

Gary G. Rogers
Environmental Manager
Orkin LLC
2170 Piedmont Road N.E.
Atlanta, GA 30324

Arcadis of New York, Inc.
855 Route 146
Suite 210
Clifton Park
New York 12065
Tel 518 250 7300
Fax 518 250 7301
www.arcadis.com

Subject:
Emerging Contaminants Sampling Report
Former Abalene Pest Control Site
Inactive Hazardous Waste Site No. 6-33-035
Clinton, New York

Environment

Date:

October 31, 2018

Dear Mr. Rogers:

Arcadis of New York, Inc. (Arcadis) has prepared this report to summarize the analytical results for groundwater samples collected in August 2018 in response to the New York State Department of Environmental Conservation's (NYSDEC's) May 8, 2018 and May 31, 2018 letters concerning sampling for emerging contaminants at the above-referenced site.

Contact:

Stefan Bagnato

Phone:

518-250-7334

FIELD ACTIVITIES

On August 27, 2018 Arcadis measured water levels in all site monitoring wells and collected groundwater samples from monitoring wells MW-1, MW-3, and MW-5. General field, sampling, handling, custody, and validation procedures were conducted in accordance with the NYSDEC-approved Remedial Investigation Work Plan (WP) and Sampling and Analysis Plan (SAP), with the exception of the following procedures and methods specific to emerging contaminants:

Email:

stefan.bagnato@arcadis.com

Our ref:

01368050.0000

- Disposable high-density polyethylene (HDPE) tubing was used for sampling in accordance with the NYSDEC's April 2018 Groundwater Sampling for Emerging Contaminants guidance.

One equipment blank was collected from the sample tubing. One blind field duplicate was collected at MW-3. One matrix spike / matrix spike duplicate was

collected. Groundwater samples were sent to Test America, Inc. for analysis of the following parameters:

- 21 compound target analyte list per- and polyfluoroalkyl substances (PFAS) by modified United States Environmental Protection Agency (USEPA) Method 537; and
- 1,4-Dioxane by USEPA Method 8270 in selective ion monitoring (SIM) mode.

Groundwater purge logs are included in Attachment 1. Analytical Laboratory Reporting Forms are included in Attachment 2.

In accordance with NYSDEC-approved Work Plan and Sampling and Analysis Plan for the site, data validation was performed for the August 2018 groundwater samples to ensure that the data generated provide sufficient information to achieve the project objectives. The Data Usability Summary Report is included in Attachment 3. Sample processing was generally conducted in compliance with the analytical protocol requirements and quality criteria. All data were classified as usable with some minor qualification, with the exception of perfluorohexanesulfonic acid (PFHxS) and perfluorobutyric acid (PFBA), which were edited to reflect non-detection due to responses in the associated blanks. It is noted that neither PFHxS nor PFBA currently have corresponding USEPA Health Advisory Limits (HALs).

RESULTS

Analytical results for groundwater samples are summarized in Table 1. As shown in Table 1, 1,4-dioxane was not detected in any of the groundwater samples collected in August 2018. As shown in Table 1, none of the groundwater samples collected in August 2018 contained PFAS concentrations greater than the corresponding USEPA HALs. Groundwater elevations are summarized in Table 2. The groundwater potentiometric surface map (Figure 1) indicates that the shallow groundwater flow direction is generally to the north-northwest, consistent with previous sampling events.

CONCLUSIONS

The results of the August 2018 groundwater sampling indicate that groundwater at the site does not contain 1,4-dioxane or PFAS compounds at concentrations greater than applicable guidance values. Therefore, additional sampling for emerging contaminants at this site does not appear warranted.

Mr. Gary Rogers
October 31, 2018

If you have any questions concerning this matter, please call me at (518) 250-7334.

Sincerely,

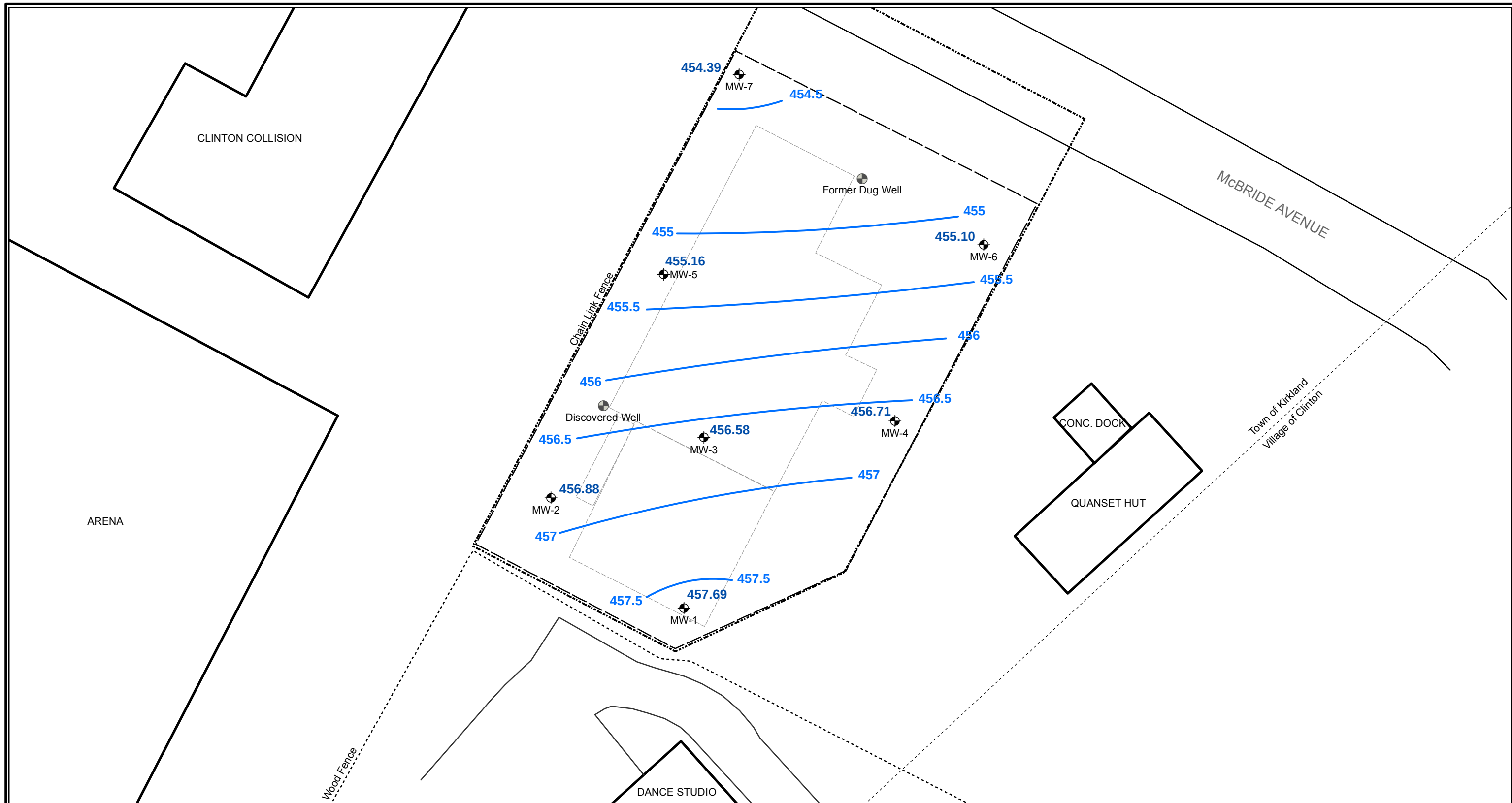
Arcadis of New York, Inc.

A handwritten signature in black ink, appearing to read 'Stefan Bagnato', with a stylized, cursive script.

Stefan Bagnato, P.G.
Senior Geologist

Attachments

Document Path: G:\GISMOD\1368050\PotMap.mxd



- Legend**
- Groundwater Elevation Contour
 - 456 Groundwater Elevation (in feet above mean sea level)
 - Groundwater Monitoring Wells
 - Former Wells
 - Property Boundary
 - Town Line
 - Former Bldg Footprint

0 30 60 120 Feet



ORKIN LLC
FORMER ABALENE PEST CONTROL SITE (# 6-33-035)
CLINTON, ONEIDA COUNTY, NEW YORK
EMERGING CONTAMINANT SAMPLING

**POTENTIOMETRIC CONTOUR MAP
AUGUST 2018**



FIGURE

1

Table 1
Summary of Emerging Contaminant Sampling Results
Former Abalene Pest Control Facility
Clinton, NY

Sample Location		USEPA Health Advisory Limit (HAL) for drinking water	MW-1	MW-3	DUP-01 (MW-3)	MW-5	EB-01
Sampling Date	Units		08/27/18	08/27/18	08/27/18	08/27/18	08/27/18
<i>Analyte</i>							
1,4-Dioxane	µg/L	---	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	ng/L	---	17 U	1.7 U	17 U	17 U	17 U
1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	ng/L	---	17 U	1.7 U	17 U	17 U	17 U
2-(N-methyl perfluorooctanesulfonamido) acetic acid (NMeFOSAA)	ng/L	---	17 U	2.6 U	17 U	17 U	17 U
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine (NEtFOSAA)	ng/L	---	17 U	1.6 U	17 U	17 U	17 U
PERFLUOROBUTANESULFONIC ACID (PFBS)	ng/L	---	1.3 J	1.3 J	1.5 J	2.1	1.7 U
PERFLUOROBUTYRIC ACID (PFBA)	ng/L	---	1.7 U	0.29 U	2.0 U	2.3 U	3.7
PERFLUORODECANE SULFONIC ACID (PFDA)	ng/L	70*	1.7 U	0.27 U	1.7 U	1.7 U	1.7 U
PERFLUORODECANOIC ACID (PFDA)	ng/L	---	1.7 U	0.26 U	1.7 U	1.7 U	1.7 U
PERFLUORODODECANOIC ACID (PFDoA)	ng/L	---	1.7 U	0.46 U	1.7 U	1.7 U	1.7 U
PERFLUOROHEPTANE SULFONATE (PFHpS)	ng/L	---	1.7 U	0.16 U	1.7 U	1.7 U	1.7 U
PERFLUOROHEPTANOIC ACID (PFHpA)	ng/L	70*	0.23 J	0.26 J	0.30 J	0.40 J	1.7 U
PERFLUOROHEXANESULFONIC ACID (PFHxS)	ng/L	---	1.7 U	0.14 U	1.7 U	1.7 U	0.29 BJ
PERFLUOROHEXANOIC ACID (PFHxA)	ng/L	---	1.7 U	0.49 U	1.7 U	0.79 J	1.7 U
PERFLUORONONANOIC ACID (PFNA)	ng/L	---	0.30 J	0.23 U	1.7 U	1.7 U	1.7 U
PERFLUOROOCTANE SULFONAMIDE (FOSA)	ng/L	---	1.7 U	0.29 U	1.7 U	1.7 U	1.7 U
PERFLUOROOCTANE SULFONIC ACID (PFOS)	ng/L	---	2.3	2.2	1.9	1.5 J	1.7 U
PERFLUOROOCTANOIC ACID (PFOA)	ng/L	---	1.7 U	0.90 J	1.1 J	0.94 J	1.7 U
PERFLUOROPENTANOIC ACID (PFPeA)	ng/L	---	1.7 U	0.49 J	0.53 J	1.0 J	1.7 U
PERFLUOROTETRADECANOIC ACID (PFTeA)	ng/L	---	1.7 U	0.24 U	1.7 U	1.7 U	1.7 U
PERFLUOROTRIDECANOIC ACID (PFTriA)	ng/L	---	1.7 U	1.1 U	1.7 U	1.7 U	1.7 U
PERFLUOROUNDECANOIC ACID (PFUnA)	ng/L	---	1.7 U	0.93 U	1.7 U	1.7 U	1.7 U
Total PFOA+PFOS	ng/L	70	2.30	3.10	3.00	2.44	ND

Notes

U = Compound was not detected. The Reporting Limit (RL) is shown.

J = Estimated result.

B = Compound was found in the blank and the sample.

*The sum of PFOA and PFOS should not exceed 70 ng/L

µg/L = micrograms per liter

ng/L - Nanograms/Liter

--- No Guidance Value

DUP-01 is a duplicate sample collected from MW-3.

EB-01 is a QC sample performed on HDPE sample tubing

TABLE 2
SUMMARY OF GROUNDWATER ELEVATIONS
FORMER ABALENE PEST CONTROL
CLINTON, NEW YORK

Well	Measuring Point Elevation	Ground Elevation (feet)	4/21/2010		4/22/2010		4/23/2010		12/13/2010		8/25/2014		7/9/2015		8/27/2018	
			DTW (feet)	Elevation (feet)	DTW (feet)	Elevation (feet)	DTW (feet)	Elevation (feet)	DTW (feet)	Elevation (feet)	DTW (feet)	Elevation (feet)	DTW (feet)	Elevation (feet)	DTW (feet)	Elevation (feet)
MW-1	467.67	467.89	8.50	459.17	5.89	461.78	8.66	459.01	8.63	459.04	9.85	458.04	8.55	459.34	10.20	457.69
MW-2	466.82	467.15	8.08	458.74	8.13	458.69	8.21	458.61	8.12	458.70	9.55	457.60	8.11	459.04	10.27	456.88
MW-3	467.13	467.55	8.69	458.44	8.76	458.37	8.83	458.30	8.72	458.41	10.19	457.36	8.71	458.84	10.97	456.58
MW-4	467.41	467.81	8.93	458.48	9.01	458.40	9.09	458.32	8.98	458.43	10.45	457.36	8.88	458.93	11.10	456.71
MW-5	466.22	466.53	8.82	457.40	8.89	457.33	8.96	457.26	8.74	457.48	NM	NM	8.87	457.66	11.37	455.16
MW-6	466.89	467.13	9.42	457.47	9.49	457.40	9.55	457.34	9.37	457.52	11.07	456.06	9.40	457.73	12.03	455.10
MW-7	465.94	466.14	9.06	456.88	9.13	456.81	9.21	456.73	8.91	457.03	10.62	455.52	9.10	457.04	11.75	454.39

Notes:
Elevations are referenced to the North American Vertical Datum of 1988 (NAVD88).

ATTACHMENT 1

Orkin: Former Abalene Pest Control Site

Site

Emerging Contaminant
Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: A.Thomas
 Client / Job Number: Orkin/ 01368050.0000
 Weather: 80's, sunny

Well ID: MW-1
 Date: 8-27-2018
 Time In: 1115 Time Out: 1240

Well Information

Depth to Water: 10.21 (feet) (from MP)
 Total Depth: 14.53 (feet) (from MP)
 Length of Water Column: (feet) 4.32
 Volume of Water in Well: (gal) 0.704
 Intake depth for tubing: (feet) ~14'

Well Type: Flushmount ☒ Stick-Up ☐
 Well Material: Stainless Steel ☐ PVC ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐
 Well Diameter: 1" 2" Other:

Purging Information

Purging Method: Bailer ☐ Peristaltic ☒ Monsoon ☐ Other:
 Tubing/Bailer Material: Steel ☐ Polyethylene ☐ Teflon ☐ Other: HDPE
 Sampling Method: Bailer ☐ Peristaltic ☒ Monsoon ☐ Other:

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L = 3785 ml = 0.1337 cubic feet				

Pump Start Time: 1125
 Pump Stop Time: Water-Quality Meter Type: HANNA EA0335
 Total Volume Removed: 2.5 (gal) Did well go dry: Yes ☐ No ☒

Unit Stability			
pH	DO / Turb	Cond. / Temp	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1137	1142	1147	1152	1157	5			
Volume Purged (Gal)	0.5	0.9	1.3	1.7	2.1	A			
Rate (mL/min)						M			
Depth to Water (ft.)	10.36	10.38	10.38	10.38	10.38	P			
pH	7.47	7.46	7.45	7.44	7.43	L			
Temp. (C)	24.04	21.14	19.53	19.46	19.41	B			
Conductivity (mS/cm)	1.79	1.88	1.94	1.93	1.92	@ 1202			
Dissolved Oxygen (mg/L)	3.20	3.58	3.83	3.83	3.80				
ORP (mV)	-24	-23	-22	-21	-21				
Turbidity (NTU)	13.3	5.1	0.8	0.4	0.0				

Notes:

Sampling Information

Analyses	#	n	Laboratory
PFAs			TestAmerica
1,4 Dioxane			↓
Color:			
Odor:			
Appearance:			
Sample ID: MW-1(082718)			Sample Time: 1202
MS/MSD: Yes ☒ No ☐			
Duplicate: Yes ☐ No ☒			
Duplicate ID			Dup. Time:
Chain of Custody Signed By:			

Problems / Observations

Initial: Clear, odorless, colorless

Final: clear, odorless, colorless

Note: well had dehydrated tubing when opened. Disposed of the tubing and replaced with HDPE tubing.

Orkin: Former Abalone Pest Control Site

Site

Emerging Contaminant
Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: A.Thomas
 Client / Job Number: Orkin/ 01368050.0000
 Weather: High 80's, sunny

Well ID: MW-3
 Date: 8-27-2018
 Time In: 1242 Time Out: 1355

Well Information

Depth to Water: 10.97 (feet) (from MP)
 Total Depth: 14.19 (feet) (from MP)
 Length of Water Column: (feet) 3.22
 Volume of Water in Well: (gal) 0.524
 Intake depth for tubing: (feet) ~14

Well Type: Flushmount ☒ Stick-Up ☐
 Well Material: Stainless Steel ☐ PVC ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐
 Well Diameter: 1" ☐ 2" ☒ Other:

Purging Information

Purging Method: Bailer ☐ Peristaltic ☒ Monsoon ☐ Other:
 Tubing/Bailer Material: Steel ☐ Polyethylene ☐ Teflon ☐ Other: HDPE
 Sampling Method: Bailer ☐ Peristaltic ☒ Monsoon ☐ Other:

Pump Start Time: 1253

Pump Stop Time: Water-Quality Meter Type: Horiba FA0335

Total Volume Removed: 2.4 (gal) Did well go dry: Yes ☐ No ☒

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L = 3785 ml = 0.1337 cubic feet				

Unit Stability			
pH	DO / Turb	Cond. / Temp	ORP
▽ 0.1	▽ 10%	▽ 3.0%	▽ 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1255	1300	1305	1310	1315	1320	1325		
Volume Purged (Gal)	0.2	0.5	0.8	1.2	1.6	2.0	S		
Rate (mL/min)							A		
Depth to Water (ft.)	11.09	11.11	11.11	11.11	11.11	11.11	M		
pH	7.48	7.45	7.45	7.44	7.44	7.44	P		
Temp. (C)	16.92	15.99	15.78	15.60	15.54	15.49	L		
Conductivity (mS/cm)	2.13	2.14	2.14	2.14	2.14	2.14	E		
Dissolved Oxygen (mg/L)	3.62	3.58	3.61	3.74	3.80	3.88	@ 1325		
ORP (mV)	-23	-22	-21	-21	-21	-21			
Turbidity (NTU)	7.0	2.0	0.0	0.0	0.0	0.0			
Notes:									

Sampling Information

Analyses	#	n	Laboratory
PFA's			TestAmerica
1,4 Dioxane			↓
Color:			
Odor:			
Appearance:			
Sample ID: MW-3(082718)	Sample Time: 1325		
MS/MSD:	Yes ☐	No ☒	
Duplicate:	Yes ☒	No ☐	
Duplicate ID: Dup-01-082718	Dup. Time:		
Chain of Custody Signed By:			

Problems / Observations

Initial: clear, colorless, odorless

Final: clear, colorless, odorless

Note: Well had dedicated tubing when opened. Disposed of this tubing and replaced with HDPE tubing.

Orkin: Former Abalene Pest Control Site

Site

GROUNDWATER SAMPLING LOG

Emergency Contaminant
Sampling Event

Sampling Personnel: A. Thomas
 Client / Job Number: Orkin/ 01368050.0000
 Weather: High 80s, sunny

Well ID: MW-5
 Date: 8-27-18
 Time In: 1550 Time Out: 1655

Well Information

Depth to Water: 11.28 (feet) (from MP)
 Total Depth: 14.91 (feet) (from MP)
 Length of Water Column: (feet) 3.13
 Volume of Water in Well: (gal) 0.510
 Intake depth for tubing: (feet) ~14

Well Type: Flushmount ☒ Stick-Up ☐
 Well Material: Stainless Steel ☐ PVC ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐
 Well Diameter: 1" ☒ 2" ☐ Other: ☐

Purging Information

Purging Method: Bailer ☐ Peristaltic ☒ Monsoon ☐ Other: ☐
 Tubing/Bailer Material: Steel ☐ Polyethylene ☐ Teflon ☐ Other: HDPE
 Sampling Method: Bailer ☐ Peristaltic ☒ Monsoon ☐ Other: ☐

Pump Start Time: 1559

Pump Stop Time: 1643 Water-Quality Meter Type: Horiba FA0335

Total Volume Removed: 2.6 (gal) Did well go dry: Yes ☐ No ☒

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.163	0.653	1.469
1 gal = 3.785 L = 3785 ml = 0.1337 cubic feet				

Unit Stability			
pH	DO / Turb	Cond. /Temp	ORP
∇ 0.1	∇ 10%	∇ 3.0%	∇ 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1604	1609	1614	1619	1624	1629	S		
Volume Purged (Gal)	0.2	0.5	0.510	1.4	1.8	2.2	A		
Rate (mL/min)							M		
Depth to Water (ft.)	11.54	11.60	11.61	11.61	11.61	11.61	P		
pH	7.60	7.53	7.47	7.45	7.44	7.44	L		
Temp. (C)	16.58	15.75	15.35	15.26	15.20	15.19	E		
Conductivity (mS/cm)	1.63	1.64	1.66	1.67	1.68	1.68			
Dissolved Oxygen (mg/L)	1.58	1.04	0.85	0.75	0.69	0.70	1634		
ORP (mV)	-30	-26	-23	-22	-21	-21			
Turbidity (NTU)	44.7	7.4	1.1	0.0	0.0	0.0			
Notes:									

Sampling Information

Analyses	#	n	Laboratory
PFCs			TestAmerica
1,4 Dioxane			↓
Color:			
Odor:			
Appearance:			
Sample ID: MW-5 (082718)			Sample Time: 1634
MS/MSD: Yes ☐ No ☒			
Duplicate: Yes ☐ No ☒			
Duplicate ID: -			Dup. Time: -
Chain of Custody Signed By:			

Problems / Observations

Initial: mostly clear, colorless, odorless

Final: clear, colorless, odorless

Note: well had dedicated tubing. Discarded of this tubing and replaced with HDPE tubing.

- Some grassy/sediment on we probe after gauging OTB.

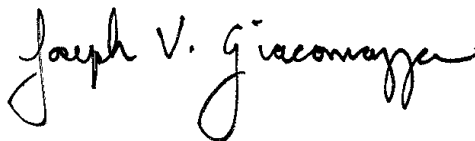
ATTACHMENT 2

ANALYTICAL REPORT

Job Number: 480-140926-1

Job Description: Orkin Former Abalene Pest Control Site

For:
ARCADIS U.S., Inc.
855 Route 146
Suite 210
Clifton Park, NY 12065
Attention: Stefan Bagnato



Approved for release.
Joe V Giacomazza
Project Management Assistant II
9/12/2018 5:54 PM

Designee for
Judy L Stone, Senior Project Manager
10 Hazelwood Drive, Amherst, NY, 14228-2298
(484)685-0868
judy.stone@testamericainc.com
09/12/2018

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

TestAmerica Buffalo NELAC Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NYDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

TestAmerica Laboratories, Inc.

TestAmerica Buffalo 10 Hazelwood Drive, Amherst, NY 14228-2298
Tel (716) 691-2600 Fax (716) 691-7991 www.testamericainc.com



Table of Contents

Cover Title Page	1
Data Summaries	4
Definitions	4
Report Narrative	5
Sample Summary	6
Detection Summary	7
Client Sample Results	8
Isotope Dilution Summary	14
QC Sample Results	16
QC Association	23
Chronicle	25
Method Summary	27
Certification Summary	28
Organic Sample Data	29
GC/MS Semi VOA	29
Method 8270D SIM-ID	29
Method 8270D SIM-ID QC Summary	30
Method 8270D SIM-ID Sample Data	39
Standards Data	64
Method 8270D SIM-ID ICAL Data	64
Method 8270D SIM-ID CCAL Data	78
Raw QC Data	81
Method 8270D SIM-ID Tune Data	81
Method 8270D SIM-ID Blank Data	93
Method 8270D SIM-ID LCS/LCSD Data	98
Method 8270D SIM-ID MS/MSD Data	102

Table of Contents

Method 8270D SIM-ID Run Logs	109
Method 8270D SIM-ID Prep Data	111
LCMS	112
Method PFC IDA	112
Method PFC IDA QC Summary	113
Method PFC IDA Sample Data	127
Standards Data	205
Method PFC IDA ICAL Data	205
Method PFC IDA CCAL Data	299
Raw QC Data	377
Method PFC IDA Blank Data	377
Method PFC IDA LCS/LCSD Data	392
Method PFC IDA MS/MSD Data	419
Method PFC IDA Run Logs	445
Method PFC IDA Prep Data	448
Shipping and Receiving Documents	450
Client Chain of Custody	451
Sample Receipt Checklist	454

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job Narrative
480-140926-1

Receipt

The samples were received on 8/28/2018 12:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.6° C and 1.8° C.

Receipt Exceptions

The following samples were received at the Sacramento laboratory outside the required temperature criteria: EB-01 (082718) (480-140926-1), MW-1 (082718) (480-140926-2), MW-1 (082718) (480-140926-2[MS]), MW-1 (082718) (480-140926-2[MSD]), MW-3 (082718) (480-140926-3), MW-5 (082718) (480-140926-4) and DUP-01 (082718) (480-140926-5). Temperature was 7.2 C, The ice was melted, there was probably not enough ice. The client was contacted and requested that we proceed with the analysis of these samples for PFAS.

GC/MS Semi VOA

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

LCMS

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

Organic Prep

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

Sample Summary

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 480-140926-1

Project/Site: Orkin Former Abalene Pest Control Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-140926-1	EB-01 (082718)	Water	08/27/18 11:05	08/28/18 00:45
480-140926-2	MW-1 (082718)	Water	08/27/18 12:02	08/28/18 00:45
480-140926-3	MW-3 (082718)	Water	08/27/18 13:25	08/28/18 00:45
480-140926-4	MW-5 (082718)	Water	08/27/18 16:34	08/28/18 00:45
480-140926-5	DUP-01 (082718)	Water	08/27/18 00:00	08/28/18 00:45

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Client Sample ID: EB-01 (082718)

Lab Sample ID: 480-140926-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.7		1.7	0.29	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.29	J B	1.7	0.14	ng/L	1			537 (modified)	Total/NA

Client Sample ID: MW-1 (082718)

Lab Sample ID: 480-140926-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.7		1.7	0.30	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.23	J	1.7	0.22	ng/L	1			537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.30	J	1.7	0.23	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.3	J	1.7	0.17	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.58	J B	1.7	0.15	ng/L	1			537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		1.7	0.47	ng/L	1			537 (modified)	Total/NA

Client Sample ID: MW-3 (082718)

Lab Sample ID: 480-140926-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.1		1.7	0.29	ng/L	1			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.49	J	1.7	0.41	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.26	J	1.7	0.21	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.90	J	1.7	0.72	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.3	J	1.7	0.17	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.64	J B	1.7	0.14	ng/L	1			537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		1.7	0.45	ng/L	1			537 (modified)	Total/NA

Client Sample ID: MW-5 (082718)

Lab Sample ID: 480-140926-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.3		1.7	0.30	ng/L	1			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.0	J	1.7	0.42	ng/L	1			537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.79	J	1.7	0.49	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.40	J	1.7	0.21	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.94	J	1.7	0.72	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.1		1.7	0.17	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.85	J B	1.7	0.14	ng/L	1			537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.5	J	1.7	0.46	ng/L	1			537 (modified)	Total/NA

Client Sample ID: DUP-01 (082718)

Lab Sample ID: 480-140926-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.0		1.7	0.30	ng/L	1			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.53	J	1.7	0.41	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.30	J	1.7	0.21	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.1	J	1.7	0.72	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.5	J	1.7	0.17	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.61	J B	1.7	0.14	ng/L	1			537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.9		1.7	0.46	ng/L	1			537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Client Sample ID: EB-01 (082718)

Date Collected: 08/27/18 11:05

Date Received: 08/28/18 00:45

Lab Sample ID: 480-140926-1

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		08/28/18 14:29	09/05/18 00:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	33		15 - 110				08/28/18 14:29	09/05/18 00:35	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.7		1.7	0.29	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluoropentanoic acid (PFPeA)	ND		1.7	0.41	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.49	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.21	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.71	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.92	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.46	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.24	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorohexanesulfonic acid (PFHxS)	0.29 J B		1.7	0.14	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.45	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.27	ng/L		09/08/18 10:16	09/10/18 11:24	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.29	ng/L		09/08/18 10:16	09/10/18 11:24	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.6	ng/L		09/08/18 10:16	09/10/18 11:24	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6	ng/L		09/08/18 10:16	09/10/18 11:24	1
6:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 11:24	1
8:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 11:24	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	94		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C5 PFPeA	96		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C2 PFHxA	91		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C4-PFHpA	96		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C4 PFOA	97		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C5 PFNA	98		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C2 PFDA	101		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C2 PFUnA	101		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C2 PFDoA	93		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C2-PFTeDA	90		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C3-PFBS	93		25 - 150				09/08/18 10:16	09/10/18 11:24	1
18O2 PFHxS	95		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C4 PFOS	98		25 - 150				09/08/18 10:16	09/10/18 11:24	1
13C8 FOSA	95		25 - 150				09/08/18 10:16	09/10/18 11:24	1
d3-NMeFOSAA	94		25 - 150				09/08/18 10:16	09/10/18 11:24	1
d5-NEtFOSAA	99		25 - 150				09/08/18 10:16	09/10/18 11:24	1
M2-6:2FTS	104		25 - 150				09/08/18 10:16	09/10/18 11:24	1
M2-8:2FTS	92		25 - 150				09/08/18 10:16	09/10/18 11:24	1

TestAmerica Buffalo

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Client Sample ID: MW-1 (082718)

Lab Sample ID: 480-140926-2

Date Collected: 08/27/18 12:02

Matrix: Water

Date Received: 08/28/18 00:45

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		08/28/18 14:29	09/05/18 00:11	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 110				08/28/18 14:29	09/05/18 00:11	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.7		1.7	0.30	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluoropentanoic acid (PFPeA)	ND		1.7	0.43	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.50	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluoroheptanoic acid (PFHpA)	0.23	J	1.7	0.22	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.74	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorononanoic acid (PFNA)	0.30	J	1.7	0.23	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorobutanesulfonic acid (PFBS)	1.3	J	1.7	0.17	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorohexanesulfonic acid (PFHxS)	0.58	J B	1.7	0.15	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorooctanesulfonic acid (PFOS)	2.3		1.7	0.47	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.28	ng/L		09/08/18 10:16	09/10/18 11:32	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.30	ng/L		09/08/18 10:16	09/10/18 11:32	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.7	ng/L		09/08/18 10:16	09/10/18 11:32	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6	ng/L		09/08/18 10:16	09/10/18 11:32	1
6:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 11:32	1
8:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 11:32	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	88		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C5 PFPeA	93		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C2 PFHxA	93		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C4-PFHpA	98		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C4 PFOA	98		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C5 PFNA	92		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C2 PFDA	98		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C2 PFUnA	102		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C2 PFDoA	93		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C2-PFTeDA	97		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C3-PFBS	92		25 - 150				09/08/18 10:16	09/10/18 11:32	1
18O2 PFHxS	97		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C4 PFOS	94		25 - 150				09/08/18 10:16	09/10/18 11:32	1
13C8 FOSA	92		25 - 150				09/08/18 10:16	09/10/18 11:32	1
d3-NMeFOSAA	88		25 - 150				09/08/18 10:16	09/10/18 11:32	1
d5-NEtFOSAA	98		25 - 150				09/08/18 10:16	09/10/18 11:32	1
M2-6:2FTS	114		25 - 150				09/08/18 10:16	09/10/18 11:32	1

TestAmerica Buffalo

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Client Sample ID: MW-1 (082718)

Date Collected: 08/27/18 12:02

Date Received: 08/28/18 00:45

Lab Sample ID: 480-140926-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-8:2FTS	99		25 - 150	09/08/18 10:16	09/10/18 11:32	1

Client Sample ID: MW-3 (082718)

Date Collected: 08/27/18 13:25

Date Received: 08/28/18 00:45

Lab Sample ID: 480-140926-3

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		08/28/18 14:29	09/05/18 00:58	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 110				08/28/18 14:29	09/05/18 00:58	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.1		1.7	0.29	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluoropentanoic acid (PFPeA)	0.49	J	1.7	0.41	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.49	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluoroheptanoic acid (PFHpA)	0.26	J	1.7	0.21	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorooctanoic acid (PFOA)	0.90	J	1.7	0.72	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.93	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.46	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.24	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorobutanesulfonic acid (PFBS)	1.3	J	1.7	0.17	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorohexanesulfonic acid (PFHxS)	0.64	J B	1.7	0.14	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorooctanesulfonic acid (PFOS)	2.2		1.7	0.45	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.27	ng/L		09/08/18 10:16	09/10/18 12:39	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.29	ng/L		09/08/18 10:16	09/10/18 12:39	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.6	ng/L		09/08/18 10:16	09/10/18 12:39	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6	ng/L		09/08/18 10:16	09/10/18 12:39	1
6:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 12:39	1
8:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 12:39	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	85		25 - 150				09/08/18 10:16	09/10/18 12:39	1
13C5 PFPeA	92		25 - 150				09/08/18 10:16	09/10/18 12:39	1
13C2 PFHxA	96		25 - 150				09/08/18 10:16	09/10/18 12:39	1
13C4-PFHpA	97		25 - 150				09/08/18 10:16	09/10/18 12:39	1
13C4 PFOA	99		25 - 150				09/08/18 10:16	09/10/18 12:39	1
13C5 PFNA	94		25 - 150				09/08/18 10:16	09/10/18 12:39	1
13C2 PFDA	101		25 - 150				09/08/18 10:16	09/10/18 12:39	1
13C2 PFUnA	98		25 - 150				09/08/18 10:16	09/10/18 12:39	1
13C2 PFDoA	94		25 - 150				09/08/18 10:16	09/10/18 12:39	1

TestAmerica Buffalo

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Client Sample ID: MW-3 (082718)

Lab Sample ID: 480-140926-3

Date Collected: 08/27/18 13:25

Matrix: Water

Date Received: 08/28/18 00:45

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
¹³ C2-PFTeDA	98		25 - 150	09/08/18 10:16	09/10/18 12:39	1
¹³ C3-PFBS	100		25 - 150	09/08/18 10:16	09/10/18 12:39	1
¹⁸ O2 PFHxS	101		25 - 150	09/08/18 10:16	09/10/18 12:39	1
¹³ C4 PFOS	95		25 - 150	09/08/18 10:16	09/10/18 12:39	1
¹³ C8 FOSA	96		25 - 150	09/08/18 10:16	09/10/18 12:39	1
d3-NMeFOSAA	96		25 - 150	09/08/18 10:16	09/10/18 12:39	1
d5-NEtFOSAA	98		25 - 150	09/08/18 10:16	09/10/18 12:39	1
M2-6:2FTS	113		25 - 150	09/08/18 10:16	09/10/18 12:39	1
M2-8:2FTS	99		25 - 150	09/08/18 10:16	09/10/18 12:39	1

Client Sample ID: MW-5 (082718)

Lab Sample ID: 480-140926-4

Date Collected: 08/27/18 16:34

Matrix: Water

Date Received: 08/28/18 00:45

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		08/28/18 14:29	09/05/18 01:21	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	34		15 - 110				08/28/18 14:29	09/05/18 01:21	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.3		1.7	0.30	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluoropentanoic acid (PFPeA)	1.0	J	1.7	0.42	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorohexanoic acid (PFHxA)	0.79	J	1.7	0.49	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluoroheptanoic acid (PFHpA)	0.40	J	1.7	0.21	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorooctanoic acid (PFOA)	0.94	J	1.7	0.72	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.94	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorobutanesulfonic acid (PFBS)	2.1		1.7	0.17	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorohexanesulfonic acid (PFHxS)	0.85	J B	1.7	0.14	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorooctanesulfonic acid (PFOS)	1.5	J	1.7	0.46	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.27	ng/L		09/08/18 10:16	09/10/18 12:47	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.30	ng/L		09/08/18 10:16	09/10/18 12:47	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.6	ng/L		09/08/18 10:16	09/10/18 12:47	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6	ng/L		09/08/18 10:16	09/10/18 12:47	1
6:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 12:47	1
8:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 12:47	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	83		25 - 150				09/08/18 10:16	09/10/18 12:47	1

TestAmerica Buffalo

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Client Sample ID: MW-5 (082718)

Lab Sample ID: 480-140926-4

Date Collected: 08/27/18 16:34

Matrix: Water

Date Received: 08/28/18 00:45

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	90		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C2 PFHxA	91		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C4-PFHpA	96		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C4 PFOA	98		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C5 PFNA	97		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C2 PFDA	97		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C2 PFUnA	96		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C2 PFDoA	92		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C2-PFTeDA	96		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C3-PFBS	95		25 - 150	09/08/18 10:16	09/10/18 12:47	1
18O2 PFHxS	99		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C4 PFOS	94		25 - 150	09/08/18 10:16	09/10/18 12:47	1
13C8 FOSA	92		25 - 150	09/08/18 10:16	09/10/18 12:47	1
d3-NMeFOSAA	97		25 - 150	09/08/18 10:16	09/10/18 12:47	1
d5-NEtFOSAA	94		25 - 150	09/08/18 10:16	09/10/18 12:47	1
M2-6:2FTS	99		25 - 150	09/08/18 10:16	09/10/18 12:47	1
M2-8:2FTS	94		25 - 150	09/08/18 10:16	09/10/18 12:47	1

Client Sample ID: DUP-01 (082718)

Lab Sample ID: 480-140926-5

Date Collected: 08/27/18 00:00

Matrix: Water

Date Received: 08/28/18 00:45

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		08/28/18 14:29	09/05/18 01:44	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	34		15 - 110				08/28/18 14:29	09/05/18 01:44	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.0		1.7	0.30	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluoropentanoic acid (PFPeA)	0.53	J	1.7	0.41	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.49	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluoroheptanoic acid (PFHpA)	0.30	J	1.7	0.21	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorooctanoic acid (PFOA)	1.1	J	1.7	0.72	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.93	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorobutanesulfonic acid (PFBS)	1.5	J	1.7	0.17	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorohexanesulfonic acid (PFHxS)	0.61	J B	1.7	0.14	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorooctanesulfonic acid (PFOS)	1.9		1.7	0.46	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.27	ng/L		09/08/18 10:16	09/10/18 12:54	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.30	ng/L		09/08/18 10:16	09/10/18 12:54	1

TestAmerica Buffalo

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Client Sample ID: DUP-01 (082718)

Lab Sample ID: 480-140926-5

Date Collected: 08/27/18 00:00

Matrix: Water

Date Received: 08/28/18 00:45

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.6	ng/L		09/08/18 10:16	09/10/18 12:54	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6	ng/L		09/08/18 10:16	09/10/18 12:54	1
6:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 12:54	1
8:2 FTS	ND		17	1.7	ng/L		09/08/18 10:16	09/10/18 12:54	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	86		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C5 PFPeA	94		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C2 PFHxA	97		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C4-PFHpA	98		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C4 PFOA	97		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C5 PFNA	98		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C2 PFDA	100		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C2 PFUnA	99		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C2 PFDoA	89		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C2-PFTeDA	93		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C3-PFBS	97		25 - 150				09/08/18 10:16	09/10/18 12:54	1
18O2 PFHxS	96		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C4 PFOS	97		25 - 150				09/08/18 10:16	09/10/18 12:54	1
13C8 FOSA	98		25 - 150				09/08/18 10:16	09/10/18 12:54	1
d3-NMeFOSAA	91		25 - 150				09/08/18 10:16	09/10/18 12:54	1
d5-NEtFOSAA	99		25 - 150				09/08/18 10:16	09/10/18 12:54	1
M2-6:2FTS	100		25 - 150				09/08/18 10:16	09/10/18 12:54	1
M2-8:2FTS	101		25 - 150				09/08/18 10:16	09/10/18 12:54	1

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-110)
480-140926-1	EB-01 (082718)	33
480-140926-2	MW-1 (082718)	32
480-140926-2 MS	MW-1 (082718)	33
480-140926-2 MSD	MW-1 (082718)	31
480-140926-3	MW-3 (082718)	32
480-140926-4	MW-5 (082718)	34
480-140926-5	DUP-01 (082718)	34
LCS 480-431806/2-A	Lab Control Sample	34
MB 480-431806/1-A	Method Blank	39

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
480-140926-1	EB-01 (082718)	94	96	91	96	97	98	101	101
480-140926-2	MW-1 (082718)	88	93	93	98	98	92	98	102
480-140926-2 MS	MW-1 (082718)	94	102	99	101	105	102	107	106
480-140926-2 MSD	MW-1 (082718)	92	98	101	99	99	96	107	97
480-140926-3	MW-3 (082718)	85	92	96	97	99	94	101	98
480-140926-4	MW-5 (082718)	83	90	91	96	98	97	97	96
480-140926-5	DUP-01 (082718)	86	94	97	98	97	98	100	99
LCS 320-244587/2-A	Lab Control Sample	93	94	94	97	100	98	97	108
LCSD 320-244587/3-A	Lab Control Sample Dup	94	95	94	95	96	94	98	103
MB 320-244587/1-A	Method Blank	95	91	95	93	97	101	103	99

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDaA (25-150)	PFTDA (25-150)	3C3-PFB: (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS: (25-150)	-NEtFOS/ (25-150)
480-140926-1	EB-01 (082718)	93	90	93	95	98	95	94	99
480-140926-2	MW-1 (082718)	93	97	92	97	94	92	88	98
480-140926-2 MS	MW-1 (082718)	90	102	102	107	100	102	103	106
480-140926-2 MSD	MW-1 (082718)	95	100	89	102	99	97	94	95
480-140926-3	MW-3 (082718)	94	98	100	101	95	96	96	98
480-140926-4	MW-5 (082718)	92	96	95	99	94	92	97	94
480-140926-5	DUP-01 (082718)	89	93	97	96	97	98	91	99
LCS 320-244587/2-A	Lab Control Sample	89	87	94	102	99	91	91	95
LCSD 320-244587/3-A	Lab Control Sample Dup	89	92	96	101	97	91	93	97
MB 320-244587/1-A	Method Blank	88	93	95	94	102	92	94	100

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
480-140926-1	EB-01 (082718)	104	92
480-140926-2	MW-1 (082718)	114	99
480-140926-2 MS	MW-1 (082718)	114	105
480-140926-2 MSD	MW-1 (082718)	102	101

TestAmerica Buffalo

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)	
		M262FTS (25-150)	M282FTS (25-150)
480-140926-3	MW-3 (082718)	113	99
480-140926-4	MW-5 (082718)	99	94
480-140926-5	DUP-01 (082718)	100	101
LCS 320-244587/2-A	Lab Control Sample	110	102
LCSD 320-244587/3-A	Lab Control Sample Dup	95	98
MB 320-244587/1-A	Method Blank	104	103

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDaA = 13C2 PFDaA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-431806/1-A
Matrix: Water
Analysis Batch: 432705

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431806

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		08/28/18 14:29	09/04/18 22:38	1
Isotope Dilution	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	39		15 - 110				08/28/18 14:29	09/04/18 22:38	1

Lab Sample ID: LCS 480-431806/2-A
Matrix: Water
Analysis Batch: 432705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431806

Analyte	LCS Result	LCS Qualifier	Spike Added	LCS Result	Unit	D	%Rec	Limits
1,4-Dioxane			1.00	0.999	ug/L		100	40 - 140
Isotope Dilution	%Recovery	LCS Qualifier	Limits					
1,4-Dioxane-d8	34		15 - 110					

Lab Sample ID: 480-140926-2 MS
Matrix: Water
Analysis Batch: 432705

Client Sample ID: MW-1 (082718)
Prep Type: Total/NA
Prep Batch: 431806

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	ND		1.00	0.988		ug/L		99	40 - 140
Isotope Dilution	%Recovery	MS Qualifier	Limits						
1,4-Dioxane-d8	33		15 - 110						

Lab Sample ID: 480-140926-2 MSD
Matrix: Water
Analysis Batch: 432705

Client Sample ID: MW-1 (082718)
Prep Type: Total/NA
Prep Batch: 431806

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	ND		1.00	0.986		ug/L		99	40 - 140	0	20
Isotope Dilution	%Recovery	MSD Qualifier	Limits								
1,4-Dioxane-d8	31		15 - 110								

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-244587/1-A
Matrix: Water
Analysis Batch: 244734

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 244587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		09/08/18 10:16	09/10/18 10:32	1

TestAmerica Buffalo

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-244587/1-A

Matrix: Water

Analysis Batch: 244734

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 244587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	1.3	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorohexanesulfonic acid (PFHxS)	0.334	J	2.0	0.17	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		09/08/18 10:16	09/10/18 10:32	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.35	ng/L		09/08/18 10:16	09/10/18 10:32	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		09/08/18 10:16	09/10/18 10:32	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		09/08/18 10:16	09/10/18 10:32	1
6:2 FTS	ND		20	2.0	ng/L		09/08/18 10:16	09/10/18 10:32	1
8:2 FTS	ND		20	2.0	ng/L		09/08/18 10:16	09/10/18 10:32	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
¹³ C4 PFBA	95		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C5 PFPeA	91		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C2 PFHxA	95		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C4-PFHpA	93		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C4 PFOA	97		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C5 PFNA	101		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C2 PFDA	103		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C2 PFUnA	99		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C2 PFDoA	88		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C2-PFTeDA	93		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C3-PFBS	95		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹⁸ O2 PFHxS	94		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C4 PFOS	102		25 - 150	09/08/18 10:16	09/10/18 10:32	1
¹³ C8 FOSA	92		25 - 150	09/08/18 10:16	09/10/18 10:32	1
d3-NMeFOSAA	94		25 - 150	09/08/18 10:16	09/10/18 10:32	1
d5-NEtFOSAA	100		25 - 150	09/08/18 10:16	09/10/18 10:32	1
M2-6:2FTS	104		25 - 150	09/08/18 10:16	09/10/18 10:32	1
M2-8:2FTS	103		25 - 150	09/08/18 10:16	09/10/18 10:32	1

Lab Sample ID: LCS 320-244587/2-A

Matrix: Water

Analysis Batch: 244734

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 244587

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	42.2		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	41.1		ng/L		103	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	38.9		ng/L		97	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.4		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	39.3		ng/L		98	64 - 124
Perfluorononanoic acid (PFNA)	40.0	44.3		ng/L		111	68 - 128

TestAmerica Buffalo

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-244587/2-A

Matrix: Water

Analysis Batch: 244734

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 244587

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	40.0	41.3		ng/L		103	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	36.4		ng/L		91	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	42.8		ng/L		107	71 - 131
Perfluorotridecanoic Acid (PFTriA)	40.0	45.2		ng/L		113	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	40.5		ng/L		101	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.0		ng/L		102	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.8		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	35.8		ng/L		96	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.7		ng/L		106	68 - 128
Perfluorooctane Sulfonamide (FOSA)	40.0	45.1		ng/L		113	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	37.4		ng/L		93	67 - 127
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	40.5		ng/L		101	65 - 125
6:2 FTS	37.9	36.3		ng/L		96	66 - 126
8:2 FTS	38.3	34.7		ng/L		91	67 - 127

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	93		25 - 150
13C5 PFPeA	94		25 - 150
13C2 PFHxA	94		25 - 150
13C4-PFHpA	97		25 - 150
13C4 PFOA	100		25 - 150
13C5 PFNA	98		25 - 150
13C2 PFDA	97		25 - 150
13C2 PFUnA	108		25 - 150
13C2 PFDoA	89		25 - 150
13C2-PFTeDA	87		25 - 150
13C3-PFBS	94		25 - 150
18O2 PFHxS	102		25 - 150
13C4 PFOS	99		25 - 150
13C8 FOSA	91		25 - 150
d3-NMeFOSAA	91		25 - 150
d5-NEtFOSAA	95		25 - 150
M2-6:2FTS	110		25 - 150
M2-8:2FTS	102		25 - 150

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-244587/3-A

Matrix: Water

Analysis Batch: 244734

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 244587

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	43.0		ng/L		107	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	40.0	41.6		ng/L		104	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)	40.0	39.9		ng/L		100	66 - 126	3	30
Perfluoroheptanoic acid (PFHpA)	40.0	45.2		ng/L		113	66 - 126	6	30
Perfluorooctanoic acid (PFOA)	40.0	41.1		ng/L		103	64 - 124	5	30
Perfluorononanoic acid (PFNA)	40.0	47.5		ng/L		119	68 - 128	7	30
Perfluorodecanoic acid (PFDA)	40.0	42.2		ng/L		106	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)	40.0	41.4		ng/L		103	60 - 120	13	30
Perfluorododecanoic acid (PFDoA)	40.0	42.4		ng/L		106	71 - 131	1	30
Perfluorotridecanoic Acid (PFTriA)	40.0	45.6		ng/L		114	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)	40.0	40.2		ng/L		101	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)	35.4	36.7		ng/L		104	73 - 133	2	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.3		ng/L		94	63 - 123	1	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.9		ng/L		107	68 - 128	1	30
Perfluorooctanesulfonic acid (PFOS)	37.1	36.0		ng/L		97	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)	38.6	43.3		ng/L		112	68 - 128	6	30
Perfluorooctane Sulfonamide (FOSA)	40.0	44.2		ng/L		111	70 - 130	2	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	42.6		ng/L		106	67 - 127	13	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	38.4		ng/L		96	65 - 125	5	30
6:2 FTS	37.9	45.8		ng/L		121	66 - 126	23	30
8:2 FTS	38.3	39.1		ng/L		102	67 - 127	12	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFBA	94		25 - 150
13C5 PFPeA	95		25 - 150
13C2 PFHxA	94		25 - 150
13C4-PFHpA	95		25 - 150
13C4 PFOA	96		25 - 150
13C5 PFNA	94		25 - 150
13C2 PFDA	98		25 - 150
13C2 PFUnA	103		25 - 150
13C2 PFDoA	89		25 - 150
13C2-PFTeA	92		25 - 150
13C3-PFBS	96		25 - 150
18O2 PFHxS	101		25 - 150
13C4 PFOS	97		25 - 150
13C8 FOSA	91		25 - 150

TestAmerica Buffalo

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-244587/3-A

Matrix: Water

Analysis Batch: 244734

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 244587

<i>Isotope Dilution</i>	<i>LCSD %Recovery</i>	<i>LCSD Qualifier</i>	<i>Limits</i>
d3-NMeFOSAA	93		25 - 150
d5-NEtFOSAA	97		25 - 150
M2-6:2FTS	95		25 - 150
M2-8:2FTS	98		25 - 150

Lab Sample ID: 480-140926-2 MS

Matrix: Water

Analysis Batch: 244734

Client Sample ID: MW-1 (082718)

Prep Type: Total/NA

Prep Batch: 244587

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Perfluorobutanoic acid (PFBA)	1.7		33.5	37.6		ng/L		107	70 - 130
Perfluoropentanoic acid (PFPeA)	ND		33.5	34.1		ng/L		102	66 - 126
Perfluorohexanoic acid (PFHxA)	ND		33.5	34.1		ng/L		102	66 - 126
Perfluoroheptanoic acid (PFHpA)	0.23	J	33.5	38.2		ng/L		113	66 - 126
Perfluorooctanoic acid (PFOA)	ND		33.6	34.6		ng/L		103	64 - 124
Perfluorononanoic acid (PFNA)	0.30	J	33.5	37.7		ng/L		112	68 - 128
Perfluorodecanoic acid (PFDA)	ND		33.5	36.2		ng/L		108	69 - 129
Perfluoroundecanoic acid (PFUnA)	ND		33.5	34.5		ng/L		103	60 - 120
Perfluorododecanoic acid (PFDoA)	ND		33.5	35.6		ng/L		106	71 - 131
Perfluorotridecanoic Acid (PFTriA)	ND		33.5	37.4		ng/L		111	72 - 132
Perfluorotetradecanoic acid (PFTeA)	ND		33.5	34.5		ng/L		103	68 - 128
Perfluorobutanesulfonic acid (PFBS)	1.3	J	29.6	32.9		ng/L		106	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	0.58	J B	30.5	29.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	ND		31.9	36.4		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	2.3		31.1	33.6		ng/L		100	67 - 127
Perfluorodecanesulfonic acid (PFDS)	ND		32.3	36.6		ng/L		113	68 - 128
Perfluorooctane Sulfonamide (FOSA)	ND		33.5	37.3		ng/L		111	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		33.5	35.8		ng/L		107	67 - 127
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		33.5	33.0		ng/L		99	65 - 125
6:2 FTS	ND		31.8	32.3		ng/L		101	66 - 126
8:2 FTS	ND		32.1	30.5		ng/L		95	67 - 127

<i>Isotope Dilution</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
13C4 PFBA	94		25 - 150
13C5 PFPeA	102		25 - 150
13C2 PFHxA	99		25 - 150
13C4-PFHpA	101		25 - 150
13C4 PFOA	105		25 - 150

TestAmerica Buffalo

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-140926-2 MS

Matrix: Water

Analysis Batch: 244734

Client Sample ID: MW-1 (082718)

Prep Type: Total/NA

Prep Batch: 244587

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C5 PFNA	102		25 - 150
13C2 PFDA	107		25 - 150
13C2 PFUnA	106		25 - 150
13C2 PFDoA	90		25 - 150
13C2-PFTeDA	102		25 - 150
13C3-PFBS	102		25 - 150
18O2 PFHxS	107		25 - 150
13C4 PFOS	100		25 - 150
13C8 FOSA	102		25 - 150
d3-NMeFOSAA	103		25 - 150
d5-NEtFOSAA	106		25 - 150
M2-6:2FTS	114		25 - 150
M2-8:2FTS	105		25 - 150

Lab Sample ID: 480-140926-2 MSD

Matrix: Water

Analysis Batch: 244760

Client Sample ID: MW-1 (082718)

Prep Type: Total/NA

Prep Batch: 244587

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	1.7		33.5	36.2		ng/L		103	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	ND		33.5	34.6		ng/L		103	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)	ND		33.5	33.3		ng/L		99	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)	0.23	J	33.5	36.5		ng/L		108	66 - 126	4	30
Perfluorooctanoic acid (PFOA)	ND		33.5	33.7		ng/L		101	64 - 124	2	30
Perfluorononanoic acid (PFNA)	0.30	J	33.5	38.5		ng/L		114	68 - 128	2	30
Perfluorodecanoic acid (PFDA)	ND		33.5	36.0		ng/L		107	69 - 129	1	30
Perfluoroundecanoic acid (PFUnA)	ND		33.5	33.0		ng/L		98	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)	ND		33.5	37.9		ng/L		113	71 - 131	6	30
Perfluorotridecanoic Acid (PFTriA)	ND		33.5	35.2		ng/L		105	72 - 132	6	30
Perfluorotetradecanoic acid (PFTeA)	ND		33.5	32.7		ng/L		98	68 - 128	5	30
Perfluorobutanesulfonic acid (PFBS)	1.3	J	29.6	36.3		ng/L		118	73 - 133	10	30
Perfluorohexanesulfonic acid (PFHxS)	0.58	J B	30.5	30.8		ng/L		99	63 - 123	6	30
Perfluoroheptanesulfonic Acid (PFHpS)	ND		31.9	36.1		ng/L		113	68 - 128	1	30
Perfluorooctanesulfonic acid (PFOS)	2.3		31.1	33.6		ng/L		101	67 - 127	0	30
Perfluorodecanesulfonic acid (PFDS)	ND		32.3	33.0		ng/L		102	68 - 128	10	30
Perfluorooctane Sulfonamide (FOSA)	ND		33.5	38.1		ng/L		114	70 - 130	2	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		33.5	36.3		ng/L		108	67 - 127	1	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		33.5	34.9		ng/L		104	65 - 125	5	30

TestAmerica Buffalo

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-140926-2 MSD

Matrix: Water

Analysis Batch: 244760

Client Sample ID: MW-1 (082718)

Prep Type: Total/NA

Prep Batch: 244587

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
6:2 FTS	ND		31.8	35.2		ng/L		111	66 - 126	9	30
8:2 FTS	ND		32.1	32.5		ng/L		101	67 - 127	6	30
MSD MSD											
Isotope Dilution	%Recovery	Qualifier	Limits								
13C4 PFBA	92		25 - 150								
13C5 PFPeA	98		25 - 150								
13C2 PFHxA	101		25 - 150								
13C4-PFHpA	99		25 - 150								
13C4 PFOA	99		25 - 150								
13C5 PFNA	96		25 - 150								
13C2 PFDA	107		25 - 150								
13C2 PFUnA	97		25 - 150								
13C2 PFDoA	95		25 - 150								
13C2-PFTeDA	100		25 - 150								
13C3-PFBS	89		25 - 150								
18O2 PFHxS	102		25 - 150								
13C4 PFOS	99		25 - 150								
13C8 FOSA	97		25 - 150								
d3-NMeFOSAA	94		25 - 150								
d5-NEtFOSAA	95		25 - 150								
M2-6:2FTS	102		25 - 150								
M2-8:2FTS	101		25 - 150								

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

GC/MS Semi VOA

Prep Batch: 431806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140926-1	EB-01 (082718)	Total/NA	Water	3510C	
480-140926-2	MW-1 (082718)	Total/NA	Water	3510C	
480-140926-3	MW-3 (082718)	Total/NA	Water	3510C	
480-140926-4	MW-5 (082718)	Total/NA	Water	3510C	
480-140926-5	DUP-01 (082718)	Total/NA	Water	3510C	
MB 480-431806/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-431806/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-140926-2 MS	MW-1 (082718)	Total/NA	Water	3510C	
480-140926-2 MSD	MW-1 (082718)	Total/NA	Water	3510C	

Analysis Batch: 432705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140926-1	EB-01 (082718)	Total/NA	Water	8270D SIM ID	431806
480-140926-2	MW-1 (082718)	Total/NA	Water	8270D SIM ID	431806
480-140926-3	MW-3 (082718)	Total/NA	Water	8270D SIM ID	431806
480-140926-4	MW-5 (082718)	Total/NA	Water	8270D SIM ID	431806
480-140926-5	DUP-01 (082718)	Total/NA	Water	8270D SIM ID	431806
MB 480-431806/1-A	Method Blank	Total/NA	Water	8270D SIM ID	431806
LCS 480-431806/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	431806
480-140926-2 MS	MW-1 (082718)	Total/NA	Water	8270D SIM ID	431806
480-140926-2 MSD	MW-1 (082718)	Total/NA	Water	8270D SIM ID	431806

LCMS

Prep Batch: 244587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140926-1	EB-01 (082718)	Total/NA	Water	3535	
480-140926-2	MW-1 (082718)	Total/NA	Water	3535	
480-140926-3	MW-3 (082718)	Total/NA	Water	3535	
480-140926-4	MW-5 (082718)	Total/NA	Water	3535	
480-140926-5	DUP-01 (082718)	Total/NA	Water	3535	
MB 320-244587/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-244587/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-244587/3-A	Lab Control Sample Dup	Total/NA	Water	3535	
480-140926-2 MS	MW-1 (082718)	Total/NA	Water	3535	
480-140926-2 MSD	MW-1 (082718)	Total/NA	Water	3535	

Analysis Batch: 244734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140926-1	EB-01 (082718)	Total/NA	Water	537 (modified)	244587
480-140926-2	MW-1 (082718)	Total/NA	Water	537 (modified)	244587
MB 320-244587/1-A	Method Blank	Total/NA	Water	537 (modified)	244587
LCS 320-244587/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	244587
LCSD 320-244587/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	244587
480-140926-2 MS	MW-1 (082718)	Total/NA	Water	537 (modified)	244587

Analysis Batch: 244760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140926-3	MW-3 (082718)	Total/NA	Water	537 (modified)	244587
480-140926-4	MW-5 (082718)	Total/NA	Water	537 (modified)	244587

TestAmerica Buffalo

QC Association Summary

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 480-140926-1

Project/Site: Orkin Former Abalene Pest Control Site

LCMS (Continued)

Analysis Batch: 244760 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-140926-5	DUP-01 (082718)	Total/NA	Water	537 (modified)	244587
480-140926-2 MSD	MW-1 (082718)	Total/NA	Water	537 (modified)	244587

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Client Sample ID: EB-01 (082718)

Date Collected: 08/27/18 11:05

Date Received: 08/28/18 00:45

Lab Sample ID: 480-140926-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			431806	08/28/18 14:29	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	432705	09/05/18 00:35	DMR	TAL BUF
Total/NA	Prep	3535			244587	09/08/18 10:16	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	244734	09/10/18 11:24	AAR	TAL SAC

Client Sample ID: MW-1 (082718)

Date Collected: 08/27/18 12:02

Date Received: 08/28/18 00:45

Lab Sample ID: 480-140926-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			431806	08/28/18 14:29	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	432705	09/05/18 00:11	DMR	TAL BUF
Total/NA	Prep	3535			244587	09/08/18 10:16	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	244734	09/10/18 11:32	AAR	TAL SAC

Client Sample ID: MW-3 (082718)

Date Collected: 08/27/18 13:25

Date Received: 08/28/18 00:45

Lab Sample ID: 480-140926-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			431806	08/28/18 14:29	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	432705	09/05/18 00:58	DMR	TAL BUF
Total/NA	Prep	3535			244587	09/08/18 10:16	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	244760	09/10/18 12:39	S1M	TAL SAC

Client Sample ID: MW-5 (082718)

Date Collected: 08/27/18 16:34

Date Received: 08/28/18 00:45

Lab Sample ID: 480-140926-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			431806	08/28/18 14:29	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	432705	09/05/18 01:21	DMR	TAL BUF
Total/NA	Prep	3535			244587	09/08/18 10:16	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	244760	09/10/18 12:47	S1M	TAL SAC

Client Sample ID: DUP-01 (082718)

Date Collected: 08/27/18 00:00

Date Received: 08/28/18 00:45

Lab Sample ID: 480-140926-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			431806	08/28/18 14:29	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	432705	09/05/18 01:44	DMR	TAL BUF
Total/NA	Prep	3535			244587	09/08/18 10:16	HJA	TAL SAC

TestAmerica Buffalo

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Orkin Former Abalene Pest Control Site

TestAmerica Job ID: 480-140926-1

Client Sample ID: DUP-01 (082718)

Date Collected: 08/27/18 00:00

Date Received: 08/28/18 00:45

Lab Sample ID: 480-140926-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	537 (modified)		1	244760	09/10/18 12:54	S1M	TAL SAC

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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

Method Summary

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 480-140926-1

Project/Site: Orkin Former Abalene Pest Control Site

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 480-140926-1

Project/Site: Orkin Former Abalene Pest Control Site

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
ANAB	DoD ELAP		L2468	01-20-21
Arizona	State Program	9	AZ0708	08-11-19
Arkansas DEQ	State Program	6	88-0691	06-17-19
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-19
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-19
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19
Illinois	NELAP	5	200060	03-17-19
Kansas	NELAP	7	E-10375	10-31-18
Louisiana	NELAP	6	30612	06-30-19
Maine	State Program	1	CA0004	04-14-20
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-19
New Hampshire	NELAP	1	2997	04-18-19
New Jersey	NELAP	2	CA005	06-30-19
New York	NELAP	2	11666	03-31-19
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-19
Texas	NELAP	6	T104704399	05-31-19
US Fish & Wildlife	Federal		LE148388-0	07-31-19
USDA	Federal		P330-18-00239	01-17-21
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-19
Vermont	State Program	1	VT-4040	04-30-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-19
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

Method 8270D

SIM-ID

Semivolatile Organic Compounds
(GC/MS SIM / Isotope Dilution) by
Method 8270D

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Buffalo

Job No.: 480-140926-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): RXI-5Sil MS ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	DXE #
EB-01 (082718)	480-140926-1	33
MW-1 (082718)	480-140926-2	32
MW-3 (082718)	480-140926-3	32
MW-5 (082718)	480-140926-4	34
DUP-01 (082718)	480-140926-5	34
	MB 480-431806/1-A	39
	LCS 480-431806/2-A	34
MW-1 (082718) MS	480-140926-2 MS	33
MW-1 (082718) MSD	480-140926-2 MSD	31

DXE = 1,4-Dioxane-d8

QC LIMITS
15-110

Column to be used to flag recovery values

FORM II 8270D SIM ID

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: U3311198.D
Lab ID: LCS 480-431806/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	0.999	100	40-140	
1,4-Dioxane-d8	10.0	3.42	34	15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: U3311199.D
Lab ID: 480-140926-2 MS Client ID: MW-1 (082718) MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	ND	0.988	99	40-140	
1,4-Dioxane-d8	10.0	3.2	3.25	33	15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: U3311200.D
Lab ID: 480-140926-2 MSD Client ID: MW-1 (082718) MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,4-Dioxane	1.00	0.986	99	0	20	40-140	
1,4-Dioxane-d8	10.0	3.10	31			15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Lab File ID: U3311197.D Lab Sample ID: MB 480-431806/1-A
Matrix: Water Date Extracted: 08/28/2018 14:29
Instrument ID: HP5973U Date Analyzed: 09/04/2018 22:38
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-431806/2-A	U3311198.D	09/04/2018 23:01
MW-1 (082718) MS	480-140926-2 MS	U3311199.D	09/04/2018 23:25
MW-1 (082718) MSD	480-140926-2 MSD	U3311200.D	09/04/2018 23:48
MW-1 (082718)	480-140926-2	U3311201.D	09/05/2018 00:11
EB-01 (082718)	480-140926-1	U3311202.D	09/05/2018 00:35
MW-3 (082718)	480-140926-3	U3311203.D	09/05/2018 00:58
MW-5 (082718)	480-140926-4	U3311204.D	09/05/2018 01:21
DUP-01 (082718)	480-140926-5	U3311205.D	09/05/2018 01:44

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Lab File ID: U3309386.D DFTPP Injection Date: 07/11/2018
Instrument ID: HP5973U DFTPP Injection Time: 18:14
Analysis Batch No.: 424045

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	42.8
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	42.1
70	Less than 2% of mass 69	0.2 (0.4) 1
127	10-80% of Base Peak	47.6
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	7.0
275	10-60% of Base Peak	26.3
365	Greater than 1% of mass 198	3.3
441	present but less than 24% of mass 442	10.2 (15.4) 2
442	Greater than 50% of mass 198	66.2
443	15-24% of mass 442	13.4 (20.3) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-424045/3	U3309387.D	07/11/2018	18:42
	IC 480-424045/4	U3309388.D	07/11/2018	19:06
	ICIS 480-424045/5	U3309389.D	07/11/2018	19:30
	IC 480-424045/6	U3309390.D	07/11/2018	19:54
	IC 480-424045/7	U3309391.D	07/11/2018	20:18
	IC 480-424045/8	U3309392.D	07/11/2018	20:42

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Lab File ID: U3311178.D DFTPP Injection Date: 09/04/2018
Instrument ID: HP5973U DFTPP Injection Time: 15:07
Analysis Batch No.: 432705

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	42.1
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	43.0
70	Less than 2% of mass 69	0.3 (0.7) 1
127	10-80% of Base Peak	44.3
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	7.8
275	10-60% of Base Peak	33.7
365	Greater than 1% of mass 198	5.6
441	present but less than 24% of mass 442	14.3 (16.7) 2
442	Greater than 50% of mass 198	86.0
443	15-24% of mass 442	17.7 (20.6) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-432705/3	U3311179.D	09/04/2018	15:34
	MB 480-431806/1-A	U3311197.D	09/04/2018	22:38
	LCS 480-431806/2-A	U3311198.D	09/04/2018	23:01
MW-1 (082718) MS	480-140926-2 MS	U3311199.D	09/04/2018	23:25
MW-1 (082718) MSD	480-140926-2 MSD	U3311200.D	09/04/2018	23:48
MW-1 (082718)	480-140926-2	U3311201.D	09/05/2018	00:11
EB-01 (082718)	480-140926-1	U3311202.D	09/05/2018	00:35
MW-3 (082718)	480-140926-3	U3311203.D	09/05/2018	00:58
MW-5 (082718)	480-140926-4	U3311204.D	09/05/2018	01:21
DUP-01 (082718)	480-140926-5	U3311205.D	09/05/2018	01:44

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Sample No.: ICIS 480-424045/5 Date Analyzed: 07/11/2018 19:30
Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)
Lab File ID (Standard): U3309389.D Heated Purge: (Y/N) N
Calibration ID: 34301

	DCBd4					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	374104	5.84				
UPPER LIMIT	748208	6.34				
LOWER LIMIT	187052	5.34				
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCVIS 480-432705/3		492204	5.45			

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
 SDG No.: _____
 Sample No.: CCVIS 480-432705/3 Date Analyzed: 09/04/2018 15:34
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25 (mm)
 Lab File ID (Standard): U3311179.D Heated Purge: (Y/N) N
 Calibration ID: 34301

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		492204	5.45				
UPPER LIMIT		984408	5.95				
LOWER LIMIT		246102	4.95				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-431806/1-A		440873	5.45				
LCS 480-431806/2-A		447348	5.46				
480-140926-2 MS	MW-1 (082718) MS	450500	5.46				
480-140926-2 MSD	MW-1 (082718) MSD	439986	5.46				
480-140926-2	MW-1 (082718)	438239	5.45				
480-140926-1	EB-01 (082718)	432213	5.45				
480-140926-3	MW-3 (082718)	443132	5.45				
480-140926-4	MW-5 (082718)	444631	5.45				
480-140926-5	DUP-01 (082718)	420448	5.45				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
 SDG No.: _____
 Client Sample ID: EB-01 (082718) Lab Sample ID: 480-140926-1
 Matrix: Water Lab File ID: U3311202.D
 Analysis Method: 8270D SIM ID Date Collected: 08/27/2018 11:05
 Extract. Method: 3510C Date Extracted: 08/28/2018 14:29
 Sample wt/vol: 1000 (mL) Date Analyzed: 09/05/2018 00:35
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 432705 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	33		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311202.D
 Lims ID: 480-140926-C-1-A
 Client ID: EB-01 (082718)
 Sample Type: Client
 Inject. Date: 05-Sep-2018 00:35:30 ALS Bottle#: 26 Worklist Smp#: 26
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-026
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 05-Sep-2018 11:52:11

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.058	1.993	0.065	98	171129	3.26	32.6	
3 1,4-Dioxane	88		2.021				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.452	5.448	0.004	94	432213	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00151

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311202.D

Injection Date: 05-Sep-2018 00:35:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-140926-C-1-A

Lab Sample ID: 480-140926-1

Worklist Smp#: 26

Client ID: EB-01 (082718)

Injection Vol: 1.0 ul

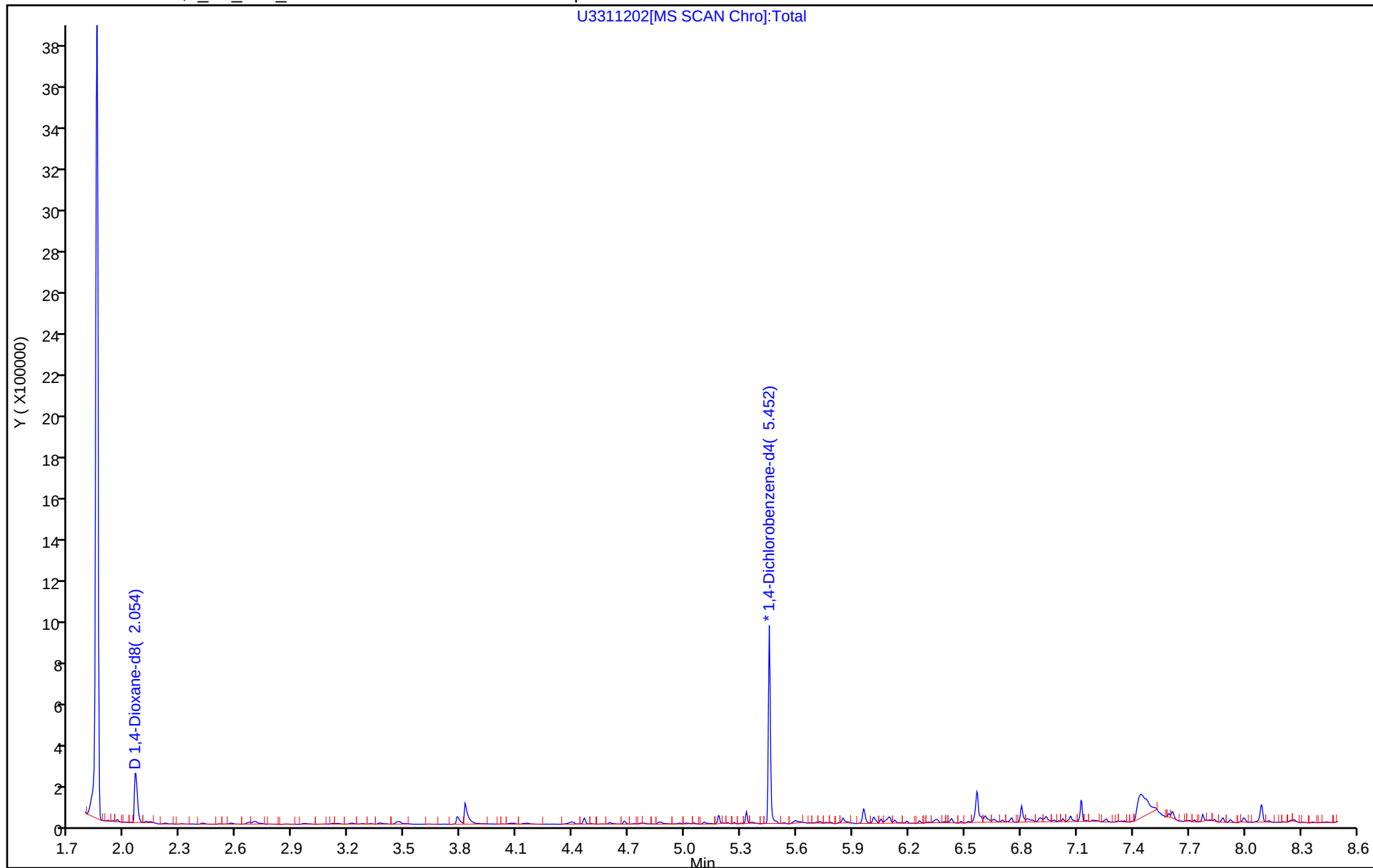
Dil. Factor: 1.0000

ALS Bottle#: 26

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311202[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311202.D

Injection Date: 05-Sep-2018 00:35:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-1-A

Lab Sample ID: 480-140926-1

Client ID: EB-01 (082718)

Operator ID: DR

ALS Bottle#: 26

Worklist Smp#: 26

Injection Vol: 1.0 ul

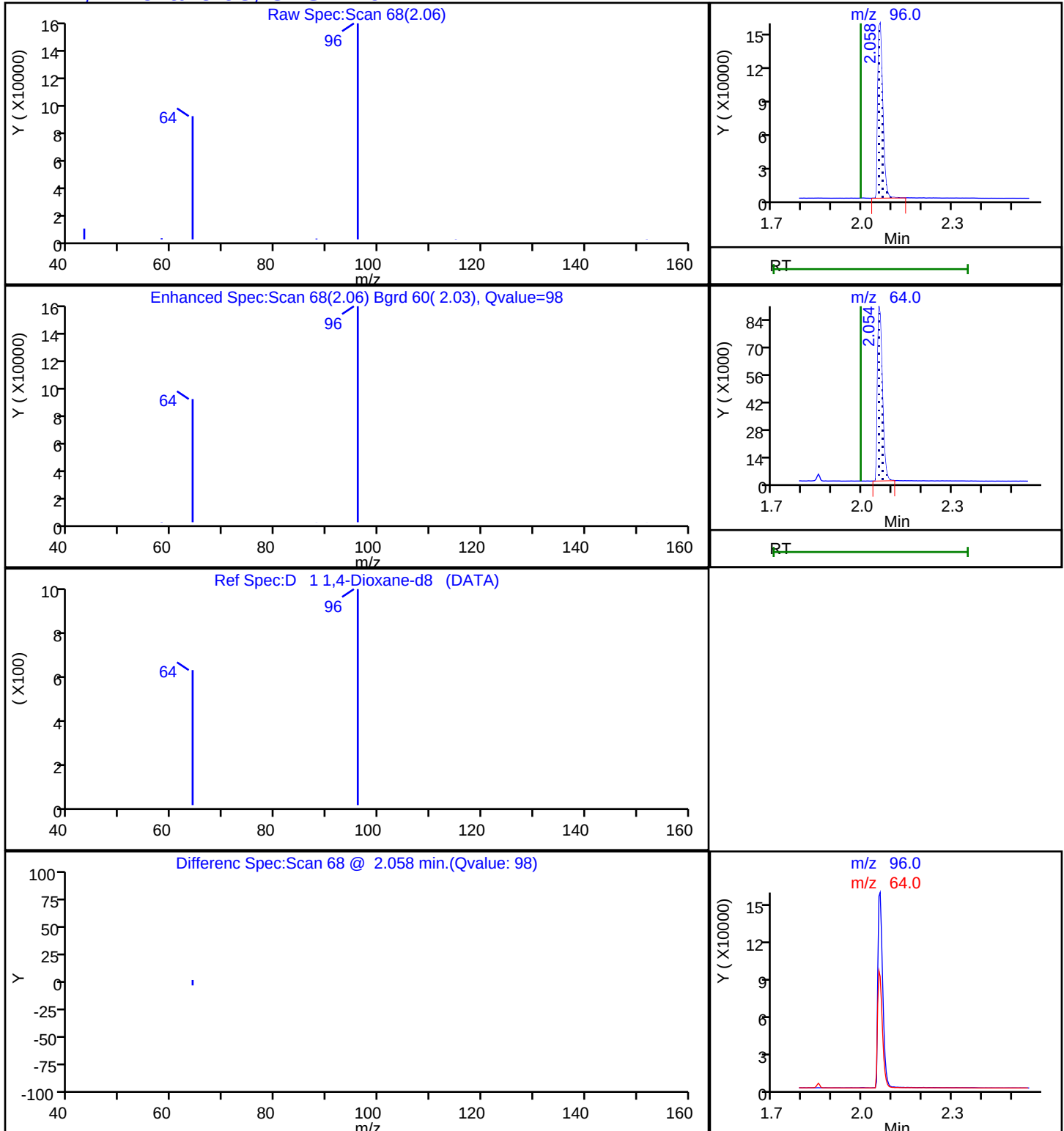
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311202.D

Injection Date: 05-Sep-2018 00:35:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-1-A

Lab Sample ID: 480-140926-1

Client ID: EB-01 (082718)

Operator ID: DR

ALS Bottle#: 26 Worklist Smp#: 26

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

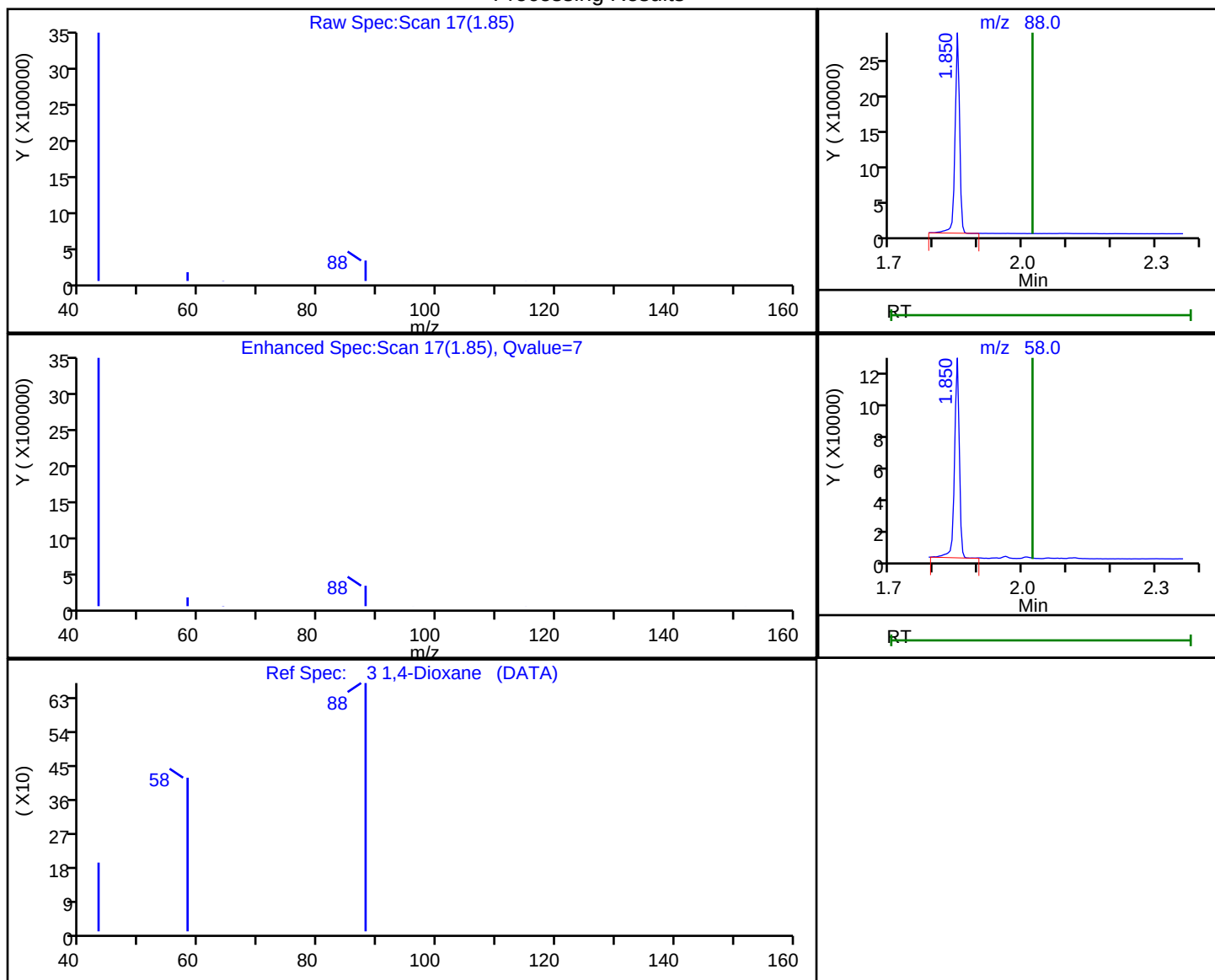
Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
1.85	88.00	202349	10.705424
1.85	58.00	91670	

Reviewer: richardsd, 05-Sep-2018 11:52:09

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
 SDG No.: _____
 Client Sample ID: MW-1 (082718) Lab Sample ID: 480-140926-2
 Matrix: Water Lab File ID: U3311201.D
 Analysis Method: 8270D SIM ID Date Collected: 08/27/2018 12:02
 Extract. Method: 3510C Date Extracted: 08/28/2018 14:29
 Sample wt/vol: 1000 (mL) Date Analyzed: 09/05/2018 00:11
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 432705 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	32		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311201.D
 Lims ID: 480-140926-C-2-A
 Client ID: MW-1 (082718)
 Sample Type: Client
 Inject. Date: 05-Sep-2018 00:11:30 ALS Bottle#: 25 Worklist Smp#: 25
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-025
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 05-Sep-2018 11:52:06

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.058	1.993	0.065	97	172638	3.25	32.5	
3 1,4-Dioxane	88		2.021				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.452	5.448	0.004	93	438239	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00151

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311201.D

Injection Date: 05-Sep-2018 00:11:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-140926-C-2-A

Lab Sample ID: 480-140926-2

Worklist Smp#: 25

Client ID: MW-1 (082718)

Injection Vol: 1.0 ul

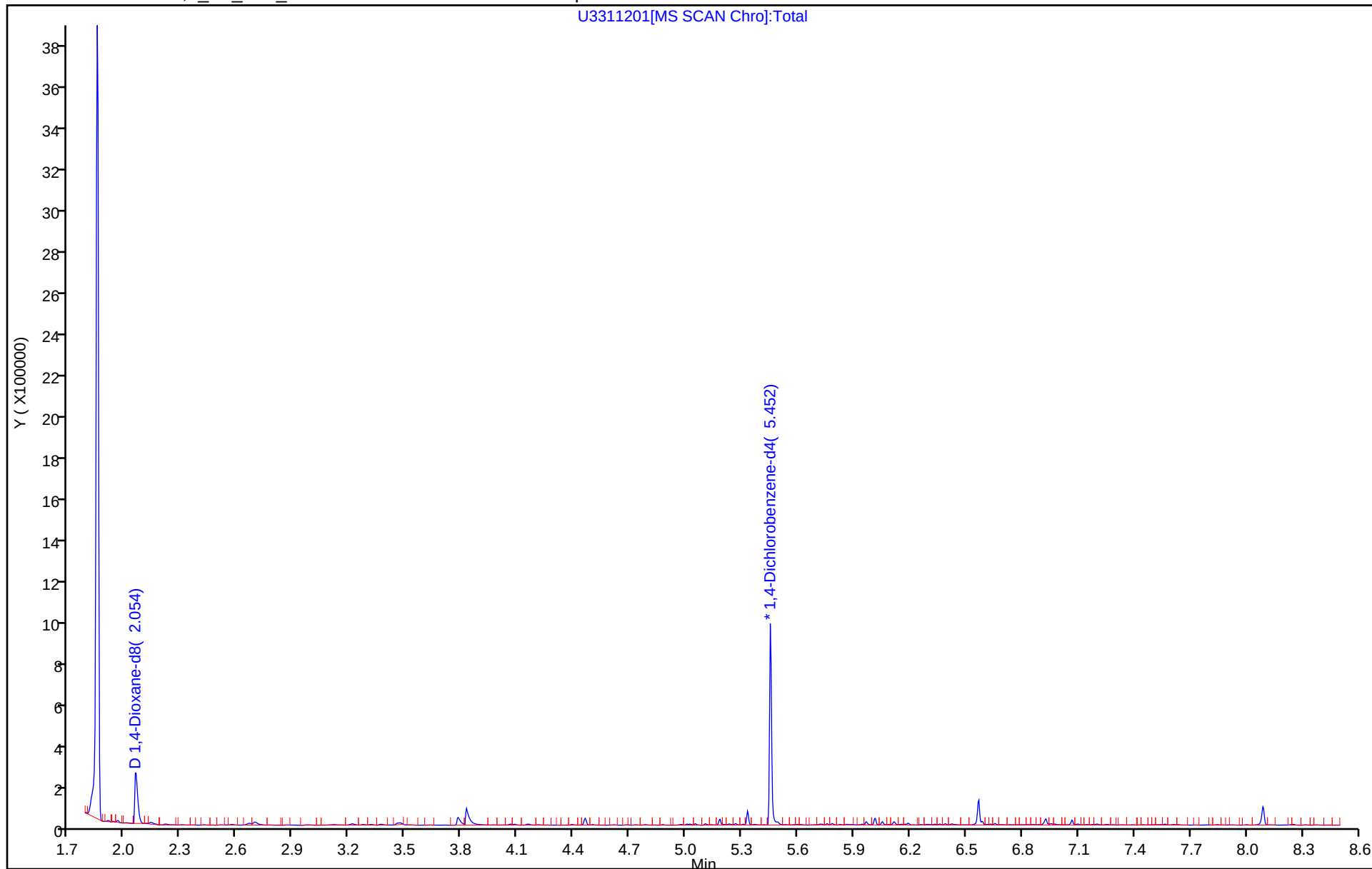
Dil. Factor: 1.0000

ALS Bottle#: 25

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311201[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311201.D

Injection Date: 05-Sep-2018 00:11:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-2-A

Lab Sample ID: 480-140926-2

Client ID: MW-1 (082718)

Operator ID: DR

ALS Bottle#: 25

Worklist Smp#: 25

Injection Vol: 1.0 ul

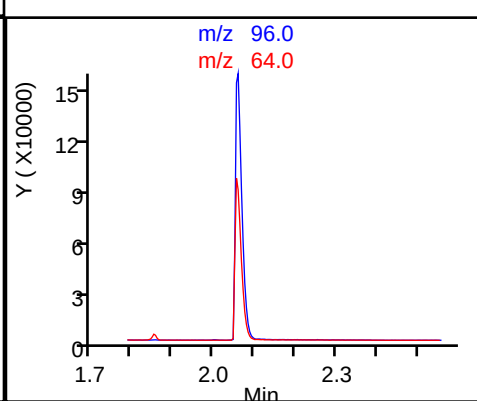
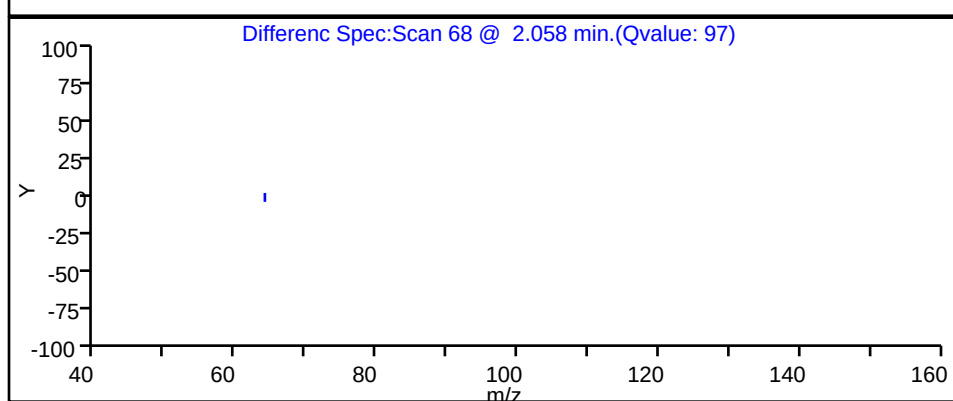
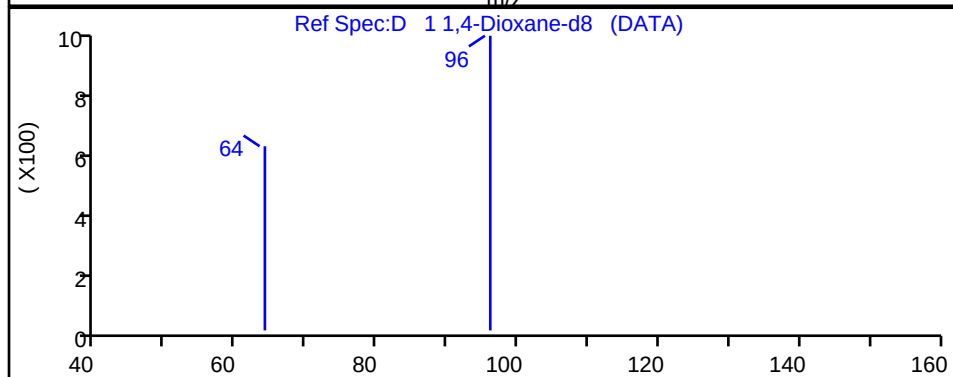
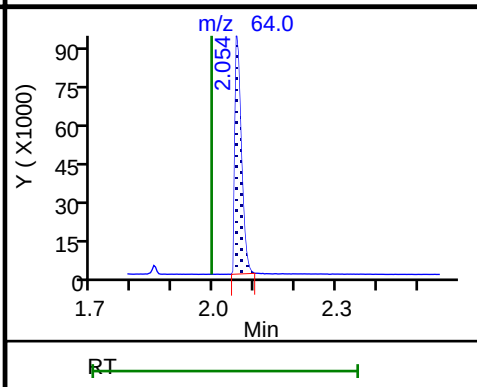
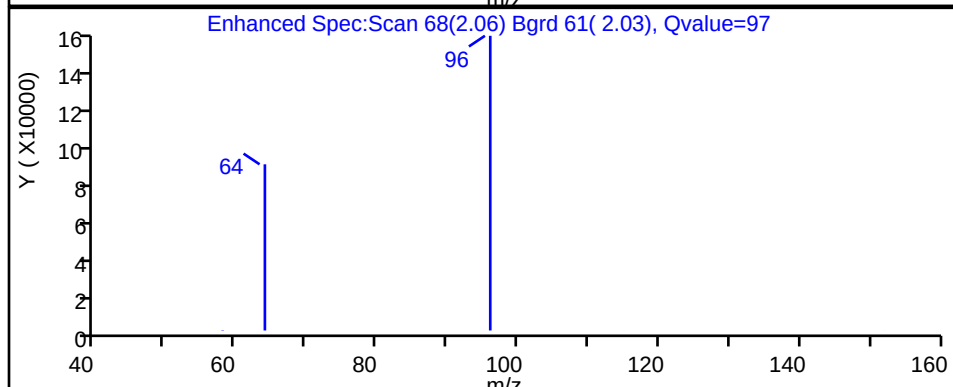
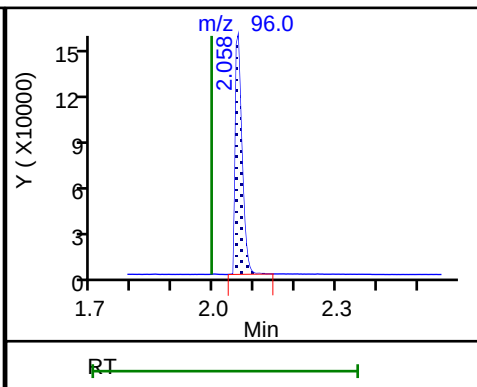
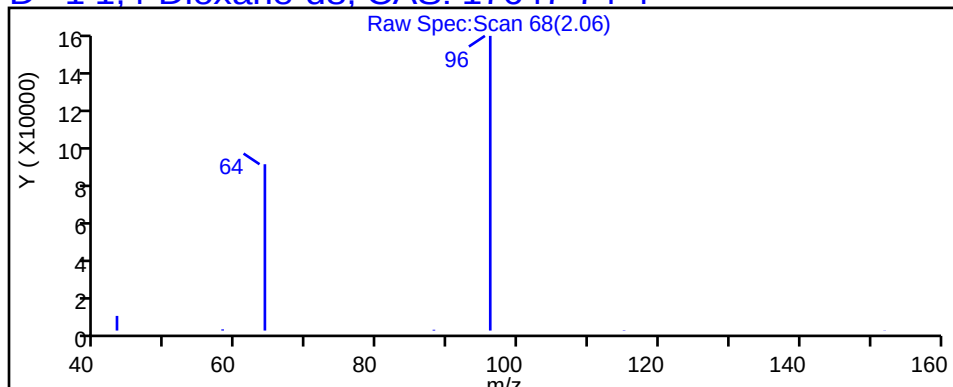
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311201.D

Injection Date: 05-Sep-2018 00:11:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-2-A

Lab Sample ID: 480-140926-2

Client ID: MW-1 (082718)

Operator ID: DR

ALS Bottle#: 25 Worklist Smp#: 25

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

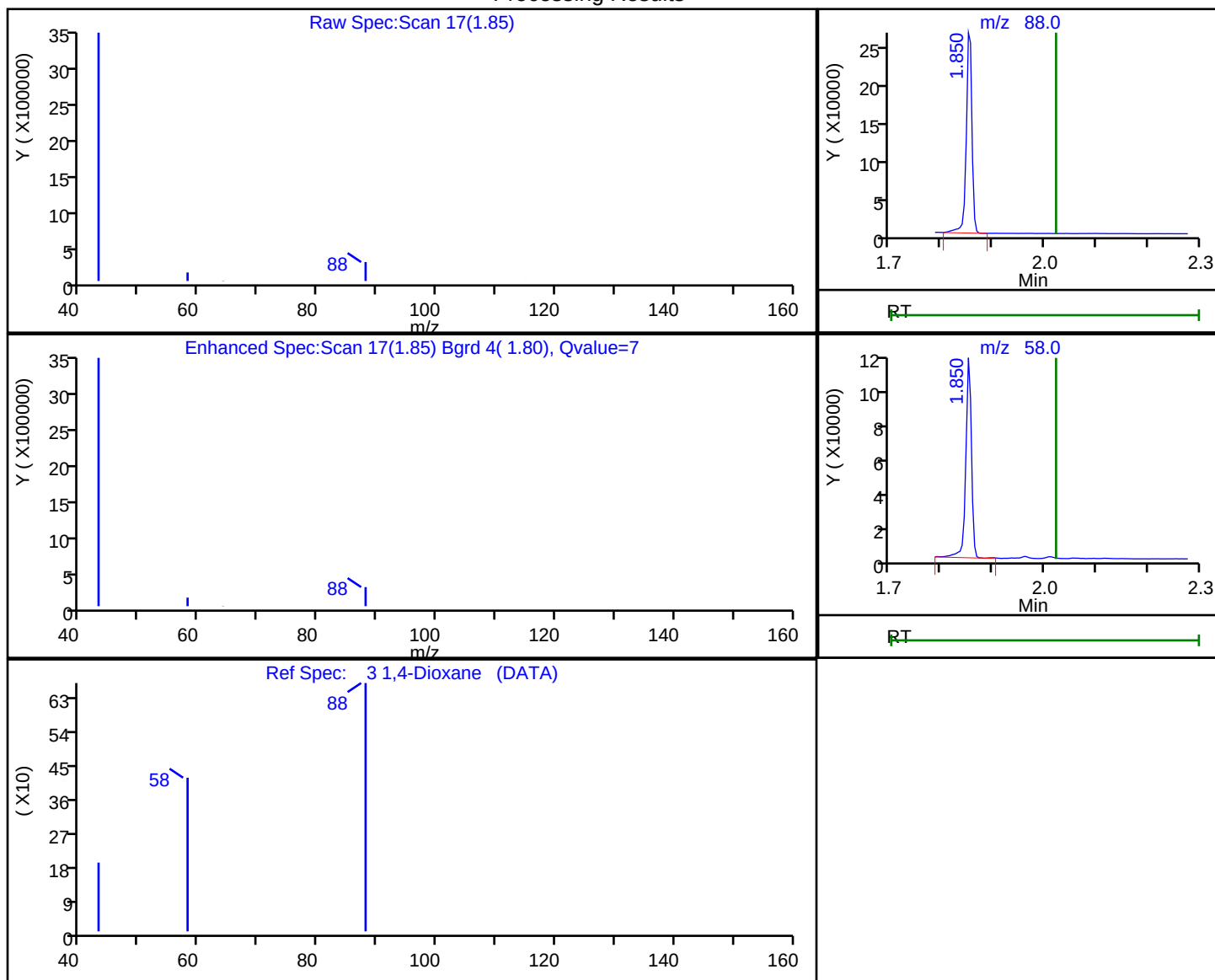
Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
1.85	88.00	202962	10.644124
1.85	58.00	90890	

Reviewer: richardsd, 05-Sep-2018 11:52:05

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Client Sample ID: MW-3 (082718) Lab Sample ID: 480-140926-3
Matrix: Water Lab File ID: U3311203.D
Analysis Method: 8270D SIM ID Date Collected: 08/27/2018 13:25
Extract. Method: 3510C Date Extracted: 08/28/2018 14:29
Sample wt/vol: 1000 (mL) Date Analyzed: 09/05/2018 00:58
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 432705 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	32		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311203.D
 Lims ID: 480-140926-C-3-A
 Client ID: MW-3 (082718)
 Sample Type: Client
 Inject. Date: 05-Sep-2018 00:58:30 ALS Bottle#: 27 Worklist Smp#: 27
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-027
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 05-Sep-2018 11:52:16

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.054	1.993	0.061	99	173311	3.22	32.2	
3 1,4-Dioxane	88		2.021				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.452	5.448	0.004	94	443132	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00151

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311203.D

Injection Date: 05-Sep-2018 00:58:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-140926-C-3-A

Lab Sample ID: 480-140926-3

Worklist Smp#: 27

Client ID: MW-3 (082718)

Injection Vol: 1.0 ul

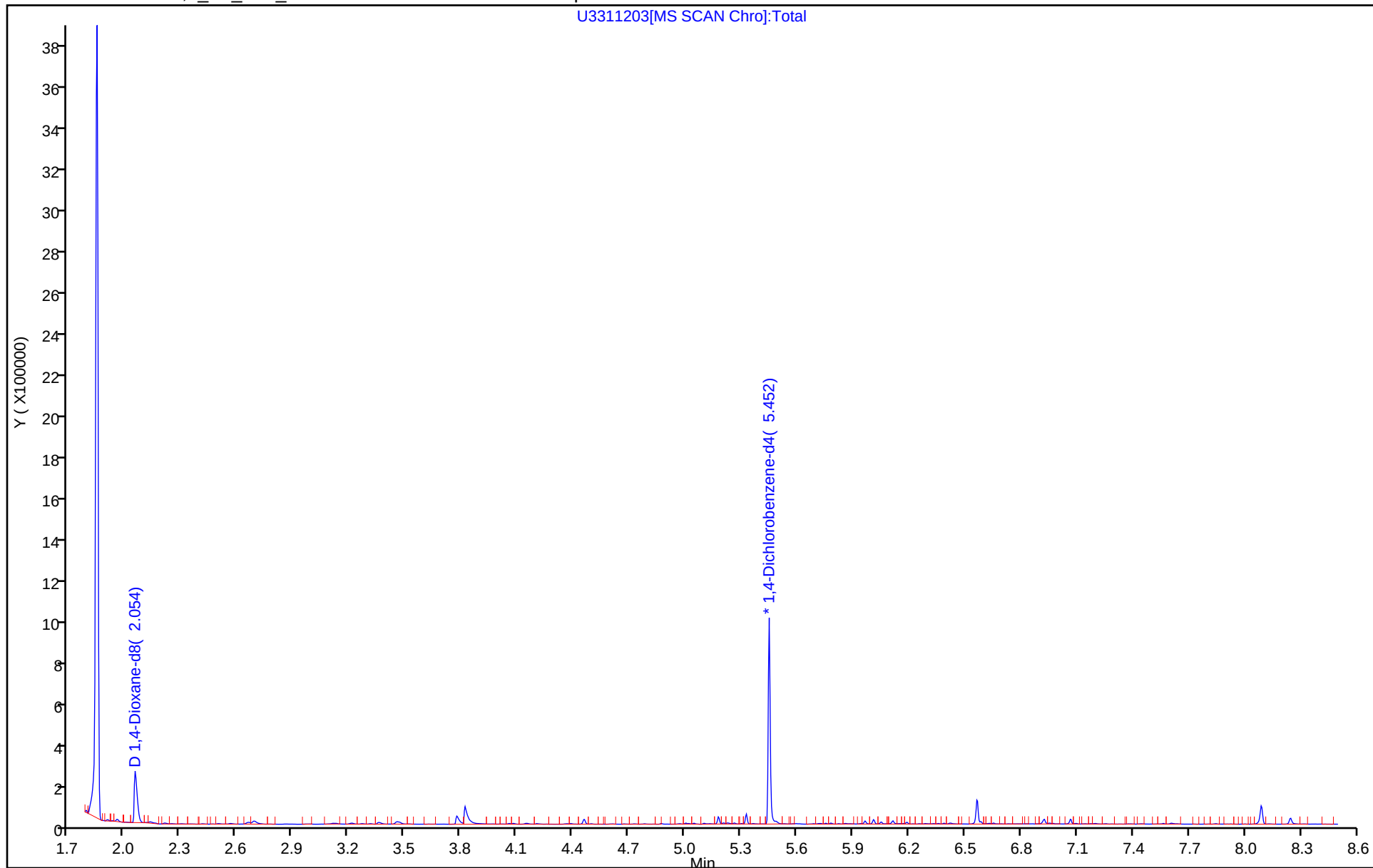
Dil. Factor: 1.0000

ALS Bottle#: 27

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311203[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311203.D

Injection Date: 05-Sep-2018 00:58:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-3-A

Lab Sample ID: 480-140926-3

Client ID: MW-3 (082718)

Operator ID: DR

ALS Bottle#: 27

Worklist Smp#: 27

Injection Vol: 1.0 ul

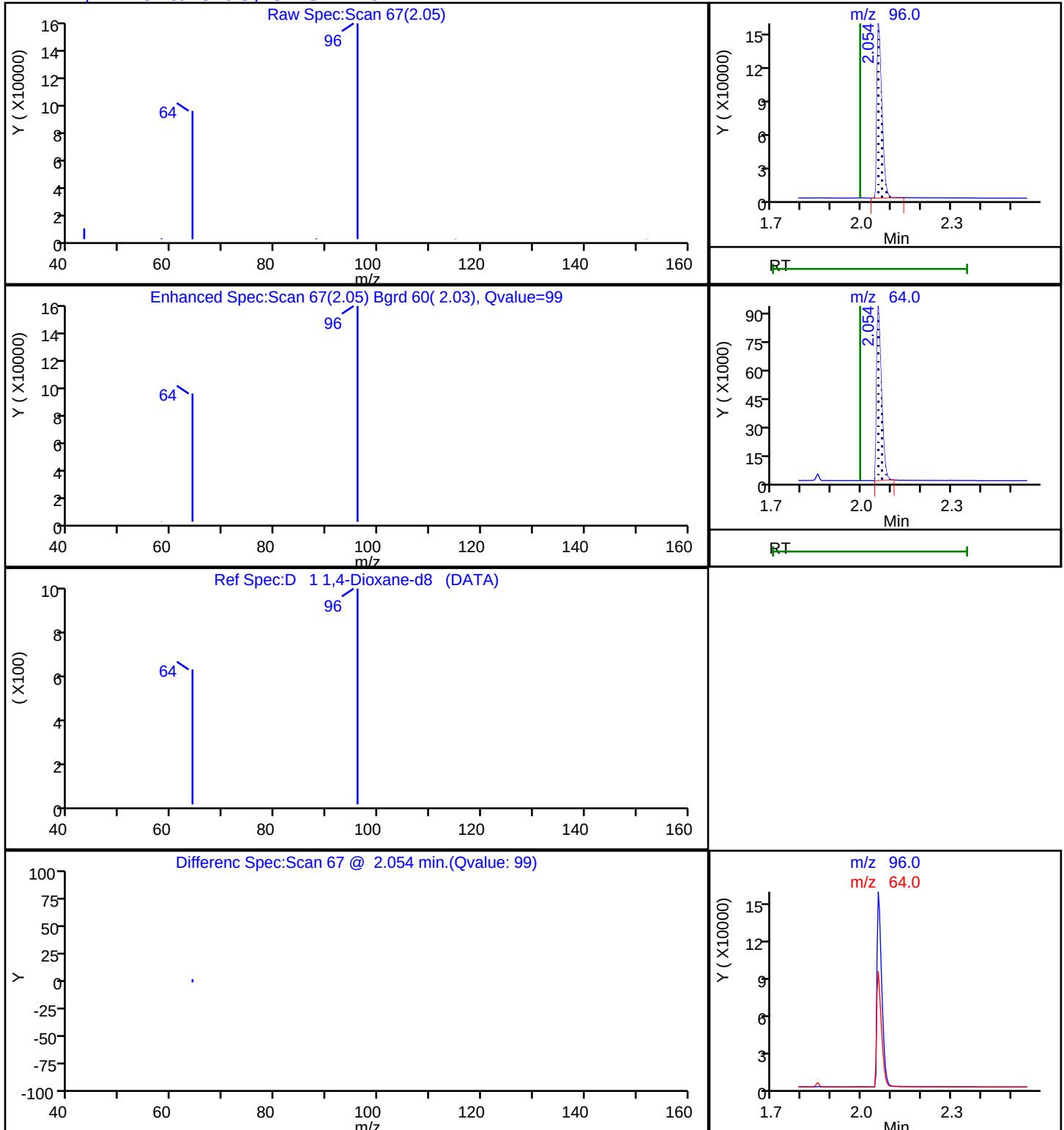
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311203.D

Injection Date: 05-Sep-2018 00:58:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-3-A

Lab Sample ID: 480-140926-3

Client ID: MW-3 (082718)

Operator ID: DR

ALS Bottle#:

27

Worklist Smp#: 27

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

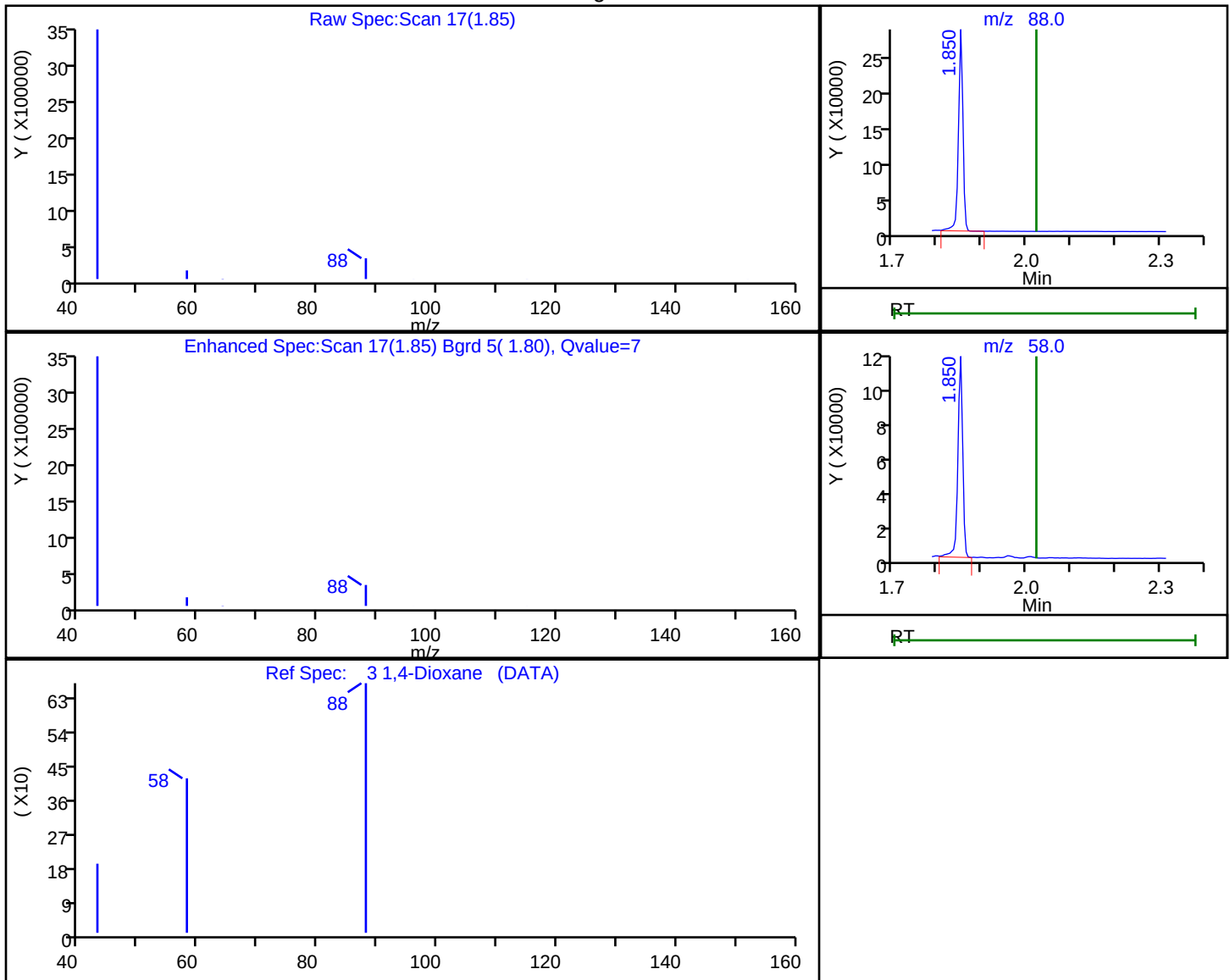
Column:

Detector

MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
1.85	88.00	201899	10.547461
1.85	58.00	90244	

Reviewer: richardsd, 05-Sep-2018 11:52:15

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Client Sample ID: MW-5 (082718) Lab Sample ID: 480-140926-4
Matrix: Water Lab File ID: U3311204.D
Analysis Method: 8270D SIM ID Date Collected: 08/27/2018 16:34
Extract. Method: 3510C Date Extracted: 08/28/2018 14:29
Sample wt/vol: 1000 (mL) Date Analyzed: 09/05/2018 01:21
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 432705 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	34		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311204.D
 Lims ID: 480-140926-C-4-A
 Client ID: MW-5 (082718)
 Sample Type: Client
 Inject. Date: 05-Sep-2018 01:21:30 ALS Bottle#: 28 Worklist Smp#: 28
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-028
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 05-Sep-2018 11:52:22

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.058	1.993	0.065	98	182459	3.38	33.8	
3 1,4-Dioxane	88		2.021				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.452	5.448	0.004	94	444631	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00151

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311204.D

Injection Date: 05-Sep-2018 01:21:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-140926-C-4-A

Lab Sample ID: 480-140926-4

Worklist Smp#: 28

Client ID: MW-5 (082718)

Injection Vol: 1.0 ul

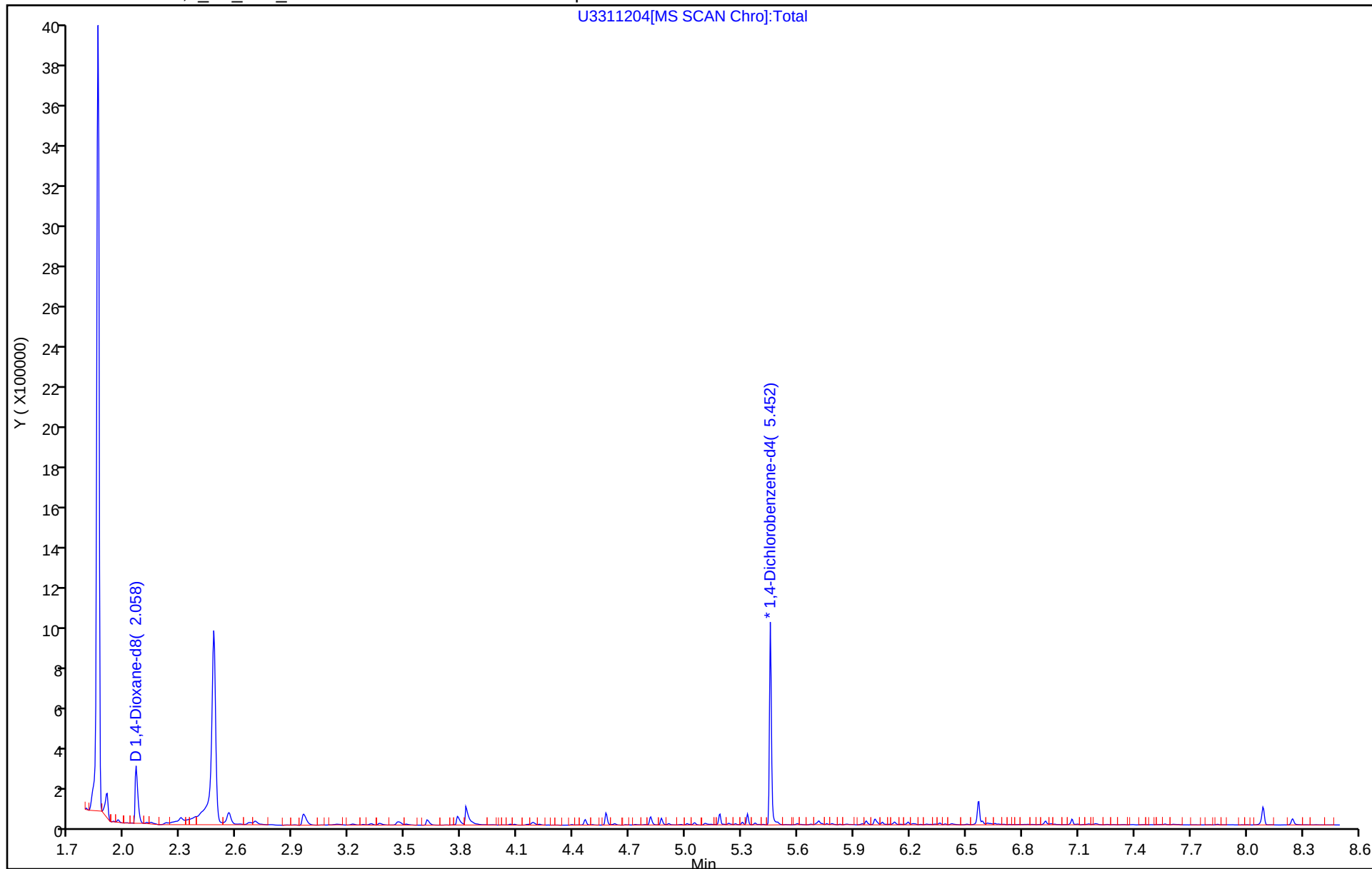
Dil. Factor: 1.0000

ALS Bottle#: 28

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311204[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311204.D

Injection Date: 05-Sep-2018 01:21:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-4-A

Lab Sample ID: 480-140926-4

Client ID: MW-5 (082718)

Operator ID: DR

ALS Bottle#: 28

Worklist Smp#: 28

Injection Vol: 1.0 ul

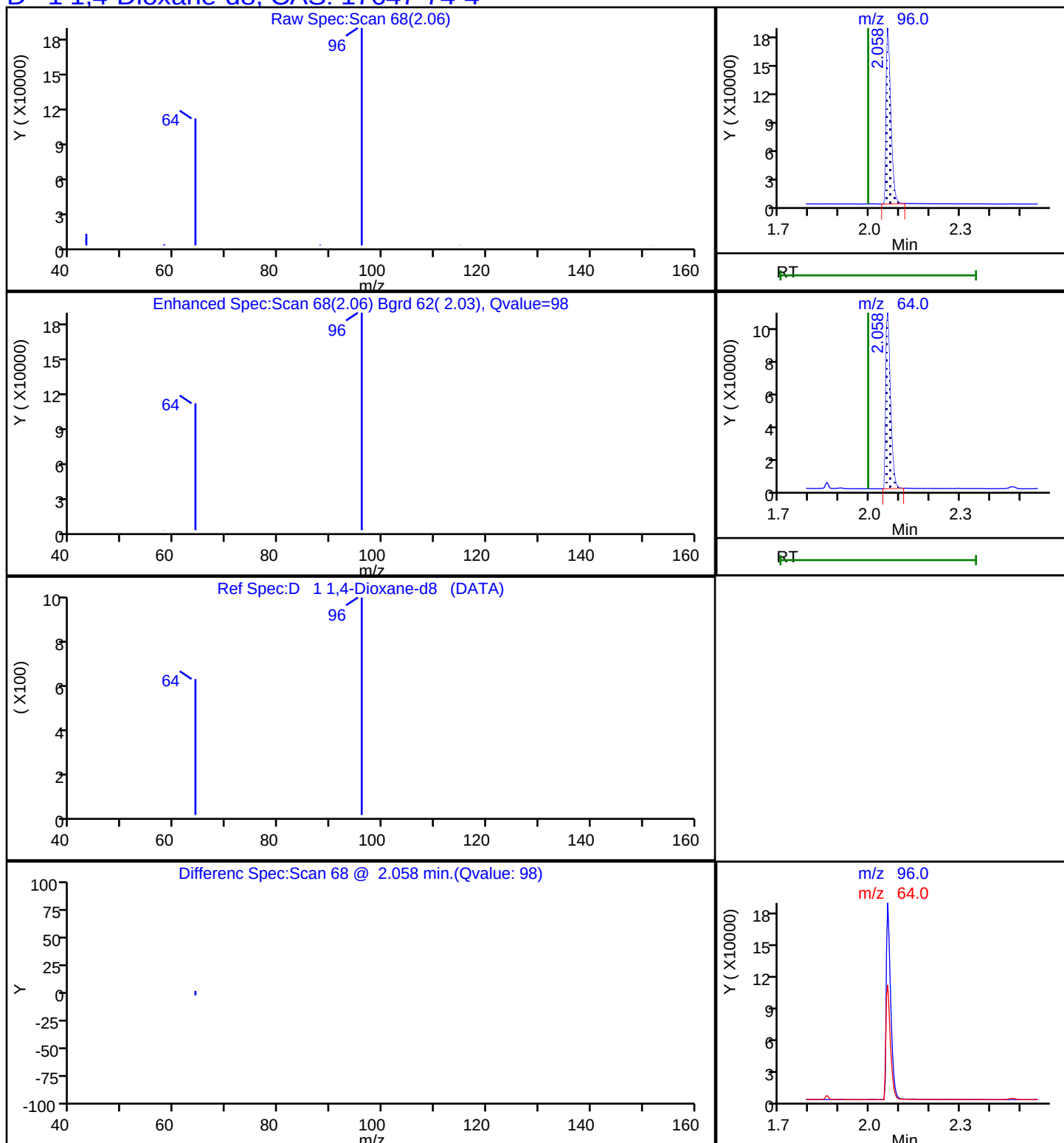
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311204.D

Injection Date: 05-Sep-2018 01:21:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-4-A

Lab Sample ID: 480-140926-4

Client ID: MW-5 (082718)

Operator ID: DR

ALS Bottle#:

28

Worklist Smp#: 28

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

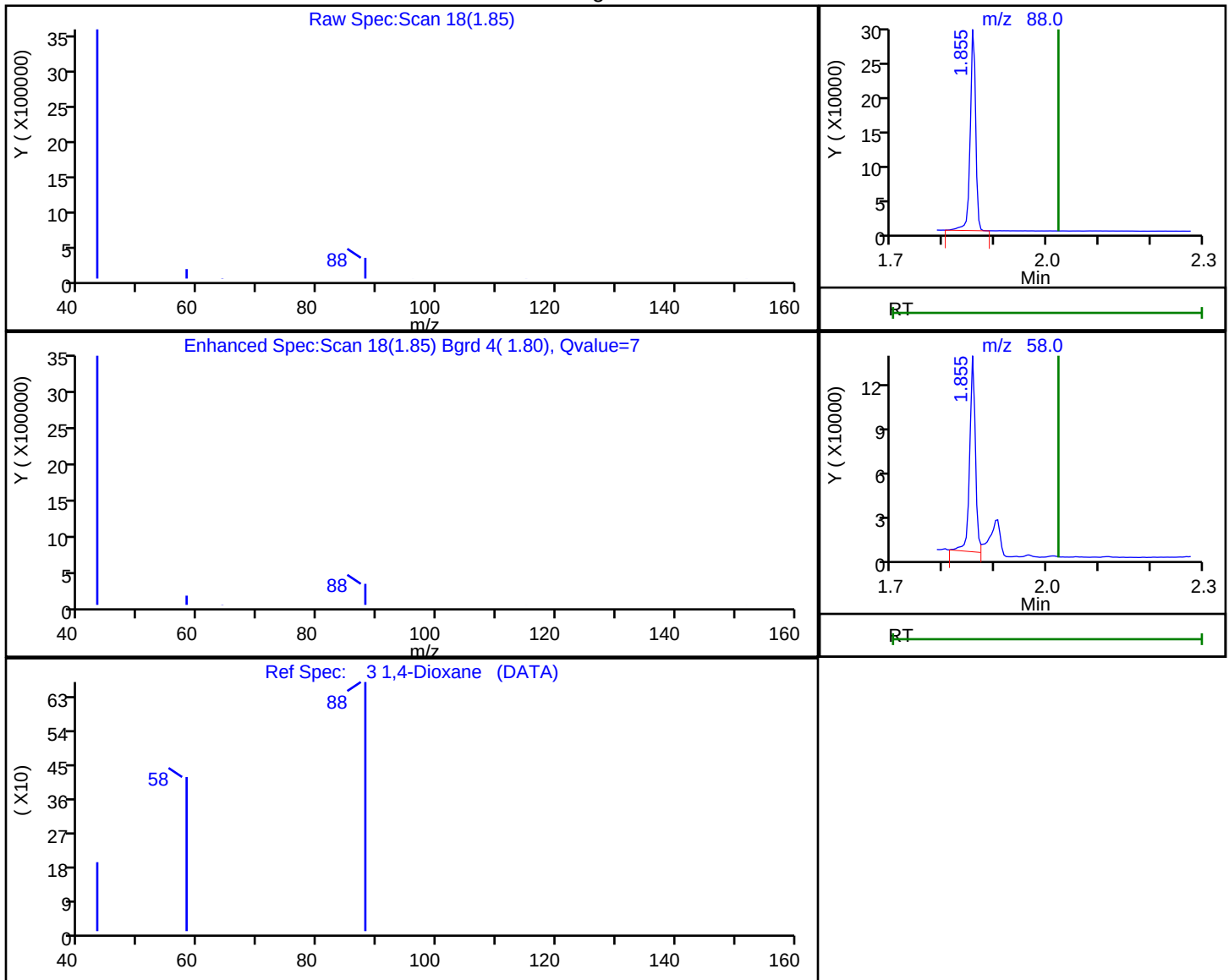
Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
1.85	88.00	214760	10.656599
1.85	58.00	99465	

Reviewer: richardsd, 05-Sep-2018 11:52:21

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Client Sample ID: DUP-01 (082718) Lab Sample ID: 480-140926-5
Matrix: Water Lab File ID: U3311205.D
Analysis Method: 8270D SIM ID Date Collected: 08/27/2018 00:00
Extract. Method: 3510C Date Extracted: 08/28/2018 14:29
Sample wt/vol: 1000 (mL) Date Analyzed: 09/05/2018 01:44
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 432705 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	34		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311205.D
 Lims ID: 480-140926-C-5-A
 Client ID: DUP-01 (082718)
 Sample Type: Client
 Inject. Date: 05-Sep-2018 01:44:30 ALS Bottle#: 29 Worklist Smp#: 29
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-029
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 05-Sep-2018 11:52:30

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.058	1.993	0.065	98	172406	3.38	33.8	
3 1,4-Dioxane	88		2.021				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.452	5.448	0.004	94	420448	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00151

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311205.D

Injection Date: 05-Sep-2018 01:44:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-140926-C-5-A

Lab Sample ID: 480-140926-5

Worklist Smp#: 29

Client ID: DUP-01 (082718)

Injection Vol: 1.0 ul

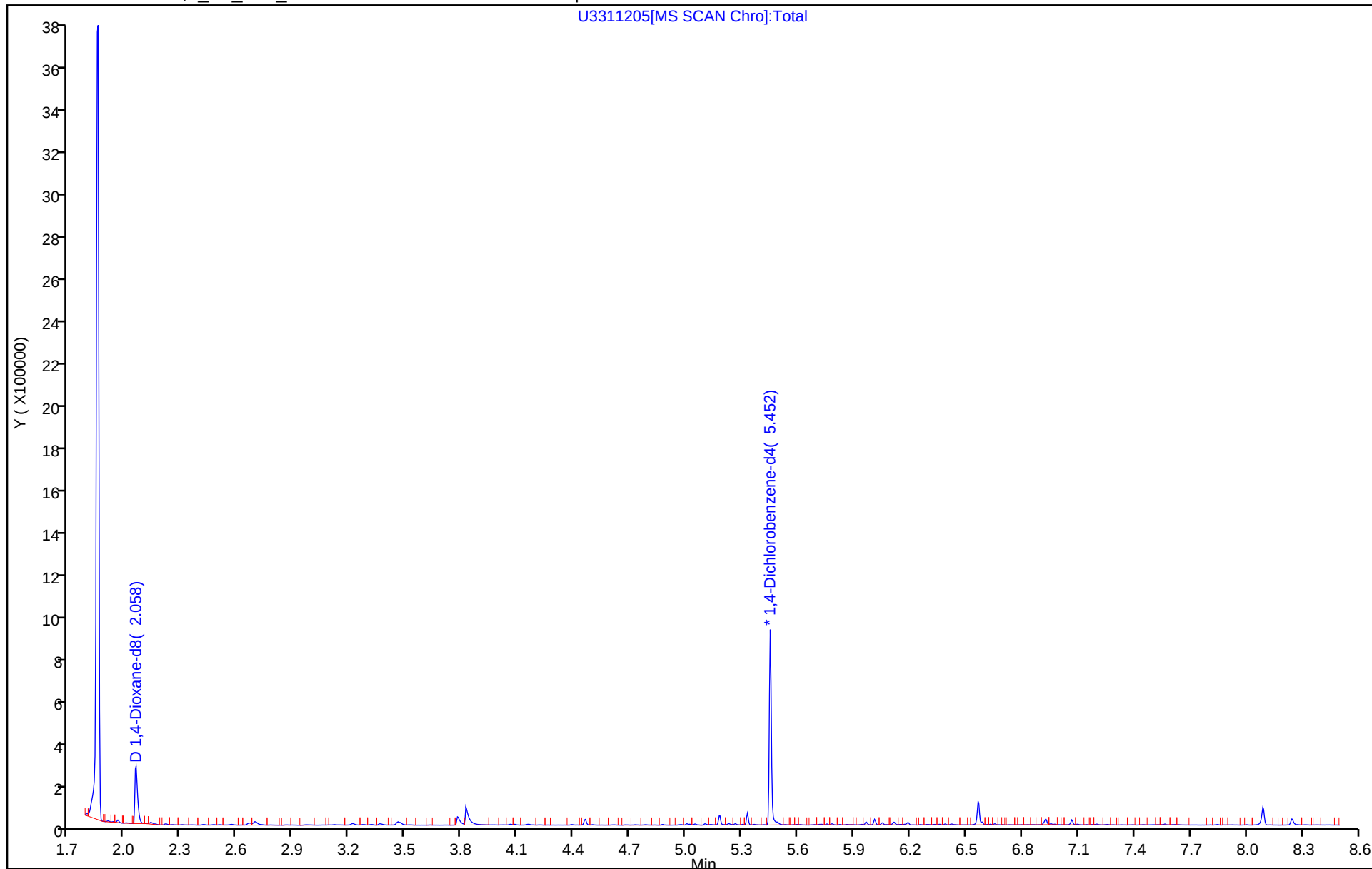
Dil. Factor: 1.0000

ALS Bottle#: 29

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311205[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311205.D

Injection Date: 05-Sep-2018 01:44:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-5-A

Lab Sample ID: 480-140926-5

Client ID: DUP-01 (082718)

Operator ID: DR

ALS Bottle#: 29

Worklist Smp#: 29

Injection Vol: 1.0 ul

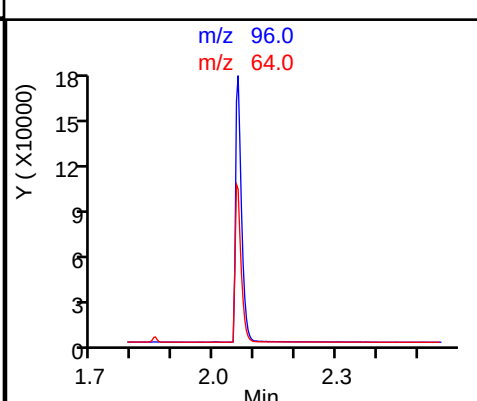
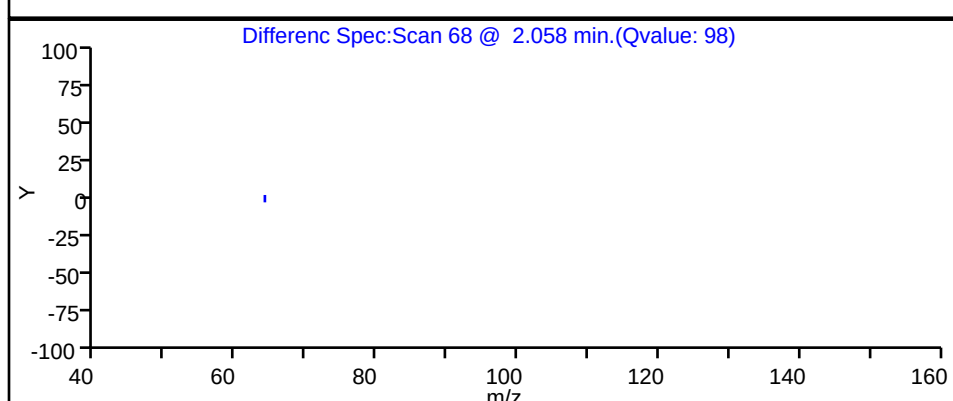
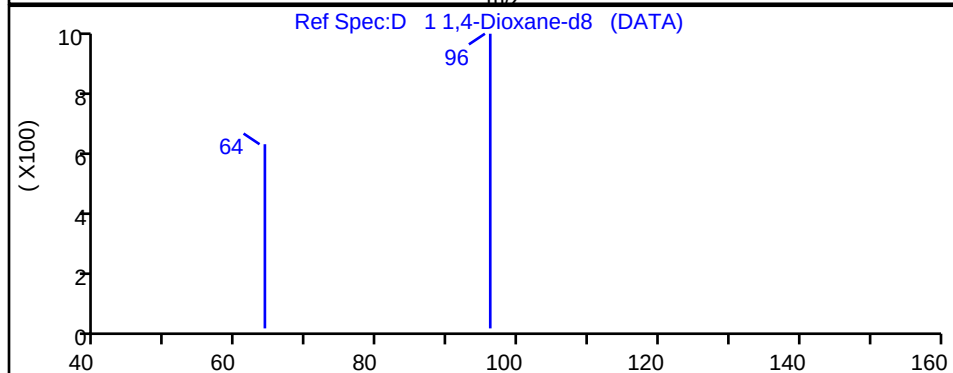
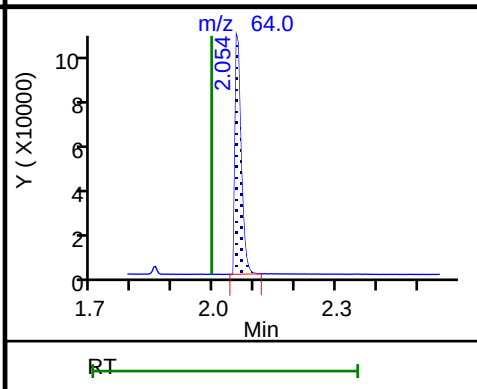
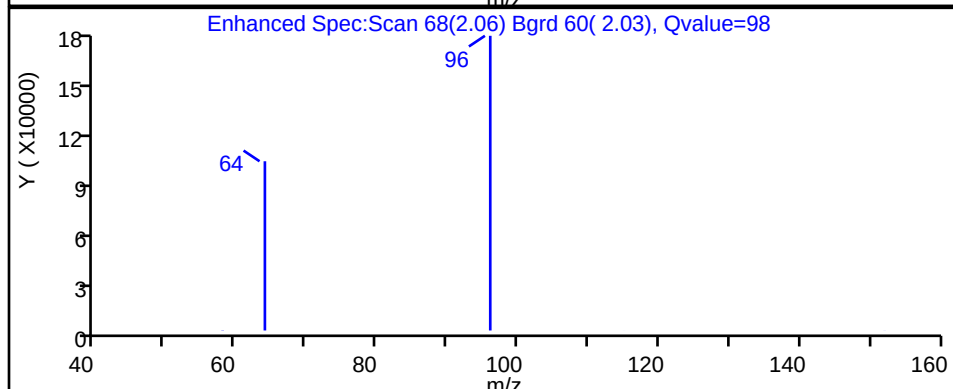
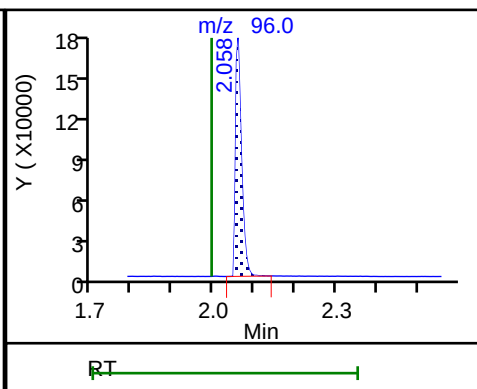
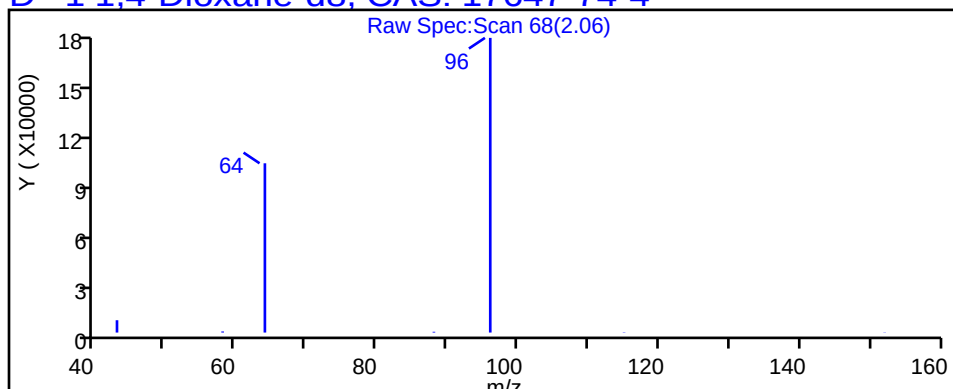
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311205.D

Injection Date: 05-Sep-2018 01:44:30

Instrument ID: HP5973U

Lims ID: 480-140926-C-5-A

Lab Sample ID: 480-140926-5

Client ID: DUP-01 (082718)

Operator ID: DR

ALS Bottle#:

29

Worklist Smp#: 29

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

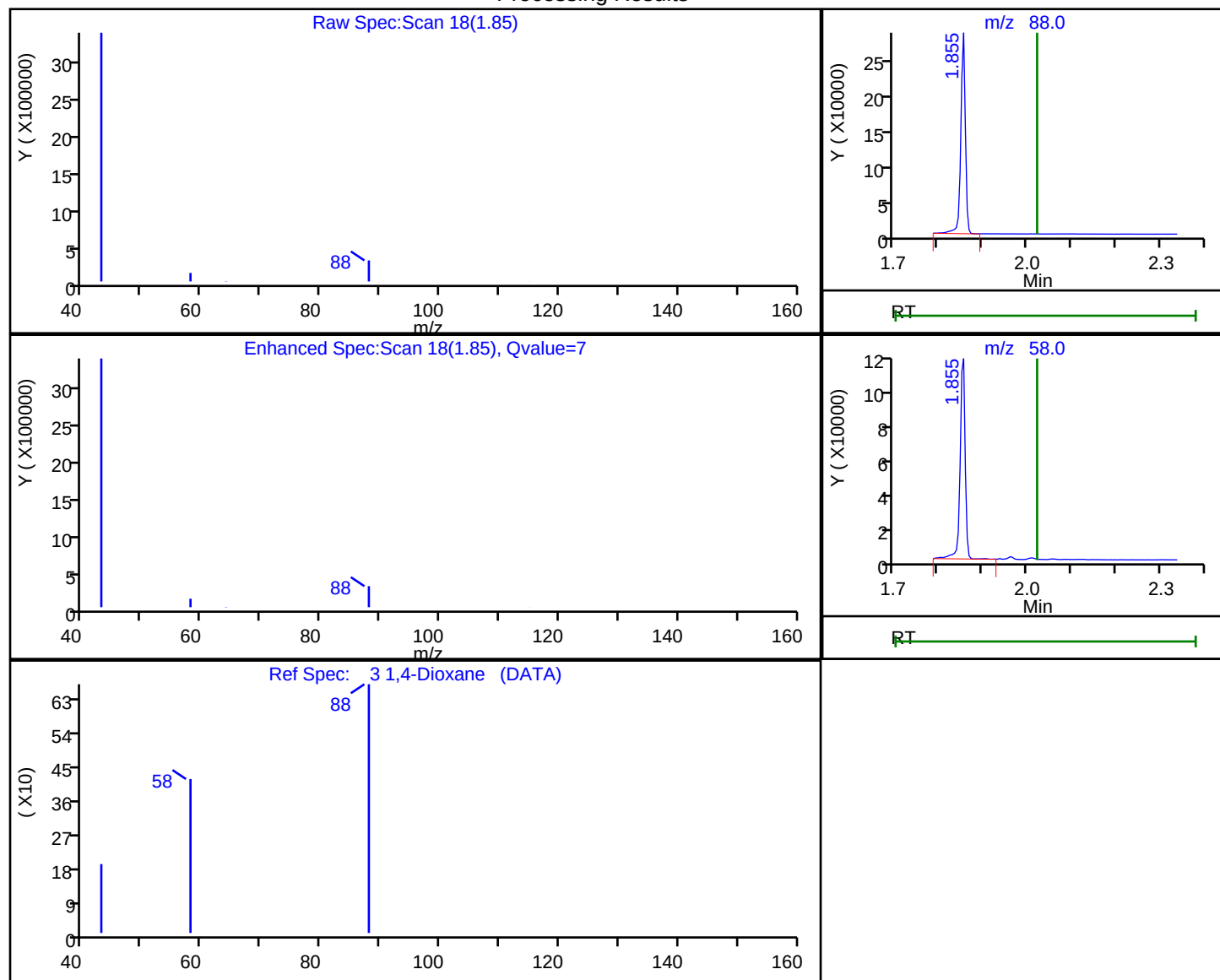
Column:

Detector

MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
1.85	88.00	203747	10.699556
1.85	58.00	91823	

Reviewer: richardsd, 05-Sep-2018 11:52:26

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1 Analy Batch No.: 424045

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/11/2018 18:42 Calibration End Date: 07/11/2018 20:42 Calibration ID: 34301

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-424045/3	U3309387.D
Level 2	ICIS 480-424045/5	U3309389.D
Level 3	IC 480-424045/6	U3309390.D
Level 4	IC 480-424045/7	U3309391.D
Level 5	IC 480-424045/8	U3309392.D
Level 6	IC 480-424045/4	U3309388.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								
1,4-Dioxane	0.9779 1.0553	1.0802	1.0751	1.0742	1.0779	L2ID	-0.025	1.1068			0.0100				1.0000		0.9900
1,4-Dioxane-d8	0.4794 0.4907	0.4899	0.4884	0.4807	0.4834	Ave		0.4854			0.0100	1.0		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1 Analy Batch No.: 424045

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/11/2018 18:42 Calibration End Date: 07/11/2018 20:42 Calibration ID: 34301

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-424045/3	U3309387.D
Level 2	ICIS 480-424045/5	U3309389.D
Level 3	IC 480-424045/6	U3309390.D
Level 4	IC 480-424045/7	U3309391.D
Level 5	IC 480-424045/8	U3309392.D
Level 6	IC 480-424045/4	U3309388.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
1,4-Dioxane		L2ID	7707 16928	29697	35587	43653	50828	0.200 0.400	0.600	0.800	1.00	1.20
1,4-Dioxane-d8	DCBd 4	Ave	78809 160410	274931	331002	406370	471566	2.00 4.00	6.00	8.00	10.0	12.0

Curve Type Legend:

Ave = Average ISTD
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309387.D
 Lims ID: IC - SIM 0.2
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 11-Jul-2018 18:42:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0073014-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 12-Jul-2018 11:01:30 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 11-Jul-2018 20:15:02

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.592	2.588	0.004	98	78809	2.00	1.98	
3 1,4-Dioxane	88	2.633	2.625	0.008	99	7707	0.2000	0.1989	
* 2 1,4-Dichlorobenzene-d4	152	5.840	5.840	0.000	99	328765	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00053
 MB_LLIS_WRK_00149

Amount Added: 1.00
 Amount Added: 20.00

Units: mL
 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309387.D

Injection Date: 11-Jul-2018 18:42:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 0.2

Worklist Smp#: 3

Client ID:

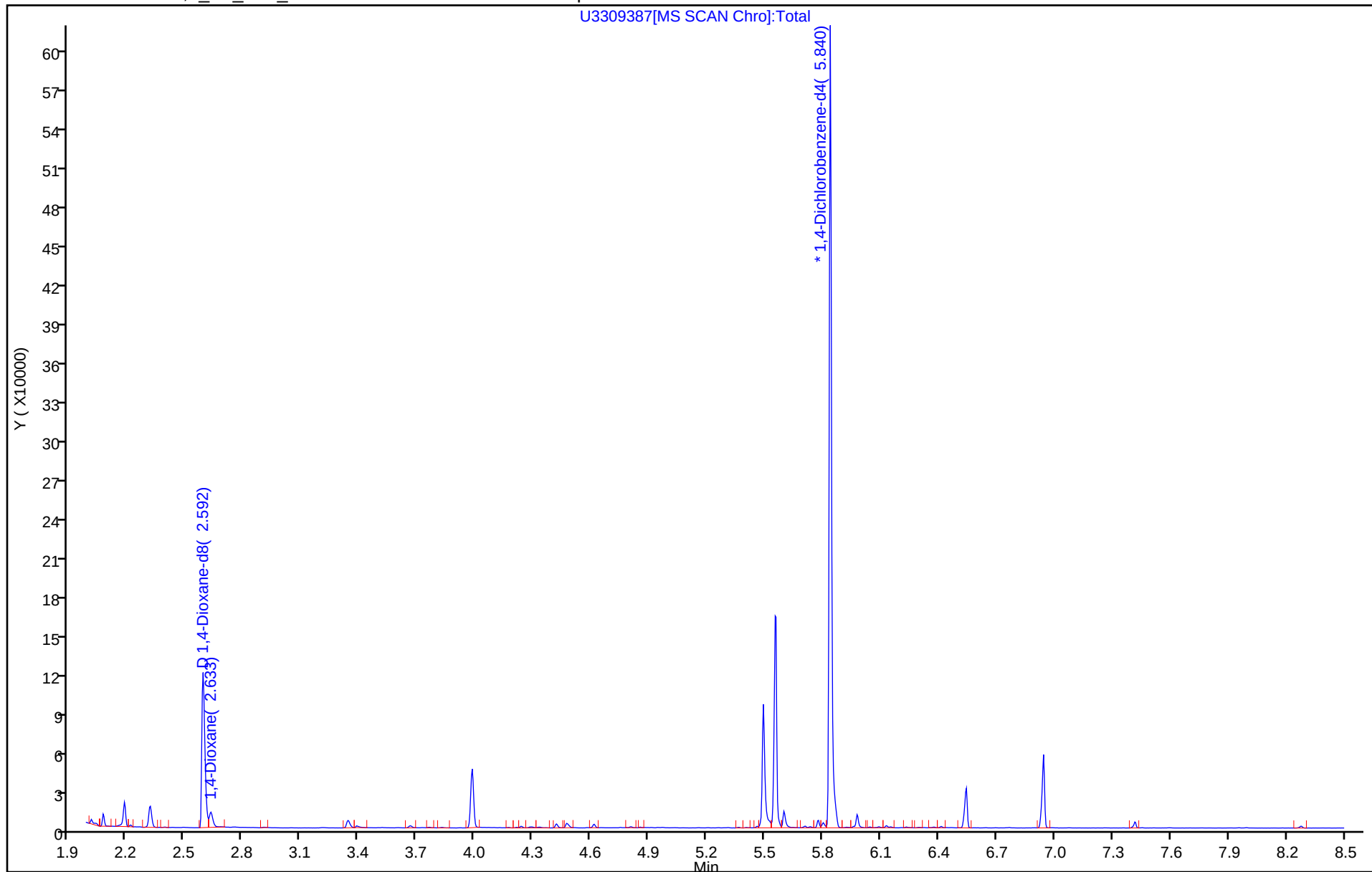
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309388.D
 Lims ID: IC - SIM 0.4
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 11-Jul-2018 19:06:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0073014-004
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 12-Jul-2018 11:01:31 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 11-Jul-2018 20:15:06

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.600	2.588	0.012	99	160410	4.00	4.04	
3 1,4-Dioxane	88	2.637	2.625	0.012	99	16928	0.4000	0.4035	
* 2 1,4-Dichlorobenzene-d4	152	5.840	5.840	0.000	99	326903	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00054
 MB_LLIS_WRK_00149

Amount Added: 1.00
 Amount Added: 20.00

Units: mL
 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309388.D

Injection Date: 11-Jul-2018 19:06:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 0.4

Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul

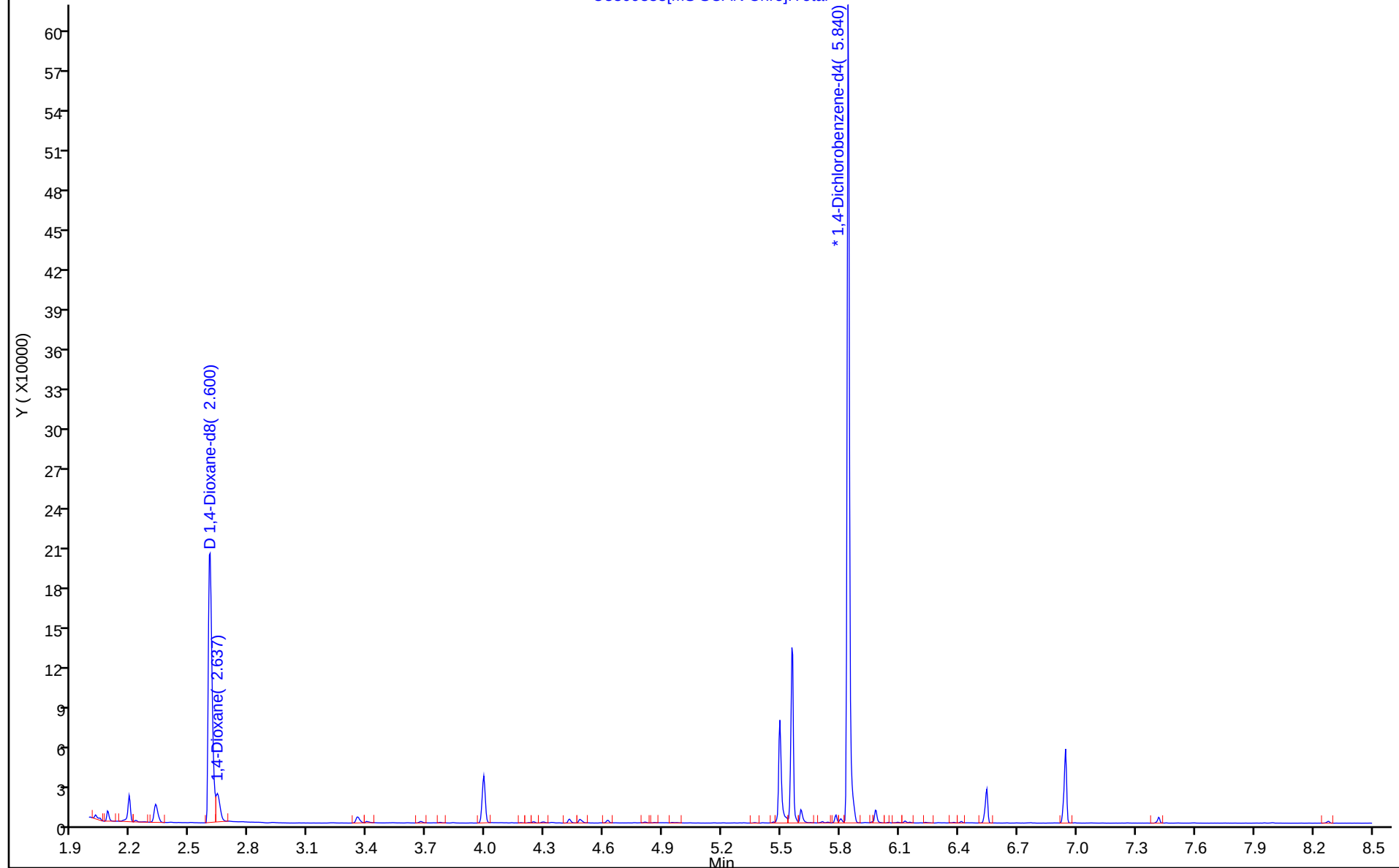
Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3309388[MS SCAN Chro]:Total



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309389.D
 Lims ID: ICIS - SIM 0.6
 Client ID:
 Sample Type: ICIS Calib Level: 3
 Inject. Date: 11-Jul-2018 19:30:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0073014-005
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 12-Jul-2018 11:01:32 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 11-Jul-2018 20:15:09

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.596	2.596	0.000	99	274931	6.00	6.06	
3 1,4-Dioxane	88	2.633	2.633	0.000	97	29697	0.6000	0.6077	
* 2 1,4-Dichlorobenzene-d4	152	5.840	5.840	0.000	99	374104	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00055
 MB_LLIS_WRK_00149

Amount Added: 1.00
 Amount Added: 20.00

Units: mL
 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309389.D

Injection Date: 11-Jul-2018 19:30:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: ICIS - SIM 0.6

Worklist Smp#: 5

Client ID:

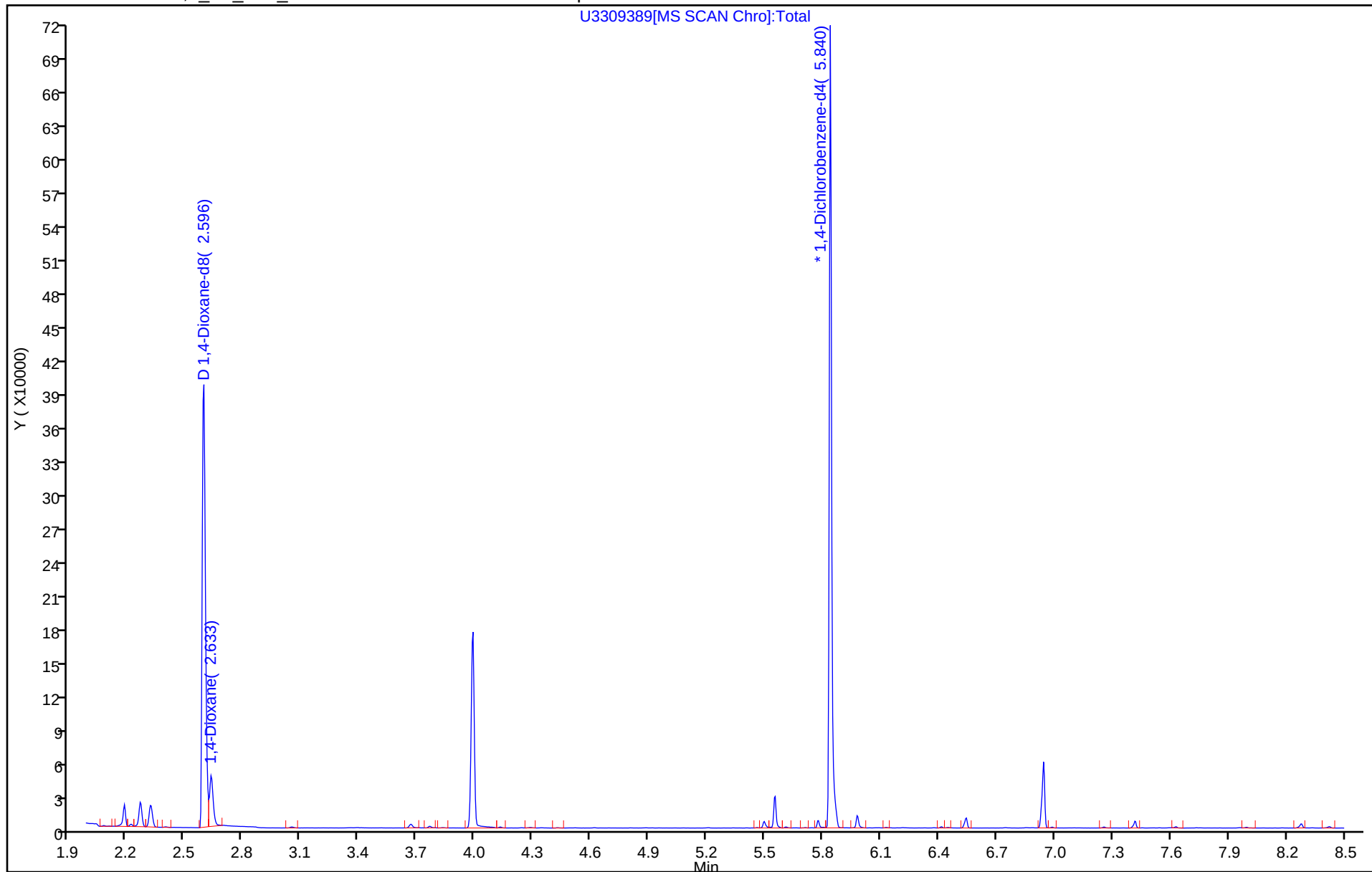
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309390.D
 Lims ID: IC - SIM 0.8
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 11-Jul-2018 19:54:30 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0073014-006
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 12-Jul-2018 11:01:34 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 11-Jul-2018 20:15:13

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.592	2.596	-0.004	98	331002	8.00	8.05	
3 1,4-Dioxane	88	2.633	2.633	0.000	99	35587	0.8000	0.7992	
* 2 1,4-Dichlorobenzene-d4	152	5.840	5.840	0.000	99	338883	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00056
 MB_LLIS_WRK_00149

Amount Added: 1.00
 Amount Added: 20.00

Units: mL
 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309390.D

Injection Date: 11-Jul-2018 19:54:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 0.8

Worklist Smp#: 6

Client ID:

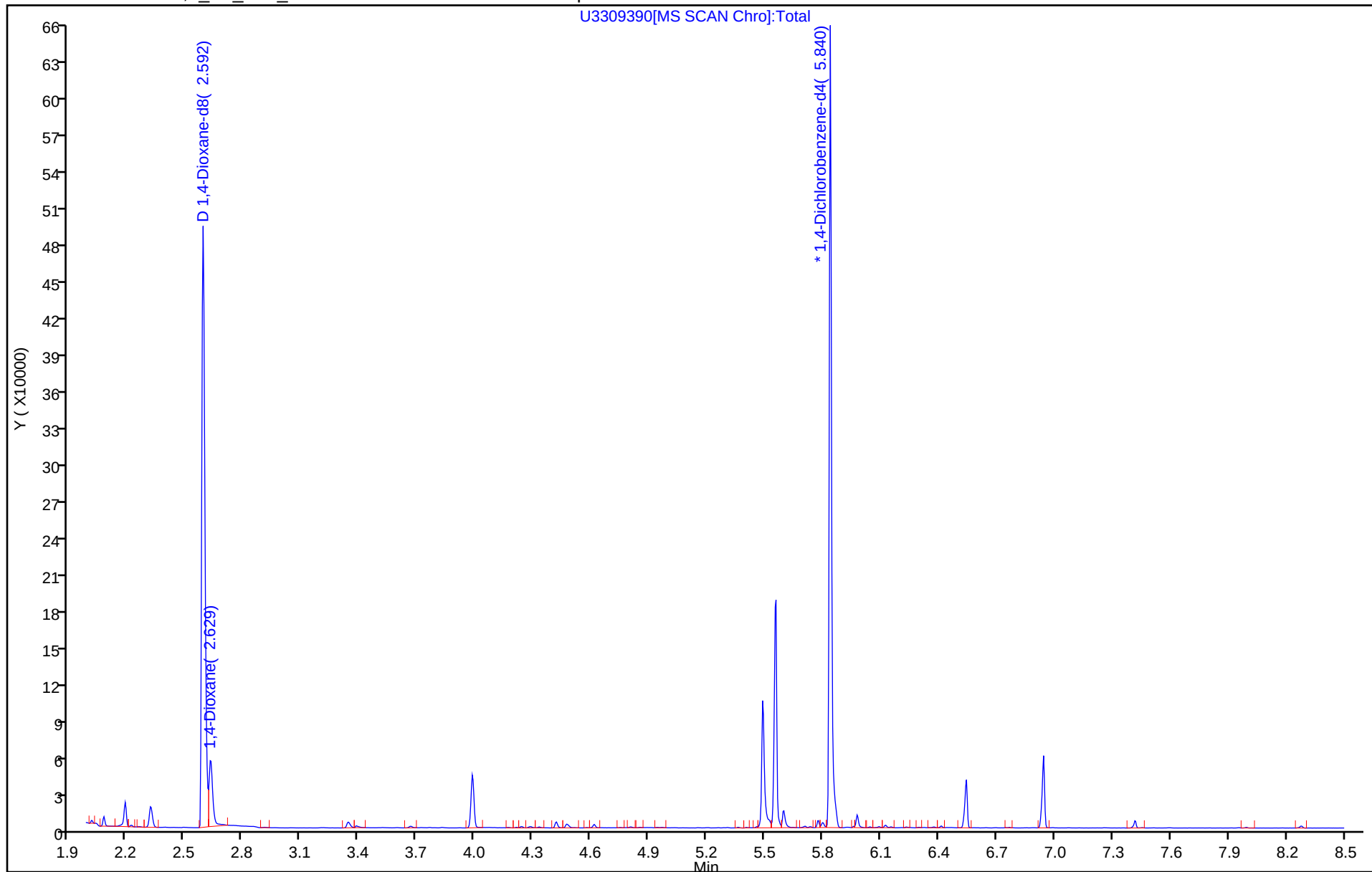
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 6

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309391.D
 Lims ID: IC - SIM 1.0
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 11-Jul-2018 20:18:30 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0073014-007
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 12-Jul-2018 11:01:35 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 12-Jul-2018 11:00:28

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.592	2.596	-0.004	97	406370	10.0	9.90	
3 1,4-Dioxane	88	2.633	2.633	0.000	100	43653	1.00	0.99	
* 2 1,4-Dichlorobenzene-d4	152	5.840	5.840	0.000	98	338149	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00057

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00149

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309391.D

Injection Date: 11-Jul-2018 20:18:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 1.0

Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul

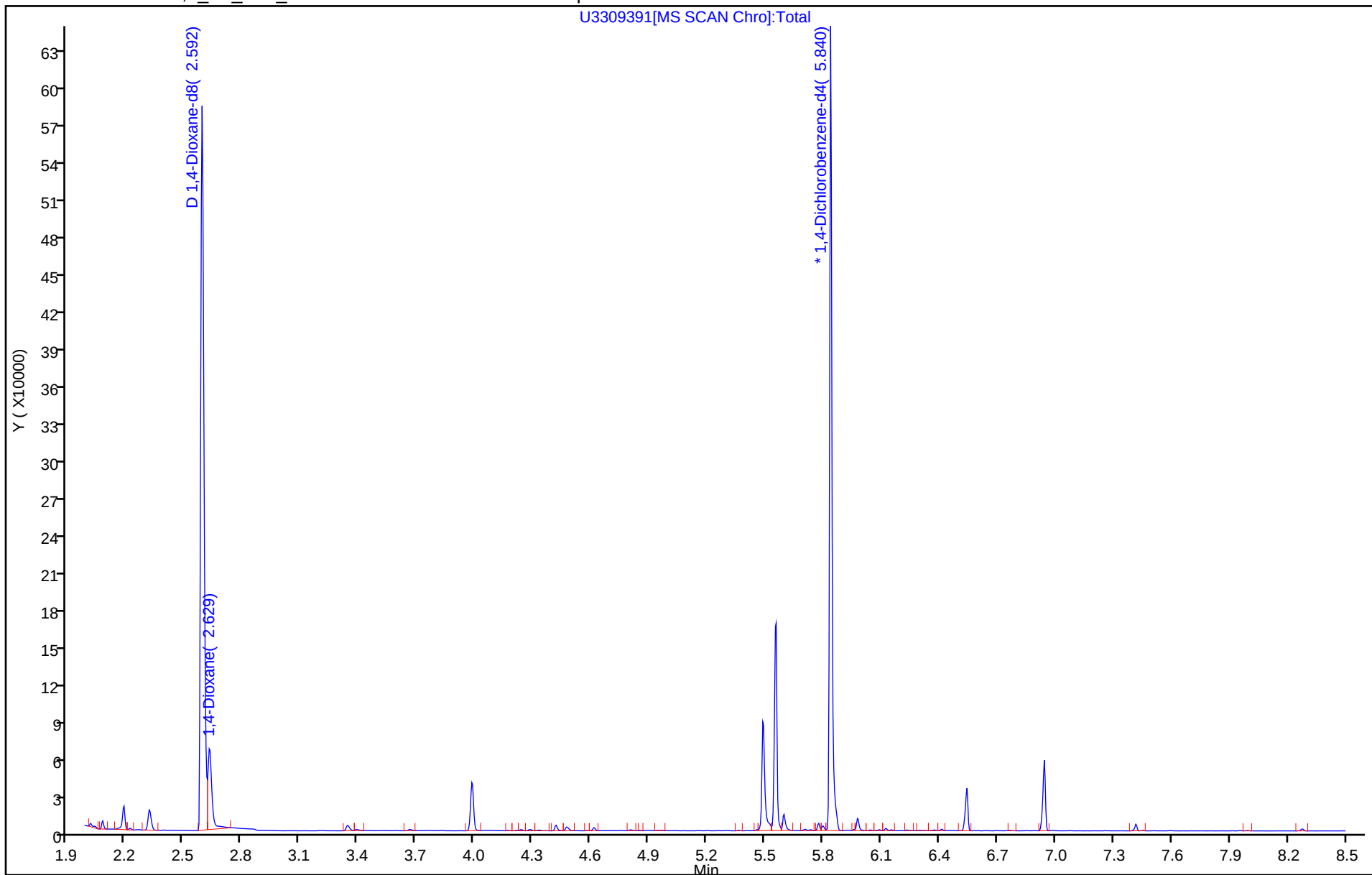
Dil. Factor: 1.0000

ALS Bottle#: 7

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3309391[MS SCAN Chro]:Total



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Lims ID: IC - SIM 1.2
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 11-Jul-2018 20:42:30 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0073014-008
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 12-Jul-2018 11:01:36 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 12-Jul-2018 11:00:32

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.588	2.596	-0.008	98	471566	12.0	11.9	
3 1,4-Dioxane	88	2.625	2.633	-0.008	98	50828	1.20	1.19	
* 2 1,4-Dichlorobenzene-d4	152	5.840	5.840	0.000	99	325204	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00058

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00149

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D

Injection Date: 11-Jul-2018 20:42:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 1.2

Worklist Smp#: 8

Client ID:

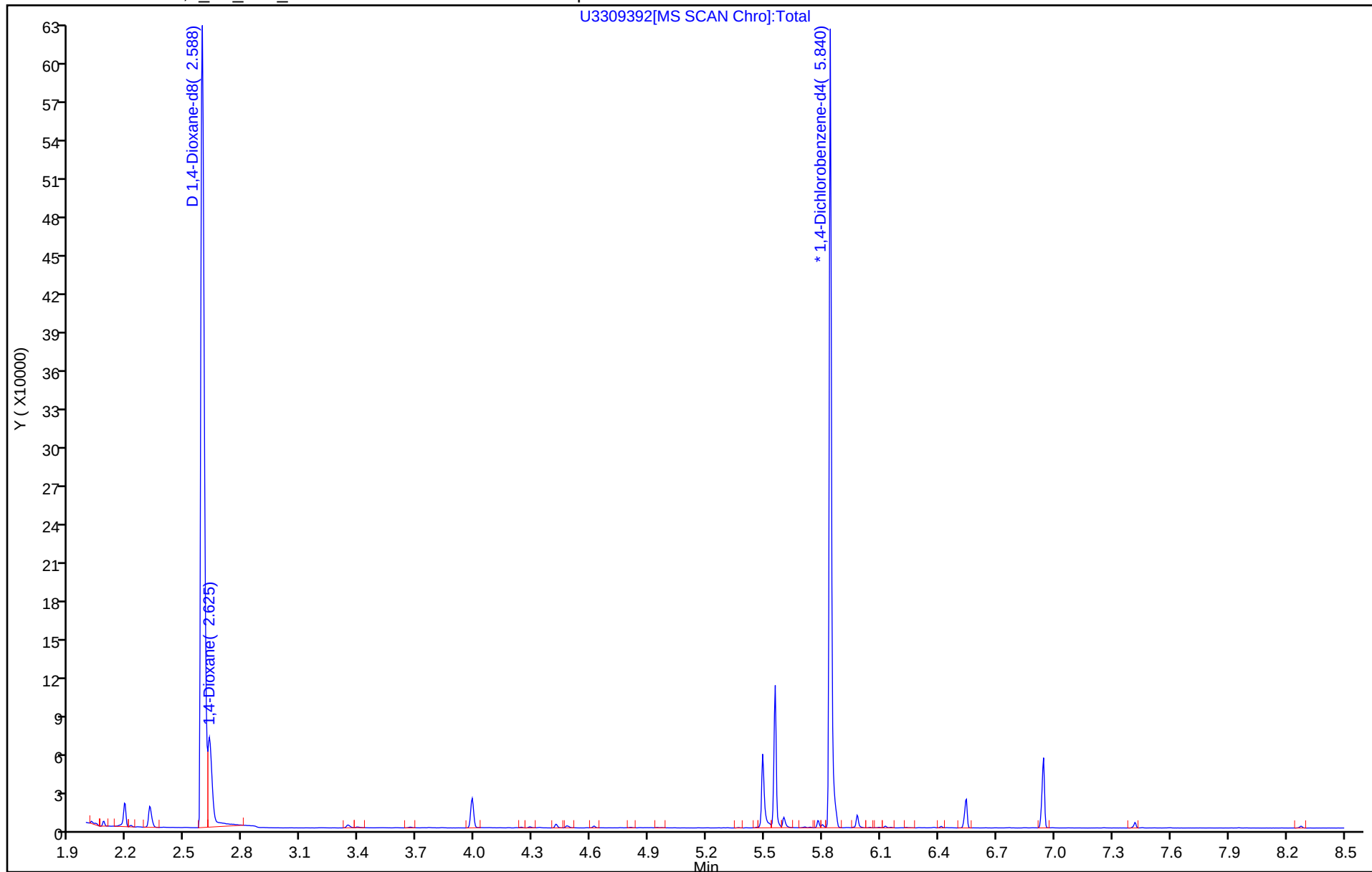
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 8

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Lab Sample ID: CCVIS 480-432705/3 Calibration Date: 09/04/2018 15:34
Instrument ID: HP5973U Calib Start Date: 07/11/2018 18:42
GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 07/11/2018 20:42
Lab File ID: U3311179.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	L2ID		0.9817	0.0100	554	600	-7.6	20.0
1,4-Dioxane-d8	Ave	0.4854	0.4610	0.0100	5700	6000	-5.0	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311179.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 04-Sep-2018 15:34:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 04-Sep-2018 16:55:20

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	1.989	1.993	-0.004	99	340391	6.00	5.70	
3 1,4-Dioxane	88	2.021	2.021	0.000	94	33415	0.6000	0.5543	
* 2 1,4-Dichlorobenzene-d4	152	5.448	5.448	0.000	95	492204	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00059

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00151

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311179.D

Injection Date: 04-Sep-2018 15:34:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: CCVIS

Worklist Smp#: 3

Client ID:

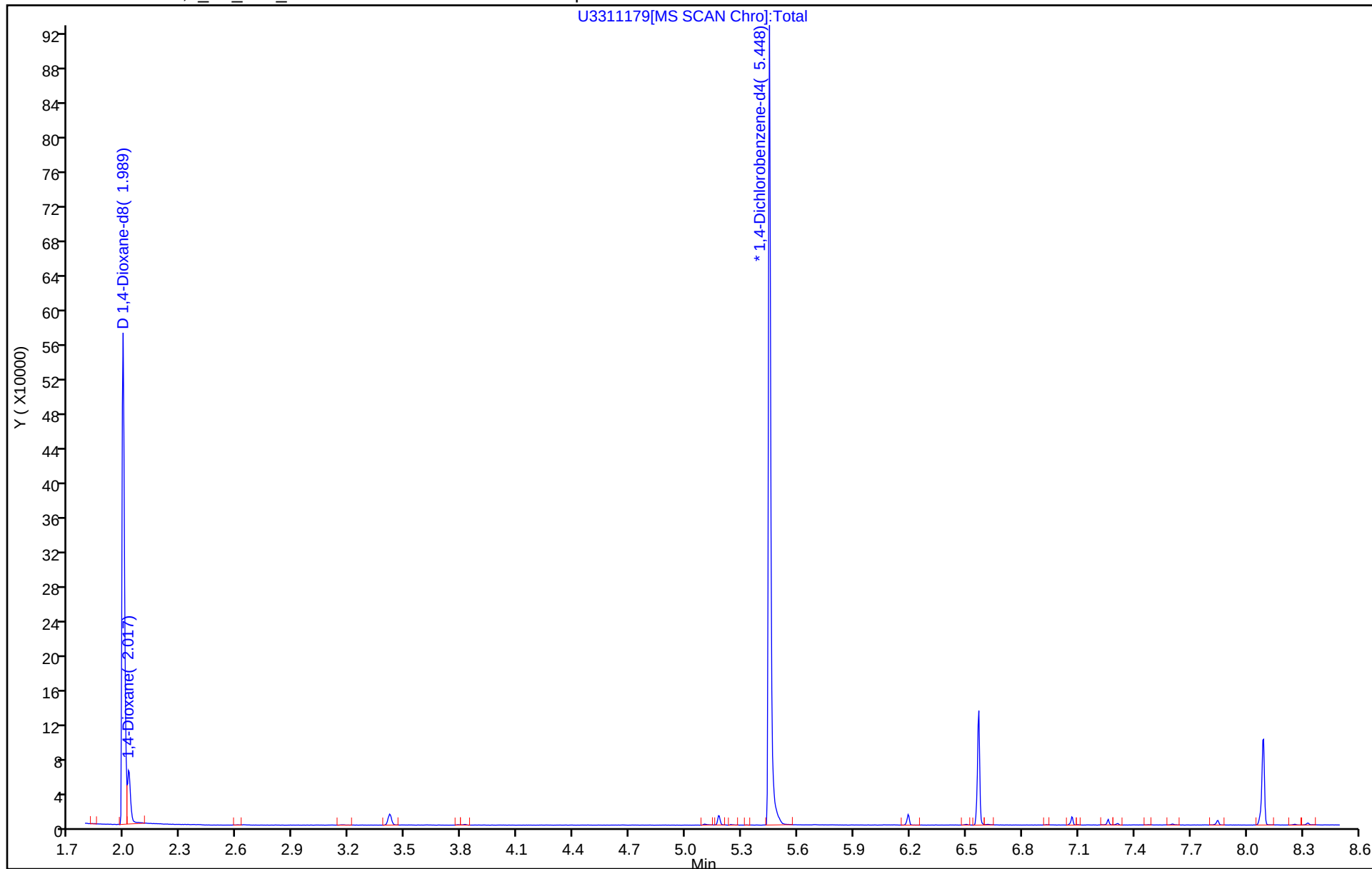
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309386.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 11-Jul-2018 18:14:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0073014-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 12-Jul-2018 11:02:18 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 11-Jul-2018 19:10:47

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 2 1,4-Dichlorobenzene-d4	152		5.840				4.00	ND	
4 DFTPP									
7 4,4'-DDE	246		11.082					ND	
5 4,4'-DDD	235	11.227	11.227	0.000	93	1464			NR
6 4,4'-DDT	235	11.504	11.504	0.000	97	776818	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

MB_DFTPP_WRK_00333

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00149

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309386.D

Injection Date: 11-Jul-2018 18:14:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul

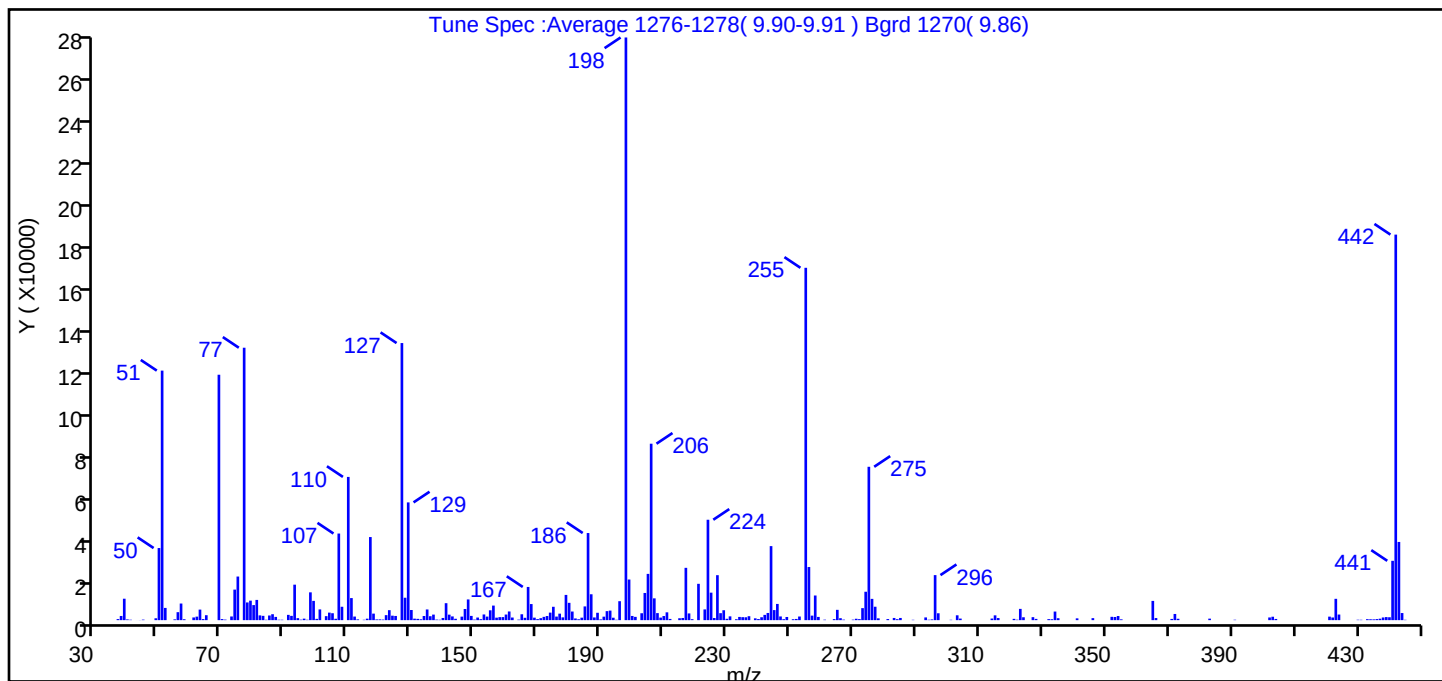
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (151.1)
51	10-80% of the base peak	42.8
68	<2% of mass 69	0.0 (0.0)
69	Present	42.1
70	<2% of mass 69	0.2 (0.4)
127	10-80% of the base peak	47.6
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.0
275	10-60% of the base peak	26.3
365	>1% of mass 198	3.3
441	present but <24% of mass 442	10.2 (15.4)
442	base peak, or >50% of 198	66.2
443	15-24% of mass 442	13.4 (20.3)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309386.D\1,4_Dx_SIM_HP5973U.rsl\tspe
Injection Date: 11-Jul-2018 18:14:30
Spectrum: Tune Spec :Average 1276-1278(9.90-9.91) Bgrd 1270(9.86)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 268

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	511	121.00	275	191.00	1660	273.00	5720
38.00	1986	122.00	2378	192.00	4290	274.00	13526
39.00	10205	123.00	4750	193.00	4542	275.00	73040
40.00	357	124.00	2124	194.00	1155	276.00	10131
41.00	192	125.00	1998	195.00	185	277.00	6389
43.00	13	127.00	131968	196.00	9025	278.00	859
44.00	45	128.00	10671	198.00	277504	281.00	517
45.00	251	129.00	56080	199.00	19344	283.00	1040
49.00	889	130.00	4826	200.00	1994	284.00	465
50.00	34336	131.00	706	201.00	1560	285.00	1041
51.00	118840	132.00	613	203.00	3286	289.00	166
52.00	5825	133.00	411	204.00	12943	293.00	1295
55.00	368	134.00	1969	205.00	22032	294.00	192
56.00	3795	135.00	5089	206.00	84032	295.00	353
57.00	7913	136.00	1876	207.00	10377	296.00	21448
58.00	429	137.00	2638	208.00	3353	297.00	3275
61.00	1281	138.00	261	209.00	1215	301.00	170
62.00	1669	139.00	183	210.00	1951	303.00	2309
63.00	5025	140.00	1040	211.00	3724	304.00	741
64.00	510	141.00	8078	212.00	578	314.00	757
65.00	2353	142.00	2616	215.00	906	315.00	2286
69.00	116880	143.00	1773	216.00	1031	316.00	996
70.00	508	144.00	654	217.00	24912	321.00	615
71.00	257	146.00	1672	218.00	3200	322.00	214
73.00	1745	147.00	5311	219.00	460	323.00	5363
74.00	14543	148.00	9861	221.00	17304	324.00	1375
75.00	20768	149.00	2018	223.00	5107	327.00	1418
77.00	129744	150.00	270	224.00	47816	328.00	592
78.00	8427	151.00	1243	225.00	13089	332.00	484
79.00	9287	152.00	455	226.00	1005	333.00	435
80.00	7174	153.00	2705	227.00	21416	334.00	4093
81.00	9632	154.00	1689	228.00	3320	335.00	918
82.00	2266	155.00	4687	229.00	4715	341.00	852

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309386.D\1,4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 11-Jul-2018 18:14:30

Spectrum: Tune Spec :Average 1276-1278(9.90-9.91) Bgrd 1270(9.86)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 268

m/z	Y	m/z	Y	m/z	Y	m/z	Y
83.00	2046	156.00	6935	230.00	642	346.00	951
84.00	187	157.00	1181	231.00	1806	352.00	1578
85.00	2209	158.00	1431	233.00	436	353.00	1500
86.00	2823	159.00	1450	234.00	1531	354.00	1965
87.00	1544	160.00	2670	235.00	1421	355.00	384
88.00	195	161.00	4129	236.00	1372	365.00	9163
89.00	191	162.00	1244	237.00	1882	366.00	997
91.00	2515	164.00	245	239.00	864	371.00	577
92.00	2039	165.00	2802	240.00	525	372.00	2943
93.00	16896	166.00	1121	241.00	1379	373.00	651
94.00	951	167.00	15808	242.00	2508	383.00	718
95.00	231	168.00	7660	243.00	3416	391.00	191
96.00	716	169.00	1181	244.00	35256	402.00	1277
97.00	192	170.00	495	245.00	4786	403.00	1625
98.00	13242	171.00	933	246.00	7719	404.00	566
99.00	9169	172.00	1560	247.00	1755	421.00	1668
100.00	608	173.00	1959	248.00	452	422.00	1263
101.00	5111	174.00	3581	249.00	1506	423.00	10154
103.00	1902	175.00	6362	251.00	435	424.00	2667
104.00	3580	176.00	1699	252.00	569	430.00	199
105.00	3295	177.00	3092	253.00	1731	431.00	172
106.00	656	178.00	1324	255.00	167808	433.00	465
107.00	41248	179.00	12013	256.00	25296	434.00	417
108.00	6371	180.00	8244	257.00	2151	435.00	367
110.00	68216	181.00	4101	258.00	11735	436.00	512
111.00	10506	182.00	803	259.00	1533	437.00	690
112.00	1707	183.00	425	261.00	224	438.00	1277
113.00	369	184.00	1180	264.00	482	439.00	1455
115.00	174	185.00	6541	265.00	4907	440.00	1382
116.00	700	186.00	41488	266.00	928	441.00	28256
117.00	39576	187.00	12325	267.00	244	442.00	183616
118.00	3108	188.00	1281	270.00	238	443.00	37240
119.00	347	189.00	3506	271.00	657	444.00	3380
120.00	358	190.00	347	272.00	488	445.00	169

m/z	Y	m/z	Y	m/z	Y	m/z	Y
83.00	2046	156.00	6935	230.00	642	346.00	951
84.00	187	157.00	1181	231.00	1806	352.00	1578
85.00	2209	158.00	1431	233.00	436	353.00	1500
86.00	2823	159.00	1450	234.00	1531	354.00	1965
87.00	1544	160.00	2670	235.00	1421	355.00	384
88.00	195	161.00	4129	236.00	1372	365.00	9163
89.00	191	162.00	1244	237.00	1882	366.00	997
91.00	2515	164.00	245	239.00	864	371.00	577
92.00	2039	165.00	2802	240.00	525	372.00	2943
93.00	16896	166.00	1121	241.00	1379	373.00	651
94.00	951	167.00	15808	242.00	2508	383.00	718
95.00	231	168.00	7660	243.00	3416	391.00	191
96.00	716	169.00	1181	244.00	35256	402.00	1277
97.00	192	170.00	495	245.00	4786	403.00	1625
98.00	13242	171.00	933	246.00	7719	404.00	566
99.00	9169	172.00	1560	247.00	1755	421.00	1668
100.00	608	173.00	1959	248.00	452	422.00	1263
101.00	5111	174.00	3581	249.00	1506	423.00	10154
103.00	1902	175.00	6362	251.00	435	424.00	2667
104.00	3580	176.00	1699	252.00	569	430.00	199
105.00	3295	177.00	3092	253.00	1731	431.00	172
106.00	656	178.00	1324	255.00	167808	433.00	465
107.00	41248	179.00	12013	256.00	25296	434.00	417
108.00	6371	180.00	8244	257.00	2151	435.00	367
110.00	68216	181.00	4101	258.00	11735	436.00	512
111.00	10506	182.00	803	259.00	1533	437.00	690
112.00	1707	183.00	425	261.00	224	438.00	1277
113.00	369	184.00	1180	264.00	482	439.00	1455
115.00	174	185.00	6541	265.00	4907	440.00	1382
116.00	700	186.00	41488	266.00	928	441.00	28256
117.00	39576	187.00	12325	267.00	244	442.00	183616
118.00	3108	188.00	1281	270.00	238	443.00	37240
119.00	347	189.00	3506	271.00	657	444.00	3380
120.00	358	190.00	347	272.00	488	445.00	169

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309386.D

Injection Date: 11-Jul-2018 18:14:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

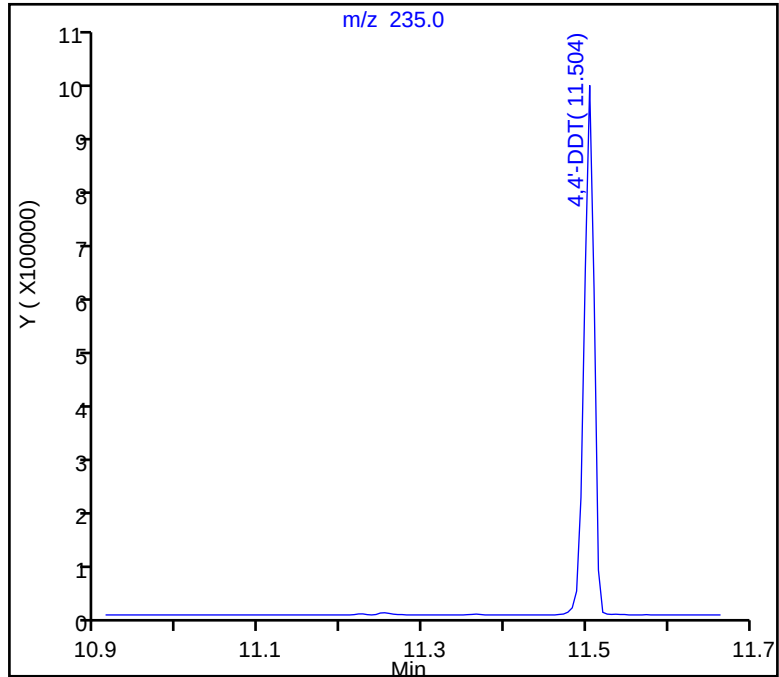
%Breakdown =

$$\left(\frac{\text{Area Breakdown Cpnds}}{\text{Total Area Breakdown Cpnds}} \right) * 100$$

6 4,4'-DDT, Area = 776818

5 4,4'-DDD, Area = 1464

7 4,4'-DDE, Area = 0

%Breakdown: 0.19%, Max Limit: 20.00%
Passed

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311178.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 04-Sep-2018 15:07:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:44 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 04-Sep-2018 16:55:12

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246	10.543	10.543	0.000	0	2580			NR
5 4,4'-DDD	235	10.821	10.821	0.000	41	2832			NR
6 4,4'-DDT	235	11.066	11.066	0.000	95	1875871	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

MB_DFTPP_WRK_00336

Amount Added: 1.00

Units: mL

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311178.D

Injection Date: 04-Sep-2018 15:07:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul

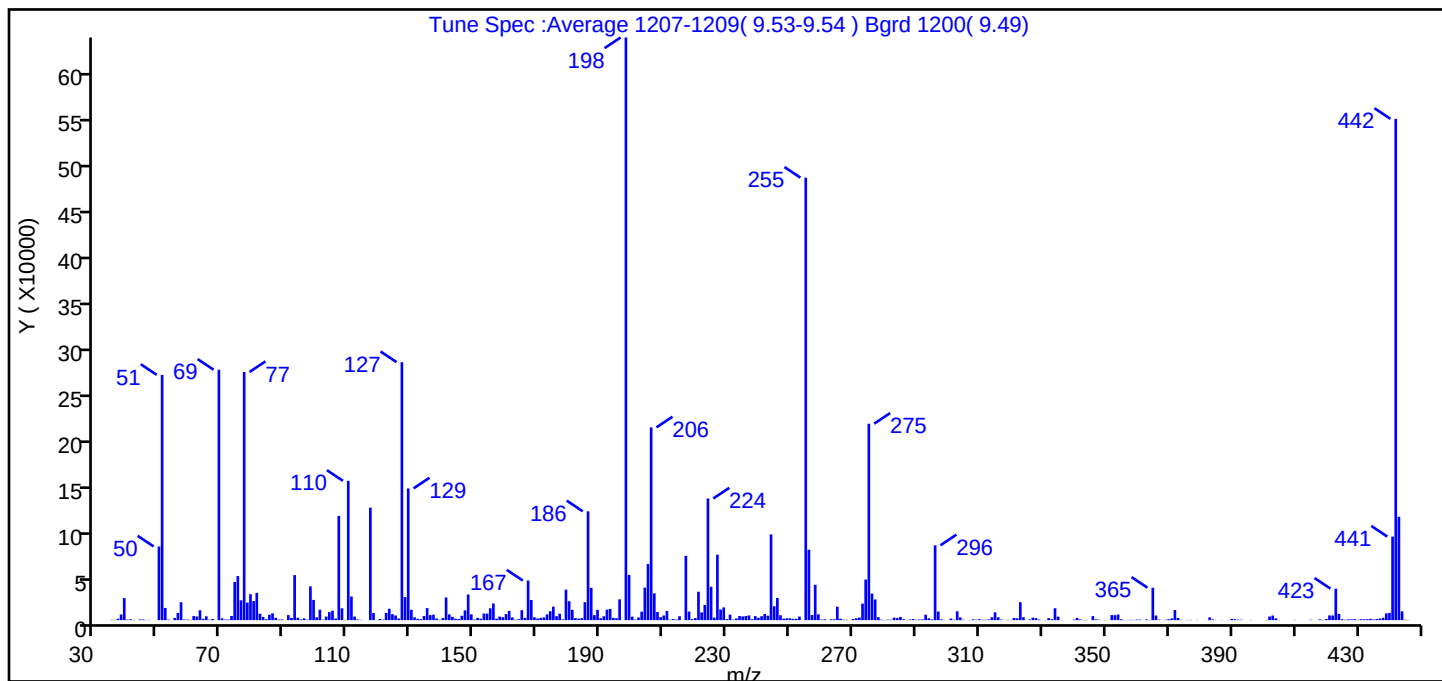
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (116.2)
51	10-80% of the base peak	42.1
68	<2% of mass 69	0.0 (0.0)
69	Present	43.0
70	<2% of mass 69	0.3 (0.7)
127	10-80% of the base peak	44.3
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.8
275	10-60% of the base peak	33.7
365	>1% of mass 198	5.6
441	present but <24% of mass 442	14.3 (16.7)
442	base peak, or >50% of 198	86.0
443	15-24% of mass 442	17.7 (20.6)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311178.D\1,4_Dx_SIM_HP5973U.rsl\tspe
Injection Date: 04-Sep-2018 15:07:30
Spectrum: Tune Spec :Average 1207-1209(9.53-9.54) Bgrd 1200(9.49)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 362

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	313	135.00	13277	228.00	11647	326.00	772
36.00	310	136.00	5542	229.00	13977	327.00	2765
37.00	1549	137.00	6001	230.00	1161	328.00	2159
38.00	6180	138.00	1719	231.00	6044	329.00	684
39.00	24280	139.00	428	232.00	667	331.00	218
40.00	565	140.00	2285	233.00	1862	332.00	2246
41.00	977	141.00	24880	234.00	4546	333.00	1091
42.00	221	142.00	6316	235.00	4058	334.00	13079
44.00	764	143.00	3621	236.00	4579	335.00	3815
45.00	728	144.00	1573	237.00	5148	336.00	172
46.00	243	145.00	1196	238.00	1059	340.00	581
47.00	197	146.00	4819	239.00	4426	341.00	2443
50.00	80888	147.00	10727	240.00	2525	342.00	842
51.00	269248	148.00	28184	241.00	4278	343.00	188
52.00	13392	149.00	6343	242.00	6799	344.00	269
53.00	600	150.00	694	243.00	4868	346.00	4432
55.00	2377	151.00	2502	244.00	94168	347.00	947
56.00	7963	152.00	1552	245.00	15233	348.00	437
57.00	19696	153.00	7243	246.00	24328	350.00	211
58.00	734	154.00	7213	247.00	5363	352.00	5521
59.00	635	155.00	13007	248.00	1590	353.00	5469
60.00	317	156.00	18328	249.00	2068	354.00	6197
61.00	4454	157.00	1765	250.00	1979	355.00	995
62.00	4004	158.00	3863	251.00	1381	356.00	185
63.00	10861	159.00	3213	252.00	1469	357.00	234
64.00	1446	160.00	6629	253.00	3891	358.00	369
65.00	4229	161.00	10187	255.00	485824	359.00	264
66.00	488	162.00	3044	256.00	77272	360.00	605
67.00	1317	163.00	431	257.00	5659	361.00	533
69.00	274944	164.00	1055	258.00	38752	363.00	843
70.00	1966	165.00	10933	259.00	6404	364.00	212
71.00	706	166.00	2590	260.00	568	365.00	35600
72.00	669	167.00	43480	261.00	967	366.00	5075

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311178.D\1_4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 04-Sep-2018 15:07:30

Spectrum: Tune Spec :Average 1207-1209(9.53-9.54) Bgrd 1200(9.49)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 362

m/z	Y	m/z	Y	m/z	Y	m/z	Y
73.00	4557	168.00	22168	263.00	949	367.00	538
74.00	41920	169.00	3206	264.00	1048	369.00	432
75.00	48416	170.00	1792	265.00	14757	370.00	1018
76.00	21768	171.00	2510	266.00	1595	371.00	1878
77.00	272448	172.00	2985	267.00	532	372.00	11061
78.00	19272	173.00	6244	268.00	390	373.00	2465
79.00	28512	174.00	9820	270.00	1254	374.00	295
80.00	20944	175.00	14794	271.00	2074	376.00	222
81.00	29928	176.00	4356	272.00	2789	377.00	279
82.00	7032	177.00	7073	273.00	18136	379.00	171
83.00	3543	178.00	840	274.00	44600	383.00	3016
84.00	1082	179.00	33544	275.00	215680	384.00	813
85.00	5923	180.00	20768	276.00	29176	385.00	167
86.00	7481	181.00	11352	277.00	22712	387.00	185
87.00	2571	182.00	2221	278.00	3238	389.00	194
88.00	615	183.00	1678	279.00	554	390.00	1440
89.00	835	184.00	2225	280.00	200	391.00	1078
91.00	5560	185.00	19704	281.00	524	392.00	470
92.00	2449	186.00	119496	282.00	450	393.00	489
93.00	49440	187.00	35472	283.00	2815	396.00	190
94.00	2653	188.00	5457	284.00	2309	401.00	203
95.00	825	189.00	11331	285.00	3526	402.00	3970
96.00	1947	190.00	2100	286.00	1028	403.00	5072
97.00	533	191.00	4308	287.00	229	404.00	1927
98.00	37088	192.00	11531	288.00	653	405.00	277
99.00	22240	193.00	12335	289.00	1224	410.00	212
100.00	3101	194.00	2539	290.00	436	415.00	450
101.00	11453	195.00	2121	291.00	712	418.00	848
102.00	408	196.00	22848	292.00	756	419.00	170
103.00	3912	198.00	639744	293.00	5945	420.00	1249
104.00	8807	199.00	49592	294.00	2024	421.00	5203
105.00	10372	200.00	3821	295.00	901	422.00	5100
106.00	1677	201.00	614	296.00	82168	423.00	34568
107.00	114480	202.00	2890	297.00	9470	424.00	6846

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311178.D\1,4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 04-Sep-2018 15:07:30

Spectrum: Tune Spec :Average 1207-1209(9.53-9.54) Bgrd 1200(9.49)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 362

m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	13005	203.00	9335	298.00	827	425.00	998
109.00	307	204.00	35744	299.00	216	426.00	439
110.00	152960	205.00	61584	301.00	1723	427.00	906
111.00	25912	206.00	211648	302.00	481	428.00	833
112.00	3925	207.00	29432	303.00	9729	429.00	1085
113.00	764	208.00	8914	304.00	2996	430.00	374
114.00	292	209.00	3279	305.00	327	431.00	1029
117.00	123552	210.00	5126	307.00	241	432.00	1034
118.00	7935	211.00	10051	308.00	864	433.00	1061
120.00	1278	212.00	484	309.00	539	434.00	1456
121.00	553	213.00	1160	310.00	1047	435.00	723
122.00	8012	214.00	663	311.00	402	436.00	1232
123.00	12518	215.00	4261	312.00	407	437.00	1757
124.00	6609	217.00	70616	313.00	766	438.00	2612
125.00	5108	218.00	9424	314.00	3141	439.00	7449
126.00	1716	219.00	1110	315.00	8599	440.00	7949
127.00	283264	220.00	2277	316.00	3152	441.00	91744
128.00	25368	221.00	31224	317.00	684	442.00	550400
129.00	144640	222.00	8465	319.00	328	443.00	113464
130.00	11387	223.00	16744	320.00	260	444.00	9647
131.00	3145	224.00	133568	321.00	2429	445.00	413
132.00	1493	225.00	36680	322.00	2119	446.00	205
133.00	1067	226.00	2699	323.00	19744		
134.00	4509	227.00	71840	324.00	3233		

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311178.D

Injection Date: 04-Sep-2018 15:07:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =

$$\left(\frac{\text{Area Breakdown Cpnds}}{\text{Total Area Breakdown Cpnds}} \right) * 100$$

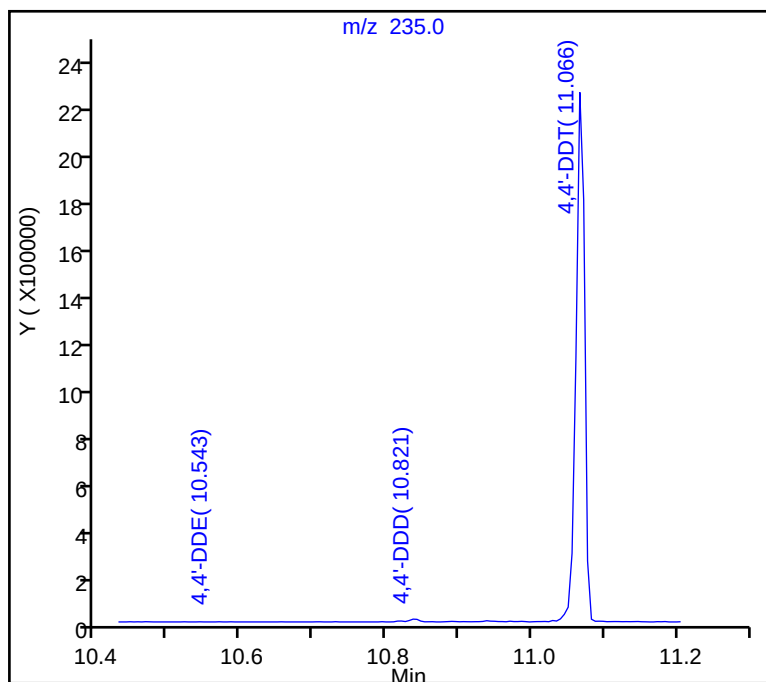
6 4,4'-DDT, Area = 1875871

5 4,4'-DDD, Area = 2832

7 4,4'-DDE, Area = 2580

%Breakdown: 0.29%, Max Limit: 20.00%

Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 480-431806/1-A
 Matrix: Water Lab File ID: U3311197.D
 Analysis Method: 8270D SIM ID Date Collected: _____
 Extract. Method: 3510C Date Extracted: 08/28/2018 14:29
 Sample wt/vol: 1000 (mL) Date Analyzed: 09/04/2018 22:38
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 432705 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	39		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311197.D
 Lims ID: MB 480-431806/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 04-Sep-2018 22:38:30 ALS Bottle#: 21 Worklist Smp#: 21
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-021
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 05-Sep-2018 11:51:44

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.066	1.993	0.073	98	208726	10.0	3.90	
3 1,4-Dioxane	88		2.021					ND	U
* 2 1,4-Dichlorobenzene-d4	152	5.452	5.448	0.004	93	440873	4.00	4.00	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00151

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311197.D

Injection Date: 04-Sep-2018 22:38:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: MB 480-431806/1-A

Worklist Smp#: 21

Client ID:

Injection Vol: 1.0 ul

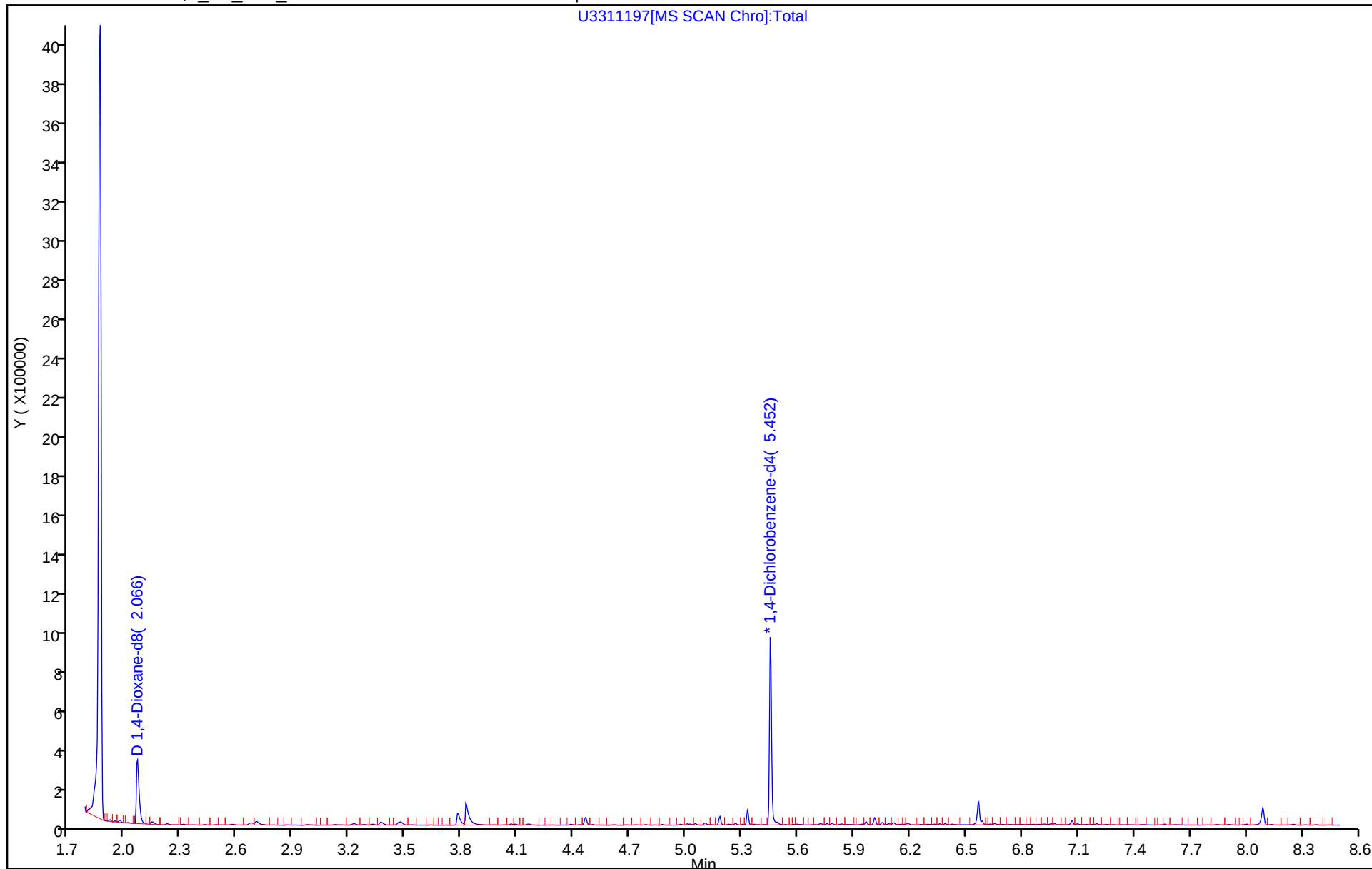
Dil. Factor: 1.0000

ALS Bottle#: 21

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311197[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311197.D

Injection Date: 04-Sep-2018 22:38:30

Instrument ID: HP5973U

Lims ID: MB 480-431806/1-A

Client ID:

Operator ID: DR

ALS Bottle#: 21

Worklist Smp#: 21

Injection Vol: 1.0 ul

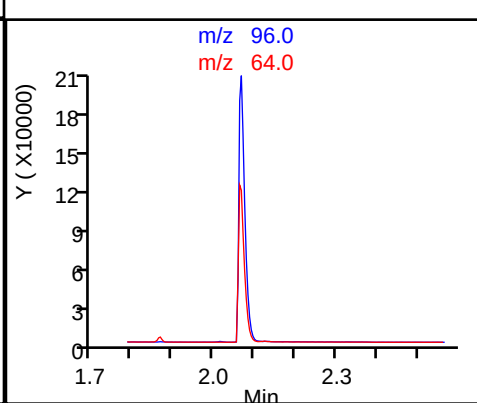
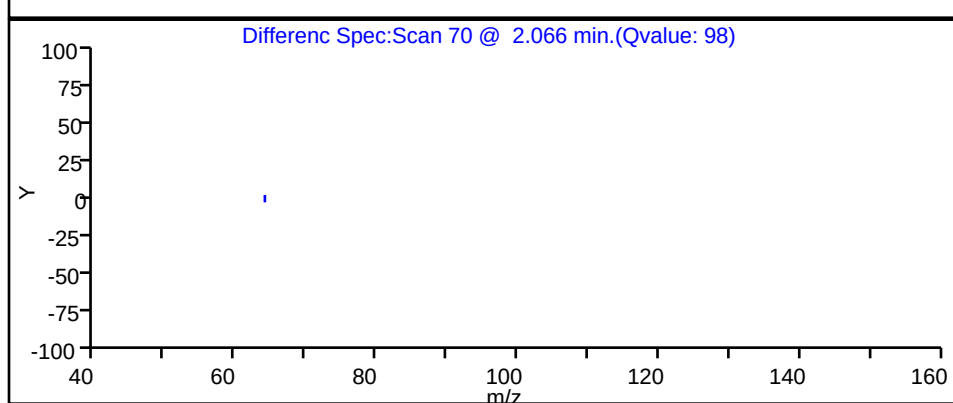
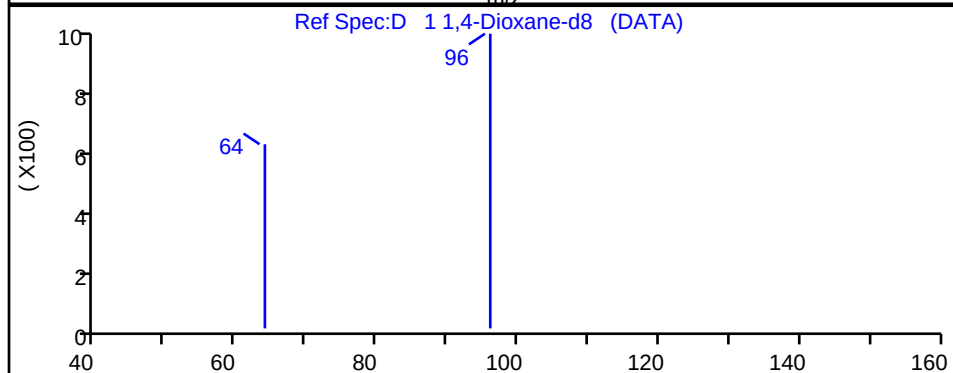
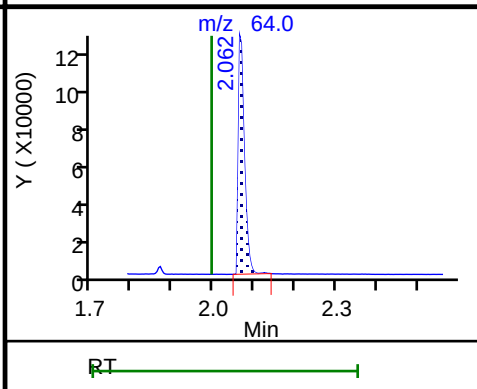
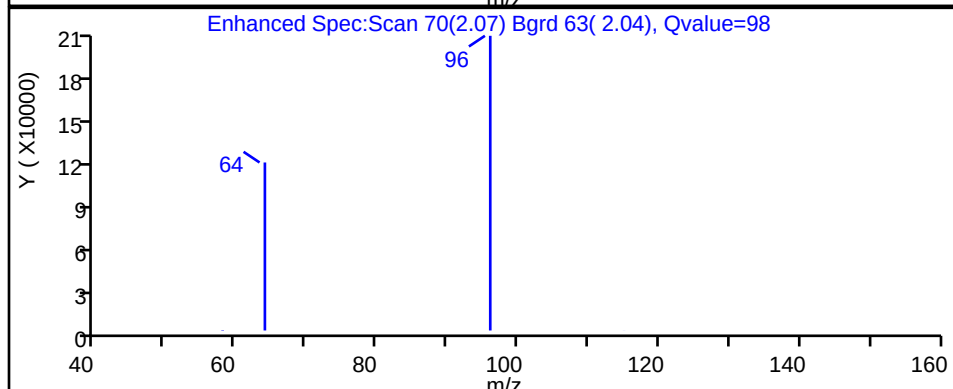
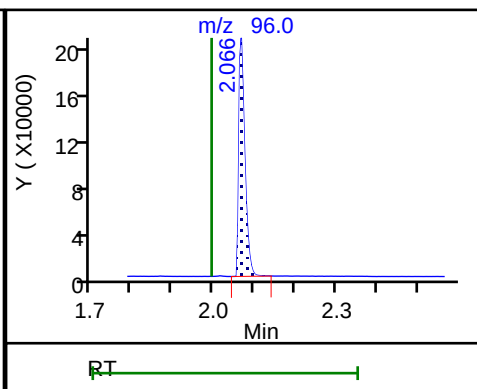
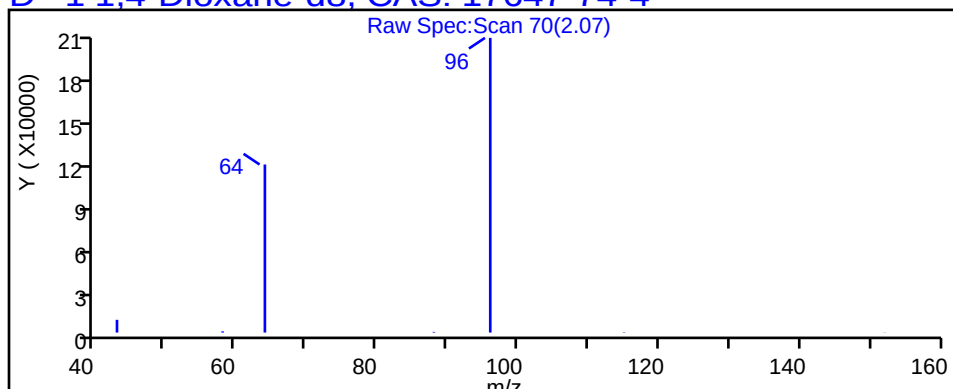
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311197.D

Injection Date: 04-Sep-2018 22:38:30

Instrument ID: HP5973U

Lims ID: MB 480-431806/1-A

Client ID:

Operator ID: DR

ALS Bottle#:

21

Worklist Smp#: 21

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

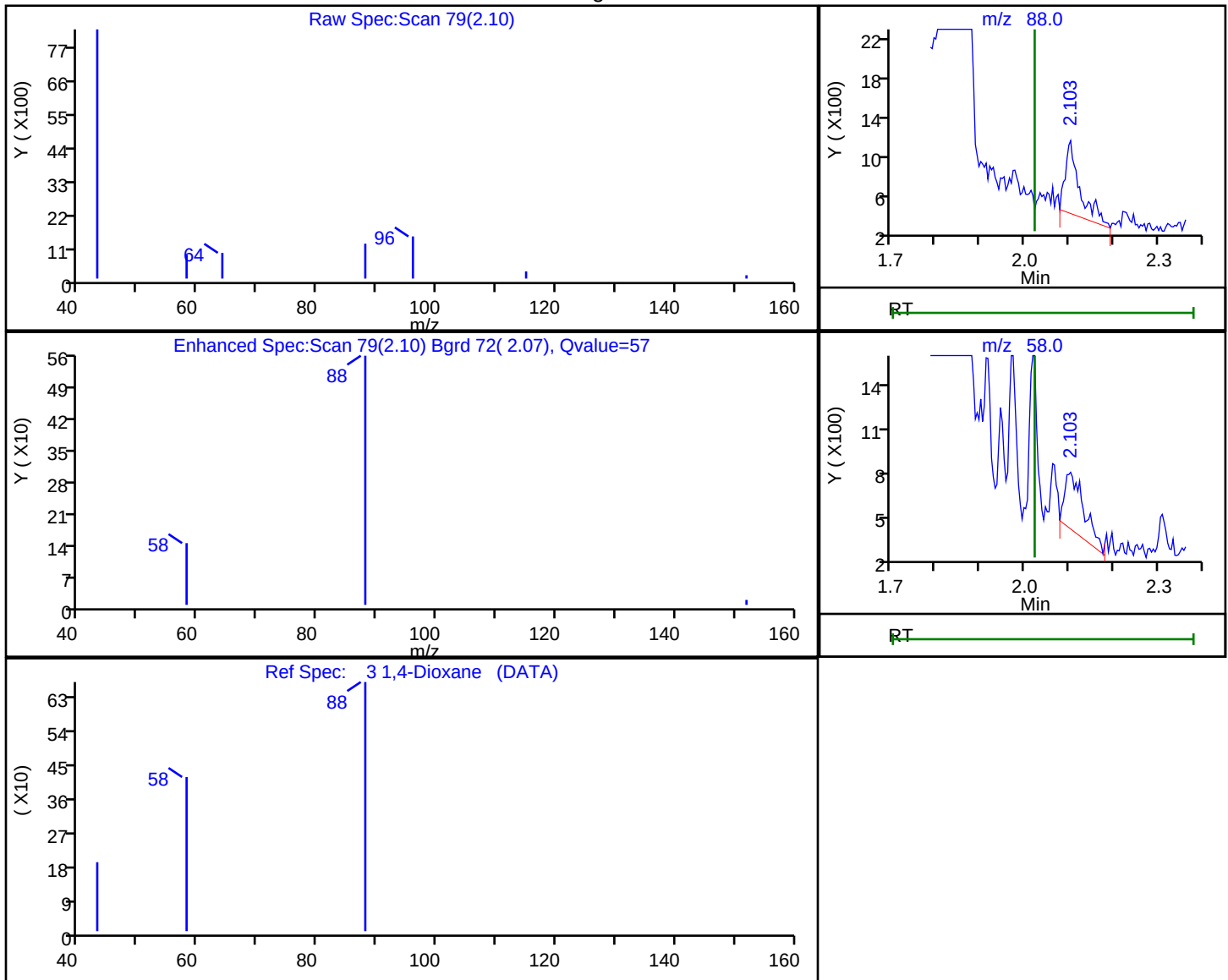
Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
2.10	88.00	1709	0.096122
2.10	58.00	1190	

Reviewer: richardsd, 05-Sep-2018 11:51:43

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCS 480-431806/2-A
Matrix: Water Lab File ID: U3311198.D
Analysis Method: 8270D SIM ID Date Collected: _____
Extract. Method: 3510C Date Extracted: 08/28/2018 14:29
Sample wt/vol: 1000 (mL) Date Analyzed: 09/04/2018 23:01
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 432705 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.999		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	34		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311198.D
 Lims ID: LCS 480-431806/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 04-Sep-2018 23:01:30 ALS Bottle#: 22 Worklist Smp#: 22
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-022
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 05-Sep-2018 11:51:50

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.111	1.993	0.118	99	185607	10.0	3.42	
3 1,4-Dioxane	88	2.144	2.021	0.123	96	20073	1.00	1.00	a
* 2 1,4-Dichlorobenzene-d4	152	5.456	5.448	0.008	94	447348	4.00	4.00	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00151

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311198.D

Injection Date: 04-Sep-2018 23:01:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: LCS 480-431806/2-A

Worklist Smp#: 22

Client ID:

Injection Vol: 1.0 ul

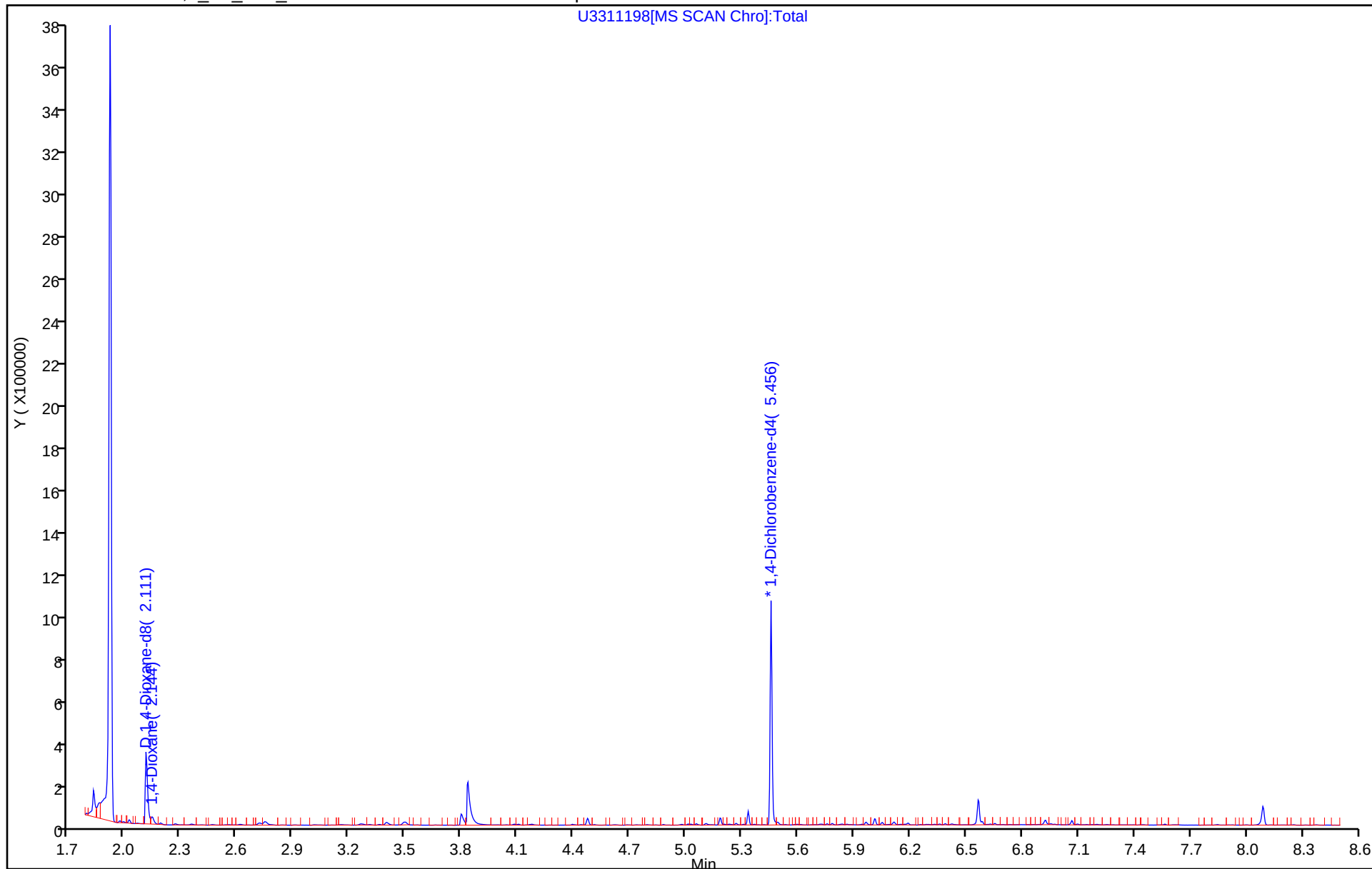
Dil. Factor: 1.0000

ALS Bottle#: 22

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311198[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311198.D

Injection Date: 04-Sep-2018 23:01:30

Instrument ID: HP5973U

Lims ID: LCS 480-431806/2-A

Client ID:

Operator ID: DR

ALS Bottle#:

22

Worklist Smp#: 22

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

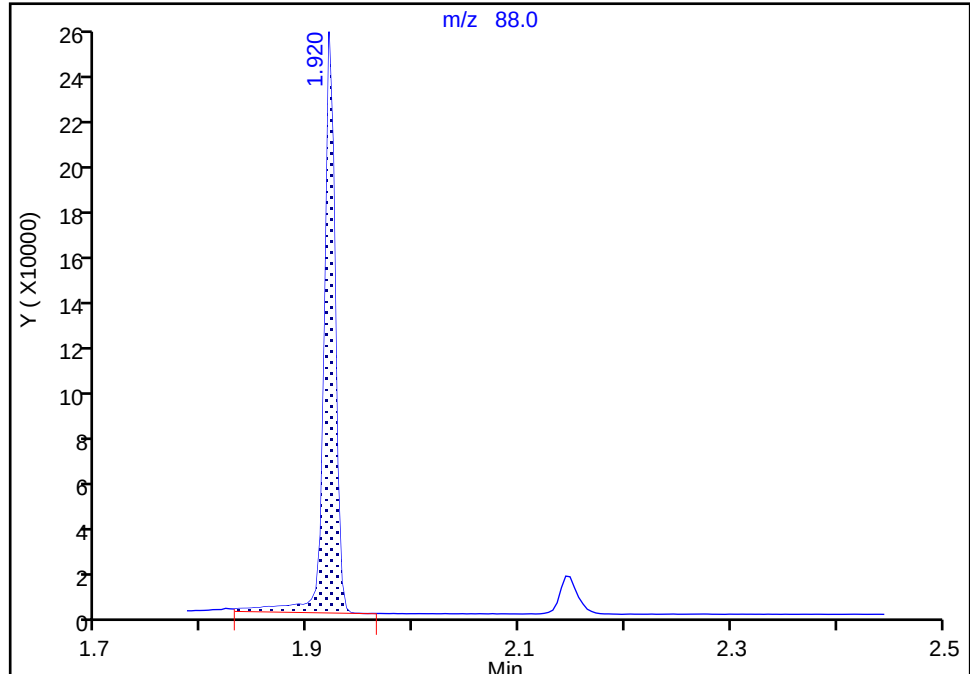
Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Signal: 1

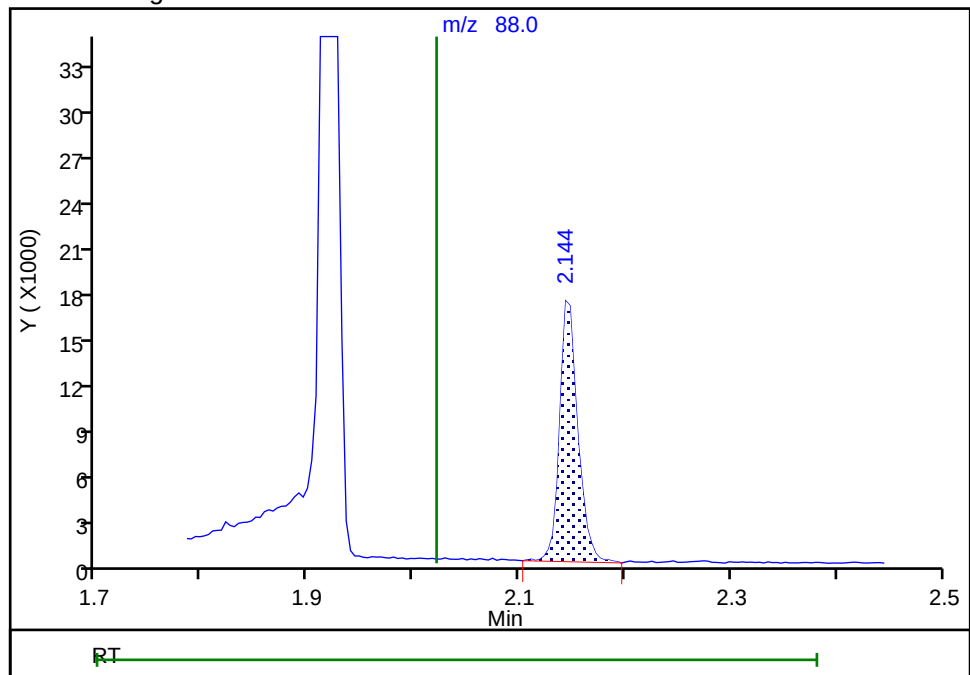
RT: 1.92
Area: 187889
Amount: 9.168206
Amount Units: ng/ul

Processing Integration Results



RT: 2.14
Area: 20073
Amount: 0.999259
Amount Units: ng/ul

Manual Integration Results



Reviewer: richardsd, 05-Sep-2018 11:51:48

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
 SDG No.: _____
 Client Sample ID: MW-1 (082718) MS Lab Sample ID: 480-140926-2 MS
 Matrix: Water Lab File ID: U3311199.D
 Analysis Method: 8270D SIM ID Date Collected: 08/27/2018 12:02
 Extract. Method: 3510C Date Extracted: 08/28/2018 14:29
 Sample wt/vol: 1000 (mL) Date Analyzed: 09/04/2018 23:25
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 432705 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.988		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	33		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311199.D
 Lims ID: 480-140926-D-2-A MS
 Client ID: MW-1 (082718)
 Sample Type: MS
 Inject. Date: 04-Sep-2018 23:25:30 ALS Bottle#: 23 Worklist Smp#: 23
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-023
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 05-Sep-2018 11:51:55

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.107	1.993	0.114	99	177941	10.0	3.25	
3 1,4-Dioxane	88	2.140	2.021	0.119	97	19015	1.00	0.9876	a
* 2 1,4-Dichlorobenzene-d4	152	5.456	5.448	0.008	94	450500	4.00	4.00	
7 4,4'-DDE	246		10.543					ND	
5 4,4'-DDD	235		10.821					ND	
6 4,4'-DDT	235		11.066					ND	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00151

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311199.D

Injection Date: 04-Sep-2018 23:25:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-140926-D-2-A MS

Worklist Smp#: 23

Client ID: MW-1 (082718)

Injection Vol: 1.0 ul

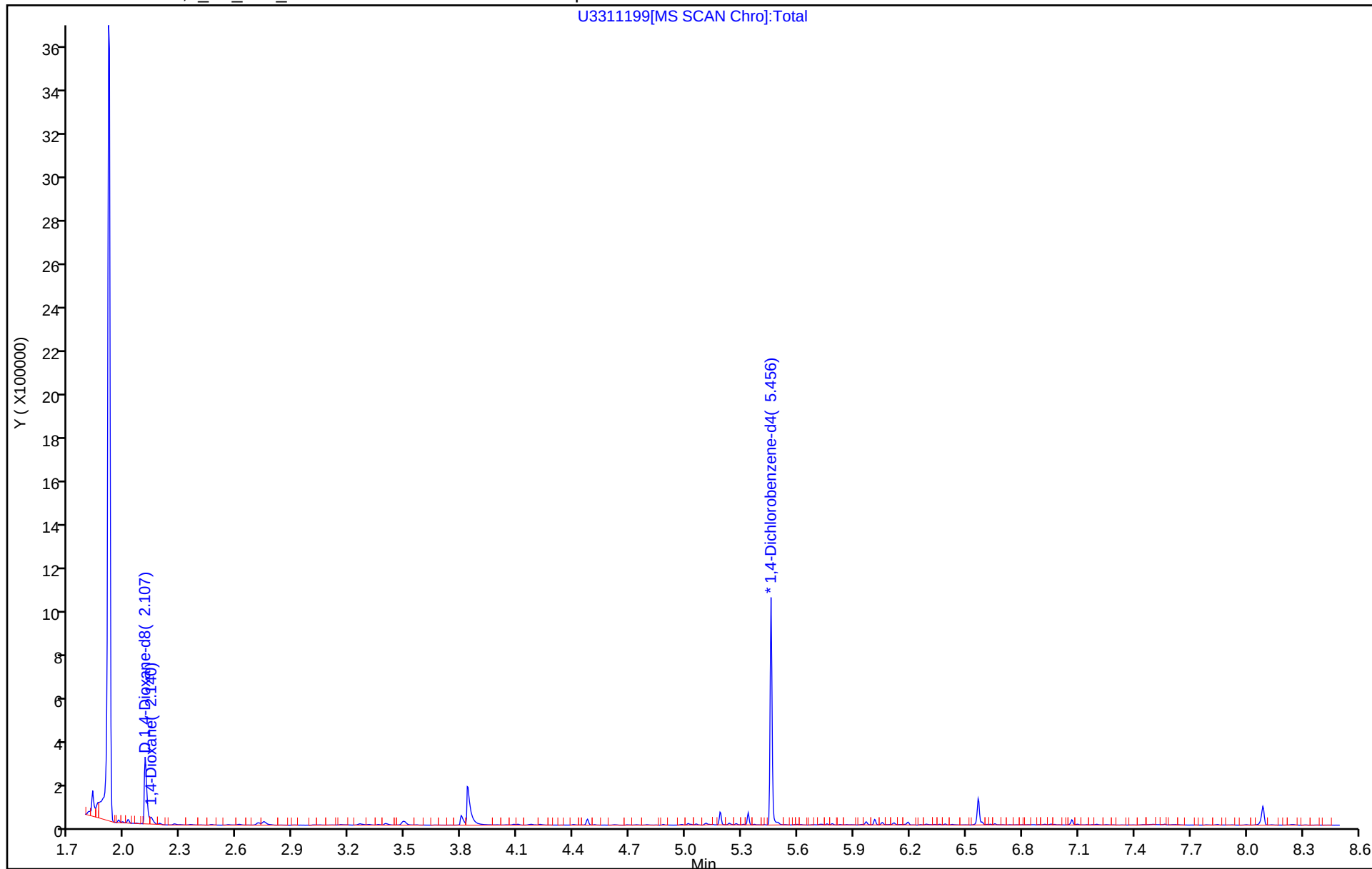
Dil. Factor: 1.0000

ALS Bottle#: 23

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311199[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311199.D

Injection Date: 04-Sep-2018 23:25:30

Instrument ID: HP5973U

Lims ID: 480-140926-D-2-A MS

Client ID: MW-1 (082718)

Operator ID: DR

ALS Bottle#: 23 Worklist Smp#: 23

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

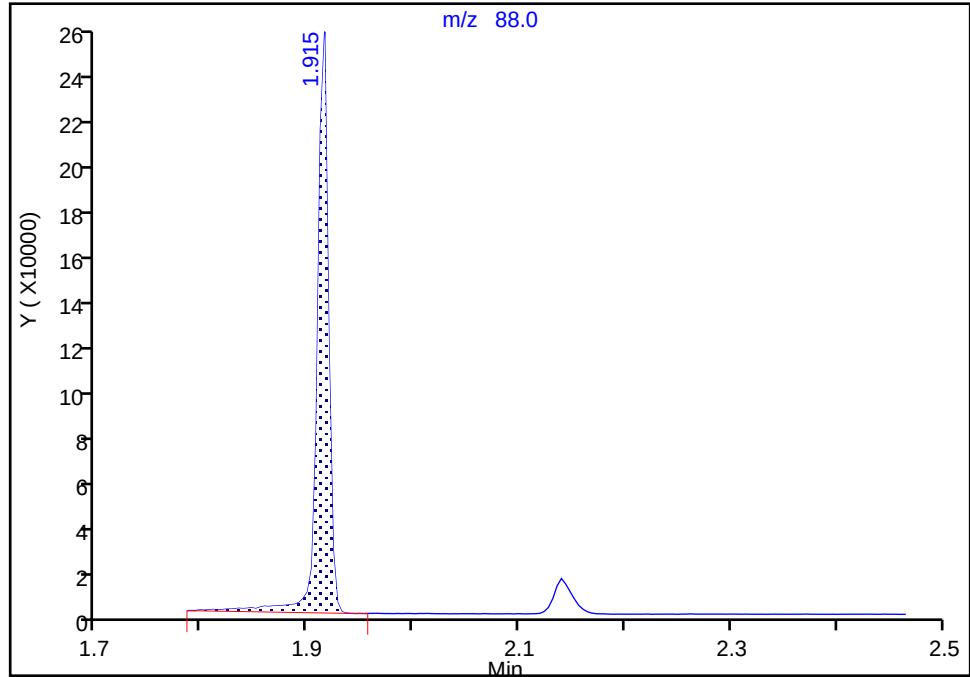
Detector: MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Signal: 1

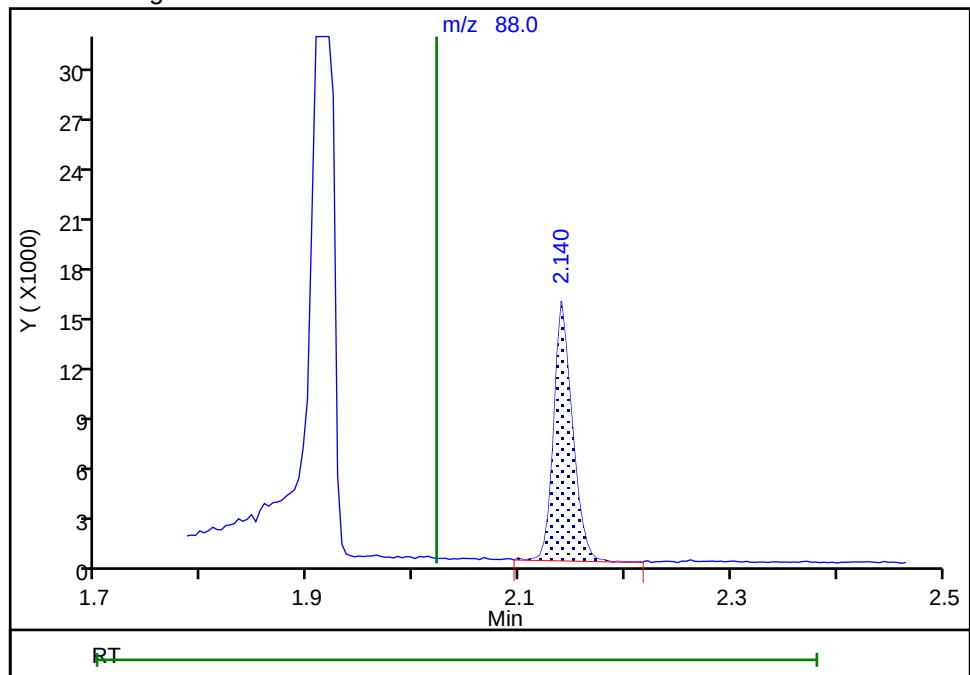
RT: 1.92
Area: 189577
Amount: 9.647943
Amount Units: ng/ul

Processing Integration Results



RT: 2.14
Area: 19015
Amount: 0.987635
Amount Units: ng/ul

Manual Integration Results



Reviewer: richardsd, 05-Sep-2018 11:51:54

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1
SDG No.: _____
Client Sample ID: MW-1 (082718) MSD Lab Sample ID: 480-140926-2 MSD
Matrix: Water Lab File ID: U3311200.D
Analysis Method: 8270D SIM ID Date Collected: 08/27/2018 12:02
Extract. Method: 3510C Date Extracted: 08/28/2018 14:29
Sample wt/vol: 1000 (mL) Date Analyzed: 09/04/2018 23:48
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 432705 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.986		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	31		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311200.D
 Lims ID: 480-140926-D-2-B MSD
 Client ID: MW-1 (082718)
 Sample Type: MSD
 Inject. Date: 04-Sep-2018 23:48:30 ALS Bottle#: 24 Worklist Smp#: 24
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0074374-024
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Sep-2018 11:52:46 Calib Date: 11-Jul-2018 20:42:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180711-73014.b\U3309392.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK004

First Level Reviewer: richardsd

Date: 05-Sep-2018 11:51:59

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.103	1.993	0.110	97	165623	10.0	3.10	
3 1,4-Dioxane	88	2.135	2.021	0.114	94	17666	1.00	0.9859	
* 2 1,4-Dichlorobenzene-d4	152	5.456	5.448	0.008	95	439986	4.00	4.00	
7 4,4'-DDE	246		10.543					ND	
5 4,4'-DDD	235		10.821					ND	
6 4,4'-DDT	235		11.066					ND	

Reagents:

MB_LLIS_WRK_00151 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180904-74374.b\U3311200.D

Injection Date: 04-Sep-2018 23:48:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-140926-D-2-B MSD

Worklist Smp#: 24

Client ID: MW-1 (082718)

Injection Vol: 1.0 ul

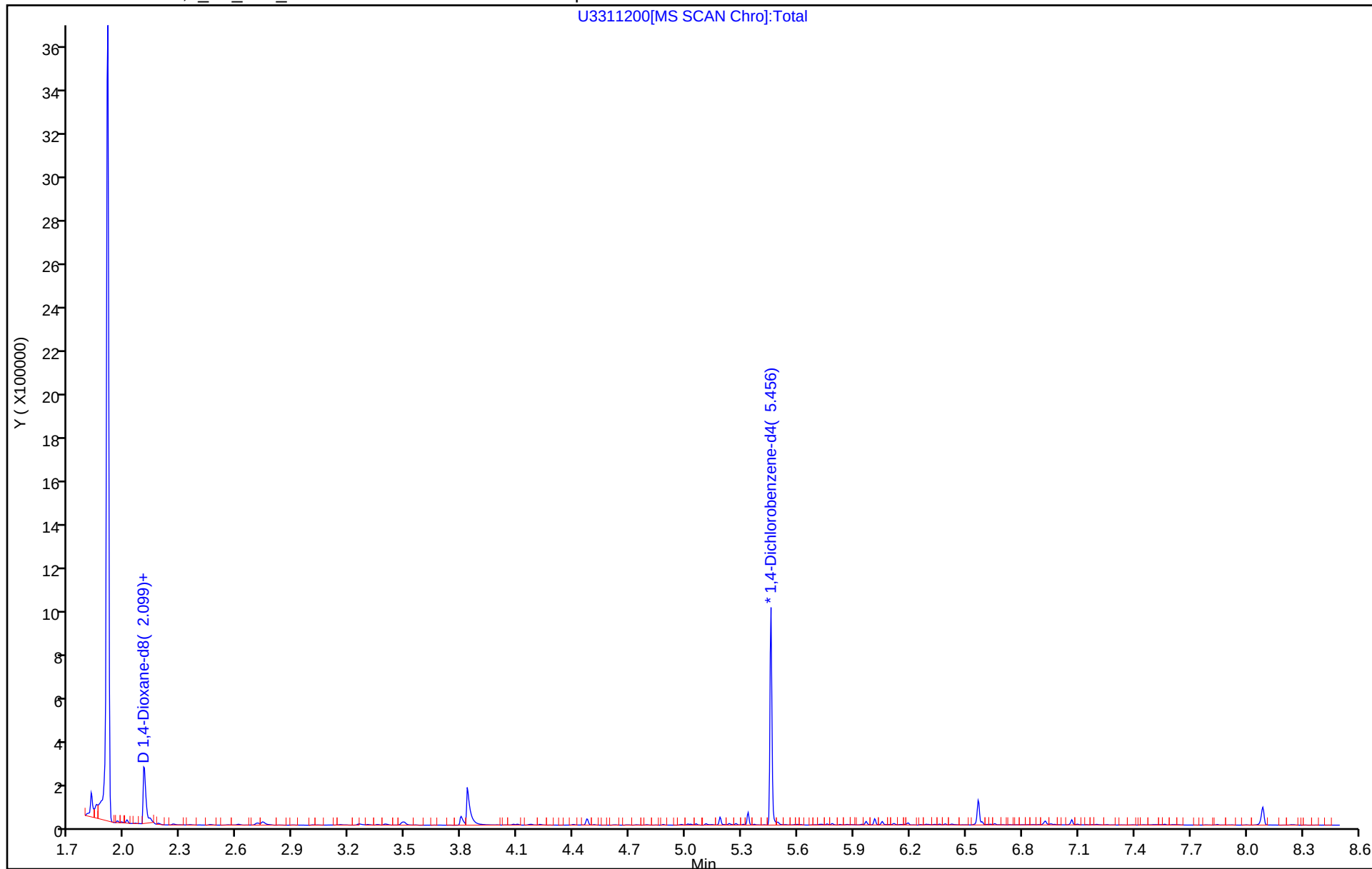
Dil. Factor: 1.0000

ALS Bottle#: 24

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311200[MS SCAN Chro]:Total



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-140926-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 07/11/2018 18:14Analysis Batch Number: 424045End Date: 07/12/2018 05:09

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-424045/2		07/11/2018 18:14	1	U3309386.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-424045/3		07/11/2018 18:42	1	U3309387.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-424045/4		07/11/2018 19:06	1	U3309388.D	RXI-5Sil MS(0.5 0.25 (mm))
ICIS 480-424045/5		07/11/2018 19:30	1	U3309389.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-424045/6		07/11/2018 19:54	1	U3309390.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-424045/7		07/11/2018 20:18	1	U3309391.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-424045/8		07/11/2018 20:42	1	U3309392.D	RXI-5Sil MS(0.5 0.25 (mm))
ICV 480-424045/9		07/11/2018 21:06	1		RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-424045/10		07/11/2018 21:30	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/11/2018 21:55	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/11/2018 22:19	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/11/2018 22:44	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/11/2018 23:08	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/11/2018 23:33	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/11/2018 23:57	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 00:22	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 00:46	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 01:10	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 01:35	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 01:58	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 02:22	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 02:46	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 03:10	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 03:34	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 03:58	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 04:22	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 04:45	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		07/12/2018 05:09	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-140926-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 09/04/2018 15:07Analysis Batch Number: 432705End Date: 09/05/2018 01:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-432705/2		09/04/2018 15:07	1	U3311178.D	RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-432705/3		09/04/2018 15:34	1	U3311179.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 15:58	1		RXI-5Sil MS(0.5 0.25 (mm))
480-140768-A-1-A MDLV		09/04/2018 16:21	1		RXI-5Sil MS(0.5 0.25 (mm))
480-140768-A-2-A MDLV		09/04/2018 16:44	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 17:07	100		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 17:30	100		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 17:54	100		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 18:17	200		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 18:40	200		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 19:04	20		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 19:27	20		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 19:51	50		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 20:15	20		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 20:39	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 21:02	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 21:26	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 21:50	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/04/2018 22:14	25		RXI-5Sil MS(0.5 0.25 (mm))
MB 480-431806/1-A		09/04/2018 22:38	1	U3311197.D	RXI-5Sil MS(0.5 0.25 (mm))
LCS 480-431806/2-A		09/04/2018 23:01	1	U3311198.D	RXI-5Sil MS(0.5 0.25 (mm))
480-140926-2 MS		09/04/2018 23:25	1	U3311199.D	RXI-5Sil MS(0.5 0.25 (mm))
480-140926-2 MSD		09/04/2018 23:48	1	U3311200.D	RXI-5Sil MS(0.5 0.25 (mm))
480-140926-2		09/05/2018 00:11	1	U3311201.D	RXI-5Sil MS(0.5 0.25 (mm))
480-140926-1		09/05/2018 00:35	1	U3311202.D	RXI-5Sil MS(0.5 0.25 (mm))
480-140926-3		09/05/2018 00:58	1	U3311203.D	RXI-5Sil MS(0.5 0.25 (mm))
480-140926-4		09/05/2018 01:21	1	U3311204.D	RXI-5Sil MS(0.5 0.25 (mm))
480-140926-5		09/05/2018 01:44	1	U3311205.D	RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-140926-1

SDG No.: _____

Batch Number: 431806 Batch Start Date: 08/28/18 14:29 Batch Analyst: Gruning, Anton TBatch Method: 3510C Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	OP_SIM_LCS 00004	OP_SimSurr 00007
MB 480-431806/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU		1 mL
LCS 480-431806/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-140926-D-2 MS	MW-1 (082718)	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-140926-D-2 MSD	MW-1 (082718)	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-140926-C-2	MW-1 (082718)	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-140926-C-1	EB-01 (082718)	3510C, 8270D SIM ID	T	1000 mL	1 mL	6 SU	<2 SU		1 mL
480-140926-C-3	MW-3 (082718)	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-140926-C-4	MW-5 (082718)	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-140926-C-5	DUP-01 (082718)	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL

Batch Notes	
Acid Used for pH Adjustment ID	4825878
Analyst ID - Concentration	AG
Analyst ID - Extraction	AG
Method/Fraction	3510C/8270D_SIM_MS_ID
Na2SO4 ID	4791972
Prep Solvent ID	4831812
Prep Solvent Volume Used	180 mL
Analyst ID - Spike Analyst	AG
Analyst ID - Spike Witness Analyst	AG
Vial Lot Number	1709111094

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.

8270D SIM ID

Page 1 of 1

Method PFC IDA

Fluorinated Hydrocarbons by Method
PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
EB-01 (082718)	480-140926-1	94	96	93	91	96	95	104	97
MW-1 (082718)	480-140926-2	88	93	92	93	98	97	114	98
MW-3 (082718)	480-140926-3	85	92	100	96	97	101	113	99
MW-5 (082718)	480-140926-4	83	90	95	91	96	99	99	98
DUP-01 (082718)	480-140926-5	86	94	97	97	98	96	100	97
	MB 320-244587/1-A	95	91	95	95	93	94	104	97
	LCS 320-244587/2-A	93	94	94	94	97	102	110	100
	LCSD 320-244587/3-A	94	95	96	94	95	101	95	96
MW-1 (082718) MS	480-140926-2 MS	94	102	102	99	101	107	114	105
MW-1 (082718) MSD	480-140926-2 MSD	92	98	89	101	99	102	102	99

	<u>QC LIMITS</u>
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
EB-01 (082718)	480-140926-1	98	98	95	92	101	94	99	101
MW-1 (082718)	480-140926-2	92	94	92	99	98	88	98	102
MW-3 (082718)	480-140926-3	94	95	96	99	101	96	98	98
MW-5 (082718)	480-140926-4	97	94	92	94	97	97	94	96
DUP-01 (082718)	480-140926-5	98	97	98	101	100	91	99	99
	MB 320-244587/1-A	101	102	92	103	103	94	100	99
	LCS 320-244587/2-A	98	99	91	102	97	91	95	108
	LCSD 320-244587/3-A	94	97	91	98	98	93	97	103
MW-1 (082718) MS	480-140926-2 MS	102	100	102	105	107	103	106	106
MW-1 (082718) MSD	480-140926-2 MSD	96	99	97	101	107	94	95	97

QC LIMITS

PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
SDG No.: _____
Matrix: Water Level: Low
GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFD _o A #	PFTDA #
EB-01 (082718)	480-140926-1	93	90
MW-1 (082718)	480-140926-2	93	97
MW-3 (082718)	480-140926-3	94	98
MW-5 (082718)	480-140926-4	92	96
DUP-01 (082718)	480-140926-5	89	93
	MB 320-244587/1-A	88	93
	LCS 320-244587/2-A	89	87
	LCSD 320-244587/3-A	89	92
MW-1 (082718) MS	480-140926-2 MS	90	102
MW-1 (082718) MSD	480-140926-2 MSD	95	100

PFD _o A = 13C2 PFD _o A	QC LIMITS
PFTDA = 13C2-PFTeDA	<u>25-150</u>
	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.09.10LLA_008.d
 Lab ID: LCS 320-244587/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	42.2	105	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	41.1	103	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	38.9	97	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	42.4	106	66-126	
Perfluorooctanoic acid (PFOA)	40.0	39.3	98	64-124	
Perfluorononanoic acid (PFNA)	40.0	44.3	111	68-128	
Perfluorodecanoic acid (PFDA)	40.0	41.3	103	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	36.4	91	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	42.8	107	71-131	
Perfluorotridecanoic Acid (PFTriA)	40.0	45.2	113	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	40.5	101	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	36.0	102	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.8	96	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7	107	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	35.8	96	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	40.7	106	68-128	
Perfluorooctane Sulfonamide (FOSA)	40.0	45.1	113	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	37.4	93	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	40.5	101	65-125	
6:2 FTS	37.9	36.3	96	66-126	
8:2 FTS	38.3	34.7	91	67-127	
13C4 PFBA	100	92.5	93	25-150	
13C5 PFPeA	100	93.8	94	25-150	
13C2 PFHxA	100	94.2	94	25-150	
13C4-PFHpA	100	97.3	97	25-150	
13C4 PFOA	100	100	100	25-150	
13C5 PFNA	100	97.6	98	25-150	
13C2 PFDA	100	97.3	97	25-150	
13C2 PFUnA	100	108	108	25-150	
13C2 PFDoA	100	89.5	89	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.09.10LLA_008.d
 Lab ID: LCS 320-244587/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	100	86.6	87	25-150	
13C3-PFBS	93.0	87.6	94	25-150	
18O2 PFHxS	94.6	96.2	102	25-150	
13C4 PFOS	95.6	94.5	99	25-150	
13C8 FOSA	100	91.1	91	25-150	
d3-NMeFOSAA	100	90.8	91	25-150	
d5-NEtFOSAA	100	94.8	95	25-150	
M2-6:2FTS	95.0	105	110	25-150	
M2-8:2FTS	95.8	98.0	102	25-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: 2018.09.10LLA_009.d
Lab ID: LCSD 320-244587/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	40.0	43.0	107	2	30	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	41.6	104	1	30	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	39.9	100	3	30	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	45.2	113	6	30	66-126	
Perfluorooctanoic acid (PFOA)	40.0	41.1	103	5	30	64-124	
Perfluorononanoic acid (PFNA)	40.0	47.5	119	7	30	68-128	
Perfluorodecanoic acid (PFDA)	40.0	42.2	106	2	30	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	41.4	103	13	30	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	42.4	106	1	30	71-131	
Perfluorotridecanoic Acid (PFTriA)	40.0	45.6	114	1	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	40.2	101	1	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	36.7	104	2	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.3	94	1	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.9	107	1	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	36.0	97	1	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	43.3	112	6	30	68-128	
Perfluorooctane Sulfonamide (FOSA)	40.0	44.2	111	2	30	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	42.6	106	13	30	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	38.4	96	5	30	65-125	
6:2 FTS	37.9	45.8	121	23	30	66-126	
8:2 FTS	38.3	39.1	102	12	30	67-127	
13C4 PFBA	100	93.8	94			25-150	
13C5 PFPeA	100	94.5	95			25-150	
13C2 PFHxA	100	94.0	94			25-150	
13C4-PFHpA	100	94.5	95			25-150	
13C4 PFOA	100	95.8	96			25-150	
13C5 PFNA	100	93.8	94			25-150	
13C2 PFDA	100	97.9	98			25-150	
13C2 PFUnA	100	103	103			25-150	
13C2 PFDoA	100	89.3	89			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.09.10LLA_009.d
 Lab ID: LCSD 320-244587/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
13C2-PFTeDA	100	92.0	92			25-150	
13C3-PFBS	93.0	89.2	96			25-150	
18O2 PFHxS	94.6	95.9	101			25-150	
13C4 PFOS	95.6	93.1	97			25-150	
13C8 FOSA	100	91.3	91			25-150	
d3-NMeFOSAA	100	93.3	93			25-150	
d5-NEtFOSAA	100	97.2	97			25-150	
M2-6:2FTS	95.0	90.2	95			25-150	
M2-8:2FTS	95.8	94.0	98			25-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 480-140926-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.09.10LLA_016.d

Lab ID: 480-140926-2 MS

Client ID: MW-1 (082718) MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	33.5	1.7	37.6	107	70-130	
Perfluoropentanoic acid (PFPeA)	33.5	ND	34.1	102	66-126	
Perfluorohexanoic acid (PFHxA)	33.5	ND	34.1	102	66-126	
Perfluoroheptanoic acid (PFHpA)	33.5	0.23 J	38.2	113	66-126	
Perfluorooctanoic acid (PFOA)	33.6	ND	34.6	103	64-124	
Perfluorononanoic acid (PFNA)	33.5	0.30 J	37.7	112	68-128	
Perfluorodecanoic acid (PFDA)	33.5	ND	36.2	108	69-129	
Perfluoroundecanoic acid (PFUnA)	33.5	ND	34.5	103	60-120	
Perfluorododecanoic acid (PFDoA)	33.5	ND	35.6	106	71-131	
Perfluorotridecanoic Acid (PFTriA)	33.5	ND	37.4	111	72-132	
Perfluorotetradecanoic acid (PFTeA)	33.5	ND	34.5	103	68-128	
Perfluorobutanesulfonic acid (PFBS)	29.6	1.3 J	32.9	106	73-133	
Perfluorohexanesulfonic acid (PFHxS)	30.5	0.58 J	29.1	94	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	31.9	ND	36.4	114	68-128	
Perfluorooctanesulfonic acid (PFOS)	31.1	2.3	33.6	100	67-127	
Perfluorodecanesulfonic acid (PFDS)	32.3	ND	36.6	113	68-128	
Perfluorooctane Sulfonamide (FOSA)	33.5	ND	37.3	111	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	33.5	ND	35.8	107	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	33.5	ND	33.0	99	65-125	
6:2 FTS	31.8	ND	32.3	101	66-126	
8:2 FTS	32.1	ND	30.5	95	67-127	
13C4 PFBA	83.8	77	78.7	94	25-150	
13C5 PFPeA	83.8	81	85.2	102	25-150	
13C2 PFHxA	83.8	81	83.0	99	25-150	
13C4-PFHpA	83.8	85	84.7	101	25-150	
13C4 PFOA	83.8	85	88.0	105	25-150	
13C5 PFNA	83.8	80	85.1	102	25-150	
13C2 PFDA	83.8	85	89.8	107	25-150	
13C2 PFUnA	83.8	88	88.8	106	25-150	
13C2 PFDoA	83.8	81	75.4	90	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.09.10LLA_016.d
 Lab ID: 480-140926-2 MS Client ID: MW-1 (082718) MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
13C2-PFTeDA	83.8	84	85.3	102	25-150	
13C3-PFBS	78.0	75	79.6	102	25-150	
18O2 PFHxS	79.3	79	84.5	107	25-150	
13C4 PFOS	80.1	78	80.4	100	25-150	
13C8 FOSA	83.8	80	85.4	102	25-150	
d3-NMeFOSAA	83.8	77	86.6	103	25-150	
d5-NEtFOSAA	83.8	85	88.9	106	25-150	
M2-6:2FTS	79.6	94	90.9	114	25-150	
M2-8:2FTS	80.3	82	84.2	105	25-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 480-140926-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.09.10LLAA_018.d

Lab ID: 480-140926-2 MSD

Client ID: MW-1 (082718) MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	33.5	36.2	103	4	30	70-130	
Perfluoropentanoic acid (PFPeA)	33.5	34.6	103	1	30	66-126	
Perfluorohexanoic acid (PFHxA)	33.5	33.3	99	2	30	66-126	
Perfluoroheptanoic acid (PFHpA)	33.5	36.5	108	4	30	66-126	
Perfluorooctanoic acid (PFOA)	33.5	33.7	101	2	30	64-124	
Perfluorononanoic acid (PFNA)	33.5	38.5	114	2	30	68-128	
Perfluorodecanoic acid (PFDA)	33.5	36.0	107	1	30	69-129	
Perfluoroundecanoic acid (PFUnA)	33.5	33.0	98	4	30	60-120	
Perfluorododecanoic acid (PFDoA)	33.5	37.9	113	6	30	71-131	
Perfluorotridecanoic Acid (PFTriA)	33.5	35.2	105	6	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	33.5	32.7	98	5	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	29.6	36.3	118	10	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	30.5	30.8	99	6	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	31.9	36.1	113	1	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	31.1	33.6	101	0	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	32.3	33.0	102	10	30	68-128	
Perfluorooctane Sulfonamide (FOSA)	33.5	38.1	114	2	30	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	33.5	36.3	108	1	30	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	33.5	34.9	104	5	30	65-125	
6:2 FTS	31.8	35.2	111	9	30	66-126	
8:2 FTS	32.1	32.5	101	6	30	67-127	
13C4 PFBA	83.8	76.8	92			25-150	
13C5 PFPeA	83.8	81.8	98			25-150	
13C2 PFHxA	83.8	84.4	101			25-150	
13C4-PFHpA	83.8	83.3	99			25-150	
13C4 PFOA	83.8	82.9	99			25-150	
13C5 PFNA	83.8	80.1	96			25-150	
13C2 PFDA	83.8	89.9	107			25-150	
13C2 PFUnA	83.8	81.5	97			25-150	
13C2 PFDoA	83.8	79.7	95			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.09.10LLAA_018.d
 Lab ID: 480-140926-2 MSD Client ID: MW-1 (082718) MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
13C2-PFTeDA	83.8	83.8	100			25-150	
13C3-PFBS	77.9	69.4	89			25-150	
18O2 PFHxS	79.3	81.2	102			25-150	
13C4 PFOS	80.1	79.4	99			25-150	
13C8 FOSA	83.8	80.9	97			25-150	
d3-NMeFOSAA	83.8	78.5	94			25-150	
d5-NEtFOSAA	83.8	80.0	95			25-150	
M2-6:2FTS	79.6	81.5	102			25-150	
M2-8:2FTS	80.3	80.7	101			25-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Lab File ID: 2018.09.10LLA_007.d Lab Sample ID: MB 320-244587/1-A
 Matrix: Water Date Extracted: 09/08/2018 10:16
 Instrument ID: A9 Date Analyzed: 09/10/2018 10:32
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-244587/2-A	2018.09.10L LA 008.d	09/10/2018 10:39
	LCSD 320-244587/3-A	2018.09.10L LA 009.d	09/10/2018 10:47
EB-01 (082718)	480-140926-1	2018.09.10L LA 014.d	09/10/2018 11:24
MW-1 (082718)	480-140926-2	2018.09.10L LA 015.d	09/10/2018 11:32
MW-1 (082718) MS	480-140926-2 MS	2018.09.10L LA 016.d	09/10/2018 11:39
MW-1 (082718) MSD	480-140926-2 MSD	2018.09.10L LAA 018.d	09/10/2018 12:32
MW-3 (082718)	480-140926-3	2018.09.10L LAA 019.d	09/10/2018 12:39
MW-5 (082718)	480-140926-4	2018.09.10L LAA 020.d	09/10/2018 12:47
DUP-01 (082718)	480-140926-5	2018.09.10L LAA 021.d	09/10/2018 12:54

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Sample No.: IC 320-242498/5 Date Analyzed: 08/28/2018 10:43
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.08.28LLICALA_0 Heated Purge: (Y/N) N
 Calibration ID: 40822

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	8409228	2.75				
UPPER LIMIT	12613842	2.95				
LOWER LIMIT	4204614	2.55				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICB 320-242498/9		8678444	2.75			
ICV 320-242498/10		8272454	2.75			
CCV 320-244734/3 CCVIS		8422579	2.82			

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.2 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.: 480-140926-1
 SDG No.: _____
 Sample No.: CCV 320-244734/3 Date Analyzed: 09/10/2018 10:24
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.09.10LLA_006.d Heated Purge: (Y/N) N
 Calibration ID: 40822

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		8422579	2.82				
UPPER LIMIT		12633869	3.02				
LOWER LIMIT		4211290	2.62				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-244734/1		8726512	2.83				
CCVL 320-244734/2		8514602	2.83				
MB 320-244587/1-A		8560271	2.82				
LCS 320-244587/2-A		8497247	2.82				
LCSD 320-244587/3-A		8337758	2.80				
480-140926-1	EB-01 (082718)	8612942	2.80				
480-140926-2	MW-1 (082718)	7750211	2.80				
480-140926-2 MS	MW-1 (082718) MS	7912602	2.80				
CCV 320-244734/14		8509919	2.78				
CCV 320-244760/1		8218460	2.79				
480-140926-2 MSD	MW-1 (082718) MSD	8155230	2.78				
480-140926-3	MW-3 (082718)	8538560	2.78				
480-140926-4	MW-5 (082718)	8831798	2.78				
480-140926-5	DUP-01 (082718)	8588054	2.78				
CCV 320-244760/12		8600686	2.78				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>EB-01 (082718)</u>	Lab Sample ID: <u>480-140926-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_014.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 11:05</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>297.4 (mL)</u>	Date Analyzed: <u>09/10/2018 11:24</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	3.7		1.7	0.29
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		1.7	0.41
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.7	0.49
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.21
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.7	0.71
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.26
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.92
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.46
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.24
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.29	J B	1.7	0.14
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.45
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.27
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.29
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.6
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6
27619-97-2	6:2 FTS	ND		17	1.7
39108-34-4	8:2 FTS	ND		17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>EB-01 (082718)</u>	Lab Sample ID: <u>480-140926-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_014.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 11:05</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>297.4 (mL)</u>	Date Analyzed: <u>09/10/2018 11:24</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	94		25-150
STL01893	13C5 PFPeA	96		25-150
STL00993	13C2 PFHxA	91		25-150
STL01892	13C4-PFHpA	96		25-150
STL00990	13C4 PFOA	97		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	101		25-150
STL00997	13C2 PFUnA	101		25-150
STL00998	13C2 PFDoA	93		25-150
STL02116	13C2-PFTeDA	90		25-150
STL02337	13C3-PFBS	93		25-150
STL00994	18O2 PFHxS	95		25-150
STL00991	13C4 PFOS	98		25-150
STL01056	13C8 FOSA	95		25-150
STL02118	d3-NMeFOSAA	94		25-150
STL02117	d5-NEtFOSAA	99		25-150
STL02279	M2-6:2FTS	104		25-150
STL02280	M2-8:2FTS	92		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_014.d
 Lims ID: 480-140926-A-1-A
 Client ID: EB-01 (082718)
 Sample Type: Client
 Inject. Date: 10-Sep-2018 11:24:48 ALS Bottle#: 8 Worklist Smp#: 11
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-140926-A-1-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 07:52:32 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 07:52:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.500	1.505	-0.005	0.536	7777423	2.35	93.8	13751	
2 Perfluorobutyric acid	212.90 > 169.00	1.545	1.505	0.040	1.030	313740	0.1105		10.5	M
D 3 13C5-PFPeA	267.90 > 223.00	1.789	1.791	-0.002	0.639	7102438	2.40	96.1	8672	
4 Perfluoropentanoic acid	262.90 > 219.00	1.773	1.791	-0.018	0.991	10760	0.003734		0.6	
D 47 13C3-PFBS	301.90 > 83.00	1.823	1.832	-0.009	0.651	84344	2.17	93.4	477	
D 7 13C2 PFHxA	315.00 > 270.00	2.079	2.091	-0.011	0.743	7150575	2.29	91.5	11375	
D 9 13C4-PFHpA	367.00 > 322.00	2.427	2.441	-0.014	0.867	8973162	2.41	96.3	23377	
D 11 18O2 PFHxS	403.00 > 84.00	2.440	2.454	-0.014	0.872	5127378	2.24	94.6	10351	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.440	2.454	-0.014	1.000	22899	0.008536		35.1	RM
	399.00 > 99.00	2.440	2.454	-0.014	1.000	3915	5.85(1.90-5.70)		5.4	R
D 12 M2-6:2FTS	429.00 > 81.00	2.767	2.784	-0.017	0.989	909119	2.48	104	1304	M
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00 > 407.00	2.767	2.784	-0.017	1.000	5888	0.007187		4.0	
D 14 13C4 PFOA	417.00 > 372.00	2.799	2.816	-0.017	1.000	8428814	2.43	97.1	7406	
* 62 13C2-PFOA	415.00 > 370.00	2.799	2.816	-0.017		8612942	2.50		13767	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.799	2.816	-0.017	1.000	15821	0.004360			1.1	
413.00 > 169.00	2.799	2.816	-0.017	1.000	9646		1.64(1.36-4.08)		14.3	
D 18 13C4 PFOS										
503.00 > 80.00	3.174	3.210	-0.036	1.134	5796350	2.35		98.4	4284	
D 19 13C5 PFNA										
468.00 > 423.00	3.193	3.210	-0.017	1.140	7971620	2.45		98.1	7384	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.193	3.210	-0.017	1.006	12361	0.004830			11.8	M
499.00 > 99.00	3.174	3.210	-0.036	1.000	1958		6.31(2.04-6.12)		9.4	M
D 21 13C8 FOSA										
506.00 > 78.00	3.499	3.499	0.0	1.250	3103629	2.38		95.3	4961	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.499	3.499	0.0	1.000	3027	0.000823			7.2	
D 26 M2-8:2FTS										
529.00 > 81.00	3.530	3.558	-0.028	1.261	118954	2.21		92.2	668	
D 23 13C2 PFDA										
515.00 > 470.00	3.545	3.573	-0.028	1.266	8217213	2.53		101	7411	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.700	3.732	-0.032	1.322	3444781	2.35		94.1	7052	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.700	3.732	-0.032	1.000	10842	0.007917			3.7	
D 30 13C2 PFUnA										
565.00 > 520.00	3.873	3.901	-0.028	1.383	7004657	2.53		101	7667	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.873	3.901	-0.028	1.383	2864358	2.49		99.5	3093	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.873	3.901	-0.028	1.000	6324	0.005936			11.7	
D 36 13C2 PFDaA										
615.00 > 570.00	4.179	4.216	-0.037	1.493	7785858	2.32		92.6	9070	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.680	4.727	-0.047	1.672	6028165	2.25		90.0	7305	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_014.d

Injection Date: 10-Sep-2018 11:24:48

Instrument ID: A9

Lims ID: 480-140926-A-1-A

Lab Sample ID: 320-140926-1

Client ID: EB-01 (082718)

Operator ID: A9\Administrator

ALS Bottle#: 8

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

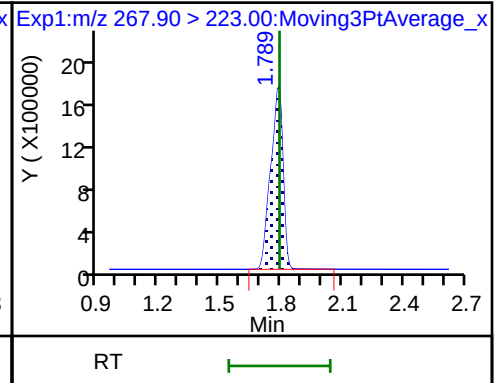
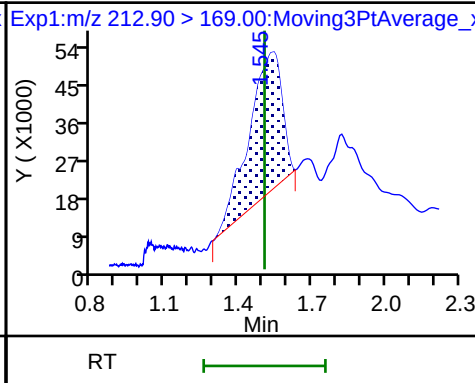
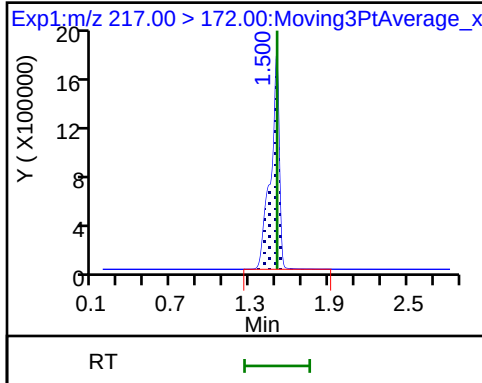
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

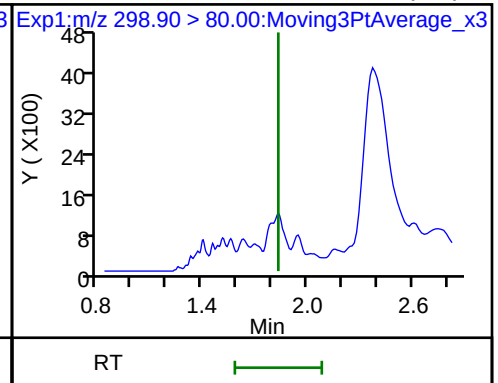
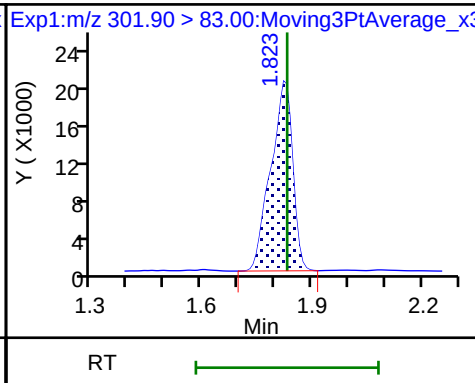
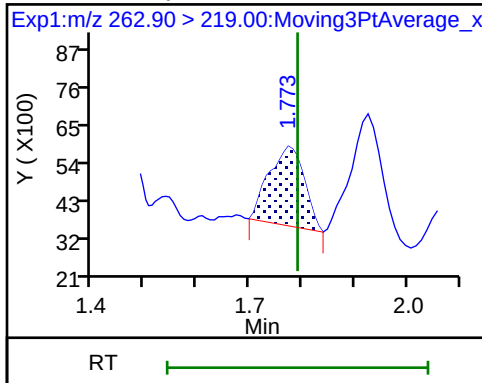
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

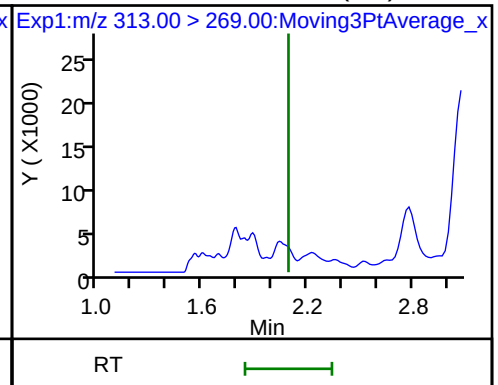
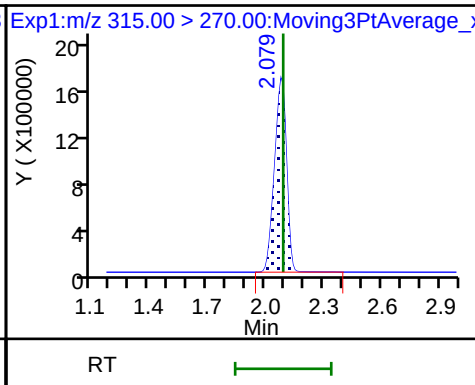
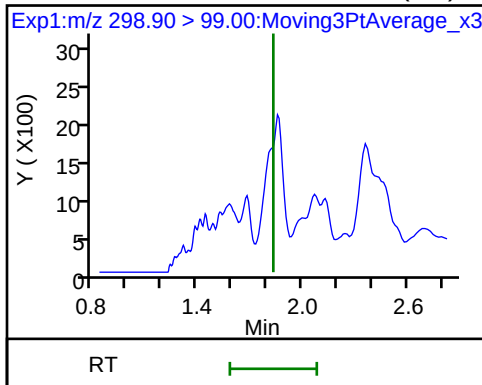
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 7 13C2 PFHxA

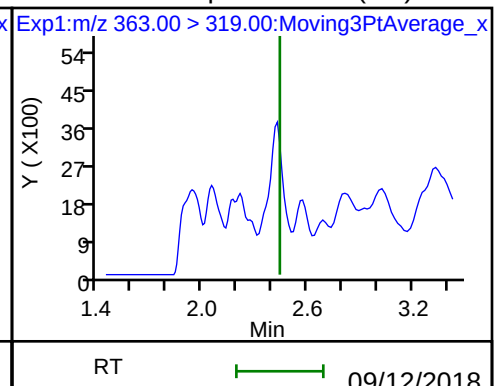
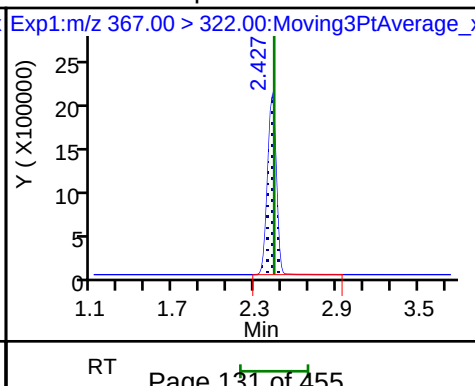
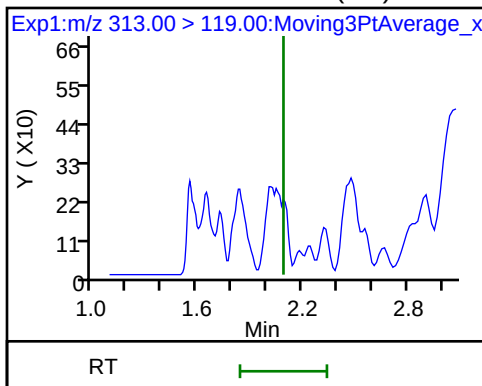
6 Perfluorohexanoic acid (ND)

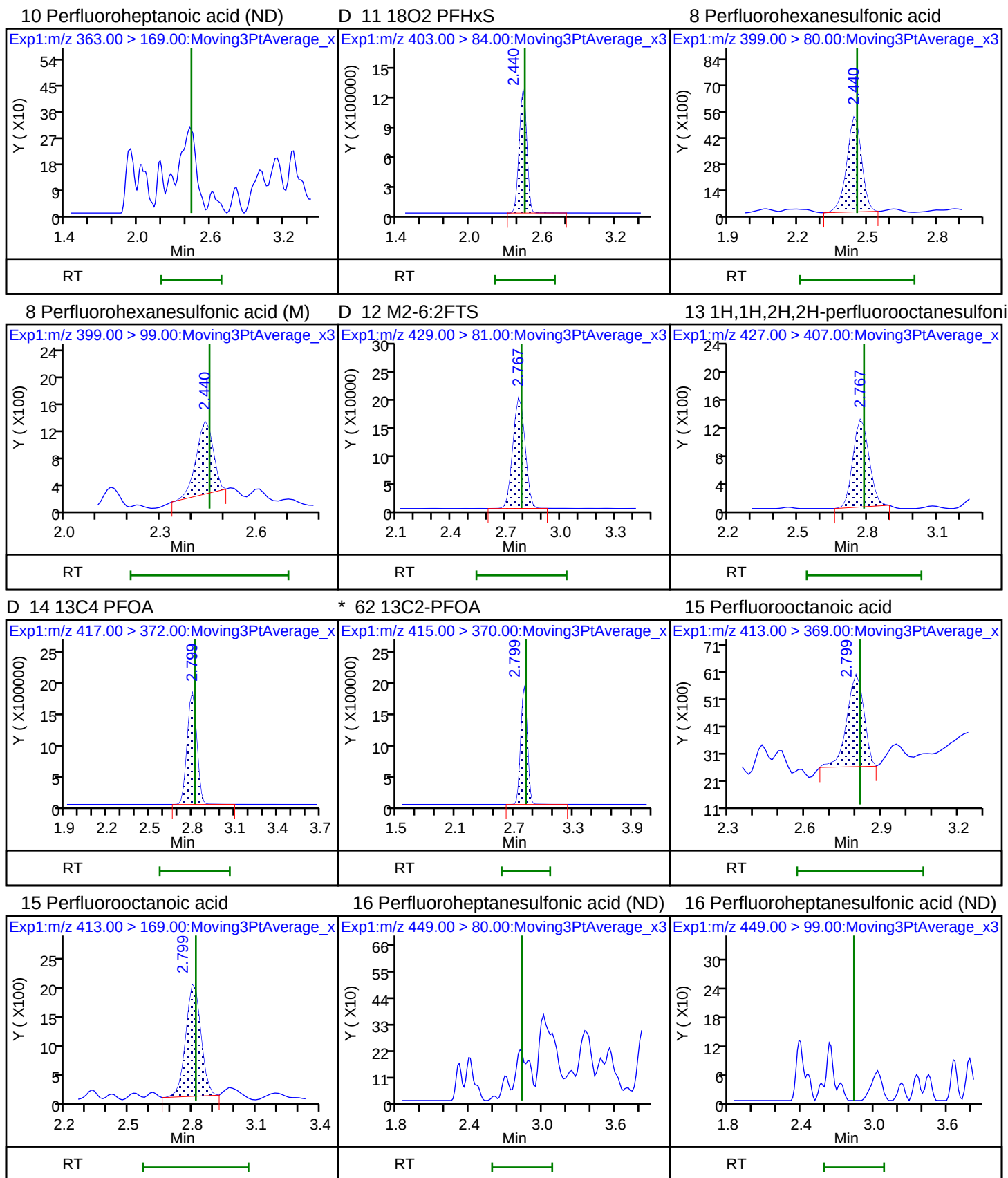


6 Perfluorohexanoic acid (ND)

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid (ND)

