_089.d
Injection Date: 07-Dec-2016 11:34:08 Instrument ID: A6
Lims ID: 320-23917-A-3-A Lab Sample ID: 320-23917-3
Client ID: WI-CV-1RW02-1116
Operator ID: CBW ALS Bottle#: 30 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

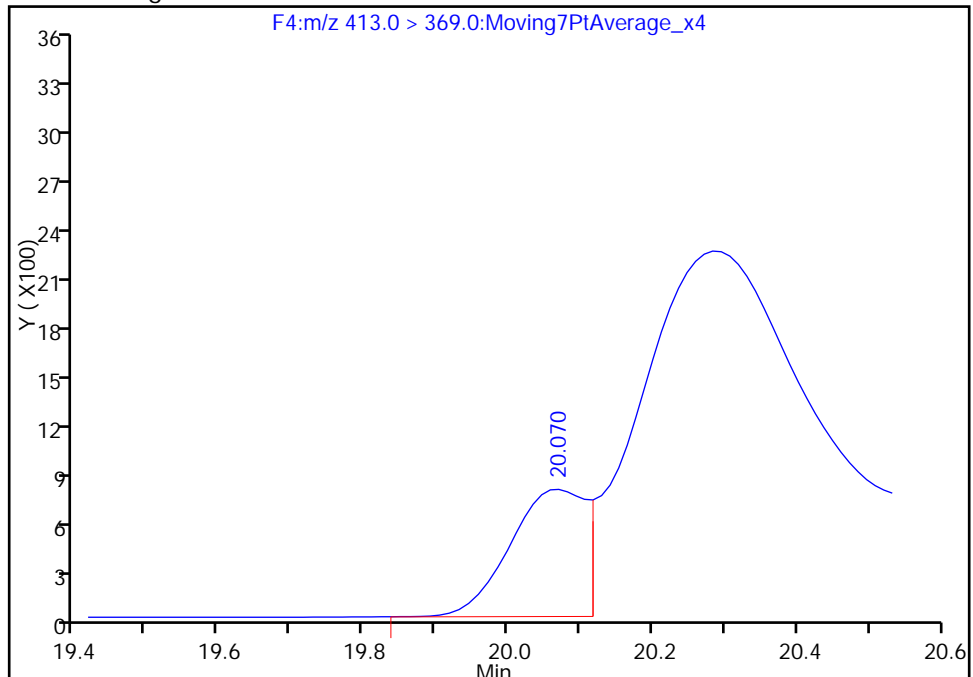
RT: 20.07
Area: 4470
Amount: 0.046923
Amount Units: ng/ml

Processing Integration Results



RT: 20.07
Area: 5744
Amount: 0.060297
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Dec-2016 15:28:47
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1FB02-1116 Lab Sample ID: 320-23917-4
 Matrix: Water Lab File ID: 05DEC2016A6A_090.d
 Analysis Method: 537 Date Collected: 11/28/2016 14:04
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 278.7(mL) Date Analyzed: 12/07/2016 12:03
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.022	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.099	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	98		70-130
STL00996	13C2 PFDA	105		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_090.d
 Lims ID: 320-23917-A-4-A
 Client ID: WI-CV-1FB02-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 12:03:45 ALS Bottle#: 31 Worklist Smp#: 11
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-4-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:30:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.586	17.576	0.010	1.000	3597	0.0627	9.7	
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	995719	9.76	32084	
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.332	0.012	1.000	3507	0.0478	17.6	M
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		874651	10.0	22928	
6 Perfluorooctanoic acid	413.0 > 369.0	20.058	20.047	0.011	1.000	5314	0.0584	2.0	M
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.655	20.619	0.036	1.000	5971	0.0699	213	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2345309	28.7	61371	
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	10855	0.1094	200	
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.462	0.009	1.000	807597	10.5	25345	

QC Flag Legend

Review Flags

M - Manually Integrated

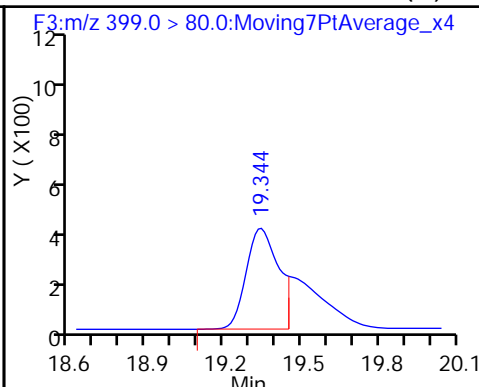
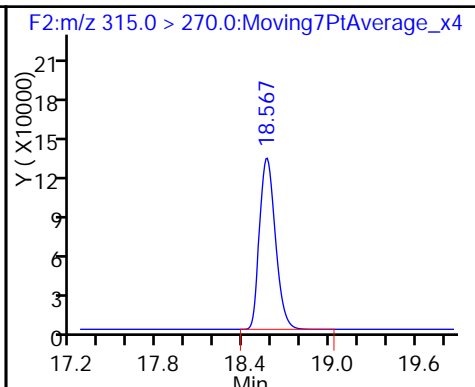
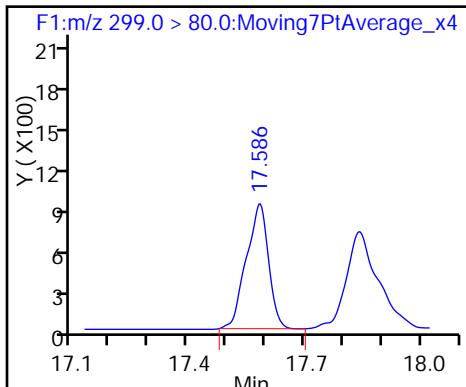
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_090.d
Injection Date: 07-Dec-2016 12:03:45 Instrument ID: A6
Lims ID: 320-23917-A-4-A Lab Sample ID: 320-23917-4
Client ID: WI-CV-1FB02-1116
Operator ID: CBW ALS Bottle#: 31 Worklist Smp#: 11
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

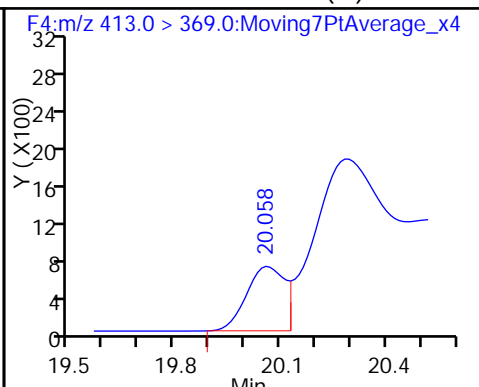
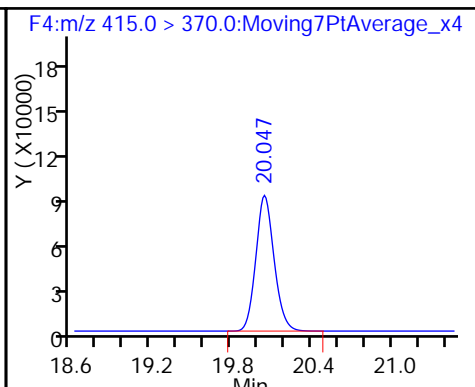
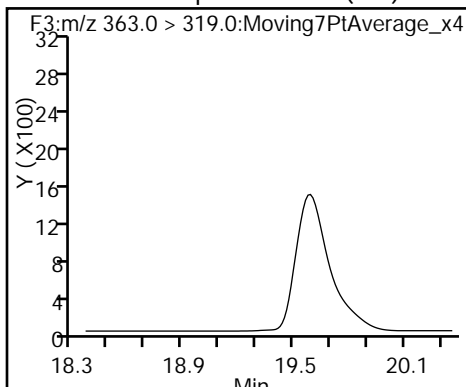
3 Perfluorohexanesulfonic acid (M)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

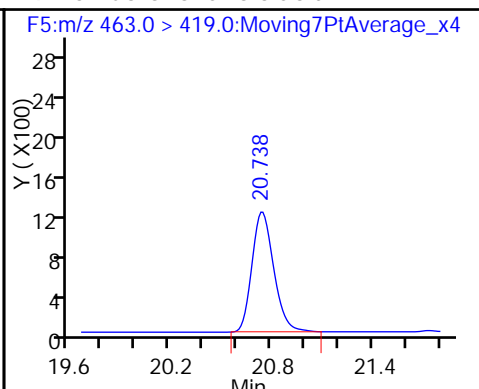
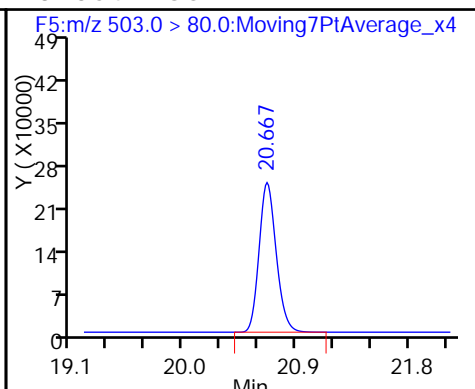
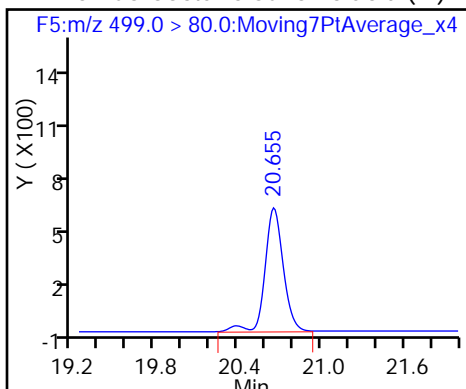
6 Perfluorooctanoic acid (M)



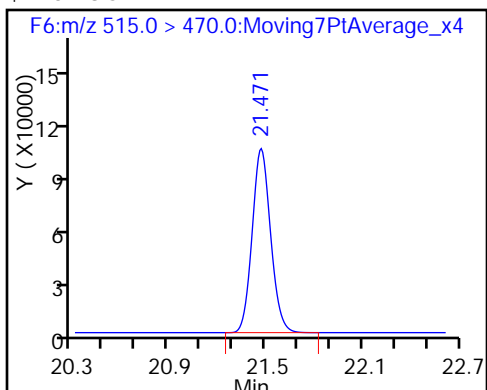
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_090.d
 Lims ID: 320-23917-A-4-A
 Client ID: WI-CV-1FB02-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 12:03:45 ALS Bottle#: 31 Worklist Smp#: 11
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-4-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:30:02

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.76	97.59
\$ 10 13C2 PFDA	10.0	10.5	105.37

TestAmerica Sacramento

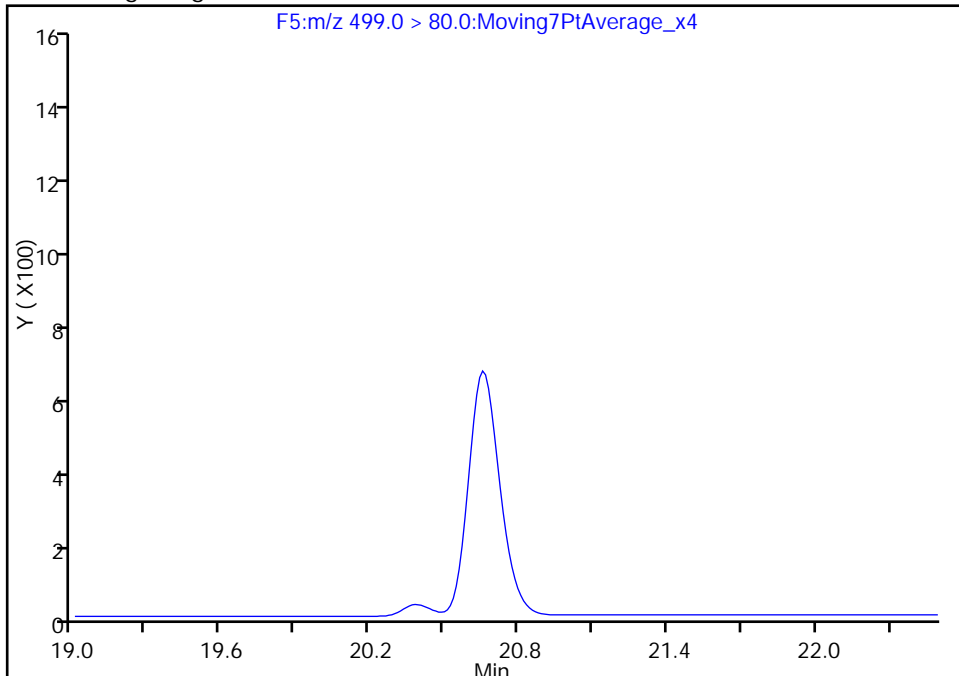
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Injection Date: 07-Dec-2016 12:03:45 Instrument ID: A6
Lims ID: 320-23917-A-4-A Lab Sample ID: 320-23917-4
Client ID: WI-CV-1FB02-1116
Operator ID: CBW ALS Bottle#: 31 Worklist Smp#: 11
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

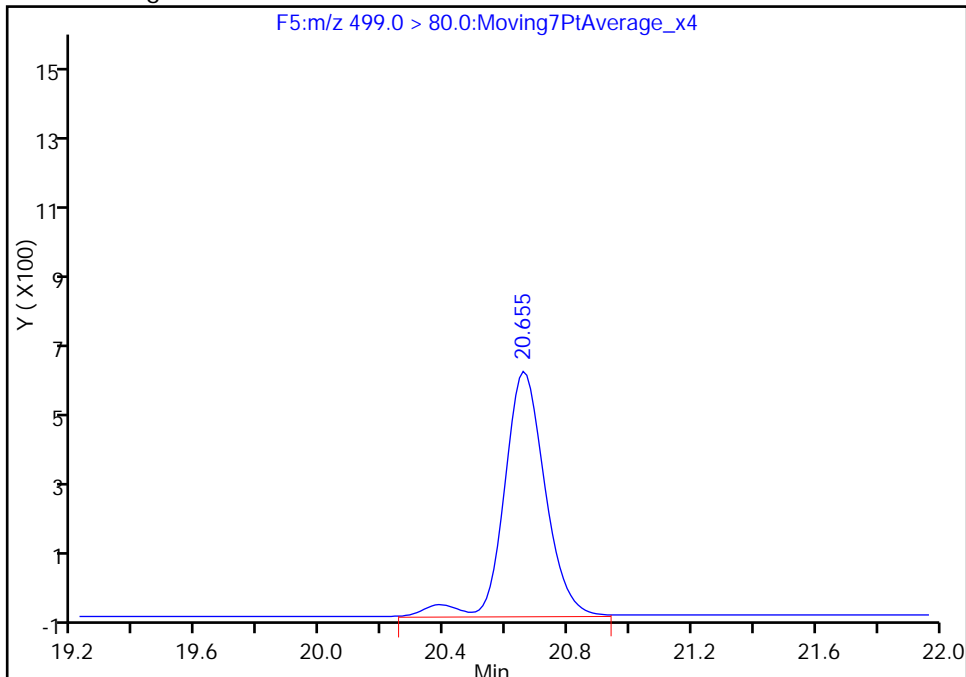
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.65
Area: 5971
Amount: 0.069941
Amount Units: ng/ml



Reviewer: barnettj, 07-Dec-2016 15:30:02
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

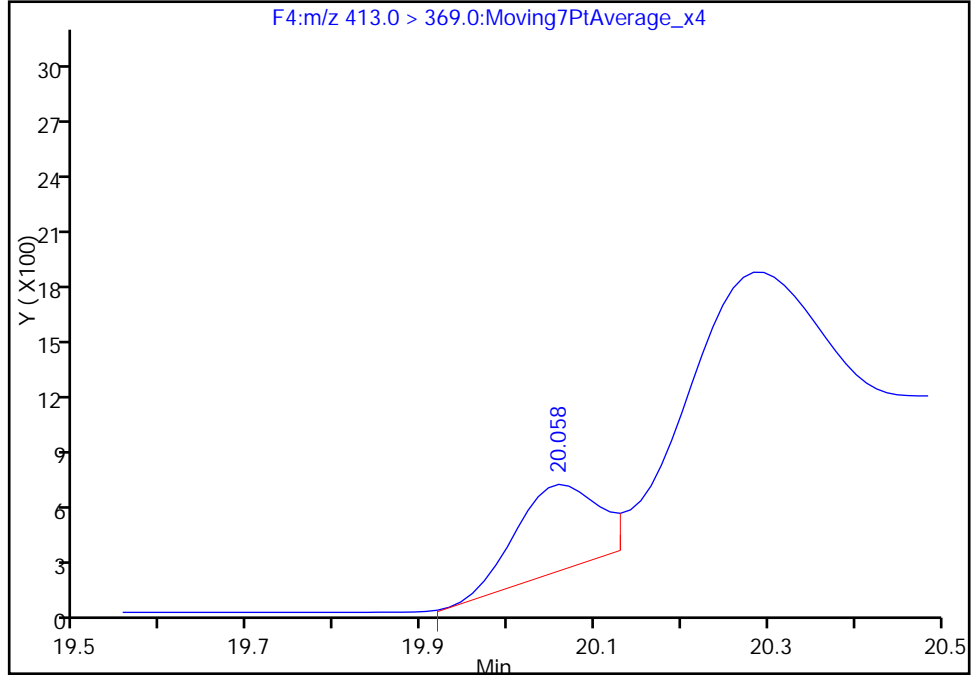
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Injection Date: 07-Dec-2016 12:03:45 Instrument ID: A6
Lims ID: 320-23917-A-4-A Lab Sample ID: 320-23917-4
Client ID: WI-CV-1FB02-1116
Operator ID: CBW ALS Bottle#: 31 Worklist Smp#: 11
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

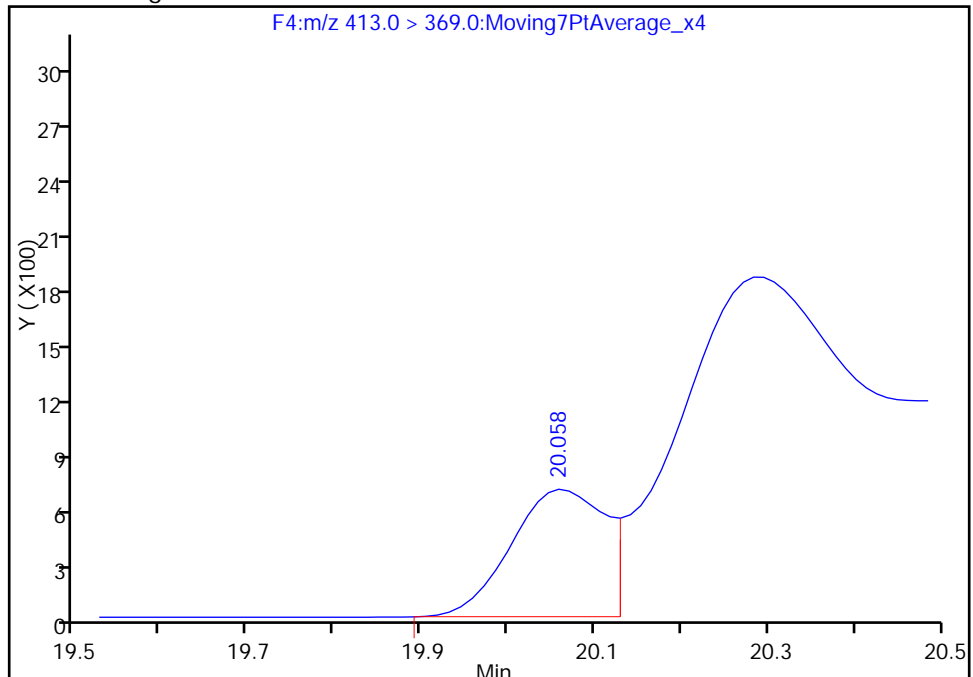
RT: 20.06
Area: 3166
Amount: 0.034791
Amount Units: ng/ml

Processing Integration Results



RT: 20.06
Area: 5314
Amount: 0.058395
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Dec-2016 15:30:02
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1RW03-1116 Lab Sample ID: 320-23917-5
 Matrix: Water Lab File ID: 05DEC2016A6A_091.d
 Analysis Method: 537 Date Collected: 11/28/2016 15:09
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 267.4 (mL) Date Analyzed: 12/07/2016 12:33
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.045	U	0.056	0.045	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0088
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	120		70-130
STL00996	13C2 PFDA	109		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_091.d
 Lims ID: 320-23917-A-5-A
 Client ID: WI-CV-1RW03-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 12:33:21 ALS Bottle#: 32 Worklist Smp#: 12
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-5-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:30:35

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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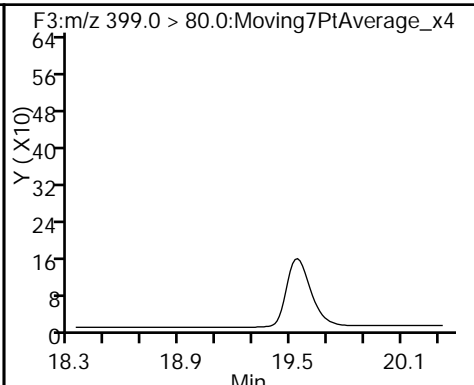
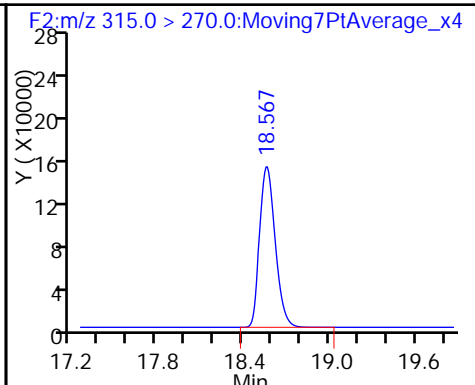
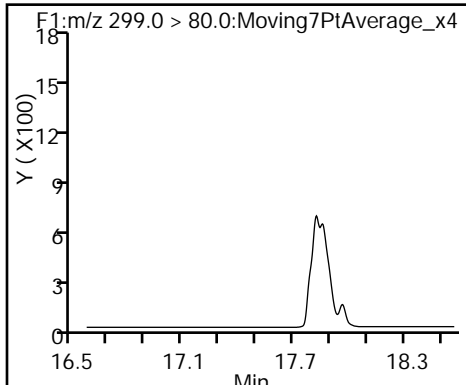
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1137687	12.0	37243
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		809603	10.0	21462
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2261398	28.7	59449
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	17324	0.1887	264
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.462	0.009	1.000	772637	10.9	24524

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_091.d
Injection Date: 07-Dec-2016 12:33:21 Instrument ID: A6
Lims ID: 320-23917-A-5-A Lab Sample ID: 320-23917-5
Client ID: WI-CV-1RW03-1116
Operator ID: CBW ALS Bottle#: 32 Worklist Smp#: 12
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

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

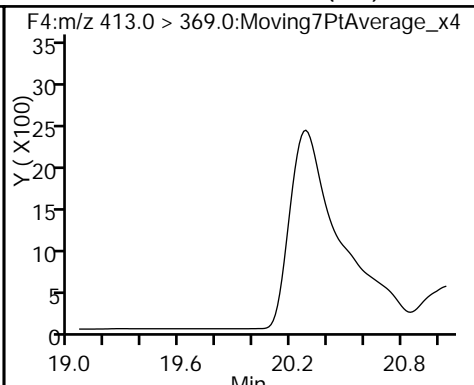
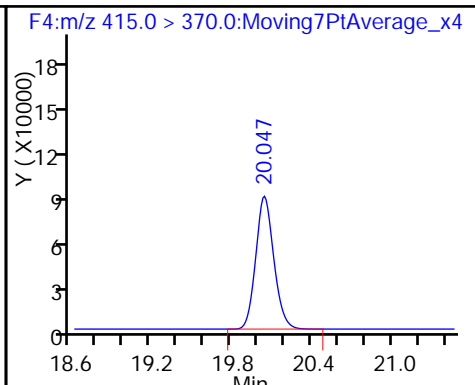
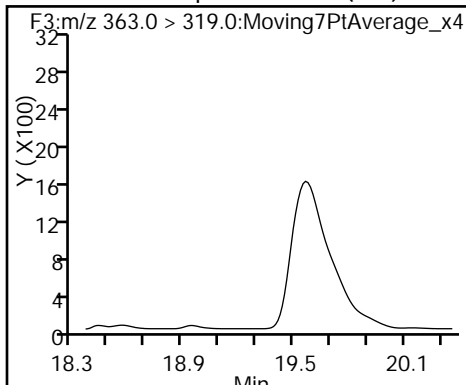
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

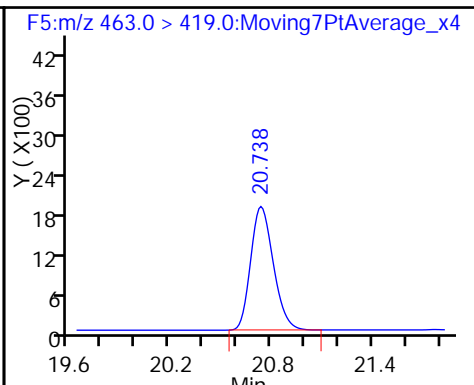
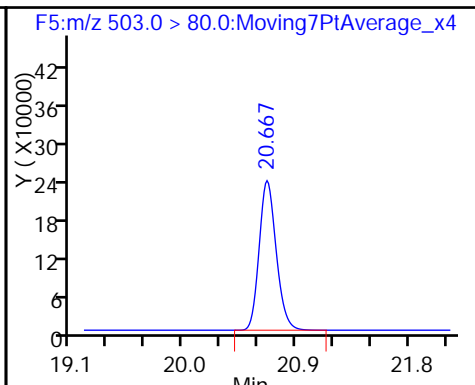
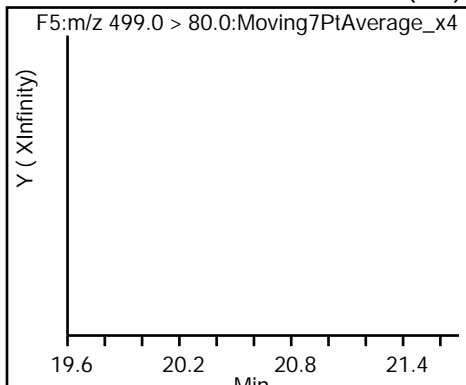
6 Perfluorooctanoic acid (ND)



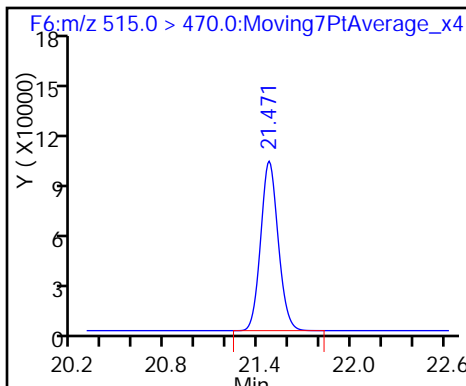
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_091.d
 Lims ID: 320-23917-A-5-A
 Client ID: WI-CV-1RW03-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 12:33:21 ALS Bottle#: 32 Worklist Smp#: 12
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-5-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:30:35

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	12.0	120.46
\$ 10 13C2 PFDA	10.0	10.9	108.91

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1FB03-1116 Lab Sample ID: 320-23917-6
 Matrix: Water Lab File ID: 05DEC2016A6A_092.d
 Analysis Method: 537 Date Collected: 11/28/2016 15:08
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 280.2 (mL) Date Analyzed: 12/07/2016 13:02
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.098	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	95		70-130
STL00996	13C2 PFDA	99		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_092.d
 Lims ID: 320-23917-A-6-A
 Client ID: WI-CV-1FB03-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 13:02:58 ALS Bottle#: 33 Worklist Smp#: 13
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-6-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:32:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	1065272	9.46	33935
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		965788	10.0	24996
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.070	20.047	0.023	1.000	512	0.005095	0.3	M
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.702	20.619	0.083	1.000	1046	0.0121	31.8	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2376641	28.7	41206
9 Perfluorononanoic acid								M
463.0 > 419.0	20.750	20.738	0.012	1.000	3979	0.0363	114	M
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.462	0.009	1.000	835087	9.87	26060

QC Flag Legend

Review Flags

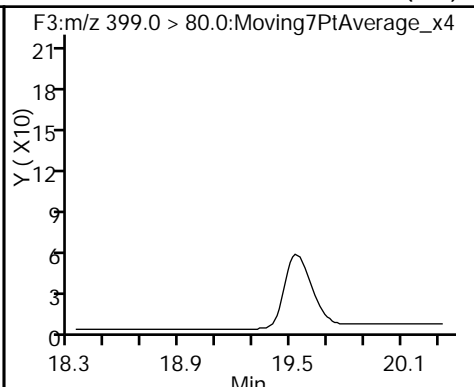
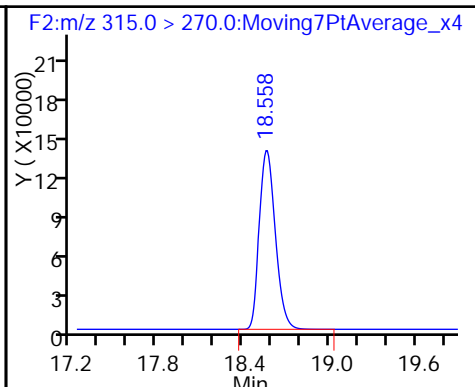
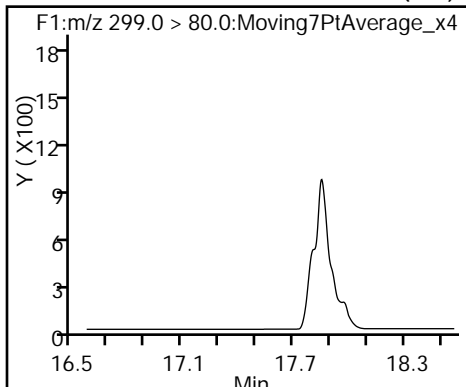
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_092.d
Injection Date: 07-Dec-2016 13:02:58 Instrument ID: A6
Lims ID: 320-23917-A-6-A Lab Sample ID: 320-23917-6
Client ID: WI-CV-1FB03-1116
Operator ID: CBW ALS Bottle#: 33 Worklist Smp#: 13
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

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

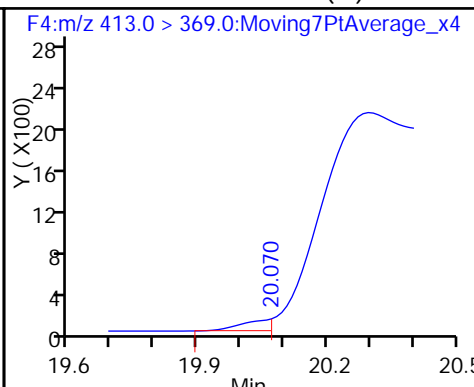
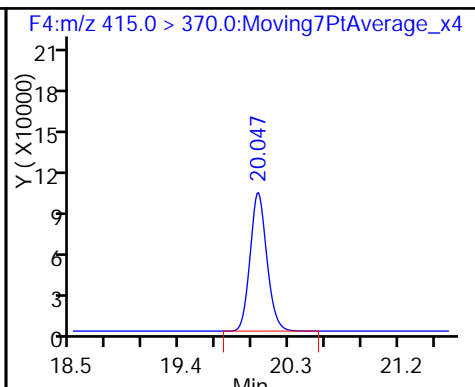
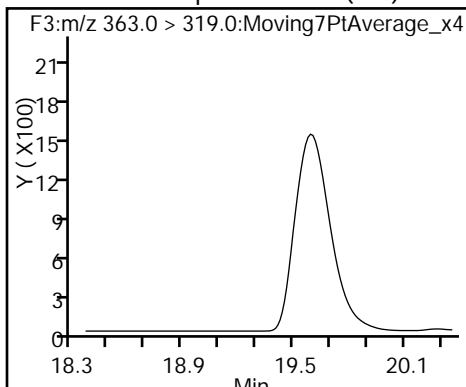
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

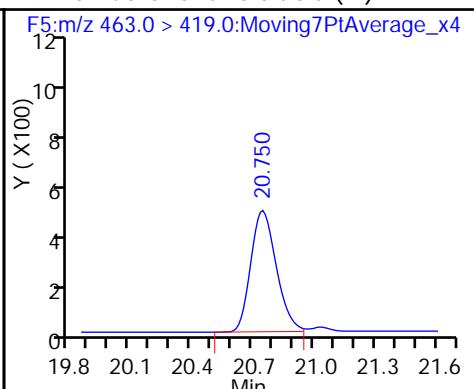
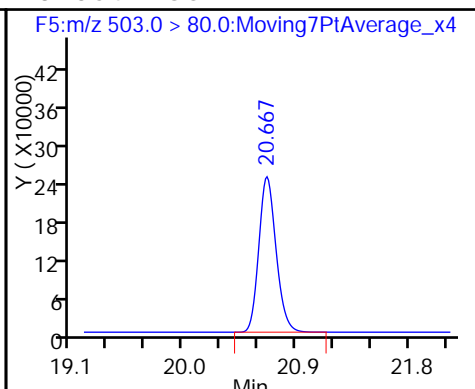
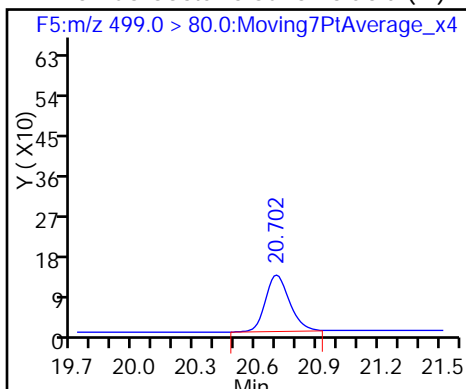
6 Perfluorooctanoic acid (M)



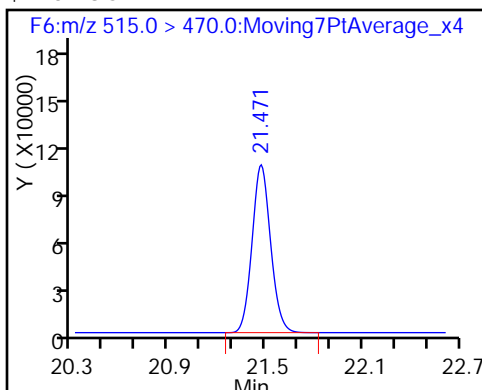
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_092.d
 Lims ID: 320-23917-A-6-A
 Client ID: WI-CV-1FB03-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 13:02:58 ALS Bottle#: 33 Worklist Smp#: 13
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-6-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:32:32

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.46	94.55
\$ 10 13C2 PFDA	10.0	9.87	98.68

TestAmerica Sacramento

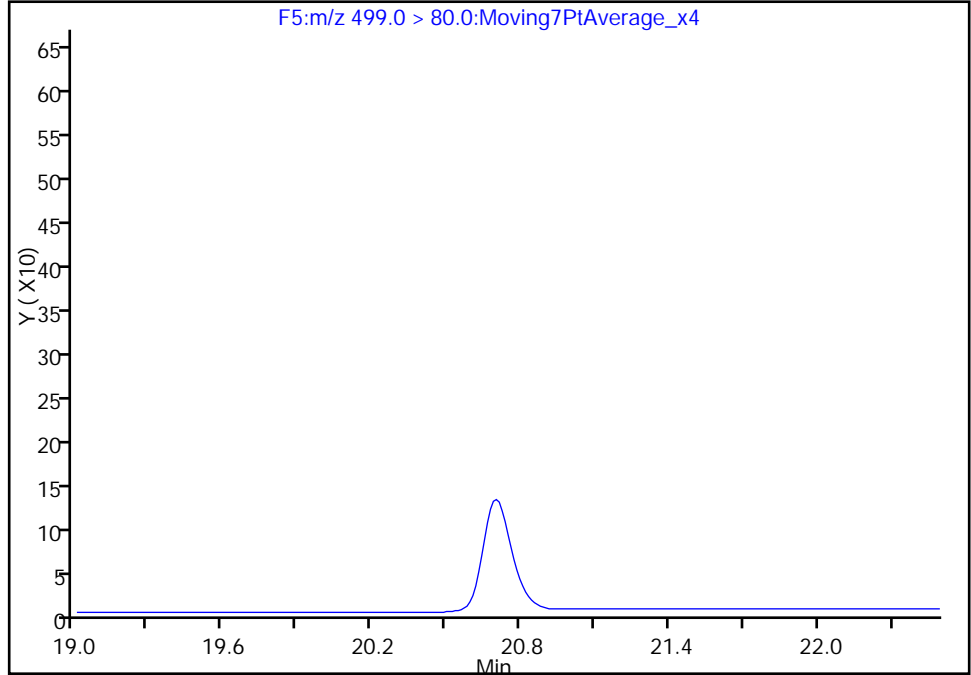
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_092.d
Injection Date: 07-Dec-2016 13:02:58 Instrument ID: A6
Lims ID: 320-23917-A-6-A Lab Sample ID: 320-23917-6
Client ID: WI-CV-1FB03-1116
Operator ID: CBW ALS Bottle#: 33 Worklist Smp#: 13
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

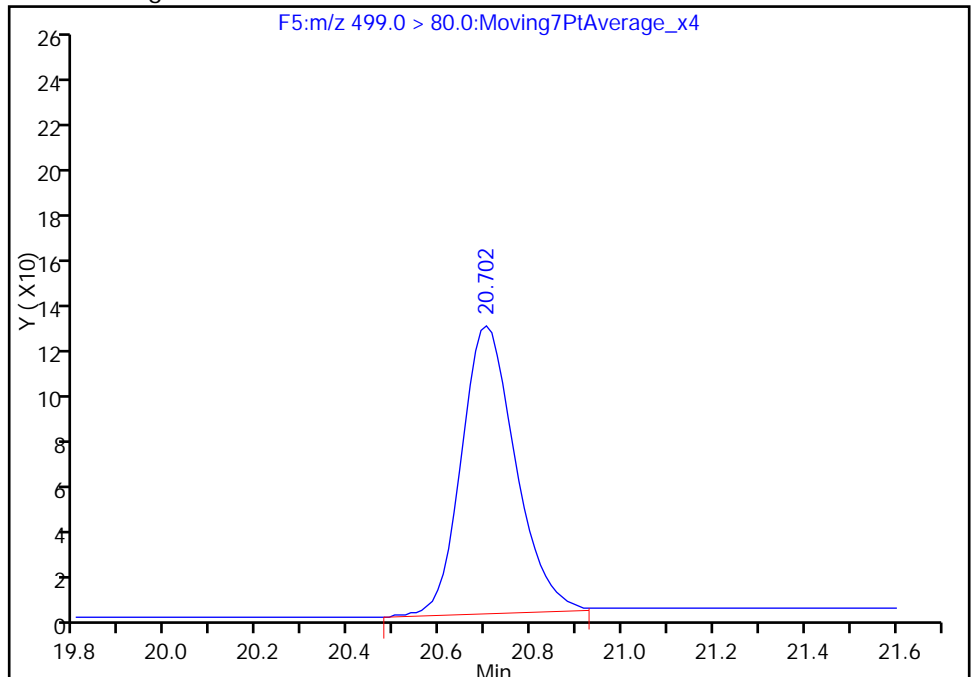
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.70
Area: 1046
Amount: 0.012091
Amount Units: ng/ml



Reviewer: barnettj, 07-Dec-2016 15:32:32
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

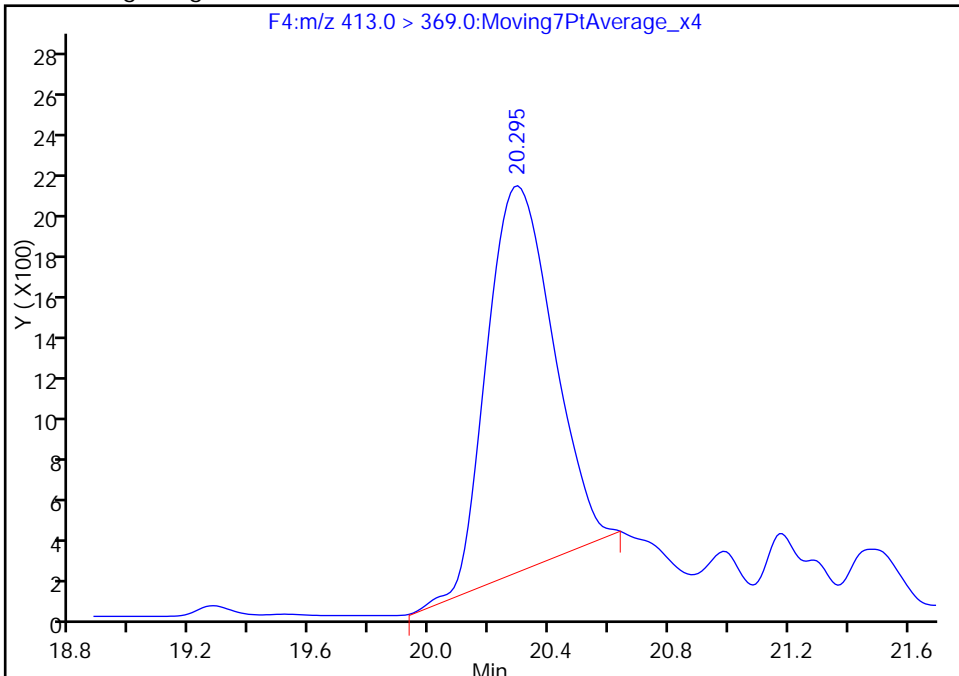
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Injection Date: 07-Dec-2016 13:02:58 Instrument ID: A6
Lims ID: 320-23917-A-6-A Lab Sample ID: 320-23917-6
Client ID: WI-CV-1FB03-1116
Operator ID: CBW ALS Bottle#: 33 Worklist Smp#: 13
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

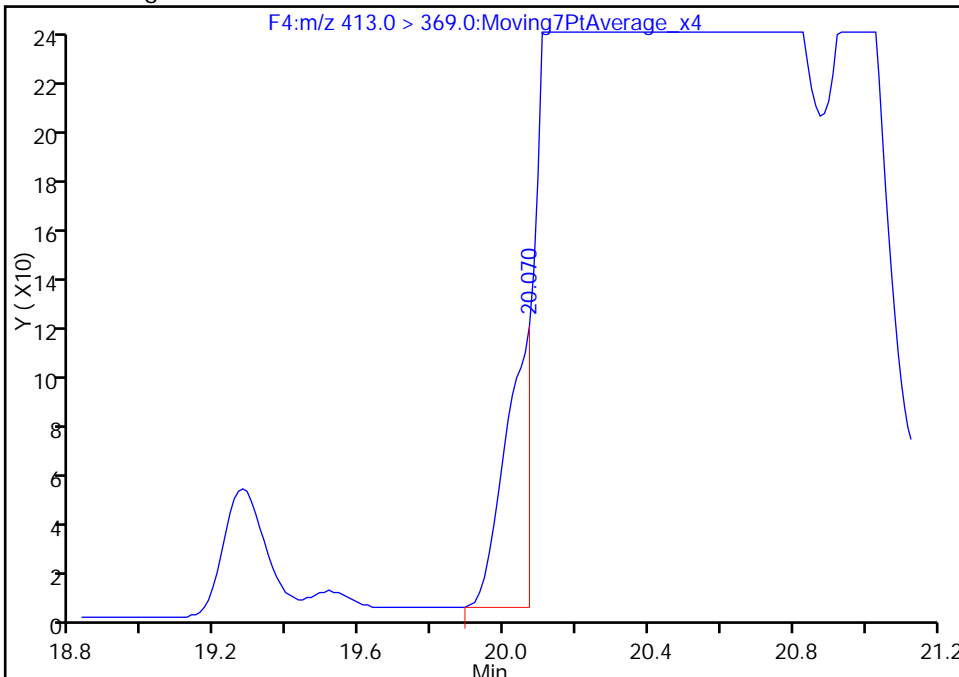
RT: 20.30
Area: 29194
Amount: 0.290537
Amount Units: ng/ml

Processing Integration Results



RT: 20.07
Area: 512
Amount: 0.005095
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Dec-2016 15:32:32
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1RW04-1116 Lab Sample ID: 320-23917-7
 Matrix: Water Lab File ID: 05DEC2016A6A_097.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:10
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 274.2 (mL) Date Analyzed: 12/07/2016 15:30
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0086
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	116		70-130
STL00996	13C2 PFDA	117		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_097.d
 Lims ID: 320-23917-A-7-A
 Client ID: WI-CV-1RW04-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 15:30:57 ALS Bottle#: 35 Worklist Smp#: 18
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-7-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 07-Dec-2016 17:00:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1009692	11.6	32875
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		747317	10.0	19468
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.655	20.619	0.036	1.000	562	0.006708	15.8	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2301619	28.7	59852
9 Perfluorononanoic acid								
463.0 > 419.0	20.738	20.738	0.0	1.000	12434	0.1467	54.5	
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.471	0.0	1.000	768769	11.7	24500

QC Flag Legend

Review Flags

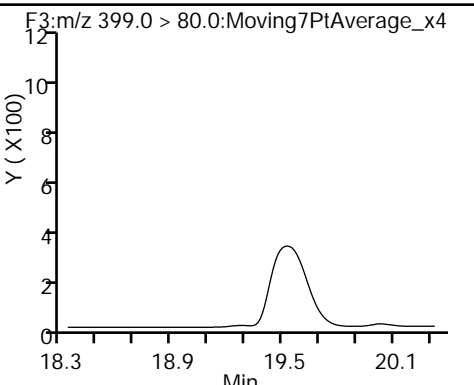
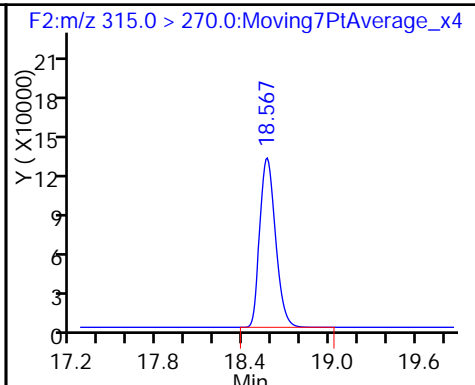
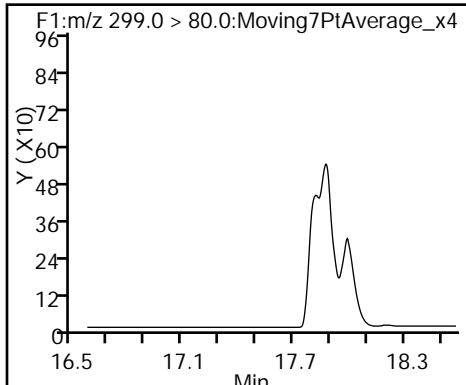
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_097.d
Injection Date: 07-Dec-2016 15:30:57 Instrument ID: A6
Lims ID: 320-23917-A-7-A Lab Sample ID: 320-23917-7
Client ID: WI-CV-1RW04-1116
Operator ID: CBW ALS Bottle#: 35 Worklist Smp#: 18
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

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

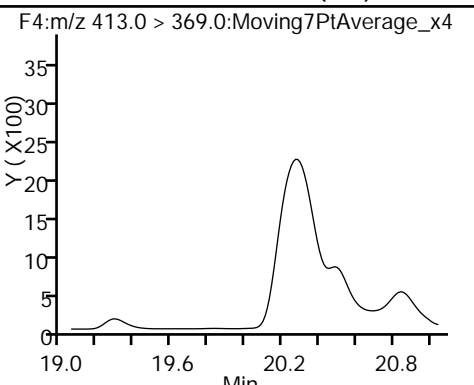
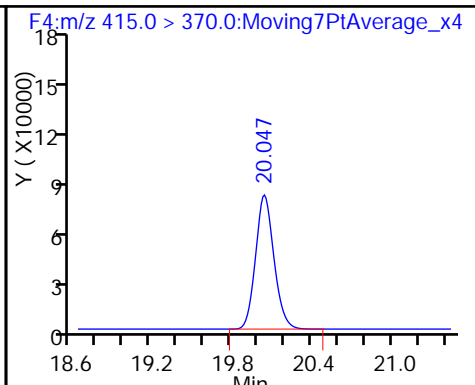
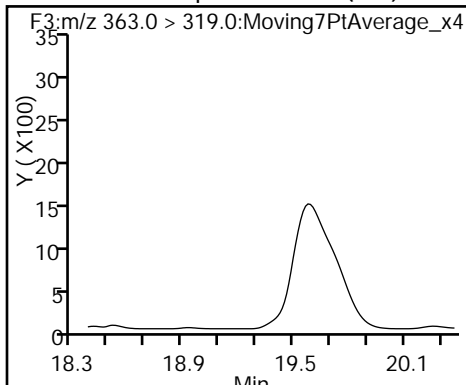
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

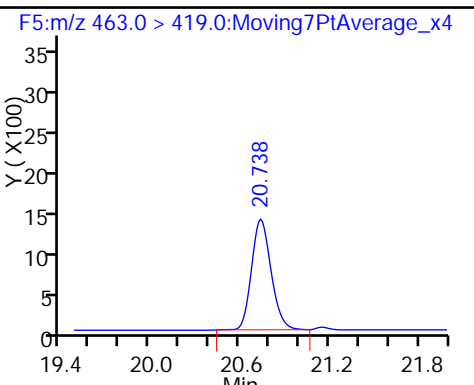
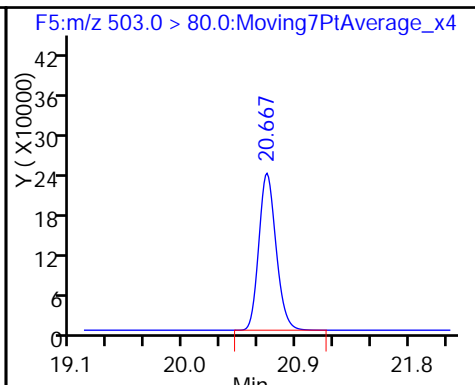
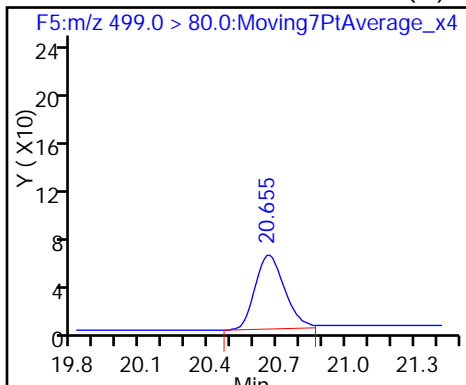
6 Perfluorooctanoic acid (ND)



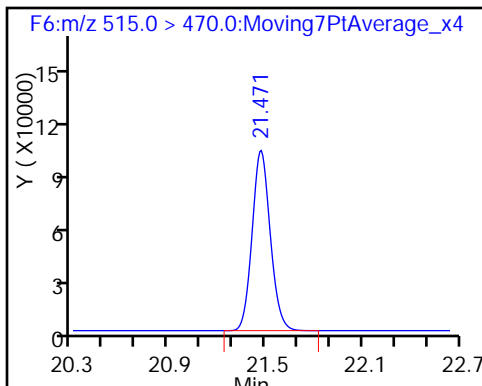
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_097.d
 Lims ID: 320-23917-A-7-A
 Client ID: WI-CV-1RW04-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 15:30:57 ALS Bottle#: 35 Worklist Smp#: 18
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-7-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 07-Dec-2016 17:00:49

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.6	115.82
\$ 10 13C2 PFDA	10.0	11.7	117.40

TestAmerica Sacramento

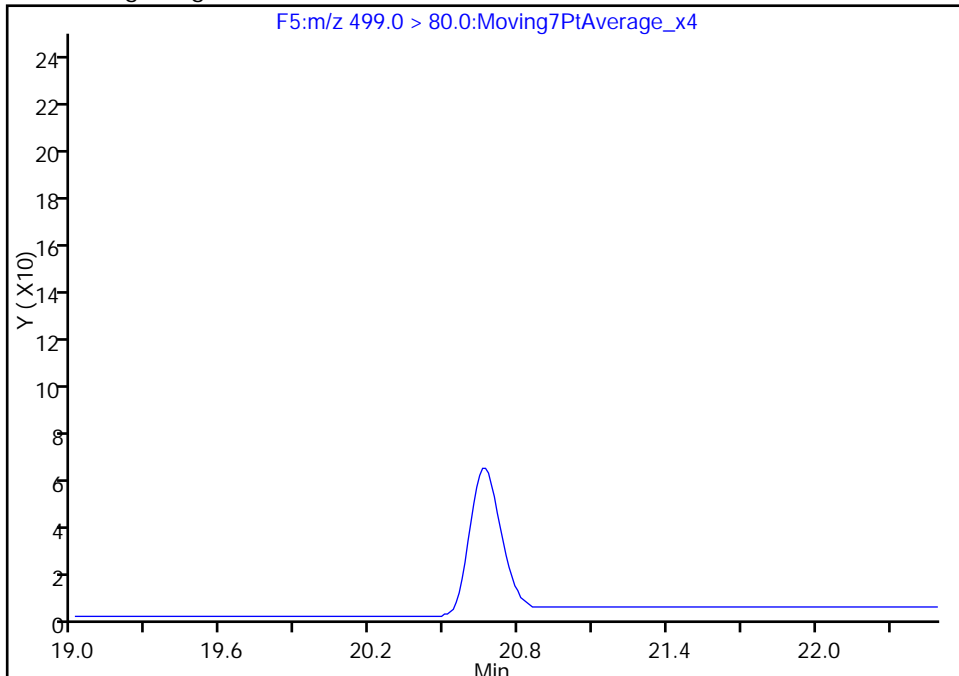
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_097.d
Injection Date: 07-Dec-2016 15:30:57 Instrument ID: A6
Lims ID: 320-23917-A-7-A Lab Sample ID: 320-23917-7
Client ID: WI-CV-1RW04-1116
Operator ID: CBW ALS Bottle#: 35 Worklist Smp#: 18
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

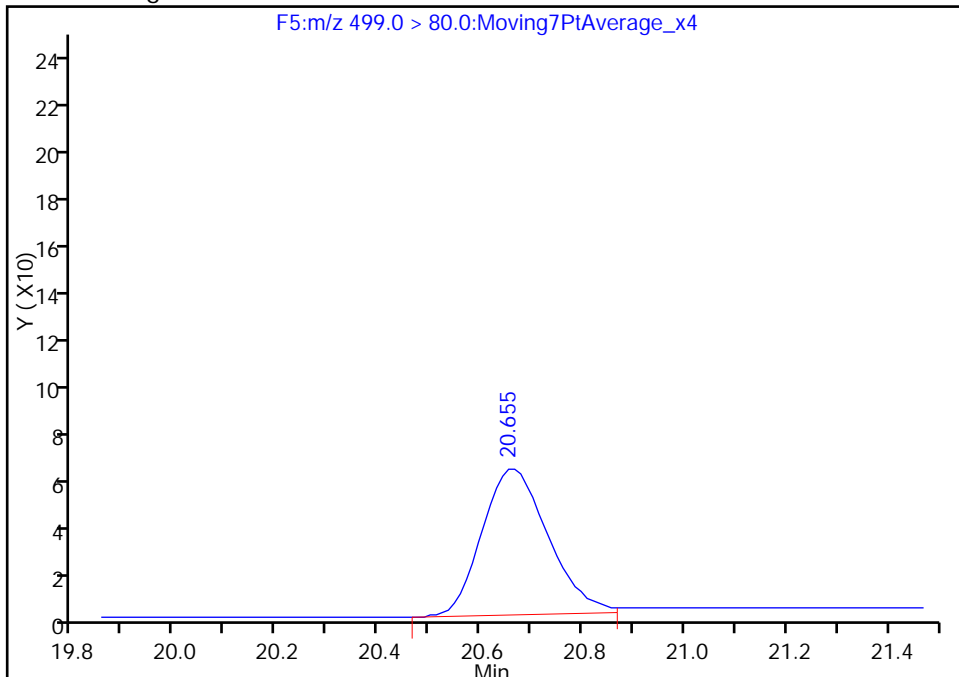
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.65
Area: 562
Amount: 0.006708
Amount Units: ng/ml



Reviewer: barnettj, 07-Dec-2016 17:00:49
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1FB04-1116 Lab Sample ID: 320-23917-8
 Matrix: Water Lab File ID: 05DEC2016A6A_098.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:09
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 283.3(mL) Date Analyzed: 12/07/2016 16:00
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	115		70-130
STL00996	13C2 PFDA	112		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_098.d
 Lims ID: 320-23917-A-8-A
 Client ID: WI-CV-1FB04-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 16:00:33 ALS Bottle#: 36 Worklist Smp#: 19
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-8-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 07-Dec-2016 17:01:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	1108064	11.5	35961
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		824997	10.0	21578
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.667	20.619	0.048	1.000	570	0.006881	16.0	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2275605	28.7	39460
9 Perfluorononanoic acid								
463.0 > 419.0	20.738	20.738	0.0	1.000	4519	0.0483	51.3	
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.471	-0.009	1.000	812292	11.2	25442

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_098.d

Injection Date: 07-Dec-2016 16:00:33

Instrument ID: A6

Lims ID: 320-23917-A-8-A

Lab Sample ID: 320-23917-8

Client ID: WI-CV-1FB04-1116

Operator ID: CBW

ALS Bottle#: 36

Worklist Smp#: 19

Injection Vol: 10.0 ul

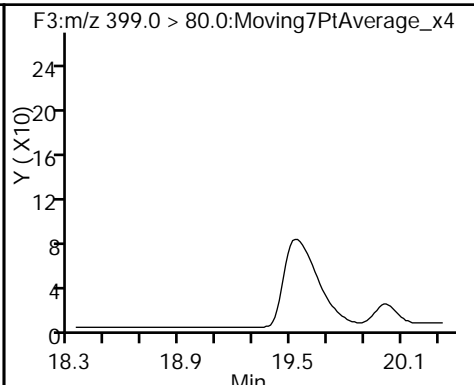
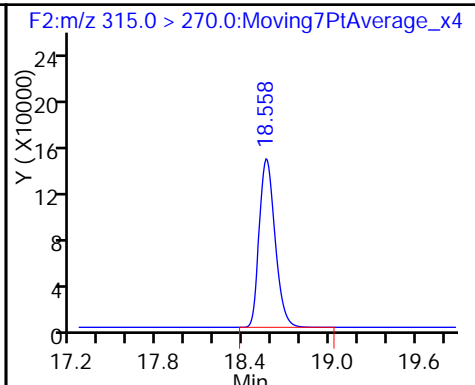
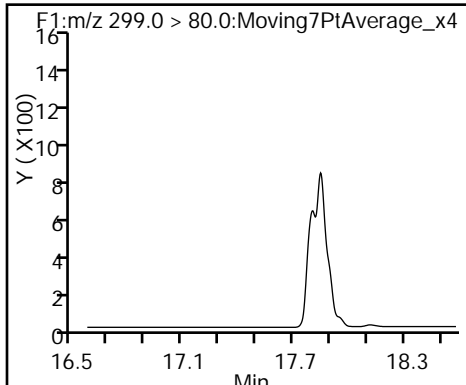
Dil. Factor: 1.0000

Method: 537_A6

Limit Group: LC 537 ICAL

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

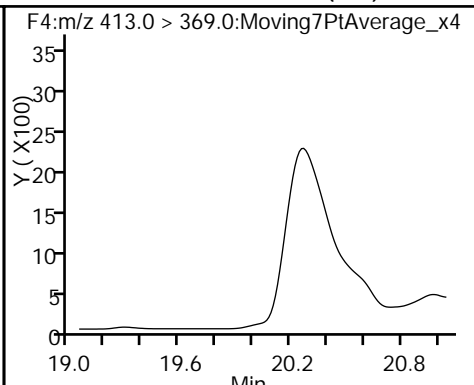
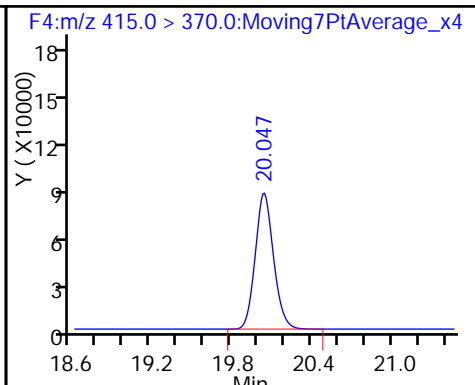
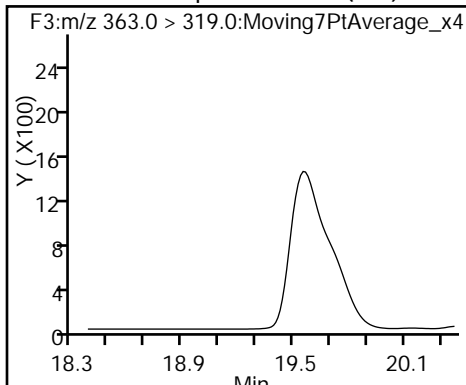
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

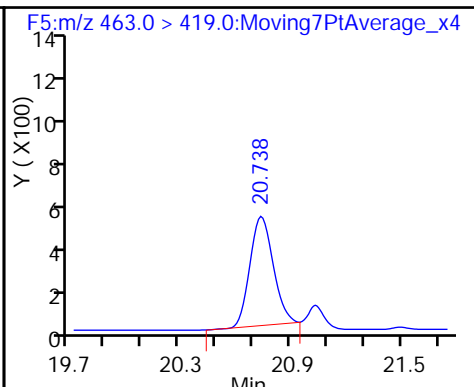
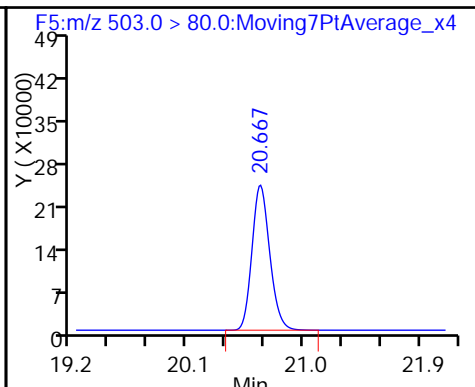
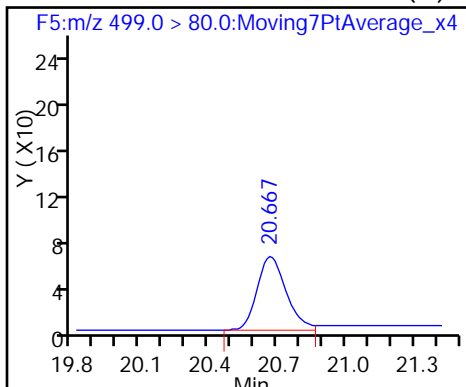
6 Perfluorooctanoic acid (ND)



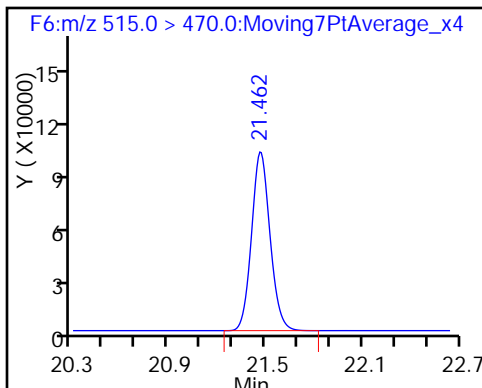
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_098.d
 Lims ID: 320-23917-A-8-A
 Client ID: WI-CV-1FB04-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 16:00:33 ALS Bottle#: 36 Worklist Smp#: 19
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-8-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 07-Dec-2016 17:01:28

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.5	115.14
\$ 10 13C2 PFDA	10.0	11.2	112.36

TestAmerica Sacramento

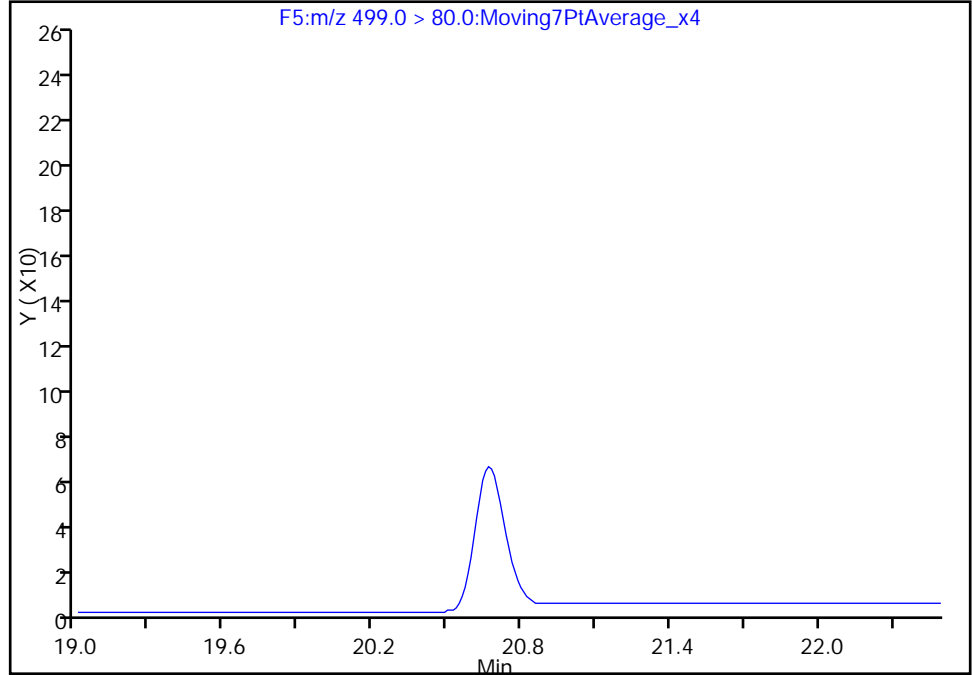
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_098.d
Injection Date: 07-Dec-2016 16:00:33 Instrument ID: A6
Lims ID: 320-23917-A-8-A Lab Sample ID: 320-23917-8
Client ID: WI-CV-1FB04-1116
Operator ID: CBW ALS Bottle#: 36 Worklist Smp#: 19
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:M/RM

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

Signal: 1

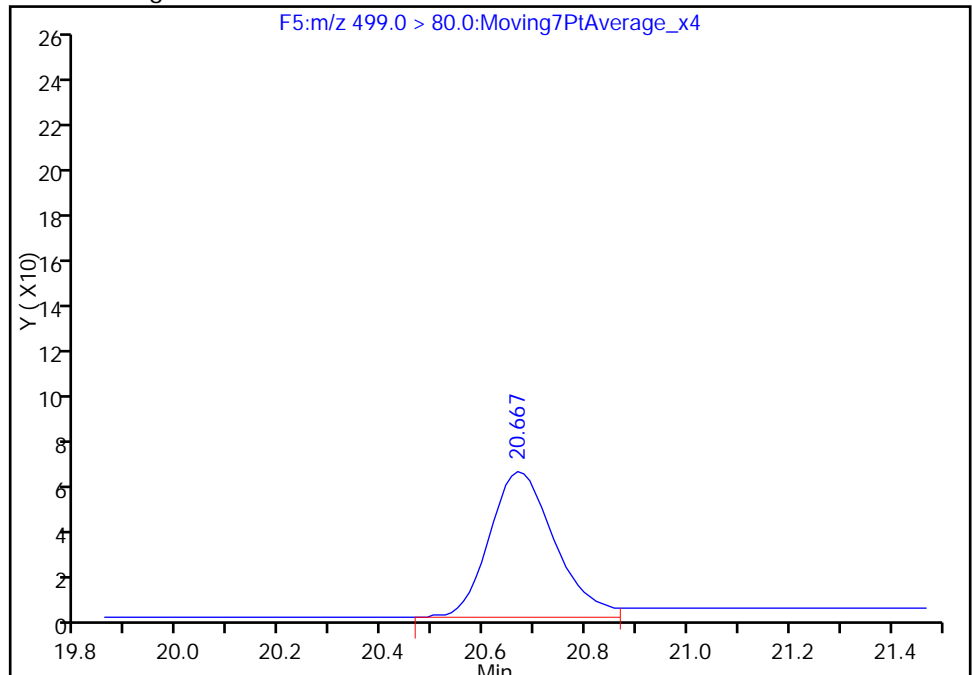
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.67
Area: 570
Amount: 0.006881
Amount Units: ng/ml



Reviewer: barnettj, 07-Dec-2016 17:01:28
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1RW05-1116 Lab Sample ID: 320-23917-9
 Matrix: Water Lab File ID: 05DEC2016A6A_099.d
 Analysis Method: 537 Date Collected: 11/28/2016 17:17
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 271.6(mL) Date Analyzed: 12/07/2016 16:30
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U M	0.028	0.022	0.0087
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	110		70-130
STL00996	13C2 PFDA	101		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_099.d
 Lims ID: 320-23917-A-9-A
 Client ID: WI-CV-1RW05-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 16:30:09 ALS Bottle#: 37 Worklist Smp#: 20
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-9-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 07-Dec-2016 17:02:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	1079652	11.0	34899
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.451	19.332	0.119	1.000	177	0.002531	1.3	M
* 5 13C2-PFOA								
415.0 > 370.0	20.047	20.047	0.0		840942	10.0	22038	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.070	20.047	0.023	1.000	354	0.004046	0.3	M
* 8 13C4 PFOS								
503.0 > 80.0	20.667	20.667	0.0		2233743	28.7	58358	
9 Perfluorononanoic acid								
463.0 > 419.0	20.738	20.738	0.0	1.000	15741	0.1650	344	
\$ 10 13C2 PFDA								
515.0 > 470.0	21.471	21.471	0.0	1.000	743119	10.1	23275	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_099.d

Injection Date: 07-Dec-2016 16:30:09

Instrument ID: A6

Lims ID: 320-23917-A-9-A

Lab Sample ID: 320-23917-9

Client ID: WI-CV-1RW05-1116

Operator ID: CBW

ALS Bottle#: 37

Worklist Smp#: 20

Injection Vol: 10.0 ul

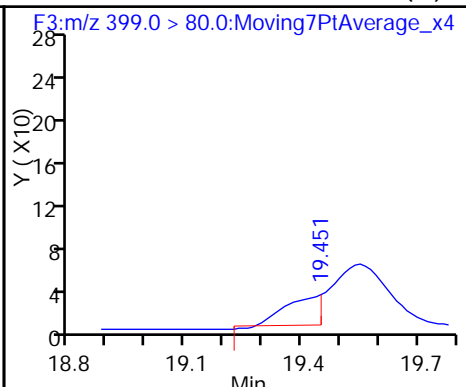
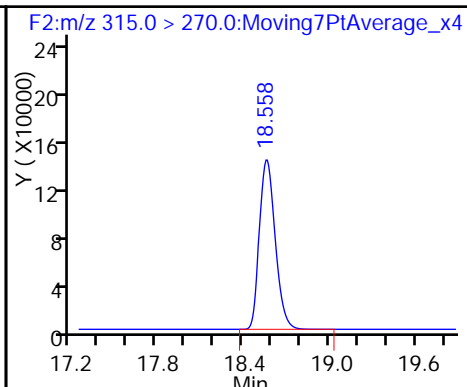
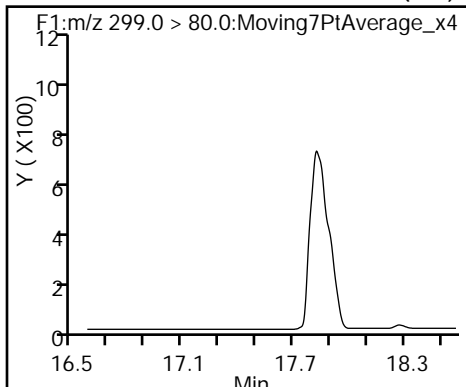
Dil. Factor: 1.0000

Method: 537_A6

Limit Group: LC 537 ICAL

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

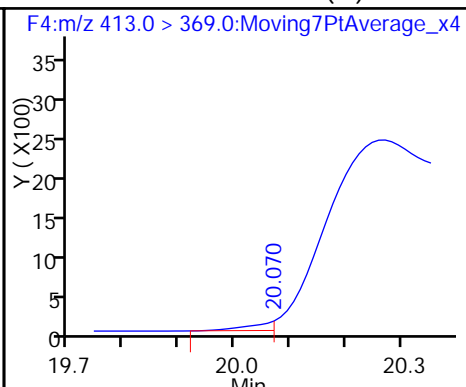
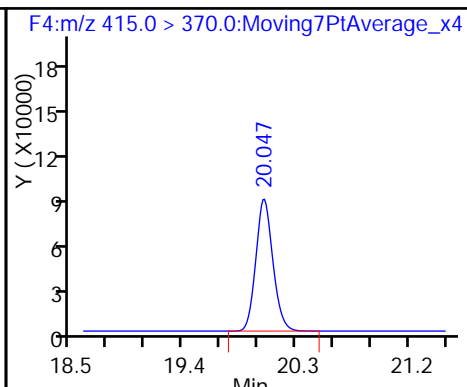
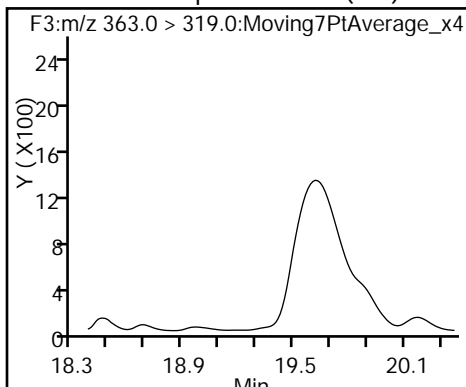
3 Perfluorohexanesulfonic acid (M)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

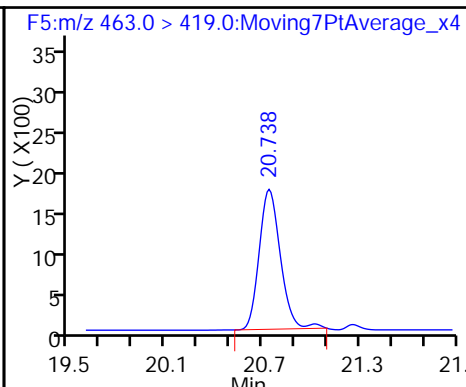
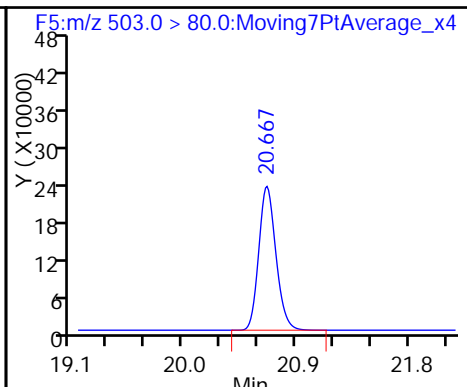
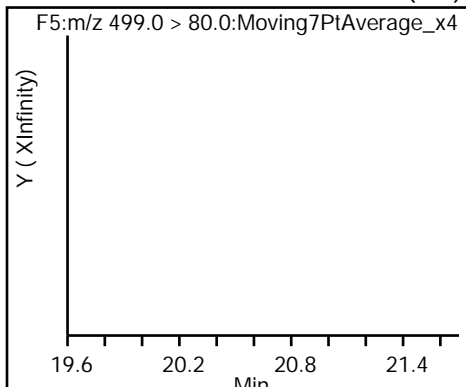
6 Perfluorooctanoic acid (M)



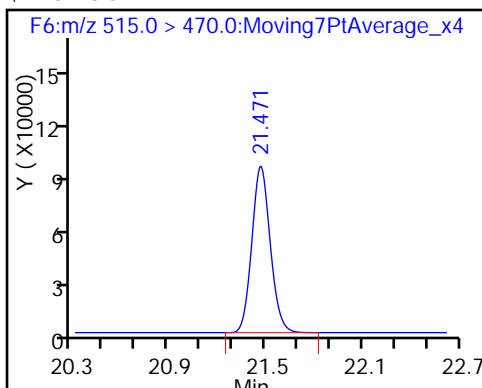
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_099.d
 Lims ID: 320-23917-A-9-A
 Client ID: WI-CV-1RW05-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 16:30:09 ALS Bottle#: 37 Worklist Smp#: 20
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-9-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 07-Dec-2016 17:02:26

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.0	110.06
\$ 10 13C2 PFDA	10.0	10.1	100.84

TestAmerica Sacramento

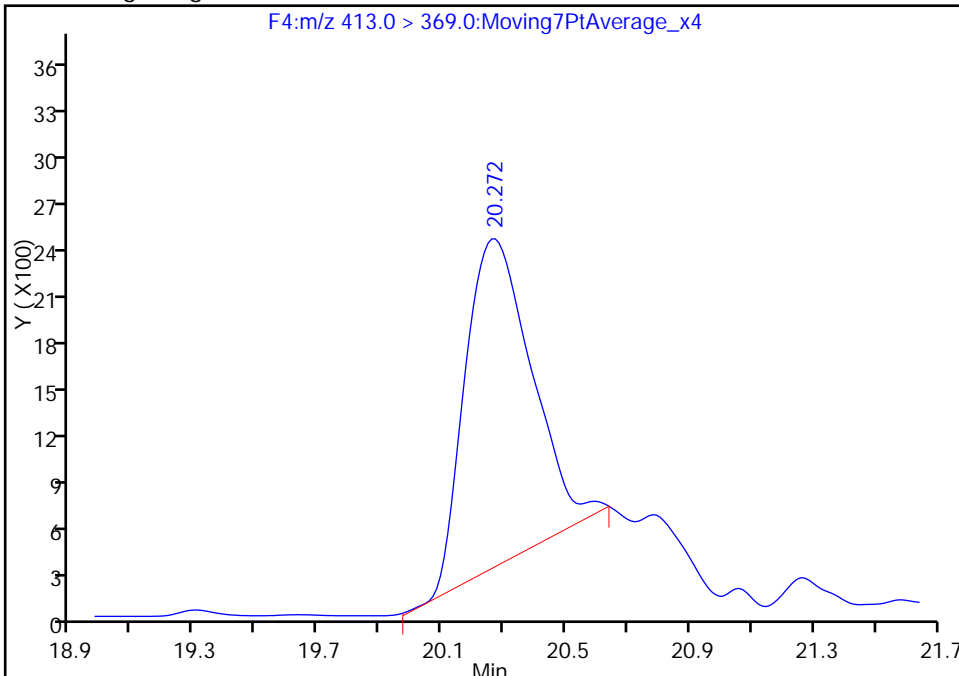
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_099.d
Injection Date: 07-Dec-2016 16:30:09 Instrument ID: A6
Lims ID: 320-23917-A-9-A Lab Sample ID: 320-23917-9
Client ID: WI-CV-1RW05-1116
Operator ID: CBW ALS Bottle#: 37 Worklist Smp#: 20
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

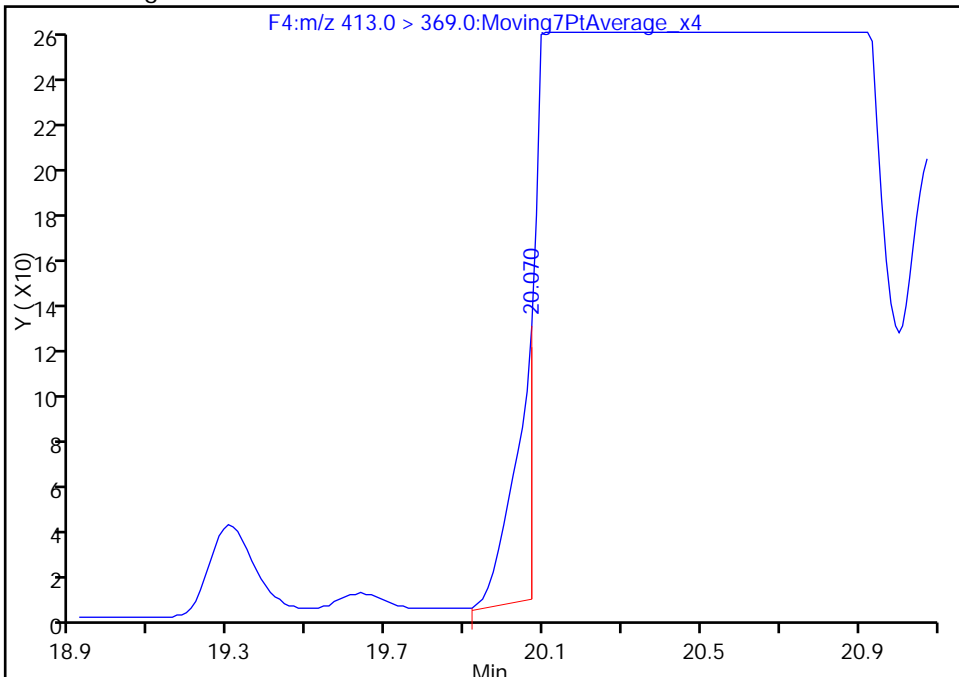
RT: 20.27
Area: 31561
Amount: 0.360723
Amount Units: ng/ml

Processing Integration Results



RT: 20.07
Area: 354
Amount: 0.004046
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Dec-2016 17:02:26
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1FB05-1116 Lab Sample ID: 320-23917-10
 Matrix: Water Lab File ID: 05DEC2016A6A_100.d
 Analysis Method: 537 Date Collected: 11/28/2016 17:16
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 282.6(mL) Date Analyzed: 12/07/2016 16:59
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	114		70-130
STL00996	13C2 PFDA	109		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_100.d
 Lims ID: 320-23917-A-10-A
 Client ID: WI-CV-1FB05-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 16:59:46 ALS Bottle#: 38 Worklist Smp#: 21
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-10-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:53:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1114102	11.4	35679
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.332	0.012	1.000	47618	0.6615	1137
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.380	-0.012	1.000	4242	0.0416	2.7
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		838291	10.0	21863
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	51991	0.5961	10.4 M
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.667	20.619	0.048	1.000	100042	1.20	1902
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2298985	28.7	34376
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	8925	0.0939	250
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.471	-0.009	1.000	802384	10.9	24952