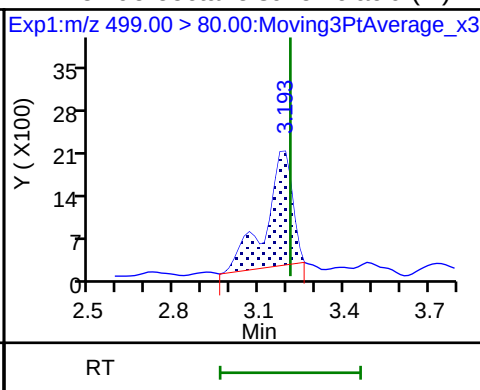
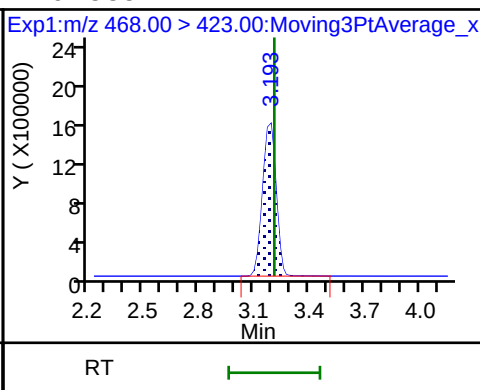
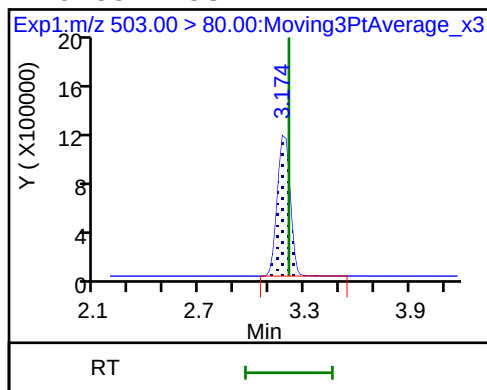




D 18 13C4 PFOS

D 19 13C5 PFNA

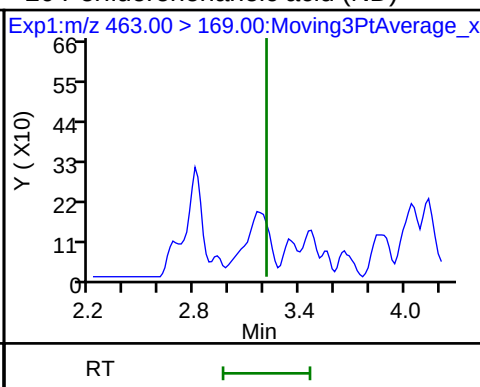
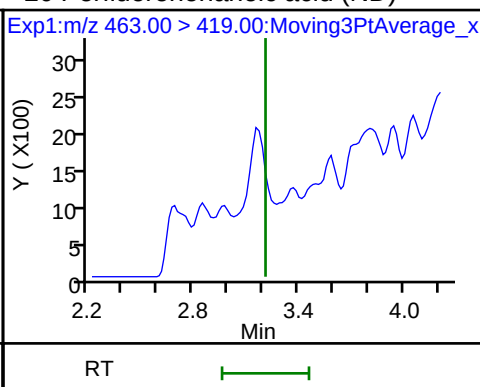
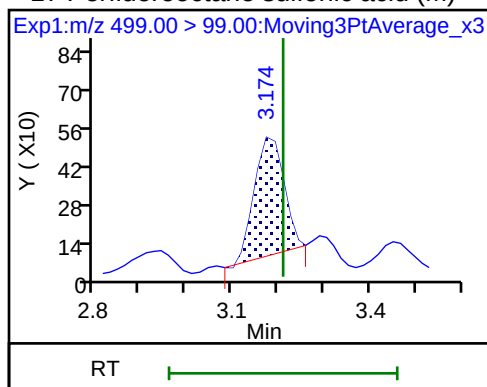
17 Perfluorooctane sulfonic acid (M)



17 Perfluorooctane sulfonic acid (M)

20 Perfluorononanoic acid (ND)

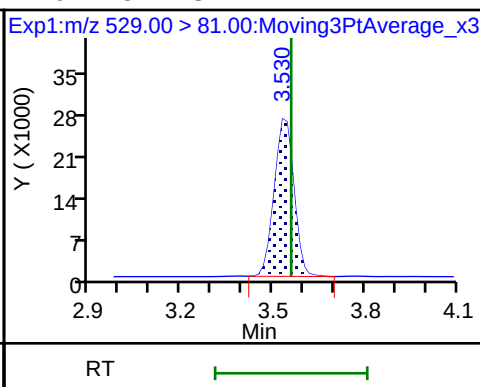
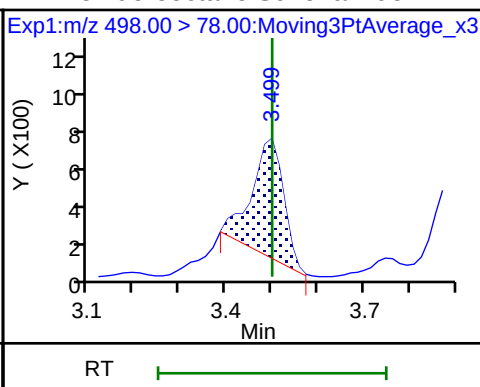
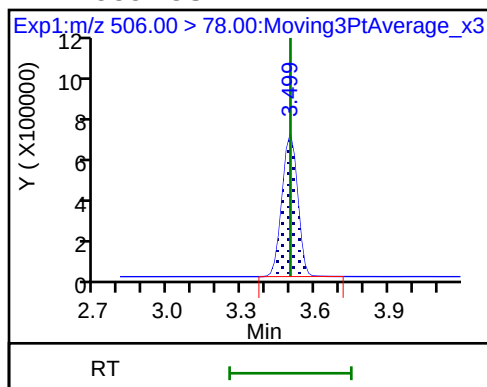
20 Perfluorononanoic acid (ND)



D 21 13C8 FOSA

22 Perfluorooctane Sulfonamide

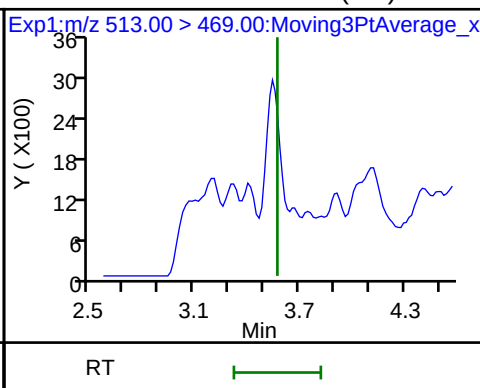
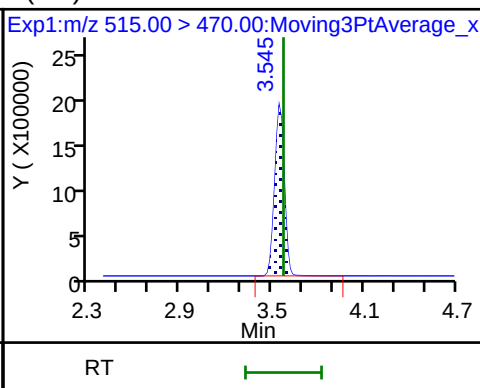
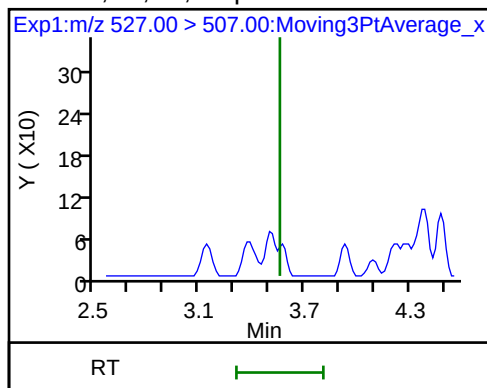
D 26 M2-8:2FTS

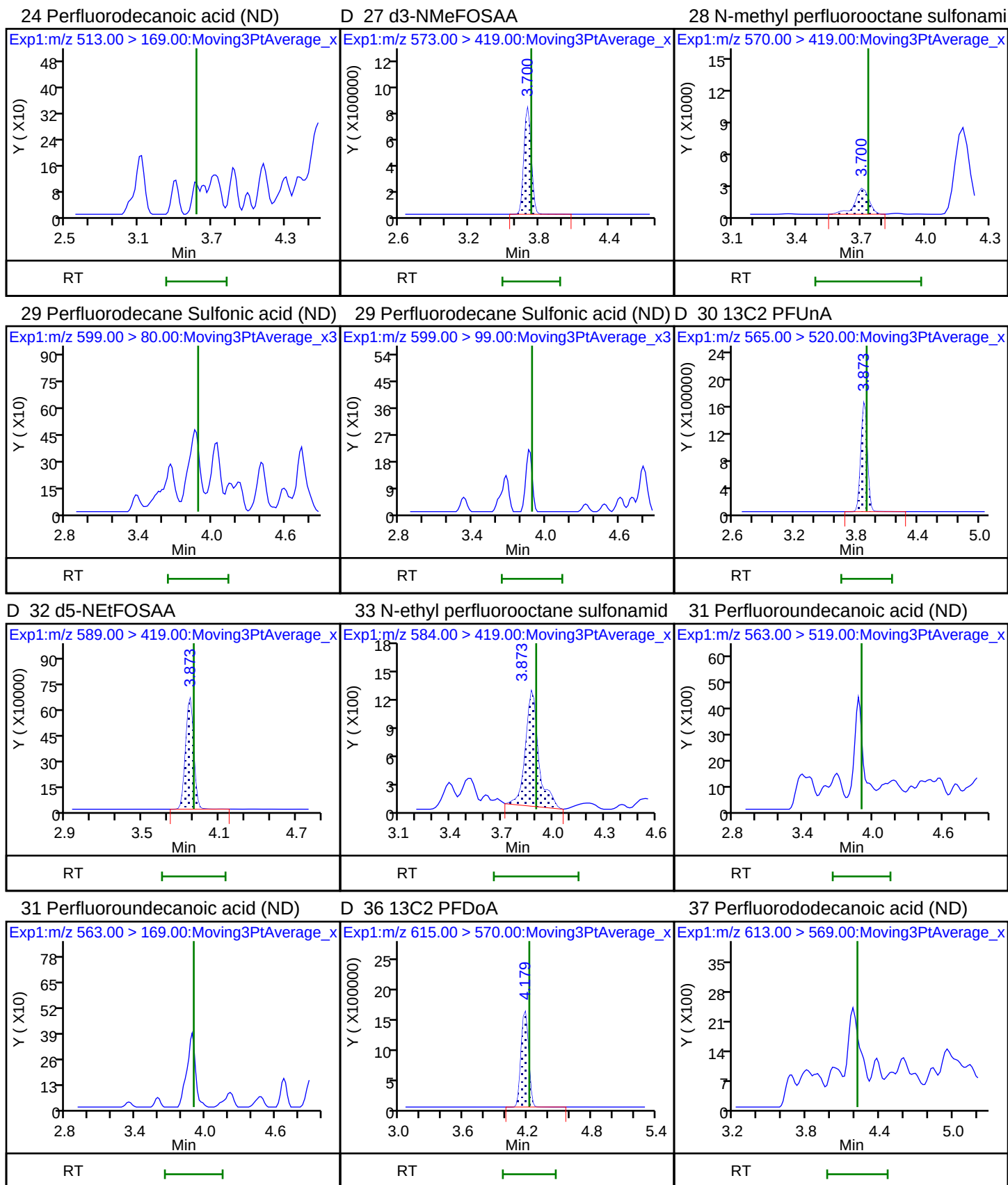


25 1H,1H,2H,2H-perfluorodecanesulfonic acid (ND)

D 27 13C2 PFDA

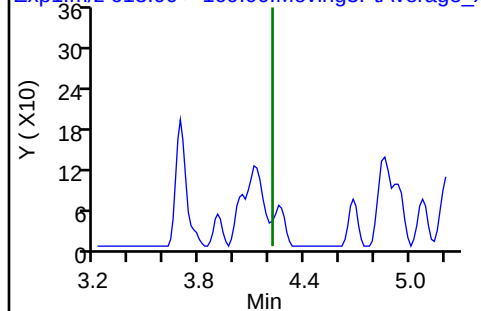
24 Perfluorodecanoic acid (ND)





37 Perfluorododecanoic acid (ND)

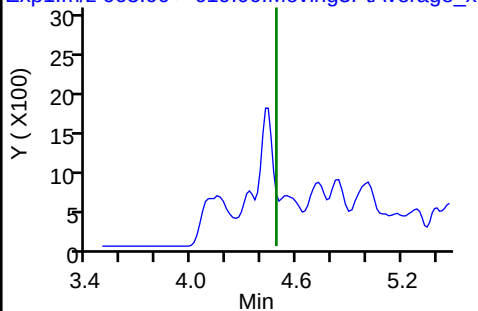
Exp1:m/z 613.00 > 169.00:Moving3PtAverage_x



RT

41 Perfluorotridecanoic acid (ND)

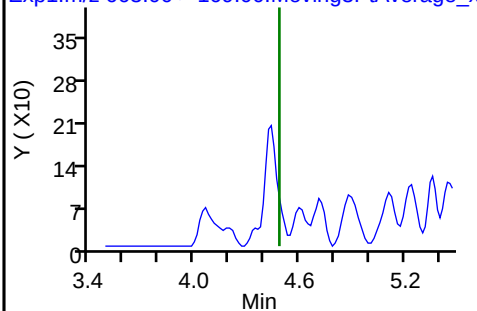
Exp1:m/z 663.00 > 619.00:Moving3PtAverage_x



RT

41 Perfluorotridecanoic acid (ND)

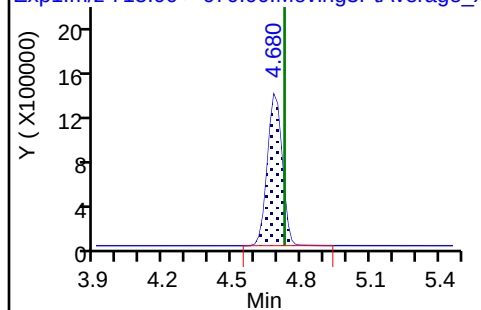
Exp1:m/z 663.00 > 169.00:Moving3PtAverage_x



RT

D 43 13C2-PFTeDA

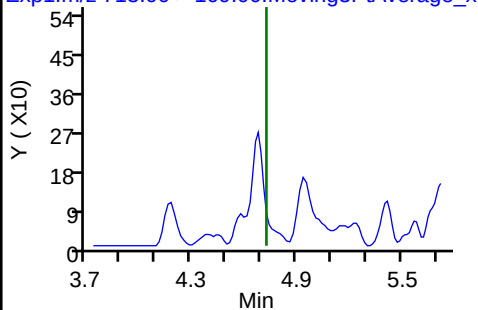
Exp1:m/z 715.00 > 670.00:Moving3PtAverage_x



RT

42 Perfluorotetradecanoic acid (ND)

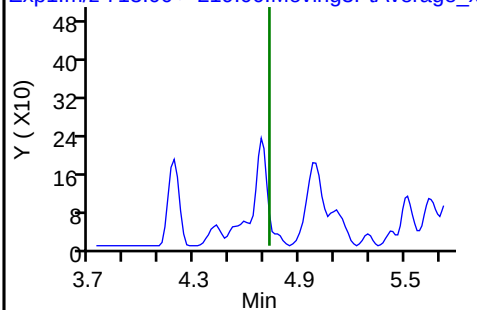
Exp1:m/z 713.00 > 169.00:Moving3PtAverage_x



RT

42 Perfluorotetradecanoic acid (ND)

Exp1:m/z 713.00 > 219.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

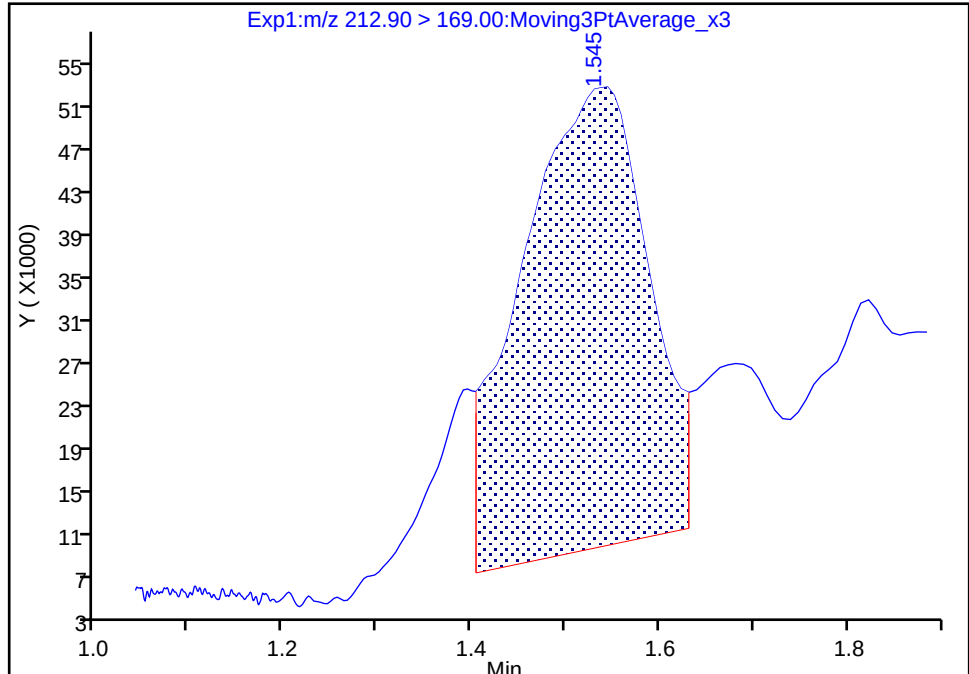
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_014.d				
Injection Date:	10-Sep-2018 11:24:48	Instrument ID:	A9		
Lims ID:	480-140926-A-1-A	Lab Sample ID:	320-140926-1		
Client ID:	EB-01 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

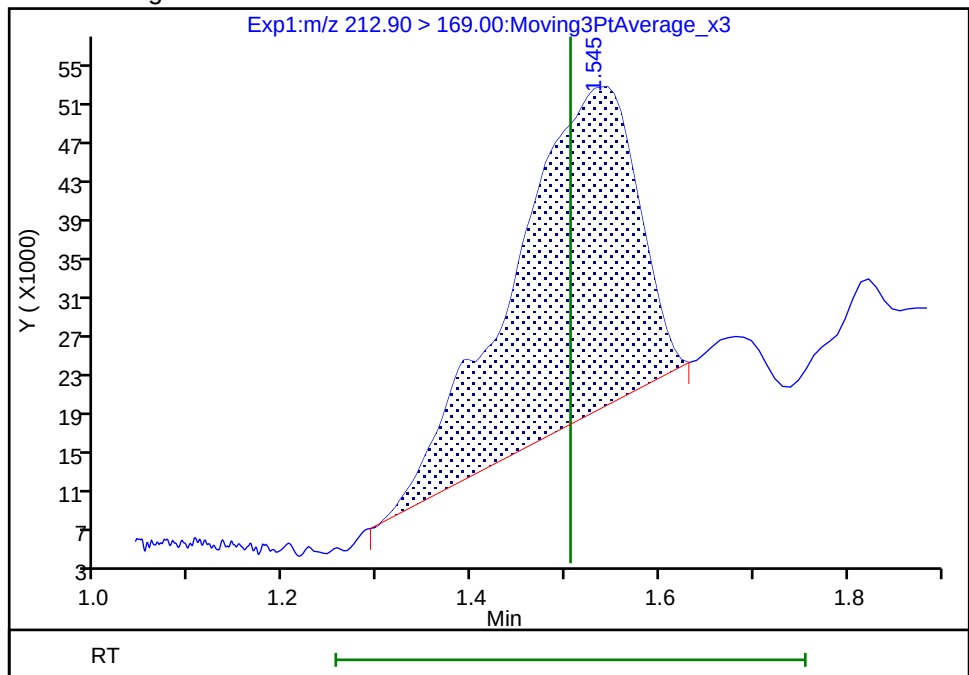
RT: 1.54
Area: 400861
Amount: 0.141160
Amount Units: ng/ml

Processing Integration Results



RT: 1.54
Area: 313740
Amount: 0.110481
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:45:19

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

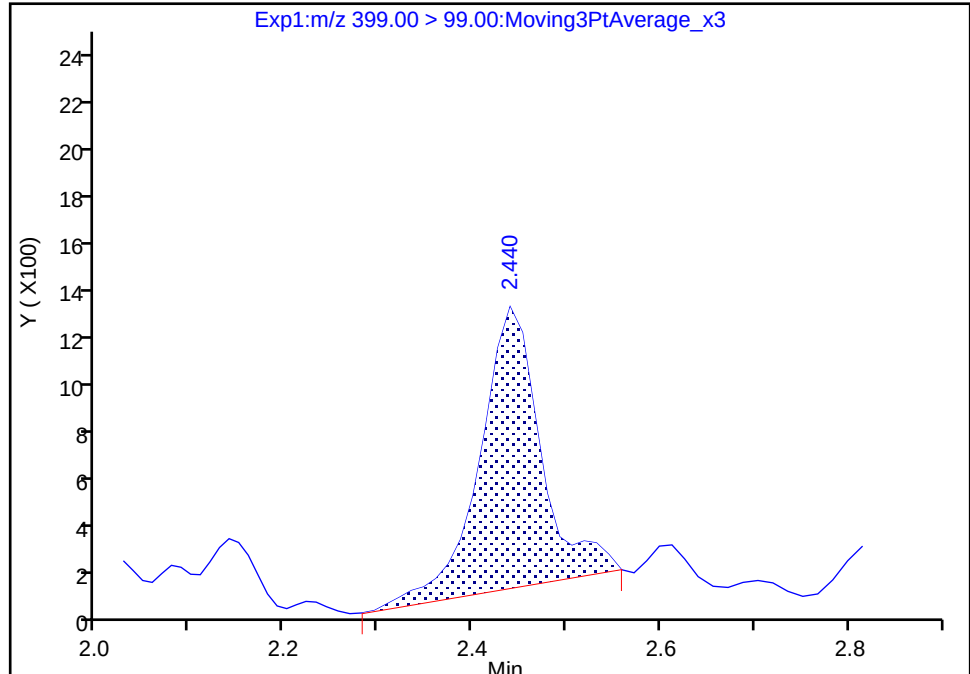
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_014.d				
Injection Date:	10-Sep-2018 11:24:48	Instrument ID:	A9		
Lims ID:	480-140926-A-1-A	Lab Sample ID:	320-140926-1		
Client ID:	EB-01 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

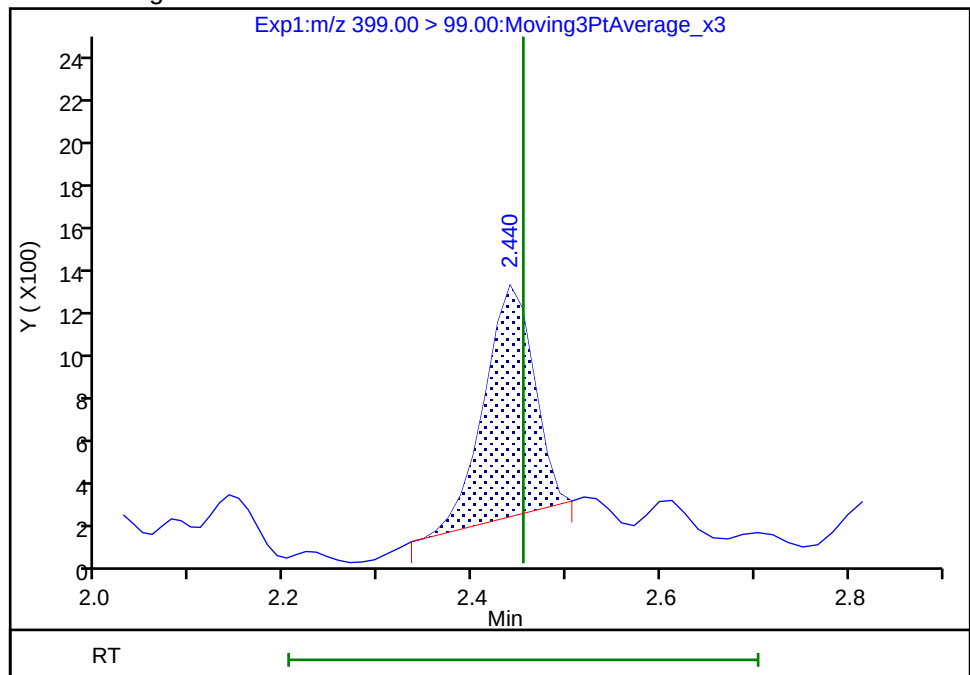
RT: 2.44
Area: 5325
Amount: 0.008536
Amount Units: ng/ml

Processing Integration Results



RT: 2.44
Area: 3915
Amount: 0.008536
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:45:38
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 137 of 455

09/12/2018

TestAmerica Sacramento

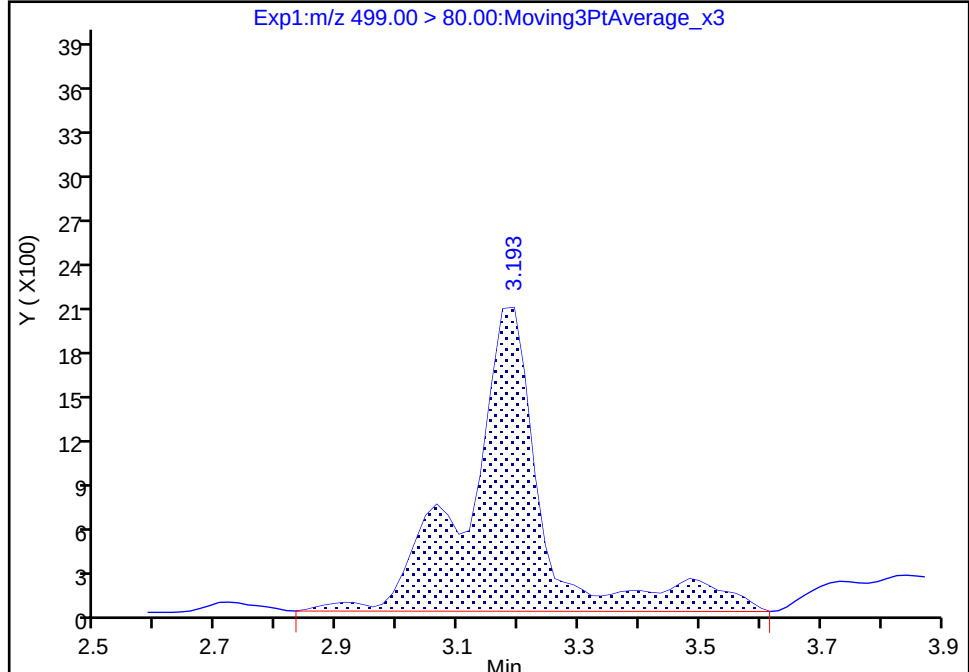
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_014.d				
Injection Date:	10-Sep-2018 11:24:48	Instrument ID:	A9		
Lims ID:	480-140926-A-1-A	Lab Sample ID:	320-140926-1		
Client ID:	EB-01 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

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

Signal: 1

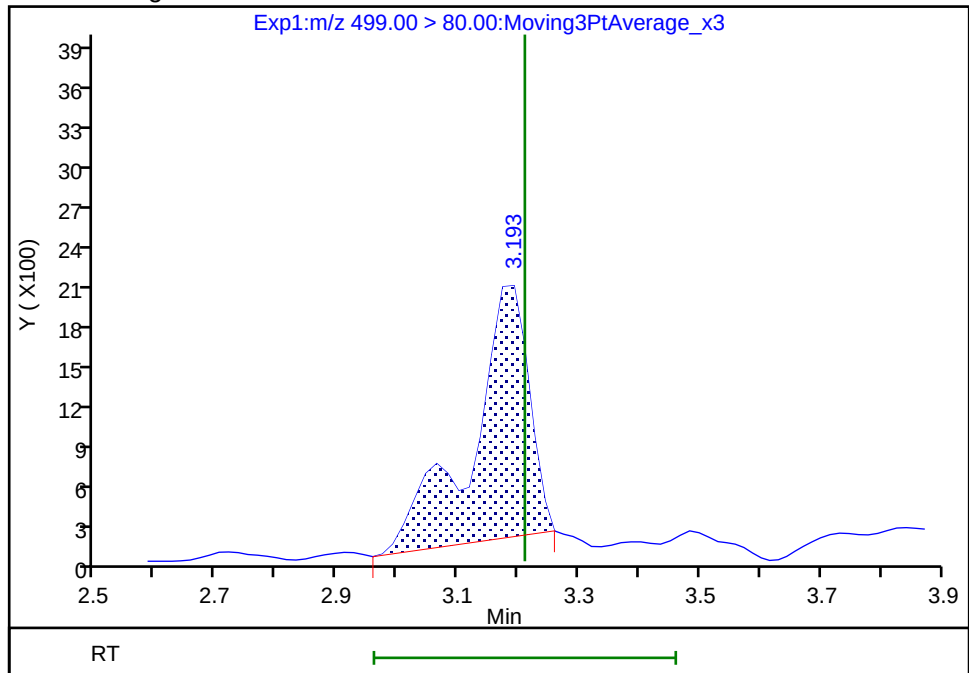
RT: 3.19
Area: 17731
Amount: 0.006929
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 12361
Amount: 0.004830
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:46:35
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 138 of 455

09/12/2018

TestAmerica Sacramento

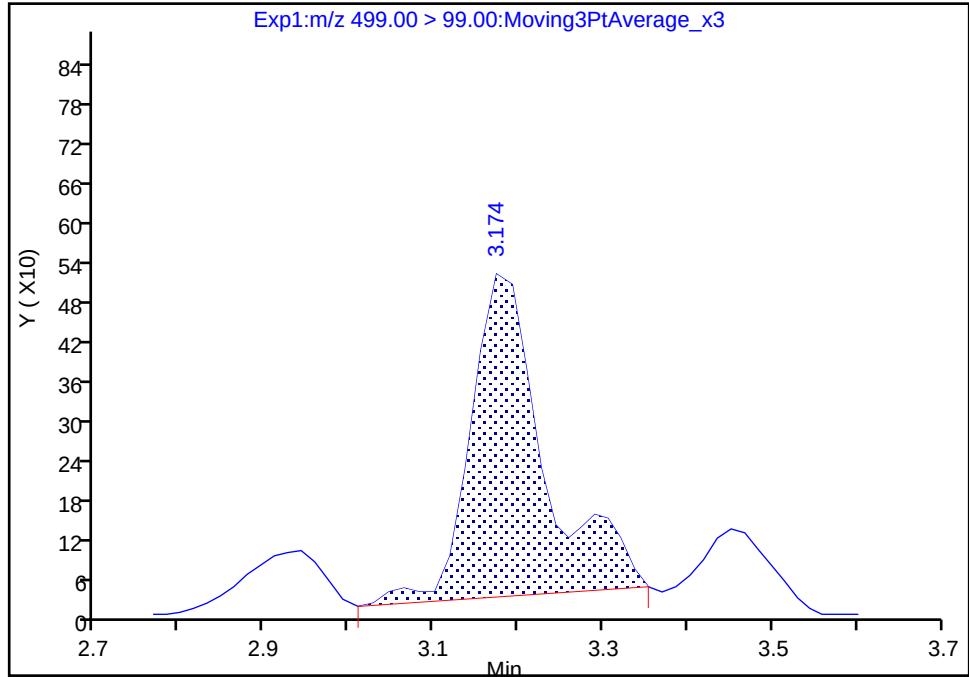
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_014.d
Injection Date: 10-Sep-2018 11:24:48 Instrument ID: A9
Lims ID: 480-140926-A-1-A Lab Sample ID: 320-140926-1
Client ID: EB-01 (082718)
Operator ID: A9\Administrator ALS Bottle#: 8 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

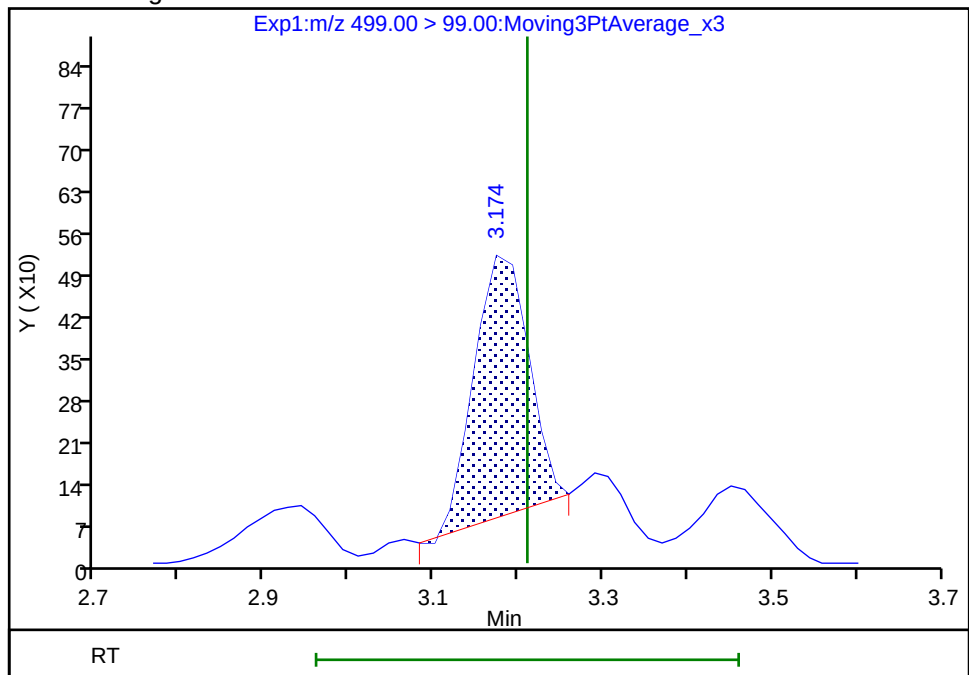
RT: 3.17
Area: 2970
Amount: 0.006929
Amount Units: ng/ml

Processing Integration Results



RT: 3.17
Area: 1958
Amount: 0.004830
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:46:39

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-1 (082718)</u>	Lab Sample ID: <u>480-140926-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_015.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 12:02</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>288.2 (mL)</u>	Date Analyzed: <u>09/10/2018 11:32</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.7		1.7	0.30
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		1.7	0.43
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.7	0.50
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.23	J	1.7	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.7	0.74
375-95-1	Perfluorononanoic acid (PFNA)	0.30	J	1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.95
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.3	J	1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.58	J B	1.7	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.3		1.7	0.47
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.28
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.30
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.7
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6
27619-97-2	6:2 FTS	ND		17	1.7
39108-34-4	8:2 FTS	ND		17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-1 (082718)</u>	Lab Sample ID: <u>480-140926-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_015.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 12:02</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>288.2 (mL)</u>	Date Analyzed: <u>09/10/2018 11:32</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	88		25-150
STL01893	13C5 PFPeA	93		25-150
STL00993	13C2 PFHxA	93		25-150
STL01892	13C4-PFHpA	98		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	92		25-150
STL00996	13C2 PFDA	98		25-150
STL00997	13C2 PFUnA	102		25-150
STL00998	13C2 PFDoA	93		25-150
STL02116	13C2-PFTeDA	97		25-150
STL02337	13C3-PFBS	92		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	94		25-150
STL01056	13C8 FOSA	92		25-150
STL02118	d3-NMeFOSAA	88		25-150
STL02117	d5-NEtFOSAA	98		25-150
STL02279	M2-6:2FTS	114		25-150
STL02280	M2-8:2FTS	99		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_015.d
 Lims ID: 480-140926-A-2-A
 Client ID: MW-1 (082718)
 Sample Type: Client
 Inject. Date: 10-Sep-2018 11:32:18 ALS Bottle#: 9 Worklist Smp#: 12
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-140926-A-2-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 07:53:57 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 07:53:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.511	1.505	0.006	0.540	6585741	2.21		88.3	13887	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.511	1.505	0.006	1.000	117996	0.0491			12.3	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.798	1.791	0.007	0.642	6202251	2.33		93.2	7048	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.798	1.791	0.007	1.000	23109	0.009184			0.9	
D 47 13C3-PFBS										
301.90 > 83.00	1.831	1.832	-0.001	0.654	75053	2.15		92.4	268	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.831	1.832	-0.001	1.000	129334	0.0381			8.3	
298.90 > 99.00	1.831	1.832	-0.001	1.000	49656		2.60(1.35-4.05)		11.4	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.001	0.746	6567978	2.33		93.4	10562	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.091	-0.001	1.000	18079	0.007557			0.6	
313.00 > 119.00	2.079	2.091	-0.011	0.995	2422		7.46(6.96-20.87)		2.5	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.192	2.193	-0.001	0.783	698986	2.29		91.7	1663	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.202	2.203	-0.001	1.005	1482	0.002998			0.3	
D 9 13C4-PFHpA										
367.00 > 322.00	2.427	2.441	-0.015	0.867	8197037	2.44		97.7	11060	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.427	2.441	-0.015	1.000	21691	0.006488			0.9	
363.00 > 169.00	2.427	2.441	-0.015	1.000	4771		4.55(2.17-6.52)		11.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.453	2.454	-0.001	0.876	4713828	2.28		96.6	9540	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.453	2.454	-0.001	1.000	41276	0.0167			10.9	
399.00 > 99.00	2.453	2.454	-0.001	1.000	12275		3.36(1.90-5.70)		9.4	
D 12 M2-6:2FTS										
429.00 > 81.00	2.767	2.784	-0.017	0.989	896464	2.72		114	1049	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.783	2.784	-0.001	1.006	7615	0.009427			4.5	
D 73 13C8 PFOA										
421.00 > 376.00	2.799	2.816	-0.017		7162	0.002477		0.0	48.3	
D 14 13C4 PFOA										
417.00 > 372.00	2.799	2.816	-0.017	1.000	7625206	2.44		97.6	8592	
* 62 13C2-PFOA										
415.00 > 370.00	2.799	2.816	-0.017		7750211	2.50			7539	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.799	2.816	-0.017	1.000	65069	0.0198			3.2	
413.00 > 169.00	2.799	2.816	-0.017	1.000	29921		2.17(1.36-4.08)		32.9	
D 18 13C4 PFOS										
503.00 > 80.00	3.192	3.210	-0.018	1.140	4982485	2.25		94.0	3444	
D 19 13C5 PFNA										
468.00 > 423.00	3.192	3.210	-0.018	1.140	6709873	2.29		91.7	7195	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.064	3.210	-0.146	0.960	145843	0.0663			57.7	M
499.00 > 99.00	3.174	3.210	-0.036	0.994	27151		5.37(2.04-6.12)		48.2	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.192	3.210	-0.018	1.000	22324	0.008506			2.0	
463.00 > 169.00	3.192	3.210	-0.018	1.000	3347		6.67(2.68-8.03)		8.0	
D 21 13C8 FOSA										
506.00 > 78.00	3.499	3.499	-0.001	1.250	2687579	2.29		91.7	4376	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.499	3.499	-0.001	1.000	4474	0.001404			8.7	
D 26 M2-8:2FTS										
529.00 > 81.00	3.530	3.558	-0.028	1.261	114785	2.37		98.8	399	
D 23 13C2 PFDA										
515.00 > 470.00	3.544	3.573	-0.029	1.266	7181399	2.46		98.3	5587	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.544	3.573	-0.029	1.000	5184	0.001585			1.0	R
513.00 > 169.00	3.544	3.573	-0.029	1.000	856		6.06(7.12-21.35)		1.9	R
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.700	3.732	-0.032	1.322	2909370	2.21		88.4	5069	
D 30 13C2 PFUnA										
565.00 > 520.00	3.872	3.901	-0.029	1.384	6336689	2.55		102	6168	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.872	3.901	-0.029	1.384	2550812	2.46		98.5	3017	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.872	3.901	-0.029	1.000	2136	0.002251			3.3	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.872	3.901	-0.029	1.000	13569	0.005967			3.6	
563.00 > 169.00	3.872	3.901	-0.029	1.000	1947		6.97(5.24-15.72)		10.7	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDaA										
615.00 > 570.00	4.179	4.216	-0.037	1.493	7066098	2.34		93.4	5119	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.680	4.727	-0.047	1.672	5815502	2.41		96.5	8272	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.113	5.164	-0.051	1.827	5534527	2.27		90.6	6376	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.113	5.164	-0.051	1.000	51931	0.000534			16.4	
813.00 > 169.00	5.113	5.164	-0.051	1.000	8390		6.19(2.77-8.32)		21.9	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_015.d

Injection Date: 10-Sep-2018 11:32:18

Instrument ID: A9

Lims ID: 480-140926-A-2-A

Lab Sample ID: 320-140926-2

Client ID: MW-1 (082718)

Operator ID: A9\Administrator

ALS Bottle#: 9

Worklist Smp#: 12

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

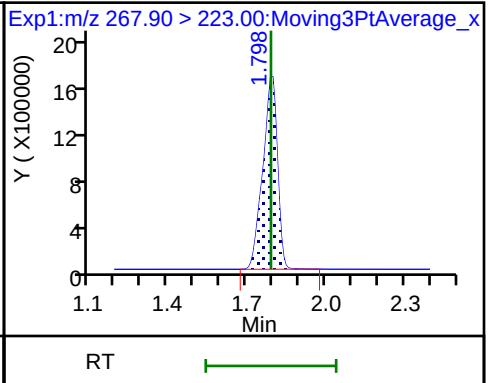
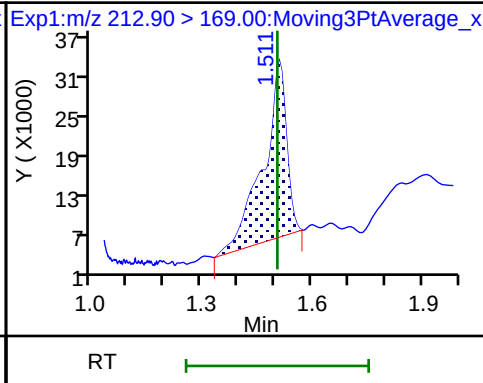
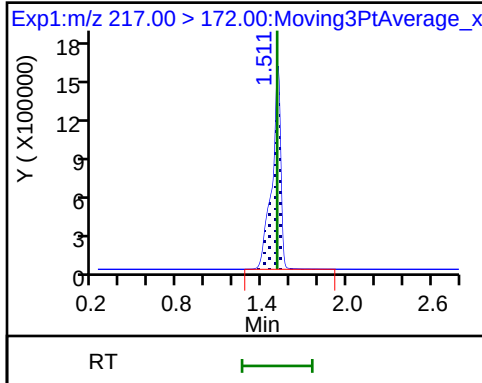
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

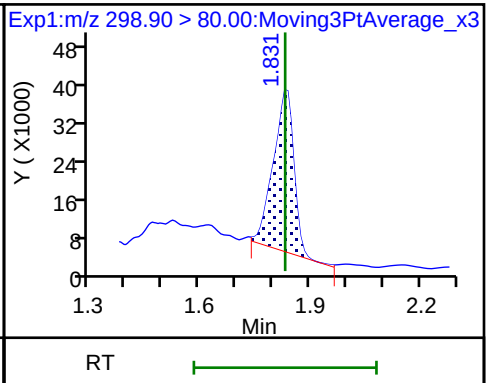
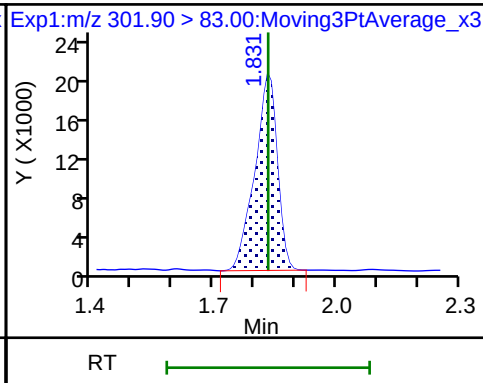
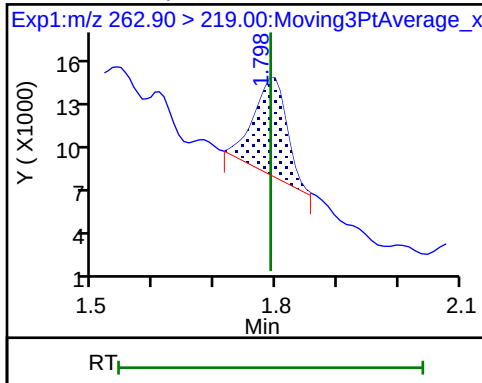
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

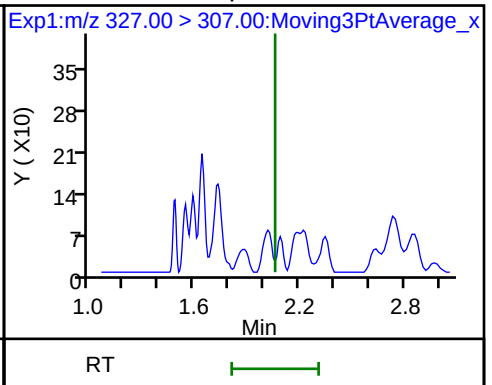
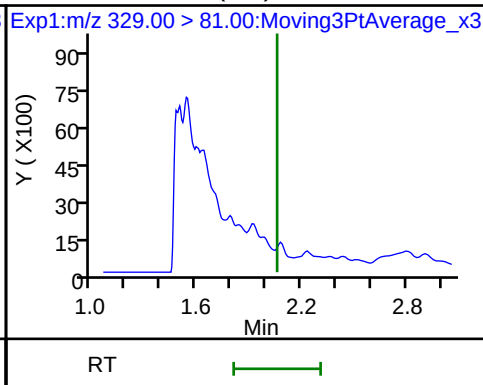
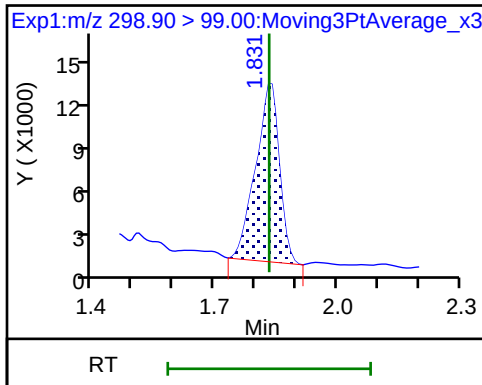
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS (ND)

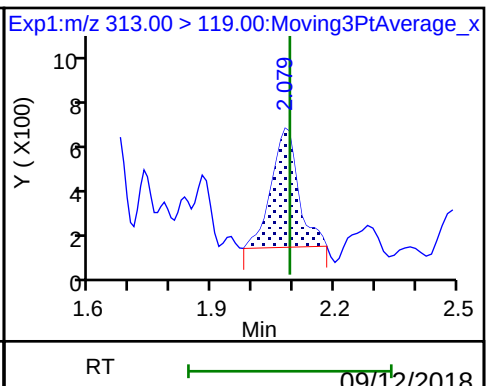
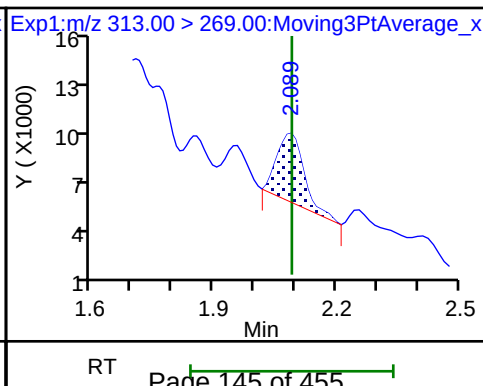
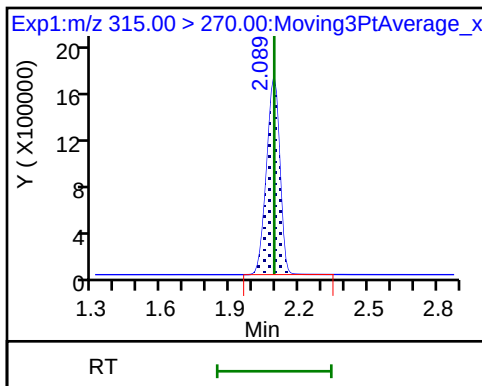
61 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



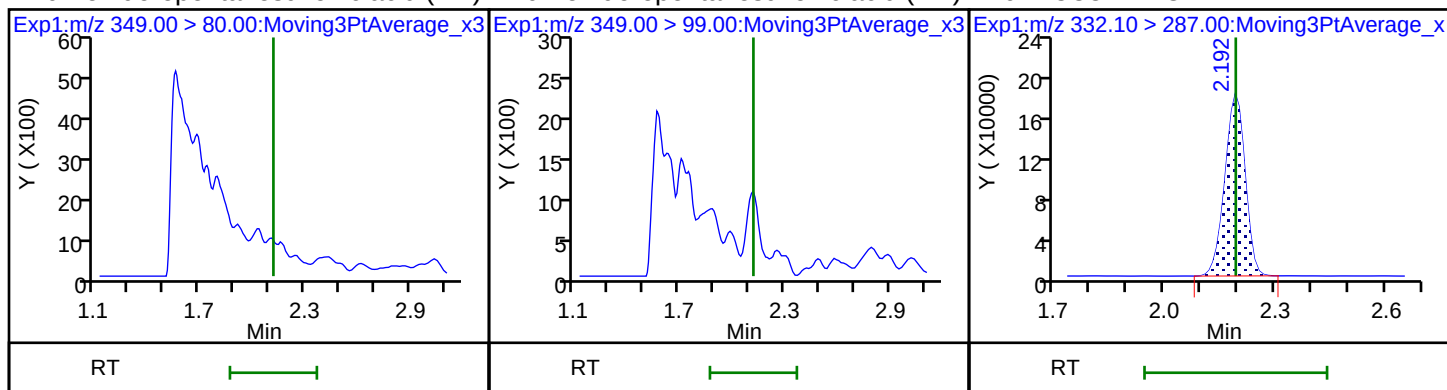
D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

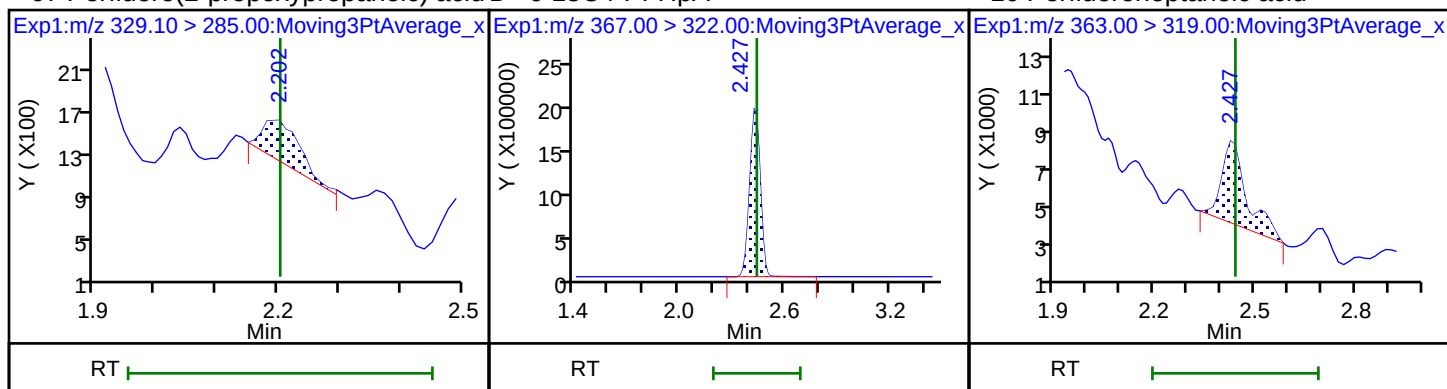


70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4-PFHpA

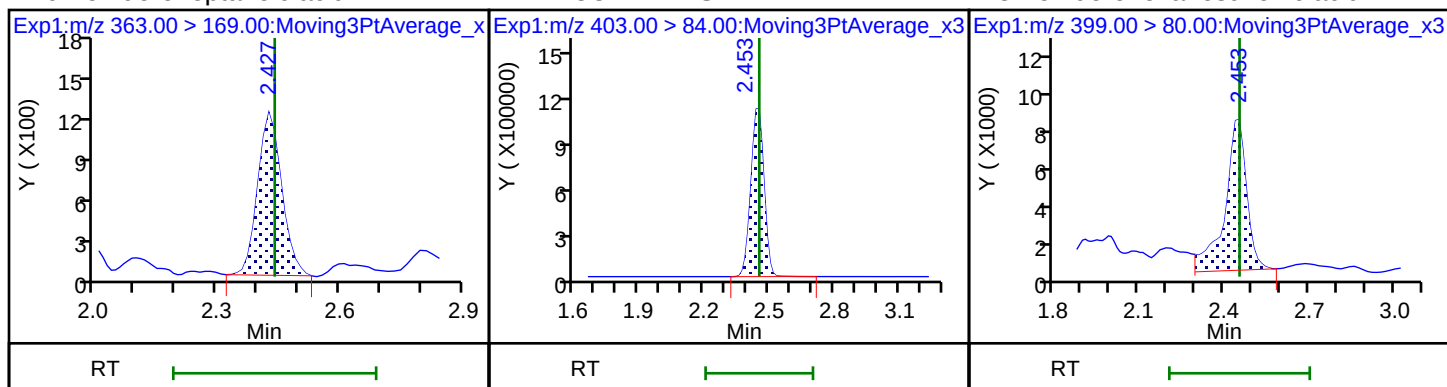
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

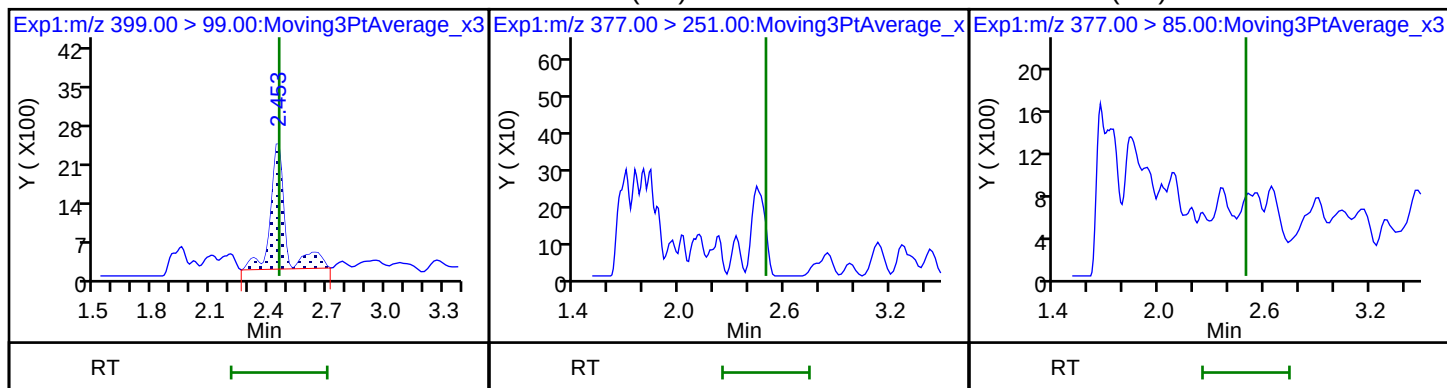
8 Perfluorohexanesulfonic acid



8 Perfluorohexanesulfonic acid

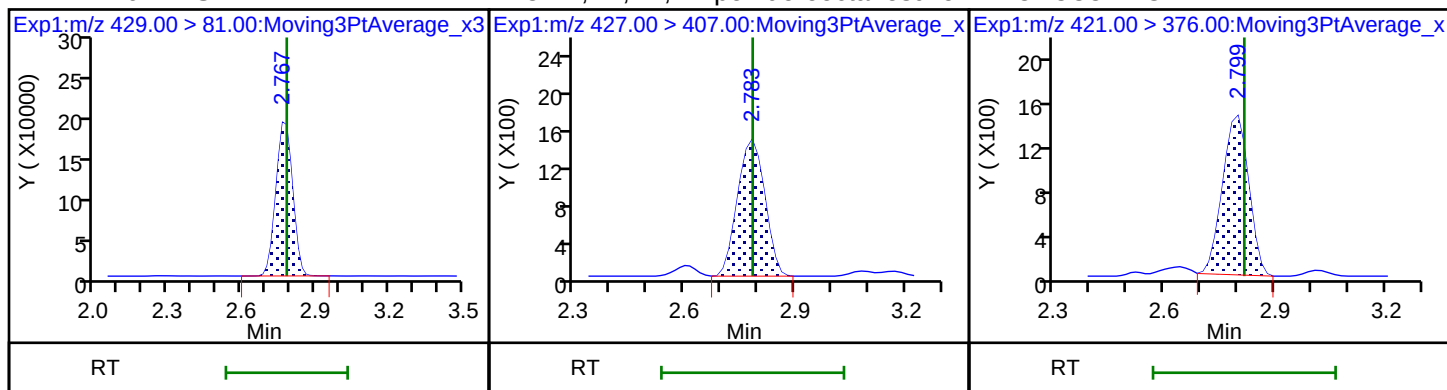
76 DONA (ND)

76 DONA (ND)



D 12 M2-6:2FTS

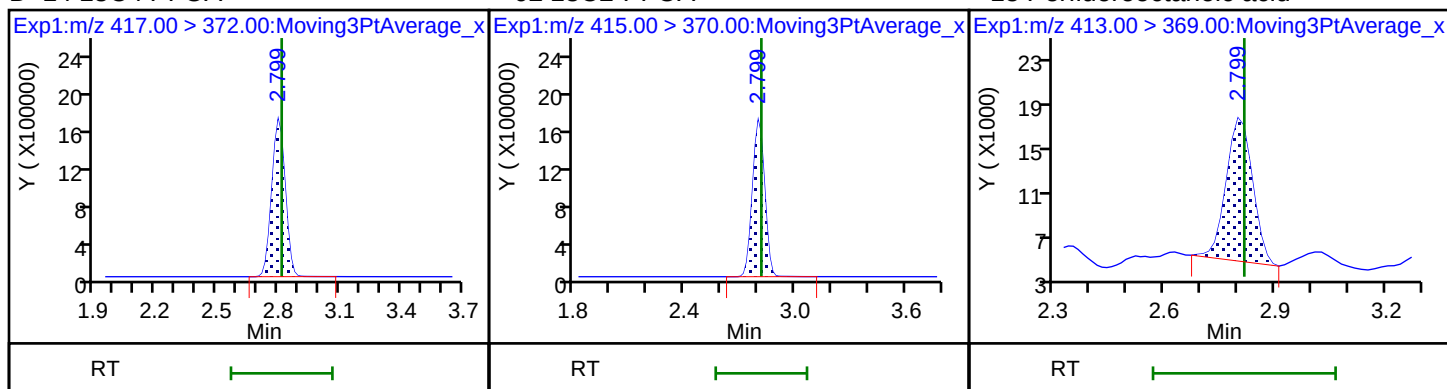
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

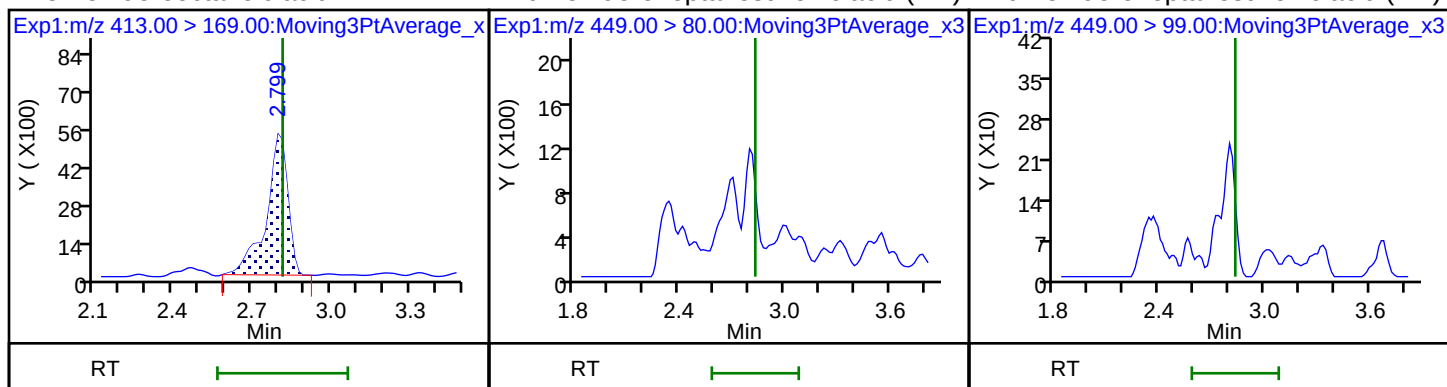
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid (ND)

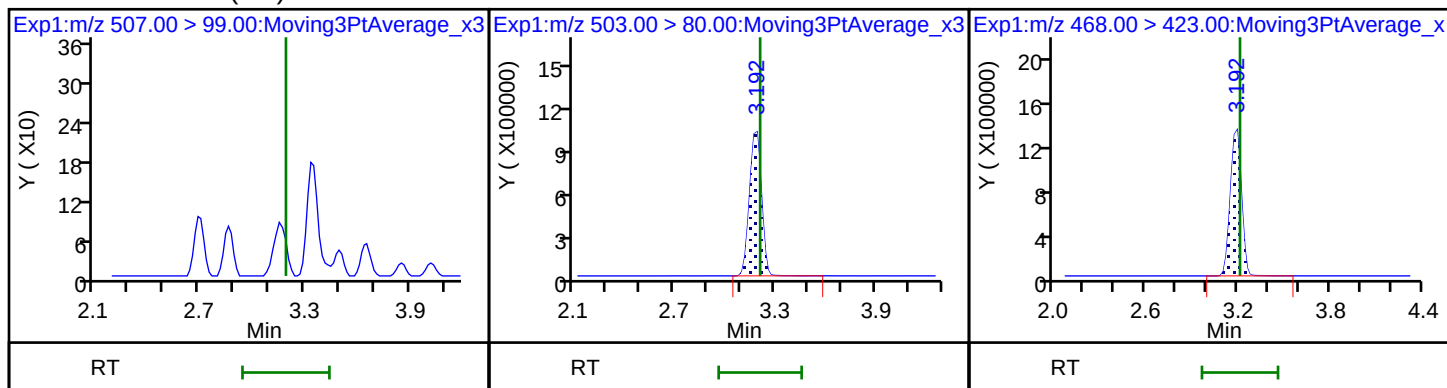
16 Perfluoroheptanesulfonic acid (ND)

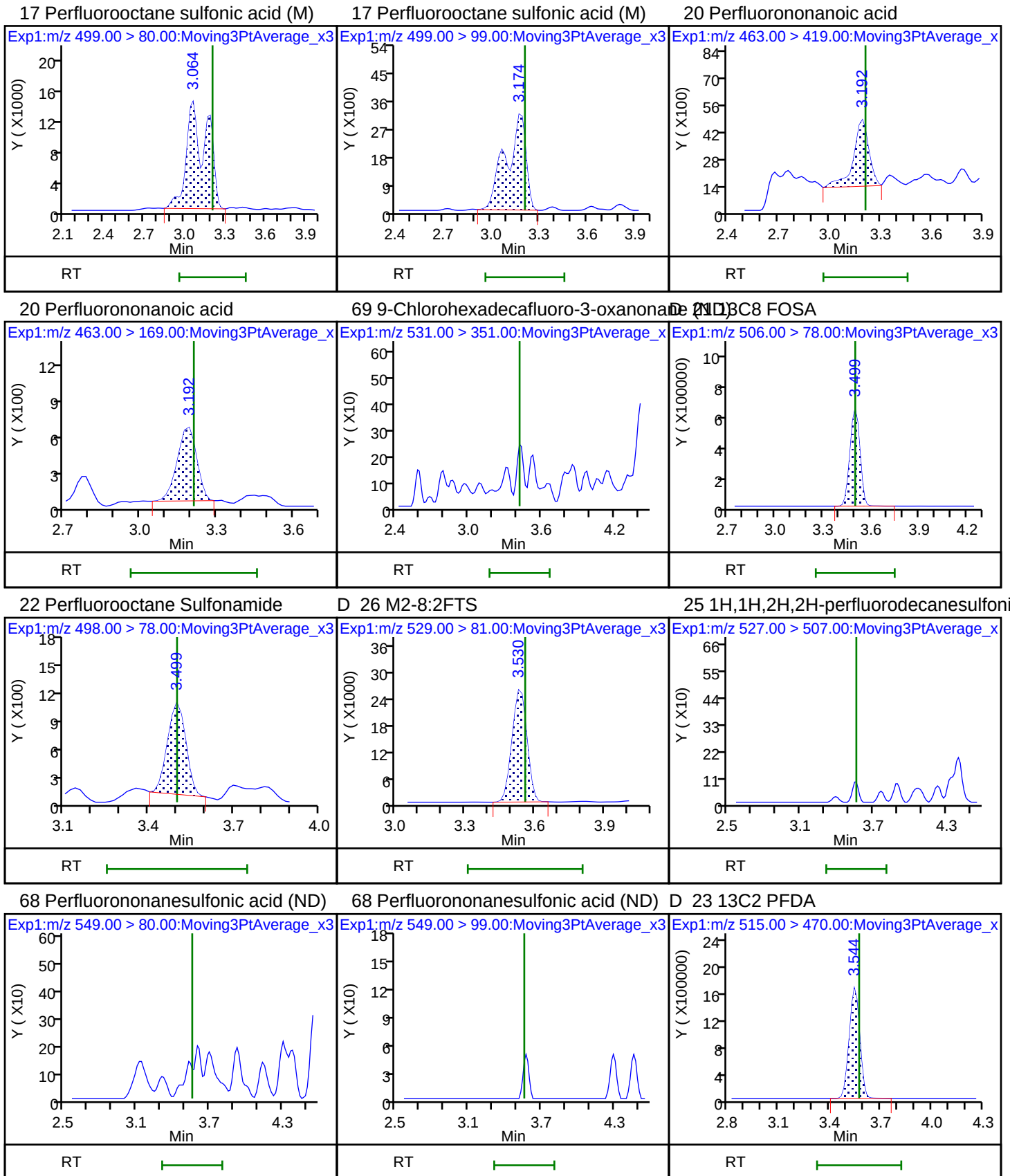


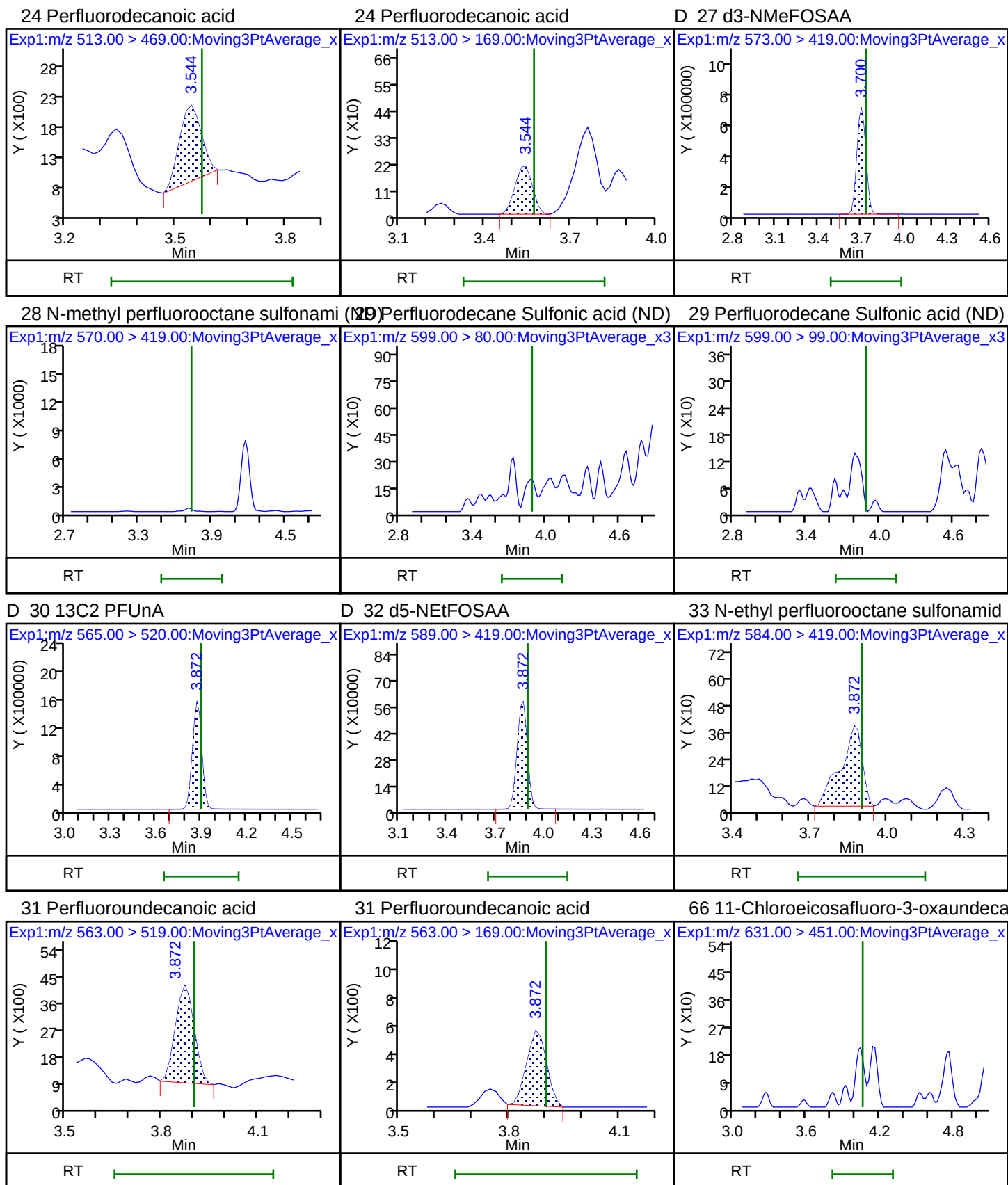
D 72 13C8 PFOS (ND)

D 18 13C4 PFOS

D 19 13C5 PFNA



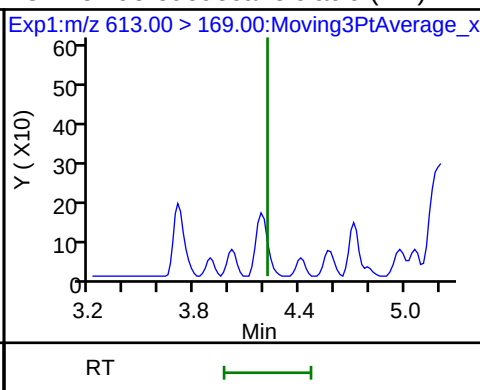
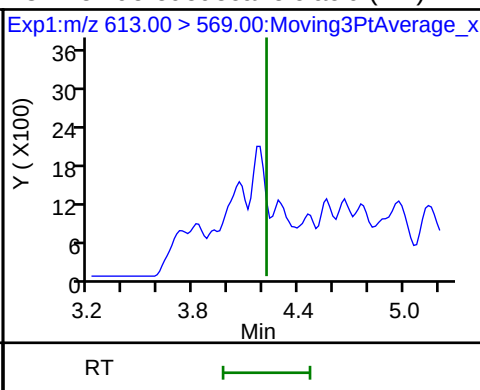
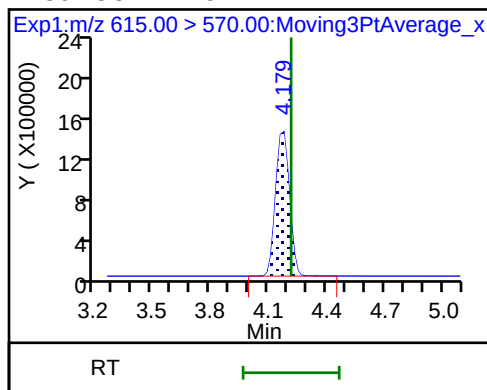




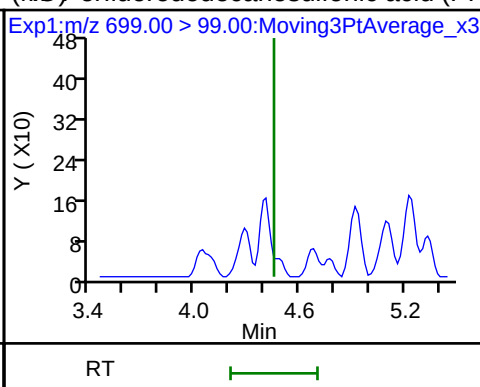
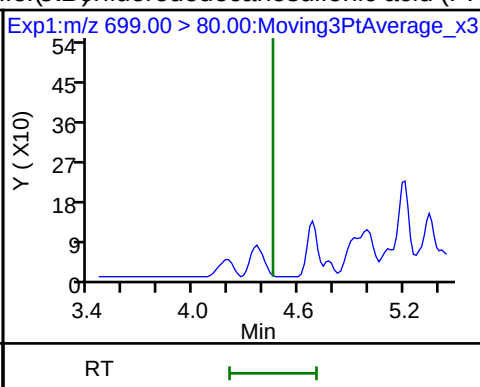
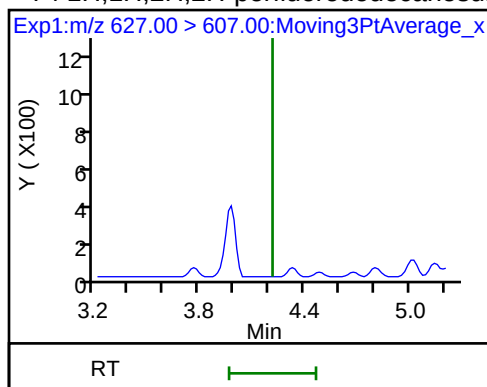
D 36 13C2 PFDaA

37 Perfluorododecanoic acid (ND)

37 Perfluorododecanoic acid (ND)



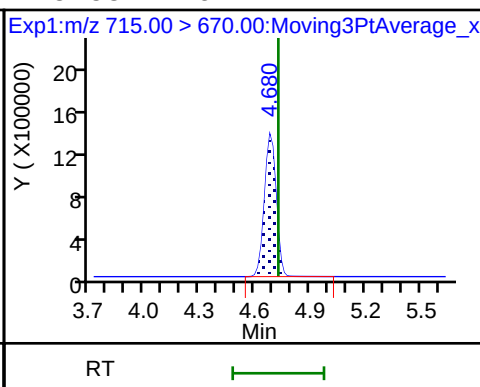
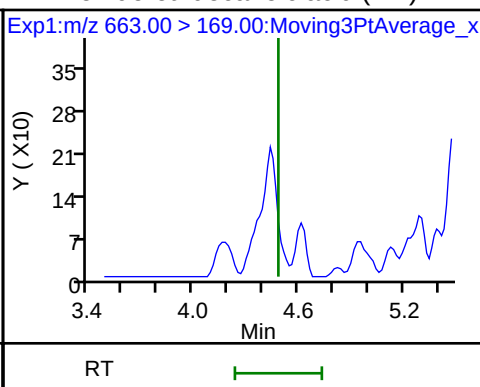
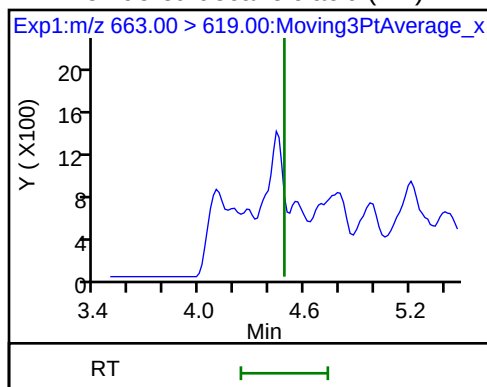
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

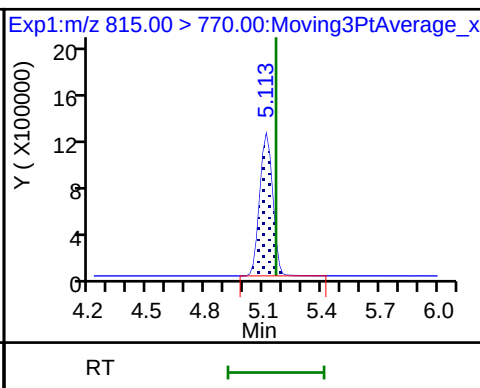
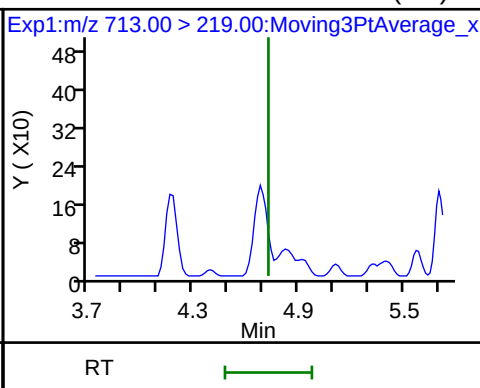
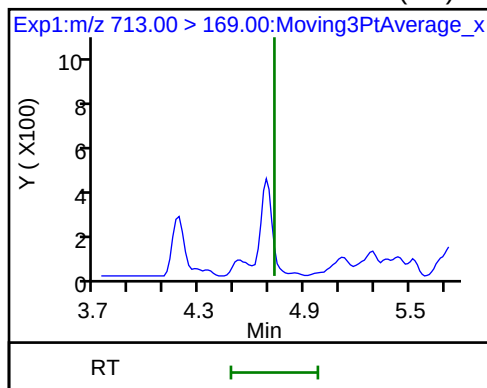
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)

42 Perfluorotetradecanoic acid (ND)

D 44 13C2-PFHxDA

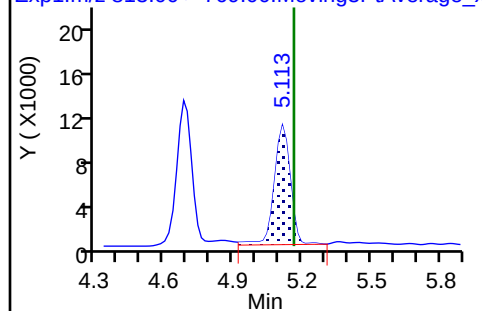


45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

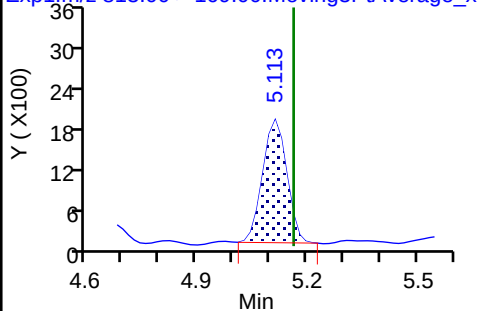
46 Perfluorooctadecanoic acid (ND)

Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



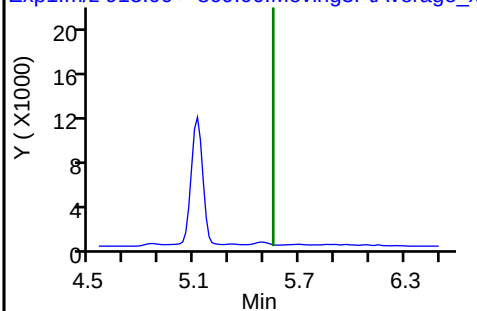
RT

Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



RT

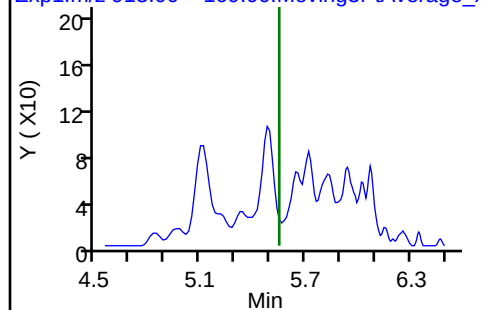
Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



RT

46 Perfluorooctadecanoic acid (ND)

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

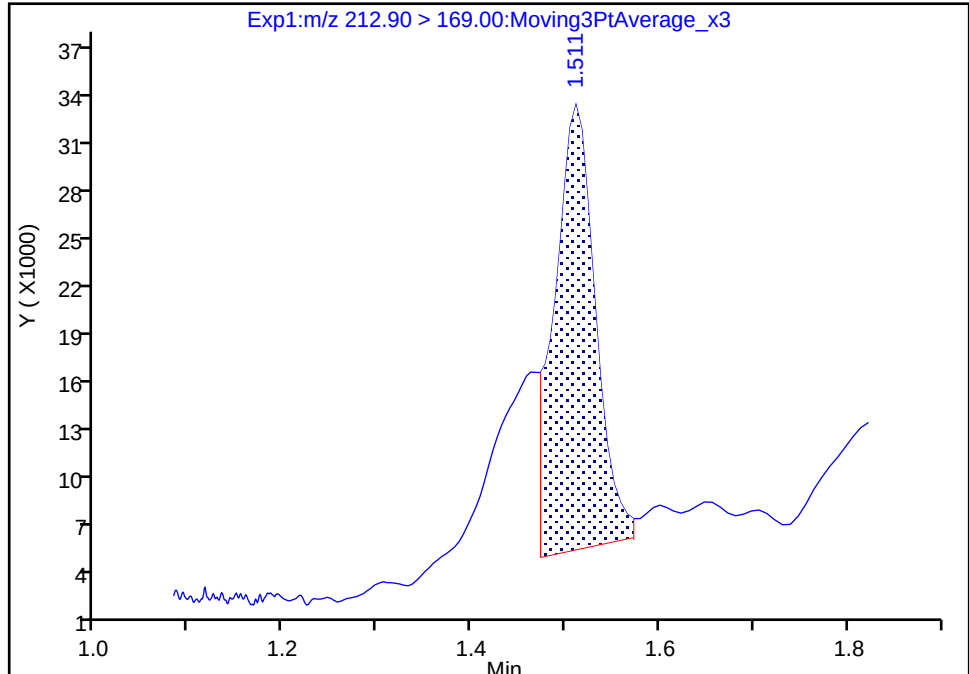
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_015.d				
Injection Date:	10-Sep-2018 11:32:18	Instrument ID:	A9		
Lims ID:	480-140926-A-2-A	Lab Sample ID:	320-140926-2		
Client ID:	MW-1 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

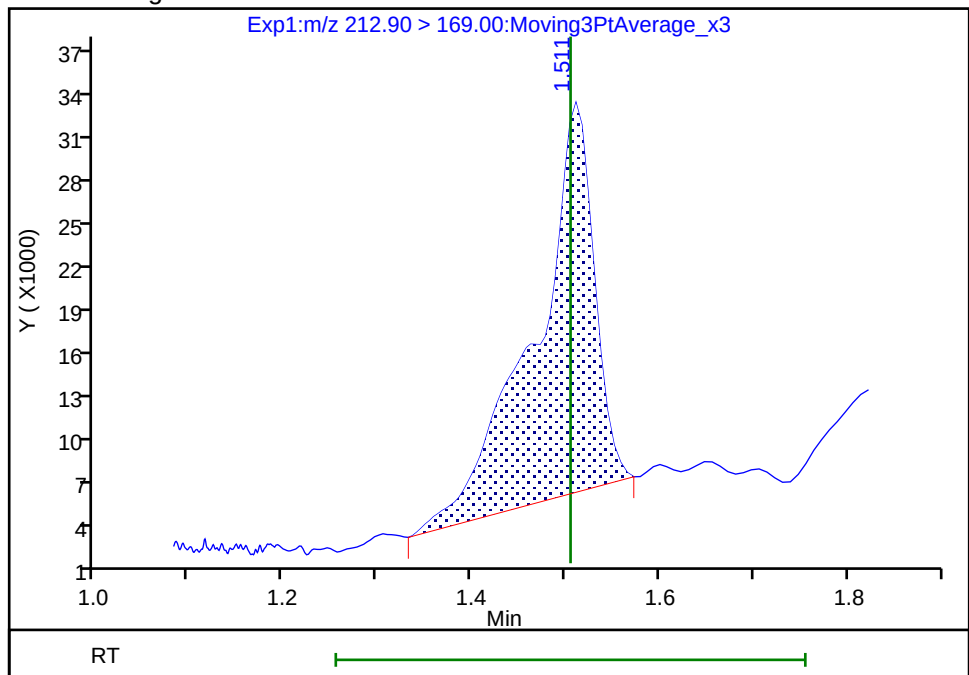
RT: 1.51
Area: 82943
Amount: 0.034493
Amount Units: ng/ml

Processing Integration Results



RT: 1.51
Area: 117996
Amount: 0.049070
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:53:07

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

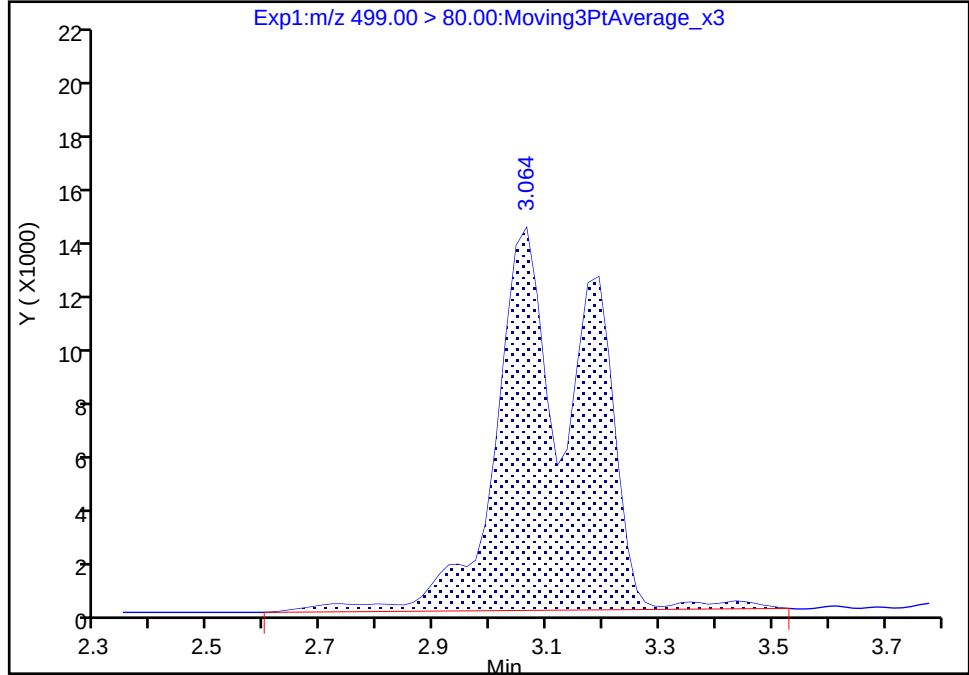
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_015.d				
Injection Date:	10-Sep-2018 11:32:18	Instrument ID:	A9		
Lims ID:	480-140926-A-2-A	Lab Sample ID:	320-140926-2		
Client ID:	MW-1 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

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

Signal: 1

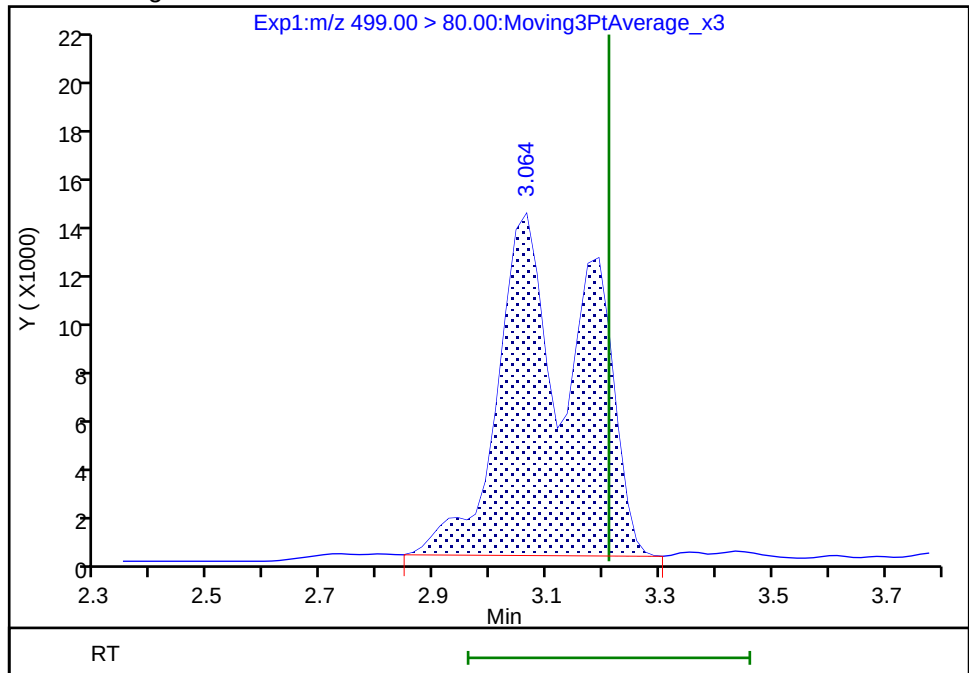
RT: 3.06
Area: 155429
Amount: 0.070660
Amount Units: ng/ml

Processing Integration Results



RT: 3.06
Area: 145843
Amount: 0.066302
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:53:27
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 153 of 455

09/12/2018

TestAmerica Sacramento

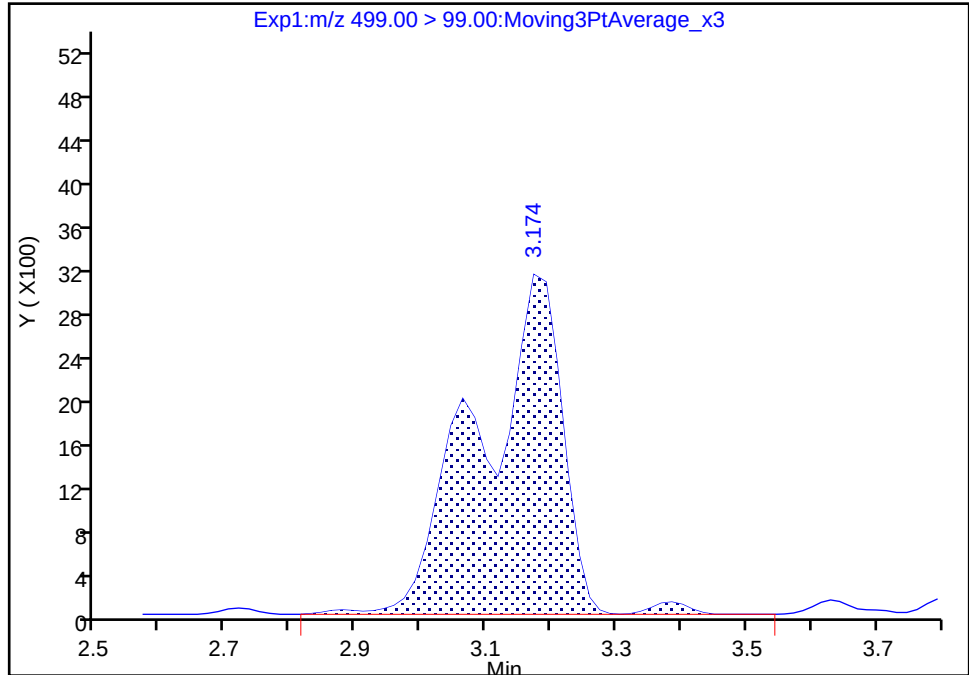
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_015.d
Injection Date: 10-Sep-2018 11:32:18 Instrument ID: A9
Lims ID: 480-140926-A-2-A Lab Sample ID: 320-140926-2
Client ID: MW-1 (082718)
Operator ID: A9\Administrator ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

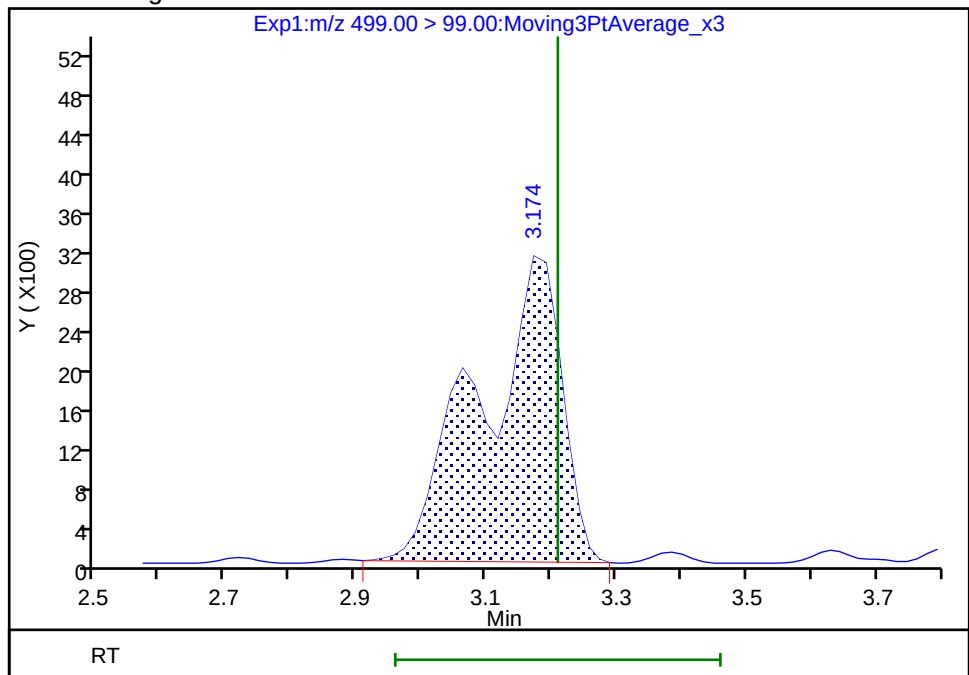
RT: 3.17
Area: 28095
Amount: 0.070660
Amount Units: ng/ml

Processing Integration Results



RT: 3.17
Area: 27151
Amount: 0.066302
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:53:29

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-3 (082718)</u>	Lab Sample ID: <u>480-140926-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLAA_019.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 13:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>297.1 (mL)</u>	Date Analyzed: <u>09/10/2018 12:39</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244760</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.1		1.7	0.29
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.49	J	1.7	0.41
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.7	0.49
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.26	J	1.7	0.21
335-67-1	Perfluorooctanoic acid (PFOA)	0.90	J	1.7	0.72
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.26
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.93
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.46
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.24
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.3	J	1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.64	J B	1.7	0.14
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.2		1.7	0.45
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.27
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.29
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.6
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6
27619-97-2	6:2 FTS	ND		17	1.7
39108-34-4	8:2 FTS	ND		17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-3 (082718)</u>	Lab Sample ID: <u>480-140926-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLAA_019.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 13:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>297.1 (mL)</u>	Date Analyzed: <u>09/10/2018 12:39</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244760</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	85		25-150
STL01893	13C5 PFPeA	92		25-150
STL00993	13C2 PFHxA	96		25-150
STL01892	13C4-PFHpA	97		25-150
STL00990	13C4 PFOA	99		25-150
STL00995	13C5 PFNA	94		25-150
STL00996	13C2 PFDA	101		25-150
STL00997	13C2 PFUnA	98		25-150
STL00998	13C2 PFDoA	94		25-150
STL02116	13C2-PFTeDA	98		25-150
STL02337	13C3-PFBS	100		25-150
STL00994	18O2 PFHxS	101		25-150
STL00991	13C4 PFOS	95		25-150
STL01056	13C8 FOSA	96		25-150
STL02118	d3-NMeFOSAA	96		25-150
STL02117	d5-NEtFOSAA	98		25-150
STL02279	M2-6:2FTS	113		25-150
STL02280	M2-8:2FTS	99		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_019.d
 Lims ID: 480-140926-A-3-A
 Client ID: MW-3 (082718)
 Sample Type: Client
 Inject. Date: 10-Sep-2018 12:39:47 ALS Bottle#: 12 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-140926-A-3-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 08:00:54 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols Date: 11-Sep-2018 08:00:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.500	1.497	0.003	1.000	159724	0.0626			9.1	M
D 1 13C4 PFBA										
217.00 > 172.00	1.500	1.499	0.001	0.539	6987124	2.13		85.0	3650	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.781	1.777	0.004	1.000	39459	0.0144			1.2	
D 3 13C5-PFPeA										
267.90 > 223.00	1.781	1.781	0.0	0.640	6736866	2.30		91.9	3609	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.823	1.818	0.005	1.000	157736	0.0390			9.0	M
298.90 > 99.00	1.823	1.818	0.005	1.000	65420		2.41(1.35-4.05)		12.6	
D 47 13C3-PFBS										
301.90 > 83.00	1.823	1.822	0.001	0.655	89447	2.32		100.0	218	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.069	2.074	-0.005	0.995	35504	0.0131			1.1	
313.00 > 119.00	2.059	2.074	-0.015	0.990	2918		12.17(6.96-20.87)		2.2	
D 7 13C2 PFHxA										
315.00 > 270.00	2.079	2.079	0.0	0.747	7451295	2.40		96.2	7950	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.413	0.0	0.867	8994311	2.43		97.3	9811	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.419	-0.006	1.000	28675	0.007816			1.2	
363.00 > 169.00	2.413	2.419	-0.006	1.000	8116		3.53(2.17-6.52)		15.0	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.427	2.432	-0.005	1.000	54048	0.0190			14.6	
399.00 > 99.00	2.440	2.432	0.008	1.005	12497		4.32(1.90-5.70)		11.7	
D 11 18O2 PFHxS										
403.00 > 84.00	2.427	2.439	-0.012	0.872	5434174	2.39		101	9455	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00 > 407.00	2.767	2.759	0.008	1.006	3509	0.004010		3.6	
D 12 M2-6:2FTS	429.00 > 81.00	2.751	2.767	-0.016	0.989	971179	2.67	113	959	
D 14 13C4 PFOA	417.00 > 372.00	2.783	2.783	0.0	1.000	8554161	2.49	99.4	7651	
* 62 13C2-PFOA	415.00 > 370.00	2.783	2.790	-0.007		8538560	2.50		9826	
15 Perfluorooctanoic acid	413.00 > 369.00	2.783	2.790	-0.007	1.000	98019	0.0266		4.2	M
413.00 > 169.00	2.783	2.790	-0.007	1.000	41682		2.35(1.36-4.08)		34.8	M
17 Perfluorooctane sulfonic acid	499.00 > 80.00	3.046	3.163	-0.117	0.960	158630	0.0647		86.8	M
499.00 > 99.00	3.174	3.163	0.011	1.000	24455		6.49(2.04-6.12)		35.9	M
20 Perfluorononanoic acid	463.00 > 419.00	3.174	3.163	0.011	1.000	12976	0.004388		1.0	
463.00 > 169.00	3.174	3.163	0.011	1.000	3429		3.78(2.68-8.03)		6.4	
D 19 13C5 PFNA	468.00 > 423.00	3.174	3.173	0.001	1.140	7560588	2.35	93.8	7303	
D 18 13C4 PFOS	503.00 > 80.00	3.174	3.173	0.001	1.140	5549652	2.27	95.1	2827	
22 Perfluorooctane Sulfonamide	498.00 > 78.00	3.483	3.490	-0.007	1.000	4624	0.001262		8.7	
D 21 13C8 FOSA	506.00 > 78.00	3.483	3.498	-0.015	1.251	3089854	2.39	95.7	3035	
D 23 13C2 PFDA	515.00 > 470.00	3.529	3.529	0.0	1.268	8165922	2.54	101	5728	
D 26 M2-8:2FTS	529.00 > 81.00	3.514	3.529	-0.015	1.262	126273	2.36	98.7	670	
24 Perfluorodecanoic acid	513.00 > 469.00	3.543	3.535	0.008	1.004	9131	0.002456		1.2	
513.00 > 169.00	3.614	3.535	0.079	1.024	1221		7.48(7.12-21.35)		2.0	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.684	3.685	-0.001	1.324	3492603	2.41	96.3	4415	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.698	3.691	0.007	1.004	3435	0.002474		0.7	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.856	3.857	-0.001	1.386	2802727	2.46	98.2	3162	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.871	3.865	0.006	1.004	3135	0.003007		4.9	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.856	3.865	-0.009	1.000	17966	0.007495		4.0	
563.00 > 169.00	3.840	3.865	-0.025	0.996	1468		12.24(5.24-15.72)		5.0	
D 30 13C2 PFUnA	565.00 > 520.00	3.856	3.872	-0.016	1.386	6679475	2.44	97.5	8034	
D 36 13C2 PFDaA	615.00 > 570.00	4.159	4.160	-0.001	1.494	7836342	2.35	94.0	7219	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										RM
713.00 > 169.00	4.676	4.671	0.005	1.003	1638	0.003905			9.2	R
713.00 > 219.00	4.661	4.671	-0.010	1.000	682		2.40(0.70-2.09)		3.8	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.661	4.680	-0.019	1.675	6495802	2.45		97.9	9412	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_019.d

Injection Date: 10-Sep-2018 12:39:47

Instrument ID: A9

Lims ID: 480-140926-A-3-A

Lab Sample ID: 320-140926-3

Client ID: MW-3 (082718)

Operator ID: A9\Administrator

ALS Bottle#: 12

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

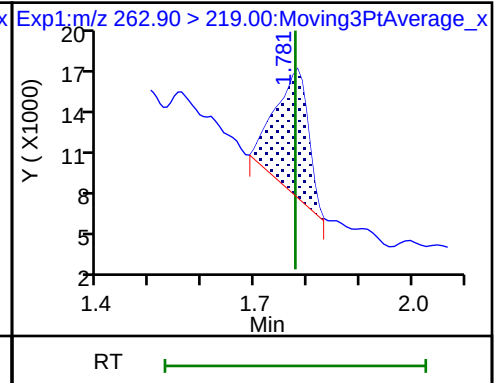
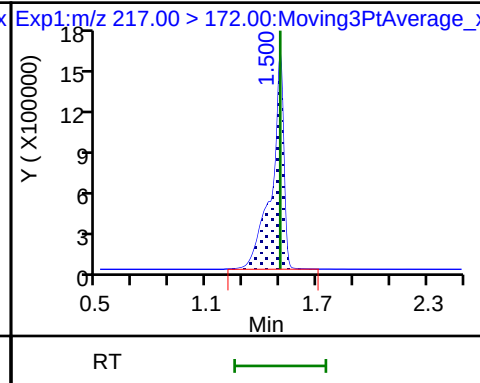
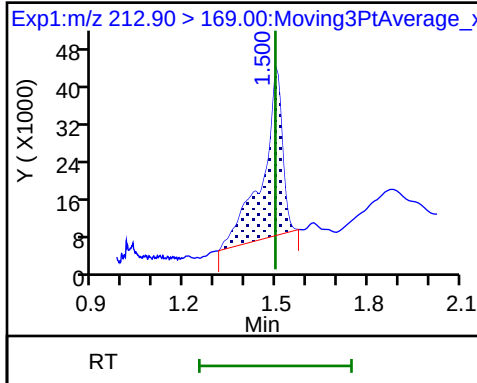
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid (M)

D 1 13C4 PFBA

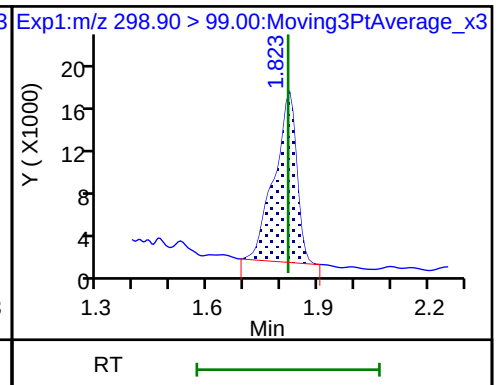
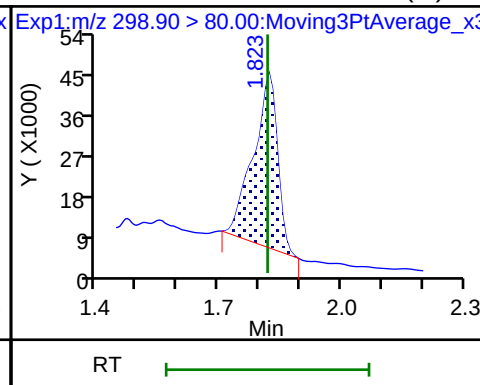
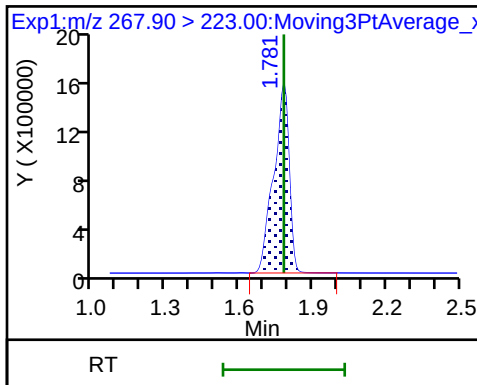
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid (M)

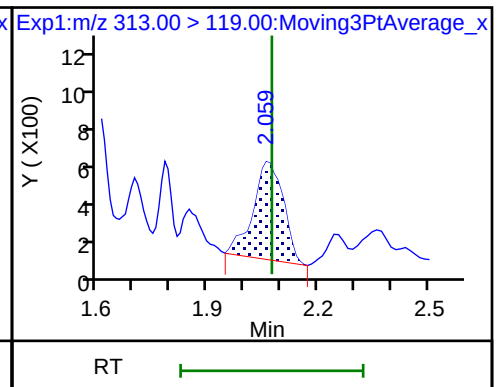
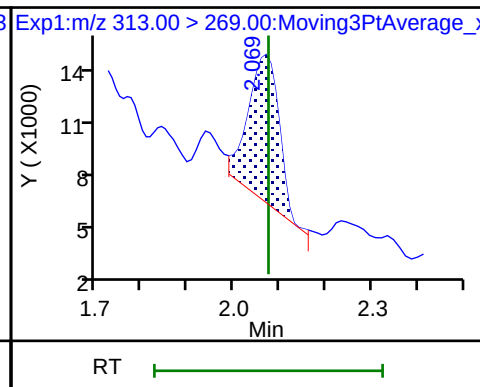
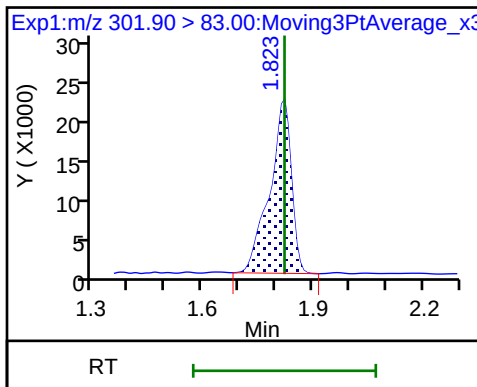
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

6 Perfluorohexanoic acid

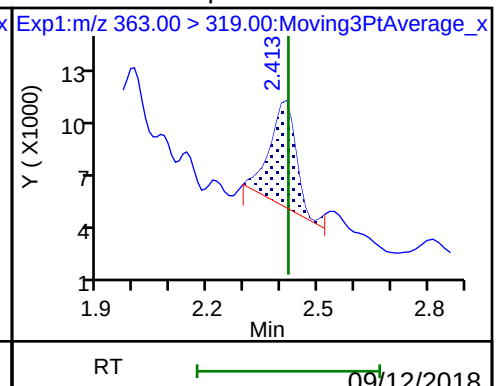
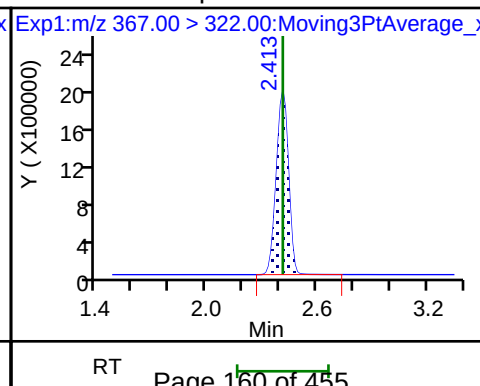
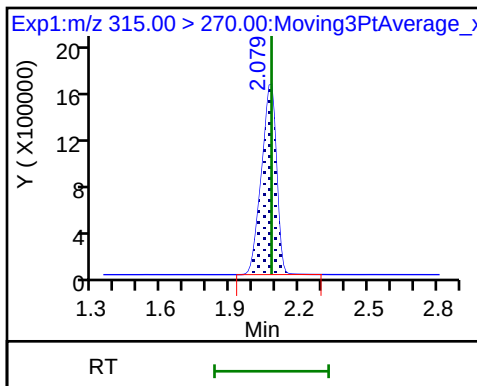
6 Perfluorohexanoic acid

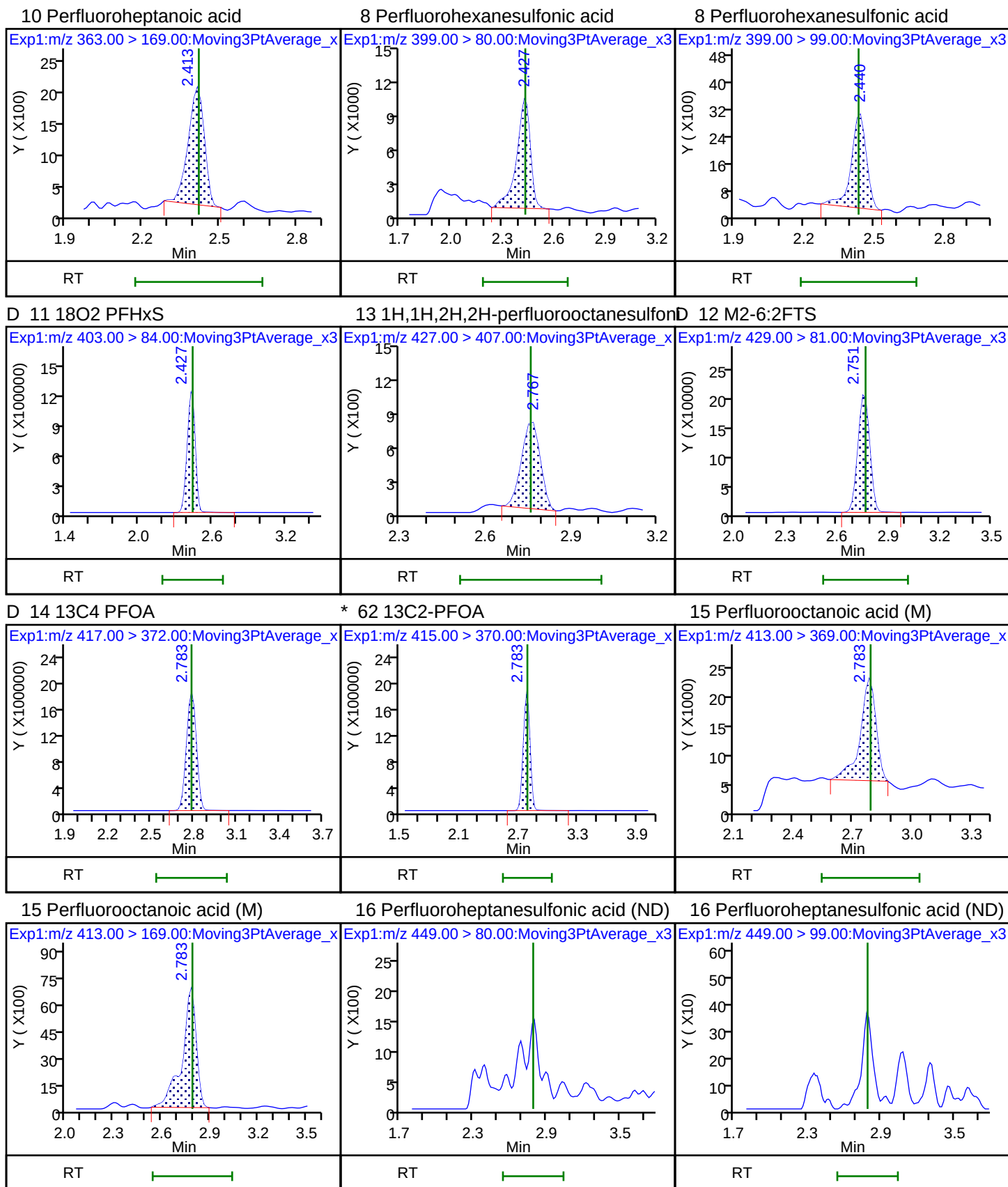


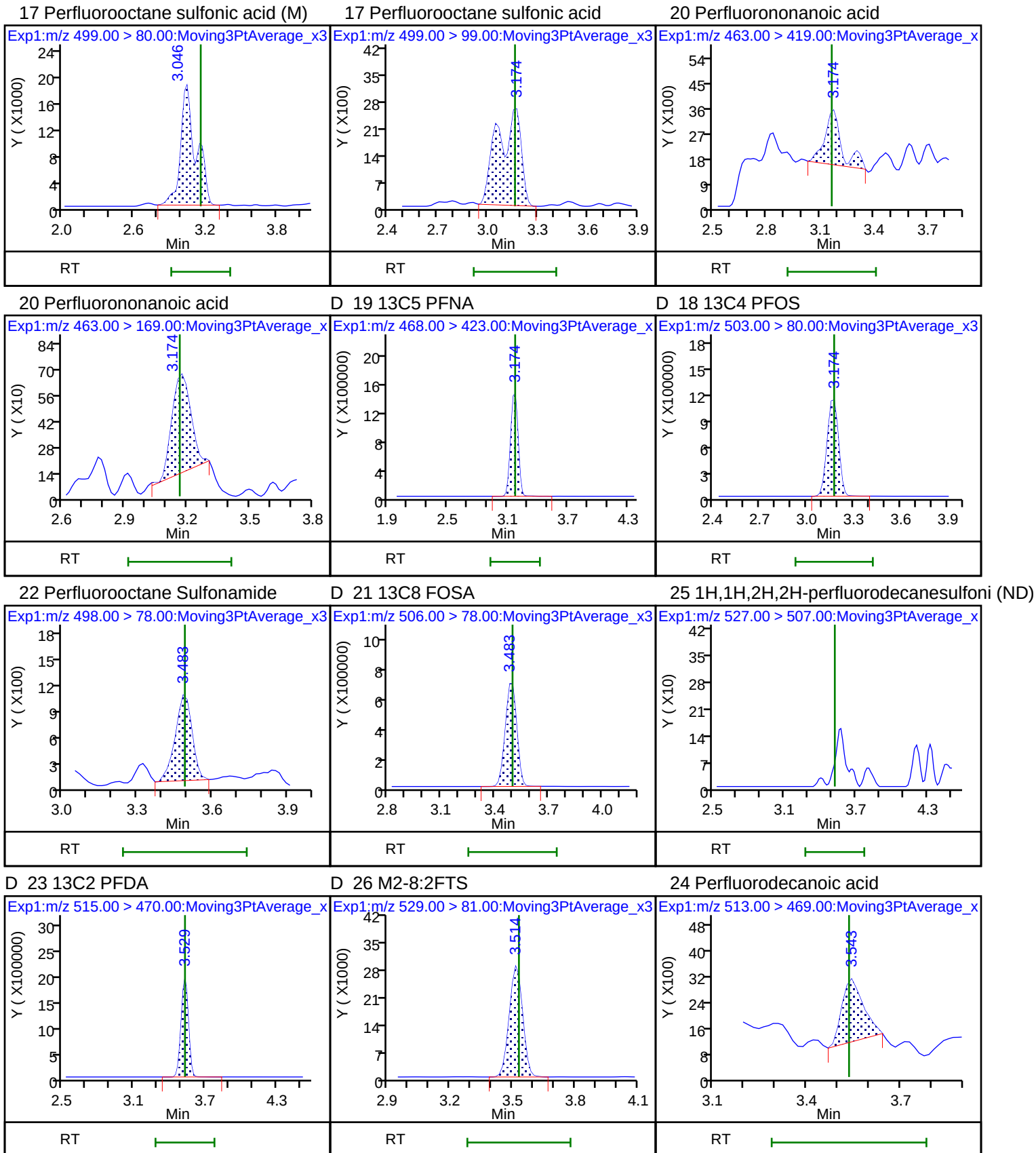
D 7 13C2 PFHxA

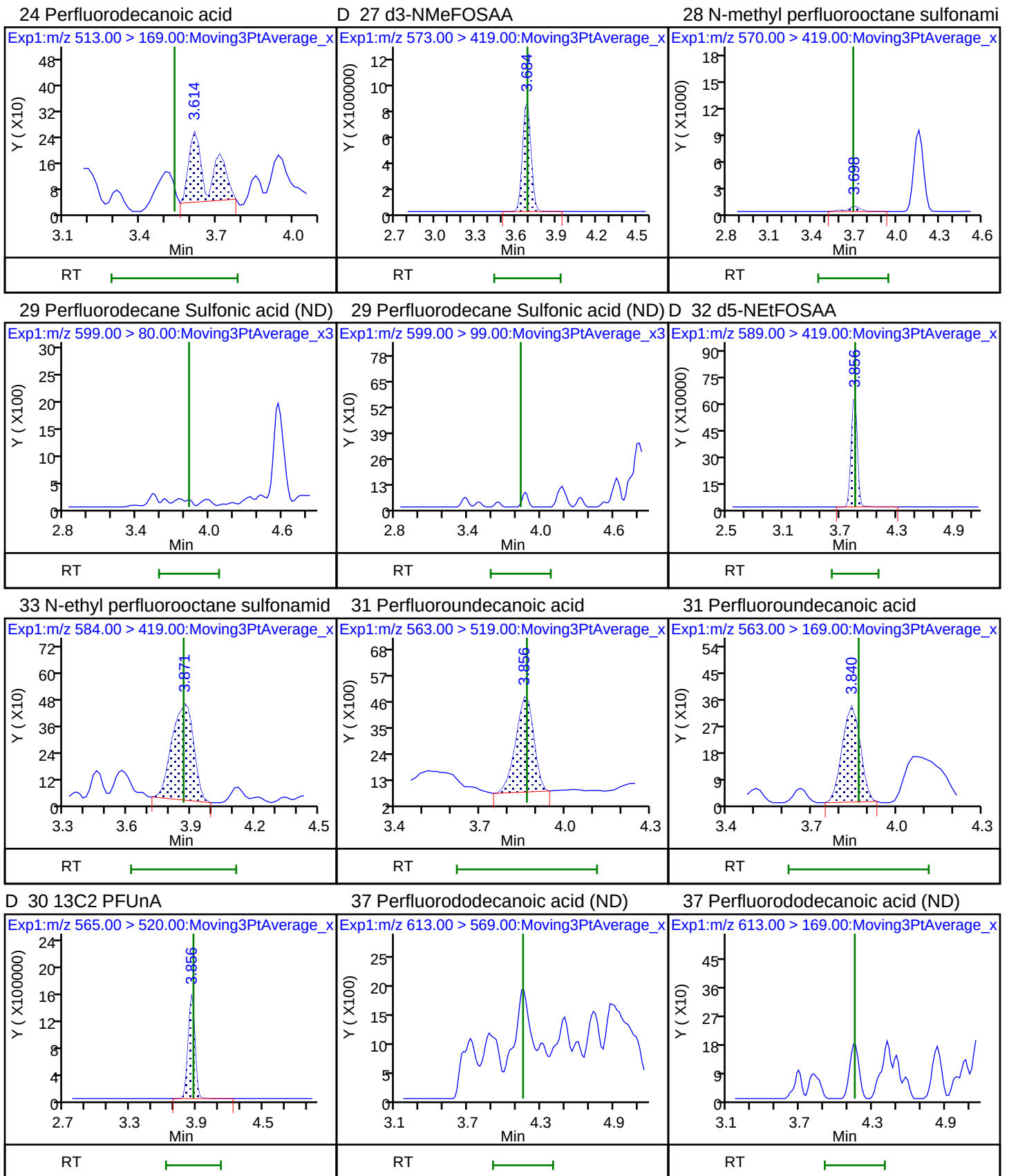
D 9 13C4-PFHpA

10 Perfluoroheptanoic acid





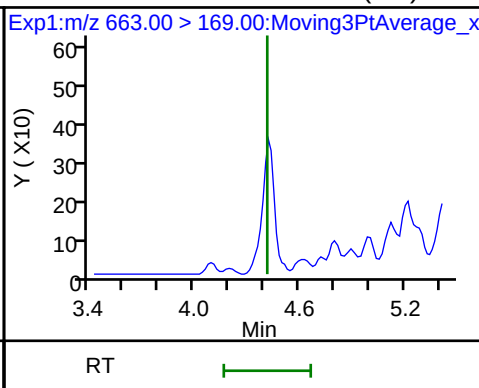
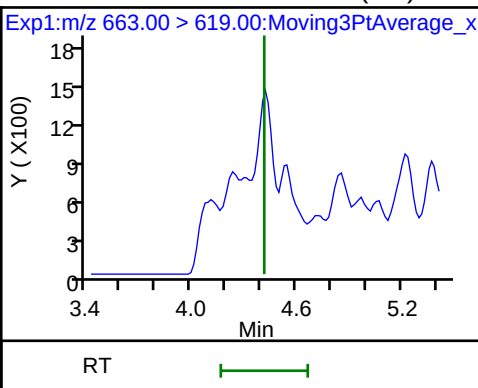
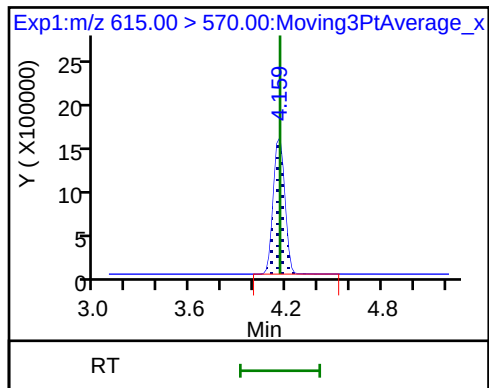




D 36 13C2 PFDaA

41 Perfluorotridecanoic acid (ND)

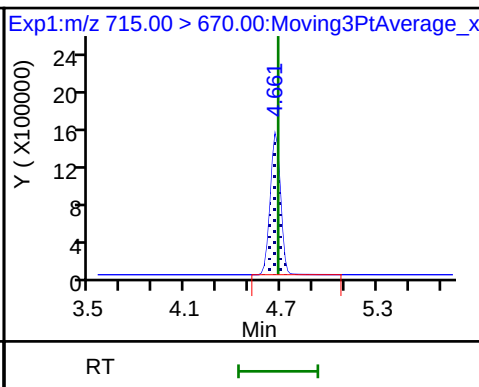
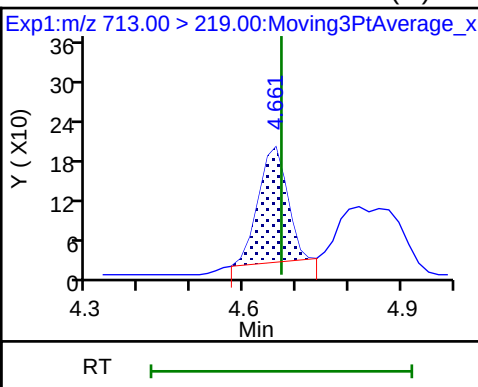
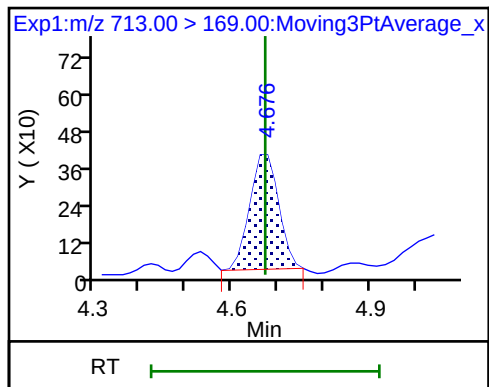
41 Perfluorotridecanoic acid (ND)



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid (M)

D 43 13C2-PFTeDA



TestAmerica Sacramento

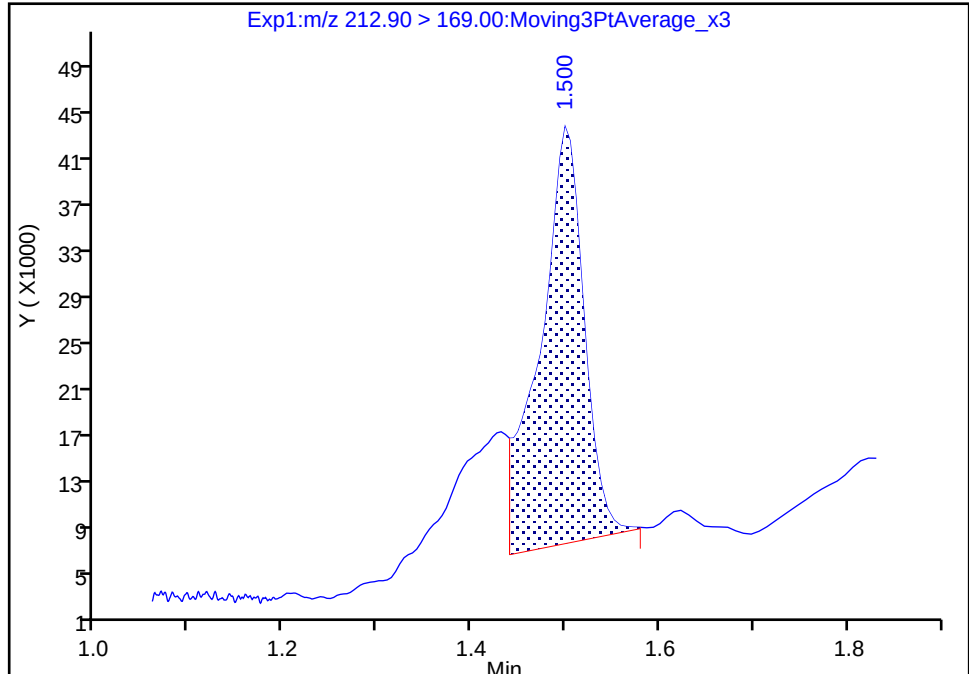
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_019.d				
Injection Date:	10-Sep-2018 12:39:47	Instrument ID:	A9		
Lims ID:	480-140926-A-3-A	Lab Sample ID:	320-140926-3		
Client ID:	MW-3 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	12	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

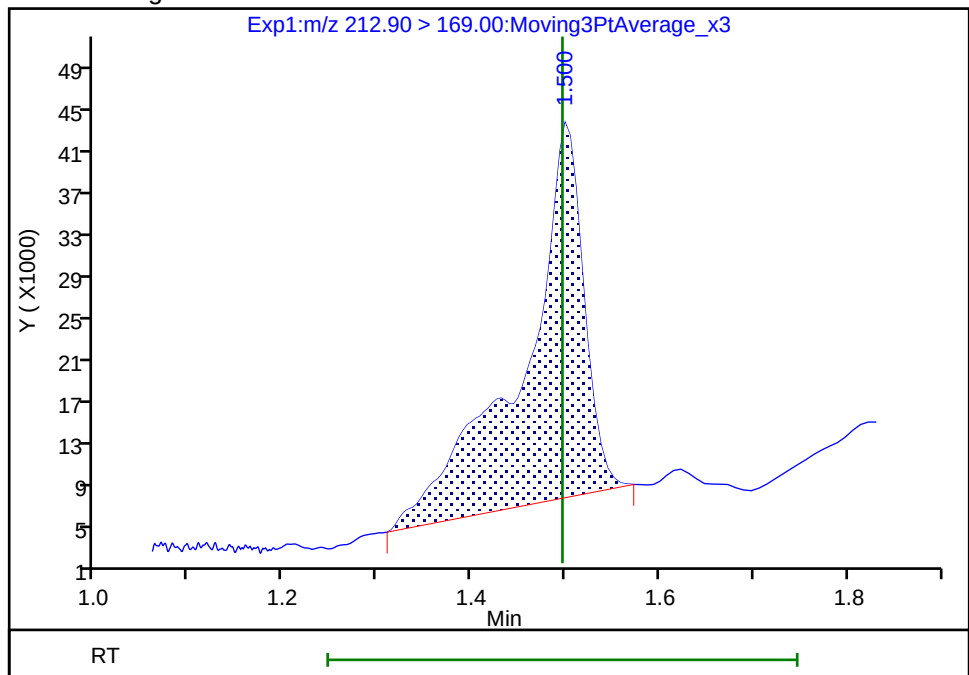
RT: 1.50
Area: 116035
Amount: 0.045483
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 159724
Amount: 0.062608
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:59:58
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 165 of 455

09/12/2018

TestAmerica Sacramento

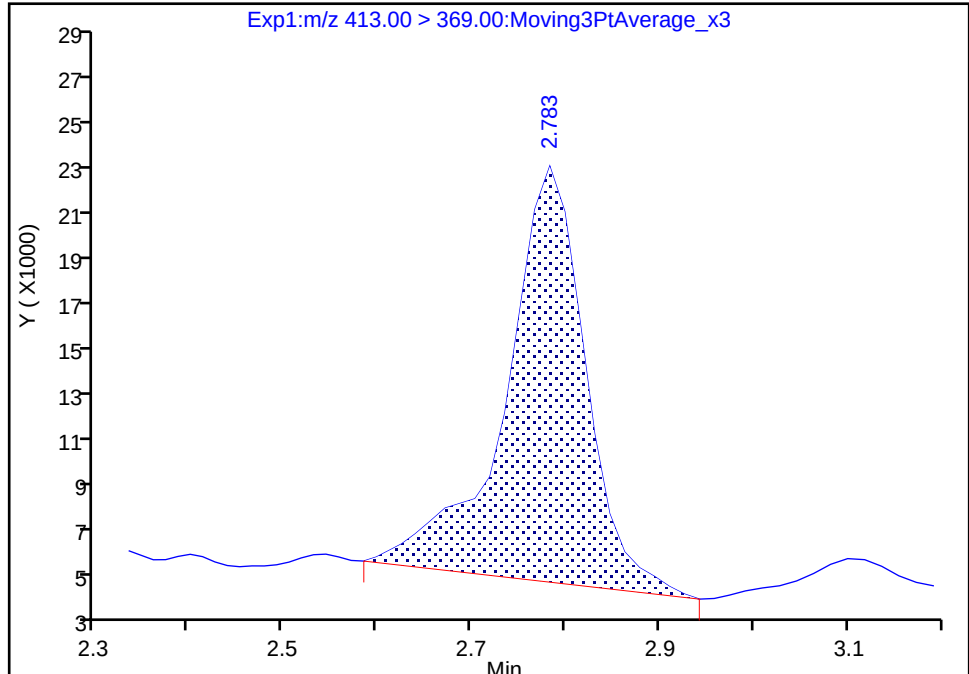
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_019.d				
Injection Date:	10-Sep-2018 12:39:47	Instrument ID:	A9		
Lims ID:	480-140926-A-3-A	Lab Sample ID:	320-140926-3		
Client ID:	MW-3 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	12	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

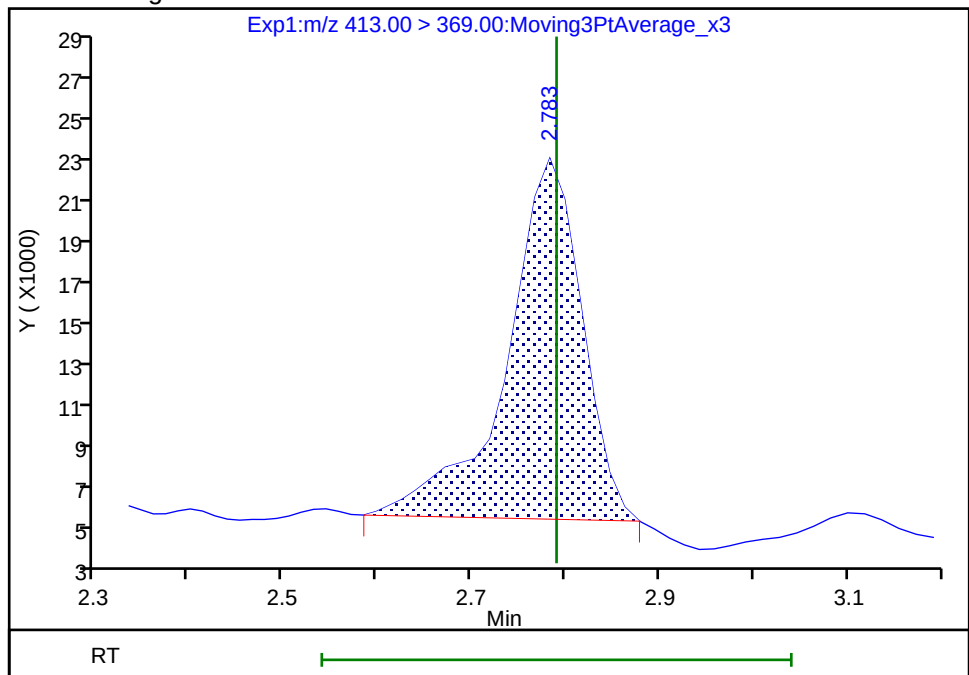
RT: 2.78
Area: 109338
Amount: 0.029691
Amount Units: ng/ml

Processing Integration Results



RT: 2.78
Area: 98019
Amount: 0.026617
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:00:18
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 166 of 455

09/12/2018

TestAmerica Sacramento

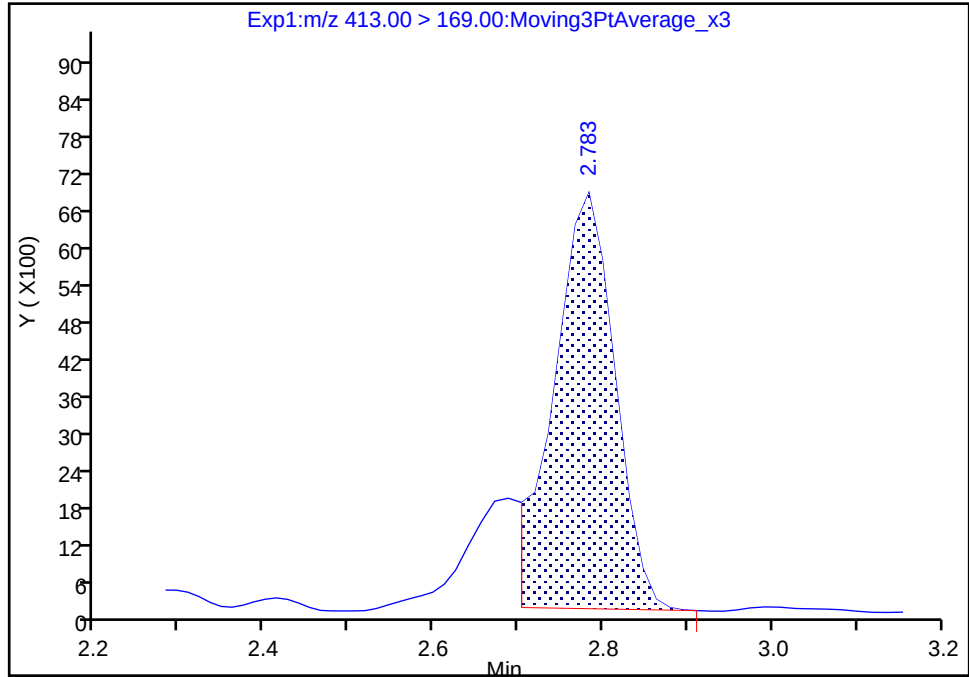
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_019.d
Injection Date: 10-Sep-2018 12:39:47 Instrument ID: A9
Lims ID: 480-140926-A-3-A Lab Sample ID: 320-140926-3
Client ID: MW-3 (082718)
Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

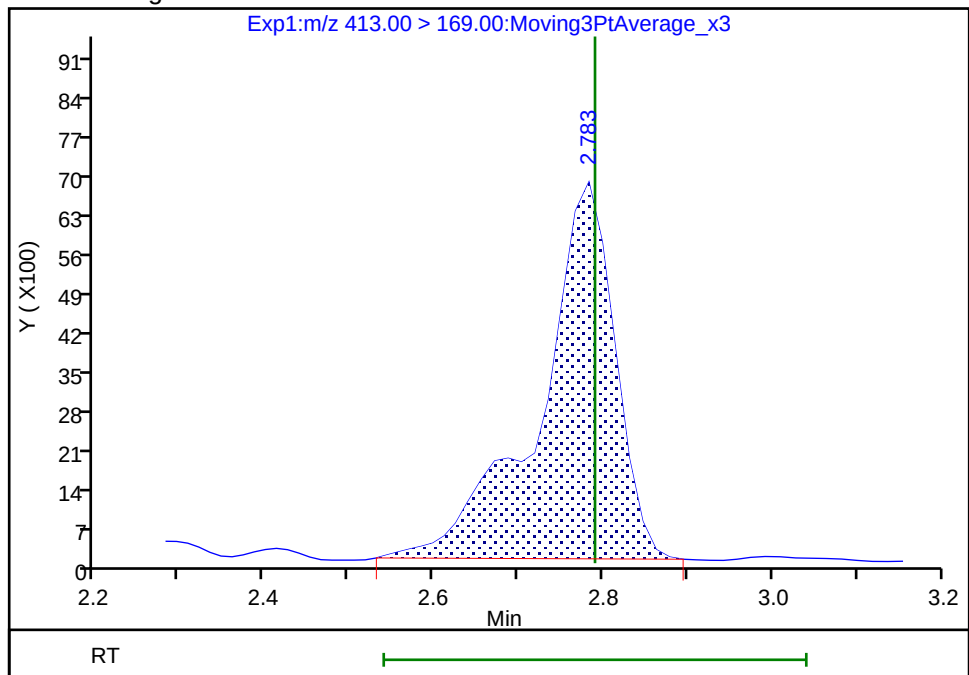
RT: 2.78
Area: 33589
Amount: 0.029691
Amount Units: ng/ml

Processing Integration Results



RT: 2.78
Area: 41682
Amount: 0.026617
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:00:24