QC Flag Legend

Review Flags

M - Manually Integrated

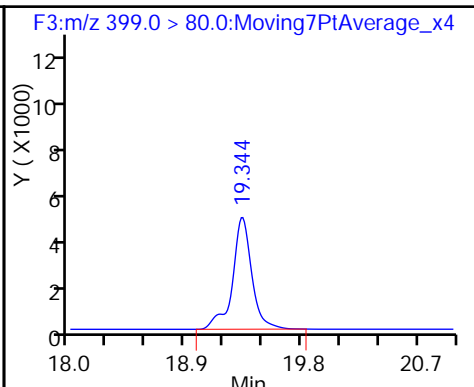
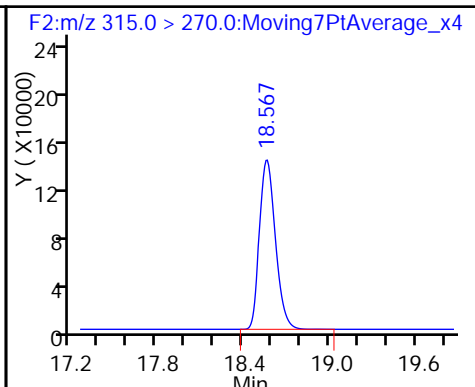
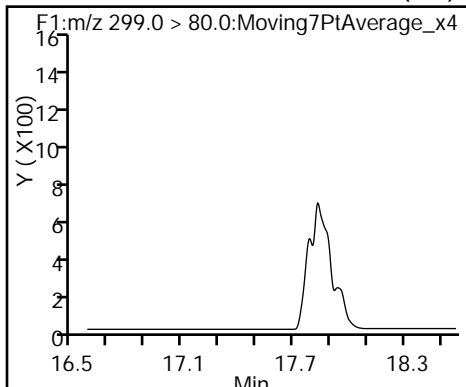
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_100.d
Injection Date: 07-Dec-2016 16:59:46 Instrument ID: A6
Lims ID: 320-23917-A-10-A Lab Sample ID: 320-23917-10
Client ID: WI-CV-1FB05-1116
Operator ID: CBW ALS Bottle#: 38 Worklist Smp#: 21
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

\$ 2 13C2 PFHxA

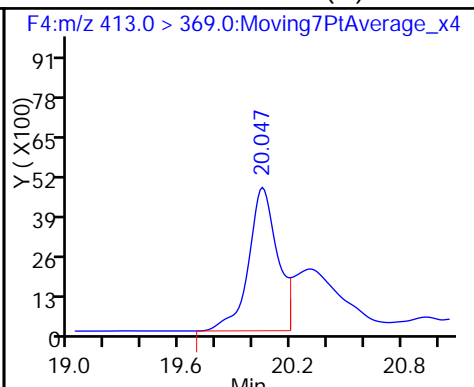
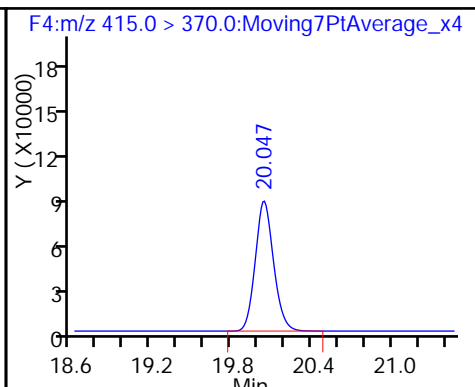
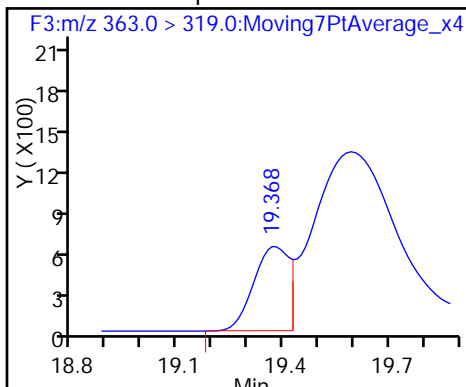
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

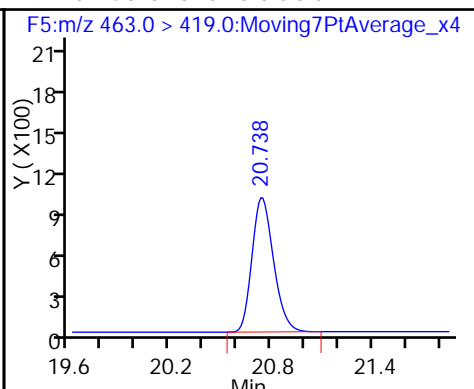
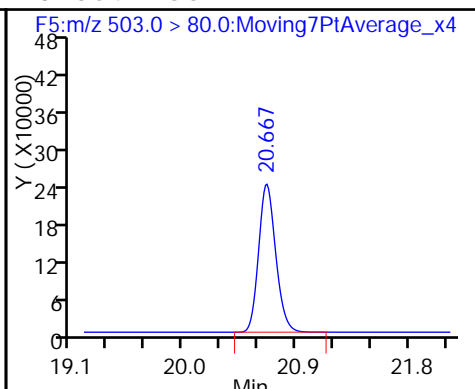
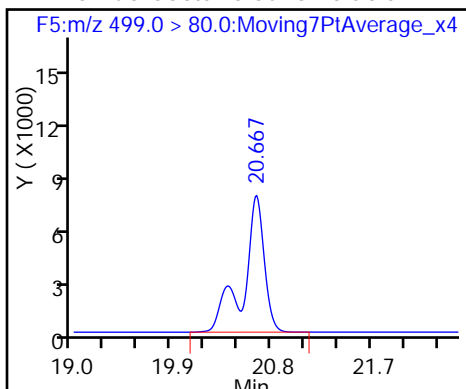
6 Perfluorooctanoic acid (M)



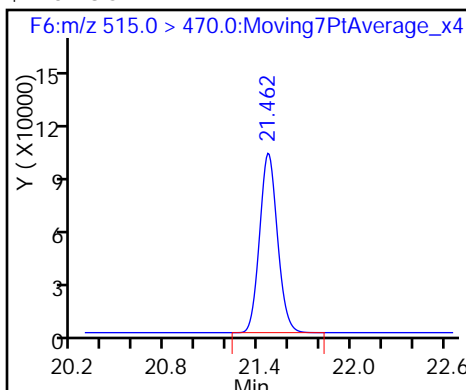
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_100.d
 Lims ID: 320-23917-A-10-A
 Client ID: WI-CV-1FB05-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 16:59:46 ALS Bottle#: 38 Worklist Smp#: 21
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-10-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:53:15

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.4	113.93
\$ 10 13C2 PFDA	10.0	10.9	109.23

TestAmerica Sacramento

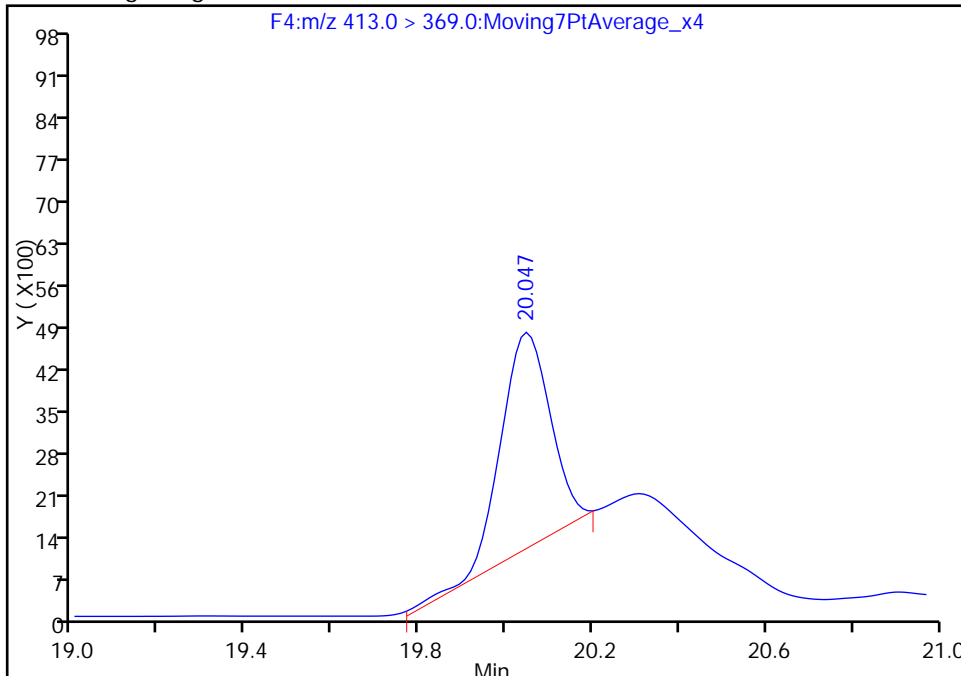
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_100.d
Injection Date: 07-Dec-2016 16:59:46 Instrument ID: A6
Lims ID: 320-23917-A-10-A Lab Sample ID: 320-23917-10
Client ID: WI-CV-1FB05-1116
Operator ID: CBW ALS Bottle#: 38 Worklist Smp#: 21
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

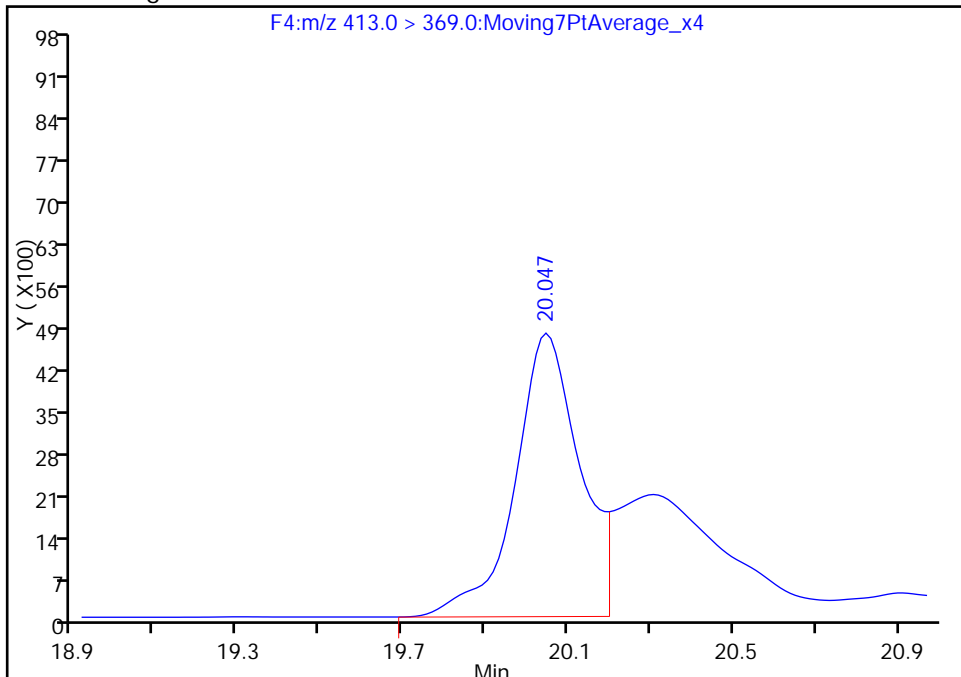
RT: 20.05
Area: 29189
Amount: 0.334668
Amount Units: ng/ml

Processing Integration Results



RT: 20.05
Area: 51991
Amount: 0.596105
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2RW01-1116 Lab Sample ID: 320-23917-11
 Matrix: Water Lab File ID: 05DEC2016A6A_101.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:15
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 253.5 (mL) Date Analyzed: 12/07/2016 17:29
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	122		70-130
STL00996	13C2 PFDA	119		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_101.d
 Lims ID: 320-23917-A-11-A
 Client ID: WI-CV-2RW01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 17:29:21 ALS Bottle#: 39 Worklist Smp#: 22
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-11-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:54:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.566	17.579	-0.013	1.000	2716	0.0558	4.4	
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1009264	12.2	32943	
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.320	19.332	-0.012	1.000	538	0.008633	5.6	M
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		709899	10.0	18500	
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	5616	0.0760	1.9	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1990413	28.7	52140	
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	15269	0.1896	155	M
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.471	0.0	1.000	741655	11.9	23611	

QC Flag Legend

Review Flags

M - Manually Integrated

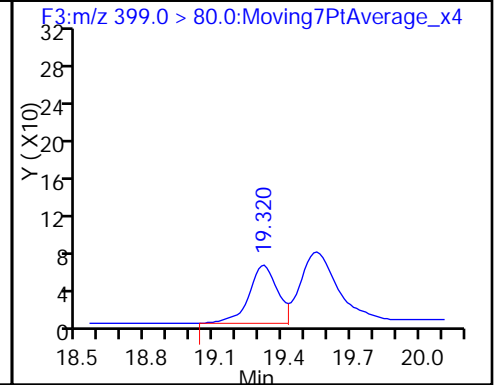
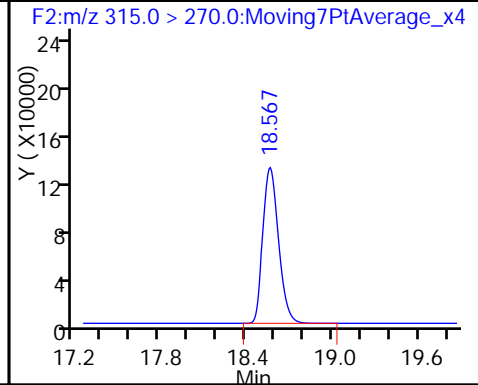
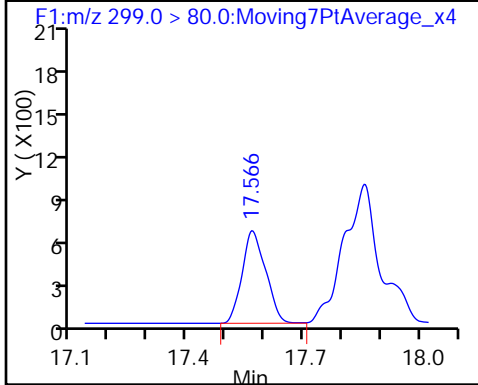
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_101.d
Injection Date: 07-Dec-2016 17:29:21 Instrument ID: A6
Lims ID: 320-23917-A-11-A Lab Sample ID: 320-23917-11
Client ID: WI-CV-2RW01-1116
Operator ID: CBW ALS Bottle#: 39 Worklist Smp#: 22
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

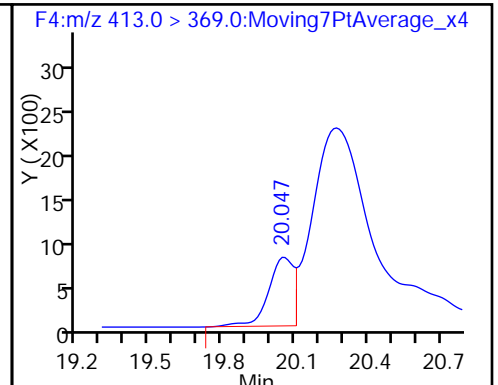
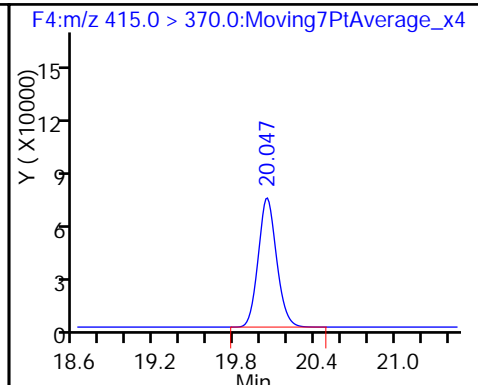
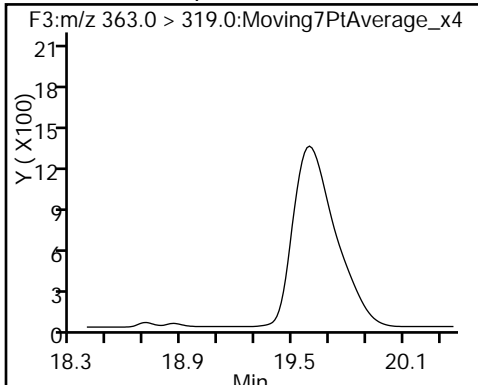
3 Perfluorohexanesulfonic acid (M)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

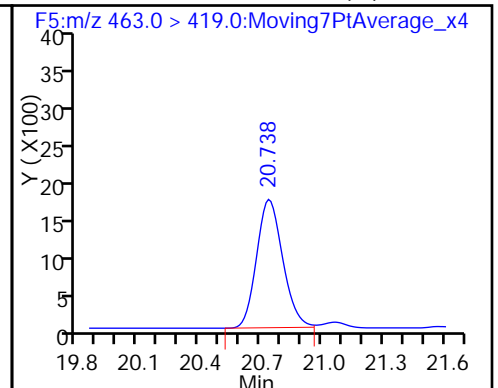
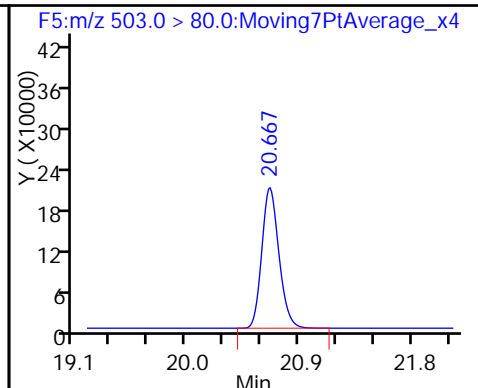
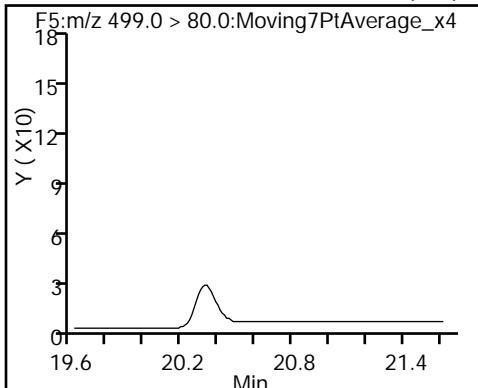
6 Perfluorooctanoic acid (M)



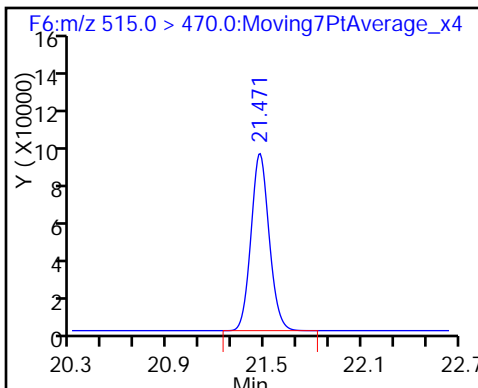
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_101.d
 Lims ID: 320-23917-A-11-A
 Client ID: WI-CV-2RW01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 17:29:21 ALS Bottle#: 39 Worklist Smp#: 22
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-11-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:54:34

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	12.2	121.87
\$ 10 13C2 PFDA	10.0	11.9	119.22

TestAmerica Sacramento

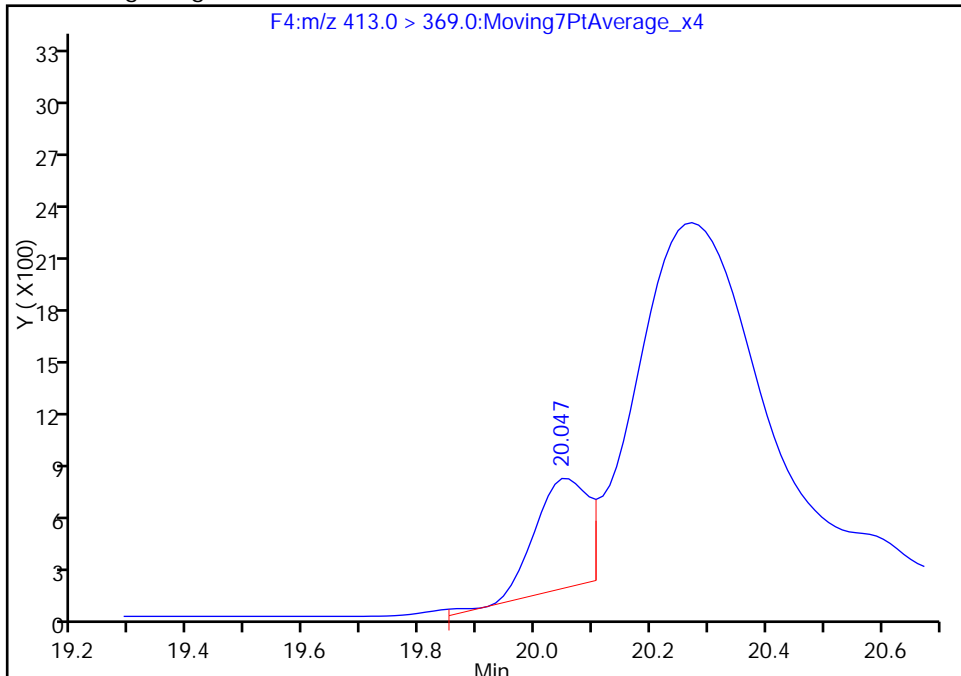
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_101.d
Injection Date: 07-Dec-2016 17:29:21 Instrument ID: A6
Lims ID: 320-23917-A-11-A Lab Sample ID: 320-23917-11
Client ID: WI-CV-2RW01-1116
Operator ID: CBW ALS Bottle#: 39 Worklist Smp#: 22
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

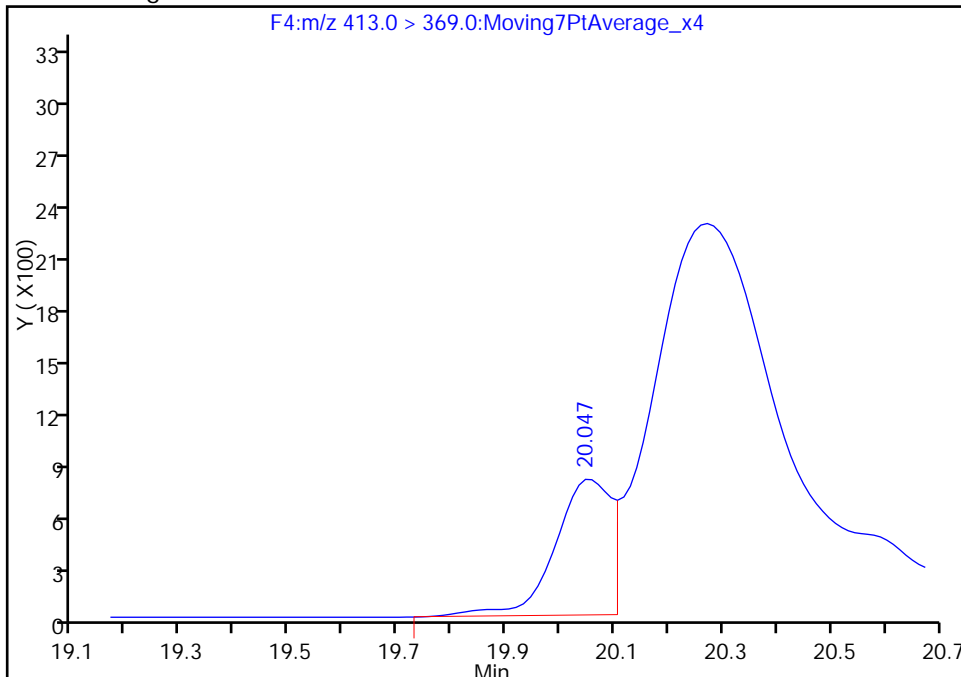
RT: 20.05
Area: 4095
Amount: 0.055443
Amount Units: ng/ml

Processing Integration Results



RT: 20.05
Area: 5616
Amount: 0.076036
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 08-Dec-2016 09:54:34
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2FB01-1116 Lab Sample ID: 320-23917-12
 Matrix: Water Lab File ID: 05DEC2016A6A_102.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:16
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 276(mL) Date Analyzed: 12/07/2016 17:58
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.043

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

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_102.d
 Lims ID: 320-23917-A-12-A
 Client ID: WI-CV-2FB01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 17:58:57 ALS Bottle#: 40 Worklist Smp#: 23
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-12-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:55:02

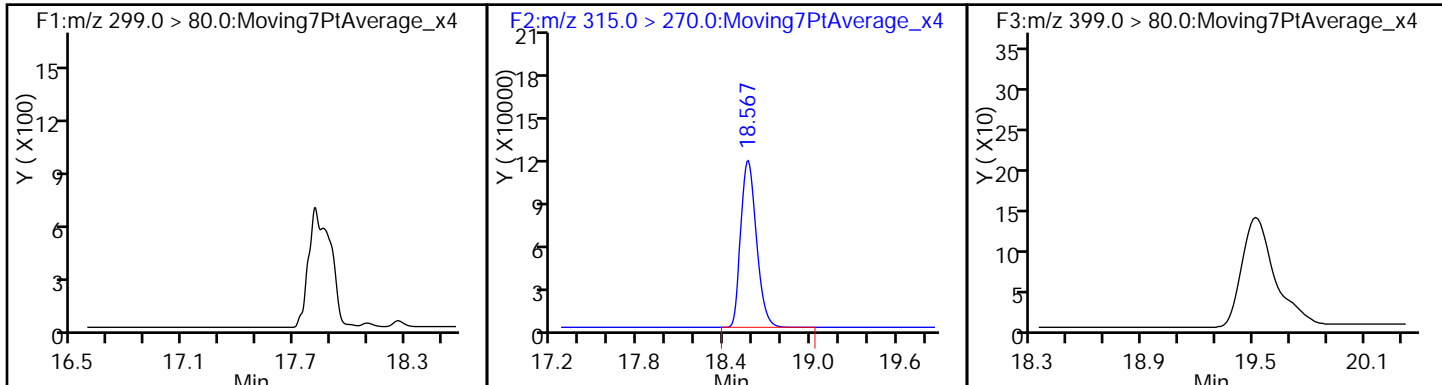
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	907405	10.8	29637
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		720925	10.0	18808
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1970032	28.7	51457
9 Perfluorononanoic acid	463.0 > 419.0	20.750	20.738	0.012	1.000	7035	0.0860	193
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.471	-0.009	1.000	683598	10.8	21661

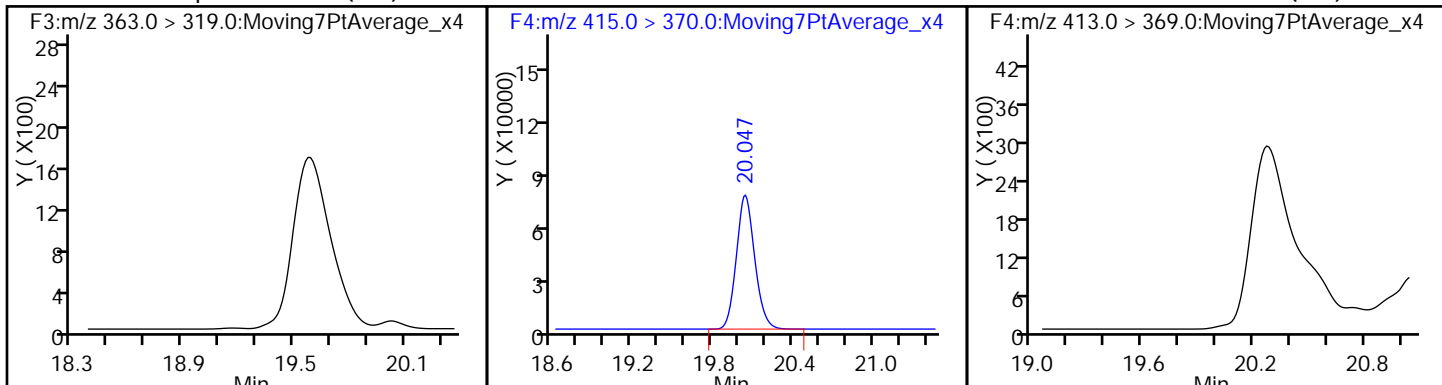
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_102.d
Injection Date: 07-Dec-2016 17:58:57 Instrument ID: A6
Lims ID: 320-23917-A-12-A Lab Sample ID: 320-23917-12
Client ID: WI-CV-2FB01-1116
Operator ID: CBW ALS Bottle#: 40 Worklist Smp#: 23
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

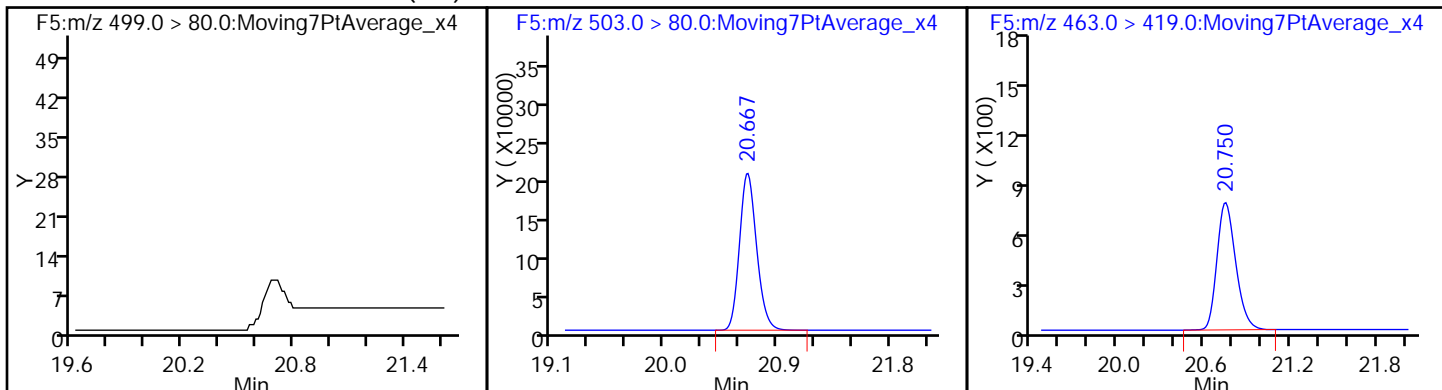
1 Perfluorobutanesulfonic acid (ND) \$ 2 13C2 PFHxA 3 Perfluorohexanesulfonic acid (ND)



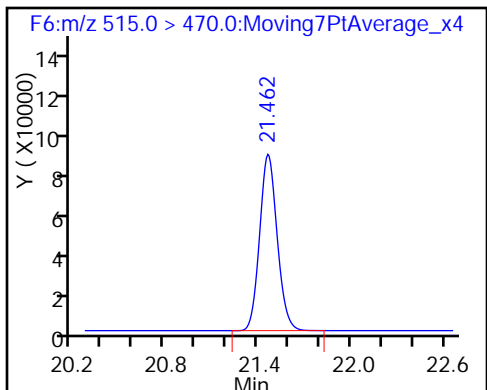
4 Perfluoroheptanoic acid (ND) * 5 13C2-PFOA 6 Perfluorooctanoic acid (ND)



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



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_102.d
 Lims ID: 320-23917-A-12-A
 Client ID: WI-CV-2FB01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 17:58:57 ALS Bottle#: 40 Worklist Smp#: 23
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-12-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:55:02

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.8	107.90
\$ 10 13C2 PFDA	10.0	10.8	108.21

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2RW02-1116 Lab Sample ID: 320-23917-13
 Matrix: Water Lab File ID: 05DEC2016A6A_106.d
 Analysis Method: 537 Date Collected: 11/28/2016 15:04
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 259.5 (mL) Date Analyzed: 12/07/2016 19:57
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.058	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.15		0.029	0.023	0.0091
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	112		70-130
STL00996	13C2 PFDA	113		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_106.d
 Lims ID: 320-23917-A-13-A
 Client ID: WI-CV-2RW02-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 19:57:21 ALS Bottle#: 44 Worklist Smp#: 27
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-13-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:00:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.579	17.579	0.0	1.000	192926	3.55	260
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	994426	11.2	31919
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.332	0.012	1.000	380357	5.46	7586
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.380	0.0	1.000	410227	4.42	108 M
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		764157	10.0	20003
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	3044661	38.3	1091
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.667	20.619	0.048	1.000	7281	0.0900	165 M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2223513	28.7	58105
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	18205	0.2100	293
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.471	0.0	1.000	753653	11.3	23884

QC Flag Legend

Review Flags

M - Manually Integrated

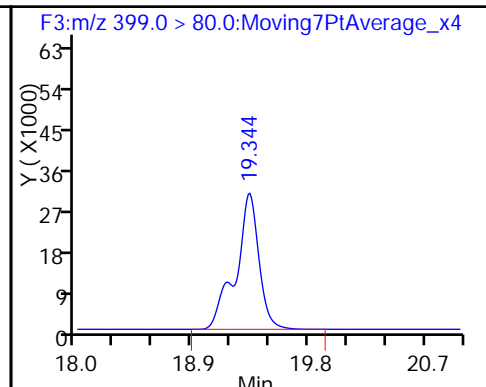
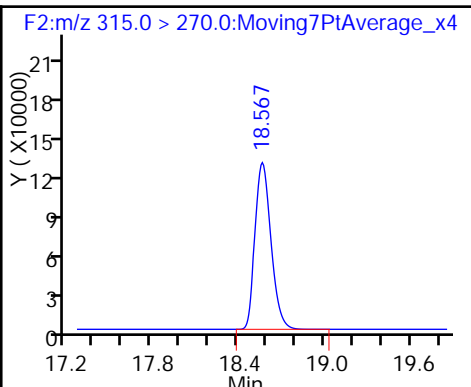
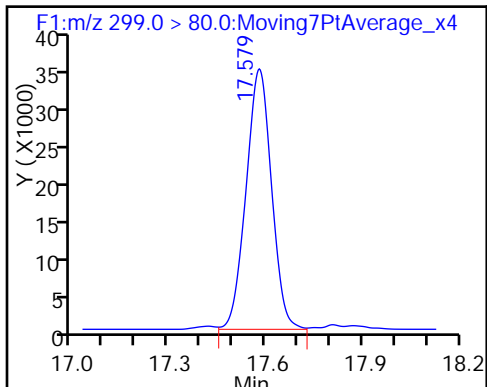
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_106.d
Injection Date: 07-Dec-2016 19:57:21 Instrument ID: A6
Lims ID: 320-23917-A-13-A Lab Sample ID: 320-23917-13
Client ID: WI-CV-2RW02-1116
Operator ID: CBW ALS Bottle#: 44 Worklist Smp#: 27
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

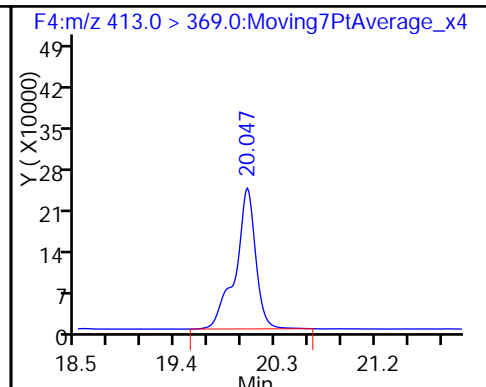
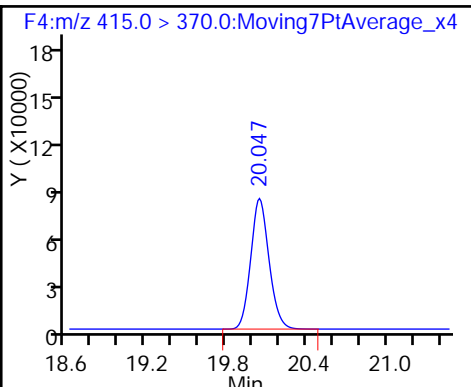
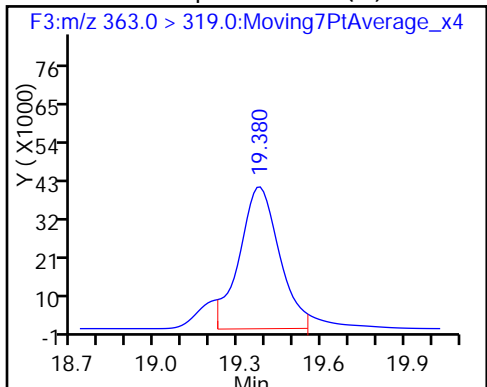
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid (M)

* 5 13C2-PFOA

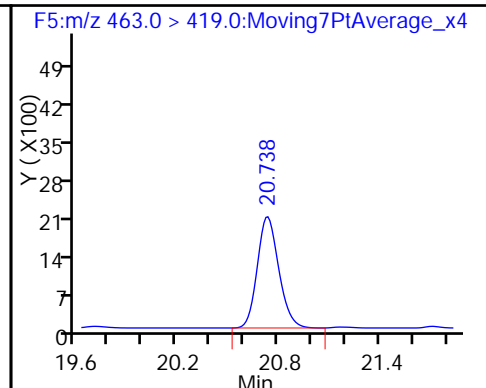
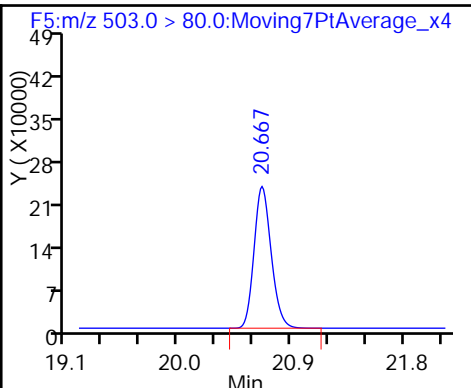
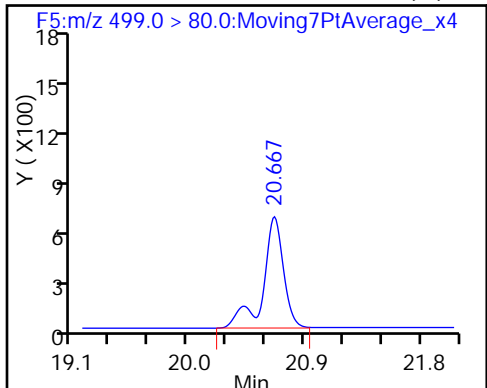
6 Perfluorooctanoic acid



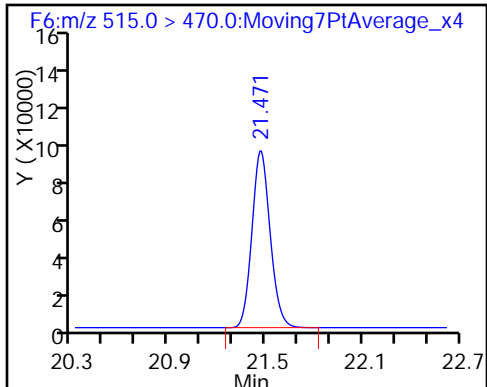
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_106.d
 Lims ID: 320-23917-A-13-A
 Client ID: WI-CV-2RW02-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 19:57:21 ALS Bottle#: 44 Worklist Smp#: 27
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-13-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:00:32

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.2	111.56
\$ 10 13C2 PFDA	10.0	11.3	112.55

TestAmerica Sacramento

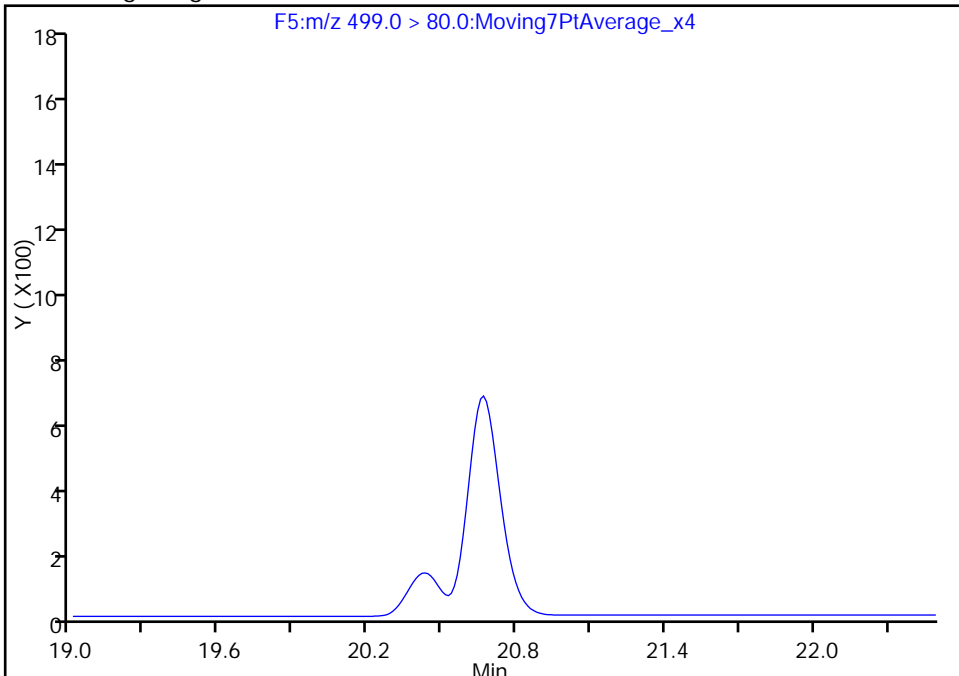
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_106.d
Injection Date: 07-Dec-2016 19:57:21 Instrument ID: A6
Lims ID: 320-23917-A-13-A Lab Sample ID: 320-23917-13
Client ID: WI-CV-2RW02-1116
Operator ID: CBW ALS Bottle#: 44 Worklist Smp#: 27
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

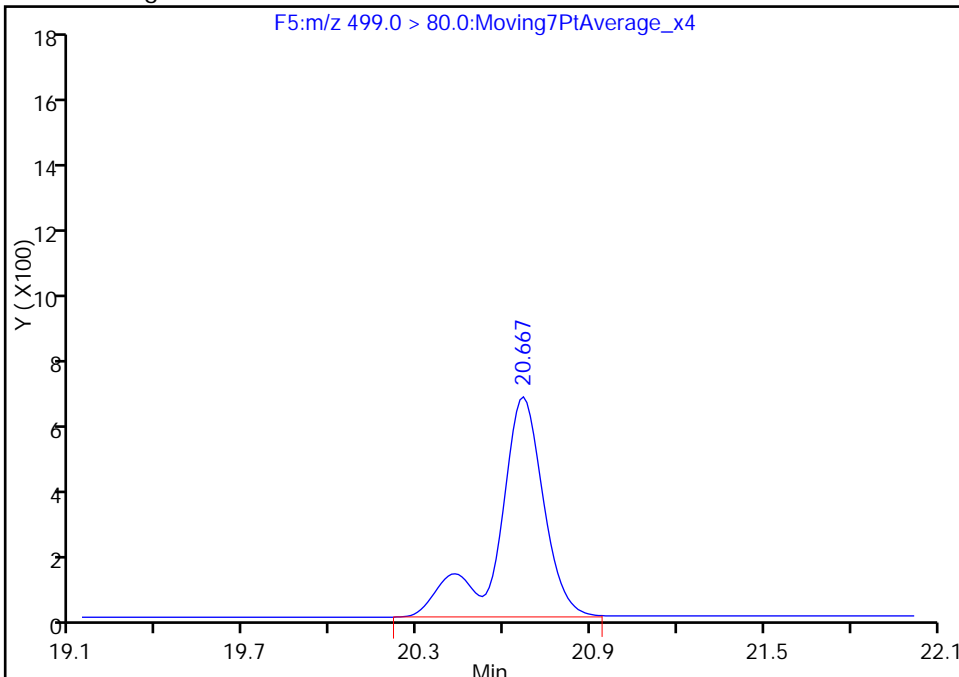
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.67
Area: 7281
Amount: 0.089957
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:00:32
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2FB02-1116 Lab Sample ID: 320-23917-14
 Matrix: Water Lab File ID: 05DEC2016A6A_104.d
 Analysis Method: 537 Date Collected: 11/28/2016 15:05
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 279.6(mL) Date Analyzed: 12/07/2016 18:58
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.13	0.098	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	105		70-130
STL00996	13C2 PFDA	106		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_104.d
 Lims ID: 320-23917-A-14-A
 Client ID: WI-CV-2FB02-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 18:58:10 ALS Bottle#: 42 Worklist Smp#: 25
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-14-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:57:53

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	918368	10.5	30006
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.320	19.332	-0.012	1.000	791	0.0121	5.2	M
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		747447	10.0	19767
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.047	20.047	0.0	1.000	17636	0.2268	6.1	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2091990	28.7	36312
9 Perfluorononanoic acid								
463.0 > 419.0	20.726	20.738	-0.012	1.000	6860	0.0809	196	
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.471	-0.009	1.000	691111	10.6	21897

QC Flag Legend

Review Flags

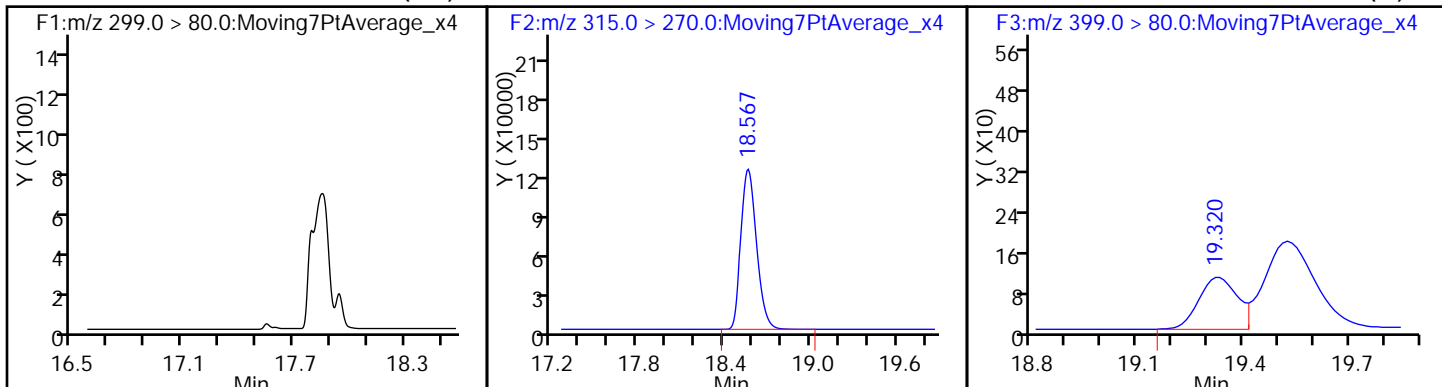
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_104.d
Injection Date: 07-Dec-2016 18:58:10 Instrument ID: A6
Lims ID: 320-23917-A-14-A Lab Sample ID: 320-23917-14
Client ID: WI-CV-2FB02-1116
Operator ID: CBW ALS Bottle#: 42 Worklist Smp#: 25
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

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

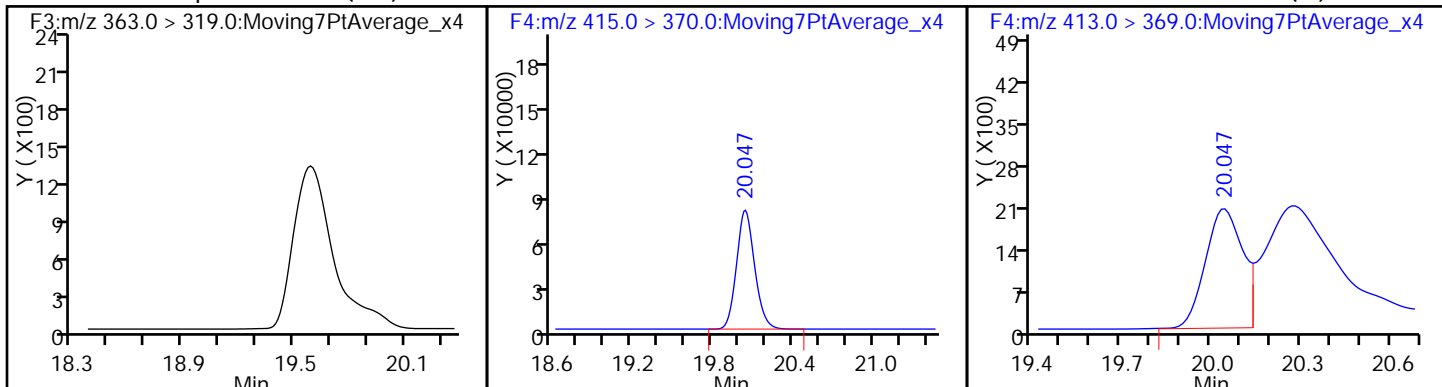
3 Perfluorohexanesulfonic acid (M)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

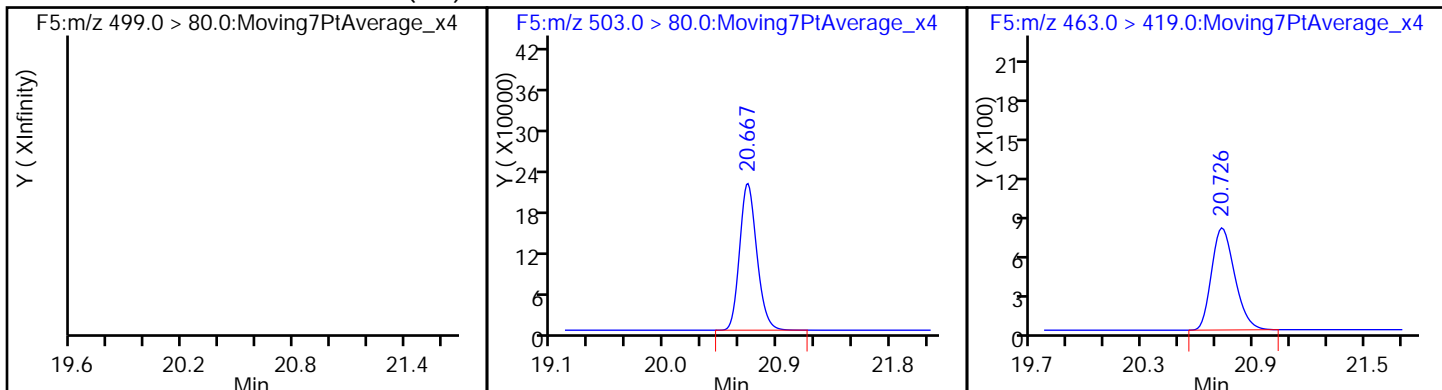
6 Perfluorooctanoic acid (M)



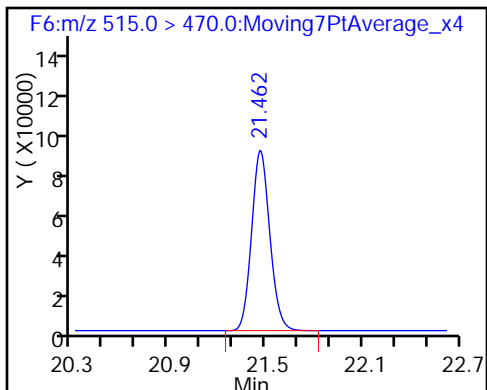
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_104.d
 Lims ID: 320-23917-A-14-A
 Client ID: WI-CV-2FB02-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 18:58:10 ALS Bottle#: 42 Worklist Smp#: 25
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-14-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:57:53

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.5	105.33
\$ 10 13C2 PFDA	10.0	10.6	105.52

TestAmerica Sacramento

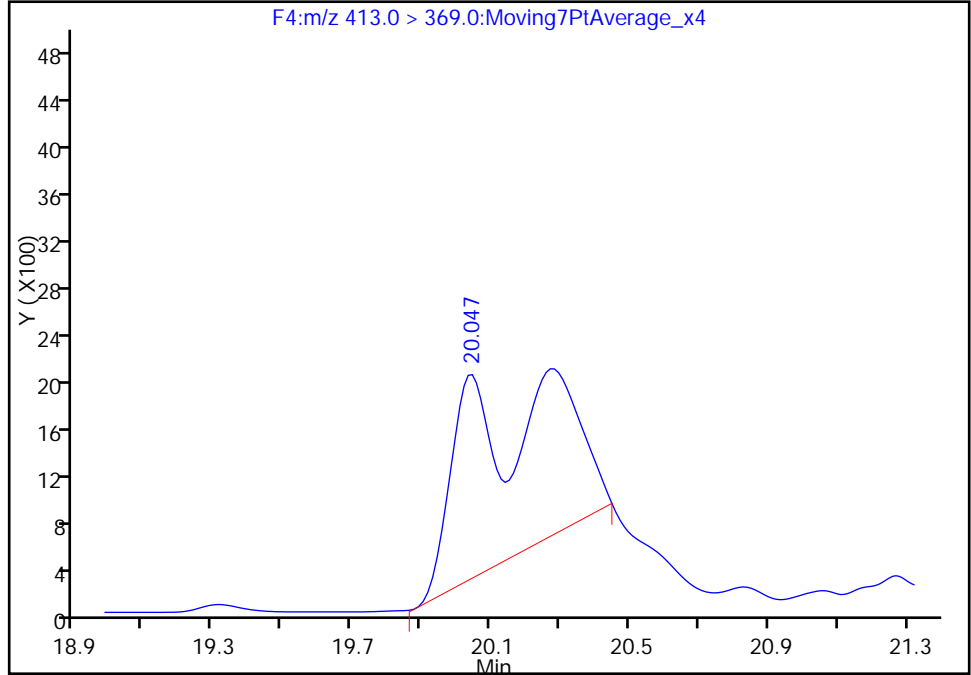
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_104.d
Injection Date: 07-Dec-2016 18:58:10 Instrument ID: A6
Lims ID: 320-23917-A-14-A Lab Sample ID: 320-23917-14
Client ID: WI-CV-2FB02-1116
Operator ID: CBW ALS Bottle#: 42 Worklist Smp#: 25
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

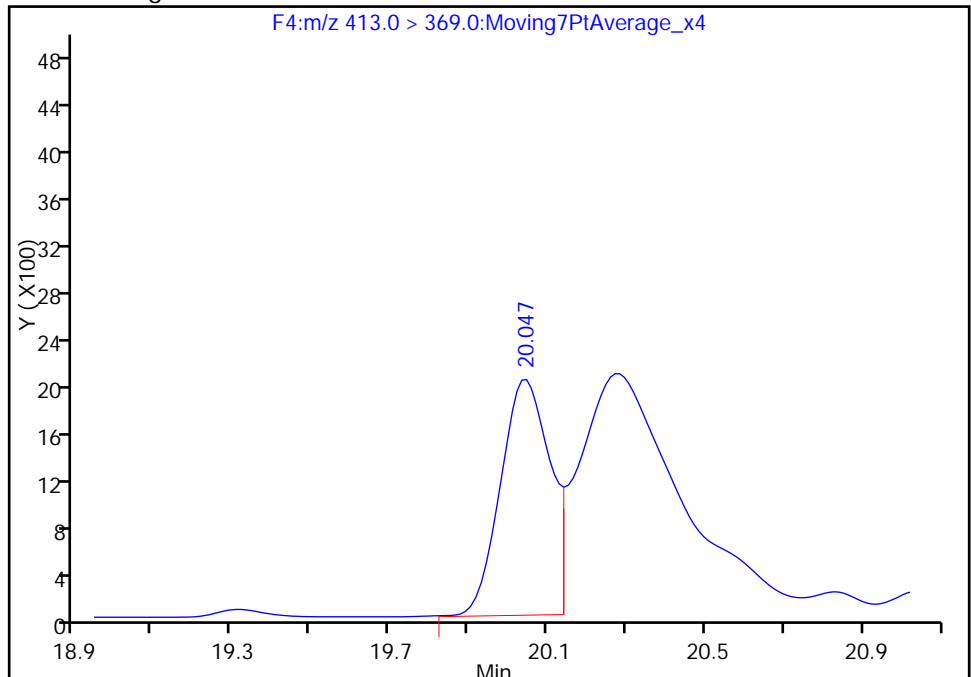
RT: 20.05
Area: 30741
Amount: 0.395300
Amount Units: ng/ml

Processing Integration Results



RT: 20.05
Area: 17636
Amount: 0.226782
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 08-Dec-2016 09:57:53
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2RW03-1116 Lab Sample ID: 320-23917-15
 Matrix: Water Lab File ID: 05DEC2016A6A_105.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:05
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 245.8 (mL) Date Analyzed: 12/07/2016 19:27
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.049	U	0.061	0.049	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U M	0.031	0.024	0.0096
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	117		70-130
STL00996	13C2 PFDA	111		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_105.d
 Lims ID: 320-23917-A-15-A
 Client ID: WI-CV-2RW03-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 19:27:45 ALS Bottle#: 43 Worklist Smp#: 26
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-15-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:59:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	925720	11.7	30319
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.344	19.332	0.012	1.000	2342	0.0387	11.9	M
* 5 13C2-PFOA	415.0 > 370.0	20.046	20.047	-0.001		681096	10.0	17777
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.082	20.047	0.035	1.000	2421	0.0342	1.2	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1933726	28.7	25166
9 Perfluorononanoic acid								
463.0 > 419.0	20.738	20.738	0.0	1.000	13685	0.1771	526	
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.471	0.0	1.000	662901	11.1	20903

QC Flag Legend

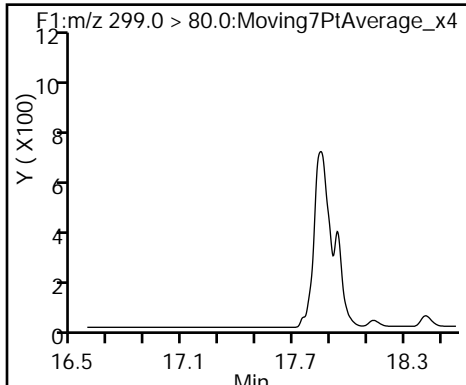
Review Flags

M - Manually Integrated

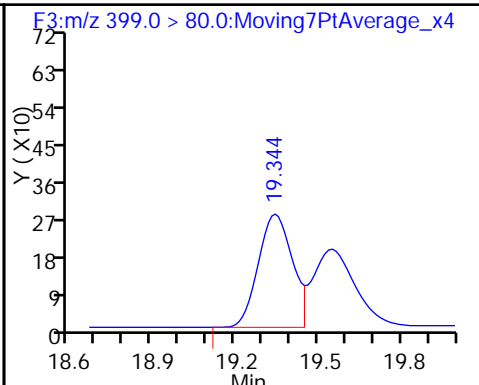
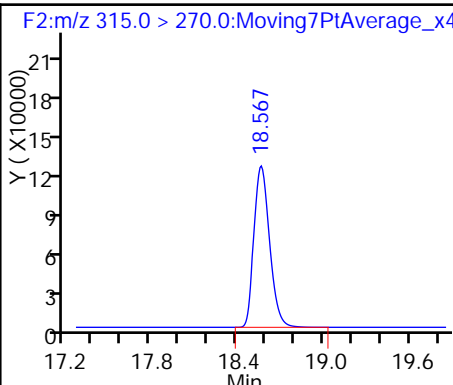
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_105.d
Injection Date: 07-Dec-2016 19:27:45 Instrument ID: A6
Lims ID: 320-23917-A-15-A Lab Sample ID: 320-23917-15
Client ID: WI-CV-2RW03-1116
Operator ID: CBW ALS Bottle#: 43 Worklist Smp#: 26
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

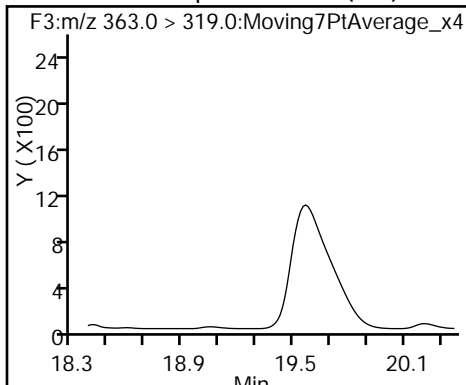
1 Perfluorobutanesulfonic acid (ND) \$ 2 13C2 PFHxA



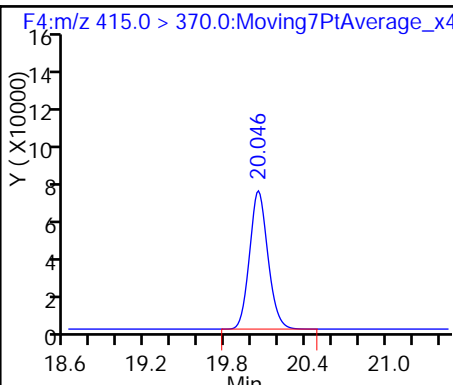
3 Perfluorohexanesulfonic acid (M)



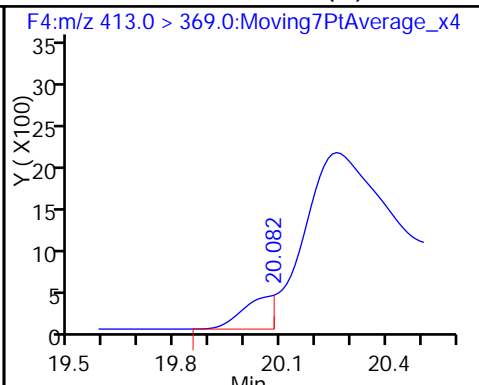
4 Perfluoroheptanoic acid (ND)



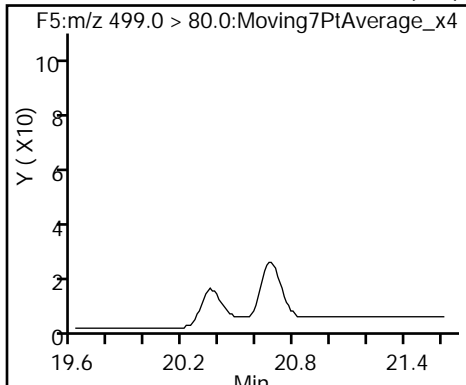
* 5 13C2-PFOA



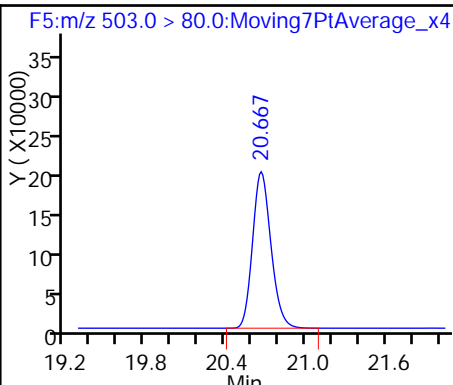
6 Perfluorooctanoic acid (M)



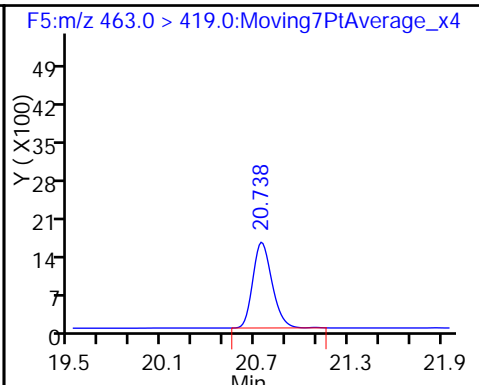
7 Perfluorooctane sulfonic acid (ND)



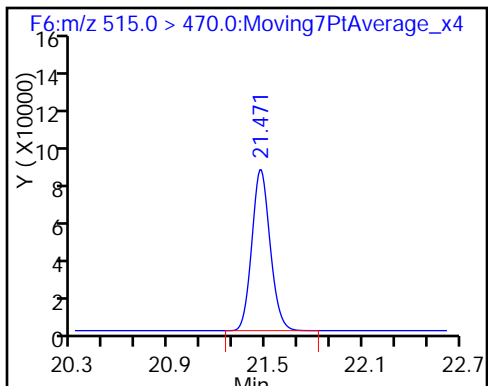
* 8 13C4 PFOS



9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_105.d
 Lims ID: 320-23917-A-15-A
 Client ID: WI-CV-2RW03-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 19:27:45 ALS Bottle#: 43 Worklist Smp#: 26
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-15-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 09:59:09

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.7	116.51
\$ 10 13C2 PFDA	10.0	11.1	111.07

TestAmerica Sacramento

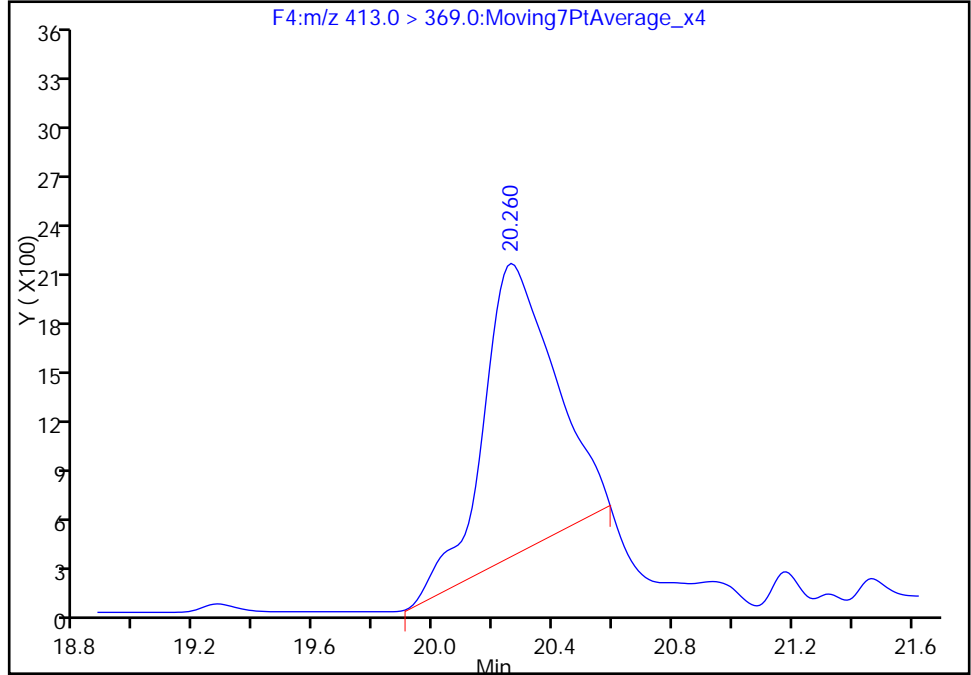
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_105.d
Injection Date: 07-Dec-2016 19:27:45 Instrument ID: A6
Lims ID: 320-23917-A-15-A Lab Sample ID: 320-23917-15
Client ID: WI-CV-2RW03-1116
Operator ID: CBW ALS Bottle#: 43 Worklist Smp#: 26
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

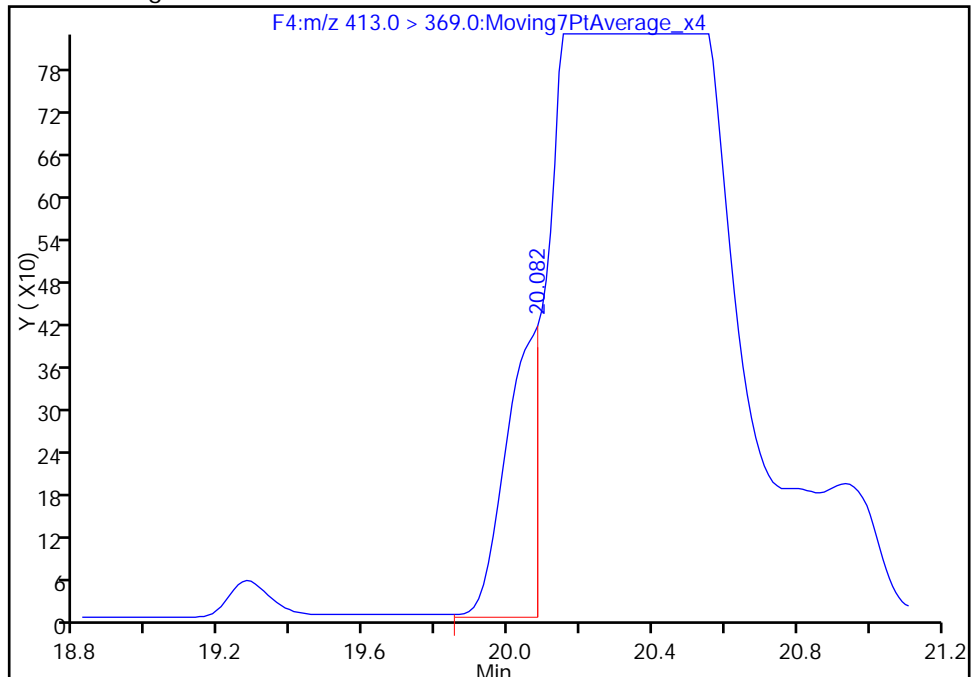
RT: 20.26
Area: 29849
Amount: 0.421222
Amount Units: ng/ml

Processing Integration Results



RT: 20.08
Area: 2421
Amount: 0.034165
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 08-Dec-2016 09:59:09
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2FB03-1116 Lab Sample ID: 320-23917-16
 Matrix: Water Lab File ID: 05DEC2016A6A_110.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:06
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 280.7(mL) Date Analyzed: 12/07/2016 21:55
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.053	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.098	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	107		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_110.d
 Lims ID: 320-23917-A-16-A
 Client ID: WI-CV-2FB03-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 21:55:44 ALS Bottle#: 45 Worklist Smp#: 31
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-16-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:04:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	1005134	10.9	32720
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.332	0.012	1.000	11804	0.1690	146
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		793639	10.0	20824
6 Perfluorooctanoic acid	413.0 > 369.0	20.094	20.047	0.047	1.000	2051	0.0248	0.8 M
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.394	20.619	-0.225	1.000	3289	0.0405	50.8 M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2230807	28.7	33313
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	7528	0.0836	211
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.471	0.0	1.000	744423	10.7	23110

QC Flag Legend

Review Flags

M - Manually Integrated

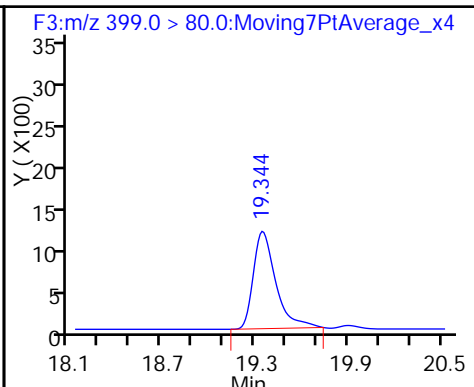
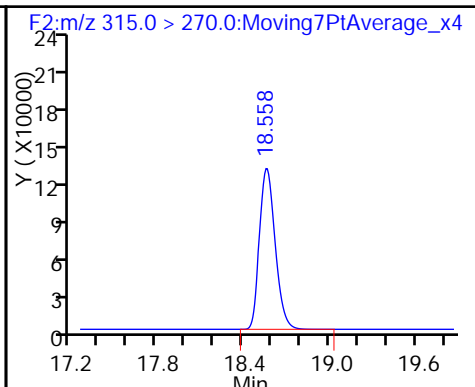
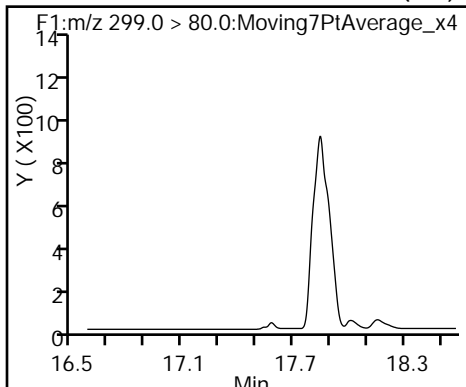
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_110.d
Injection Date: 07-Dec-2016 21:55:44 Instrument ID: A6
Lims ID: 320-23917-A-16-A Lab Sample ID: 320-23917-16
Client ID: WI-CV-2FB03-1116
Operator ID: CBW ALS Bottle#: 45 Worklist Smp#: 31
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

\$ 2 13C2 PFHxA

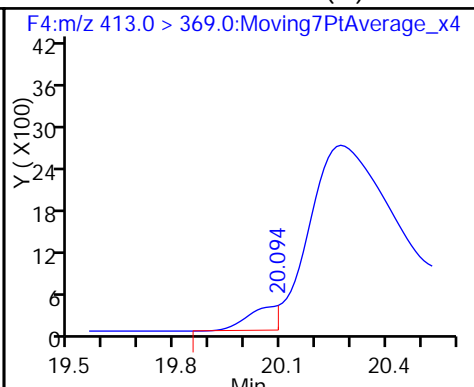
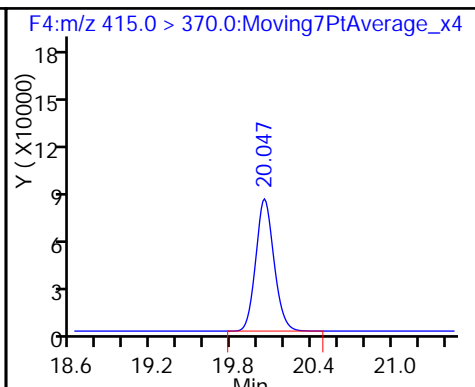
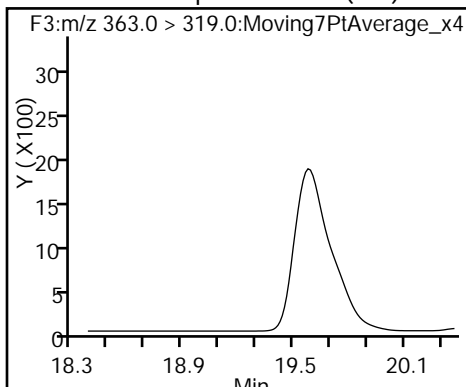
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

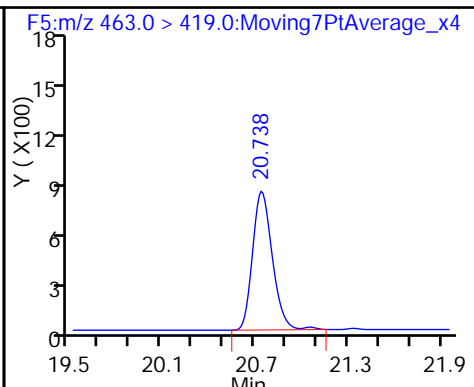
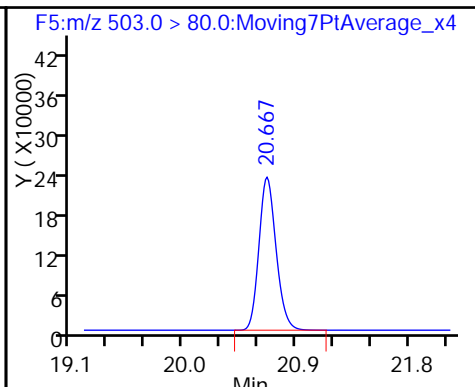
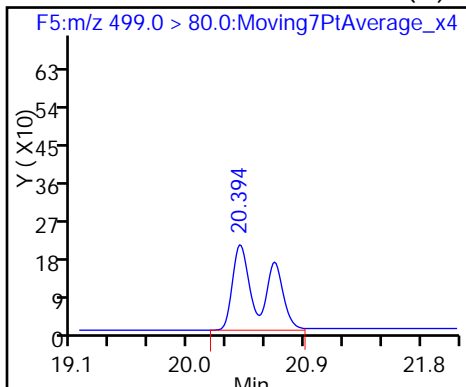
6 Perfluorooctanoic acid (M)



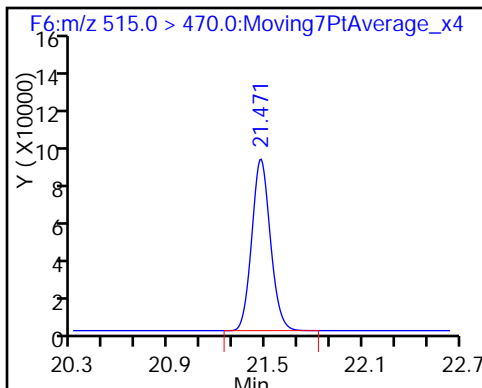
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_110.d
 Lims ID: 320-23917-A-16-A
 Client ID: WI-CV-2FB03-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 21:55:44 ALS Bottle#: 45 Worklist Smp#: 31
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-16-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:04:14

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.9	108.57
\$ 10 13C2 PFDA	10.0	10.7	107.04

TestAmerica Sacramento

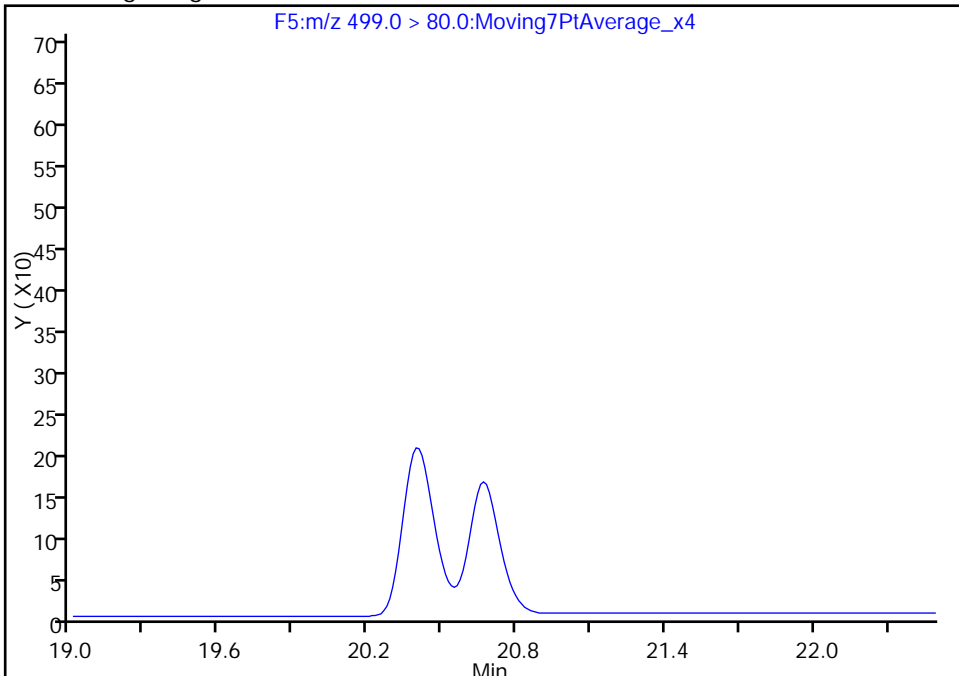
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_110.d
Injection Date: 07-Dec-2016 21:55:44 Instrument ID: A6
Lims ID: 320-23917-A-16-A Lab Sample ID: 320-23917-16
Client ID: WI-CV-2FB03-1116
Operator ID: CBW ALS Bottle#: 45 Worklist Smp#: 31
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

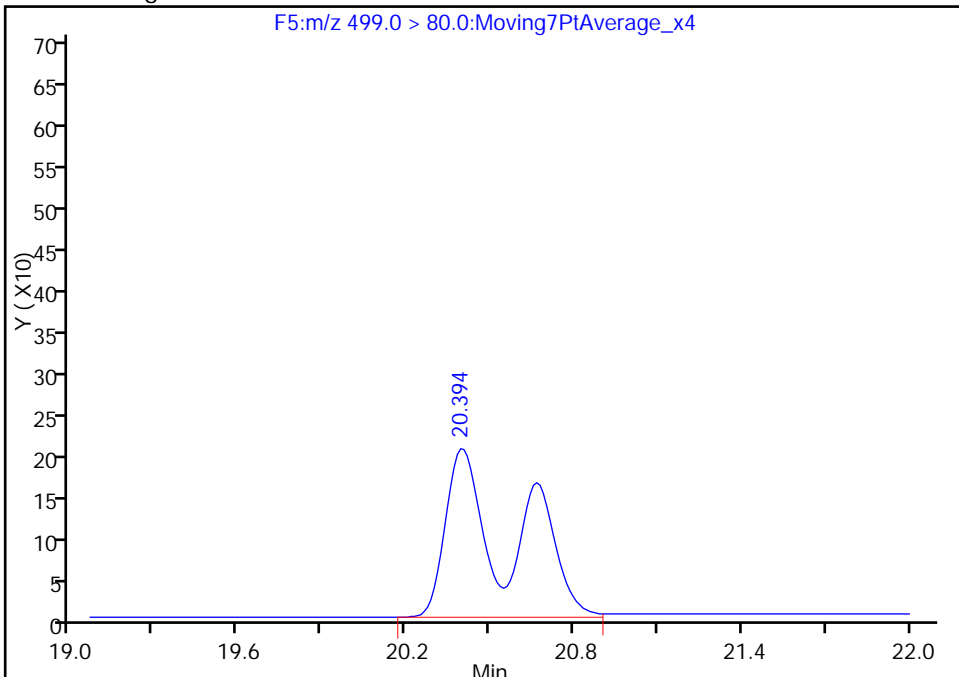
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.39
Area: 3289
Amount: 0.040503
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:04:14
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

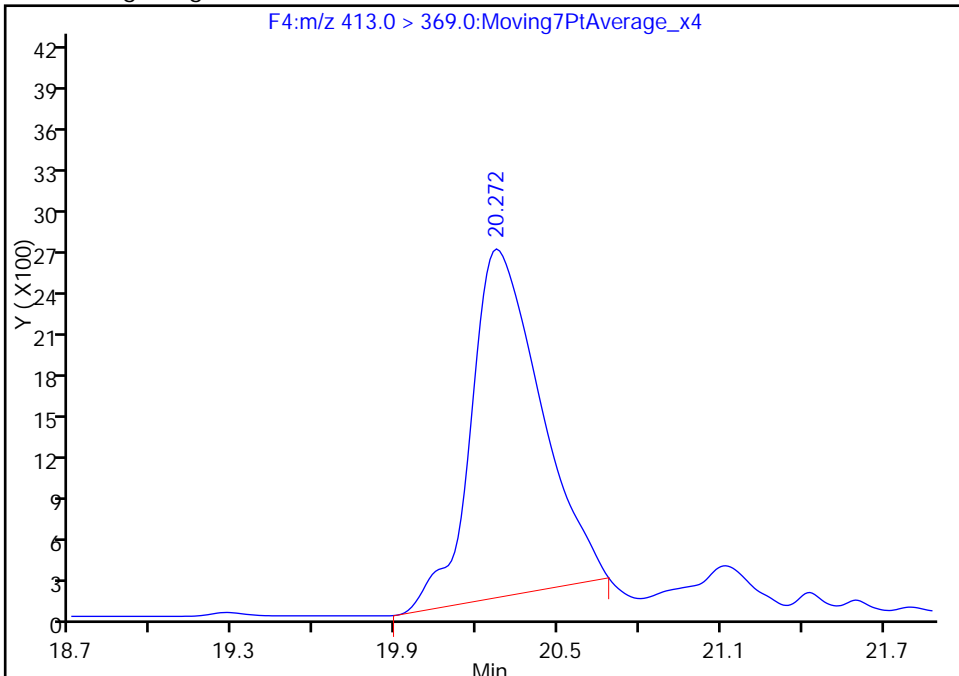
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_110.d
Injection Date: 07-Dec-2016 21:55:44 Instrument ID: A6
Lims ID: 320-23917-A-16-A Lab Sample ID: 320-23917-16
Client ID: WI-CV-2FB03-1116
Operator ID: CBW ALS Bottle#: 45 Worklist Smp#: 31
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

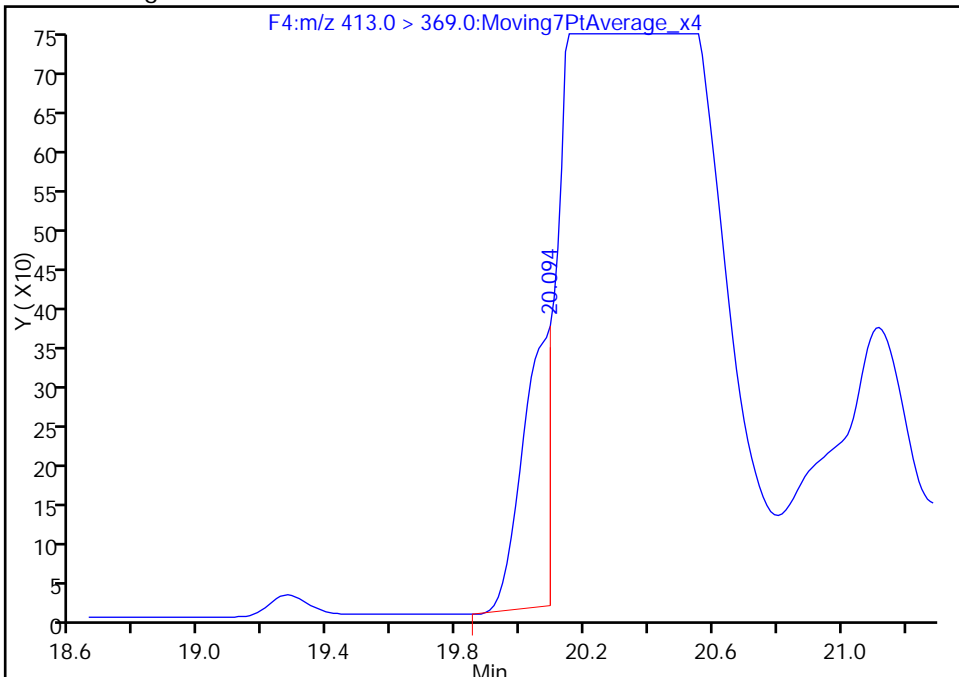
RT: 20.27
Area: 46000
Amount: 0.557088
Amount Units: ng/ml

Processing Integration Results



RT: 20.09
Area: 2051
Amount: 0.024839
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 08-Dec-2016 10:04:14
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2RW04-1116 Lab Sample ID: 320-23917-17
 Matrix: Water Lab File ID: 05DEC2016A6A_111.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:59
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 267.2 (mL) Date Analyzed: 12/07/2016 22:25
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.022	J	0.056	0.045	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.015	J M	0.028	0.022	0.0088
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.045

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	101		70-130
STL00996	13C2 PFDA	114		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_111.d
 Lims ID: 320-23917-A-17-A
 Client ID: WI-CV-2RW04-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 22:25:20 ALS Bottle#: 46 Worklist Smp#: 32
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-17-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:05:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.573	17.579	-0.006	1.000	290913	6.08	1101
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	764410	10.1	25103
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	437996	7.15	6364
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.380	-0.012	1.000	70385	0.8938	12.7 M
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.047	-0.012		648087	10.0	16994
6 Perfluorooctanoic acid	413.0 > 369.0	20.035	20.047	-0.012	1.000	278420	4.13	106 M
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.406	20.619	-0.213	1.000	414034	5.82	8498
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1955336	28.7	51398
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	13128	0.1786	68.0 M
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.471	-0.009	1.000	647584	11.4	20239

QC Flag Legend

Review Flags

M - Manually Integrated

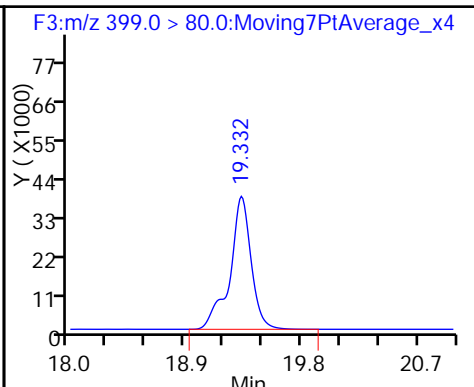
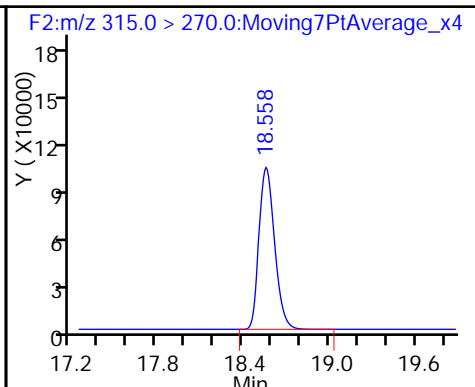
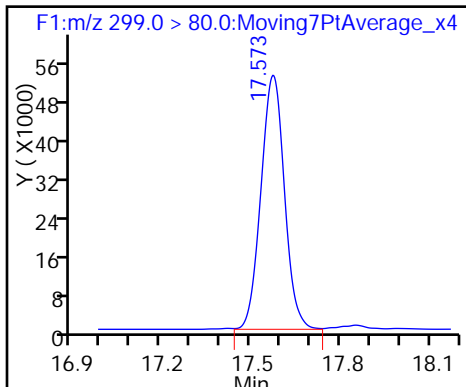
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_111.d
Injection Date: 07-Dec-2016 22:25:20 Instrument ID: A6
Lims ID: 320-23917-A-17-A Lab Sample ID: 320-23917-17
Client ID: WI-CV-2RW04-1116
Operator ID: CBW ALS Bottle#: 46 Worklist Smp#: 32
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

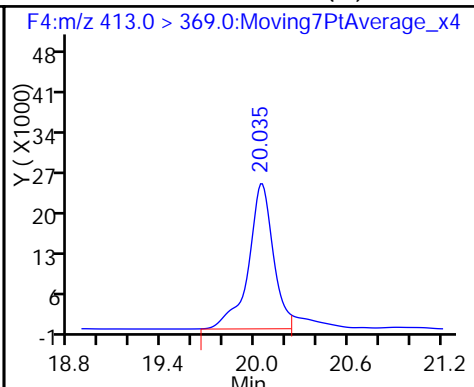
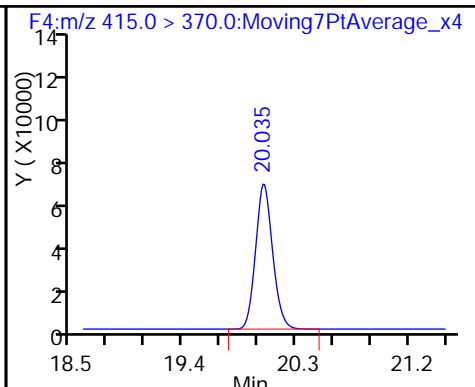
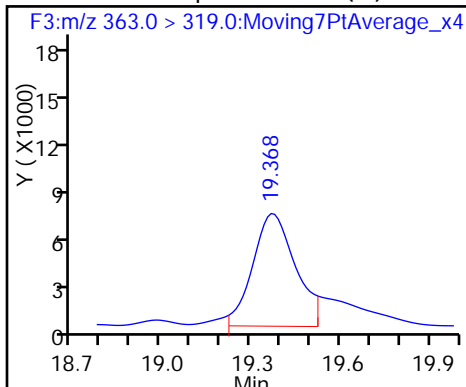
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid (M)

* 5 13C2-PFOA

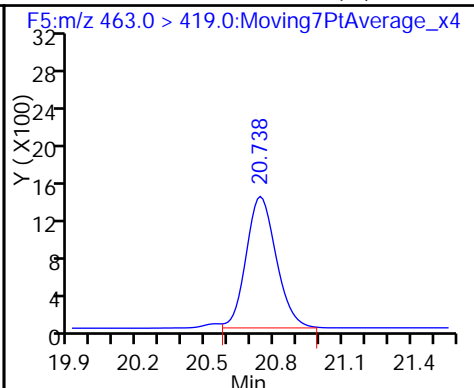
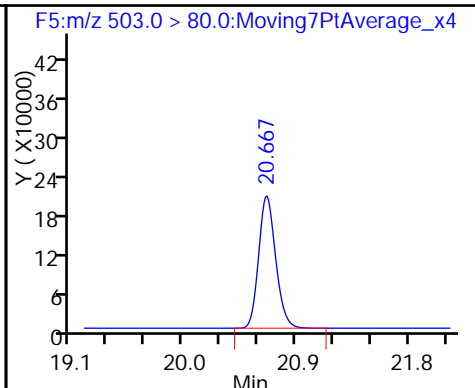
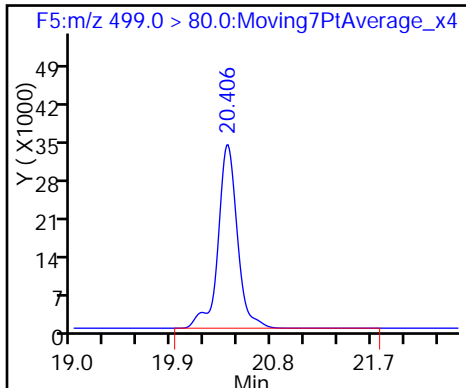
6 Perfluorooctanoic acid (M)



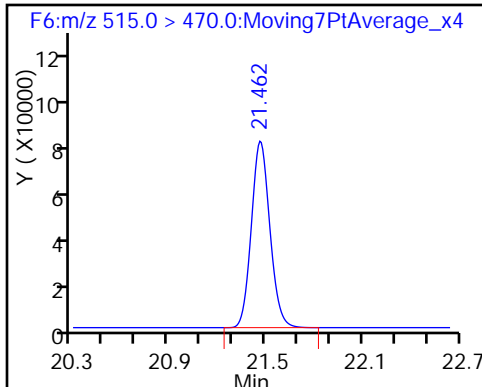
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_111.d
 Lims ID: 320-23917-A-17-A
 Client ID: WI-CV-2RW04-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 22:25:20 ALS Bottle#: 46 Worklist Smp#: 32
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-17-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:05:24

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.1	101.11
\$ 10 13C2 PFDA	10.0	11.4	114.03

TestAmerica Sacramento

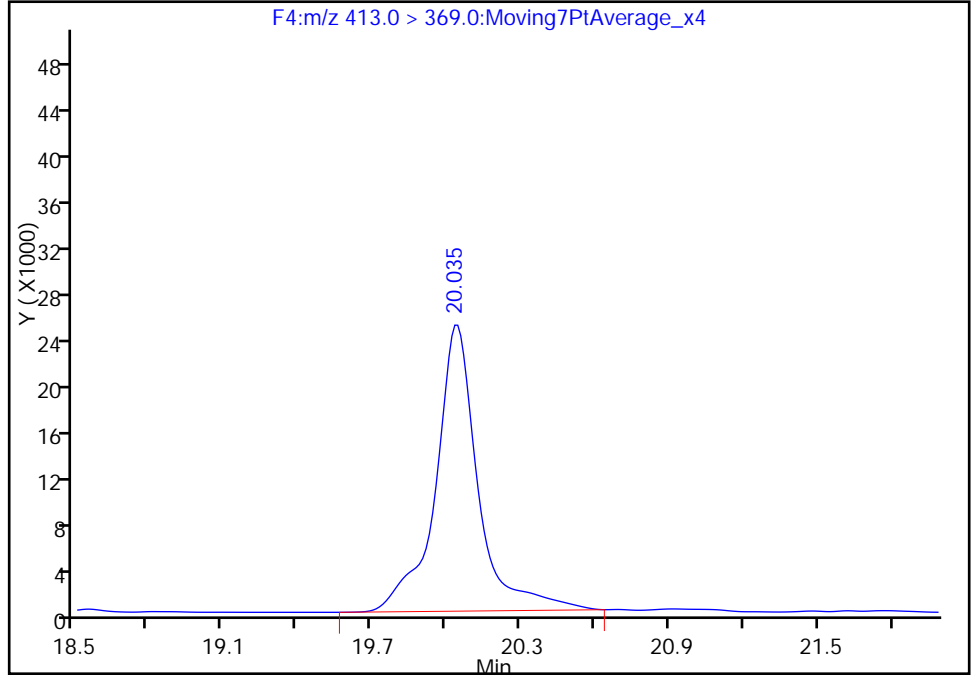
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_111.d
Injection Date: 07-Dec-2016 22:25:20 Instrument ID: A6
Lims ID: 320-23917-A-17-A Lab Sample ID: 320-23917-17
Client ID: WI-CV-2RW04-1116
Operator ID: CBW ALS Bottle#: 46 Worklist Smp#: 32
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

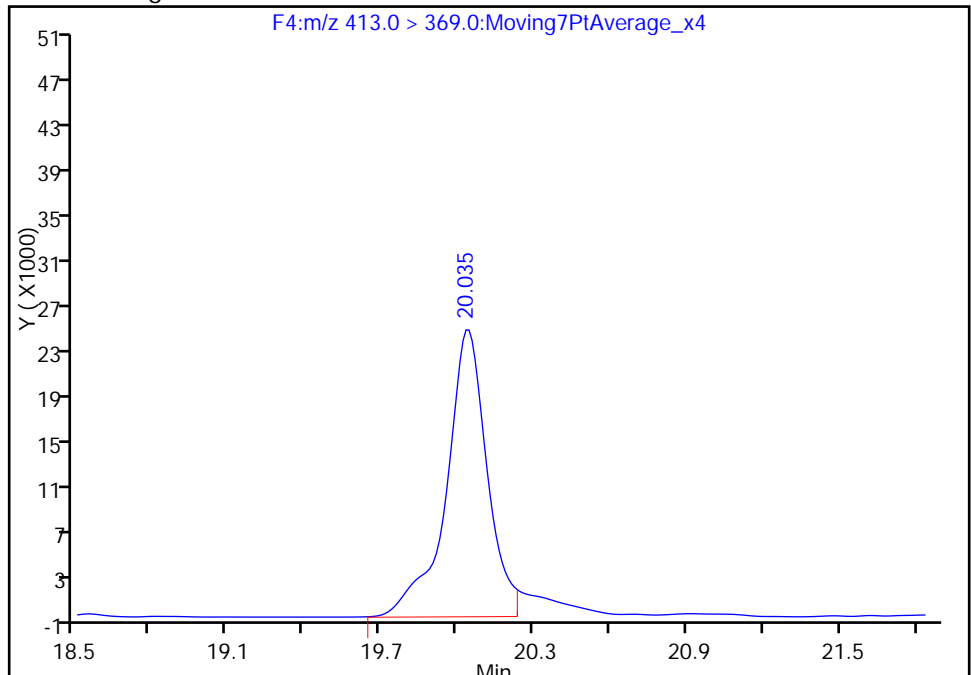
RT: 20.03
Area: 298806
Amount: 4.431444
Amount Units: ng/ml

Processing Integration Results



RT: 20.03
Area: 278420
Amount: 4.129109
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 08-Dec-2016 10:05:24
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2FB04-1116 Lab Sample ID: 320-23917-18
 Matrix: Water Lab File ID: 05DEC2016A6A_112.d
 Analysis Method: 537 Date Collected: 11/28/2016 17:00
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 288.6(mL) Date Analyzed: 12/07/2016 22:54
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.052	0.042	0.013
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U M	0.026	0.021	0.0082
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.095	U	0.12	0.095	0.041

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	105		70-130
STL00996	13C2 PFDA	107		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_112.d
 Lims ID: 320-23917-A-18-A
 Client ID: WI-CV-2FB04-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 22:54:57 ALS Bottle#: 47 Worklist Smp#: 33
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-18-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:06:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	904931	10.5	29767
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.356	19.332	0.024	1.000	1052	0.0165	5.5	M
* 5 13C2-PFOA								
415.0 > 370.0	20.035	20.047	-0.012		737940	10.0	19075	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.035	20.047	-0.012	1.000	1822	0.0237	0.6	M
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.667	20.619	0.048	1.000	1340	0.0180	56.3	M
* 8 13C4 PFOS								
503.0 > 80.0	20.655	20.667	-0.012		2040614	28.7	53146	
9 Perfluorononanoic acid								
463.0 > 419.0	20.726	20.738	-0.012	1.000	9904	0.1183	284	
\$ 10 13C2 PFDA								
515.0 > 470.0	21.462	21.471	-0.009	1.000	690438	10.7	21618	

QC Flag Legend

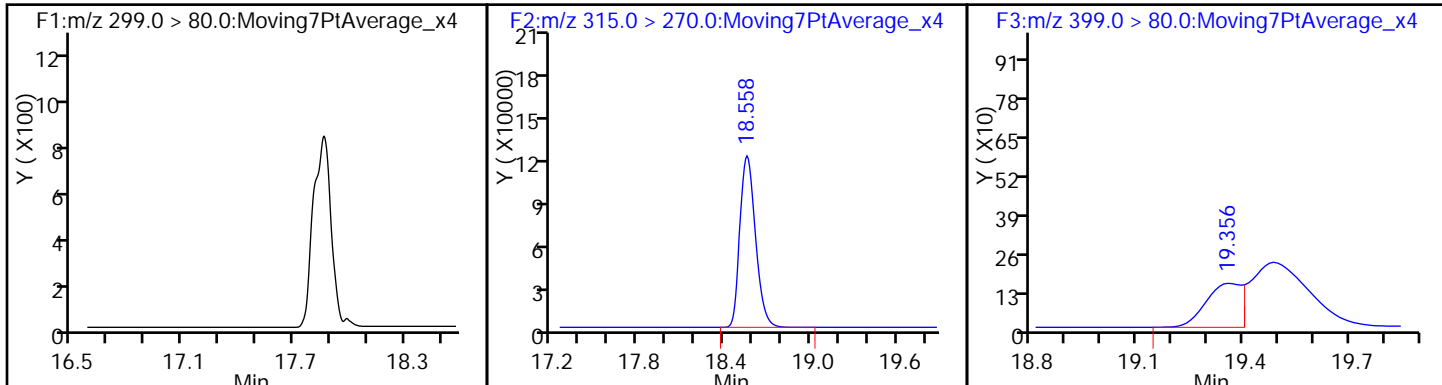
Review Flags

M - Manually Integrated

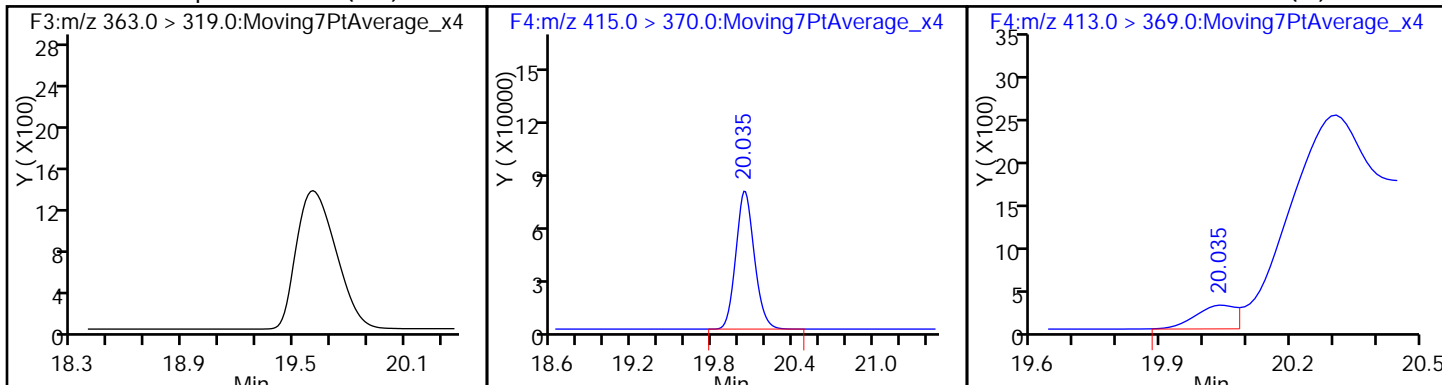
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_112.d
Injection Date: 07-Dec-2016 22:54:57 Instrument ID: A6
Lims ID: 320-23917-A-18-A Lab Sample ID: 320-23917-18
Client ID: WI-CV-2FB04-1116
Operator ID: CBW ALS Bottle#: 47 Worklist Smp#: 33
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

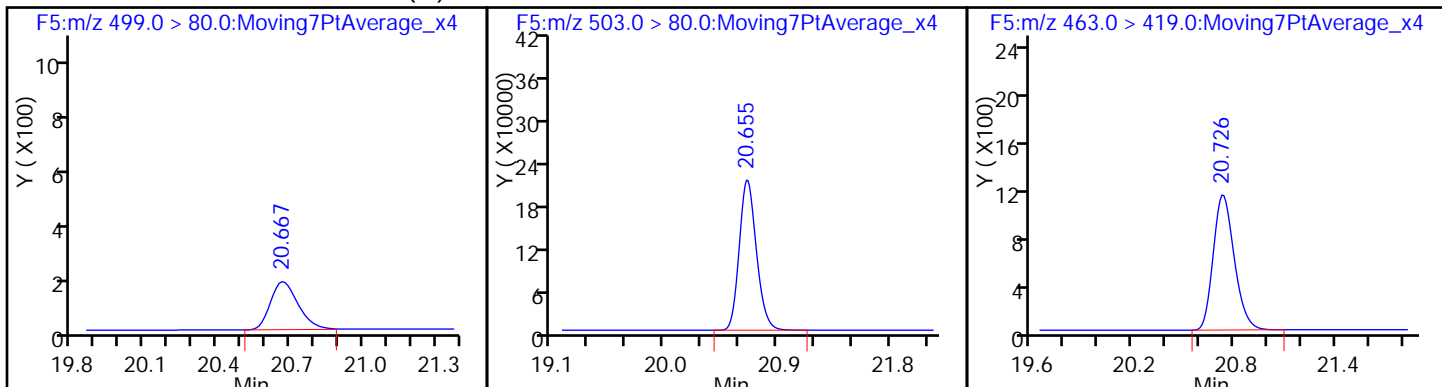
1 Perfluorobutanesulfonic acid (ND) \$ 2 13C2 PFHxA 3 Perfluorohexanesulfonic acid (M)



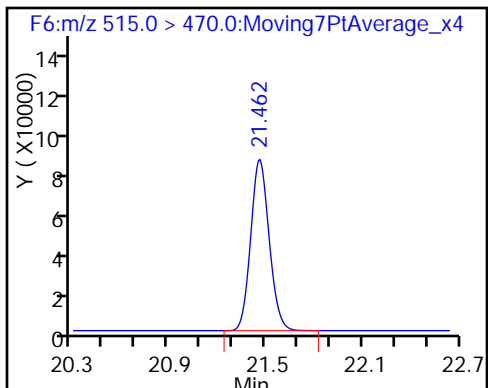
4 Perfluoroheptanoic acid (ND) * 5 13C2-PFOA 6 Perfluorooctanoic acid (M)



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



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_112.d
 Lims ID: 320-23917-A-18-A
 Client ID: WI-CV-2FB04-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 22:54:57 ALS Bottle#: 47 Worklist Smp#: 33
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-18-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:06:39

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.5	105.12
\$ 10 13C2 PFDA	10.0	10.7	106.77

TestAmerica Sacramento

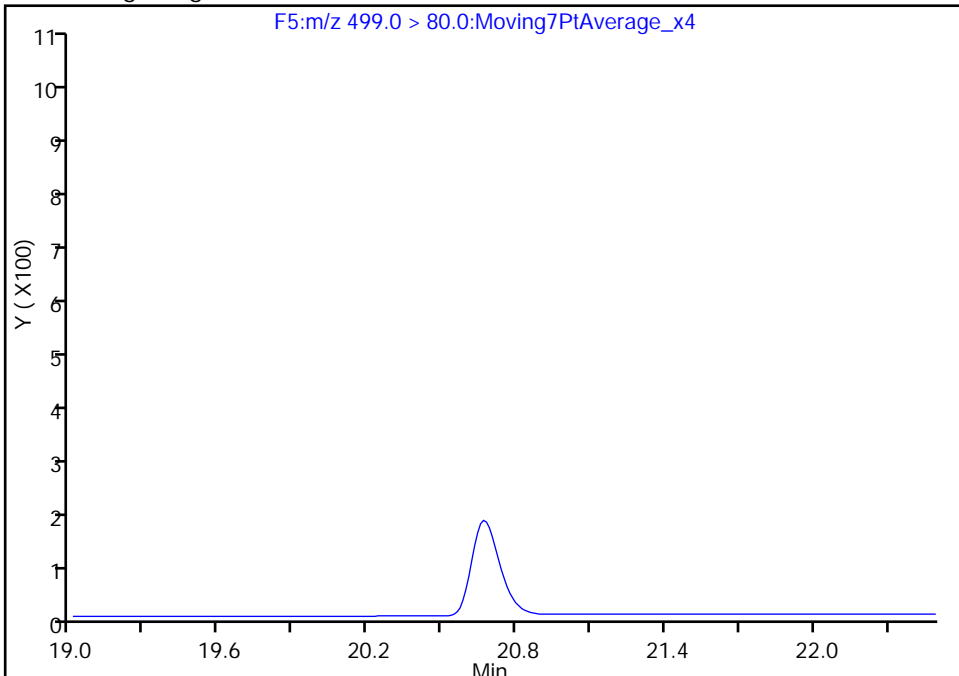
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Injection Date: 07-Dec-2016 22:54:57 Instrument ID: A6
Lims ID: 320-23917-A-18-A Lab Sample ID: 320-23917-18
Client ID: WI-CV-2FB04-1116
Operator ID: CBW ALS Bottle#: 47 Worklist Smp#: 33
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

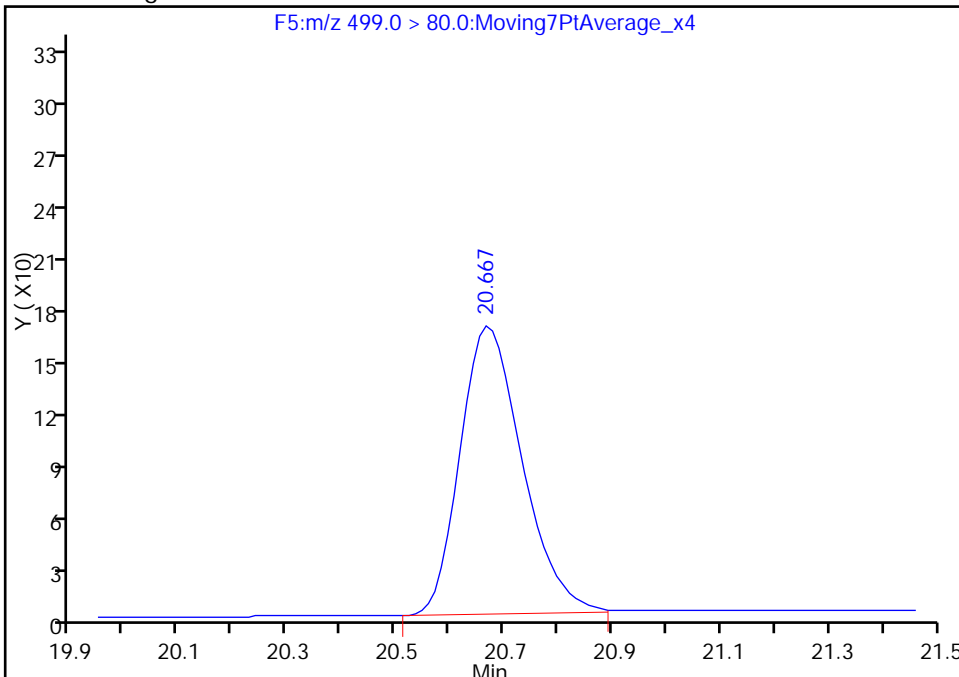
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.67
Area: 1340
Amount: 0.018040
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:06:39
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

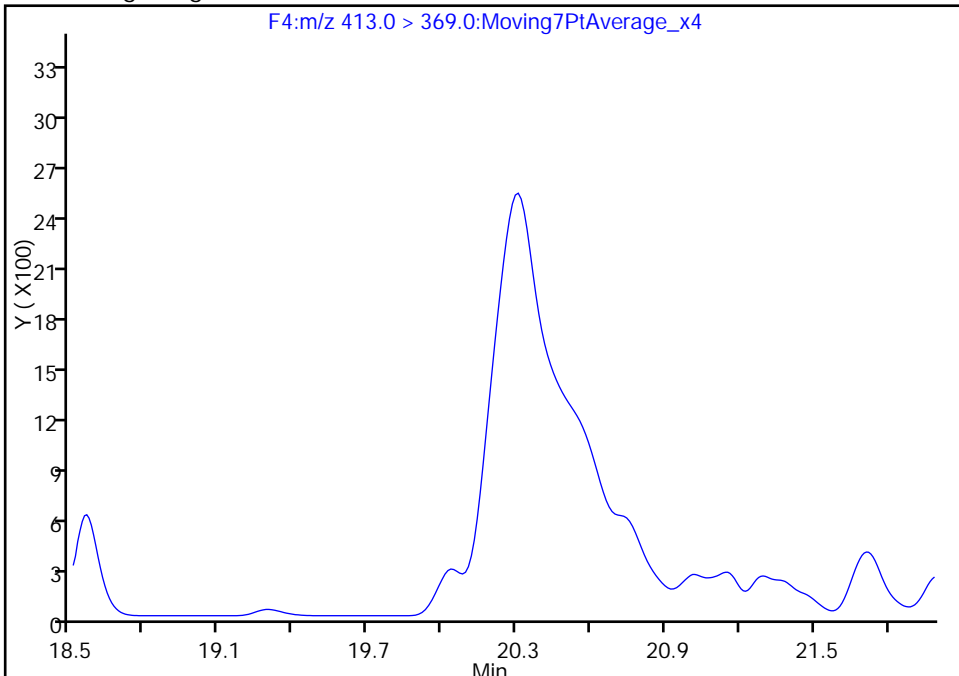
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Injection Date: 07-Dec-2016 22:54:57 Instrument ID: A6
Lims ID: 320-23917-A-18-A Lab Sample ID: 320-23917-18
Client ID: WI-CV-2FB04-1116
Operator ID: CBW ALS Bottle#: 47 Worklist Smp#: 33
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

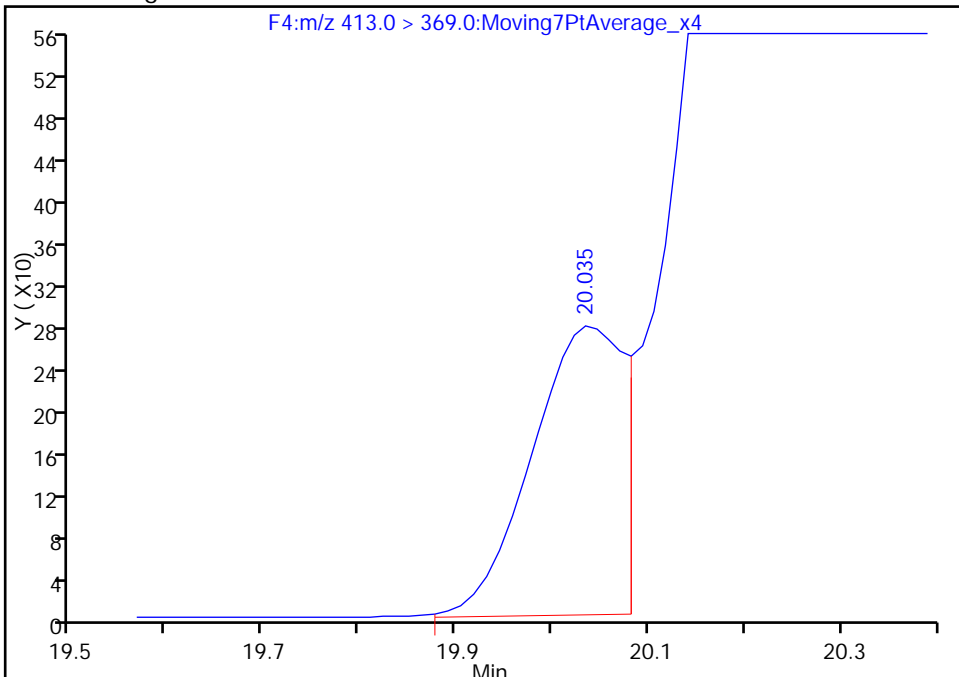
Not Detected
Expected RT: 20.05

Processing Integration Results



Manual Integration Results

RT: 20.03
Area: 1822
Amount: 0.023731
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:06:39
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3RW01-1116 Lab Sample ID: 320-23917-19
 Matrix: Water Lab File ID: 05DEC2016A6A_113.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:14
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 277.9(mL) Date Analyzed: 12/07/2016 23:24
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.099	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	118		70-130
STL00996	13C2 PFDA	110		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_113.d
 Lims ID: 320-23917-A-19-A
 Client ID: WI-CV-3RW01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 23:24:34 ALS Bottle#: 48 Worklist Smp#: 34
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-19-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:07:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	938621	11.8	31051
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.332	0.012	1.000	20689	0.3386	527
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.380	-0.012	1.000	1469	0.0177	1.4
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.047	-0.012		681732	10.0	17843
6 Perfluorooctanoic acid	413.0 > 369.0	20.035	20.047	-0.012	1.000	12241	0.1726	3.6 M
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.667	20.619	0.048	1.000	4466	0.0629	12.2 M
* 8 13C4 PFOS	503.0 > 80.0	20.655	20.667	-0.012		1951241	28.7	40635
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	17259	0.2232	277
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.471	-0.009	1.000	657065	11.0	20585

QC Flag Legend

Review Flags

M - Manually Integrated

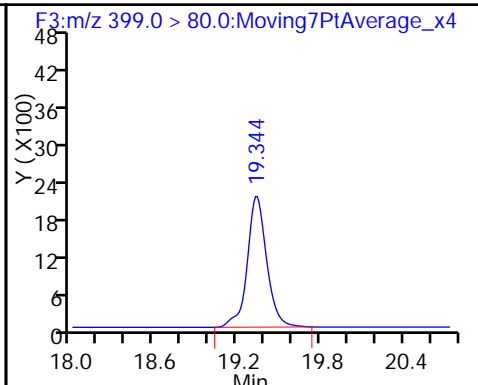
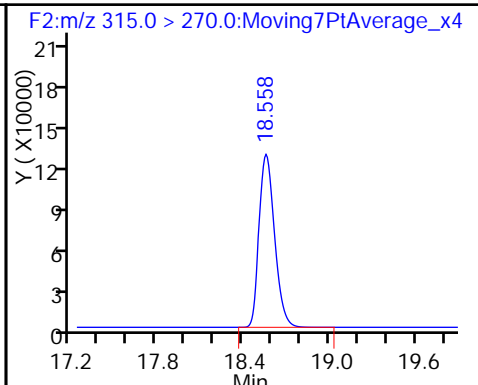
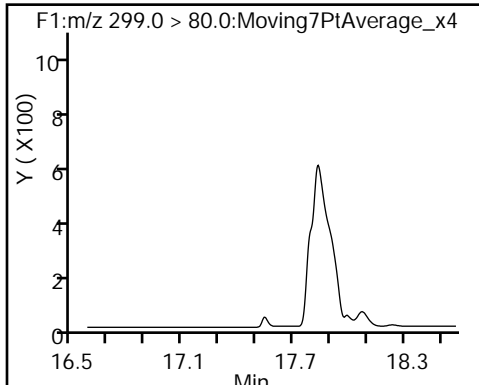
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_113.d
Injection Date: 07-Dec-2016 23:24:34 Instrument ID: A6
Lims ID: 320-23917-A-19-A Lab Sample ID: 320-23917-19
Client ID: WI-CV-3RW01-1116
Operator ID: CBW ALS Bottle#: 48 Worklist Smp#: 34
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

\$ 2 13C2 PFHxA

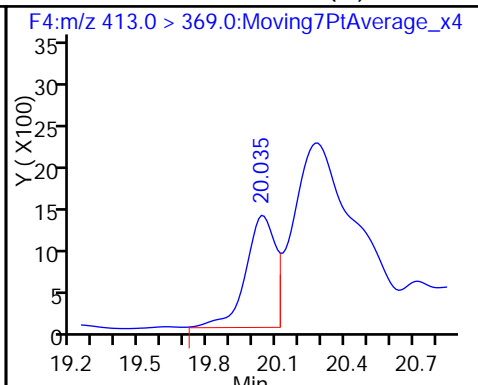
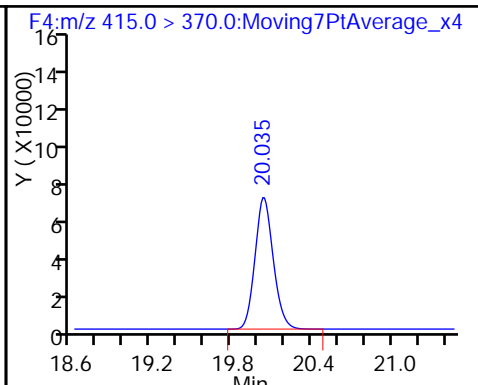
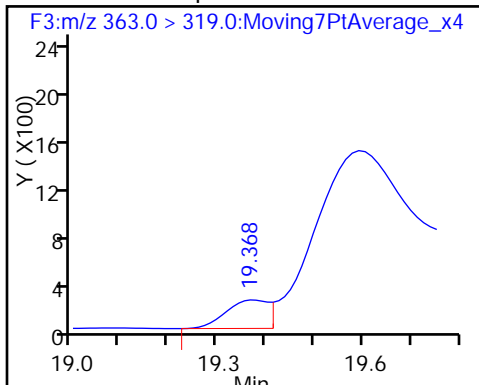
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

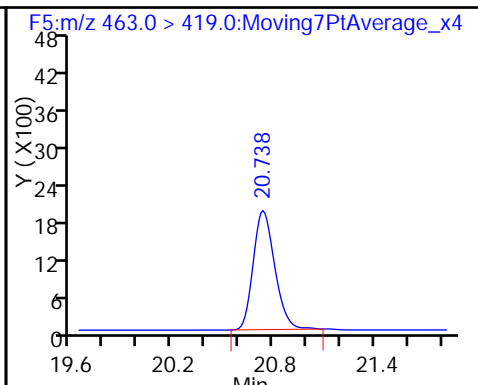
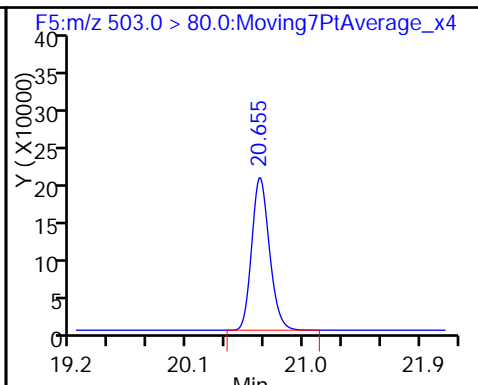
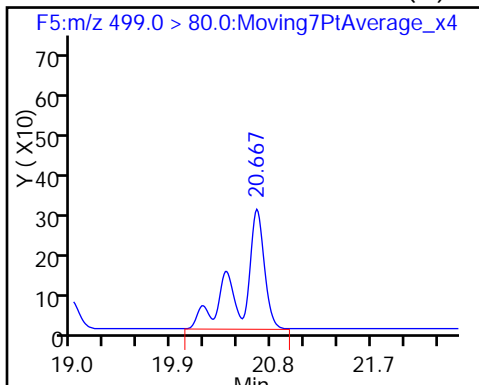
6 Perfluorooctanoic acid (M)



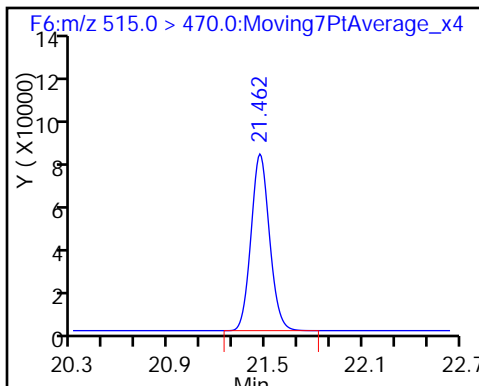
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_113.d
 Lims ID: 320-23917-A-19-A
 Client ID: WI-CV-3RW01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 23:24:34 ALS Bottle#: 48 Worklist Smp#: 34
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-19-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:07:56

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.8	118.03
\$ 10 13C2 PFDA	10.0	11.0	109.99

TestAmerica Sacramento

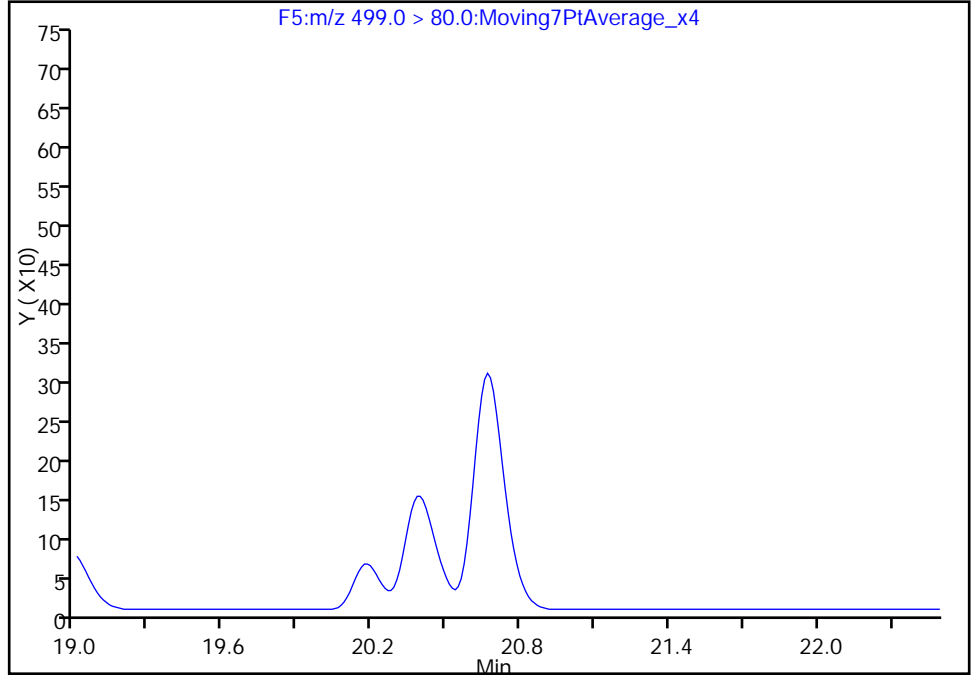
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_113.d
Injection Date: 07-Dec-2016 23:24:34 Instrument ID: A6
Lims ID: 320-23917-A-19-A Lab Sample ID: 320-23917-19
Client ID: WI-CV-3RW01-1116
Operator ID: CBW ALS Bottle#: 48 Worklist Smp#: 34
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

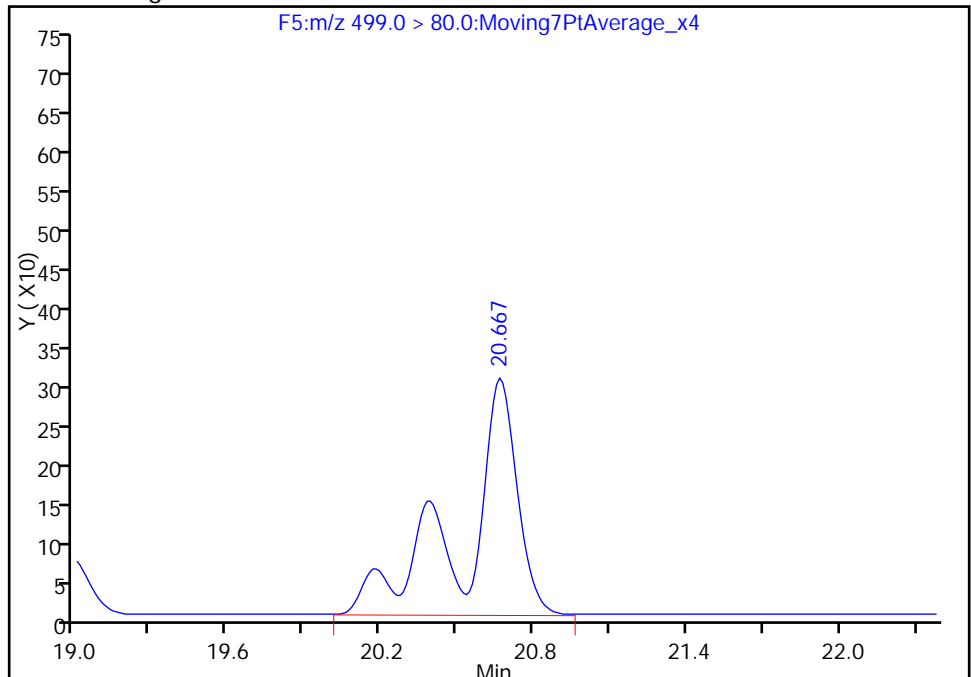
Signal: 1

Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results



RT: 20.67
Area: 4466
Amount: 0.062877
Amount Units: ng/ml

Reviewer: barnettj, 08-Dec-2016 10:07:56
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

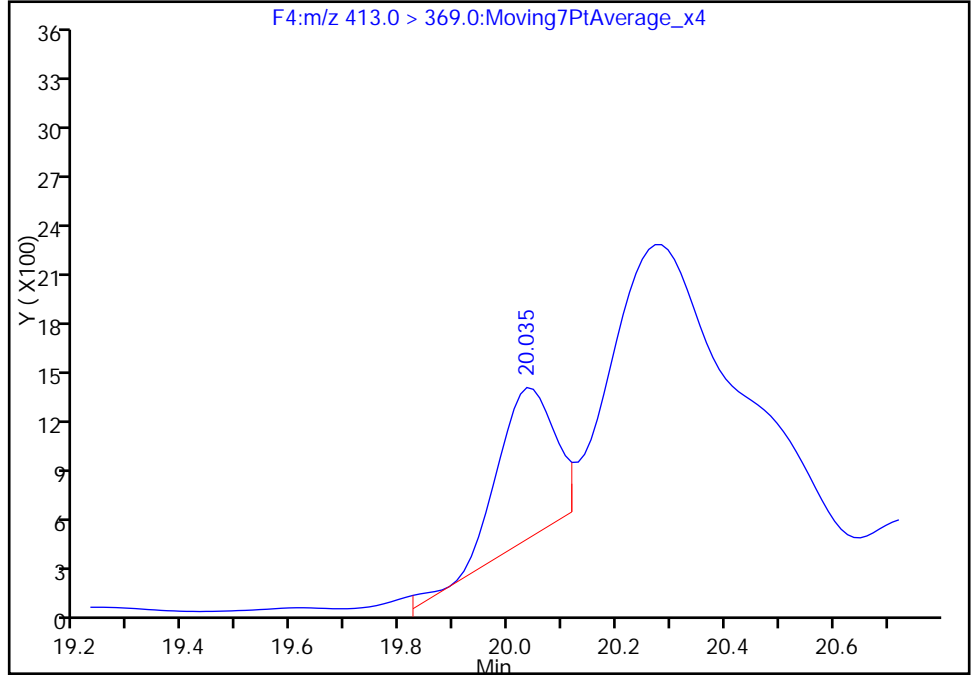
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_113.d
Injection Date: 07-Dec-2016 23:24:34 Instrument ID: A6
Lims ID: 320-23917-A-19-A Lab Sample ID: 320-23917-19
Client ID: WI-CV-3RW01-1116
Operator ID: CBW ALS Bottle#: 48 Worklist Smp#: 34
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

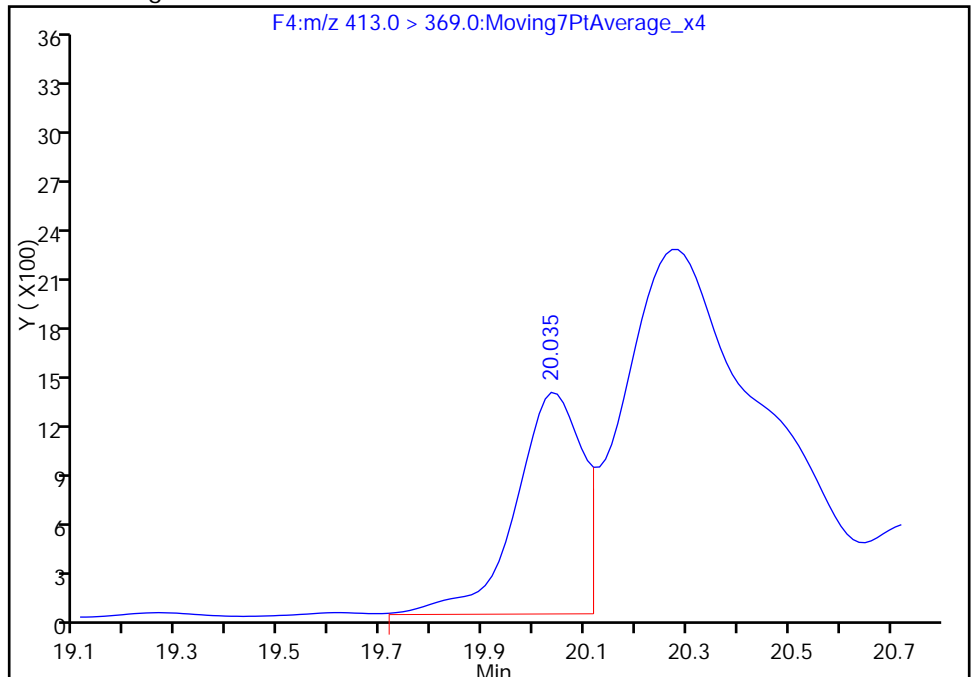
RT: 20.03
Area: 6768
Amount: 0.095419
Amount Units: ng/ml

Processing Integration Results



RT: 20.03
Area: 12241
Amount: 0.172581
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 08-Dec-2016 10:07:56
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB01-1116 Lab Sample ID: 320-23917-20
 Matrix: Water Lab File ID: 05DEC2016A6A_114.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:15
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 283.5 (mL) Date Analyzed: 12/07/2016 23:54
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	0.1	M Q	70-130
STL00996	13C2 PFDA	0.3	M Q	70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_114.d
 Lims ID: 320-23917-A-20-A
 Client ID: WI-CV-3FB01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 23:54:11 ALS Bottle#: 1 Worklist Smp#: 35
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-20-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:32:48 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 11:32:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
\$ 2 13C2 PFHxA								M
315.0 > 270.0	18.558	18.567	-0.009	1.000	1242	0.0139	48.5	M
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.344	19.332	0.012	1.000	2715	0.0461	9.6	M
* 5 13C2-PFOA								
415.0 > 370.0	20.035	20.047	-0.012		766412	10.0	19934	
* 8 13C4 PFOS								
503.0 > 80.0	20.655	20.667	-0.012		1880853	28.7	49030	
\$ 10 13C2 PFDA								M
515.0 > 470.0	21.453	21.471	-0.018	1.000	1970	0.0293	72.0	M

QC Flag Legend

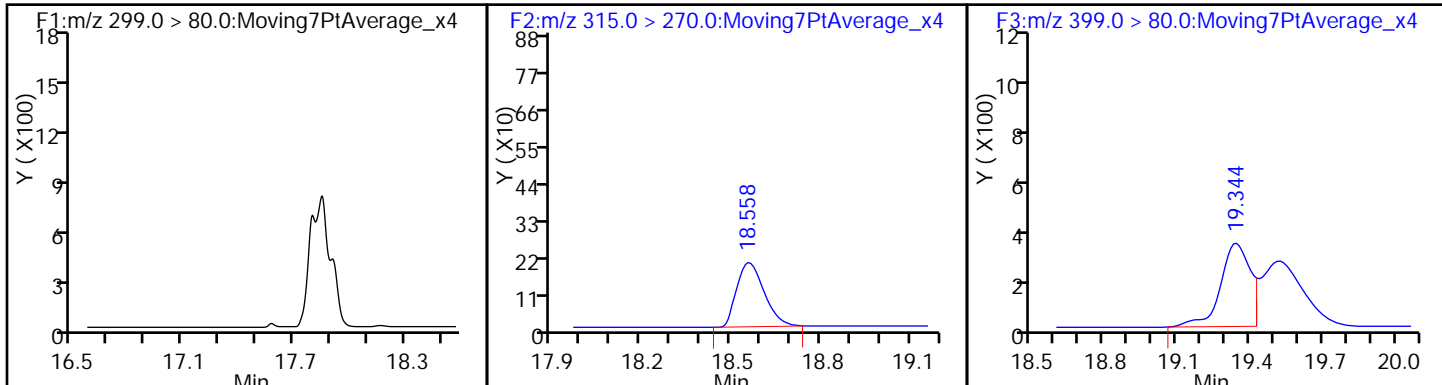
Review Flags

M - Manually Integrated

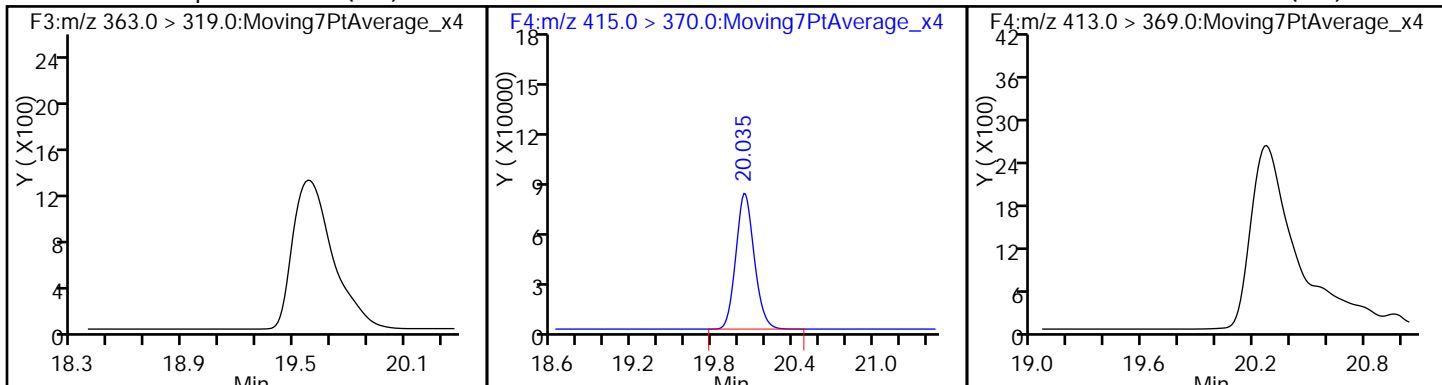
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_114.d
Injection Date: 07-Dec-2016 23:54:11 Instrument ID: A6
Lims ID: 320-23917-A-20-A Lab Sample ID: 320-23917-20
Client ID: WI-CV-3FB01-1116
Operator ID: CBW ALS Bottle#: 1 Worklist Smp#: 35
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

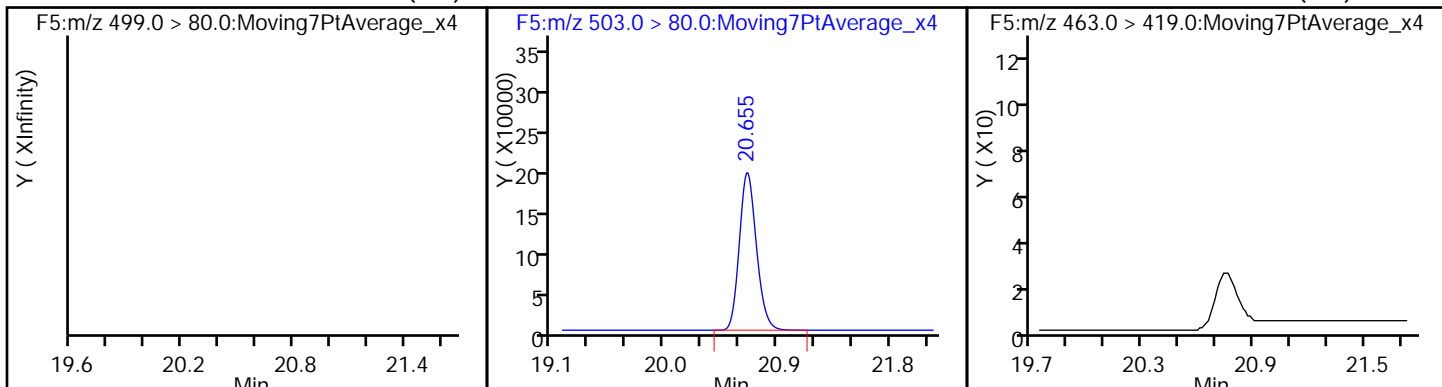
1 Perfluorobutanesulfonic acid (ND) \$ 2 13C2 PFHxA (M) 3 Perfluorohexanesulfonic acid (M)



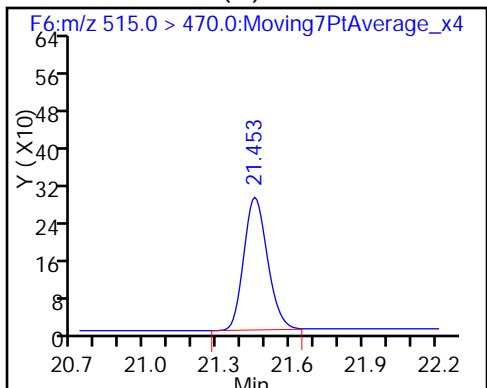
4 Perfluoroheptanoic acid (ND) * 5 13C2-PFOA 6 Perfluorooctanoic acid (ND)



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



\$ 10 13C2 PFDA (M)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_114.d
 Lims ID: 320-23917-A-20-A
 Client ID: WI-CV-3FB01-1116
 Sample Type: Client
 Inject. Date: 07-Dec-2016 23:54:11 ALS Bottle#: 1 Worklist Smp#: 35
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-20-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:32:48 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 11:32:48

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	0.0139	0.14
\$ 10 13C2 PFDA	10.0	0.0293	0.29

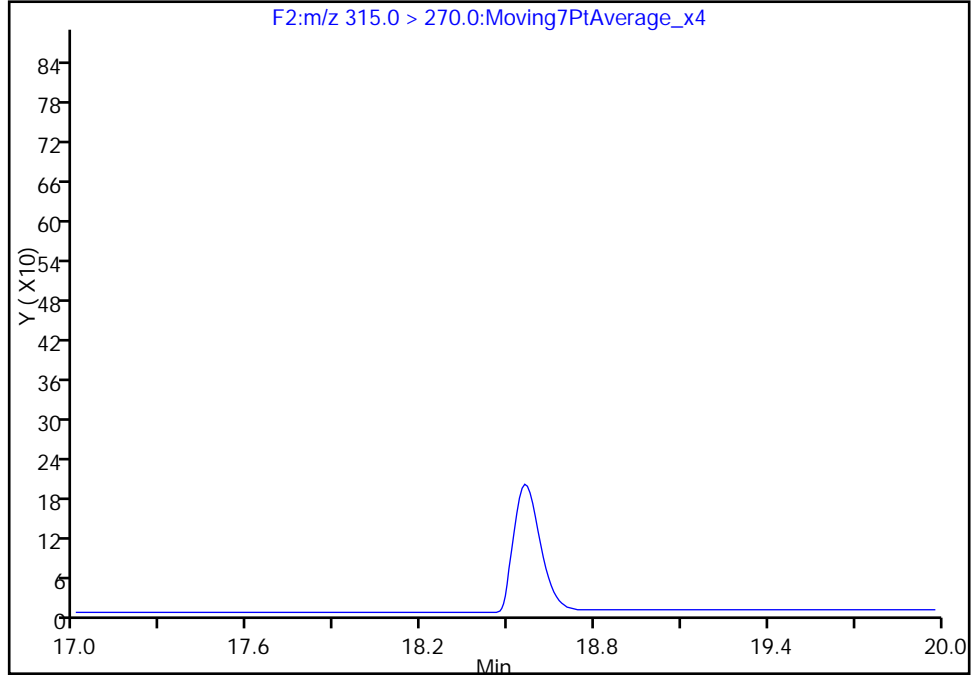
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_114.d
Injection Date: 07-Dec-2016 23:54:11 Instrument ID: A6
Lims ID: 320-23917-A-20-A Lab Sample ID: 320-23917-20
Client ID: WI-CV-3FB01-1116
Operator ID: CBW ALS Bottle#: 1 Worklist Smp#: 35
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F2:M/RM

\$ 2 13C2 PFHxA, CAS: STL00993
Signal: 1

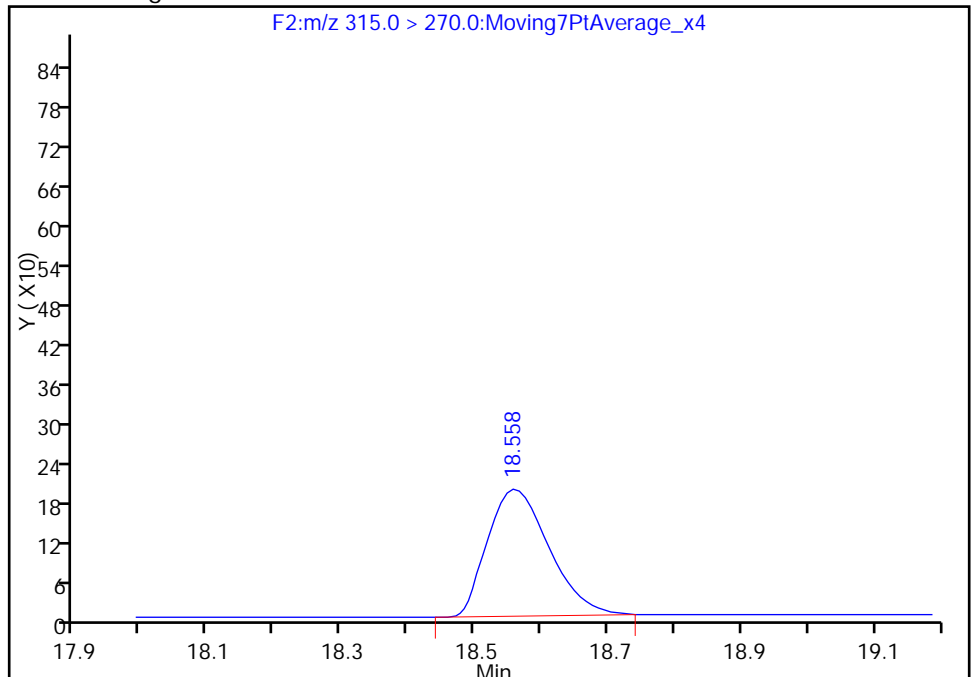
Not Detected
Expected RT: 18.57

Processing Integration Results



RT: 18.56
Area: 1242
Amount: 0.013892
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 08-Dec-2016 11:32:48
Audit Action: Manually Integrated

Audit Reason: Missed Peak

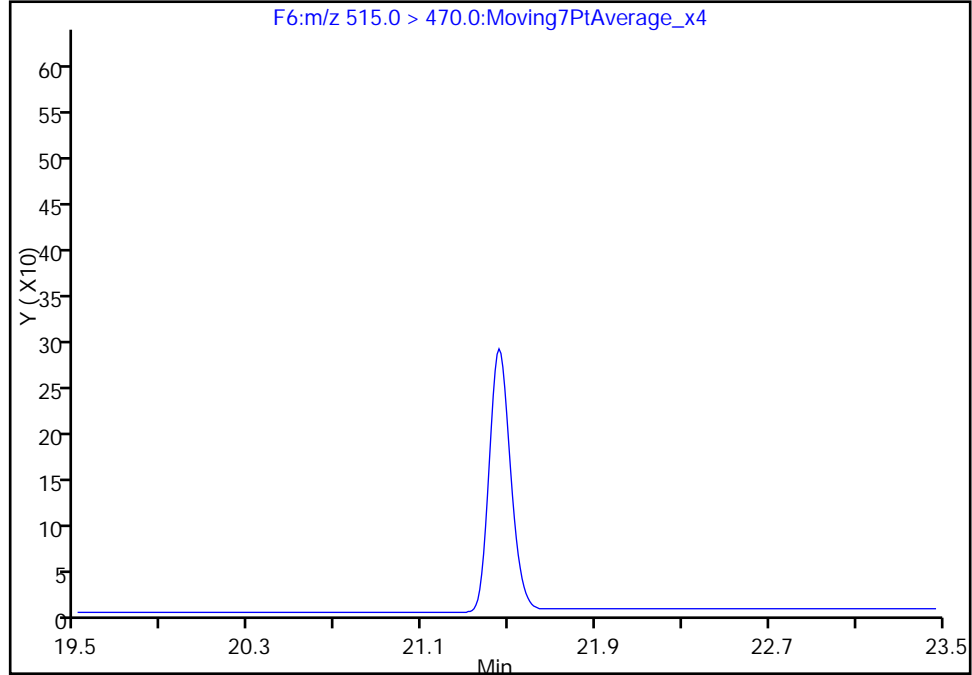
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_114.d
Injection Date: 07-Dec-2016 23:54:11 Instrument ID: A6
Lims ID: 320-23917-A-20-A Lab Sample ID: 320-23917-20
Client ID: WI-CV-3FB01-1116
Operator ID: CBW ALS Bottle#: 1 Worklist Smp#: 35
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F6:M/RM

\$ 10 13C2 PFDA, CAS: STL00996
Signal: 1

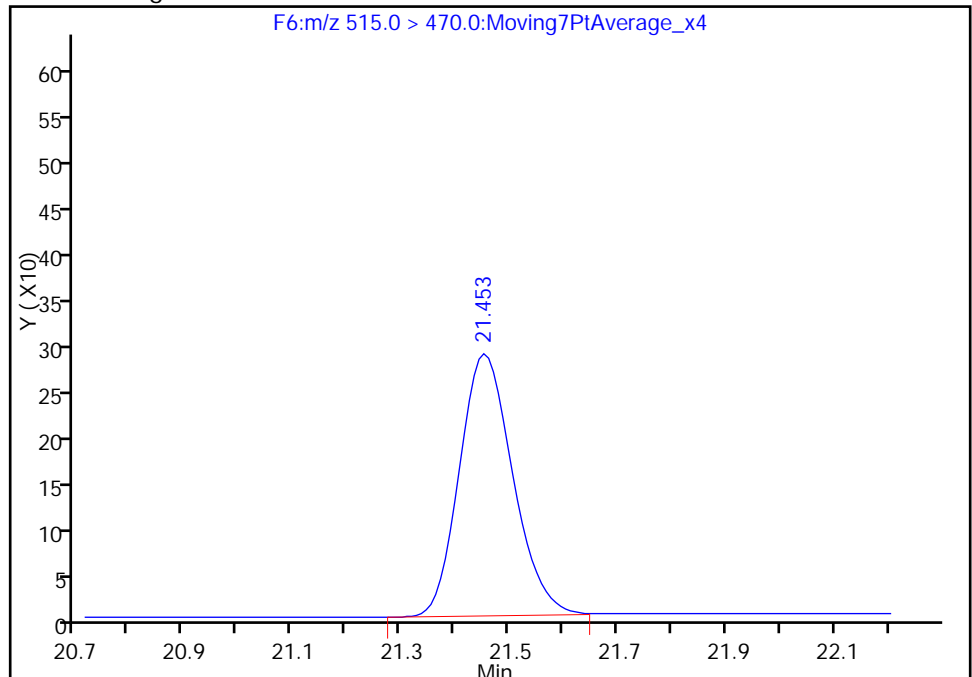
Not Detected
Expected RT: 21.47

Processing Integration Results



Manual Integration Results

RT: 21.45
Area: 1970
Amount: 0.029333
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 11:32:48
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3RW02-1116 Lab Sample ID: 320-23917-21
 Matrix: Water Lab File ID: 05DEC2016A6A_118.d
 Analysis Method: 537 Date Collected: 11/28/2016 14:14
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 256.4(mL) Date Analyzed: 12/08/2016 01:52
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.023	0.0092
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	106		70-130
STL00996	13C2 PFDA	107		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_118.d
 Lims ID: 320-23917-A-21-A
 Client ID: WI-CV-3RW02-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 01:52:37 ALS Bottle#: 5 Worklist Smp#: 39
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-21-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:13:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA								
315.0 > 270.0	18.548	18.567	-0.019	1.000	899653	10.6	29477	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.285	19.332	-0.047	1.000	213	0.003339	0.9	M
* 5 13C2-PFOA								
415.0 > 370.0	20.035	20.047	-0.012		728502	10.0	18878	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.082	20.047	0.035	1.000	1539	0.0203	0.7	M
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.679	20.619	0.060	1.000	955	0.0129	17.0	M
* 8 13C4 PFOS								
503.0 > 80.0	20.655	20.667	-0.012		2037218	28.7	53344	
9 Perfluorononanoic acid								
463.0 > 419.0	20.738	20.738	0.0	1.000	13685	0.1656	134	
\$ 10 13C2 PFDA								
515.0 > 470.0	21.462	21.471	-0.009	1.000	684539	10.7	21711	

QC Flag Legend

Review Flags

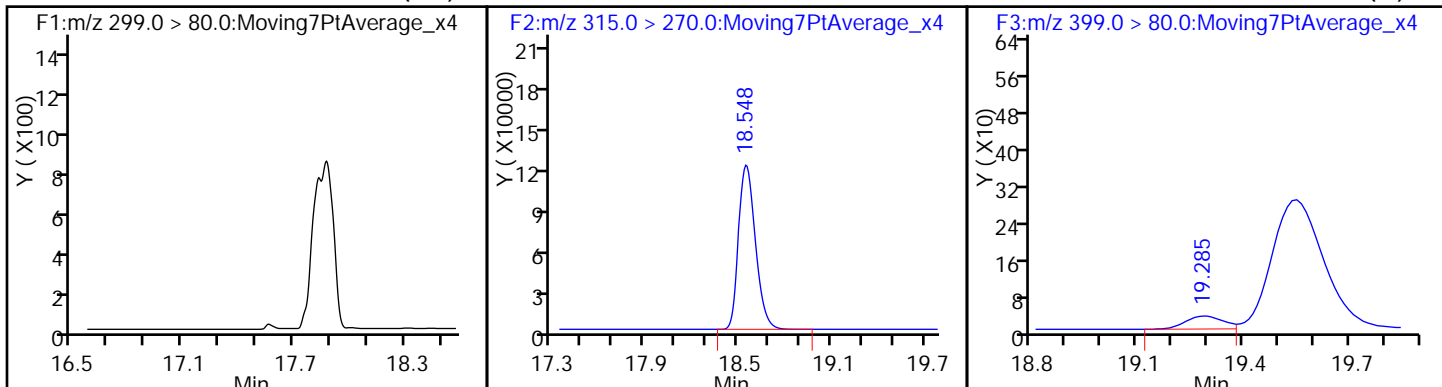
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_118.d
Injection Date: 08-Dec-2016 01:52:37 Instrument ID: A6
Lims ID: 320-23917-A-21-A Lab Sample ID: 320-23917-21
Client ID: WI-CV-3RW02-1116
Operator ID: CBW ALS Bottle#: 5 Worklist Smp#: 39
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

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

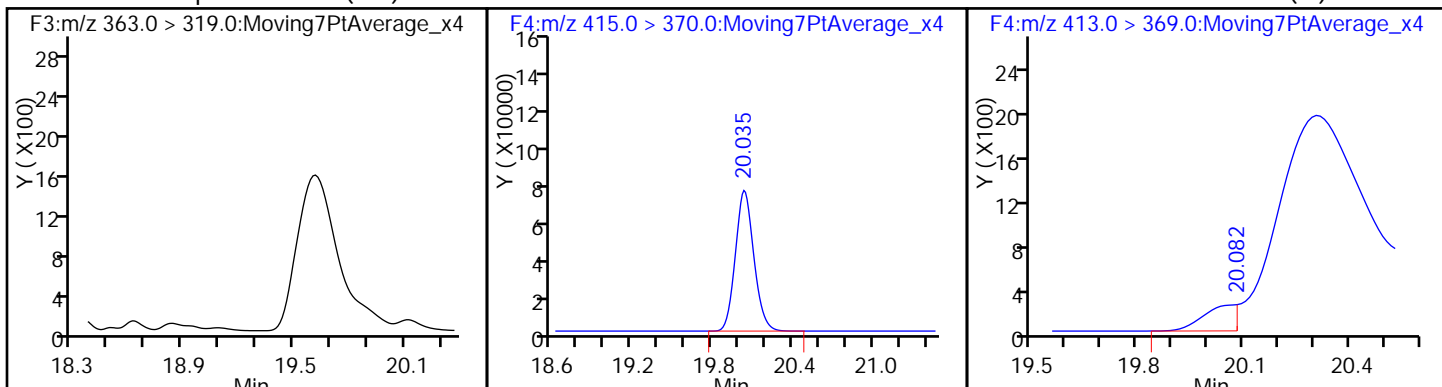
3 Perfluorohexanesulfonic acid (M)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

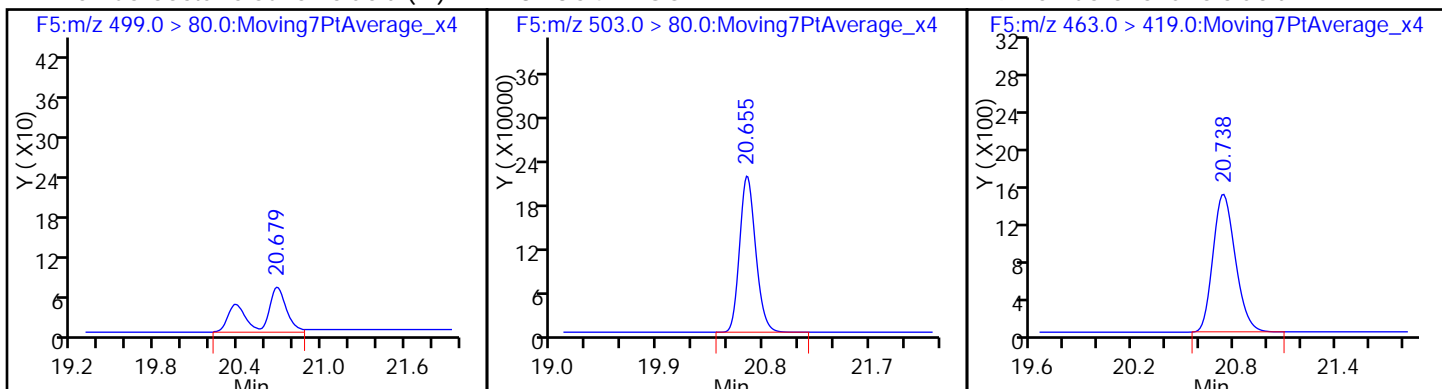
6 Perfluorooctanoic acid (M)



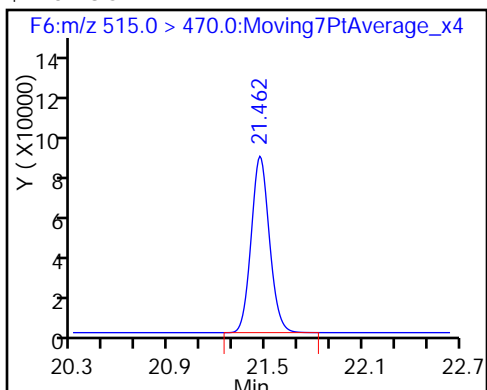
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_118.d
 Lims ID: 320-23917-A-21-A
 Client ID: WI-CV-3RW02-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 01:52:37 ALS Bottle#: 5 Worklist Smp#: 39
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-21-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:13:58

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.6	105.86
\$ 10 13C2 PFDA	10.0	10.7	107.23

TestAmerica Sacramento

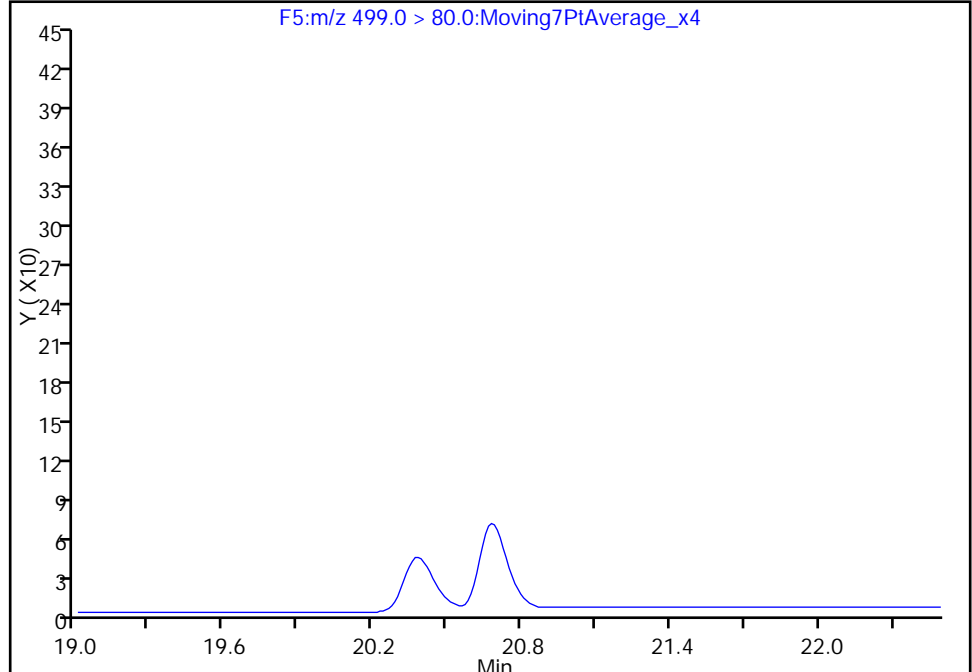
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_118.d
Injection Date: 08-Dec-2016 01:52:37 Instrument ID: A6
Lims ID: 320-23917-A-21-A Lab Sample ID: 320-23917-21
Client ID: WI-CV-3RW02-1116
Operator ID: CBW ALS Bottle#: 5 Worklist Smp#: 39
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

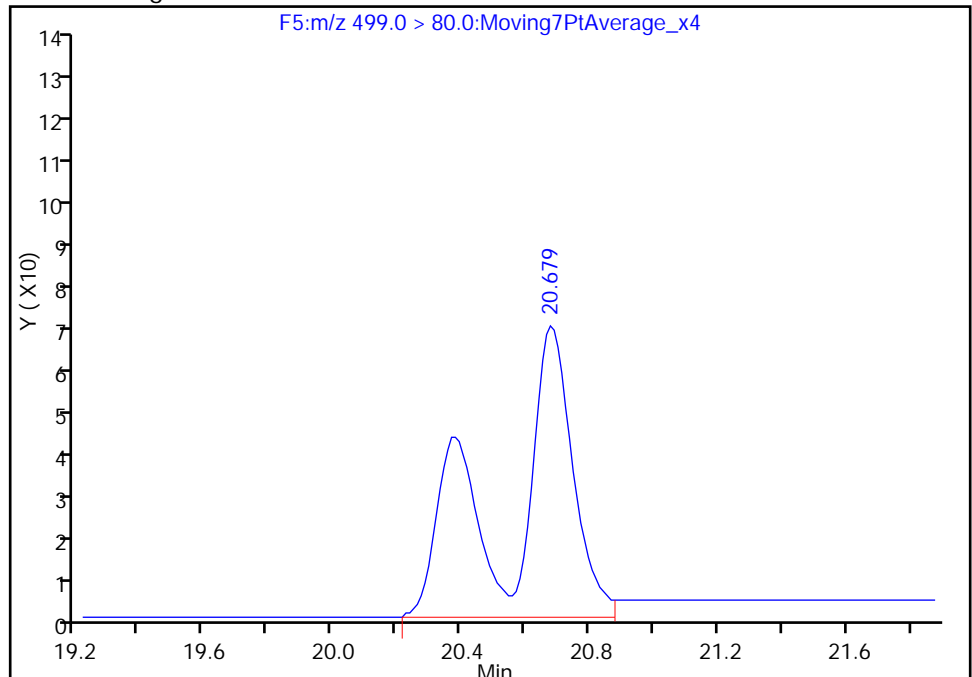
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.68
Area: 955
Amount: 0.012878
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:13:58
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