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

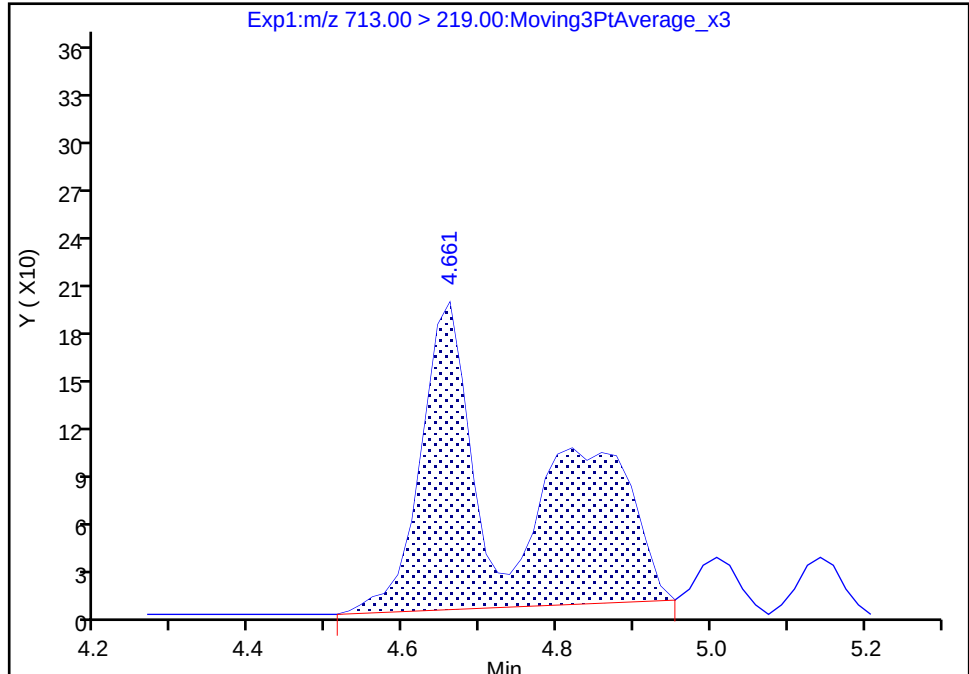
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_019.d				
Injection Date:	10-Sep-2018 12:39:47	Instrument ID:	A9		
Lims ID:	480-140926-A-3-A	Lab Sample ID:	320-140926-3		
Client ID:	MW-3 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	12	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

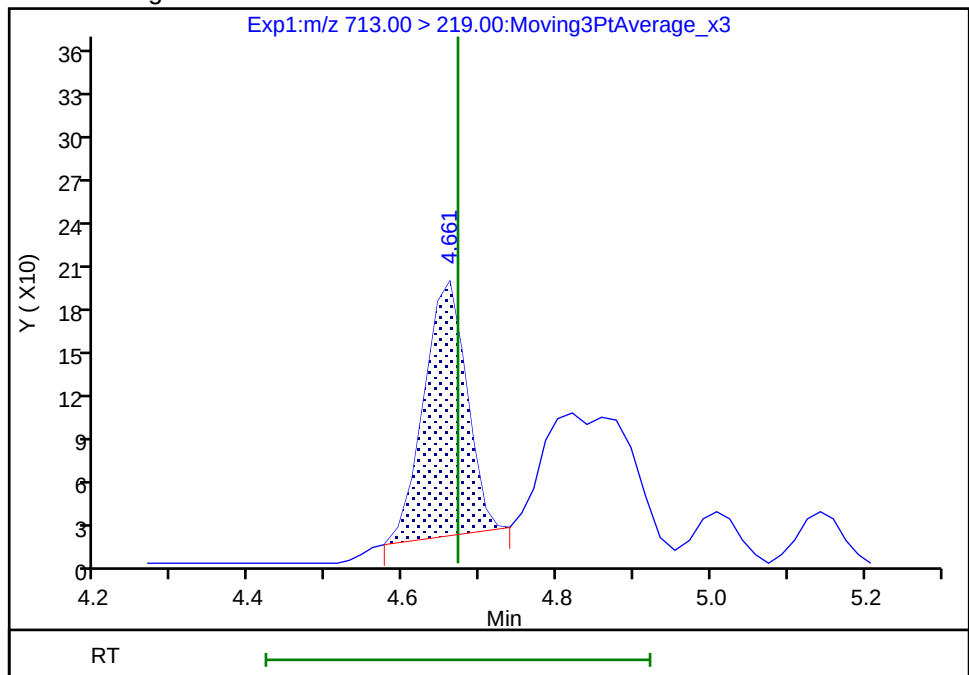
RT: 4.66
Area: 1686
Amount: 0.003905
Amount Units: ng/ml

Processing Integration Results



RT: 4.66
Area: 682
Amount: 0.003905
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:00:49
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 168 of 455

09/12/2018

TestAmerica Sacramento

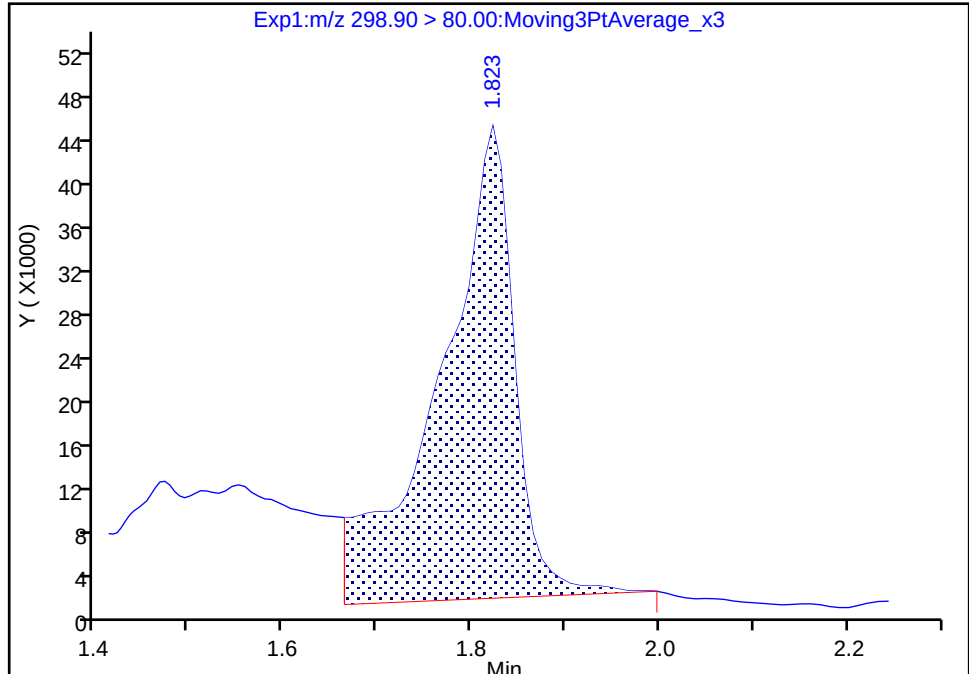
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_019.d				
Injection Date:	10-Sep-2018 12:39:47	Instrument ID:	A9		
Lims ID:	480-140926-A-3-A	Lab Sample ID:	320-140926-3		
Client ID:	MW-3 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	12	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

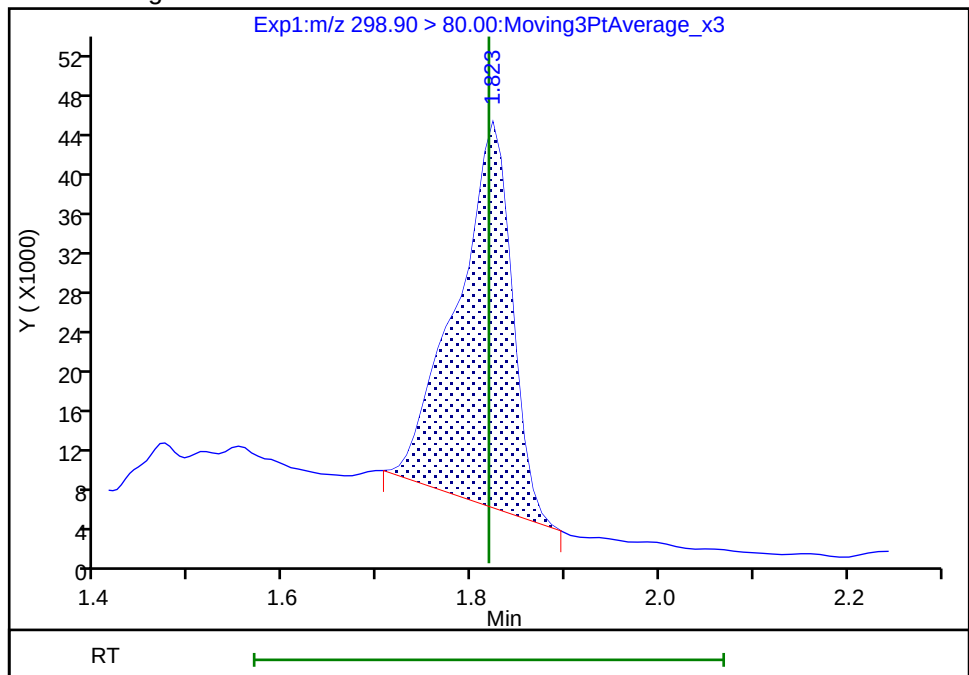
RT: 1.82
Area: 236589
Amount: 0.058532
Amount Units: ng/ml

Processing Integration Results



RT: 1.82
Area: 157736
Amount: 0.039024
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:00:06
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 169 of 455

09/12/2018

TestAmerica Sacramento

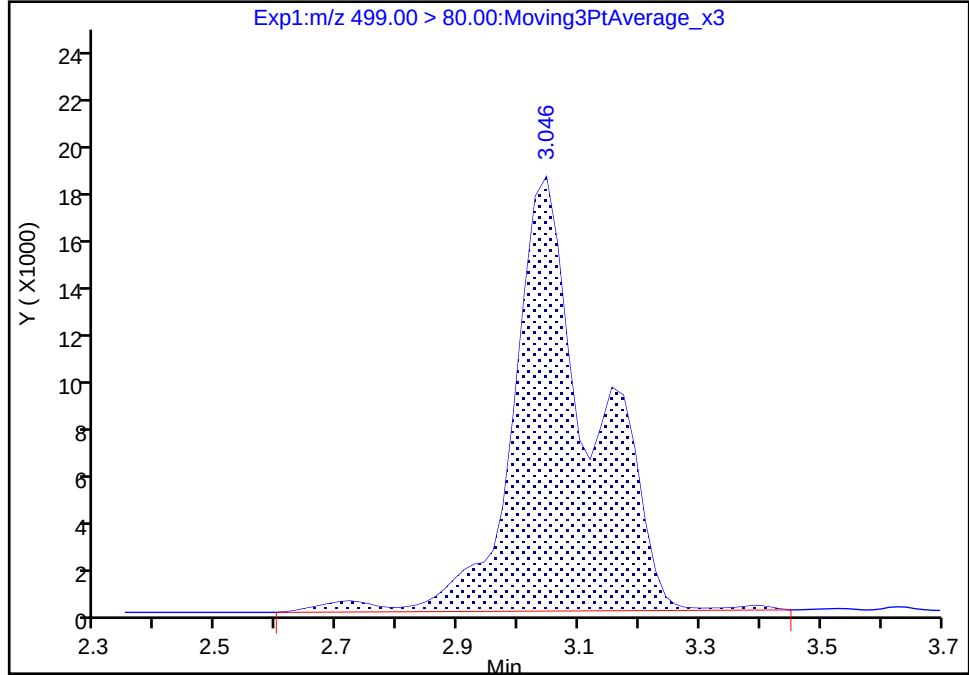
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_019.d				
Injection Date:	10-Sep-2018 12:39:47	Instrument ID:	A9		
Lims ID:	480-140926-A-3-A	Lab Sample ID:	320-140926-3		
Client ID:	MW-3 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	12	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

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

Signal: 1

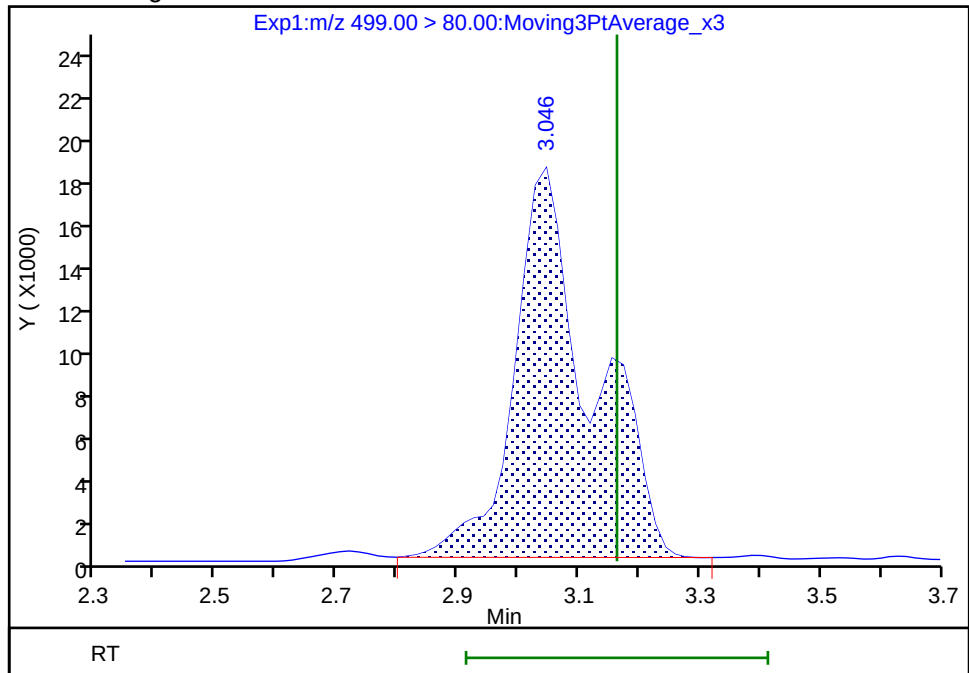
RT: 3.05
Area: 166196
Amount: 0.067833
Amount Units: ng/ml

Processing Integration Results



RT: 3.05
Area: 158630
Amount: 0.064745
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:00:32
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 170 of 455

09/12/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-5 (082718)</u>	Lab Sample ID: <u>480-140926-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLAA_020.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 16:34</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>293.3 (mL)</u>	Date Analyzed: <u>09/10/2018 12:47</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244760</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.3		1.7	0.30
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.0	J	1.7	0.42
307-24-4	Perfluorohexanoic acid (PFHxA)	0.79	J	1.7	0.49
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.40	J	1.7	0.21
335-67-1	Perfluorooctanoic acid (PFOA)	0.94	J	1.7	0.72
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.26
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.94
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.1		1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.85	J B	1.7	0.14
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.5	J	1.7	0.46
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.27
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.30
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.6
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6
27619-97-2	6:2 FTS	ND		17	1.7
39108-34-4	8:2 FTS	ND		17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-5 (082718)</u>	Lab Sample ID: <u>480-140926-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLAA_020.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 16:34</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>293.3 (mL)</u>	Date Analyzed: <u>09/10/2018 12:47</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244760</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	83		25-150
STL01893	13C5 PFPeA	90		25-150
STL00993	13C2 PFHxA	91		25-150
STL01892	13C4-PFHpA	96		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	97		25-150
STL00996	13C2 PFDA	97		25-150
STL00997	13C2 PFUnA	96		25-150
STL00998	13C2 PFDoA	92		25-150
STL02116	13C2-PFTeDA	96		25-150
STL02337	13C3-PFBS	95		25-150
STL00994	18O2 PFHxS	99		25-150
STL00991	13C4 PFOS	94		25-150
STL01056	13C8 FOSA	92		25-150
STL02118	d3-NMeFOSAA	97		25-150
STL02117	d5-NEtFOSAA	94		25-150
STL02279	M2-6:2FTS	99		25-150
STL02280	M2-8:2FTS	94		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d
 Lims ID: 480-140926-A-4-A
 Client ID: MW-5 (082718)
 Sample Type: Client
 Inject. Date: 10-Sep-2018 12:47:18 ALS Bottle#: 13 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-140926-A-4-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 08:02:55 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 08:02:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.504	1.497	0.007	1.000	175955	0.0687			7.1	M
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.499	0.005	0.541	7013450	2.06		82.5	7138	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.780	1.777	0.003	1.000	81474	0.0295			1.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.780	1.781	-0.001	0.640	6805003	2.24		89.8	5231	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.822	1.818	0.004	1.000	239827	0.0604			14.1	M
298.90 > 99.00	1.822	1.818	0.004	1.000	79067		3.03(1.35-4.05)		12.6	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.822	0.0	0.655	87863	2.21		94.9	201	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.079	2.074	0.005	1.000	61836	0.0233			1.6	
313.00 > 119.00	2.079	2.074	0.005	1.000	5696		10.86(6.96-20.87)		4.5	
D 7 13C2 PFHxA										
315.00 > 270.00	2.079	2.079	0.0	0.747	7299161	2.28		91.1	5553	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.413	0.0	0.867	9216444	2.41		96.4	13930	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.413	2.419	-0.006	1.000	43675	0.0116			1.5	M
363.00 > 169.00	2.426	2.419	0.007	1.005	10081		4.33(2.17-6.52)		14.5	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.439	2.432	0.007	1.005	71860	0.0249			14.9	M
399.00 > 99.00	2.426	2.432	-0.006	1.000	16484		4.36(1.90-5.70)		10.5	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.439	-0.013	0.872	5512827	2.34		99.1	7657	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00 > 407.00	2.767	2.759	0.008	1.000	7348	0.009269		6.1	
D 12 M2-6:2FTS	429.00 > 81.00	2.767	2.767	0.0	0.994	879699	2.34	98.6	707	
D 14 13C4 PFOA	417.00 > 372.00	2.783	2.783	0.0	1.000	8756395	2.46	98.4	8400	
* 62 13C2-PFOA	415.00 > 370.00	2.783	2.790	-0.007		8831798	2.50		8960	
15 Perfluorooctanoic acid	413.00 > 369.00	2.783	2.790	-0.007	1.000	104046	0.0276		2.8	M
413.00 > 169.00	2.783	2.790	-0.007	1.000	53824		1.93(1.36-4.08)		32.0	M
17 Perfluorooctane sulfonic acid	499.00 > 80.00	3.046	3.163	-0.117	0.960	110294	0.0440		54.1	M
499.00 > 99.00	3.173	3.163	0.010	1.000	12325		8.95(2.04-6.12)		14.5	M
20 Perfluorononanoic acid	463.00 > 419.00	3.154	3.163	-0.009	0.994	14296	0.004507		1.2	
463.00 > 169.00	3.192	3.163	0.029	1.006	2465		5.80(2.68-8.03)		4.4	
D 19 13C5 PFNA	468.00 > 423.00	3.173	3.173	0.0	1.140	8109738	2.43	97.3	7621	
D 18 13C4 PFOS	503.00 > 80.00	3.173	3.173	0.0	1.140	5681681	2.25	94.1	3260	
22 Perfluorooctane Sulfonamide	498.00 > 78.00	3.498	3.490	0.008	1.000	3553	0.000972		6.6	
D 21 13C8 FOSA	506.00 > 78.00	3.498	3.498	0.0	1.257	3084420	2.31	92.3	3979	
D 23 13C2 PFDA	515.00 > 470.00	3.529	3.529	0.0	1.268	8079905	2.43	97.1	11005	
D 26 M2-8:2FTS	529.00 > 81.00	3.514	3.529	-0.015	1.263	123819	2.24	93.6	648	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.685	3.685	0.0	1.324	3627061	2.42	96.7	4250	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.857	3.857	0.0	1.386	2777269	2.35	94.1	2746	
D 30 13C2 PFUnA	565.00 > 520.00	3.857	3.872	-0.015	1.386	6795075	2.40	95.9	13195	
D 36 13C2 PFDaA	615.00 > 570.00	4.160	4.160	0.0	1.495	7930353	2.30	92.0	7418	
D 43 13C2-PFTeDA	715.00 > 670.00	4.661	4.680	-0.019	1.675	6593148	2.40	96.0	10677	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d

Injection Date: 10-Sep-2018 12:47:18

Instrument ID: A9

Lims ID: 480-140926-A-4-A

Lab Sample ID: 320-140926-4

Client ID: MW-5 (082718)

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

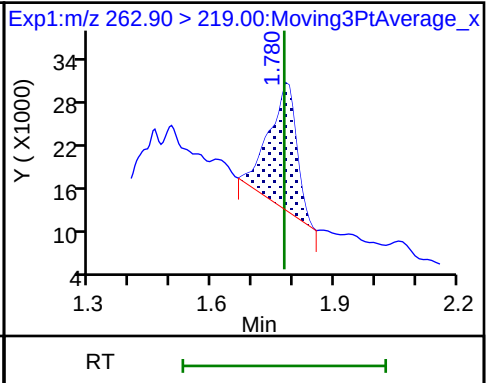
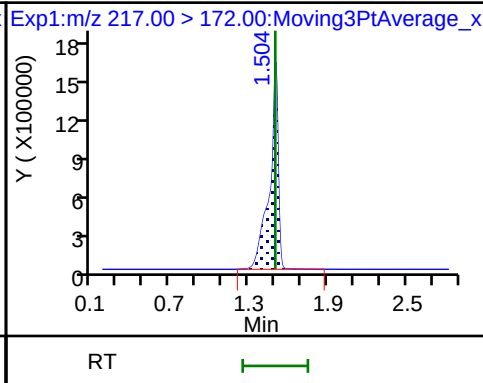
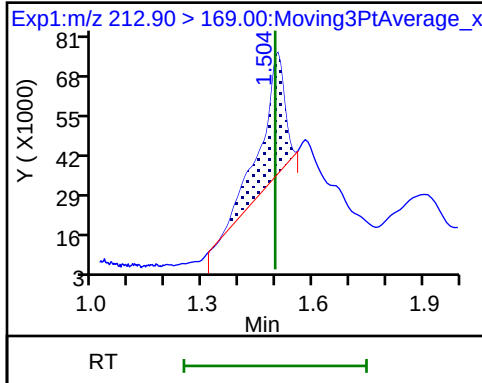
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid (M)

D 1 13C4 PFBA

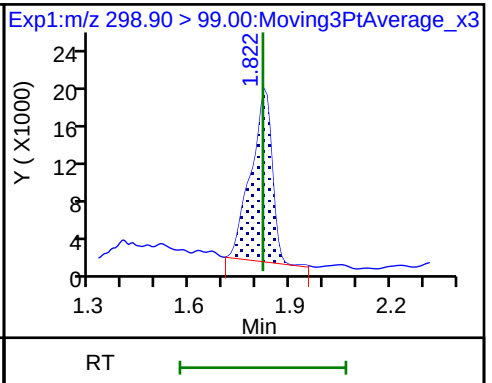
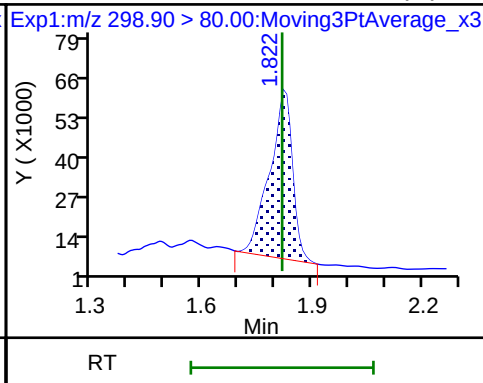
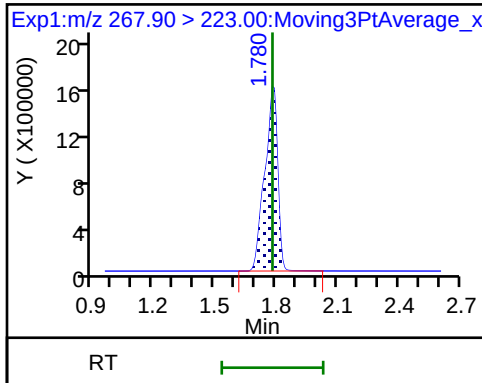
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid (M)

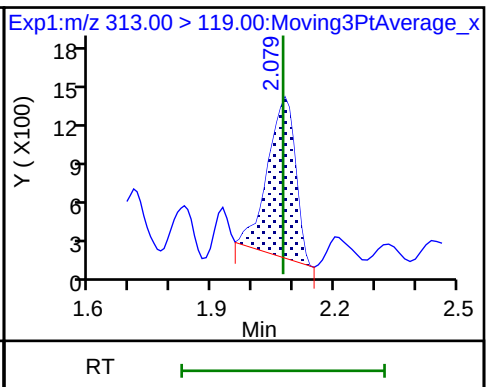
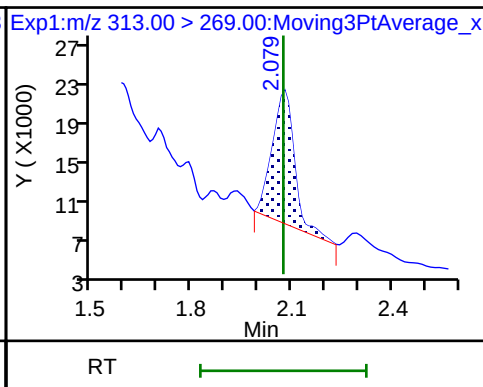
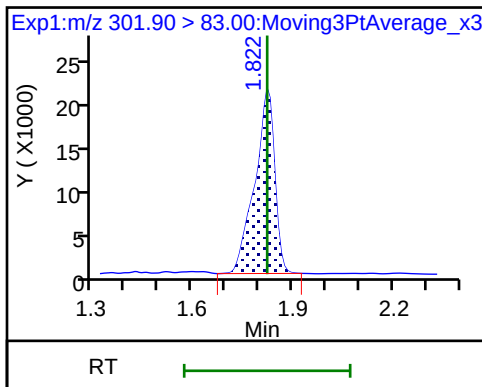
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

6 Perfluorohexanoic acid

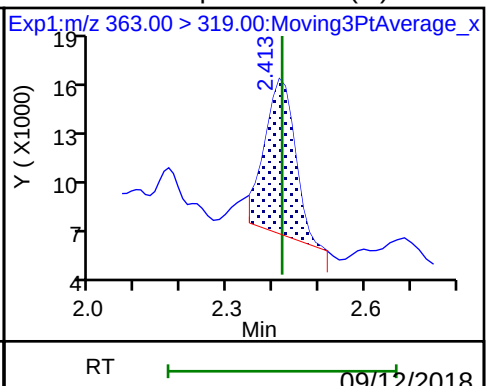
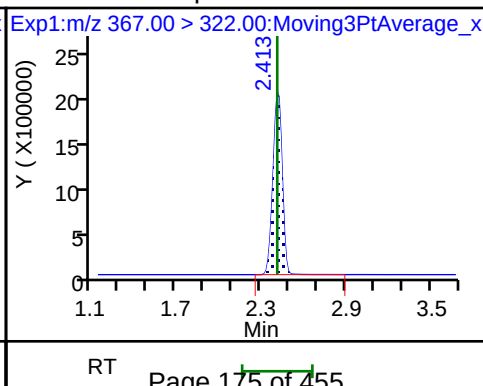
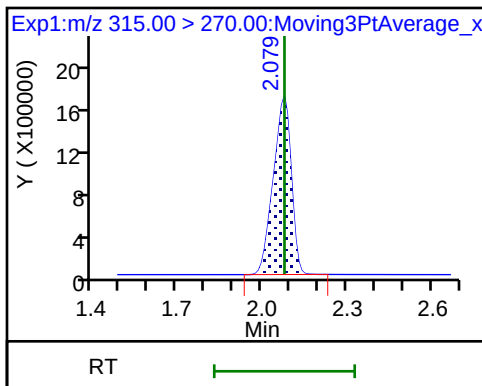
6 Perfluorohexanoic acid

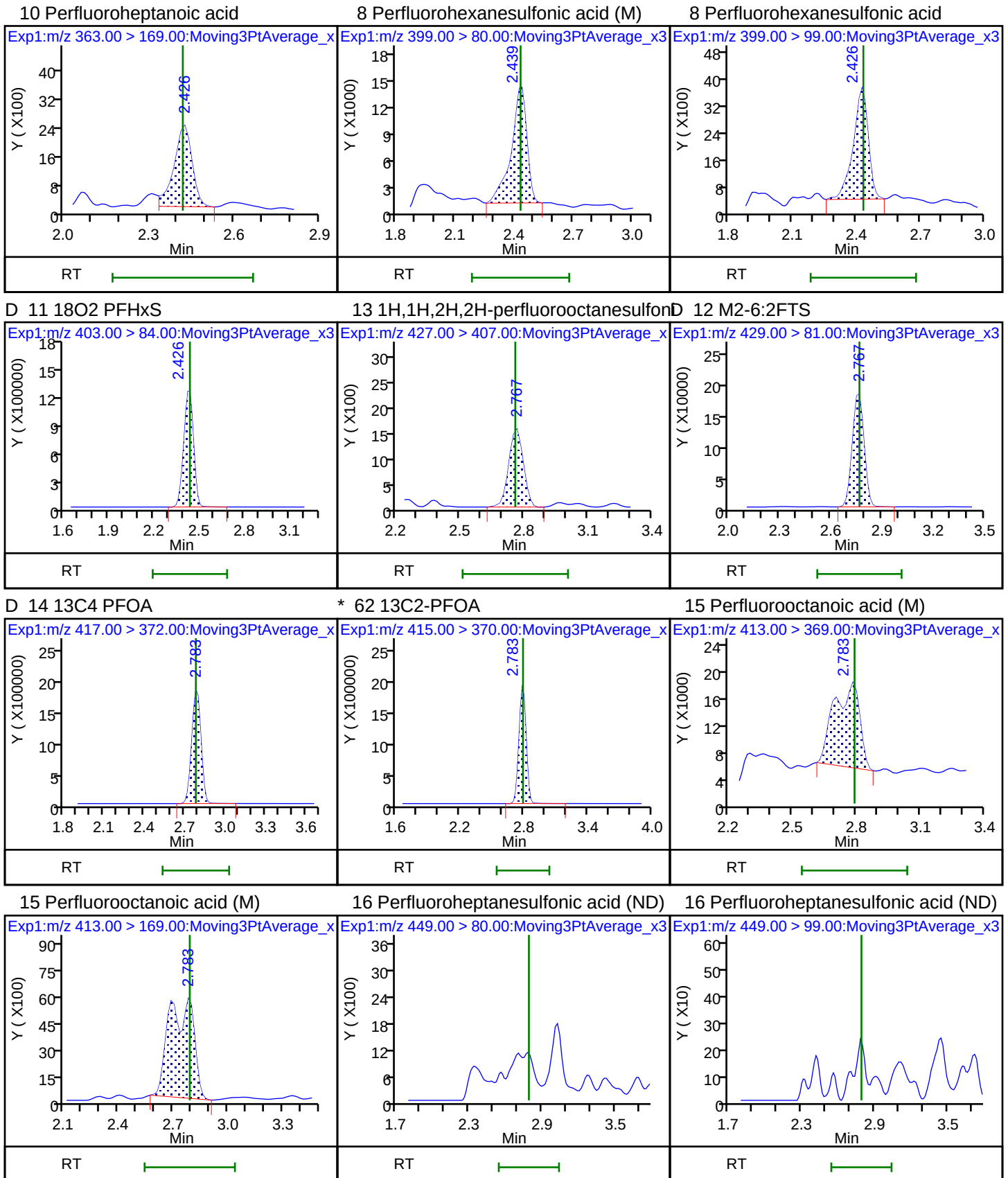


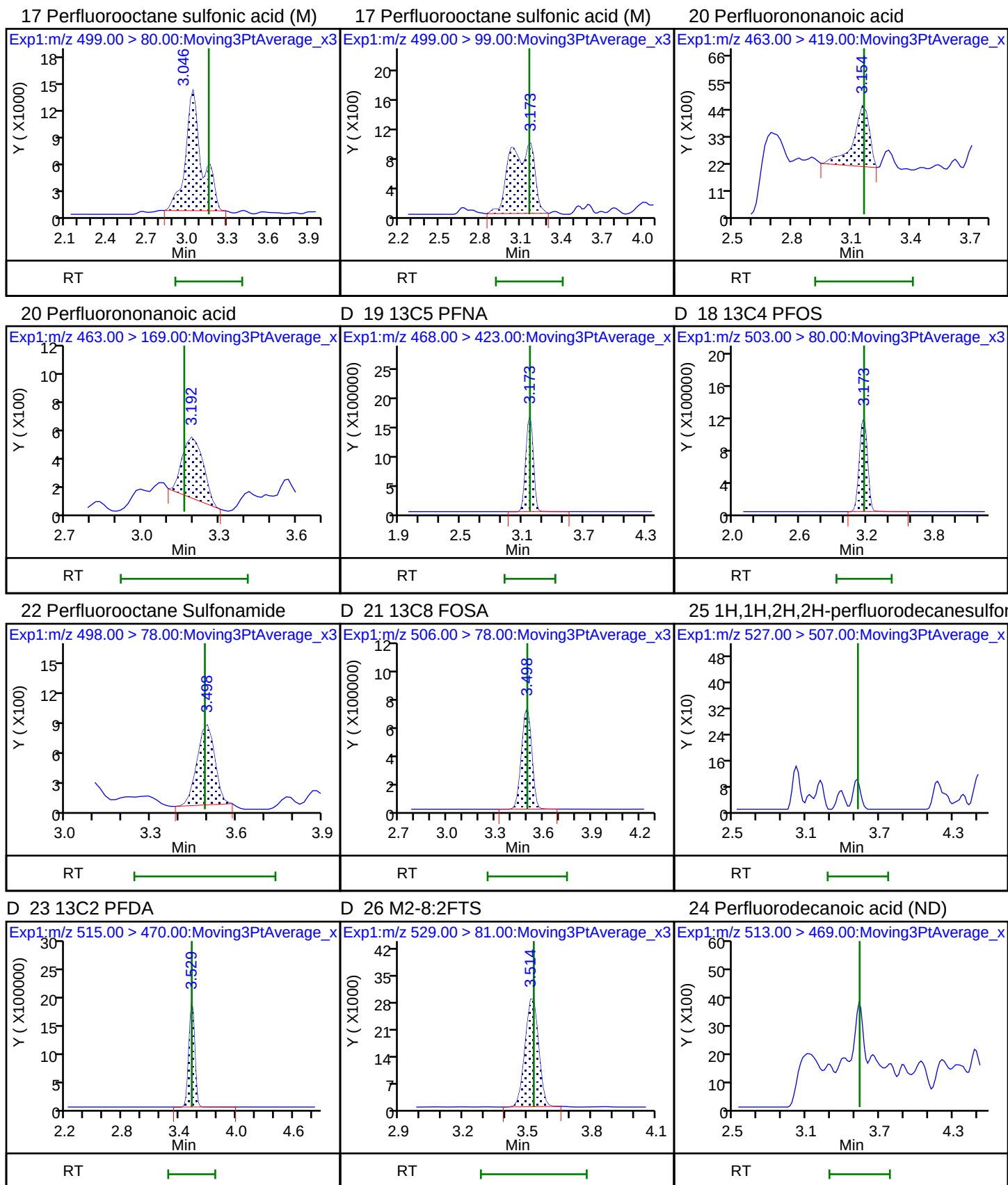
D 7 13C2 PFHxA

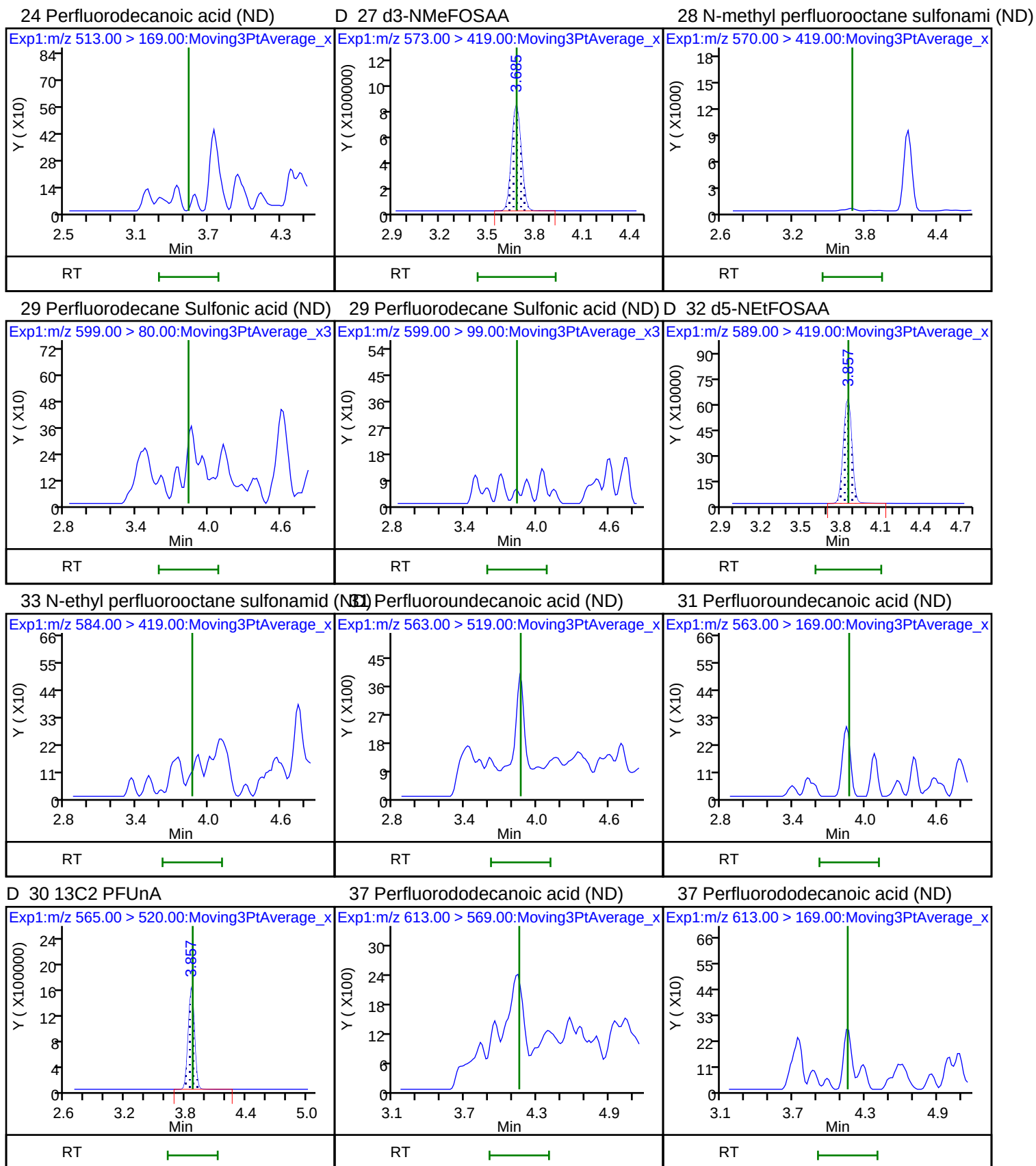
D 9 13C4-PFHpA

10 Perfluoroheptanoic acid (M)





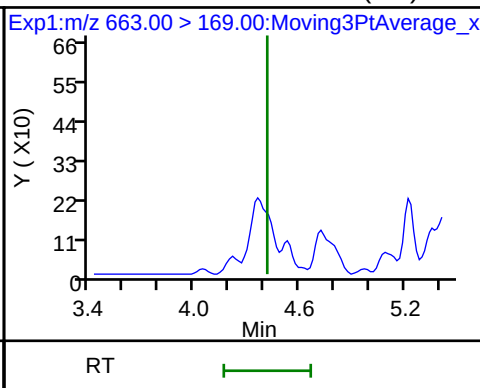
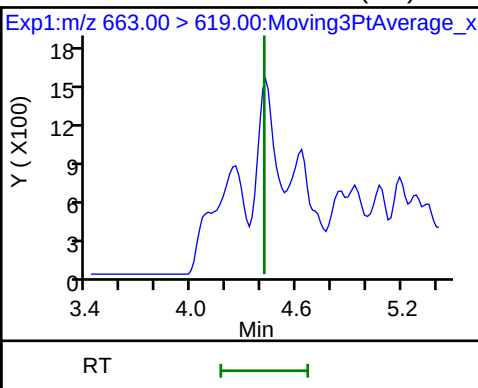
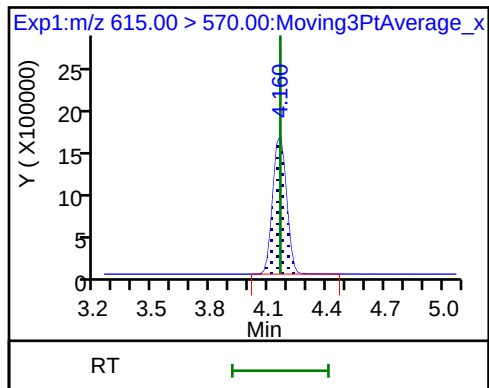




D 36 13C2 PFDaA

41 Perfluorotridecanoic acid (ND)

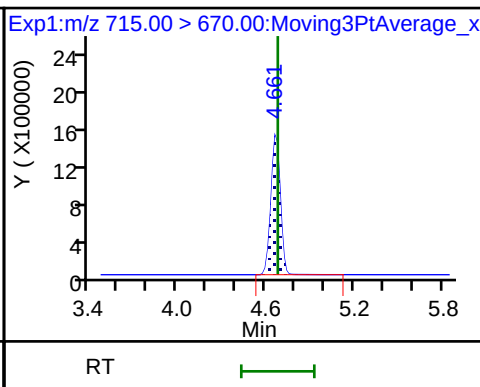
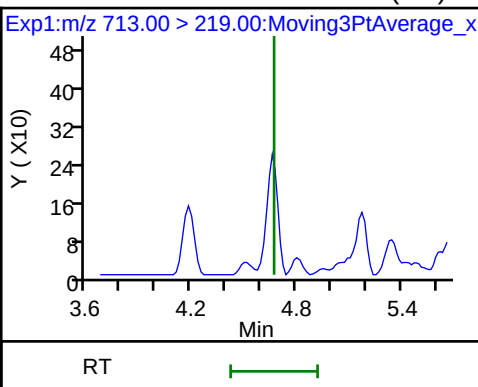
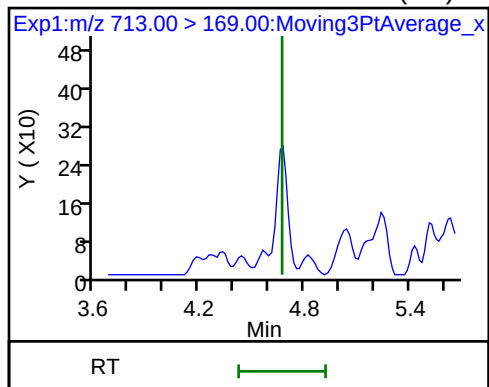
41 Perfluorotridecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)

42 Perfluorotetradecanoic acid (ND)

D 43 13C2-PFTeDA



TestAmerica Sacramento

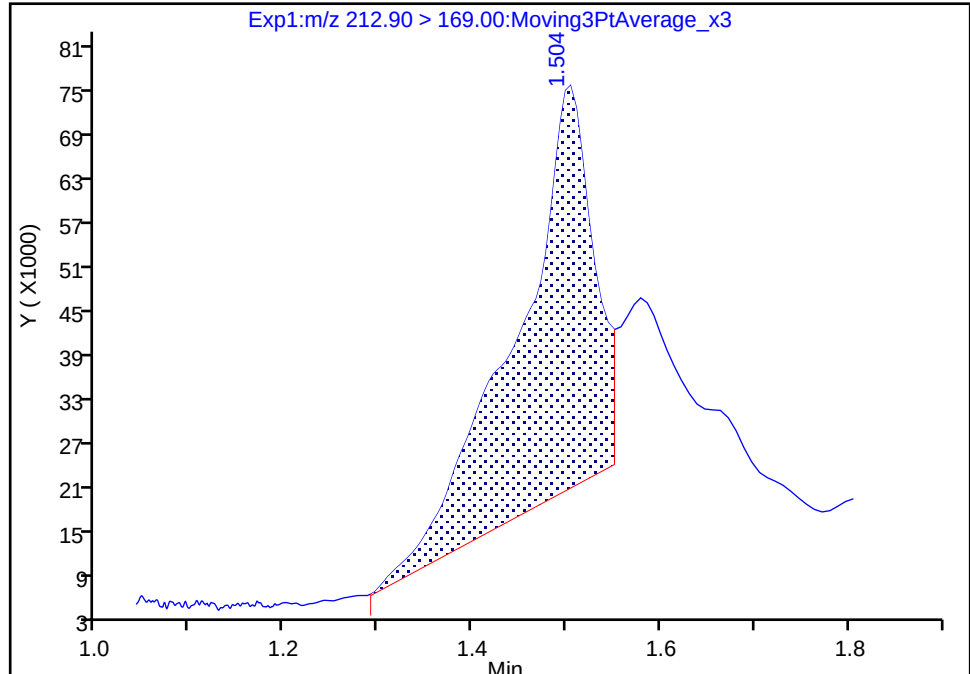
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d		
Injection Date:	10-Sep-2018 12:47:18	Instrument ID:	A9
Lims ID:	480-140926-A-4-A	Lab Sample ID:	320-140926-4
Client ID:	MW-5 (082718)		
Operator ID:	A9\Administrator	ALS Bottle#:	13
Injection Vol:	20.0 ul	Dil. Factor:	1.0000
Method:	PFAS_A9	Limit Group:	LC PFC ICAL
Column:		Detector:	EXP1
		Worklist Smp#:	4

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

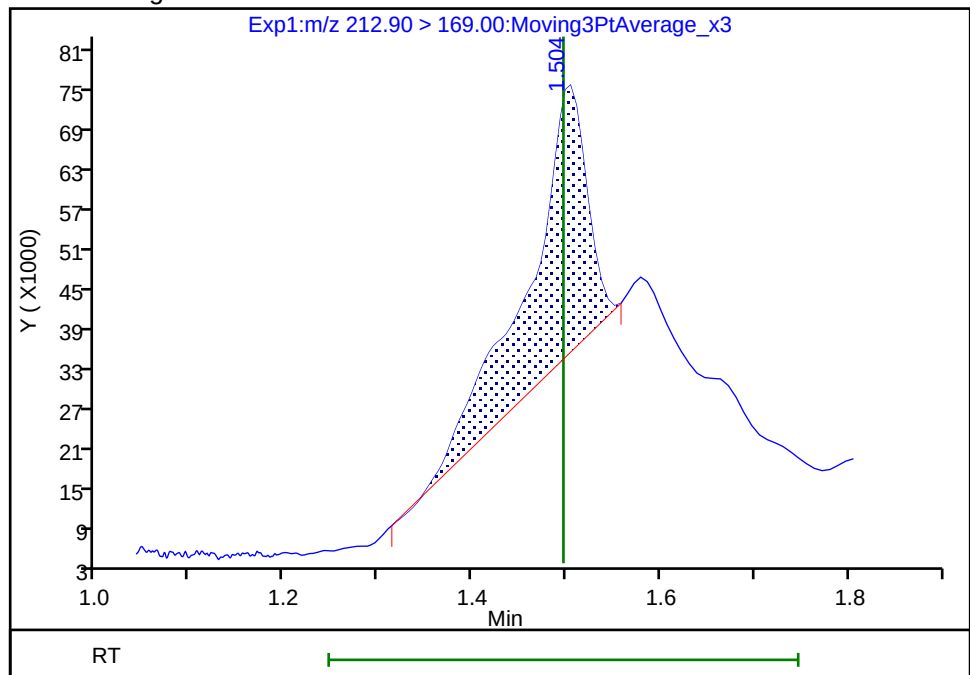
RT: 1.50
Area: 315436
Amount: 0.123178
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 175955
Amount: 0.068711
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:01:36
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 180 of 455

09/12/2018

TestAmerica Sacramento

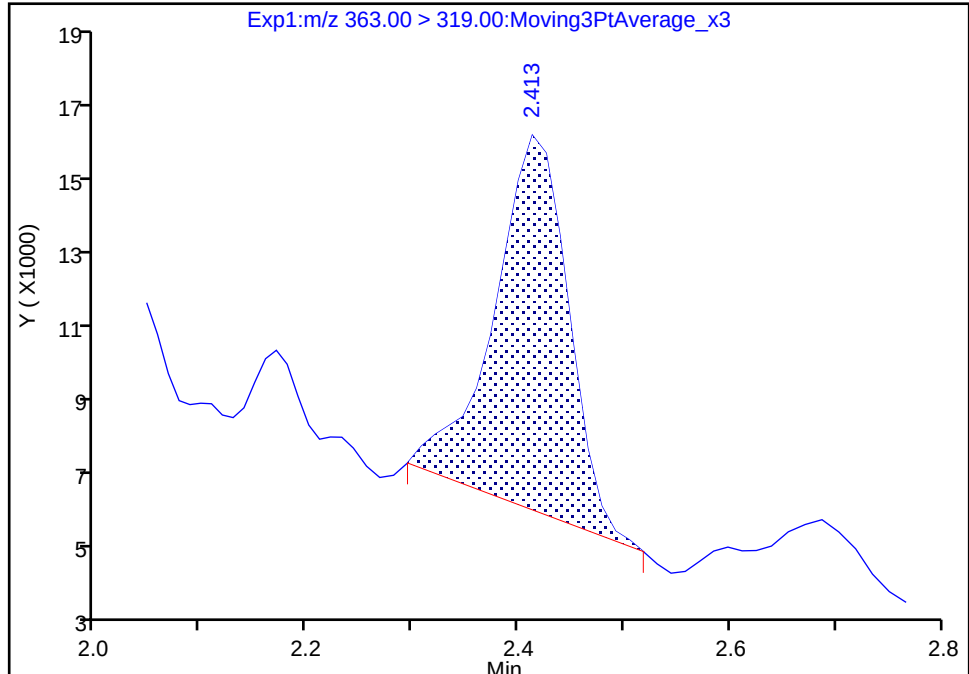
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d				
Injection Date:	10-Sep-2018 12:47:18	Instrument ID:	A9		
Lims ID:	480-140926-A-4-A	Lab Sample ID:	320-140926-4		
Client ID:	MW-5 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

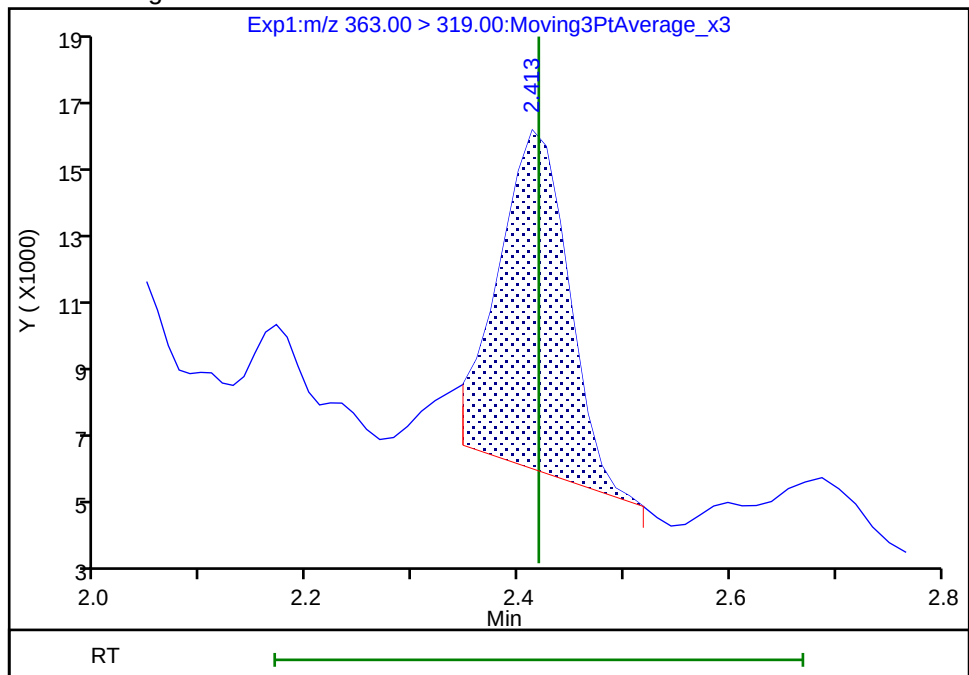
RT: 2.41
Area: 46632
Amount: 0.012405
Amount Units: ng/ml

Processing Integration Results



RT: 2.41
Area: 43675
Amount: 0.011618
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:01:52

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

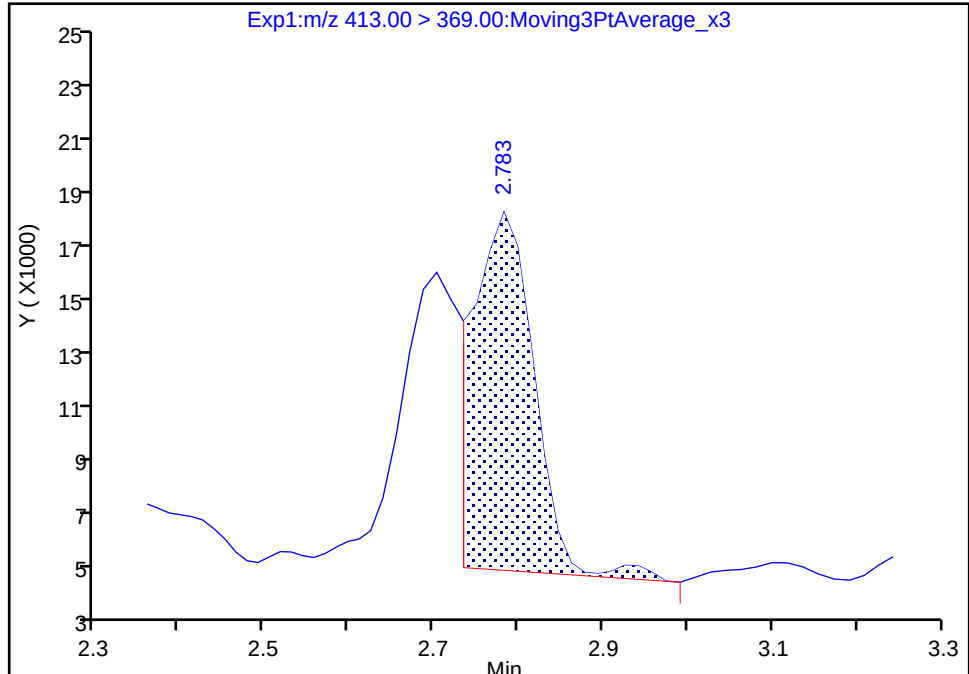
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d
Injection Date: 10-Sep-2018 12:47:18 Instrument ID: A9
Lims ID: 480-140926-A-4-A Lab Sample ID: 320-140926-4
Client ID: MW-5 (082718)
Operator ID: A9\Administrator ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

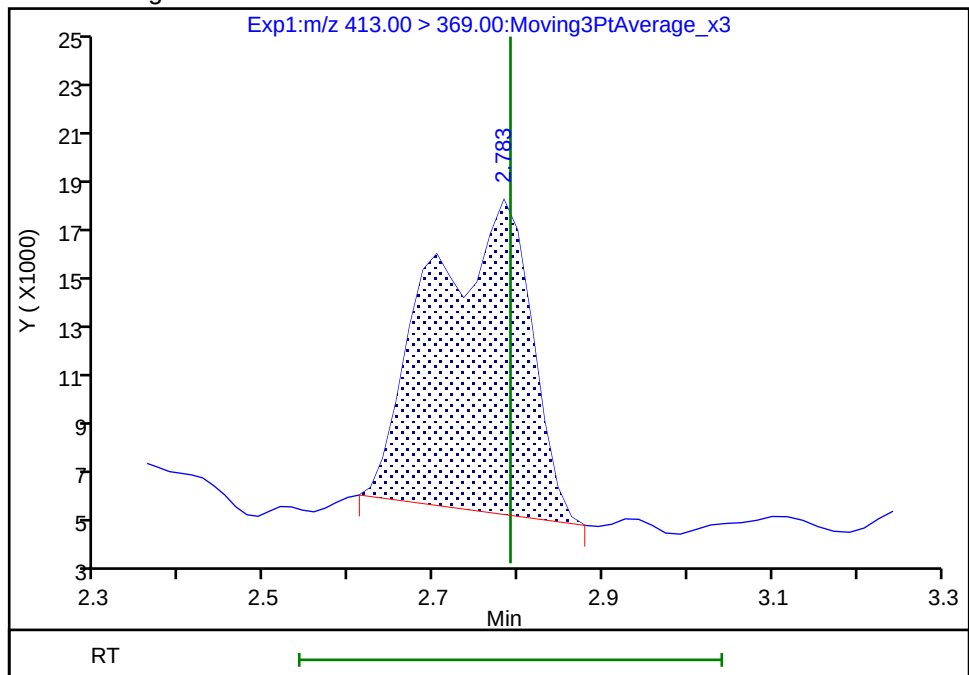
RT: 2.78
Area: 64171
Amount: 0.017023
Amount Units: ng/ml

Processing Integration Results



RT: 2.78
Area: 104046
Amount: 0.027601
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:02:23
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 182 of 455

09/12/2018

TestAmerica Sacramento

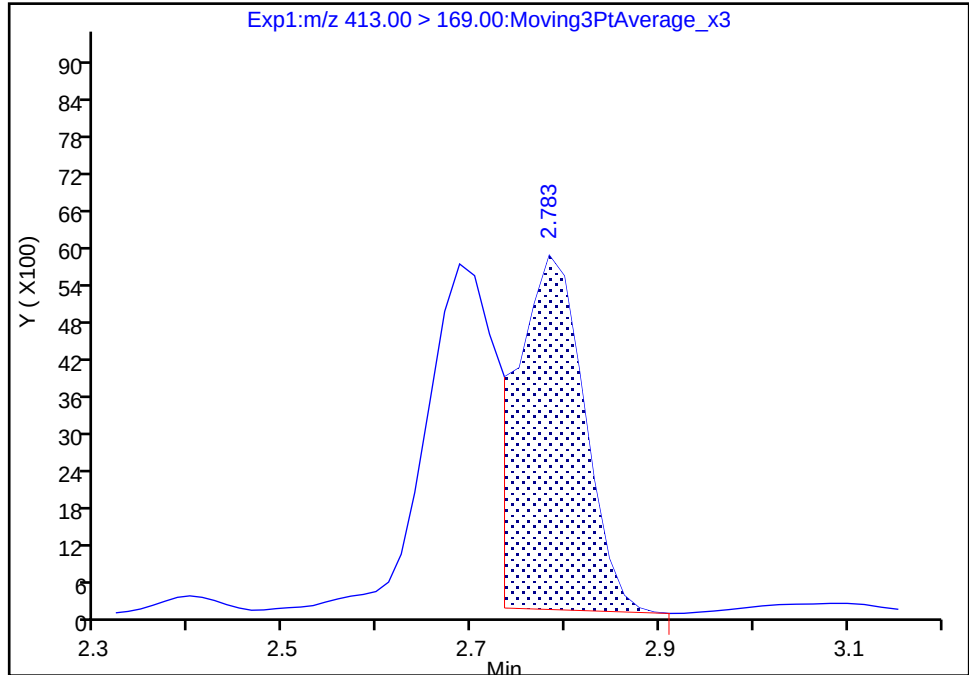
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d
Injection Date: 10-Sep-2018 12:47:18 Instrument ID: A9
Lims ID: 480-140926-A-4-A Lab Sample ID: 320-140926-4
Client ID: MW-5 (082718)
Operator ID: A9\Administrator ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

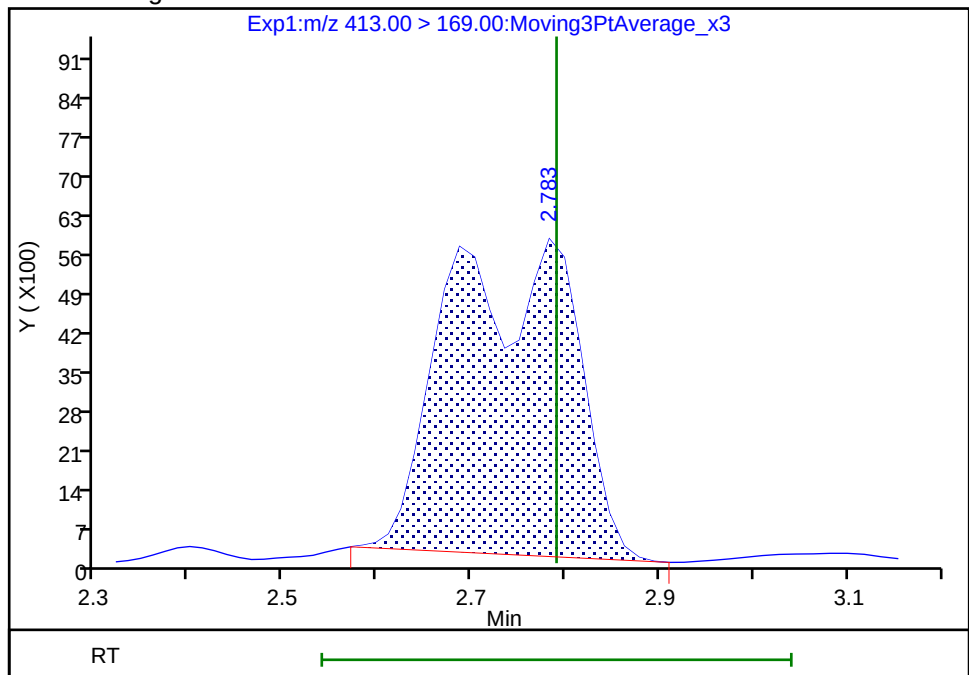
RT: 2.78
Area: 27822
Amount: 0.017023
Amount Units: ng/ml

Processing Integration Results



RT: 2.78
Area: 53824
Amount: 0.027601
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:02:26

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

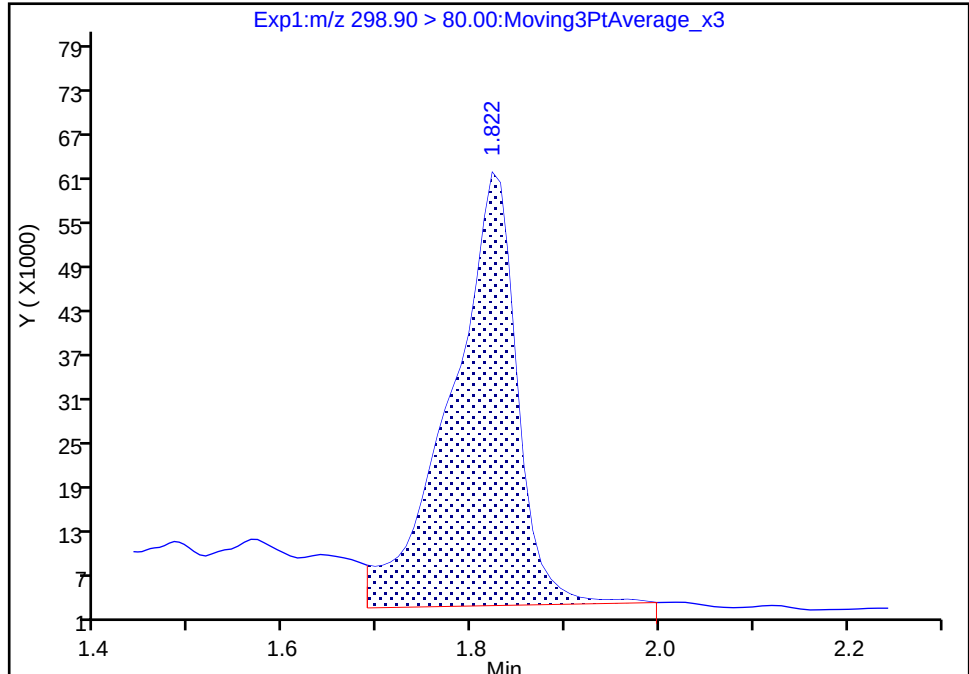
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d				
Injection Date:	10-Sep-2018 12:47:18	Instrument ID:	A9		
Lims ID:	480-140926-A-4-A	Lab Sample ID:	320-140926-4		
Client ID:	MW-5 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

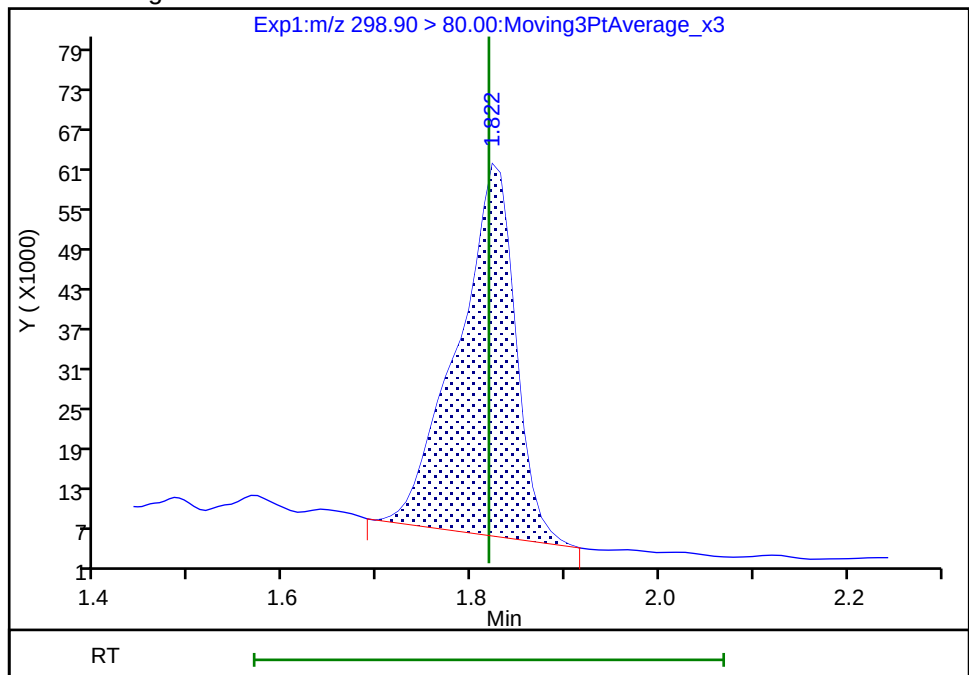
RT: 1.82
Area: 287557
Amount: 0.072425
Amount Units: ng/ml

Processing Integration Results



RT: 1.82
Area: 239827
Amount: 0.060403
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:01:43
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 184 of 455

09/12/2018

TestAmerica Sacramento

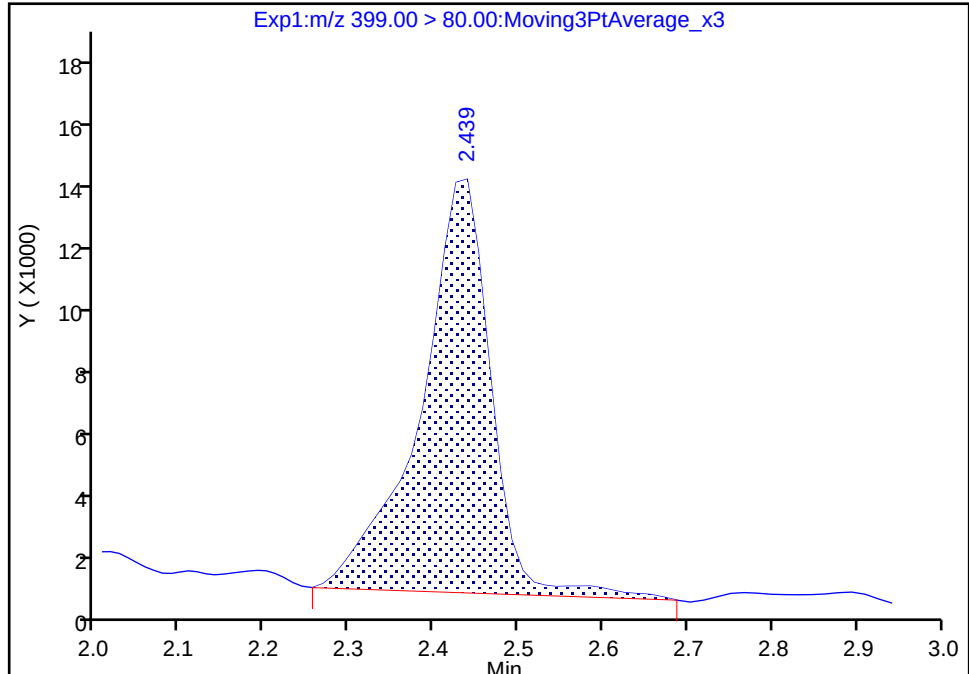
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d				
Injection Date:	10-Sep-2018 12:47:18	Instrument ID:	A9		
Lims ID:	480-140926-A-4-A	Lab Sample ID:	320-140926-4		
Client ID:	MW-5 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

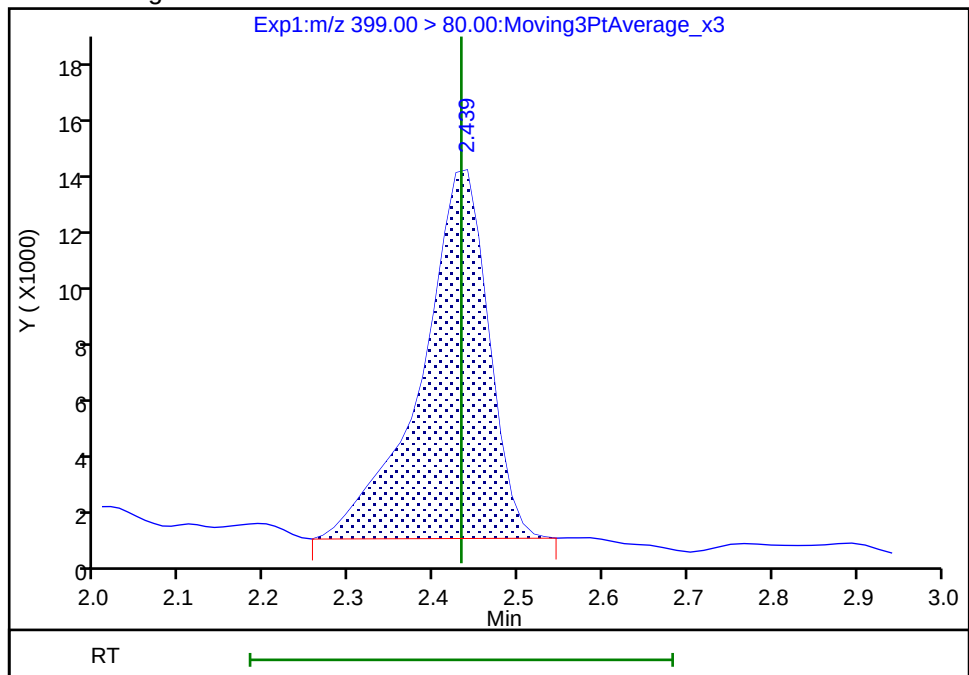
RT: 2.44
Area: 76342
Amount: 0.026467
Amount Units: ng/ml

Processing Integration Results



RT: 2.44
Area: 71860
Amount: 0.024914
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:02:07

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

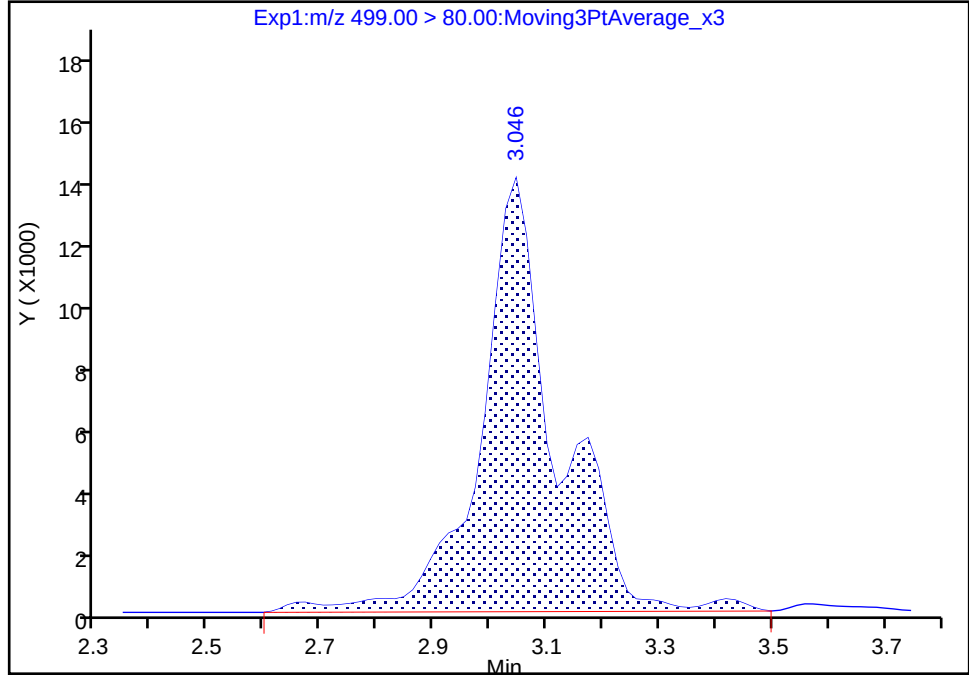
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d				
Injection Date:	10-Sep-2018 12:47:18	Instrument ID:	A9		
Lims ID:	480-140926-A-4-A	Lab Sample ID:	320-140926-4		
Client ID:	MW-5 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

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

Signal: 1

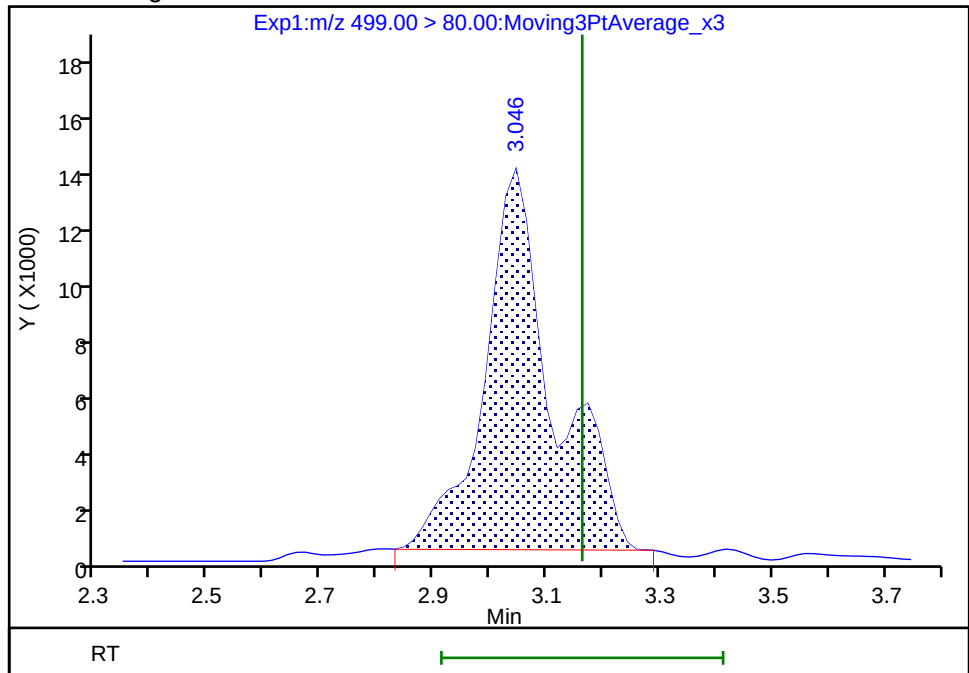
RT: 3.05
Area: 126777
Amount: 0.050542
Amount Units: ng/ml

Processing Integration Results



RT: 3.05
Area: 110294
Amount: 0.043971
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:02:36
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 186 of 455

09/12/2018

TestAmerica Sacramento

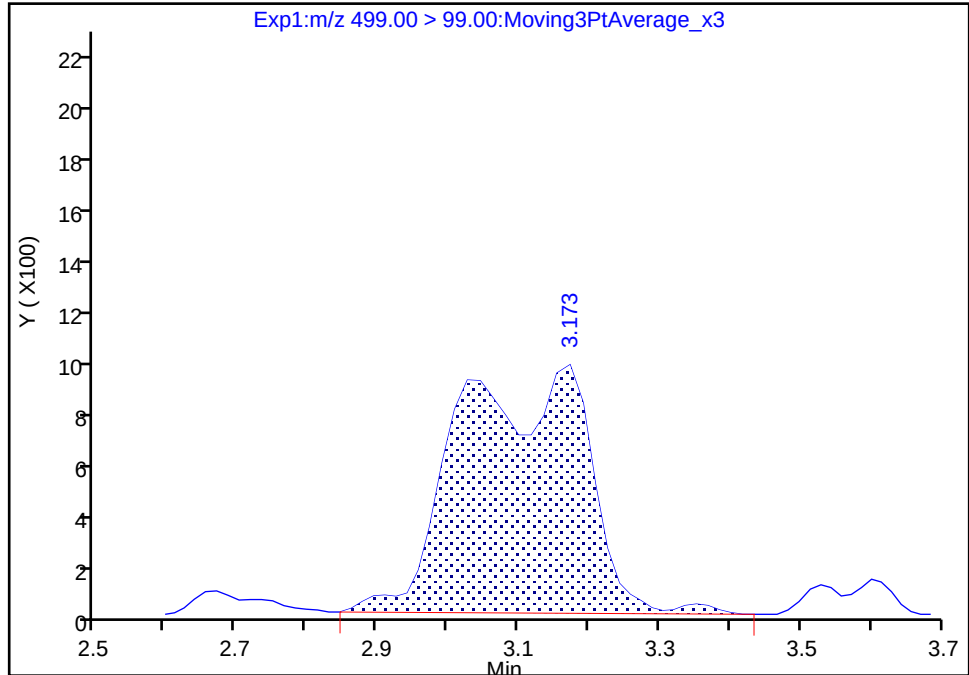
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_020.d
Injection Date: 10-Sep-2018 12:47:18 Instrument ID: A9
Lims ID: 480-140926-A-4-A Lab Sample ID: 320-140926-4
Client ID: MW-5 (082718)
Operator ID: A9\Administrator ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

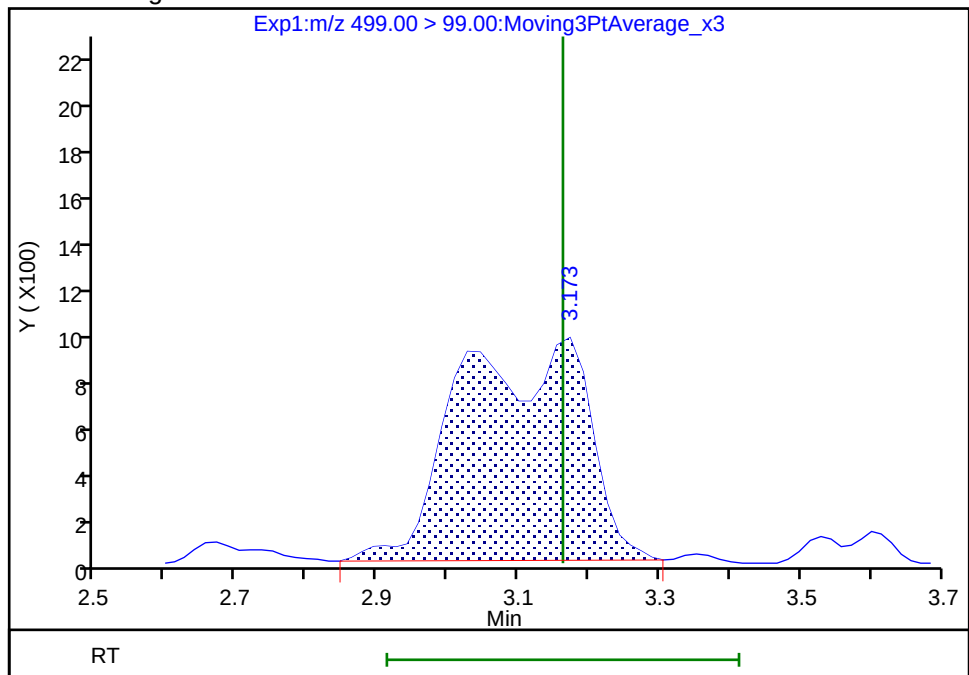
RT: 3.17
Area: 12633
Amount: 0.050542
Amount Units: ng/ml

Processing Integration Results



RT: 3.17
Area: 12325
Amount: 0.043971
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:02:46

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>DUP-01 (082718)</u>	Lab Sample ID: <u>480-140926-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLAA_021.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 00:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>295.2 (mL)</u>	Date Analyzed: <u>09/10/2018 12:54</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244760</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.0		1.7	0.30
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.53	J	1.7	0.41
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.7	0.49
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.30	J	1.7	0.21
335-67-1	Perfluorooctanoic acid (PFOA)	1.1	J	1.7	0.72
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.26
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.93
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	ND		1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.5	J	1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.61	J B	1.7	0.14
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.9		1.7	0.46
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.27
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		1.7	0.30
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		17	2.6
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		17	1.6
27619-97-2	6:2 FTS	ND		17	1.7
39108-34-4	8:2 FTS	ND		17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>DUP-01 (082718)</u>	Lab Sample ID: <u>480-140926-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLAA_021.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 00:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>295.2 (mL)</u>	Date Analyzed: <u>09/10/2018 12:54</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244760</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	86		25-150
STL01893	13C5 PFPeA	94		25-150
STL00993	13C2 PFHxA	97		25-150
STL01892	13C4-PFHpA	98		25-150
STL00990	13C4 PFOA	97		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	100		25-150
STL00997	13C2 PFUnA	99		25-150
STL00998	13C2 PFDoA	89		25-150
STL02116	13C2-PFTeDA	93		25-150
STL02337	13C3-PFBS	97		25-150
STL00994	18O2 PFHxS	96		25-150
STL00991	13C4 PFOS	97		25-150
STL01056	13C8 FOSA	98		25-150
STL02118	d3-NMeFOSAA	91		25-150
STL02117	d5-NEtFOSAA	99		25-150
STL02279	M2-6:2FTS	100		25-150
STL02280	M2-8:2FTS	101		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_021.d
 Lims ID: 480-140926-A-5-A
 Client ID: DUP-01 (082718)
 Sample Type: Client
 Inject. Date: 10-Sep-2018 12:54:47 ALS Bottle#: 14 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-140926-A-5-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 08:04:15 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 08:04:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.495	1.497	-0.002	1.000	156800	0.0601			7.1	M
D 1 13C4 PFBA										
217.00 > 172.00	1.495	1.499	-0.004	0.537	7140568	2.16		86.4	8859	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.781	1.777	0.004	1.000	44375	0.0158			1.3	
D 3 13C5-PFPeA										
267.90 > 223.00	1.781	1.781	0.0	0.640	6935233	2.35		94.1	3839	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.823	1.818	0.005	1.005	178681	0.0455			9.4	
298.90 > 99.00	1.823	1.818	0.005	1.005	64584		2.77(1.35-4.05)		10.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.822	-0.008	0.652	86890	2.24		96.5	251	
D 7 13C2 PFHxA										
315.00 > 270.00	2.069	2.079	-0.010	0.743	7525133	2.41		96.6	9705	
D 9 13C4-PFHpA										
367.00 > 322.00	2.414	2.413	0.001	0.867	9103567	2.45		98.0	9756	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.414	2.419	-0.005	1.000	32845	0.008845			1.3	
363.00 > 169.00	2.400	2.419	-0.019	0.995	5091		6.45(2.17-6.52)		8.2	M
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.427	2.432	-0.005	1.000	48742	0.0179			12.8	M
399.00 > 99.00	2.427	2.432	-0.005	1.000	12051		4.04(1.90-5.70)		9.3	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.427	2.439	-0.012	0.872	5213679	2.28		96.4	10706	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.751	2.759	-0.008	1.000	3453	0.004435			3.1	
D 12 M2-6:2FTS										
429.00 > 81.00	2.751	2.767	-0.016	0.989	864020	2.37		99.6	893	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.783	2.783	0.0	1.000	8364095	2.42		96.7	8728	
* 62 13C2-PFOA										
415.00 > 370.00	2.783	2.790	-0.007		8588054	2.50			9179	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.783	2.790	-0.007	1.000	113598	0.0315			4.7	M
413.00 > 169.00	2.783	2.790	-0.007	1.000	47602		2.39(1.36-4.08)		51.8	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.028	3.163	-0.135	0.960	144773	0.0574			75.1	M
499.00 > 99.00	3.155	3.163	-0.008	1.000	23198		6.24(2.04-6.12)		46.8	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.155	3.163	-0.008	0.994	9240	0.002976			1.0	
463.00 > 169.00	3.155	3.163	-0.008	0.994	2695		3.43(2.68-8.03)		3.6	
D 19 13C5 PFNA										
468.00 > 423.00	3.174	3.173	0.001	1.140	7936829	2.45		97.9	7759	
D 18 13C4 PFOS										
503.00 > 80.00	3.155	3.173	-0.018	1.134	5711617	2.33		97.3	3152	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.499	3.490	0.009	1.004	2950	0.000784			5.4	
D 21 13C8 FOSA										
506.00 > 78.00	3.483	3.498	-0.015	1.251	3172606	2.44		97.7	4803	
D 23 13C2 PFDA										
515.00 > 470.00	3.529	3.529	0.0	1.268	8055304	2.49		99.5	8356	
D 26 M2-8:2FTS										
529.00 > 81.00	3.514	3.529	-0.015	1.263	130486	2.43		101	660	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.529	3.535	-0.006	1.000	9602	0.002618			1.1	
513.00 > 169.00	3.543	3.535	0.008	1.004	751		12.79(7.12-21.35)		1.7	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.685	3.685	0.0	1.324	3321852	2.28		91.0	5172	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.685	3.691	-0.006	1.000	2679	0.002029			0.8	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.841	3.857	-0.016	1.380	2837500	2.47		98.9	4041	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.857	3.865	-0.008	1.000	12616	0.005150			3.1	
563.00 > 169.00	3.841	3.865	-0.024	0.996	1596		7.90(5.24-15.72)		6.2	
D 30 13C2 PFUnA										
565.00 > 520.00	3.857	3.872	-0.015	1.386	6826814	2.48		99.1	7410	
D 36 13C2 PFDaA										
615.00 > 570.00	4.160	4.160	0.0	1.494	7460925	2.23		89.0	6446	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.671	-0.011	1.000	1917	0.004797			11.3	
713.00 > 219.00	4.660	4.671	-0.011	1.000	1480		1.30(0.70-2.09)		6.8	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.680	-0.020	1.674	6189174	2.32		92.7	9169	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_021.d

Injection Date: 10-Sep-2018 12:54:47

Instrument ID: A9

Lims ID: 480-140926-A-5-A

Lab Sample ID: 320-140926-5

Client ID: DUP-01 (082718)

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

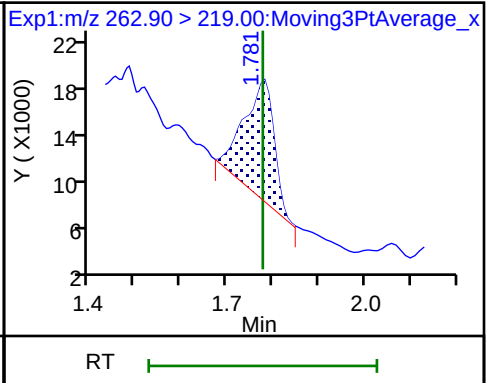
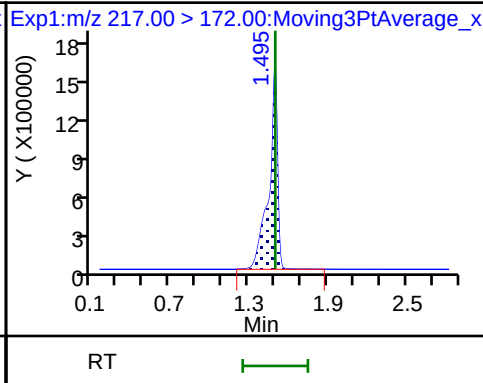
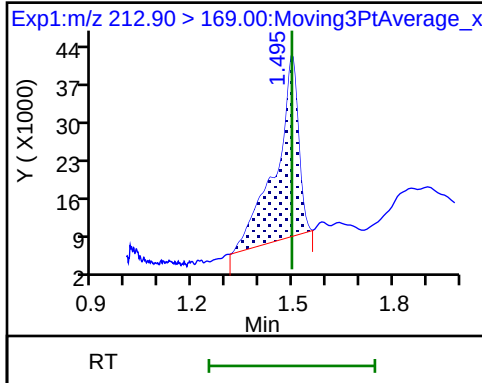
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid (M)

D 1 13C4 PFBA

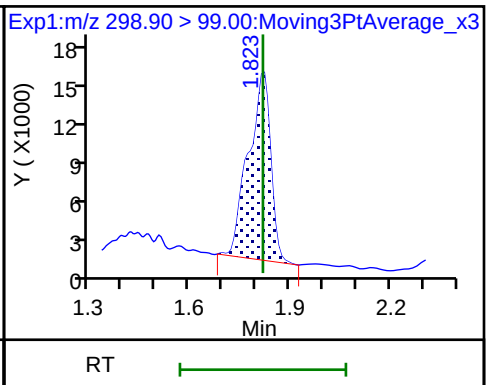
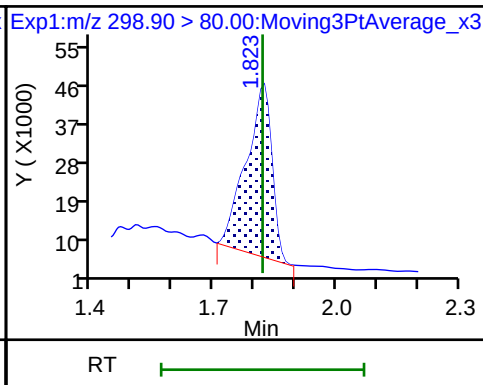
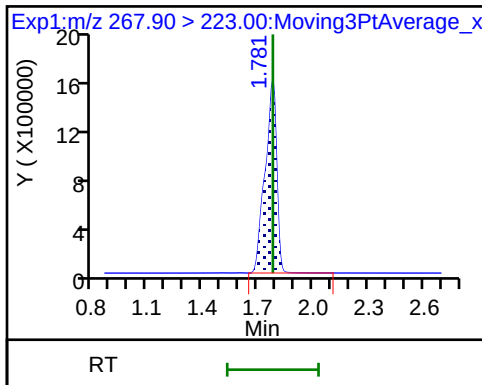
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

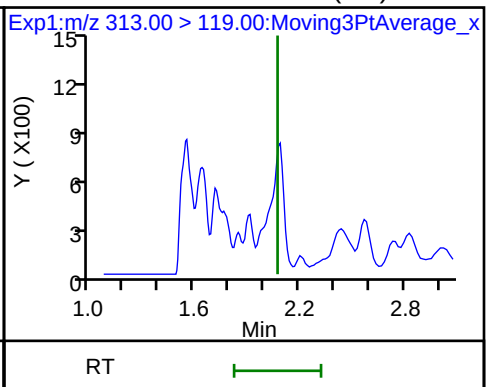
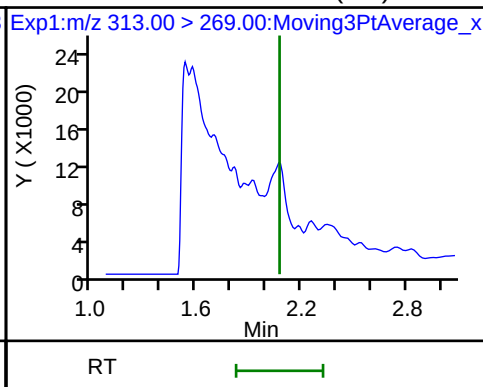
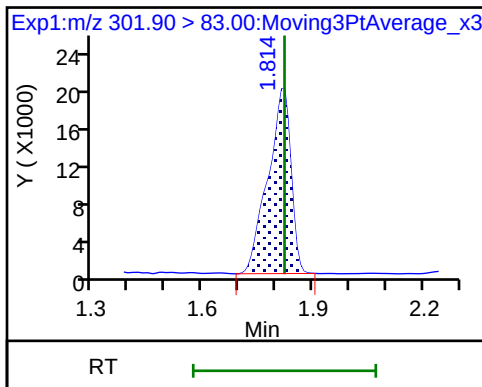
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

6 Perfluorohexanoic acid (ND)

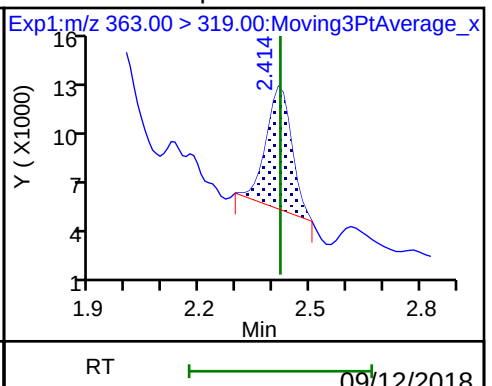
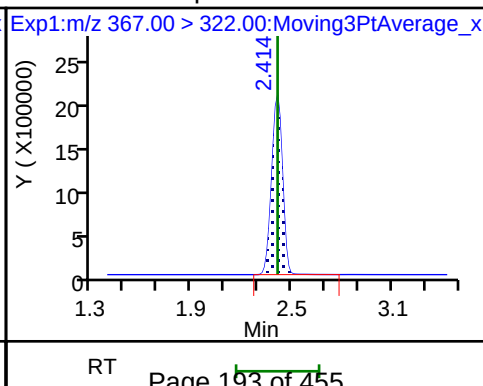
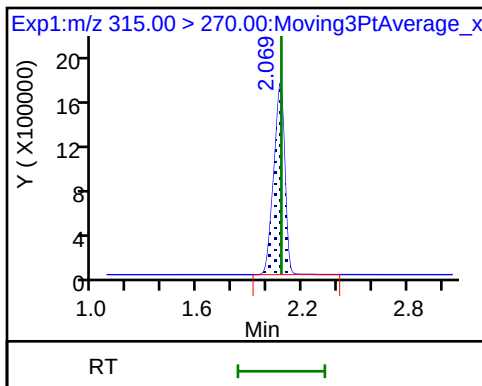
6 Perfluorohexanoic acid (ND)



D 7 13C2 PFHxA

D 9 13C4-PFHpA

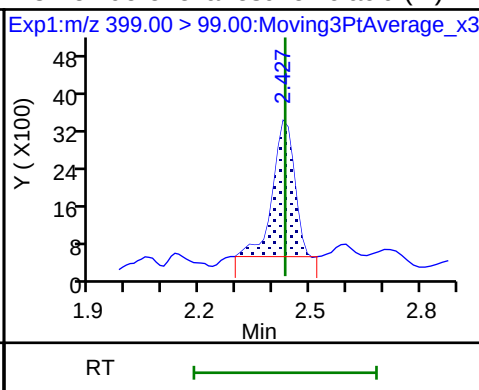
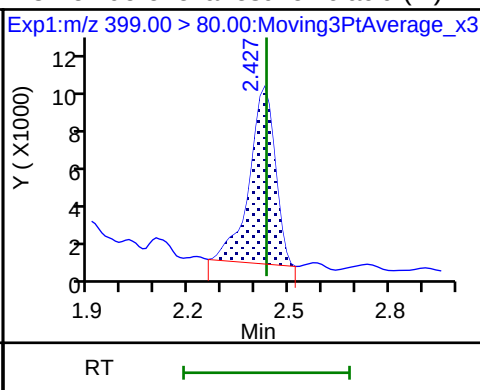
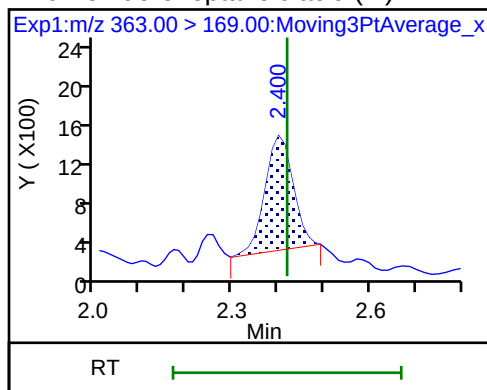
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid (M)

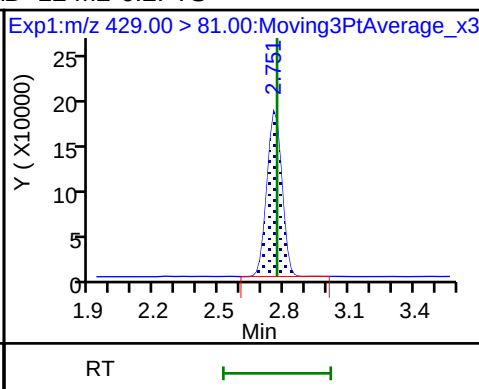
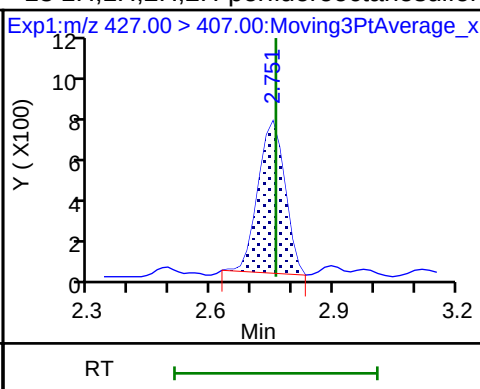
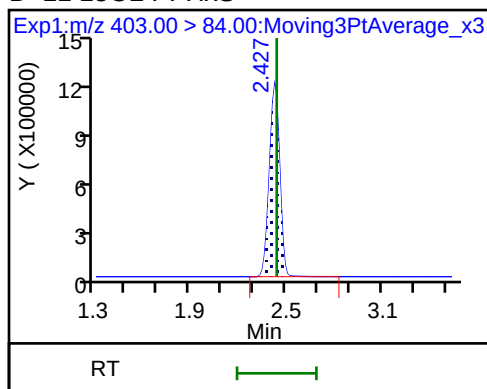
8 Perfluorohexanesulfonic acid (M)

8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

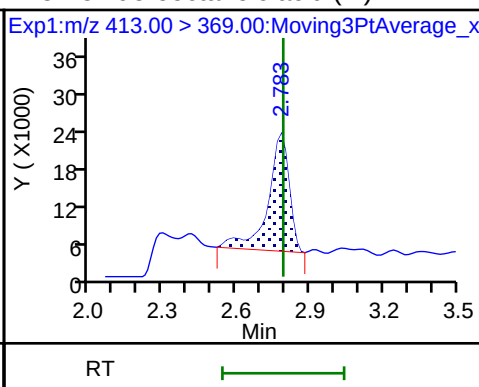
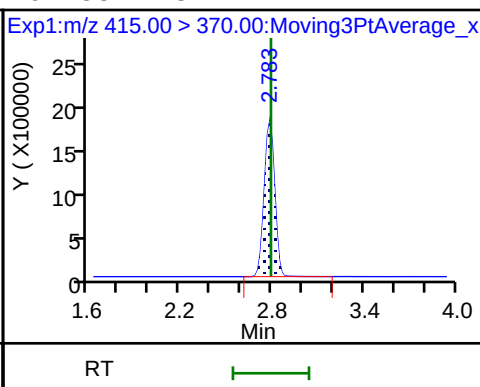
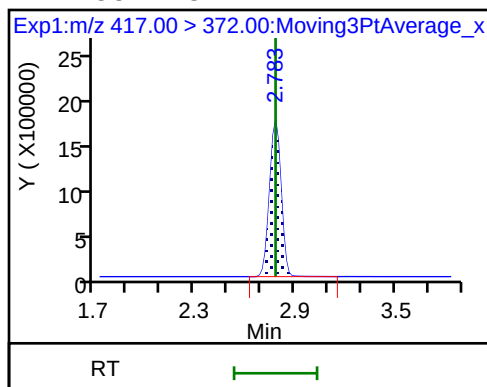
13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS



D 14 13C4 PFOA

* 62 13C2-PFOA

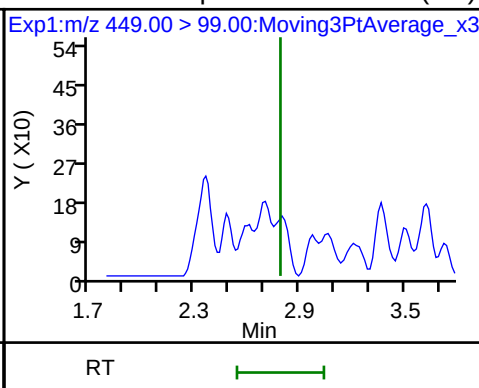
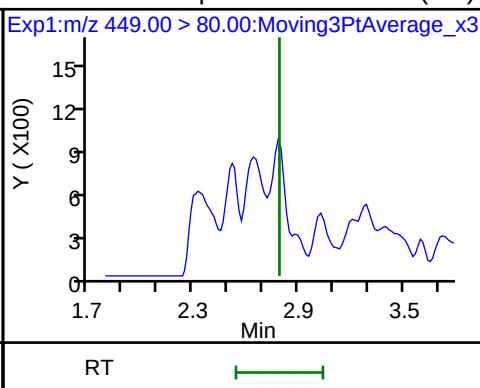
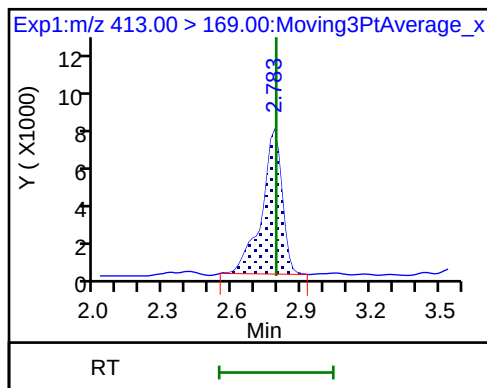
15 Perfluorooctanoic acid (M)

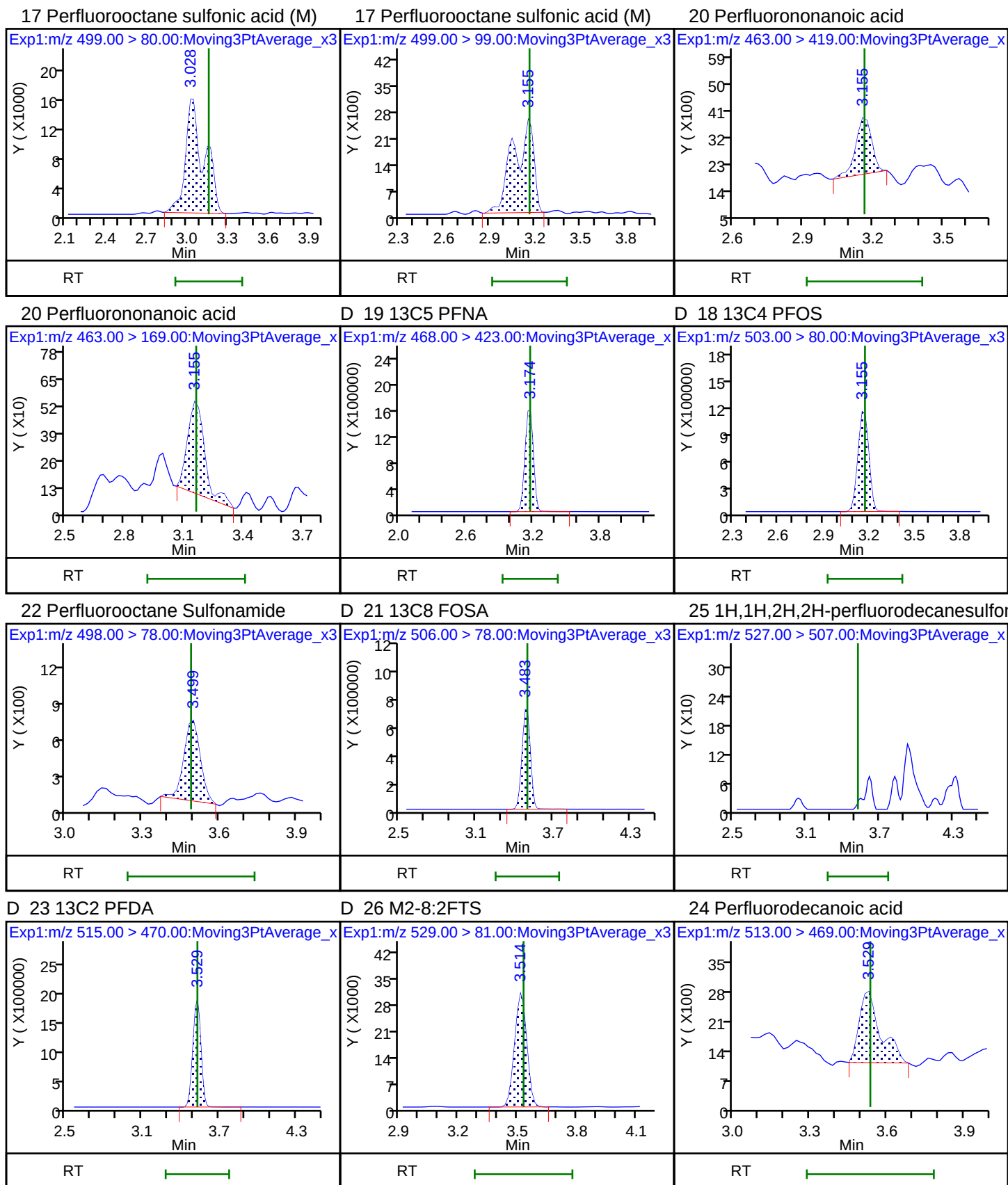


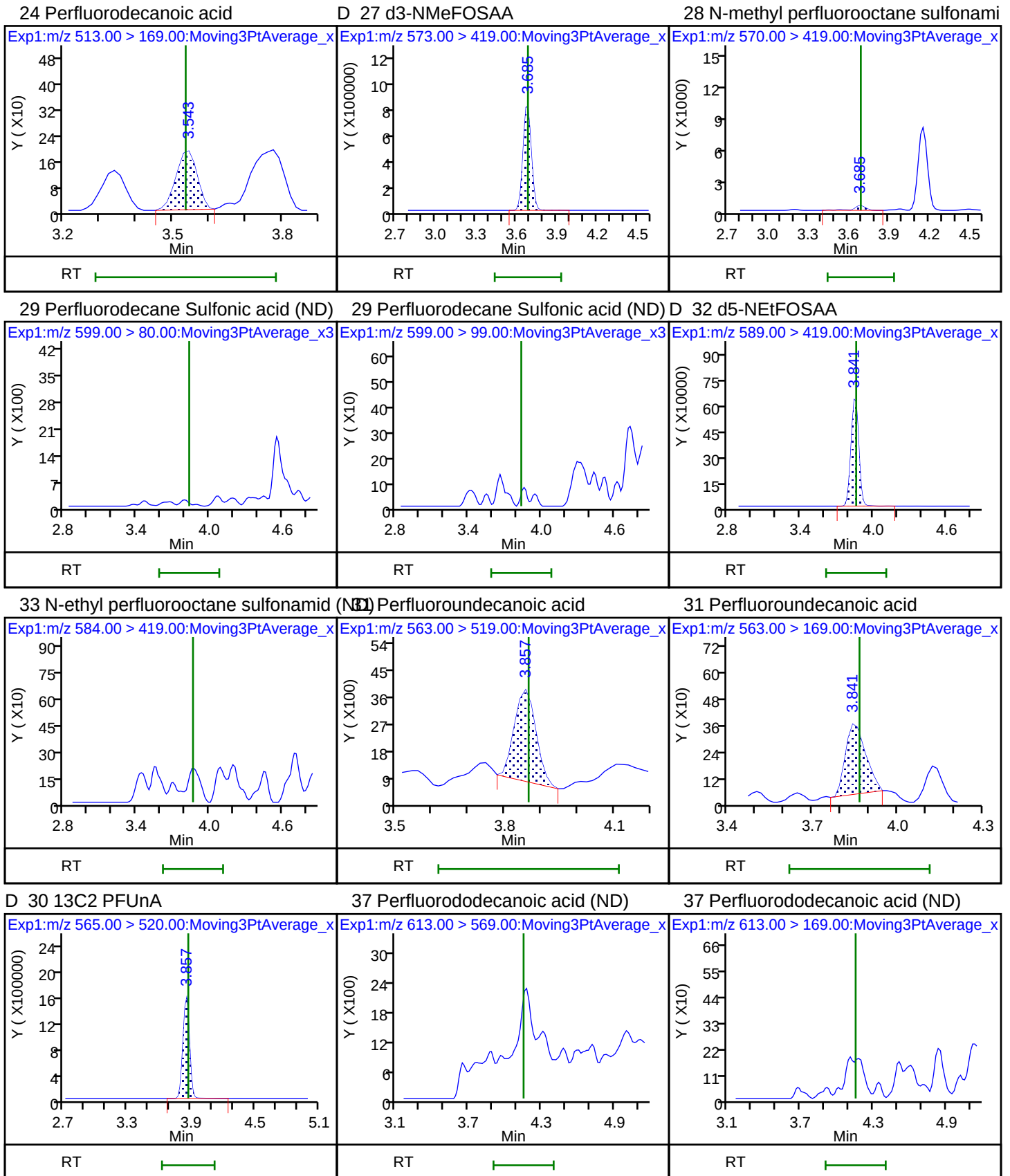
15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid (ND)

16 Perfluoroheptanesulfonic acid (ND)



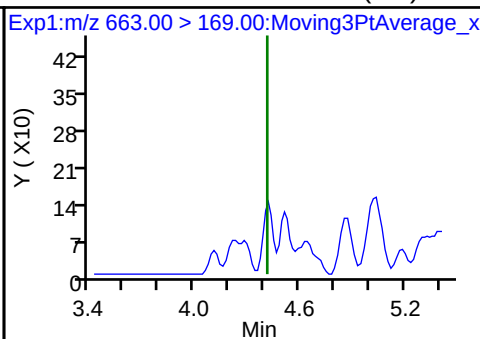
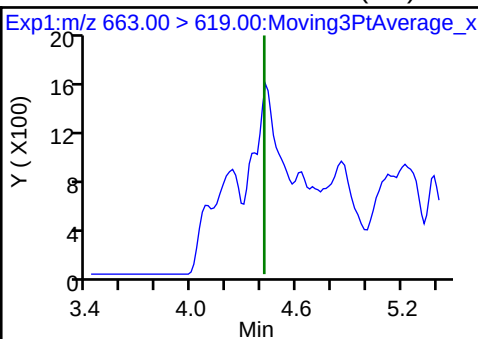
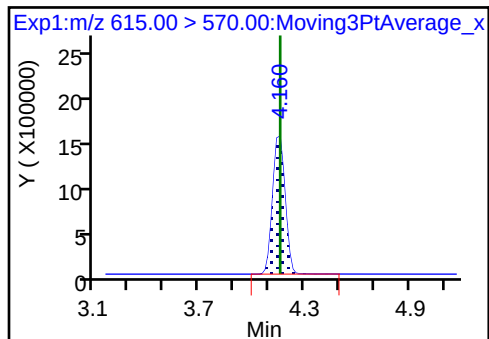




D 36 13C2 PFDaA

41 Perfluorotridecanoic acid (ND)

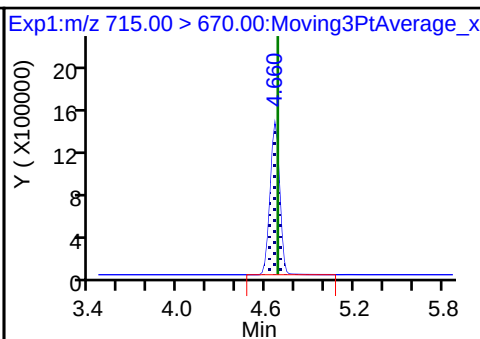
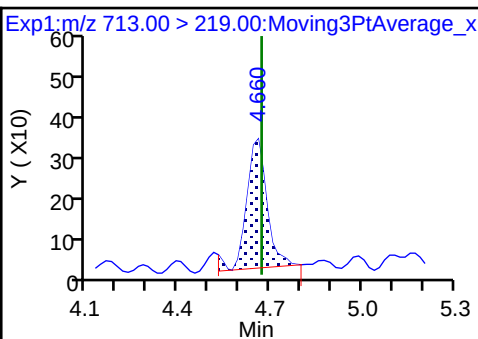
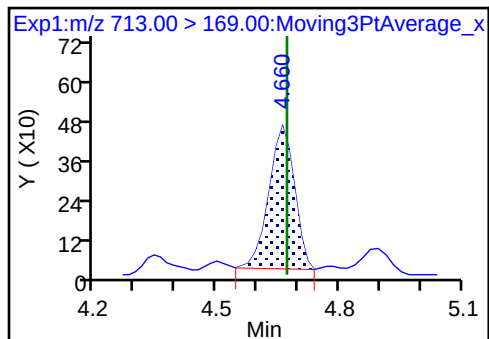
41 Perfluorotridecanoic acid (ND)



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA



TestAmerica Sacramento

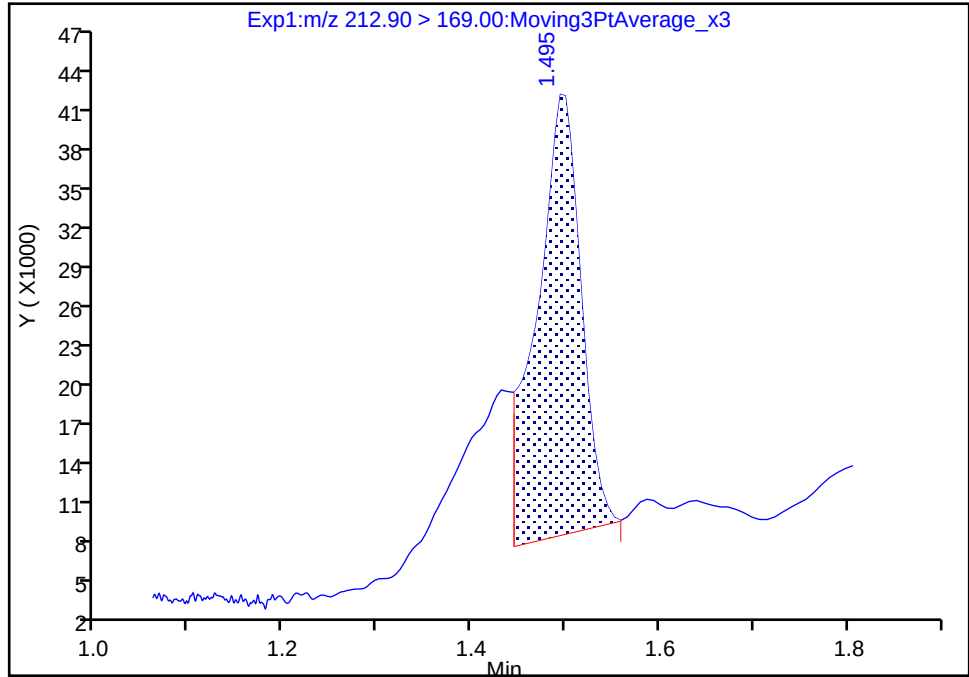
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_021.d				
Injection Date:	10-Sep-2018 12:54:47	Instrument ID:	A9		
Lims ID:	480-140926-A-5-A	Lab Sample ID:	320-140926-5		
Client ID:	DUP-01 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

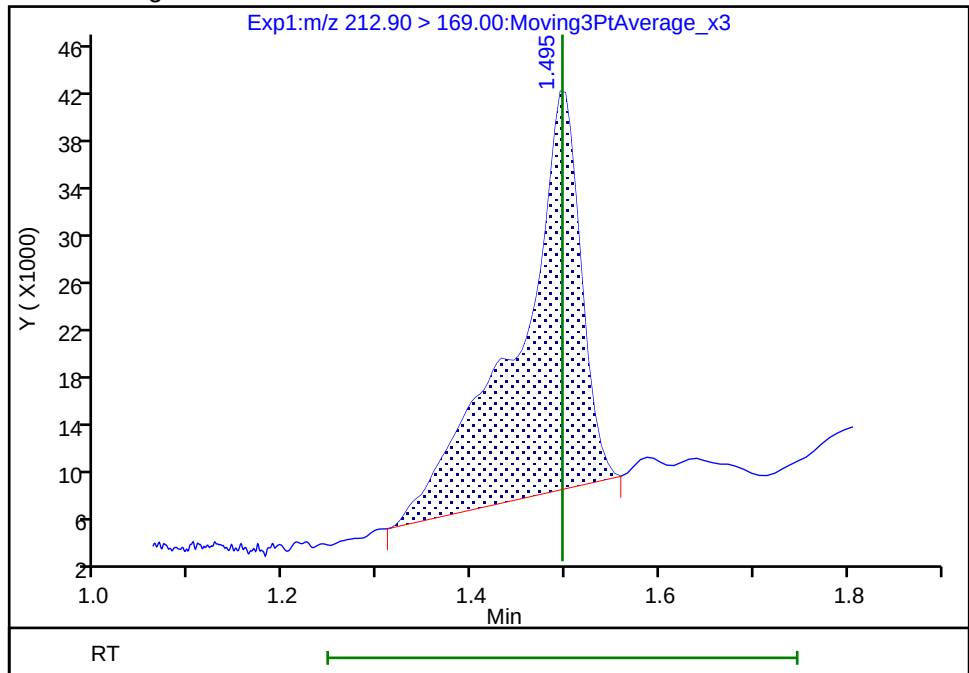
RT: 1.49
Area: 107585
Amount: 0.041264
Amount Units: ng/ml

Processing Integration Results



RT: 1.49
Area: 156800
Amount: 0.060141
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:03:15
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 198 of 455

09/12/2018

TestAmerica Sacramento

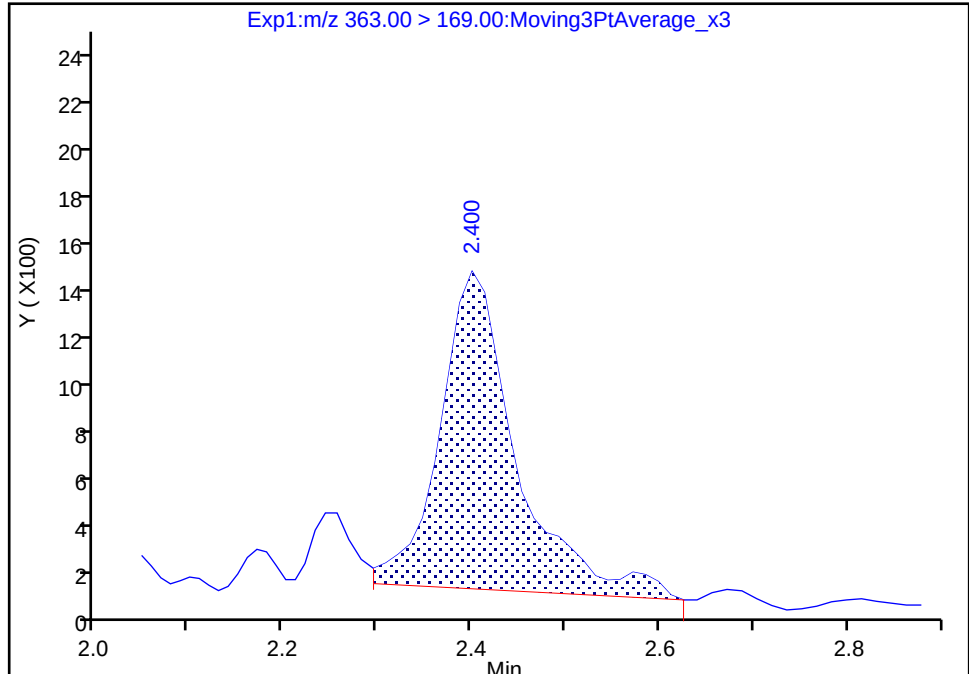
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_021.d				
Injection Date:	10-Sep-2018 12:54:47	Instrument ID:	A9		
Lims ID:	480-140926-A-5-A	Lab Sample ID:	320-140926-5		
Client ID:	DUP-01 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

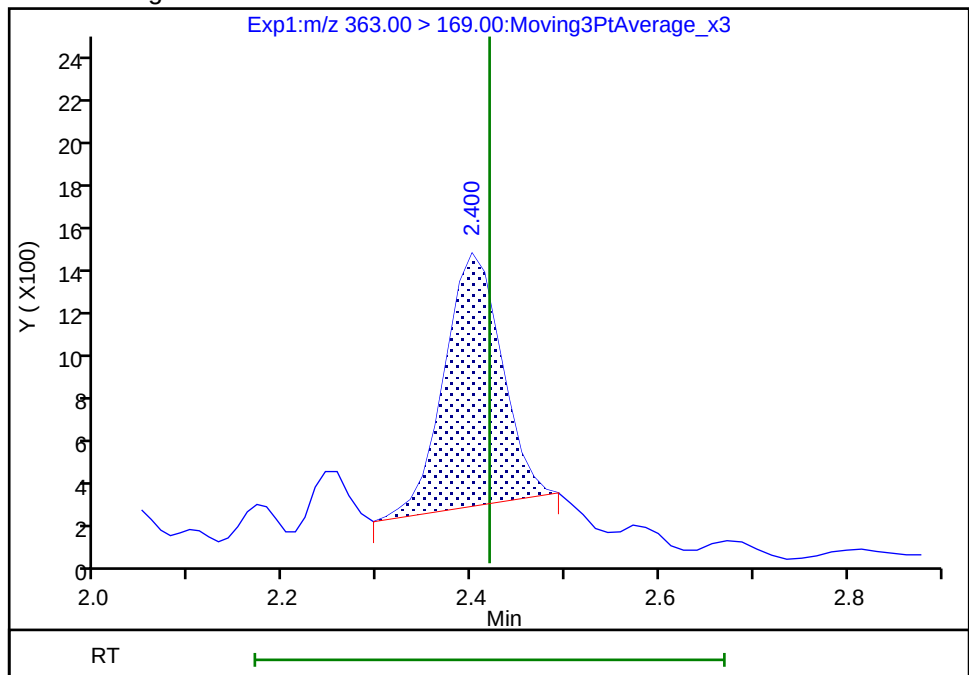
RT: 2.40
Area: 7699
Amount: 0.008845
Amount Units: ng/ml

Processing Integration Results



RT: 2.40
Area: 5091
Amount: 0.008845
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:03:26
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 199 of 455

09/12/2018

TestAmerica Sacramento

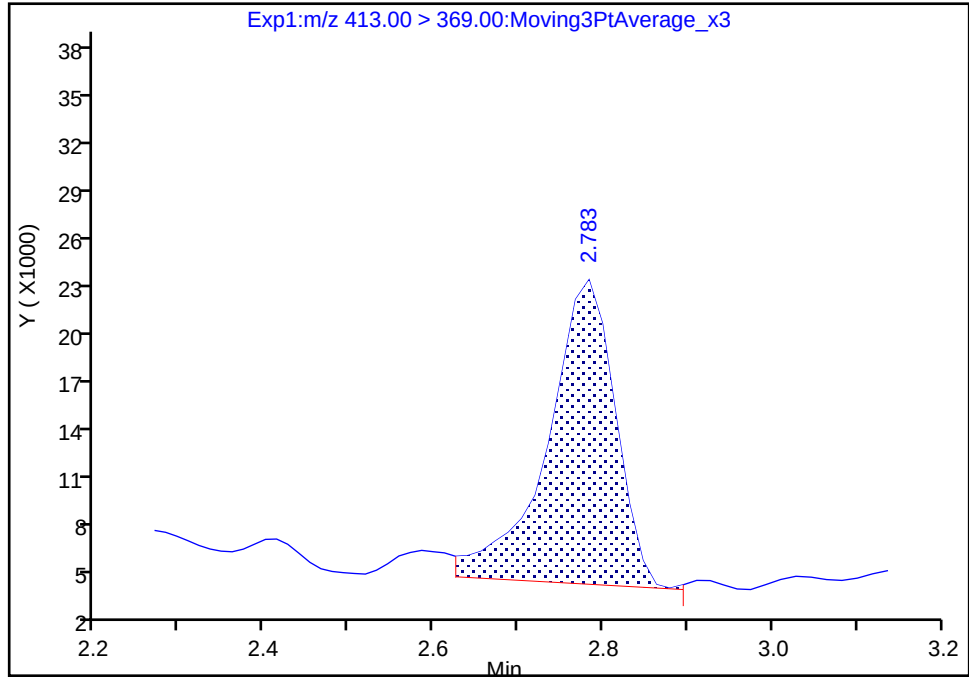
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_021.d				
Injection Date:	10-Sep-2018 12:54:47	Instrument ID:	A9		
Lims ID:	480-140926-A-5-A	Lab Sample ID:	320-140926-5		
Client ID:	DUP-01 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

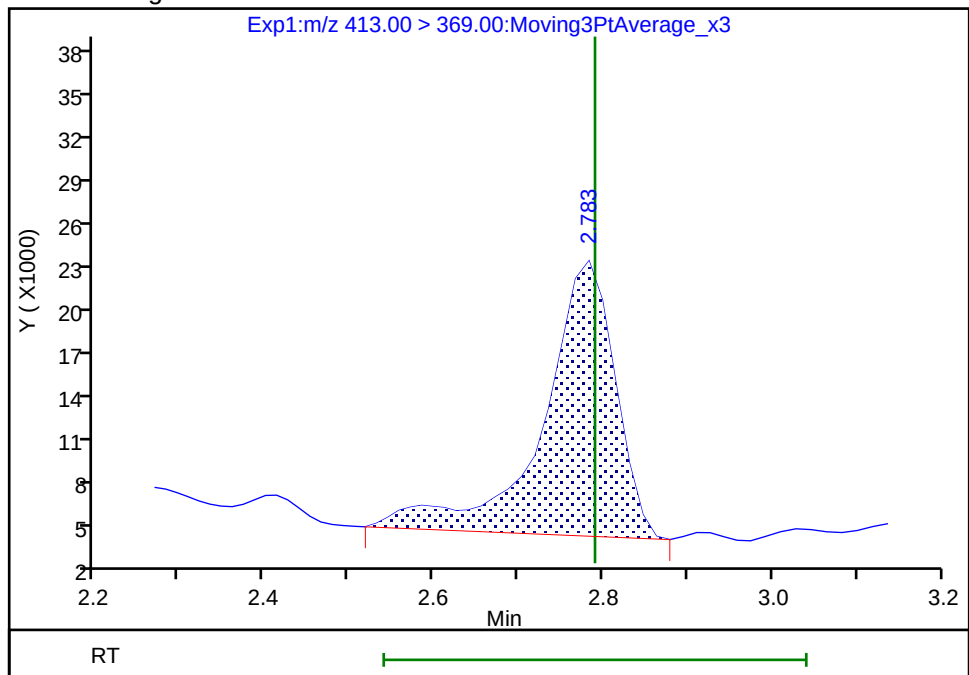
RT: 2.78
Area: 105925
Amount: 0.029418
Amount Units: ng/ml

Processing Integration Results



RT: 2.78
Area: 113598
Amount: 0.031549
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:03:44
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 200 of 455

09/12/2018

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_021.d

Injection Date: 10-Sep-2018 12:54:47

Instrument ID: A9

Lims ID: 480-140926-A-5-A

Lab Sample ID: 320-140926-5

Client ID: DUP-01 (082718)

Operator ID: A9\Administrator

ALS Bottle#: 14 Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

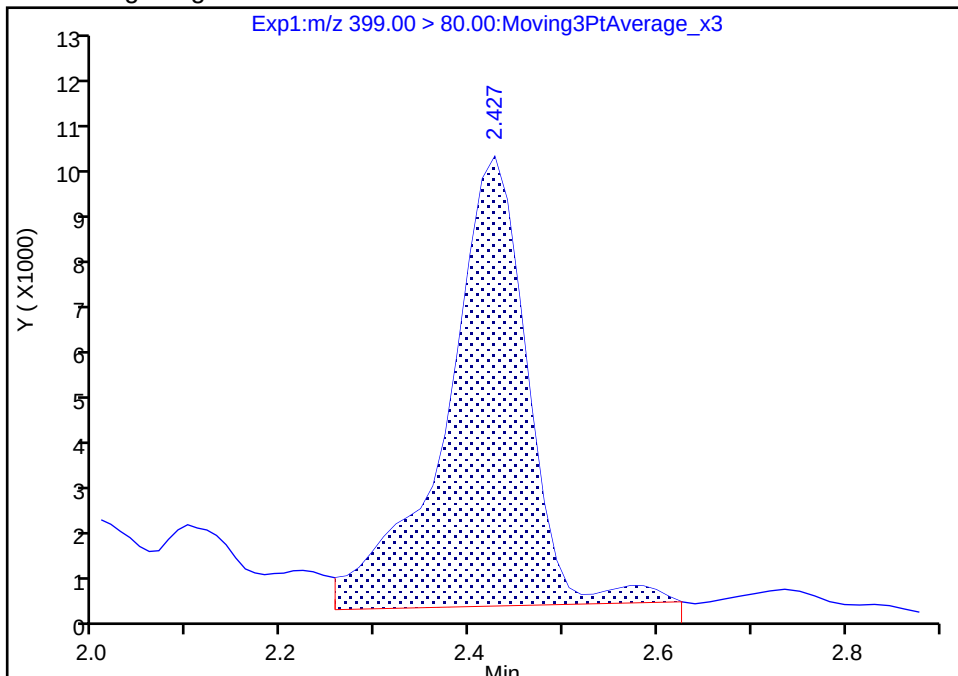
Detector: EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

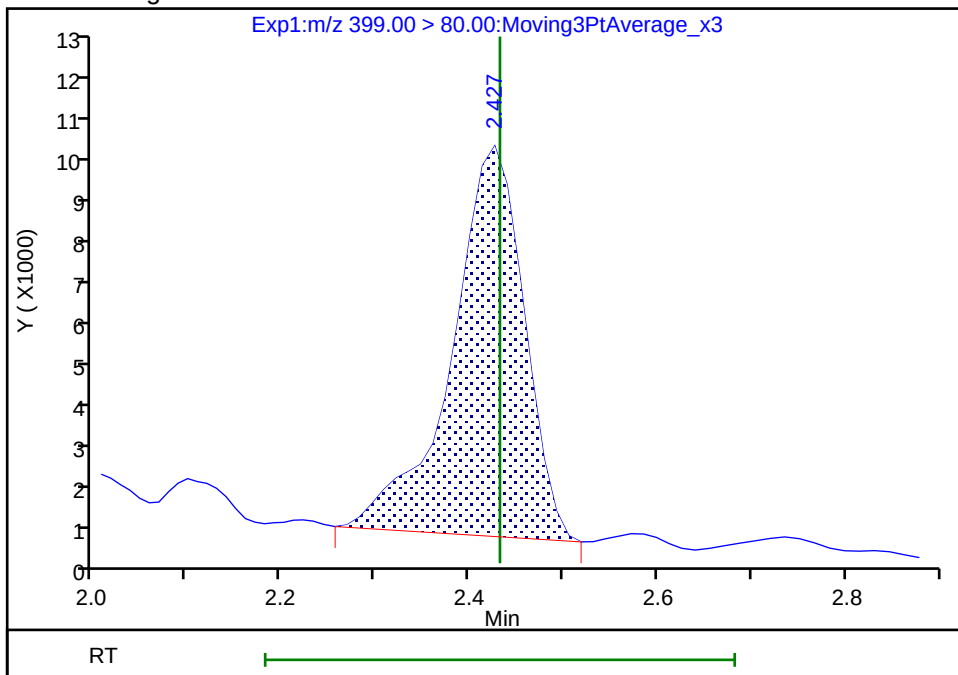
RT: 2.43
Area: 57129
Amount: 0.020943
Amount Units: ng/ml

Processing Integration Results



RT: 2.43
Area: 48742
Amount: 0.017868
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:03:33

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

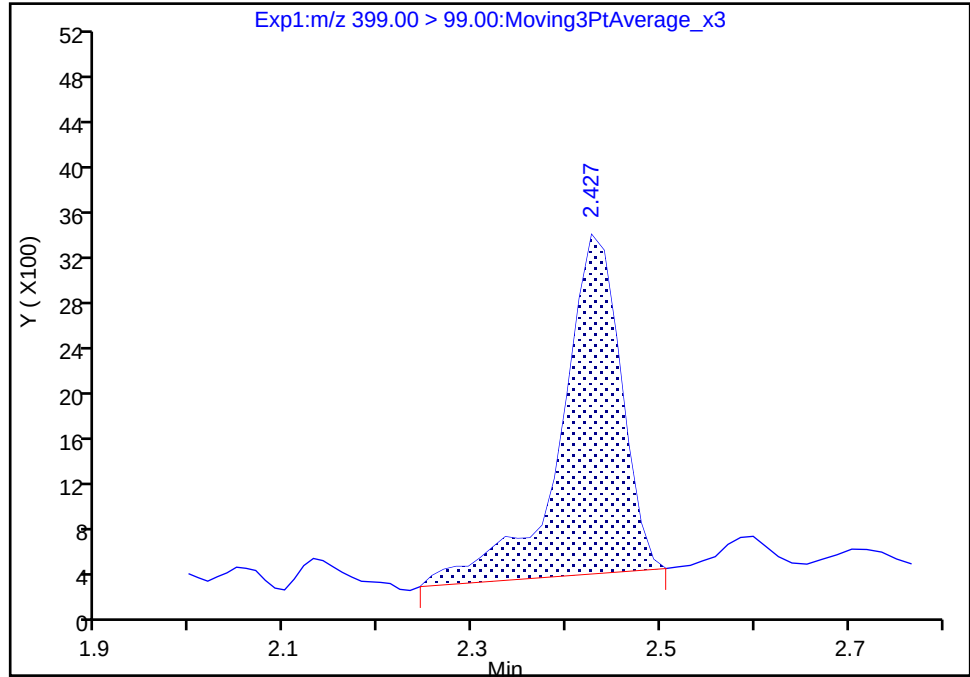
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_021.d
Injection Date: 10-Sep-2018 12:54:47 Instrument ID: A9
Lims ID: 480-140926-A-5-A Lab Sample ID: 320-140926-5
Client ID: DUP-01 (082718)
Operator ID: A9\Administrator ALS Bottle#: 14 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

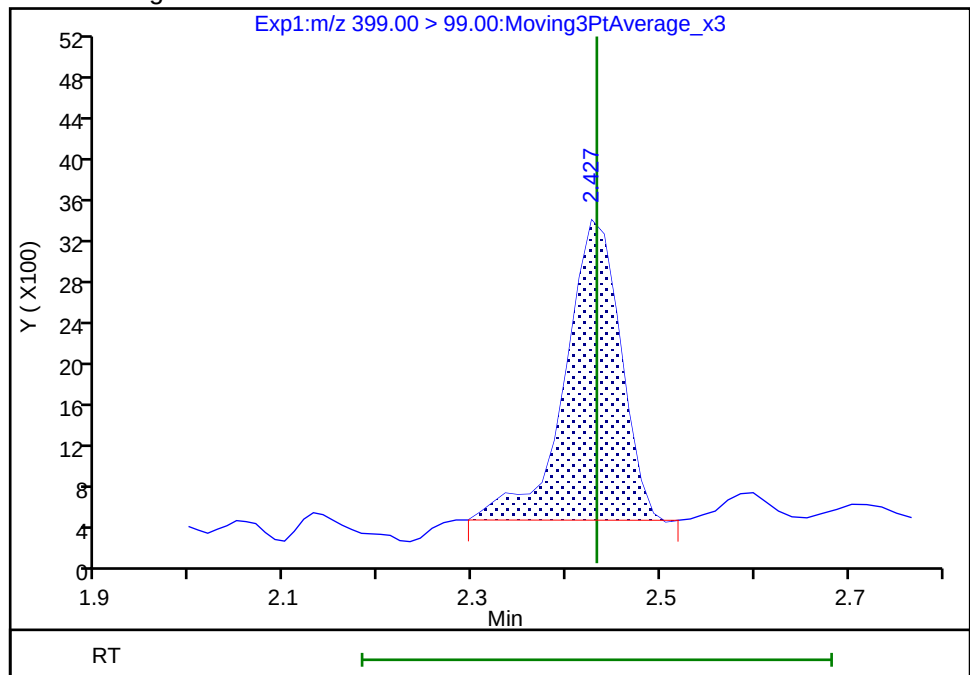
RT: 2.43
Area: 13421
Amount: 0.020943
Amount Units: ng/ml

Processing Integration Results



RT: 2.43
Area: 12051
Amount: 0.017868
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:03:37

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

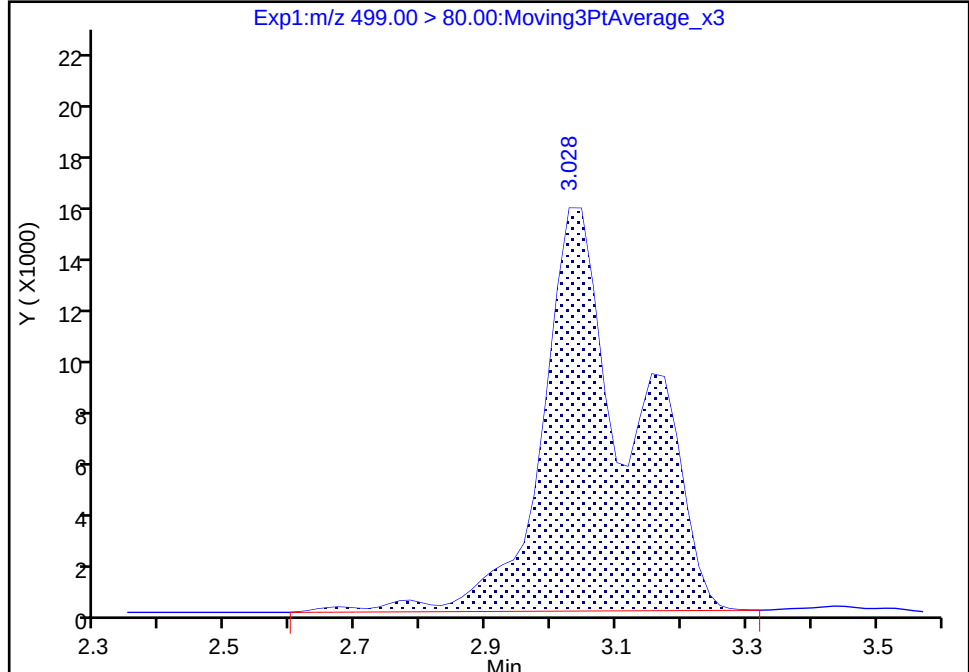
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_021.d				
Injection Date:	10-Sep-2018 12:54:47	Instrument ID:	A9		
Lims ID:	480-140926-A-5-A	Lab Sample ID:	320-140926-5		
Client ID:	DUP-01 (082718)				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