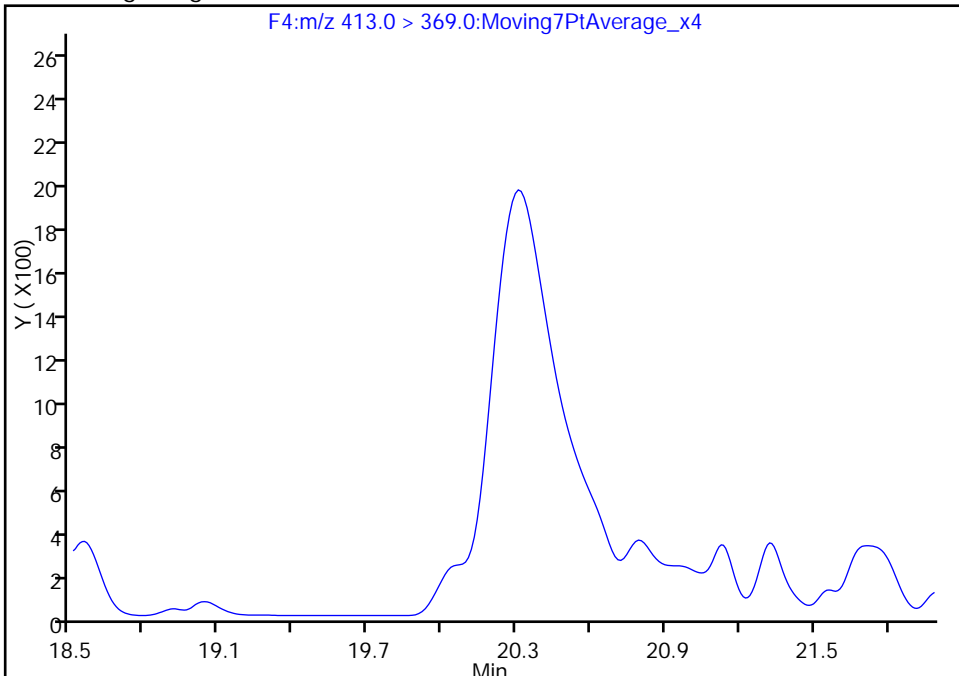
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_118.d
Injection Date: 08-Dec-2016 01:52:37 Instrument ID: A6
Lims ID: 320-23917-A-21-A Lab Sample ID: 320-23917-21
Client ID: WI-CV-3RW02-1116
Operator ID: CBW ALS Bottle#: 5 Worklist Smp#: 39
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

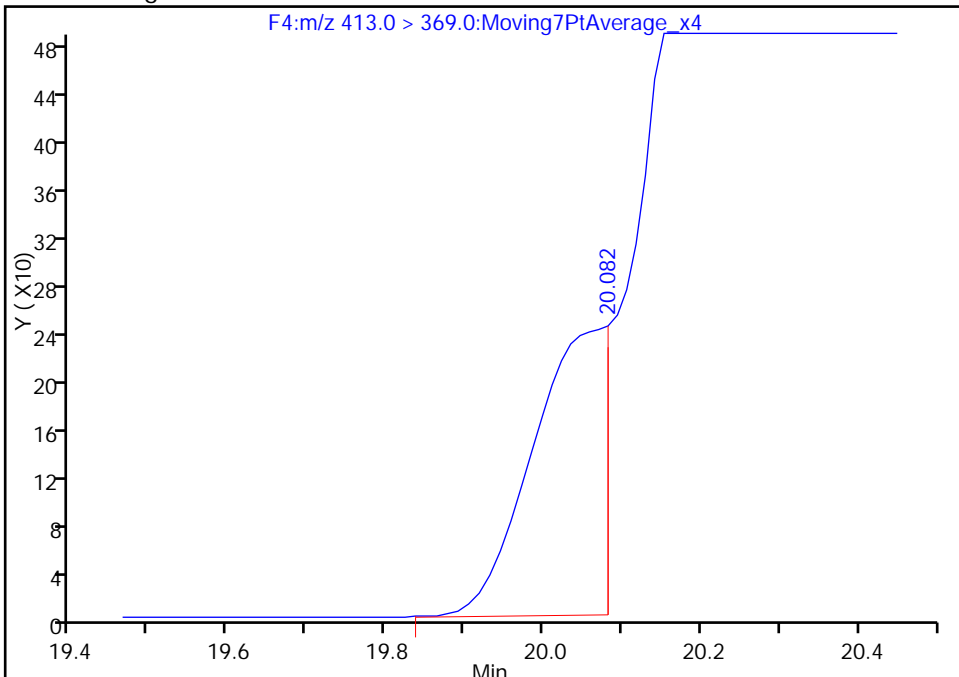
Not Detected
Expected RT: 20.05

Processing Integration Results



Manual Integration Results

RT: 20.08
Area: 1539
Amount: 0.020305
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:13:58
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB02-1116 Lab Sample ID: 320-23917-22
 Matrix: Water Lab File ID: 05DEC2016A6A_119.d
 Analysis Method: 537 Date Collected: 11/28/2016 14:15
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 255.9(mL) Date Analyzed: 12/08/2016 02:22
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.023	0.0092
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	105		70-130
STL00996	13C2 PFDA	108		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_119.d
 Lims ID: 320-23917-A-22-A
 Client ID: WI-CV-3FB02-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 02:22:14 ALS Bottle#: 6 Worklist Smp#: 40
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-22-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:54:13 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 13:56:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.557	18.567	-0.010	1.000	1066141	10.5	35079
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.047	-0.012		869080	10.0	22721
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.023	20.047	-0.024	1.000	243	0.002687	0.1	M
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.643	20.619	0.024	1.000	677	0.007792	18.3	M
* 8 13C4 PFOS	503.0 > 80.0	20.655	20.667	-0.012		2386910	28.7	62412
9 Perfluorononanoic acid								
463.0 > 419.0	20.738	20.738	0.0	1.000	7953	0.0807	111	
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.471	-0.009	1.000	819810	10.8	26141

QC Flag Legend

Review Flags

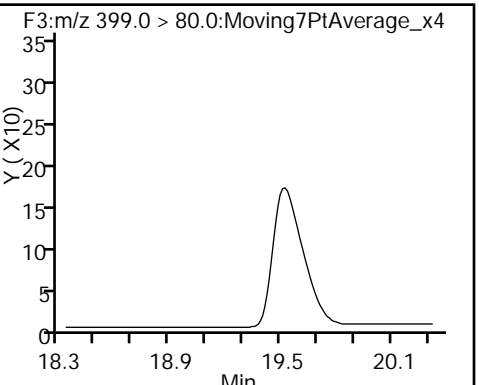
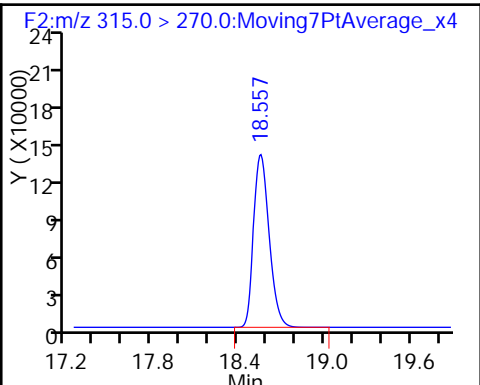
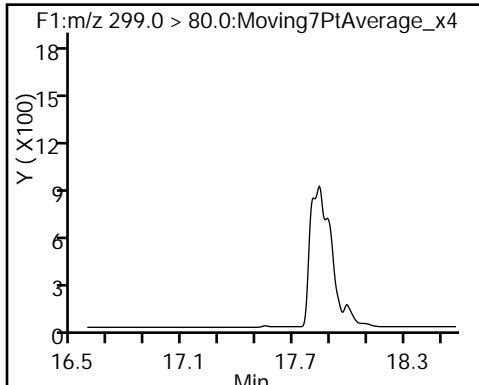
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_119.d
Injection Date: 08-Dec-2016 02:22:14 Instrument ID: A6
Lims ID: 320-23917-A-22-A Lab Sample ID: 320-23917-22
Client ID: WI-CV-3FB02-1116
Operator ID: CBW ALS Bottle#: 6 Worklist Smp#: 40
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

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

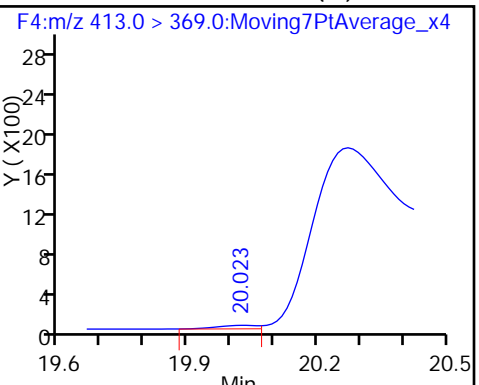
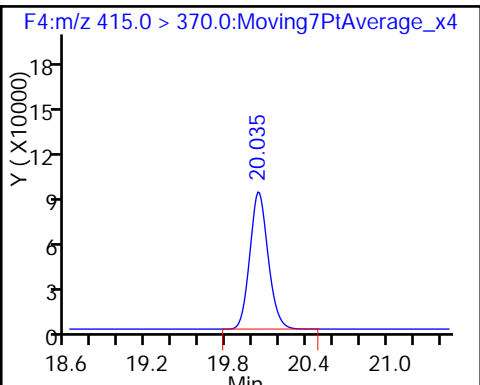
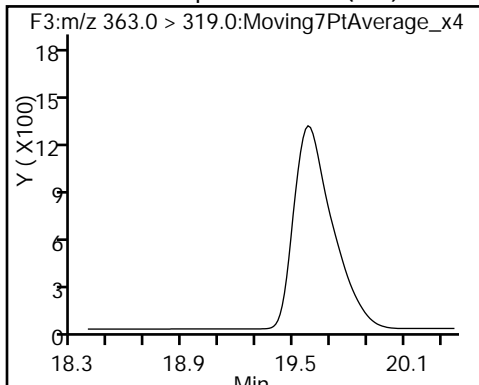
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

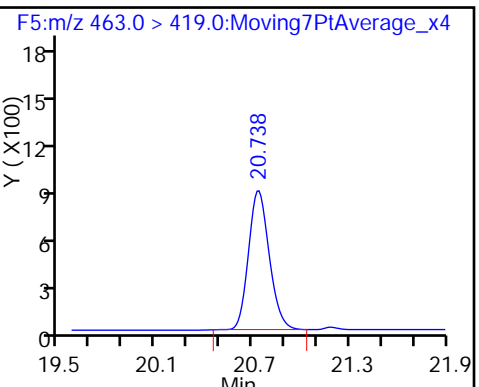
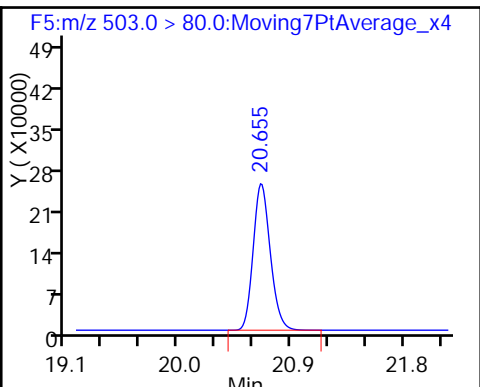
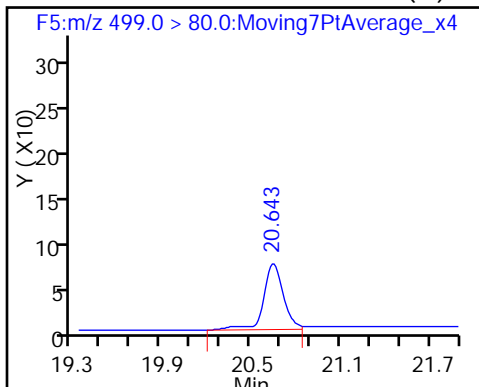
6 Perfluorooctanoic acid (M)



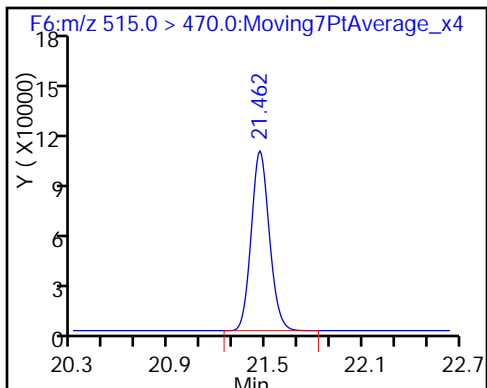
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_119.d
 Lims ID: 320-23917-A-22-A
 Client ID: WI-CV-3FB02-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 02:22:14 ALS Bottle#: 6 Worklist Smp#: 40
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-22-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:54:13 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 13:56:51

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.5	105.16
\$ 10 13C2 PFDA	10.0	10.8	107.65

TestAmerica Sacramento

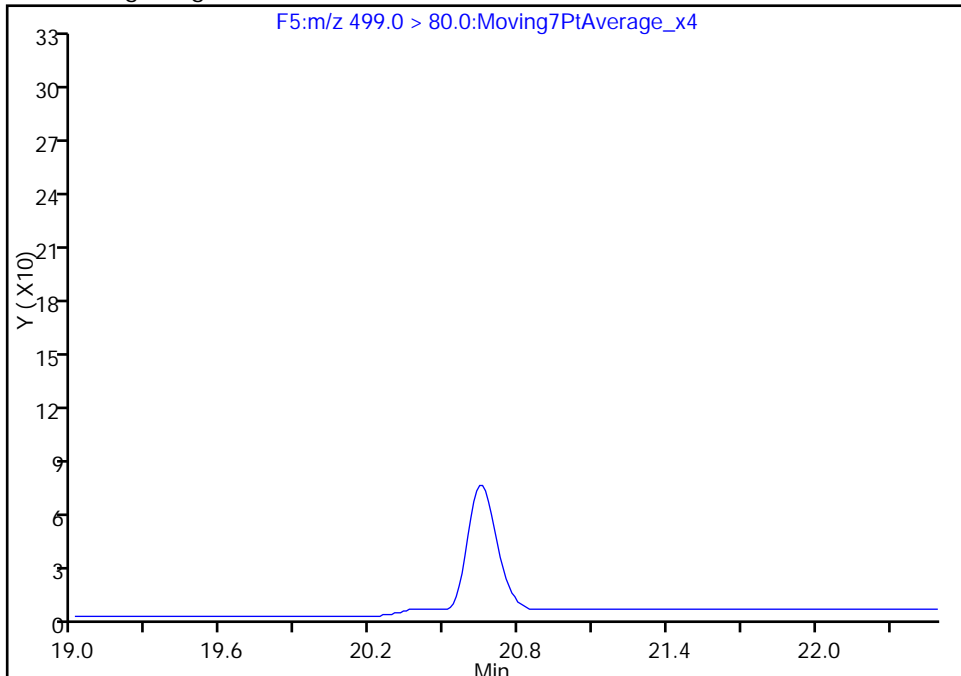
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_119.d
Injection Date: 08-Dec-2016 02:22:14 Instrument ID: A6
Lims ID: 320-23917-A-22-A Lab Sample ID: 320-23917-22
Client ID: WI-CV-3FB02-1116
Operator ID: CBW ALS Bottle#: 6 Worklist Smp#: 40
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

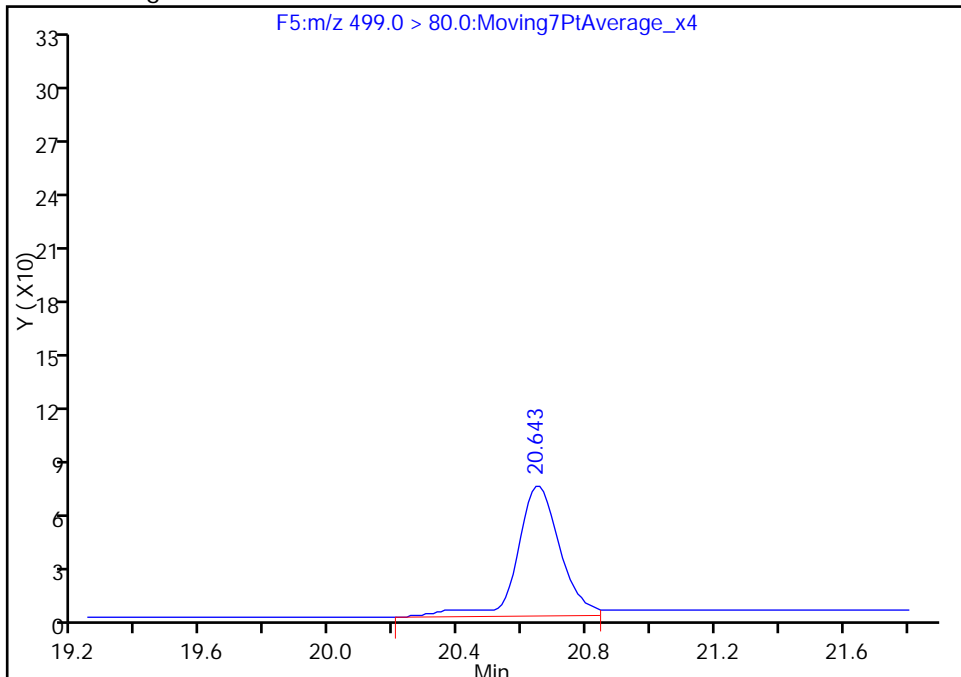
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.64
Area: 677
Amount: 0.007792
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:15:00
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

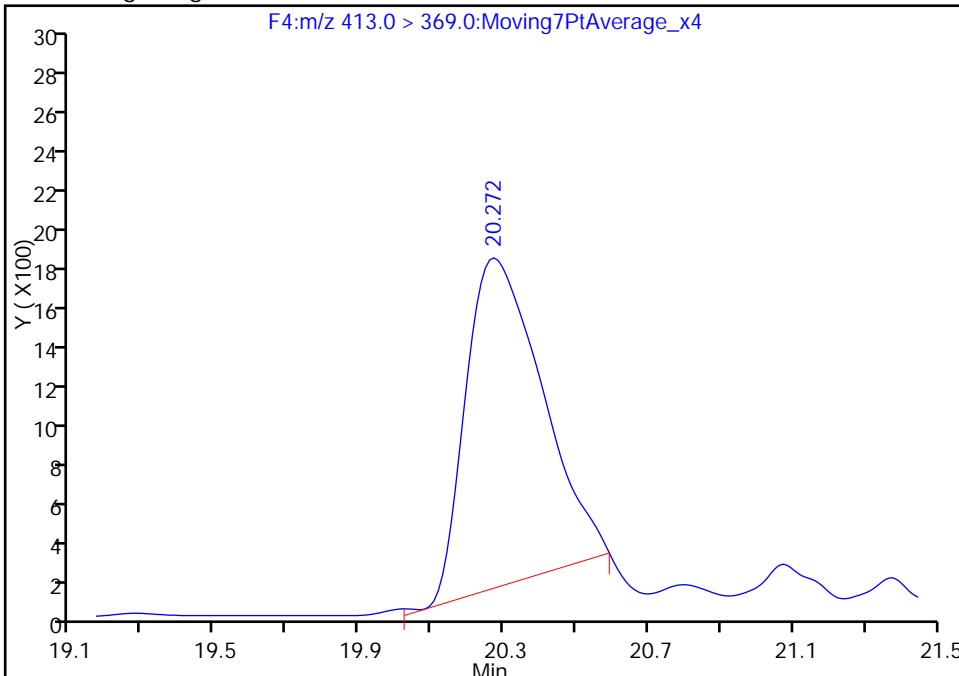
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Injection Date: 08-Dec-2016 02:22:14 Instrument ID: A6
Lims ID: 320-23917-A-22-A Lab Sample ID: 320-23917-22
Client ID: WI-CV-3FB02-1116
Operator ID: CBW ALS Bottle#: 6 Worklist Smp#: 40
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

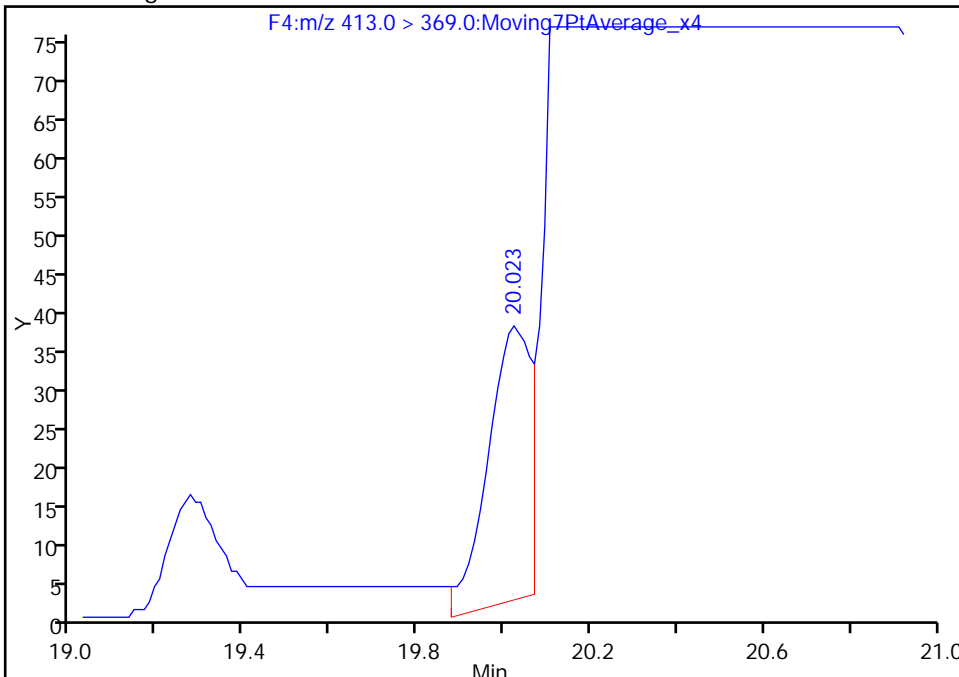
RT: 20.27
Area: 24236
Amount: 0.268034
Amount Units: ng/ml

Processing Integration Results



RT: 20.02
Area: 243
Amount: 0.002687
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 08-Dec-2016 10:15:00
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3RW03-1116 Lab Sample ID: 320-23917-23
 Matrix: Water Lab File ID: 05DEC2016A6A_123.d
 Analysis Method: 537 Date Collected: 11/28/2016 15:11
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 250.2(mL) Date Analyzed: 12/08/2016 04:20
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U M	0.060	0.048	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	108		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_123.d
 Lims ID: 320-23917-A-23-A
 Client ID: WI-CV-3RW03-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 04:20:38 ALS Bottle#: 7 Worklist Smp#: 44
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-23-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:50:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.549	18.558	-0.009	1.000	1006003	10.9	32632
4 Perfluoroheptanoic acid	363.0 > 319.0	19.356	19.368	-0.012	1.000	1212	0.0126	1.1
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.035	0.0		790761	10.0	20611
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.655	20.619	0.036	1.000	1198	0.0152	19.8 M
* 8 13C4 PFOS	503.0 > 80.0	20.655	20.667	-0.012		2168020	28.7	32276
9 Perfluorononanoic acid	463.0 > 419.0	20.726	20.738	-0.012	1.000	13766	0.1535	378
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.462	0.0	1.000	751369	10.8	23706

QC Flag Legend

Review Flags

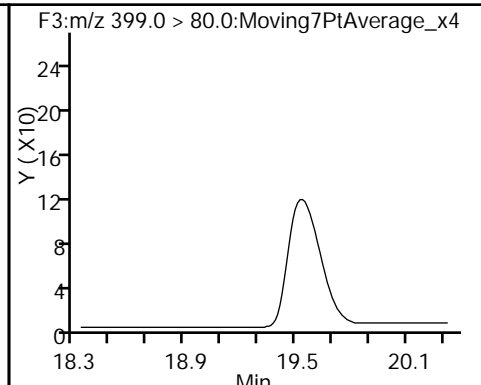
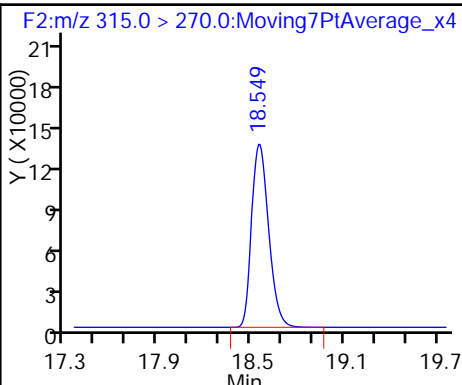
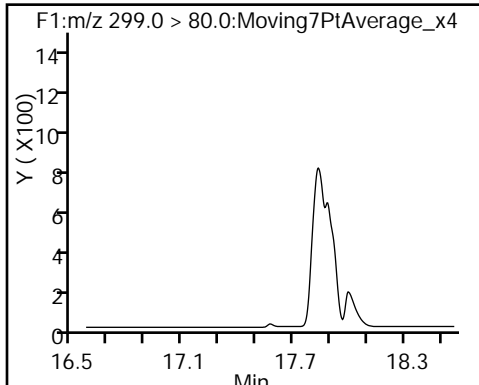
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_123.d
Injection Date: 08-Dec-2016 04:20:38 Instrument ID: A6
Lims ID: 320-23917-A-23-A Lab Sample ID: 320-23917-23
Client ID: WI-CV-3RW03-1116
Operator ID: CBW ALS Bottle#: 7 Worklist Smp#: 44
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

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

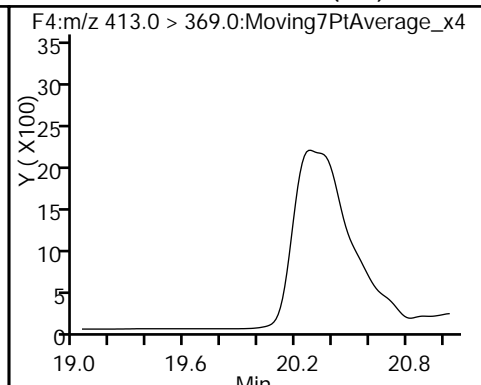
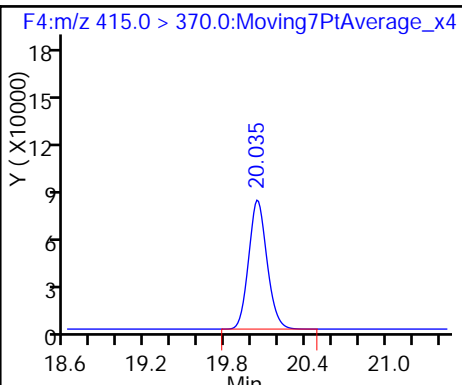
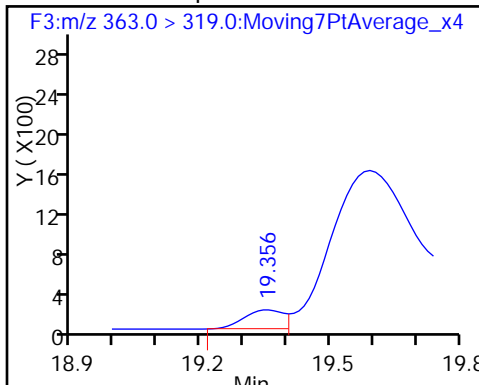
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

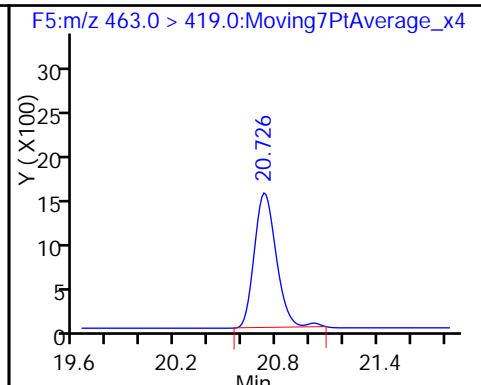
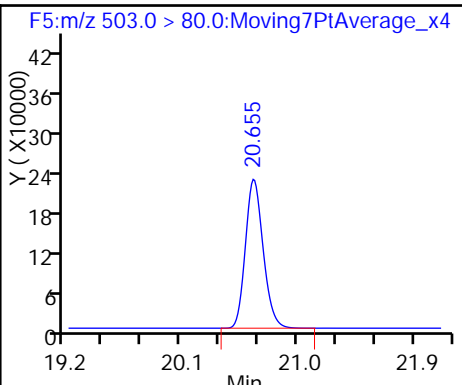
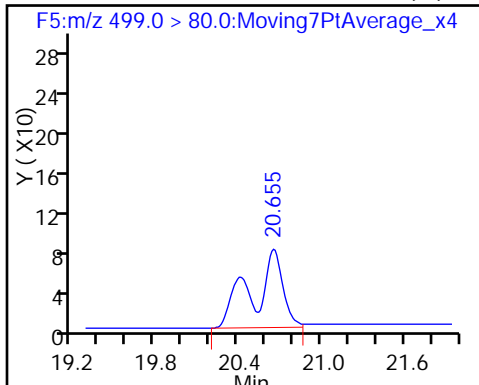
6 Perfluorooctanoic acid (ND)



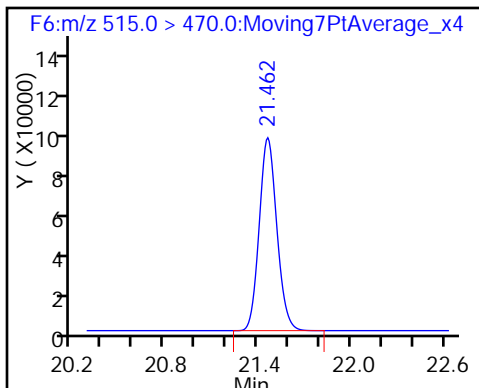
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_123.d
 Lims ID: 320-23917-A-23-A
 Client ID: WI-CV-3RW03-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 04:20:38 ALS Bottle#: 7 Worklist Smp#: 44
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-23-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:50:40

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.9	109.06
\$ 10 13C2 PFDA	10.0	10.8	108.43

TestAmerica Sacramento

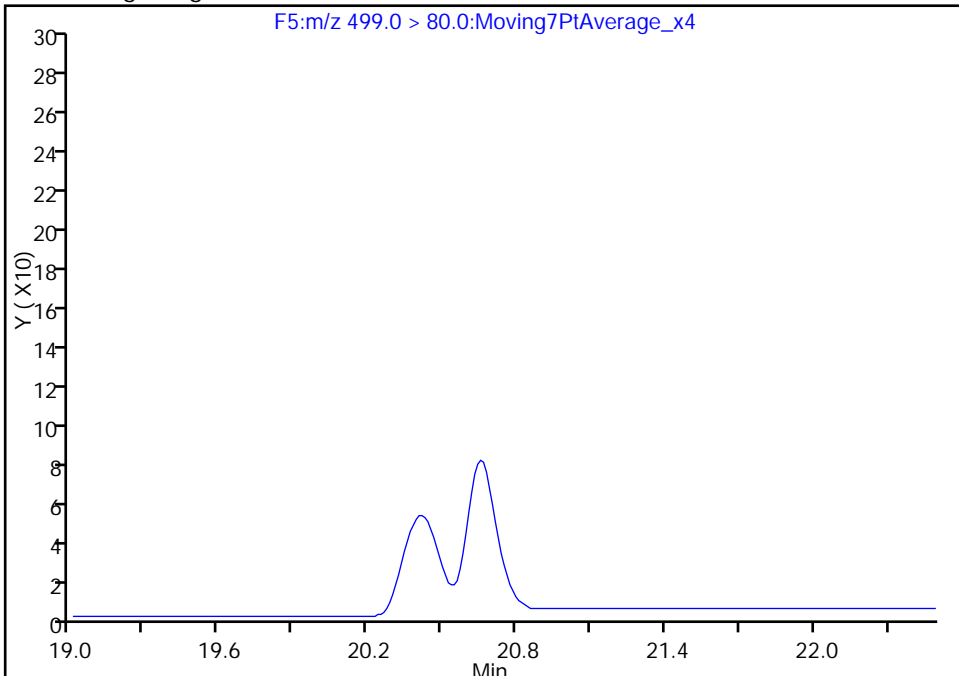
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Injection Date: 08-Dec-2016 04:20:38 Instrument ID: A6
Lims ID: 320-23917-A-23-A Lab Sample ID: 320-23917-23
Client ID: WI-CV-3RW03-1116
Operator ID: CBW ALS Bottle#: 7 Worklist Smp#: 44
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

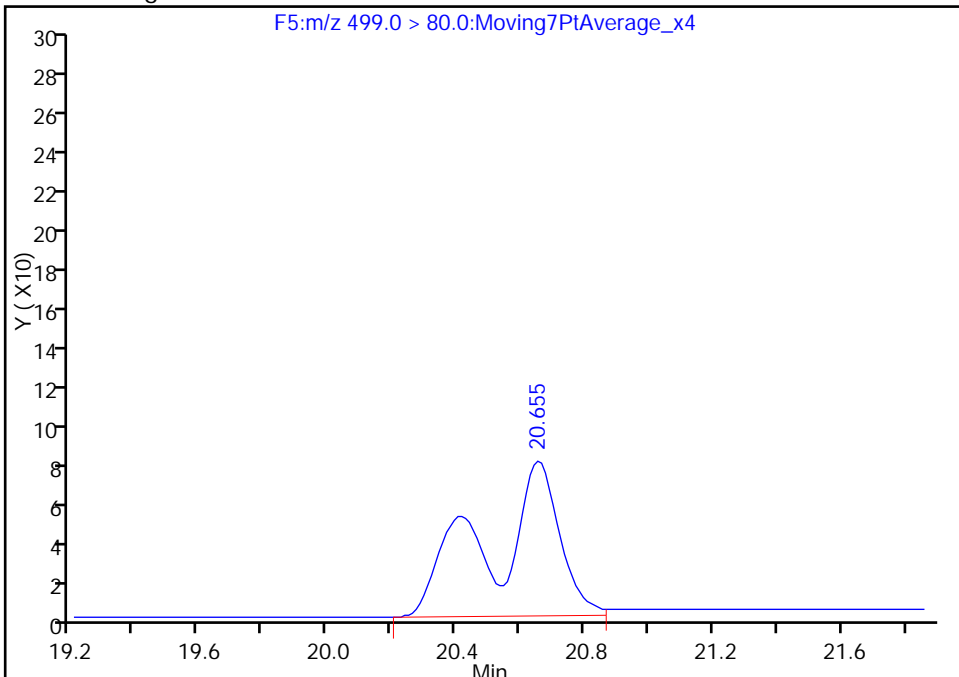
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.66
Area: 1198
Amount: 0.015180
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:50:40
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB03-1116 Lab Sample ID: 320-23917-24
 Matrix: Water Lab File ID: 05DEC2016A6A_124.d
 Analysis Method: 537 Date Collected: 11/28/2016 15:12
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 259.4(mL) Date Analyzed: 12/08/2016 04:50
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U	0.058	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U	0.029	0.023	0.0091
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	106		70-130
STL00996	13C2 PFDA	105		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_124.d
 Lims ID: 320-23917-A-24-A
 Client ID: WI-CV-3FB03-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 04:50:15 ALS Bottle#: 8 Worklist Smp#: 45
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-24-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:51:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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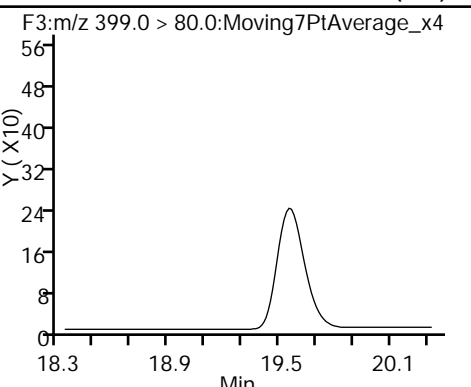
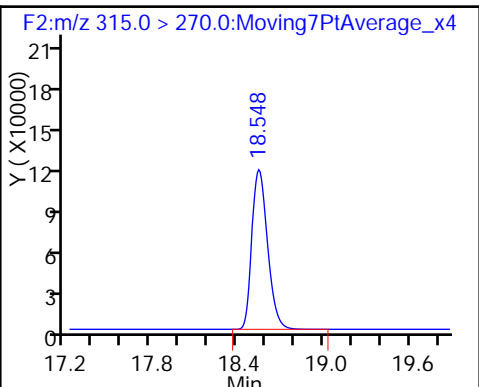
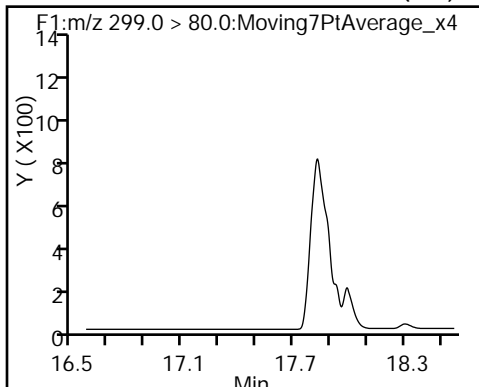
\$ 2 13C2 PFHxA	315.0 > 270.0	18.548	18.558	-0.010	1.000	892114	10.6	29157
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.035	0.0		722199	10.0	18835
* 8 13C4 PFOS	503.0 > 80.0	20.655	20.667	-0.012		1919881	28.7	50601
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	4578	0.0559	88.0
\$ 10 13C2 PFDA	515.0 > 470.0	21.453	21.462	-0.009	1.000	662479	10.5	21013

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_124.d
Injection Date: 08-Dec-2016 04:50:15 Instrument ID: A6
Lims ID: 320-23917-A-24-A Lab Sample ID: 320-23917-24
Client ID: WI-CV-3FB03-1116
Operator ID: CBW ALS Bottle#: 8 Worklist Smp#: 45
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

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

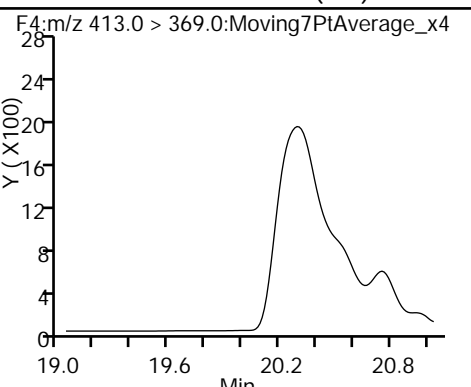
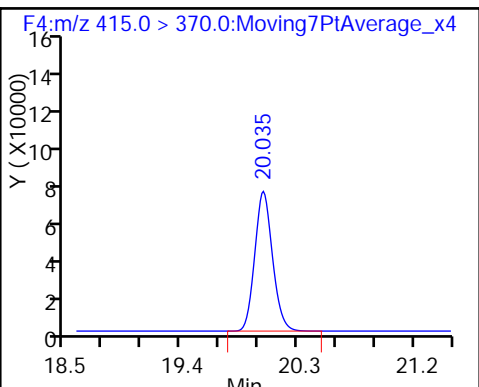
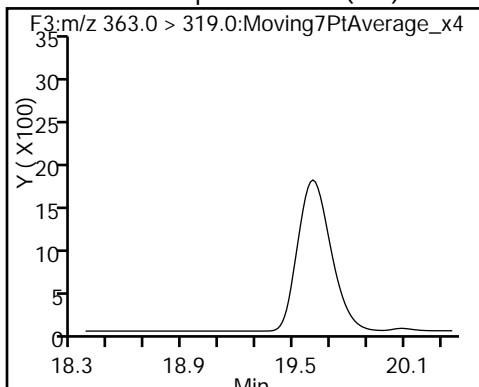
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

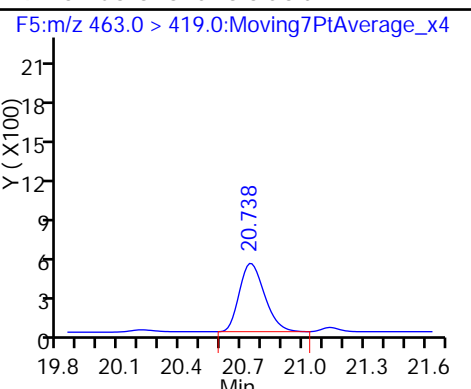
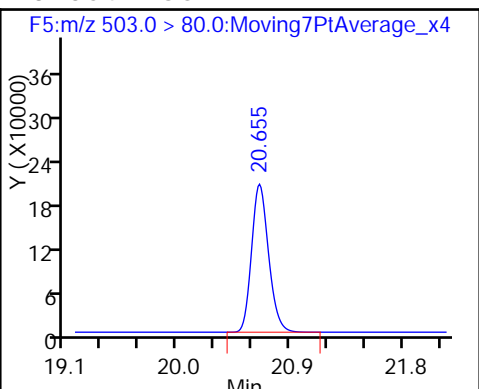
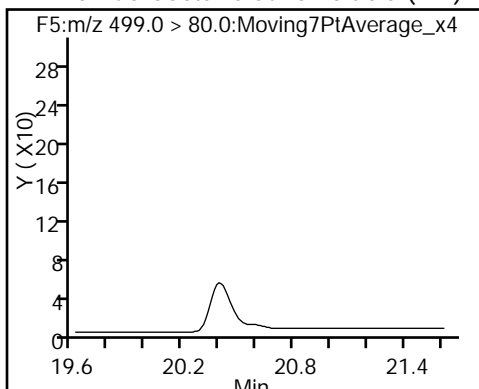
6 Perfluorooctanoic acid (ND)



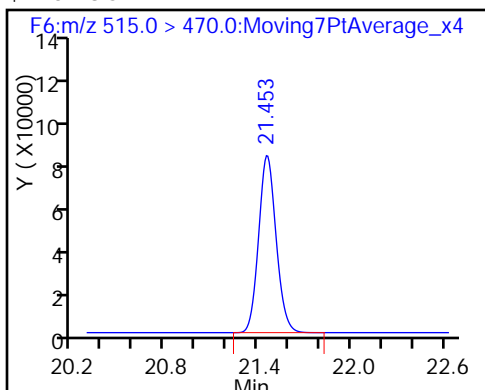
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_124.d
 Lims ID: 320-23917-A-24-A
 Client ID: WI-CV-3FB03-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 04:50:15 ALS Bottle#: 8 Worklist Smp#: 45
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-24-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:51:04

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.6	105.89
\$ 10 13C2 PFDA	10.0	10.5	104.68

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3RW04-1116 Lab Sample ID: 320-23917-25
 Matrix: Water Lab File ID: 05DEC2016A6A_125.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:17
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 258.4(mL) Date Analyzed: 12/08/2016 05:19
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U	0.058	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.023	0.0091
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	108		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_125.d
 Lims ID: 320-23917-A-25-A
 Client ID: WI-CV-3RW04-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 05:19:51 ALS Bottle#: 9 Worklist Smp#: 46
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-25-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:55:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA								
315.0 > 270.0	18.549	18.558	-0.009	1.000	901776	10.9	29820	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.273	19.332	-0.059	1.000	233	0.003820	2.5	M
* 5 13C2-PFOA								
415.0 > 370.0	20.035	20.035	0.0		708716	10.0	18447	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.082	20.035	0.047	1.000	997	0.0135	0.5	M
* 8 13C4 PFOS								
503.0 > 80.0	20.655	20.667	-0.012		1947937	28.7	51182	
9 Perfluorononanoic acid								M
463.0 > 419.0	20.738	20.738	0.0	1.000	3028	0.0377	84.3	M
\$ 10 13C2 PFDA								
515.0 > 470.0	21.462	21.462	0.0	1.000	673012	10.8	21351	

QC Flag Legend

Review Flags

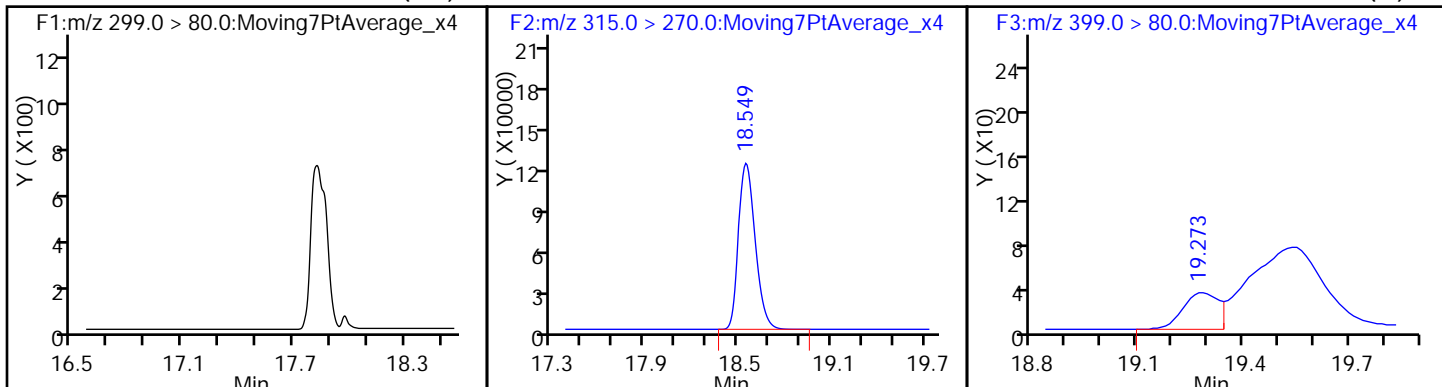
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_125.d
Injection Date: 08-Dec-2016 05:19:51 Instrument ID: A6
Lims ID: 320-23917-A-25-A Lab Sample ID: 320-23917-25
Client ID: WI-CV-3RW04-1116
Operator ID: CBW ALS Bottle#: 9 Worklist Smp#: 46
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

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

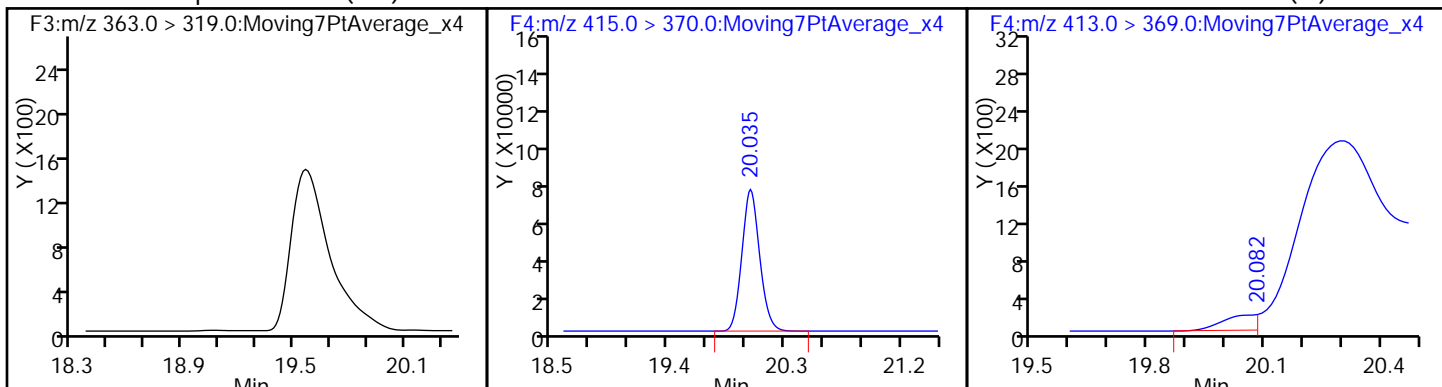
3 Perfluorohexanesulfonic acid (M)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

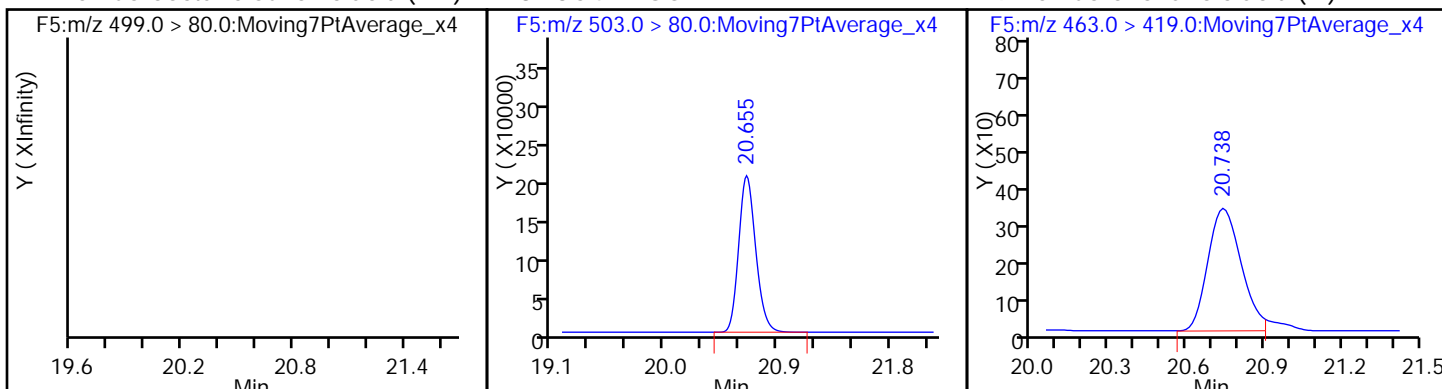
6 Perfluorooctanoic acid (M)



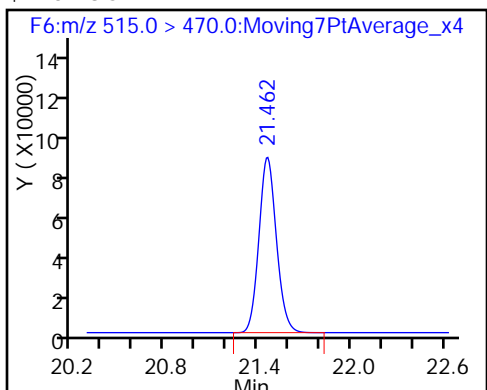
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_125.d
 Lims ID: 320-23917-A-25-A
 Client ID: WI-CV-3RW04-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 05:19:51 ALS Bottle#: 9 Worklist Smp#: 46
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-25-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:55:27

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.9	109.08
\$ 10 13C2 PFDA	10.0	10.8	108.37

TestAmerica Sacramento

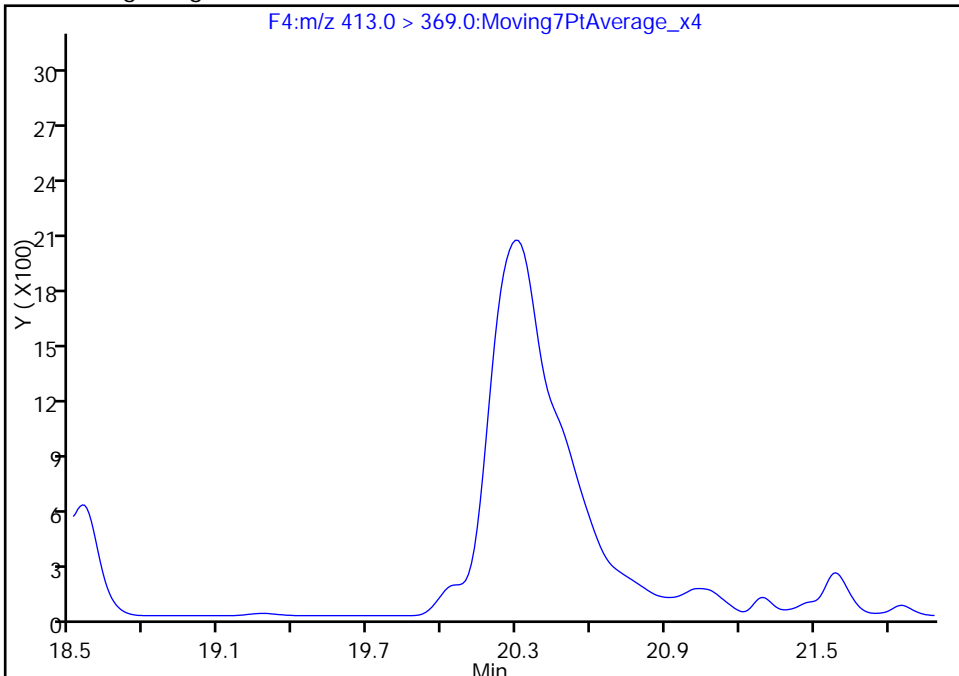
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_125.d
Injection Date: 08-Dec-2016 05:19:51 Instrument ID: A6
Lims ID: 320-23917-A-25-A Lab Sample ID: 320-23917-25
Client ID: WI-CV-3RW04-1116
Operator ID: CBW ALS Bottle#: 9 Worklist Smp#: 46
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

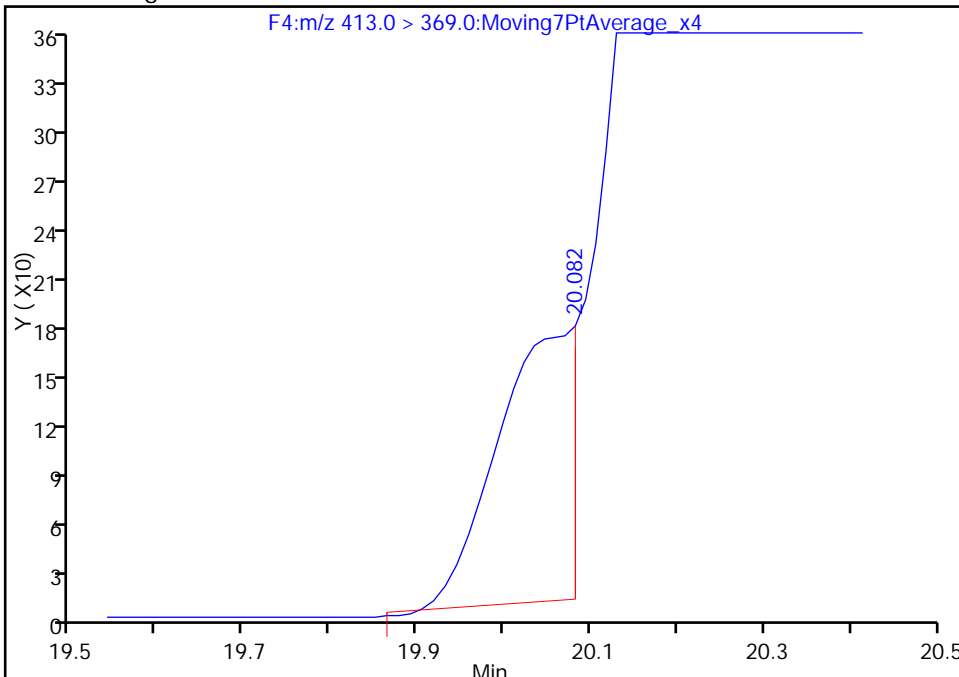
Not Detected
Expected RT: 20.03

Processing Integration Results



Manual Integration Results

RT: 20.08
Area: 997
Amount: 0.013521
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:55:27
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB04-1116 Lab Sample ID: 320-23917-26
 Matrix: Water Lab File ID: 05DEC2016A6A_126.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:18
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 261.1(mL) Date Analyzed: 12/08/2016 05:49
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.057	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.023	0.0090
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	107		70-130
STL00996	13C2 PFDA	108		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_126.d
 Lims ID: 320-23917-A-26-A
 Client ID: WI-CV-3FB04-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 05:49:26 ALS Bottle#: 10 Worklist Smp#: 47
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-26-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:57:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
--------	----	--------	--------	--------	----------	--------------	-----	-------

\$ 2 13C2 PFHxA	315.0 > 270.0	18.548	18.558	-0.010	1.000	899879	10.7	29528
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.332	19.332	0.0	1.000	300	0.004982	3.5	M
* 5 13C2-PFOA								
415.0 > 370.0	20.035	20.035	0.0		718627	10.0	18903	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.035	20.035	0.0	1.000	809	0.0108	0.4	M
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.643	20.619	0.024	1.000	562	0.008028	12.3	M
* 8 13C4 PFOS								
503.0 > 80.0	20.655	20.667	-0.012		1923117	28.7	40093	
9 Perfluorononanoic acid								M
463.0 > 419.0	20.738	20.738	0.0	1.000	4114	0.0505	41.2	M
\$ 10 13C2 PFDA								
515.0 > 470.0	21.462	21.462	0.0	1.000	680750	10.8	21599	

QC Flag Legend

Review Flags

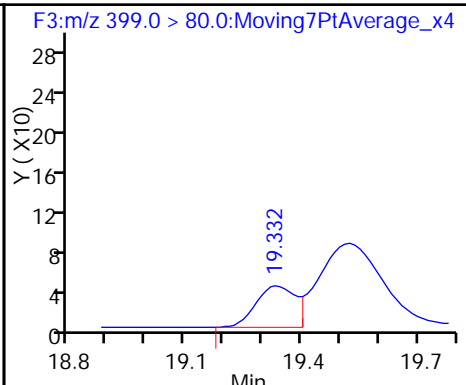
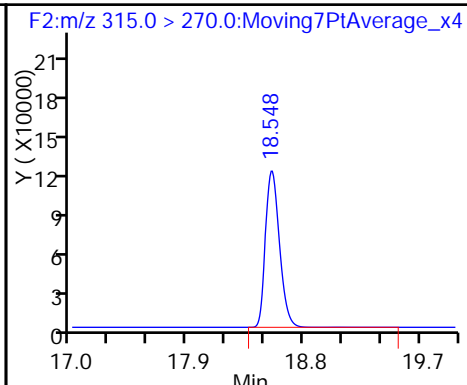
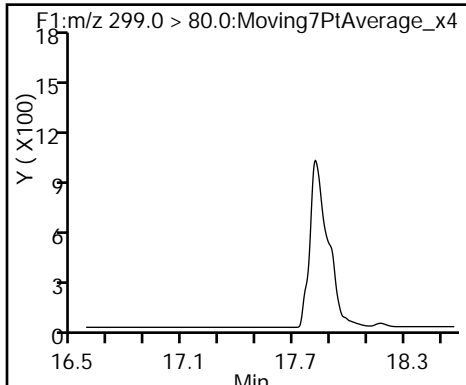
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_126.d
Injection Date: 08-Dec-2016 05:49:26 Instrument ID: A6
Lims ID: 320-23917-A-26-A Lab Sample ID: 320-23917-26
Client ID: WI-CV-3FB04-1116
Operator ID: CBW ALS Bottle#: 10 Worklist Smp#: 47
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

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

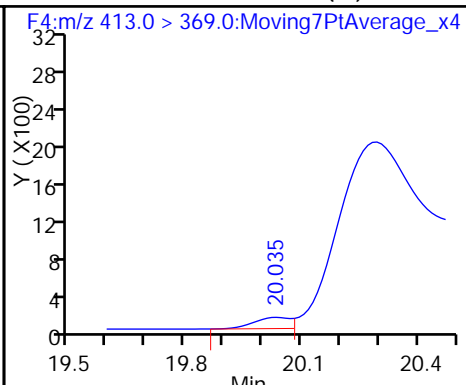
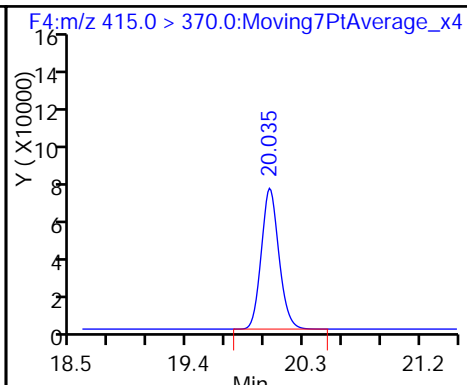
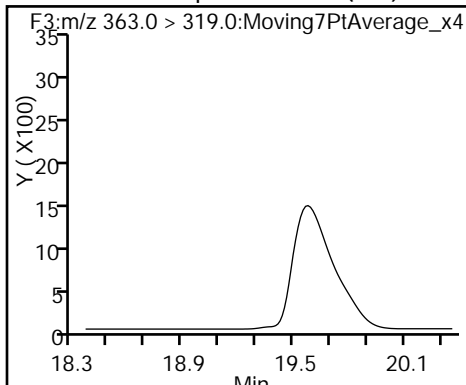
3 Perfluorohexanesulfonic acid (M)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

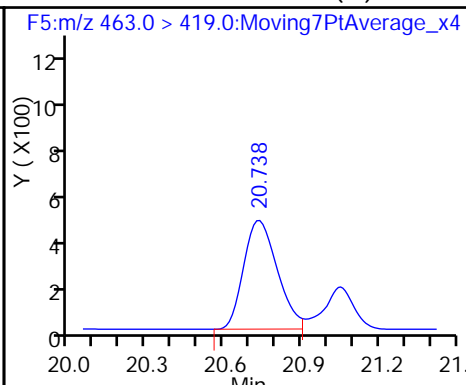
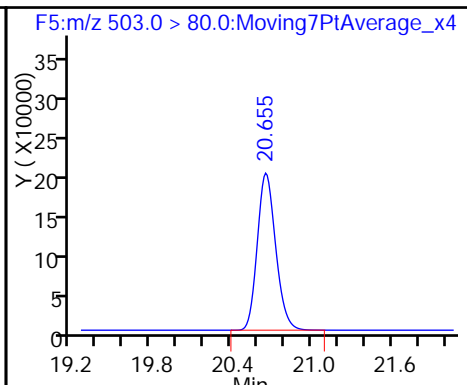
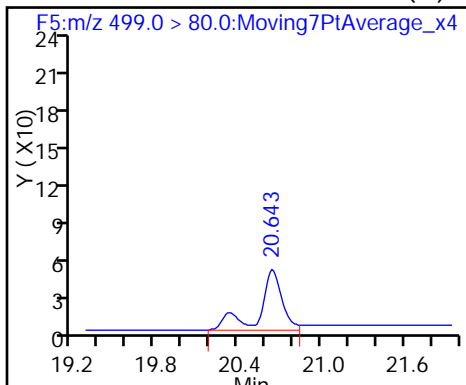
6 Perfluorooctanoic acid (M)



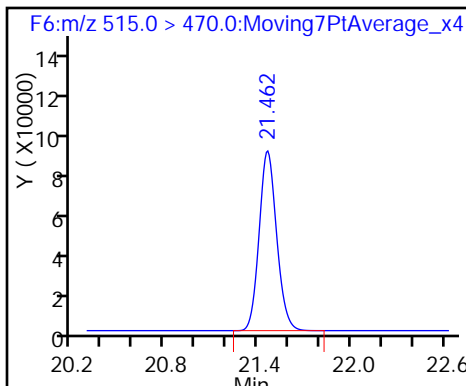
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_126.d
 Lims ID: 320-23917-A-26-A
 Client ID: WI-CV-3FB04-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 05:49:26 ALS Bottle#: 10 Worklist Smp#: 47
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-26-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:57:19

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.7	107.35
\$ 10 13C2 PFDA	10.0	10.8	108.10

TestAmerica Sacramento

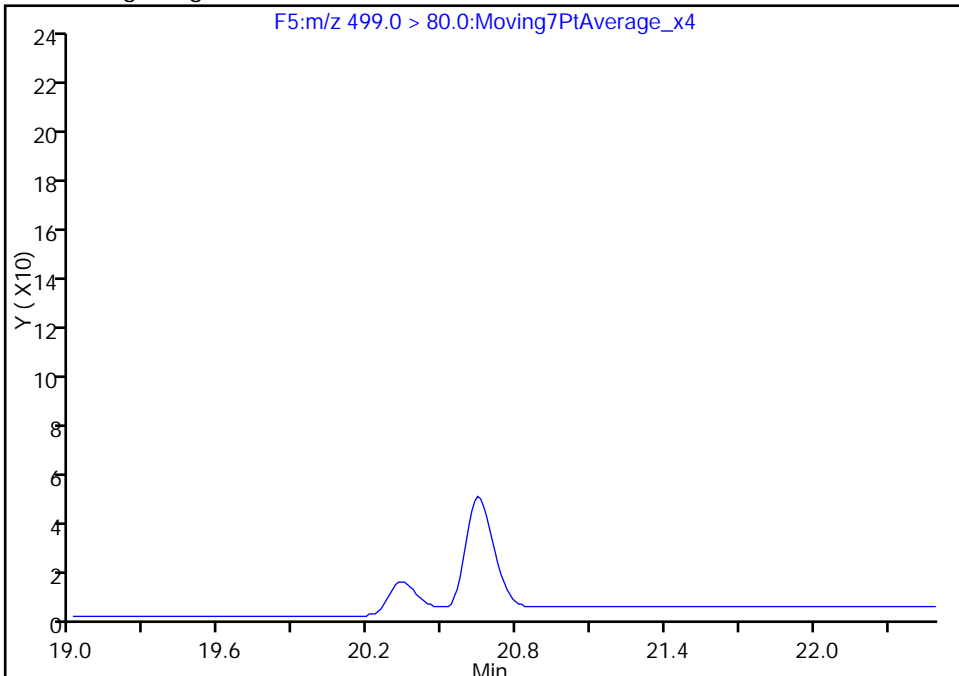
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_126.d
Injection Date: 08-Dec-2016 05:49:26 Instrument ID: A6
Lims ID: 320-23917-A-26-A Lab Sample ID: 320-23917-26
Client ID: WI-CV-3FB04-1116
Operator ID: CBW ALS Bottle#: 10 Worklist Smp#: 47
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

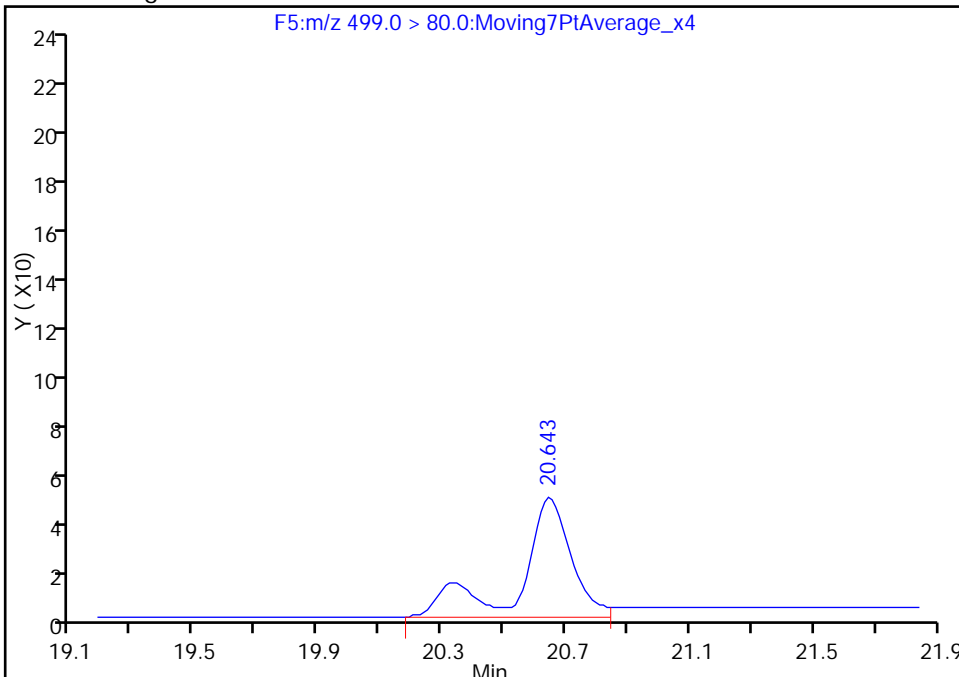
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.64
Area: 562
Amount: 0.008028
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:57:19
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

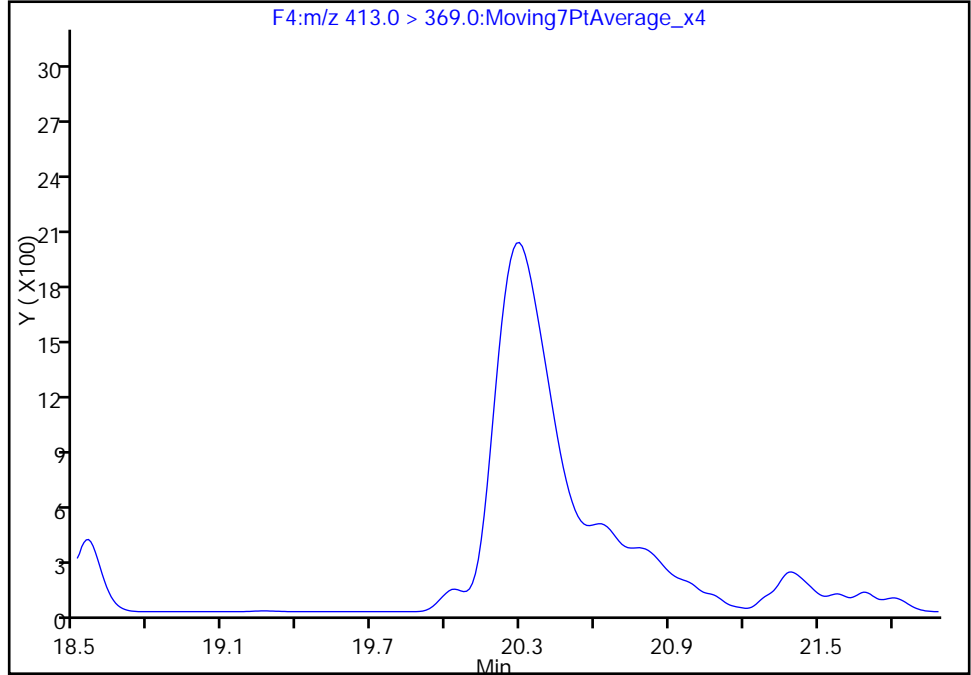
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_126.d
Injection Date: 08-Dec-2016 05:49:26 Instrument ID: A6
Lims ID: 320-23917-A-26-A Lab Sample ID: 320-23917-26
Client ID: WI-CV-3FB04-1116
Operator ID: CBW ALS Bottle#: 10 Worklist Smp#: 47
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

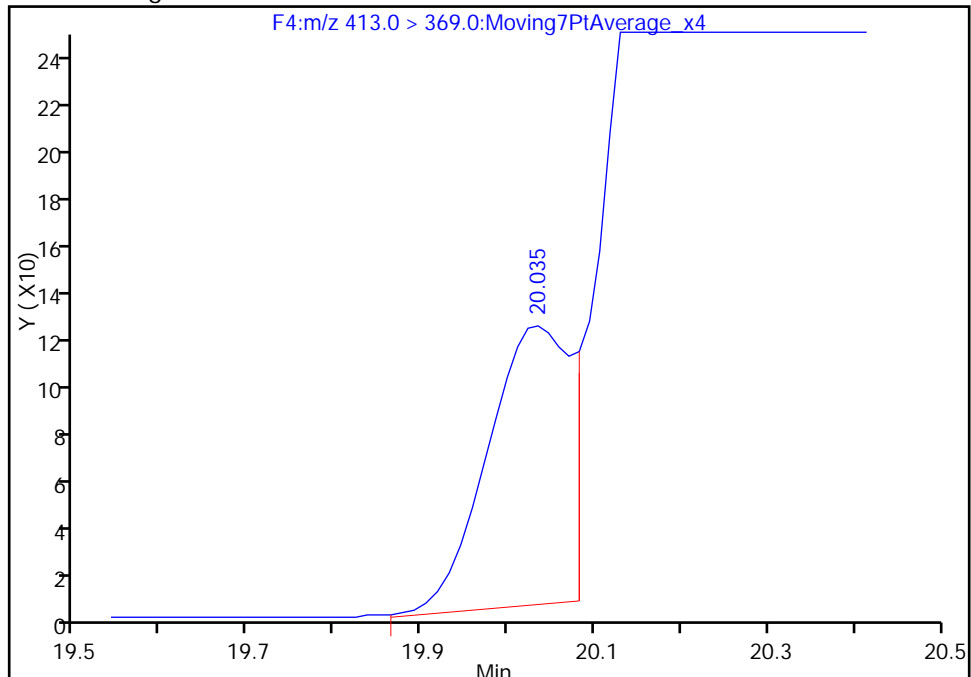
Not Detected
Expected RT: 20.03

Processing Integration Results



Manual Integration Results

RT: 20.03
Area: 809
Amount: 0.010820
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:57:19
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3RW05-1116 Lab Sample ID: 320-23917-27
 Matrix: Water Lab File ID: 05DEC2016A6A_127.d
 Analysis Method: 537 Date Collected: 11/28/2016 18:08
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 251.8(mL) Date Analyzed: 12/08/2016 06:19
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.048	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	130		70-130
STL00996	13C2 PFDA	124		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_127.d
 Lims ID: 320-23917-A-27-A
 Client ID: WI-CV-3RW05-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 06:19:03 ALS Bottle#: 11 Worklist Smp#: 48
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-27-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:58:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
--------	----	--------	--------	--------	----------	--------------	-----	-------

1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.576	17.573	0.003	1.000	1976	0.0434	3.5	
\$ 2 13C2 PFHxA	315.0 > 270.0	18.548	18.558	-0.010	1.000	999468	13.0	32861	
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.368	0.0	1.000	1965	0.0246	2.9	
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.035	0.0		657718	10.0	17168	
6 Perfluorooctanoic acid	413.0 > 369.0	20.082	20.035	0.047	1.000	378	0.005524	0.2	M
* 8 13C4 PFOS	503.0 > 80.0	20.655	20.667	-0.012		1861489	28.7	48857	
9 Perfluorononanoic acid	463.0 > 419.0	20.726	20.738	-0.012	1.000	11459	0.1536	300	
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.462	0.0	1.000	712987	12.4	22657	

QC Flag Legend

Review Flags

M - Manually Integrated

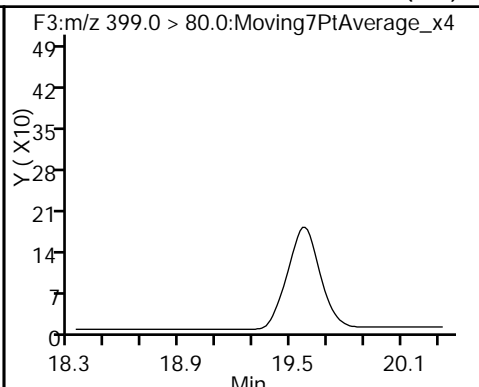
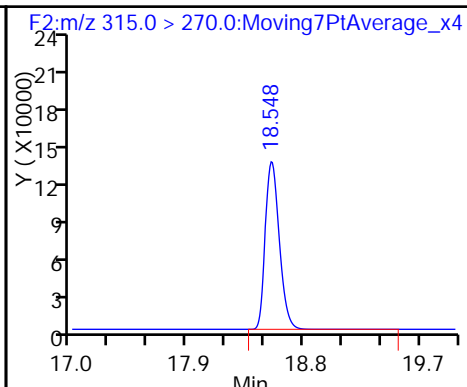
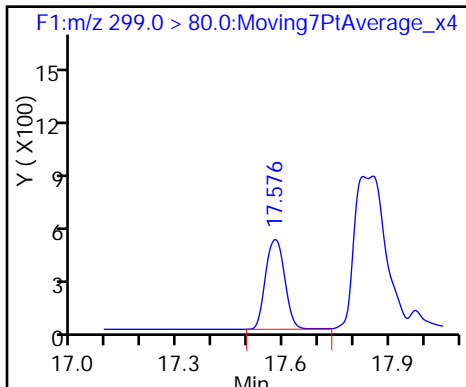
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_127.d
Injection Date: 08-Dec-2016 06:19:03 Instrument ID: A6
Lims ID: 320-23917-A-27-A Lab Sample ID: 320-23917-27
Client ID: WI-CV-3RW05-1116
Operator ID: CBW ALS Bottle#: 11 Worklist Smp#: 48
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

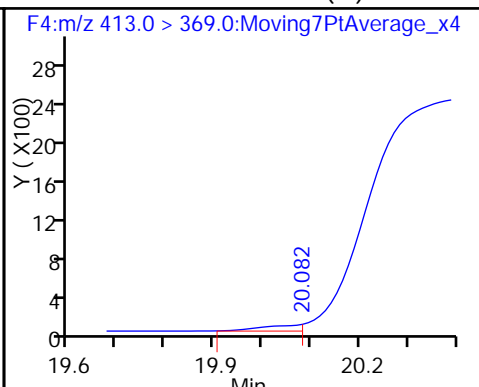
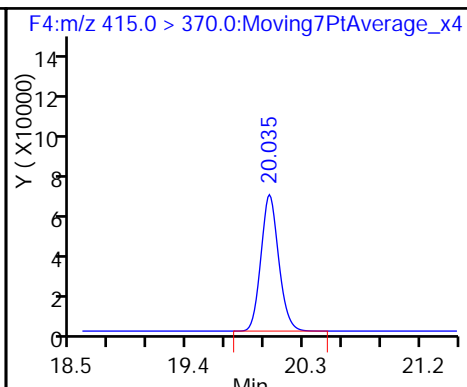
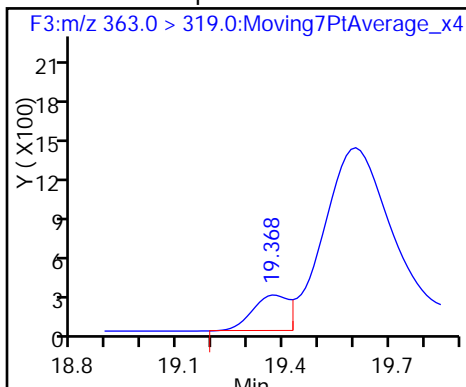
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

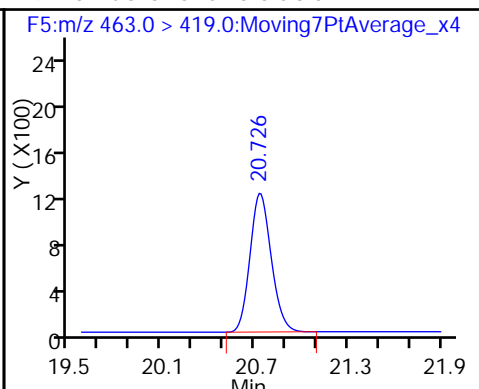
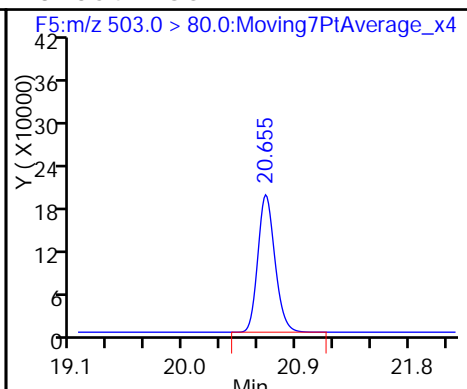
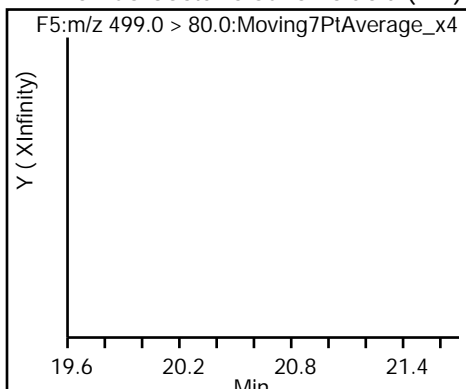
6 Perfluorooctanoic acid (M)



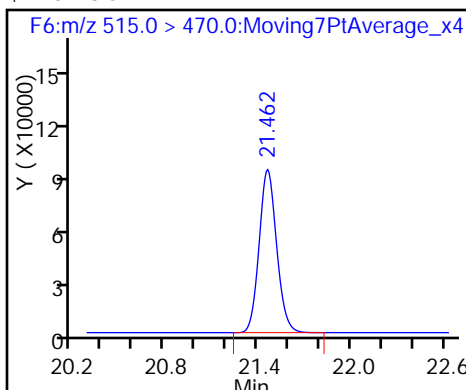
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_127.d
 Lims ID: 320-23917-A-27-A
 Client ID: WI-CV-3RW05-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 06:19:03 ALS Bottle#: 11 Worklist Smp#: 48
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-27-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:58:14

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	13.0	130.27
\$ 10 13C2 PFDA	10.0	12.4	123.71

TestAmerica Sacramento

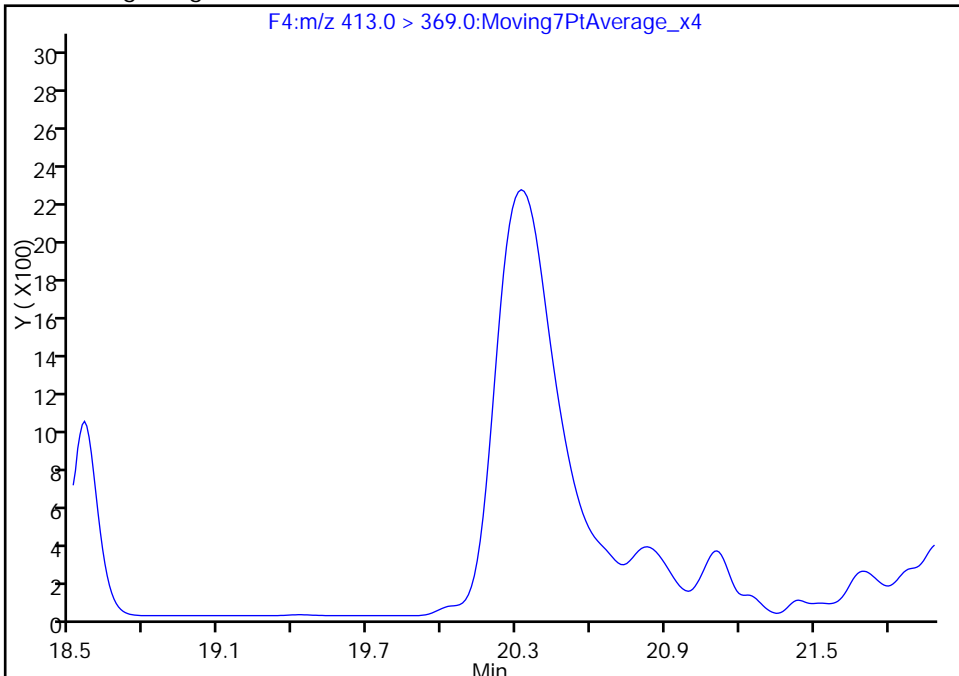
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_127.d
Injection Date: 08-Dec-2016 06:19:03 Instrument ID: A6
Lims ID: 320-23917-A-27-A Lab Sample ID: 320-23917-27
Client ID: WI-CV-3RW05-1116
Operator ID: CBW ALS Bottle#: 11 Worklist Smp#: 48
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

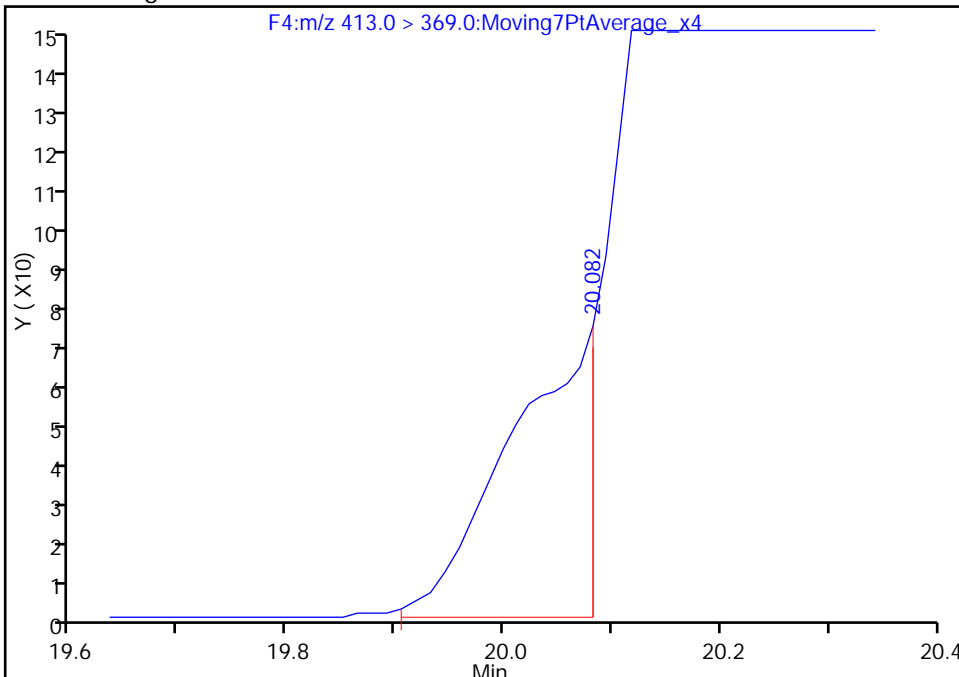
Not Detected
Expected RT: 20.03

Processing Integration Results



Manual Integration Results

RT: 20.08
Area: 378
Amount: 0.005524
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:58:14
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB05-1116 Lab Sample ID: 320-23917-28
 Matrix: Water Lab File ID: 05DEC2016A6A_128.d
 Analysis Method: 537 Date Collected: 11/28/2016 18:09
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 261(mL) Date Analyzed: 12/08/2016 06:48
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.057	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.023	0.0090
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	110		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_128.d
 Lims ID: 320-23917-A-28-A
 Client ID: WI-CV-3FB05-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 06:48:39 ALS Bottle#: 12 Worklist Smp#: 49
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-28-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:59:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
--------	----	--------	--------	--------	----------	--------------	-----	-------

\$ 2 13C2 PFHxA	315.0 > 270.0	18.548	18.558	-0.010	1.000	986782	10.9	32375
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.368	19.332	0.036	1.000	214	0.003185	2.0	M
* 5 13C2-PFOA								
415.0 > 370.0	20.035	20.035	0.0		773809	10.0	0.0	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.070	20.035	0.035	1.000	214	0.002658	0.1	M
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.643	20.619	0.024	1.000	918	0.0118	28.3	M
* 8 13C4 PFOS								
503.0 > 80.0	20.655	20.667	-0.012		2146082	28.7	22375	
9 Perfluorononanoic acid								
463.0 > 419.0	20.738	20.738	0.0	1.000	7525	0.0857	207	
\$ 10 13C2 PFDA								
515.0 > 470.0	21.453	21.462	-0.009	1.000	744069	11.0	23256	

QC Flag Legend

Review Flags

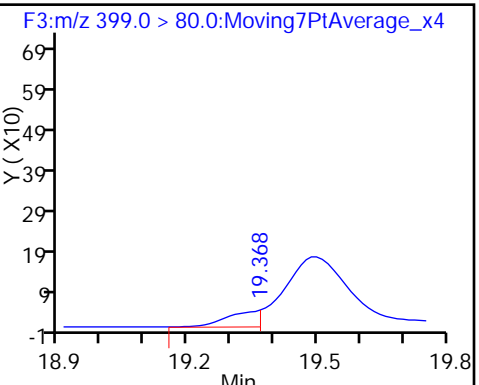
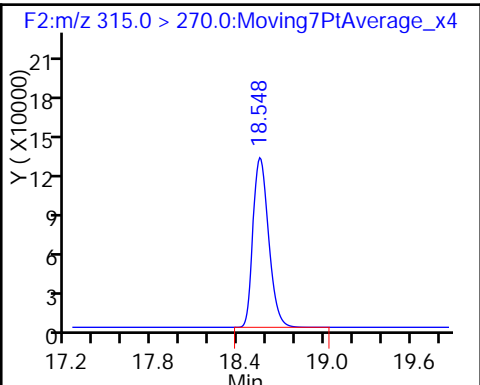
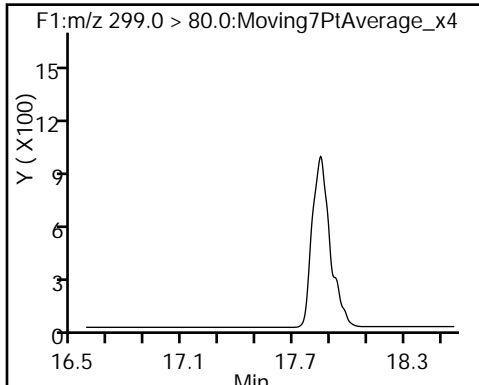
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_128.d
Injection Date: 08-Dec-2016 06:48:39 Instrument ID: A6
Lims ID: 320-23917-A-28-A Lab Sample ID: 320-23917-28
Client ID: WI-CV-3FB05-1116
Operator ID: CBW ALS Bottle#: 12 Worklist Smp#: 49
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537_A6 Limit Group: LC 537 ICAL

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

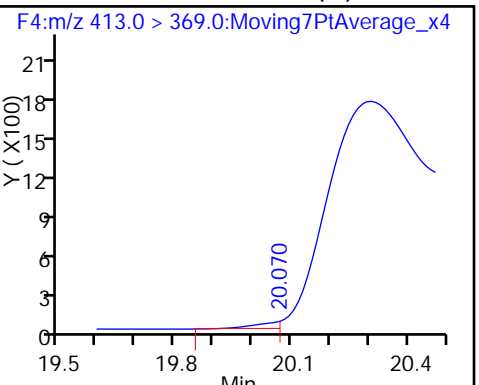
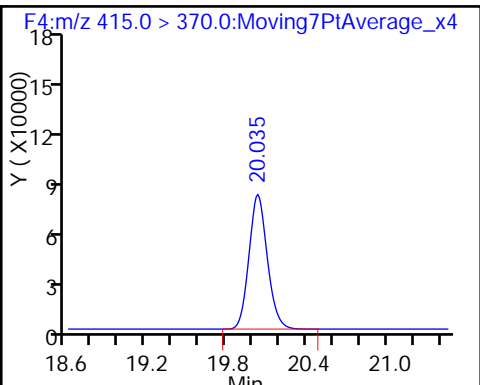
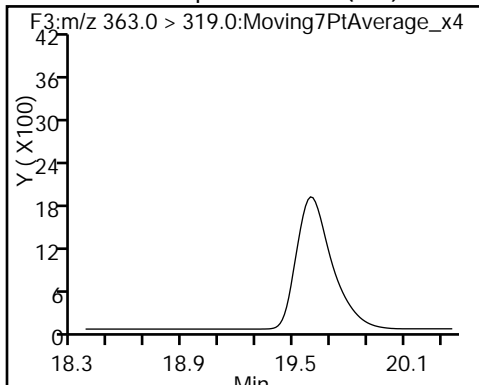
3 Perfluorohexanesulfonic acid (M)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

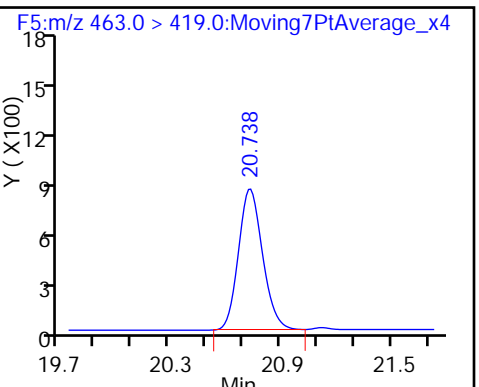
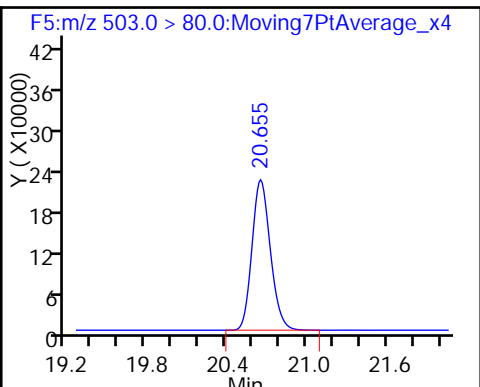
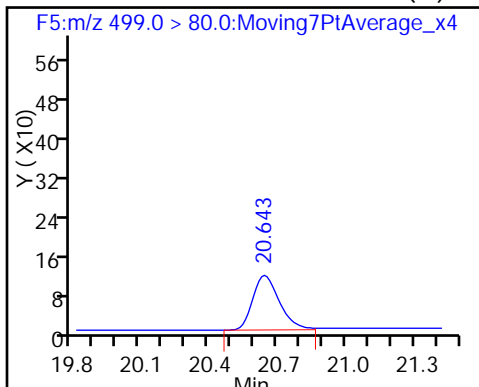
6 Perfluorooctanoic acid (M)



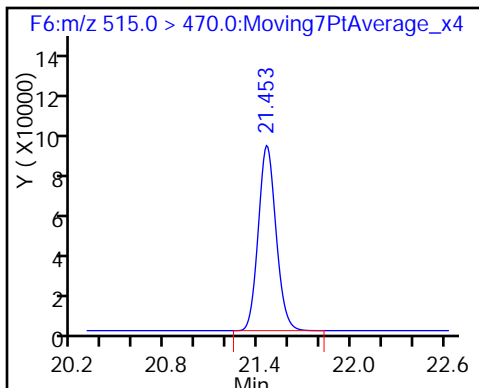
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_128.d
 Lims ID: 320-23917-A-28-A
 Client ID: WI-CV-3FB05-1116
 Sample Type: Client
 Inject. Date: 08-Dec-2016 06:48:39 ALS Bottle#: 12 Worklist Smp#: 49
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: 320-23917-a-28-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:24:53 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:59:13

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.9	109.32
\$ 10 13C2 PFDA	10.0	11.0	109.73

TestAmerica Sacramento

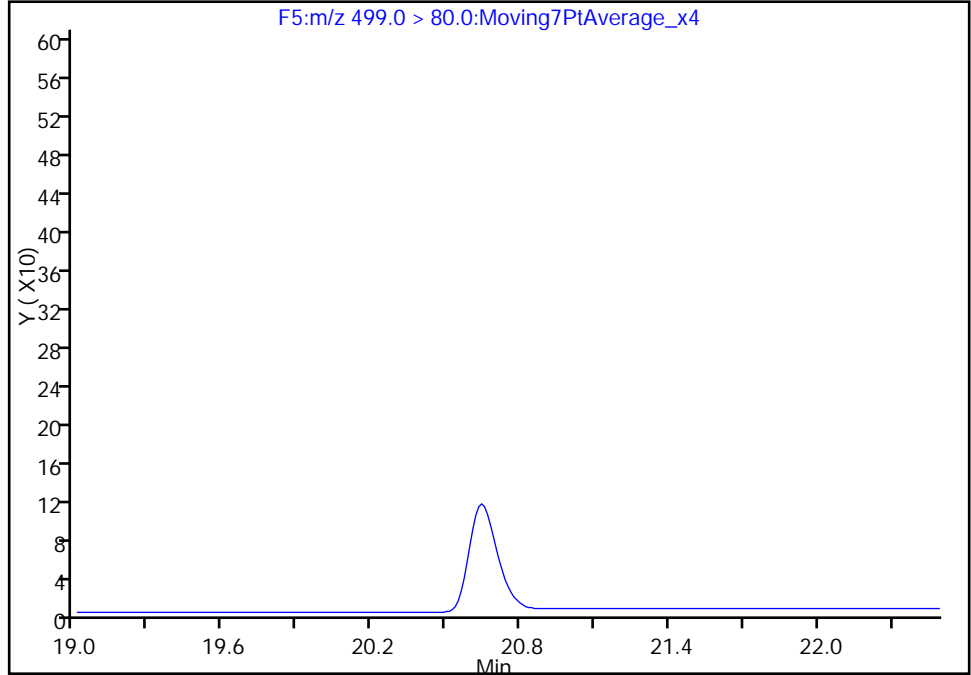
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Injection Date: 08-Dec-2016 06:48:39 Instrument ID: A6
Lims ID: 320-23917-A-28-A Lab Sample ID: 320-23917-28
Client ID: WI-CV-3FB05-1116
Operator ID: CBW ALS Bottle#: 12 Worklist Smp#: 49
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:M/RM

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

Signal: 1

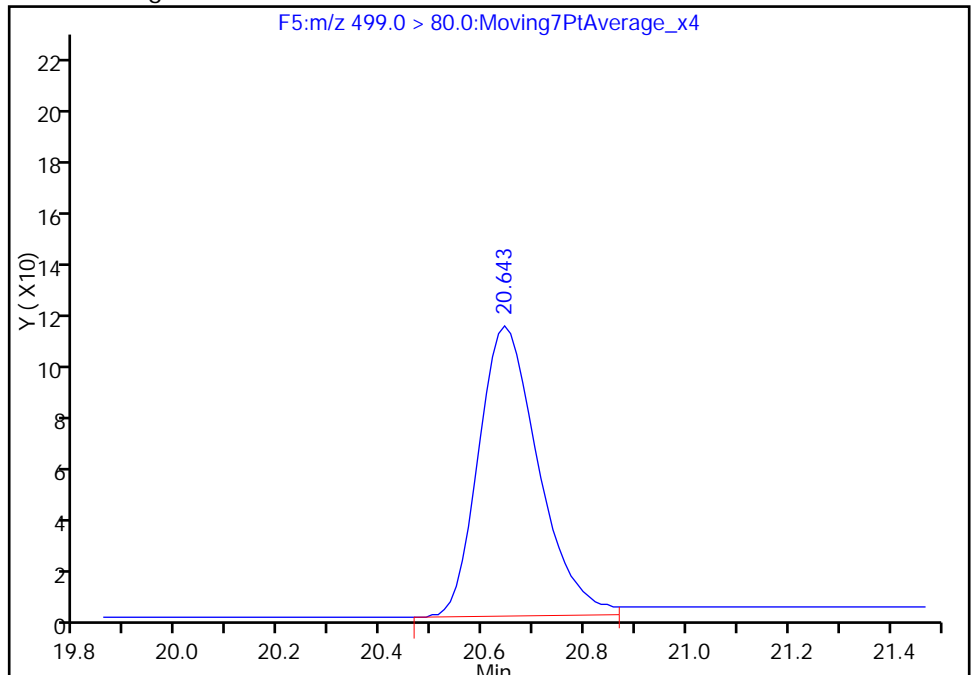
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.64
Area: 918
Amount: 0.011751
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:59:13
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

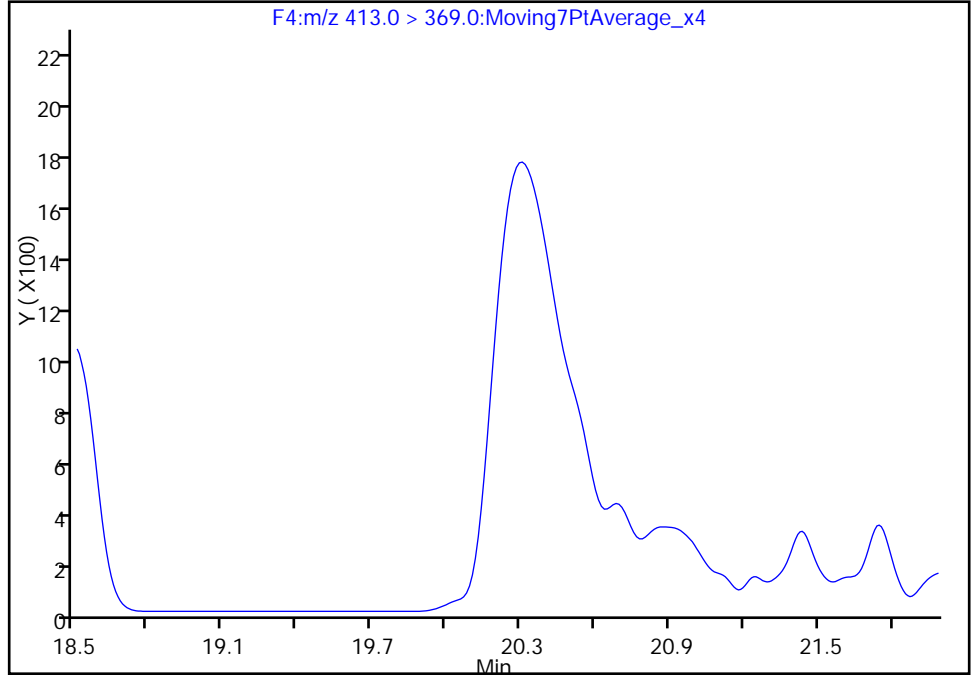
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Injection Date: 08-Dec-2016 06:48:39 Instrument ID: A6
Lims ID: 320-23917-A-28-A Lab Sample ID: 320-23917-28
Client ID: WI-CV-3FB05-1116
Operator ID: CBW ALS Bottle#: 12 Worklist Smp#: 49
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

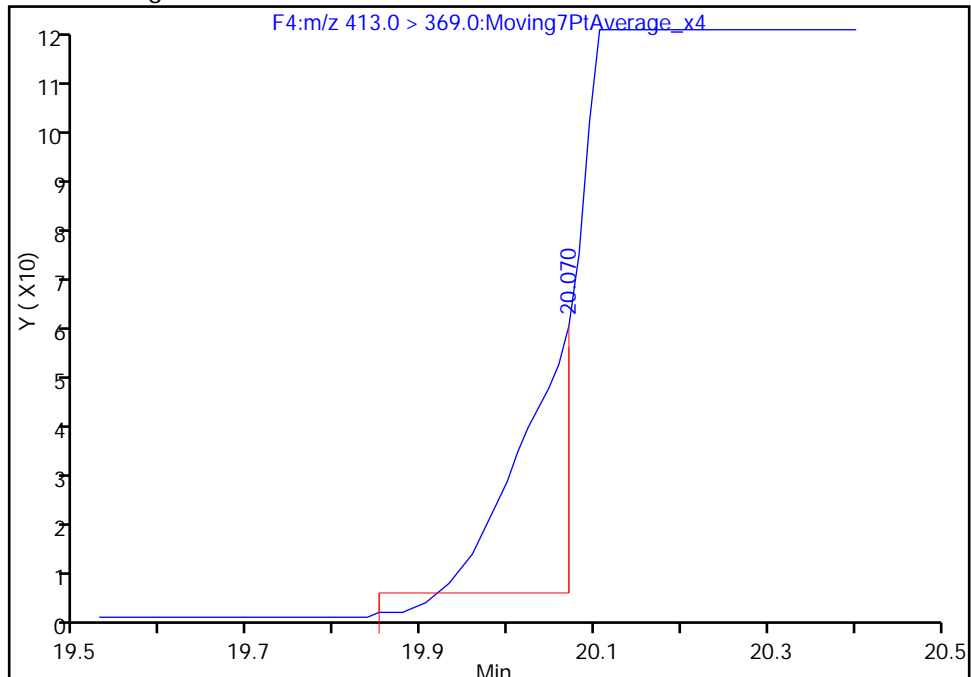
Not Detected
Expected RT: 20.03

Processing Integration Results



Manual Integration Results

RT: 20.07
Area: 214
Amount: 0.002658
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 10:59:13
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1 Analy Batch No.: 140688

SDG No.: _____

Instrument ID: A6 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/05/2016 17:26 Calibration End Date: 12/05/2016 19:54 Calibration ID: 26888

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 320-140688/2	05DEC2016A6A_004.d
Level 2	STD 320-140688/3	05DEC2016A6A_005.d
Level 3	STD 320-140688/4	05DEC2016A6A_006.d
Level 4	STD 320-140688/5	05DEC2016A6A_007.d
Level 5	STD 320-140688/6	05DEC2016A6A_008.d
Level 6	STD 320-140688/7	05DEC2016A6A_009.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanesulfonic acid (PFBS)	0.7247 0.6563	0.6525	0.7178	0.7256	0.7321	Ave		0.7015			5.2		30.0				
Perfluorohexanesulfonic acid	0.8344 0.8930	0.7757	0.9290	0.9478	1.0082	Ave		0.8980			9.3		30.0				
Perfluoroheptanoic acid	1.4137 1.1078	1.1891	1.2161	1.1975	1.1665	Ave		1.2151			8.6		30.0				
Perfluorooctanoic acid (PFOA)	0.9720 1.0610	0.9049	1.0674	1.1235	1.1136	Ave		1.0404			8.2		30.0				
Perfluorooctanesulfonic acid (PFOS)	0.8855 1.0951	0.9020	1.0711	1.0966	1.2136	Ave		1.0440			12.1		30.0				
Perfluorononanoic acid	0.9735 1.1655	0.9961	1.1929	1.2321	1.2453	Ave		1.1342			10.5		30.0				
13C2 PFHxA	1.0366 1.2091	1.0515	1.1929	1.2298	1.2791	Ave		1.1665			8.5		30.0				
13C2 PFDA	0.8084 0.9456	0.7439	0.8674	0.9054	0.9868	Ave		0.8763			10.2		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.: 320-23917-1 Analy Batch No.: 140688

SDG No.: _____

Instrument ID: A6 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/05/2016 17:26 Calibration End Date: 12/05/2016 19:54 Calibration ID: 26888

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 320-140688/2	05DEC2016A6A_004.d
Level 2	STD 320-140688/3	05DEC2016A6A_005.d
Level 3	STD 320-140688/4	05DEC2016A6A_006.d
Level 4	STD 320-140688/5	05DEC2016A6A_007.d
Level 5	STD 320-140688/6	05DEC2016A6A_008.d
Level 6	STD 320-140688/7	05DEC2016A6A_009.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Perfluorobutanesulfonic acid (PFBS)	PFOS	Ave	437563 7753569	1227165	2489398	4401661	6630132	8.76 178	22.9	45.1	90.9	135
Perfluorohexanesulfonic acid	PFOS	Ave	169827 3556638	491809	1086082	1938237	3077974	2.95 60.1	7.72	15.2	30.6	45.4
Perfluoroheptanoic acid	13PF OA	Ave	126557 2032288	324913	658044	1121930	1727957	0.994 20.2	2.60	5.12	10.3	15.3
Perfluorooctanoic acid (PFOA)	13PF OA	Ave	173304 3876381	492431	1150281	2096404	3285195	1.98 40.3	5.17	10.2	20.5	30.4
Perfluorooctanesulfonic acid (PFOS)	PFOS	Ave	238662 5775285	757269	1658139	2969550	4906017	3.91 79.6	10.2	20.1	40.6	60.1
Perfluorononanoic acid	13PF OA	Ave	168128 4124664	525061	1245341	2227031	3558831	1.92 39.0	5.01	9.87	19.9	29.5
13C2 PFHxA	13PF OA	Ave	933751 1095977	1106485	1261522	1117585	1240474	10.0 10.0	10.0	10.0	10.0	10.0
13C2 PFDA	13PF OA	Ave	728204 857144	782778	917302	822787	957025	10.0 10.0	10.0	10.0	10.0	10.0

Curve Type Legend:

Ave = Average ISTD

FORM VI
 LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
 READBACK PERCENT ERROR

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1 Analy Batch No.: 140688

SDG No.: _____

Instrument ID: A6 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/05/2016 17:26 Calibration End Date: 12/05/2016 19:54 Calibration ID: 26888

Calibration Files:

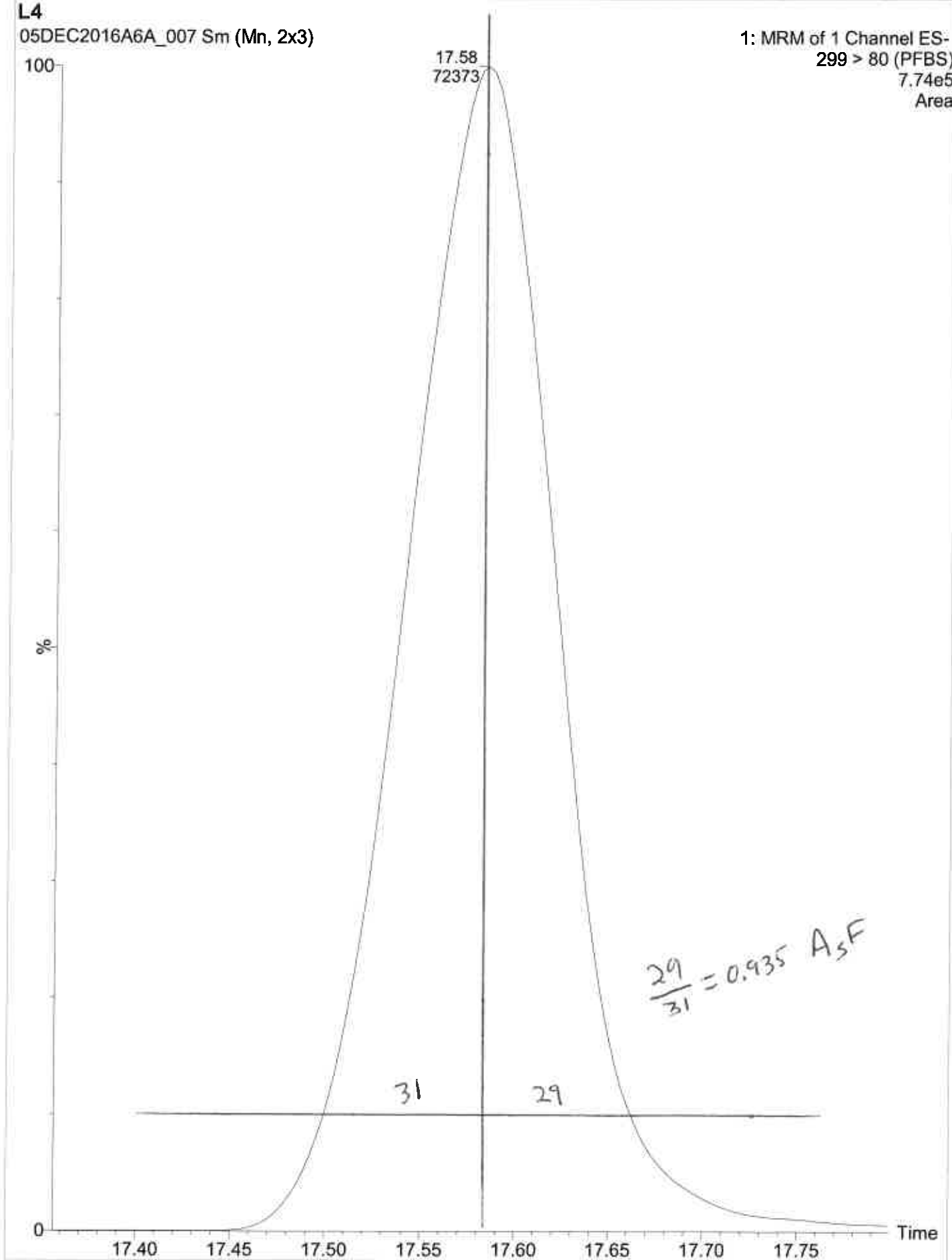
LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 320-140688/2	05DEC2016A6A_004.d
Level 2	STD 320-140688/3	05DEC2016A6A_005.d
Level 3	STD 320-140688/4	05DEC2016A6A_006.d
Level 4	STD 320-140688/5	05DEC2016A6A_007.d
Level 5	STD 320-140688/6	05DEC2016A6A_008.d
Level 6	STD 320-140688/7	05DEC2016A6A_009.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanesulfonic acid (PFBS)	3.3	-7.0	2.3	3.4	4.4	-6.4	50	50	50	50	50	50
Perfluorohexanesulfonic acid	-7.1	-13.6	3.4	5.5	12.3	-0.6	50	50	50	50	50	50
Perfluoroheptanoic acid	16.3	-2.1	0.1	-1.5	-4.0	-8.8	50	50	50	50	50	50
Perfluorooctanoic acid (PFOA)	-6.6	-13.0	2.6	8.0	7.0	2.0	50	50	50	50	50	50
Perfluorooctanesulfonic acid (PFOS)	-15.2	-13.6	2.6	5.0	16.2	4.9	50	50	50	50	50	50
Perfluorononanoic acid	-14.2	-12.2	5.2	8.6	9.8	2.8	50	50	50	50	50	50
13C2 PFHxA	-11.1	-9.9	2.3	5.4	9.7	3.7	30	30	30	30	30	30
13C2 PFDA	-7.7	-15.1	-1.0	3.3	12.6	7.9	30	30	30	30	30	30

L4

05DEC2016A6A_007 Sm (Mn, 2x3)

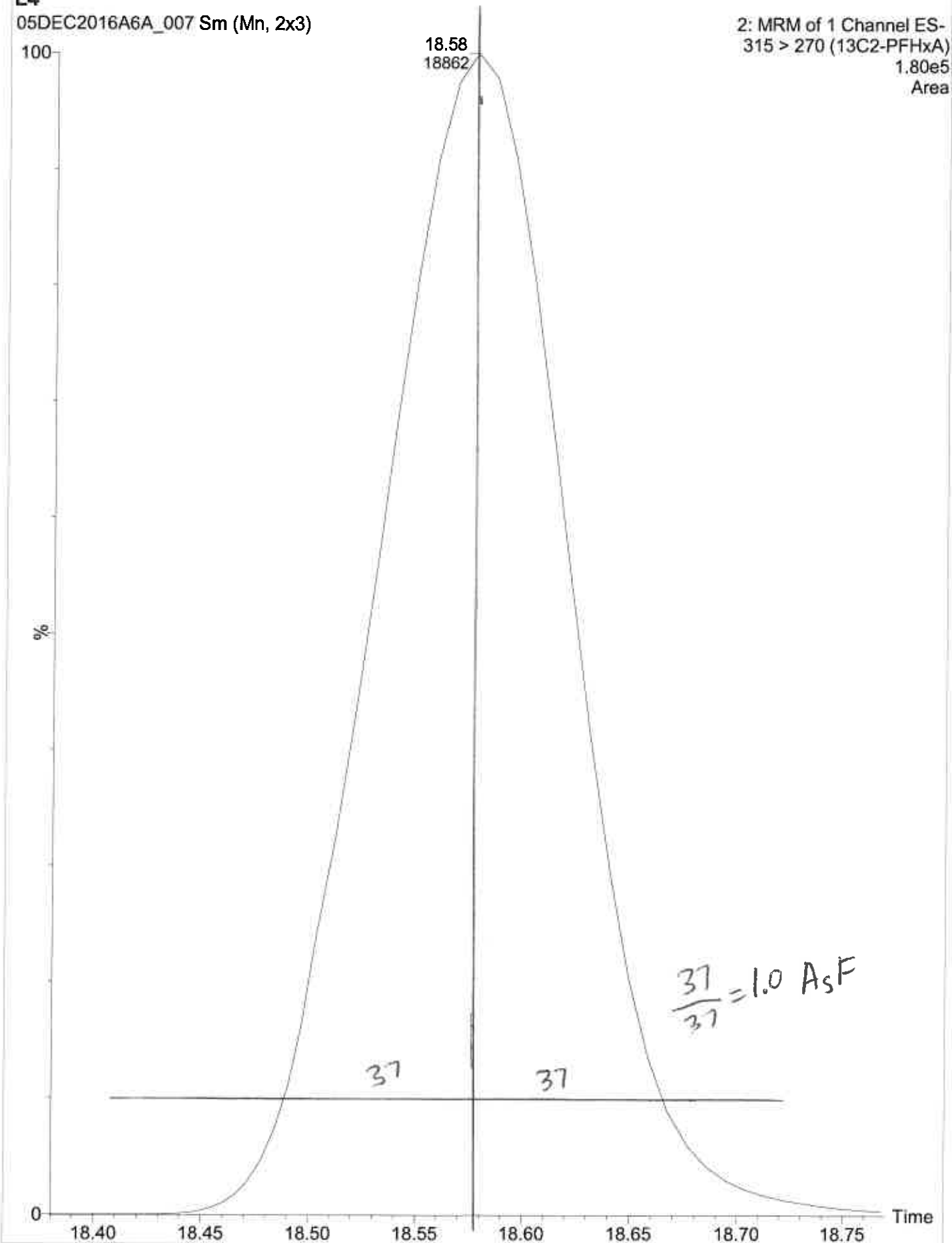
1: MRM of 1 Channel ES-
299 > 80 (PFBS)
7.74e5
Area



L4

05DEC2016A6A_007 Sm (Mn, 2x3)

2: MRM of 1 Channel ES-
315 > 270 (13C2-PFHxA)
1.80e5
Area



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_004.d
 Lims ID: STD L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 05-Dec-2016 17:26:03 ALS Bottle#: 1 Worklist Smp#: 2
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: STD L1 L1
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Dec-2016 16:35:34 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK024

First Level Reviewer: barnettj Date: 06-Dec-2016 10:00:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.576	17.581	-0.005	1.000	437563	9.05	466
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	933751	8.89	30467
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.342	-0.010	1.000	169827	2.74	4140
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.378	-0.010	1.000	126557	1.16	45.1 M
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		900764	10.0	23392
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	173304	1.85	35.0 M
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	238662	3.32	2941
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.669	-0.002		1976615	28.7	40886
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.748	-0.010	1.000	168128	1.65	6043
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.474	-0.003	1.000	728204	9.23	22953

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L1_00015

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_004.d

Injection Date: 05-Dec-2016 17:26:03

Instrument ID: A6

Lims ID: STD L1

Client ID:

Operator ID: CBW

ALS Bottle#: 1

Worklist Smp#: 2

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

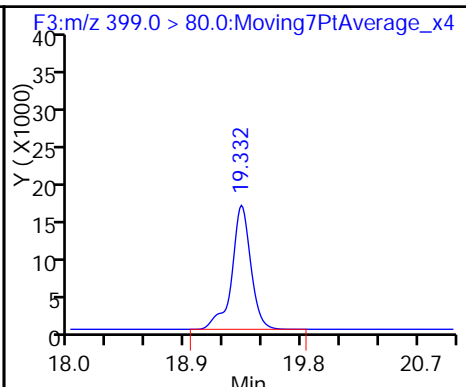
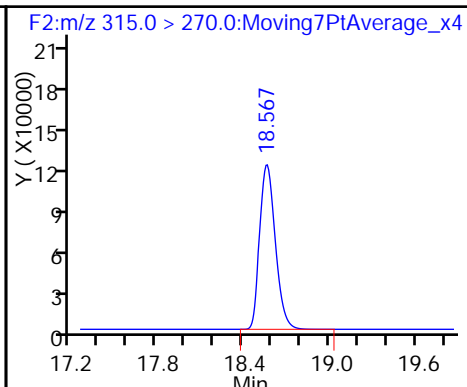
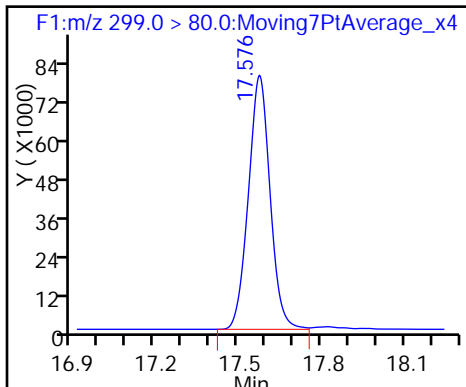
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

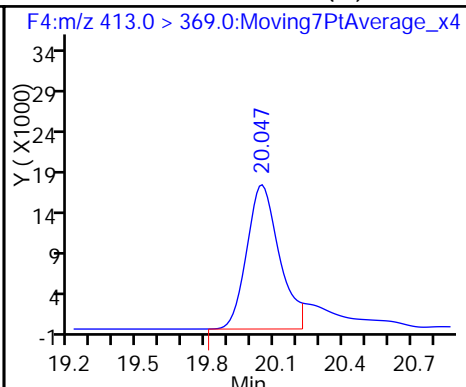
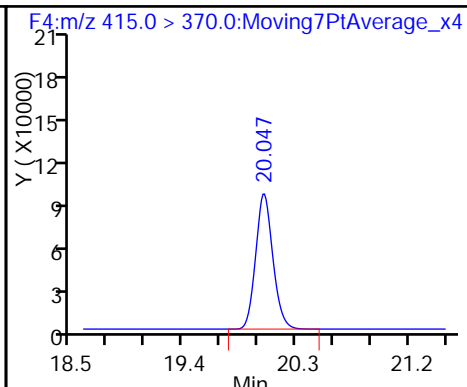
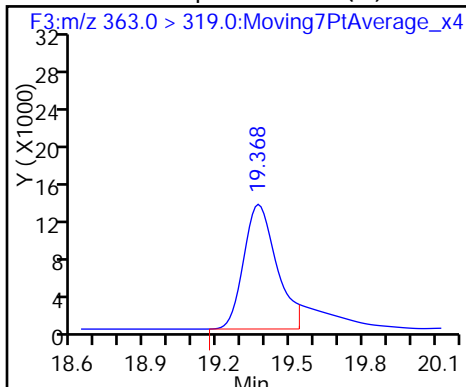
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid (M)

* 5 13C2-PFOA

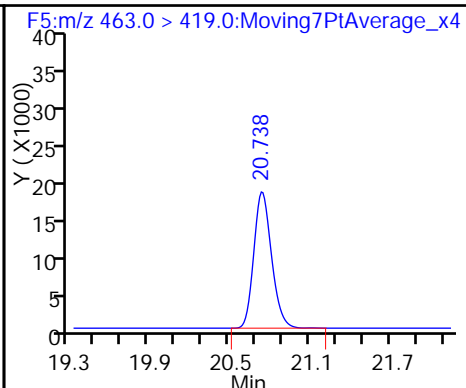
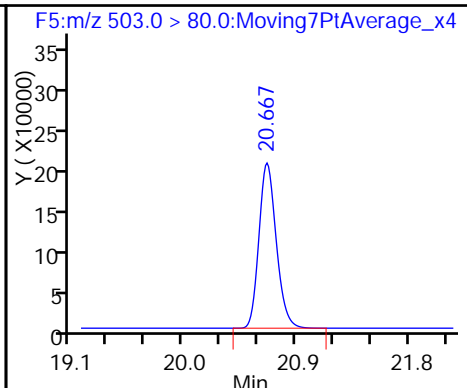
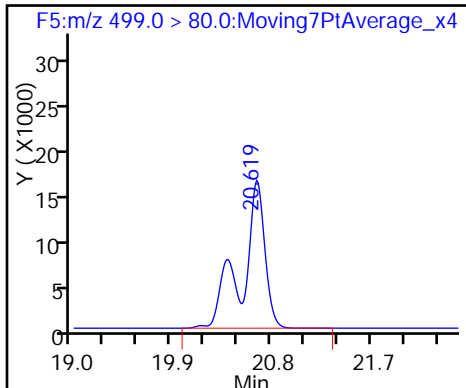
6 Perfluorooctanoic acid (M)



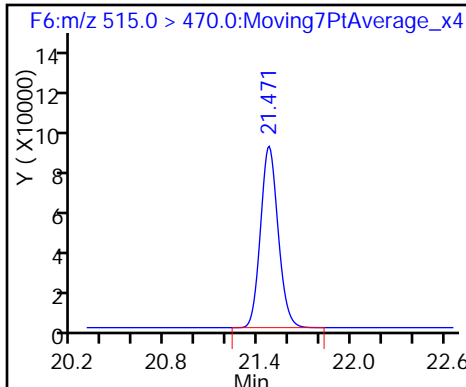
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

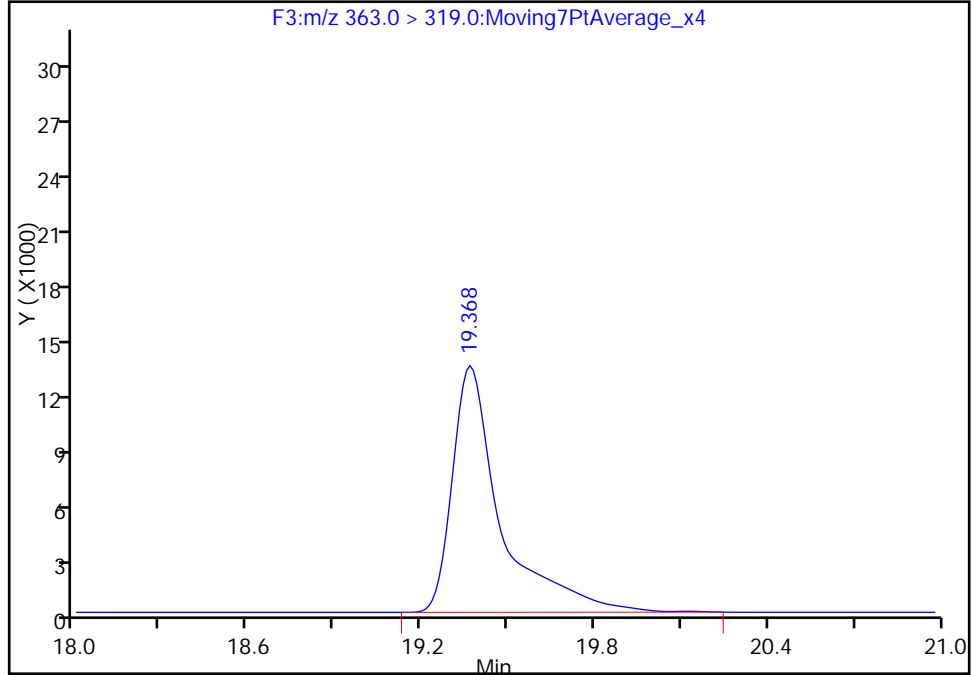
Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_004.d
Injection Date: 05-Dec-2016 17:26:03 Instrument ID: A6
Lims ID: STD L1
Client ID:
Operator ID: CBW ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F3:MRM

4 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

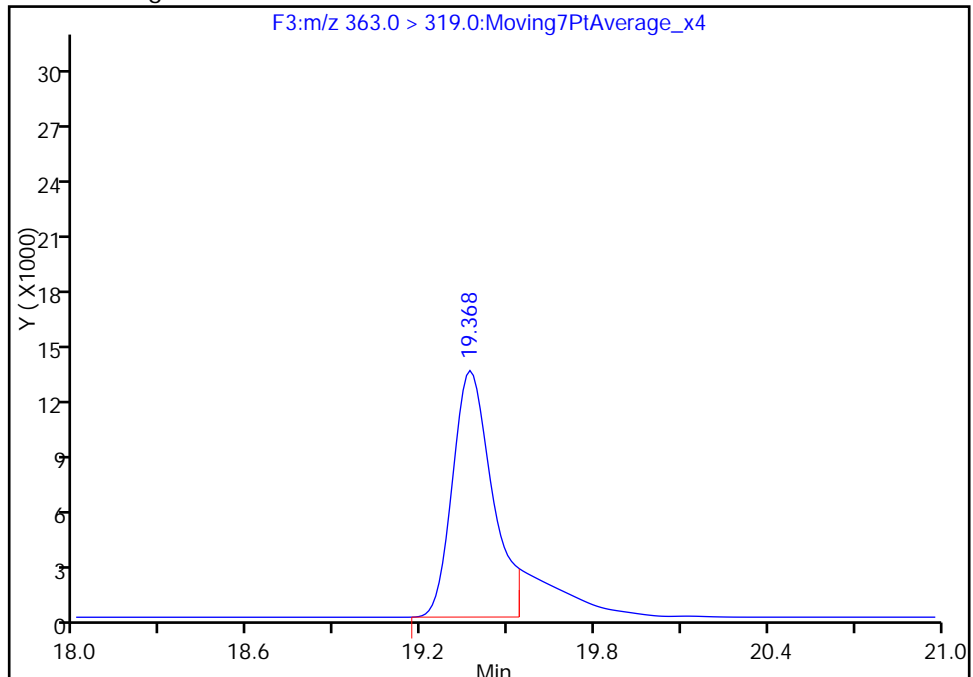
RT: 19.37
Area: 155591
Amount: 1.476072
Amount Units: ng/ml

Processing Integration Results



RT: 19.37
Area: 126557
Amount: 1.156251
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 06-Dec-2016 10:00:02
Audit Action: Manually Integrated

Audit Reason: Split Peak

TestAmerica Sacramento

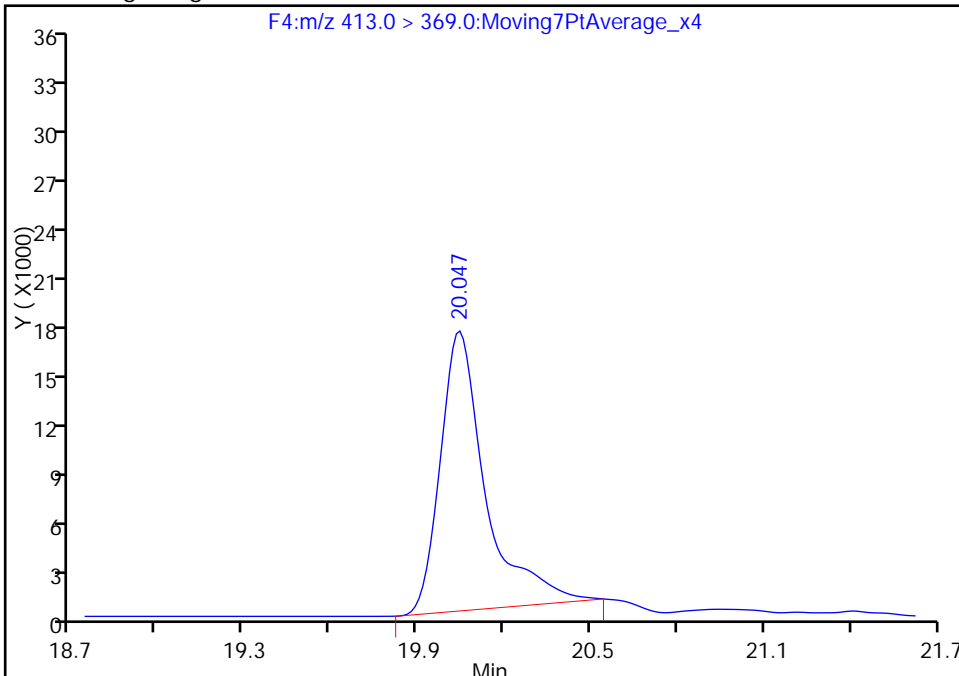
Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_004.d
Injection Date: 05-Dec-2016 17:26:03 Instrument ID: A6
Lims ID: STD L1
Client ID:
Operator ID: CBW ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

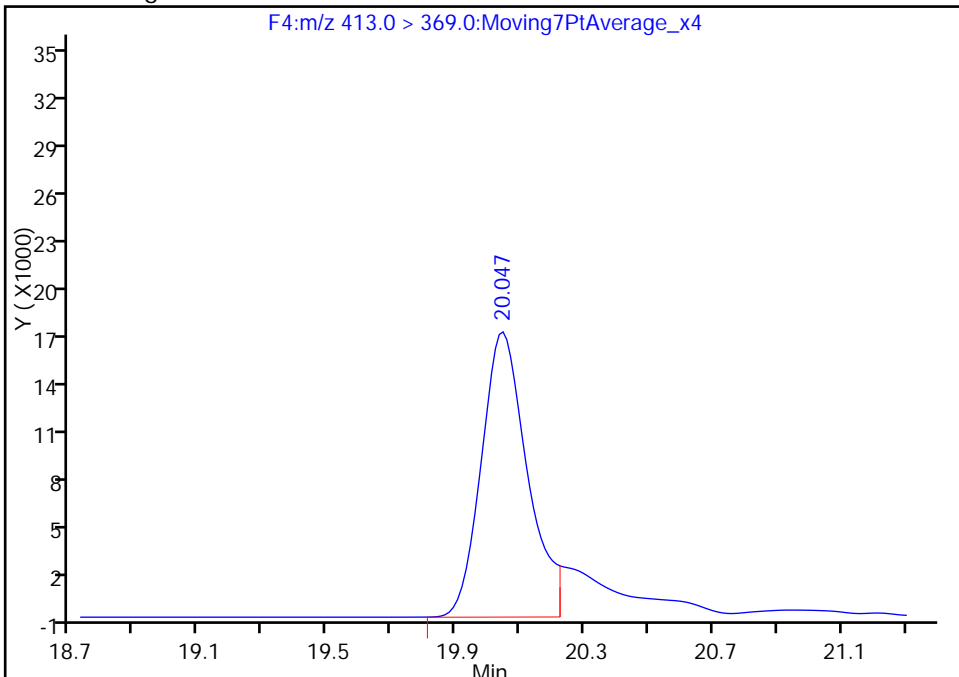
RT: 20.05
Area: 186490
Amount: 1.959453
Amount Units: ng/ml

Processing Integration Results



RT: 20.05
Area: 173304
Amount: 1.849212
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 06-Dec-2016 10:00:02
Audit Action: Manually Integrated

Audit Reason: Split Peak

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_005.d
 Lims ID: STD L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 05-Dec-2016 17:55:38 ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: STD L2 L2
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Dec-2016 16:35:35 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK024

First Level Reviewer: barnettj Date: 06-Dec-2016 09:58:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.582	17.581	0.001	1.000	1227165	21.3	5055
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1106485	9.01	35678
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.342	0.002	1.000	491809	6.67	11495
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.378	0.002	1.000	324913	2.54	155 M
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		1052273	10.0	27645
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	492431	4.50	100 M
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	757269	8.83	8449
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.669	-0.002		2356620	28.7	30757
9 Perfluorononanoic acid	463.0 > 419.0	20.750	20.748	0.002	1.000	525061	4.40	13911
\$ 10 13C2 PFDA	515.0 > 470.0	21.480	21.474	0.006	1.000	782778	8.49	24678

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L2_00014

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_005.d

Injection Date: 05-Dec-2016 17:55:38

Instrument ID: A6

Lims ID: STD L2

Client ID:

Operator ID: CBW

ALS Bottle#: 2

Worklist Smp#: 3

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

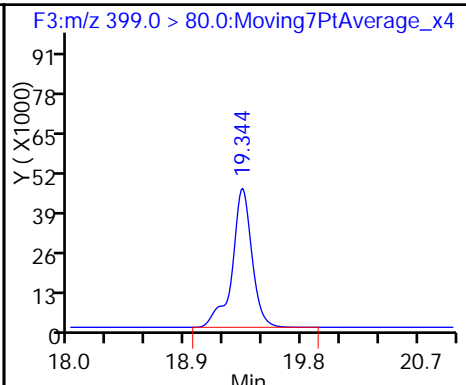
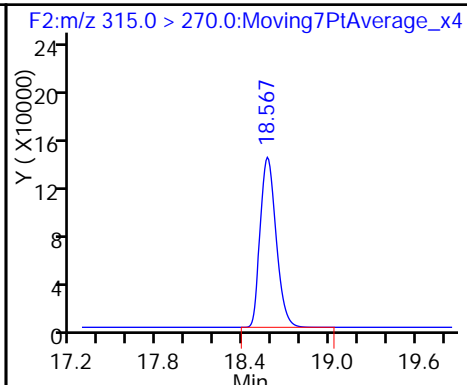
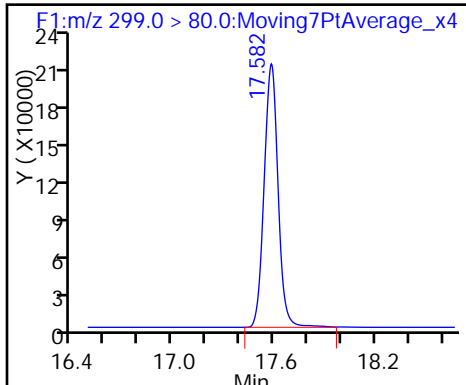
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

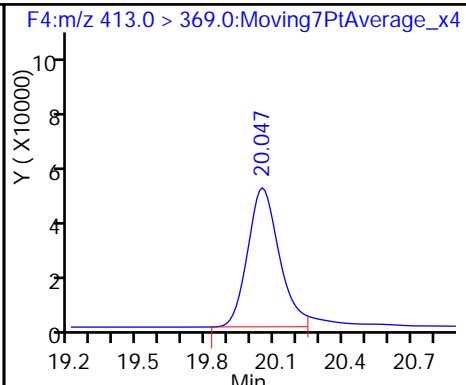
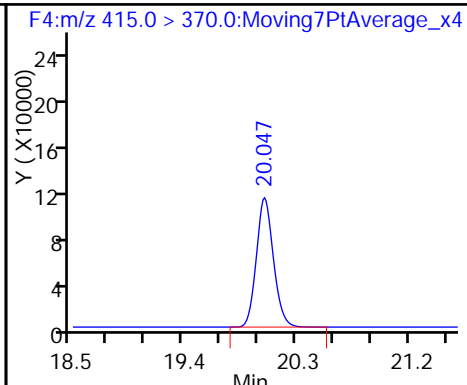
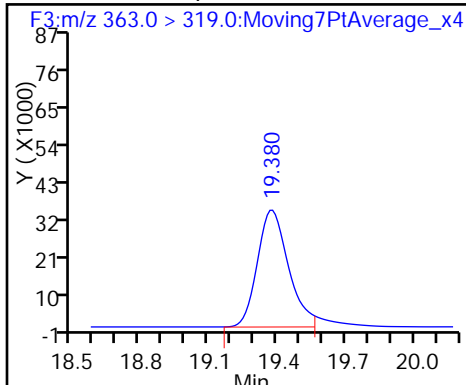
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid (M)

* 5 13C2-PFOA

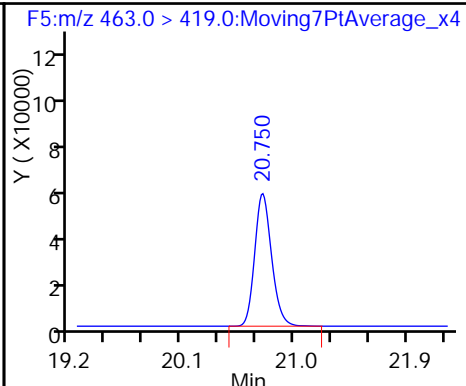
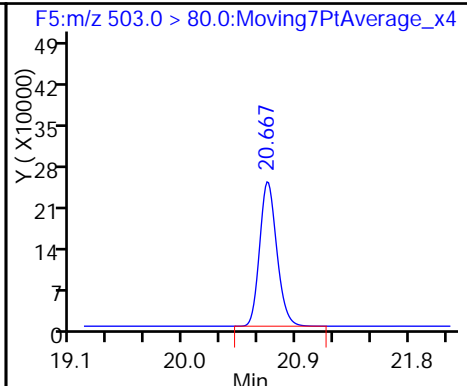
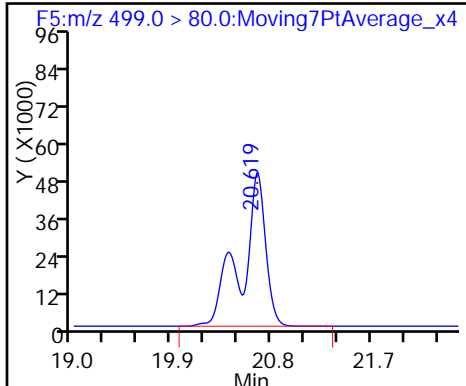
6 Perfluorooctanoic acid (M)



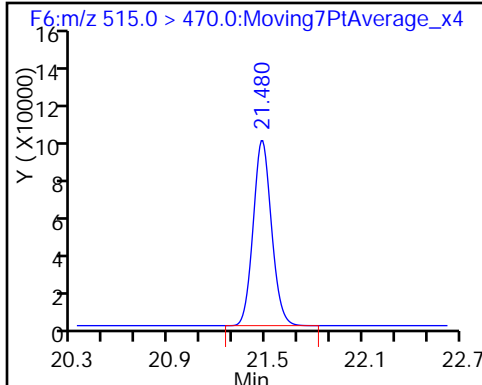
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

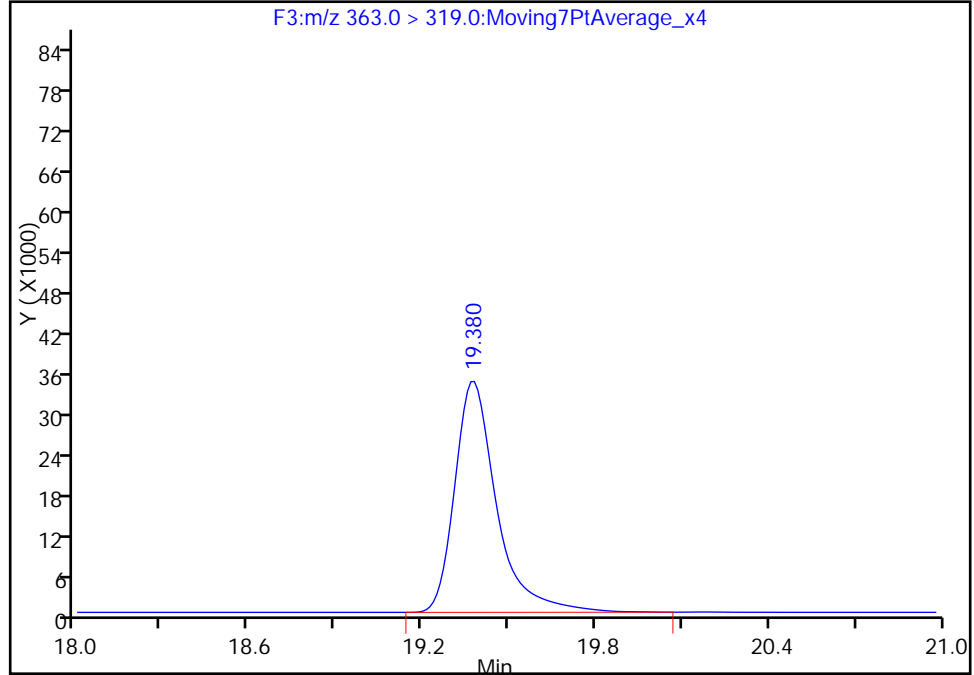
Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_005.d
Injection Date: 05-Dec-2016 17:55:38 Instrument ID: A6
Lims ID: STD L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F3:M/RM

4 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

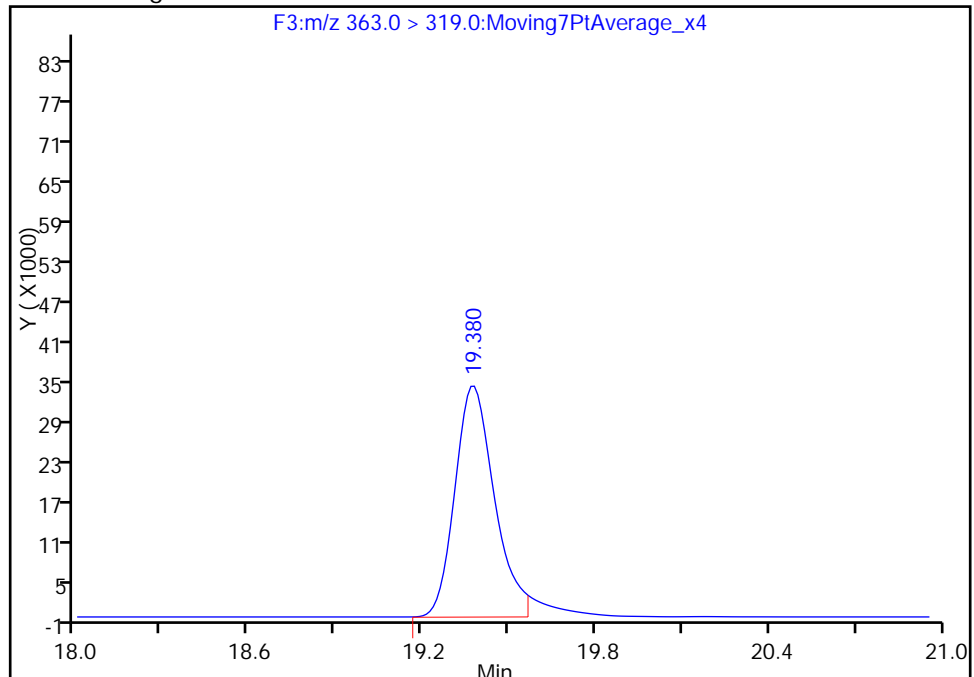
RT: 19.38
Area: 344811
Amount: 2.670013
Amount Units: ng/ml

Processing Integration Results



RT: 19.38
Area: 324913
Amount: 2.541065
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 06-Dec-2016 10:03:30
Audit Action: Manually Integrated

Audit Reason: Split Peak

TestAmerica Sacramento

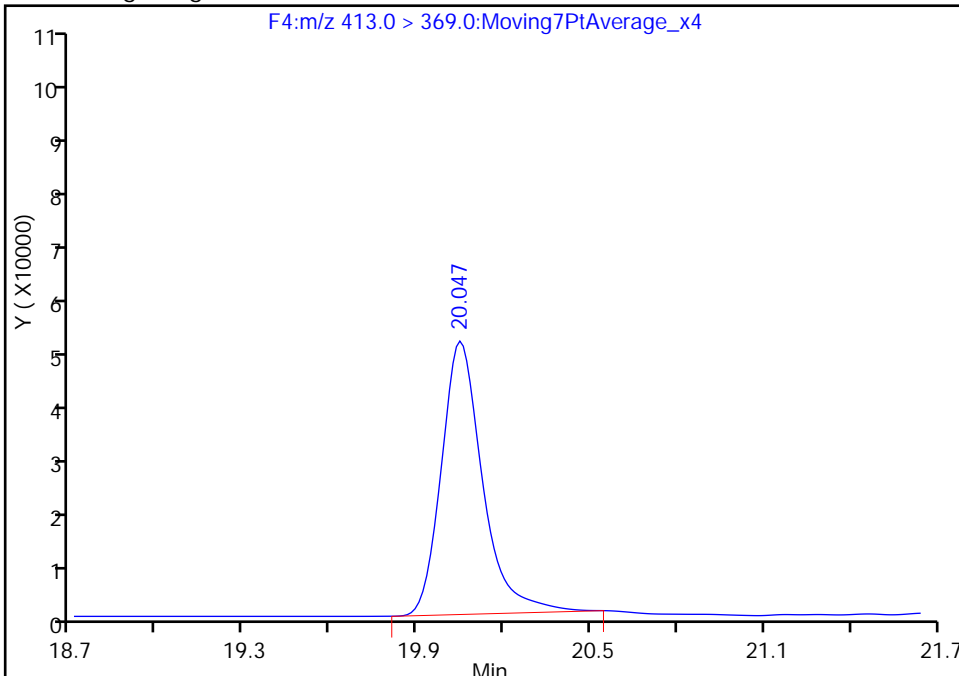
Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_005.d
Injection Date: 05-Dec-2016 17:55:38 Instrument ID: A6
Lims ID: STD L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

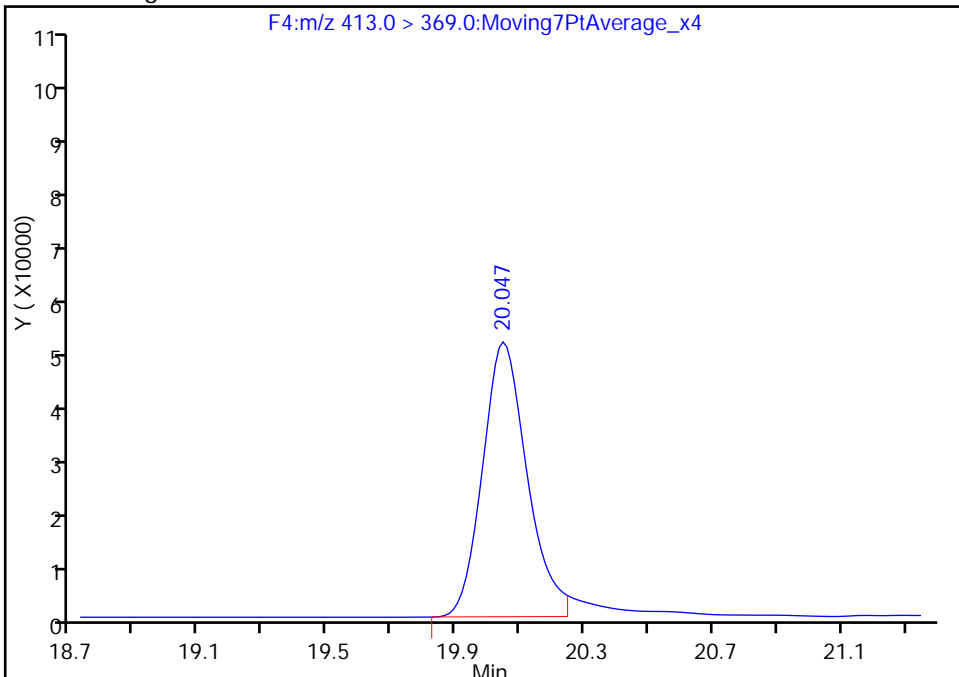
RT: 20.05
Area: 504990
Amount: 4.595586
Amount Units: ng/ml

Processing Integration Results



RT: 20.05
Area: 492431
Amount: 4.497863
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 06-Dec-2016 10:03:30
Audit Action: Manually Integrated

Audit Reason: Split Peak

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_006.d
 Lims ID: STD L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 05-Dec-2016 18:25:13 ALS Bottle#: 3 Worklist Smp#: 4
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: STD L3 L3
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Dec-2016 16:35:36 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK024

First Level Reviewer: barnettj Date: 06-Dec-2016 09:58:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.582	17.581	0.001	1.000	2489398	46.2	1804
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1261522	10.2	40506
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.342	0.002	1.000	1086082	15.7	25400
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.378	0.002	1.000	658044	5.12	4774
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		1057506	10.0	27287
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	1150281	10.5	429
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	1658139	20.7	19019
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.669	-0.002		2205243	28.7	57142
9 Perfluorononanoic acid	463.0 > 419.0	20.750	20.748	0.002	1.000	1245341	10.4	13210
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.474	-0.003	1.000	917302	9.90	28753

Reagents:

LC537-L3_00016 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_006.d

Injection Date: 05-Dec-2016 18:25:13

Instrument ID: A6

Lims ID: STD L3

Client ID:

Operator ID: CBW

ALS Bottle#: 3

Worklist Smp#: 4

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

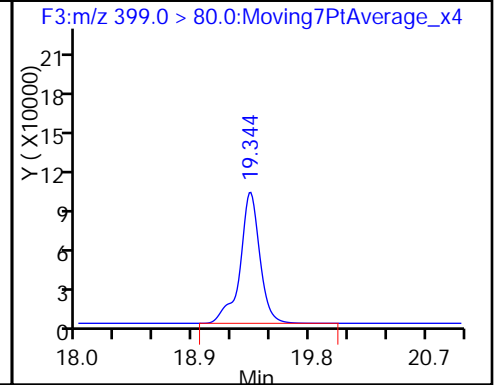
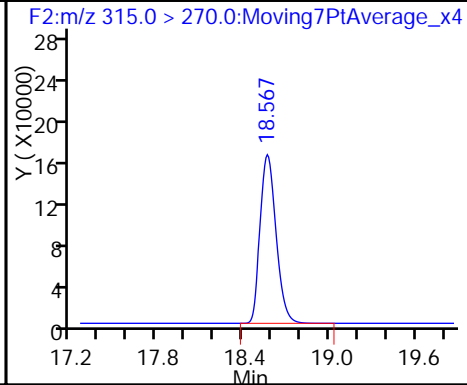
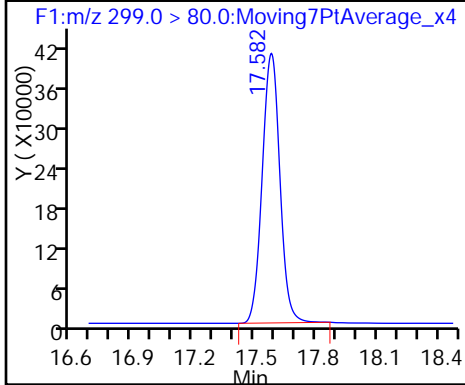
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

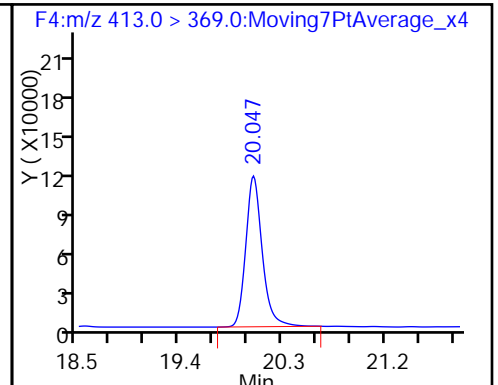
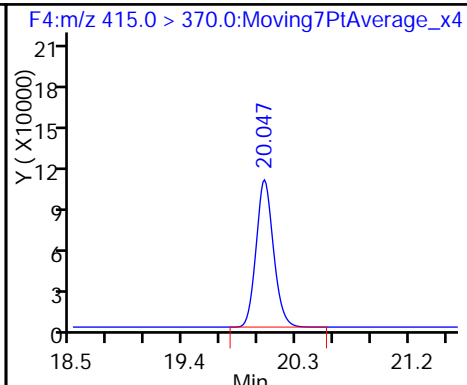
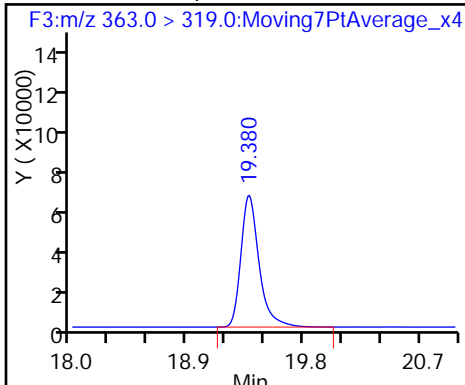
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

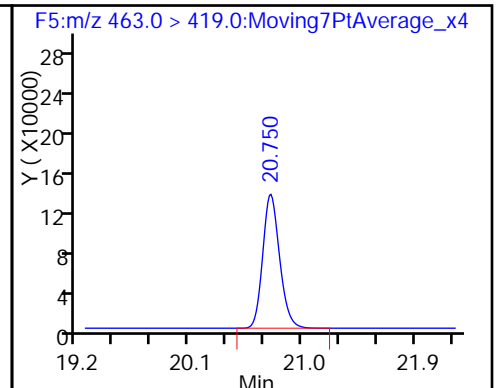
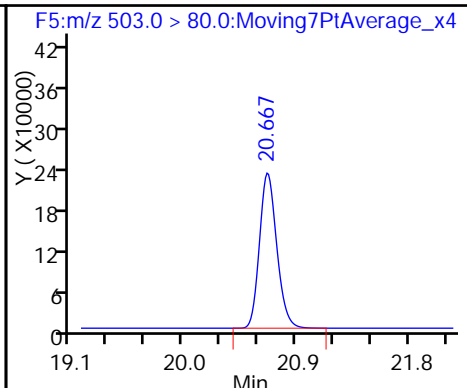
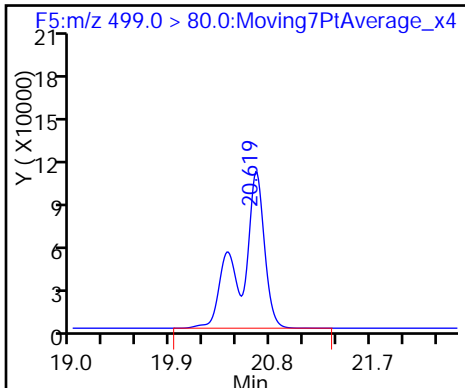
6 Perfluorooctanoic acid



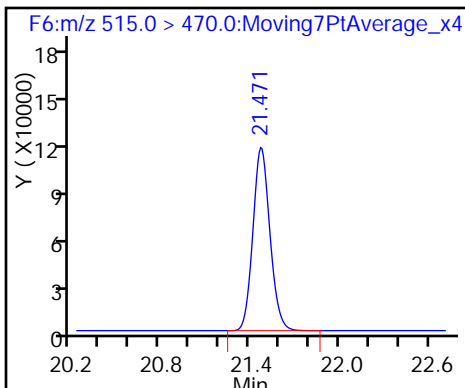
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_007.d
 Lims ID: STD L4
 Client ID:
 Sample Type: ICISAV Calib Level: 4
 Inject. Date: 05-Dec-2016 18:54:48 ALS Bottle#: 4 Worklist Smp#: 5
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: STD L4 L4
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Dec-2016 16:35:37 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK024

First Level Reviewer: barnettj Date: 06-Dec-2016 13:43:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.579	17.581	-0.002	1.000	4401661	94.0	2768
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1117585	10.5	28676
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.342	0.002	1.000	1938237	32.3	25196
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.378	0.002	1.000	1121930	10.2	12796
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		908727	10.0	23744
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	2096404	22.2	516
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	2969550	42.6	9704
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.669	-0.002		1914415	28.7	28032
9 Perfluorononanoic acid	463.0 > 419.0	20.750	20.748	0.002	1.000	2227031	21.6	23494
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.474	-0.003	1.000	822787	10.3	25796

Reagents:

LC537-L4_00015 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_007.d

Injection Date: 05-Dec-2016 18:54:48

Instrument ID: A6

Lims ID: STD L4

Client ID:

Operator ID: CBW

ALS Bottle#: 4

Worklist Smp#: 5

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

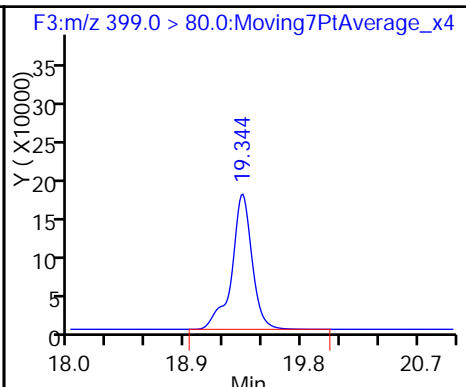
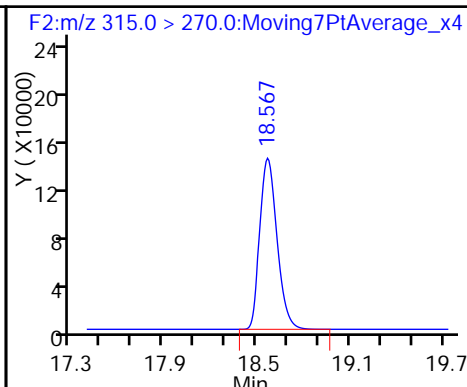
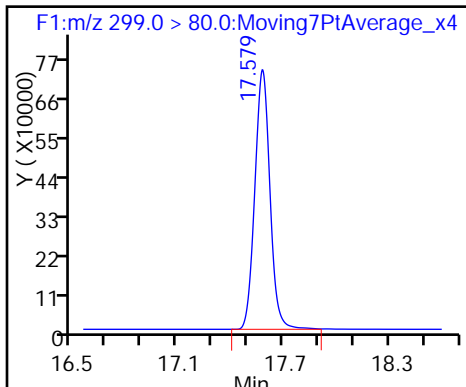
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

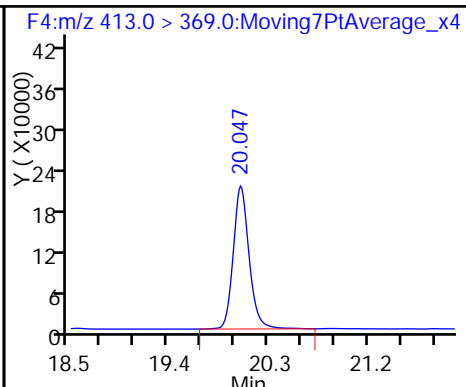
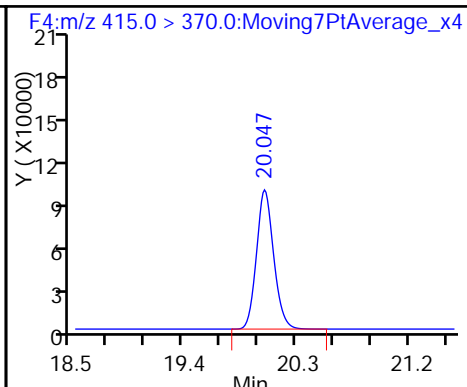
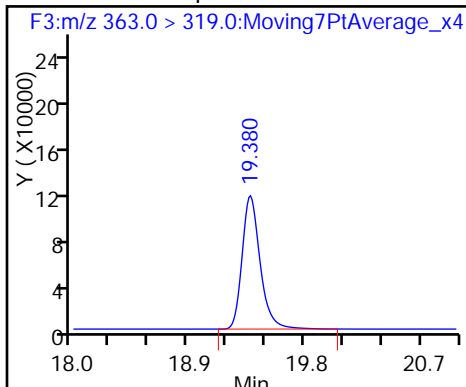
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

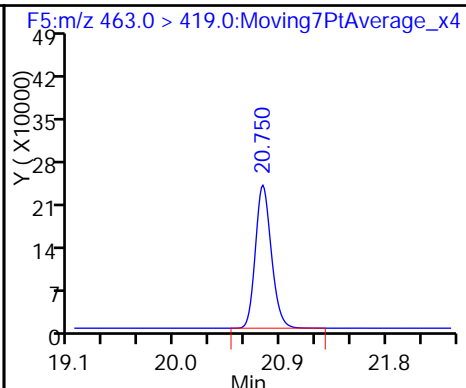
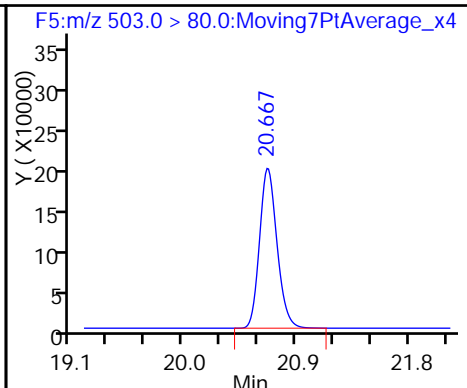
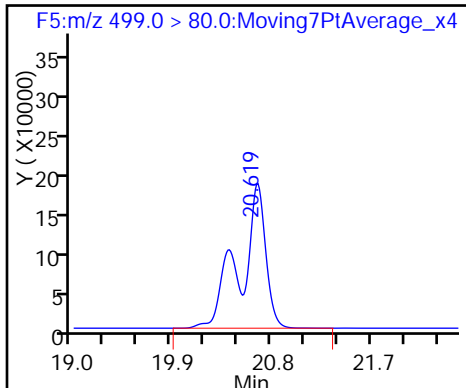
6 Perfluorooctanoic acid



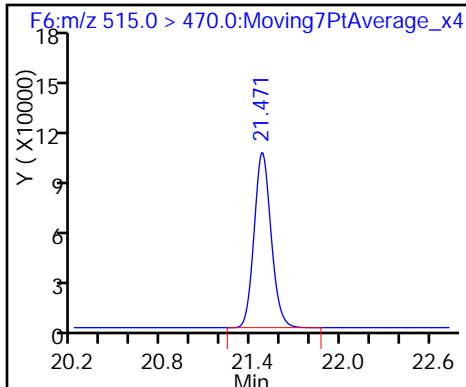
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_008.d
 Lims ID: STD L5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 05-Dec-2016 19:24:23 ALS Bottle#: 5 Worklist Smp#: 6
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: STD L5 L5
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Dec-2016 16:35:38 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK024

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.582	17.581	0.001	1.000	6630132	140.5	3208
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1240474	11.0	39454
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.342	0.002	1.000	3077974	51.0	14553
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.378	0.002	1.000	1727957	14.7	6886
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		969779	10.0	24964
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	3285195	32.6	1114
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.620	20.619	0.001	1.000	4906017	69.9	10146
* 8 13C4 PFOS	503.0 > 80.0	20.679	20.669	0.010		1929192	28.7	32805
9 Perfluorononanoic acid	463.0 > 419.0	20.750	20.748	0.002	1.000	3558831	32.4	16307
\$ 10 13C2 PFDA	515.0 > 470.0	21.480	21.474	0.006	1.000	957025	11.3	30231

Reagents:

LC537-L5_00017 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_008.d

Injection Date: 05-Dec-2016 19:24:23

Instrument ID: A6

Lims ID: STD L5

Client ID:

Operator ID: CBW

ALS Bottle#: 5

Worklist Smp#: 6

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

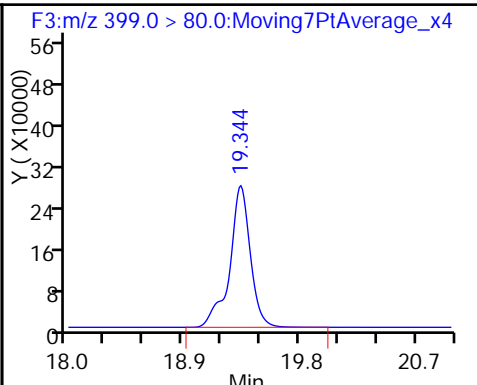
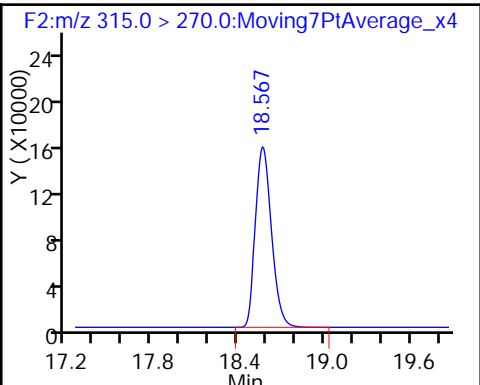
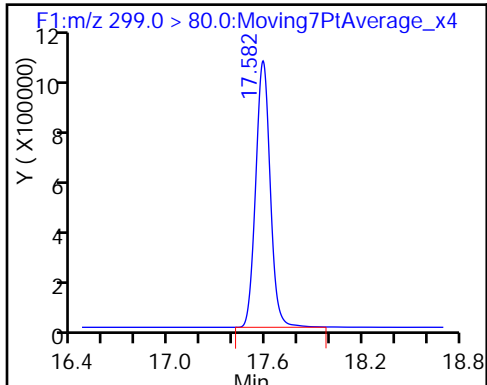
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