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

Signal: 1

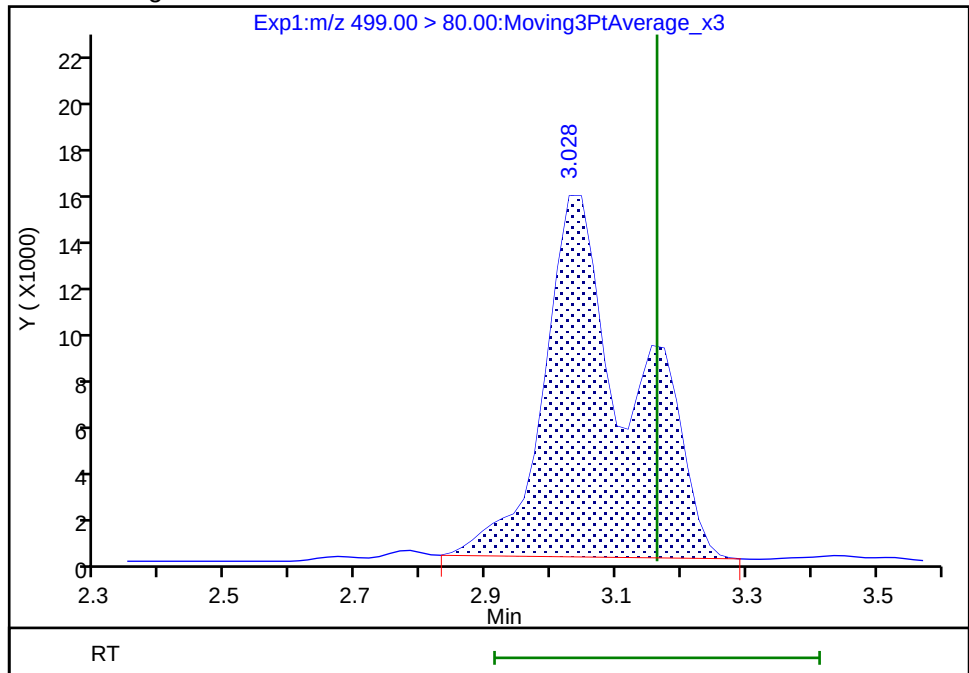
RT: 3.03
Area: 151128
Amount: 0.059934
Amount Units: ng/ml

Processing Integration Results



RT: 3.03
Area: 144773
Amount: 0.057414
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:03:52
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 203 of 455

09/12/2018

TestAmerica Sacramento

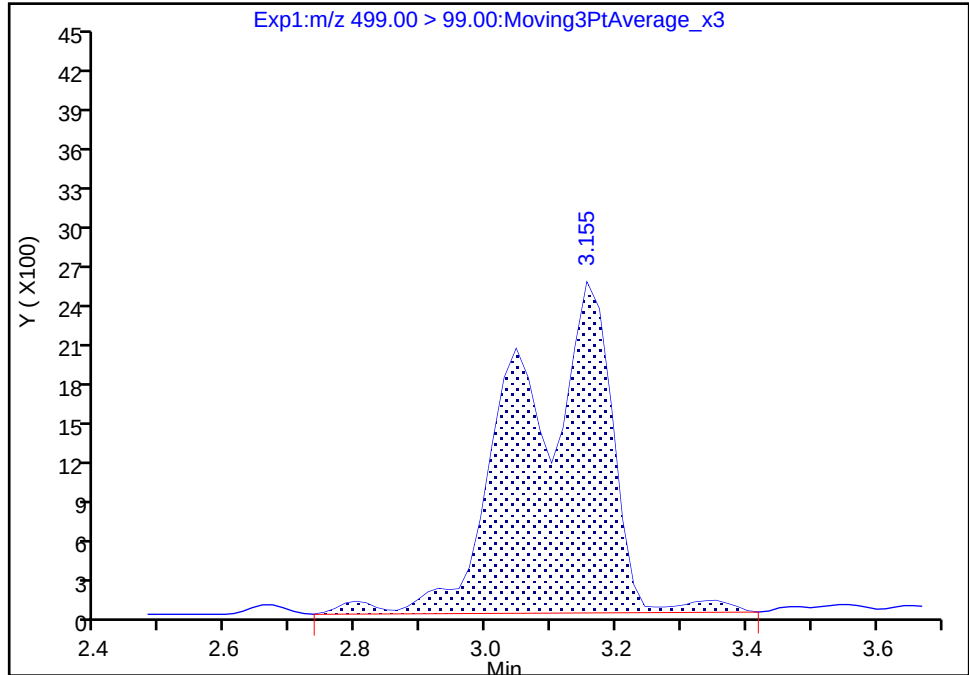
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_021.d
Injection Date: 10-Sep-2018 12:54:47 Instrument ID: A9
Lims ID: 480-140926-A-5-A Lab Sample ID: 320-140926-5
Client ID: DUP-01 (082718)
Operator ID: A9\Administrator ALS Bottle#: 14 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

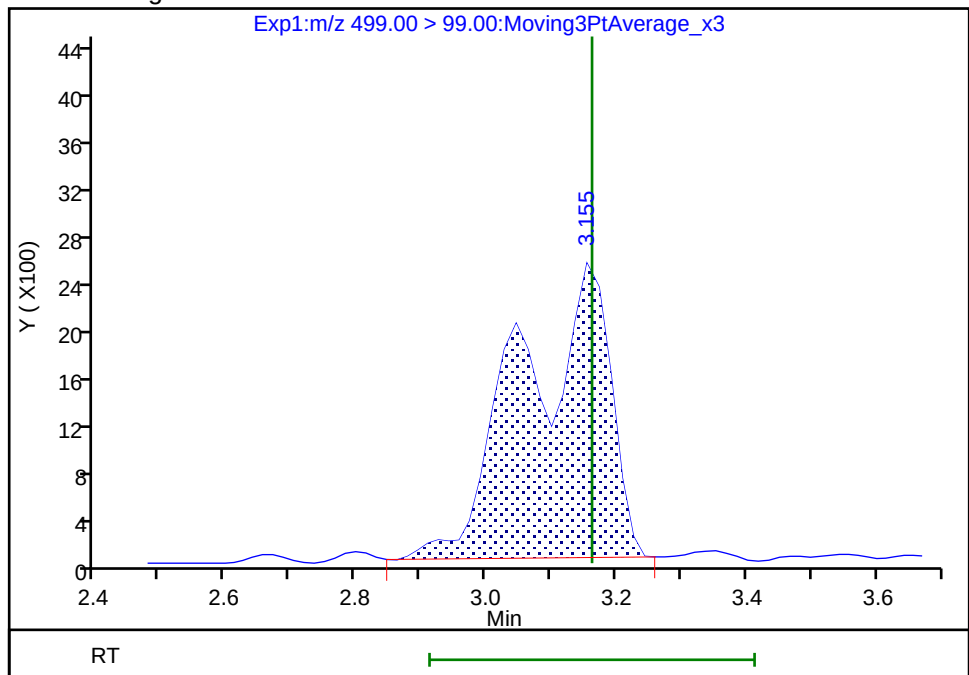
RT: 3.16
Area: 24910
Amount: 0.059934
Amount Units: ng/ml

Processing Integration Results



RT: 3.16
Area: 23198
Amount: 0.057414
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 08:04:00

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-242498/2	2018.08.28LLICALA_005.d
Level 2	IC 320-242498/3	2018.08.28LLICALA_006.d
Level 3	IC 320-242498/4	2018.08.28LLICALA_007.d
Level 4	IC 320-242498/5	2018.08.28LLICALA_008.d
Level 5	IC 320-242498/6	2018.08.28LLICALA_009.d
Level 6	IC 320-242498/7	2018.08.28LLICALA_010.d
Level 7	IC 320-242498/8	2018.08.28LLICALA_011.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorobutanoic acid (PFBA)	1.489	1.489	1.483	1.489	1.484	1.484	1.484				1.236 - 1.736	1.486
Perfluoropentanoic acid (PFPeA)	1.756	1.764	1.764	1.764	1.756	1.756	1.756				1.509 - 2.009	1.759
Perfluorobutanesulfonic acid (PFBS)	1.798	1.797	1.797	1.797	1.797	1.798	1.797				1.547 - 2.047	1.797
4:2 FTS	2.018	2.017	2.007	2.017	2.007	2.007	2.007				1.762 - 2.262	2.011
Perfluorohexanoic acid (PFHxA)	2.048	2.048	2.048	2.048	2.048	2.048	2.048				1.798 - 2.298	2.048
Perfluoropentanesulfonic acid (PFPeS)	2.079	2.068	2.068	2.079	2.069	2.069	2.068				1.821 - 2.321	2.071
HFPO-DA (GenX)	2.151	2.150	2.150	2.150	2.150	2.140	2.150				1.899 - 2.399	2.149
Perfluoroheptanoic acid (PFHpA)	2.387	2.387	2.387	2.387	2.387	2.387	2.387				2.137 - 2.637	2.387
Perfluorohexanesulfonic acid (PFHxS)	2.400	2.400	2.400	2.400	2.400	2.400	2.400				2.150 - 2.650	2.400
DONA	2.440	2.439	2.426	2.439	2.426	2.426	2.426				2.182 - 2.682	2.432
6:2 FTS	2.735	2.735	2.735	2.735	2.719	2.719	2.719				2.478 - 2.978	2.728
Perfluorooctanoic acid (PFOA)	2.751	2.751	2.751	2.751	2.751	2.751	2.751				2.501 - 3.001	2.751
Perfluoroheptanesulfonic Acid (PFHpS)	2.767	2.767	2.767	2.767	2.751	2.751	2.751				2.510 - 3.010	2.760
Perfluorononanoic acid (PFNA)	3.137	3.136	3.136	3.136	3.136	3.136	3.136				2.886 - 3.386	3.136
Perfluorooctanesulfonic acid (PFOS)	3.137	3.136	3.136	3.136	3.136	3.136	3.136				2.886 - 3.386	3.136
F-53B Major	3.353	3.352	3.353	3.352	3.336	3.336	3.336				3.096 - 3.596	3.345
Perfluorooctane Sulfonamide (FOSA)	3.467	3.467	3.467	3.467	3.467	3.467	3.467				3.217 - 3.717	3.467
Perfluorononanesulfonic acid (PFNS)	3.483	3.482	3.482	3.482	3.483	3.483	3.482				3.233 - 3.733	3.482
8:2 FTS	3.499	3.482	3.482	3.482	3.483	3.483	3.482				3.235 - 3.735	3.485
Perfluorodecanoic acid (PFDA)	3.499	3.498	3.498	3.498	3.498	3.498	3.498				3.248 - 3.748	3.498
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.658	3.657	3.657	3.657	3.657	3.643	3.643				3.403 - 3.903	3.653
Perfluorodecanesulfonic acid (PFDS)	3.810	3.810	3.810	3.809	3.810	3.794	3.810				3.557 - 4.057	3.808
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	3.826	3.825	3.825	3.825	3.826	3.826	3.825				3.575 - 4.075	3.825
Perfluoroundecanoic acid (PFUnA)	3.826	3.825	3.825	3.825	3.826	3.826	3.825				3.575 - 4.075	3.825
F-53B Minor	3.995	3.978	3.978	3.993	3.978	3.978	3.978				3.733 - 4.233	3.983
Perfluorododecanoic acid (PFDoA)	4.126	4.125	4.125	4.125	4.109	4.109	4.108				3.868 - 4.368	4.118
10:2 FTS	4.126	4.125	4.125	4.125	4.125	4.109	4.108				3.870 - 4.370	4.120
Perfluorododecanesulfonic acid (PFDoS)	4.360	4.359	4.360	4.360	4.360	4.360	4.360				4.110 - 4.610	4.360
Perfluorotridecanoic Acid (PFTriA)	4.391	4.390	4.391	4.390	4.376	4.375	4.375				4.134 - 4.634	4.384
Perfluorotetradecanoic acid (PFTeA)	4.633	4.629	4.630	4.629	4.633	4.630	4.633				4.381 - 4.881	4.631
Perfluoro-n-hexadecanoic acid (PFHxDA)	5.062	5.058	5.059	5.058	5.045	5.042	+++++				4.803 - 5.303	5.054
Perfluoro-n-octadecanoic acid (PFODA)	5.436	5.420	5.419	5.418	5.408	5.406	5.408				5.166 - 5.666	5.416

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C4 PFBA	1.484	1.489	1.483	1.489	1.484	1.484	1.484				1.235 - 1.735	1.485
13C5 PFPeA	1.756	1.764	1.756	1.764	1.756	1.756	1.756				1.508 - 2.008	1.758
13C3-PFBS	1.798	1.797	1.797	1.797	1.797	1.789	1.797				1.546 - 2.046	1.796
M2-4:2FTS	2.018	2.017	2.017	2.017	2.007	2.007	2.007				1.763 - 2.263	2.013
13C2 PFHxA	2.048	2.048	2.048	2.048	2.048	2.048	2.048				1.798 - 2.298	2.048
13C3 HFPO-DA	2.151	2.150	2.150	2.150	2.150	2.150	2.150				1.900 - 2.400	2.150
13C4-PFHpA	2.387	2.387	2.387	2.387	2.387	2.387	2.387				2.137 - 2.637	2.387
18O2 PFHxS	2.400	2.400	2.400	2.400	2.400	2.400	2.400				2.150 - 2.650	2.400
M2-6:2FTS	2.735	2.735	2.735	2.735	2.719	2.719	2.719				2.478 - 2.978	2.728
13C8 PFOA	2.751	2.751	2.751	2.751	2.735	2.735	2.735				2.494 - 2.994	2.744
13C4 PFOA	2.751	2.751	2.751	2.751	2.751	2.751	2.751				2.501 - 3.001	2.751
13C8 PFOS	3.137	3.136	3.136	3.136	3.118	3.118	3.118				2.879 - 3.379	3.128
13C4 PFOS	3.137	3.136	3.136	3.136	3.136	3.136	3.136				2.886 - 3.386	3.136
13C5 PFNA	3.137	3.136	3.136	3.136	3.136	3.136	3.136				2.886 - 3.386	3.136
13C8 FOSA	3.467	3.467	3.467	3.467	3.467	3.467	3.467				3.217 - 3.717	3.467
M2-8:2FTS	3.499	3.482	3.482	3.482	3.483	3.483	3.482				3.235 - 3.735	3.485
13C2 PFDA	3.499	3.498	3.498	3.498	3.498	3.498	3.498				3.248 - 3.748	3.498
d3-NMeFOSAA	3.658	3.657	3.657	3.657	3.643	3.643	3.643				3.401 - 3.901	3.651
d5-NEtFOSAA	3.826	3.825	3.825	3.825	3.810	3.810	3.810				3.569 - 4.069	3.819
13C2 PFUnA	3.826	3.825	3.825	3.825	3.826	3.826	3.825				3.575 - 4.075	3.825
13C2 PFDoA	4.126	4.125	4.125	4.125	4.109	4.109	4.108				3.868 - 4.368	4.118
13C2-PFTeDA	4.633	4.629	4.630	4.629	4.633	4.630	4.615				4.378 - 4.878	4.628
13C2-PFHxDA	5.062	5.058	5.059	5.058	5.045	5.042	5.045				4.803 - 5.303	5.053

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-242498/2	2018.08.28LLICALA_005.d
Level 2	IC 320-242498/3	2018.08.28LLICALA_006.d
Level 3	IC 320-242498/4	2018.08.28LLICALA_007.d
Level 4	IC 320-242498/5	2018.08.28LLICALA_008.d
Level 5	IC 320-242498/6	2018.08.28LLICALA_009.d
Level 6	IC 320-242498/7	2018.08.28LLICALA_010.d
Level 7	IC 320-242498/8	2018.08.28LLICALA_011.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C8 PFOA	2950599 2798018	3041430 2826233	2912930 2810860	2902323	Ave		2891770.26				3.0		50.0			
13C8 PFOS	503549 515446	544019 493408	527515 500589	510741	Ave		513609.504				3.4		50.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498
SDG No.: _____
Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

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 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.8927 0.9116	0.8954 0.8679	0.9443	0.9529	0.9250	AveID		0.9128				3.3		35.0			
Perfluoropentanoic acid (PFPeA)	1.0749 0.9802	1.1009 0.9016	1.0098	1.0241	1.0081	AveID		1.0142				6.4		35.0			
Perfluorobutanesulfonic acid (PFBS)	107.38 104.12	107.86 86.752	107.68	107.88	113.78	AveID		105.06				8.2		50.0			
4:2 FTS	22.077 21.958	24.055 19.139	20.776	21.704	21.556	AveID		21.609				6.8		50.0			
Perfluorohexanoic acid (PFHxA)	1.0587 0.8313	0.9607 0.7919	0.8893	0.9289	0.9138	AveID		0.9107				9.6		35.0			
Perfluoropentanesulfonic acid (PFPeS)	52.424 51.169	50.750 43.829	49.787	48.669	52.488	AveID		49.874				6.0		50.0			
HFPO-DA (GenX)	1.7877 1.8120	1.8768 1.6992	1.6553	1.7368	1.8094	AveID		1.7682				4.3		35.0			
Perfluoroheptanoic acid (PFHpA)	1.0818 0.9815	1.0173 0.8823	1.0810	1.0765	1.0176	AveID		1.0197				7.1		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3769 1.2002	1.4155 1.1259	1.1598	1.1188	1.2648	AveID		1.2374				9.7		35.0			
DONA	2.6233 2.4518	2.8435 2.1250	2.7175	2.7917	2.5443	AveID		2.5853				9.5		50.0			
6:2 FTS	2.3795 2.1598	1.9035 2.0910	2.1061	2.2987	2.0425	AveID		2.1401				7.4		35.0			
Perfluorooctanoic acid (PFOA)	1.2591 0.9395	1.2418 0.8788	1.1012	1.1239	0.9894	AveID		1.0762				13.6		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	0.9739 0.9937	1.0074 0.9395	0.9316	1.0199	1.0262	AveID		0.9846				3.8		50.0			
Perfluorononanoic acid (PFNA)	0.9784 0.9314	0.9989 0.8380	1.0334	1.0251	1.0400	AveID		0.9779				7.4		35.0			
Perfluorooctanesulfonic acid (PFOS)	1.0369 1.0829	1.1378 1.0313	0.9847	1.0387	1.0737	AveID		1.0551				4.6		35.0			
F-53B Major	1.2015 1.1544	1.2911 1.0614	1.1017	1.1550	1.1411	AveID		1.1580				6.3		50.0			
Perfluorooctane Sulfonamide (FOSA)	2.9240 2.8542	3.1961 2.4575	3.1668	3.1126	3.0350	AveID		2.9638				8.6		35.0			
Perfluorononanesulfonic acid (PFNS)	0.6306 0.6719	0.7244 0.6076	0.5845	0.6733	0.6287	AveID		0.6458				7.3		50.0			
8:2 FTS	16.922 14.257	16.064 14.985	14.493	13.879	15.370	AveID		15.139				7.1		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498
SDG No.: _____
Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

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 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorodecanoic acid (PFDA)	1.0698 1.0175	1.3625 0.9134	1.2465	1.1597	1.1991	AveID		1.1384				13.2		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.0006 1.0203	1.0031 0.9147	1.0172	1.0286	0.9722	AveID		0.9938				4.0		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.6624 0.8237	0.9114 0.8004	0.7860	0.8637	0.8457	AveID		0.8133				9.7		50.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.1494 0.9525	0.8021 0.9059	0.9226	0.8817	0.8950	AveID		0.9299				11.5		35.0			
Perfluoroundecanoic acid (PFUnA)	1.1176 0.8386	0.9636 0.7797	0.8634	0.8880	0.8291	AveID		0.8971				12.6		35.0			
F-53B Minor	1.2022 1.2489	1.3181 1.1930	1.3083	1.3455	1.3323	AveID		1.2783				4.9		50.0			
Perfluorododecanoic acid (PFDoA)	1.0185 0.9775	1.1442 0.7672	1.0634	1.0760	1.0082	AveID		1.0079				11.8		35.0			
10:2 FTS	10.502 9.9785	10.726 10.178	9.8935	9.1319	10.690	AveID		10.157				5.5		50.0			
Perfluorododecanesulfonic acid (PFDoS)	0.1171 0.0950	0.0748 0.0991	0.0859	0.0900	0.0888	AveID		0.0930				14.1		50.0			
Perfluorotridecanoic Acid (PFTriA)	0.9028 0.7663	0.8711 0.6019	0.8424	0.8131	0.8186	AveID		0.8023				12.3		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.1638 0.1615	0.1607 0.1547	0.1708	0.1595	0.1591	AveID		0.1614				3.1		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7020 0.8887	1.4192 +++++	1.0270	0.9518	0.9363	LlID	0.0230	0.9030							0.9990		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.6395 0.6446	0.6573 0.5940	0.6563	0.6110	0.6608	AveID		0.6377				4.0		50.0			
13C4 PFBA	0.9405 1.0096	0.9644 0.9619	0.9327	0.9807	0.9467	Ave		0.9623				2.7		50.0			
13C5 PFPeA	0.8460 0.8928	0.8591 0.8383	0.8447	0.8853	0.8424	Ave		0.8584				2.6		50.0			
13C3-PFBS	0.0108 0.0116	0.0113 0.0119	0.0109	0.0119	0.0105	Ave		0.0113				4.9		50.0			
M2-4:2FTS	0.0955 0.0989	0.1027 0.0930	0.0935	0.1004	0.0940	Ave		0.0968				3.9		50.0			
13C2 PFHxA	0.8705 0.9435	0.9268 0.8949	0.9126	0.9125	0.8918	Ave		0.9075				2.7		50.0			
13C3 HFPO-DA	0.1054 0.0983	0.0934 0.1068	0.0996	0.0947	0.0906	Ave		0.0984				6.2		50.0			
13C4-PFHpA	1.0624 1.0891	1.1339 1.0454	1.0894	1.0940	1.0613	Ave		1.0822				2.7		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

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 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
18O2 PFHxS	0.6471 0.6934	0.6840 0.6372	0.6680	0.7016	0.6274	Ave		0.6655				4.3		50.0			
M2-6:2FTS	0.1058 0.1069	0.1096 0.0989	0.1068	0.1114	0.1050	Ave		0.1063				3.7		50.0			
13C4 PFOA	1.0772 1.0353	0.9932 0.9391	0.9888	1.0020	1.0174	Ave		1.0076				4.2		50.0			
13C4 PFOS	0.7090 0.7233	0.7126 0.6669	0.7361	0.7341	0.7237	Ave		0.7151				3.3		50.0			
13C5 PFNA	0.9204 0.9719	0.9572 0.9051	0.9819	0.9602	0.9095	Ave		0.9437				3.3		50.0			
13C8 FOSA	0.3749 0.3702	0.3999 0.3657	0.3716	0.3987	0.3672	Ave		0.3783				3.9		50.0			
M2-8:2FTS	0.0168 0.0154	0.0159 0.0130	0.0161	0.0173	0.0150	Ave		0.0156				9.0		50.0			
13C2 PFDA	0.9701 0.9577	0.9673 0.8828	0.9334	0.9650	0.9217	Ave		0.9426				3.4		50.0			
d3-NMeFOSAA	0.4114 0.4319	0.4324 0.4231	0.4248	0.4150	0.4355	Ave		0.4249				2.2		50.0			
d5-NEtFOSAA	0.3232 0.3152	0.3634 0.3012	0.3465	0.3544	0.3357	Ave		0.3342				6.7		50.0			
13C2 PFUnA	0.7731 0.8292	0.8518 0.7395	0.8015	0.8134	0.8075	Ave		0.8023				4.6		50.0			
13C2 PFDoA	0.9715 0.9794	0.9938 0.9968	0.9290	0.9689	0.9919	Ave		0.9759				2.4		50.0			
13C2-PFTeDA	0.7780 0.7753	0.8260 0.7640	0.7336	0.7602	0.8050	Ave		0.7774				3.9		50.0			
13C2-PFHxDA	0.8072 0.8373	0.8184 0.8172	0.7701	0.6493	0.8177	Ave		0.7882				8.2		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-242498/2	2018.08.28LLICALA_005.d
Level 2	IC 320-242498/3	2018.08.28LLICALA_006.d
Level 3	IC 320-242498/4	2018.08.28LLICALA_007.d
Level 4	IC 320-242498/5	2018.08.28LLICALA_008.d
Level 5	IC 320-242498/6	2018.08.28LLICALA_009.d
Level 6	IC 320-242498/7	2018.08.28LLICALA_010.d
Level 7	IC 320-242498/8	2018.08.28LLICALA_011.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C8 PFOA	Ave	7221591 6917205	7443899 6879581	7129395	7103435	6848148	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C8 PFOS	Ave	1203481 1179245	1300205 1196408	1260760	1220672	1231916	2.39 2.39	2.39 2.39	2.39	2.39	2.39

Curve Type Legend:

Ave = Average

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-242498/2	2018.08.28LLICALA_005.d
Level 2	IC 320-242498/3	2018.08.28LLICALA_006.d
Level 3	IC 320-242498/4	2018.08.28LLICALA_007.d
Level 4	IC 320-242498/5	2018.08.28LLICALA_008.d
Level 5	IC 320-242498/6	2018.08.28LLICALA_009.d
Level 6	IC 320-242498/7	2018.08.28LLICALA_010.d
Level 7	IC 320-242498/8	2018.08.28LLICALA_011.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	71445 14983771	148472 27502138	771594	3143317	7216590	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	77378 14249697	162630 24900282	747283	3049788	6999092	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	86842 17343386	185053 30003262	910651	3828010	8735294	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	18865 3864378	43604 6993719	185640	813711	1748471	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	78425 12770869	153085 23347053	710995	2851130	6716098	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	44988 9043779	92389 16084327	446776	1832484	4275802	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	16040 2900205	30149 5979686	144461	552949	1350318	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	97799 17404274	198338 30385284	1031715	3961330	8899700	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	69000 12331061	151487 21506619	617641	2402576	5950574	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	149099 27199824	328200 43974663	1650815	6494207	14294164	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	20316 3562961	33995 6460415	186850	816302	1675863	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	115524 15852050	212266 27214840	954853	3792013	8304297	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	55943 11141173	117514 19649006	571922	2397620	5826744	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorononanoic acid (PFNA)		AveID	76629 14738364	164410 24988022	888927	3310854	7795005	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	58058 11834862	129377 21024940	589276	2380254	5942729	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
F-53B Major		AveID	67563 12670914	147444 21731125	662154	2658307	6342999	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctane Sulfonamide (FOSA)		AveID	93280 17204061	219730 29608945	1031117	4174038	9183356	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorononanesulfonic acid (PFNS)		AveID	36528 7596364	85204 12812955	361865	1596059	3599772	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
8:2 FTS		AveID	23158 3415181	42130 6151127	196079	773601	1820247	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorodecanoic acid (PFDA)		AveID	88314 15866006	226611 26563468	1019290	3764333	9108633	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	35030 7175328	74575 12749037	378563	1435862	3489405	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	38530 9351668	107648 16951122	488613	2056125	4862491	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	31607 4889294	50114 8988864	280096	1051106	2476305	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	73524 11321464	141127 18994666	606238	2429610	5517545	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	68328 13855585	152144 24688548	794765	3129936	7485003	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	84200 15587157	195509 25191162	865534	3507055	8241309	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	14462 2405218	28306 4204181	134692	512179	1273893	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	6838 1083101	8877 2106595	53596	215153	512801	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic Acid (PFTriA)		AveID	74635 12220220	148840 19763356	685651	2650027	6691746	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	10843 2038535	22816 3893936	109761	407853	1055743	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L1ID	116904 12115938	199686 +++++	692910	2078803	6310009	0.0250 5.00	0.0500 +++++	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	43928 8788349	92487 15992370	442803	1334498	4453206	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	8002830 8218830	8291131 7921655	8171064	8247082	7801898	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	7198766 7268510	7385908 6904215	7400409	7445050	6942787	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PF OA	Ave	85084 87618	90247 90962	88972	93328	80767	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PF OA	Ave	759048 751690	824589 715177	764687	788951	723431	2.34 2.34	2.34 2.34	2.34	2.34	2.34

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1 Analy Batch No.: 242498

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/28/2018 10:20 Calibration End Date: 08/28/2018 11:05 Calibration ID: 40822

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C2 PFHxA	13PF OA	Ave	7407564 7681141	7967390 7370188	7995321	7673418	7349652	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	897253 800298	803202 879762	872697	795942	746274	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4-PFHpA	13PF OA	Ave	9040528 8866287	9747881 8609256	9544033	9199599	8746068	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	5209326 5340279	5562863 4964565	5536160	5581192	4891052	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PF OA	Ave	855608 826593	894847 774049	889043	889676	822215	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	9166204 8428311	8538141 7734289	8662621	8426167	8384516	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	5768085 5629385	5856894 5250354	6165020	5901987	5701715	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	7831909 7912109	8229151 7454345	8602003	8074769	7495131	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	3190191 3013781	3437498 3012041	3255994	3352554	3025791	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2FTS	13PF OA	Ave	136855 119770	131131 102619	135294	139344	118425	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	8255368 7796459	8316028 7270400	8177178	8114874	7596034	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	3501055 3516347	3717380 3484339	3721760	3489761	3589091	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	2749959 2566441	3123931 2480748	3035794	2980380	2766889	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	6578448 6750273	7323152 6090404	7021910	6840404	6654794	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	8266827 7973084	8543283 8209254	8139014	8148044	8174334	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	6620523 6312069	7100968 6291947	6427054	6392553	6634077	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	6868821 6816429	7035360 6730496	6746927	5459924	6738965	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L1ID = Linear 1/conc IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_005.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 28-Aug-2018 10:20:47 ALS Bottle#: 10 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD1
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 28-Aug-2018 13:27:18 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: roycea

Date: 28-Aug-2018 10:56:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.484	1.485	-0.001	0.539	8002830	2.44		97.7	27886	
2 Perfluorobutyric acid										
212.90 > 169.00	1.489	1.486	0.003	1.004	71445	0.0245		97.8	12.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.756	1.758	-0.002	0.638	7198766	2.46		98.6	14481	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.756	1.759	-0.003	1.000	77378	0.0265		106	10.6	
D 47 13C3-PFBS										
301.90 > 83.00	1.798	1.796	0.002	0.653	85084	2.22		95.4	655	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.798	1.797	0.001	1.000	86842	0.0226		102	67.1	
298.90 > 99.00	1.798	1.797	0.001	1.000	30121		2.88(1.35-4.05)	102	41.8	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.018	2.012	0.006	1.122	18865	0.0239		102	175	
D 60 M2-4:2FTS										
329.00 > 81.00	2.018	2.013	0.005	0.733	759048	2.30		98.6	913	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.048	0.0	0.745	7407564	2.40		95.9	6826	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.048	2.048	0.0	1.000	78425	0.0291		116	24.7	
313.00 > 119.00	2.059	2.048	0.011	1.005	5659		13.86(6.96-20.87)	116	10.4	M
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.079	2.071	0.008	1.157	44988	0.0246		105	158	
349.00 > 99.00	2.079	2.071	0.008	1.157	22028		2.04(1.15-3.45)	105	65.6	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.151	2.149	0.002	1.000	16040	0.0253		101	10.1	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.151	2.150	0.001	0.782	897253	2.68		107	2826	
D 9 13C4-PFHpA										
367.00 > 322.00	2.387	2.387	0.0	0.868	9040528	2.45		98.2	12366	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.387	0.0	1.000	97799	0.0265		106	18.3	
363.00 > 169.00	2.387	2.387	0.0	1.000	24009		4.07(2.17-6.52)	106	59.9	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	69000	0.0253		111	106	
399.00 > 99.00	2.400	2.400	0.0	1.000	27099		2.55(1.90-5.70)	111	46.1	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.872	5209326	2.30		97.2	9109	
76 DONA										
377.00 > 251.00	2.440	2.432	0.008	0.778	149099	0.0239		101	252	
377.00 > 85.00	2.427	2.432	-0.005	0.774	60160		2.48(1.13-3.39)	101	27.6	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.735	2.728	0.007	1.000	20316	0.0264		111	19.6	
D 12 M2-6:2FTS										
429.00 > 81.00	2.735	2.728	0.007	0.994	855608	2.36		99.5	1608	
D 73 13C8 PFOA										
421.00 > 376.00	2.751	2.744	0.007		7221591	2.50		102	12573	
D 14 13C4 PFOA										
417.00 > 372.00	2.751	2.751	0.0	1.000	9166204	2.67		107	11780	
* 62 13C2-PFOA										
415.00 > 370.00	2.751	2.751	0.0		8509573	2.50			16014	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.751	2.751	0.0	1.000	115524	0.0293		117	10.4	
413.00 > 169.00	2.751	2.751	0.0	1.000	37560		3.08(1.36-4.08)	117	76.6	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.767	2.760	0.007	0.882	55943	0.0235		98.9	107	
449.00 > 99.00	2.767	2.760	0.007	0.882	15538		3.60(1.84-5.53)	98.9	82.0	
D 72 13C8 PFOS										
507.00 > 99.00	3.137	3.129	0.008		1203481	2.34		98.0	3010	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.137	3.136	0.001	1.000	58058	0.0228		98.3	72.1	
499.00 > 99.00	3.137	3.136	0.001	1.000	17541		3.31(2.04-6.12)	98.3	65.7	
D 19 13C5 PFNA										
468.00 > 423.00	3.137	3.136	0.001	1.140	7831909	2.44		97.5	7738	
20 Perfluorononanoic acid										
463.00 > 419.00	3.137	3.136	0.001	1.000	76629	0.0250		100	10.7	
463.00 > 169.00	3.137	3.136	0.001	1.000	12902		5.94(2.68-8.03)	100	41.7	
D 18 13C4 PFOS										
503.00 > 80.00	3.137	3.136	0.001	1.140	5768085	2.37		99.2	3864	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.353	3.346	0.007	1.069	67563	0.0242		104	176	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.467	3.467	0.0	1.000	93280	0.0247		98.7	228	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.467	3.467	0.0	1.260	3190191	2.48		99.1	5962	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.483	3.483	0.0	1.110	36528	0.0234		97.6	114	
549.00 > 99.00	3.483	3.483	0.0	1.110	4232		8.63(3.02-9.05)	97.6	31.4	
D 26 M2-8:2FTS										
529.00 > 81.00	3.499	3.485	0.014	1.272	136855	2.57		107	714	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.499	3.485	0.014	1.000	23158	0.0268		112	85.1	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.499	3.498	0.001	1.000	88314	0.0235		94.0	15.0	R
513.00 > 169.00	3.499	3.498	0.001	1.000	4025		21.94(7.12-21.35)	94.0	11.6	R
D 23 13C2 PFDA										
515.00 > 470.00	3.499	3.498	0.001	1.272	8255368	2.57		103	5162	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.658	3.651	0.007	1.329	3501055	2.42		96.8	4446	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.658	3.653	0.005	1.000	35030	0.0252		101	12.3	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.810	3.807	0.003	1.215	38530	0.0196		81.4	54.3	
599.00 > 99.00	3.810	3.807	0.003	1.215	11643		3.31(2.14-6.43)	81.4	67.2	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.826	3.819	0.007	1.391	2749959	2.42		96.7	2024	
D 30 13C2 PFUnA										
565.00 > 520.00	3.826	3.825	0.001	1.391	6578448	2.41		96.4	5245	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.826	3.825	0.001	1.000	31607	0.0309		124	74.2	M
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.826	3.825	0.001	1.000	73524	0.0311		125	16.3	
563.00 > 169.00	3.826	3.825	0.001	1.000	7359		9.99(5.24-15.72)	125	36.6	
35 MeFOSA										
512.00 > 169.00	3.947	3.949	-0.002		19919	NC			79.1	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.995	3.983	0.012	1.273	68328	0.0221		94.0	239	M
37 Perfluorododecanoic acid										
613.00 > 569.00	4.126	4.118	0.008	1.000	84200	0.0253		101	18.4	M
613.00 > 169.00	4.126	4.118	0.008	1.000	7805		10.79(4.68-14.05)	101	21.4	M
D 36 13C2 PFDaA										
615.00 > 570.00	4.126	4.118	0.008	1.500	8266827	2.49		99.5	8398	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.126	4.120	0.006	1.179	14462	0.0249		103	46.4	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.142	4.142	0.0		17783	NC			58.6	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.360	4.360	0.0	1.390	6838	0.0305		126	15.1	
699.00 > 99.00	4.360	4.360	0.0	1.390	11677		0.59(0.28-0.83)	126	55.2	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.391	4.384	0.007	1.064	74635	0.0281		113	26.6	
663.00 > 169.00	4.391	4.384	0.007	1.064	9832		7.59(3.09-9.27)	113	30.5	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.633	4.628	0.005	1.684	6620523	2.50		100	8521	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.633	4.631	0.002	1.000	10843	0.0254		101	56.5	
713.00 > 219.00	4.633	4.631	0.002	1.000	7242		1.50(0.70-2.09)	101	46.8	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.062	5.053	0.009	1.000	116904	0.0217		86.7	26.4	
813.00 > 169.00	5.062	5.053	0.009	1.000	21077		5.55(2.77-8.32)	86.7	81.2	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.062	5.053	0.009	1.840	6868821	2.56		102	6421	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.436	5.416	0.020	1.074	43928	0.0251		100	14.8	
913.00 > 169.00	5.422	5.416	0.006	1.071	7329		5.99(2.55-7.64)	100	65.5	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_005.d

Injection Date: 28-Aug-2018 10:20:47

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

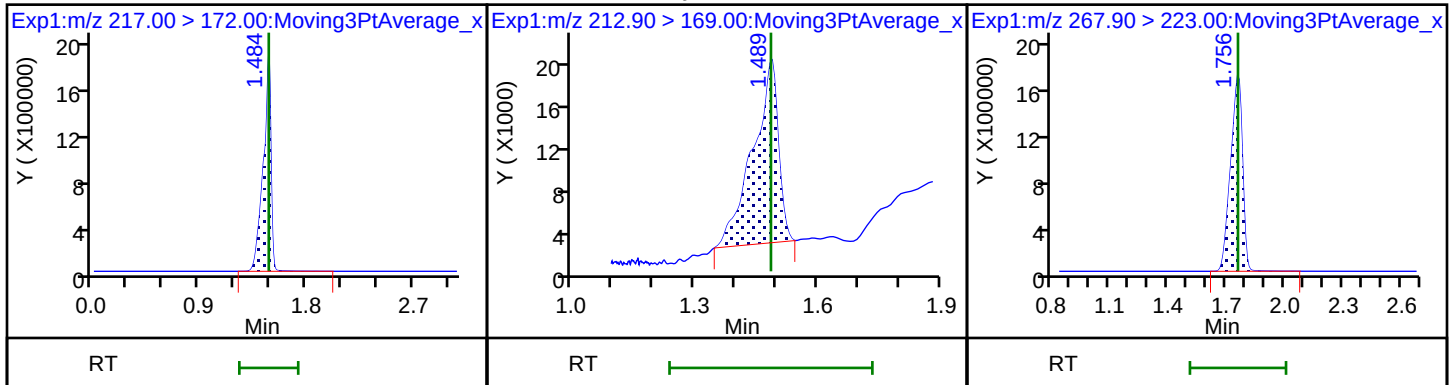
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

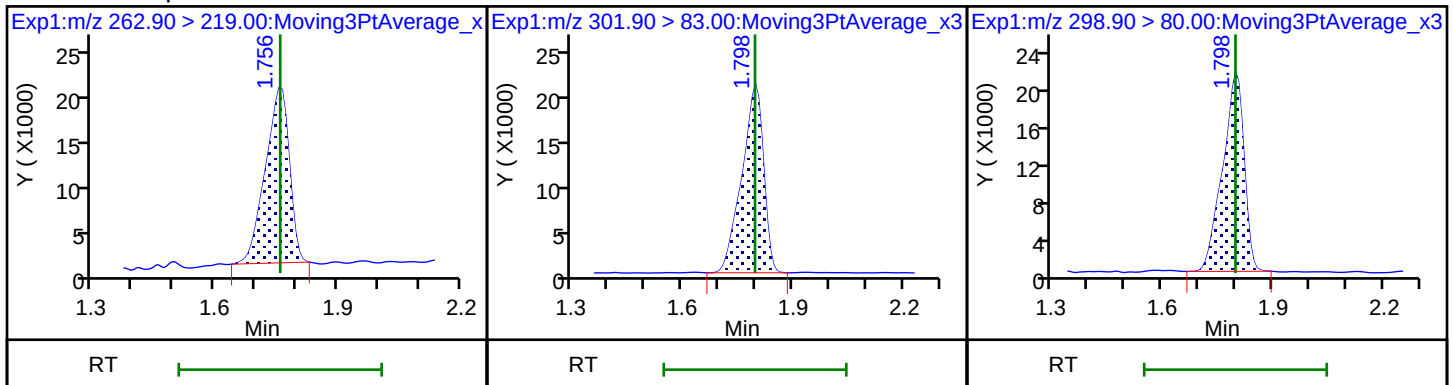
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

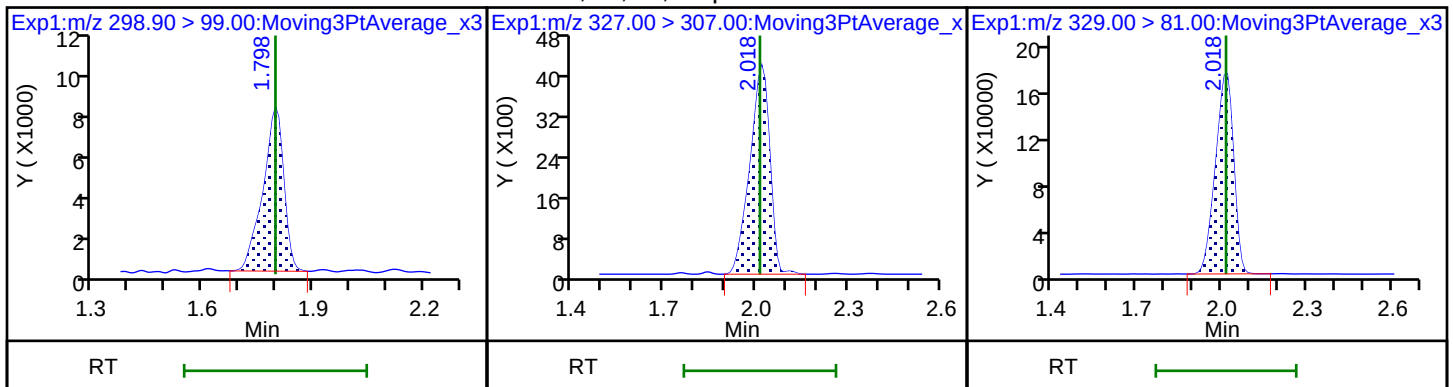
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

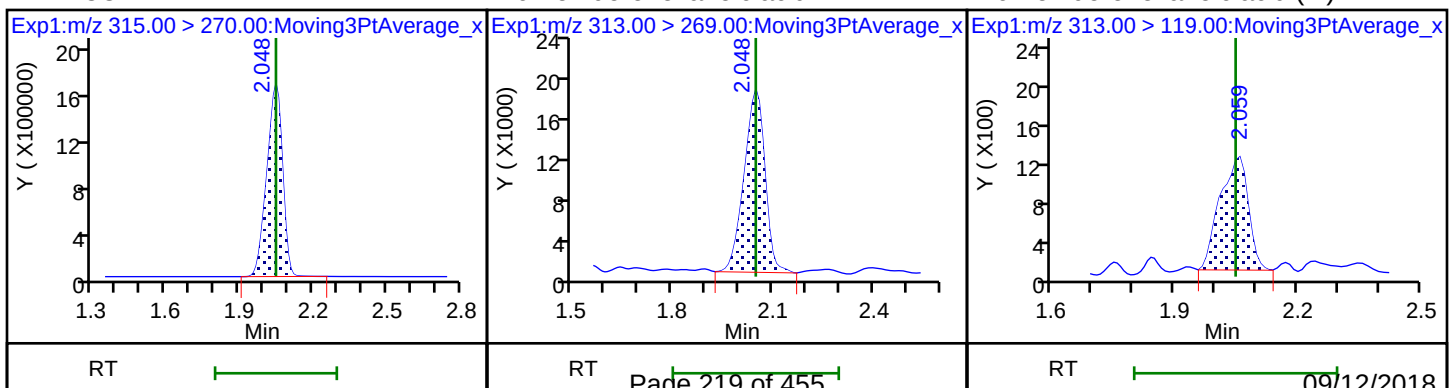
D 60 M2-4:2FTS

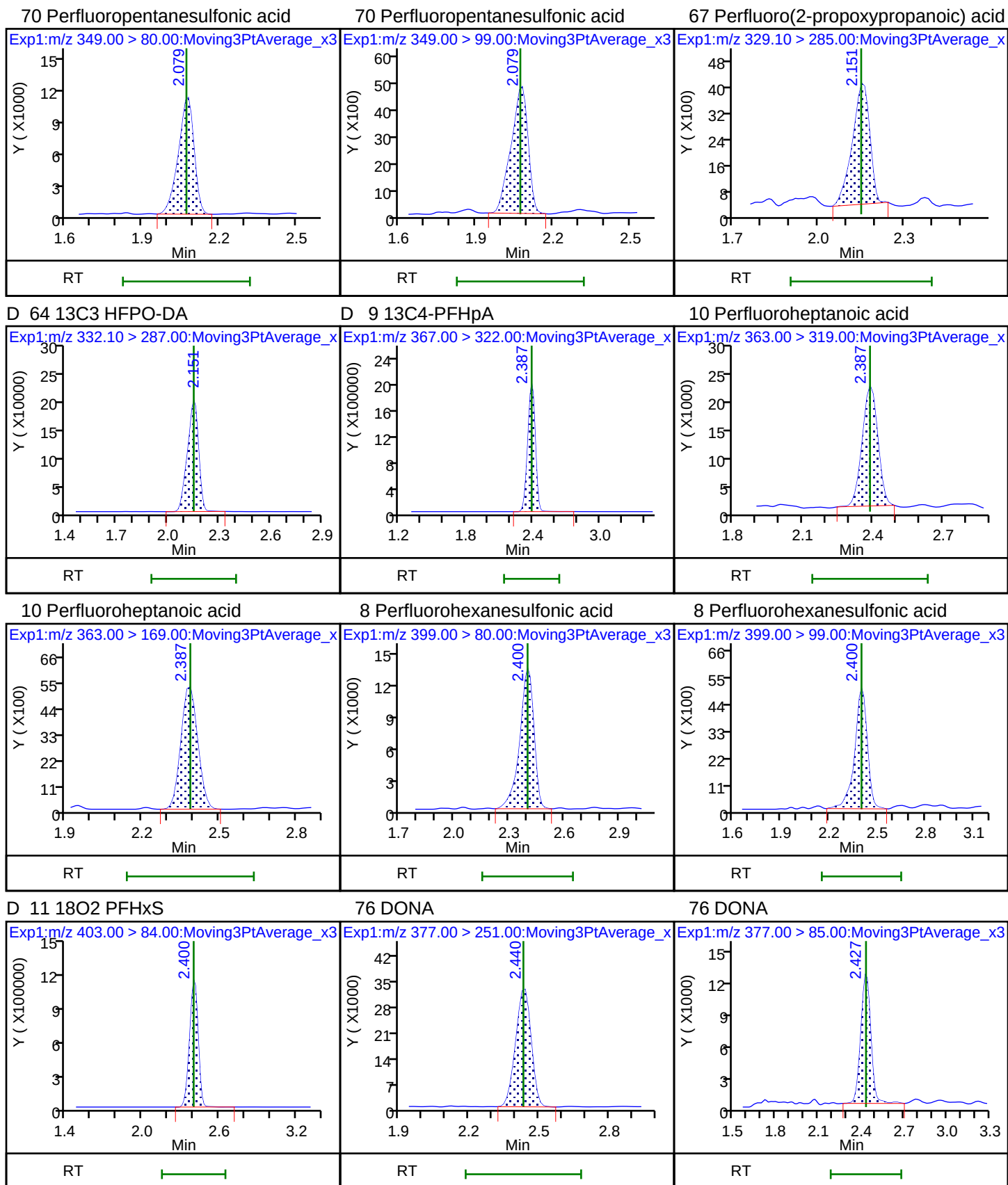


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

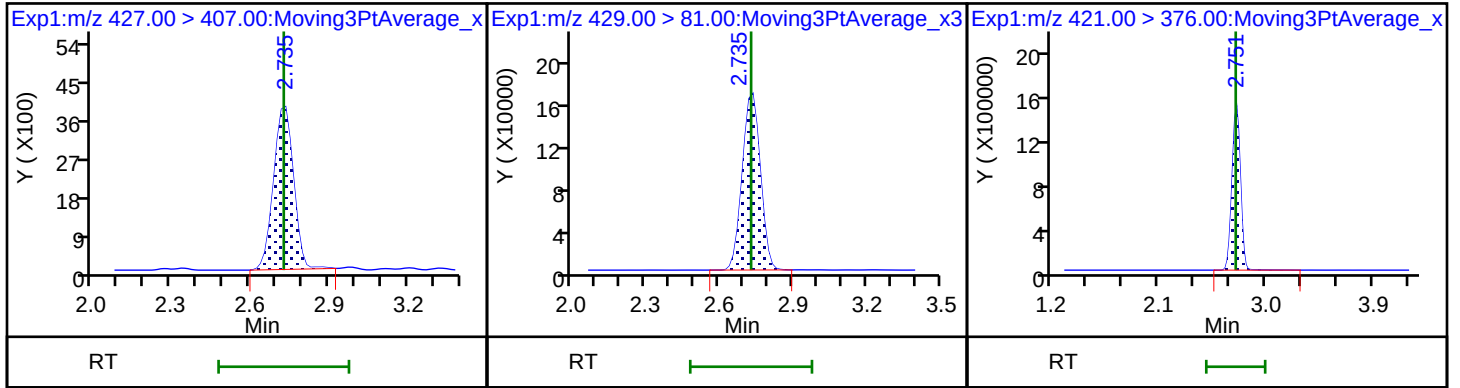
6 Perfluorohexanoic acid (M)





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

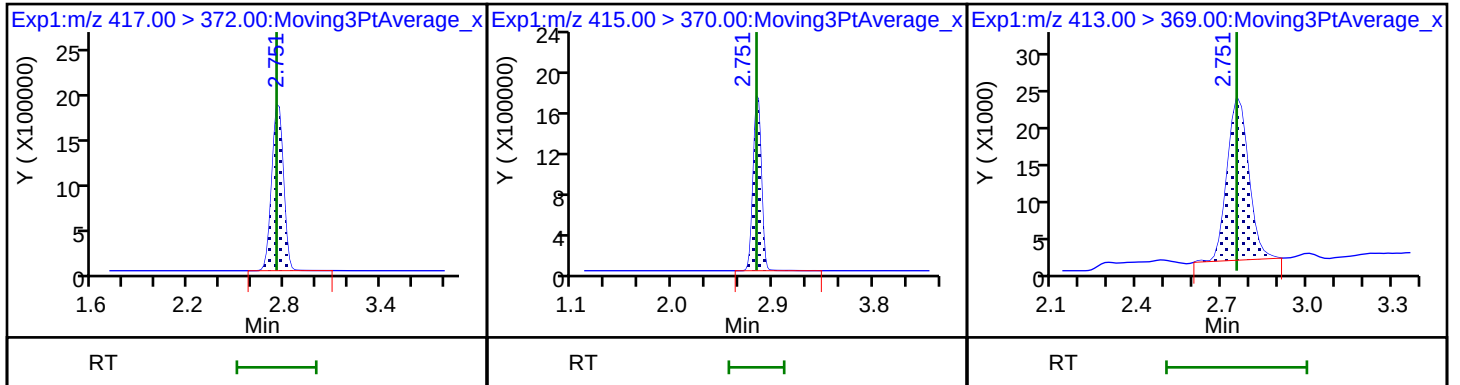
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

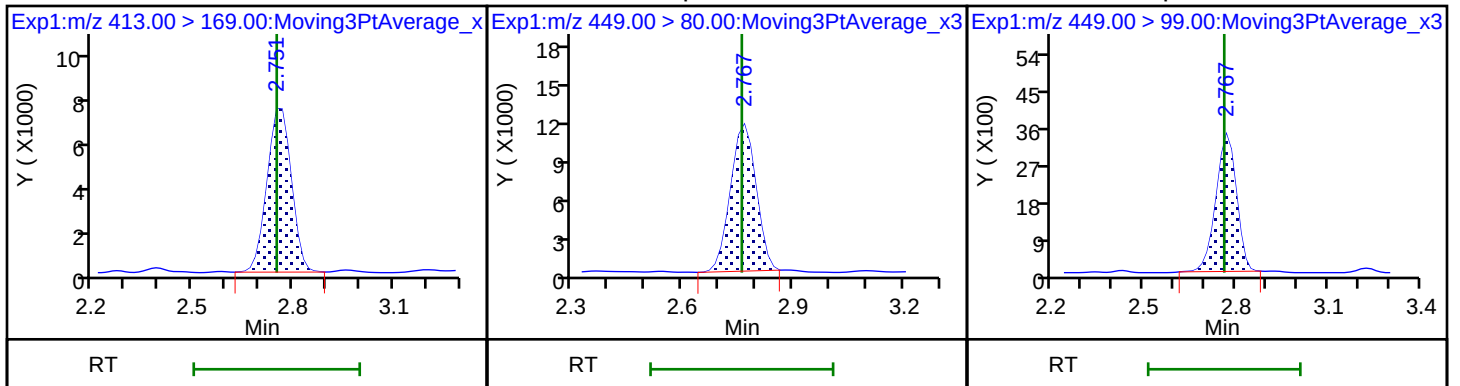
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

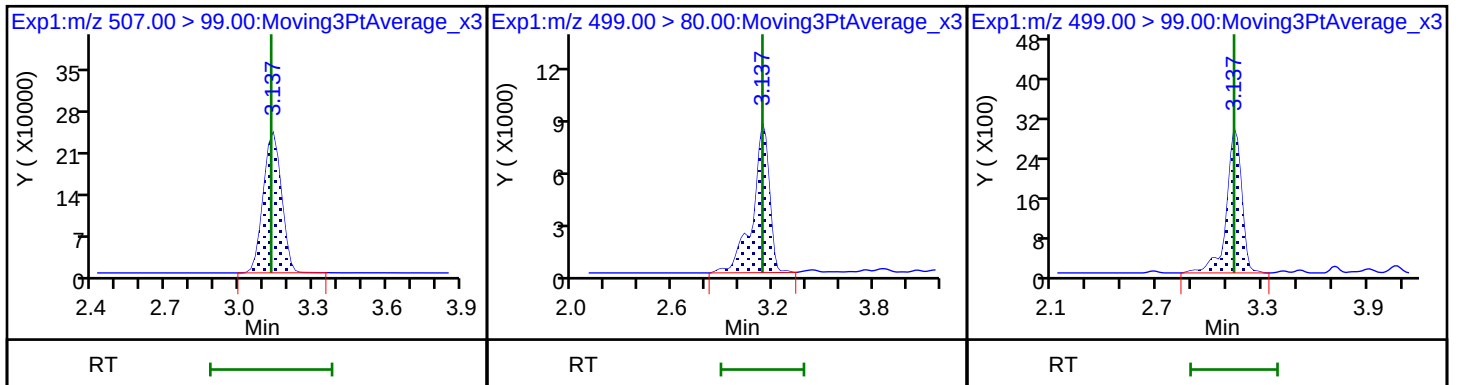
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid

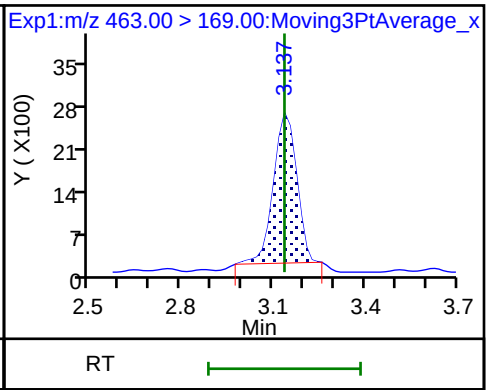
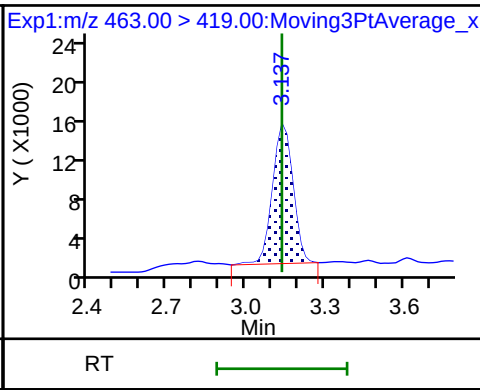
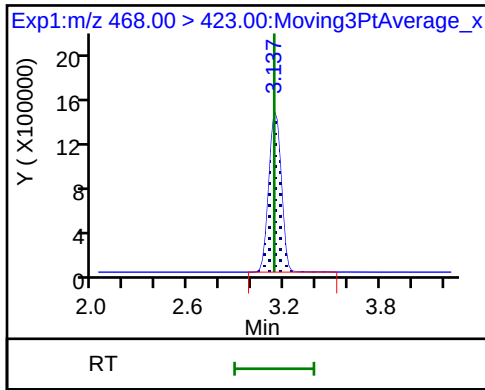
17 Perfluorooctane sulfonic acid



D 19 13C5 PFNA

20 Perfluorononanoic acid

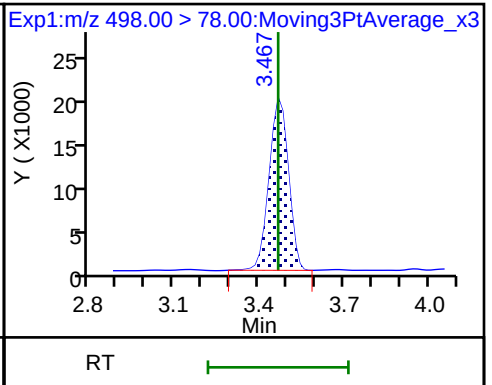
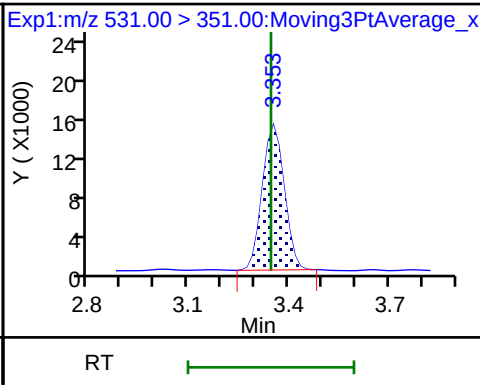
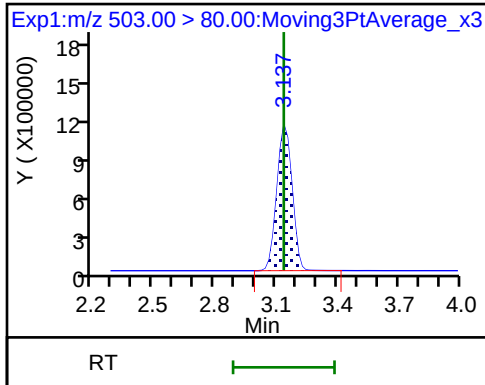
20 Perfluorononanoic acid



D 18 13C4 PFOS

69 9-Chlorohexadecafluoro-3-oxanonan

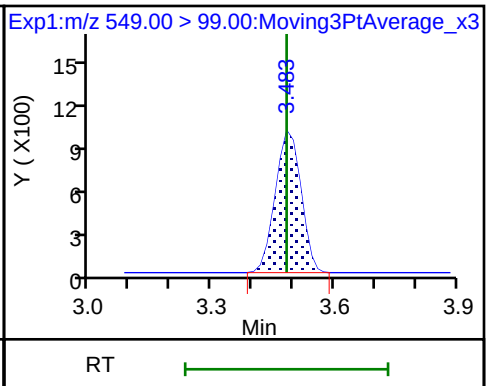
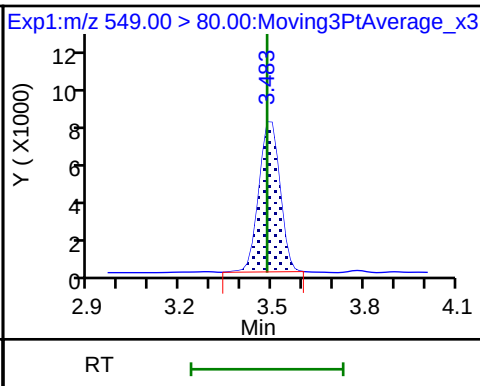
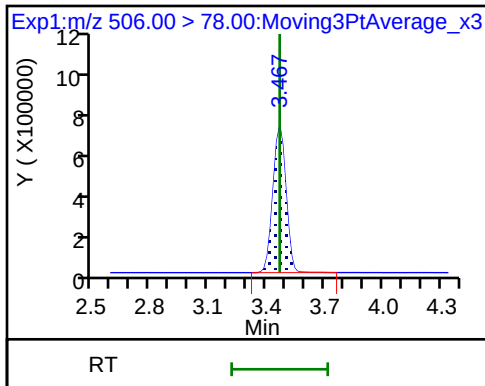
22 Perfluorooctane Sulfonamide



D 21 13C8 FOSA

68 Perfluorononanesulfonic acid

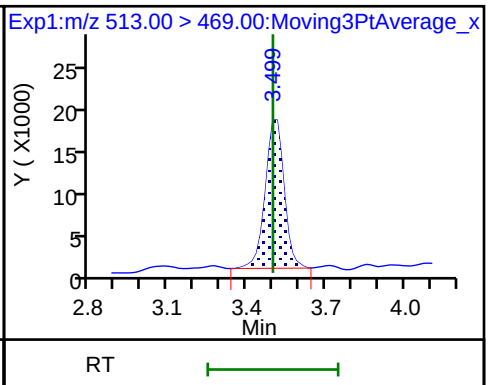
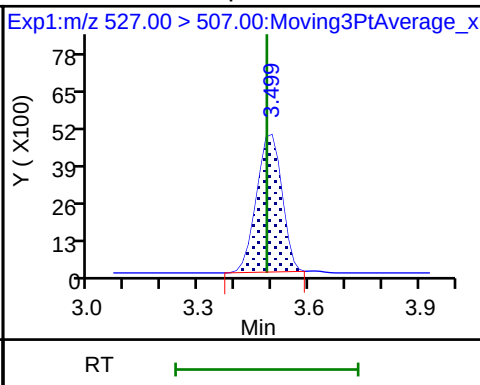
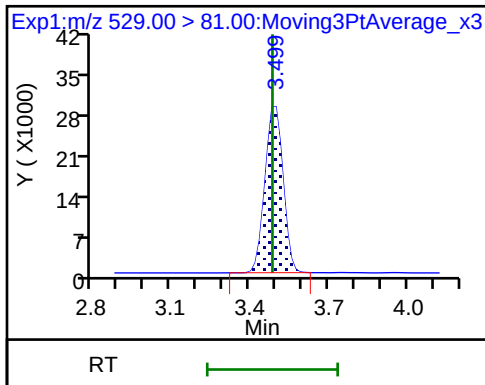
68 Perfluorononanesulfonic acid

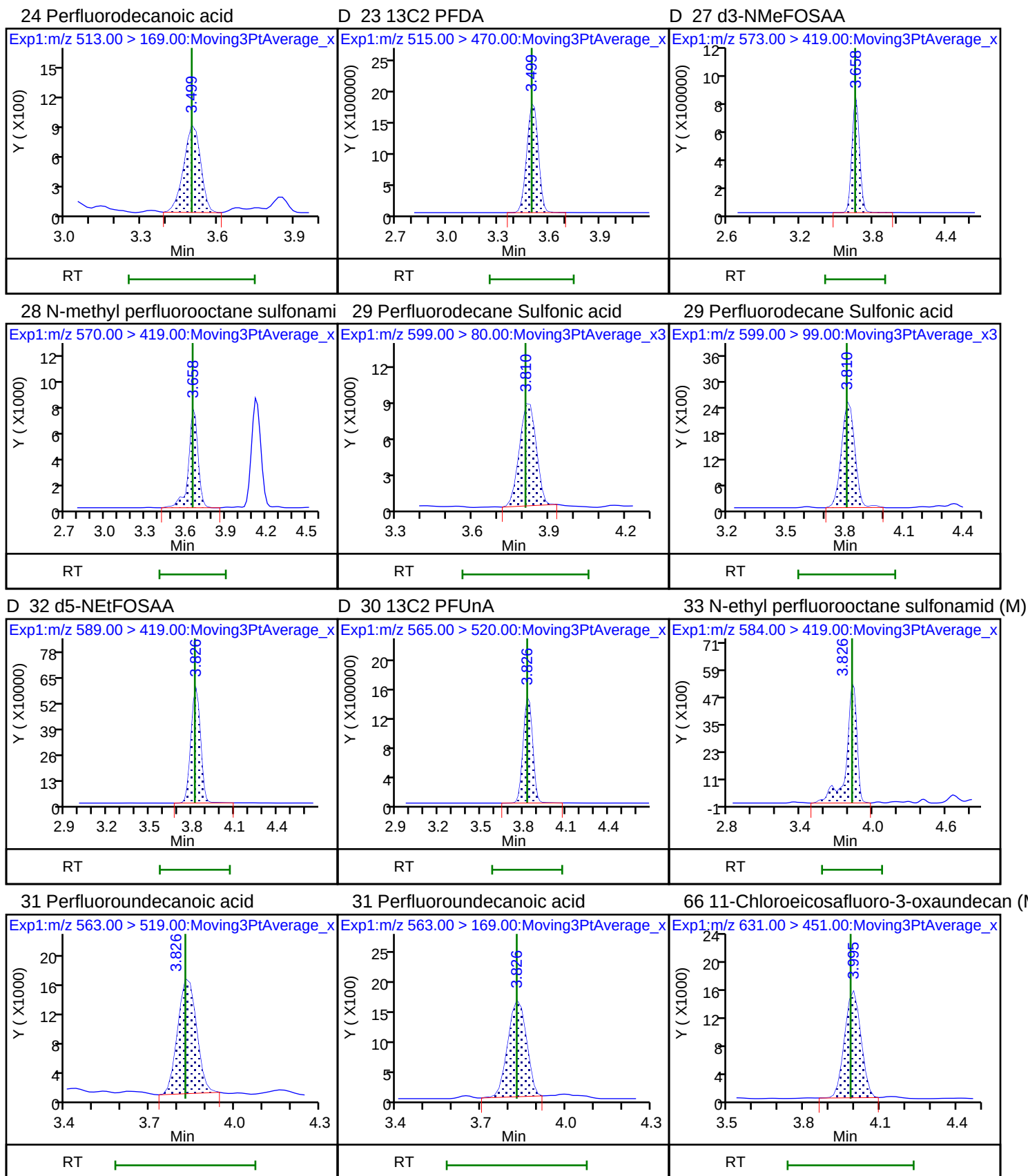


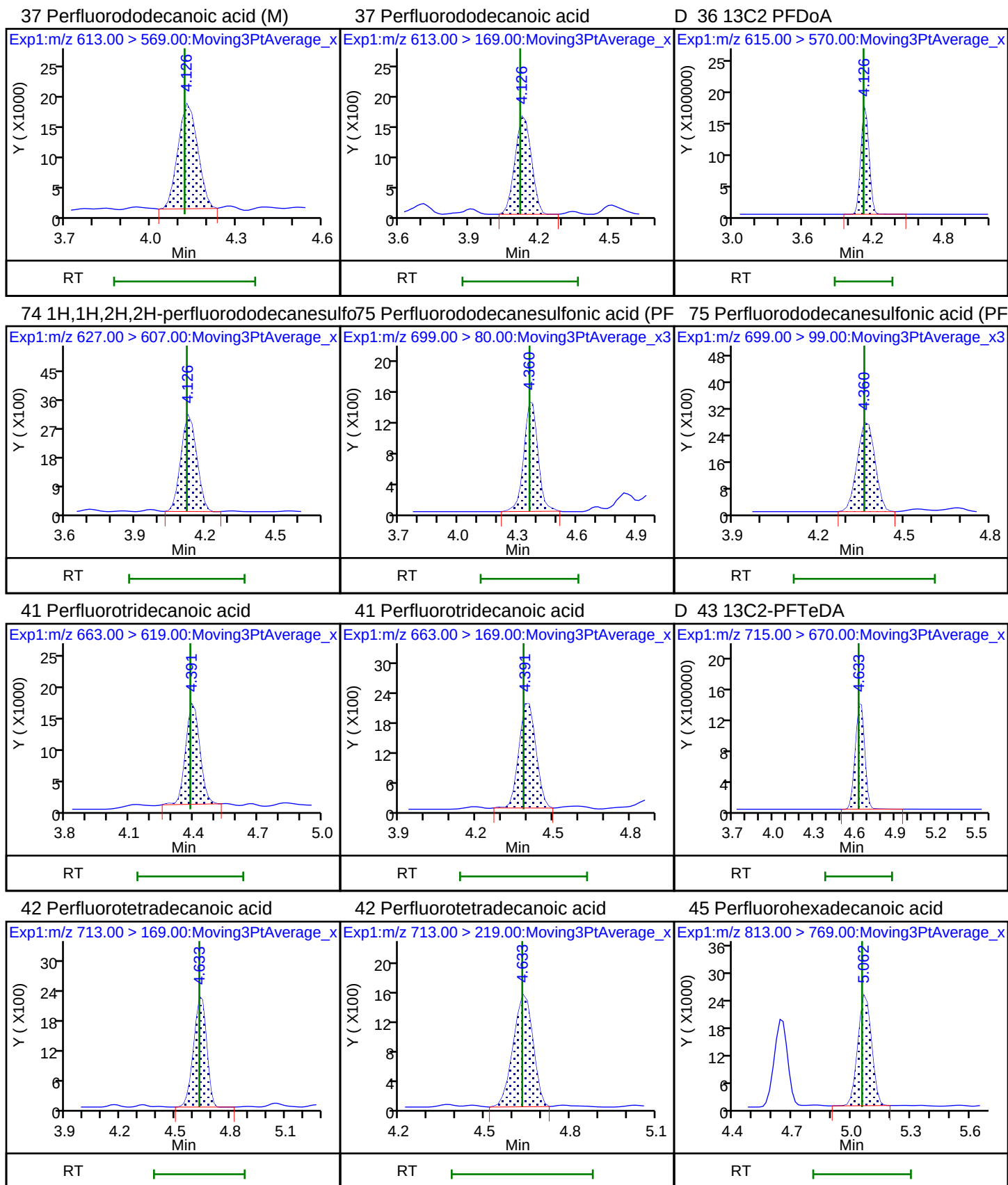
D 26 M2-8:2FTS

25 1H,1H,2H,2H-perfluorodecanesulfoni

24 Perfluorodecanoic acid



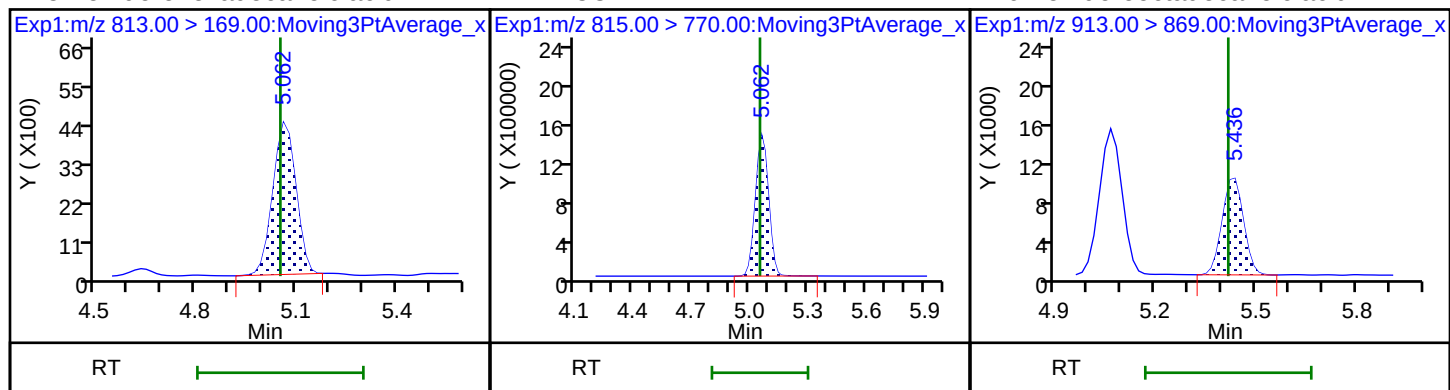




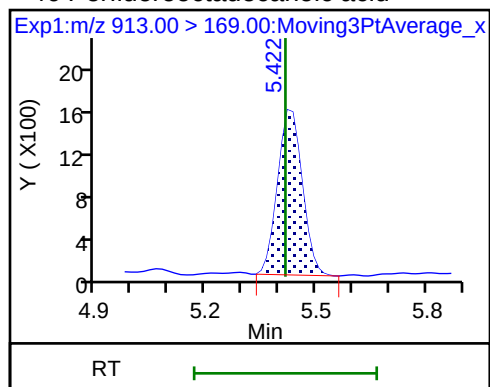
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_005.d

Injection Date: 28-Aug-2018 10:20:47

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

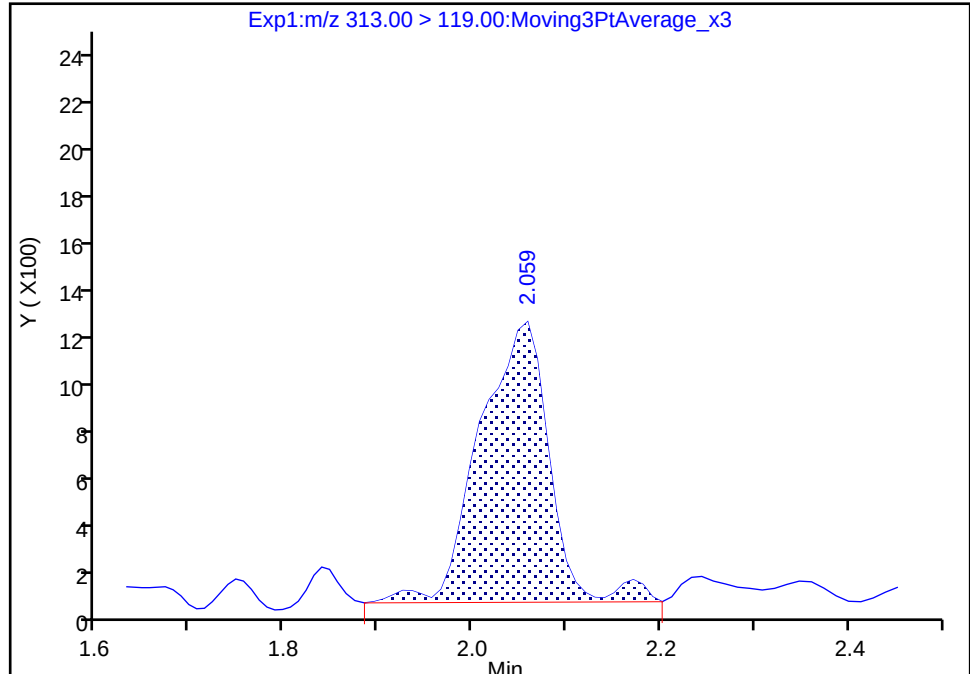
Detector: EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

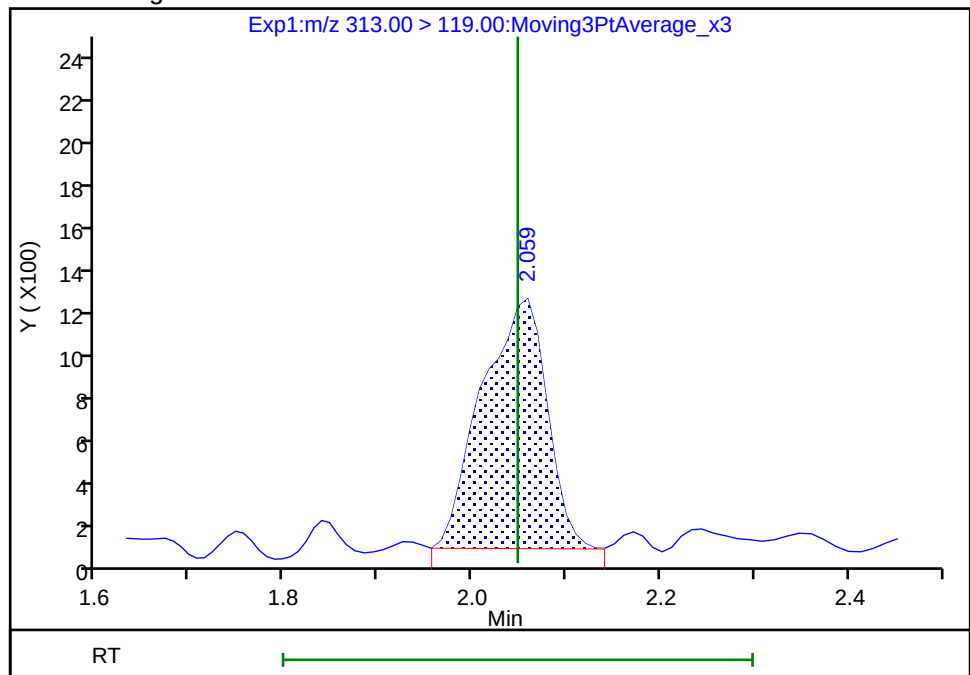
RT: 2.06
Area: 6169
Amount: 0.027588
Amount Units: ng/ml

Processing Integration Results



RT: 2.06
Area: 5659
Amount: 0.029064
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 28-Aug-2018 10:55:31

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_005.d

Injection Date: 28-Aug-2018 10:20:47

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

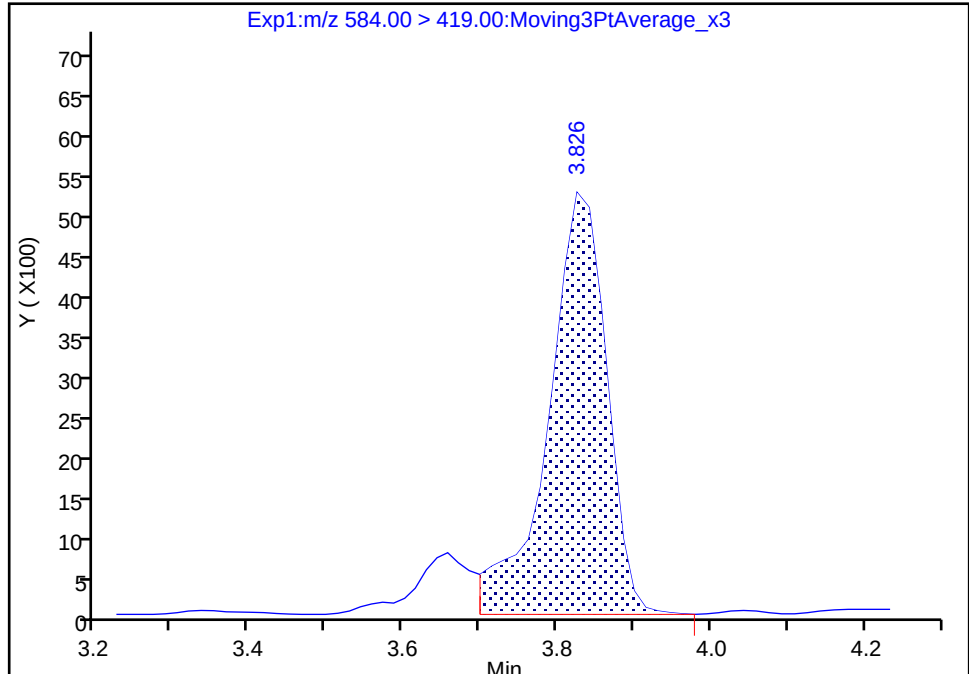
Detector: EXP1

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

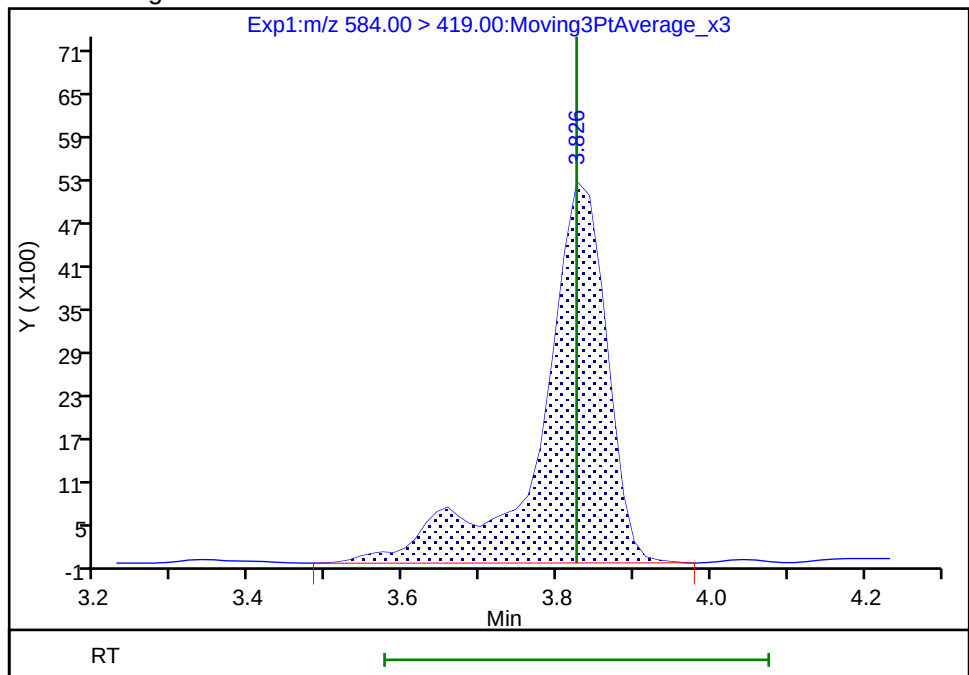
RT: 3.83
Area: 27761
Amount: 0.027628
Amount Units: ng/ml

Processing Integration Results



RT: 3.83
Area: 31607
Amount: 0.030901
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 28-Aug-2018 10:55:56

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_005.d

Injection Date: 28-Aug-2018 10:20:47

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

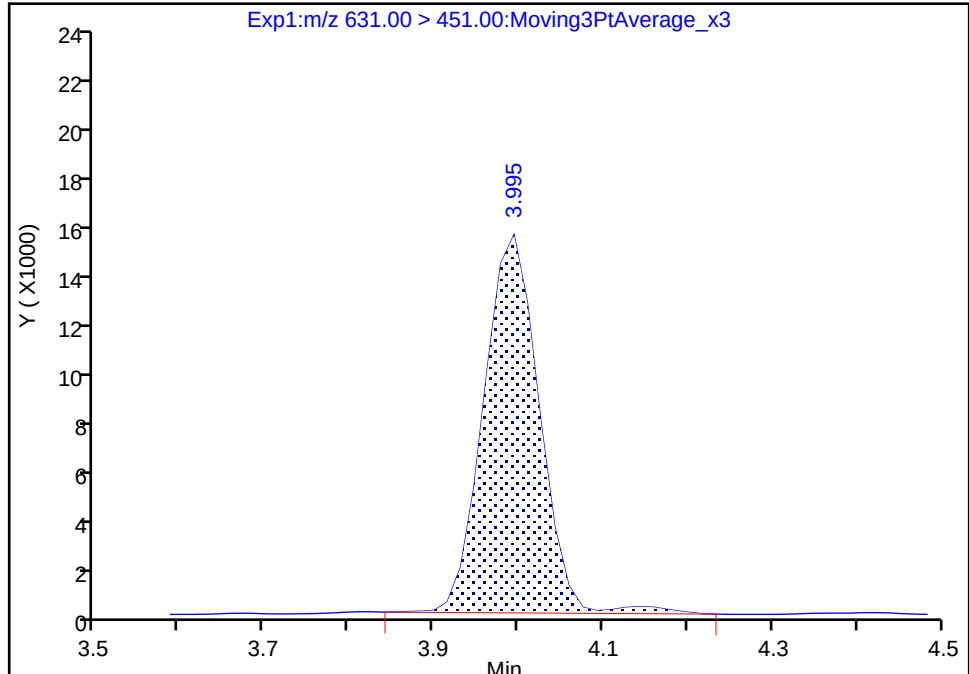
Detector: EXP1

66 11-Chloroeicosafluoro-3-oxaundecane-1-sulfon, CAS: 83329-89-9

Signal: 1

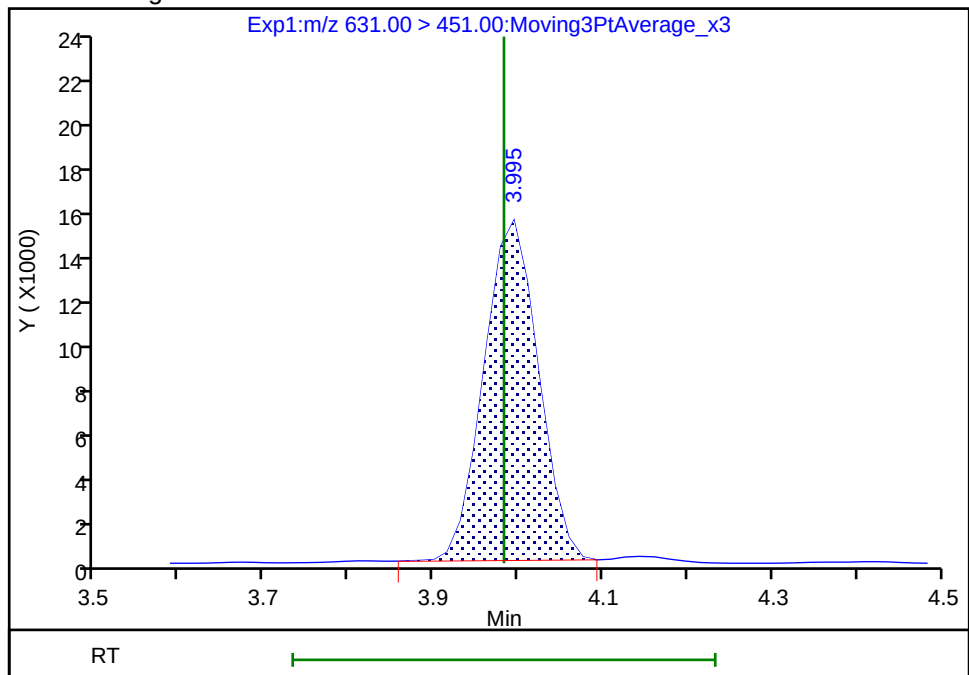
RT: 3.99
Area: 70406
Amount: 0.022394
Amount Units: ng/ml

Processing Integration Results



RT: 3.99
Area: 68328
Amount: 0.022147
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 28-Aug-2018 10:57:04

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_005.d

Injection Date: 28-Aug-2018 10:20:47

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

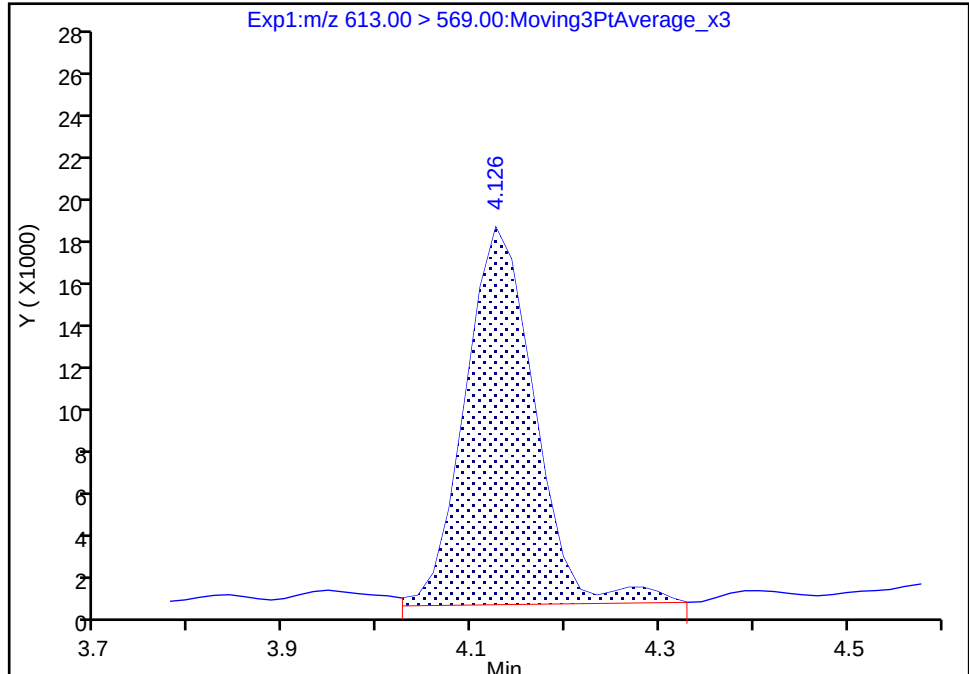
Detector: EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

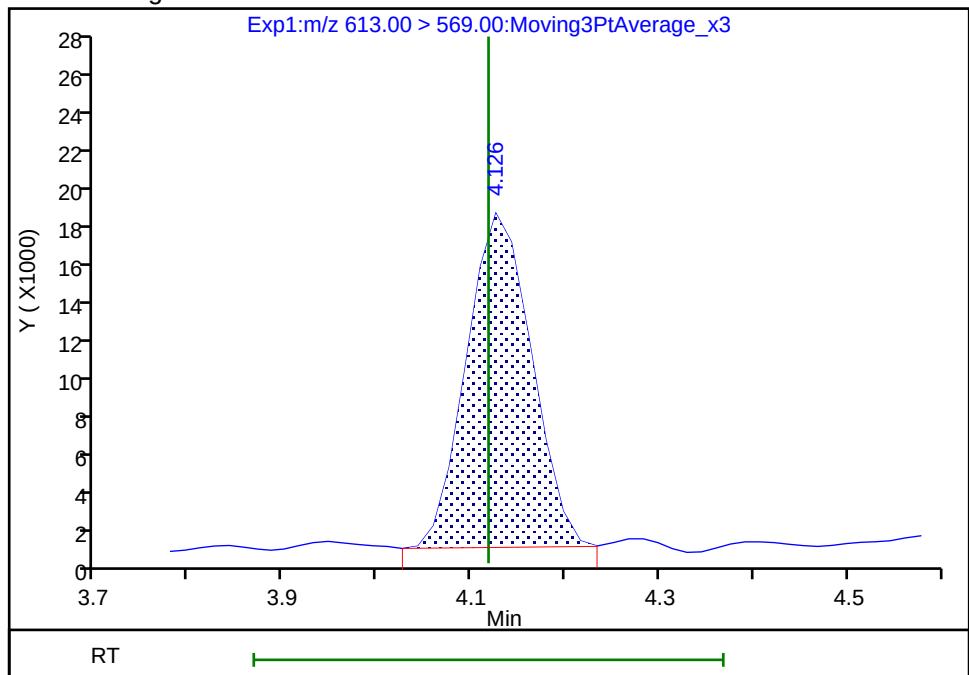
RT: 4.13
Area: 91648
Amount: 0.025240
Amount Units: ng/ml

Processing Integration Results



RT: 4.13
Area: 84200
Amount: 0.025264
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 28-Aug-2018 10:56:10

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_006.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 28-Aug-2018 10:28:16 ALS Bottle#: 11 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 28-Aug-2018 13:27:28 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: roycea

Date: 28-Aug-2018 10:56:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.489	1.485	0.004	0.541	8291131	2.51		100	17018	
2 Perfluorobutyric acid										
212.90 > 169.00	1.489	1.486	0.003	1.000	148472	0.0490		98.1	24.1	
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.758	0.006	0.641	7385908	2.50		100	12498	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.759	0.005	1.000	162630	0.0543		109	21.5	
D 47 13C3-PFBS										
301.90 > 83.00	1.797	1.796	0.001	0.653	90247	2.33		100	738	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.797	1.797	0.0	1.000	185053	0.0454		103	127	
298.90 > 99.00	1.797	1.797	0.0	1.000	59365		3.12(1.35-4.05)	103	75.1	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.017	2.012	0.005	1.122	43604	0.0520		111	319	
D 60 M2-4:2FTS										
329.00 > 81.00	2.017	2.013	0.004	0.733	824589	2.48		106	1107	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.048	0.0	0.744	7967390	2.55		102	8699	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	153085	0.0527		105	49.7	
313.00 > 119.00	2.048	2.048	0.0	1.000	12880		11.89(6.96-20.87)	105	25.0	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.068	2.071	-0.003	1.151	92389	0.0477		102	247	
349.00 > 99.00	2.079	2.071	0.008	1.157	39375		2.35(1.15-3.45)	102	138	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.150	2.149	0.001	1.000	30149	0.0531		106	18.6	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.782	803202	2.37		94.9	2151	
D 9 13C4-PFHpA										
367.00 > 322.00	2.387	2.387	0.0	0.868	9747881	2.62		105	10893	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.387	0.0	1.000	198338	0.0499		99.8	44.3	
363.00 > 169.00	2.387	2.387	0.0	1.000	47456		4.18(2.17-6.52)	99.8	134	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	151487	0.0520		114	188	
399.00 > 99.00	2.400	2.400	0.0	1.000	41006		3.69(1.90-5.70)	114	82.1	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.872	5562863	2.43		103	15845	
76 DONA										
377.00 > 251.00	2.439	2.432	0.007	0.778	328200	0.0518		110	467	
377.00 > 85.00	2.439	2.432	0.007	0.778	140412		2.34(1.13-3.39)	110	73.8	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.735	2.728	0.007	1.000	33995	0.0422		88.9	28.5	
D 12 M2-6:2FTS										
429.00 > 81.00	2.735	2.728	0.007	0.994	894847	2.45		103	1405	
D 73 13C8 PFOA										
421.00 > 376.00	2.751	2.744	0.007		7443899	2.57		105	11202	
D 14 13C4 PFOA										
417.00 > 372.00	2.751	2.751	0.0	1.000	8538141	2.46		98.6	11358	
* 62 13C2-PFOA										
415.00 > 370.00	2.751	2.751	0.0		8596922	2.50			15510	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.751	2.751	0.0	1.000	212266	0.0577		115	19.6	M
413.00 > 169.00	2.751	2.751	0.0	1.000	74449		2.85(1.36-4.08)	115	188	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.767	2.760	0.007	0.882	117514	0.0487		102	156	
449.00 > 99.00	2.767	2.760	0.007	0.882	28009		4.20(1.84-5.53)	102	132	
D 72 13C8 PFOS										
507.00 > 99.00	3.136	3.129	0.007		1300205	2.53		106	3048	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.136	3.136	0.0	1.000	129377	0.0500		108	110	
499.00 > 99.00	3.136	3.136	0.0	1.000	29738		4.35(2.04-6.12)	108	90.4	
D 19 13C5 PFNA										
468.00 > 423.00	3.136	3.136	0.0	1.140	8229151	2.54		101	7676	
20 Perfluorononanoic acid										
463.00 > 419.00	3.136	3.136	0.0	1.000	164410	0.0511		102	22.1	
463.00 > 169.00	3.136	3.136	0.0	1.000	32541		5.05(2.68-8.03)	102	81.4	
D 18 13C4 PFOS										
503.00 > 80.00	3.136	3.136	0.0	1.140	5856894	2.38		99.7	4285	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.352	3.346	0.006	1.069	147444	0.0520		111	367	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.467	3.467	0.0	1.000	219730	0.0539		108	534	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.467	3.467	0.0	1.260	3437498	2.64		106	7407	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.482	3.483	-0.001	1.110	85204	0.0538		112	211	
549.00 > 99.00	3.482	3.483	-0.001	1.110	13283		6.41(3.02-9.05)	112	104	
D 26 M2-8:2FTS										
529.00 > 81.00	3.482	3.485	-0.003	1.266	131131	2.44		102	650	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.482	3.485	-0.003	1.000	42130	0.0508		106	174	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.498	3.498	0.0	1.000	226611	0.0598		120	42.4	
513.00 > 169.00	3.498	3.498	0.0	1.000	14709		15.41(7.12-21.35)	120	48.6	
D 23 13C2 PFDA										
515.00 > 470.00	3.498	3.498	0.0	1.272	8316028	2.57		103	8587	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.657	3.651	0.006	1.329	3717380	2.54		102	4722	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.657	3.653	0.004	1.000	74575	0.0505		101	25.5	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.810	3.807	0.003	1.215	107648	0.0540		112	140	
599.00 > 99.00	3.810	3.807	0.003	1.215	23332		4.61(2.14-6.43)	112	166	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.825	3.819	0.006	1.391	3123931	2.72		109	2483	
D 30 13C2 PFUnA										
565.00 > 520.00	3.825	3.825	0.0	1.391	7323152	2.65		106	14284	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.825	3.825	0.0	1.000	50114	0.0431		86.3	101	M
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.825	3.825	0.0	1.000	141127	0.0537		107	32.6	
563.00 > 169.00	3.825	3.825	0.0	1.000	14526		9.72(5.24-15.72)	107	96.3	
35 MeFOSA										
512.00 > 169.00	3.946	3.949	-0.003		33986	NC			157	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.978	3.983	-0.005	1.268	152144	0.0486		103	708	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.125	4.118	0.007	1.000	195509	0.0568		114	42.0	
613.00 > 169.00	4.125	4.118	0.007	1.000	19225		10.17(4.68-14.05)	114	68.2	
D 36 13C2 PFDaA										
615.00 > 570.00	4.125	4.118	0.007	1.500	8543283	2.55		102	6868	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.125	4.120	0.005	1.185	28306	0.0509		106	77.4	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.142	4.142	0.0		35989	NC			98.7	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.359	4.360	-0.001	1.390	8877	0.0390		80.5	19.6	M
699.00 > 99.00	4.359	4.360	-0.001	1.390	19034		0.47(0.28-0.83)	80.5	97.4	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.390	4.384	0.006	1.064	148840	0.0543		109	55.5	
663.00 > 169.00	4.390	4.384	0.006	1.064	24969		5.96(3.09-9.27)	109	88.8	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.629	4.628	0.001	1.683	7100968	2.66		106	10774	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.629	4.631	-0.002	1.000	22816	0.0498		99.5	134	
713.00 > 219.00	4.629	4.631	-0.002	1.000	16839		1.35(0.70-2.09)	99.5	107	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.058	5.053	0.005	1.000	199686	0.0531		106	46.7	
813.00 > 169.00	5.058	5.053	0.005	1.000	31573		6.32(2.77-8.32)	106	143	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.058	5.053	0.005	1.839	7035360	2.60		104	12129	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.420	5.416	0.004	1.071	92487	0.0515		103	26.2	
913.00 > 169.00	5.420	5.416	0.004	1.071	16340		5.66(2.55-7.64)	103	183	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_006.d

Injection Date: 28-Aug-2018 10:28:16

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

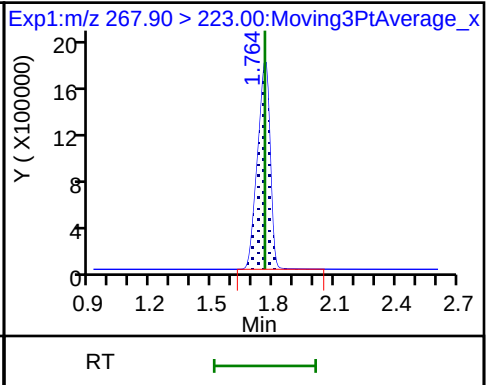
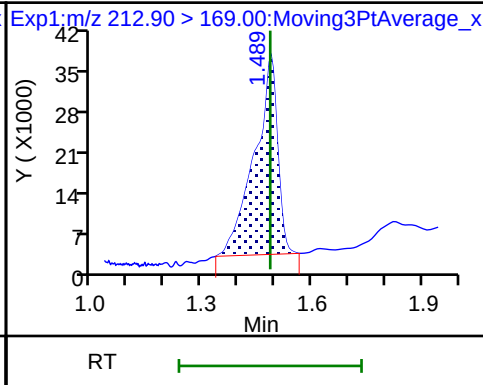
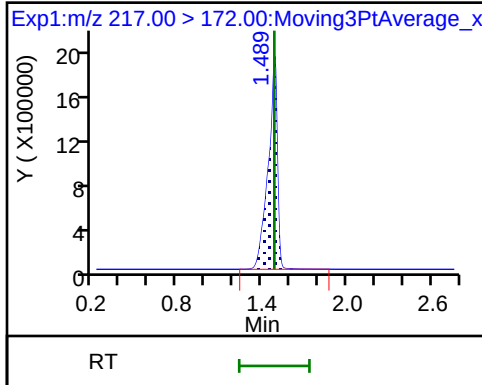
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

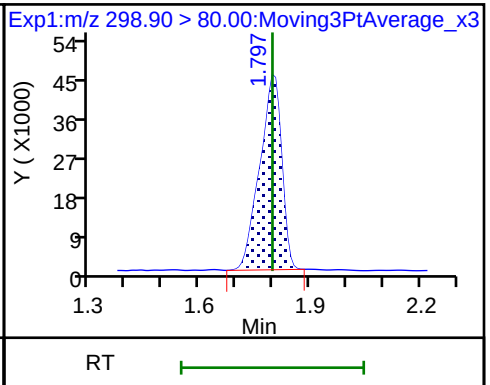
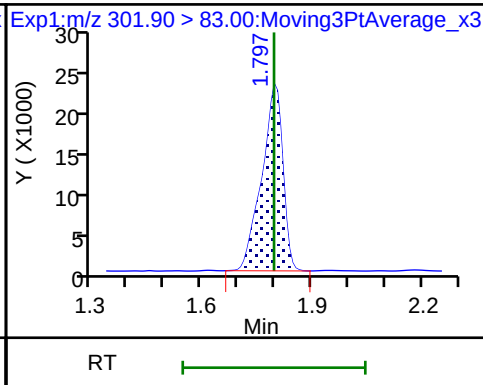
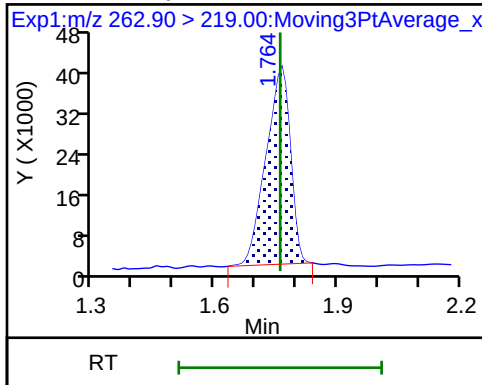
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

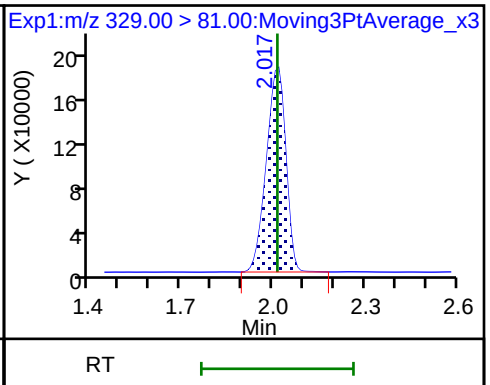
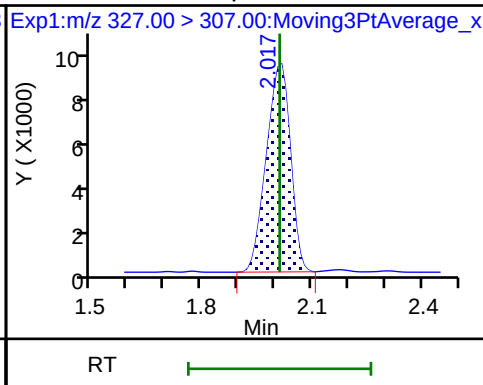
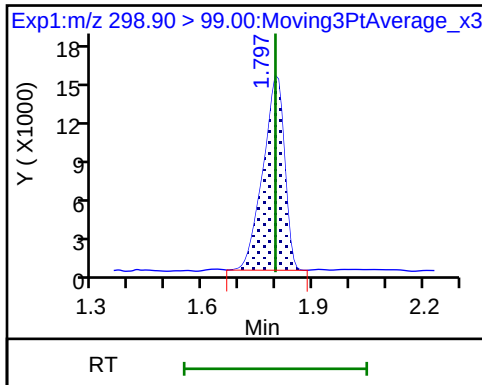
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

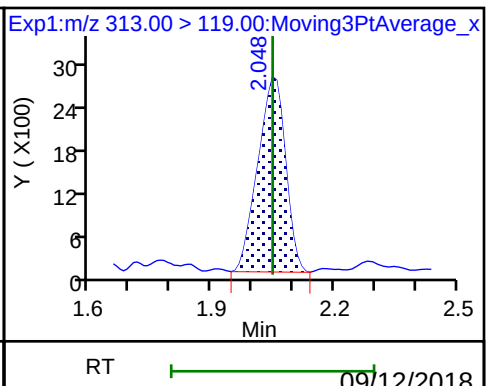
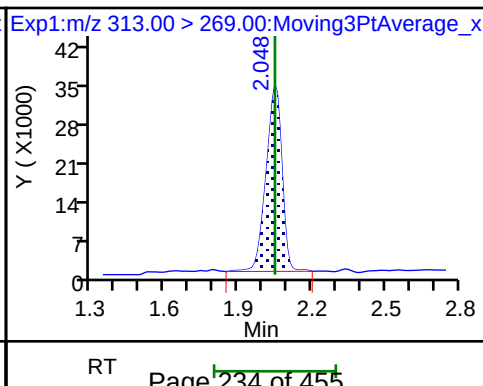
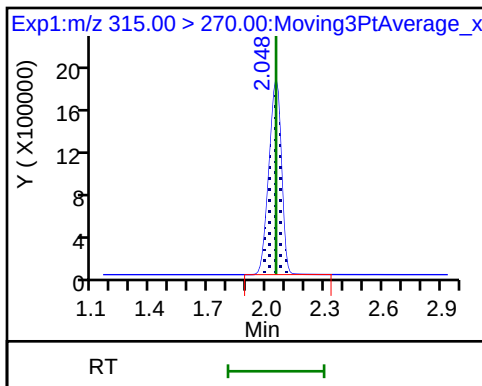
D 60 M2-4:2FTS

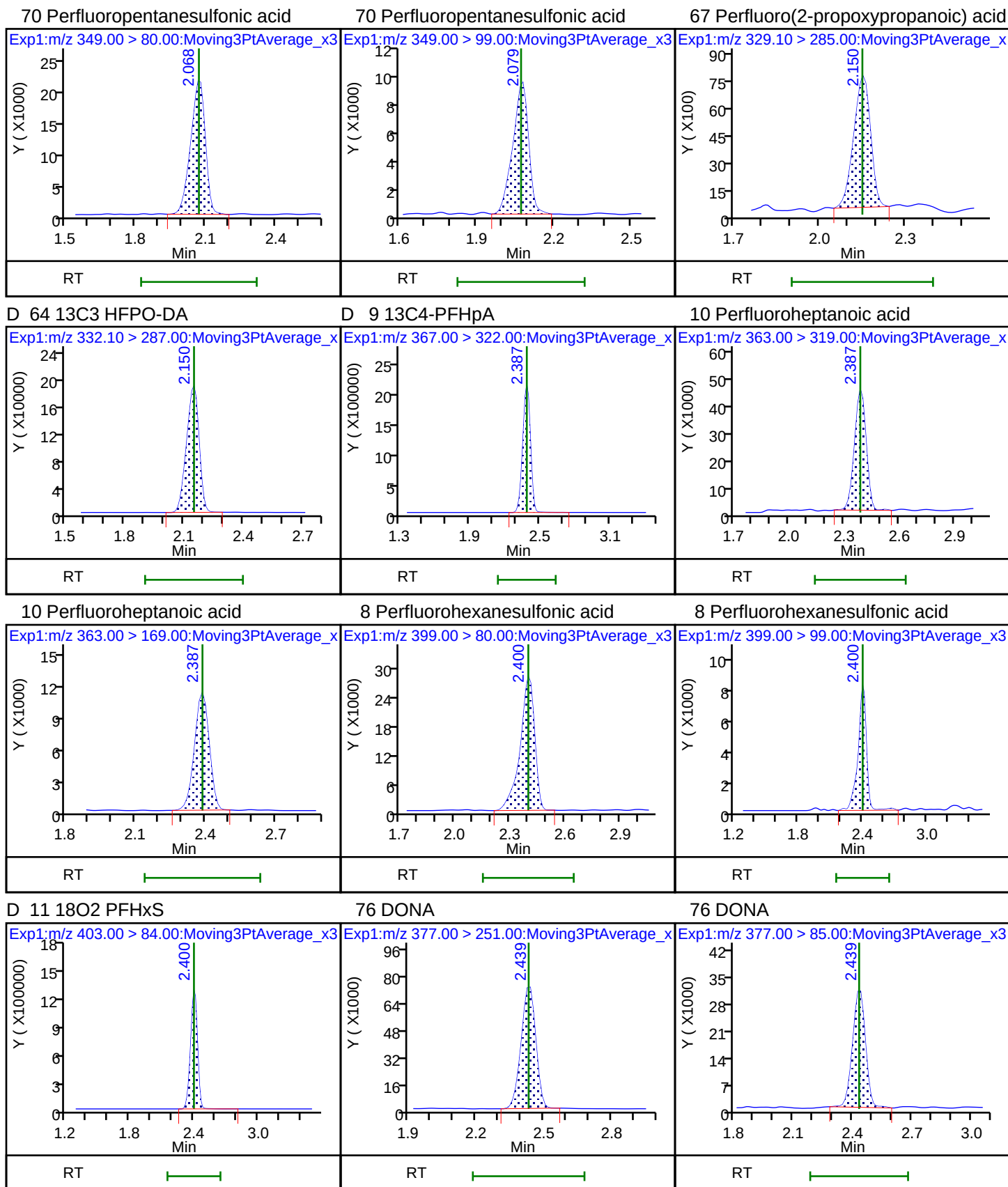


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

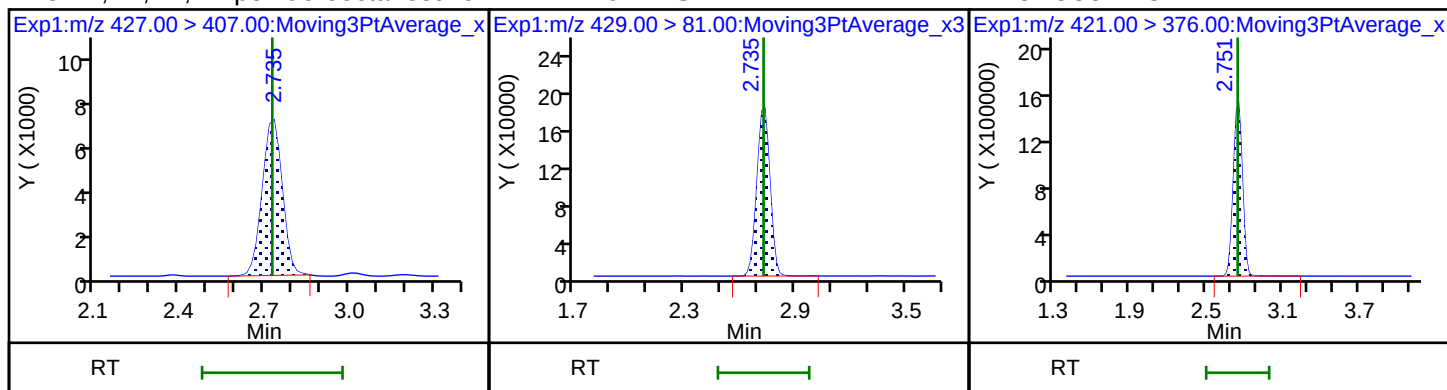
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

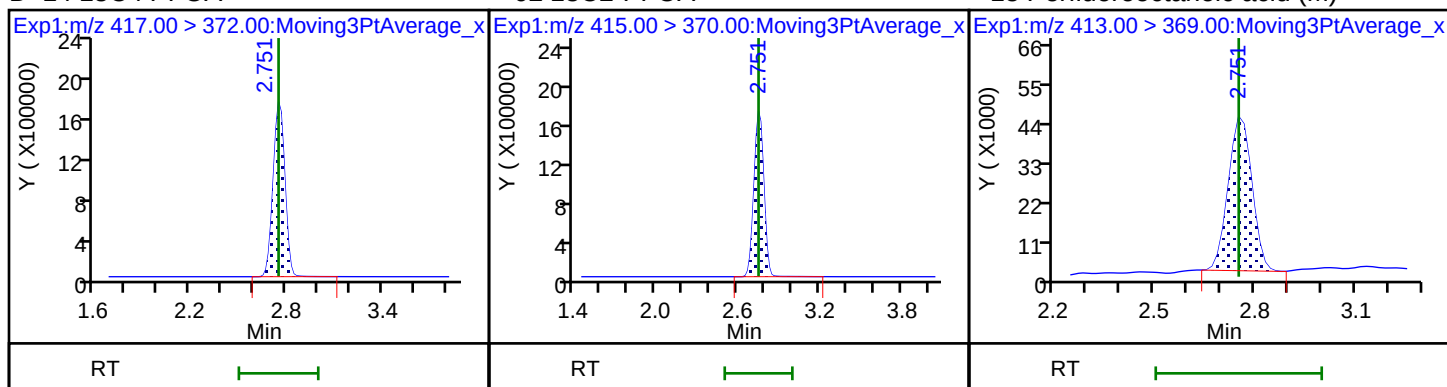
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

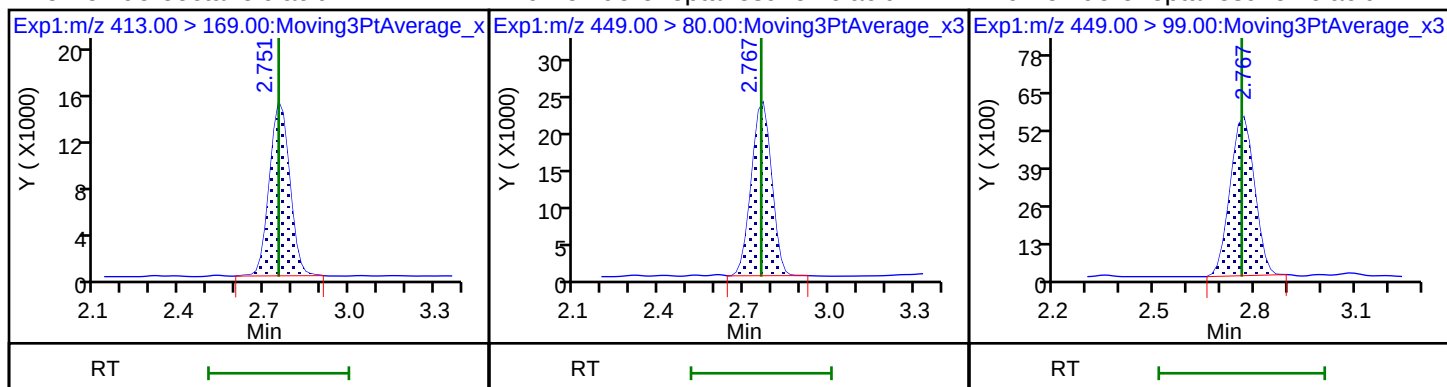
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

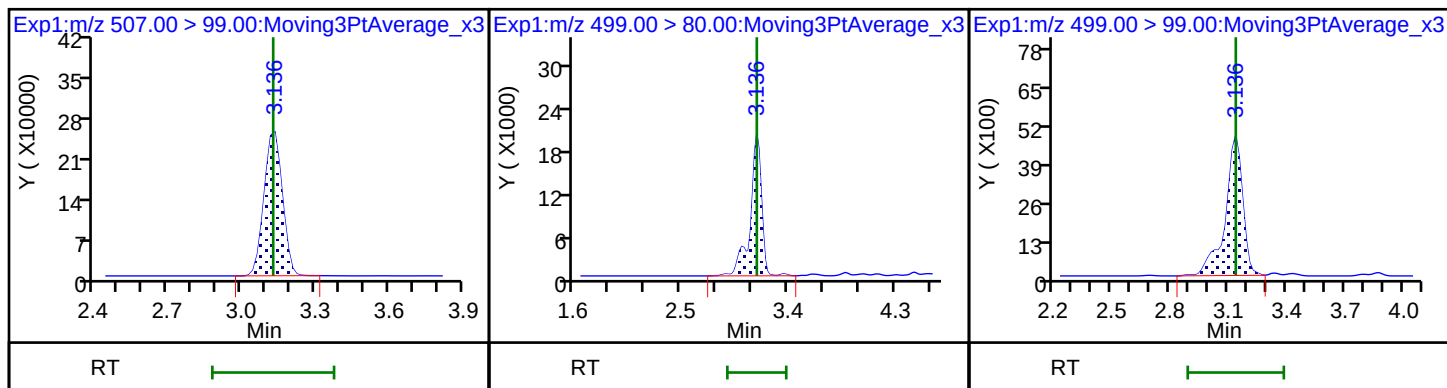
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid

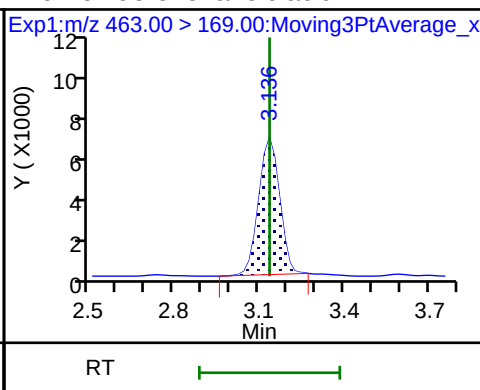
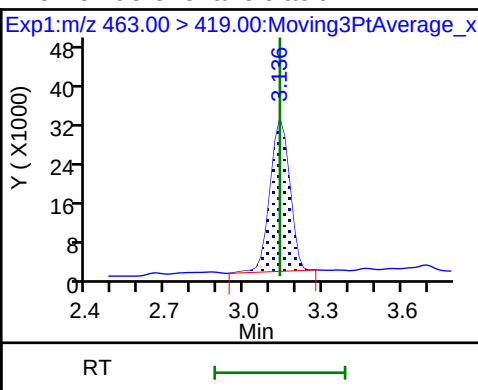
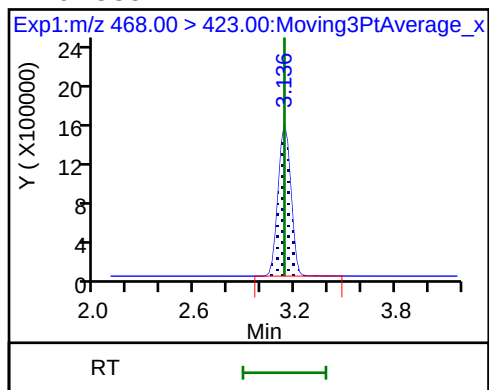
17 Perfluorooctane sulfonic acid



D 19 13C5 PFNA

20 Perfluorononanoic acid

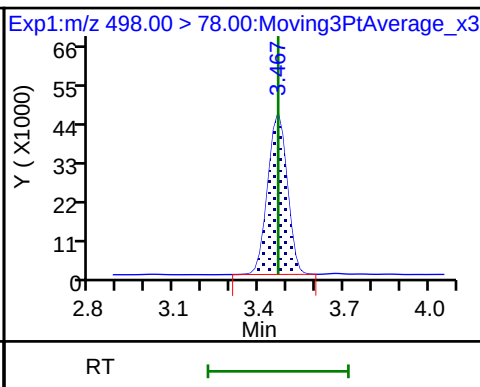
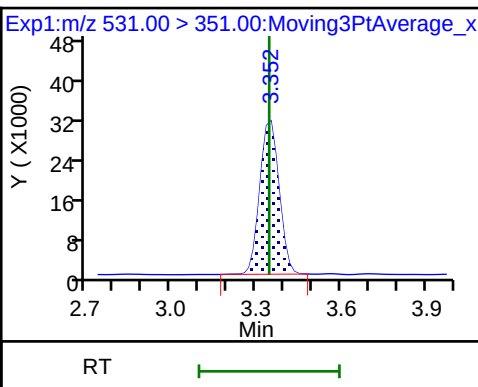
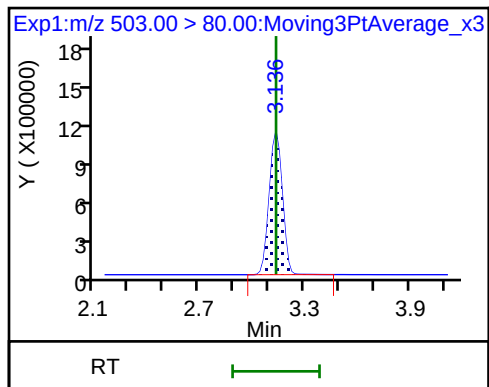
20 Perfluorononanoic acid



D 18 13C4 PFOS

69 9-Chlorohexadecafluoro-3-oxanonan

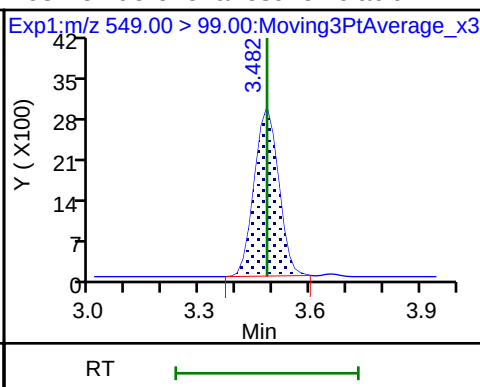
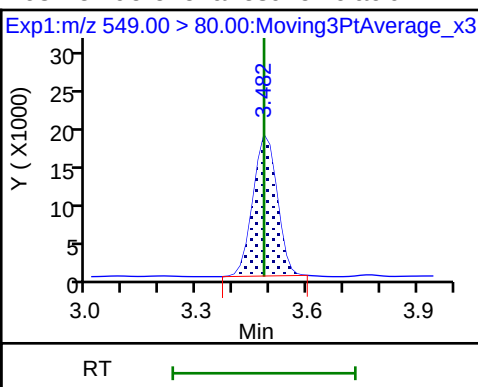
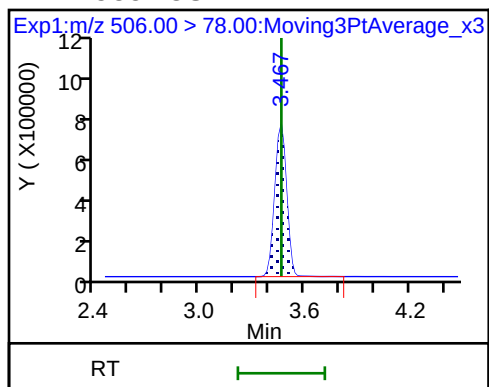
22 Perfluorooctane Sulfonamide



D 21 13C8 FOSA

68 Perfluorononanesulfonic acid

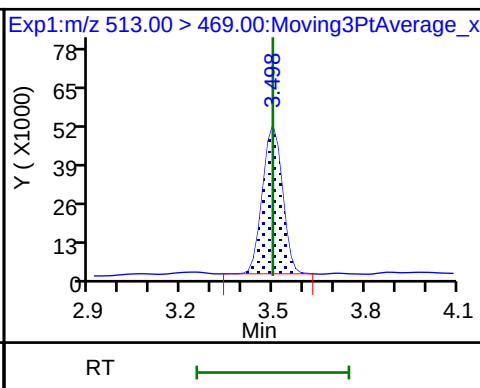
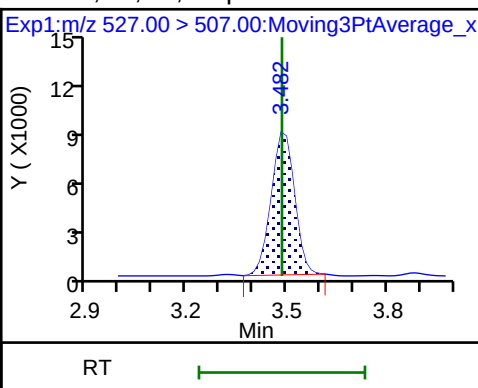
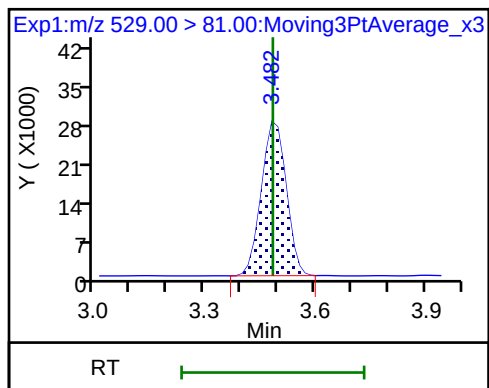
68 Perfluorononanesulfonic acid

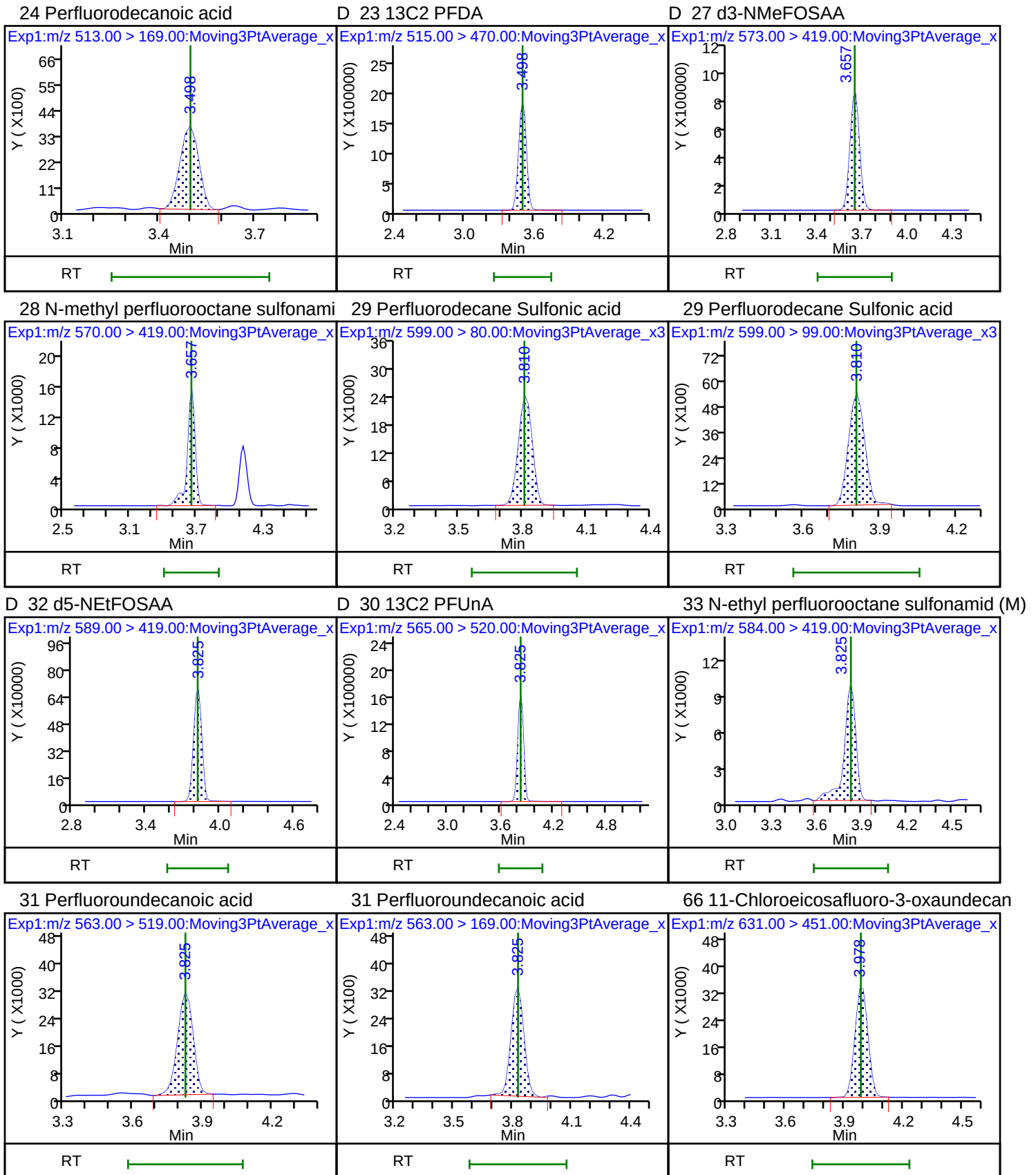


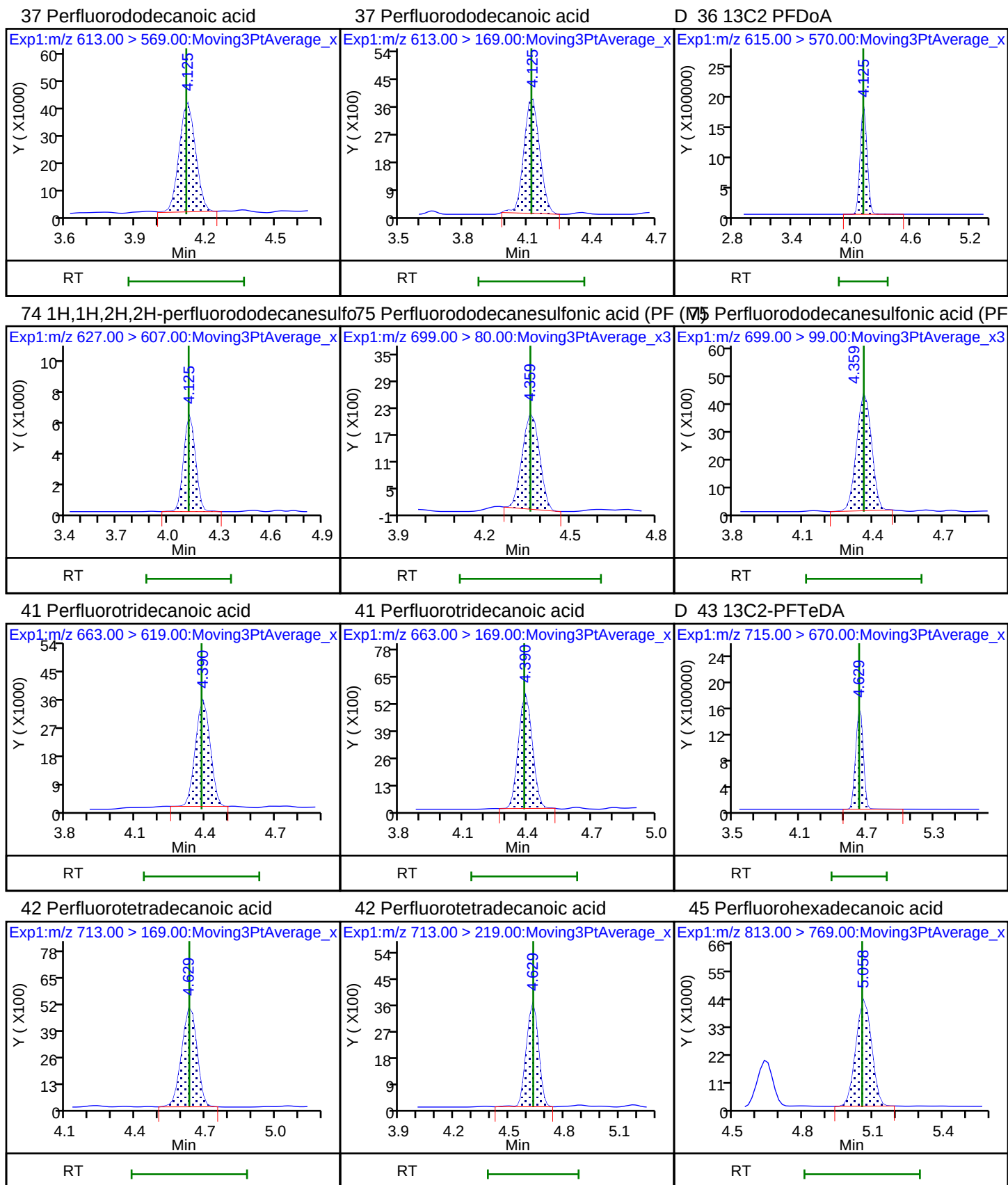
D 26 M2-8:2FTS

25 1H,1H,2H,2H-perfluorodecanesulfoni

24 Perfluorodecanoic acid



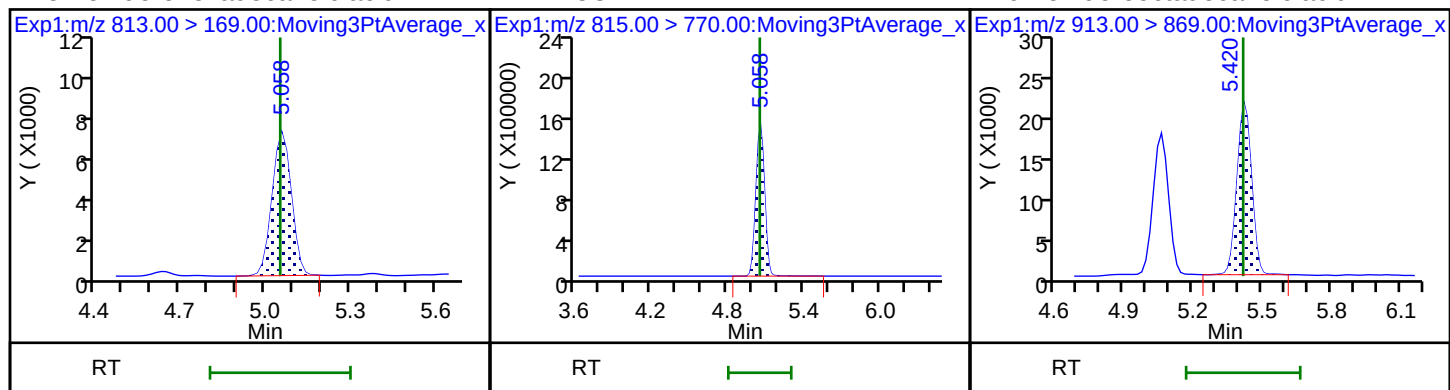




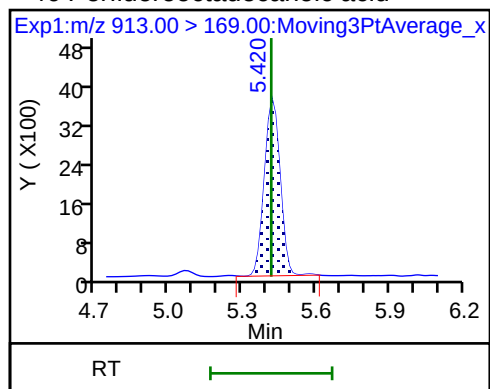
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_006.d

Injection Date: 28-Aug-2018 10:28:16

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

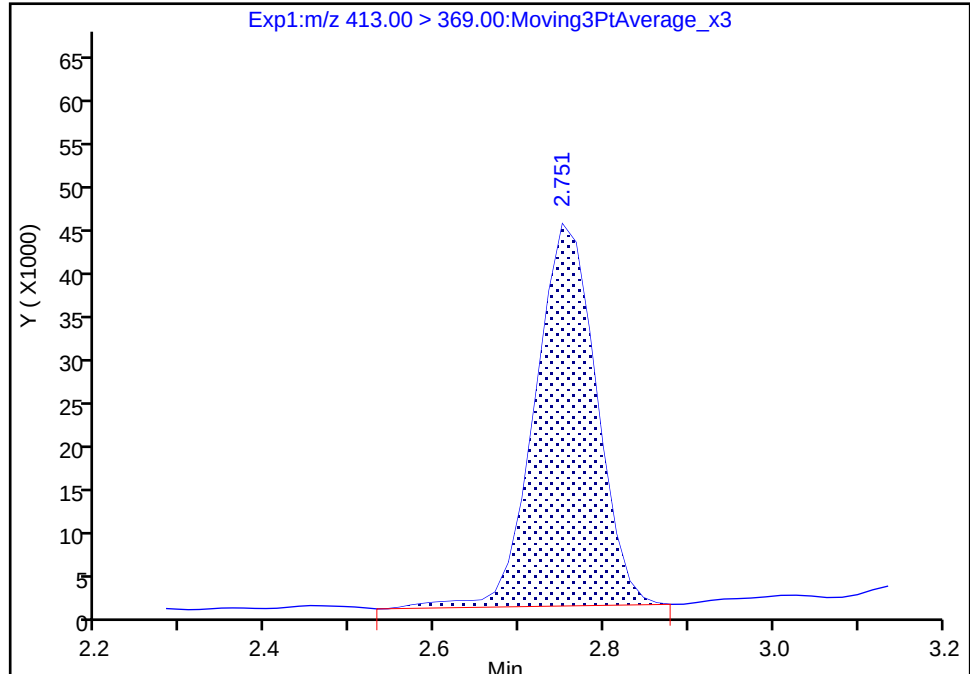
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