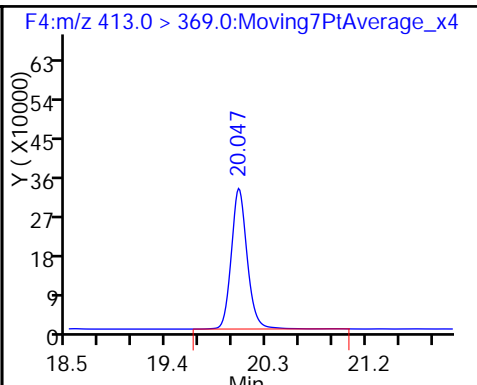
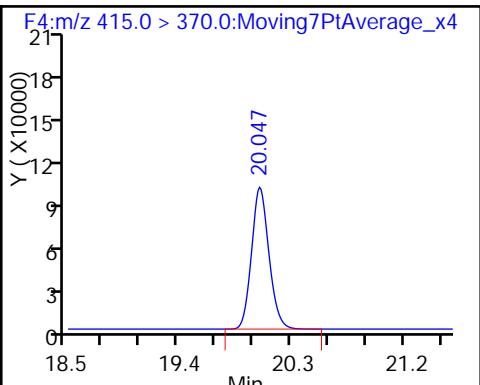
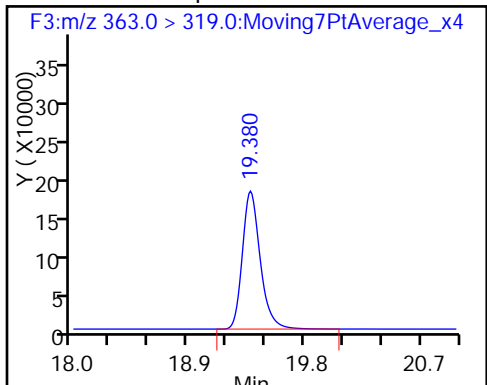
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

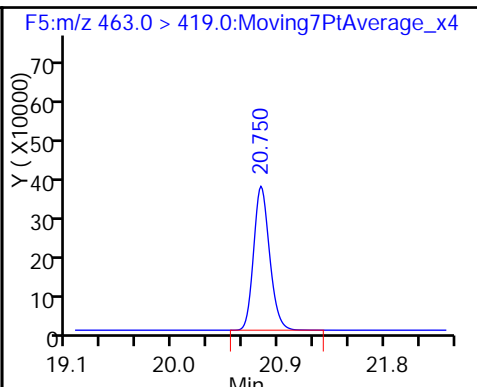
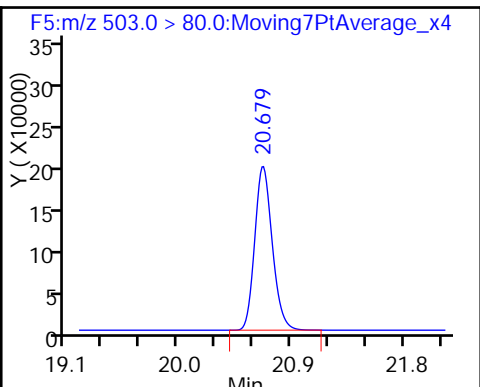
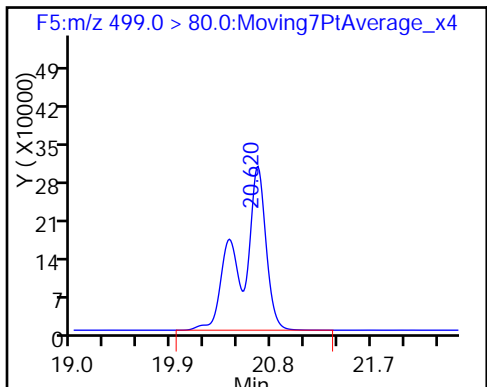
6 Perfluorooctanoic acid



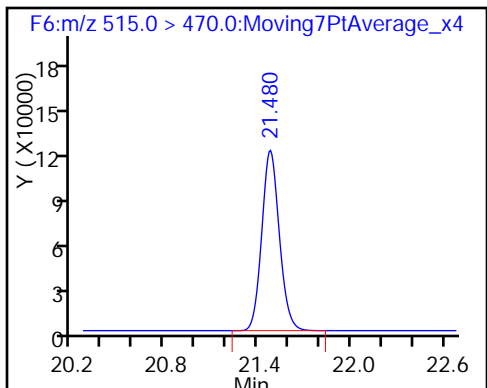
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Lims ID: STD L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 05-Dec-2016 19:54:00 ALS Bottle#: 6 Worklist Smp#: 7
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: STD L6 L6
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Dec-2016 16:35:39 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK024

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.582	17.581	0.001	1.000	7753569	166.9	8570
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1095977	10.4	34796
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.342	0.002	1.000	3556638	59.8	31299
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.378	0.002	1.000	2032288	18.5	6367
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		906416	10.0	23083
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	3876381	41.1	917
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	5775285	83.5	12991
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.669	-0.002		1899408	28.7	17628
9 Perfluorononanoic acid	463.0 > 419.0	20.750	20.748	0.002	1.000	4124664	40.1	17939
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.474	-0.003	1.000	857144	10.8	26862

Reagents:

LC537-L6_00014 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d

Injection Date: 05-Dec-2016 19:54:00

Instrument ID: A6

Lims ID: STD L6

Client ID:

Operator ID: CBW

ALS Bottle#: 6

Worklist Smp#: 7

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

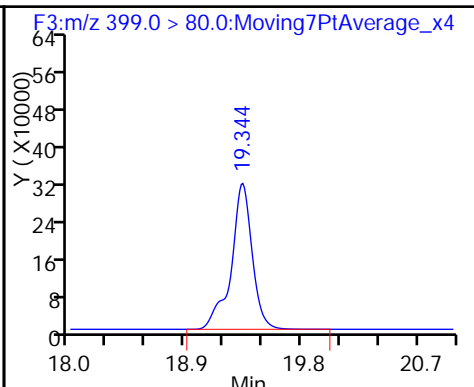
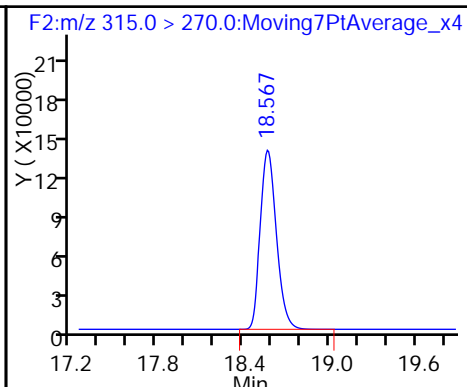
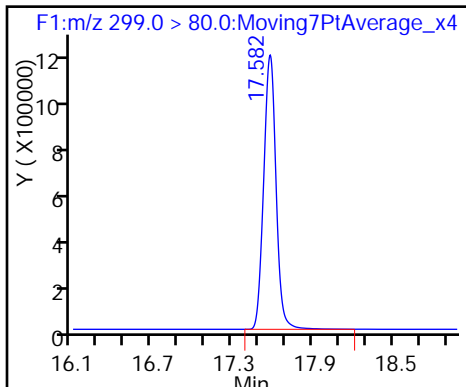
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

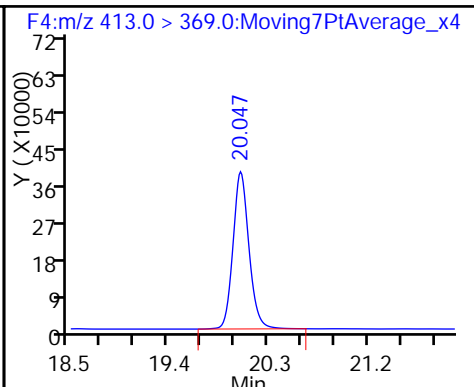
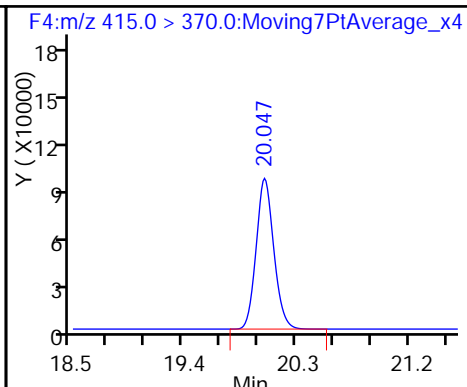
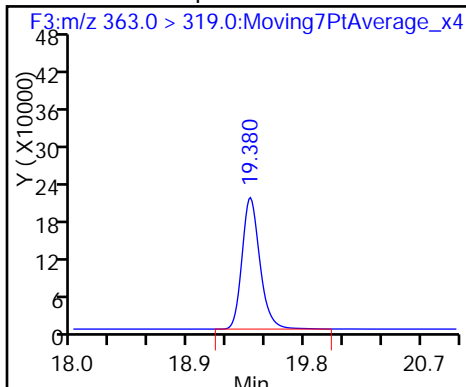
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

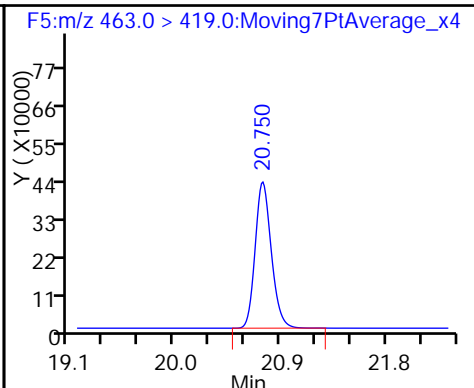
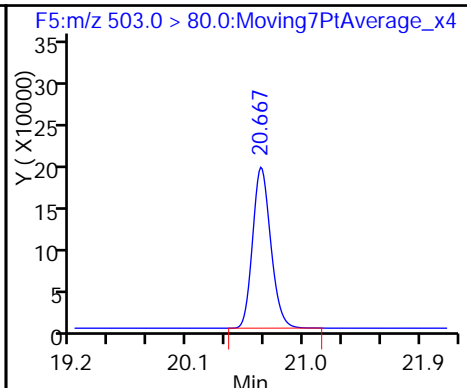
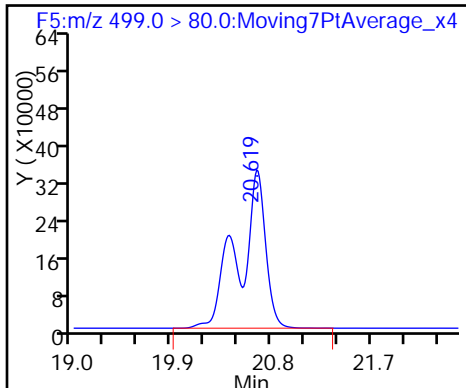
6 Perfluorooctanoic acid



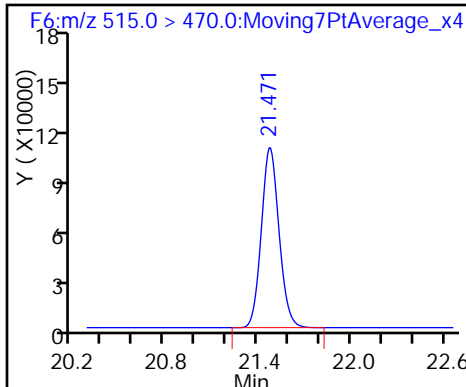
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140688/9 Calibration Date: 12/05/2016 20:53
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.6306		20.6	22.9	-10.1	50.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.7822		6.72	7.72	-12.9	50.0
Perfluoroheptanoic acid	Ave	1.215	1.239		2.65	2.60	1.9	50.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	0.9133		4.54	5.17	-12.2	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	0.8902		8.71	10.2	-14.7	50.0
Perfluorononanoic acid	Ave	1.134	1.093		4.83	5.01	-3.6	50.0
13C2 PFHxA	Ave	1.167	1.081		9.27	10.0	-7.3	30.0
13C2 PFDA	Ave	0.8763	0.8211		9.37	10.0	-6.3	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_011.d
 Lims ID: CCV L2
 Client ID:
 Sample Type: CCVL
 Inject. Date: 05-Dec-2016 20:53:12 ALS Bottle#: 2 Worklist Smp#: 9
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L2 CCV L2
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Dec-2016 16:35:40 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK024

First Level Reviewer: barnettj Date: 06-Dec-2016 10:08:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.586	17.581	0.005	1.000	1186753	20.6	693
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1108698	9.27	35970
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.342	0.002	1.000	496197	6.72	11535
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.378	0.002	1.000	329772	2.65	166 M
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		1025187	10.0	21492
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	484196	4.54	93.2 M
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	747766	8.71	8549
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.669	-0.002		2358079	28.7	20478
9 Perfluorononanoic acid	463.0 > 419.0	20.750	20.748	0.002	1.000	561371	4.83	15032
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.474	-0.003	1.000	841818	9.37	26813

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LC537-L2_00014

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_011.d

Injection Date: 05-Dec-2016 20:53:12

Instrument ID: A6

Lims ID: CCV L2

Client ID:

Operator ID: CBW

ALS Bottle#: 2

Worklist Smp#: 9

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

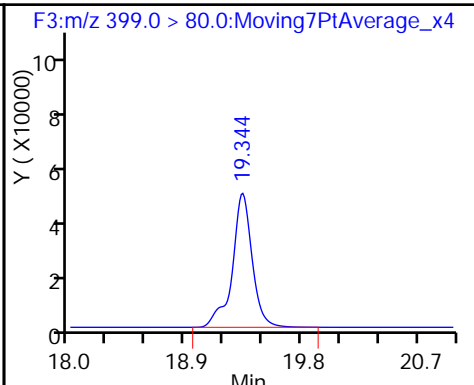
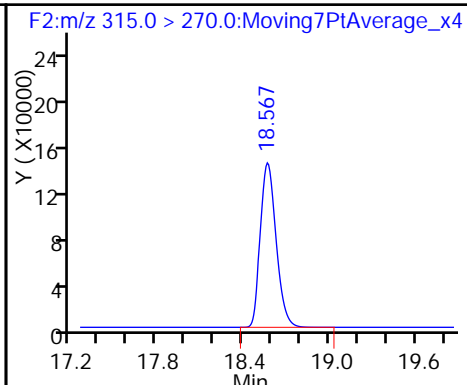
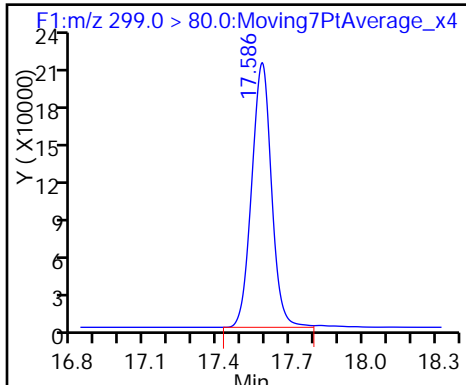
Method: 537__A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

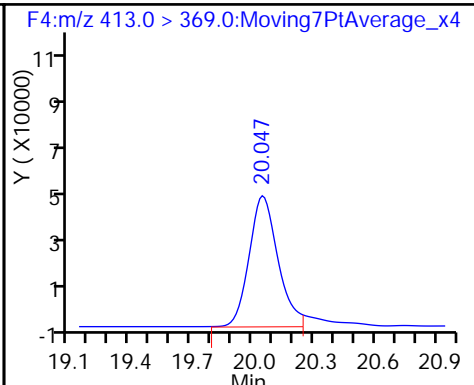
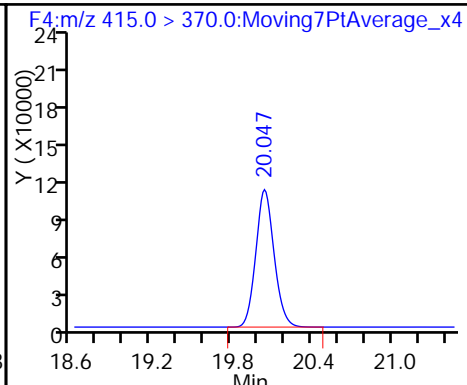
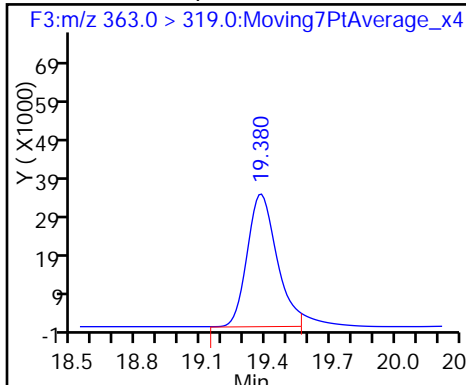
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid (M)

* 5 13C2-PFOA

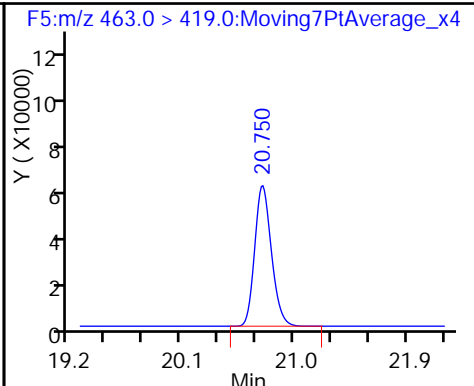
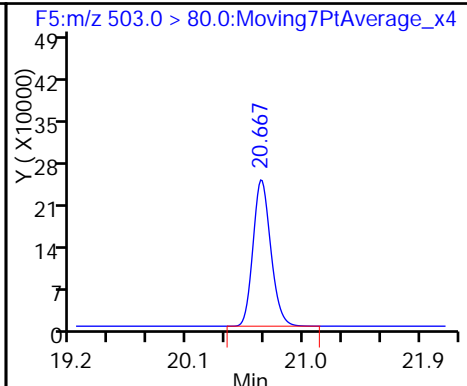
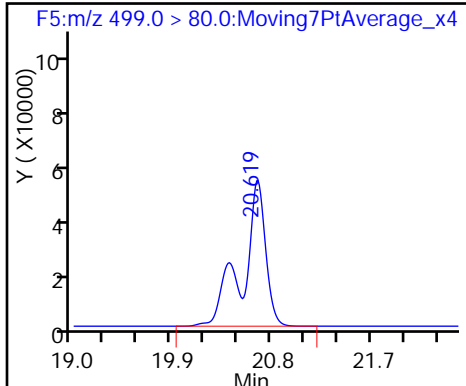
6 Perfluorooctanoic acid (M)



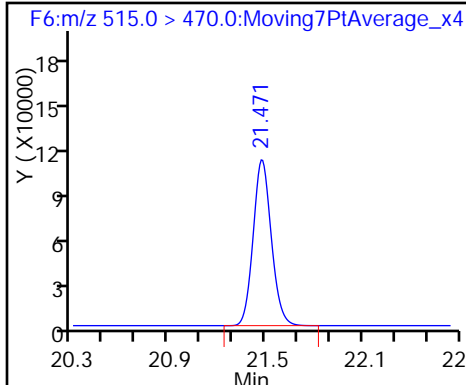
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

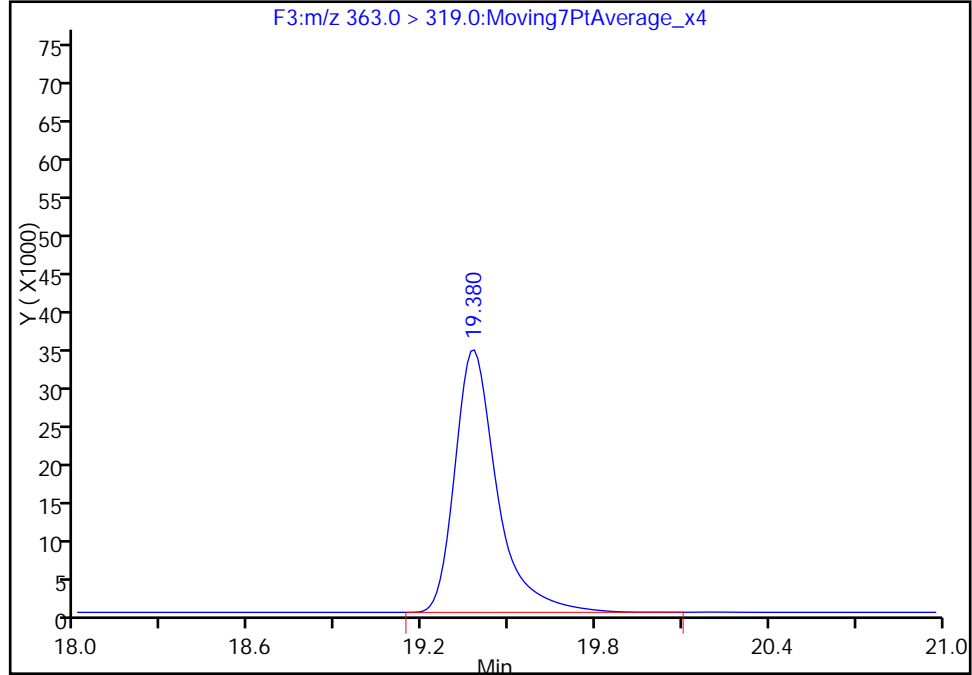
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Injection Date: 05-Dec-2016 20:53:12 Instrument ID: A6
Lims ID: CCV L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F3:M/RM

4 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

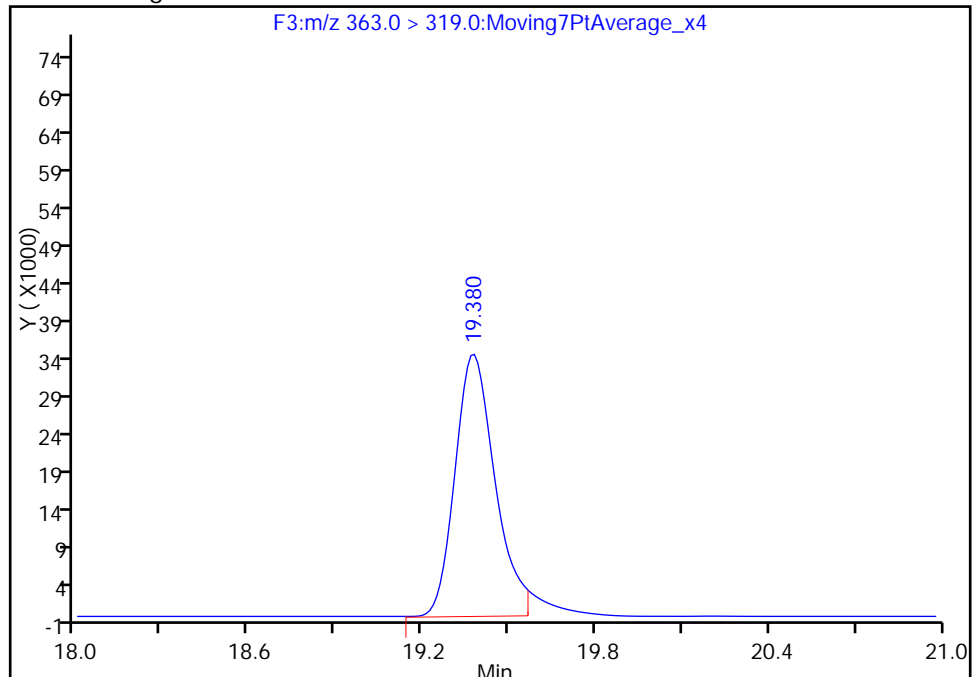
RT: 19.38
Area: 349162
Amount: 2.802857
Amount Units: ng/ml

Processing Integration Results



RT: 19.38
Area: 329772
Amount: 2.647206
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 06-Dec-2016 10:08:33
Audit Action: Manually Integrated

Audit Reason: Split Peak

TestAmerica Sacramento

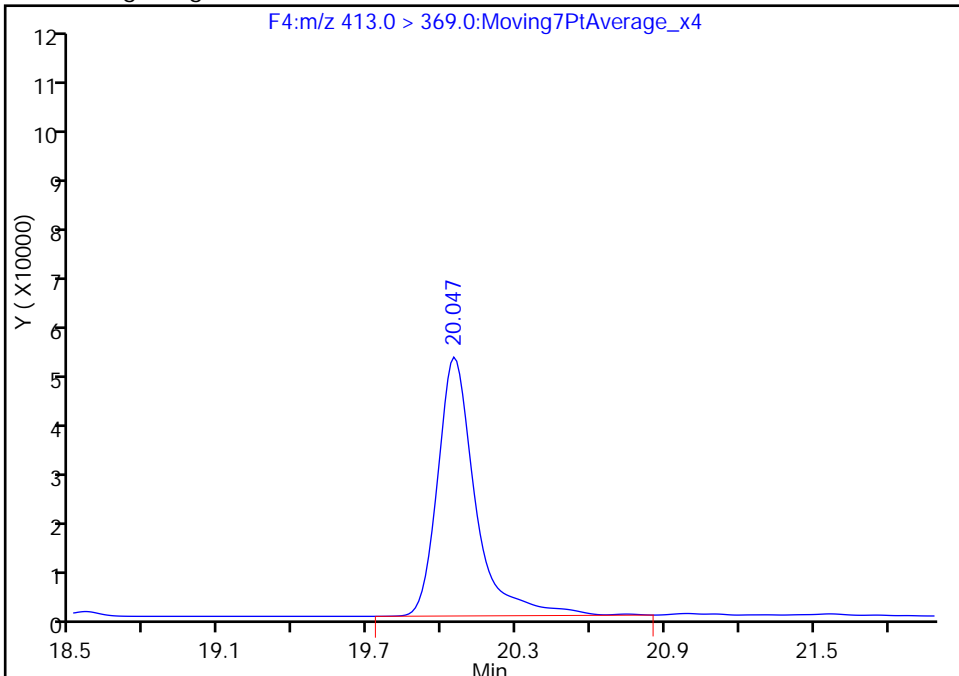
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Injection Date: 05-Dec-2016 20:53:12 Instrument ID: A6
Lims ID: CCV L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

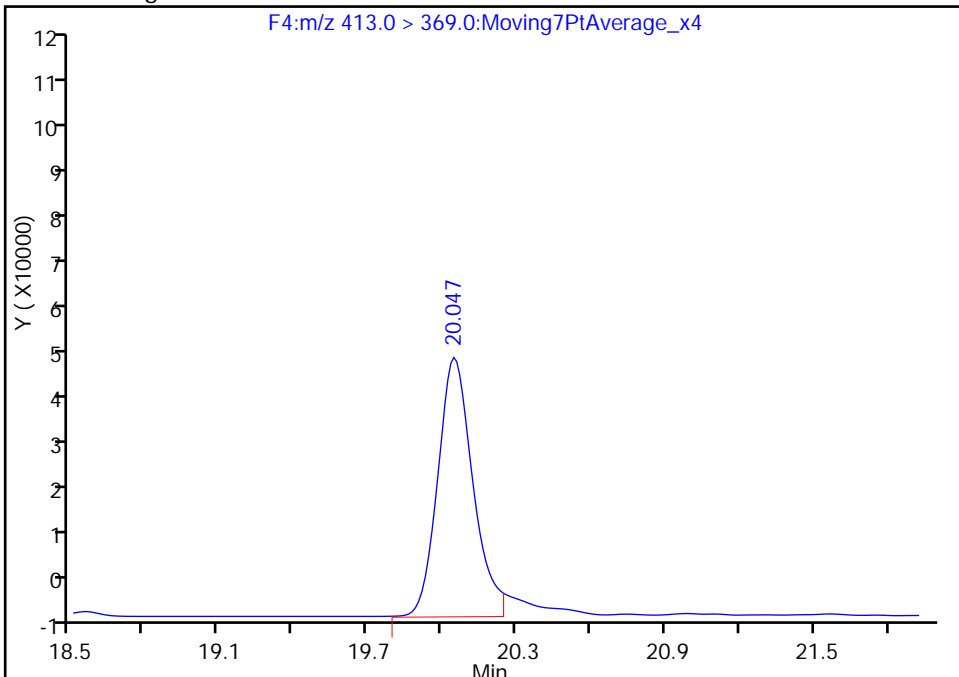
RT: 20.05
Area: 520603
Amount: 4.880820
Amount Units: ng/ml

Processing Integration Results



RT: 20.05
Area: 484196
Amount: 4.539493
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 06-Dec-2016 10:08:33
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: ICV 320-140688/11 Calibration Date: 12/05/2016 21:52
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.5756		94.2	115	-18.0	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.6976		20.6	26.5	-22.3	30.0
Perfluoroheptanoic acid	Ave	1.215	1.155		11.9	12.5	-4.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	0.9604		23.2	25.1	-7.7	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	0.8424		22.0	27.2	-19.3	30.0
Perfluorononanoic acid	Ave	1.134	0.9316		20.6	25.1	-17.9	30.0
13C2 PFHxA	Ave	1.167	1.079		9.25	10.0	-7.5	30.0
13C2 PFDA	Ave	0.8763	0.8628		9.85	10.0	-1.5	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_013.d
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 05-Dec-2016 21:52:24 ALS Bottle#: 7 Worklist Smp#: 11
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: ICV ICV
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist:

Method: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 06-Dec-2016 16:53:23 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK024

First Level Reviewer: barnettj Date: 06-Dec-2016 16:34:53

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.582	17.581	0.001	1.000	4641388	94.2	8629
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	946677	9.25	29673
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.344	19.342	0.002	1.000	1298107	20.6	29738
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.378	0.002	1.000	1267011	11.9	9991
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		877210	10.0	22431
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	2114272	23.2	647
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	1612191	22.0	13496
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.669	-0.002		2015178	28.7	51574
9 Perfluorononanoic acid	463.0 > 419.0	20.750	20.748	0.002	1.000	2051048	20.6	7161
\$ 10 13C2 PFDA	515.0 > 470.0	21.480	21.474	0.006	1.000	756809	9.85	23714

Reagents:

LC537-ICV_00017 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_013.d

Injection Date: 05-Dec-2016 21:52:24

Instrument ID: A6

Lims ID: ICV

Client ID:

Operator ID: CBW

ALS Bottle#: 7

Worklist Smp#: 11

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

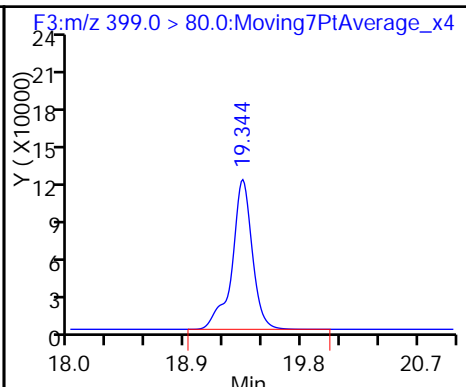
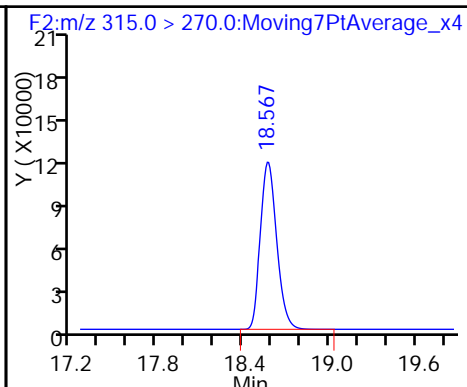
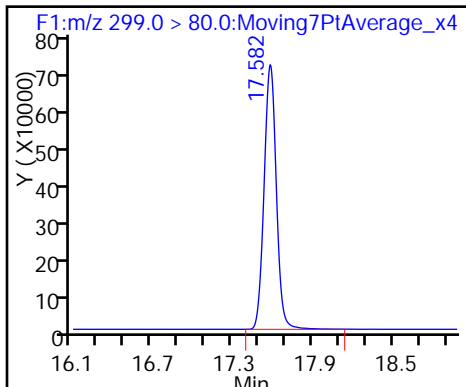
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

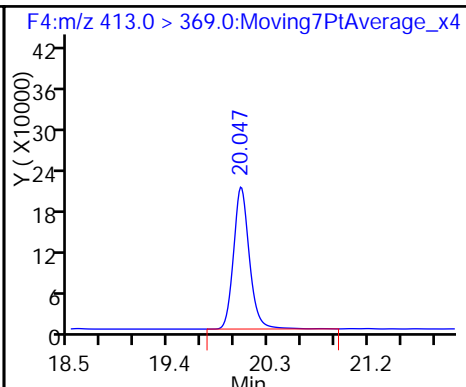
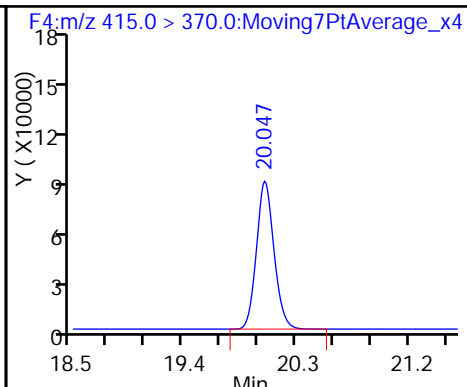
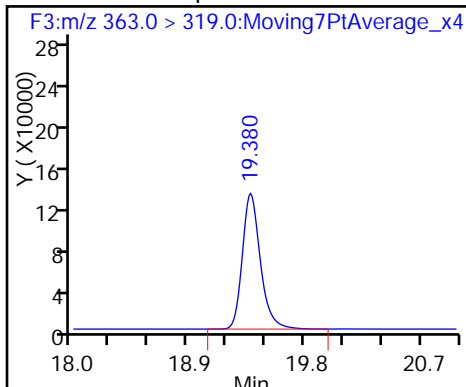
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

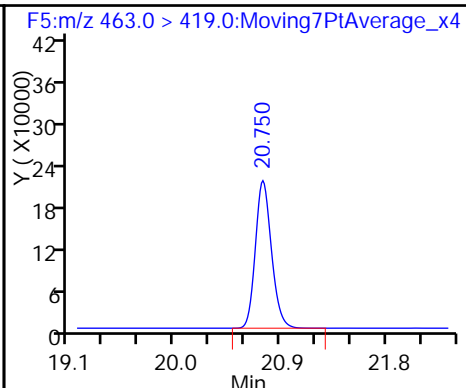
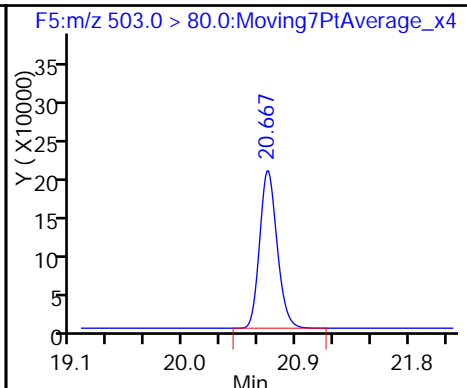
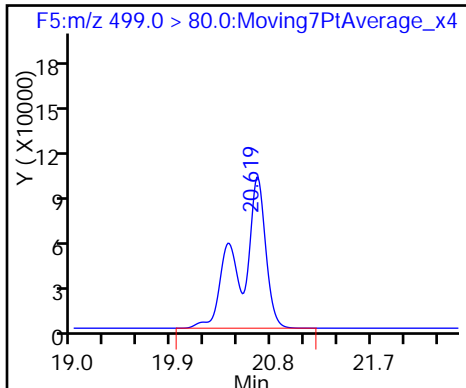
6 Perfluorooctanoic acid



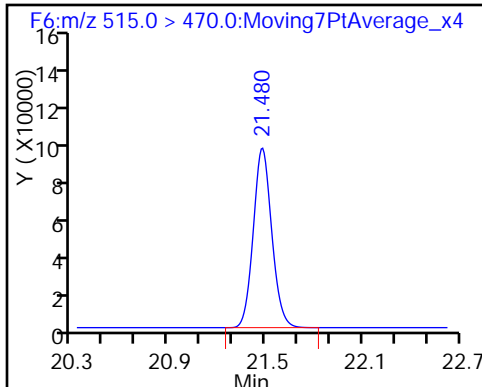
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140943/2 Calibration Date: 12/07/2016 07:26
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_081.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7302		46.9	45.1	4.1	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.9125		15.4	15.2	1.6	30.0
Perfluoroheptanoic acid	Ave	1.215	1.267		5.33	5.12	4.2	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.047		10.3	10.2	0.6	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.083		20.9	20.1	3.7	30.0
Perfluorononanoic acid	Ave	1.134	1.180		10.3	9.87	4.0	30.0
13C2 PFHxA	Ave	1.167	1.220		10.5	10.0	4.6	30.0
13C2 PFDA	Ave	0.8763	0.8535		9.74	10.0	-2.6	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_081.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 07-Dec-2016 07:26:05 ALS Bottle#: 3 Worklist Smp#: 2
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3 CCV L3
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:15:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.576	17.576	0.0	1.000	2236533	46.9	7285
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1106161	10.5	35651
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	942160	15.4	22239
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.368	0.0	1.000	587527	5.33	2874
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		906467	10.0	23127
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	967045	10.3	547
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	1480309	20.9	18316
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1947617	28.7	40377
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	1055862	10.3	15993
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.462	0.0	1.000	773628	9.74	24302

Reagents:

LC537-L3_00016 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_081.d

Injection Date: 07-Dec-2016 07:26:05

Instrument ID: A6

Lims ID: CCV L3

Client ID:

Operator ID: CBW

ALS Bottle#: 3

Worklist Smp#: 2

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

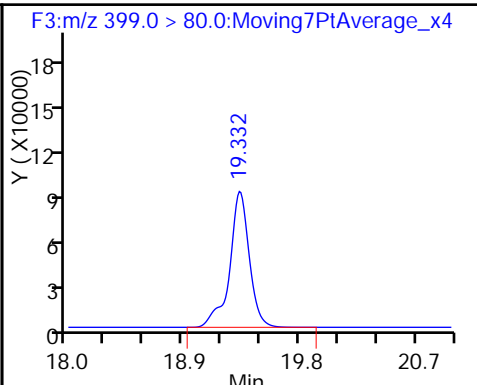
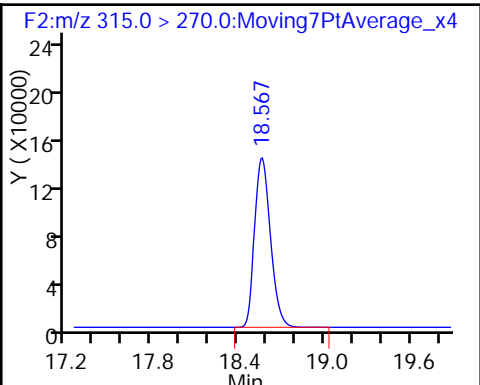
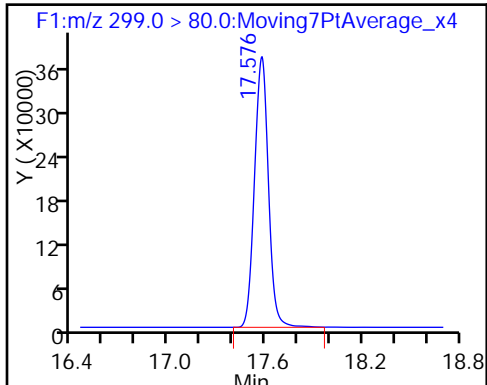
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

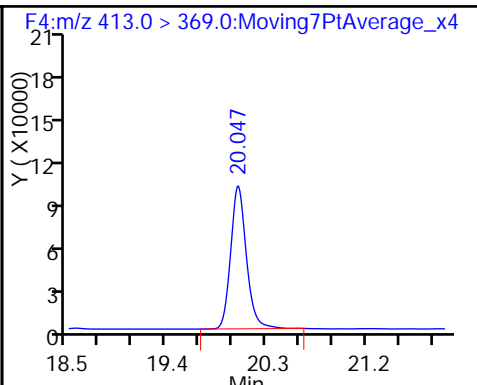
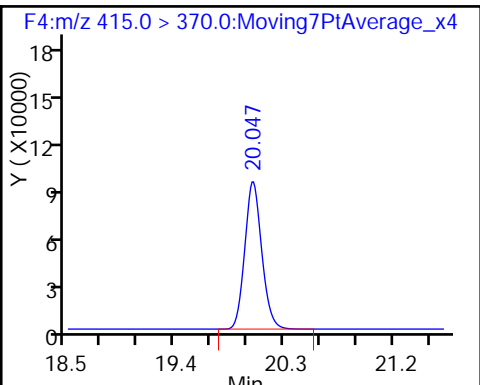
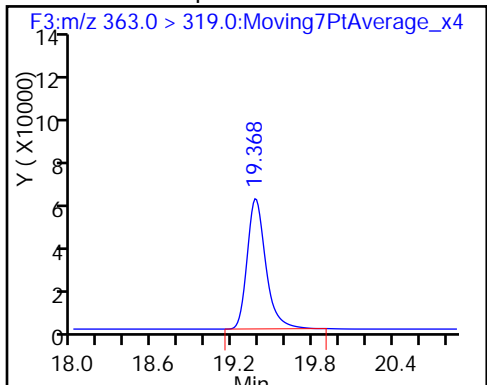
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

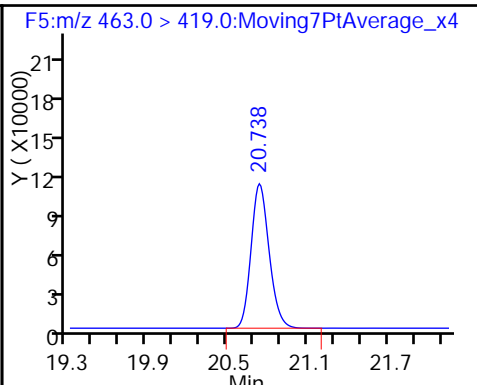
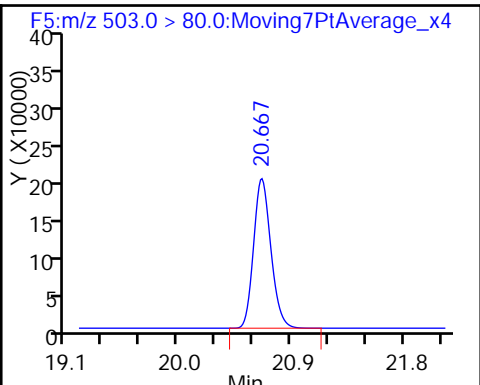
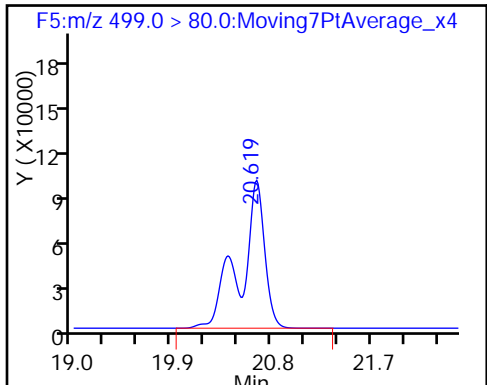
6 Perfluorooctanoic acid



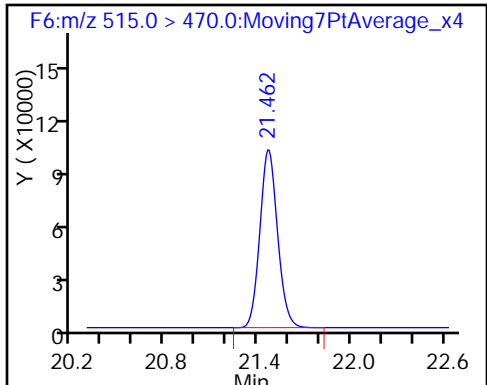
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140943/16 Calibration Date: 12/07/2016 14:31
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_095.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7343		141	135	4.7	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	1.002		50.7	45.4	11.6	30.0
Perfluoroheptanoic acid	Ave	1.215	1.223		15.4	15.3	0.6	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.119		32.7	30.4	7.6	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.213		69.9	60.1	16.2	30.0
Perfluorononanoic acid	Ave	1.134	1.213		31.5	29.5	7.0	30.0
13C2 PFHxA	Ave	1.167	1.331		11.4	10.0	14.1	30.0
13C2 PFDA	Ave	0.8763	0.9641		11.0	10.0	10.0	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140945/16 Calibration Date: 12/07/2016 14:31
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_095.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7343		141	135	4.7	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	1.002		50.7	45.4	11.6	30.0
Perfluoroheptanoic acid	Ave	1.215	1.223		15.4	15.3	0.6	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.119		32.7	30.4	7.6	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.213		69.9	60.1	16.2	30.0
Perfluorononanoic acid	Ave	1.134	1.213		31.5	29.5	7.0	30.0
13C2 PFHxA	Ave	1.167	1.331		11.4	10.0	14.1	30.0
13C2 PFDA	Ave	0.8763	0.9641		11.0	10.0	10.0	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_095.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 07-Dec-2016 14:31:46 ALS Bottle#: 5 Worklist Smp#: 16
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5 CCV L5
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:27:03 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.579	17.579	0.0	1.000	6074795	140.9	5575
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1090285	11.4	34796
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	2795407	50.7	49140
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.380	0.0	1.000	1530071	15.4	39204
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		819185	10.0	20883
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	2788514	32.7	974
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	4480596	69.9	12565
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1762144	28.7	44792
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	2928731	31.5	76538
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.471	0.0	1.000	789802	11.0	24297

Reagents:

LC537-L5_00017 Amount Added: 1.00 Units: mL

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_095.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 07-Dec-2016 14:31:46 ALS Bottle#: 5 Worklist Smp#: 16
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5 CCV L5
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:27:03 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.579	17.579	0.0	1.000	6074795	140.9	5575
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1090285	11.4	34796
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	2795407	50.7	49140
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.380	0.0	1.000	1530071	15.4	39204
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		819185	10.0	20883
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	2788514	32.7	974
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	4480596	69.9	12565
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1762144	28.7	44792
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	2928731	31.5	76538
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.471	0.0	1.000	789802	11.0	24297

Reagents:

LC537-L5_00017 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_095.d

Injection Date: 07-Dec-2016 14:31:46

Instrument ID: A6

Lims ID: CCV L5

Client ID:

Operator ID: CBW

ALS Bottle#: 5

Worklist Smp#: 16

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

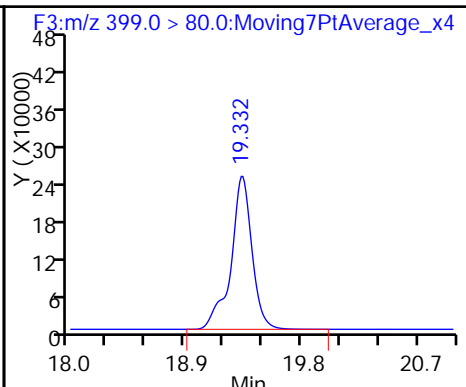
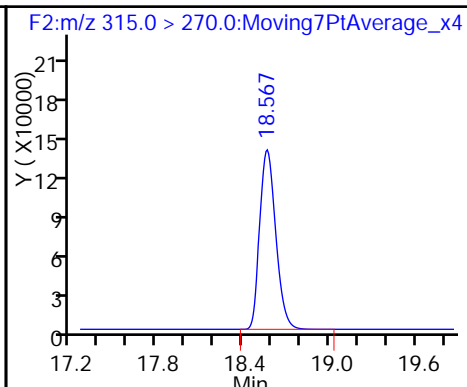
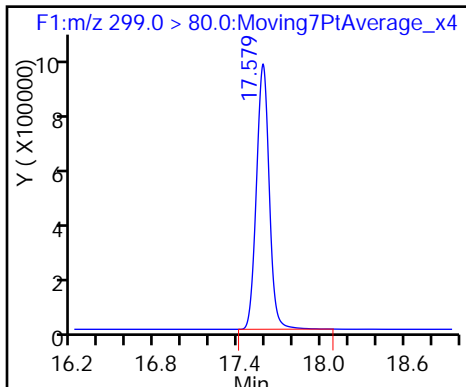
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

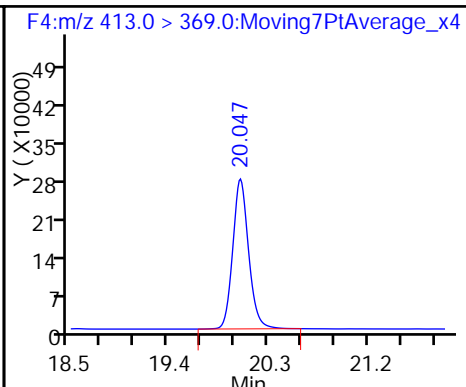
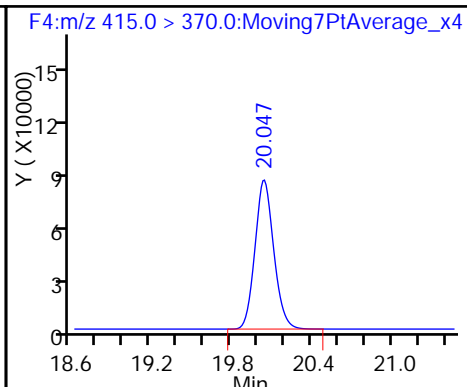
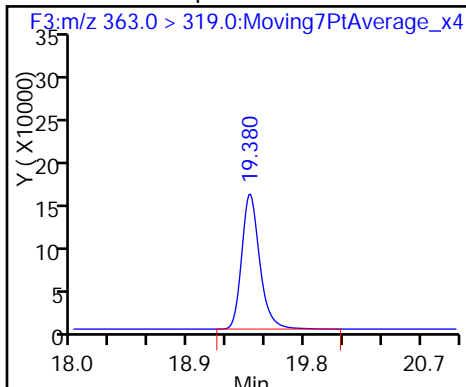
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

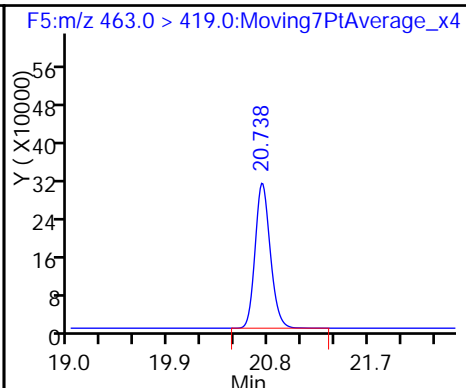
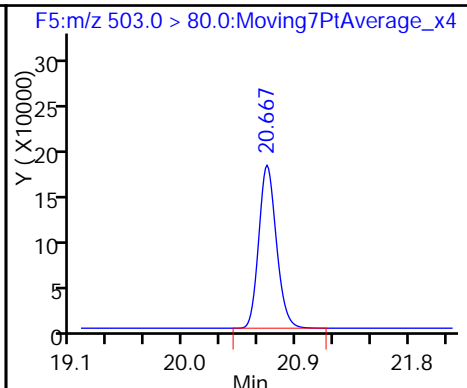
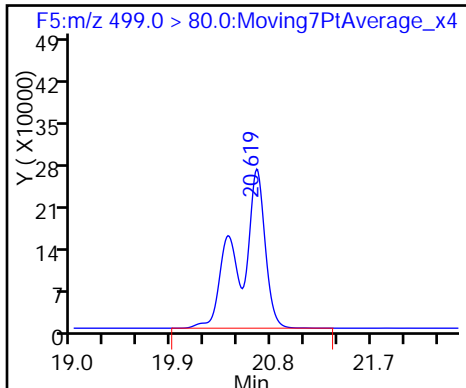
6 Perfluorooctanoic acid



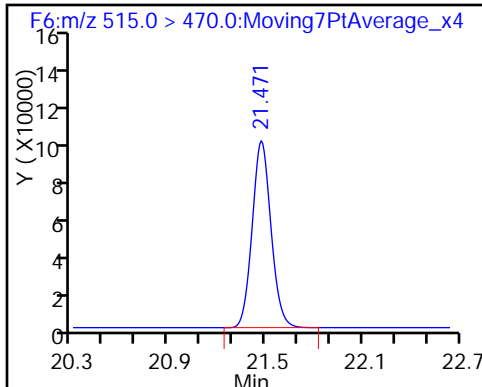
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_095.d

Injection Date: 07-Dec-2016 14:31:46

Instrument ID: A6

Lims ID: CCV L5

Client ID:

Operator ID: CBW

ALS Bottle#: 5

Worklist Smp#: 16

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

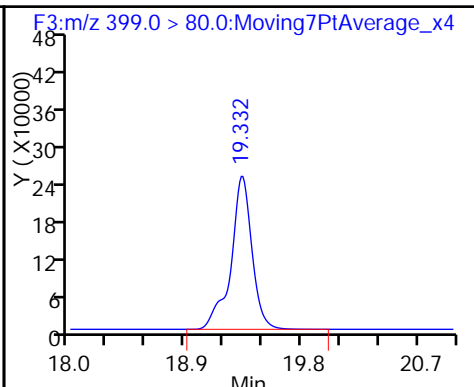
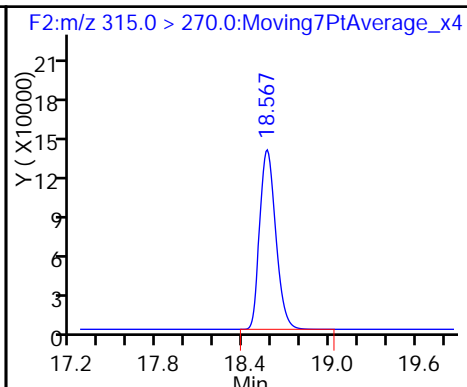
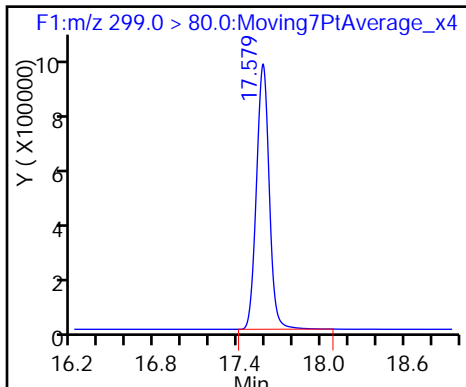
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

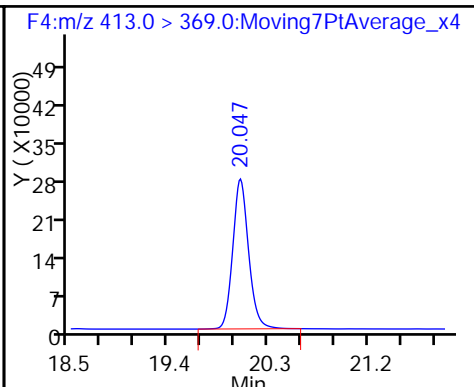
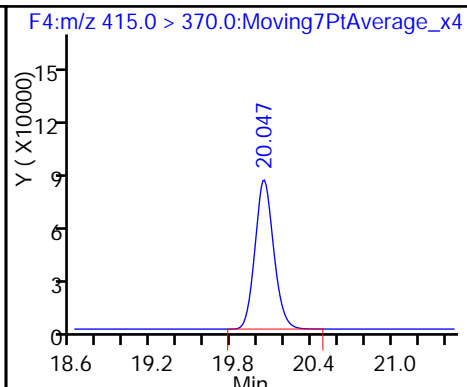
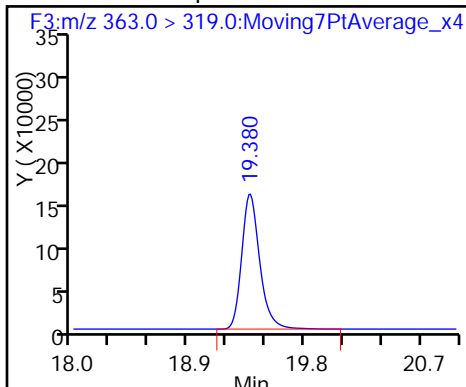
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

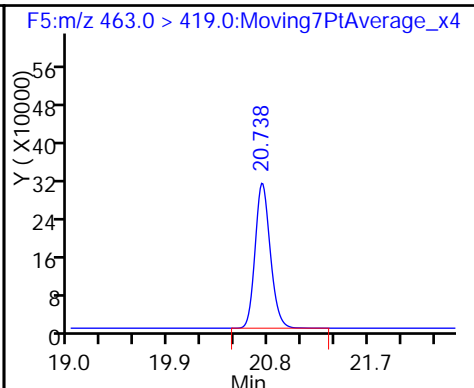
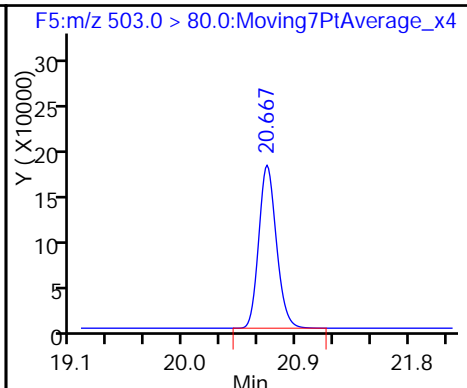
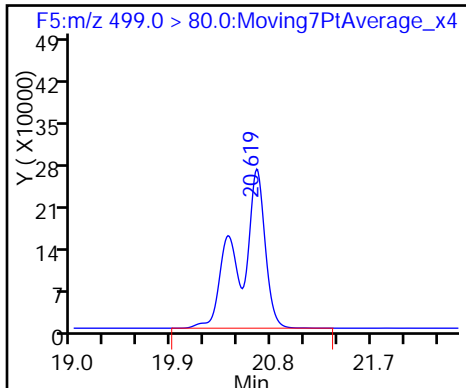
6 Perfluorooctanoic acid



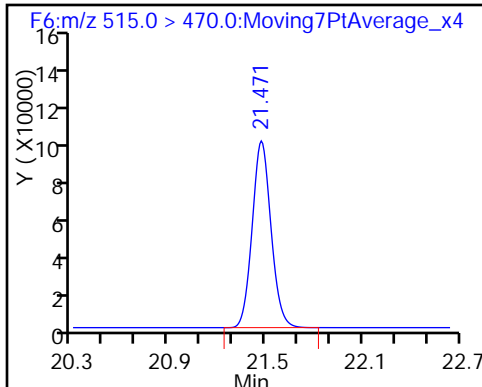
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140945/29 Calibration Date: 12/07/2016 20:56
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_108.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7512		48.3	45.1	7.1	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.9374		15.9	15.2	4.4	30.0
Perfluoroheptanoic acid	Ave	1.215	1.222		5.14	5.12	0.5	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.093		10.7	10.2	5.1	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.079		20.8	20.1	3.3	30.0
Perfluorononanoic acid	Ave	1.134	1.162		10.1	9.87	2.5	30.0
13C2 PFHxA	Ave	1.167	1.255		10.8	10.0	7.6	30.0
13C2 PFDA	Ave	0.8763	0.8918		10.2	10.0	1.8	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140946/29 Calibration Date: 12/07/2016 20:56
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_108.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7512		48.3	45.1	7.1	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.9374		15.9	15.2	4.4	30.0
Perfluoroheptanoic acid	Ave	1.215	1.222		5.14	5.12	0.5	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.093		10.7	10.2	5.1	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.079		20.8	20.1	3.3	30.0
Perfluorononanoic acid	Ave	1.134	1.162		10.1	9.87	2.5	30.0
13C2 PFHxA	Ave	1.167	1.255		10.8	10.0	7.6	30.0
13C2 PFDA	Ave	0.8763	0.8918		10.2	10.0	1.8	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_108.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 07-Dec-2016 20:56:33 ALS Bottle#: 3 Worklist Smp#: 29
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3 CCV L3
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:58 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:01:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.579	17.579	0.0	1.000	2155655	48.3	1821
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1035733	10.8	33420
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	906834	15.9	20753
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.380	0.0	1.000	515756	5.14	10458
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		825149	10.0	21328
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	919258	10.7	449
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	1381989	20.8	16907
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1824739	28.7	47070
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	946706	10.1	25181
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.471	0.0	1.000	735878	10.2	23073

Reagents:

LC537-L3_00016 Amount Added: 1.00 Units: mL

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_108.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 07-Dec-2016 20:56:33 ALS Bottle#: 3 Worklist Smp#: 29
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3 CCV L3
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:29:58 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 10:01:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.579	17.579	0.0	1.000	2155655	48.3	1821
\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1035733	10.8	33420
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	906834	15.9	20753
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.380	0.0	1.000	515756	5.14	10458
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		825149	10.0	21328
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	919258	10.7	449
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	1381989	20.8	16907
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1824739	28.7	47070
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	946706	10.1	25181
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.471	0.0	1.000	735878	10.2	23073

Reagents:

LC537-L3_00016 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_108.d

Injection Date: 07-Dec-2016 20:56:33

Instrument ID: A6

Lims ID: CCV L3

Client ID:

Operator ID: CBW

ALS Bottle#: 3

Worklist Smp#: 29

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

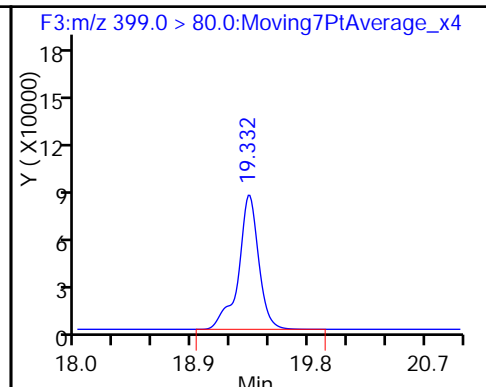
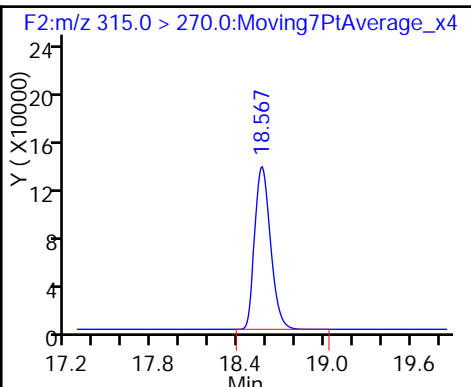
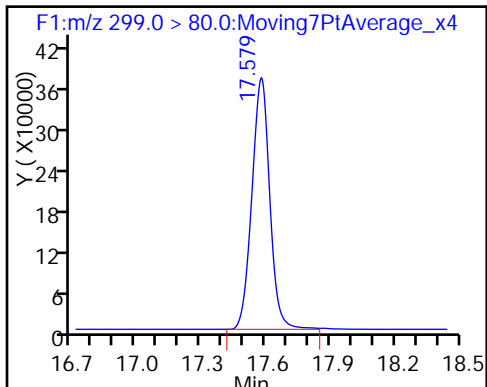
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

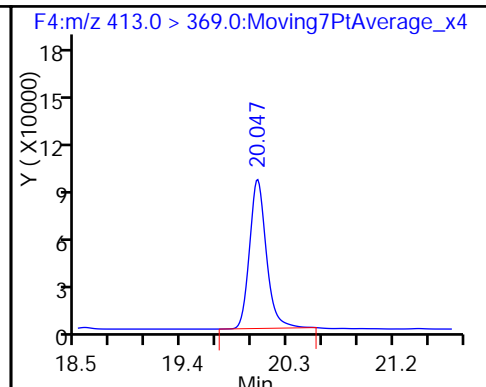
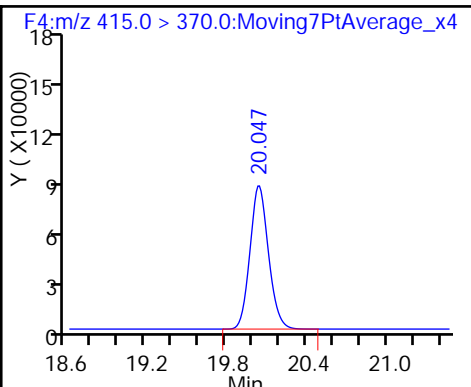
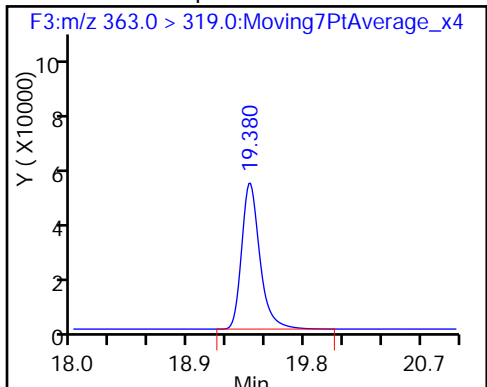
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

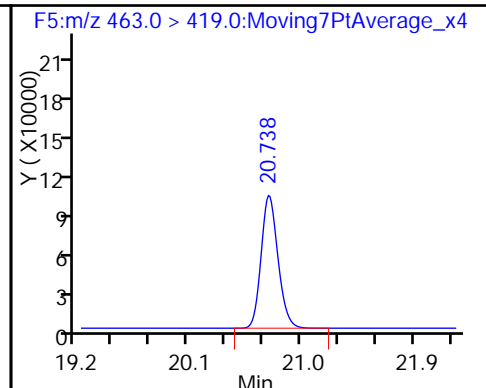
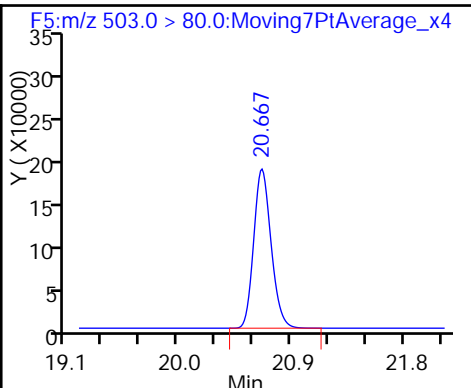
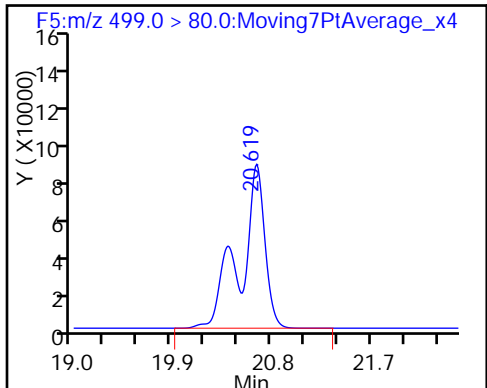
6 Perfluorooctanoic acid



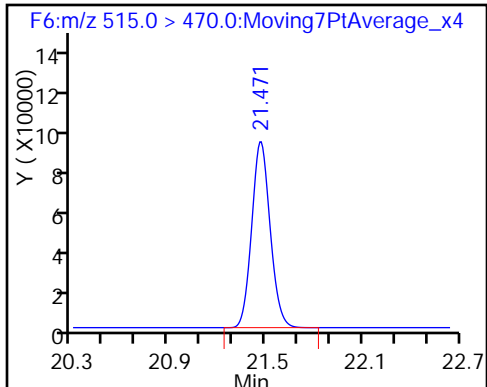
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_108.d

Injection Date: 07-Dec-2016 20:56:33

Instrument ID: A6

Lims ID: CCV L3

Client ID:

Operator ID: CBW

ALS Bottle#: 3

Worklist Smp#: 29

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

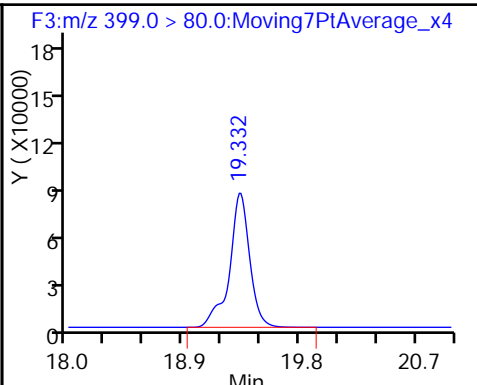
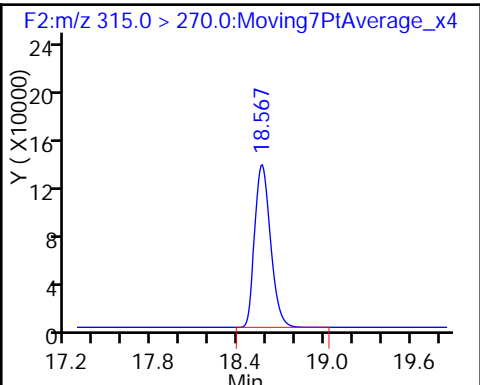
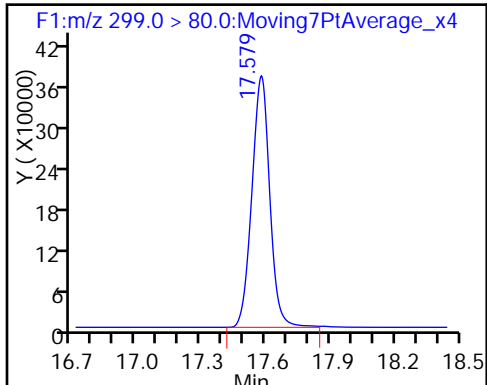
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

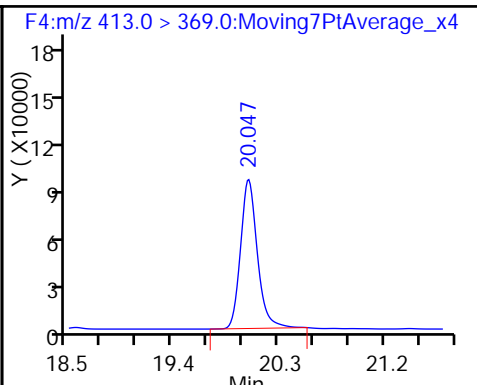
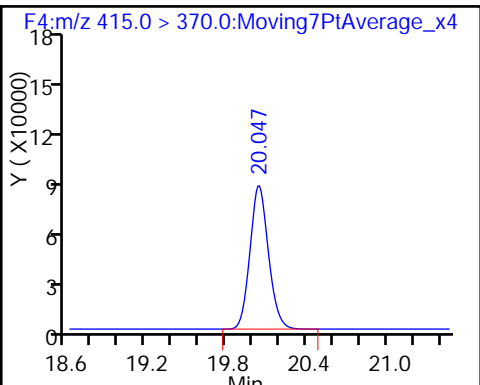
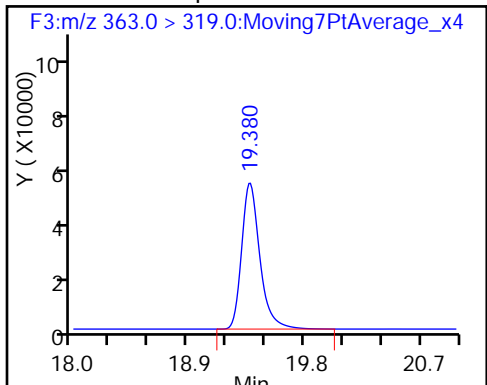
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

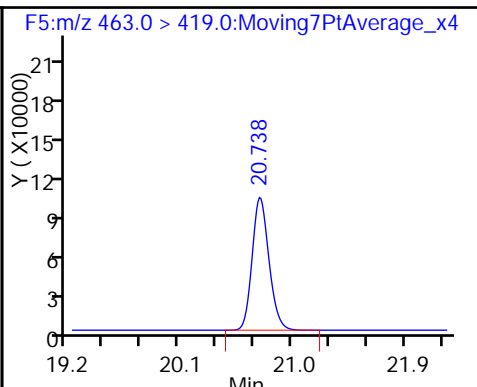
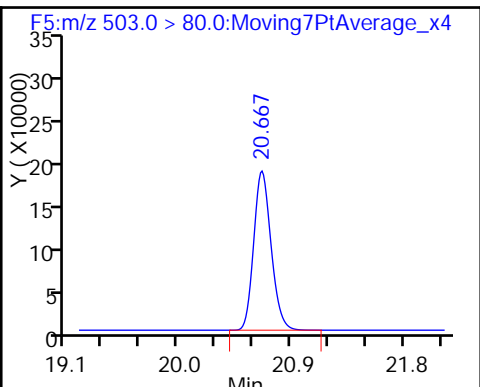
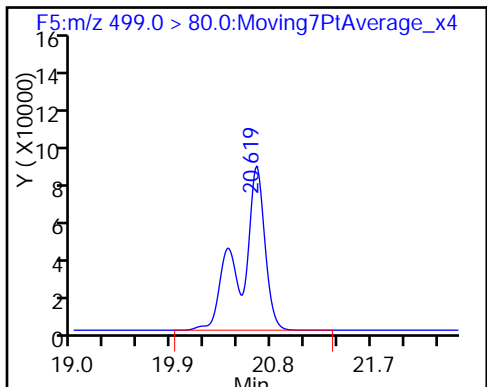
6 Perfluorooctanoic acid



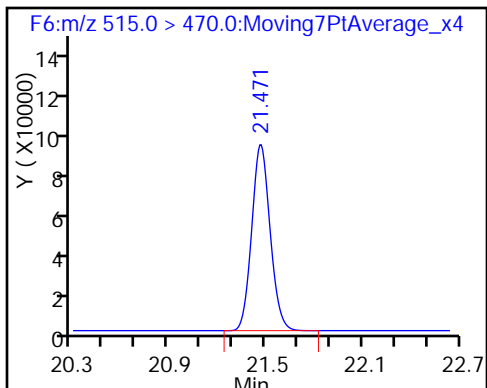
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140946/42 Calibration Date: 12/08/2016 03:21
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_121.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7245		139	135	3.3	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.9634		48.7	45.4	7.3	30.0
Perfluoroheptanoic acid	Ave	1.215	1.230		15.5	15.3	1.2	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.095		32.0	30.4	5.2	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.219		70.2	60.1	16.8	30.0
Perfluorononanoic acid	Ave	1.134	1.239		32.2	29.5	9.2	30.0
13C2 PFHxA	Ave	1.167	1.340		11.5	10.0	14.8	30.0
13C2 PFDA	Ave	0.8763	1.020		11.6	10.0	16.4	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140947/42 Calibration Date: 12/08/2016 03:21
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_121.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7245		139	135	3.3	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.9634		48.7	45.4	7.3	30.0
Perfluoroheptanoic acid	Ave	1.215	1.230		15.5	15.3	1.2	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.095		32.0	30.4	5.2	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.219		70.2	60.1	16.8	30.0
Perfluorononanoic acid	Ave	1.134	1.239		32.2	29.5	9.2	30.0
13C2 PFHxA	Ave	1.167	1.340		11.5	10.0	14.8	30.0
13C2 PFDA	Ave	0.8763	1.020		11.6	10.0	16.4	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_121.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 08-Dec-2016 03:21:26 ALS Bottle#: 5 Worklist Smp#: 42
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5 CCV L5
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:31:06 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.573	17.573	0.0	1.000	5854370	139.1	10432
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.558	0.0	1.000	1091977	11.5	35509
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	2624037	48.7	38974
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.368	0.0	1.000	1530801	15.5	5445
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.035	0.0		815069	10.0	20880
6 Perfluorooctanoic acid	413.0 > 369.0	20.035	20.035	0.0	1.000	2714168	32.0	1411
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	4397310	70.2	22963
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1721192	28.7	44035
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	2975365	32.2	52083
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.462	0.0	1.000	831597	11.6	26375

Reagents:

LC537-L5_00017 Amount Added: 1.00 Units: mL

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_121.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 08-Dec-2016 03:21:26 ALS Bottle#: 5 Worklist Smp#: 42
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5 CCV L5
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:31:06 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.573	17.573	0.0	1.000	5854370	139.1	10432
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.558	0.0	1.000	1091977	11.5	35509
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	2624037	48.7	38974
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.368	0.0	1.000	1530801	15.5	5445
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.035	0.0		815069	10.0	20880
6 Perfluorooctanoic acid	413.0 > 369.0	20.035	20.035	0.0	1.000	2714168	32.0	1411
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	4397310	70.2	22963
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1721192	28.7	44035
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	2975365	32.2	52083
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.462	0.0	1.000	831597	11.6	26375

Reagents:

LC537-L5_00017 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_121.d

Injection Date: 08-Dec-2016 03:21:26

Instrument ID: A6

Lims ID: CCV L5

Client ID:

Operator ID: CBW

ALS Bottle#: 5

Worklist Smp#: 42

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

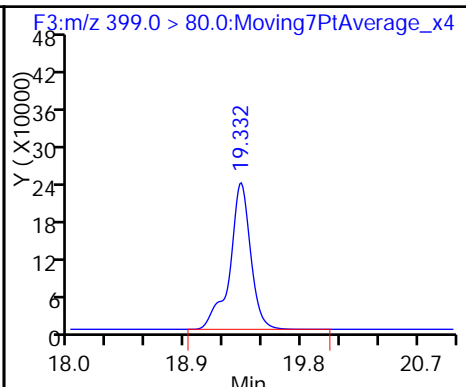
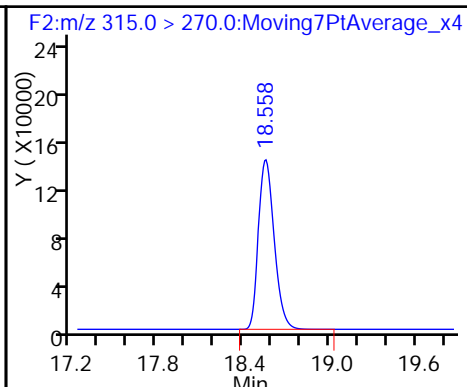
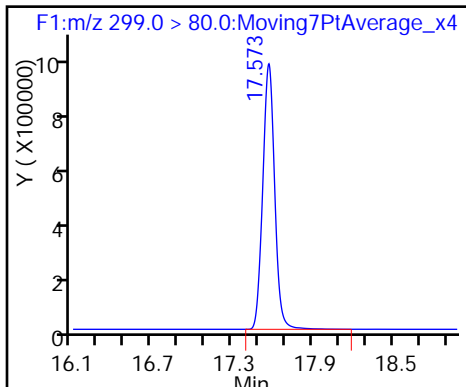
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

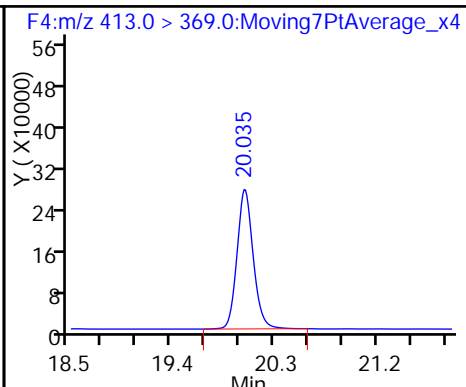
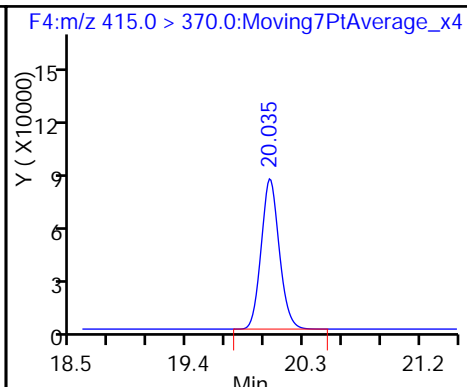
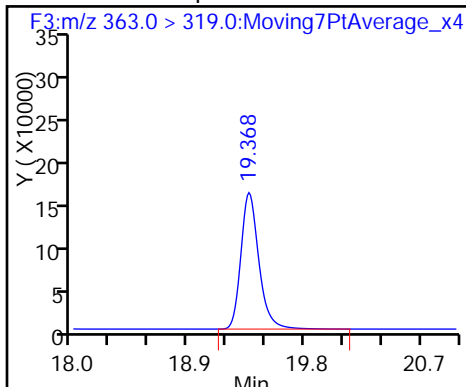
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

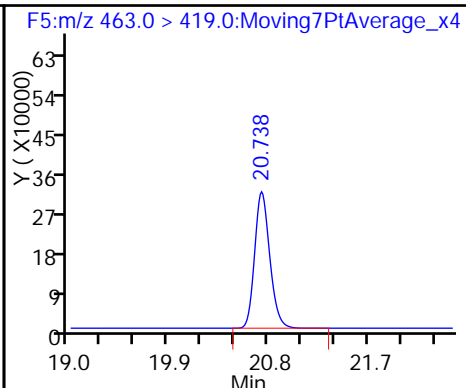
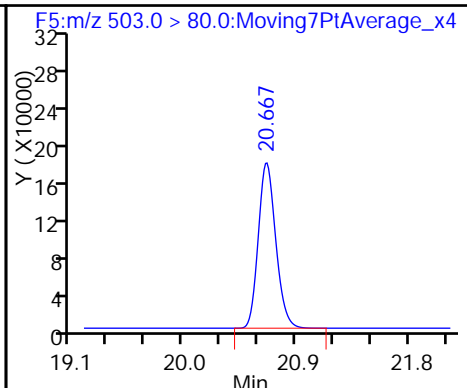
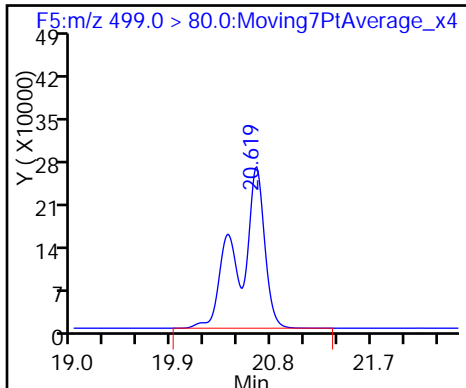
6 Perfluorooctanoic acid



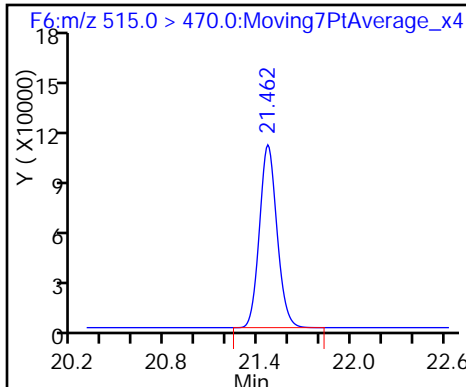
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_121.d

Injection Date: 08-Dec-2016 03:21:26

Instrument ID: A6

Lims ID: CCV L5

Client ID:

Operator ID: CBW

ALS Bottle#: 5

Worklist Smp#: 42

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

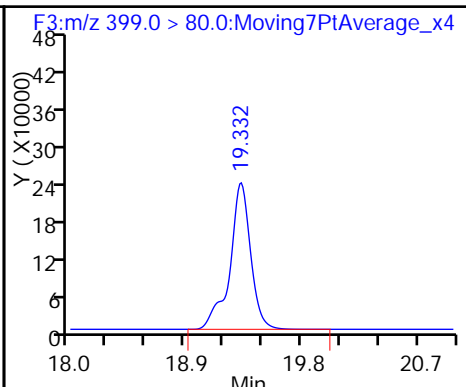
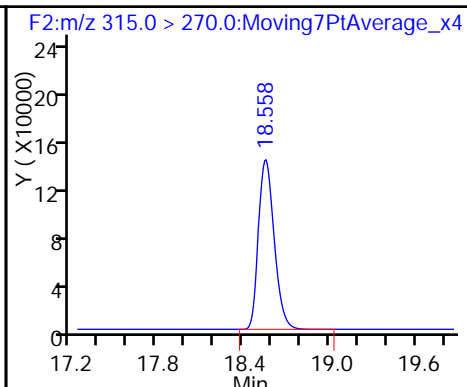
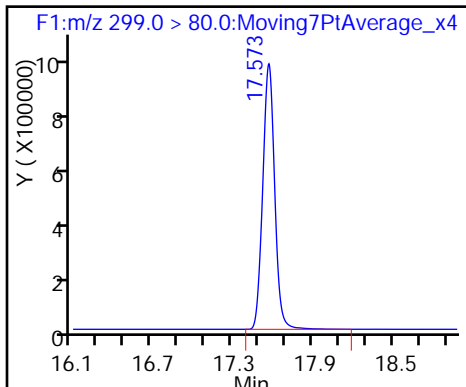
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

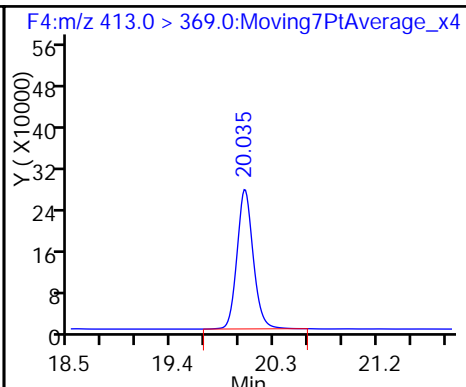
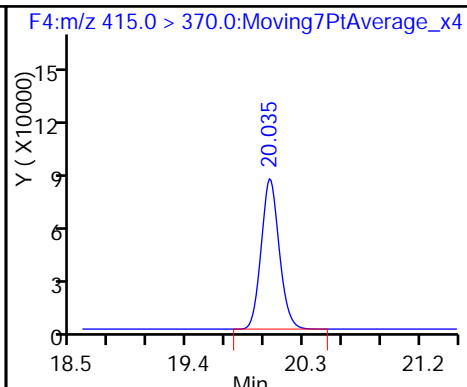
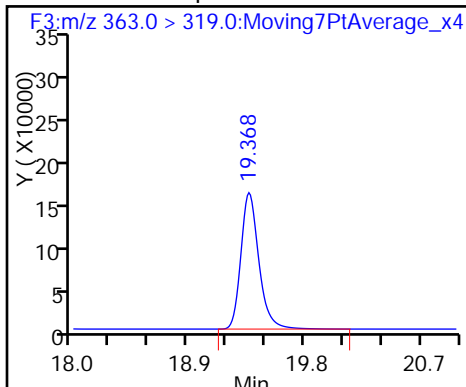
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

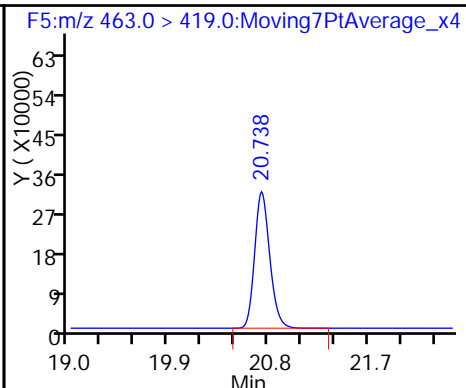
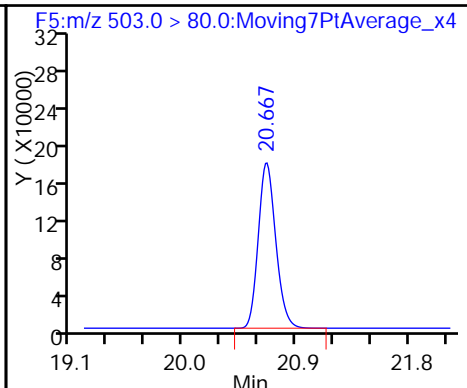
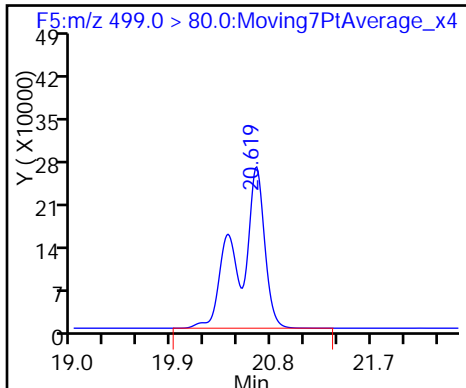
6 Perfluorooctanoic acid



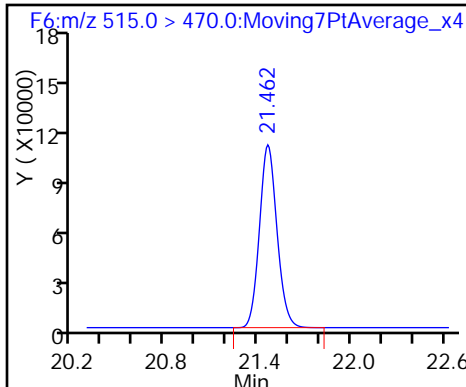
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140947/55 Calibration Date: 12/08/2016 09:46
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_134.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7368		47.4	45.1	5.0	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.9518		16.1	15.2	6.0	30.0
Perfluoroheptanoic acid	Ave	1.215	1.236		5.21	5.12	1.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.040		10.2	10.2	-0.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.105		21.3	20.1	5.9	30.0
Perfluorononanoic acid	Ave	1.134	1.110		9.66	9.87	-2.1	30.0
13C2 PFHxA	Ave	1.167	1.205		10.3	10.0	3.3	30.0
13C2 PFDA	Ave	0.8763	0.8283		9.45	10.0	-5.5	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140948/55 Calibration Date: 12/08/2016 09:46
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_134.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7368		47.4	45.1	5.0	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.9518		16.1	15.2	6.0	30.0
Perfluoroheptanoic acid	Ave	1.215	1.236		5.21	5.12	1.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.040		10.2	10.2	-0.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.105		21.3	20.1	5.9	30.0
Perfluorononanoic acid	Ave	1.134	1.110		9.66	9.87	-2.1	30.0
13C2 PFHxA	Ave	1.167	1.205		10.3	10.0	3.3	30.0
13C2 PFDA	Ave	0.8763	0.8283		9.45	10.0	-5.5	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_134.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 08-Dec-2016 09:46:20 ALS Bottle#: 3 Worklist Smp#: 55
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3 CCV L3
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:25:41 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.579	17.579	0.0	1.000	2041325	47.4	1612
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.558	0.0	1.000	1027004	10.3	33287
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	888976	16.1	20771
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.368	0.0	1.000	539217	5.21	11092
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.035	0.0		852422	10.0	22083
6 Perfluorooctanoic acid	413.0 > 369.0	20.035	20.035	0.0	1.000	903388	10.2	345
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	1367079	21.3	17937
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1761773	28.7	45688
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	934278	9.66	4122
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.462	0.0	1.000	706078	9.45	22250

Reagents:

LC537-L3_00016 Amount Added: 1.00 Units: mL

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_134.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 08-Dec-2016 09:46:20 ALS Bottle#: 3 Worklist Smp#: 55
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3 CCV L3
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:25:41 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.579	17.579	0.0	1.000	2041325	47.4	1612
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.558	0.0	1.000	1027004	10.3	33287
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	888976	16.1	20771
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.368	0.0	1.000	539217	5.21	11092
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.035	0.0		852422	10.0	22083
6 Perfluorooctanoic acid	413.0 > 369.0	20.035	20.035	0.0	1.000	903388	10.2	345
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	1367079	21.3	17937
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1761773	28.7	45688
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	934278	9.66	4122
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.462	0.0	1.000	706078	9.45	22250

Reagents:

LC537-L3_00016 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_134.d

Injection Date: 08-Dec-2016 09:46:20

Instrument ID: A6

Lims ID: CCV L3

Client ID:

Operator ID: CBW

ALS Bottle#: 3

Worklist Smp#: 55

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

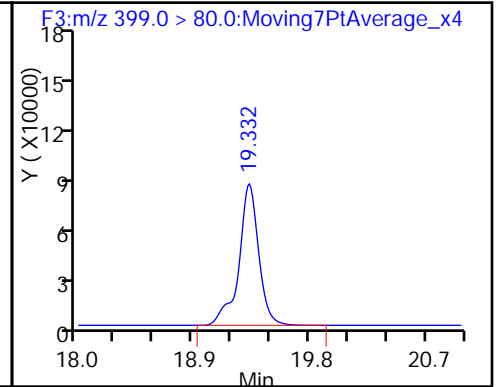
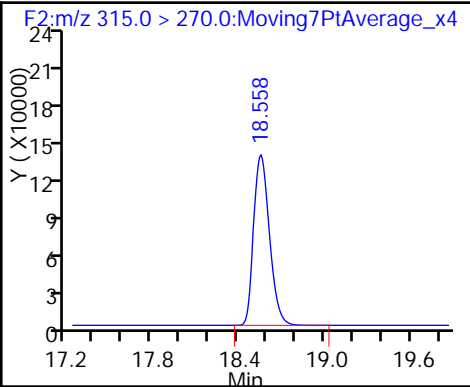
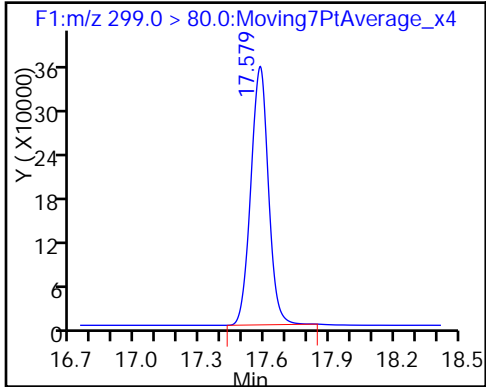
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

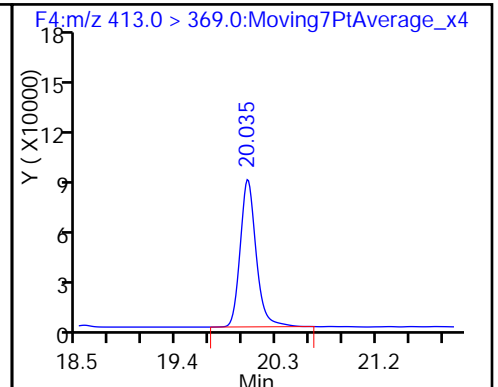
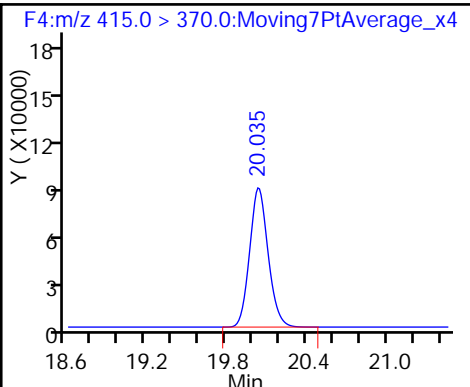
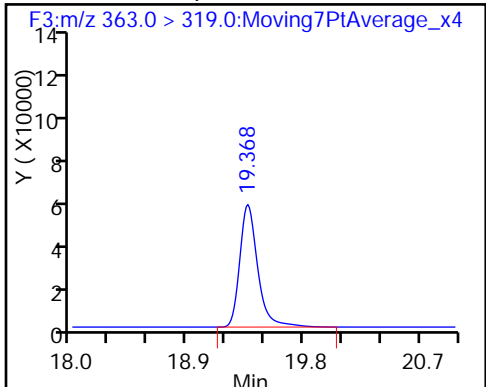
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

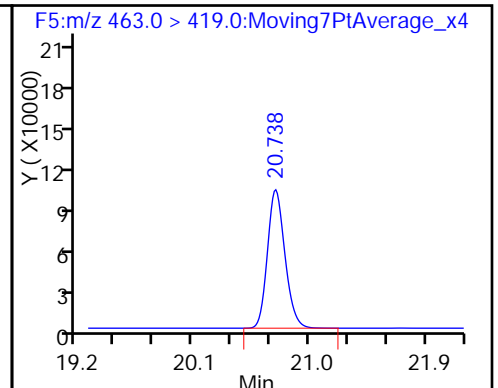
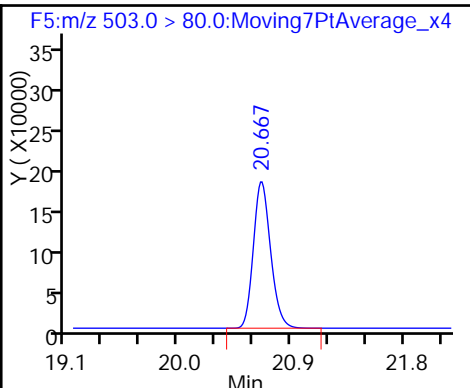
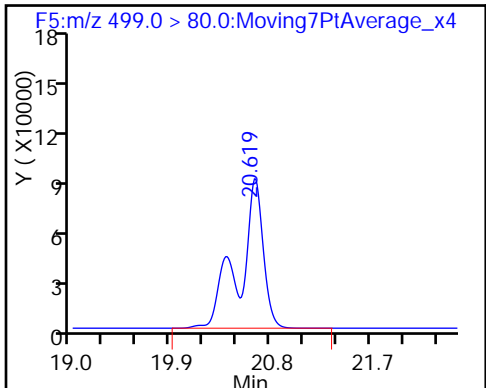
6 Perfluorooctanoic acid



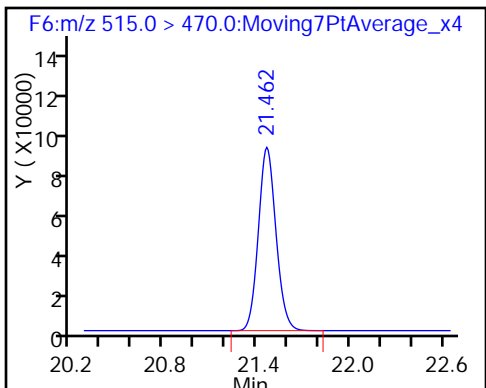
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_134.d

Injection Date: 08-Dec-2016 09:46:20

Instrument ID: A6

Lims ID: CCV L3

Client ID:

Operator ID: CBW

ALS Bottle#: 3

Worklist Smp#: 55

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

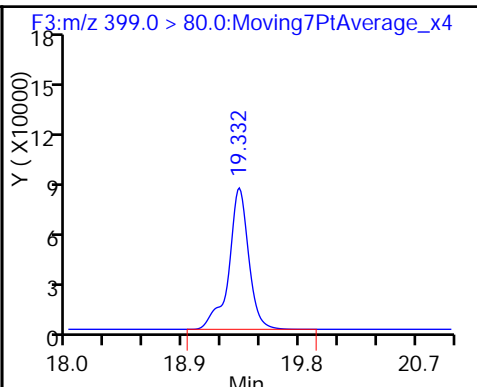
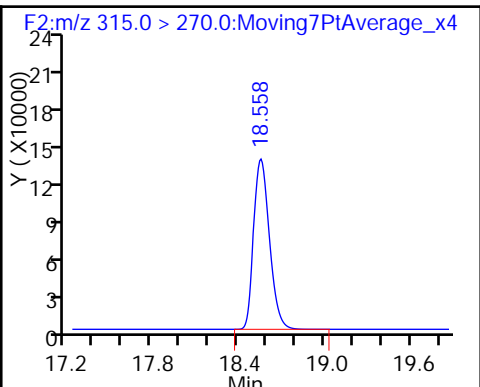
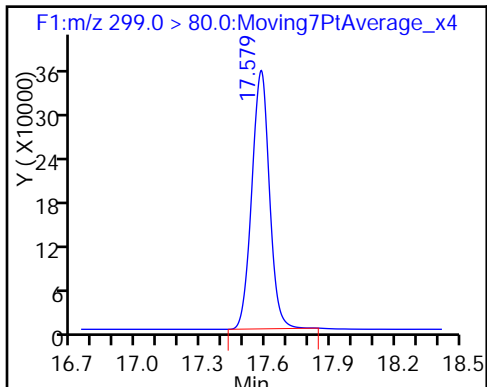
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

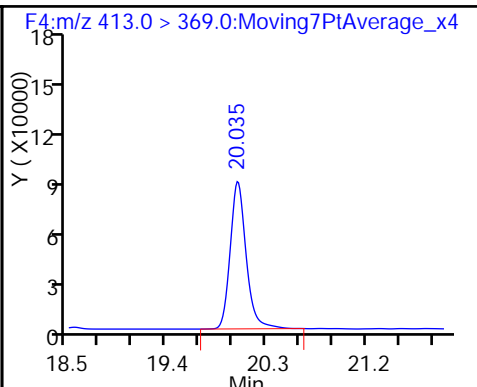
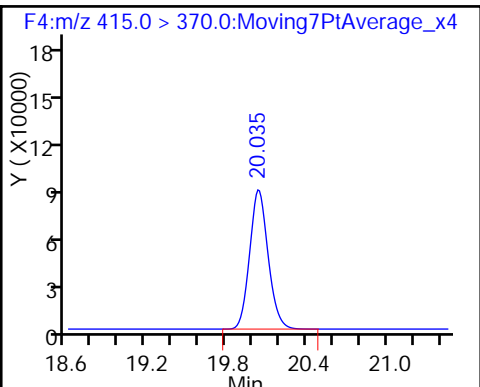
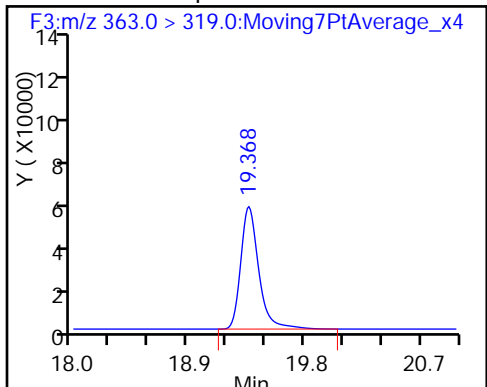
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

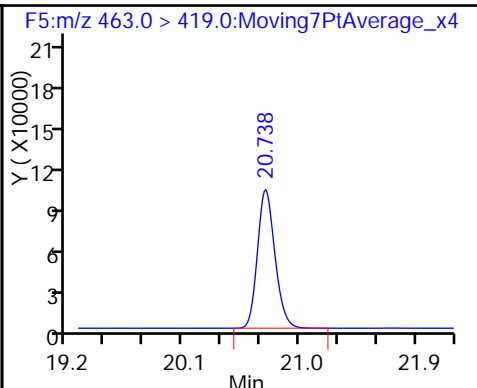
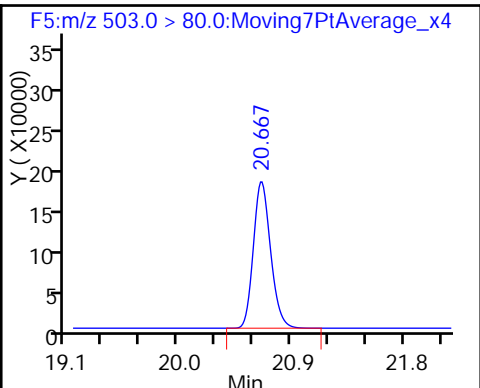
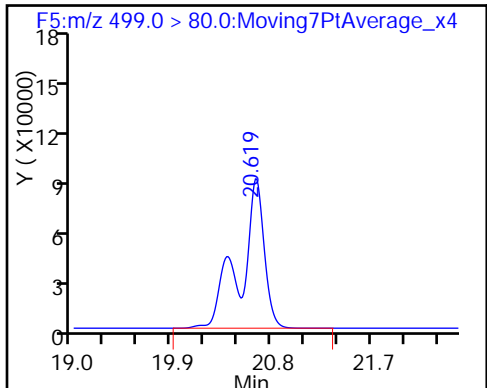
6 Perfluorooctanoic acid



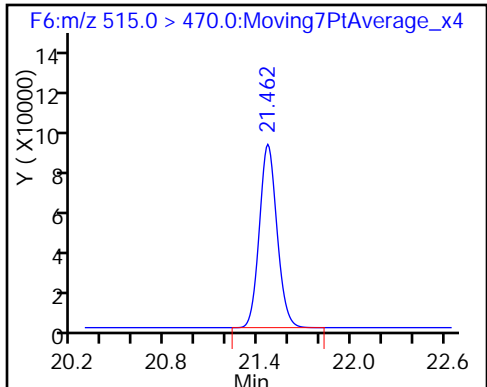
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Lab Sample ID: CCV 320-140948/101 Calibration Date: 12/08/2016 12:14
 Instrument ID: A6 Calib Start Date: 12/05/2016 17:26
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 12/05/2016 19:54
 Lab File ID: 05DEC2016A6A_139.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7015	0.7521		48.4	45.1	7.2	30.0
Perfluorohexanesulfonic acid	Ave	0.8980	0.9698		16.4	15.2	8.0	30.0
Perfluoroheptanoic acid	Ave	1.215	1.208		5.09	5.12	-0.6	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.040	1.090		10.7	10.2	4.8	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.044	1.093		21.1	20.1	4.7	30.0
Perfluorononanoic acid	Ave	1.134	1.138		9.90	9.87	0.3	30.0
13C2 PFHxA	Ave	1.167	1.221		10.5	10.0	4.7	30.0
13C2 PFDA	Ave	0.8763	0.8825		10.1	10.0	0.7	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_139.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 08-Dec-2016 12:14:14 ALS Bottle#: 3 Worklist Smp#: 101
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L3 CCV L3
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Sublist: chrom-537__A6*sub3
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 14:01:10 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 13:54:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.566	17.566	0.0	1.000	2232265	48.4	1181
\$ 2 13C2 PFHxA	315.0 > 270.0	18.548	18.548	0.0	1.000	1108334	10.5	36106
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.320	19.320	0.0	1.000	970349	16.4	22358
4 Perfluoroheptanoic acid	363.0 > 319.0	19.356	19.356	0.0	1.000	560899	5.09	5757
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.035	0.0		907626	10.0	23440
6 Perfluorooctanoic acid	413.0 > 369.0	20.035	20.035	0.0	1.000	1008028	10.7	310
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.655	20.655	0.0	1.000	1447715	21.1	23592
* 8 13C4 PFOS	503.0 > 80.0	20.655	20.655	0.0		1887289	28.7	21676
9 Perfluorononanoic acid	463.0 > 419.0	20.726	20.726	0.0	1.000	1019625	9.90	9017
\$ 10 13C2 PFDA	515.0 > 470.0	21.453	21.453	0.0	1.000	800977	10.1	25163

Reagents:

LC537-L3_00016 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_139.d

Injection Date: 08-Dec-2016 12:14:14

Instrument ID: A6

Lims ID: CCV L3

Client ID:

Operator ID: CBW

ALS Bottle#: 3

Worklist Smp#: 101

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

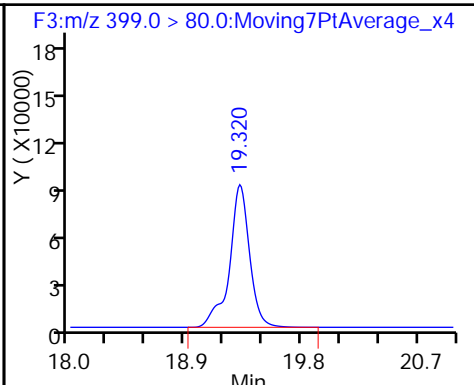
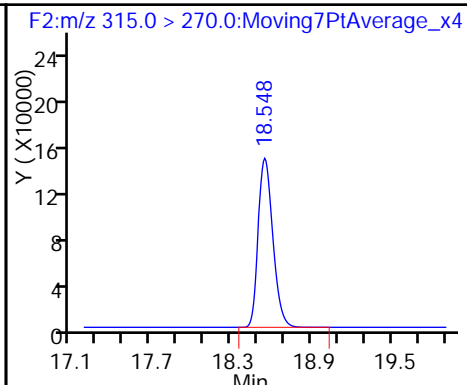
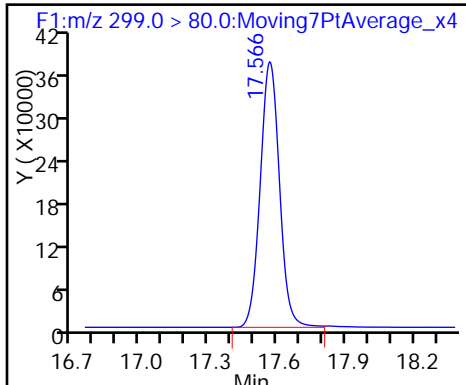
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

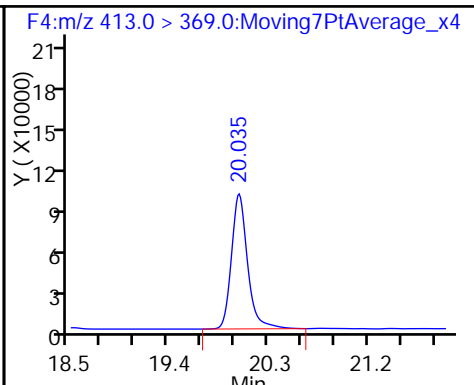
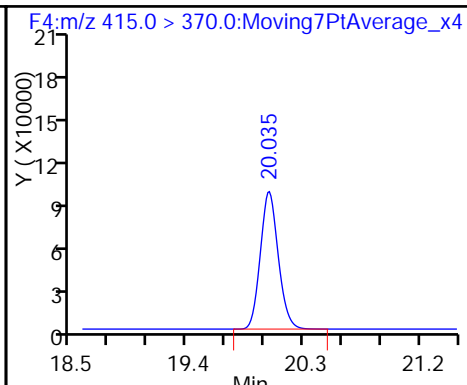
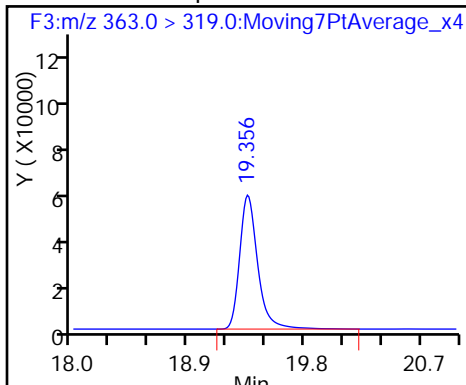
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

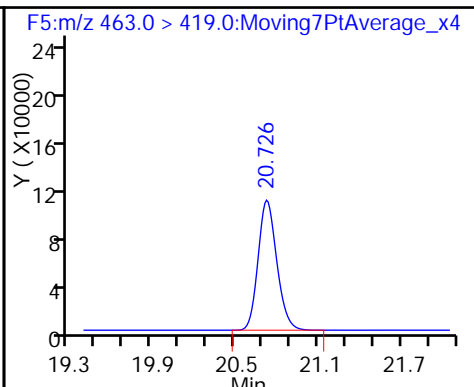
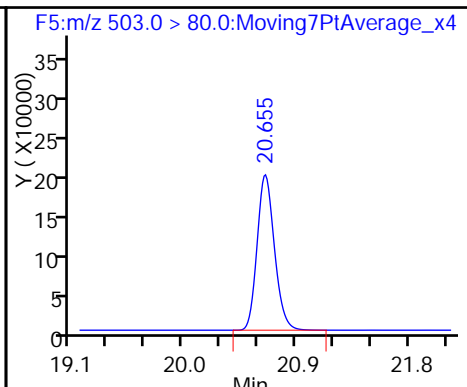
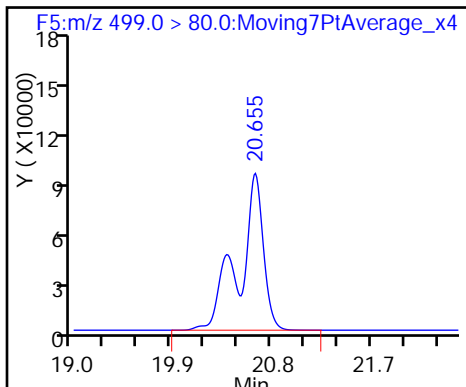
6 Perfluorooctanoic acid



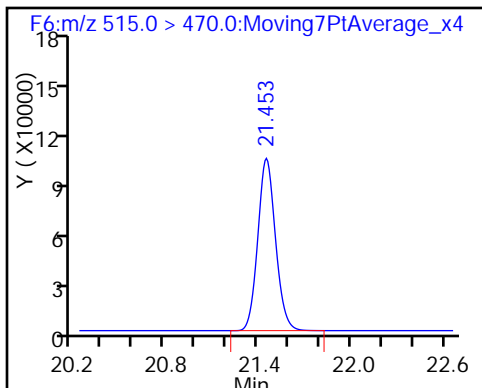
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-140280/1-A
 Matrix: Water Lab File ID: 05DEC2016A6A_084.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 250 (mL) Date Analyzed: 12/07/2016 09:06
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	111		70-130
STL00996	13C2 PFDA	106		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_084.d
 Lims ID: MB 320-140280/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 07-Dec-2016 09:06:09 ALS Bottle#: 25 Worklist Smp#: 5
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-140280/1-a BOX 13
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:18:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.567	18.567	0.0	1.000	1080018	11.1	28034
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		837319	10.0	21972
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.082	20.047	0.035	1.000	221	0.002537	0.1	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2249484	28.7	59248
9 Perfluorononanoic acid								M
463.0 > 419.0	20.762	20.738	0.024	1.000	1411	0.0149	43.3	M
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.462	0.009	1.000	780428	10.6	24516

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_084.d

Injection Date: 07-Dec-2016 09:06:09

Instrument ID: A6

Lims ID: MB 320-140280/1-A

Client ID:

Operator ID: CBW

ALS Bottle#: 25

Worklist Smp#: 5

Injection Vol: 10.0 ul

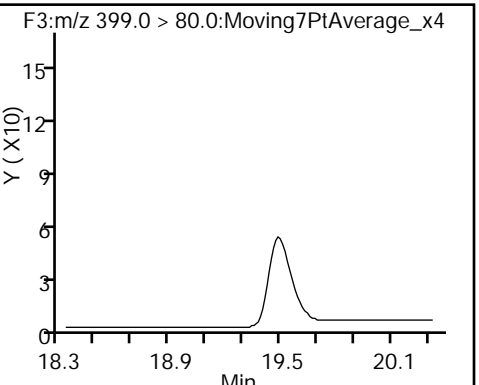
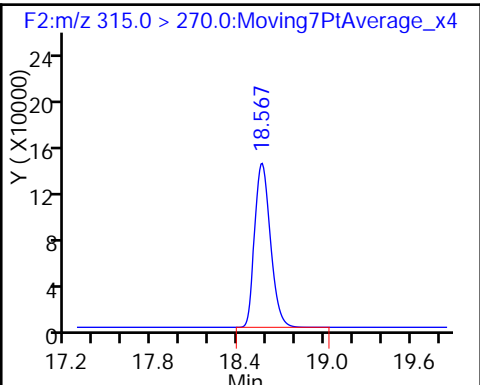
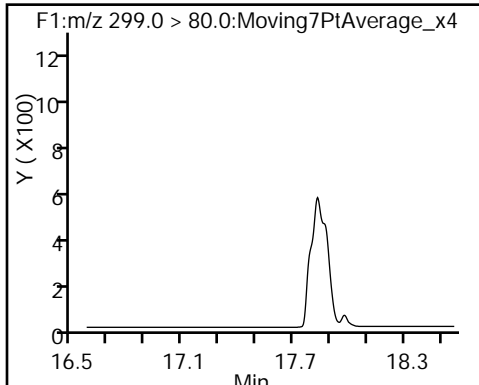
Dil. Factor: 1.0000

Method: 537_A6

Limit Group: LC 537 ICAL

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

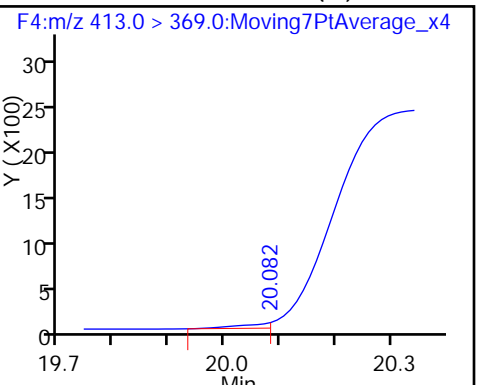
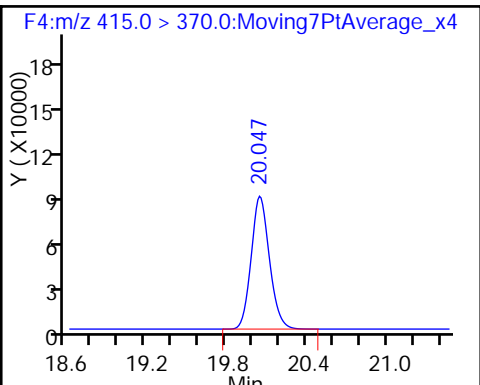
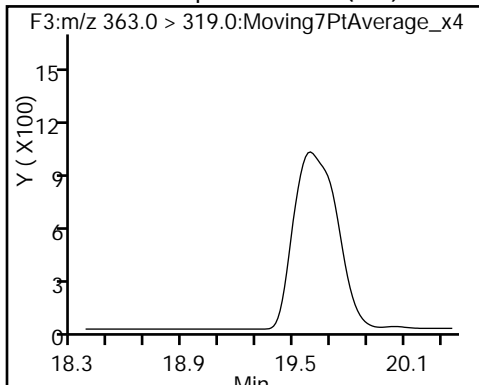
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

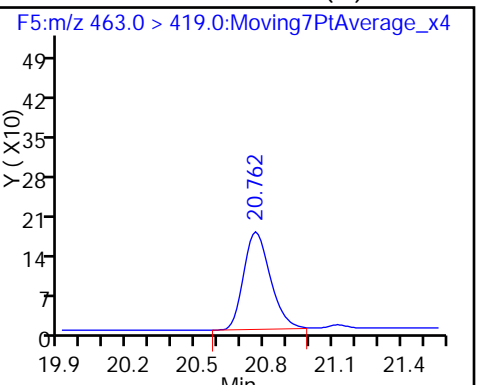
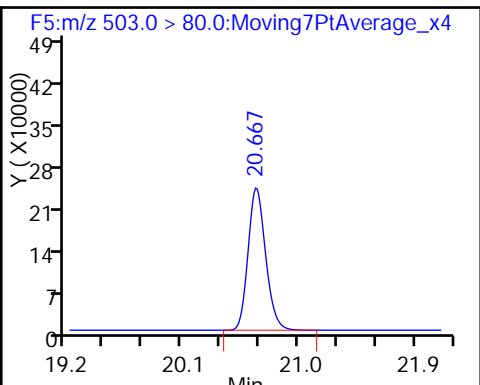
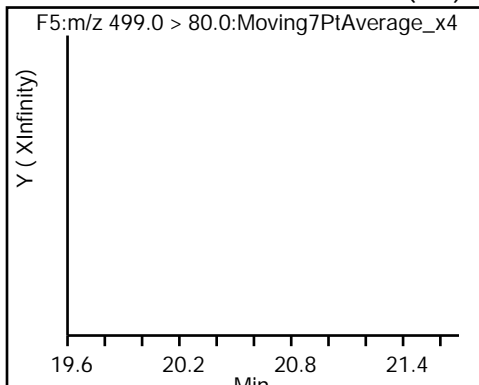
6 Perfluorooctanoic acid (M)



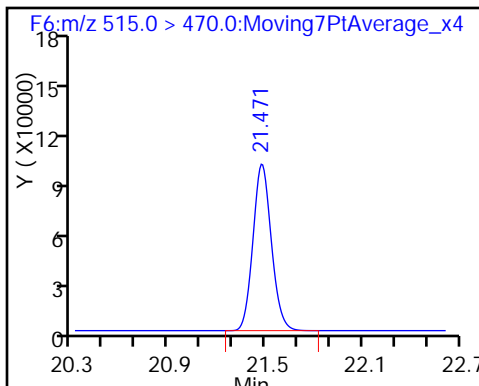
7 Perfluorooctane sulfonic acid (ND)

* 8 13C4 PFOS

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_084.d
 Lims ID: MB 320-140280/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 07-Dec-2016 09:06:09 ALS Bottle#: 25 Worklist Smp#: 5
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-140280/1-a BOX 13
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

First Level Reviewer: barnettj Date: 07-Dec-2016 15:18:19

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.1	110.57
\$ 10 13C2 PFDA	10.0	10.6	106.37

TestAmerica Sacramento

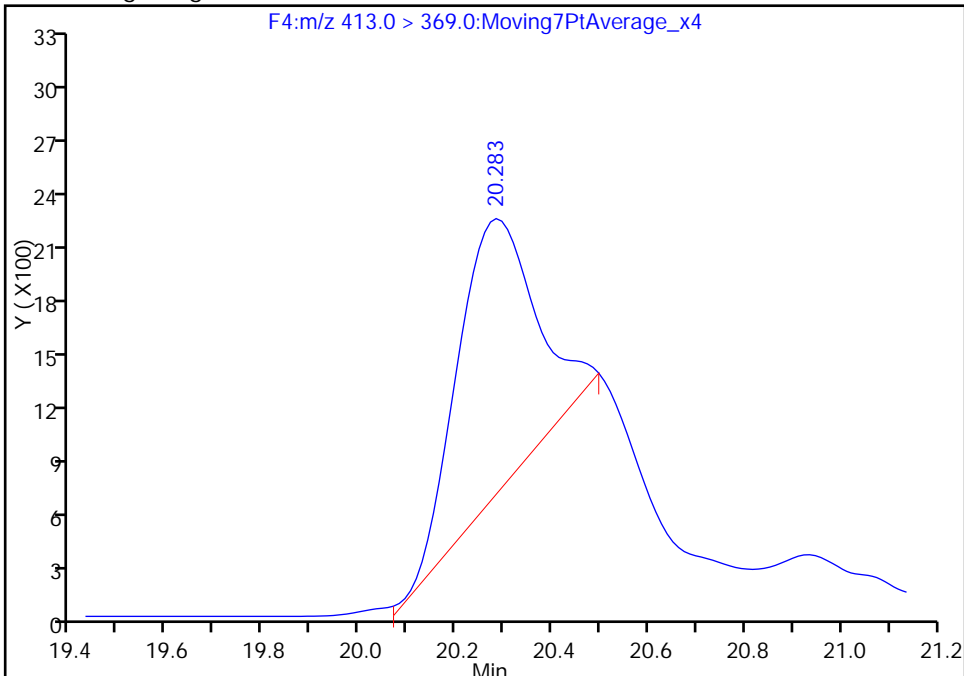
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_084.d
Injection Date: 07-Dec-2016 09:06:09 Instrument ID: A6
Lims ID: MB 320-140280/1-A
Client ID:
Operator ID: CBW ALS Bottle#: 25 Worklist Smp#: 5
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

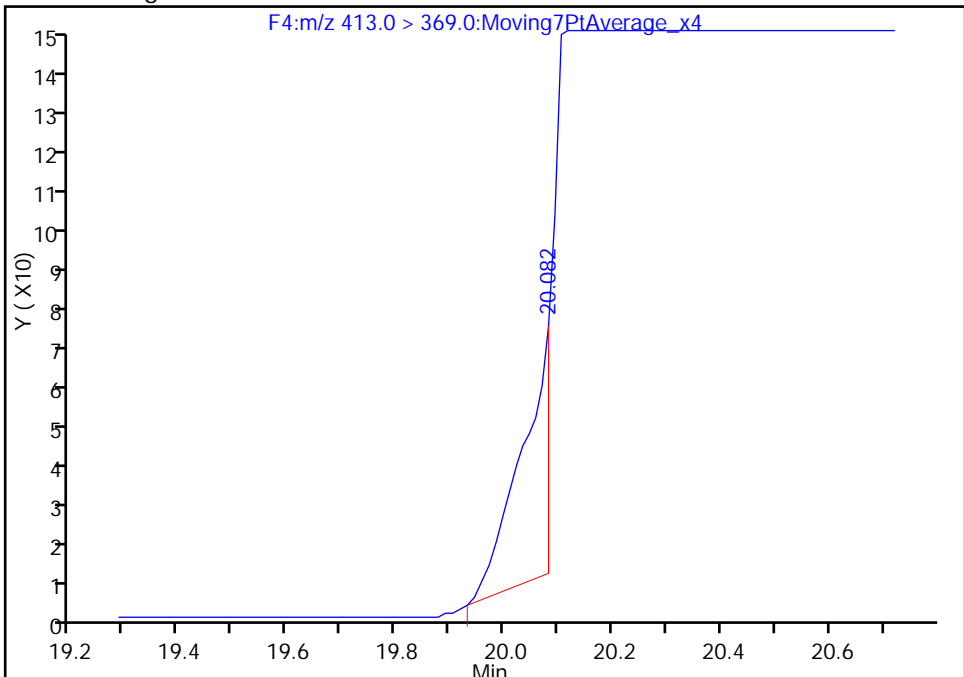
RT: 20.28
Area: 17603
Amount: 0.202062
Amount Units: ng/ml

Processing Integration Results



RT: 20.08
Area: 221
Amount: 0.002537
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 07-Dec-2016 15:18:19
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-140400/1-A
 Matrix: Water Lab File ID: 05DEC2016A6A_138.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 250 (mL) Date Analyzed: 12/08/2016 11:41
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140948 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U M	0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	123		70-130
STL00996	13C2 PFDA	120		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_138.d
 Lims ID: MB 320-140400/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 08-Dec-2016 11:41:08 ALS Bottle#: 2 Worklist Smp#: 100
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-140400/1-a BOX 14
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:54:01 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 13:53:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
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\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.558	0.0	1.000	1052399	12.3	34400
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.035	0.012		730789	10.0	38224
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.070	20.035	0.035	1.000	1190	0.0157	0.6	M
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.667	20.619	0.048	1.000	604	0.008311	11.8	M
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1996434	28.7	69873
9 Perfluorononanoic acid								M
463.0 > 419.0	20.750	20.738	0.012	1.000	620	0.007480	9.5	M
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.462	0.0	1.000	771344	12.0	24463

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_138.d

Injection Date: 08-Dec-2016 11:41:08

Instrument ID: A6

Lims ID: MB 320-140400/1-A

Client ID:

Operator ID: CBW

ALS Bottle#: 2

Worklist Smp#: 100

Injection Vol: 10.0 ul

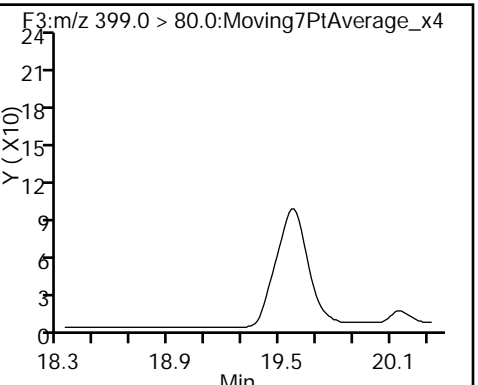
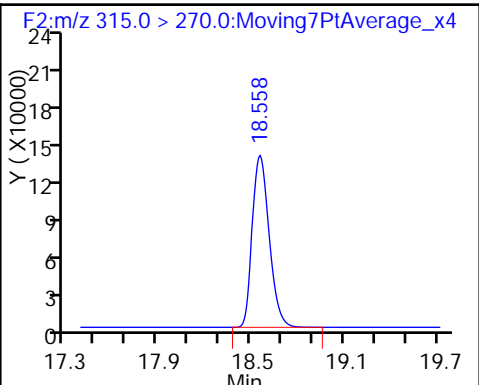
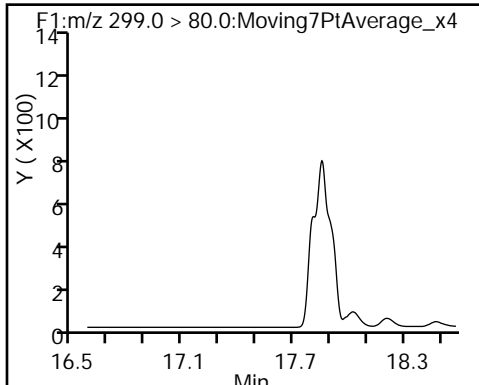
Dil. Factor: 1.0000

Method: 537__A6

Limit Group: LC 537 ICAL

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

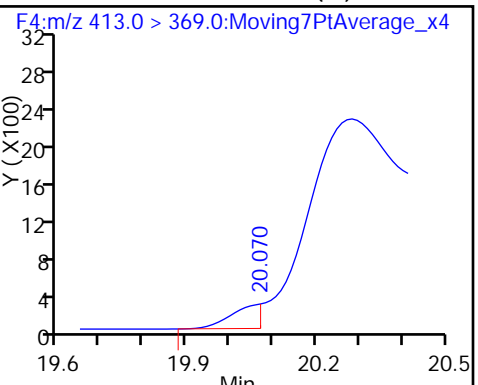
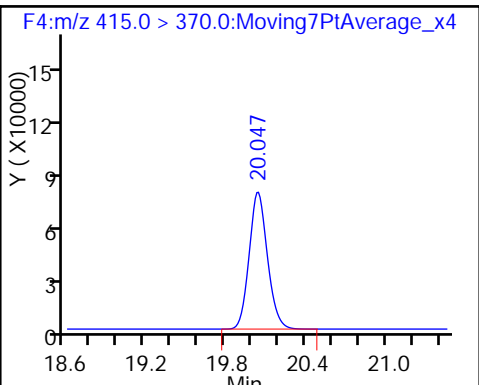
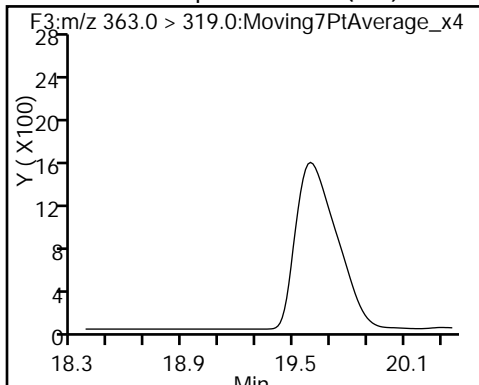
3 Perfluorohexanesulfonic acid (ND)



4 Perfluoroheptanoic acid (ND)

* 5 13C2-PFOA

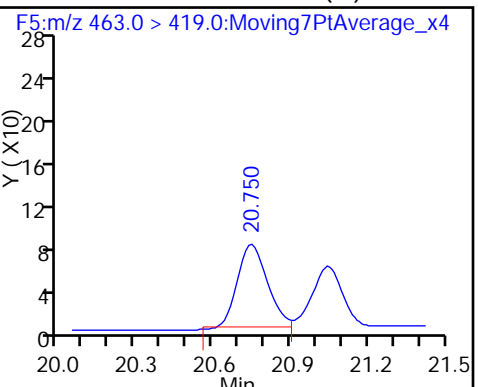
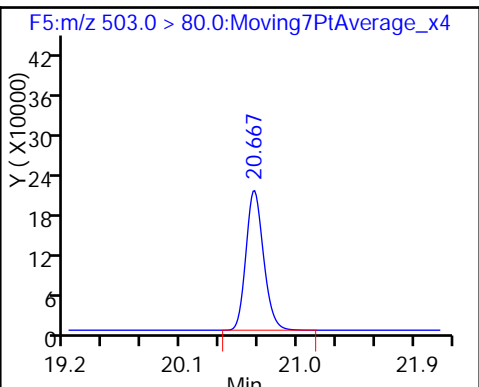
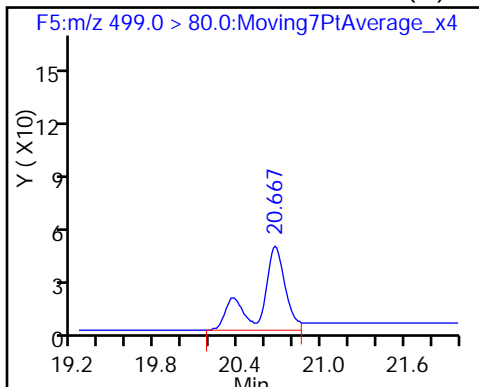
6 Perfluorooctanoic acid (M)



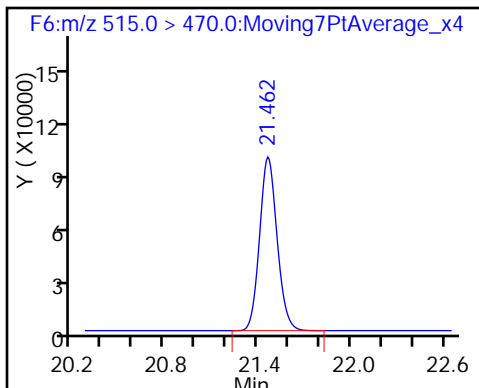
7 Perfluorooctane sulfonic acid (M)

* 8 13C4 PFOS

9 Perfluorononanoic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_138.d
 Lims ID: MB 320-140400/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 08-Dec-2016 11:41:08 ALS Bottle#: 2 Worklist Smp#: 100
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-140400/1-a BOX 14
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 13:54:01 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

First Level Reviewer: barnettj Date: 08-Dec-2016 13:53:52

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	12.3	123.45
\$ 10 13C2 PFDA	10.0	12.0	120.45

TestAmerica Sacramento

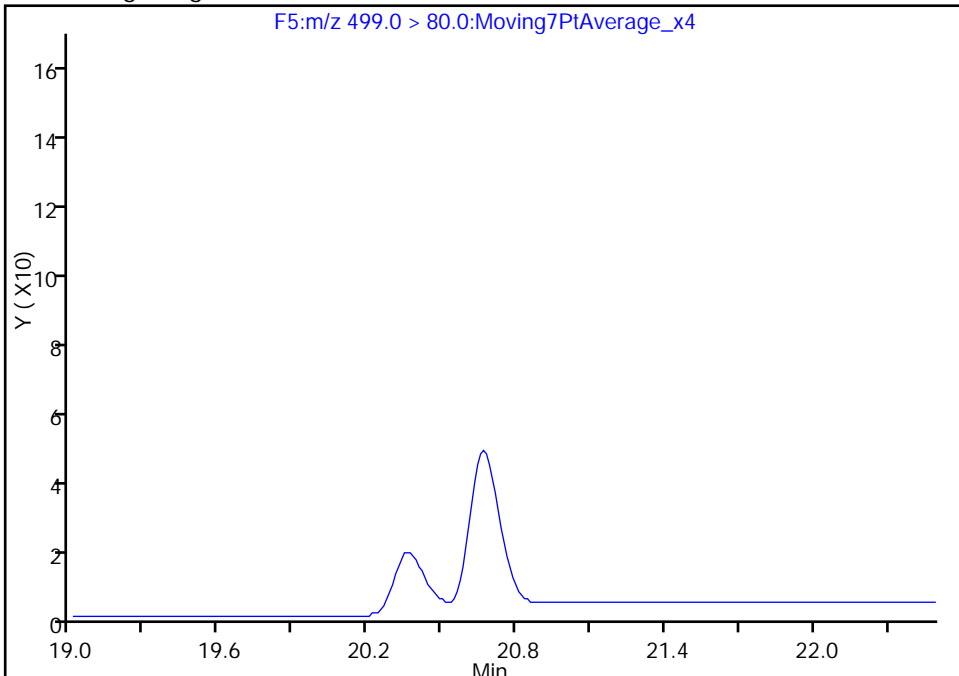
Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_138.d
Injection Date: 08-Dec-2016 11:41:08 Instrument ID: A6
Lims ID: MB 320-140400/1-A
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 100
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F5:MRM

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

Signal: 1

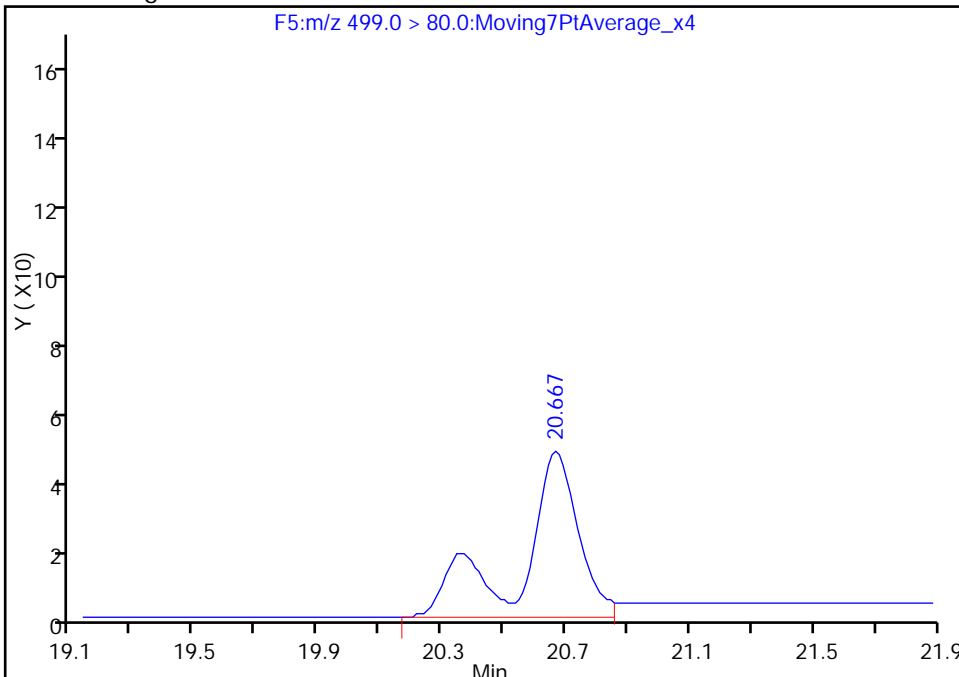
Not Detected
Expected RT: 20.62

Processing Integration Results



Manual Integration Results

RT: 20.67
Area: 604
Amount: 0.008311
Amount Units: ng/ml



Reviewer: barnettj, 08-Dec-2016 13:53:52
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

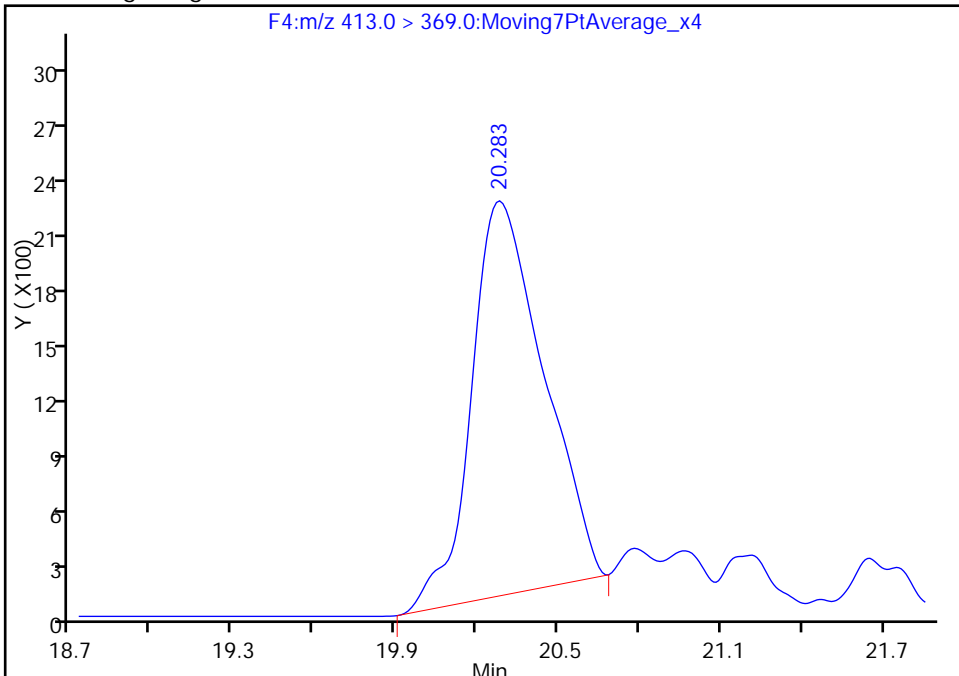
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Injection Date: 08-Dec-2016 11:41:08 Instrument ID: A6
Lims ID: MB 320-140400/1-A
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 100
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:M/RM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

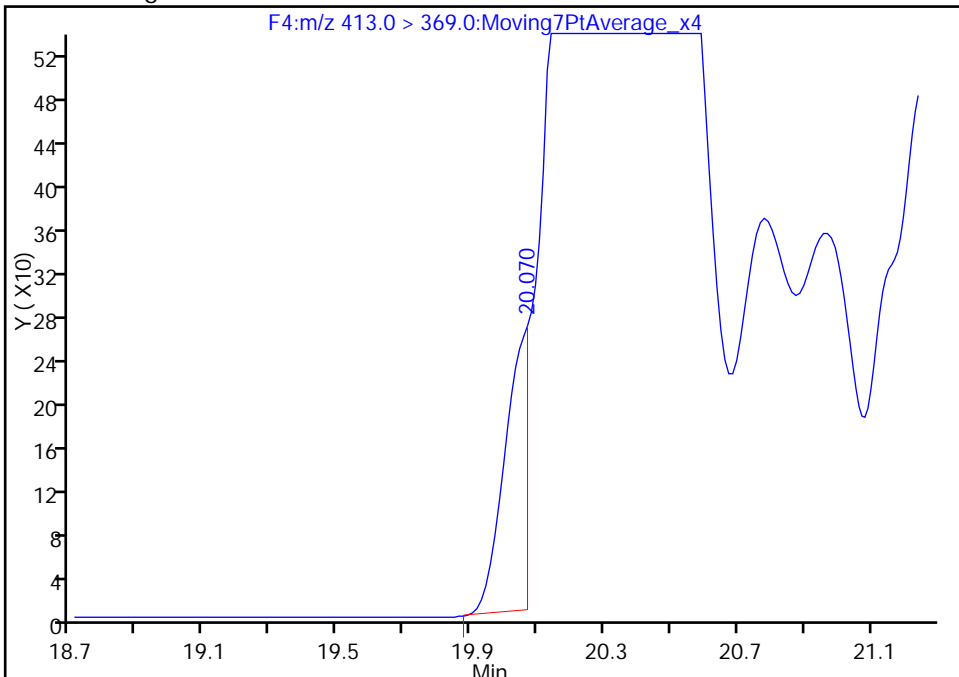
RT: 20.28
Area: 39445
Amount: 0.518787
Amount Units: ng/ml

Processing Integration Results



RT: 20.07
Area: 1190
Amount: 0.015651
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 08-Dec-2016 13:53:52
Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 320-140280/2-A
 Matrix: Water Lab File ID: 05DEC2016A6A_085.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 250 (mL) Date Analyzed: 12/07/2016 09:35
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.315		0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.157		0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.582		0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	113		70-130
STL00996	13C2 PFDA	101		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_085.d
 Lims ID: LCS 320-140280/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 07-Dec-2016 09:35:44 ALS Bottle#: 26 Worklist Smp#: 6
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-140280/2-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.570	17.576	-0.006	1.000	6901434	145.5	1974
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	1155767	11.3	37397
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	3484730	57.4	77102
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.368	0.0	1.000	2003210	18.8	6323
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		878576	10.0	22841
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	3576748	39.1	1071
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	5559105	78.7	21024
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1939291	28.7	39608
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	3845936	38.6	33555
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.462	0.009	1.000	777182	10.1	24174

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_085.d

Injection Date: 07-Dec-2016 09:35:44

Instrument ID: A6

Lims ID: LCS 320-140280/2-A

Client ID:

Operator ID: CBW

ALS Bottle#: 26

Worklist Smp#: 6

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

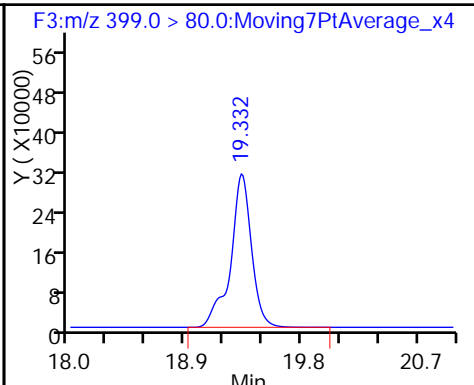
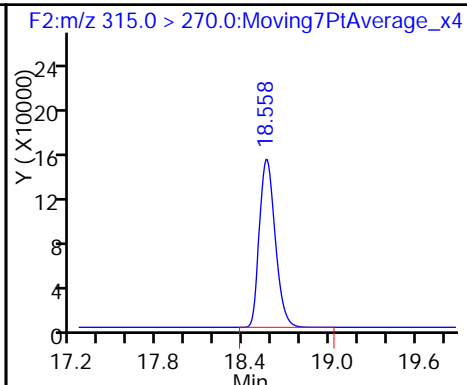
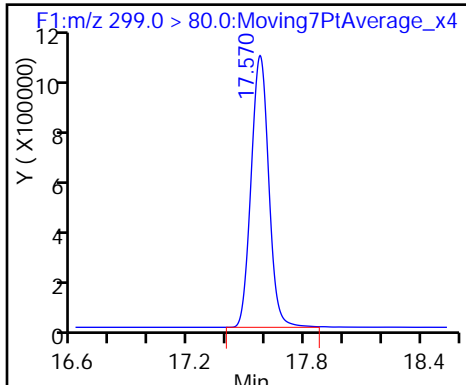
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

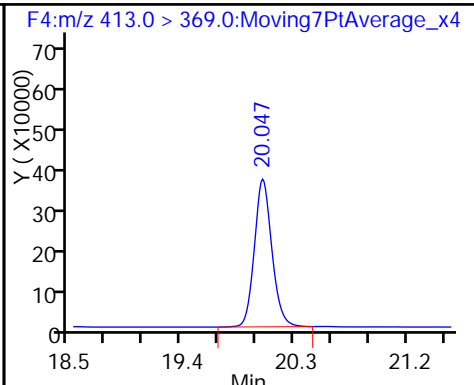
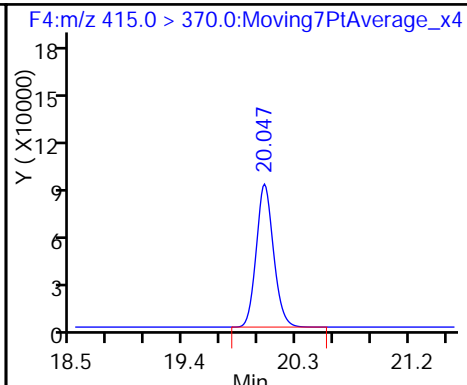
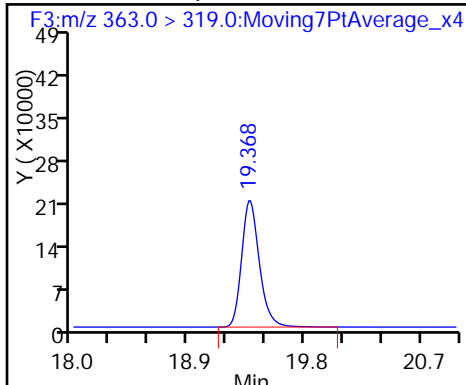
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

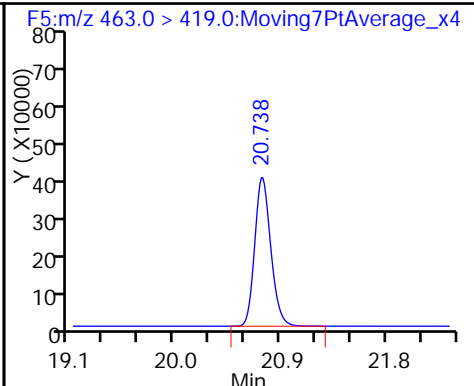
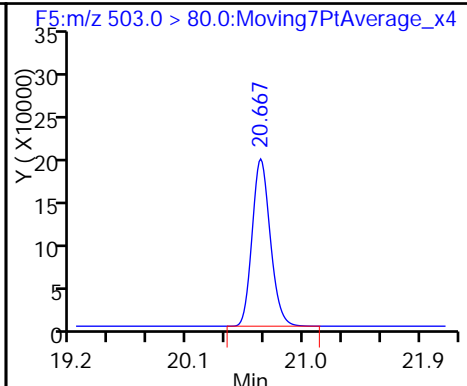
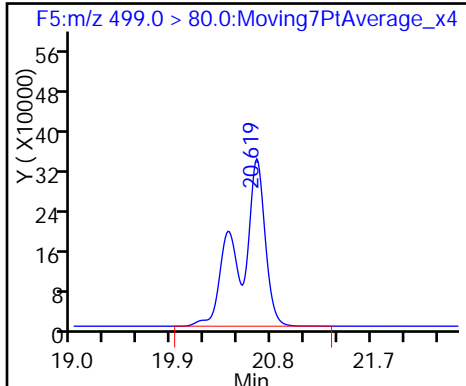
6 Perfluorooctanoic acid



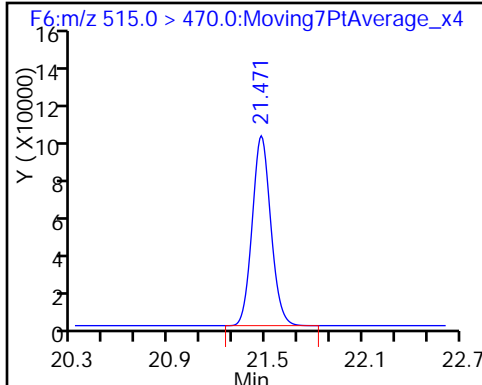
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_085.d
 Lims ID: LCS 320-140280/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 07-Dec-2016 09:35:44 ALS Bottle#: 26 Worklist Smp#: 6
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-140280/2-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.3	112.77
\$ 10 13C2 PFDA	10.0	10.1	100.95

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCSD 320-140280/3-A
 Matrix: Water Lab File ID: 05DEC2016A6A_086.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 250 (mL) Date Analyzed: 12/07/2016 10:05
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.322	E	0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.157		0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.645		0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	117		70-130
STL00996	13C2 PFDA	112		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_086.d
 Lims ID: LCSD 320-140280/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 07-Dec-2016 10:05:19 ALS Bottle#: 27 Worklist Smp#: 7
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd 320-140280/3-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.570	17.576	-0.006	1.000	7262964	161.3	2913
\$ 2 13C2 PFHxA	315.0 > 270.0	18.557	18.567	-0.010	1.000	1161356	11.7	37505
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	3444547	59.8	76036
4 Perfluoroheptanoic acid	363.0 > 319.0	19.380	19.368	0.012	1.000	1951297	18.9	22600
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		851824	10.0	22190
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	3474433	39.2	1236
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	5401756	80.6	39907 E
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		1841068	28.7	37460
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	3749559	38.8	28078
\$ 10 13C2 PFDA	515.0 > 470.0	21.471	21.462	0.009	1.000	835411	11.2	26460

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_086.d

Injection Date: 07-Dec-2016 10:05:19

Instrument ID: A6

Lims ID: LCSD 320-140280/3-A

Client ID:

Operator ID: CBW

ALS Bottle#: 27

Worklist Smp#: 7

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

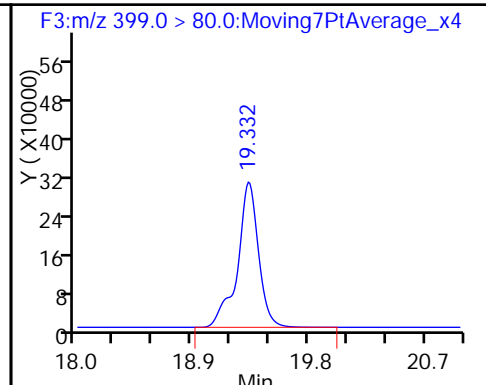
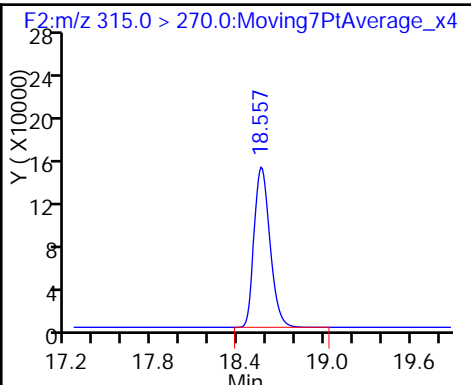
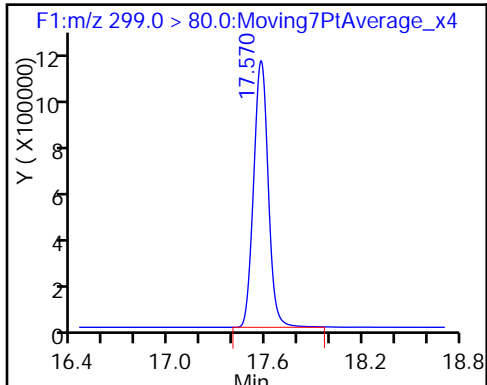
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

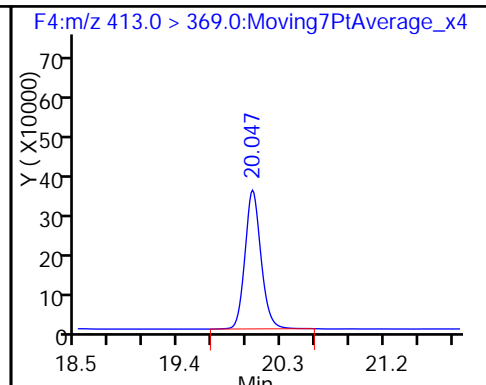
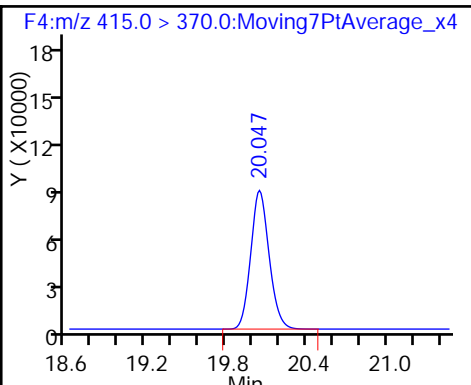
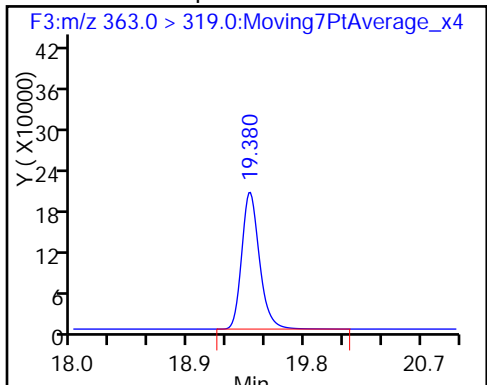
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

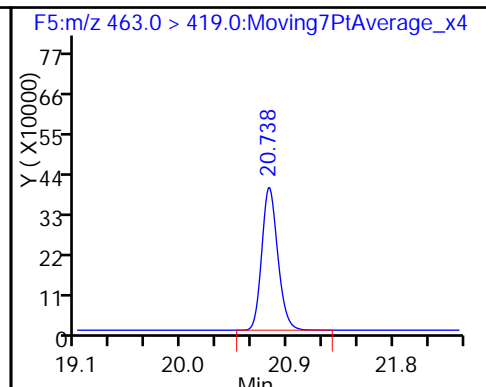
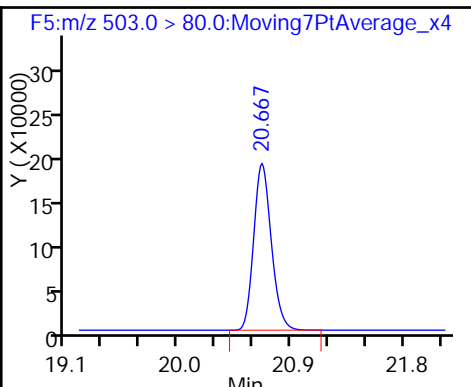
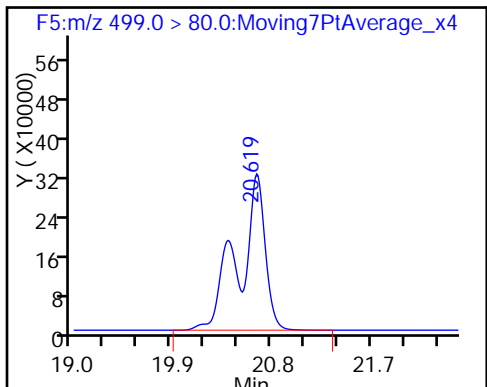
6 Perfluorooctanoic acid



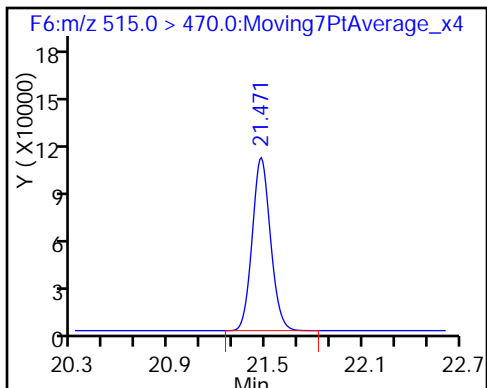
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_086.d
 Lims ID: LCSD 320-140280/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 07-Dec-2016 10:05:19 ALS Bottle#: 27 Worklist Smp#: 7
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd 320-140280/3-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 07-Dec-2016 16:26:51 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK028

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.7	116.87
\$ 10 13C2 PFDA	10.0	11.2	111.92

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LLCS 320-140400/2-A
 Matrix: Water Lab File ID: 05DEC2016A6A_116.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 250(mL) Date Analyzed: 12/08/2016 00:53
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0318	J	0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.0180	J	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.0805	J	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	112		70-130
STL00996	13C2 PFDA	108		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_116.d
 Lims ID: LLCS 320-140400/2-A
 Client ID:
 Sample Type: LLCS
 Inject. Date: 08-Dec-2016 00:53:25 ALS Bottle#: 3 Worklist Smp#: 37
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: llcs 320-140400/2-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.573	17.579	-0.006	1.000	1120294	20.1	696
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	1079010	11.2	46909
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	406587	5.71	9673
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.380	-0.012	1.000	263401	2.62	1987
* 5 13C2-PFOA	415.0 > 370.0	20.035	20.047	-0.012		827196	10.0	21631
6 Perfluorooctanoic acid	413.0 > 369.0	20.035	20.047	-0.012	1.000	386392	4.49	248
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	657942	7.94	8766
* 8 13C4 PFOS	503.0 > 80.0	20.655	20.667	-0.012		2275824	28.7	59033
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	367468	3.92	9923
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.471	-0.009	1.000	784265	10.8	24916

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_116.d

Injection Date: 08-Dec-2016 00:53:25

Instrument ID: A6

Lims ID: LLCS 320-140400/2-A

Client ID:

Operator ID: CBW

ALS Bottle#: 3

Worklist Smp#: 37

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

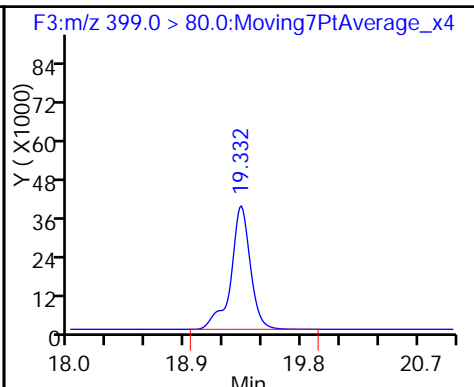
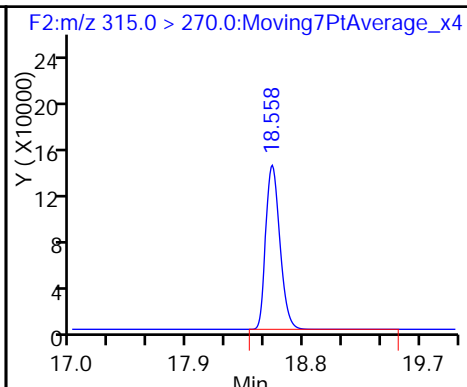
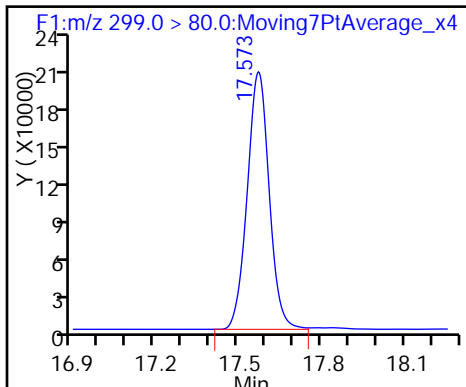
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

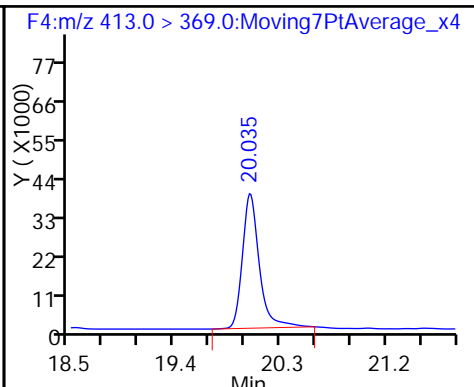
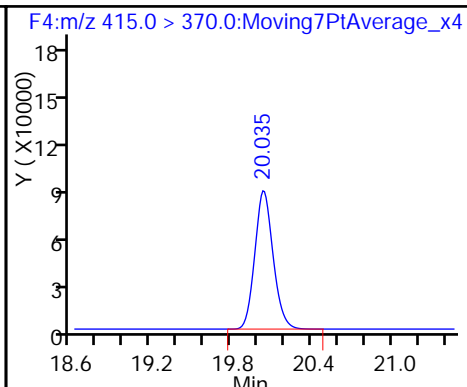
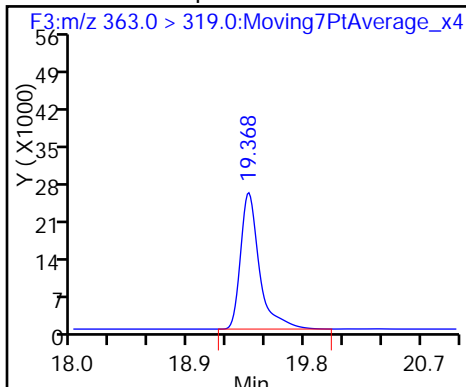
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

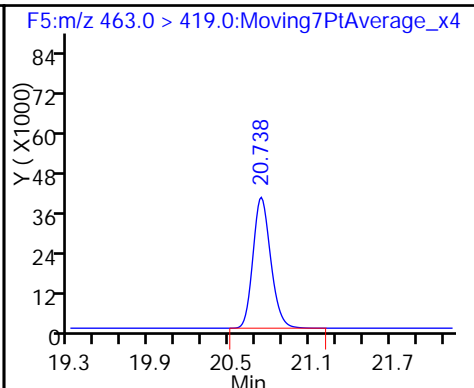
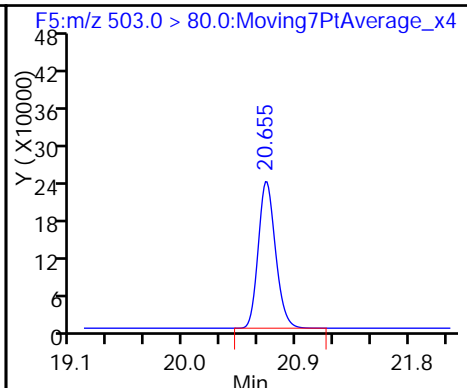
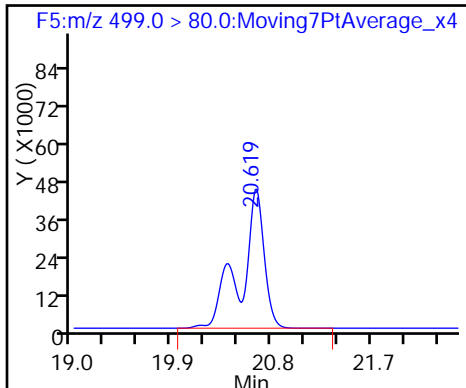
6 Perfluorooctanoic acid



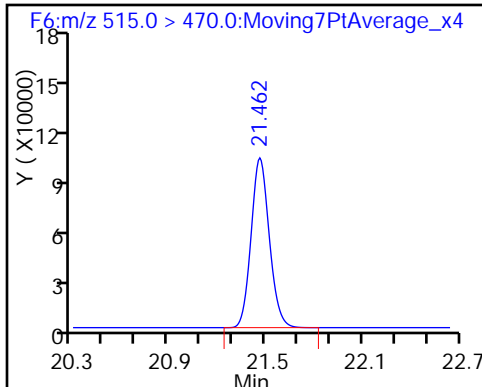
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_116.d
 Lims ID: LLCS 320-140400/2-A
 Client ID:
 Sample Type: LLCS
 Inject. Date: 08-Dec-2016 00:53:25 ALS Bottle#: 3 Worklist Smp#: 37
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: llcs 320-140400/2-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.2	111.82
\$ 10 13C2 PFDA	10.0	10.8	108.20