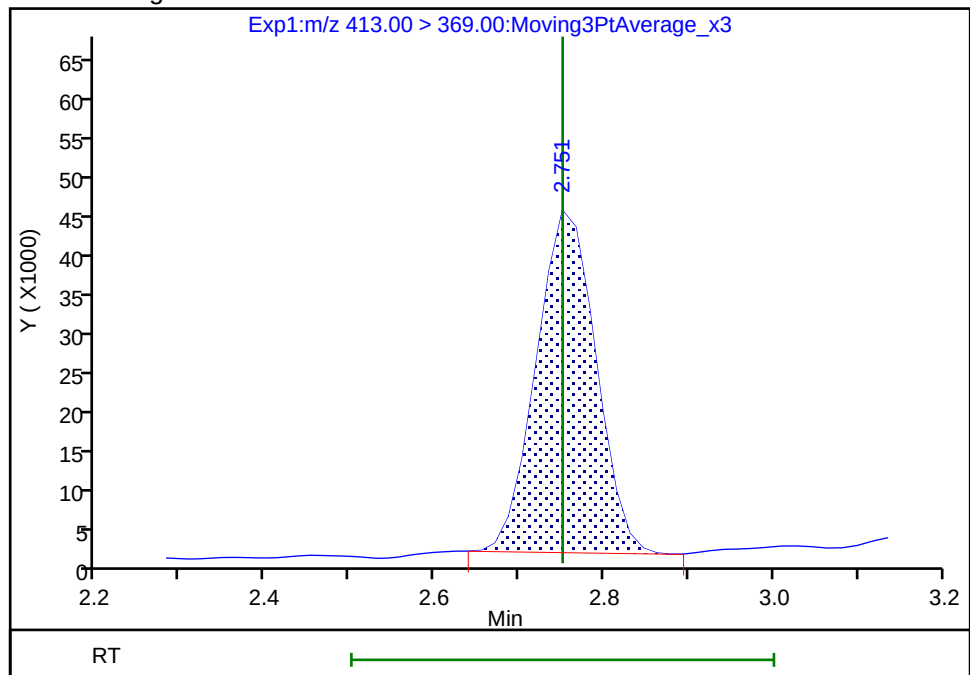
RT: 2.75
Area: 220267
Amount: 0.059556
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 212266
Amount: 0.057749
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 28-Aug-2018 11:55:22

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_006.d

Injection Date: 28-Aug-2018 10:28:16

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

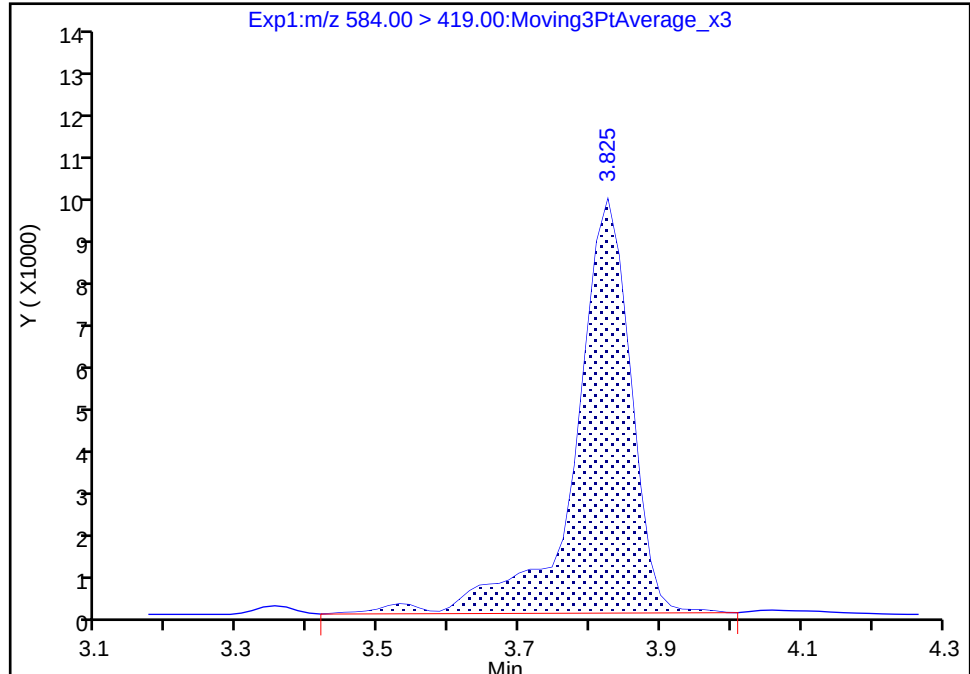
Detector EXP1

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

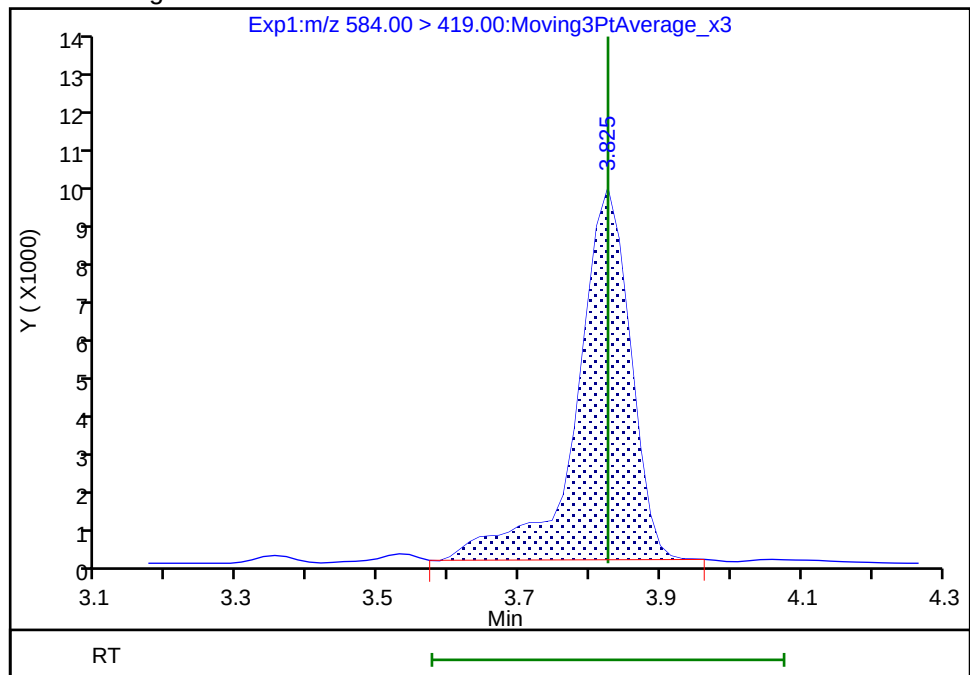
RT: 3.83
Area: 52485
Amount: 0.044286
Amount Units: ng/ml

Processing Integration Results



RT: 3.83
Area: 50114
Amount: 0.043129
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 28-Aug-2018 10:58:28

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_006.d

Injection Date: 28-Aug-2018 10:28:16

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

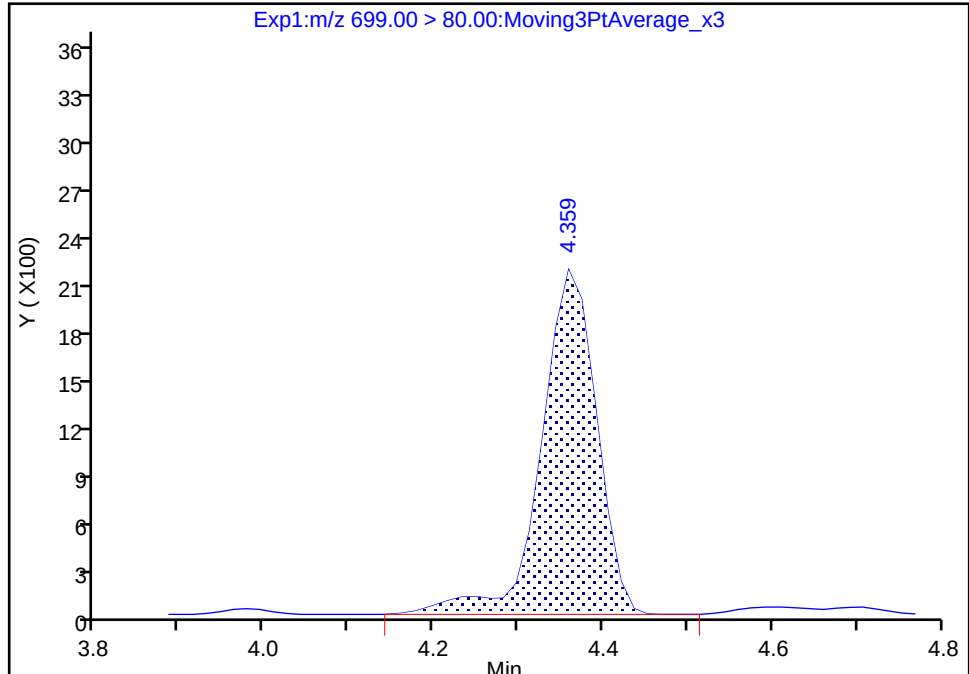
Detector: EXP1

75 Perfluorododecanesulfonic acid (PFDoS), CAS: 79780-39-5

Signal: 1

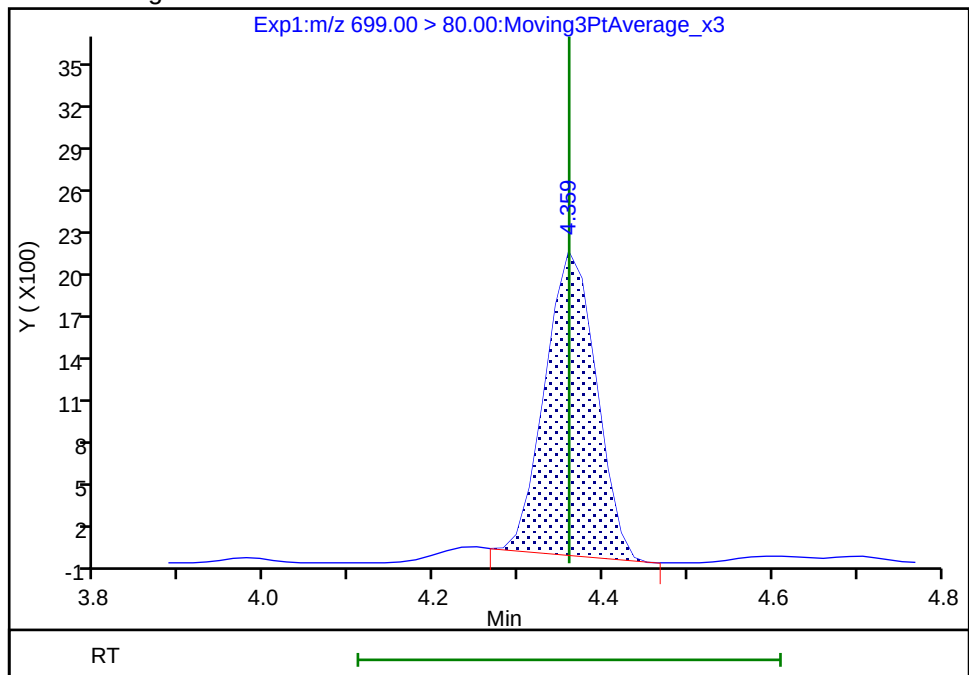
RT: 4.36
Area: 9904
Amount: 0.042944
Amount Units: ng/ml

Processing Integration Results



RT: 4.36
Area: 8877
Amount: 0.038970
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 28-Aug-2018 10:58:43

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_007.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 28-Aug-2018 10:35:45 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 28-Aug-2018 13:27:36 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: roycea

Date: 28-Aug-2018 10:59:59

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.483	1.485	-0.002	0.539	8171064	2.42		96.9	11309	
2 Perfluorobutyric acid										
212.90 > 169.00	1.483	1.486	-0.003	1.000	771594	0.2586		103	131	
D 3 13C5-PFPeA										
267.90 > 223.00	1.756	1.758	-0.002	0.638	7400409	2.46		98.4	10119	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.759	0.005	1.005	747283	0.2489		99.6	92.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.797	1.796	0.001	0.653	88972	2.25		96.9	731	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.797	1.797	0.0	1.000	910651	0.2265		102	566	
298.90 > 99.00	1.797	1.797	0.0	1.000	310492		2.93(1.35-4.05)	102	355	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.007	2.012	-0.005	1.117	185640	0.2245		96.1	1079	
D 60 M2-4:2FTS										
329.00 > 81.00	2.017	2.013	0.004	0.733	764687	2.25		96.5	818	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.048	0.0	0.744	7995321	2.51		101	8594	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	710995	0.2441		97.7	197	
313.00 > 119.00	2.048	2.048	0.0	1.000	45947		15.47(6.96-20.87)	97.7	94.2	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.068	2.071	-0.003	1.151	446776	0.2341		99.8	1060	
349.00 > 99.00	2.068	2.071	-0.003	1.151	209041		2.14(1.15-3.45)	99.8	535	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.150	2.149	0.001	1.000	144461	0.2340		93.6	84.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.782	872697	2.53		101	2722	
D 9 13C4-PFHpA										
367.00 > 322.00	2.387	2.387	0.0	0.868	9544033	2.52		101	14205	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.387	0.0	1.000	1031715	0.2650		106	185	
363.00 > 169.00	2.387	2.387	0.0	1.000	233468		4.42(2.17-6.52)	106	691	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	617641	0.2132		93.7	774	
399.00 > 99.00	2.400	2.400	0.0	1.000	181791		3.40(1.90-5.70)	93.7	382	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.872	5536160	2.37		100	9871	
76 DONA										
377.00 > 251.00	2.426	2.432	-0.006	0.774	1650815	0.2475		105	2552	
377.00 > 85.00	2.426	2.432	-0.006	0.774	708641		2.33(1.13-3.39)	105	336	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.735	2.728	0.007	1.000	186850	0.2332		98.4	228	
D 12 M2-6:2FTS										
429.00 > 81.00	2.735	2.728	0.007	0.994	889043	2.39		100	1268	
D 73 13C8 PFOA										
421.00 > 376.00	2.751	2.744	0.007		7129395	2.47		101	12737	
D 14 13C4 PFOA										
417.00 > 372.00	2.751	2.751	0.0	1.000	8662621	2.45		98.1	13367	
* 62 13C2-PFOA										
415.00 > 370.00	2.751	2.751	0.0		8760981	2.50			7465	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.751	2.751	0.0	1.000	954853	0.2560		102	81.1	
413.00 > 169.00	2.751	2.751	0.0	1.000	329107		2.90(1.36-4.08)	102	562	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.767	2.760	0.007	0.882	571922	0.2252		94.6	593	
449.00 > 99.00	2.767	2.760	0.007	0.882	146227		3.91(1.84-5.53)	94.6	515	
D 72 13C8 PFOS										
507.00 > 99.00	3.136	3.129	0.007		1260760	2.45		103	2898	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.136	3.136	0.0	1.000	589276	0.2165		93.3	586	
499.00 > 99.00	3.136	3.136	0.0	1.000	150858		3.91(2.04-6.12)	93.3	453	
D 19 13C5 PFNA										
468.00 > 423.00	3.136	3.136	0.0	1.140	8602003	2.60		104	15584	
20 Perfluorononanoic acid										
463.00 > 419.00	3.136	3.136	0.0	1.000	888927	0.2642		106	113	
463.00 > 169.00	3.136	3.136	0.0	1.000	144935		6.13(2.68-8.03)	106	450	
D 18 13C4 PFOS										
503.00 > 80.00	3.136	3.136	0.0	1.140	6165020	2.46		103	4347	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.353	3.346	0.007	1.069	662154	0.2217		95.1	1155	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.467	3.467	0.0	1.000	1031117	0.2671		107	1921	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.467	3.467	0.0	1.260	3255994	2.46		98.2	8042	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.482	3.483	-0.001	1.110	361865	0.2172		90.5	913	
549.00 > 99.00	3.482	3.483	-0.001	1.110	67871		5.33(3.02-9.05)	90.5	777	
D 26 M2-8:2FTS										
529.00 > 81.00	3.482	3.485	-0.003	1.266	135294	2.47		103	554	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.482	3.485	-0.003	1.000	196079	0.2293		95.7	772	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.498	3.498	0.0	1.000	1019290	0.2737		109	173	
513.00 > 169.00	3.498	3.498	0.0	1.000	63973		15.93(7.12-21.35)	109	150	
D 23 13C2 PFDA										
515.00 > 470.00	3.498	3.498	0.0	1.272	8177178	2.48		99.0	13184	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.657	3.651	0.006	1.329	3721760	2.50		100.0	3977	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.657	3.653	0.004	1.000	378563	0.2559		102	113	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.810	3.807	0.003	1.215	488613	0.2329		96.6	620	
599.00 > 99.00	3.810	3.807	0.003	1.215	110745		4.41(2.14-6.43)	96.6	411	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.825	3.819	0.006	1.391	3035794	2.59		104	2983	
D 30 13C2 PFUnA										
565.00 > 520.00	3.825	3.825	0.0	1.391	7021910	2.50		99.9	5964	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.825	3.825	0.0	1.000	280096	0.2481		99.2	476	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.825	3.825	0.0	1.000	606238	0.2406		96.2	127	
563.00 > 169.00	3.825	3.825	0.0	1.000	63827		9.50(5.24-15.72)	96.2	356	
35 MeFOSA										
512.00 > 169.00	3.947	3.949	-0.002		173308	NC			517	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.978	3.983	-0.005	1.268	794765	0.2410		102	2363	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.125	4.118	0.007	1.000	865534	0.2638		106	212	
613.00 > 169.00	4.125	4.118	0.007	1.000	93241		9.28(4.68-14.05)	106	301	
D 36 13C2 PFDaA										
615.00 > 570.00	4.125	4.118	0.007	1.500	8139014	2.38		95.2	10321	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.125	4.120	0.005	1.185	134692	0.2347		97.4	403	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.142	4.142	0.0		184078	NC			308	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.360	4.360	0.0	1.390	53596	0.2235		92.4	130	
699.00 > 99.00	4.360	4.360	0.0	1.390	90934		0.59(0.28-0.83)	92.4	431	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.391	4.384	0.007	1.064	685651	0.2625		105	253	
663.00 > 169.00	4.391	4.384	0.007	1.064	121775		5.63(3.09-9.27)	105	473	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.630	4.628	0.002	1.683	6427054	2.36		94.4	10600	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.630	4.631	-0.001	1.000	109761	0.2645		106	657	
713.00 > 219.00	4.630	4.631	-0.001	1.000	73919		1.48(0.70-2.09)	106	496	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.059	5.053	0.006	1.000	692910	0.2589		104	153	
813.00 > 169.00	5.059	5.053	0.006	1.000	125880		5.50(2.77-8.32)	104	500	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.059	5.053	0.006	1.839	6746927	2.44		97.7	10418	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.419	5.416	0.003	1.071	442803	0.2573		103	130	
913.00 > 169.00	5.419	5.416	0.003	1.071	84799		5.22(2.55-7.64)	103	717	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL3_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_007.d

Injection Date: 28-Aug-2018 10:35:45

Instrument ID: A9

Lims ID: IC L3 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 12

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

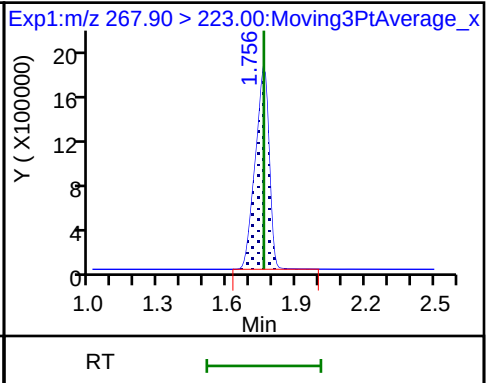
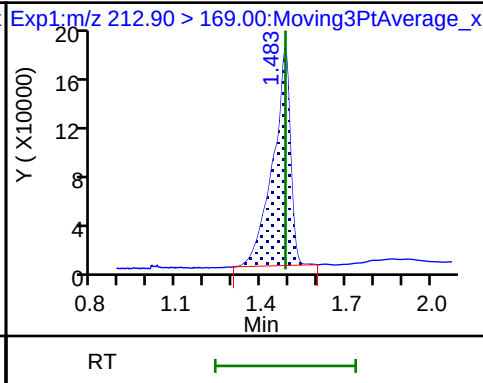
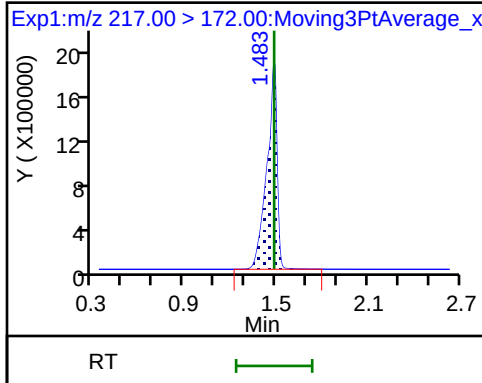
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

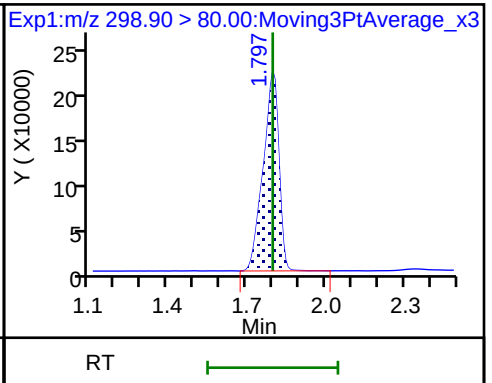
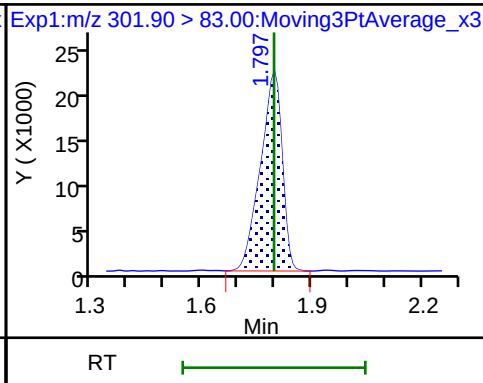
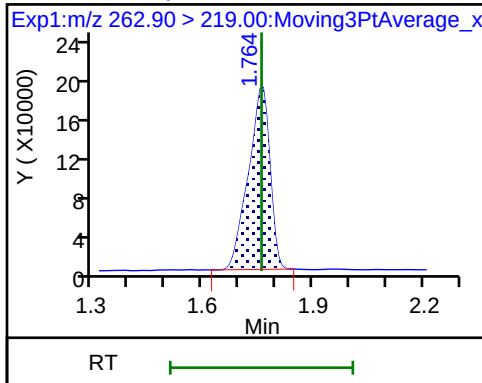
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

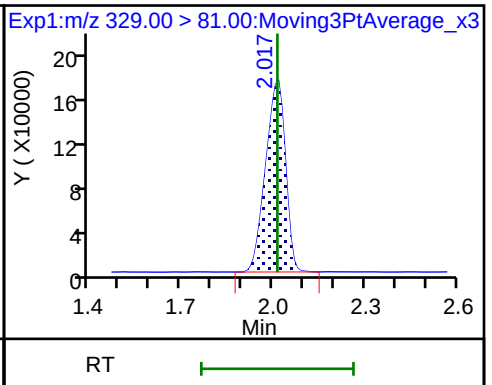
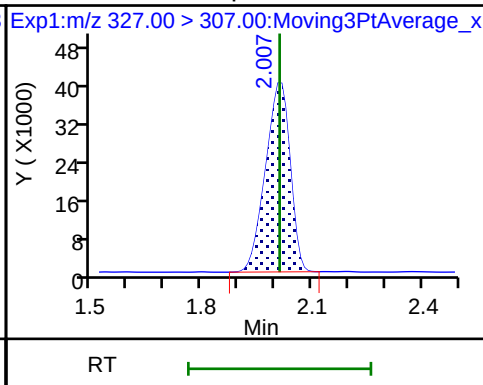
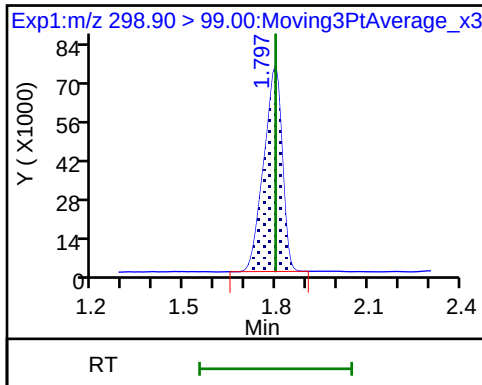
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

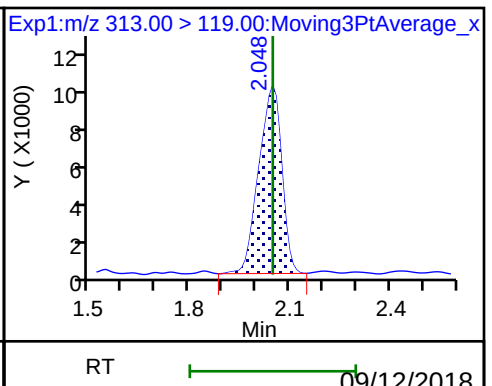
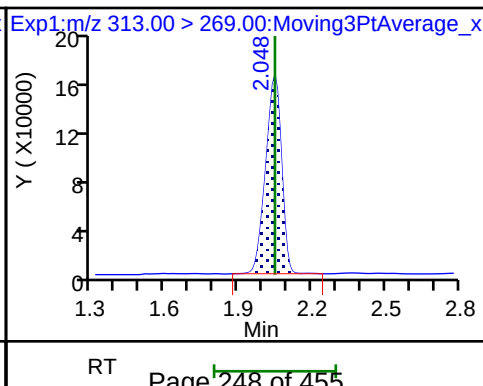
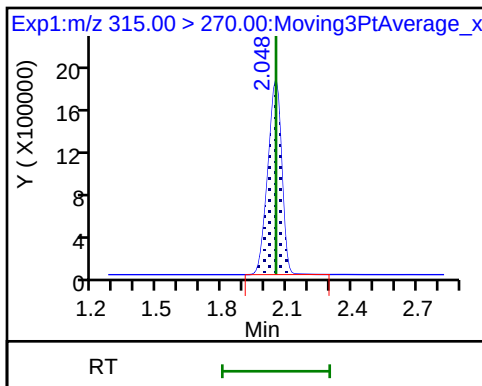
D 60 M2-4:2FTS

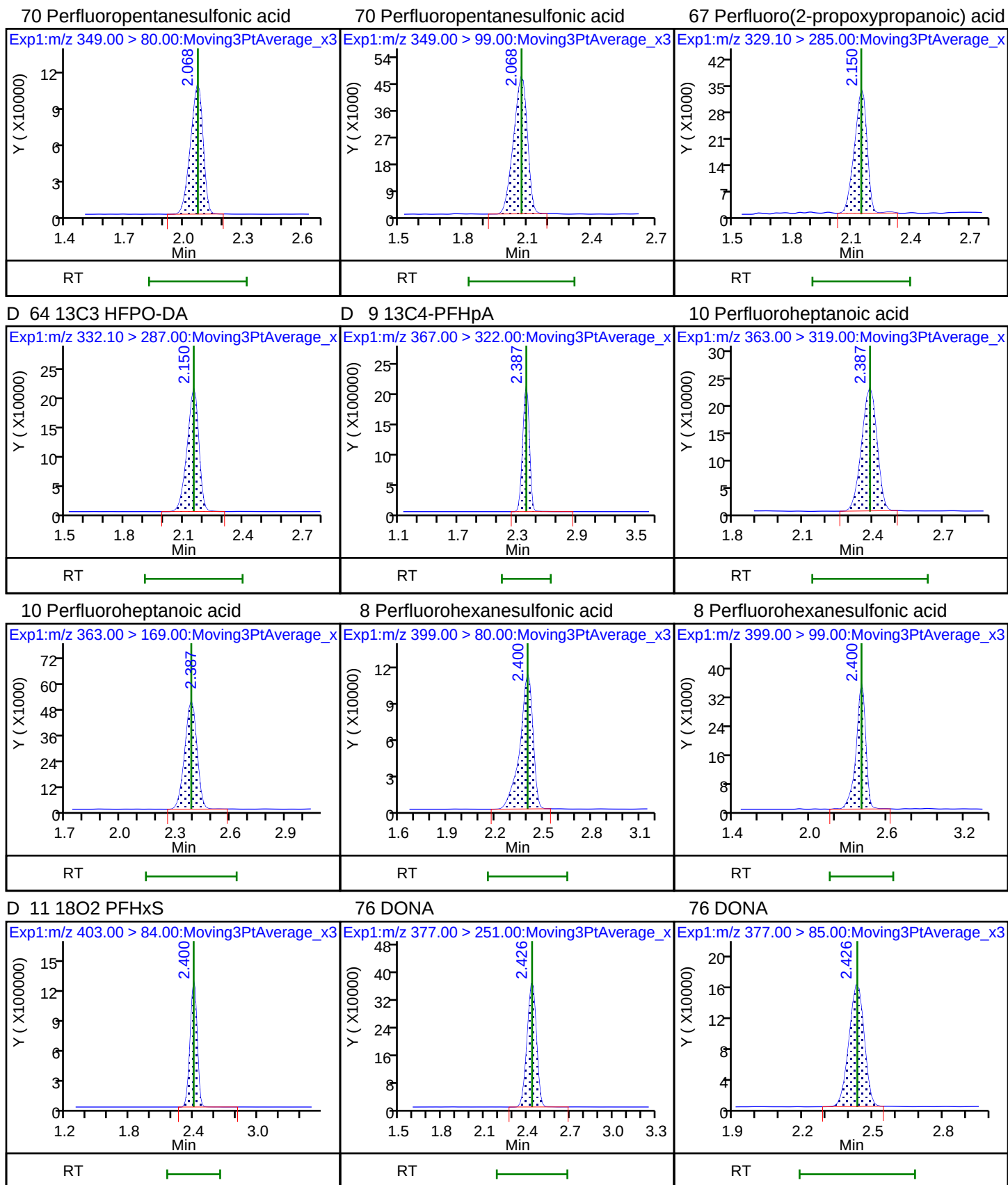


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

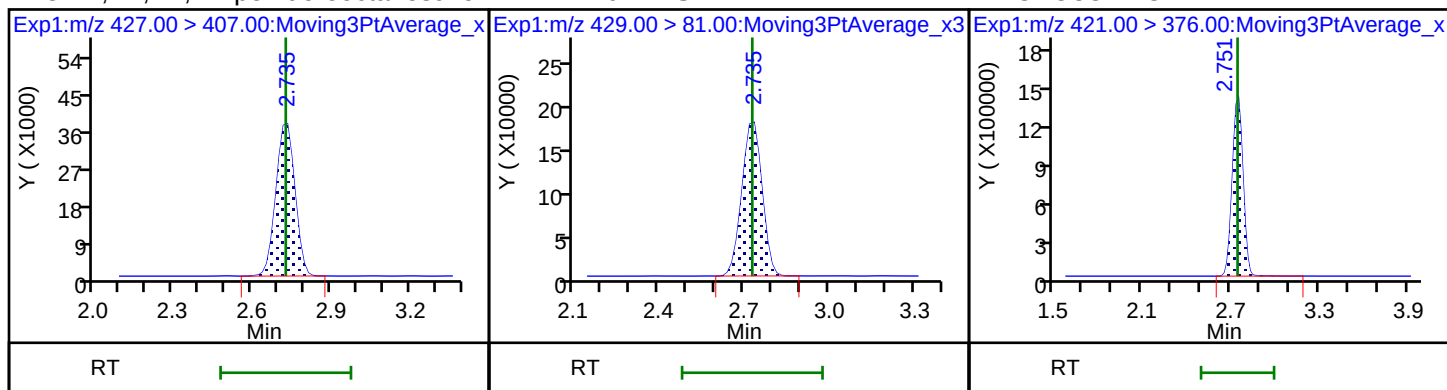
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

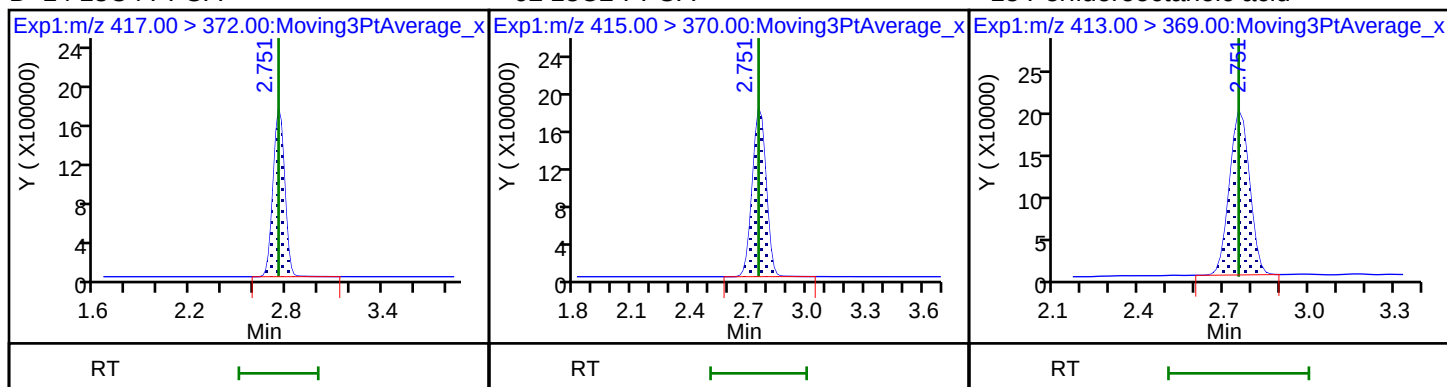
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

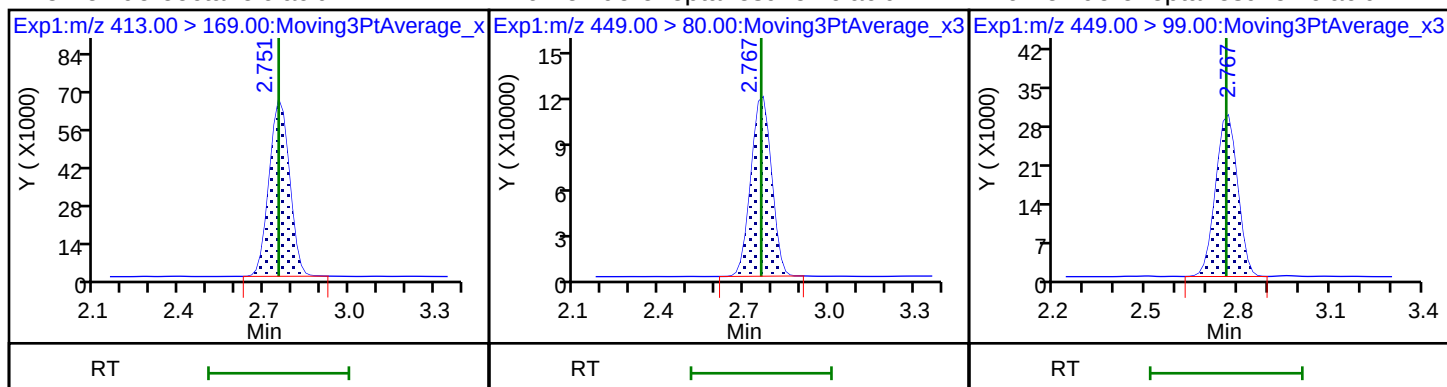
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

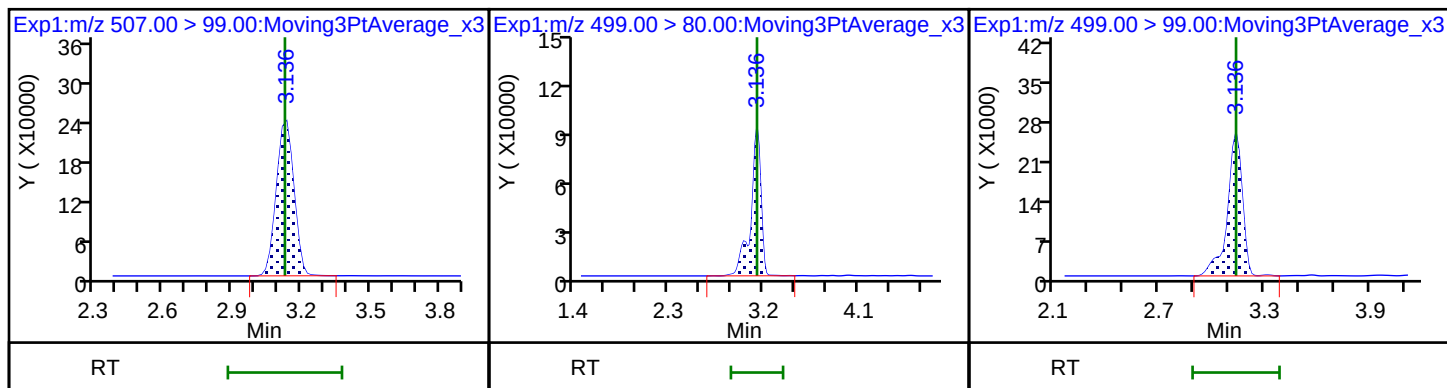
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid

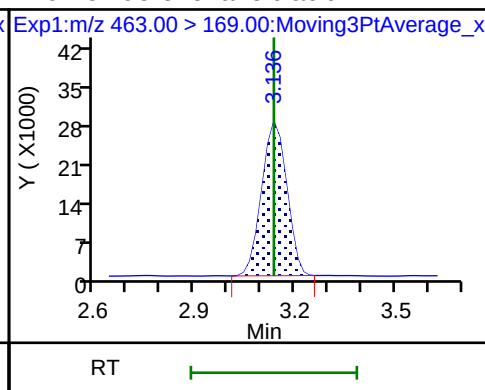
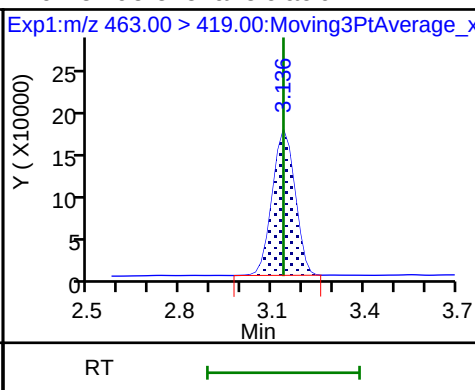
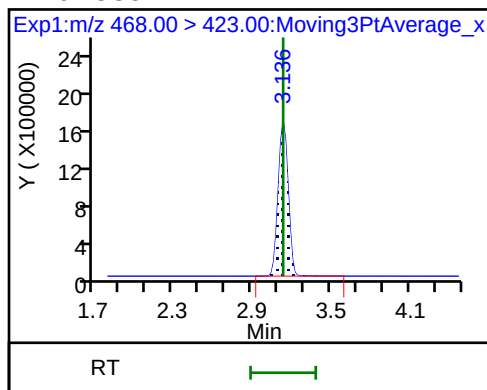
17 Perfluorooctane sulfonic acid



D 19 13C5 PFNA

20 Perfluorononanoic acid

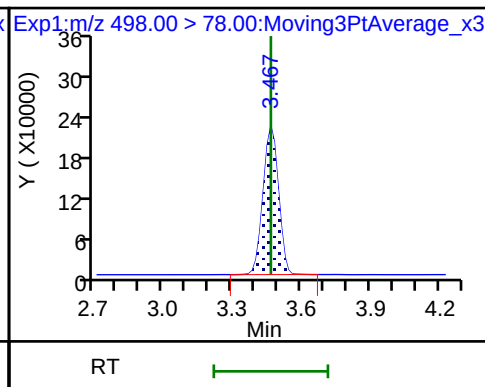
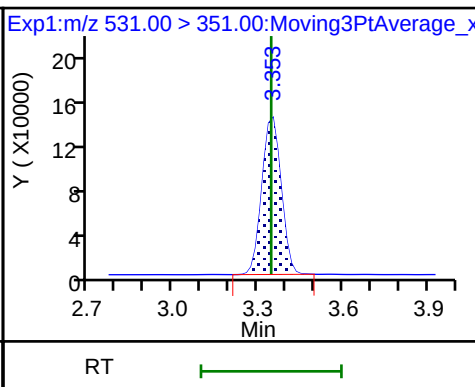
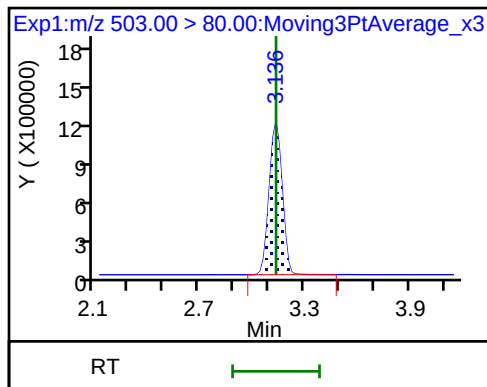
20 Perfluorononanoic acid



D 18 13C4 PFOS

69 9-Chlorohexadecafluoro-3-oxanonan

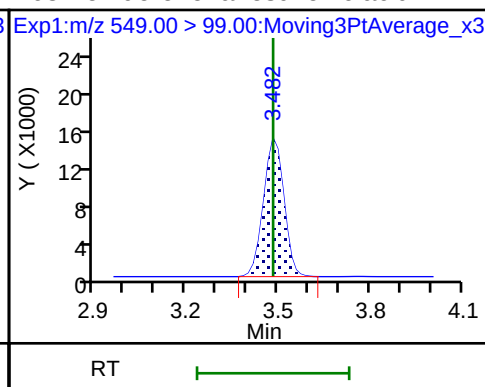
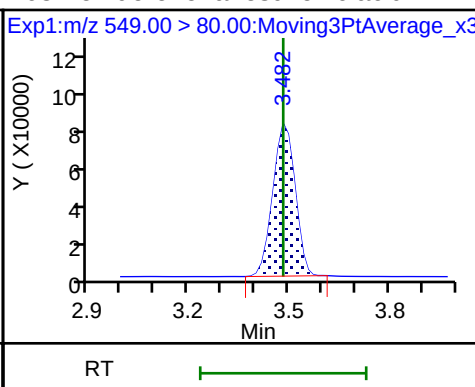
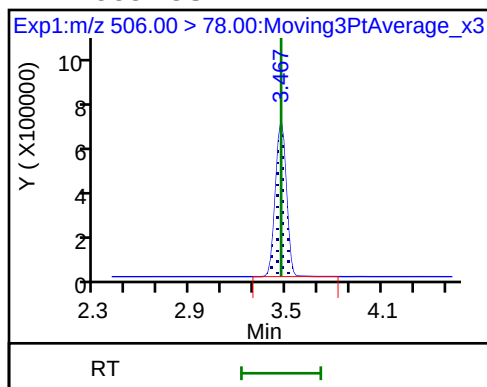
22 Perfluorooctane Sulfonamide



D 21 13C8 FOSA

68 Perfluorononanesulfonic acid

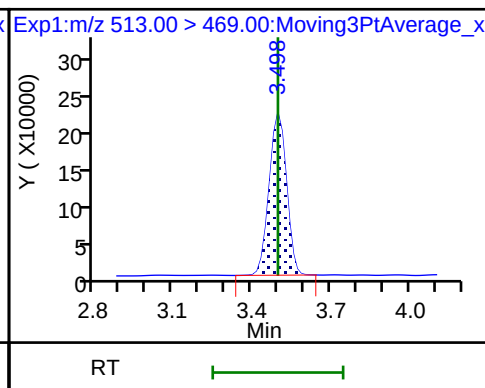
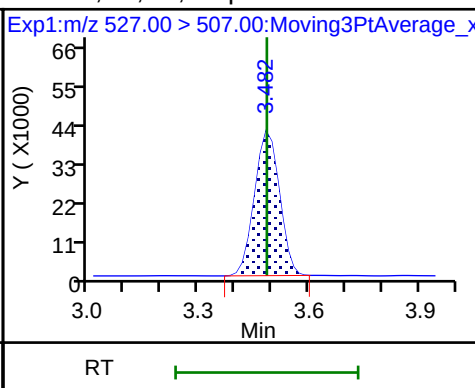
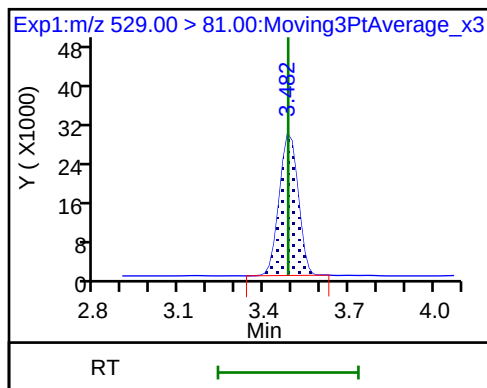
68 Perfluorononanesulfonic acid

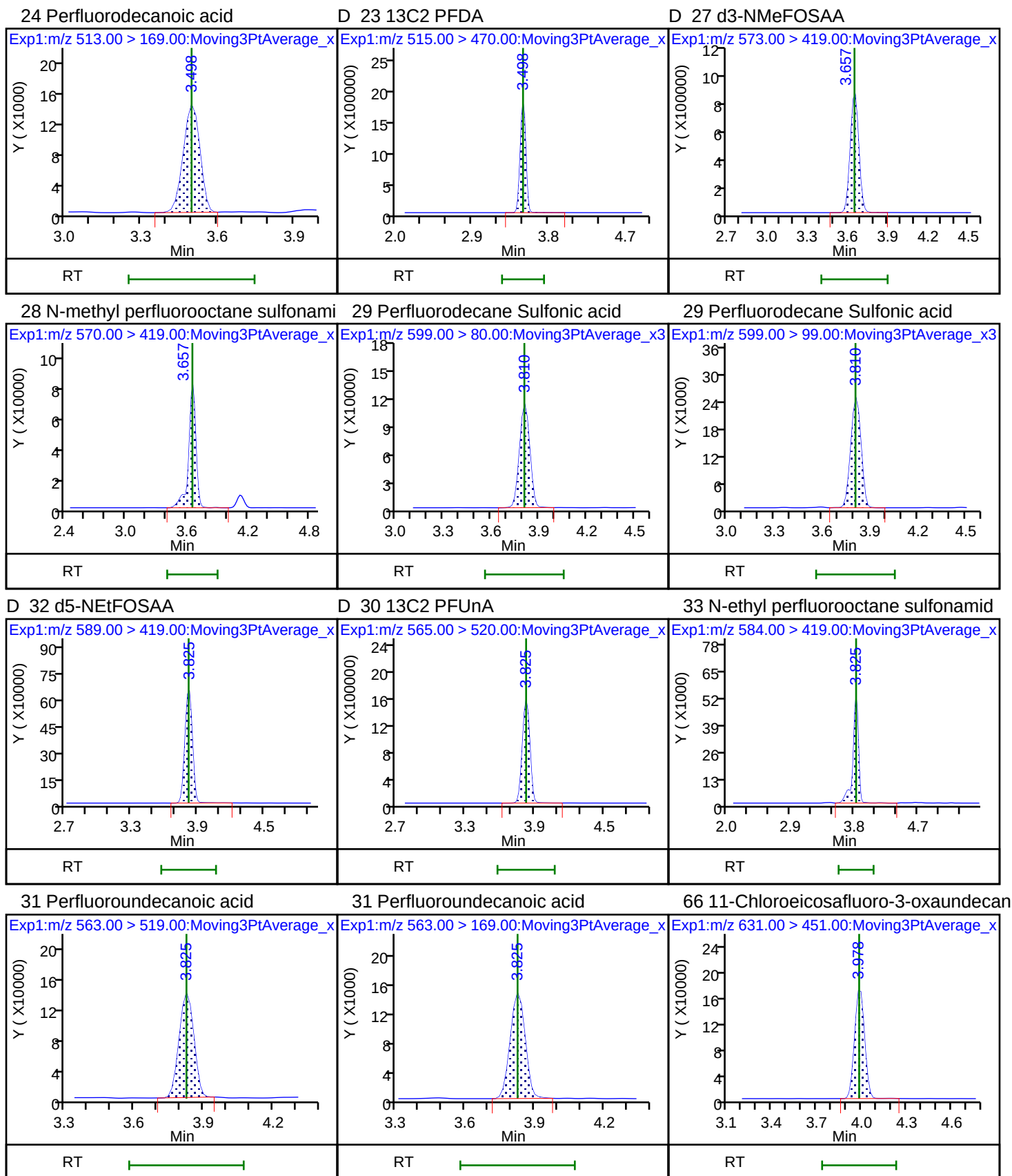


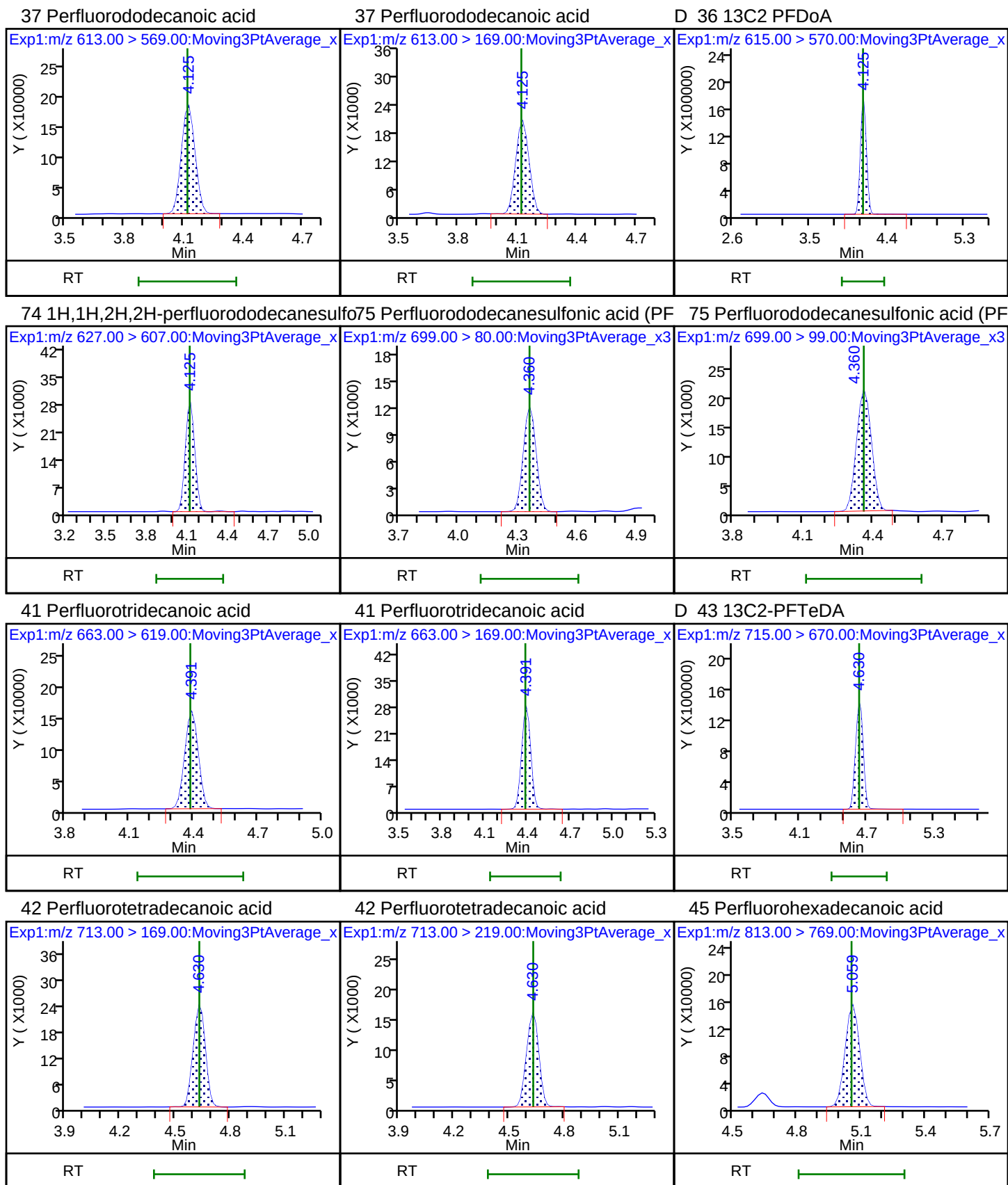
D 26 M2-8:2FTS

25 1H,1H,2H,2H-perfluorodecanesulfoni

24 Perfluorodecanoic acid



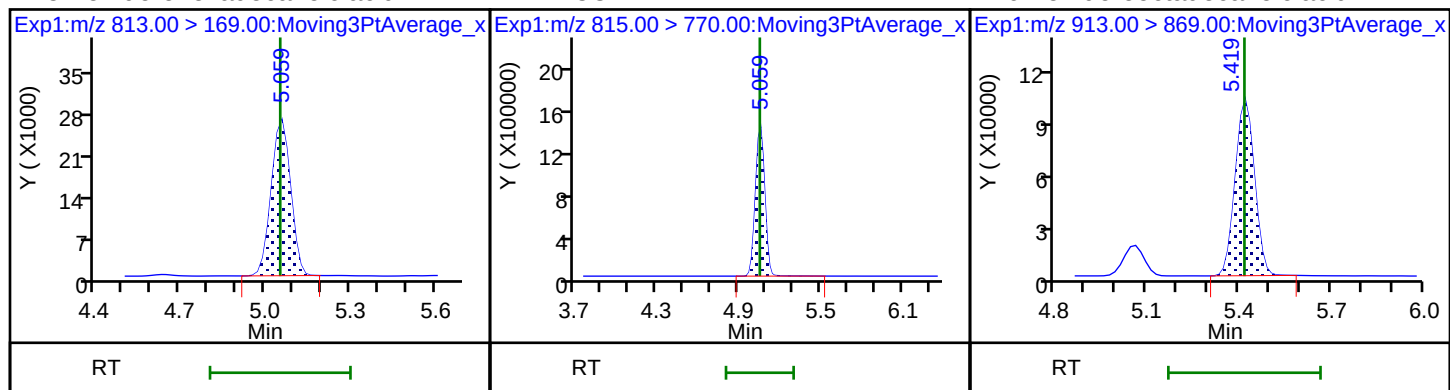




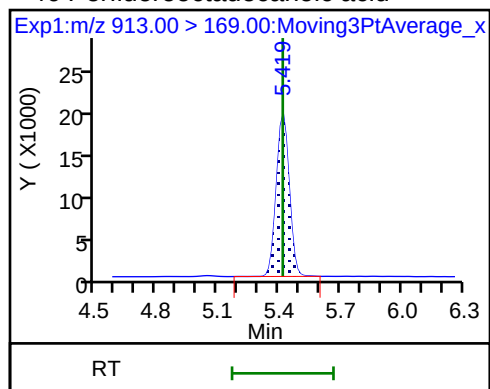
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_008.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 28-Aug-2018 10:43:17 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 28-Aug-2018 13:27:08 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: roycea

Date: 28-Aug-2018 13:27:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.489	1.485	0.004	0.541	8247082	2.55		102	14262	
2 Perfluorobutyric acid										
212.90 > 169.00	1.489	1.486	0.003	1.000	3143317	1.04		104	508	
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.758	0.006	0.641	7445050	2.58		103	14769	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.759	0.005	1.000	3049788	1.01		101	354	
D 47 13C3-PFBS										
301.90 > 83.00	1.797	1.796	0.001	0.653	93328	2.46		106	737	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.797	1.797	0.0	1.000	3828010	0.9077		103	2017	
298.90 > 99.00	1.797	1.797	0.0	1.000	1261899		3.03(1.35-4.05)	103	1200	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.017	2.012	0.005	1.122	813711	0.9381		100	4350	
D 60 M2-4:2FTS										
329.00 > 81.00	2.017	2.013	0.004	0.733	788951	2.42		104	926	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.048	0.0	0.745	7673418	2.51		101	14087	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	2851130	1.02		102	863	
313.00 > 119.00	2.048	2.048	0.0	1.000	214904		13.27(6.96-20.87)	102	502	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.079	2.071	0.008	1.157	1832484	0.9153		97.6	3435	
349.00 > 99.00	2.068	2.071	-0.003	1.151	842217		2.18(1.15-3.45)	97.6	2116	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.150	2.149	0.001	1.000	552949	0.9822		98.2	312	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.782	795942	2.40		96.2	2978	
D 9 13C4-PFHpA										
367.00 > 322.00	2.387	2.387	0.0	0.868	9199599	2.53		101	9411	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.387	0.0	1.000	3961330	1.06		106	681	
363.00 > 169.00	2.387	2.387	0.0	1.000	852861		4.64(2.17-6.52)	106	1600	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	2402576	0.8228		90.4	2203	
399.00 > 99.00	2.400	2.400	0.0	1.000	683800		3.51(1.90-5.70)	90.4	909	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.872	5581192	2.49		105	5455	
76 DONA										
377.00 > 251.00	2.439	2.432	0.007	0.778	6494207	1.02		108	6414	
377.00 > 85.00	2.439	2.432	0.007	0.778	2756257		2.36(1.13-3.39)	108	1249	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.735	2.728	0.007	1.000	816302	1.02		107	622	
D 12 M2-6:2FTS										
429.00 > 81.00	2.735	2.728	0.007	0.994	889676	2.49		105	1290	
D 73 13C8 PFOA										
421.00 > 376.00	2.751	2.744	0.007		7103435	2.46		100	8511	
D 14 13C4 PFOA										
417.00 > 372.00	2.751	2.751	0.0	1.000	8426167	2.49		99.4	10249	
* 62 13C2-PFOA										
415.00 > 370.00	2.751	2.751	0.0		8409228	2.50			10679	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.751	2.751	0.0	1.000	3792013	1.05		104	301	
413.00 > 169.00	2.751	2.751	0.0	1.000	1323195		2.87(1.36-4.08)	104	2123	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.767	2.760	0.007	0.882	2397620	0.9861		104	2422	
449.00 > 99.00	2.767	2.760	0.007	0.882	582972		4.11(1.84-5.53)	104	2833	
D 72 13C8 PFOS										
507.00 > 99.00	3.136	3.129	0.007		1220672	2.38		99.4	4374	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.136	3.136	0.0	1.000	2380254	0.9135		98.4	1209	
499.00 > 99.00	3.136	3.136	0.0	1.000	577528		4.12(2.04-6.12)	98.4	1576	
D 19 13C5 PFNA										
468.00 > 423.00	3.136	3.136	0.0	1.140	8074769	2.54		102	12278	
20 Perfluorononanoic acid										
463.00 > 419.00	3.136	3.136	0.0	1.000	3310854	1.05		105	402	
463.00 > 169.00	3.136	3.136	0.0	1.000	602945		5.49(2.68-8.03)	105	1032	
D 18 13C4 PFOS										
503.00 > 80.00	3.136	3.136	0.0	1.140	5901987	2.45		103	4328	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.352	3.346	0.006	1.069	2658307	0.9296		99.7	2232	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.467	3.467	0.0	1.000	4174038	1.05		105	3615	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.467	3.467	0.0	1.260	3352554	2.63		105	5672	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.482	3.483	-0.001	1.110	1596059	1.00		104	2091	
549.00 > 99.00	3.482	3.483	-0.001	1.110	257104		6.21(3.02-9.05)	104	1491	
D 26 M2-8:2FTS										
529.00 > 81.00	3.482	3.485	-0.003	1.266	139344	2.65		111	904	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.482	3.485	-0.003	1.000	773601	0.8783		91.7	2550	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.498	3.498	0.0	1.000	3764333	1.02		102	615	
513.00 > 169.00	3.498	3.498	0.0	1.000	236839		15.89(7.12-21.35)	102	323	
D 23 13C2 PFDA										
515.00 > 470.00	3.498	3.498	0.0	1.272	8114874	2.56		102	5791	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.657	3.651	0.006	1.329	3489761	2.44		97.7	6524	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.657	3.653	0.004	1.000	1435862	1.04		104	382	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.809	3.807	0.002	1.215	2056125	1.02		106	1878	
599.00 > 99.00	3.809	3.807	0.002	1.215	422265		4.87(2.14-6.43)	106	1411	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.825	3.819	0.006	1.391	2980380	2.65		106	2984	
D 30 13C2 PFUnA										
565.00 > 520.00	3.825	3.825	0.0	1.391	6840404	2.53		101	11625	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.825	3.825	0.0	1.000	1051106	0.9482		94.8	1290	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.825	3.825	0.0	1.000	2429610	0.9898		99.0	487	
563.00 > 169.00	3.825	3.825	0.0	1.000	232635		10.44(5.24-15.72)	99.0	805	
35 MeFOSA										
512.00 > 169.00	3.962	3.949	0.013		680757	NC			636	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.993	3.983	0.010	1.273	3129936	0.99		105	6133	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.125	4.118	0.007	1.000	3507055	1.07		107	776	
613.00 > 169.00	4.125	4.118	0.007	1.000	361062		9.71(4.68-14.05)	107	1205	
D 36 13C2 PFDaA										
615.00 > 570.00	4.125	4.118	0.007	1.499	8148044	2.48		99.3	9374	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.125	4.120	0.005	1.184	512179	0.8667		89.9	1206	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.141	4.142	-0.001		692795	NC			436	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.360	4.360	0.0	1.390	215153	0.9373		96.8	513	
699.00 > 99.00	4.360	4.360	0.0	1.390	382083		0.56(0.28-0.83)	96.8	1236	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.390	4.384	0.006	1.064	2650027	1.01		101	899	
663.00 > 169.00	4.390	4.384	0.006	1.064	436267		6.07(3.09-9.27)	101	1370	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.629	4.628	0.001	1.683	6392553	2.44		97.8	14581	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.629	4.631	-0.002	1.000	407853	0.9880		98.8	1746	
713.00 > 219.00	4.629	4.631	-0.002	1.000	305947		1.33(0.70-2.09)	98.8	2146	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.058	5.053	0.005	1.000	2078803	1.03		103	472	
813.00 > 169.00	5.058	5.053	0.005	1.000	355463		5.85(2.77-8.32)	103	1098	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.058	5.053	0.005	1.839	5459924	2.06		82.4	5959	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.418	5.416	0.002	1.071	1334498	0.9582		95.8	412	
913.00 > 169.00	5.418	5.416	0.002	1.071	238751		5.59(2.55-7.64)	95.8	1653	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_008.d

Injection Date: 28-Aug-2018 10:43:17

Instrument ID: A9

Lims ID: IC L4 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

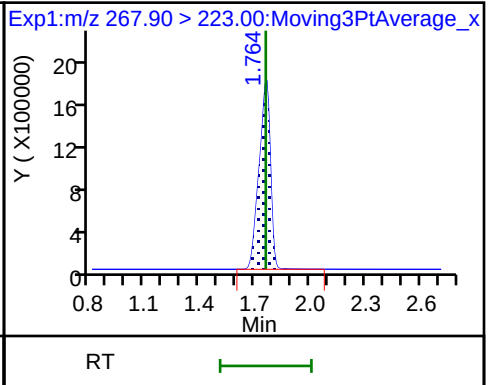
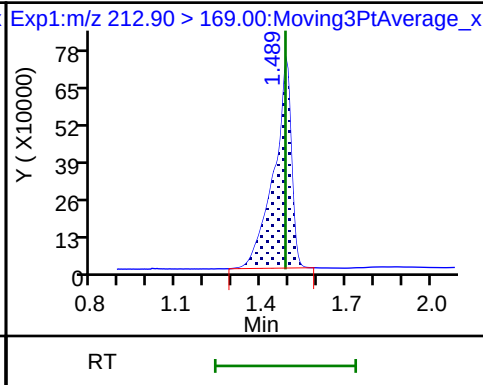
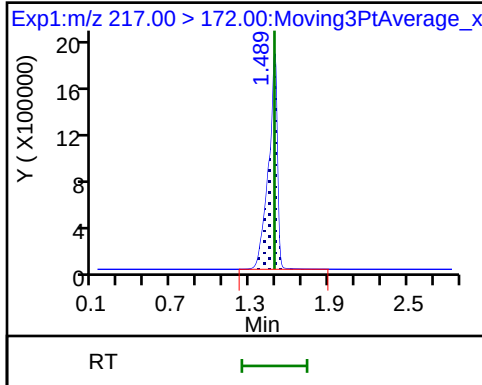
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

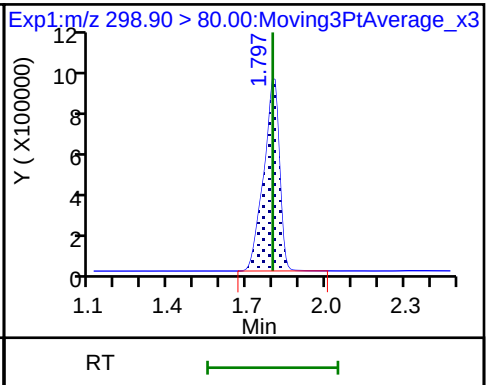
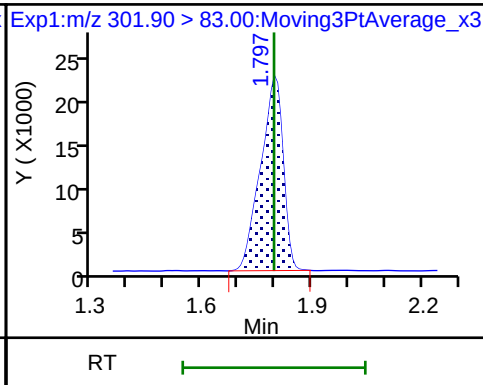
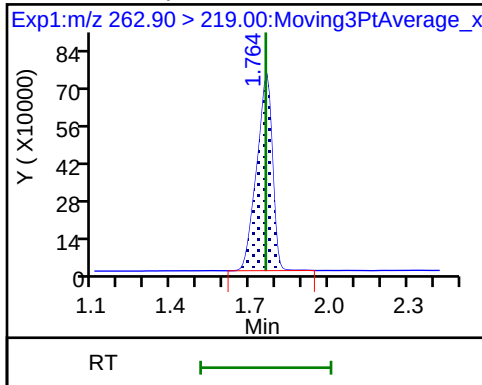
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

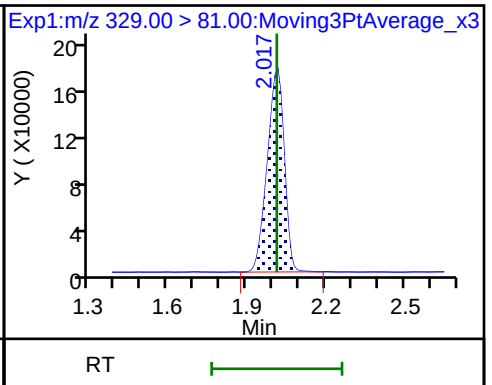
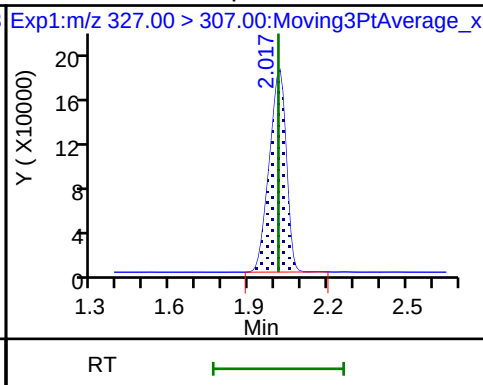
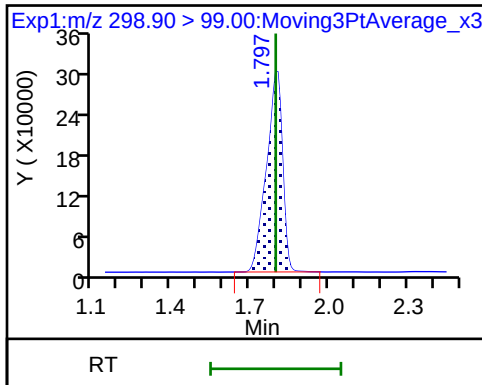
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

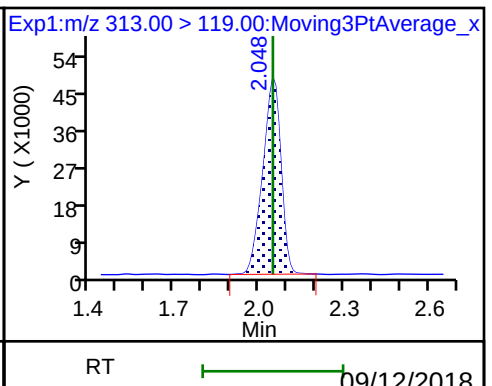
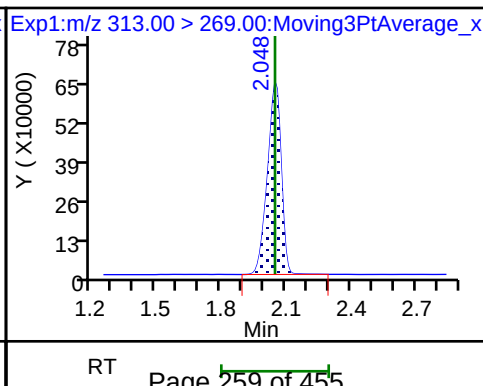
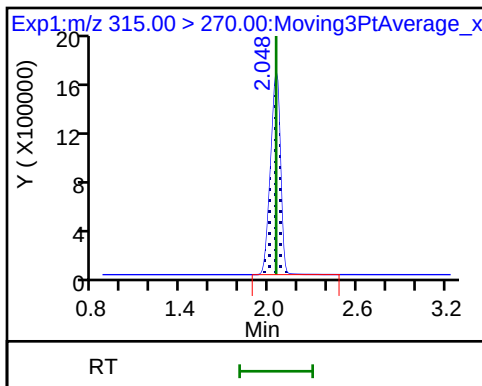
D 60 M2-4:2FTS

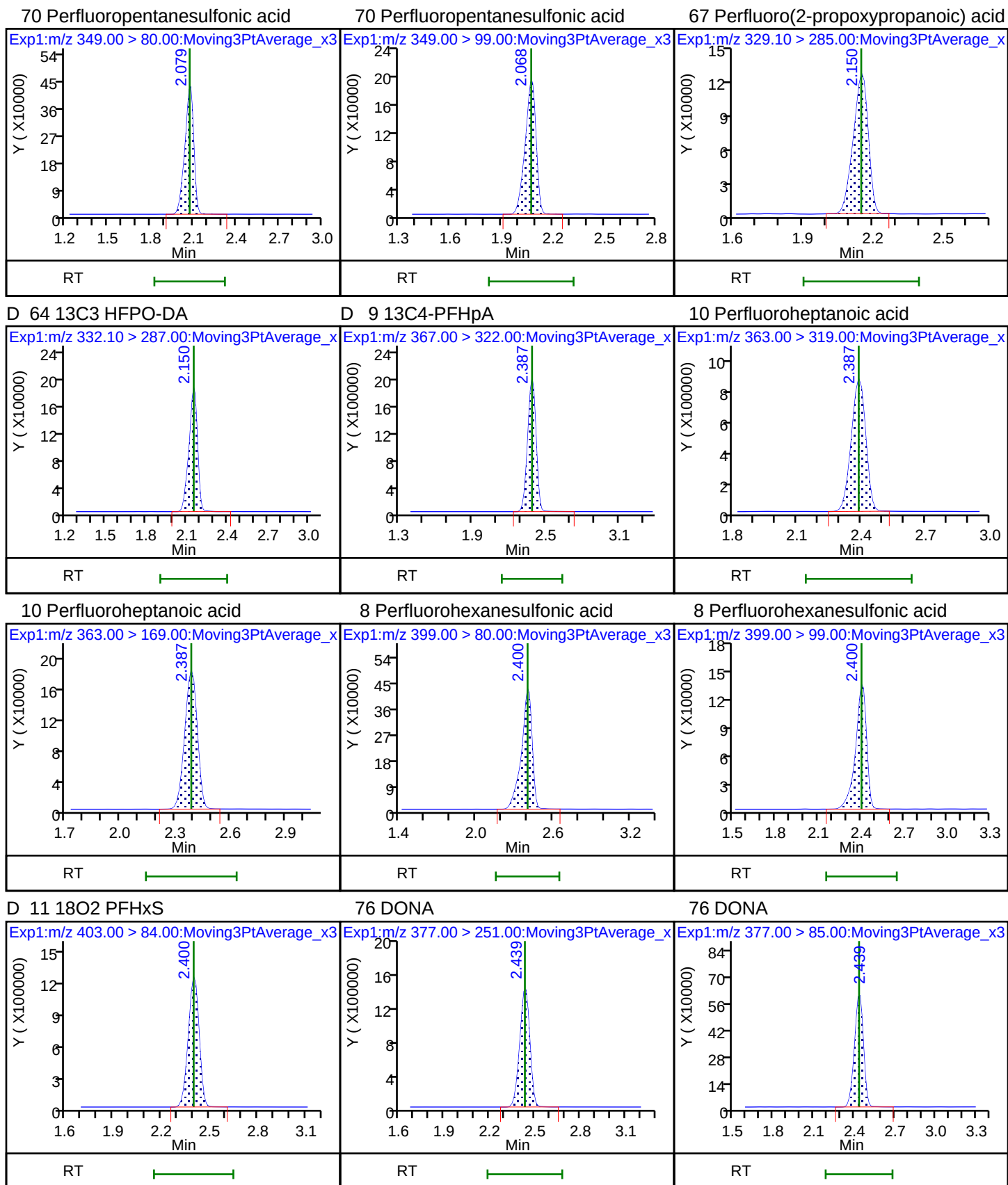


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

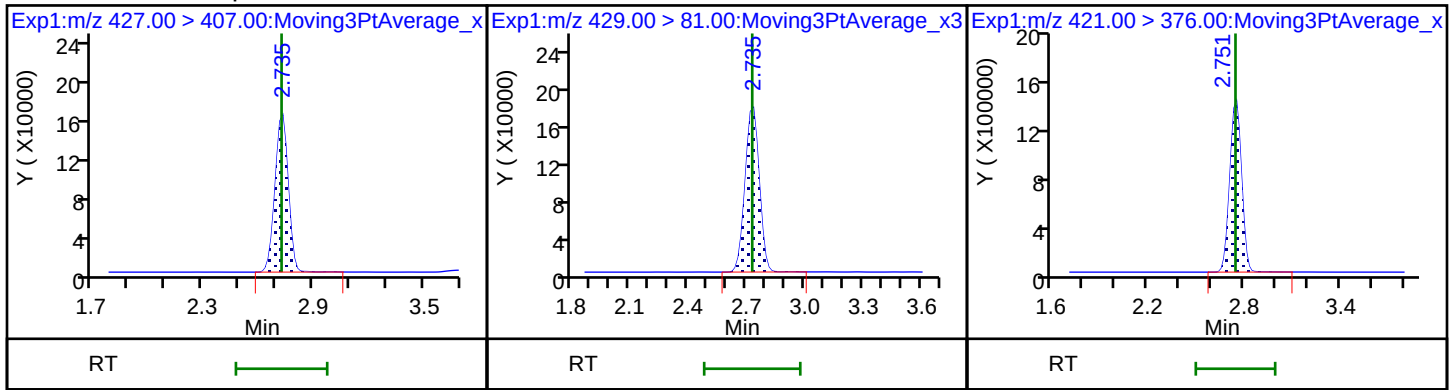
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

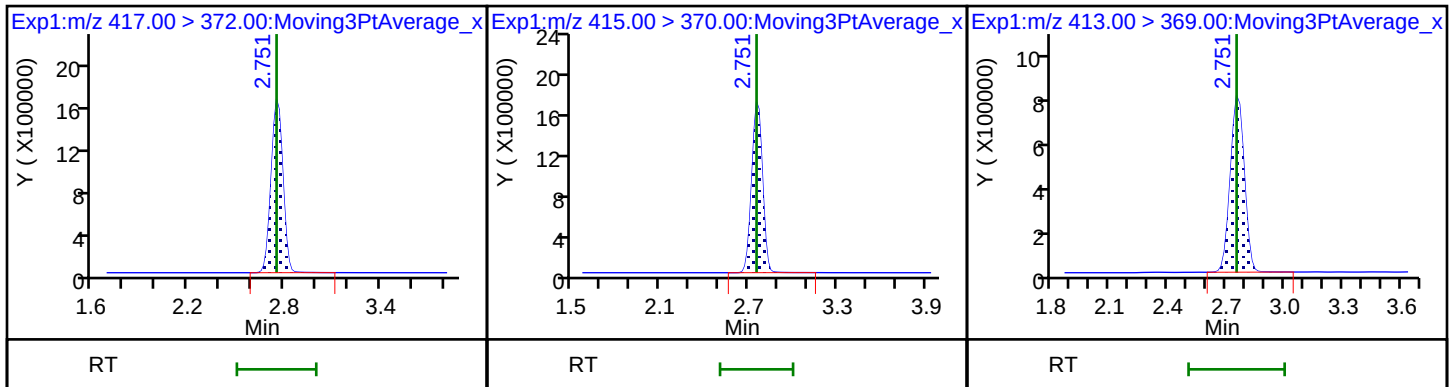
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

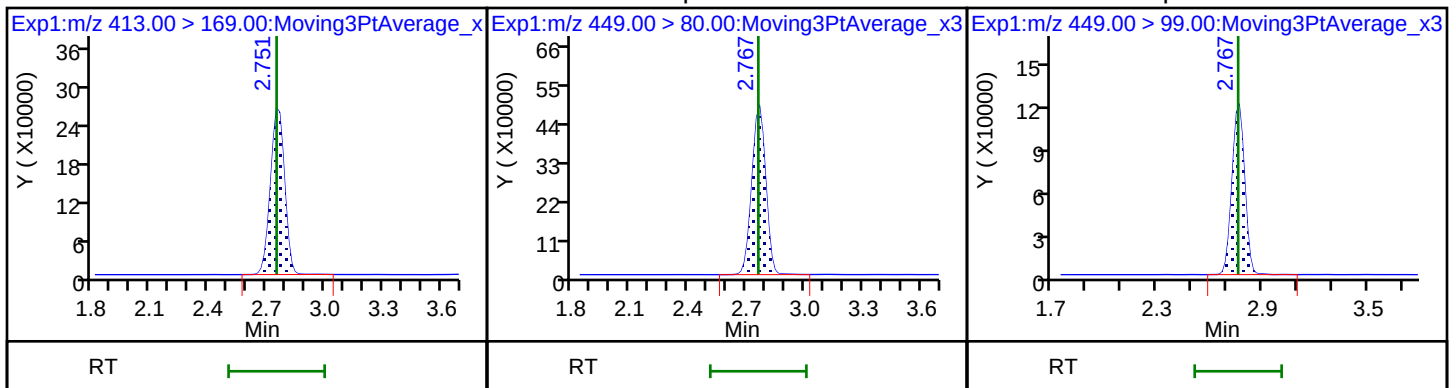
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

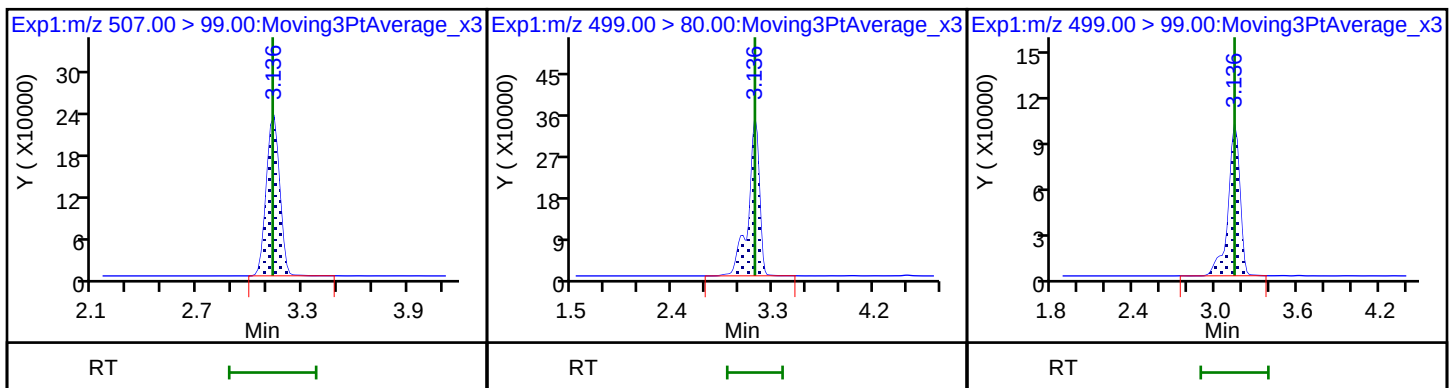
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid

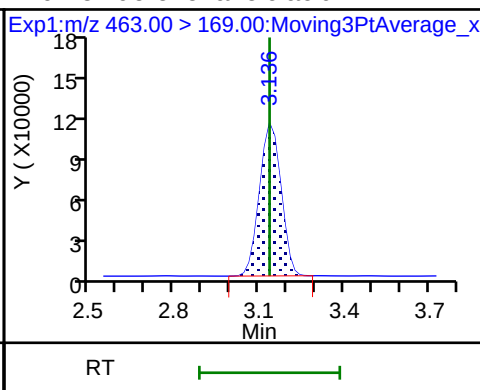
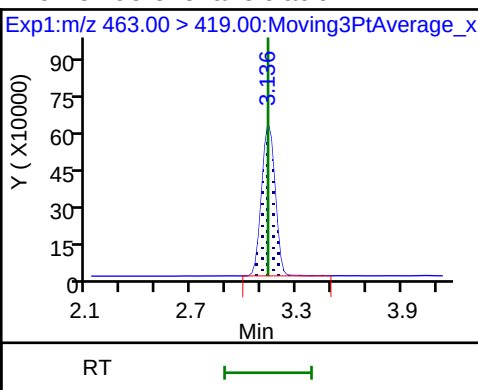
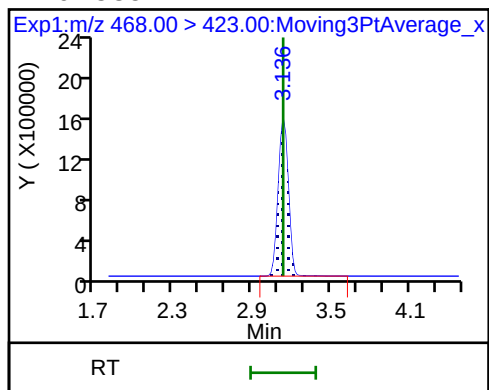
17 Perfluorooctane sulfonic acid



D 19 13C5 PFNA

20 Perfluorononanoic acid

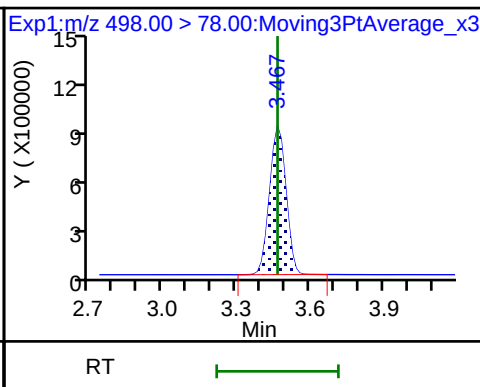
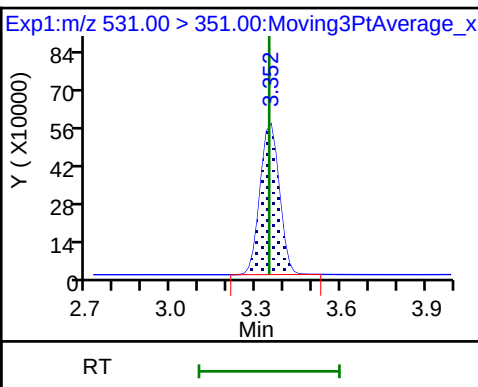
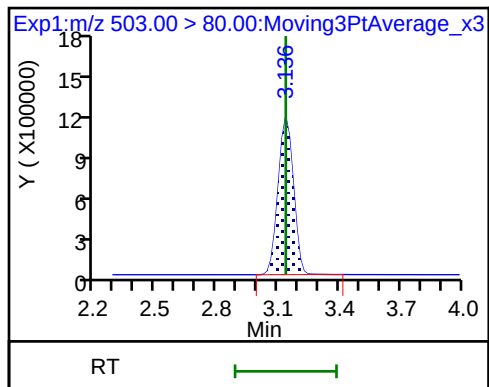
20 Perfluorononanoic acid



D 18 13C4 PFOS

69 9-Chlorohexadecafluoro-3-oxanonan

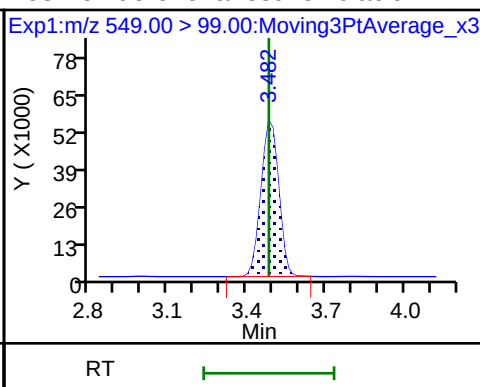
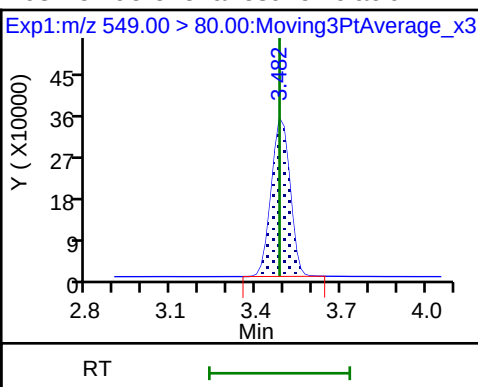
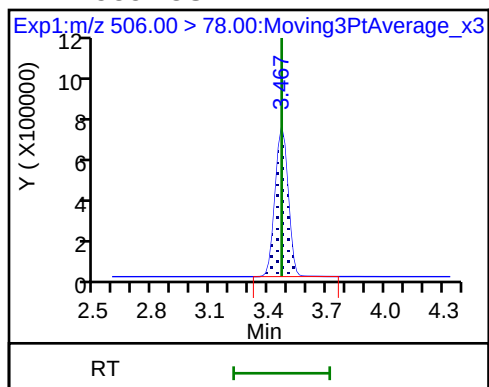
22 Perfluorooctane Sulfonamide



D 21 13C8 FOSA

68 Perfluorononanesulfonic acid

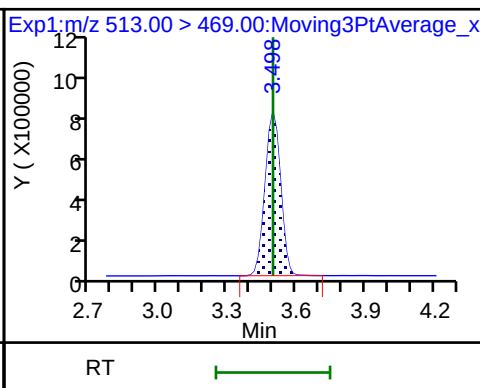
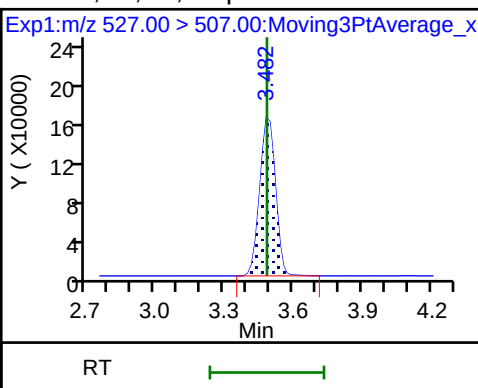
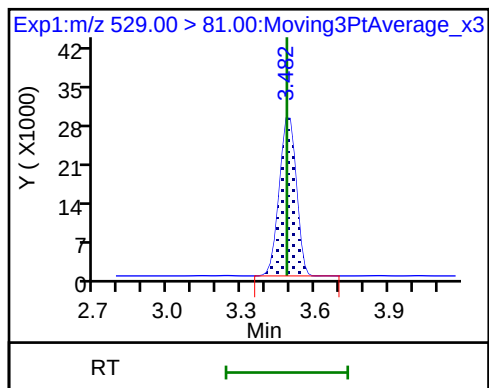
68 Perfluorononanesulfonic acid

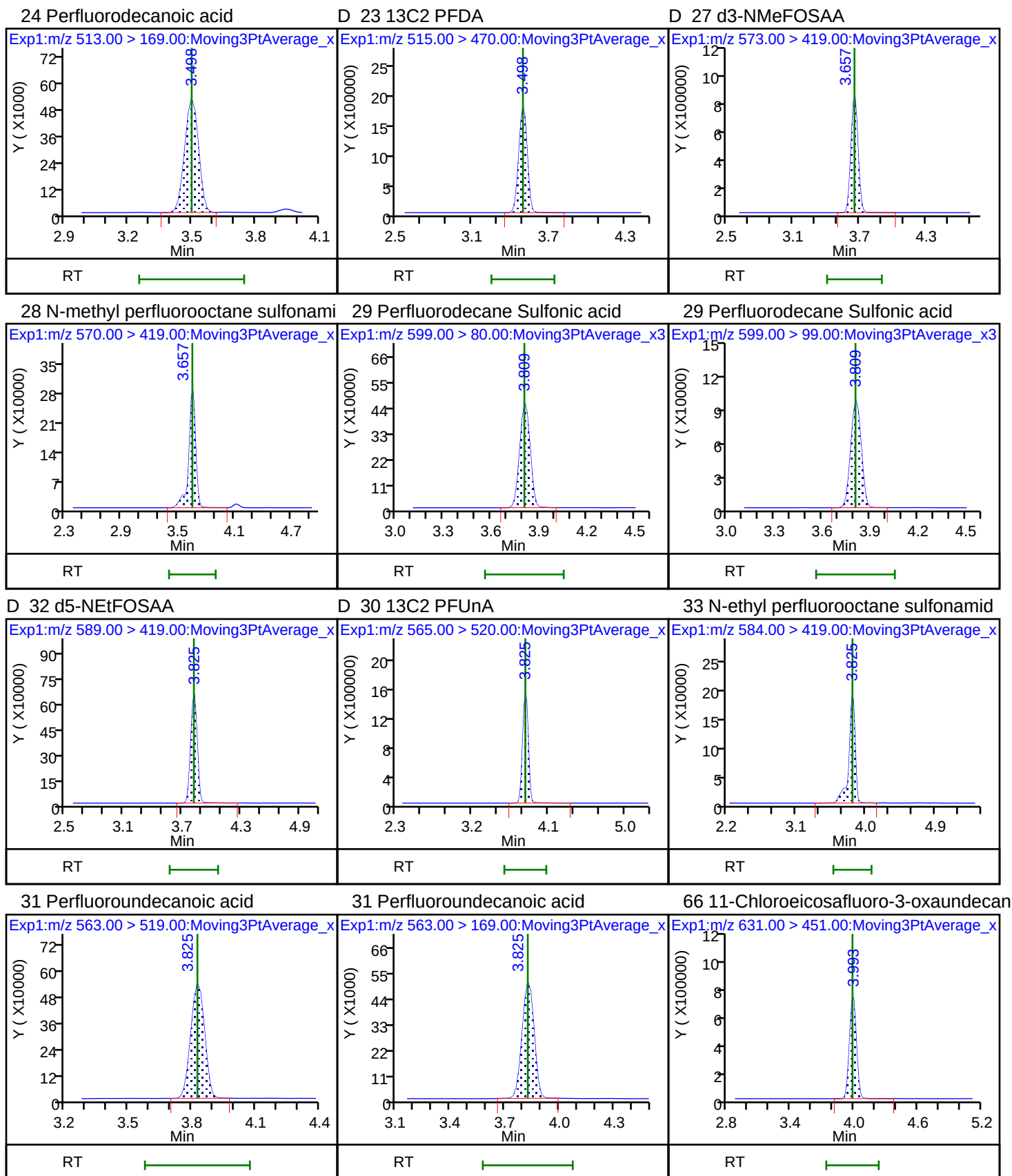


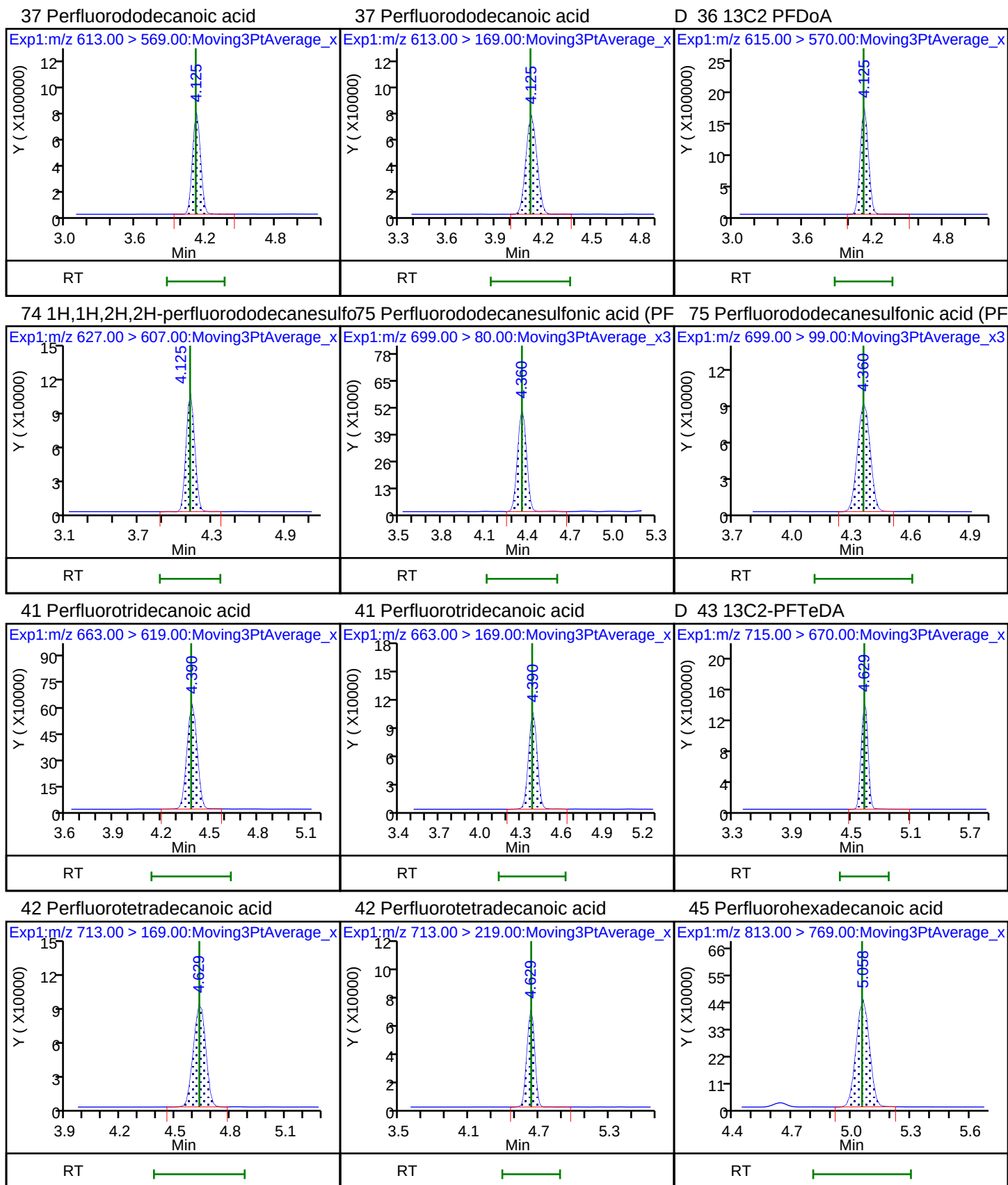
D 26 M2-8:2FTS

25 1H,1H,2H,2H-perfluorodecanesulfoni

24 Perfluorodecanoic acid



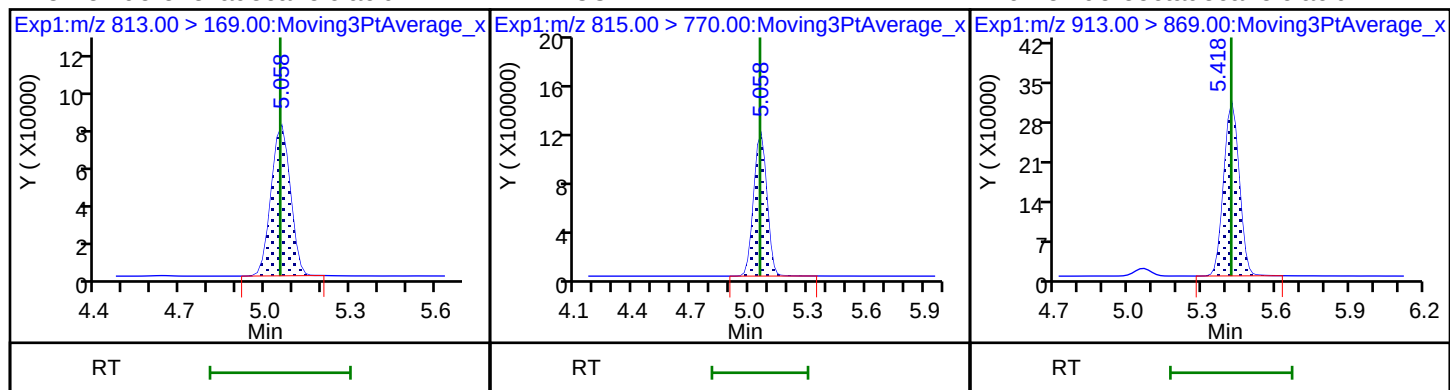




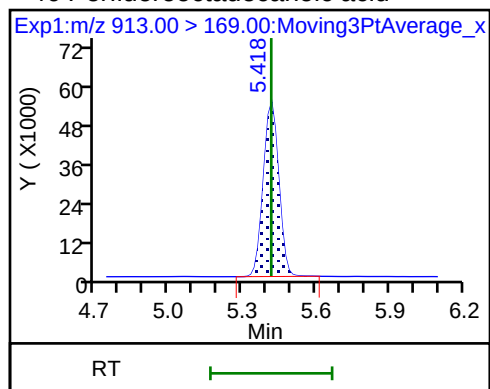
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_009.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 28-Aug-2018 10:50:48 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 28-Aug-2018 13:27:44 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: roycea

Date: 28-Aug-2018 11:04:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.484	1.485	-0.001	0.539	7801898	2.46		98.4	18666	
2 Perfluorobutyric acid										
212.90 > 169.00	1.484	1.486	-0.002	1.000	7216590	2.53		101	1140	
D 3 13C5-PFPeA										
267.90 > 223.00	1.756	1.758	-0.002	0.638	6942787	2.45		98.1	16427	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.756	1.759	-0.003	1.000	6999092	2.48		99.4	691	
D 47 13C3-PFBS										
301.90 > 83.00	1.797	1.796	0.001	0.653	80767	2.17		93.5	646	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.797	1.797	0.0	1.000	8735294	2.39		108	4242	
298.90 > 99.00	1.797	1.797	0.0	1.000	3068462		2.85(1.35-4.05)	108	2904	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.007	2.012	-0.005	1.117	1748471	2.33		99.8	3708	
D 60 M2-4:2FTS										
329.00 > 81.00	2.007	2.013	-0.006	0.730	723431	2.27		97.0	910	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.048	0.0	0.745	7349652	2.46		98.3	10194	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	6716098	2.51		100	1652	
313.00 > 119.00	2.048	2.048	0.0	1.000	503877		13.33(6.96-20.87)	100	1268	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.069	2.071	-0.002	1.151	4275802	2.47		105	5365	
349.00 > 99.00	2.069	2.071	-0.002	1.151	1917757		2.23(1.15-3.45)	105	2640	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.150	2.149	0.001	1.000	1350318	2.56		102	650	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.782	746274	2.30		92.0	2256	
D 9 13C4-PFHpA										
367.00 > 322.00	2.387	2.387	0.0	0.868	8746068	2.45		98.1	16769	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.387	0.0	1.000	8899700	2.49		99.8	1307	
363.00 > 169.00	2.387	2.387	0.0	1.000	2107597		4.22(2.17-6.52)	99.8	3167	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	5950574	2.33		102	4987	
399.00 > 99.00	2.400	2.400	0.0	1.000	1601819		3.71(1.90-5.70)	102	2349	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.872	4891052	2.23		94.3	8820	
76 DONA										
377.00 > 251.00	2.426	2.432	-0.006	0.774	14294164	2.32		98.4	12126	
377.00 > 85.00	2.426	2.432	-0.006	0.774	6467909		2.21(1.13-3.39)	98.4	2969	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.719	2.728	-0.009	1.000	1675863	2.26		95.4	1561	
D 12 M2-6:2FTS										
429.00 > 81.00	2.719	2.728	-0.009	0.988	822215	2.35		98.8	1068	
D 73 13C8 PFOA										
421.00 > 376.00	2.735	2.744	-0.009		6848148	2.37		96.8	8473	
D 14 13C4 PFOA										
417.00 > 372.00	2.751	2.751	0.0	1.000	8384516	2.52		101	11662	
* 62 13C2-PFOA										
415.00 > 370.00	2.751	2.751	0.0		8241249	2.50			16980	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.751	2.751	0.0	1.000	8304297	2.30		91.9	652	
413.00 > 169.00	2.751	2.751	0.0	1.000	3002795		2.77(1.36-4.08)	91.9	3394	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.751	2.760	-0.009	0.877	5826744	2.48		104	4770	
449.00 > 99.00	2.751	2.760	-0.009	0.877	1330852		4.38(1.84-5.53)	104	2565	
D 72 13C8 PFOS										
507.00 > 99.00	3.118	3.129	-0.011		1231916	2.40		100	2727	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.136	3.136	0.0	1.000	5942729	2.36		102	3927	
499.00 > 99.00	3.136	3.136	0.0	1.000	1389335		4.28(2.04-6.12)	102	2540	
D 19 13C5 PFNA										
468.00 > 423.00	3.136	3.136	0.0	1.140	7495131	2.41		96.4	11913	
20 Perfluorononanoic acid										
463.00 > 419.00	3.136	3.136	0.0	1.000	7795005	2.66		106	869	
463.00 > 169.00	3.136	3.136	0.0	1.000	1466662		5.31(2.68-8.03)	106	2225	
D 18 13C4 PFOS										
503.00 > 80.00	3.136	3.136	0.0	1.140	5701715	2.42		101	3867	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.336	3.346	-0.010	1.064	6342999	2.30		98.5	4324	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.467	3.467	0.0	1.000	9183356	2.56		102	5598	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.467	3.467	0.0	1.260	3025791	2.43		97.1	6566	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.483	3.483	0.0	1.110	3599772	2.34		97.3	2924	
549.00 > 99.00	3.483	3.483	0.0	1.110	614110		5.86(3.02-9.05)	97.3	2016	
D 26 M2-8:2FTS										
529.00 > 81.00	3.483	3.485	-0.002	1.266	118425	2.30		95.9	567	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.483	3.485	-0.002	1.000	1820247	2.43		102	4524	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.498	3.498	0.0	1.000	9108633	2.63		105	1313	
513.00 > 169.00	3.498	3.498	0.0	1.000	586175		15.54(7.12-21.35)	105	396	
D 23 13C2 PFDA										
515.00 > 470.00	3.498	3.498	0.0	1.272	7596034	2.44		97.8	7658	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.643	3.651	-0.008	1.324	3589091	2.56		103	5068	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.657	3.653	0.004	1.004	3489405	2.45		97.8	7066	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.810	3.807	0.003	1.215	4862491	2.51		104	3918	
599.00 > 99.00	3.810	3.807	0.003	1.215	1024799		4.74(2.14-6.43)	104	2304	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.810	3.819	-0.009	1.385	2766889	2.51		100	2664	
D 30 13C2 PFUnA										
565.00 > 520.00	3.826	3.825	0.001	1.391	6654794	2.52		101	11815	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.826	3.825	0.001	1.004	2476305	2.41		96.2	3349	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.826	3.825	0.001	1.000	5517545	2.31		92.4	995	
563.00 > 169.00	3.826	3.825	0.001	1.000	583713		9.45(5.24-15.72)	92.4	2553	
35 MeFOSA										
512.00 > 169.00	3.947	3.949	-0.002		1701939	NC			858	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.978	3.983	-0.005	1.268	7485003	2.45		104	18945	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.109	4.118	-0.009	1.000	8241309	2.50		100	1590	
613.00 > 169.00	4.109	4.118	-0.009	1.000	887808		9.28(4.68-14.05)	100	2045	
D 36 13C2 PFDaA										
615.00 > 570.00	4.109	4.118	-0.009	1.494	8174334	2.54		102	7239	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.125	4.120	0.005	1.184	1273893	2.54		105	3906	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.142	4.142	0.0		1807818	NC			607	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.360	4.360	0.0	1.390	512801	2.31		95.6	1050	
699.00 > 99.00	4.360	4.360	0.0	1.390	868748		0.59(0.28-0.83)	95.6	2069	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.376	4.384	-0.008	1.065	6691746	2.55		102	2032	
663.00 > 169.00	4.391	4.384	0.007	1.069	1100551		6.08(3.09-9.27)	102	2566	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.633	4.628	0.005	1.684	6634077	2.59		104	11939	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.633	4.631	0.002	1.000	1055743	2.46		98.6	3023	
713.00 > 219.00	4.615	4.631	-0.016	0.996	701865		1.50(0.70-2.09)	98.6	2079	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.045	5.053	-0.008	1.000	6310009	2.57		103	1196	
813.00 > 169.00	5.045	5.053	-0.008	1.000	1065933		5.92(2.77-8.32)	103	2433	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.045	5.053	-0.008	1.834	6738965	2.59		104	10290	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.408	5.416	-0.008	1.072	4453206	2.59		104	951	
913.00 > 169.00	5.408	5.416	-0.008	1.072	791459		5.63(2.55-7.64)	104	2660	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_009.d

Injection Date: 28-Aug-2018 10:50:48

Instrument ID: A9

Lims ID: IC L5 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

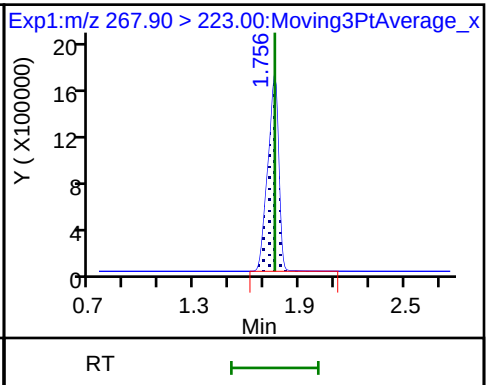
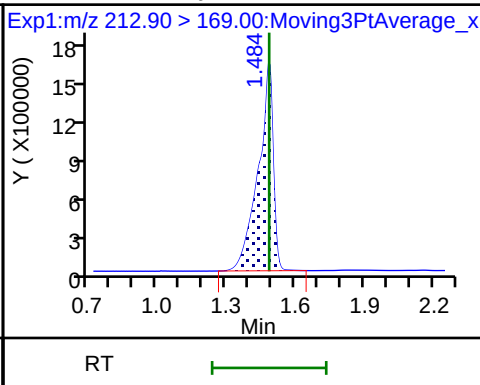
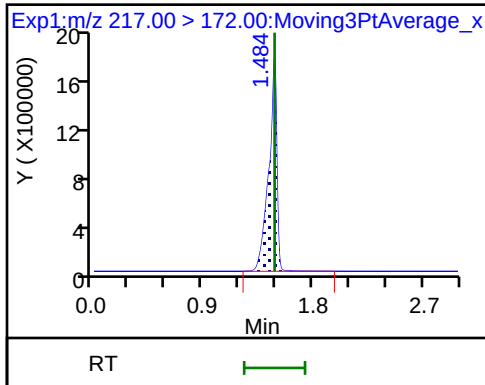
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

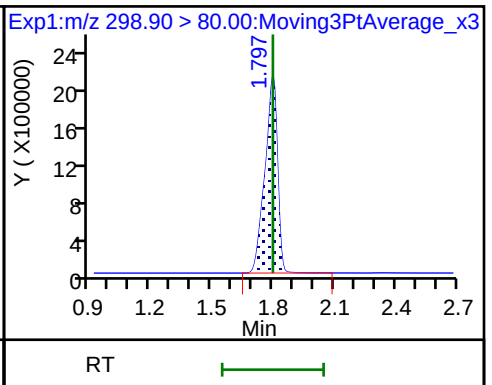
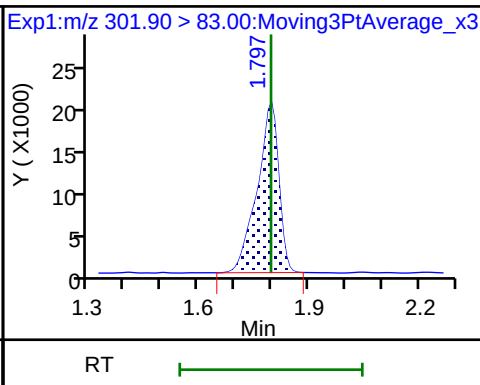
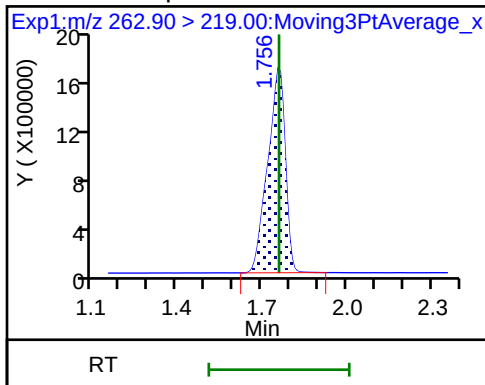
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

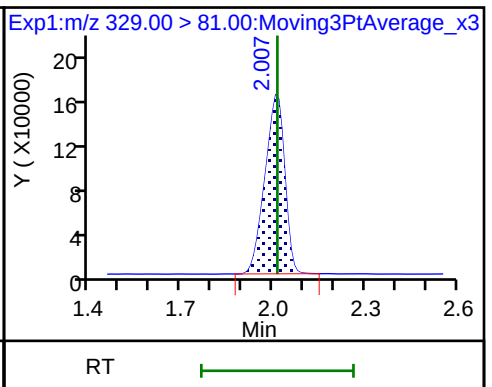
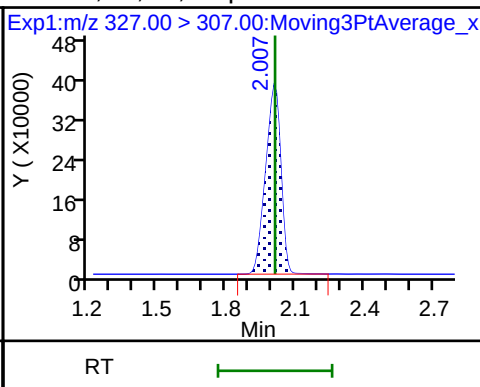
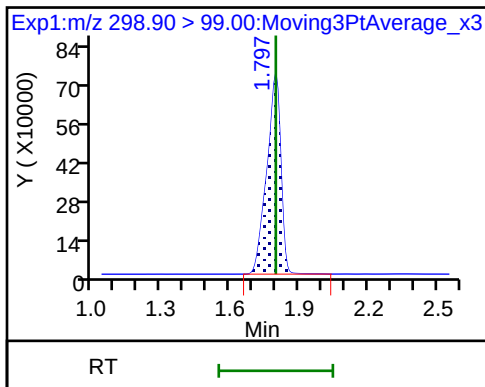
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

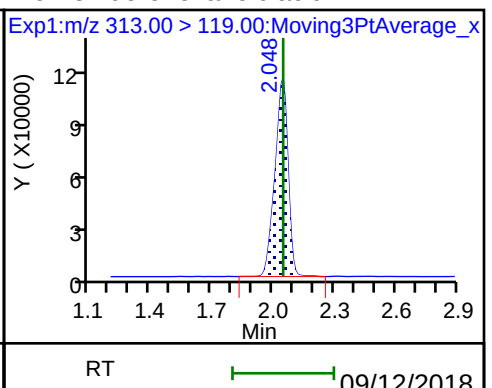
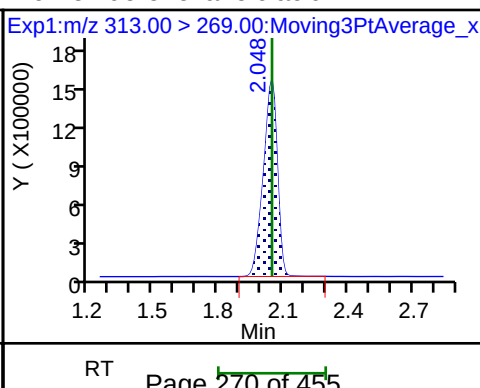
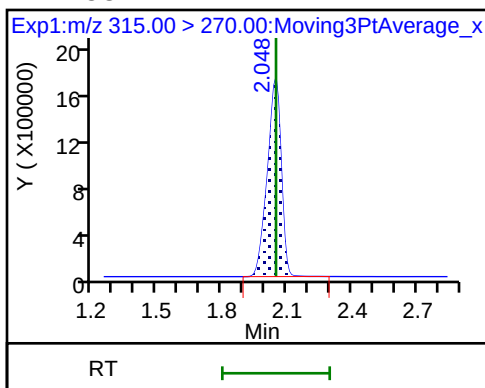
D 60 M2-4:2FTS

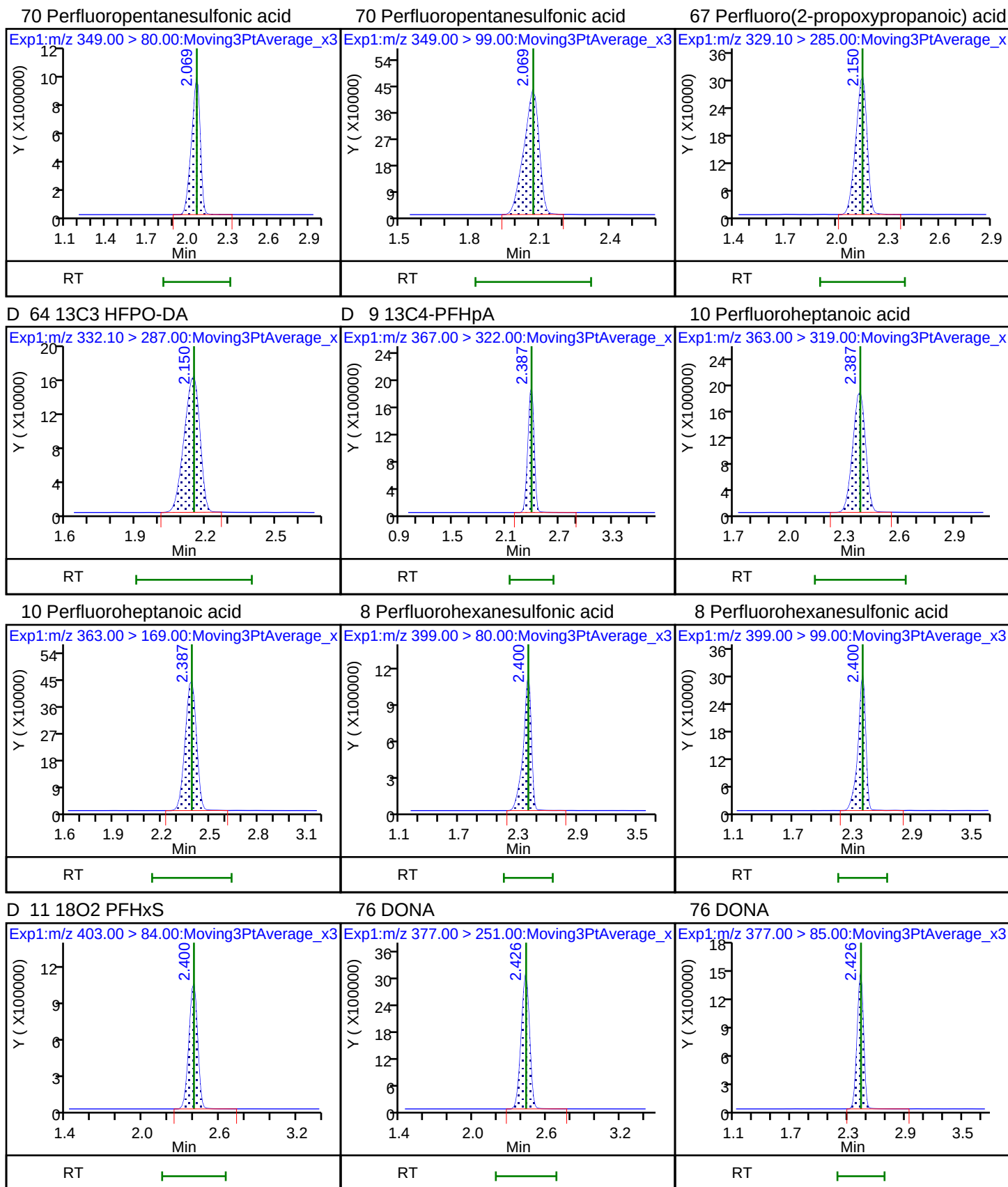


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

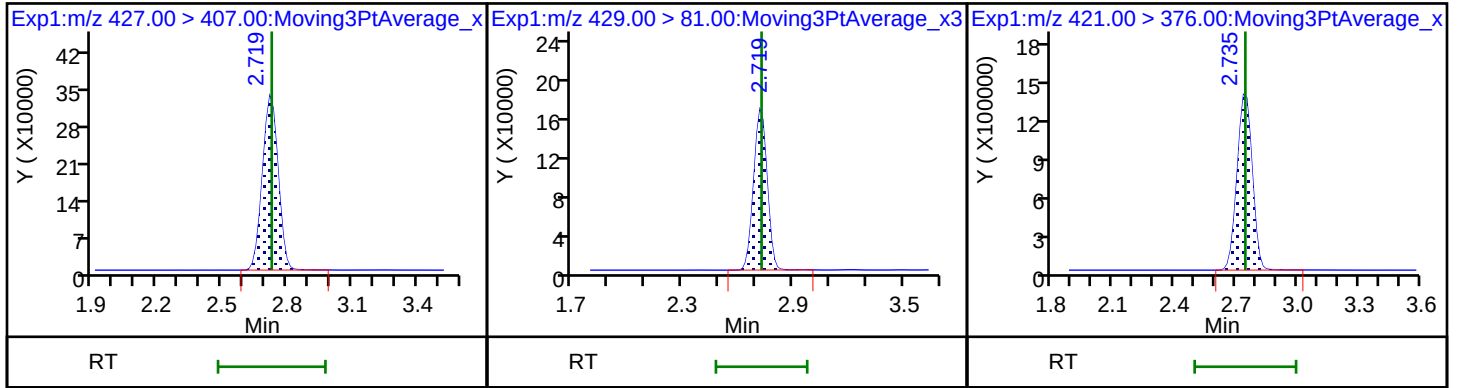
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

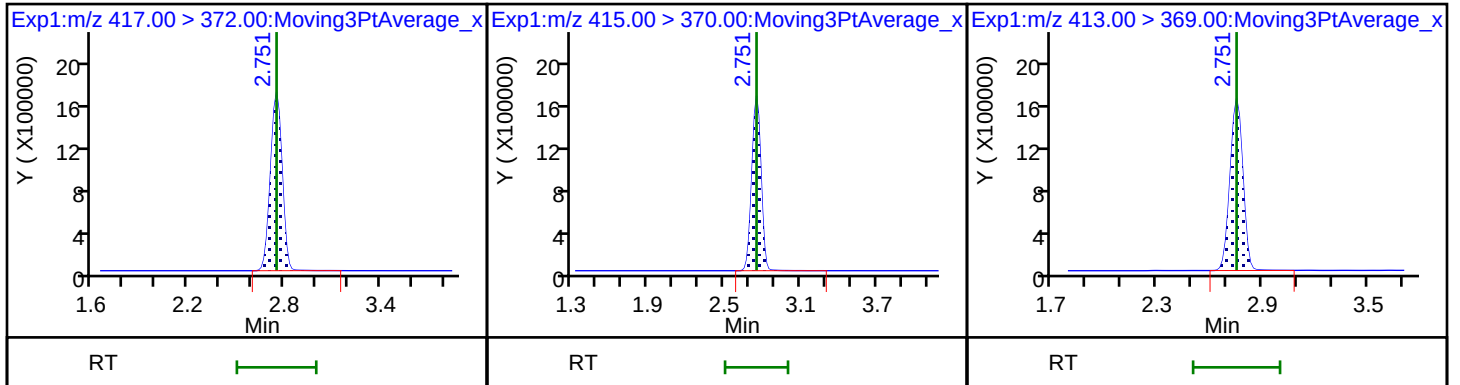
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

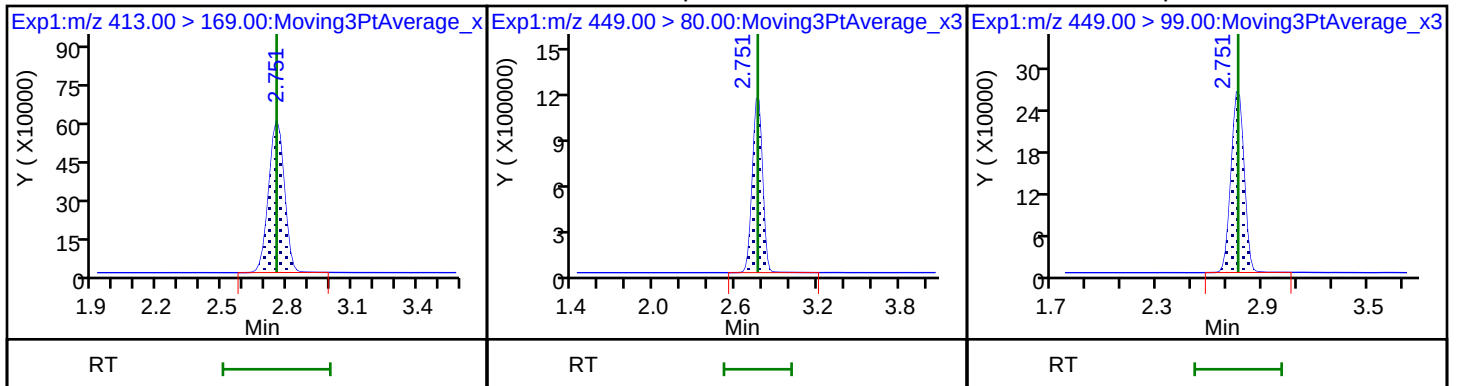
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

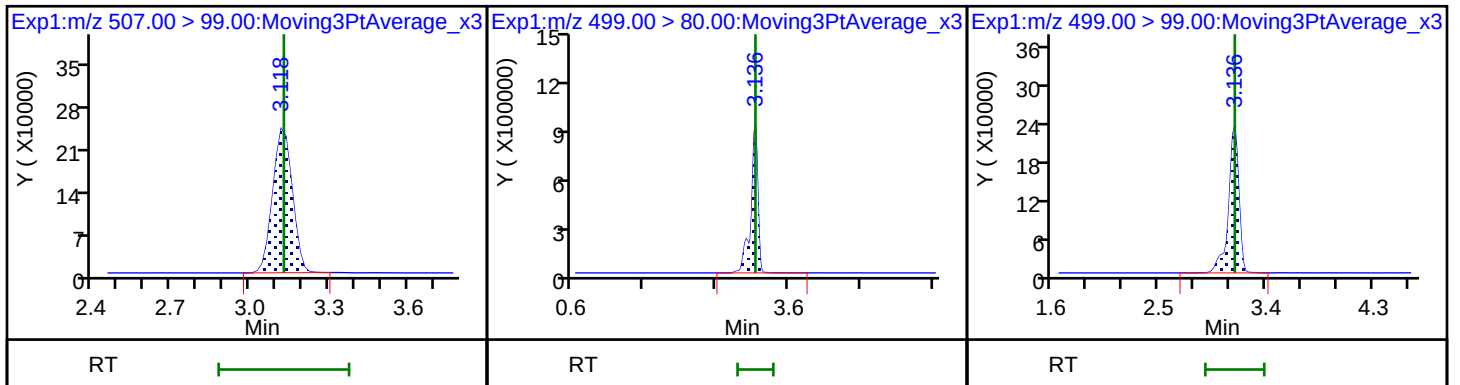
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid

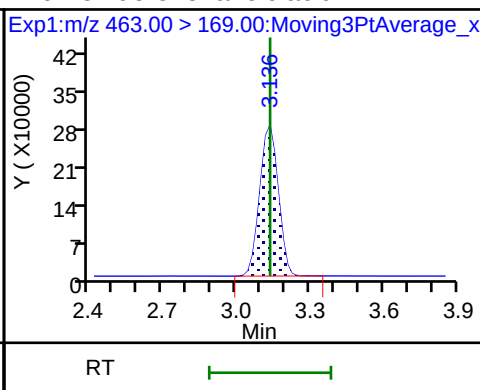
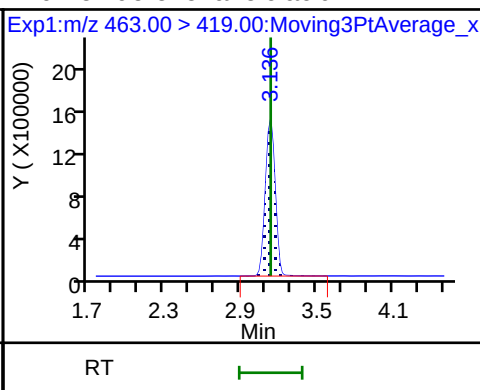
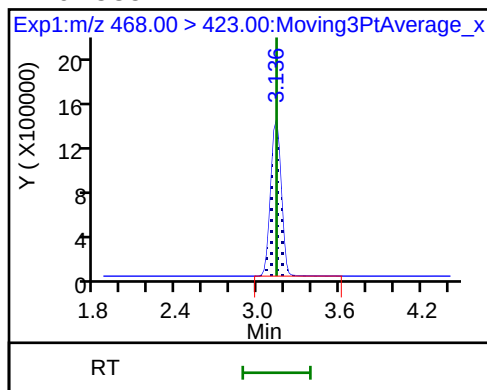
17 Perfluorooctane sulfonic acid



D 19 13C5 PFNA

20 Perfluorononanoic acid

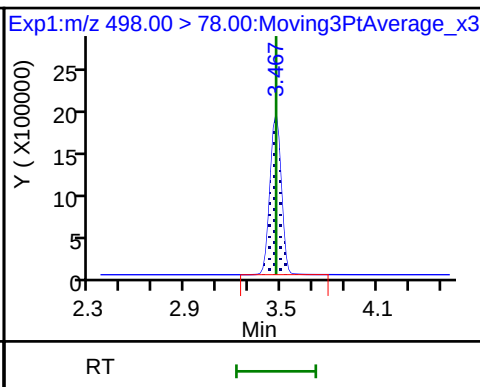
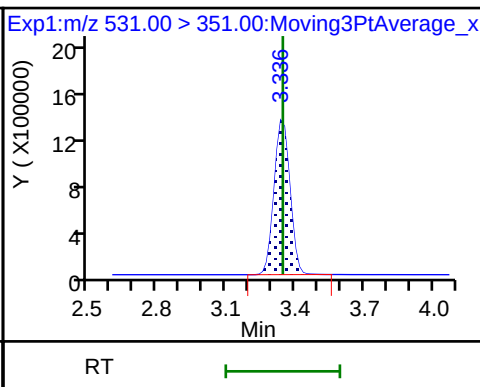
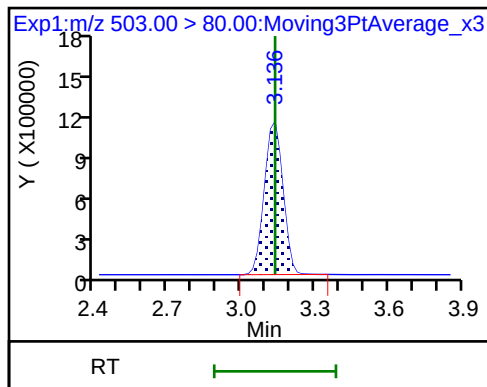
20 Perfluorononanoic acid



D 18 13C4 PFOS

69 9-Chlorohexadecafluoro-3-oxanonan

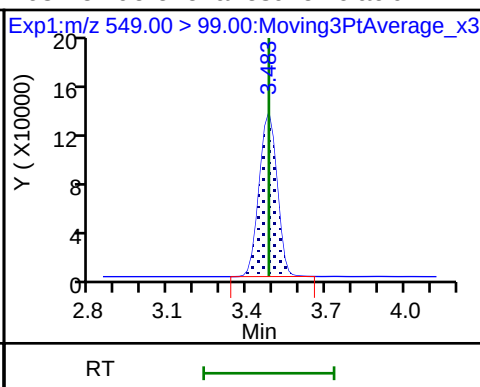
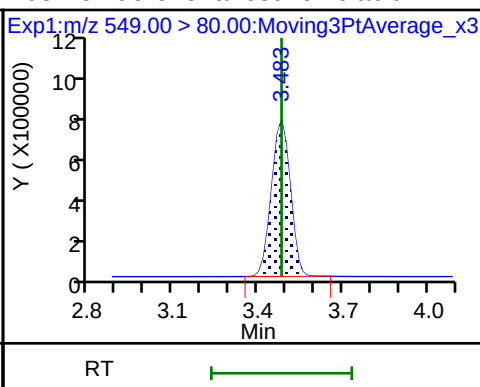
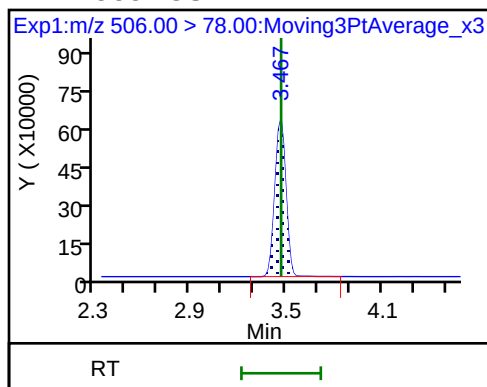
22 Perfluorooctane Sulfonamide



D 21 13C8 FOSA

68 Perfluorononanesulfonic acid

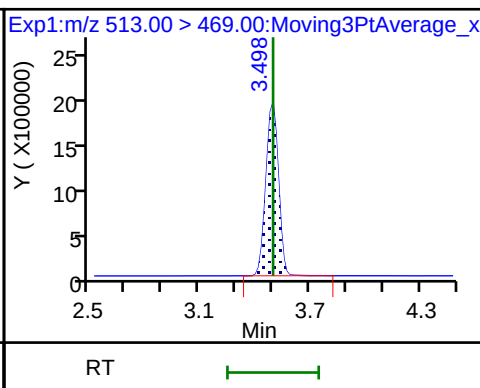
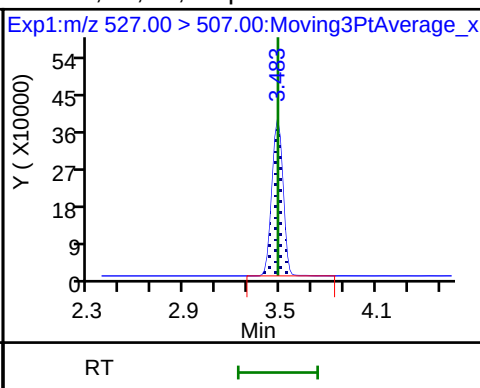
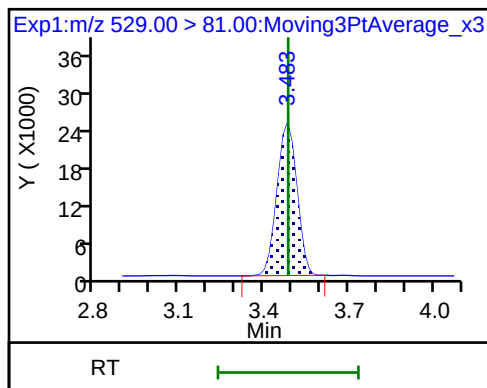
68 Perfluorononanesulfonic acid

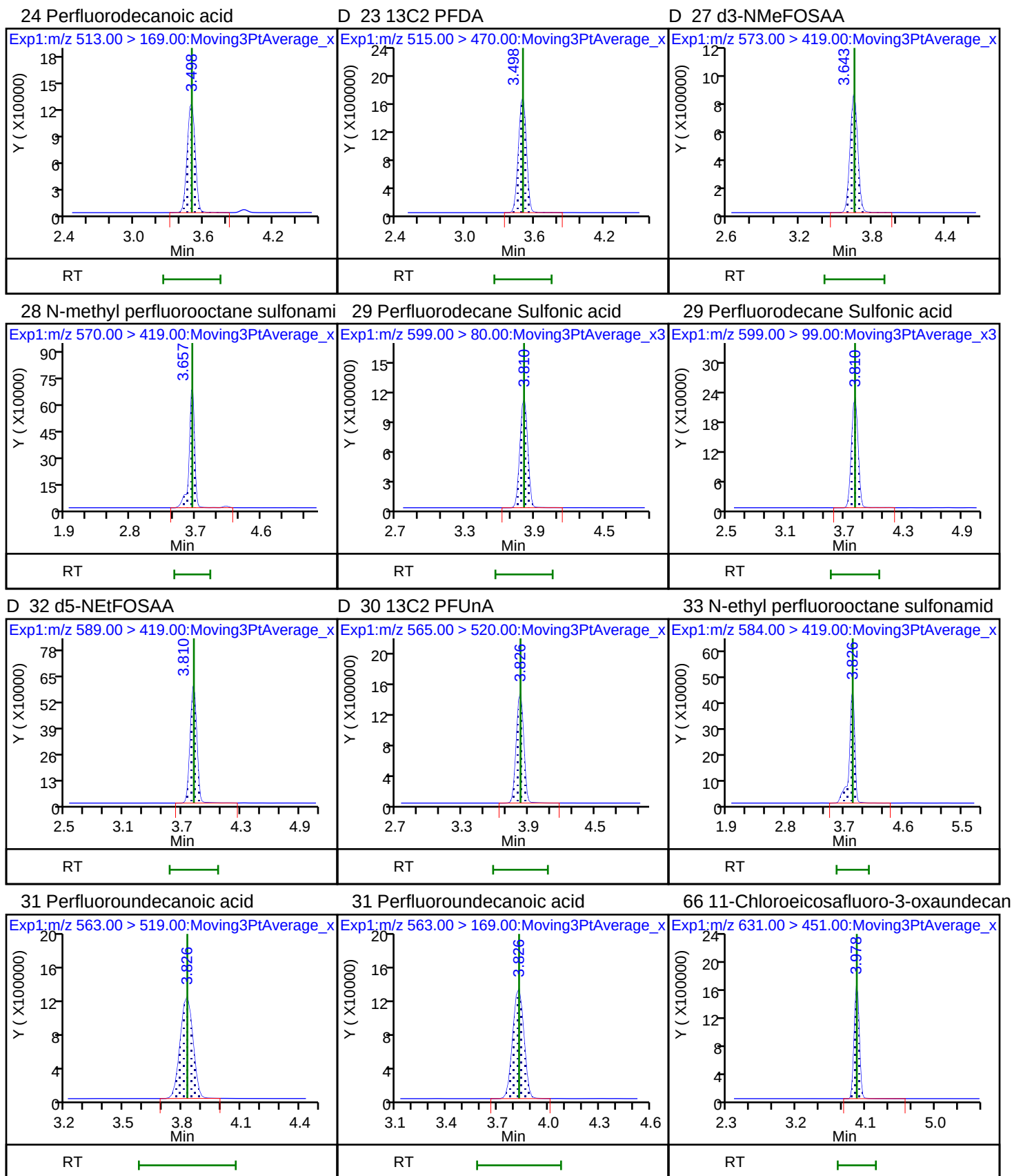


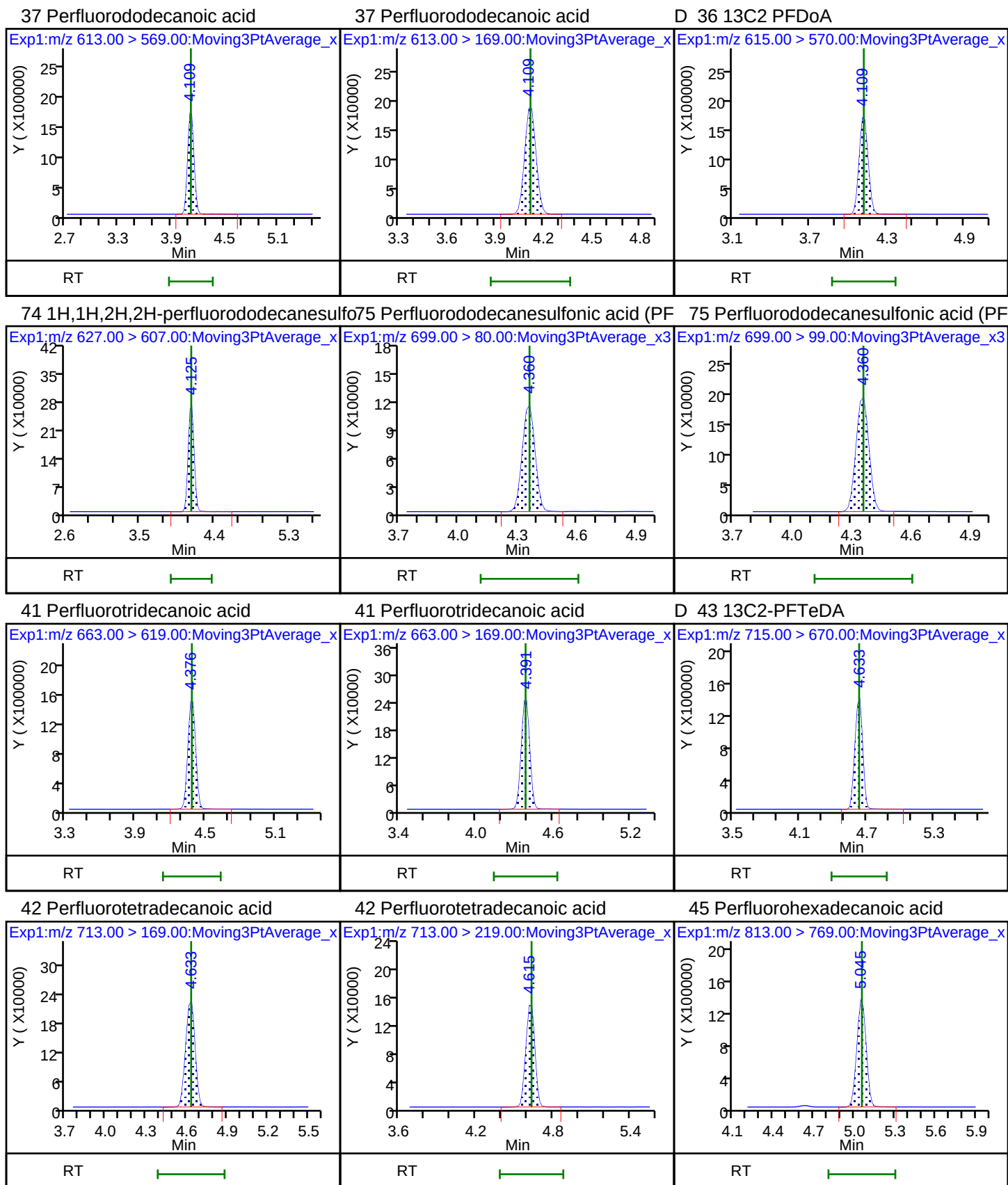
D 26 M2-8:2FTS

25 1H,1H,2H,2H-perfluorodecanesulfoni

24 Perfluorodecanoic acid



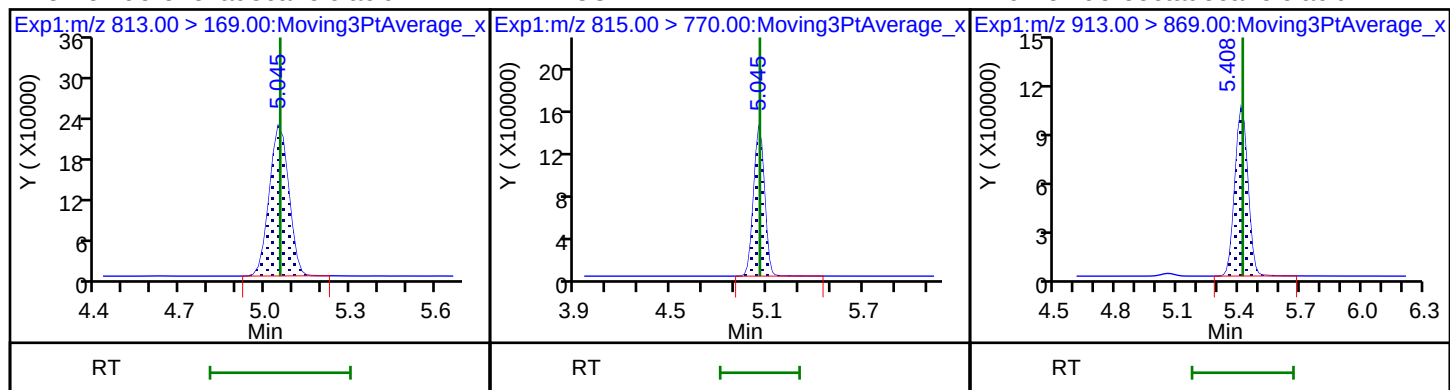




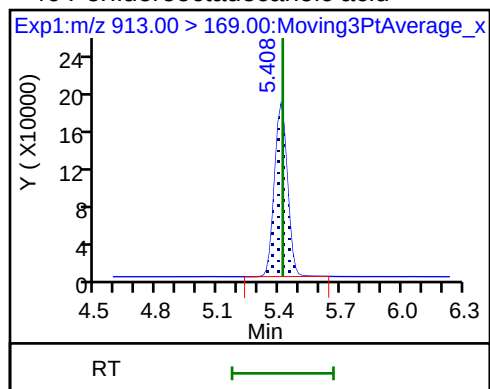
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_010.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 28-Aug-2018 10:58:17 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD6
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 28-Aug-2018 13:27:51 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: roycea