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LLCSD 320-140400/3-A
 Matrix: Water Lab File ID: 05DEC2016A6A_117.d
 Analysis Method: 537 Date Collected: _____
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 250 (mL) Date Analyzed: 12/08/2016 01:23
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 10 (uL) GC Column: Acquity ID: 2.1 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0315	J	0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.0185	J	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.0796	J	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	112		70-130
STL00996	13C2 PFDA	108		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_117.d
 Lims ID: LLCSD 320-140400/3-A
 Client ID:
 Sample Type: LLCSD
 Inject. Date: 08-Dec-2016 01:23:01 ALS Bottle#: 4 Worklist Smp#: 38
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: llcsd 320-140400/3-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid	299.0 > 80.0	17.576	17.579	-0.003	1.000	1105089	19.9	879
\$ 2 13C2 PFHxA	315.0 > 270.0	18.558	18.567	-0.009	1.000	1085857	11.2	35333
3 Perfluorohexanesulfonic acid	399.0 > 80.0	19.332	19.332	0.0	1.000	438138	6.17	10252
4 Perfluoroheptanoic acid	363.0 > 319.0	19.368	19.380	-0.012	1.000	273562	2.71	2236
* 5 13C2-PFOA	415.0 > 370.0	20.047	20.047	0.0		830936	10.0	21569
6 Perfluorooctanoic acid	413.0 > 369.0	20.047	20.047	0.0	1.000	398803	4.61	189
7 Perfluorooctane sulfonic acid	499.0 > 80.0	20.619	20.619	0.0	1.000	651554	7.89	8323
* 8 13C4 PFOS	503.0 > 80.0	20.667	20.667	0.0		2269539	28.7	46901
9 Perfluorononanoic acid	463.0 > 419.0	20.738	20.738	0.0	1.000	392806	4.17	20481
\$ 10 13C2 PFDA	515.0 > 470.0	21.462	21.471	-0.009	1.000	785054	10.8	24569

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_117.d

Injection Date: 08-Dec-2016 01:23:01

Instrument ID: A6

Lims ID: LLCSD 320-140400/3-A

Client ID:

Operator ID: CBW

ALS Bottle#: 4

Worklist Smp#: 38

Injection Vol: 10.0 ul

Dil. Factor: 1.0000

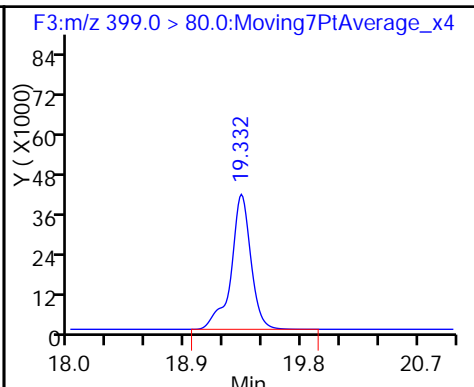
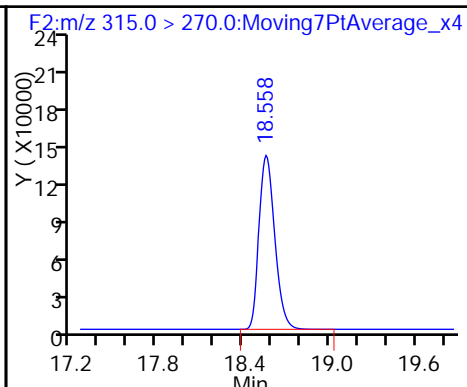
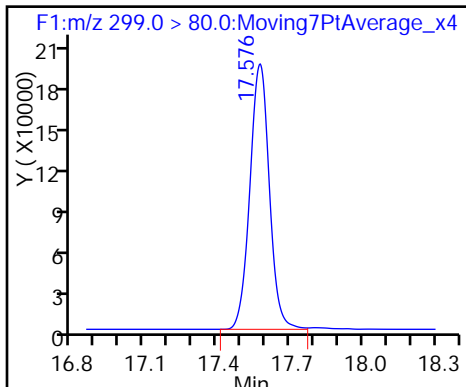
Method: 537_A6

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

\$ 2 13C2 PFHxA

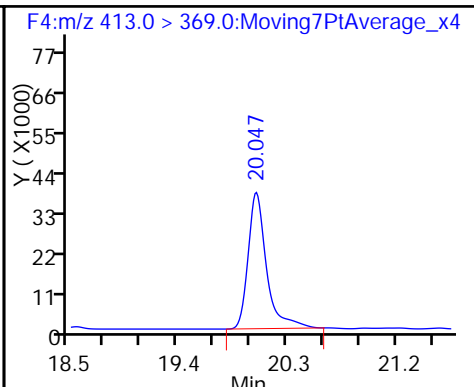
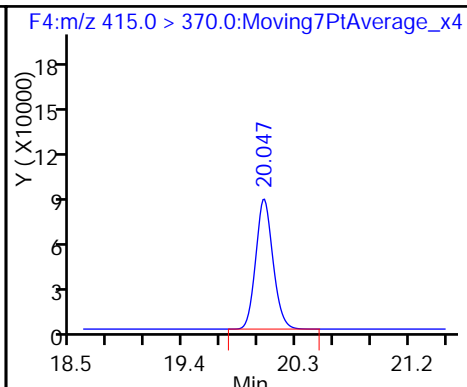
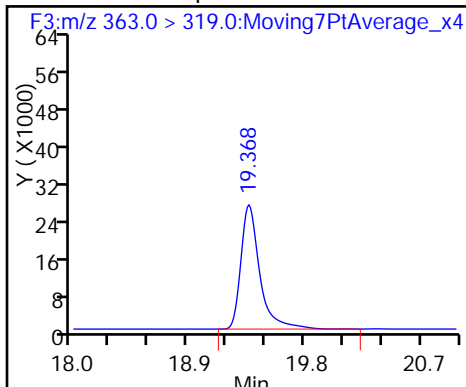
3 Perfluorohexanesulfonic acid



4 Perfluoroheptanoic acid

* 5 13C2-PFOA

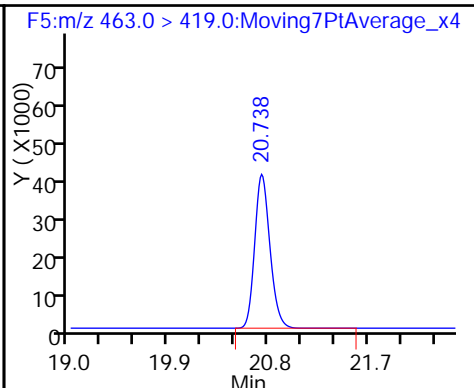
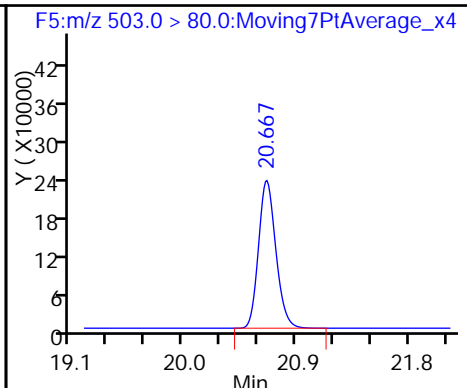
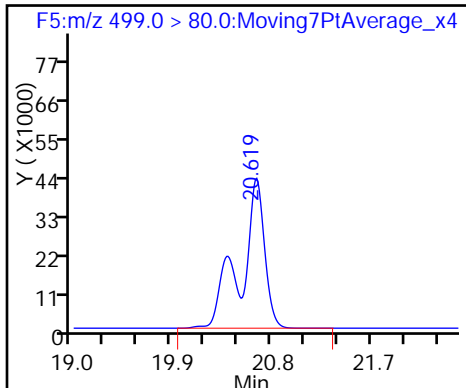
6 Perfluorooctanoic acid



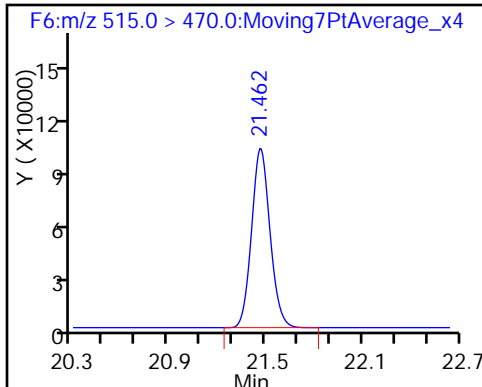
7 Perfluorooctane sulfonic acid

* 8 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\05DEC2016A6A_117.d
 Lims ID: LLCSD 320-140400/3-A
 Client ID:
 Sample Type: LLCSD
 Inject. Date: 08-Dec-2016 01:23:01 ALS Bottle#: 4 Worklist Smp#: 38
 Injection Vol: 10.0 ul Dil. Factor: 1.0000
 Sample Info: llcsd 320-140400/3-a
 Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35°C
 Operator ID: CBW Instrument ID: A6
 Method: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b\537__A6.m
 Limit Group: LC 537 ICAL
 Last Update: 08-Dec-2016 11:30:17 Calib Date: 05-Dec-2016 19:54:00
 Integrator: Picker
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20161205-37524.b\05DEC2016A6A_009.d
 Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
 Process Host: XAWRK014

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	11.2	112.02
\$ 10 13C2 PFDA	10.0	10.8	107.82

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Start Date: 12/05/2016 17:26

Analysis Batch Number: 140688 End Date: 12/06/2016 02:48

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD 320-140688/2 IC		12/05/2016 17:26	1	05DEC2016A6A_00 4.d	Acquity 2.1 (mm)
STD 320-140688/3 IC		12/05/2016 17:55	1	05DEC2016A6A_00 5.d	Acquity 2.1 (mm)
STD 320-140688/4 IC		12/05/2016 18:25	1	05DEC2016A6A_00 6.d	Acquity 2.1 (mm)
STD 320-140688/5 ICISAV		12/05/2016 18:54	1	05DEC2016A6A_00 7.d	Acquity 2.1 (mm)
STD 320-140688/6 IC		12/05/2016 19:24	1	05DEC2016A6A_00 8.d	Acquity 2.1 (mm)
STD 320-140688/7 IC		12/05/2016 19:54	1	05DEC2016A6A_00 9.d	Acquity 2.1 (mm)
ZZZZZ		12/05/2016 20:23	1		Acquity 2.1 (mm)
CCV 320-140688/9 CCVL		12/05/2016 20:53	1	05DEC2016A6A_01 1.d	Acquity 2.1 (mm)
ZZZZZ		12/05/2016 21:22	1		Acquity 2.1 (mm)
ICV 320-140688/11		12/05/2016 21:52	1	05DEC2016A6A_01 3.d	Acquity 2.1 (mm)
ZZZZZ		12/05/2016 22:22	1		Acquity 2.1 (mm)
ZZZZZ		12/05/2016 22:51	1		Acquity 2.1 (mm)
ZZZZZ		12/05/2016 23:21	1		Acquity 2.1 (mm)
ZZZZZ		12/05/2016 23:50	1		Acquity 2.1 (mm)
ZZZZZ		12/06/2016 00:20	1		Acquity 2.1 (mm)
ZZZZZ		12/06/2016 00:49	1		Acquity 2.1 (mm)
ZZZZZ		12/06/2016 01:19	1		Acquity 2.1 (mm)
ZZZZZ		12/06/2016 01:49	1		Acquity 2.1 (mm)
ZZZZZ		12/06/2016 02:18	1		Acquity 2.1 (mm)
CCV 320-140688/21 CCVIS		12/06/2016 02:48	1		Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Start Date: 12/07/2016 07:26

Analysis Batch Number: 140943 End Date: 12/07/2016 14:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-140943/2 CCVIS		12/07/2016 07:26	1	05DEC2016A6A_08 1.d	Acquity 2.1(mm)
ZZZZZ		12/07/2016 07:55	1		Acquity 2.1(mm)
ZZZZZ		12/07/2016 08:36	1		Acquity 2.1(mm)
MB 320-140280/1-A		12/07/2016 09:06	1	05DEC2016A6A_08 4.d	Acquity 2.1(mm)
LCS 320-140280/2-A		12/07/2016 09:35	1	05DEC2016A6A_08 5.d	Acquity 2.1(mm)
LCSD 320-140280/3-A		12/07/2016 10:05	1	05DEC2016A6A_08 6.d	Acquity 2.1(mm)
320-23917-1 DL		12/07/2016 10:34	5	05DEC2016A6A_08 7.d	Acquity 2.1(mm)
320-23917-2		12/07/2016 11:04	1	05DEC2016A6A_08 8.d	Acquity 2.1(mm)
320-23917-3		12/07/2016 11:34	1	05DEC2016A6A_08 9.d	Acquity 2.1(mm)
320-23917-4		12/07/2016 12:03	1	05DEC2016A6A_09 0.d	Acquity 2.1(mm)
320-23917-5		12/07/2016 12:33	1	05DEC2016A6A_09 1.d	Acquity 2.1(mm)
320-23917-6		12/07/2016 13:02	1	05DEC2016A6A_09 2.d	Acquity 2.1(mm)
320-23917-1		12/07/2016 13:32	1	05DEC2016A6A_09 3.d	Acquity 2.1(mm)
CCV 320-140943/16 CCVIS		12/07/2016 14:31	1	05DEC2016A6A_09 5.d	Acquity 2.1(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Start Date: 12/07/2016 14:31

Analysis Batch Number: 140945 End Date: 12/07/2016 20:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-140945/16 CCVIS		12/07/2016 14:31	1	05DEC2016A6A_09 5.d	Acquity 2.1 (mm)
ZZZZZ		12/07/2016 15:01	1		Acquity 2.1 (mm)
320-23917-7		12/07/2016 15:30	1	05DEC2016A6A_09 7.d	Acquity 2.1 (mm)
320-23917-8		12/07/2016 16:00	1	05DEC2016A6A_09 8.d	Acquity 2.1 (mm)
320-23917-9		12/07/2016 16:30	1	05DEC2016A6A_09 9.d	Acquity 2.1 (mm)
320-23917-10		12/07/2016 16:59	1	05DEC2016A6A_10 0.d	Acquity 2.1 (mm)
320-23917-11		12/07/2016 17:29	1	05DEC2016A6A_10 1.d	Acquity 2.1 (mm)
320-23917-12		12/07/2016 17:58	1	05DEC2016A6A_10 2.d	Acquity 2.1 (mm)
ZZZZZ		12/07/2016 18:28	2		Acquity 2.1 (mm)
320-23917-14		12/07/2016 18:58	1	05DEC2016A6A_10 4.d	Acquity 2.1 (mm)
320-23917-15		12/07/2016 19:27	1	05DEC2016A6A_10 5.d	Acquity 2.1 (mm)
320-23917-13		12/07/2016 19:57	1	05DEC2016A6A_10 6.d	Acquity 2.1 (mm)
CCV 320-140945/29 CCVIS		12/07/2016 20:56	1	05DEC2016A6A_10 8.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Start Date: 12/07/2016 20:56

Analysis Batch Number: 140946 End Date: 12/08/2016 03:21

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-140946/29 CCVIS		12/07/2016 20:56	1	05DEC2016A6A_10 8.d	Acquity 2.1(mm)
ZZZZZ		12/07/2016 21:26	1		Acquity 2.1(mm)
320-23917-16		12/07/2016 21:55	1	05DEC2016A6A_11 0.d	Acquity 2.1(mm)
320-23917-17		12/07/2016 22:25	1	05DEC2016A6A_11 1.d	Acquity 2.1(mm)
320-23917-18		12/07/2016 22:54	1	05DEC2016A6A_11 2.d	Acquity 2.1(mm)
320-23917-19		12/07/2016 23:24	1	05DEC2016A6A_11 3.d	Acquity 2.1(mm)
320-23917-20		12/07/2016 23:54	1	05DEC2016A6A_11 4.d	Acquity 2.1(mm)
ZZZZZ		12/08/2016 00:23	1		Acquity 2.1(mm)
LLCS 320-140400/2-A		12/08/2016 00:53	1	05DEC2016A6A_11 6.d	Acquity 2.1(mm)
LLCSD 320-140400/3-A		12/08/2016 01:23	1	05DEC2016A6A_11 7.d	Acquity 2.1(mm)
320-23917-21		12/08/2016 01:52	1	05DEC2016A6A_11 8.d	Acquity 2.1(mm)
320-23917-22		12/08/2016 02:22	1	05DEC2016A6A_11 9.d	Acquity 2.1(mm)
CCV 320-140946/42 CCVIS		12/08/2016 03:21	1	05DEC2016A6A_12 1.d	Acquity 2.1(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Start Date: 12/08/2016 03:21

Analysis Batch Number: 140947 End Date: 12/08/2016 09:46

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-140947/42 CCVIS		12/08/2016 03:21	1	05DEC2016A6A_12 1.d	Acquity 2.1 (mm)
ZZZZZ		12/08/2016 03:51	1		Acquity 2.1 (mm)
320-23917-23		12/08/2016 04:20	1	05DEC2016A6A_12 3.d	Acquity 2.1 (mm)
320-23917-24		12/08/2016 04:50	1	05DEC2016A6A_12 4.d	Acquity 2.1 (mm)
320-23917-25		12/08/2016 05:19	1	05DEC2016A6A_12 5.d	Acquity 2.1 (mm)
320-23917-26		12/08/2016 05:49	1	05DEC2016A6A_12 6.d	Acquity 2.1 (mm)
320-23917-27		12/08/2016 06:19	1	05DEC2016A6A_12 7.d	Acquity 2.1 (mm)
320-23917-28		12/08/2016 06:48	1	05DEC2016A6A_12 8.d	Acquity 2.1 (mm)
ZZZZZ		12/08/2016 07:18	1		Acquity 2.1 (mm)
ZZZZZ		12/08/2016 07:47	1		Acquity 2.1 (mm)
ZZZZZ		12/08/2016 08:17	1		Acquity 2.1 (mm)
ZZZZZ		12/08/2016 08:47	1		Acquity 2.1 (mm)
CCV 320-140947/55 CCVIS		12/08/2016 09:46	1	05DEC2016A6A_13 4.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Instrument ID: A6 Start Date: 12/08/2016 09:46

Analysis Batch Number: 140948 End Date: 12/08/2016 12:14

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-140948/55 CCVIS		12/08/2016 09:46	1	05DEC2016A6A_13 4.d	Acquity 2.1(mm)
ZZZZZ		12/08/2016 10:15	1		Acquity 2.1(mm)
ZZZZZ		12/08/2016 10:45	1		Acquity 2.1(mm)
ZZZZZ		12/08/2016 11:15	1		Acquity 2.1(mm)
MB 320-140400/1-A		12/08/2016 11:41	1	05DEC2016A6A_13 8.d	Acquity 2.1(mm)
CCV 320-140948/101 CCVIS		12/08/2016 12:14	1	05DEC2016A6A_13 9.d	Acquity 2.1(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Batch Number: 140280 Batch Start Date: 12/02/16 07:41 Batch Analyst: Arauz, Horacio J

Batch Method: 537 Batch End Date: 12/03/16 14:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-HSP 00010
MB 320-140280/1		537, 537				250 mL	1.00 mL	7 SU	
LCS 320-140280/2		537, 537				250 mL	1.00 mL	7 SU	50 uL
LCSD 320-140280/3		537, 537				250 mL	1.00 mL	7 SU	50 uL
320-23917-A-1	WI-CV-1RW01-1116	537, 537	T	296.17 g	27.05 g	269.1 mL	1.00 mL	9 SU	
320-23917-A-2	WI-CV-1FB01-1116	537, 537	T	304.89 g	25.98 g	278.9 mL	1.00 mL	9 SU	
320-23917-A-3	WI-CV-1RW02-1116	537, 537	T	306.40 g	27.10 g	279.3 mL	1.00 mL	9 SU	
320-23917-A-4	WI-CV-1FB02-1116	537, 537	T	305.02 g	26.28 g	278.7 mL	1.00 mL	9 SU	
320-23917-A-5	WI-CV-1RW03-1116	537, 537	T	294.31 g	26.91 g	267.4 mL	1.00 mL	9 SU	
320-23917-A-6	WI-CV-1FB03-1116	537, 537	T	306.37 g	26.15 g	280.2 mL	1.00 mL	9 SU	
320-23917-A-7	WI-CV-1RW04-1116	537, 537	T	300.90 g	26.74 g	274.2 mL	1.00 mL	9 SU	
320-23917-A-8	WI-CV-1FB04-1116	537, 537	T	309.02 g	25.77 g	283.3 mL	1.00 mL	9 SU	
320-23917-A-9	WI-CV-1RW05-1116	537, 537	T	298.96 g	27.36 g	271.6 mL	1.00 mL	9 SU	
320-23917-A-10	WI-CV-1FB05-1116	537, 537	T	308.50 g	25.88 g	282.6 mL	1.00 mL	9 SU	
320-23917-A-11	WI-CV-2RW01-1116	537, 537	T	280.40 g	26.92 g	253.5 mL	1.00 mL	9 SU	
320-23917-A-12	WI-CV-2FB01-1116	537, 537	T	303.05 g	27.03 g	276 mL	1.00 mL	9 SU	
320-23917-A-13	WI-CV-2RW02-1116	537, 537	T	286.62 g	27.14 g	259.5 mL	1.00 mL	9 SU	
320-23917-A-14	WI-CV-2FB02-1116	537, 537	T	305.61 g	26.01 g	279.6 mL	1.00 mL	9 SU	
320-23917-A-15	WI-CV-2RW03-1116	537, 537	T	272.15 g	26.39 g	245.8 mL	1.00 mL	9 SU	
320-23917-A-16	WI-CV-2FB03-1116	537, 537	T	307.06 g	26.40 g	280.7 mL	1.00 mL	9 SU	
320-23917-A-17	WI-CV-2RW04-1116	537, 537	T	294.56 g	27.32 g	267.2 mL	1.00 mL	9 SU	
320-23917-A-18	WI-CV-2FB04-1116	537, 537	T	314.54 g	25.93 g	288.6 mL	1.00 mL	9 SU	
320-23917-A-19	WI-CV-3RW01-1116	537, 537	T	304.88 g	27.00 g	277.9 mL	1.00 mL	9 SU	
320-23917-A-20	WI-CV-3FB01-1116	537, 537	T	309.33 g	25.83 g	283.5 mL	1.00 mL	9 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-IS 00025	LC537-SU 00022	AnalysisComment			
MB 320-140280/1		537, 537		20 uL	50 uL	Chlorine ND			
LCS 320-140280/2		537, 537		20 uL	50 uL	Chlorine ND			
LCSD 320-140280/3		537, 537		20 uL	50 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.: 320-23917-1

SDG No.: _____

Batch Number: 140280 Batch Start Date: 12/02/16 07:41 Batch Analyst: Arauz, Horacio J

Batch Method: 537 Batch End Date: 12/03/16 14:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-IS 00025	LC537-SU 00022	AnalysisComment			
320-23917-A-1	WI-CV-1RW01-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-2	WI-CV-1FB01-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-3	WI-CV-1RW02-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-4	WI-CV-1FB02-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-5	WI-CV-1RW03-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-6	WI-CV-1FB03-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-7	WI-CV-1RW04-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-8	WI-CV-1FB04-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-9	WI-CV-1RW05-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-10	WI-CV-1FB05-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-11	WI-CV-2RW01-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-12	WI-CV-2FB01-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-13	WI-CV-2RW02-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-14	WI-CV-2FB02-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-15	WI-CV-2RW03-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-16	WI-CV-2FB03-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-17	WI-CV-2RW04-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-18	WI-CV-2FB04-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-19	WI-CV-3RW01-1116	537, 537	T	20 uL	50 uL	Chlorine ND			
320-23917-A-20	WI-CV-3FB01-1116	537, 537	T	20 uL	50 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.: 320-23917-1

SDG No.: _____

Batch Number: 140280 Batch Start Date: 12/02/16 07:41 Batch Analyst: Arauz, Horacio J

Batch Method: 537 Batch End Date: 12/03/16 14:15

Batch Notes	
Manifold ID	5,6
Methanol ID	789821
Pipette ID	MD05306
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	NSH
Analyst ID - SU Reagent Drop	HJA
Analyst ID - SU Reagent Drop Witness	CCB
Analyst ID - TA Reagent Drop	HJA
Analyst ID - TA Reagent Drop Witness	CCB
SPE Cartridge ID	6332578-03
Trizma ID	SLBN2122V
Reagent Water ID	12-01-16

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1

SDG No.: _____

Batch Number: 140400 Batch Start Date: 12/02/16 15:24 Batch Analyst: Marchenko, Veronika P

Batch Method: 537 Batch End Date: 12/03/16 18:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00025
MB 320-140400/1		537, 537				250 mL	1 mL	7 SU	20 uL
LLCS 320-140400/2		537, 537				250 mL	1 mL	7 SU	20 uL
LLCSD 320-140400/3		537, 537				250 mL	1 mL	7 SU	20 uL
320-23917-A-21	WI-CV-3RW02-1116	537, 537	T	283.91 g	27.51 g	256.4 mL	1 mL	9 SU	20 uL
320-23917-A-22	WI-CV-3FB02-1116	537, 537	T	282.00 g	26.11 g	255.9 mL	1 mL	9 SU	20 uL
320-23917-A-23	WI-CV-3RW03-1116	537, 537	T	277.74 g	27.59 g	250.2 mL	1 mL	9 SU	20 uL
320-23917-A-24	WI-CV-3FB03-1116	537, 537	T	285.57 g	26.16 g	259.4 mL	1 mL	9 SU	20 uL
320-23917-A-25	WI-CV-3RW04-1116	537, 537	T	285.97 g	27.57 g	258.4 mL	1 mL	9 SU	20 uL
320-23917-A-26	WI-CV-3FB04-1116	537, 537	T	287.86 g	26.73 g	261.1 mL	1 mL	9 SU	20 uL
320-23917-A-27	WI-CV-3RW05-1116	537, 537	T	278.61 g	26.80 g	251.8 mL	1 mL	9 SU	20 uL
320-23917-A-28	WI-CV-3FB05-1116	537, 537	T	287.29 g	26.29 g	261 mL	1 mL	9 SU	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-LSP 00016	LC537-SU 00022	AnalysisComment			
MB 320-140400/1		537, 537			50 uL	Chlorine ND			
LLCS 320-140400/2		537, 537		50 uL	50 uL	Chlorine ND			
LLCSD 320-140400/3		537, 537		50 uL	50 uL	Chlorine ND			
320-23917-A-21	WI-CV-3RW02-1116	537, 537	T		50 uL	Chlorine ND			
320-23917-A-22	WI-CV-3FB02-1116	537, 537	T		50 uL	Chlorine ND			
320-23917-A-23	WI-CV-3RW03-1116	537, 537	T		50 uL	Chlorine ND			
320-23917-A-24	WI-CV-3FB03-1116	537, 537	T		50 uL	Chlorine ND			
320-23917-A-25	WI-CV-3RW04-1116	537, 537	T		50 uL	Chlorine ND			
320-23917-A-26	WI-CV-3FB04-1116	537, 537	T		50 uL	Chlorine ND			
320-23917-A-27	WI-CV-3RW05-1116	537, 537	T		50 uL	Chlorine ND			
320-23917-A-28	WI-CV-3FB05-1116	537, 537	T		50 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.: 320-23917-1

SDG No.: _____

Batch Number: 140400 Batch Start Date: 12/02/16 15:24

Batch Analyst: Marchenko, Veronika P

Batch Method: 537 Batch End Date: 12/03/16 18:10

Batch Notes	
Manifold ID	1,3
Methanol ID	789821
Pipette ID	MD05306
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	NSH
Analyst ID - SU Reagent Drop	VPM
Analyst ID - SU Reagent Drop Witness	KMK
Analyst ID - TA Reagent Drop	VPM
Analyst ID - TA Reagent Drop Witness	KMK
SPE Cartridge ID	6332578-03
Trizma ID	SLBN2122V
Reagent Water ID	12-02-16

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.

Al

Job No: 23917 Instrument ID & Date: 12-7-16 ICAL Batch: 140688

Extraction Batch: 140280, 140400 Worklist #: 37576 TALS Batch: 140943, 140945, 140946,

140947,
140948

Review Items	-- Level 1 --			Level 2
	Yes	No	N/A	
Initial Calibration				
1. Is ICAL verified and locked in Chrom & TALS?	✓			✓
2. Is ICV properly linked in TALS?	✓			✓
Continuing Calibration				
1. Low-range CCV injected at start of analytical run? CCV injected after every 10 samples and at the end of the analytical run and alternated between Low-range, Mid-range and High-range?	✓			✓
2. If sequence was not after an ICAL was a low and mid range CCV injected at the start of the analytical run?			✓	
3. Native compounds and surrogates in control? Low-range within ±50% of true value Mid and High-range within ±30% of true value	✓			✓
4. Internal Standard areas in control? Areas ≥ 50% of average area of the ICAL and 70-140% of the most recent CCV.	✓			✓
Client Samples & QC Sample Results				
1. Were preparation and analysis done within holding times?	✓			✓
2. Are Chromatograms reviewed and spectra verified?	✓			✓
3. Are positive results within calibration range?	✓			✓
4. Dilutions due to target cpds? <u>1</u> Dilutions due to non-targets? <u> </u>	✓			✓
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 12-8-16

2nd Level Reviewer / Date: SW 12/8/16

NCM # and Comments: 72326, 72245, 72340

Instrument ID & Date: ^{AL6} 12-5-16 Worklist#: 37524

ICAL Batch: 140688, 140689 Calibration ID number: 26888, 26889

Review Items	-- Level 1 --			Level 2
	Yes	No	N/A	
Initial Calibration				
1. Mass calibration, as needed, verified by full scan of PFC stock standard. All PFC ions used for quantitation are within 0.3 m/z of true mass?	✓			✓
2. Responses increase with increasing concentration?	✓			✓
3. Fit used (circle): <u>Average</u> Linear (1/x ²)Linear Quadratic (6 points minimum)				
4. Meets fit criteria? Intercept ≤ 1/2 RL RSD ≤ 30% for Average R ² ≥ 0.990 for Linear R ² ≥ 0.990 for Quadratic NOTE: "Force through Zero" must be used and weighted if needed	✓			✓
5. If quadratic fit used the curve does not "bend over".			✓	
6. Feed calibration points into the calculated curve. Are points ≤MRL within ±50% of true value? Are points >MRL within ±30% of true value?	✓			✓
7. Any carryover from the high calibration point must be < 1/3 RL	✓			✓
8. Asymmetry check meets criteria for the first two eluting peaks?.(0.8 - 1.5).	✓			✓
9. Is the asymmetry check scanned and linked in TALS to the calibration point?	✓			✓
10. Is ICV (2 nd source) ± 30% of true value?	✓			✓
11. Is ICV (2 nd source) internal standards ±50% of average area of the ICAL?	✓			✓
12. ICAL locked in Chrom and uploaded to TALS?	✓			✓
13. ICAL locked in TALS and scanned?				✓

1st Level Reviewer / Date: JRB 12-6-16

2nd Level Reviewer / Date: R. H. 12/7/16

NCM # and Comments: _____

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 06DEC2016C_A6 537 Worklist Number: 37576
 Instrument Name: A6 Chrom Method: 537__A6
 Data Directory: \\ChromNA\Sacramento\ChromData\A6\20161207-37576.b
 QC Batching: Enabled Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 140943
# 1 RB	# 1 RB
# 2 CCV L3	# 2 CCV L3
# 3 RB	# 3 RB
# 4 RB	# 4 RB
# 5 MB 320-140280/1-A	# 5 MB 320-140280/1-A
# 6 LCS 320-140280/2-A	# 6 LCS 320-140280/2-A
# 7 LCSD 320-140280/3-A	# 7 LCSD 320-140280/3-A
# 8 320-23917-A-1-A	# 8 320-23917-A-1-A
# 9 320-23917-A-2-A	# 9 320-23917-A-2-A
#10 320-23917-A-3-A	#10 320-23917-A-3-A
#11 320-23917-A-4-A	#11 320-23917-A-4-A
#12 320-23917-A-5-A	#12 320-23917-A-5-A
#13 320-23917-A-6-A	#13 320-23917-A-6-A
#14 320-23917-A-1-A	#14 320-23917-A-1-A
#15 RB	#15 RB
#16 CCV L5	#16 CCV L5

QC Batch: 2	LC 537 ICAL Raw Batch: 140945
#16 CCV L5	#16 CCV L5
#17 RB	#17 RB
#18 320-23917-A-7-A	#18 320-23917-A-7-A
#19 320-23917-A-8-A	#19 320-23917-A-8-A
#20 320-23917-A-9-A	#20 320-23917-A-9-A
#21 320-23917-A-10-A	#21 320-23917-A-10-A
#22 320-23917-A-11-A	#22 320-23917-A-11-A
#23 320-23917-A-12-A	#23 320-23917-A-12-A
#24 320-23917-A-13-A	#24 320-23917-A-13-A
#25 320-23917-A-14-A	#25 320-23917-A-14-A
#26 320-23917-A-15-A	#26 320-23917-A-15-A
#27 320-23917-A-13-A	#27 320-23917-A-13-A
#28 RB	#28 RB
#29 CCV L3	#29 CCV L3

not needed

report

QC Batch: 3	LC 537 ICAL Raw Batch: 140946
#29 CCV L3	#29 CCV L3
#30 RB	#30 RB
#31 320-23917-A-16-A	#31 320-23917-A-16-A
#32 320-23917-A-17-A	#32 320-23917-A-17-A
#33 320-23917-A-18-A	#33 320-23917-A-18-A
#34 320-23917-A-19-A	#34 320-23917-A-19-A
#35 320-23917-A-20-A	#35 320-23917-A-20-A
#36 MB 320-140400/1-A	#36 MB 320-140400/1-A
#37 LLCS 320-140400/2-A	#37 LLCS 320-140400/2-A
#38 LLCSD 320-140400/3-A	#38 LLCSD 320-140400/3-A
#39 320-23917-A-21-A	#39 320-23917-A-21-A
#40 320-23917-A-22-A	#40 320-23917-A-22-A
#41 RB	#41 RB
#42 CCV L5	#42 CCV L5

surrogate high. Not used

QC Batch: 4	LC 537 ICAL Raw Batch: 140947
#42 CCV L5	#42 CCV L5
#43 RB	#43 RB
#44 320-23917-A-23-A	#44 320-23917-A-23-A
#45 320-23917-A-24-A	#45 320-23917-A-24-A
#46 320-23917-A-25-A	#46 320-23917-A-25-A
#47 320-23917-A-26-A	#47 320-23917-A-26-A
#48 320-23917-A-27-A	#48 320-23917-A-27-A
#49 320-23917-A-28-A	#49 320-23917-A-28-A
#50 320-23929-A-1-A	#50 320-23929-A-1-A
#51 320-23929-A-2-A	#51 320-23929-A-2-A
#52 320-23929-A-3-A	#52 320-23929-A-3-A
#53 320-23929-A-4-A	#53 320-23929-A-4-A
#54 RB	#54 RB
#55 CCV L3	#55 CCV L3

QC Batch: 5	LC 537 ICAL Raw Batch: 140948
#55 CCV L3	#55 CCV L3
#56 RB	#56 RB
#57 320-23929-A-5-A	#57 320-23929-A-5-A
#58 320-23929-A-6-A	#58 320-23929-A-6-A
#100 MB 320-140400/1-A	#100 MB 320-140400/1-A
#101 CCV L3	#101 CCV L3

report

QC Batch: 6	LC 537 ICAL Raw Batch: 141249
#101 CCV L3	#101 CCV L3
#102 RB	#102 RB
#59 320-23929-A-7-A	#59 320-23929-A-7-A
#60 320-23929-A-8-A	#60 320-23929-A-8-A
#61 320-23929-A-9-A	#61 320-23929-A-9-A
#62 320-23929-A-10-A	#62 320-23929-A-10-A
#63 320-23919-A-1-A	#63 320-23919-A-1-A
#64 320-23919-A-2-A	#64 320-23919-A-2-A
#65 MB 320-140409/1-A	#65 MB 320-140409/1-A
#66 LCS 320-140409/2-A	#66 LCS 320-140409/2-A
#67 RB	#67 RB
#68 CCV L5	#68 CCV L5

QC Batch: 7	LC 537 ICAL Raw Batch: 140949
#68 CCV L5	#68 CCV L5
#69 RB	#69 RB
#70 LCSD 320-140409/3-A	#70 LCSD 320-140409/3-A
#71 320-23919-A-3-A	#71 320-23919-A-3-A
#72 320-23919-A-4-A	#72 320-23919-A-4-A
#73 320-23919-A-5-A	#73 320-23919-A-5-A
#74 320-23919-A-6-A	#74 320-23919-A-6-A
#75 320-23919-A-7-A	#75 320-23919-A-7-A
#76 320-23919-A-8-A	#76 320-23919-A-8-A
#77 320-23919-A-9-A	#77 320-23919-A-9-A
#78 320-23919-A-10-A	#78 320-23919-A-10-A
#79 320-23919-A-11-A	#79 320-23919-A-11-A
#80 RB	#80 RB
#81 CCV L3	#81 CCV L3

QC Batch: 8	LC 537 ICAL Raw Batch: 140950
#81 CCV L3	#81 CCV L3
#82 RB	#82 RB
#83 320-23919-A-12-A	#83 320-23919-A-12-A
#84 320-23919-A-13-A	#84 320-23919-A-13-A
#85 320-23919-A-14-A	#85 320-23919-A-14-A
#86 320-23919-A-15-A	#86 320-23919-A-15-A
#87 320-23919-A-16-A	#87 320-23919-A-16-A
#88 320-23919-A-17-A	#88 320-23919-A-17-A
#89 320-23919-A-18-A	#89 320-23919-A-18-A
#90 320-23919-A-19-A	#90 320-23919-A-19-A
#91 320-23919-A-20-A	#91 320-23919-A-20-A
#92 320-23919-A-13-A	#92 320-23919-A-13-A
#93 RB	#93 RB
#94 CCV L5	#94 CCV L5

QC Batch: 9	LC 537 ICAL Raw Batch: 140951
#94 CCV L5	#94 CCV L5
#95 RB	#95 RB
#96 320-23919-A-21-A	#96 320-23919-A-21-A
#97 320-23919-A-22-A	#97 320-23919-A-22-A
#98 RB	#98 RB
#99 CCV L3	#99 CCV L3

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-140280

Analyst: Arauz, Horacio J

Batch Open: 12/2/2016 7:41:00AM

Method Code: 320-537_Prep-320

Batch End: 12/3/2016 2:15:00PM

Extraction of Perfluorinated Alkyl Acids

Screened AH 12/3/16

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs		Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
				Rcvd	Adj1					
1 MB-320-140280/1 N/A	N/A		250 mL 1.00 mL	7		N/A	N/A	N/A	Chlorine ND	MB 320-140280/1-A
2 LCS-320-140280/2 N/A	N/A		250 mL 1.00 mL	7		N/A	N/A	N/A	Chlorine ND	LCS 320-140280/2-A
3 LCS-320-140280/3 N/A	N/A		250 mL 1.00 mL	7		N/A	N/A	N/A	Chlorine ND	LCS 320-140280/3-A
4 320-23917-A-1 (537_DOD5) <i>see prep</i>	N/A (320-23917-1)	296.17 g 27.05 g	269.1 mL 1.00 mL	9		12/5/16	5_Days	4	Chlorine ND 5X	320-23917-A-1-A
5 320-23917-A-2 (537_DOD5)	N/A (320-23917-1)	304.89 g 25.98 g	278.9 mL 1.00 mL	9		12/5/16	5_Days	4	Chlorine ND	320-23917-A-2-A
6 320-23917-A-3 (537_DOD5)	N/A (320-23917-1)	306.40 g 27.10 g	279.3 mL 1.00 mL	9		12/5/16	5_Days	4	Chlorine ND	320-23917-A-3-A
7 320-23917-A-4 (537_DOD5)	N/A (320-23917-1)	305.02 g 26.28 g	278.7 mL 1.00 mL	9		12/5/16	5_Days	4	Chlorine ND	320-23917-A-4-A
8 320-23917-A-5 (537_DOD5)	N/A (320-23917-1)	294.31 g 26.91 g	267.4 mL 1.00 mL	9		12/5/16	5_Days	4	Chlorine ND	320-23917-A-5-A
9 320-23917-A-6 (537_DOD5)	N/A (320-23917-1)	306.37 g 26.15 g	280.2 mL 1.00 mL	9		12/5/16	5_Days	4	Chlorine ND	320-23917-A-6-A
10 320-23917-A-7 (537_DOD5)	N/A (320-23917-1)	300.90 g 26.74 g	274.2 mL 1.00 mL	9		12/5/16	5_Days	4	Chlorine ND	320-23917-A-7-A

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-140280

Analyst: Arauz, Horacio J

Batch Open: 12/2/2016 7:41:00AM

Method Code: 320-537_Prep-320

Batch End: 12/3/2016 2:15:00PM

Sample ID	Weight (g)	Volume (mL)	Chlorine ND	5_Days	Date
320-23917-A-8 (537_DOD5)	309.02 g 25.77 g	283.3 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-9 (537_DOD5)	298.96 g 27.36 g	271.6 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-10 (537_DOD5)	308.50 g 25.88 g	282.6 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-11 (537_DOD5)	280.40 g 26.92 g	253.5 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-12 (537_DOD5)	303.05 g 27.03 g	276 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-13 (537_DOD5)	286.62 g 27.14 g	259.5 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-14 (537_DOD5)	305.61 g 26.01 g	279.6 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-15 (537_DOD5)	272.15 g 26.39 g	245.8 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-16 (537_DOD5)	307.06 g 26.40 g	280.7 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-17 (537_DOD5)	294.56 g 27.32 g	267.2 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-18 (537_DOD5)	314.54 g 25.93 g	288.6 mL 1.00 mL	Chlorine ND	4	12/5/16
320-23917-A-19 (537_DOD5)	304.88 g 27.00 g	277.9 mL 1.00 mL	Chlorine ND	4	12/5/16

2X

12/09/2016

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-140280

Analyst: Arauz, Horacio J

Batch Open: 12/2/2016 7:41:00AM

Method Code: 320-537_Prep-320

Batch End:

320-23917-A-20 (537_DOD5)	N/A (320-23917-1)	309.33 g	12.5 mL H ₂ O 0.5 mL 1.0 mL	9	12/5/16	5_Days	4	Chlorine ND
 320-23917-A-20								

Batch Notes

Manifold ID 5,6	
Trizma ID SLBN2122V	
SPE Cartridge ID 6332578-03	
Methanol ID 789821	
Reagent Water ID 12-01-16	
Pipette ID MD05306	
Analyst ID - TA Reagent Drop	HJA
Analyst ID - TA Reagent Drop	CCB
Analyst ID - SU Reagent Drop	HJA
Analyst ID - SU Reagent Drop	CCB
Analyst ID - IS Reagent Drop	VPM LC537-1S-00025 Exp: 03-19-17 0.5-1.434 ug/ml
Analyst ID - IS Reagent Drop	NSH
Batch Comment	NA

Comments

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Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-140280

Analyst: Arauz, Horacio J

Batch Open: 12/2/2016 7:41:00AM

Method Code: 320-537_Prep-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-140280/1	LC537-SU_00022	50 uL	0.5 mL	HSA 12.2.16	CJS 12/2/15
LCS 320-140280/2	LC537-HSP_00010	50 uL	0.5 mL		
LCS 320-140280/2	LC537-SU_00022	50 uL	0.5 mL		
LCSD 320-140280/3	LC537-HSP_00010	50 uL	0.5 mL		
LCSD 320-140280/3	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-1	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-2	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-3	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-4	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-5	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-6	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-7	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-8	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-9	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-10	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-11	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-12	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-13	LC537-SU_00022	50 uL	0.5 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-140280

Analyst: Arauz, Horacio J

Batch Open: 12/2/2016 7:41:00AM

Method Code: 320-537_Prep-320

Batch End:

320-23917-A-14	LC537-SU_00022	50 uL	0.5 mL	HJA 12-2-16	CAS 12/2/16
320-23917-A-15	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-16	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-17	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-18	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-19	LC537-SU_00022	50 uL	0.5 mL		
320-23917-A-20	LC537-SU_00022	50 uL	0.5 mL		

Reagent	Other Reagents:	Amount/Units	Lot#:

Preparation Batch Number(s): 320-140280 Test: 537-1* Pushes*

Earliest Holding Time: 12-12-16

Sample List Tab		1 st Level Reviewer	2 nd Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		/	/
Method/sample/login/QAS checked and correct		/	/
Worksheet Tab		1 st Level Reviewer	2 nd Level Reviewer
All samples properly preserved		/	/
Weights in anticipated range and not targeted		/	/
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)		/	/
The pH is transcribed correctly in TALS		/	/
All additional information transcribed into TALS is correct and raw data is attached		/	/
Comments are transcribed correctly in TALS		/	/
Reagents Tab		1 st Level Reviewer	2 nd Level Reviewer
All necessary reagents not expired and entered into TALS		/	/
All spike amounts correct and added to necessary samples and QC		/	/
Batch Information		1 st Level Reviewer	2 nd Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1st Level Reviewer: NSH

Date: 12-3-16

2nd Level Reviewer: VPM

Date: 12/03/16

Comments: _____

Method ID 537

Job # 23919, 23917, 23928

Analyst (Print Name) John Barnett

Analyst Initials JRB

Date 12-6-16

<u>Sample#</u>	<u>Original F.V. (uL)</u>	<u>Aliquot (uL)</u>	<u>Dilution F.V. (uL)</u>	<u>Dilution Factor</u>
23919-13	-	10	200	20X
23917-1	-	40	200	5X
23917-13	-	80	160	2X
23928-3	-	50	200	4X

Comments:

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Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-140400

Analyst: Marchenko, Veronika P

Method Code: 320-537_Prep-320

Batch Open: 12/2/2016 3:24:00PM

Batch End: 12-3-16 18:10 pm

Extraction of Perfluorinated Alkyl Acids

Screed A4 12/3/16

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	PHs Rcvd Adj1 Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1 MB-320-140400/1 N/A	N/A		250 mL 1 mL	7	N/A	N/A	N/A	Chlorine ND	MB 320-140400/1-A
2 LLCS-320-140400/2 N/A	N/A		250 mL 1 mL	7	N/A	N/A	N/A	Chlorine ND	LLCS 320-140400/2-A
3 LLCSD-320-140400/3 N/A	N/A		250 mL 1 mL	7	N/A	N/A	N/A	Chlorine ND	LLCSD 320-140400/3-A
4 320-23917-A-21 (537_DOD5)	N/A (320-23917-1)	283.91 g 27.51 g	256.4 mL 1 mL	9	12/5/16	5_Days	4	Chlorine ND	320-23917-A-21-A
5 320-23917-A-22 (537_DOD5)	N/A (320-23917-1)	282.00 g 26.11 g	255.9 mL 1 mL	9	12/5/16	5_Days	4	Chlorine ND	320-23917-A-22-A
6 320-23917-A-23 (537_DOD5)	N/A (320-23917-1)	277.74 g 27.59 g	250.2 mL 1 mL	9	12/5/16	5_Days	4	Chlorine ND	320-23917-A-23-A
7 320-23917-A-24 (537_DOD5)	N/A (320-23917-1)	285.57 g 26.16 g	259.4 mL 1 mL	9	12/5/16	5_Days	4	Chlorine ND	320-23917-A-24-A
8 320-23917-A-25 (537_DOD5)	N/A (320-23917-1)	285.97 g 27.57 g	258.4 mL 1 mL	9	12/5/16	5_Days	4	Chlorine ND	320-23917-A-25-A
9 320-23917-A-26 (537_DOD5)	N/A (320-23917-1)	287.86 g 26.73 g	261.1 mL 1 mL	9	12/5/16	5_Days	4	Chlorine ND	320-23917-A-26-A
10 320-23917-A-27 (537_DOD5)	N/A (320-23917-1)	278.61 g 26.80 g	251.8 mL 1 mL	9	12/5/16	5_Days	4	Chlorine ND	320-23917-A-27-A

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-140400

Analyst: Marchenko, Veronika P

Batch Open: 12/2/2016 3:24:00PM

Method Code: 320-537_Prep-320

Batch End:

Line	Sample ID	Weight (g)	Volume (mL)	Replicates	Date	5_Days	Chlorine ND
11	320-23917-A-28 (537_DOD5)	287.29 g 26.29 g	261 mL 1 mL	9	12/5/16	4	Chlorine ND
12	320-23929-A-1 (537_DOD5)	284.94 g 27.41 g	257.5 mL 1 mL	9	12/5/16	4	Chlorine ND
13	320-23929-A-2 (537_DOD5)	279.62 g 26.14 g	253.5 mL 1 mL	9	12/5/16	4	Chlorine ND
14	320-23929-A-3 (537_DOD5)	284.03 g 27.38 g	256.7 mL 1 mL	9	12/5/16	4	Chlorine ND
15	320-23929-A-4 (537_DOD5)	285.07 g 26.77 g	258.3 mL 1 mL	9	12/5/16	4	Chlorine ND
16	320-23929-A-5 (537_DOD5)	279.04 g 27.22 g	251.8 mL 1 mL	9	12/5/16	4	Chlorine ND
17	320-23929-A-6 (537_DOD5)	285.91 g 26.90 g	259 mL 1 mL	9	12/5/16	4	Chlorine ND
18	320-23929-A-7 (537_DOD5)	281.98 g 27.51 g	254.5 mL 1 mL	9	12/5/16	4	Chlorine ND
19	320-23929-A-8 (537_DOD5)	283.53 g 26.13 g	257.4 mL 1 mL	9	12/5/16	4	Chlorine ND
20	320-23929-A-9 (537_DOD5)	281.97 g 27.32 g	254.7 mL 1 mL	9	12/5/16	4	Chlorine ND
21	320-23929-A-10 (537_DOD5)	280.22 g 26.82 g	253.4 mL 1 mL	9	12/5/16	4	Chlorine ND
22	320-23919-A-1 (537_DOD5)	282.15 g 27.77 g	254.4 mL 1 mL	9	12/5/16	4	Chlorine ND

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-140400

Analyst: Marchenko, Veronika P

Batch Open: 12/2/2016 3:24:00PM

Method Code: 320-537_Prep-320

Batch End:

320-23919-A-2 (537_DOD5)	N/A (320-23919-1)	284.16 g	257.4 mL	9	12/5/16	5_Days	4	Chlorine ND
		26.81 g	1 mL					



Batch Notes

Manifold ID 1,3

Trizma ID SLBN2122V

SPE Cartridge ID 6332578-03

Methanol ID 789821

Reagent Water ID 12-02-16

Pipette ID MD05306

Analyst ID - TA Reagent Drop VPM

Analyst ID - TA Reagent Drop Witness KMK

Analyst ID - SU Reagent Drop VPM

Analyst ID - SU Reagent Drop Witness KMK

Analyst ID - IS Reagent Drop VPM (791202) 20uL exp. 3/19/17

Analyst ID - IS Reagent Drop Witness NSH

Batch Comment NA

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Marchenko, Veronika P

Batch Number: 320-140400

Method Code: 320-537_Prep-320

Batch Open: 12/2/2016 3:24:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-140400/1	LC537-SU_00022	50 uL	1 mL	VPM 12-02-16	KMK 12-2-16
LLCS 320-140400/2	LC537-LSP_00016	50 uL	1 mL		
LLCS 320-140400/2	LC537-SU_00022	50 uL	1 mL		
LLCSD 320-140400/3	LC537-LSP_00016	50 uL	1 mL		
LLCSD 320-140400/3	LC537-SU_00022	50 uL	1 mL		
320-23917-A-21	LC537-SU_00022	50 uL	1 mL		
320-23917-A-22	LC537-SU_00022	50 uL	1 mL		
320-23917-A-23	LC537-SU_00022	50 uL	1 mL		
320-23917-A-24	LC537-SU_00022	50 uL	1 mL		
320-23917-A-25	LC537-SU_00022	50 uL	1 mL		
320-23917-A-26	LC537-SU_00022	50 uL	1 mL		
320-23917-A-27	LC537-SU_00022	50 uL	1 mL		
320-23917-A-28	LC537-SU_00022	50 uL	1 mL		
320-23929-A-1	LC537-SU_00022	50 uL	1 mL		
320-23929-A-2	LC537-SU_00022	50 uL	1 mL		
320-23929-A-3	LC537-SU_00022	50 uL	1 mL		
320-23929-A-4	LC537-SU_00022	50 uL	1 mL		
320-23929-A-5	LC537-SU_00022	50 uL	1 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Marchenko, Veronika P

Batch Number: 320-140400

Method Code: 320-537_Prep-320

Batch Open: 12/2/2016 3:24:00PM

Batch End:

320-23929-A-6	LC537-SU_00022	50 uL	1 mL	VPM 12-02-16	KMK 12-2-16
320-23929-A-7	LC537-SU_00022	50 uL	1 mL		
320-23929-A-8	LC537-SU_00022	50 uL	1 mL		
320-23929-A-9	LC537-SU_00022	50 uL	1 mL		
320-23929-A-10	LC537-SU_00022	50 uL	1 mL		
320-23919-A-1	LC537-SU_00022	50 uL	1 mL		
320-23919-A-2	LC537-SU_00022	50 uL	1 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

Preparation Batch Number(s): 140400

Test: 537-0005 -Push-

Earliest Holding Time: 12/12/16

Sample List Tab		1 st Level Reviewer	2 nd Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		/	/
Method/sample/login/QAS checked and correct		/	/
Worksheet Tab		1 st Level Reviewer	2 nd Level Reviewer
All samples properly preserved		/	/
Weights in anticipated range and not targeted		/	/
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)		/	/
The pH is transcribed correctly in TALS		/	/
All additional information transcribed into TALS is correct and raw data is attached		/	/
Comments are transcribed correctly in TALS		/	/
Reagents Tab		1 st Level Reviewer	2 nd Level Reviewer
All necessary reagents not expired and entered into TALS		/	/
All spike amounts correct and added to necessary samples and QC		/	/
Batch Information		1 st Level Reviewer	2 nd Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1st Level Reviewer: VPM

Date: VPM 12/03/16

2nd Level Reviewer: NSH

Date: 12-03-16

Comments: _____

Shipping and Receiving Documents


West Sacramento, CA 95605
phone 916 373 5600 fax

Regulatory Program: DW NPDES RCRA Other:

TestAmerica Laboratories, Inc.

Client Contact: **Tiffany Hill** Project Manager: **Katie Tippin** Tel/Fax: (757) 671-6258
 Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
 TAT if different from Below: 7 Day 2 weeks 1 week 2 days 1 day

Project Chemist: **1100 NE Circle Blvd Ste 300 Corvallis, OR 97330 (541) 908-3794**
 Project Name: **CTO-08** Site: **OLF Coupeville** P O #: **100067106050 - 6795580.09.F.I.F.S**
 Date: **11/2016** Carrier: **FedEx** COC No: **1** of **2** COCs
 Sampler: **1**
 For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (G-Comp, G-grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	USEPA Method 537 (PFOA, PFOS, and PFBS)	Sample Specific Notes:
WI-CV-1RW01-1116	11/28/16	1325	G	DW	1	N	N	X	 320-23917 Chain of Custody
WI-CV-1FB01-1116	11/28/16	1325	G	DW	1	N	N	X	
WI-CV-1RW02-1116	11/28/16	1405	G	DW	1	N	N	X	
WI-CV-1FB02-1116	11/28/16	1404	G	DW	1	N	N	X	
WI-CV-1RW03-1116	11/28/16	1509	G	DW	2	N	N	X	
WI-CV-1FB03-1116	11/28/16	1508	G	DW	2	N	N	X	
WI-CV-1RW04-1116	11/28/16	1610	G	DW	2	N	N	X	
WI-CV-1FB04-1116	11/28/16	1609	G	DW	2	N	N	X	
WI-CV-1RW05-1116	11/28/16	1717	G	DW	2	N	N	X	
WI-CV-1FB05-1116	11/28/16	1716	G	DW	2	N	N	X	
WI-CV-2RW01-1116	11/28/16	1315	G	DW	1	N	N	X	
WI-CV-2FB01-1116	11/28/16	1316	G	DW	1	N	N	X	

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: Yes No
 Relinquished by: **Eric Epple** Company: **CH2M** Date/Time: **11-29-16/1600** Received by: **Troy G. Turpen** Company: **THS** Date/Time: **12/1/16 09:55D**
 Relinquished by: _____ Company: _____ Date/Time: _____
 Relinquished by: _____ Company: _____ Date/Time: _____

Cooler Temp. (°C): Obs'd **1.8** Cor'd **0.7** Term ID No.: **12**
 Received in Laboratory by: _____ Company: _____ Date/Time: _____

TestAmerica Sacramento
880 Riverside Parkway

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento, CA, 95605
phone 916.373.5600 fax

Regulatory Program: DW NPDES RCRA Other:

TestAmerica Laboratories Inc.
COC No: 1 of 3 COCs

Client Contact
Tiffany Hill
Project Chemist
1100 NE Circle Blvd Ste 300 Corvallis, OR 97330
(541) 768-3109
(541) 908-3794
Project Name: CTO-08
Site: OLF Coupeville
P O #: 100067106050 - 679580.09.F1.FS

Project Manager: Katie Tippin
Tel/Fax: (757) 671-6258

Site Contact: Eric Epple
Lab Contact: Laura Turpen

Date: 11/ / 2016
Carrier: FedEx

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS

TAT if different from Below: 7 Day
 2 weeks
 1 week
 2 days
 1 day

Filtered Sample (Y / N)
Perform MS / MSD (Y / N)
USEPA Method 537 (PFOA, PFOS, and PFBS)

Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (G-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	USEPA Method 537 (PFOA, PFOS, and PFBS)
WL-CV-2RW02-1116	11/28/16	1504	G	DW	1	N	N	X
1 WL-CV-2FEB02-1116	11/28/16	1505	G	DW	1	N	N	X
WL-CV-2RW03-1116	11/28/16	1605	G	DW	2	N	N	X
WL-CV-2FEB03-1116	11/28/16	1606	G	DW	2	N	N	X
WL-CV-2RW04-1116	11/28/16	1659	G	DW	2	N	N	X
WL-CV-2FEB04-1116	11/28/16	1700	G	DW	2	N	N	X
WL-CV-3RW01-1116	11/28/16	1314	G	DW	1	N	N	X
WL-CV-3FEB01-1116	11/28/16	1315	G	DW	1	N	N	X
WL-CV-3RW02-1116	11/28/16	1414	G	DW	1	N	N	X
WL-CV-3FEB02-1116	11/28/16	1415	G	DW	1	N	N	X
WL-CV-3RW03-1116	11/28/16	1511	G	DW	1	N	N	X
WL-CV-3FEB03-1116	11/28/16	1512	G	DW	1	N	N	X

Sample Specific Notes:

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other _____
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
 Return to Client Disposal by Lab Archive for _____ Months

Custody Seals Intact: Yes No

Custody Seal No.:

Relinquished by: *Eric Epple* Company: CH2M Date/Time: 11-21-16/1600 Received by: *Troy G. Turpen* Company: *THS* Date/Time: 02/1/16 09250

Relinquished by: _____ Company: _____ Date/Time: _____ Received in Laboratory by: _____ Company: _____ Date/Time: _____

Relinquished by: _____ Company: _____ Date/Time: _____ Received in Laboratory by: _____ Company: _____ Date/Time: _____

Cooler Temp. (°C): Obs'd: 16 Cor'd: 0-4 Term ID No.: 12

West Sacramento, CA 95605
phone 916.373.5600 fax

Regulatory Program: DW HPCES RCRA Other:

TestAmerica Laboratories Inc.

Client Contact: **Tiffany Hill** Project Manager: **Katie Tippin** Date: **11/20/16**
 Project Chemist: **1100 NE Circle Blvd Ste 300 Corvallis, OR 97330** Tel/fax: **(757) 671-6258** Lab Contact: **Laura Turpen** Carrier: **FedEx**
 COC No: **1** of **2** COCs

Project Name: **CTO-08** Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
 Site: **OLF Coupeville** TAT if different from Below: 7-Day 2 weeks 1 week 2 days 1 day
 P O #: **100067106050 - 679580.09 F.I.F.S.**

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grav)	Matrix	# of Cont.	Filtered Sample (Y/N)		Perform MS / MSD (Y/N)		USEPA Method 537 (PFOA, PFOS, and PFBS)
						Y	N	Y	N	
WI-CV-3RW04-1116	11/28/16	1617	G	DW	2					X
WI-CV-3FB04-1116	11/28/16	1618	G	DW	2					X
WI-CV-3RW05-1116	11/28/16	1808	G	DW	2					X
WI-CV-3FB05-1116	11/28/16	1809	G	DW	2					X

Preservation Used: **1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other**
 Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Dispose by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments: **Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Custody Seals Intact: Yes No Cooler Temp. (°C): Obs'd: **1.6** Cor'd: **0.7** Therm ID No.: **02**
 Relinquished by: **Eric Eple** Company: **CH2M** Date/Time: **11-20-16/1600** Received by: **Laura Turpen** Company: **THS** Date/Time: **12/1/16 09:52**
 Relinquished by: _____ Company: _____ Date/Time: _____ Received in Laboratory by: _____ Company: _____ Date/Time: _____

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 320-23917-1

Login Number: 23917
List Number: 1
Creator: Hytrek, Cheryl

List Source: TestAmerica Sacramento

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

**DATA VALIDATION SUMMARY REPORT
WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
 SDG: 320-23917
 Laboratory: Test America, Sacramento, California
 Site: Whidbey Island, CTO-0008, Washington
 Date: December 21, 2016

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW01-1116	320-23917-1	Water
1DL	WI-CV-1RW01-1116DL	320-23917-1DL	Water
2	WI-CV-1FB01-1116	320-23917-2	Water
3	WI-CV-1RW02-1116	320-23917-3	Water
4	WI-CV-1FB02-1116	320-23917-4	Water
5	WI-CV-1RW03-1116	320-23917-5	Water
6	WI-CV-1FB03-1116	320-23917-6	Water
7	WI-CV-1RW04-1116	320-23917-7	Water
8	WI-CV-1FB04-1116	320-23917-8	Water
9	WI-CV-1RW05-1116	320-23917-9	Water
10	WI-CV-1FB05-1116	320-23917-10	Water
11	WI-CV-2RW01-1116	320-23917-11	Water
12	WI-CV-2FB01-1116	320-23917-12	Water
13	WI-CV-2RW02-1116	320-23917-13	Water
14	WI-CV-2FB02-1116	320-23917-14	Water
15	WI-CV-2RW03-1116	320-23917-15	Water
16	WI-CV-2FB03-1116	320-23917-16	Water
17	WI-CV-2RW04-1116	320-23917-17	Water
18	WI-CV-2FB04-1116	320-23917-18	Water
19	WI-CV-3RW01-1116	320-23917-19	Water
20	WI-CV-3FB01-1116	320-23917-20	Water
21	WI-CV-3RW02-1116	320-23917-21	Water
22	WI-CV-3FB02-1116	320-23917-22	Water
23	WI-CV-3RW03-1116	320-23917-23	Water
24	WI-CV-3FB03-1116	320-23917-24	Water
25	WI-CV-3RW04-1116	320-23917-25	Water
26	WI-CV-3FB04-1116	320-23917-26	Water
27	WI-CV-3RW05-1116	320-23917-27	Water
28	WI-CV-3FB05-1116	320-23917-28	Water

A full data validation was performed on the analytical data for fourteen water samples and fourteen aqueous equipment blank samples collected on November 28, 2016 by CH2M HILL at the Whidbey Island site in Washington. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis
PFCs

Method References
USEPA Method 537 Rev 1.1 Modified

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM), Version 5.0 (DoD 2013) and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA “Contract Laboratories Program National Functional Guidelines for Superfund Organic Methods Data Review,” August 2014;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Gas Chromatography/Mass Spectrometry (GC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were minor rejections of data. This data cannot be used in the decision-making process for this project.

- All PFCs were rejected in one field blank sample due to severely low surrogate recoveries.

Overall the remaining data is acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

Perfluorinated Compounds (PFCs)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

GC/MS Tuning

- All criteria were met.

Initial Calibration

- All percent difference (%D) or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- The field blank samples were free of contamination.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values except for the following.

Sample ID	Surrogate	%R	Qualifier
20	13C2-PFHxA	0.1%	(R) - Entire Sample
	13C2-PFDA	0.3%	

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- A MS/MSD sample was not collected.

Laboratory Control Samples/Laboratory Control Sample Duplicates

- The LCS/LCSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria except for the following.

Sample ID	Internal Standard	Area Count	Qualifier
1DL	13C2-PFOA	Severely Low	J - PFOA Only Compound Reported
	13C4-PFOS	Severely Low	

Target Compound Identification

- All mass spectra and quantitation criteria were met.

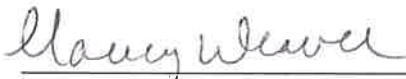
Compound Quantitation

- EDS Sample ID #1 was analyzed at a 5X dilution for PFOA due to a high concentration. The reporting limits were adjusted accordingly. No action was required.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: 
 Nancy Weaver
 Senior Chemist

Dated: 12/20/16

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1RW01-1116 Lab Sample ID: 320-23917-1
 Matrix: Water Lab File ID: 05DEC2016A6A_093.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:25
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 269.1(mL) Date Analyzed: 12/07/2016 13:32
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.045	U M	0.056	0.045	0.014
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	111		70-130
STL00996	13C2 PFDA	112		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

10L

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1RW01-1116 DL Lab Sample ID: 320-23917-1 DL
 Matrix: Water Lab File ID: 05DEC2016A6A_087.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:25
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 269.1(mL) Date Analyzed: 12/07/2016 10:34
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 5
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.44	✓ J	0.14	0.11	0.044

ISL

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	108		70-130
STL00996	13C2 PFDA	103		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

2

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.: _____	
Client Sample ID: <u>WI-CV-1FB01-1116</u>	Lab Sample ID: <u>320-23917-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_088.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 13:25</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 07:42</u>
Sample wt/vol: <u>278.9(mL)</u>	Date Analyzed: <u>12/07/2016 11:04</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140943</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U A	0.027	0.022	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.099	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	103		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

3

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.: _____	
Client Sample ID: <u>WI-CV-1RW02-1116</u>	Lab Sample ID: <u>320-23917-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_089.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 14:05</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 07:42</u>
Sample wt/vol: <u>279.3(mL)</u>	Date Analyzed: <u>12/07/2016 11:34</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140943</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U ✓	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.13	0.098	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	96		70-130
STL00996	13C2 PFDA	89		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

4

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1FB02-1116 Lab Sample ID: 320-23917-4
 Matrix: Water Lab File ID: 05DEC2016A6A_090.d
 Analysis Method: 537 Date Collected: 11/28/2016 14:04
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 278.7(mL) Date Analyzed: 12/07/2016 12:03
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.022	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.099	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	98		70-130
STL00996	13C2 PFDA	105		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

5

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.: _____	
Client Sample ID: <u>WI-CV-1RW03-1116</u>	Lab Sample ID: <u>320-23917-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_091.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 15:09</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 07:42</u>
Sample wt/vol: <u>267.4(mL)</u>	Date Analyzed: <u>12/07/2016 12:33</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140943</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.045	U	0.056	0.045	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0088
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	120		70-130
STL00996	13C2 PFDA	109		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1FB03-1116 Lab Sample ID: 320-23917-6
 Matrix: Water Lab File ID: 05DEC2016A6A_092.d
 Analysis Method: 537 Date Collected: 11/28/2016 15:08
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 280.2(mL) Date Analyzed: 12/07/2016 13:02
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140943 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.098	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	95		70-130
STL00996	13C2 PFDA	99		70-130

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Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.: _____	
Client Sample ID: <u>WI-CV-1RW04-1116</u>	Lab Sample ID: <u>320-23917-7</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_097.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 16:10</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 07:42</u>
Sample wt/vol: <u>274.2(mL)</u>	Date Analyzed: <u>12/07/2016 15:30</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140945</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U 1	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0086
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	116		70-130
STL00996	13C2 PFDA	117		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1FB04-1116 Lab Sample ID: 320-23917-8
 Matrix: Water Lab File ID: 05DEC2016A6A_098.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:09
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 283.3(mL) Date Analyzed: 12/07/2016 16:00
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	115		70-130
STL00996	13C2 PFDA	112		70-130

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Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.: _____	
Client Sample ID: <u>WI-CV-1RW05-1116</u>	Lab Sample ID: <u>320-23917-9</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_099.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 17:17</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 07:42</u>
Sample wt/vol: <u>271.6(mL)</u>	Date Analyzed: <u>12/07/2016 16:30</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140945</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U M	0.028	0.022	0.0087
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	110		70-130
STL00996	13C2 PFDA	101		70-130

New. 2/2/18

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10

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-1FB05-1116 Lab Sample ID: 320-23917-10
 Matrix: Water Lab File ID: 05DEC2016A6A_100.d
 Analysis Method: 537 Date Collected: 11/28/2016 17:16
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 282.6(mL) Date Analyzed: 12/07/2016 16:59
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U Y	0.027	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	114		70-130
STL00996	13C2 PFDA	109		70-130

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11

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2RW01-1116 Lab Sample ID: 320-23917-11
 Matrix: Water Lab File ID: 05DEC2016A6A_101.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:15
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 253.5(mL) Date Analyzed: 12/07/2016 17:29
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U N	0.030	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	122		70-130
STL00996	13C2 PFDA	119		70-130

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Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.: _____	
Client Sample ID: <u>WI-CV-2FB01-1116</u>	Lab Sample ID: <u>320-23917-12</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_102.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 13:16</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 07:42</u>
Sample wt/vol: <u>276(mL)</u>	Date Analyzed: <u>12/07/2016 17:58</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140945</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.043

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

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13

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.:	
Client Sample ID: <u>WI-CV-2RW02-1116</u>	Lab Sample ID: <u>320-23917-13</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_106.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 15:04</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 07:42</u>
Sample wt/vol: <u>259.5(mL)</u>	Date Analyzed: <u>12/07/2016 19:57</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture:	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140945</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.058	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.15		0.029	0.023	0.0091
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	112		70-130
STL00996	13C2 PFDA	113		70-130

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Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.:	
Client Sample ID: <u>WI-CV-2FB02-1116</u>	Lab Sample ID: <u>320-23917-14</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_104.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 15:05</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 07:42</u>
Sample wt/vol: <u>279.6(mL)</u>	Date Analyzed: <u>12/07/2016 18:58</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture:	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140945</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U N	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.13	0.098	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	105		70-130
STL00996	13C2 PFDA	106		70-130

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15

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2RW03-1116 Lab Sample ID: 320-23917-15
 Matrix: Water Lab File ID: 05DEC2016A6A_105.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:05
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 245.8(mL) Date Analyzed: 12/07/2016 19:27
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140945 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.049	U	0.061	0.049	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U M	0.031	0.024	0.0096
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	117		70-130
STL00996	13C2 PFDA	111		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2FB03-1116 Lab Sample ID: 320-23917-16
 Matrix: Water Lab File ID: 05DEC2016A6A_110.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:06
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 280.7(mL) Date Analyzed: 12/07/2016 21:55
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.053	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U M	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.098	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	107		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2RW04-1116 Lab Sample ID: 320-23917-17
 Matrix: Water Lab File ID: 05DEC2016A6A_111.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:59
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 267.2(mL) Date Analyzed: 12/07/2016 22:25
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.022	J	0.056	0.045	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.015	J V	0.028	0.022	0.0088
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.045

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	101		70-130
STL00996	13C2 PFDA	114		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-2FB04-1116 Lab Sample ID: 320-23917-18
 Matrix: Water Lab File ID: 05DEC2016A6A_112.d
 Analysis Method: 537 Date Collected: 11/28/2016 17:00
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 288.6(mL) Date Analyzed: 12/07/2016 22:54
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U 1	0.052	0.042	0.013
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U 1	0.026	0.021	0.0082
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.095	U	0.12	0.095	0.041

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	105		70-130
STL00996	13C2 PFDA	107		70-130

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Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.: _____	
Client Sample ID: <u>WI-CV-3RW01-1116</u>	Lab Sample ID: <u>320-23917-19</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_113.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 13:14</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 07:42</u>
Sample wt/vol: <u>277.9(mL)</u>	Date Analyzed: <u>12/07/2016 23:24</u>
Con. Extract Vol.: <u>1.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140946</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U M	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U M	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.099	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	118		70-130
STL00996	13C2 PFDA	110		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB01-1116 Lab Sample ID: 320-23917-20
 Matrix: Water Lab File ID: 05DEC2016A6A_114.d
 Analysis Method: 537 Date Collected: 11/28/2016 13:15
 Extraction Method: 537 Date Extracted: 12/02/2016 07:42
 Sample wt/vol: 283.5(mL) Date Analyzed: 12/07/2016 23:54
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U R	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

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CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	0.1	M Q	70-130
STL00996	13C2 PFDA	0.3	M Q	70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3RW02-1116 Lab Sample ID: 320-23917-21
 Matrix: Water Lab File ID: 05DEC2016A6A_118.d
 Analysis Method: 537 Date Collected: 11/28/2016 14:14
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 256.4(mL) Date Analyzed: 12/08/2016 01:52
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.023	0.0092
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	106		70-130
STL00996	13C2 PFDA	107		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB02-1116 Lab Sample ID: 320-23917-22
 Matrix: Water Lab File ID: 05DEC2016A6A_119.d
 Analysis Method: 537 Date Collected: 11/28/2016 14:15
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 255.9(mL) Date Analyzed: 12/08/2016 02:22
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140946 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.023	0.0092
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	105		70-130
STL00996	13C2 PFDA	108		70-130

New 12/21/16

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23

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-23917-1</u>
SDG No.:	
Client Sample ID: <u>WI-CV-3RW03-1116</u>	Lab Sample ID: <u>320-23917-23</u>
Matrix: <u>Water</u>	Lab File ID: <u>05DEC2016A6A_123.d</u>
Analysis Method: <u>537</u>	Date Collected: <u>11/28/2016 15:11</u>
Extraction Method: <u>537</u>	Date Extracted: <u>12/02/2016 15:27</u>
Sample wt/vol: <u>250.2(mL)</u>	Date Analyzed: <u>12/08/2016 04:20</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>10(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture:	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>140947</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U M	0.060	0.048	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	108		70-130

Mw 12/21/16

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB03-1116 Lab Sample ID: 320-23917-24
 Matrix: Water Lab File ID: 05DEC2016A6A_124.d
 Analysis Method: 537 Date Collected: 11/28/2016 15:12
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 259.4(mL) Date Analyzed: 12/08/2016 04:50
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U	0.058	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U	0.029	0.023	0.0091
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	106		70-130
STL00996	13C2 PFDA	105		70-130

New 12/21/16

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3RW04-1116 Lab Sample ID: 320-23917-25
 Matrix: Water Lab File ID: 05DEC2016A6A_125.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:17
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 258.4(mL) Date Analyzed: 12/08/2016 05:19
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U	0.058	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U N	0.029	0.023	0.0091
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	108		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB04-1116 Lab Sample ID: 320-23917-26
 Matrix: Water Lab File ID: 05DEC2016A6A_126.d
 Analysis Method: 537 Date Collected: 11/28/2016 16:18
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 261.1(mL) Date Analyzed: 12/08/2016 05:49
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.057	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.023	0.0090
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	107		70-130
STL00996	13C2 PFDA	108		70-130

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27

Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3RW05-1116 Lab Sample ID: 320-23917-27
 Matrix: Water Lab File ID: 05DEC2016A6A_127.d
 Analysis Method: 537 Date Collected: 11/28/2016 18:08
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 251.8(mL) Date Analyzed: 12/08/2016 06:19
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.048	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	130		70-130
STL00996	13C2 PFDA	124		70-130

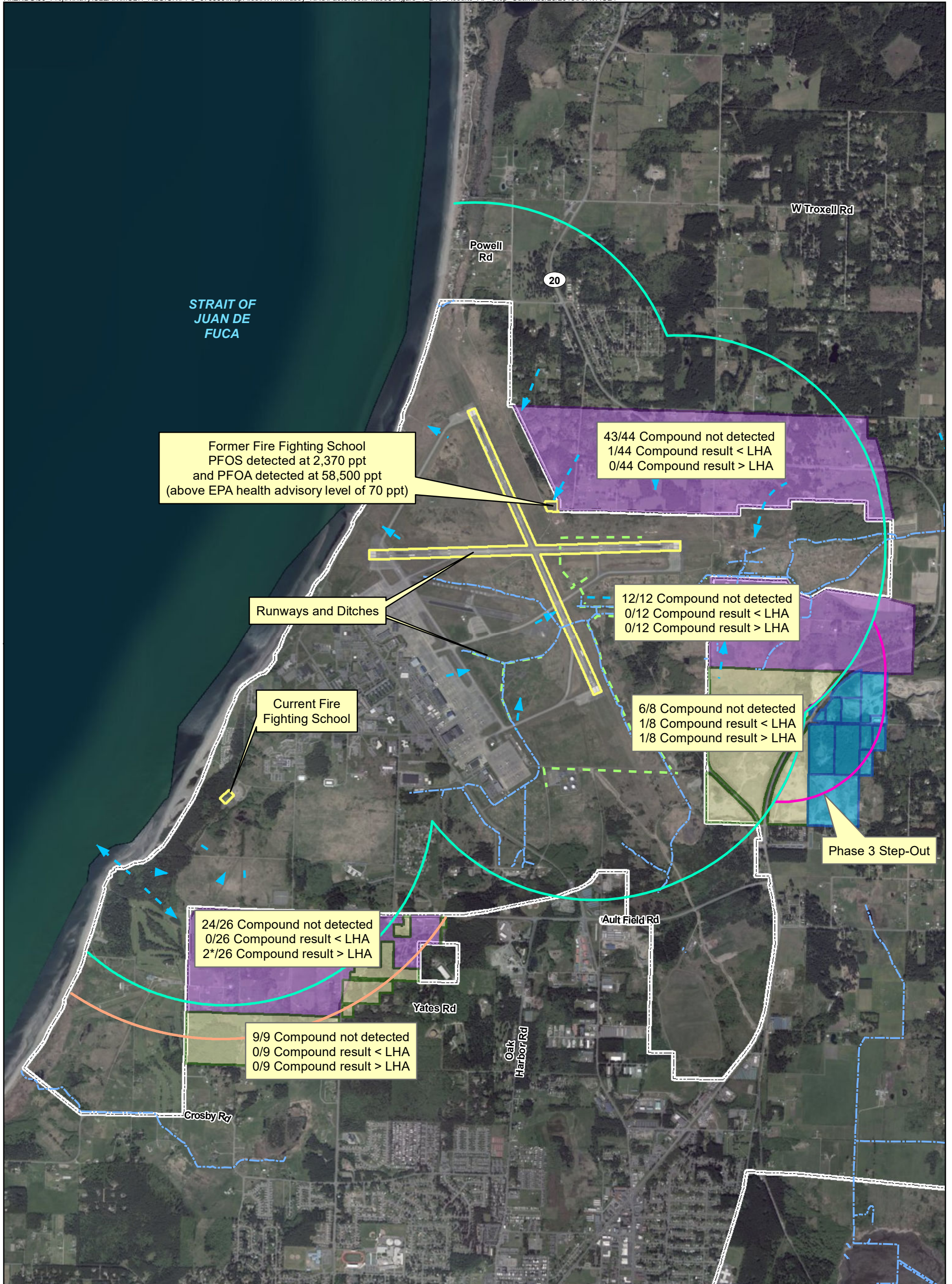
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Lab Name: TestAmerica Sacramento Job No.: 320-23917-1
 SDG No.: _____
 Client Sample ID: WI-CV-3FB05-1116 Lab Sample ID: 320-23917-28
 Matrix: Water Lab File ID: 05DEC2016A6A_128.d
 Analysis Method: 537 Date Collected: 11/28/2016 18:09
 Extraction Method: 537 Date Extracted: 12/02/2016 15:27
 Sample wt/vol: 261(mL) Date Analyzed: 12/08/2016 06:48
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 140947 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.046	U M	0.057	0.046	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	U M	0.029	0.023	0.0090
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.13	0.11	0.046

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	109		70-130
STL00996	13C2 PFDA	110		70-130



Former Fire Fighting School
 PFOS detected at 2,370 ppt
 and PFOA detected at 58,500 ppt
 (above EPA health advisory level of 70 ppt)

43/44 Compound not detected
 1/44 Compound result < LHA
 0/44 Compound result > LHA

Runways and Ditches

12/12 Compound not detected
 0/12 Compound result < LHA
 0/12 Compound result > LHA

Current Fire Fighting School

6/8 Compound not detected
 1/8 Compound result < LHA
 1/8 Compound result > LHA

Phase 3 Step-Out

24/26 Compound not detected
 0/26 Compound result < LHA
 2*/26 Compound result > LHA

9/9 Compound not detected
 0/9 Compound result < LHA
 0/9 Compound result > LHA

Legend

- 1 Mile Zone
- Half-mile Step-out Downgradient
- - - Surface Water
- - - Drainage Ditch
- Half-mile Step-out Downgradient
- Suspected Source Area
- Parcels in Phase 1 Sampling Area
- Parcels Identified in Phase 2 Sampling Area
- Parcels Identified in Phase 3 Sampling Area

- Base Boundary
- - - Inferred Groundwater Flow Direction

* Second result above the EPA health advisory is from a duplicate sample collected from the well with the first exceedance near Ault Field.

Note:
 PFOA and PFOS results reflected on figure,
 PFBS results discussed in Table 2 and text.



0 0.225 0.45
 Miles

1 inch = 0.45 mile
 Imagery Source: Esri

Figure 2
 Results for Drinking Water Well Sampling
 Ault Field
 Naval Air Station Whidbey Island
 Oak Harbor, Washington