Date: 28-Aug-2018 11:52:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.484	1.485	-0.001	0.539	8218830	2.62		105	17599	
2 Perfluorobutyric acid										
212.90 > 169.00	1.484	1.486	-0.002	1.000	14983771	4.99		99.9	2252	
D 3 13C5-PFPeA										
267.90 > 223.00	1.756	1.758	-0.002	0.638	7268510	2.60		104	8870	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.756	1.759	-0.003	1.000	14249697	4.83		96.6	1340	
D 47 13C3-PFBS										
301.90 > 83.00	1.789	1.796	-0.007	0.650	87618	2.39		103	721	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.798	1.797	0.001	1.005	17343386	4.38		99.1	5896	
298.90 > 99.00	1.798	1.797	0.001	1.005	6371973		2.72(1.35-4.05)	99.1	4834	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.007	2.012	-0.005	1.122	3864378	4.75		102	7205	
D 60 M2-4:2FTS										
329.00 > 81.00	2.007	2.013	-0.006	0.730	751690	2.38		102	847	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.048	0.0	0.745	7681141	2.60		104	10055	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	12770869	4.56		91.3	3746	
313.00 > 119.00	2.048	2.048	0.0	1.000	1043036		12.24(6.96-20.87)	91.3	1987	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.069	2.071	-0.002	1.156	9043779	4.81		103	6585	
349.00 > 99.00	2.069	2.071	-0.002	1.156	4185432		2.16(1.15-3.45)	103	5118	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.140	2.149	-0.009	0.995	2900205	5.12		102	1520	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.782	800298	2.50		99.9	2144	
D 9 13C4-PFHpA										
367.00 > 322.00	2.387	2.387	0.0	0.868	8866287	2.52		101	16373	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.387	0.0	1.000	17404274	4.81		96.3	2120	
363.00 > 169.00	2.374	2.387	-0.013	0.994	4380290		3.97(2.17-6.52)	96.3	6187	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	12331061	4.41		97.0	6758	
399.00 > 99.00	2.400	2.400	0.0	1.000	3392384		3.63(1.90-5.70)	97.0	3348	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.872	5340279	2.46		104	7426	
76 DONA										
377.00 > 251.00	2.426	2.432	-0.006	0.774	27199824	4.47		94.8	29562	
377.00 > 85.00	2.426	2.432	-0.006	0.774	12945040		2.10(1.13-3.39)	94.8	5136	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.719	2.728	-0.009	1.000	3562961	4.78		101	2295	
D 12 M2-6:2FTS										
429.00 > 81.00	2.719	2.728	-0.009	0.988	826593	2.39		101	1559	
D 73 13C8 PFOA										
421.00 > 376.00	2.735	2.744	-0.009		6917205	2.39		97.7	12216	
D 14 13C4 PFOA										
417.00 > 372.00	2.751	2.751	0.0	1.000	8428311	2.57		103	26044	
* 62 13C2-PFOA										
415.00 > 370.00	2.751	2.751	0.0		8140987	2.50			11219	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.751	2.751	0.0	1.000	15852050	4.37		87.3	1067	
413.00 > 169.00	2.751	2.751	0.0	1.000	6237187		2.54(1.36-4.08)	87.3	5619	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.751	2.760	-0.009	0.877	11141173	4.80		101	8318	
449.00 > 99.00	2.751	2.760	-0.009	0.877	3002246		3.71(1.84-5.53)	101	5881	
D 72 13C8 PFOS										
507.00 > 99.00	3.118	3.129	-0.011		1179245	2.30		96.1	2256	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.136	3.136	0.0	1.000	11834862	4.76		103	8163	
499.00 > 99.00	3.136	3.136	0.0	1.000	2971407		3.98(2.04-6.12)	103	4295	
D 19 13C5 PFNA										
468.00 > 423.00	3.136	3.136	0.0	1.140	7912109	2.57		103	9263	
20 Perfluorononanoic acid										
463.00 > 419.00	3.136	3.136	0.0	1.000	14738364	4.76		95.2	1376	
463.00 > 169.00	3.136	3.136	0.0	1.000	3075245		4.79(2.68-8.03)	95.2	5412	
D 18 13C4 PFOS										
503.00 > 80.00	3.136	3.136	0.0	1.140	5629385	2.42		101	4231	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.336	3.346	-0.010	1.064	12670914	4.65		99.7	4984	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.467	3.467	0.0	1.000	17204061	4.82		96.3	11085	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.467	3.467	0.0	1.260	3013781	2.45		97.9	8034	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.483	3.483	0.0	1.110	7596364	4.99		104	5401	
549.00 > 99.00	3.483	3.483	0.0	1.110	1326799		5.73(3.02-9.05)	104	5081	
D 26 M2-8:2FTS										
529.00 > 81.00	3.483	3.485	-0.002	1.266	119770	2.35		98.2	691	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.483	3.485	-0.002	1.000	3415181	4.51		94.2	5065	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.498	3.498	0.0	1.000	15866006	4.47		89.4	1851	
513.00 > 169.00	3.498	3.498	0.0	1.000	1237796		12.82(7.12-21.35)	89.4	482	
D 23 13C2 PFDA										
515.00 > 470.00	3.498	3.498	0.0	1.272	7796459	2.54		102	15345	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.643	3.651	-0.008	1.324	3516347	2.54		102	3859	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.643	3.653	-0.010	1.000	7175328	5.13		103	1579	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.794	3.807	-0.013	1.210	9351668	4.88		101	6004	
599.00 > 99.00	3.794	3.807	-0.013	1.210	2156718		4.34(2.14-6.43)	101	4361	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.810	3.819	-0.009	1.385	2566441	2.36		94.3	2260	
D 30 13C2 PFUnA										
565.00 > 520.00	3.826	3.825	0.001	1.391	6750273	2.58		103	6772	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.826	3.825	0.001	1.004	4889294	5.12		102	4140	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.826	3.825	0.001	1.000	11321464	4.67		93.5	2040	
563.00 > 169.00	3.810	3.825	-0.015	0.996	1095584		10.33(5.24-15.72)	93.5	2374	
35 MeFOSA										
512.00 > 169.00	3.947	3.949	-0.002		3556841	NC			885	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.978	3.983	-0.005	1.268	13855585	4.60		97.7	9941	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.109	4.118	-0.009	1.000	15587157	4.85		97.0	2717	
613.00 > 169.00	4.109	4.118	-0.009	1.000	1741310		8.95(4.68-14.05)	97.0	3431	
D 36 13C2 PFDaA										
615.00 > 570.00	4.109	4.118	-0.009	1.493	7973084	2.51		100	6036	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.109	4.120	-0.011	1.180	2405218	4.74		98.2	4137	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.142	4.142	0.0		3791367	NC			562	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.360	4.360	0.0	1.390	1083101	4.95		102	2115	
699.00 > 99.00	4.360	4.360	0.0	1.390	1929696		0.56(0.28-0.83)	102	2482	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.375	4.384	-0.009	1.065	12220220	4.78		95.5	3514	
663.00 > 169.00	4.375	4.384	-0.009	1.065	2368145		5.16(3.09-9.27)	95.5	5433	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.630	4.628	0.002	1.683	6312069	2.49		99.7	12716	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.630	4.631	-0.001	1.000	2038535	5.00		100	4974	
713.00 > 219.00	4.630	4.631	-0.001	1.000	1470914		1.39(0.70-2.09)	100	5164	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.042	5.053	-0.011	1.000	12115938	4.90		97.9	1902	
813.00 > 169.00	5.042	5.053	-0.011	1.000	2271869		5.33(2.77-8.32)	97.9	4129	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.042	5.053	-0.011	1.833	6816429	2.66		106	7012	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.406	5.416	-0.010	1.072	8788349	5.05		101	1634	
913.00 > 169.00	5.406	5.416	-0.010	1.072	1633197		5.38(2.55-7.64)	101	3518	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL6_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_010.d

Injection Date: 28-Aug-2018 10:58:17

Instrument ID: A9

Lims ID: IC L6 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 15

Worklist Smp#: 7

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

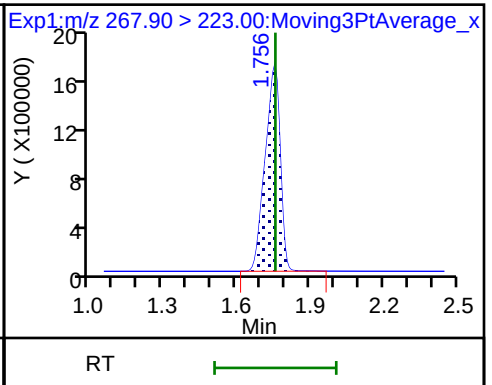
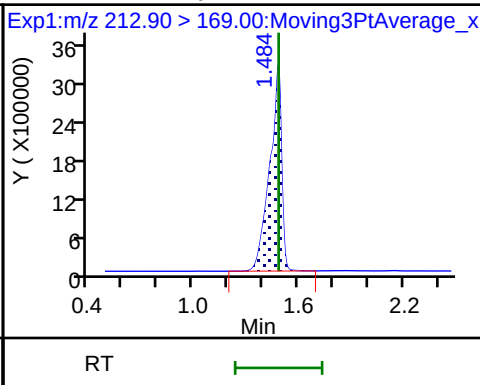
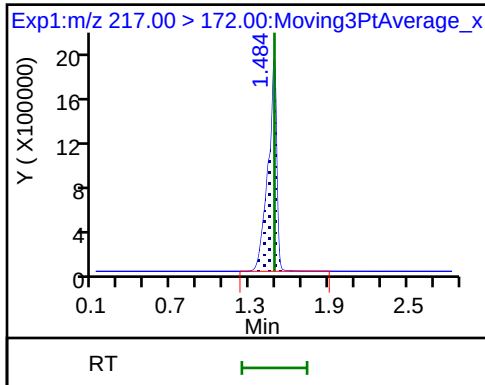
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

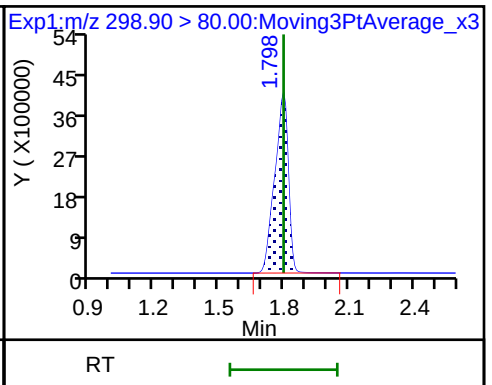
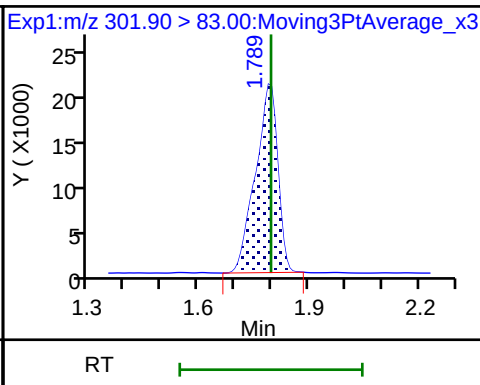
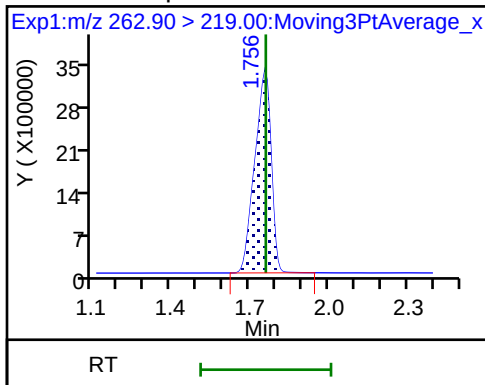
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

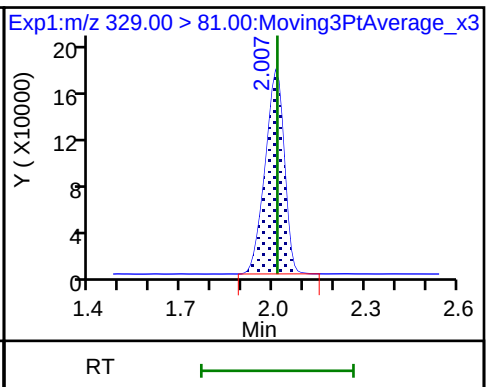
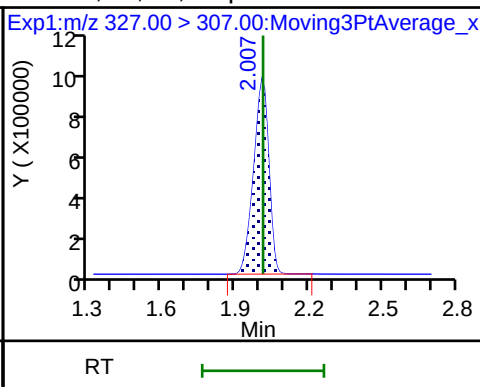
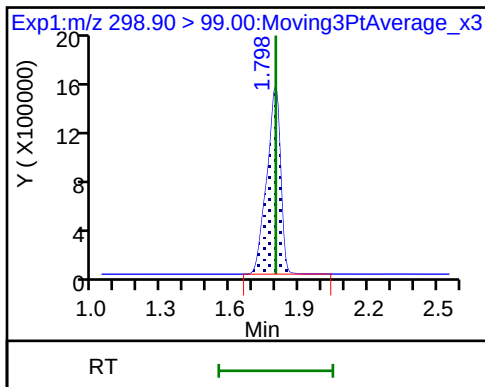
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

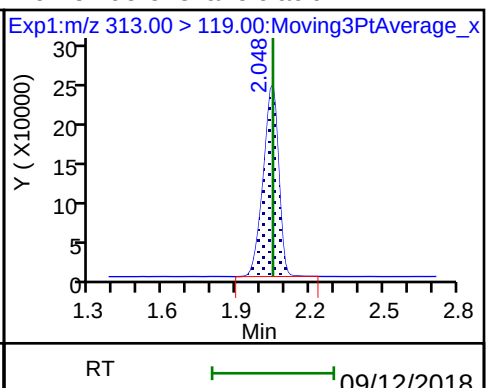
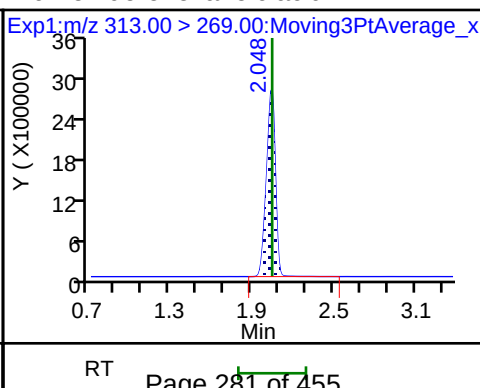
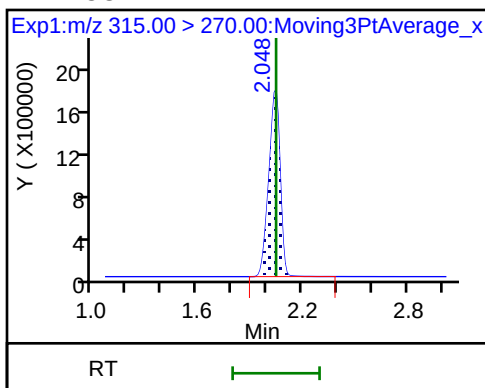
D 60 M2-4:2FTS

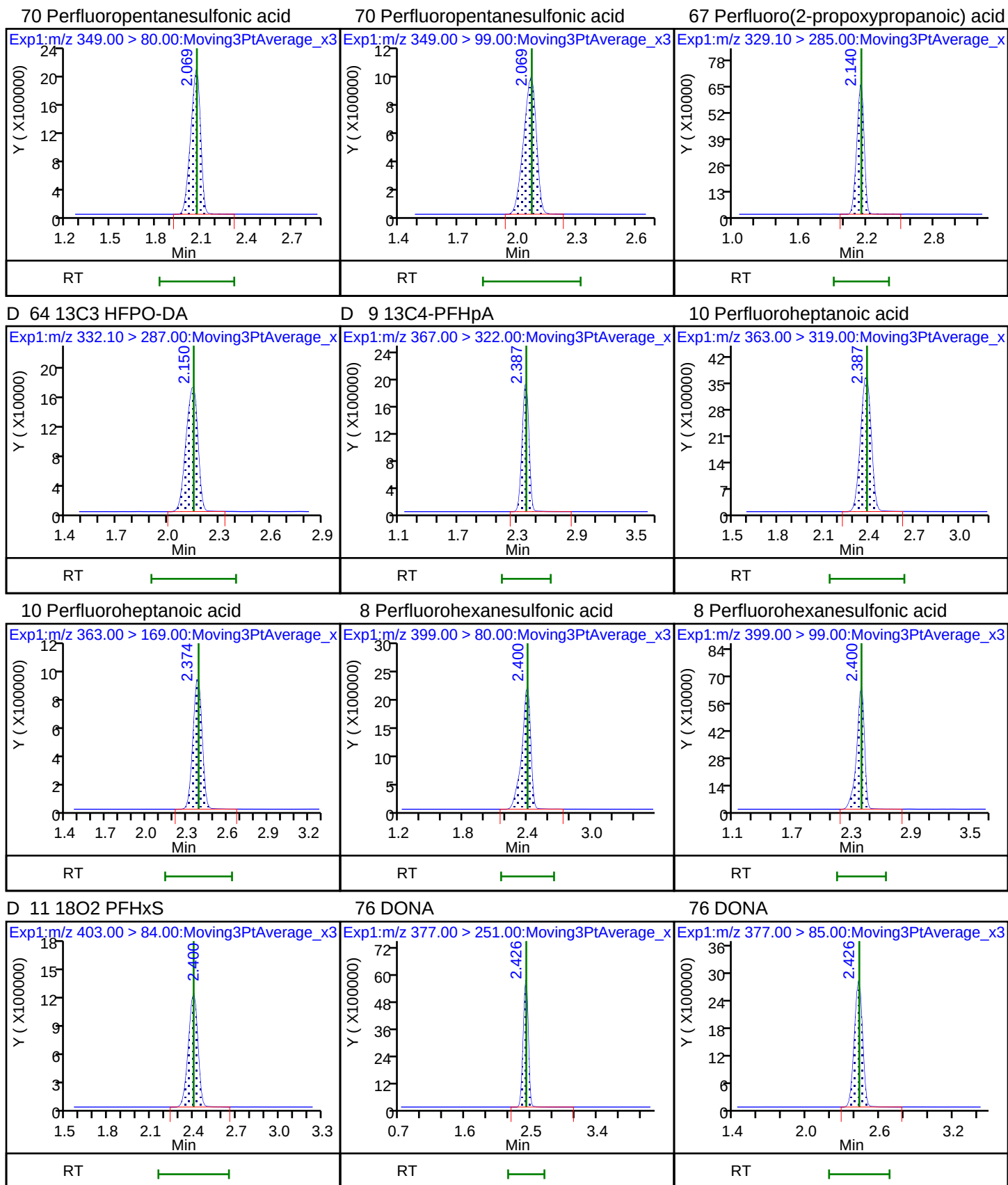


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

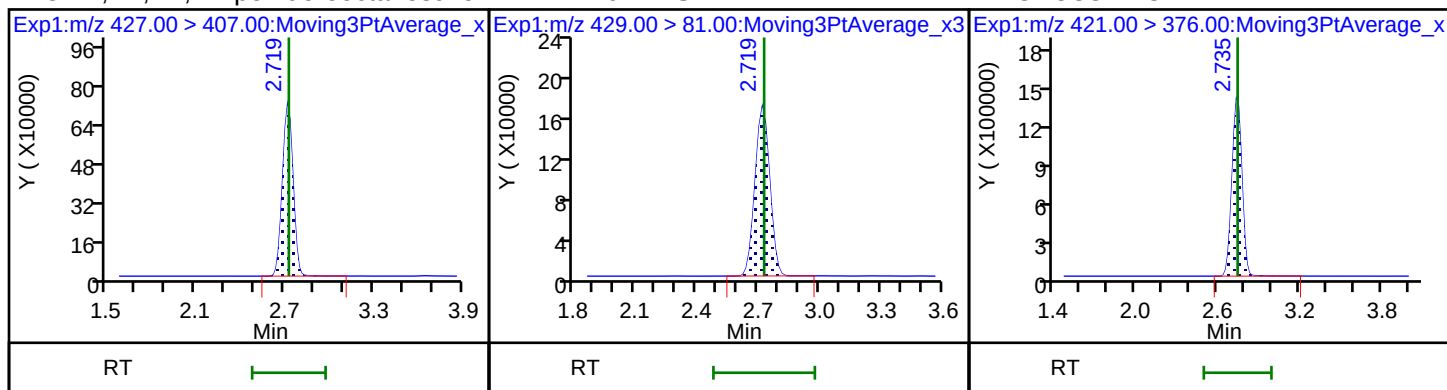
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

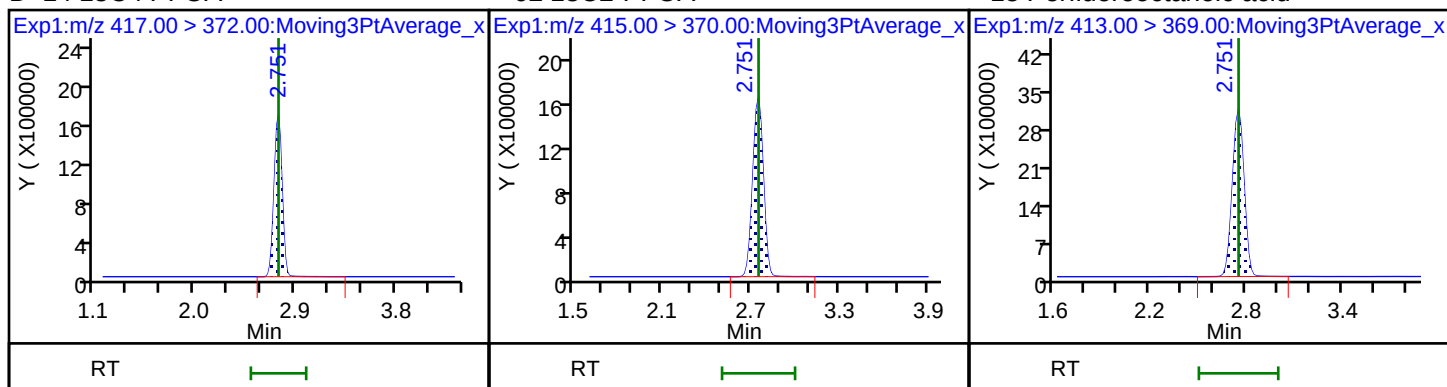
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

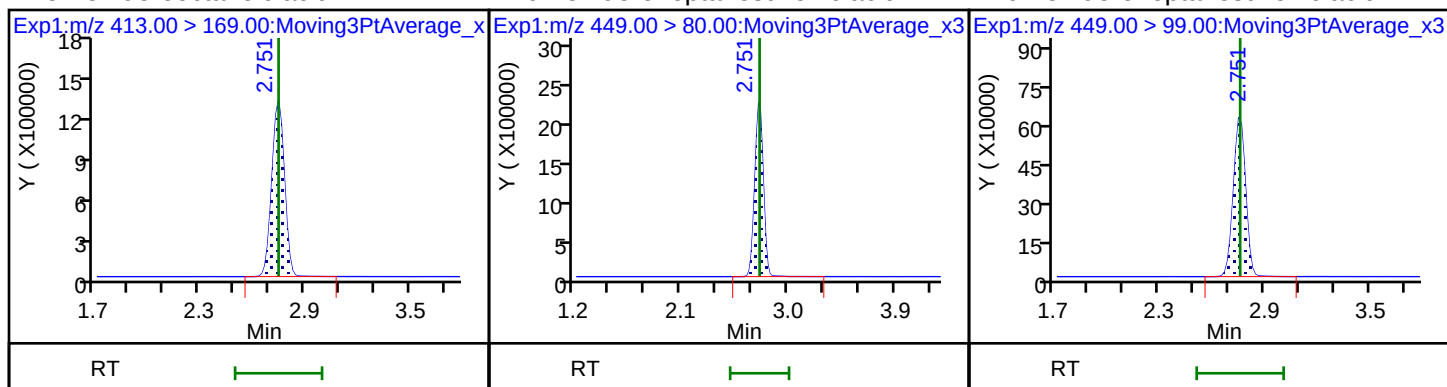
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

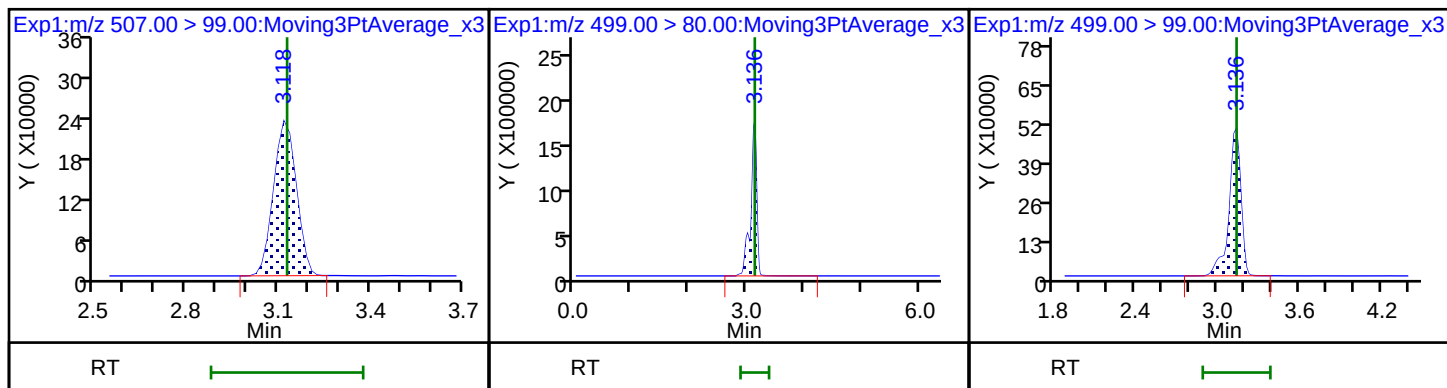
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid

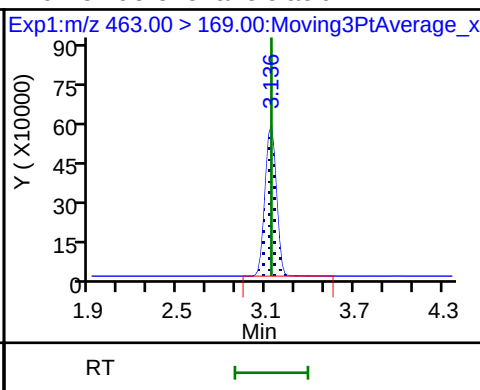
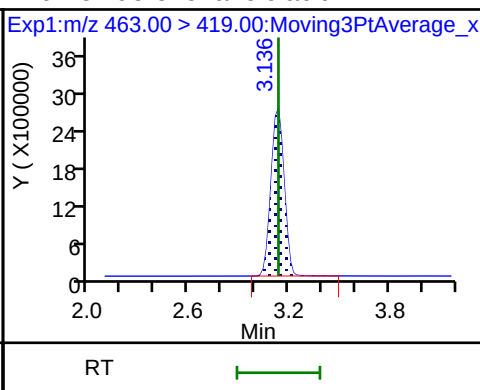
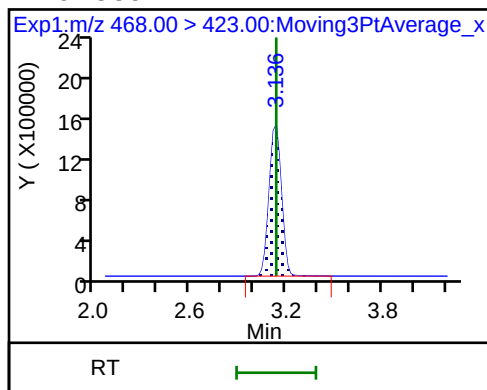
17 Perfluorooctane sulfonic acid



D 19 13C5 PFNA

20 Perfluorononanoic acid

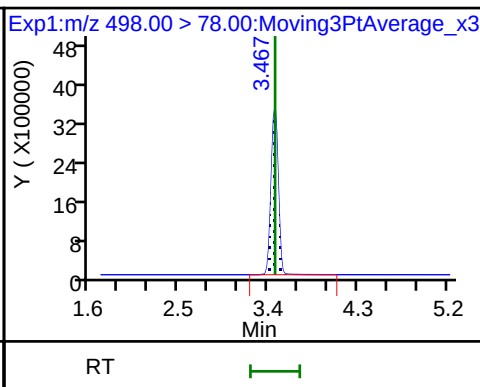
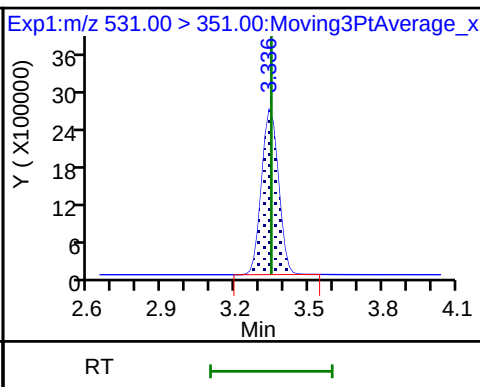
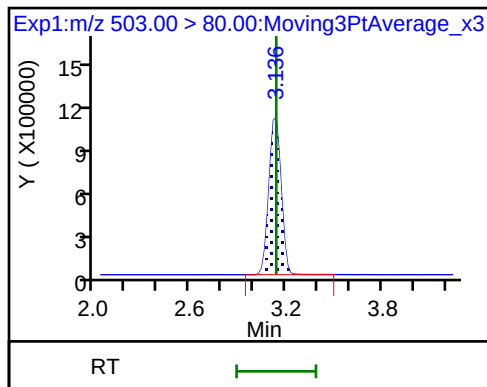
20 Perfluorononanoic acid



D 18 13C4 PFOS

69 9-Chlorohexadecafluoro-3-oxanonan

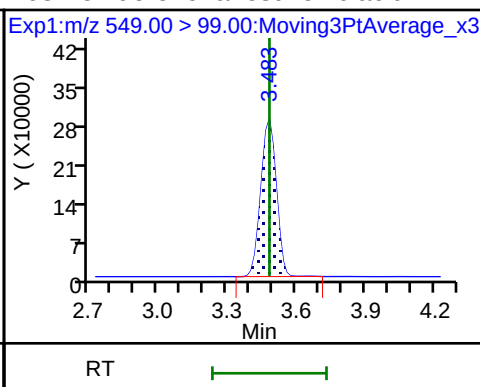
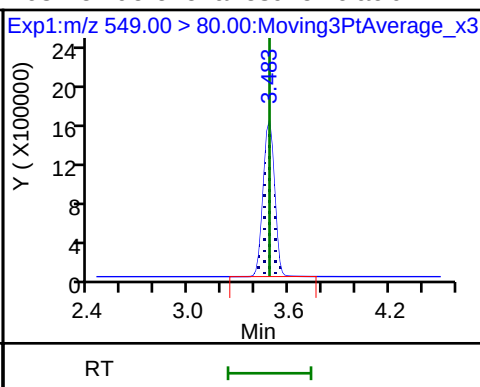
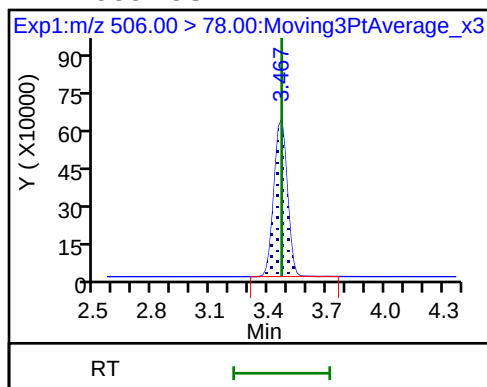
22 Perfluorooctane Sulfonamide



D 21 13C8 FOSA

68 Perfluorononanesulfonic acid

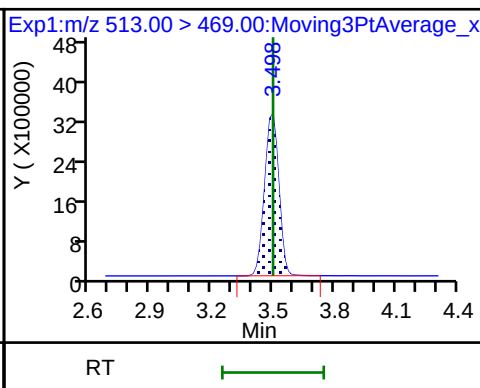
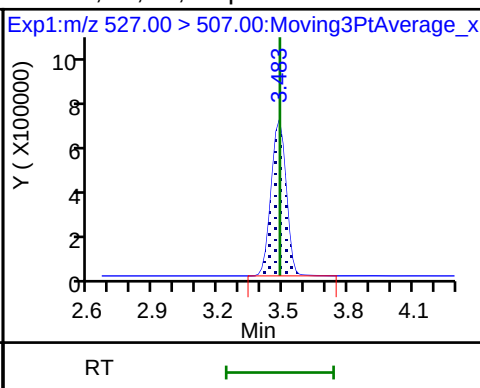
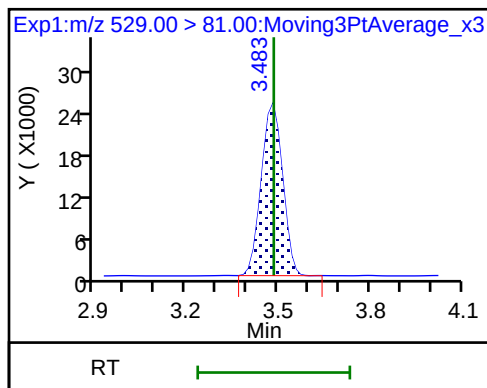
68 Perfluorononanesulfonic acid

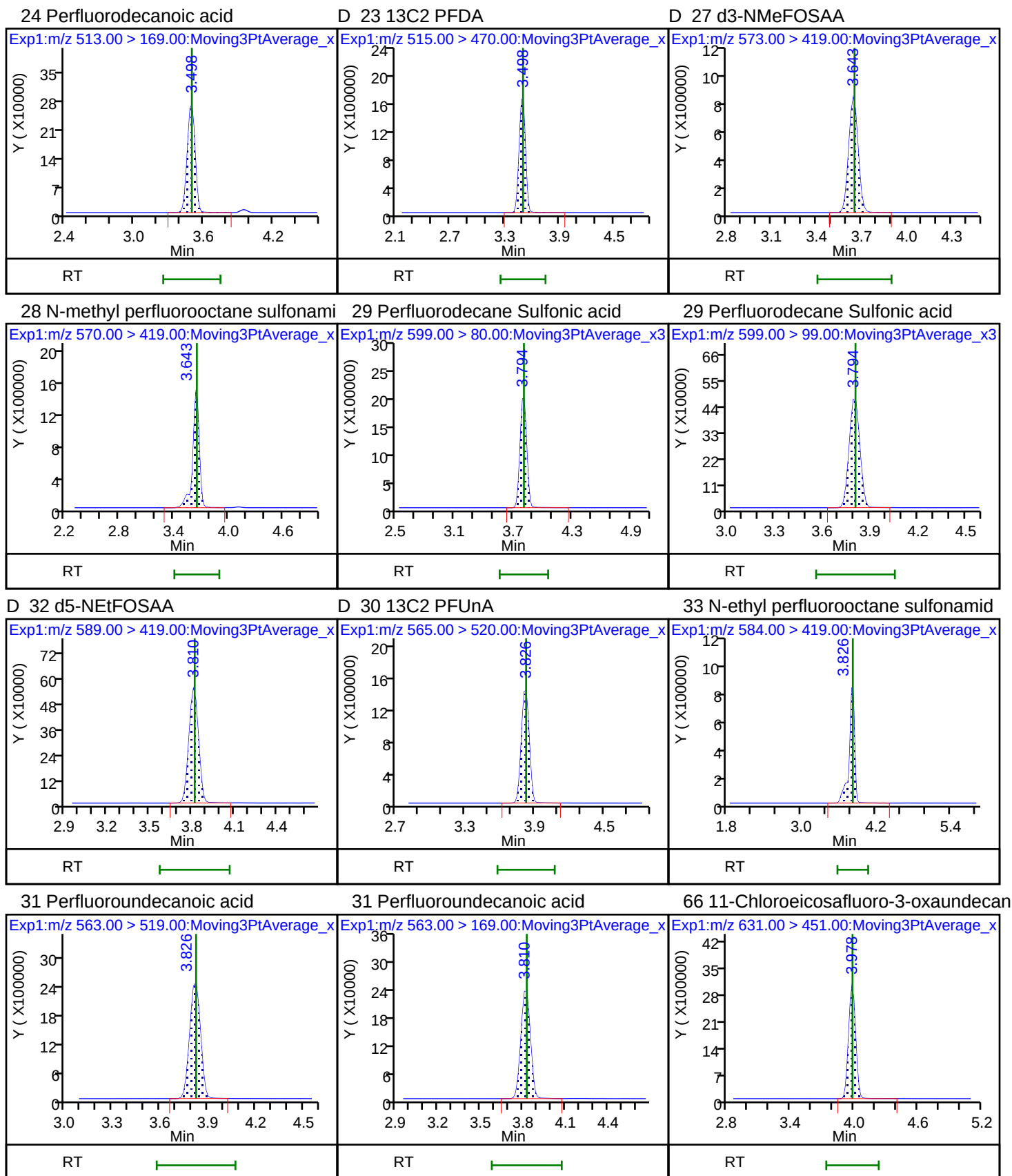


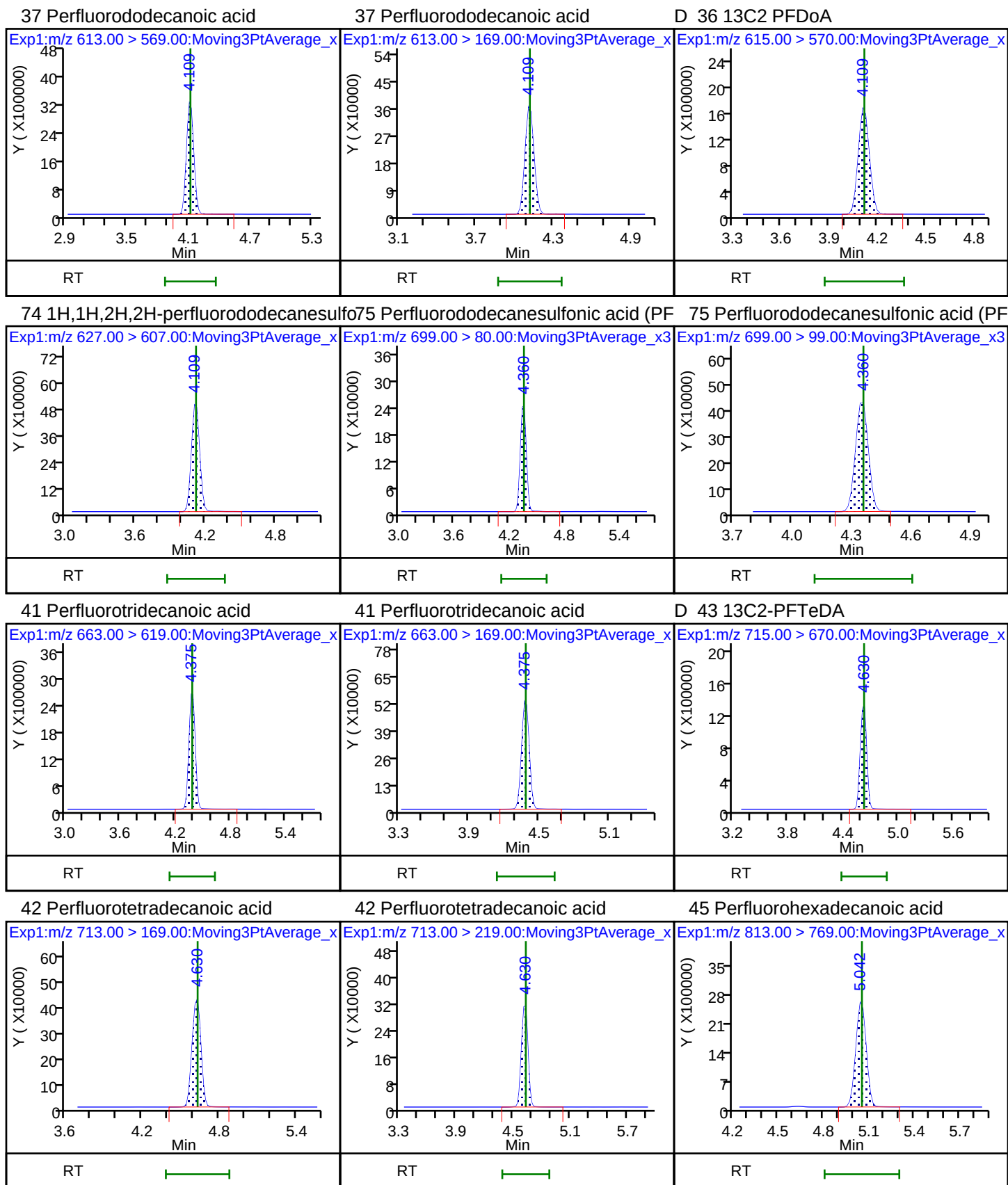
D 26 M2-8:2FTS

25 1H,1H,2H,2H-perfluorodecanesulfoni

24 Perfluorodecanoic acid



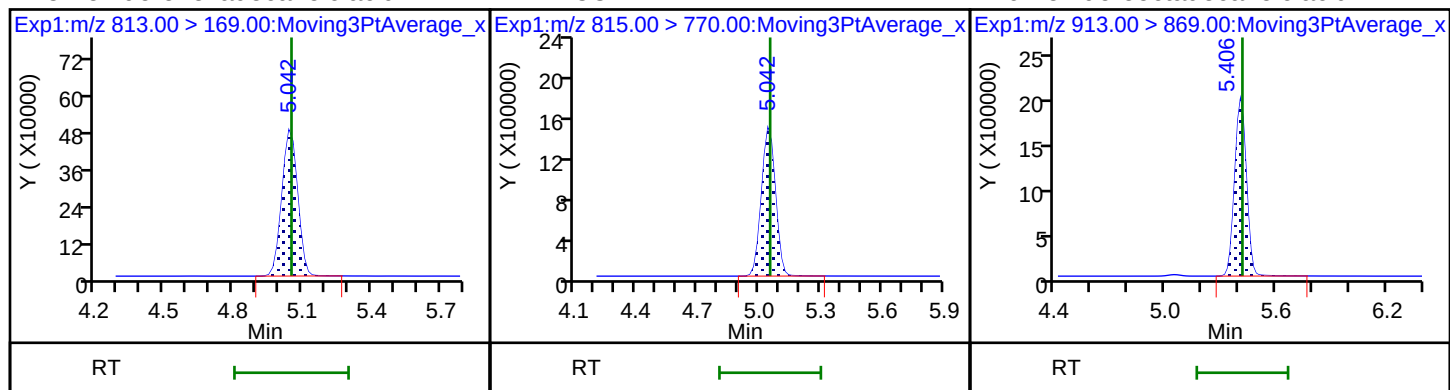




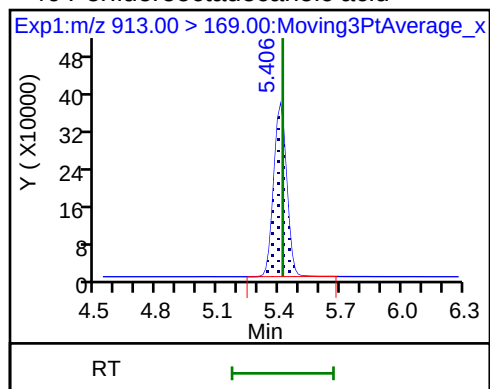
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Lims ID: IC L7 Full
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 28-Aug-2018 11:05:49 ALS Bottle#: 16 Worklist Smp#: 8
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD7
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 28-Aug-2018 13:27:59 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: roycea

Date: 28-Aug-2018 11:52:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.484	1.485	-0.001	0.539	7921655	2.50		100.0	22603	
2 Perfluorobutyric acid										
212.90 > 169.00	1.484	1.486	-0.002	1.000	27502138	9.51		95.1	3546	
D 3 13C5-PFPeA										
267.90 > 223.00	1.756	1.758	-0.002	0.638	6904215	2.44		97.7	13178	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.756	1.759	-0.003	1.000	24900282	8.89		88.9	1970	
D 47 13C3-PFBS										
301.90 > 83.00	1.797	1.796	0.001	0.653	90962	2.45		105	714	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.797	1.797	0.0	1.000	30003262	7.30		82.6	7809	
298.90 > 99.00	1.797	1.797	0.0	1.000	11679987		2.57(1.35-4.05)	82.6	7679	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.007	2.012	-0.005	1.117	6993719	8.27		88.6	13060	
D 60 M2-4:2FTS										
329.00 > 81.00	2.007	2.013	-0.006	0.730	715177	2.24		96.0	885	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.048	0.0	0.744	7370188	2.47		98.6	8834	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	23347053	8.70		87.0	4894	
313.00 > 119.00	2.048	2.048	0.0	1.000	1998176		11.68(6.96-20.87)	87.0	2639	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.068	2.071	-0.003	1.151	16084327	8.24		87.9	10331	
349.00 > 99.00	2.068	2.071	-0.003	1.151	7994692		2.01(1.15-3.45)	87.9	7155	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.150	2.149	0.001	1.000	5979686	9.61		96.1	2598	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.782	879762	2.71		109	3273	
D 9 13C4-PFHpA										
367.00 > 322.00	2.387	2.387	0.0	0.868	8609256	2.41		96.6	6540	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.387	0.0	1.000	30385284	8.65		86.5	3237	
363.00 > 169.00	2.387	2.387	0.0	1.000	8190734		3.71(2.17-6.52)	86.5	8403	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	21506619	8.28		91.0	13127	
399.00 > 99.00	2.400	2.400	0.0	1.000	6436519		3.34(1.90-5.70)	91.0	7077	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.872	4964565	2.26		95.7	4642	
76 DONA										
377.00 > 251.00	2.426	2.432	-0.006	0.774	43974663	7.74		82.2	12427	
377.00 > 85.00	2.426	2.432	-0.006	0.774	23235019		1.89(1.13-3.39)	82.2	7286	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.719	2.728	-0.009	1.000	6460415	9.26		97.7	4188	
D 12 M2-6:2FTS										
429.00 > 81.00	2.719	2.728	-0.009	0.988	774049	2.21		93.0	1356	
D 73 13C8 PFOA										
421.00 > 376.00	2.735	2.744	-0.009		6879581	2.38		97.2	15664	
D 14 13C4 PFOA										
417.00 > 372.00	2.751	2.751	0.0	1.000	7734289	2.33		93.2	13249	
* 62 13C2-PFOA										
415.00 > 370.00	2.751	2.751	0.0		8235568	2.50			16840	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.751	2.751	0.0	1.000	27214840	8.17		81.7	1777	
413.00 > 169.00	2.751	2.751	0.0	1.000	11375347		2.39(1.36-4.08)	81.7	9599	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.751	2.760	-0.009	0.877	19649006	9.08		95.4	10966	
449.00 > 99.00	2.751	2.760	-0.009	0.877	5377408		3.65(1.84-5.53)	95.4	7671	
D 72 13C8 PFOS										
507.00 > 99.00	3.118	3.129	-0.011		1196408	2.33		97.5	2347	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.136	3.136	0.0	1.000	21024940	9.07		97.7	9164	
499.00 > 99.00	3.136	3.136	0.0	1.000	5441287		3.86(2.04-6.12)	97.7	5471	
D 19 13C5 PFNA										
468.00 > 423.00	3.136	3.136	0.0	1.140	7454345	2.40		95.9	12096	
20 Perfluorononanoic acid										
463.00 > 419.00	3.136	3.136	0.0	1.000	24988022	8.57		85.7	2227	
463.00 > 169.00	3.136	3.136	0.0	1.000	5558667		4.50(2.68-8.03)	85.7	4548	
D 18 13C4 PFOS										
503.00 > 80.00	3.136	3.136	0.0	1.140	5250354	2.23		93.3	4555	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.336	3.346	-0.010	1.064	21731125	8.54		91.7	7155	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.467	3.467	0.0	1.000	29608945	8.29		82.9	9002	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.467	3.467	0.0	1.260	3012041	2.42		96.7	5317	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.482	3.483	-0.001	1.110	12812955	9.03		94.1	5205	
549.00 > 99.00	3.482	3.483	-0.001	1.110	2366309		5.41(3.02-9.05)	94.1	3571	
D 26 M2-8:2FTS										
529.00 > 81.00	3.482	3.485	-0.003	1.266	102619	1.99		83.2	591	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.482	3.485	-0.003	1.000	6151127	9.48		99.0	6127	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.498	3.498	0.0	1.000	26563468	8.02		80.2	2695	
513.00 > 169.00	3.498	3.498	0.0	1.000	2263032		11.74(7.12-21.35)	80.2	519	
D 23 13C2 PFDA										
515.00 > 470.00	3.498	3.498	0.0	1.272	7270400	2.34		93.7	4182	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.643	3.651	-0.008	1.324	3484339	2.49		99.6	3698	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.643	3.653	-0.010	1.000	12749037	9.20		92.0	2389	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.810	3.807	0.003	1.215	16951122	9.49		98.4	8429	
599.00 > 99.00	3.810	3.807	0.003	1.215	4140295		4.09(2.14-6.43)	98.4	7134	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.810	3.819	-0.009	1.385	2480748	2.25		90.1	2241	
D 30 13C2 PFUnA										
565.00 > 520.00	3.825	3.825	0.0	1.391	6090404	2.30		92.2	13059	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.825	3.825	0.0	1.004	8988864	9.74		97.4	4848	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.825	3.825	0.0	1.000	18994666	8.69		86.9	2597	
563.00 > 169.00	3.825	3.825	0.0	1.000	2095818		9.06(5.24-15.72)	86.9	5814	
35 MeFOSA										
512.00 > 169.00	3.946	3.949	-0.003		6875952	NC			929	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.978	3.983	-0.005	1.268	24688548	8.79		93.3	8495	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.108	4.118	-0.010	1.000	25191162	7.61		76.1	4574	
613.00 > 169.00	4.108	4.118	-0.010	1.000	3534183		7.13(4.68-14.05)	76.1	5503	
D 36 13C2 PFDaA										
615.00 > 570.00	4.108	4.118	-0.010	1.494	8209254	2.55		102	9673	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.108	4.120	-0.012	1.180	4204181	9.66		100	4524	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.142	4.142	0.0		7067831	NC			577	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.360	4.360	0.0	1.390	2106595	10.3		107	4911	
699.00 > 99.00	4.360	4.360	0.0	1.390	3777264		0.56(0.28-0.83)	107	9201	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.375	4.384	-0.009	1.065	19763356	7.50		75.0	3267	
663.00 > 169.00	4.375	4.384	-0.009	1.065	4029434		4.90(3.09-9.27)	75.0	5506	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.615	4.628	-0.013	1.678	6291947	2.46		98.3	11703	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.633	4.631	0.002	1.004	3893936	9.58		95.8	7422	
713.00 > 219.00	4.615	4.631	-0.016	1.000	2777105		1.40(0.70-2.09)	95.8	6946	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.045	5.053	-0.008	1.000	21065415	8.64		86.4	3280	
813.00 > 169.00	5.045	5.053	-0.008	1.000	4307334		4.89(2.77-8.32)	86.4	5658	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.045	5.053	-0.008	1.834	6730496	2.59		104	10041	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.408	5.416	-0.008	1.072	15992370	9.32		93.2	2581	
913.00 > 169.00	5.408	5.416	-0.008	1.072	3266966		4.90(2.55-7.64)	93.2	5649	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL7_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Injection Date: 28-Aug-2018 11:05:49

Instrument ID: A9

Lims ID: IC L7 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 16

Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

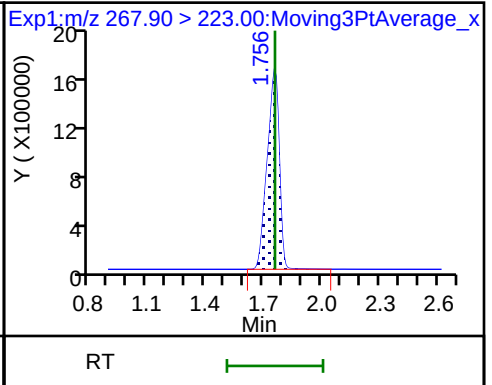
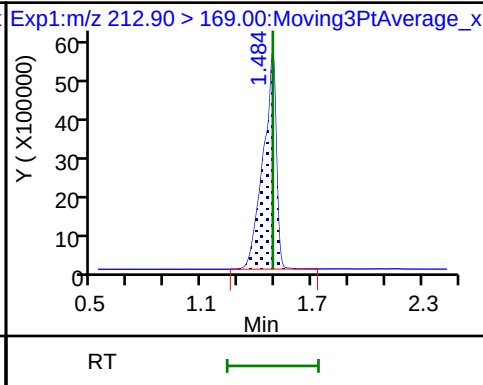
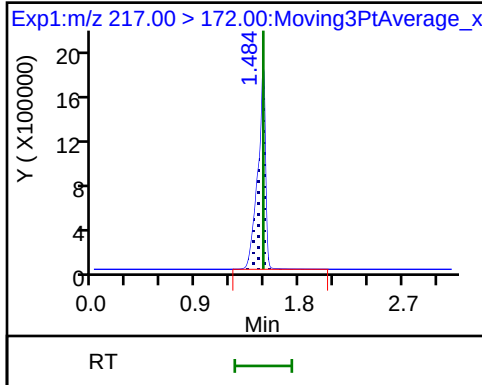
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

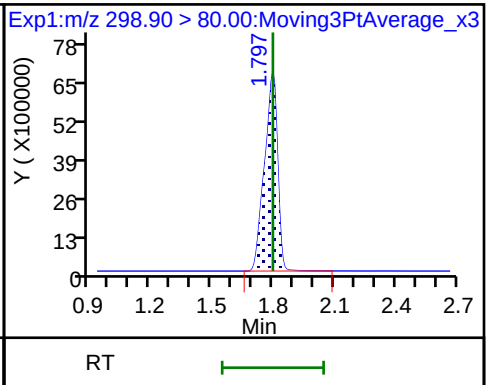
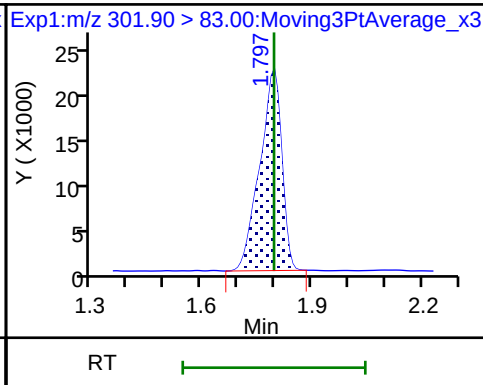
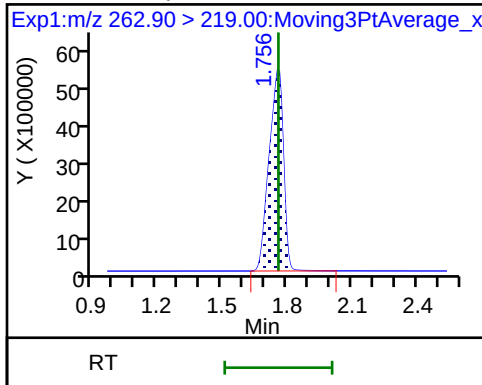
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

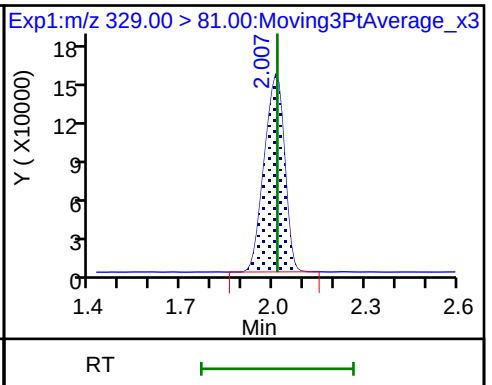
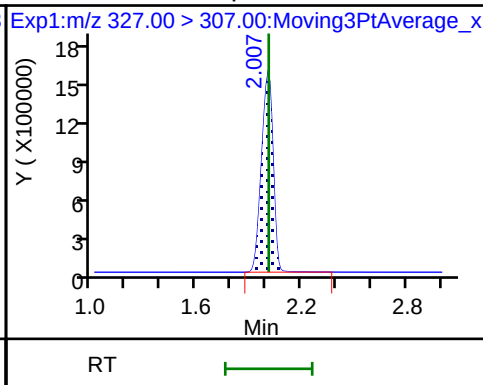
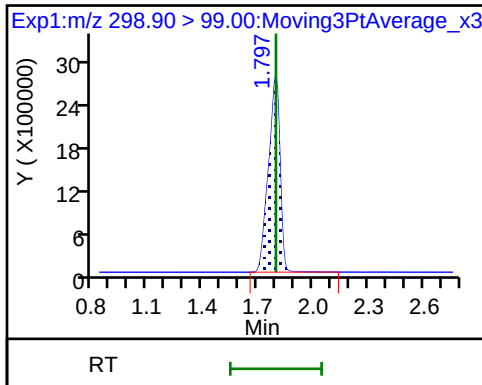
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

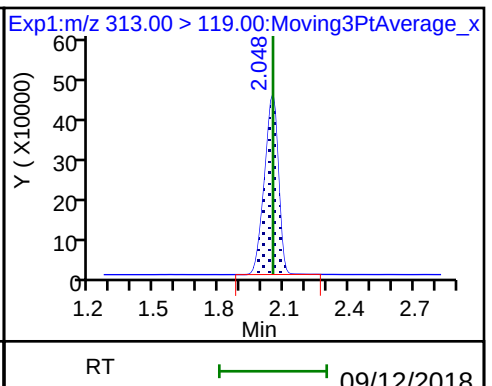
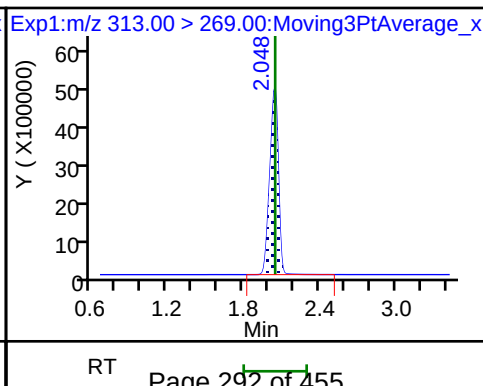
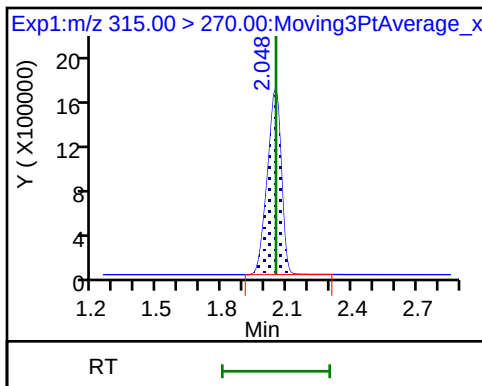
D 60 M2-4:2FTS

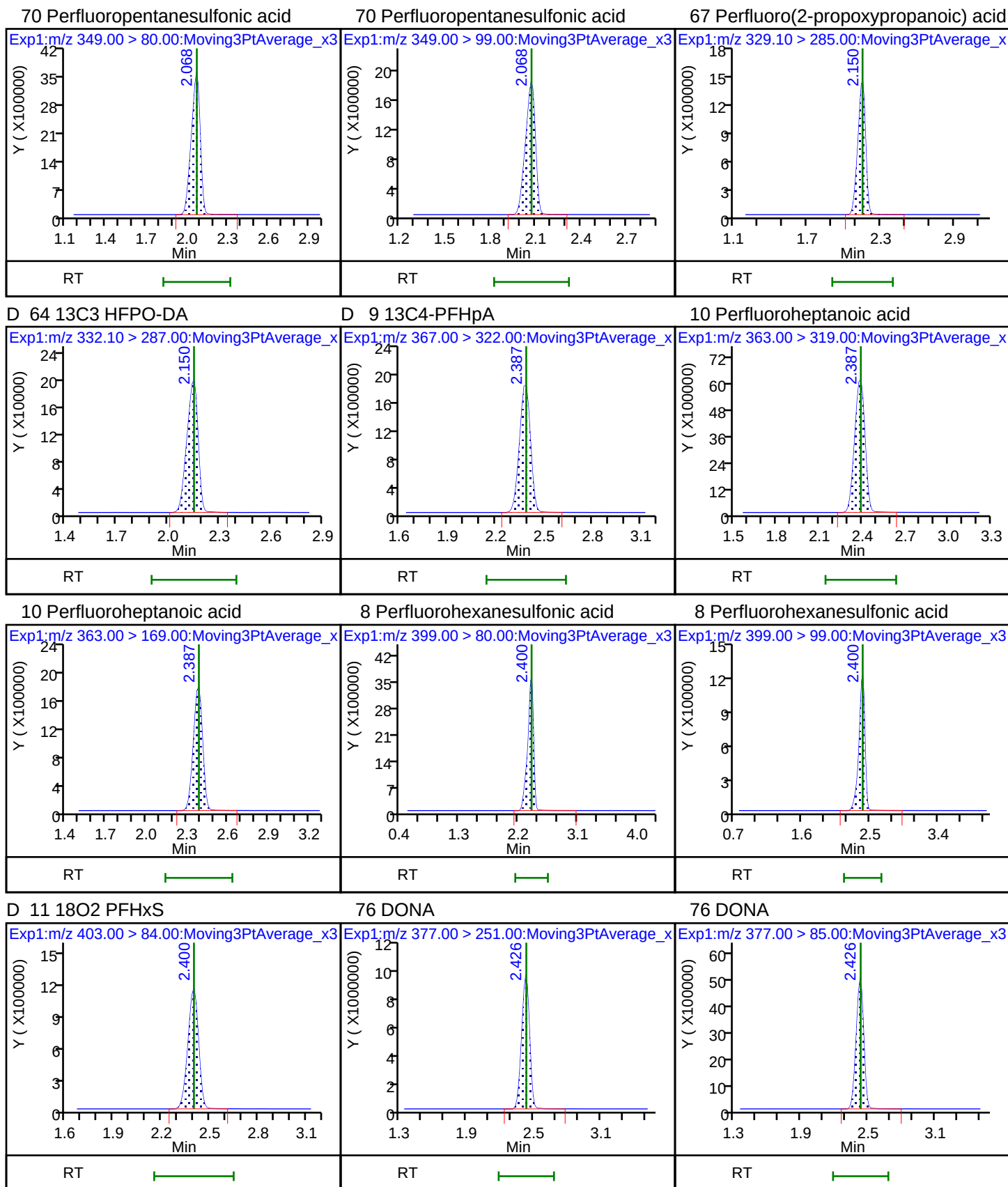


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

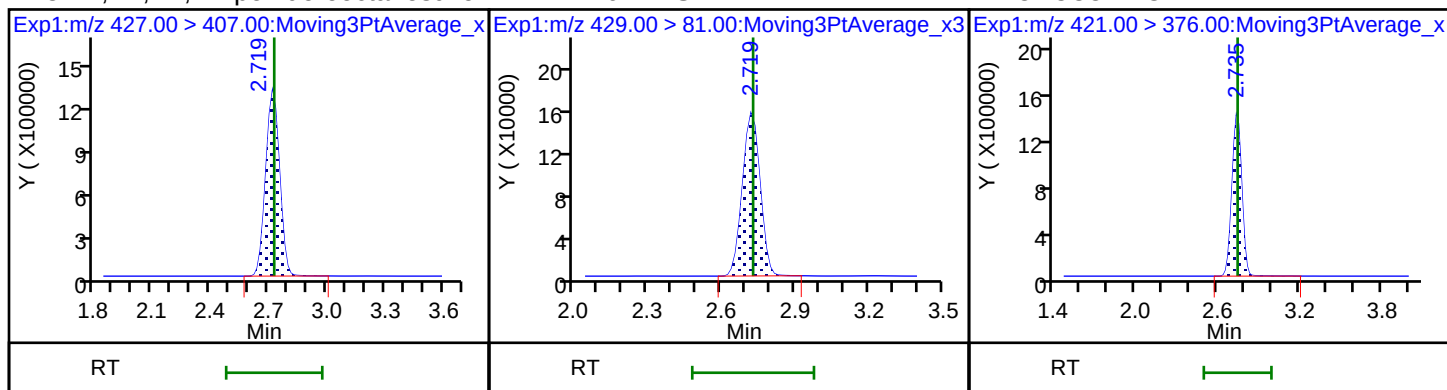
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

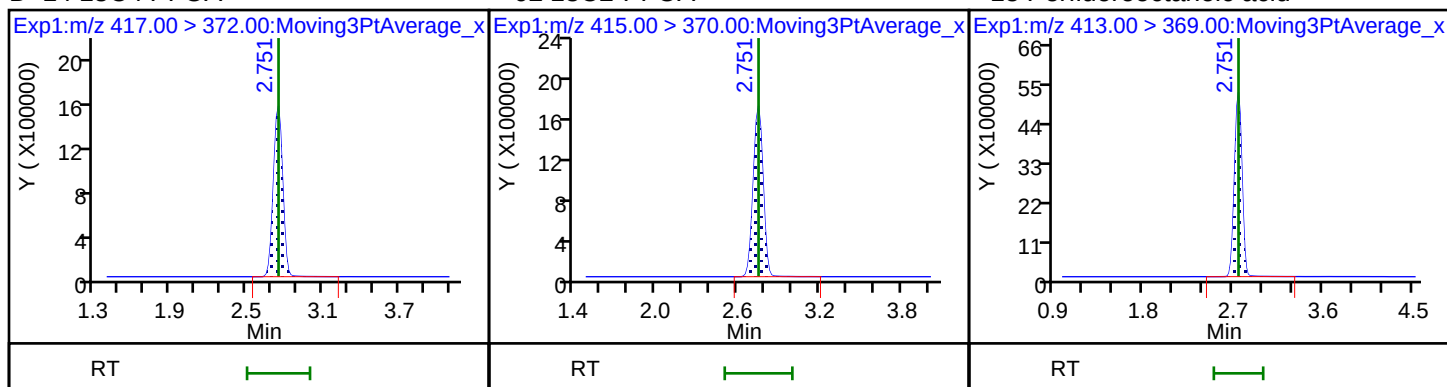
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

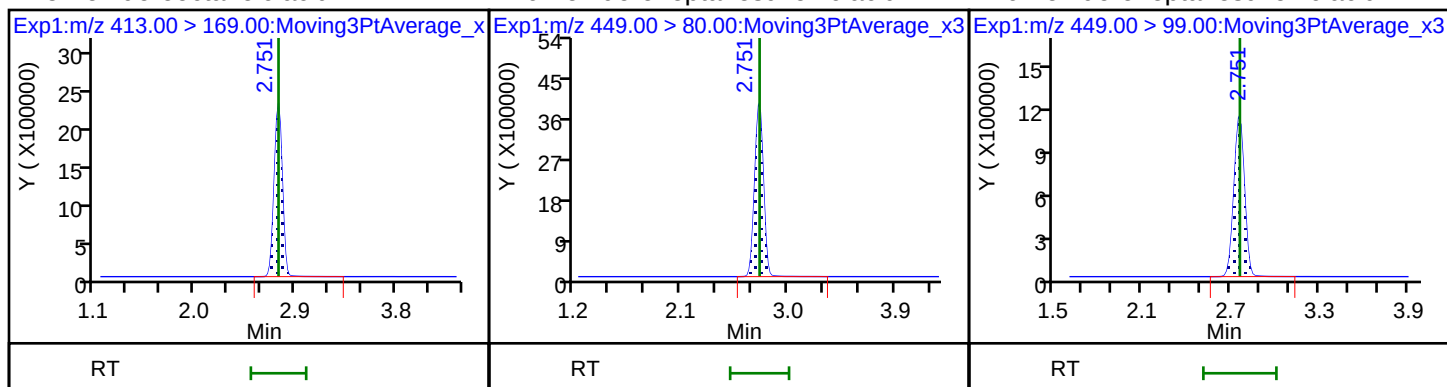
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

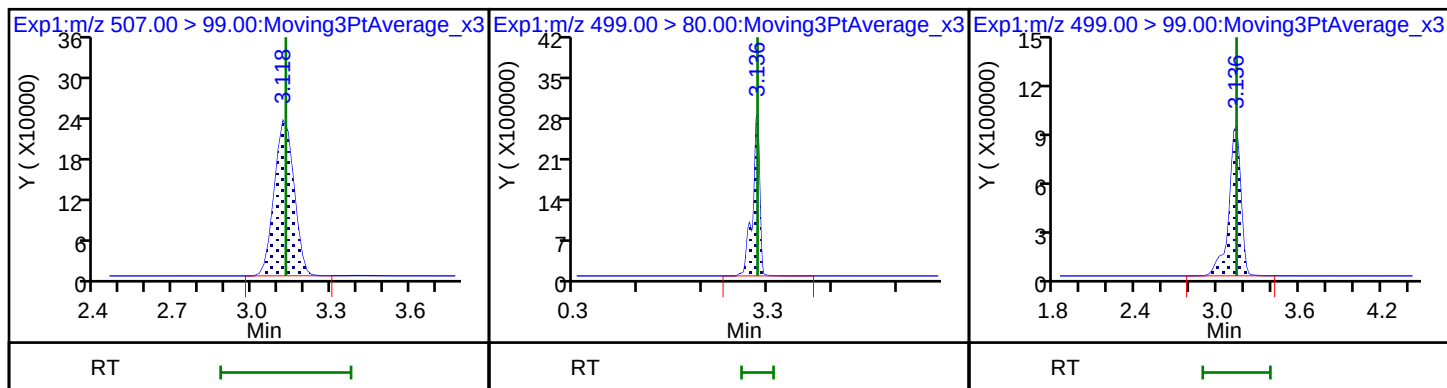
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid

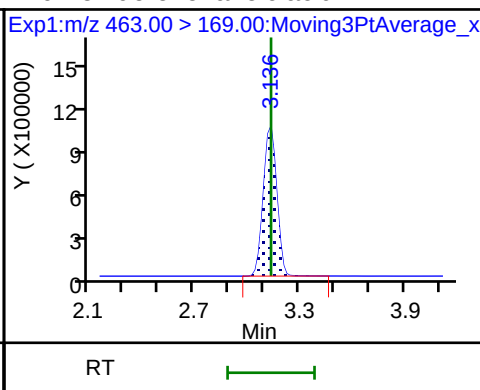
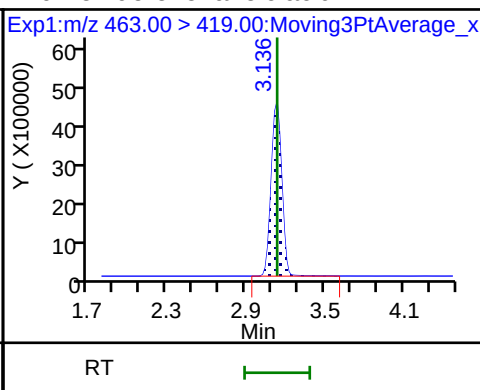
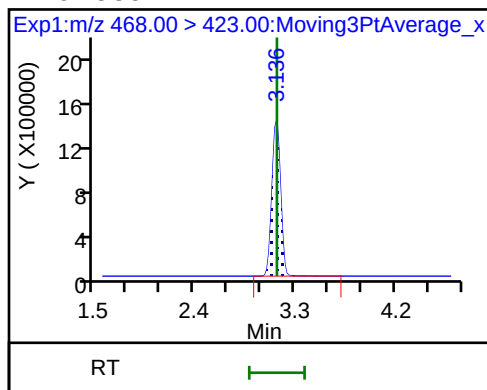
17 Perfluorooctane sulfonic acid



D 19 13C5 PFNA

20 Perfluorononanoic acid

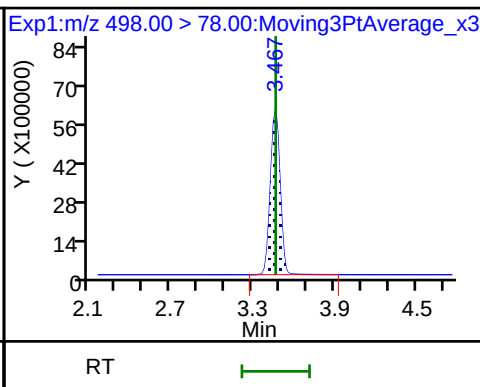
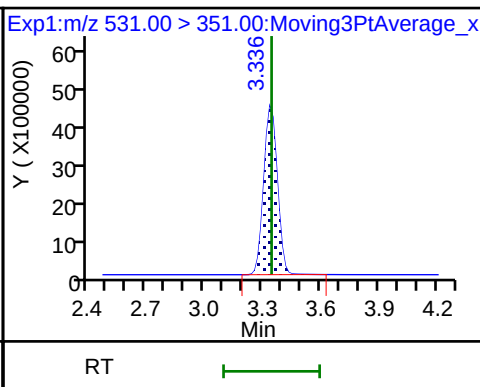
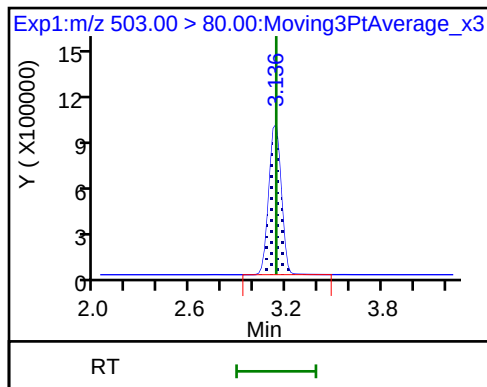
20 Perfluorononanoic acid



D 18 13C4 PFOS

69 9-Chlorohexadecafluoro-3-oxanonan

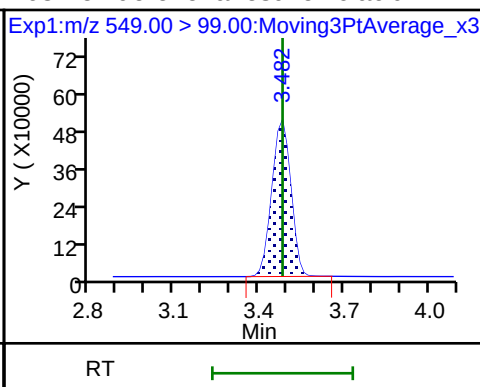
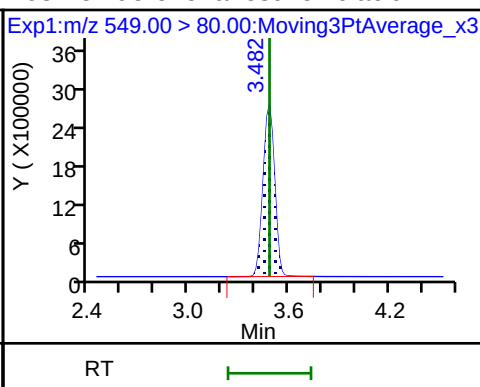
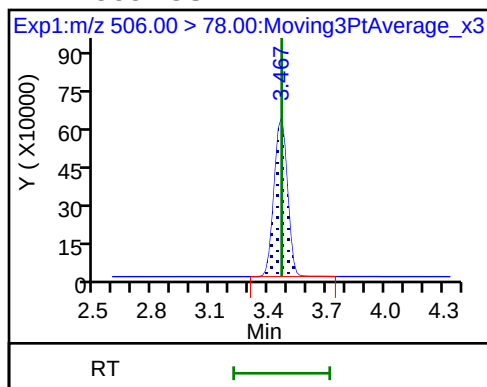
22 Perfluorooctane Sulfonamide



D 21 13C8 FOSA

68 Perfluorononanesulfonic acid

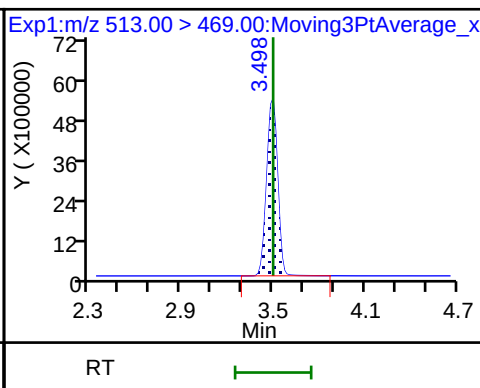
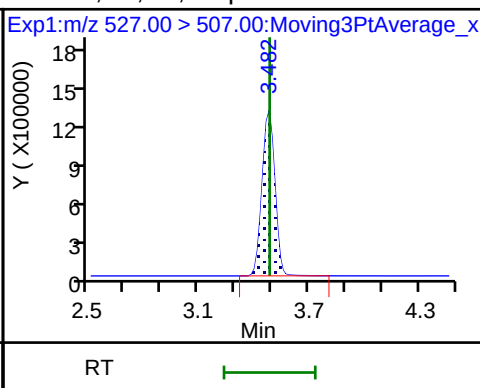
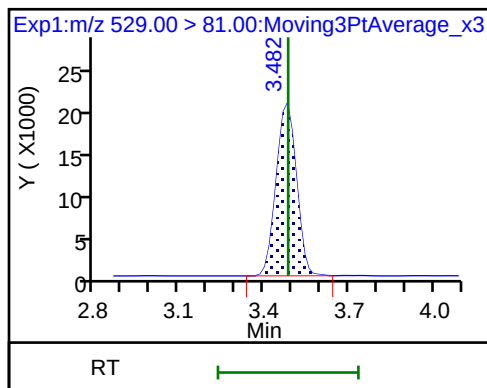
68 Perfluorononanesulfonic acid

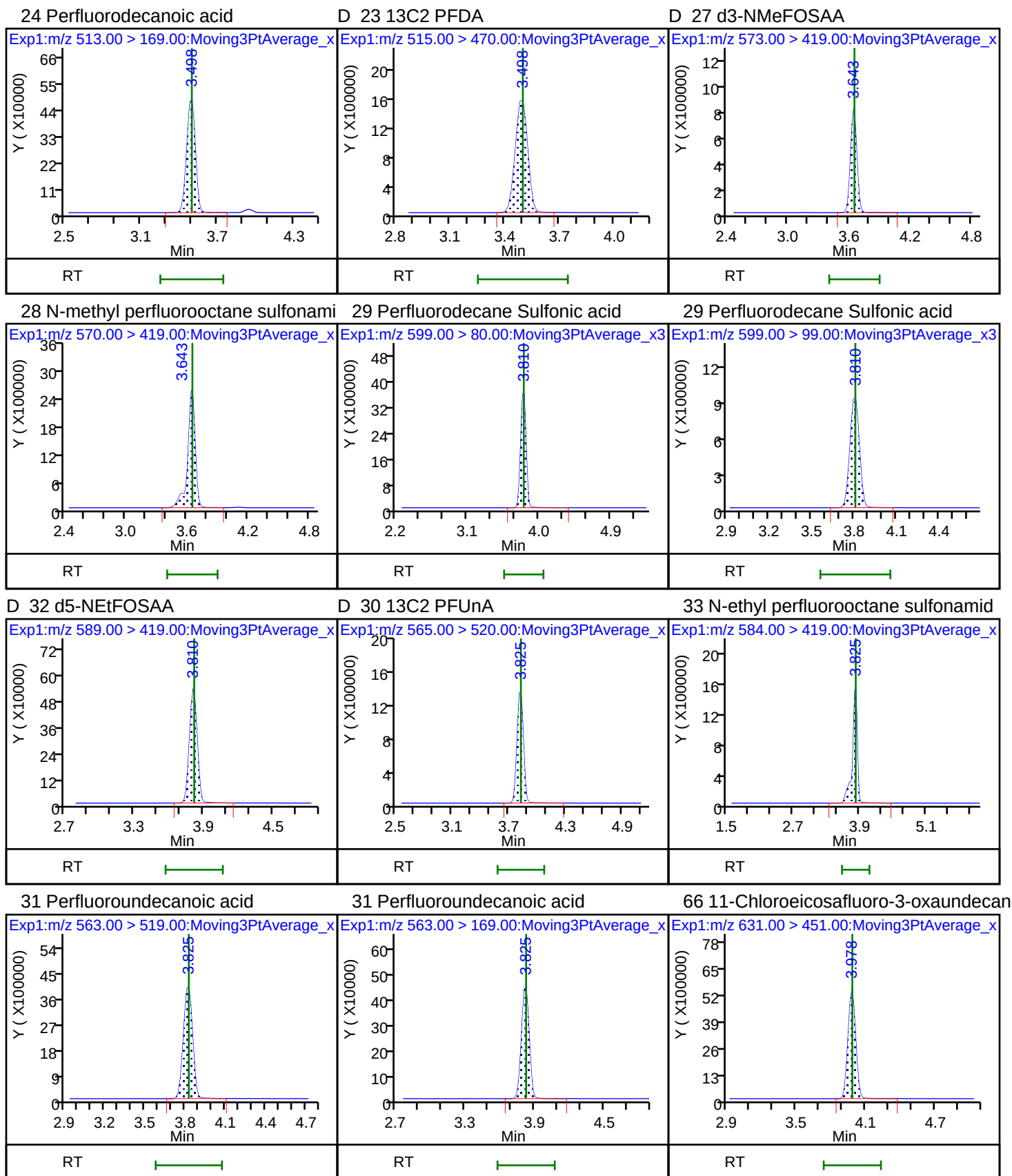


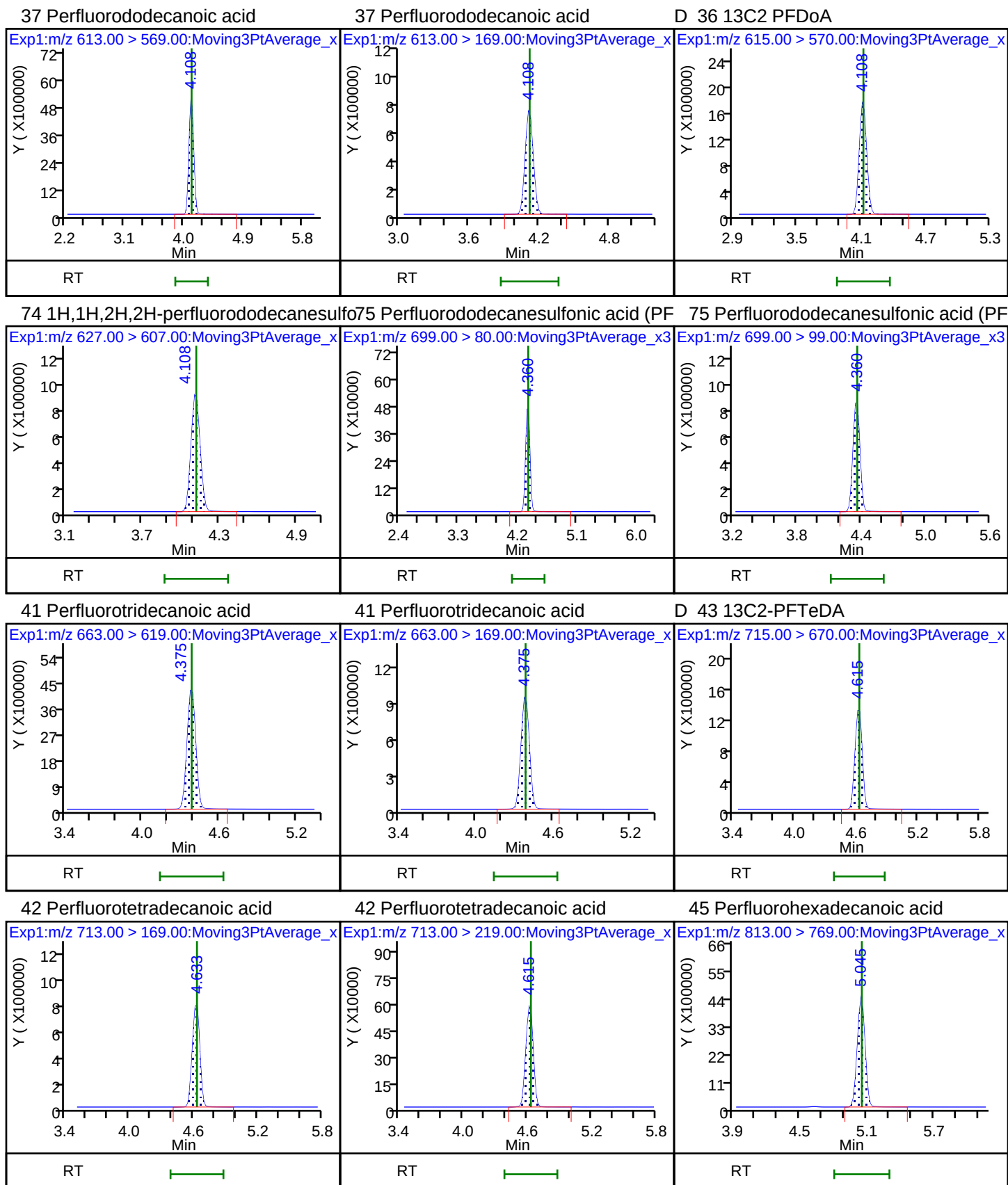
D 26 M2-8:2FTS

25 1H,1H,2H,2H-perfluorodecanesulfoni

24 Perfluorodecanoic acid



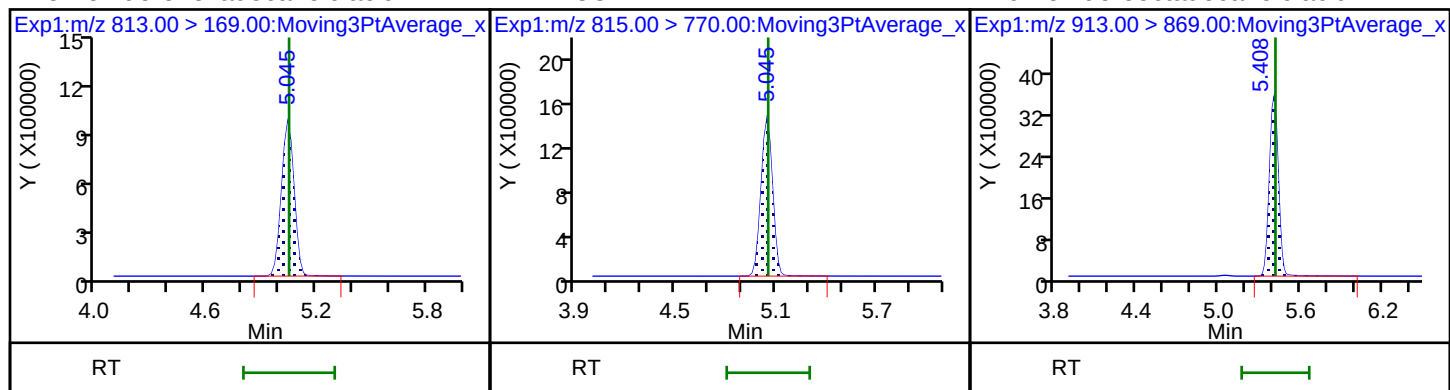




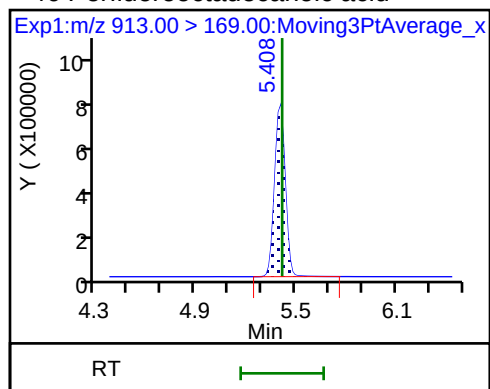
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Lab Sample ID: ICV 320-242498/10 Calibration Date: 08/28/2018 11:20

Instrument ID: A9 Calib Start Date: 08/28/2018 10:20

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05

Lab File ID: 2018.08.28LLICALA_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9128	0.9485		2.60	2.50	3.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.014	1.004		2.48	2.50	-1.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	105.1	112.9		2.38	2.21	7.5	50.0
4:2 FTS	AveID	21.61	22.53		2.44	2.34	4.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9107	0.9048		2.48	2.50	-0.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.87	54.00		2.54	2.35	8.3	50.0
HFPO-DA (GenX)	AveID	1.768	1.794		2.54	2.50	1.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.020	1.030		2.52	2.50	1.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.237	1.180		2.18	2.28	-4.6	40.0
DONA	AveID	2.585	2.711		2.47	2.36	4.9	50.0
6:2 FTS	AveID	2.140	2.200		2.44	2.38	2.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9846	1.094		2.64	2.38	11.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.076	1.046		2.43	2.50	-2.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.055	1.063		2.33	2.31	0.8	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9779	1.063		2.72	2.50	8.7	40.0
F-53B Major	AveID	1.158	1.176		2.37	2.33	1.5	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	2.964	3.245		2.74	2.50	9.5	40.0
8:2 FTS	AveID	15.14	15.07		2.39	2.40	-0.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.125		2.47	2.50	-1.1	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6458	0.7146		2.66	2.40	10.6	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9938	1.164		2.93	2.50	17.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8133	0.9229		2.74	2.41	13.5	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9299	1.107		2.98	2.50	19.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8971	0.9109		2.54	2.50	1.5	40.0
F-53B Minor	AveID	1.278	1.398		2.58	2.36	9.4	50.0
10:2 FTS	AveID	10.16	10.69		2.54	2.41	5.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.008	1.087		2.70	2.50	7.9	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0930	0.0925		2.41	2.42	-0.5	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8023	0.8433		2.63	2.50	5.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1614	0.1640		2.54	2.50	1.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Lab Sample ID: ICV 320-242498/10 Calibration Date: 08/28/2018 11:20
 Instrument ID: A9 Calib Start Date: 08/28/2018 10:20
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05
 Lab File ID: 2018.08.28LLICALA_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9433		2.59	2.50	3.4	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6377	0.6551		2.57	2.50	2.7	50.0
13C4 PFBA	Ave	0.9623	0.9451		2.46	2.50	-1.8	50.0
13C5 PFPeA	Ave	0.8584	0.8602		2.51	2.50	0.2	50.0
13C3-PFBS	Ave	0.0113	0.0107		2.20	2.33	-5.4	50.0
M2-4:2FTS	Ave	0.0968	0.0972		2.34	2.34	0.3	50.0
13C2 PFHxA	Ave	0.9075	0.8852		2.44	2.50	-2.5	50.0
13C3 HFPO-DA	Ave	0.0984	0.0942		2.39	2.50	-4.3	50.0
13C4-PFHpA	Ave	1.082	1.049		2.42	2.50	-3.1	50.0
18O2 PFHxS	Ave	0.6655	0.6612		2.35	2.37	-0.7	50.0
M2-6:2FTS	Ave	0.1063	0.1028		2.30	2.38	-3.4	40.0
13C8 PFOA	Ave	2891770	2776703		2.35	2.45	-4.0	50.0
13C4 PFOA	Ave	1.008	0.9886		2.45	2.50	-1.9	50.0
13C4 PFOS	Ave	0.7151	0.6918		2.31	2.39	-3.3	50.0
13C5 PFNA	Ave	0.9437	0.8968		2.38	2.50	-5.0	50.0
13C8 PFOS	Ave	513610	506369		2.36	2.39	-1.4	50.0
13C8 FOSA	Ave	0.3783	0.3642		2.41	2.50	-3.7	50.0
13C2 PFDA	Ave	0.9426	0.9539		2.53	2.50	1.2	50.0
M2-8:2FTS	Ave	0.0156	0.0139		2.13	2.40	-11.0	40.0
d3-NMeFOSAA	Ave	0.4249	0.4335		2.55	2.50	2.0	50.0
13C2 PFUnA	Ave	0.8023	0.8024		2.50	2.50	0.0	50.0
d5-NEtFOSAA	Ave	0.3342	0.3324		2.49	2.50	-0.5	50.0
13C2 PFDoA	Ave	0.9759	0.9367		2.40	2.50	-4.0	50.0
13C2-PFTeDA	Ave	0.7774	0.7444		2.39	2.50	-4.2	50.0
13C2-PFHxDA	Ave	0.7882	0.8298		2.63	2.50	5.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_013.d
 Lims ID: ICV Full
 Client ID:
 Sample Type: ICV
 Inject. Date: 28-Aug-2018 11:20:48 ALS Bottle#: 17 Worklist Smp#: 10
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist:
 Method: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 28-Aug-2018 12:43:45 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: roycea

Date: 28-Aug-2018 12:23:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.483	1.485	-0.002	0.539	7818437	2.46		98.2	13074	
2 Perfluorobutyric acid										
212.90 > 169.00	1.483	1.486	-0.003	1.000	7415669	2.60			802	
D 3 13C5-PFPeA										
267.90 > 223.00	1.755	1.758	-0.003	0.638	7116172	2.51		100	7335	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.755	1.759	-0.004	1.000	7145426	2.48			632	
D 47 13C3-PFBS										
301.90 > 83.00	1.789	1.796	-0.007	0.650	82043	2.20		94.6	528	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.797	1.797	0.0	1.005	8816096	2.38			3956	
298.90 > 99.00	1.797	1.797	0.0	1.005	3034067		2.91(1.35-4.05)		2538	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.007	2.012	-0.005	1.122	1858286	2.44			5651	
D 60 M2-4:2FTS										
329.00 > 81.00	2.007	2.013	-0.006	0.730	750734	2.34		100	844	
D 7 13C2 PFHxA										
315.00 > 270.00	2.037	2.048	-0.011	0.741	7322944	2.44		97.5	6873	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.005	6625853	2.48			1486	
313.00 > 119.00	2.037	2.048	-0.011	1.000	479100		13.83(6.96-20.87)		861	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.068	2.071	-0.003	1.156	4477656	2.54			5354	
349.00 > 99.00	2.068	2.071	-0.003	1.156	2017744		2.22(1.15-3.45)		2899	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.140	2.149	-0.009	1.000	1398449	2.54			577	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.140	2.150	-0.010	0.778	779374	2.39		95.7	2441	
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.387	-0.014	0.863	8673867	2.42		96.9	8083	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.373	2.387	-0.014	1.000	8931381	2.52			1205	
363.00 > 169.00	2.373	2.387	-0.014	1.000	2061992		4.33(2.17-6.52)		3143	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	5888331	2.18			3584	
399.00 > 99.00	2.400	2.400	0.0	1.000	1602830		3.67(1.90-5.70)		1543	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.872	5174153	2.35		99.3	11725	
76 DONA										
377.00 > 251.00	2.426	2.432	-0.006	0.778	14614247	2.47			13466	
377.00 > 85.00	2.426	2.432	-0.006	0.778	6700701		2.18(1.13-3.39)		3003	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.719	2.728	-0.009	1.000	1777055	2.44			1383	
D 12 M2-6:2FTS										
429.00 > 81.00	2.719	2.728	-0.009	0.988	807686	2.30		96.6	1607	
D 73 13C8 PFOA										
421.00 > 376.00	2.735	2.744	-0.009		6795981	2.35		96.0	7686	
D 14 13C4 PFOA										
417.00 > 372.00	2.751	2.751	0.0	1.000	8178397	2.45		98.1	7841	
* 62 13C2-PFOA										
415.00 > 370.00	2.751	2.751	0.0		8272454	2.50			9101	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.751	2.751	0.0	1.000	8550596	2.43			579	
413.00 > 169.00	2.751	2.751	0.0	1.000	3160759		2.71(1.36-4.08)		4379	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.751	2.760	-0.009	0.882	5947480	2.64			4166	
449.00 > 99.00	2.751	2.760	-0.009	0.882	1438198		4.14(1.84-5.53)		4257	
D 72 13C8 PFOS										
507.00 > 99.00	3.118	3.129	-0.011		1210221	2.36		98.6	3025	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.118	3.136	-0.018	1.000	5630426	2.33			2687	
499.00 > 99.00	3.118	3.136	-0.018	1.000	1342419		4.19(2.04-6.12)		2314	
D 19 13C5 PFNA										
468.00 > 423.00	3.118	3.136	-0.018	1.134	7418808	2.38		95.0	7323	
20 Perfluorononanoic acid										
463.00 > 419.00	3.136	3.136	0.0	1.006	7884470	2.72			781	
463.00 > 169.00	3.118	3.136	-0.018	1.000	1372852		5.74(2.68-8.03)		2643	
D 18 13C4 PFOS										
503.00 > 80.00	3.118	3.136	-0.018	1.134	5470728	2.31		96.7	4464	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.336	3.346	-0.010	1.070	6271013	2.37			6344	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.467	3.467	0.0	1.000	9778618	2.74			5712	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.467	3.467	0.0	1.260	3013180	2.41		96.3	4993	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.482	3.483	-0.001	1.117	3925851	2.66			3709	
549.00 > 99.00	3.482	3.483	-0.001	1.117	645053		6.09(3.02-9.05)		2315	
D 26 M2-8:2FTS										
529.00 > 81.00	3.482	3.485	-0.003	1.266	110298	2.13		89.0	667	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.482	3.485	-0.003	1.000	1665339	2.39			3424	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.482	3.498	-0.016	1.000	8879874	2.47			1169	
513.00 > 169.00	3.482	3.498	-0.016	1.000	619624		14.33(7.12-21.35)		2037	
D 23 13C2 PFDA										
515.00 > 470.00	3.482	3.498	-0.016	1.266	7891039	2.53		101	12046	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.643	3.651	-0.008	1.324	3586265	2.55		102	4119	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.643	3.653	-0.010	1.000	4172723	2.93			8187	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.794	3.807	-0.013	1.217	5096463	2.74			4193	
599.00 > 99.00	3.794	3.807	-0.013	1.217	1060306		4.81(2.14-6.43)		2431	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.809	3.819	-0.010	1.385	2749911	2.49		99.5	2962	
D 30 13C2 PFUnA										
565.00 > 520.00	3.809	3.825	-0.016	1.385	6637764	2.50		100	5750	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.809	3.825	-0.016	1.000	3043946	2.98			4091	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.809	3.825	-0.016	1.000	6046034	2.54			1093	
563.00 > 169.00	3.809	3.825	-0.016	1.000	533788		11.33(5.24-15.72)		1369	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.978	3.983	-0.005	1.276	7538475	2.58			6957	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.108	4.118	-0.010	1.000	8422800	2.70			1590	
613.00 > 169.00	4.108	4.118	-0.010	1.000	900345		9.36(4.68-14.05)		1778	
D 36 13C2 PFDaA										
615.00 > 570.00	4.108	4.118	-0.010	1.494	7748743	2.40		96.0	9860	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.108	4.120	-0.012	1.180	1186373	2.54			2324	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.344	4.360	-0.016	1.393	512569	2.41			1291	
699.00 > 99.00	4.344	4.360	-0.016	1.393	972478		0.53(0.28-0.83)		2361	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.375	4.384	-0.009	1.065	6534380	2.63			2112	
663.00 > 169.00	4.375	4.384	-0.009	1.065	1098281		5.95(3.09-9.27)		3337	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.612	4.628	-0.016	1.677	6158190	2.39		95.8	12830	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.612	4.631	-0.019	1.000	1009829	2.54			3334	
713.00 > 219.00	4.612	4.631	-0.019	1.000	692793		1.46(0.70-2.09)		3141	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.042	5.053	-0.011	1.000	6475285	2.59			1309	
813.00 > 169.00	5.042	5.053	-0.011	1.000	1106950		5.85(2.77-8.32)		3071	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.042	5.053	-0.011	1.833	6864378	2.63		105	9588	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.404	5.416	-0.012	1.072	4496921	2.57			937	
913.00 > 169.00	5.404	5.416	-0.012	1.072	810463		5.55(2.55-7.64)		2455	

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_013.d

Injection Date: 28-Aug-2018 11:20:48

Instrument ID: A9

Lims ID: ICV Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 17

Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

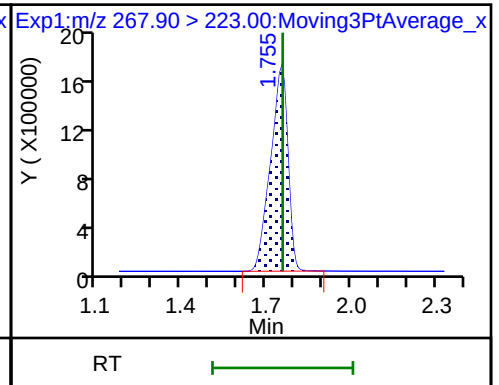
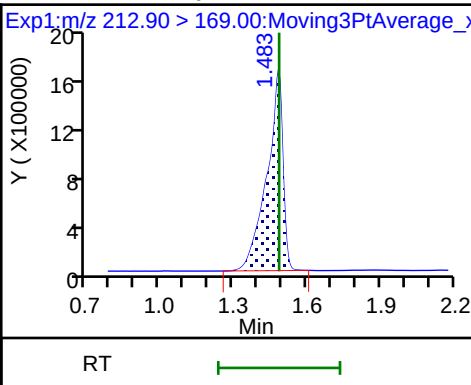
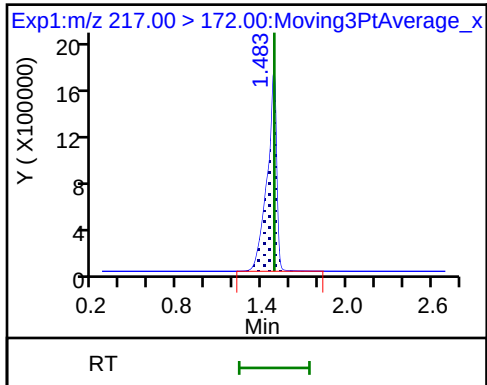
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

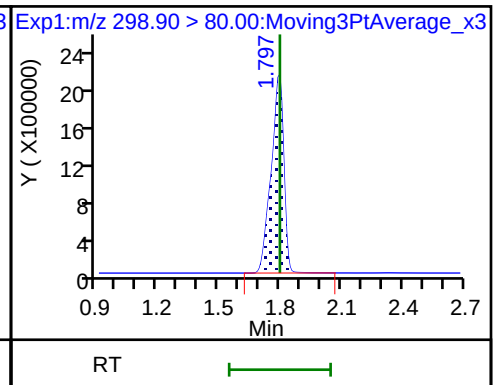
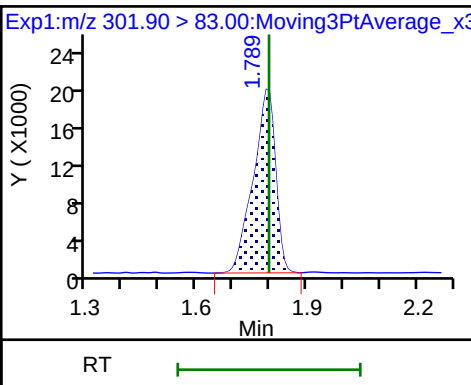
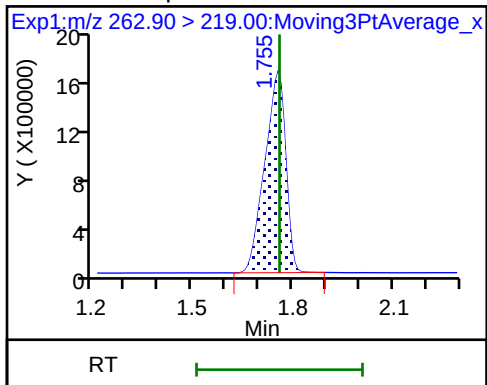
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

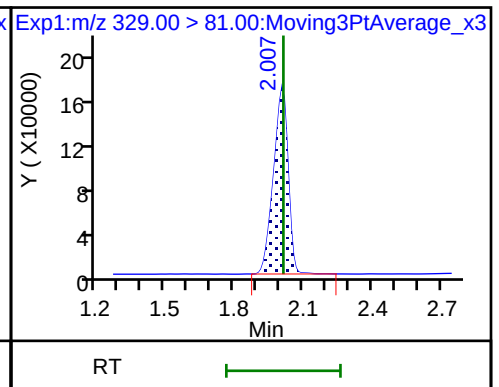
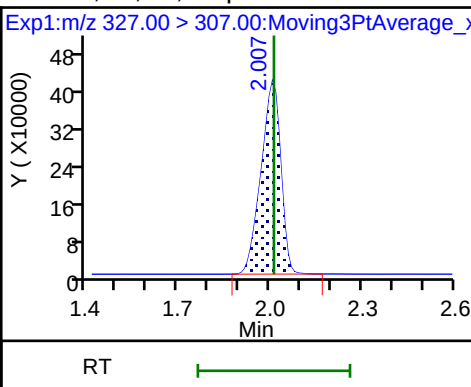
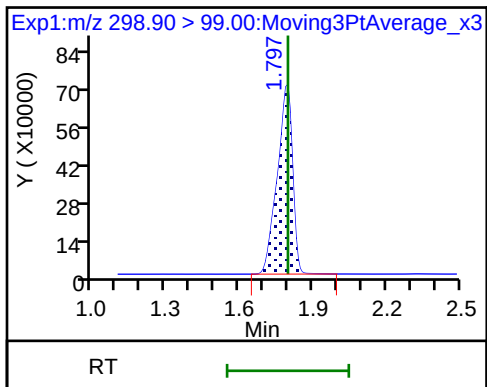
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

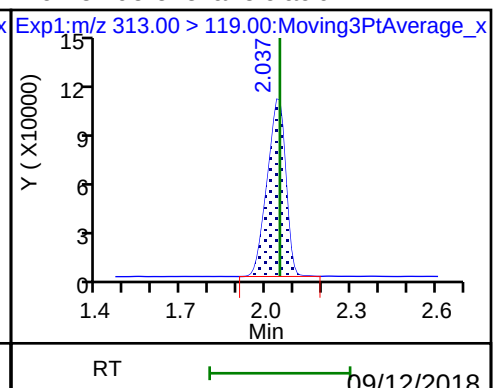
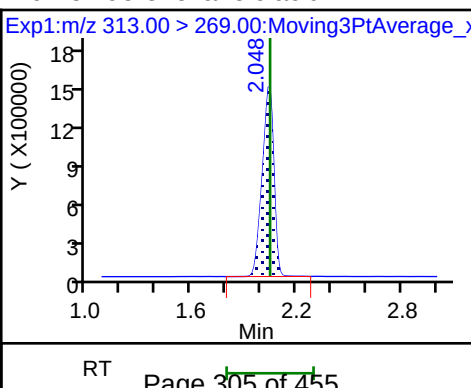
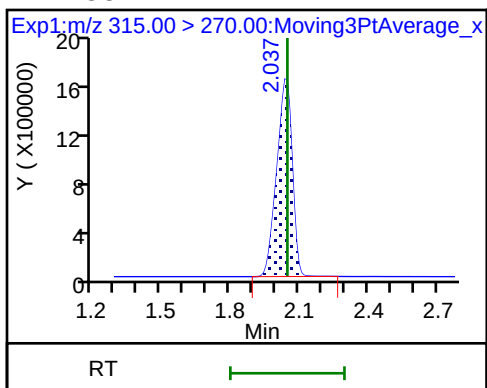
D 60 M2-4:2FTS

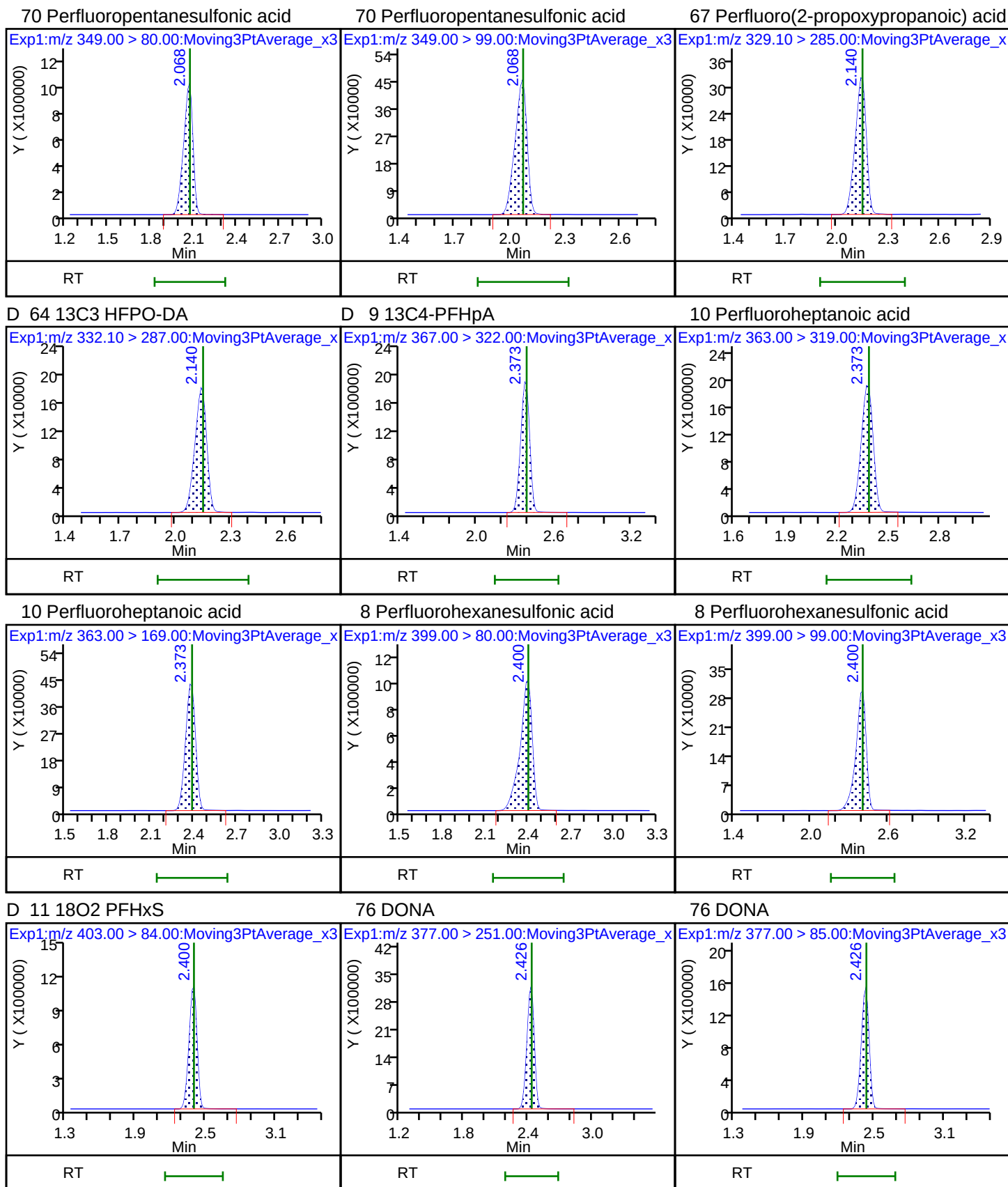


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

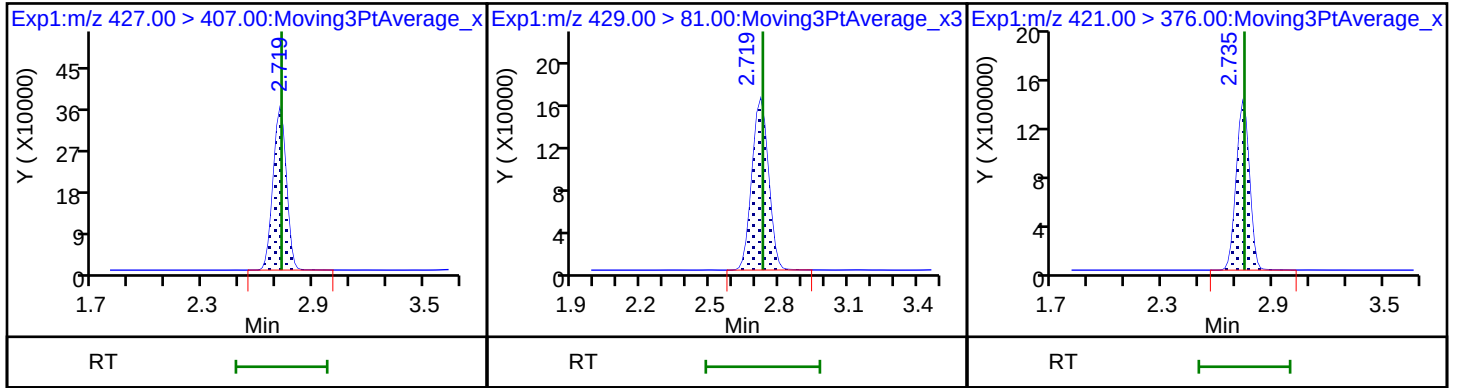
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

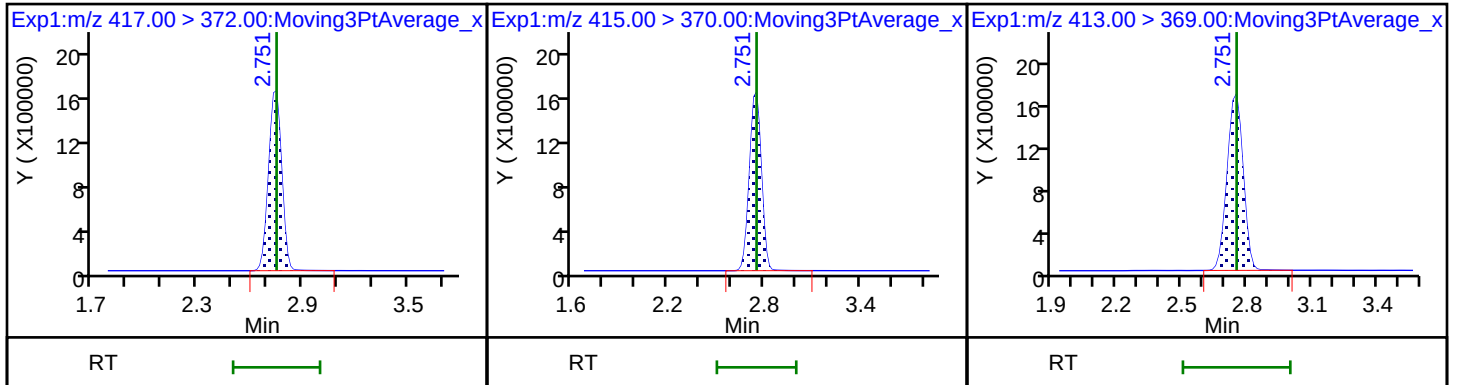
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

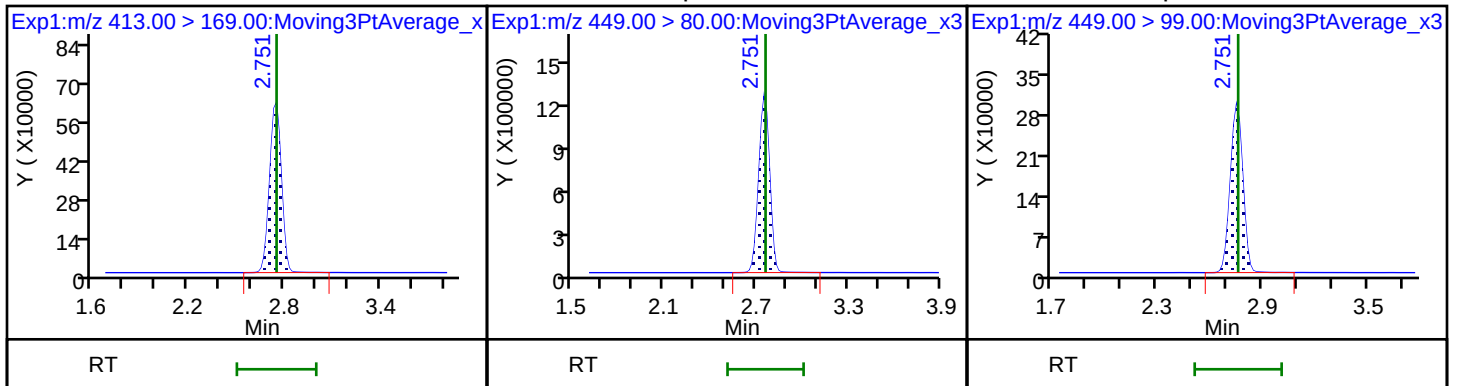
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

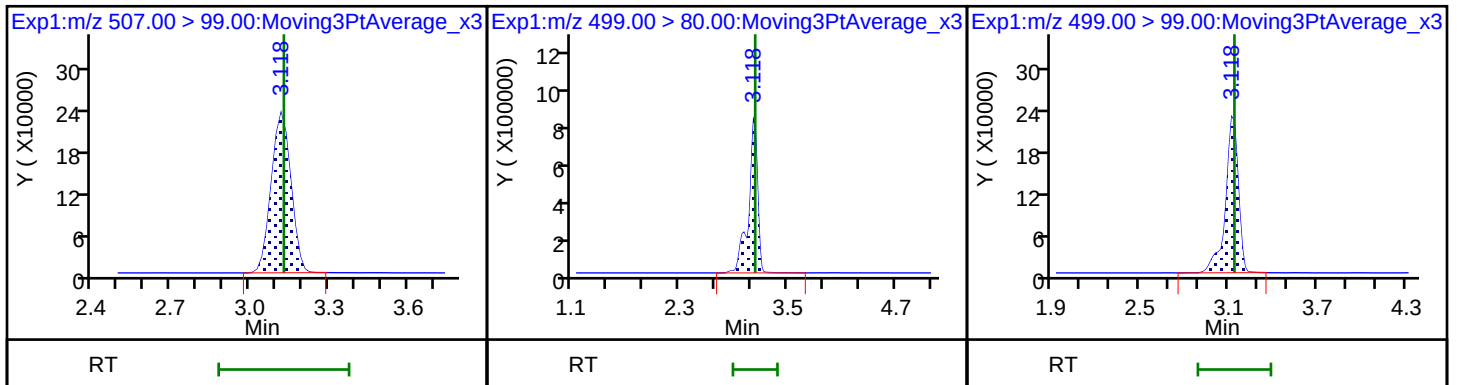
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid

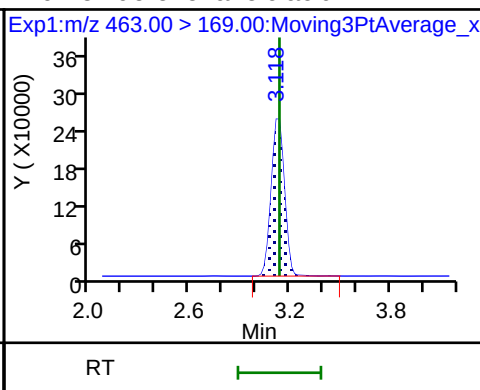
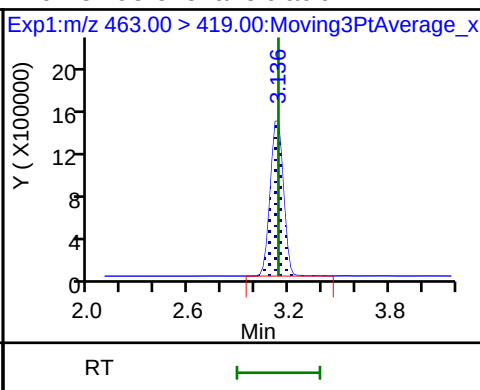
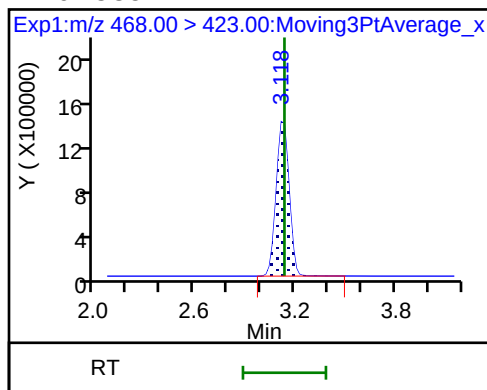
17 Perfluorooctane sulfonic acid



D 19 13C5 PFNA

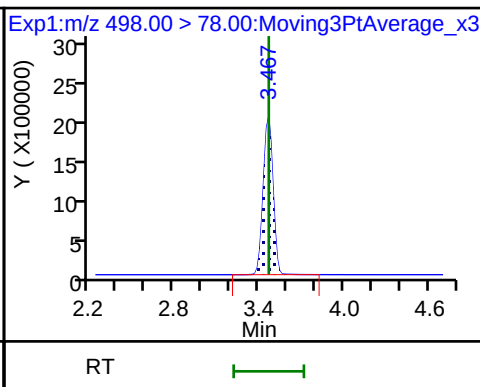
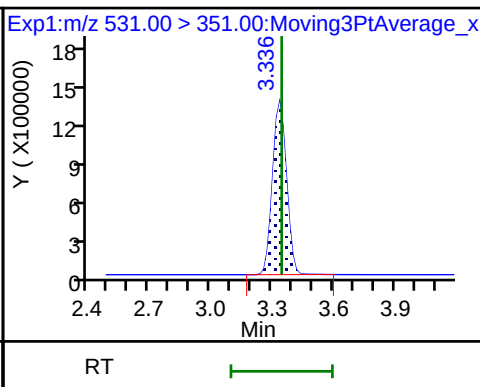
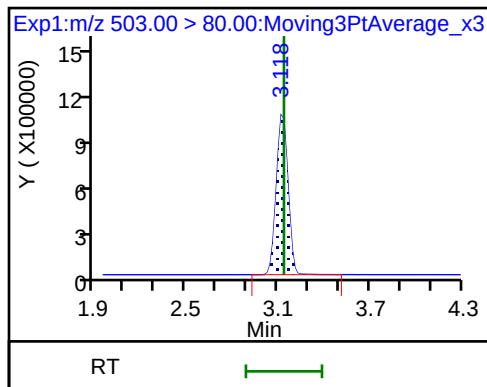
20 Perfluorononanoic acid

20 Perfluorononanoic acid



D 18 13C4 PFOS

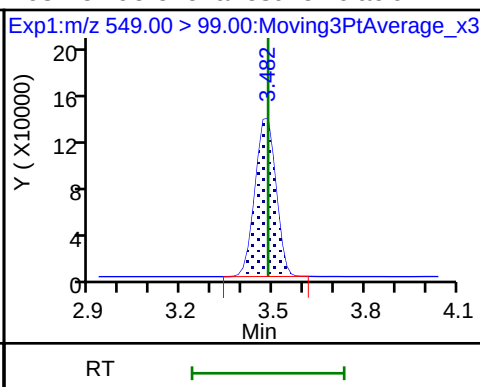
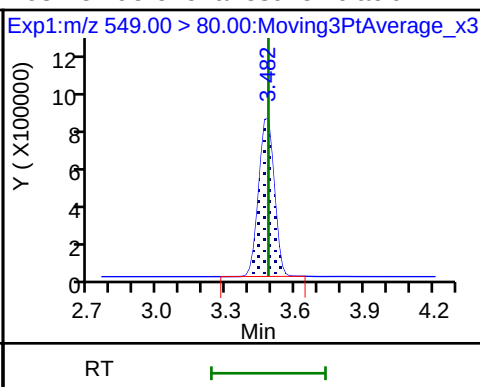
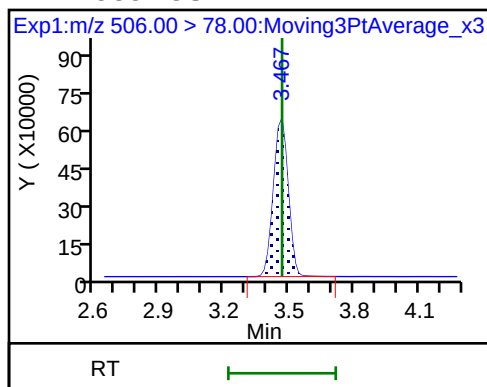
69 9-Chlorohexadecafluoro-3-oxanonan-2-yl Perfluorooctane Sulfonamide



D 21 13C8 FOSA

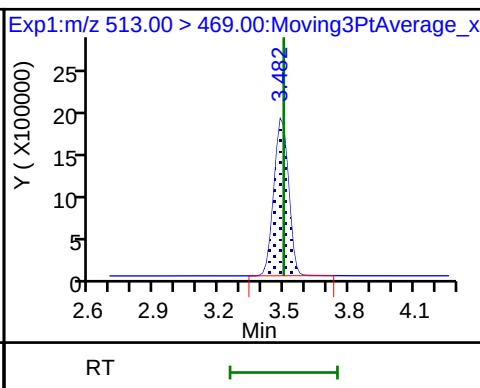
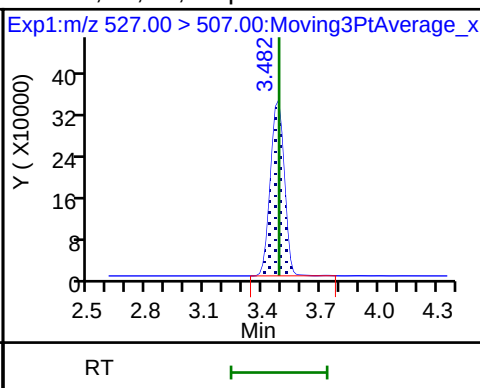
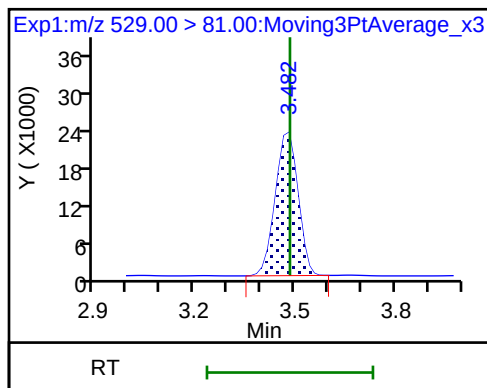
68 Perfluorononanesulfonic acid

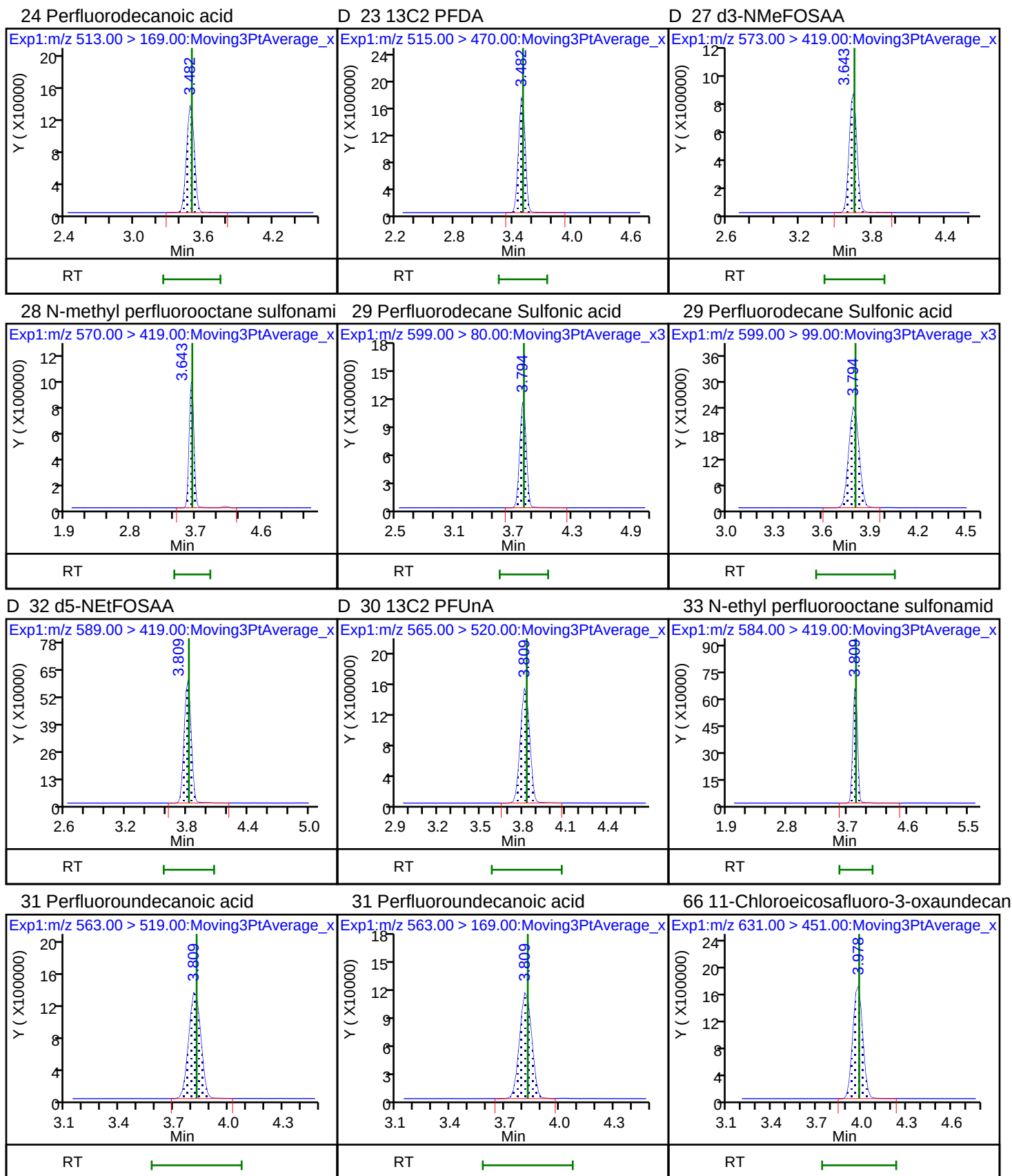
68 Perfluorononanesulfonic acid

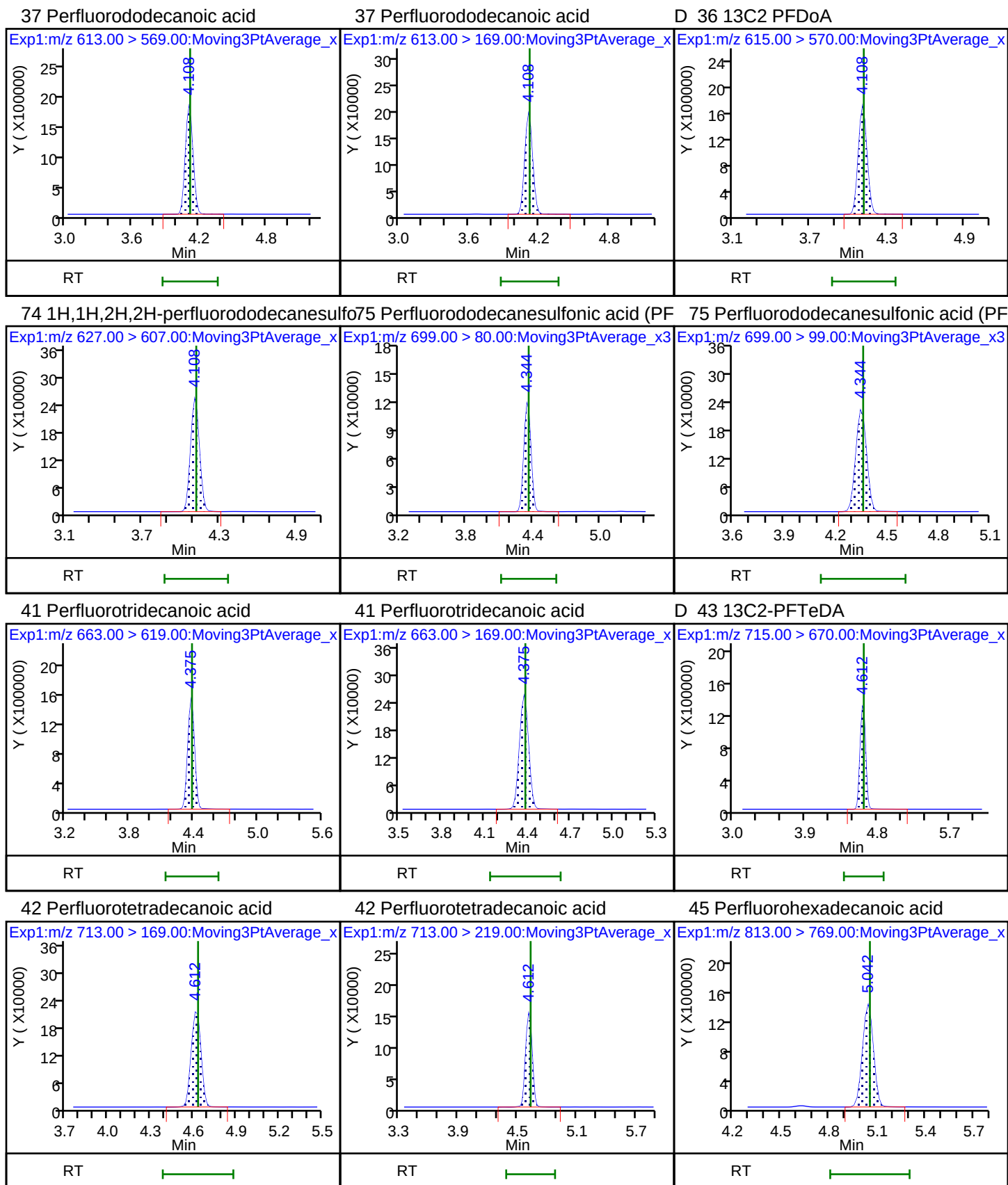


D 26 M2-8:2FTS

25 1H,1H,2H,2H-perfluorodecanesulfoni 24 Perfluorodecanoic acid



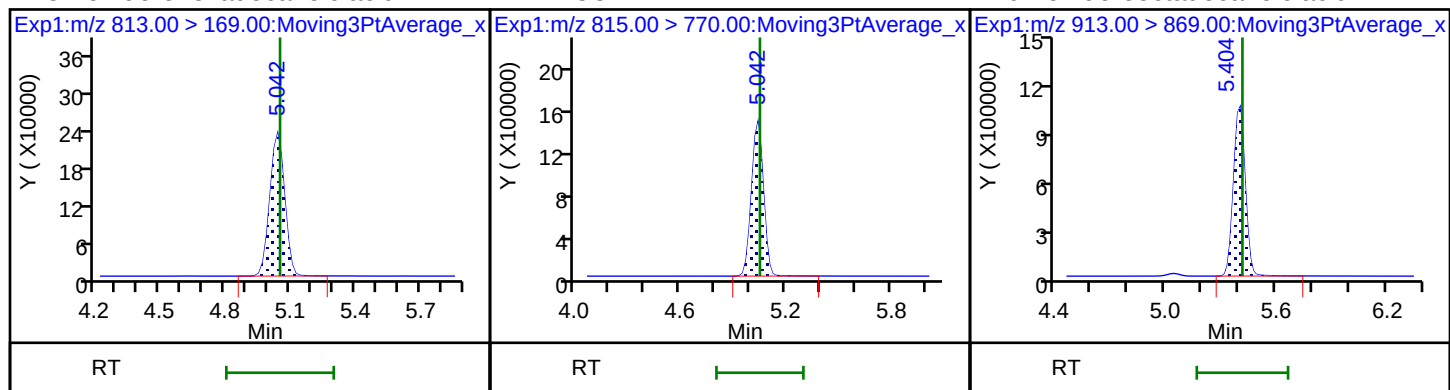




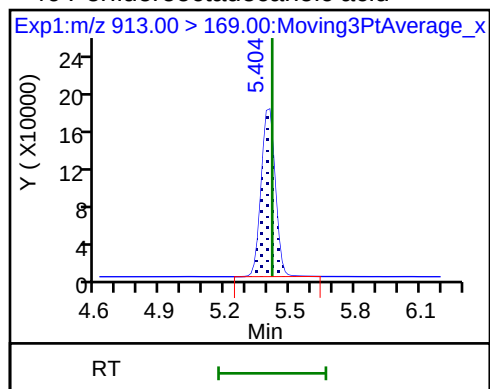
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Lab Sample ID: CCVL 320-244734/2 Calibration Date: 09/10/2018 10:17

Instrument ID: A9 Calib Start Date: 08/28/2018 10:20

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05

Lab File ID: 2018.09.10LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9128	0.9227		0.0505	0.0500	1.1	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.014	1.005		0.0496	0.0500	-0.9	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	105.1	109.2		0.0460	0.0442	4.0	50.0
4:2 FTS	AveID	21.61	23.53			0.0467	8.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9107	0.9375		0.0515	0.0500	2.9	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.87	51.89		0.0488	0.0469	4.1	50.0
HFPO-DA (GenX)	AveID	1.768	1.543		0.0436	0.0500	-12.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.020	1.139		0.0558	0.0500	11.7	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.237	1.254		0.0461	0.0455	1.3	50.0
DONA	AveID	2.585	2.808		0.0512	0.0471	8.6	50.0
6:2 FTS	AveID	2.140	2.844		0.0630	0.0474	32.9	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9846	0.9743		0.0471	0.0476	-1.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.076	1.288		0.0599	0.0501	19.7	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9779	0.996		0.0509	0.0500	1.9	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.055	1.145		0.0504	0.0464	8.5	50.0
F-53B Major	AveID	1.158	1.013		0.0407	0.0466	-12.6	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	2.964	3.127		0.0528	0.0500	5.5	50.0
8:2 FTS	AveID	15.14	12.76			0.0479	-15.7	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6458	0.6257		0.0465	0.0480	-3.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.238		0.0544	0.0500	8.7	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9938	1.031			0.0500	3.7	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8133	0.8675		0.0514	0.0482	6.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9299	0.8080			0.0500	-13.1	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8971	1.009		0.0562	0.0500	12.5	50.0
F-53B Minor	AveID	1.278	1.292		0.0476	0.0471	1.1	50.0
10:2 FTS	AveID	10.16	7.083		0.0336	0.0482	-30.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.008	1.190		0.0591	0.0500	18.1	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0930	0.0853		0.0444	0.0484	-8.2	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8023	0.8453		0.0527	0.0500	5.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1614	0.1688		0.0523	0.0500	4.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-244734/2 Calibration Date: 09/10/2018 10:17
 Instrument ID: A9 Calib Start Date: 08/28/2018 10:20
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05
 Lab File ID: 2018.09.10LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.260		0.0443	0.0500	-11.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6377	0.5405		0.0424	0.0500	-15.2	50.0
13C4 PFBA	Ave	0.9623	0.9370		2.43	2.50	-2.6	50.0
13C5 PFPeA	Ave	0.8584	0.8246		2.40	2.50	-3.9	50.0
13C3-PFBS	Ave	0.0113	0.0112		2.32	2.33	-0.4	50.0
M2-4:2FTS	Ave	0.0968	0.0970		2.34	2.34	0.2	50.0
13C2 PFHxA	Ave	0.9075	0.8671		2.39	2.50	-4.5	50.0
13C3 HFPO-DA	Ave	0.0984	0.1001		2.54	2.50	1.8	50.0
13C4-PFHpA	Ave	1.082	1.041		2.40	2.50	-3.9	50.0
18O2 PFHxS	Ave	0.6655	0.6906		2.45	2.37	3.8	50.0
M2-6:2FTS	Ave	0.1063	0.1035		2.31	2.38	-2.6	50.0
13C8 PFOA	Ave	2891770	2792168		2.36	2.45	-3.4	50.0
13C4 PFOA	Ave	1.008	0.9927		2.46	2.50	-1.5	50.0
13C4 PFOS	Ave	0.7151	0.7394		2.47	2.39	3.4	50.0
13C5 PFNA	Ave	0.9437	0.9558		2.53	2.50	1.3	50.0
13C8 PFOS	Ave	513610	533339		2.48	2.39	3.8	50.0
13C8 FOSA	Ave	0.3783	0.3792		2.51	2.50	0.2	50.0
13C2 PFDA	Ave	0.9426	0.9871		2.62	2.50	4.7	50.0
M2-8:2FTS	Ave	0.0156	0.0185		2.83	2.40	18.3	50.0
d3-NMeFOSAA	Ave	0.4249	0.3517		2.07	2.50	-17.2	50.0
d5-NEtFOSAA	Ave	0.3342	0.3519		2.63	2.50	5.3	50.0
13C2 PFUnA	Ave	0.8023	0.8405		2.62	2.50	4.8	50.0
13C2 PFDoA	Ave	0.9759	0.9173		2.35	2.50	-6.0	50.0
13C2-PFTeDA	Ave	0.7774	0.6861		2.21	2.50	-11.8	50.0
13C2-PFHxDA	Ave	0.7882	0.5986		1.90	2.50	-24.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 10-Sep-2018 10:17:12 ALS Bottle#: 21 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCVL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Sep-2018 11:57:22 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: roycea

Date: 10-Sep-2018 11:56:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.511	1.505	0.006	0.534	7978538	2.43		97.4	14926	
2 Perfluorobutyric acid										
212.90 > 169.00	1.511	1.505	0.006	1.000	147243	0.0505		101	16.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.798	1.791	0.007	0.635	7021360	2.40		96.1	12704	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.798	1.791	0.007	1.000	141175	0.0496		99.1	15.6	
D 47 13C3-PFBS										
301.90 > 83.00	1.839	1.832	0.007	0.650	88907	2.32		99.6	604	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.839	1.832	0.007	1.000	184648	0.0460		104	69.0	
298.90 > 99.00	1.839	1.832	0.007	1.000	66885		2.76(1.35-4.05)		49.7	
D 60 M2-4:2FTS										
329.00 > 81.00	2.059	2.060	-0.001	0.727	771570	2.34		100	759	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.059	2.060	-0.001	1.119	42016	0.0508		109	254	
D 7 13C2 PFHxA										
315.00 > 270.00	2.099	2.091	0.009	0.742	7383096	2.39		95.5	7863	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.099	2.091	0.009	1.000	138431	0.0515		103	44.2	
313.00 > 119.00	2.099	2.091	0.009	1.000	9924		13.95(6.96-20.87)		26.1	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.120	2.121	-0.001	1.153	93069	0.0488		104	206	
349.00 > 99.00	2.130	2.121	0.009	1.158	40407		2.30(1.15-3.45)		92.8	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.202	2.193	0.009	0.778	852681	2.54		102	2088	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.202	2.203	-0.001	1.000	26306	0.0436		87.2	14.2	
D 9 13C4-PFHpA										
367.00 > 322.00	2.453	2.441	0.012	0.866	8859685	2.40		96.1	7639	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.453	2.441	0.012	1.000	201754	0.0558		112	33.3	
363.00 > 169.00	2.440	2.441	-0.001	0.995	49623		4.07(2.17-6.52)		133	
D 11 18O2 PFHxS										
403.00 > 84.00	2.466	2.454	0.012	0.871	5562751	2.45		104	8217	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.466	2.454	0.012	1.000	134173	0.0461		101	146	
399.00 > 99.00	2.466	2.454	0.012	1.000	42491		3.16(1.90-5.70)		70.4	
76 DONA										
377.00 > 251.00	2.492	2.493	-0.001	0.777	333039	0.0512		109	894	
377.00 > 85.00	2.492	2.493	-0.001	0.777	129859		2.56(1.13-3.39)		63.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.799	2.784	0.015	0.989	837510	2.31		97.4	1224	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.799	2.784	0.015	1.000	47545	0.0630		133	36.4	
D 73 13C8 PFOA										
421.00 > 376.00	2.815	2.816	-0.001		6833831	2.36		96.6	6630	
D 14 13C4 PFOA										
417.00 > 372.00	2.831	2.816	0.015	1.000	8452413	2.46		98.5	5580	
* 62 13C2-PFOA										
415.00 > 370.00	2.831	2.816	0.015		8514602	2.50			7487	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.831	2.816	0.015	1.000	217973	0.0599		120	16.4	
413.00 > 169.00	2.831	2.816	0.015	1.000	75765		2.88(1.36-4.08)		106	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.831	2.832	-0.001	0.882	116792	0.0471		99.0	137	
449.00 > 99.00	2.831	2.832	-0.001	0.882	25127		4.65(1.84-5.53)		97.4	
D 72 13C8 PFOS										
507.00 > 99.00	3.209	3.193	0.016		1274681	2.48		104	1764	
D 18 13C4 PFOS										
503.00 > 80.00	3.209	3.210	-0.001	1.134	6018734	2.47		103	4711	
D 19 13C5 PFNA										
468.00 > 423.00	3.209	3.210	-0.001	1.134	8138233	2.53		101	5135	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.209	3.210	-0.001	1.000	133815	0.0504		109	117	
499.00 > 99.00	3.209	3.210	-0.001	1.000	35668		3.75(2.04-6.12)		89.2	
20 Perfluorononanoic acid										
463.00 > 419.00	3.209	3.210	-0.001	1.000	162172	0.0509		102	23.0	
463.00 > 169.00	3.209	3.210	-0.001	1.000	32172		5.04(2.68-8.03)		61.2	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.418	3.419	-0.001	1.065	118827	0.0407		87.4	321	
D 21 13C8 FOSA										
506.00 > 78.00	3.498	3.499	-0.001	1.236	3228860	2.51		100	6501	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.498	3.499	-0.001	1.000	201956	0.0528		106	322	
D 26 M2-8:2FTS										
529.00 > 81.00	3.573	3.558	0.015	1.262	150936	2.83		118	563	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.573	3.558	0.015	1.000	38532	0.0404		84.3	191	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.573	3.558	0.015	1.113	75636	0.0465		96.9	249	
549.00 > 99.00	3.573	3.558	0.015	1.113	13171		5.74(3.02-9.05)		59.1	
D 23 13C2 PFDA										
515.00 > 470.00	3.573	3.573	0.0	1.262	8404982	2.62		105	8136	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.587	3.573	0.014	1.004	208024	0.0544		109	41.8	
513.00 > 169.00	3.587	3.573	0.014	1.004	15953		13.04(7.12-21.35)		37.3	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.731	3.732	-0.001	1.318	2994912	2.07		82.8	4255	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.747	3.732	0.015	1.004	61736	0.0519		104	21.7	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.900	3.887	0.013	1.215	105304	0.0514		107	188	
599.00 > 99.00	3.900	3.887	0.013	1.215	20720		5.08(2.14-6.43)		79.9	
D 30 13C2 PFUnA										
565.00 > 520.00	3.915	3.901	0.014	1.383	7156776	2.62		105	6213	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.900	3.901	-0.001	1.378	2996401	2.63		105	3255	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.915	3.901	0.014	1.004	48422	0.0434		86.9	105	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.915	3.901	0.014	1.000	144405	0.0562		112	35.2	
563.00 > 169.00	3.915	3.901	0.014	1.000	17957		8.04(5.24-15.72)		63.5	
35 MeFOSA										
512.00 > 169.00	3.979	3.979	0.0		29561	NC			90.5	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.076	4.060	0.016	1.270	153274	0.0476		101	602	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.161	4.161	-0.001		27596	NC			78.6	
D 36 13C2 PFDoA										
615.00 > 570.00	4.216	4.216	0.0	1.489	7810629	2.35		94.0	7757	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.216	4.216	0.0	1.000	185948	0.0591		118	53.7	
613.00 > 169.00	4.216	4.216	0.0	1.000	20307		9.16(4.68-14.05)		25.3	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.216	4.216	0.0	1.180	21516	0.0336		69.7	22.1	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.453	4.453	0.0	1.387	10400	0.0444		91.8	22.9	
699.00 > 99.00	4.453	4.453	0.0	1.387	15428		0.67(0.28-0.83)		40.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.484	4.484	0.0	1.064	132040	0.0527		105	55.7	
663.00 > 169.00	4.484	4.484	0.0	1.064	24789		5.33(3.09-9.27)		50.8	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.739	4.727	0.012	1.674	5841783	2.21		88.2	6791	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.739	4.727	0.012	1.000	19725	0.0523		105	56.2	
713.00 > 219.00	4.739	4.727	0.012	1.000	13682		1.44(0.70-2.09)		35.1	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.177	5.164	0.013	1.829	5096974	1.90		76.0	5637	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.177	5.164	0.013	1.000	128478	0.0443		88.7	45.0	
813.00 > 169.00	5.177	5.164	0.013	1.000	24559		5.23(2.77-8.32)		56.5	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.559	5.549	0.010	1.074	55096	0.0424		84.8	38.0	
913.00 > 169.00	5.559	5.549	0.010	1.074	11411		4.83(2.55-7.64)		64.4	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL2_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_005.d

Injection Date: 10-Sep-2018 10:17:12

Instrument ID: A9

Lims ID: CCVL

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 21

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

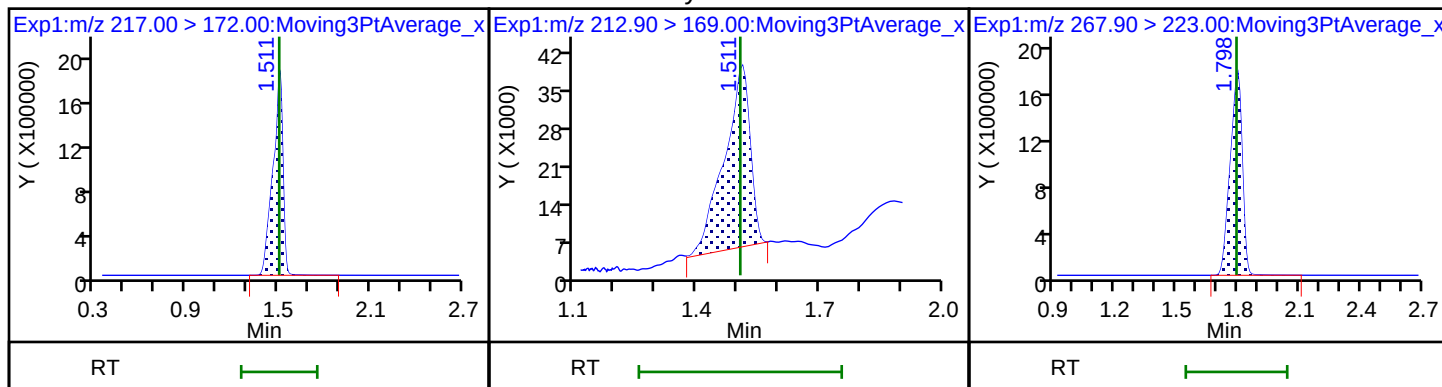
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

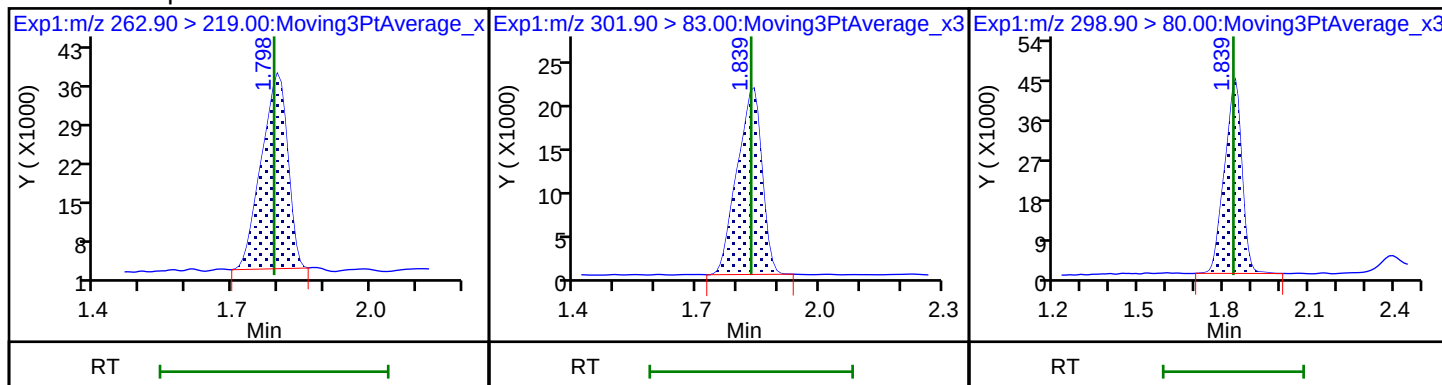
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

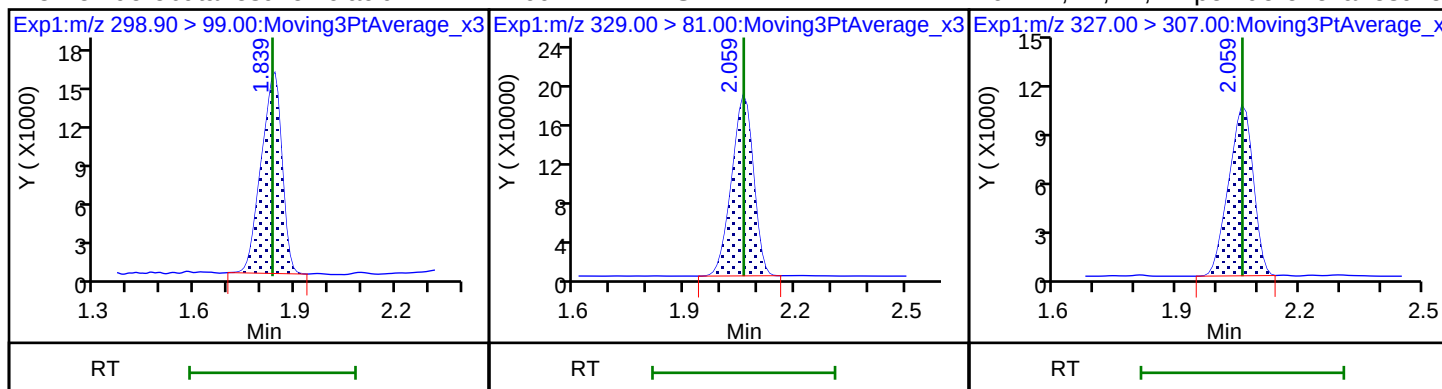
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

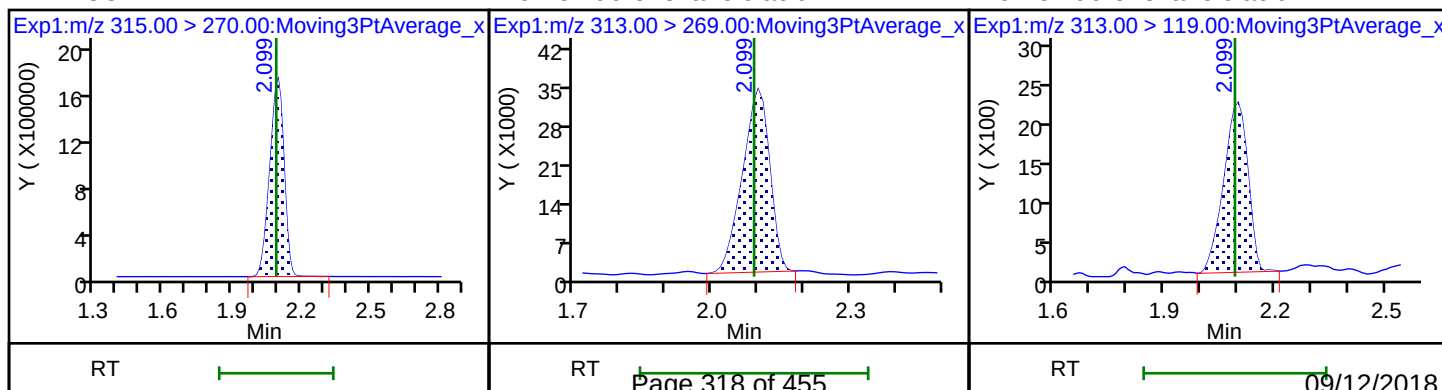
61 1H,1H,2H,2H-perfluorohexanesulfoni

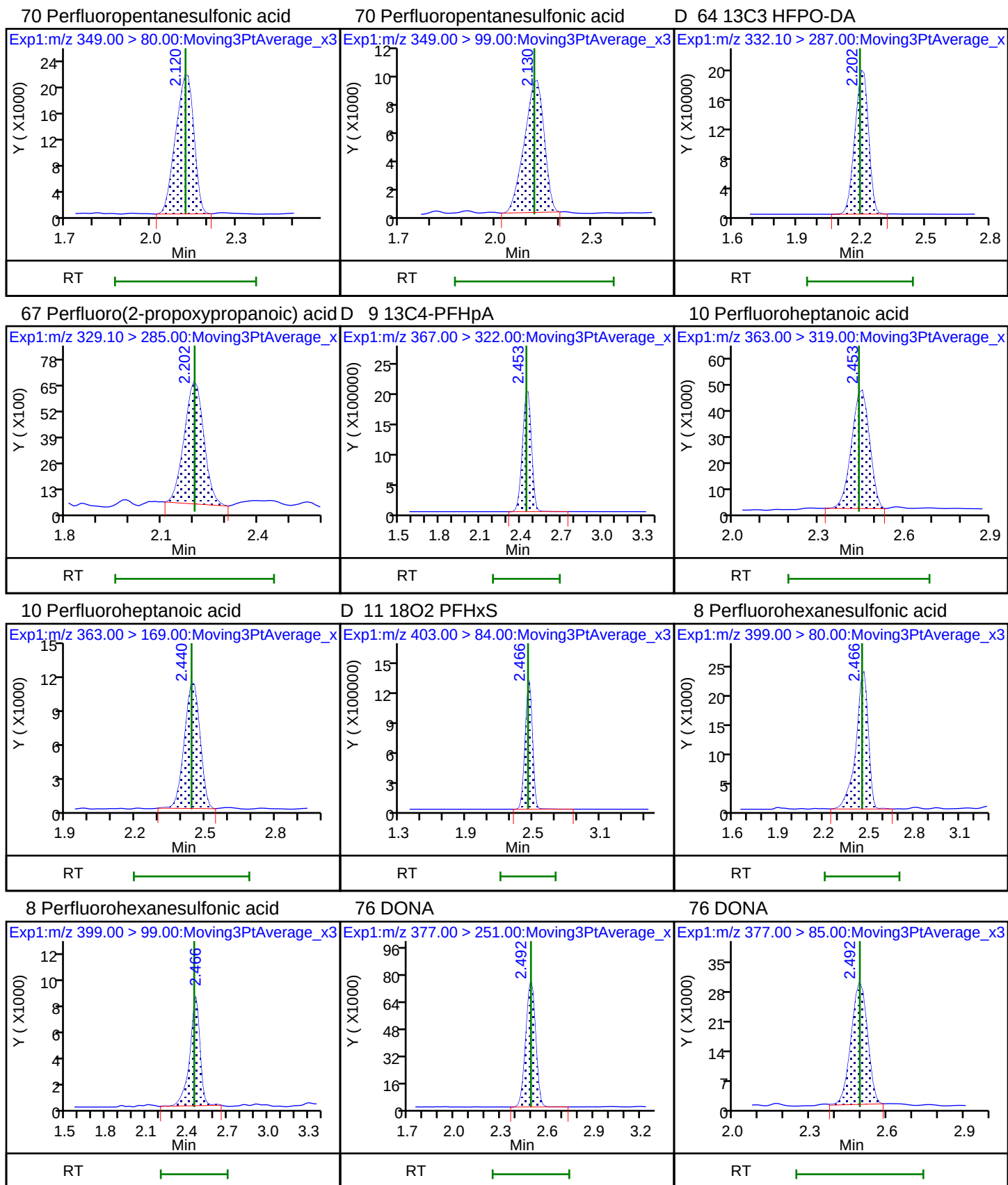


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

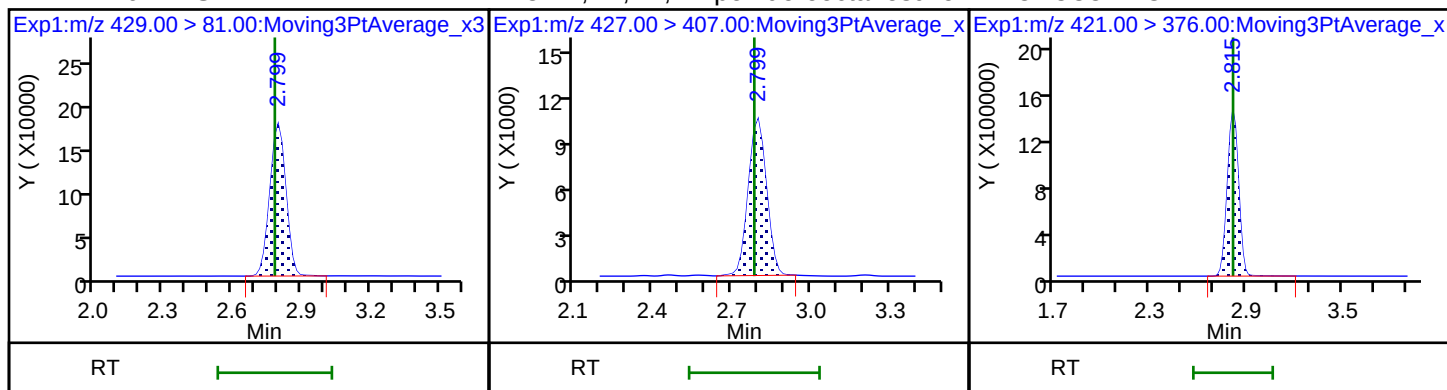
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

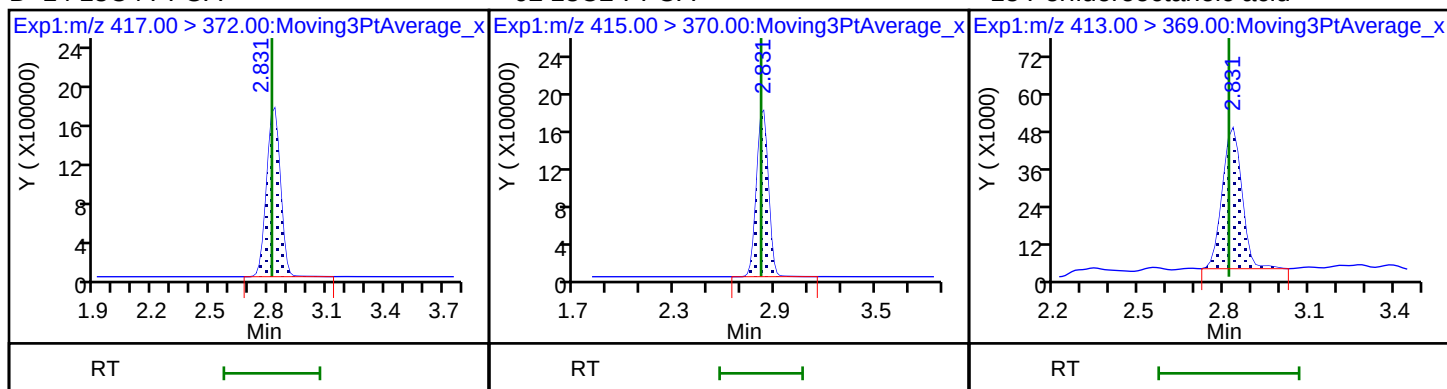
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

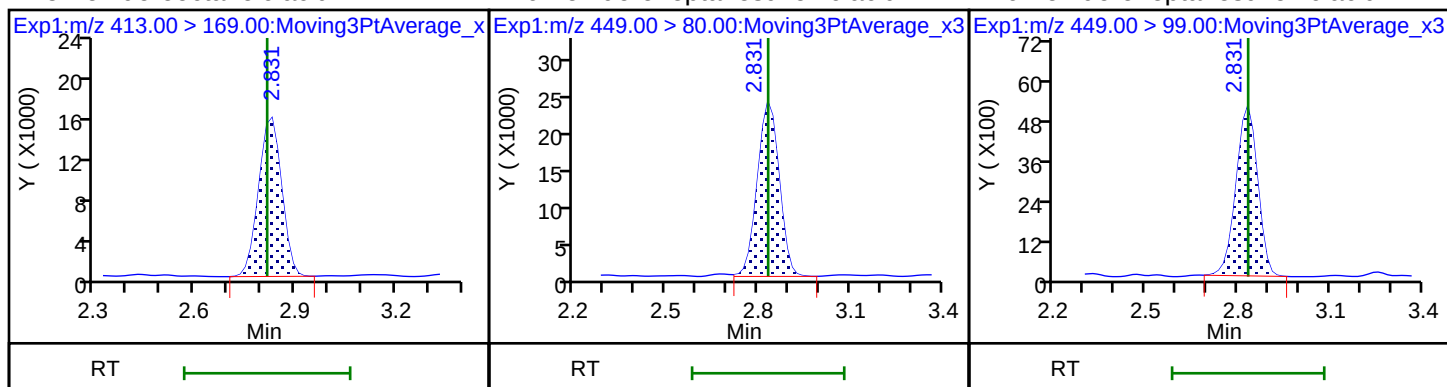
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

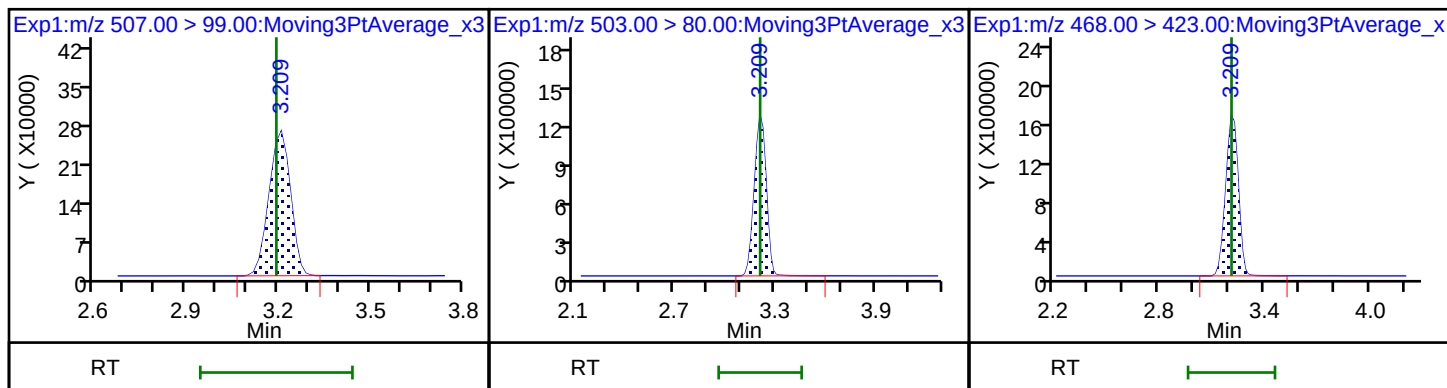
16 Perfluoroheptanesulfonic acid

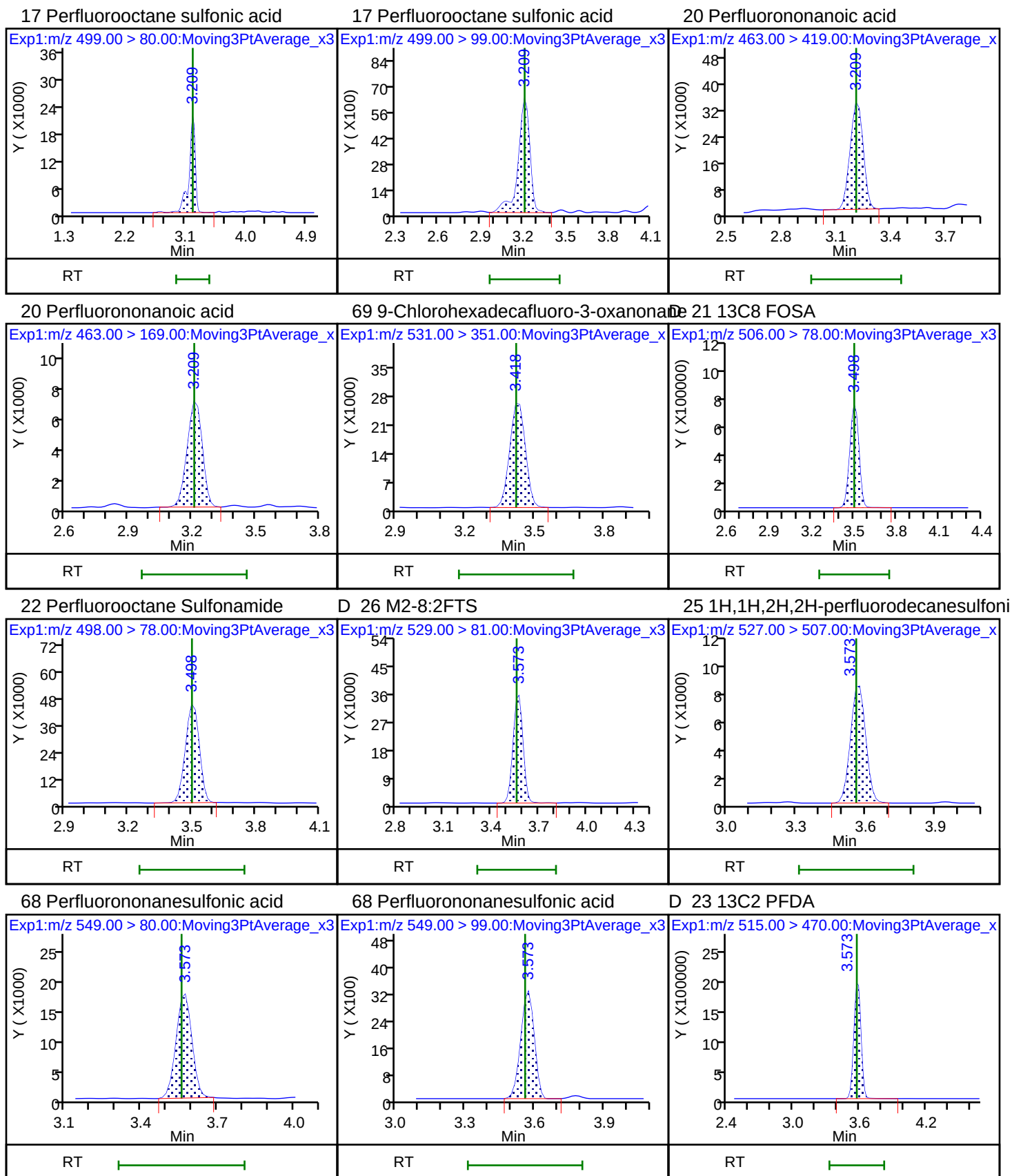


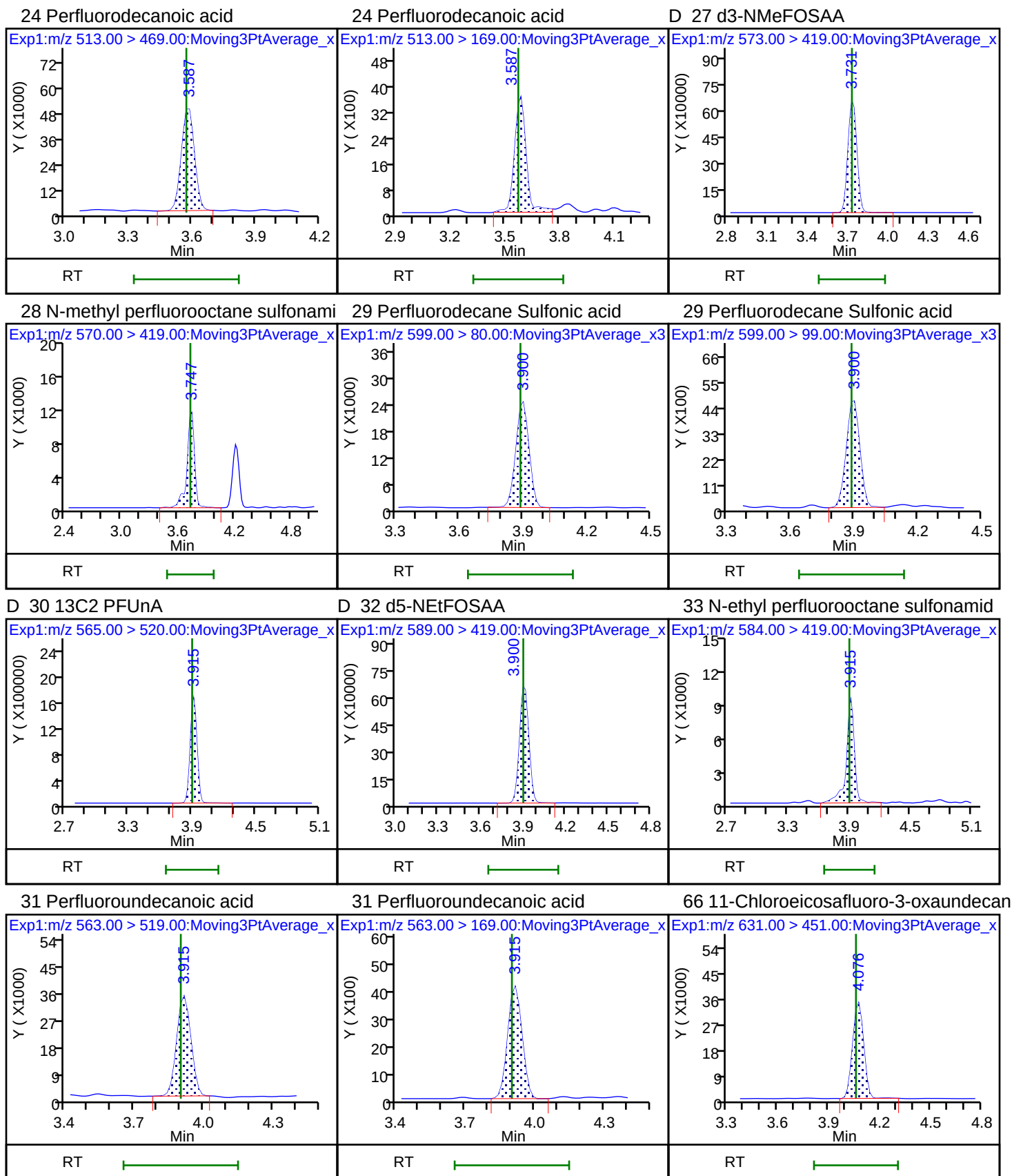
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA



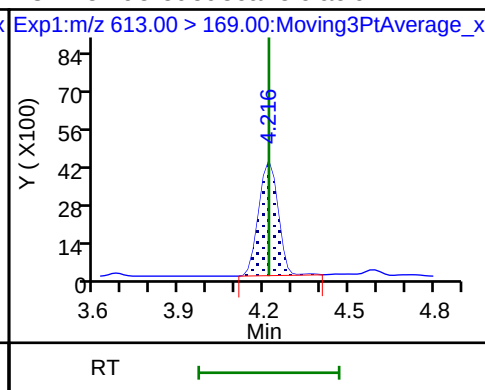
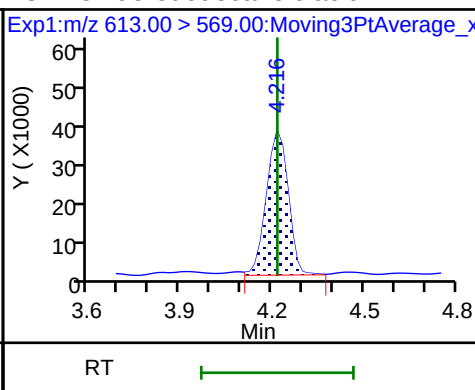
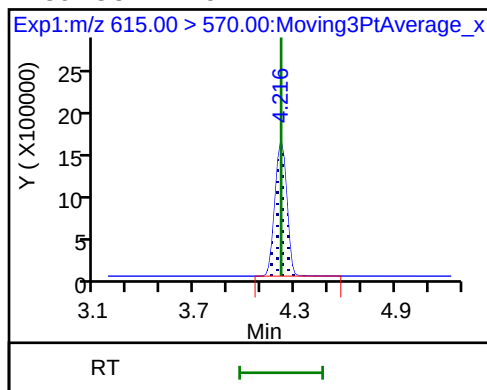




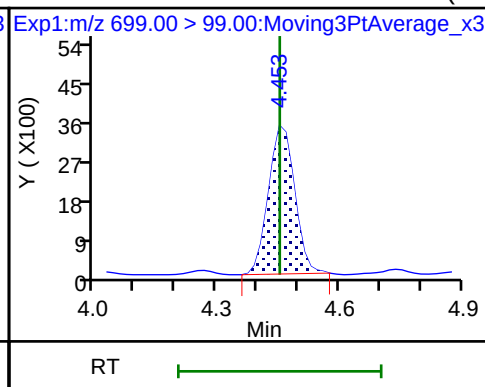
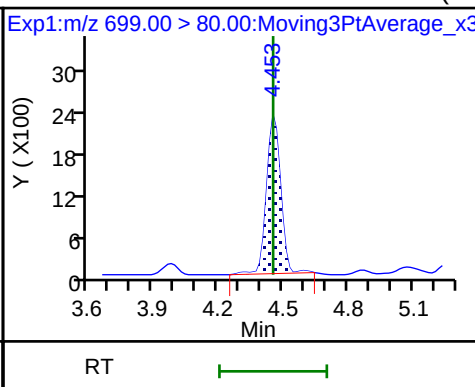
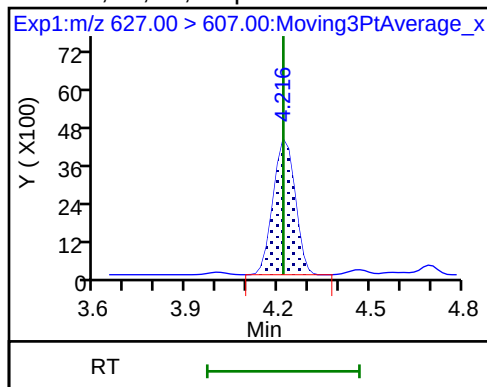
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



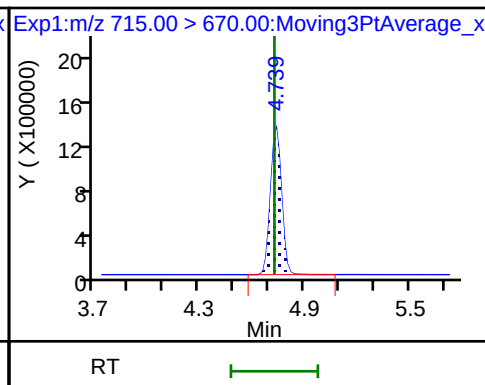
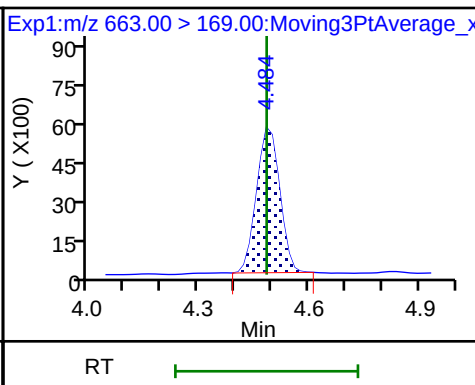
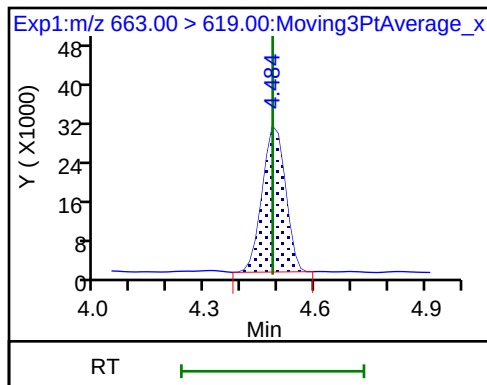
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

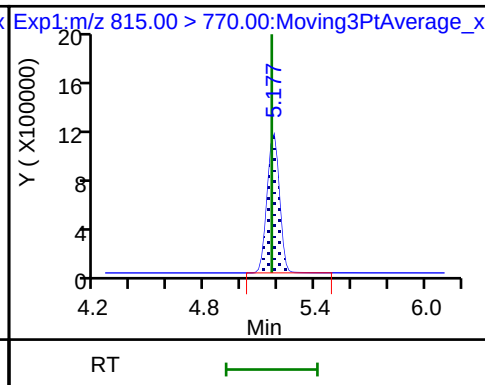
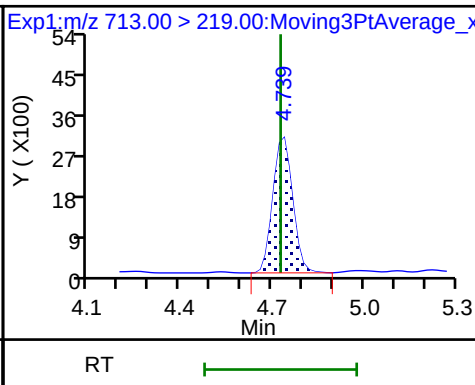
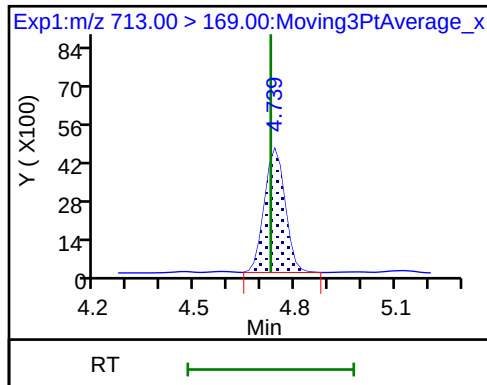
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

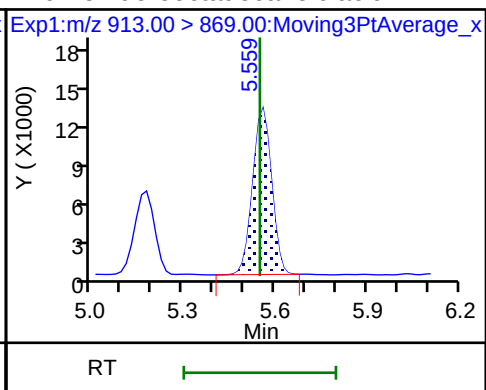
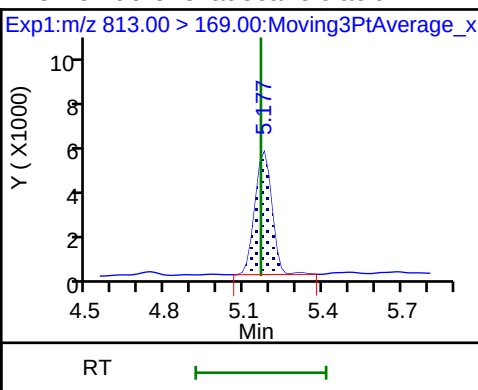
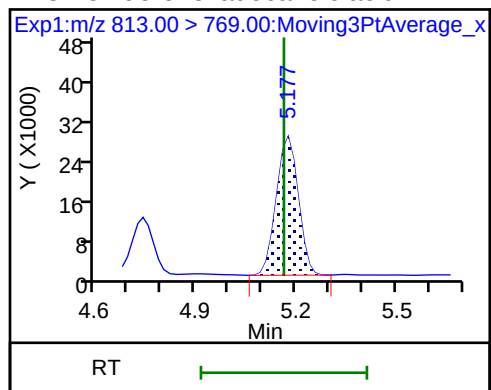
D 44 13C2-PFHxDA



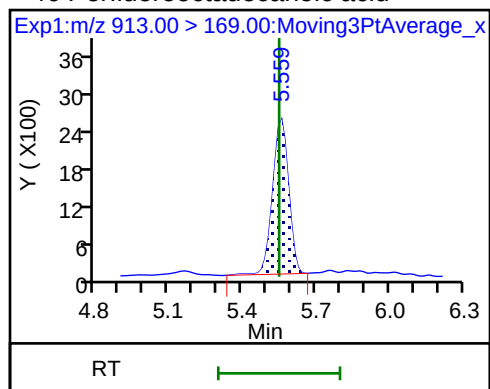
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Lab Sample ID: CCV 320-244734/3 Calibration Date: 09/10/2018 10:24

Instrument ID: A9 Calib Start Date: 08/28/2018 10:20

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05

Lab File ID: 2018.09.10LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9128	0.9104		0.997	1.00	-0.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.014	1.062		1.05	1.00	4.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	105.1	115.3		0.970	0.884	9.7	50.0
4:2 FTS	AveID	21.61	22.69		0.981	0.934	5.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9107	0.8710		0.956	1.00	-4.4	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.87	50.92		0.958	0.938	2.1	50.0
HFPO-DA (GenX)	AveID	1.768	1.677		0.949	1.00	-5.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.020	1.057		1.04	1.00	3.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.237	1.211		0.890	0.910	-2.1	40.0
DONA	AveID	2.585	2.969		1.08	0.942	14.9	50.0
6:2 FTS	AveID	2.140	1.970		0.873	0.948	-7.9	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.076	1.057		0.983	1.00	-1.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9846	1.046		1.01	0.952	6.2	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9779	1.026		1.05	1.00	4.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.055	1.090		0.959	0.928	3.3	40.0
F-53B Major	AveID	1.158	1.160		0.934	0.932	0.2	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	2.964	3.161		1.07	1.00	6.7	40.0
8:2 FTS	AveID	15.14	14.44		0.913	0.958	-4.6	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6458	0.7181		1.07	0.960	11.2	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.160		1.02	1.00	1.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9938	0.9873		0.993	1.00	-0.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8133	0.9733		1.15	0.964	19.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9299	0.8794		0.946	1.00	-5.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8971	0.8963		0.999	1.00	-0.0	40.0
F-53B Minor	AveID	1.278	1.333		0.982	0.942	4.3	50.0
10:2 FTS	AveID	10.16	11.09		1.05	0.964	9.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.008	1.046		1.04	1.00	3.8	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0930	0.0884		0.920	0.968	-4.9	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8023	0.9654		1.20	1.00	20.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1614	0.1459		0.904	1.00	-9.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Lab Sample ID: CCV 320-244734/3 Calibration Date: 09/10/2018 10:24
 Instrument ID: A9 Calib Start Date: 08/28/2018 10:20
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05
 Lab File ID: 2018.09.10LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9537		1.03	1.00	3.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6377	0.5881		0.922	1.00	-7.8	50.0
13C4 PFBA	Ave	0.9623	0.9440		2.45	2.50	-1.9	50.0
13C5 PFPeA	Ave	0.8584	0.8160		2.38	2.50	-4.9	50.0
13C3-PFBS	Ave	0.0113	0.0107		2.21	2.33	-4.9	50.0
M2-4:2FTS	Ave	0.0968	0.0965		2.33	2.34	-0.4	50.0
13C2 PFHxA	Ave	0.9075	0.8932		2.46	2.50	-1.6	50.0
13C3 HFPO-DA	Ave	0.0984	0.0923		2.34	2.50	-6.2	50.0
13C4-PFHpA	Ave	1.082	1.101		2.54	2.50	1.7	50.0
18O2 PFHxS	Ave	0.6655	0.6781		2.41	2.37	1.9	50.0
M2-6:2FTS	Ave	0.1063	0.1141		2.55	2.38	7.3	40.0
13C4 PFOA	Ave	1.008	0.9836		2.44	2.50	-2.4	50.0
13C8 PFOA	Ave	2891770	2930920		2.48	2.45	1.4	50.0
13C8 PFOS	Ave	513610	540479		2.52	2.39	5.2	50.0
13C4 PFOS	Ave	0.7151	0.6864		2.29	2.39	-4.0	50.0
13C5 PFNA	Ave	0.9437	0.9475		2.51	2.50	0.4	50.0
13C8 FOSA	Ave	0.3783	0.3805		2.51	2.50	0.6	50.0
M2-8:2FTS	Ave	0.0156	0.0150		2.30	2.40	-4.1	40.0
13C2 PFDA	Ave	0.9426	0.9387		2.49	2.50	-0.4	50.0
d3-NMeFOSAA	Ave	0.4249	0.3783		2.23	2.50	-11.0	50.0
13C2 PFUnA	Ave	0.8023	0.8396		2.62	2.50	4.7	50.0
d5-NEtFOSAA	Ave	0.3342	0.3459		2.59	2.50	3.5	50.0
13C2 PFDoA	Ave	0.9759	0.8531		2.19	2.50	-12.6	50.0
13C2-PFTeDA	Ave	0.7774	0.7324		2.36	2.50	-5.8	50.0
13C2-PFHxDA	Ave	0.7882	0.6054		1.92	2.50	-23.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_006.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 10-Sep-2018 10:24:43 ALS Bottle#: 13 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Sep-2018 11:57:26 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: roycea

Date: 10-Sep-2018 11:57:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.505	1.505	0.0	0.535	7950718	2.45		98.1	12273	
2 Perfluorobutyric acid										
212.90 > 169.00	1.505	1.505	0.0	1.000	2895447	1.00		99.7	333	
D 3 13C5-PFPeA										
267.90 > 223.00	1.791	1.791	0.0	0.636	6872825	2.38		95.1	10688	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.791	1.791	0.0	1.000	2920053	1.05		105	293	
D 47 13C3-PFBS										
301.90 > 83.00	1.832	1.832	0.0	0.651	83910	2.21		95.1	509	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.832	1.832	0.0	1.000	3677955	0.9700		110	1241	
298.90 > 99.00	1.832	1.832	0.0	1.000	1249678		2.94(1.35-4.05)		944	
D 60 M2-4:2FTS										
329.00 > 81.00	2.060	2.060	0.0	0.731	759080	2.33		99.6	784	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.060	2.060	0.0	1.124	764934	0.9808		105	3688	
D 7 13C2 PFHxA										
315.00 > 270.00	2.091	2.091	0.0	0.742	7523265	2.46		98.4	14232	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.091	2.091	0.0	1.000	2621111	0.9564		95.6	703	
313.00 > 119.00	2.091	2.091	0.0	1.000	206465		12.70(6.96-20.87)		602	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.121	2.121	0.0	1.158	1723938	0.9578		102	2604	
349.00 > 99.00	2.121	2.121	0.0	1.158	789557		2.18(1.15-3.45)		1715	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.193	2.193	0.0	0.779	777125	2.34		93.8	2160	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.203	2.203	0.0	1.005	521374	0.9486		94.9	234	
D 9 13C4-PFHpA										
367.00 > 322.00	2.441	2.441	0.0	0.867	9271255	2.54		102	10241	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.441	2.441	0.0	1.000	3918923	1.04		104	567	
363.00 > 169.00	2.441	2.441	0.0	1.000	843530		4.65(2.17-6.52)		2133	
D 11 18O2 PFHxS										
403.00 > 84.00	2.454	2.454	0.0	0.871	5403050	2.41		102	4642	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.454	2.454	0.0	1.000	2517308	0.8905		97.9	2061	
399.00 > 99.00	2.454	2.454	0.0	1.000	688837		3.65(1.90-5.70)		949	
76 DONA										
377.00 > 251.00	2.493	2.493	0.0	0.777	6468132	1.08		115	8897	
377.00 > 85.00	2.493	2.493	0.0	0.777	2753771		2.35(1.13-3.39)		1162	
D 12 M2-6:2FTS										
429.00 > 81.00	2.784	2.784	0.0	0.989	912722	2.55		107	1415	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.784	2.784	0.0	1.000	717768	0.8727		92.1	544	
D 73 13C8 PFOA										
421.00 > 376.00	2.816	2.816	0.0		7173427	2.48		101	6524	
D 14 13C4 PFOA										
417.00 > 372.00	2.816	2.816	0.0	1.000	8284113	2.44		97.6	6854	
* 62 13C2-PFOA										
415.00 > 370.00	2.816	2.816	0.0		8422579	2.50			6828	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.816	2.816	0.0	1.000	3506511	0.9832		98.2	248	
413.00 > 169.00	2.816	2.816	0.0	1.000	1269042		2.76(1.36-4.08)		1779	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.832	2.832	0.0	0.882	2302796	1.01		106	1846	
449.00 > 99.00	2.832	2.832	0.0	0.882	597025		3.86(1.84-5.53)		1758	
D 72 13C8 PFOS										
507.00 > 99.00	3.193	3.193	0.0		1291746	2.52		105	3032	
D 18 13C4 PFOS										
503.00 > 80.00	3.210	3.210	0.0	1.140	5526666	2.29		96.0	3154	
D 19 13C5 PFNA										
468.00 > 423.00	3.210	3.210	0.0	1.140	7980005	2.51		100	9466	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.210	3.210	0.0	1.000	2339413	0.9588		103	1206	
499.00 > 99.00	3.210	3.210	0.0	1.000	572601		4.09(2.04-6.12)		1119	
20 Perfluorononanoic acid										
463.00 > 419.00	3.210	3.210	0.0	1.000	3275855	1.05		105	425	
463.00 > 169.00	3.210	3.210	0.0	1.000	602528		5.44(2.68-8.03)		1243	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.419	3.419	0.0	1.065	2499826	0.9335		100	3451	
D 21 13C8 FOSA										
506.00 > 78.00	3.499	3.499	0.0	1.243	3204965	2.51		101	3382	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.499	3.499	0.0	1.000	4052494	1.07		107	3537	
D 26 M2-8:2FTS										
529.00 > 81.00	3.558	3.558	0.0	1.264	121042	2.30		95.9	412	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.558	3.558	0.0	1.000	698920	0.9135		95.4	1782	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.558	3.558	0.0	1.108	1594194	1.07		111	3168	
549.00 > 99.00	3.558	3.558	0.0	1.108	260003		6.13(3.02-9.05)		1481	
D 23 13C2 PFDA										
515.00 > 470.00	3.573	3.573	0.0	1.269	7906537	2.49		99.6	3010	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.573	3.573	0.0	1.000	3667173	1.02		102	655	
513.00 > 169.00	3.573	3.573	0.0	1.000	250499		14.64(7.12-21.35)		332	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.732	3.732	0.0	1.325	3186412	2.23		89.0	1875	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.732	3.732	0.0	1.000	1258352	0.99		99.3	393	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.887	3.887	0.0	1.211	2169587	1.15		120	1924	
599.00 > 99.00	3.887	3.887	0.0	1.211	465627		4.66(2.14-6.43)		1778	
D 30 13C2 PFUnA										
565.00 > 520.00	3.901	3.901	0.0	1.385	7071720	2.62		105	6317	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.901	3.901	0.0	1.385	2913371	2.59		103	3068	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.901	3.901	0.0	1.000	1024768	0.9457		94.6	1462	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.901	3.901	0.0	1.000	2535470	1.00		99.9	631	
563.00 > 169.00	3.901	3.901	0.0	1.000	242324		10.46(5.24-15.72)		948	
35 MeFOSA										
512.00 > 169.00	3.979	3.979	0.0		680441	NC			826	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.060	4.060	0.0	1.265	2903579	0.9822		104	4799	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.161	4.161	0.0		683077	NC			445	
D 36 13C2 PFDaA										
615.00 > 570.00	4.216	4.216	0.0	1.497	7185251	2.19		87.4	5294	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.216	4.216	0.0	1.000	3006490	1.04		104	815	
613.00 > 169.00	4.216	4.216	0.0	1.000	336264		8.94(4.68-14.05)		436	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.216	4.216	0.0	1.185	540510	1.05		109	608	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.453	4.453	0.0	1.387	197835	0.9204		95.1	540	
699.00 > 99.00	4.453	4.453	0.0	1.387	392082		0.50(0.28-0.83)		1239	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.484	4.484	0.0	1.064	2774774	1.20		120	1051	
663.00 > 169.00	4.484	4.484	0.0	1.064	438264		6.33(3.09-9.27)		915	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.727	4.727	0.0	1.679	6169013	2.36		94.2	6425	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.727	4.727	0.0	1.000	359925	0.9035		90.4	1040	
713.00 > 219.00	4.727	4.727	0.0	1.000	265556		1.36(0.70-2.09)		583	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.164	5.164	0.0	1.834	5099353	1.92		76.8	5474	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.164	5.164	0.0	1.000	1945234	1.03		103	568	
813.00 > 169.00	5.164	5.164	0.0	1.000	361980		5.37(2.77-8.32)		845	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.549	5.549	0.0	1.075	1199510	0.9222		92.2	604	
913.00 > 169.00	5.535	5.549	-0.014	1.072	224473		5.34(2.55-7.64)		850	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_006.d

Injection Date: 10-Sep-2018 10:24:43

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

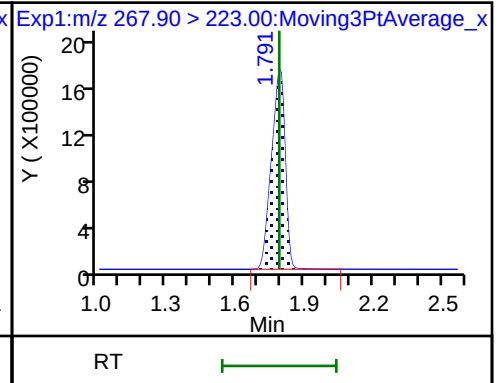
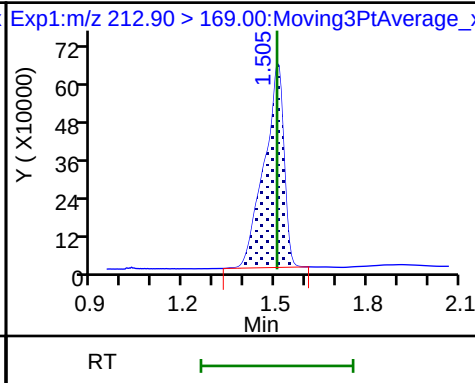
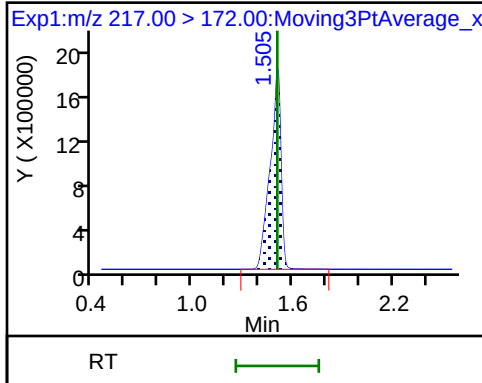
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

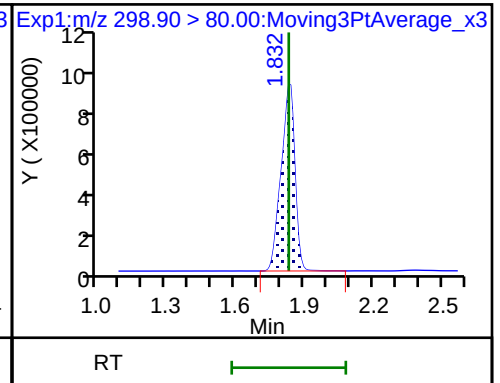
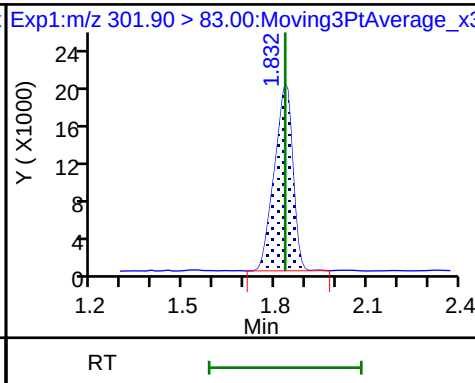
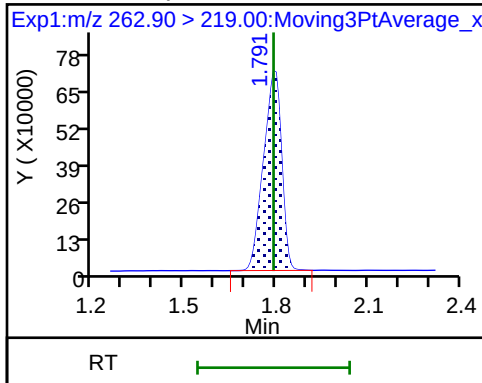
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

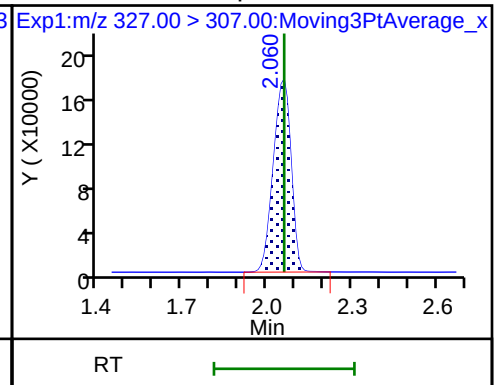
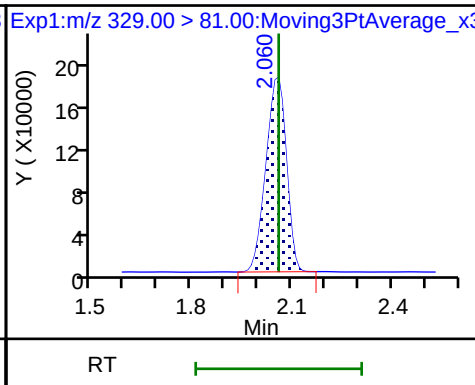
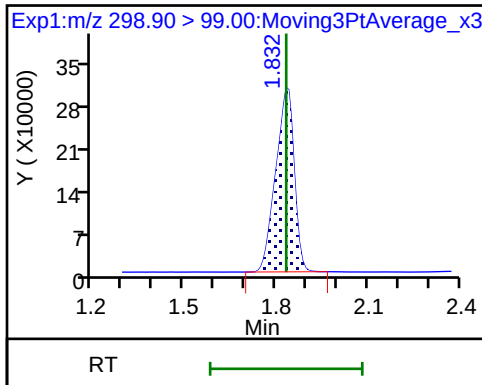
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

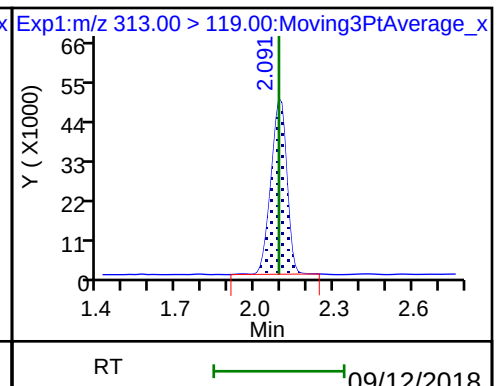
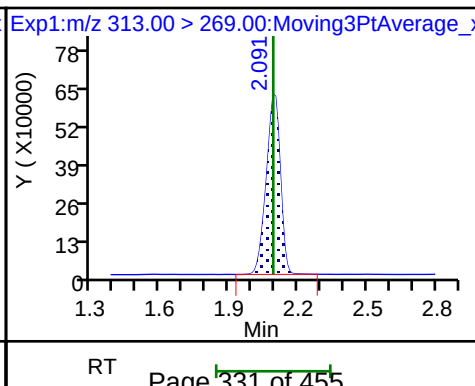
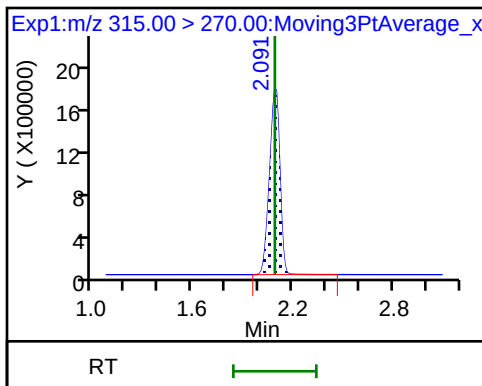
61 1H,1H,2H,2H-perfluorohexanesulfoni

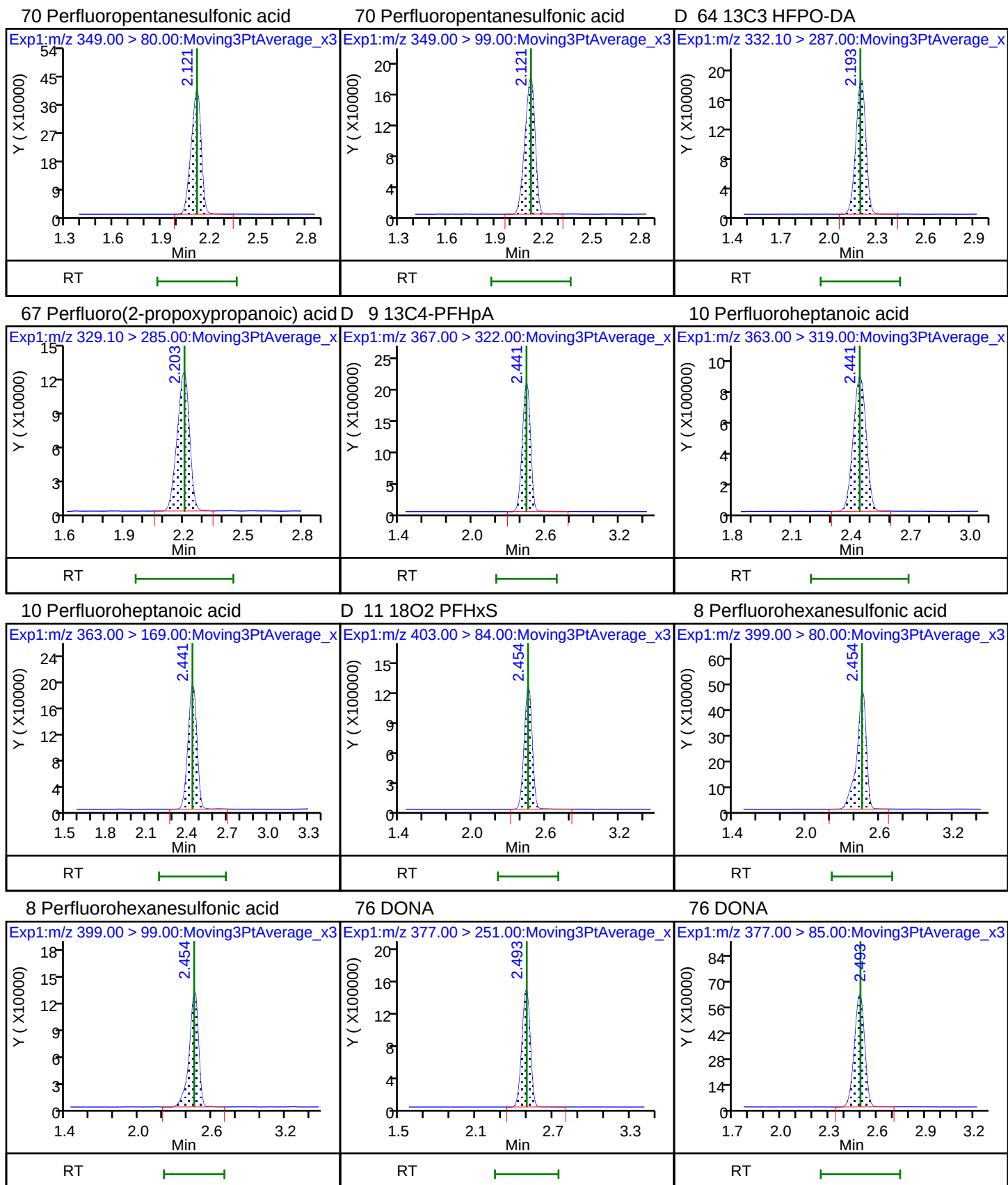


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

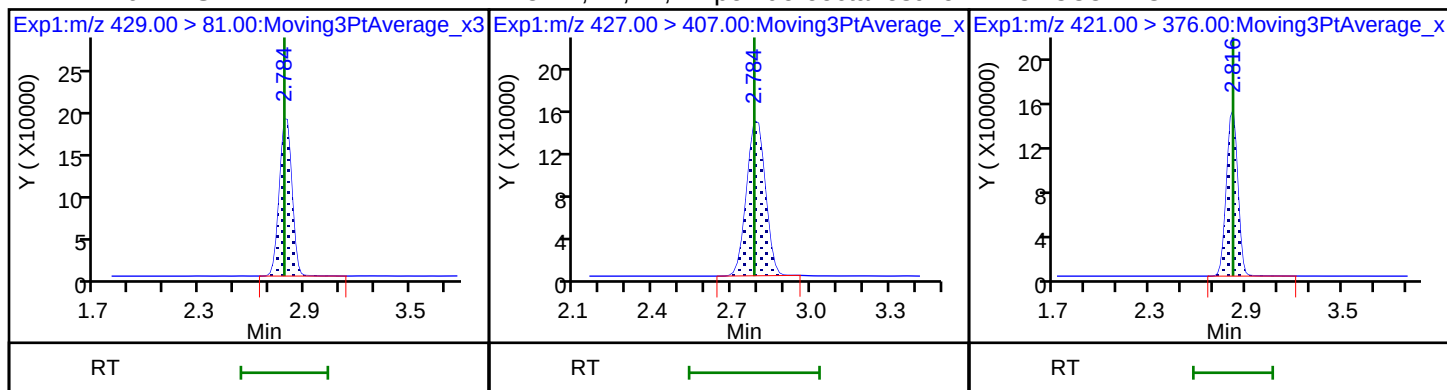
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

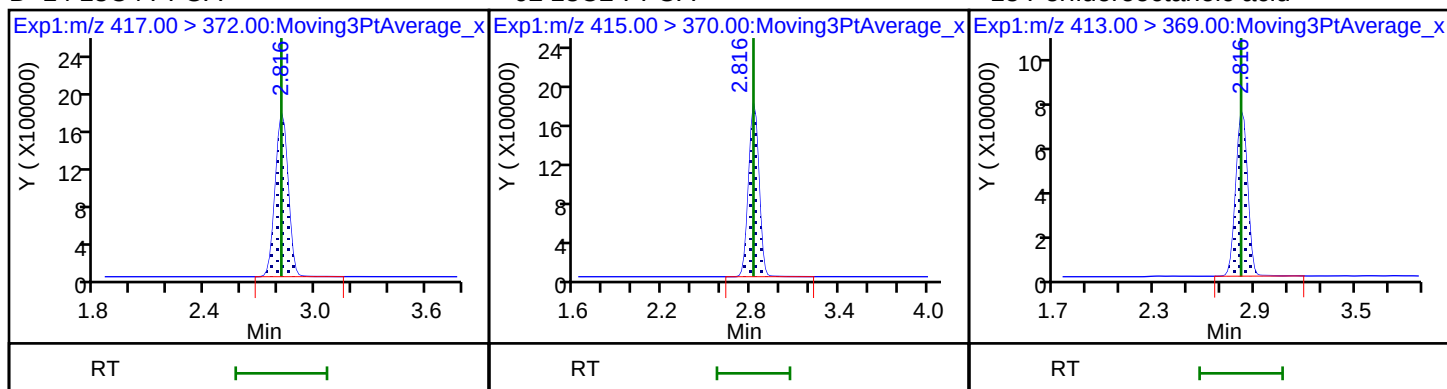
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

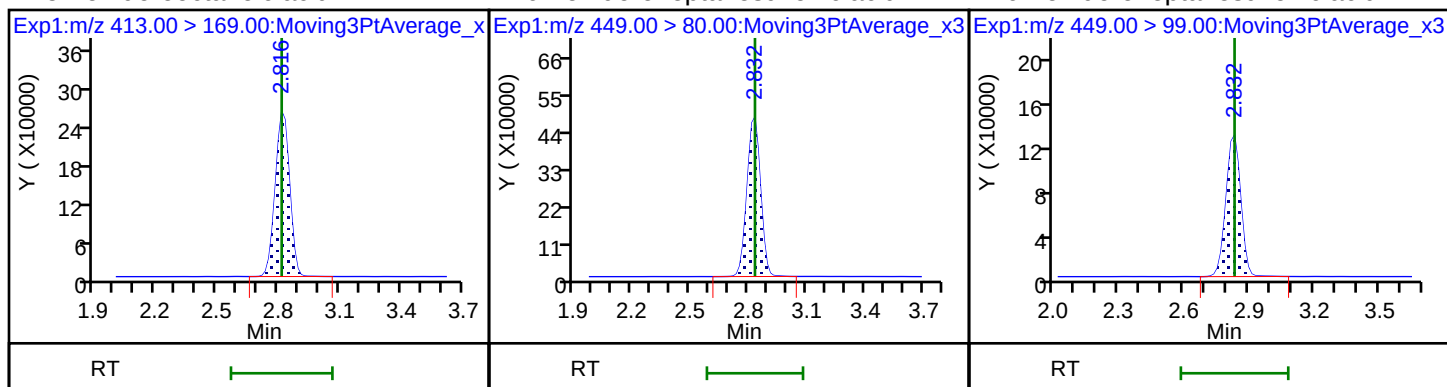
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

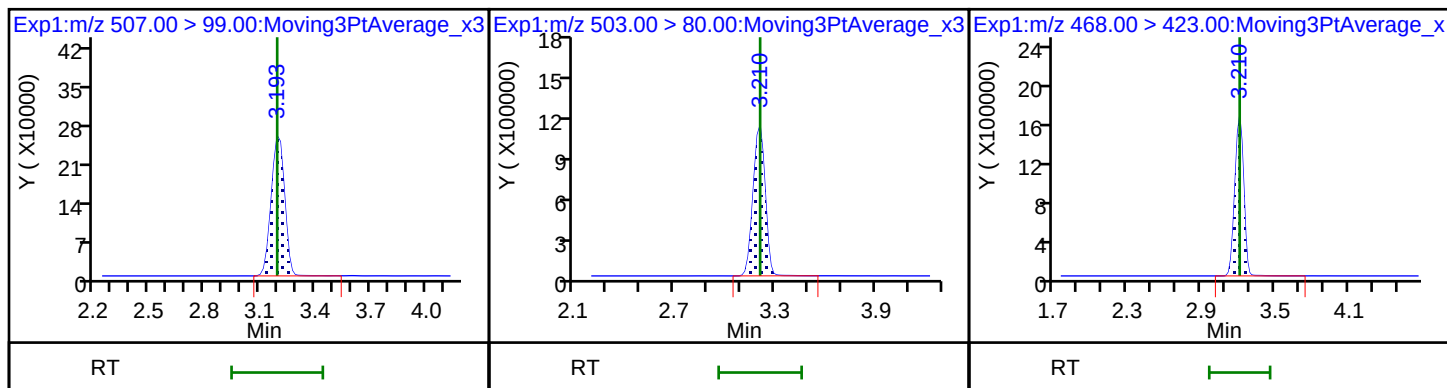
16 Perfluoroheptanesulfonic acid

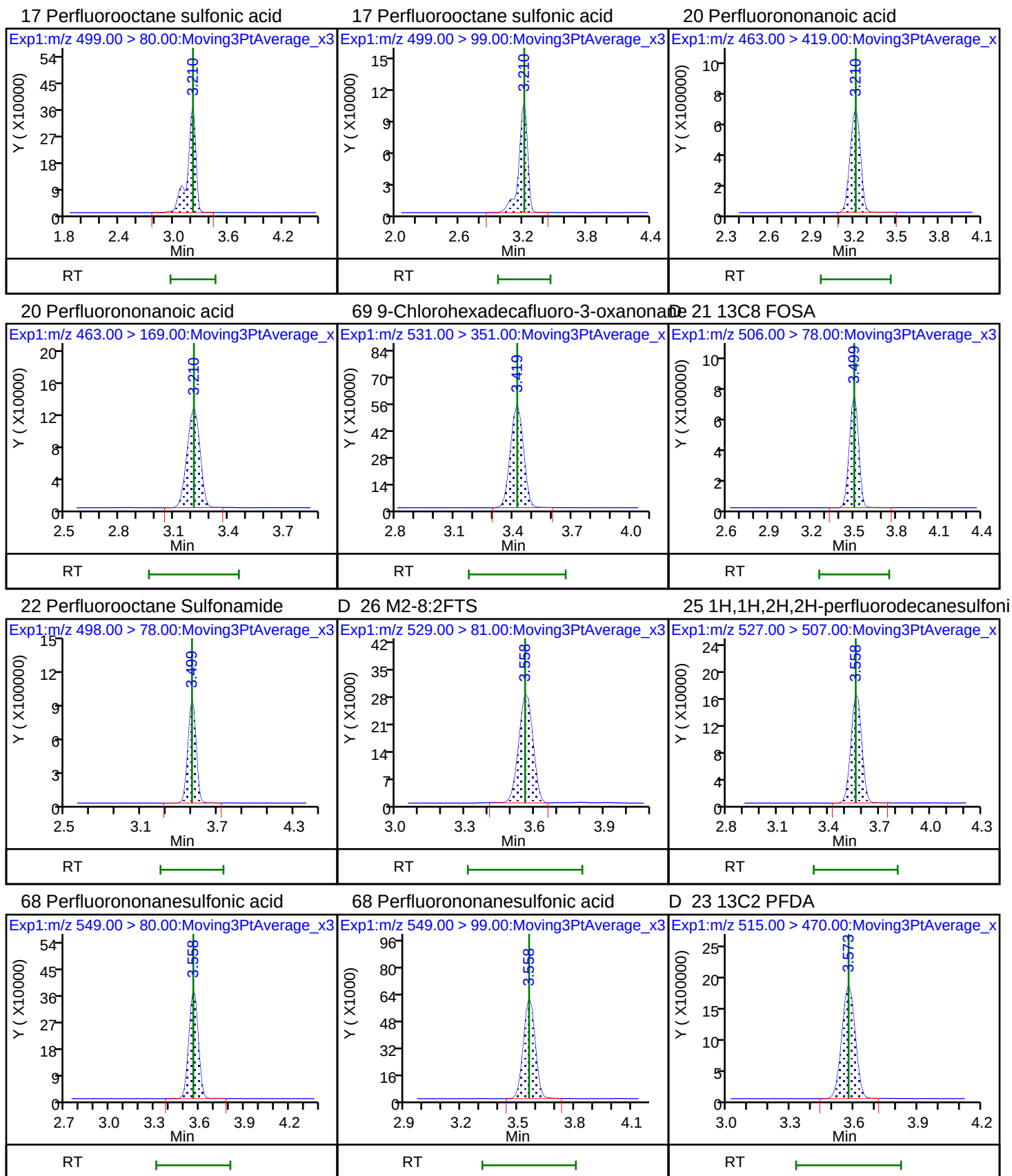


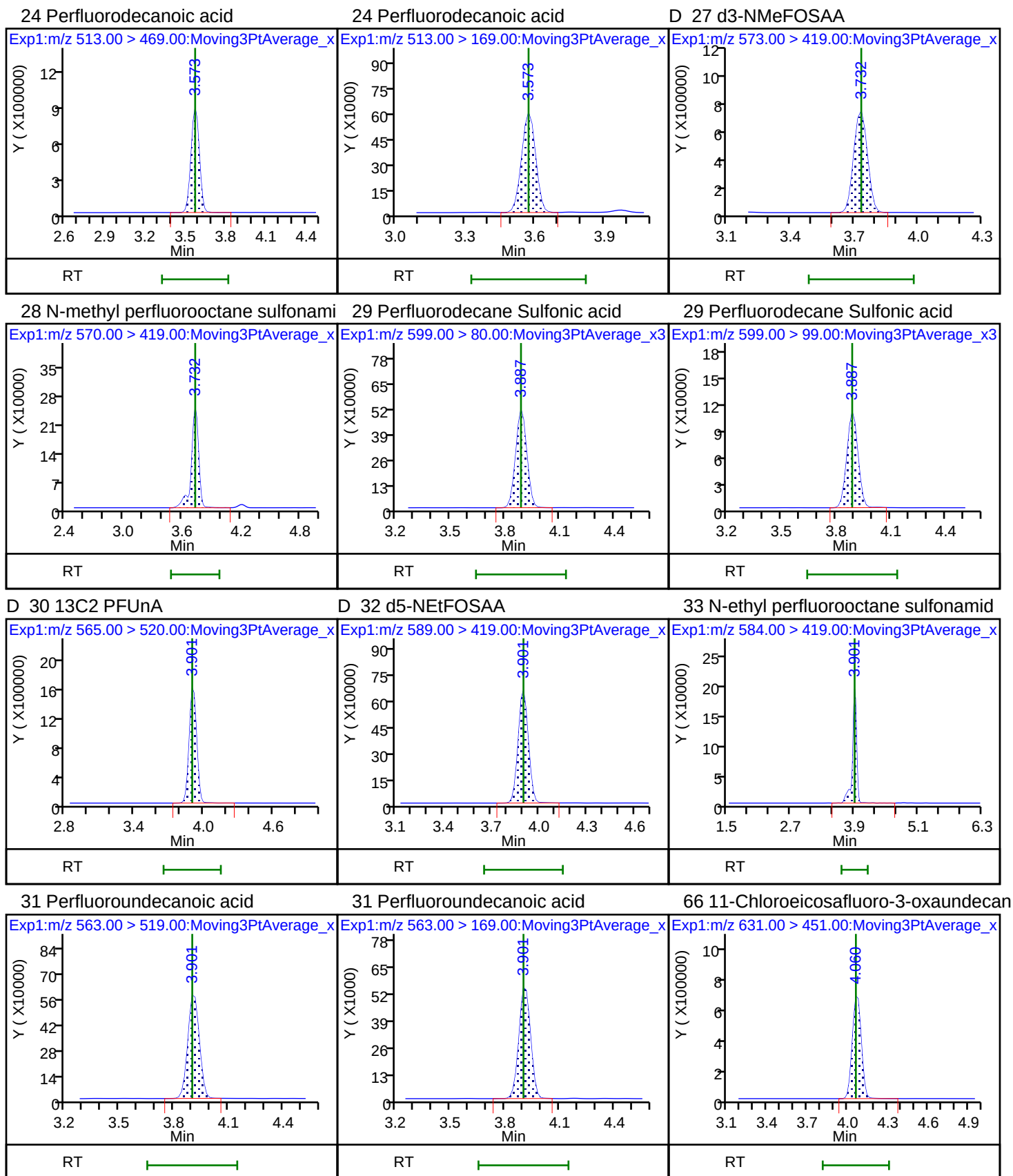
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA



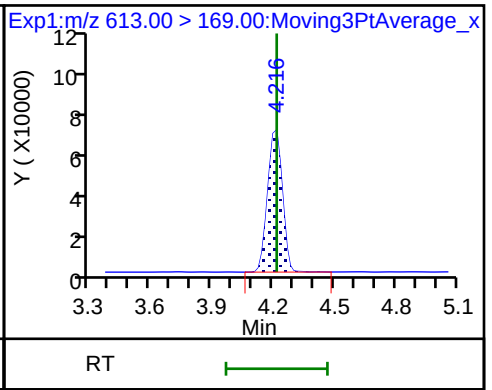
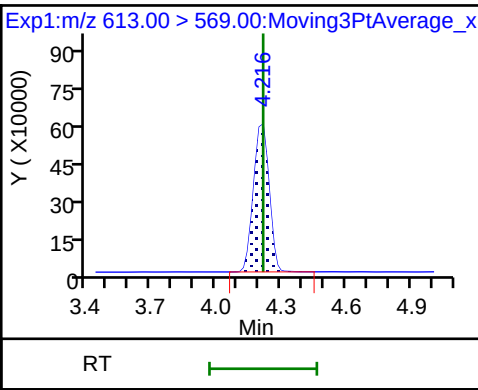
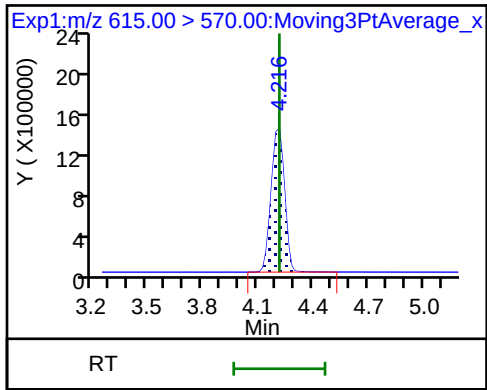




D 36 13C2 PFDaA

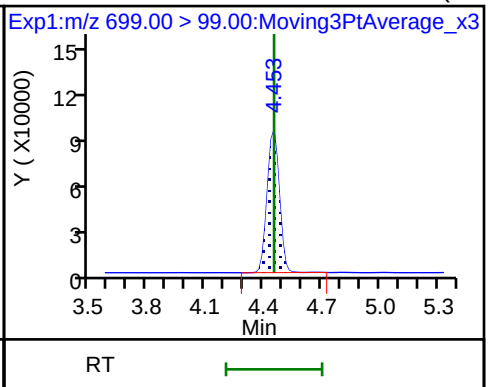
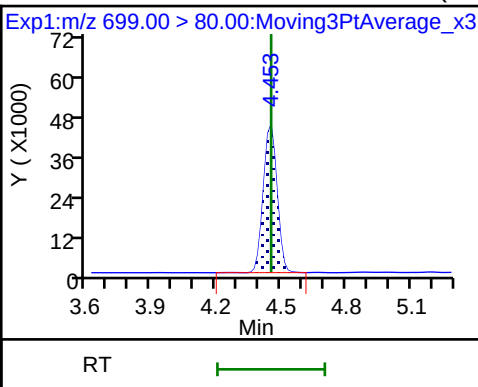
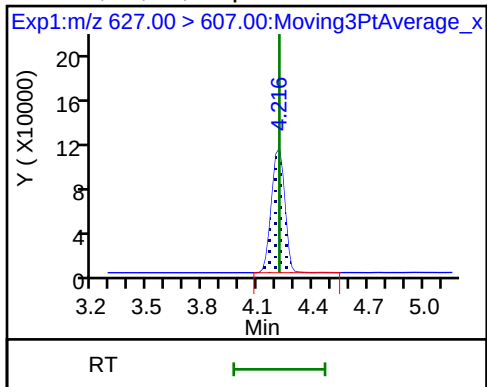
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

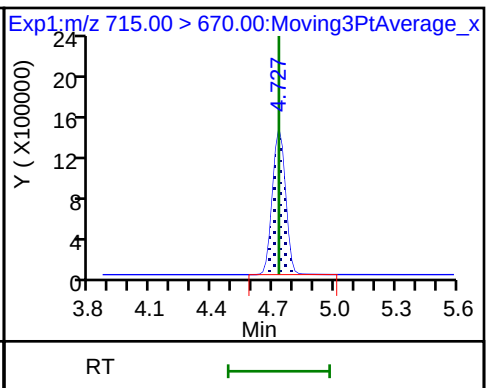
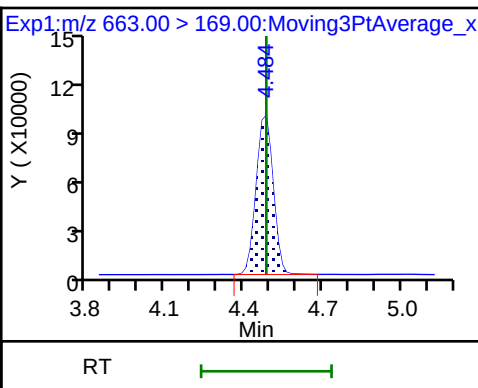
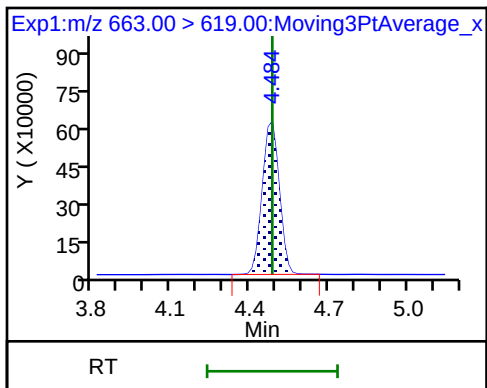
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

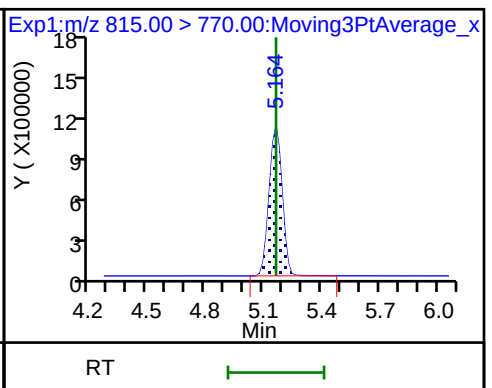
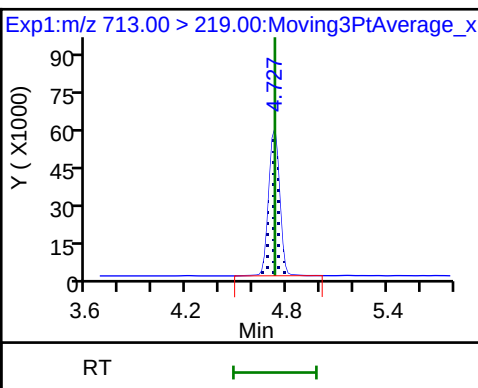
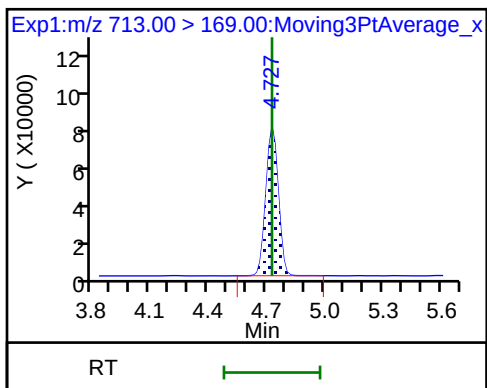
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

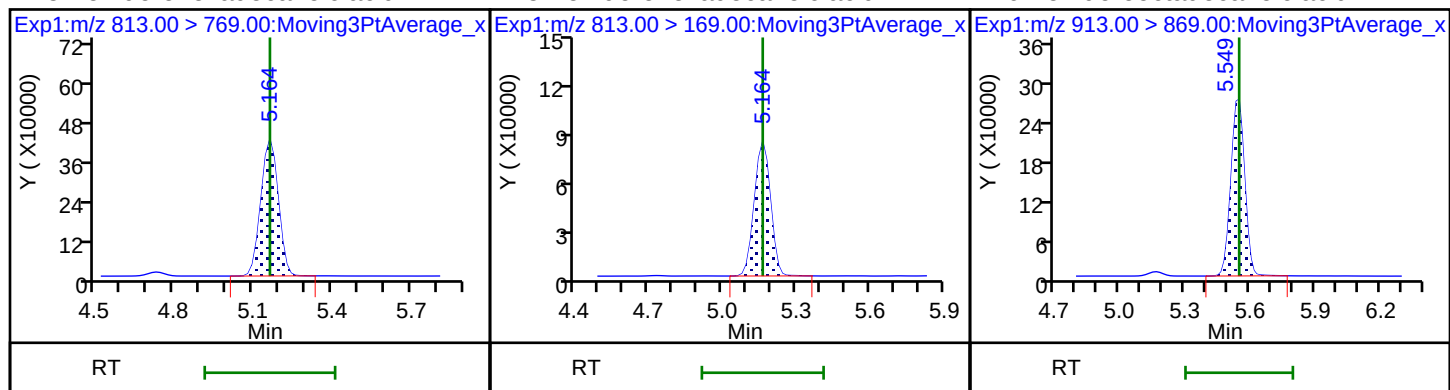
D 44 13C2-PFHxDA



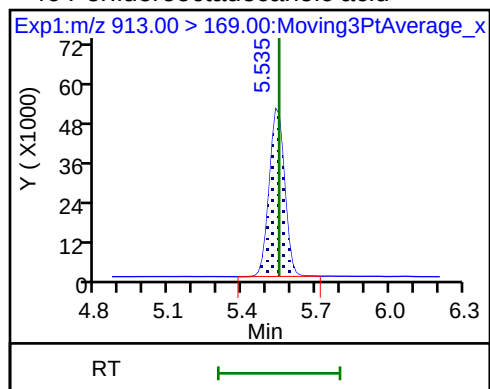
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Lab Sample ID: CCV 320-244734/14 Calibration Date: 09/10/2018 11:47

Instrument ID: A9 Calib Start Date: 08/28/2018 10:20

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05

Lab File ID: 2018.09.10LLA_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9128	0.9587		2.63	2.50	5.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.014	1.028		2.53	2.50	1.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	105.1	113.4		2.39	2.21	8.0	50.0
4:2 FTS	AveID	21.61	20.68		2.23	2.34	-4.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9107	0.9066		2.49	2.50	-0.4	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.87	50.63		2.38	2.35	1.5	50.0
HFPO-DA (GenX)	AveID	1.768	1.908		2.70	2.50	7.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.020	1.101		2.70	2.50	8.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.237	1.182		2.17	2.28	-4.5	40.0
DONA	AveID	2.585	2.553		2.33	2.36	-1.2	50.0
6:2 FTS	AveID	2.140	2.114		2.34	2.37	-1.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9846	1.061		2.57	2.38	7.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.076	0.9878		2.30	2.50	-8.2	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9779	0.9921		2.54	2.50	1.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.055	1.050		2.31	2.32	-0.5	40.0
F-53B Major	AveID	1.158	1.184		2.38	2.33	2.2	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	2.964	3.140		2.65	2.50	6.0	40.0
8:2 FTS	AveID	15.14	13.55		2.14	2.40	-10.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.083		2.38	2.50	-4.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6458	0.6337		2.35	2.40	-1.9	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9938	0.9815		2.47	2.50	-1.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8133	0.8495		2.52	2.41	4.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9299	0.9667		2.60	2.50	4.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8971	0.8337		2.32	2.50	-7.1	40.0
F-53B Minor	AveID	1.278	1.278		2.35	2.36	-0.0	50.0
10:2 FTS	AveID	10.16	9.040		2.14	2.41	-11.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.008	1.051		2.61	2.50	4.3	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0930	0.0834		2.17	2.42	-10.3	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8023	0.8083		2.52	2.50	0.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1614	0.1616		2.50	2.50	0.0	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Lab Sample ID: CCV 320-244734/14 Calibration Date: 09/10/2018 11:47
 Instrument ID: A9 Calib Start Date: 08/28/2018 10:20
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05
 Lab File ID: 2018.09.10LLA_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9475		2.60	2.50	3.9	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6377	0.6521		2.56	2.50	2.3	50.0
13C4 PFBA	Ave	0.9623	0.9142		2.37	2.50	-5.0	50.0
13C5 PFPeA	Ave	0.8584	0.8246		2.40	2.50	-3.9	50.0
13C3-PFBS	Ave	0.0113	0.0107		2.21	2.33	-5.0	50.0
M2-4:2FTS	Ave	0.0968	0.0925		2.23	2.34	-4.5	50.0
13C2 PFHxA	Ave	0.9075	0.8466		2.33	2.50	-6.7	50.0
13C3 HFPO-DA	Ave	0.0984	0.0845		2.15	2.50	-14.1	50.0
13C4-PFHpA	Ave	1.082	1.023		2.36	2.50	-5.5	50.0
18O2 PFHxS	Ave	0.6655	0.6485		2.30	2.37	-2.6	50.0
M2-6:2FTS	Ave	0.1063	0.0962		2.15	2.38	-9.5	40.0
13C4 PFOA	Ave	1.008	0.9739		2.42	2.50	-3.3	50.0
13C8 PFOA	Ave	2891770	2733240		2.31	2.45	-5.5	50.0
13C8 PFOS	Ave	513610	486433		2.26	2.39	-5.3	50.0
13C4 PFOS	Ave	0.7151	0.7053		2.36	2.39	-1.4	50.0
13C5 PFNA	Ave	0.9437	0.9232		2.45	2.50	-2.2	50.0
13C8 FOSA	Ave	0.3783	0.3528		2.33	2.50	-6.7	50.0
13C2 PFDA	Ave	0.9426	0.9598		2.55	2.50	1.8	50.0
M2-8:2FTS	Ave	0.0156	0.0142		2.17	2.40	-9.2	40.0
d3-NMeFOSAA	Ave	0.4249	0.3970		2.34	2.50	-6.6	50.0
d5-NEtFOSAA	Ave	0.3342	0.3042		2.28	2.50	-9.0	50.0
13C2 PFUnA	Ave	0.8023	0.8305		2.59	2.50	3.5	50.0
13C2 PFDoA	Ave	0.9759	0.9067		2.32	2.50	-7.1	50.0
13C2-PFTeDA	Ave	0.7774	0.7234		2.33	2.50	-7.0	50.0
13C2-PFHxDA	Ave	0.7882	0.7063		2.24	2.50	-10.4	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_017.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 10-Sep-2018 11:47:20 ALS Bottle#: 14 Worklist Smp#: 14
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 07:54:47 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 07:54:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.494	1.505	-0.011	0.537	7779321	2.37		95.0	10014	
2 Perfluorobutyric acid										
212.90 > 169.00	1.494	1.494	0.0	1.000	7457941	2.63		105	778	
D 3 13C5-PFPeA										
267.90 > 223.00	1.780	1.791	-0.011	0.640	7016838	2.40		96.1	12702	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.780	1.780	0.0	1.000	7210738	2.53		101	653	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.832	-0.010	0.655	84699	2.21		95.0	454	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.822	0.0	1.000	9132621	2.39		108	3267	
298.90 > 99.00	1.822	1.822	0.0	1.000	3141133		2.91(1.35-4.05)		2019	
D 60 M2-4:2FTS										
329.00 > 81.00	2.038	2.060	-0.022	0.732	734813	2.23		95.5	684	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.038	0.0	1.118	1759392	2.23		95.7	4759	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.091	-0.012	0.747	7204121	2.33		93.3	8751	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.078	0.0	1.000	6531483	2.49		99.6	1365	
313.00 > 119.00	2.078	2.078	0.0	1.000	476869		13.70(6.96-20.87)		1001	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.099	0.0	1.152	4324954	2.38		102	4440	
349.00 > 99.00	2.099	2.099	0.0	1.152	2015557		2.15(1.15-3.45)		2525	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.181	2.193	-0.012	0.784	719111	2.15		85.9	1986	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.181	0.0	1.000	1372329	2.70		108	609	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.441	-0.028	0.867	8707330	2.36		94.5	8984	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.000	9585778	2.70		108	1244	
363.00 > 169.00	2.413	2.413	0.0	1.000	2194758		4.37(2.17-6.52)		4246	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.454	-0.015	0.877	5220259	2.30		97.4	7068	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.439	0.0	1.000	5935886	2.17		95.5	3872	
399.00 > 99.00	2.439	2.439	0.0	1.000	1724351		3.44(1.90-5.70)		1760	
76 DONA										
377.00 > 251.00	2.465	2.465	0.0	0.777	14436091	2.33		98.8	14341	
377.00 > 85.00	2.465	2.465	0.0	0.777	7026123		2.05(1.13-3.39)		2584	
D 12 M2-6:2FTS										
429.00 > 81.00	2.767	2.784	-0.017	0.994	777876	2.15		90.5	1076	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.767	2.767	0.0	1.000	1641193	2.34		98.8	1122	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.816	-0.034		6689604	2.31		94.5	9933	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.816	-0.034	1.000	8287686	2.42		96.7	6754	
* 62 13C2-PFOA										
415.00 > 370.00	2.782	2.782	0.0		8509919	2.50			6634	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.798	0.0	1.006	8194869	2.30		91.8	540	
413.00 > 169.00	2.798	2.798	0.0	1.006	3194412		2.57(1.36-4.08)		2647	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.798	0.0	0.882	6064580	2.57		108	4094	
449.00 > 99.00	2.798	2.798	0.0	0.882	1391115		4.36(1.84-5.53)		2238	
D 72 13C8 PFOS										
507.00 > 99.00	3.155	3.193	-0.038		1162575	2.26		94.7	3659	
D 18 13C4 PFOS										
503.00 > 80.00	3.174	3.210	-0.036	1.141	5737598	2.36		98.6	4160	
D 19 13C5 PFNA										
468.00 > 423.00	3.174	3.210	-0.036	1.141	7856644	2.45		97.8	6903	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.174	3.174	0.0	1.000	5849073	2.31		99.5	2512	
499.00 > 99.00	3.174	3.174	0.0	1.000	1376462		4.25(2.04-6.12)		1586	
20 Perfluorononanoic acid										
463.00 > 419.00	3.174	3.174	0.0	1.000	7794420	2.54		101	826	
463.00 > 169.00	3.174	3.174	0.0	1.000	1467067		5.31(2.68-8.03)		2356	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.386	3.386	0.0	1.067	6622311	2.38		102	3889	
D 21 13C8 FOSA										
506.00 > 78.00	3.483	3.499	-0.016	1.252	3002295	2.33		93.3	2798	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.499	3.499	0.0	1.004	9427892	2.65		106	4522	
D 26 M2-8:2FTS										
529.00 > 81.00	3.529	3.558	-0.029	1.268	115731	2.17		90.8	719	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.529	3.529	0.0	1.000	1568462	2.14		89.5	2839	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.529	3.529	0.0	1.112	3651080	2.35		98.1	3280	
549.00 > 99.00	3.529	3.529	0.0	1.112	618108		5.91(3.02-9.05)		1959	
D 23 13C2 PFDA										
515.00 > 470.00	3.529	3.573	-0.044	1.268	8167497	2.55		102	9926	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.529	3.529	0.0	1.000	8842290	2.38		95.1	1275	
513.00 > 169.00	3.543	3.529	0.014	1.004	625985		14.13(7.12-21.35)		469	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.685	3.732	-0.047	1.324	3378466	2.34		93.4	2064	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.685	3.685	0.0	1.000	3315873	2.47		98.8	969	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.857	3.857	0.0	1.215	4914710	2.52		104	4542	
599.00 > 99.00	3.841	3.857	-0.016	1.210	1025689		4.79(2.14-6.43)		2313	
D 30 13C2 PFUnA										
565.00 > 520.00	3.871	3.901	-0.030	1.391	7067780	2.59		104	6410	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.857	3.901	-0.044	1.386	2588883	2.28		91.0	2707	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.871	3.871	0.0	1.004	2502623	2.60		104	2522	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.871	3.871	0.0	1.000	5892700	2.32		92.9	1164	
563.00 > 169.00	3.871	3.871	0.0	1.000	600364		9.82(5.24-15.72)		1445	
35 MeFOSA										
512.00 > 169.00	3.978	3.978	0.0		1645833	NC			772	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.025	4.025	0.0	1.268	7224461	2.35		100.0	7675	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.160	4.160	0.0		1707539	NC			484	
D 36 13C2 PFDoA										
615.00 > 570.00	4.160	4.216	-0.056	1.495	7716213	2.32		92.9	5575	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.160	4.160	0.0	1.000	8110365	2.61		104	1568	
613.00 > 169.00	4.160	4.160	0.0	1.000	883712		9.18(4.68-14.05)		2160	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.160	4.160	0.0	1.179	1052752	2.14		89.0	1423	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.405	4.405	0.0	1.388	484627	2.17		89.7	1584	
699.00 > 99.00	4.405	4.405	0.0	1.388	866986		0.56(0.28-0.83)		1486	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.436	4.436	0.0	1.067	6237083	2.52		101	2557	
663.00 > 169.00	4.436	4.436	0.0	1.067	1079714		5.78(3.09-9.27)		2437	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.676	4.727	-0.051	1.680	6156154	2.33		93.0	7416	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.676	4.676	0.0	1.000	994615	2.50		100	3068	
713.00 > 219.00	4.676	4.676	0.0	1.000	690207		1.44(0.70-2.09)		2290	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.109	5.164	-0.055	1.836	6010705	2.24		89.6	5989	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.109	5.109	0.0	1.000	5695215	2.60		104	1237	
813.00 > 169.00	5.109	5.109	0.0	1.000	947939		6.01(2.77-8.32)		1639	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.476	5.476	0.0	1.072	3919274	2.56		102	1152	
913.00 > 169.00	5.462	5.476	-0.014	1.069	718846		5.45(2.55-7.64)		2107	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_017.d

Injection Date: 10-Sep-2018 11:47:20

Instrument ID: A9

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 14

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

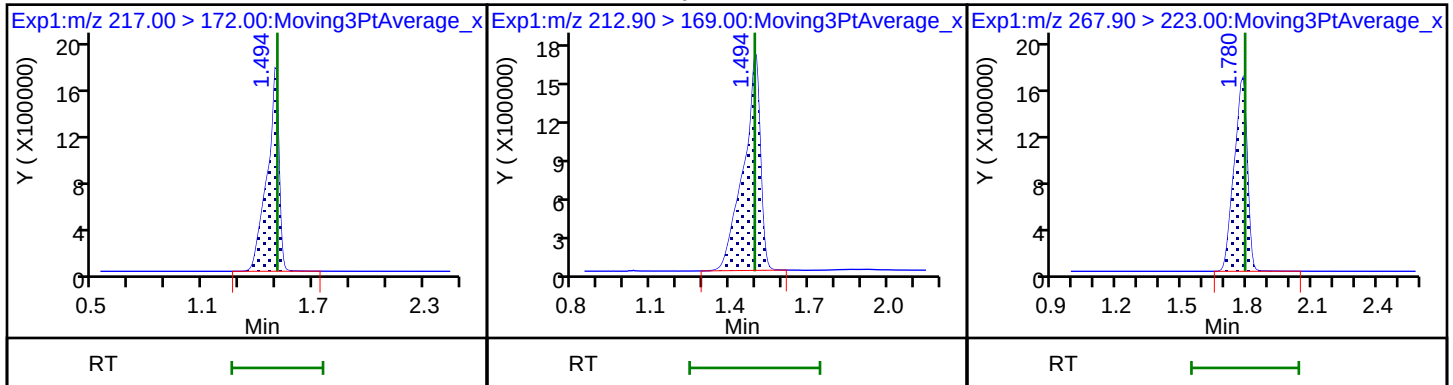
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

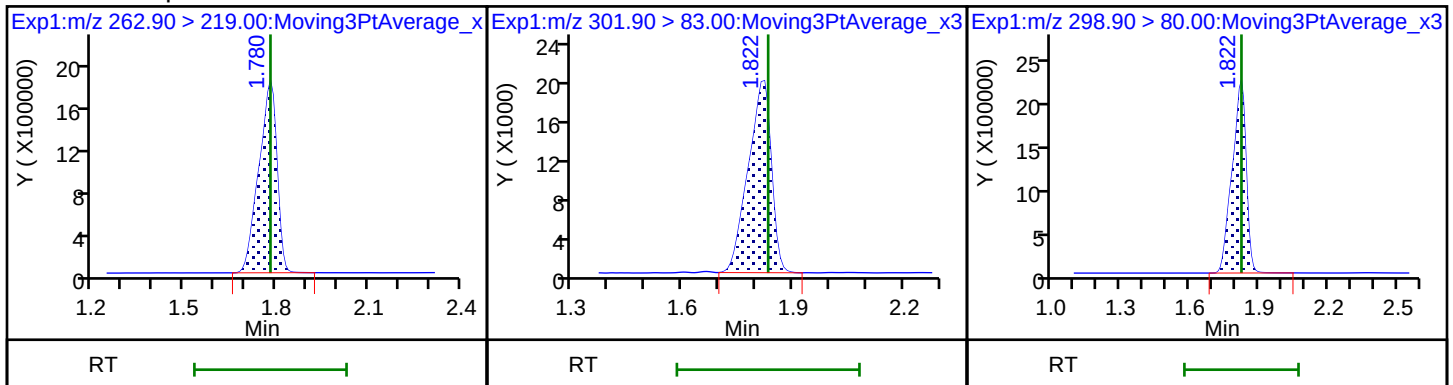
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

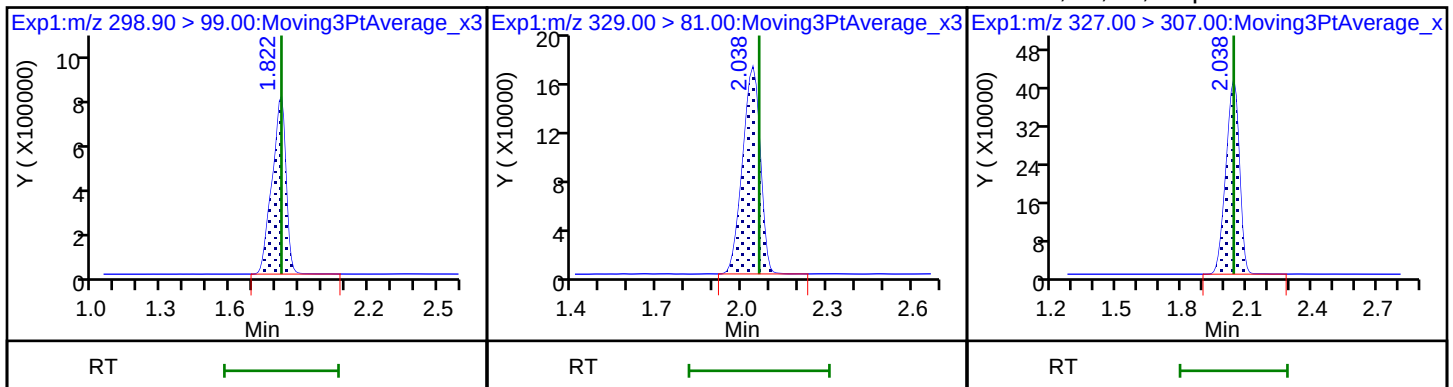
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

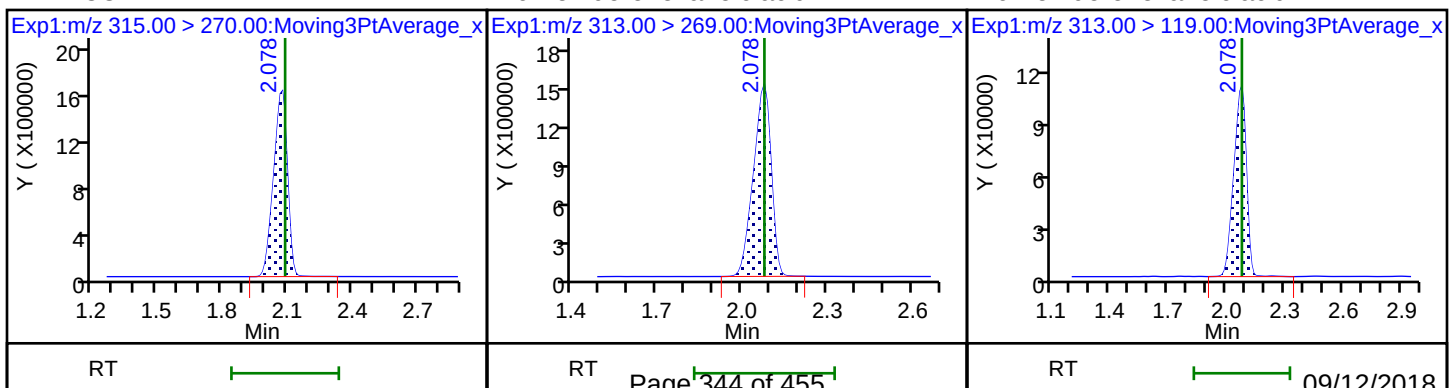
61 1H,1H,2H,2H-perfluorohexanesulfoni

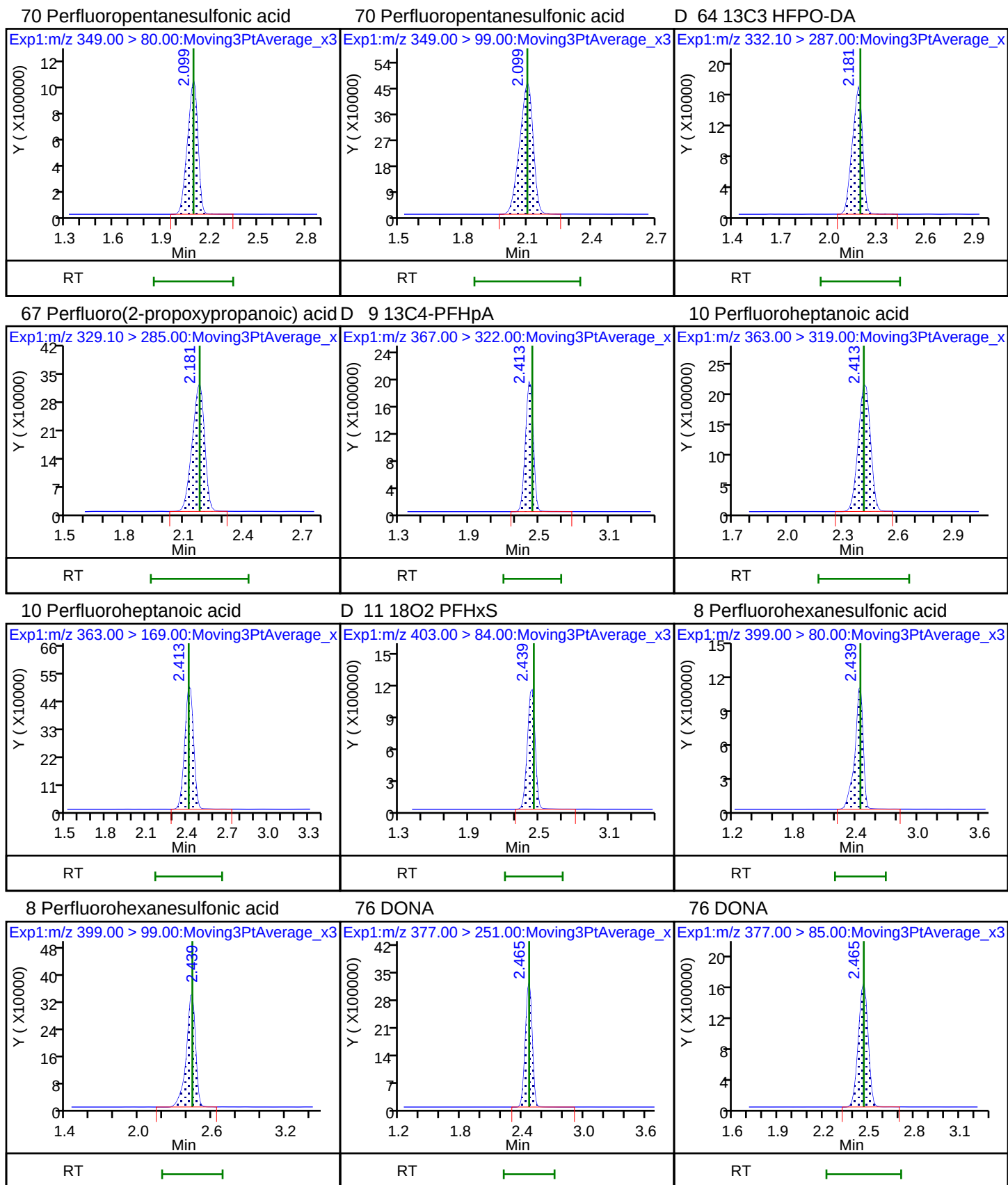


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

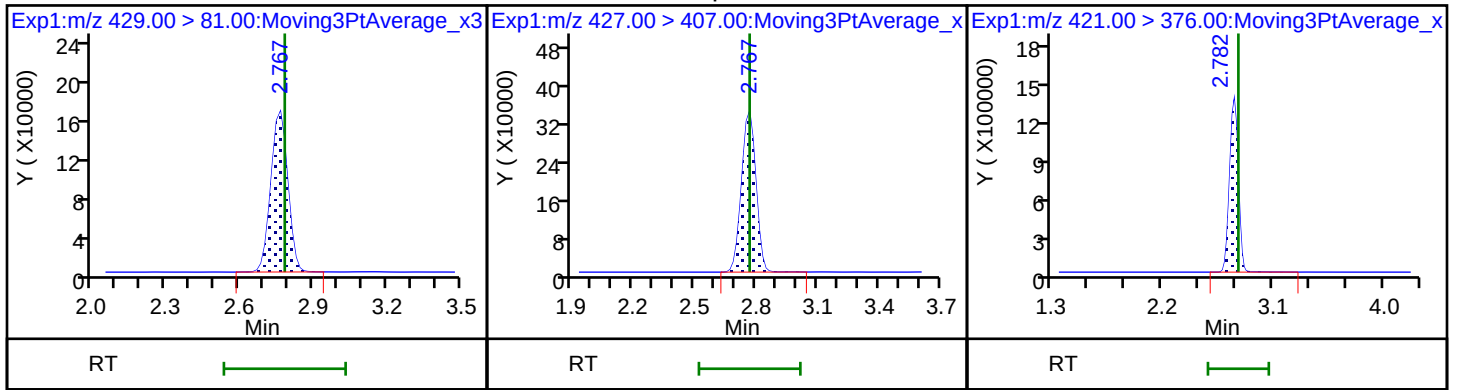
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

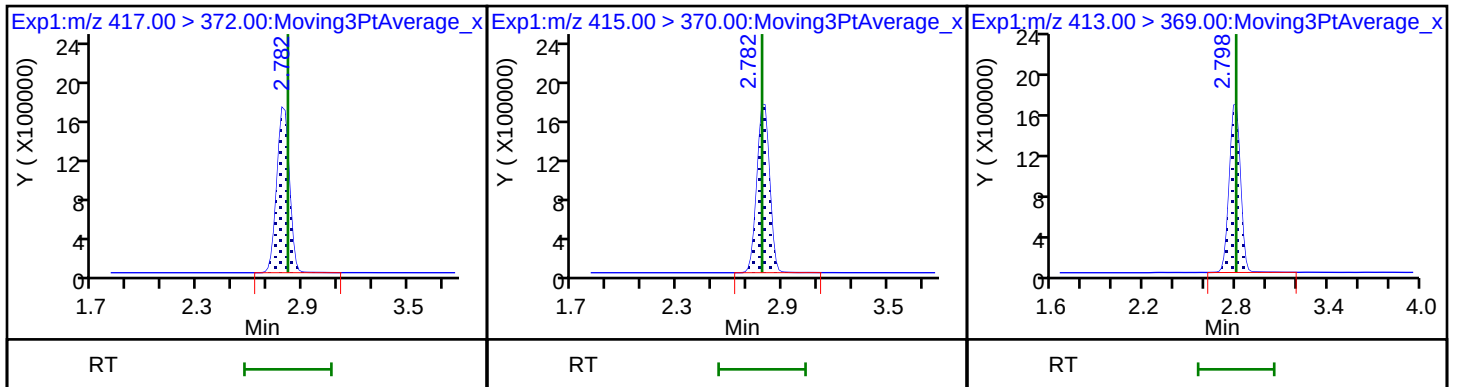
13 1H,1H,2H,2H-perfluorooctanesulfonyl D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

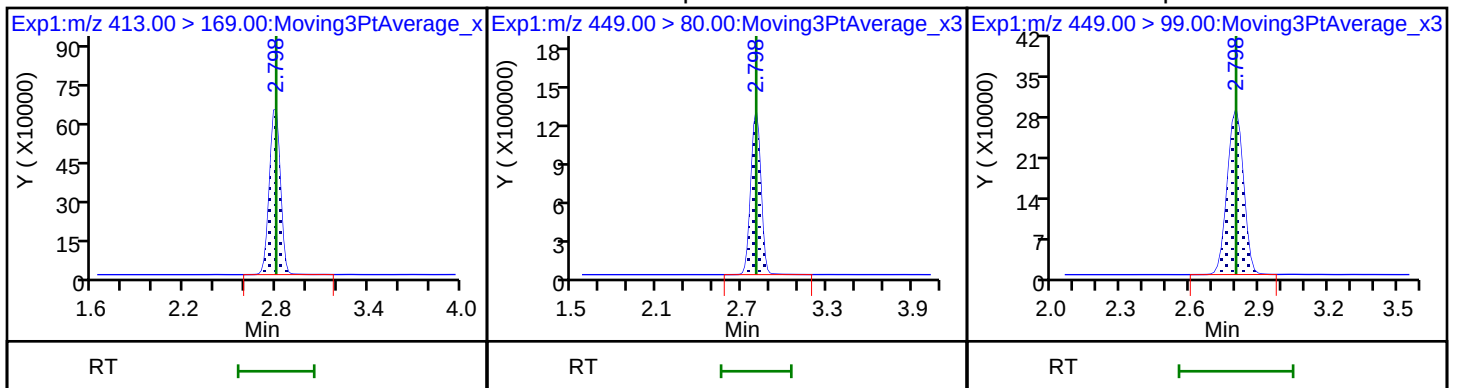
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

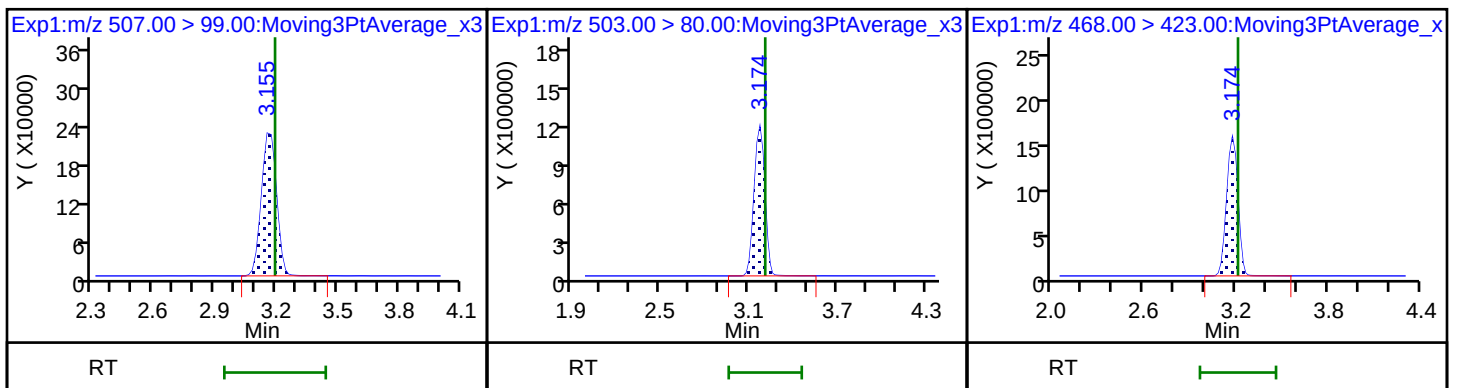
16 Perfluoroheptanesulfonic acid

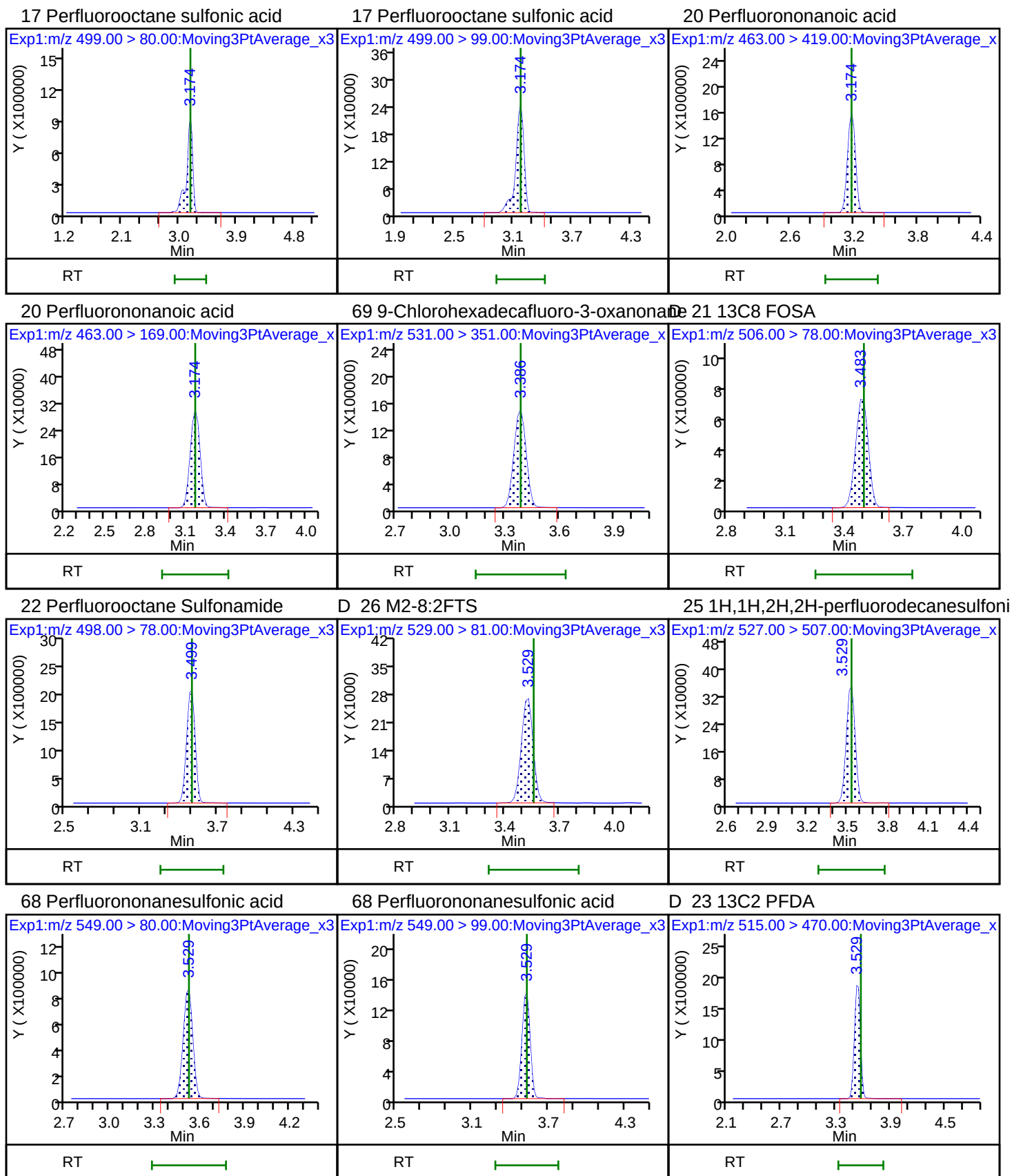


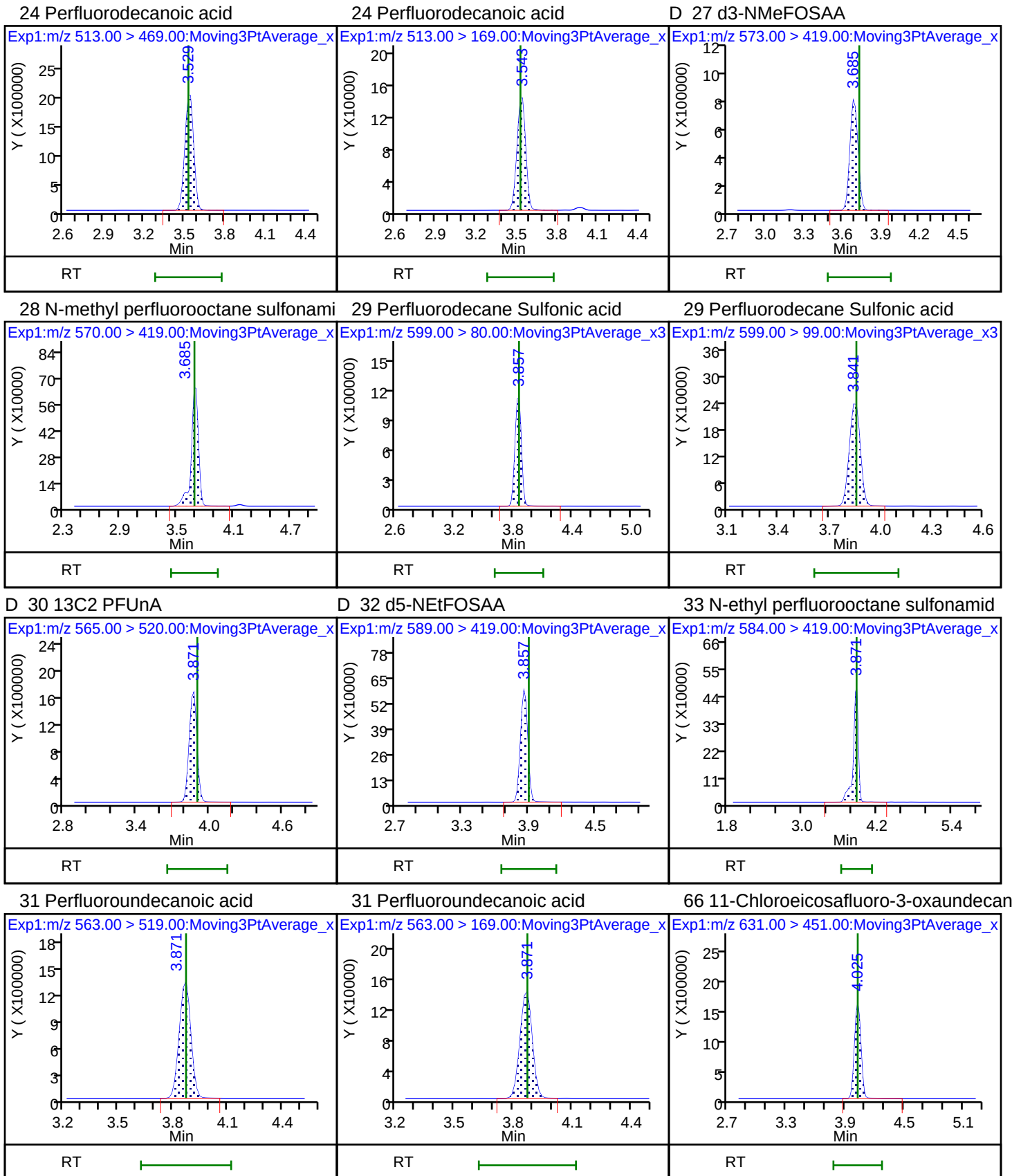
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA



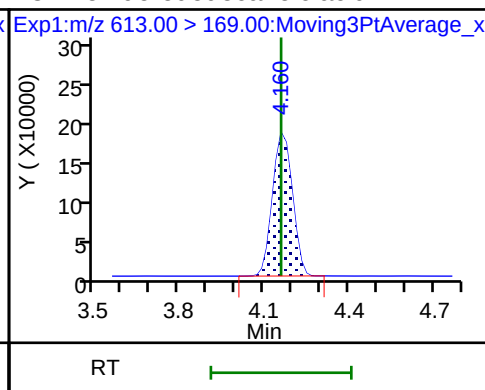
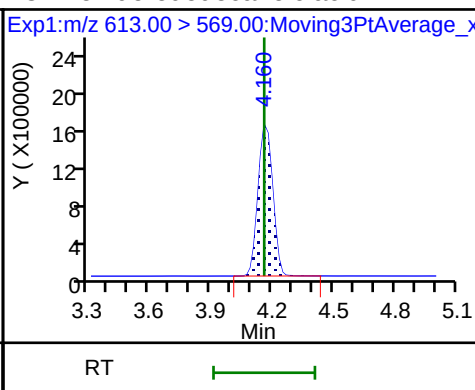
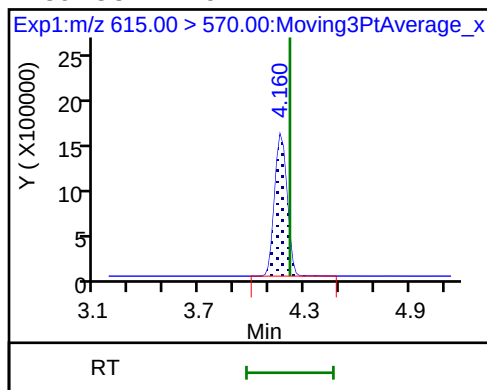




D 36 13C2 PFDaA

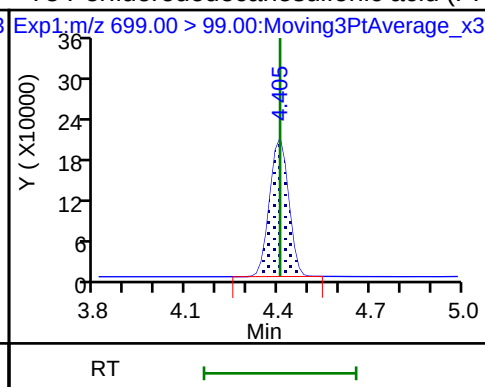
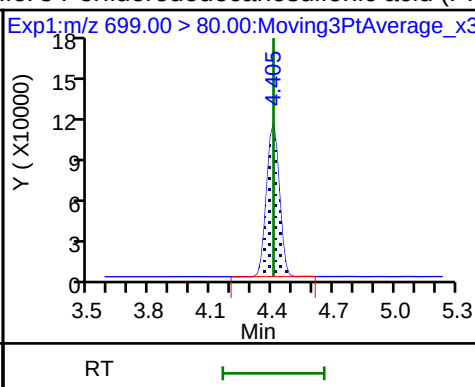
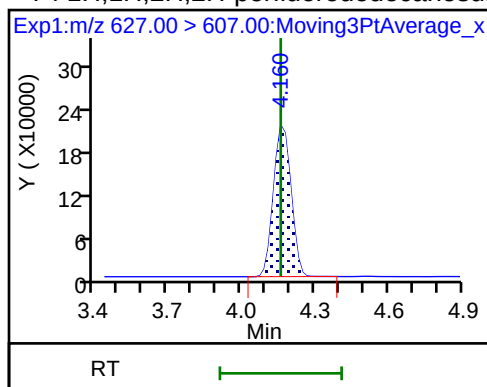
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

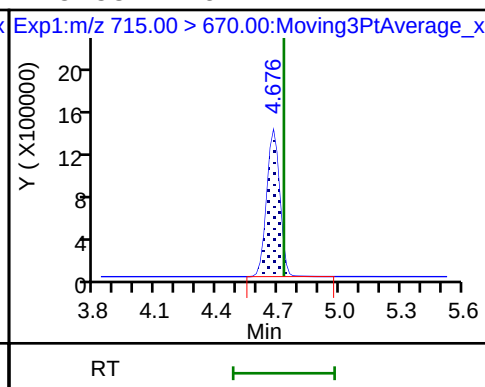
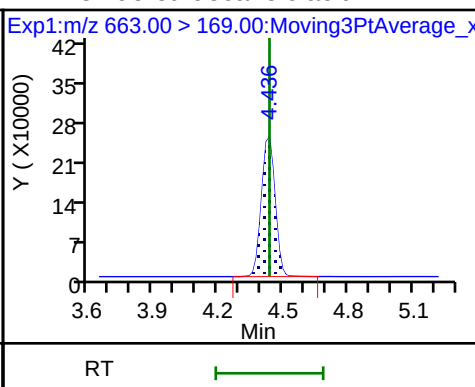
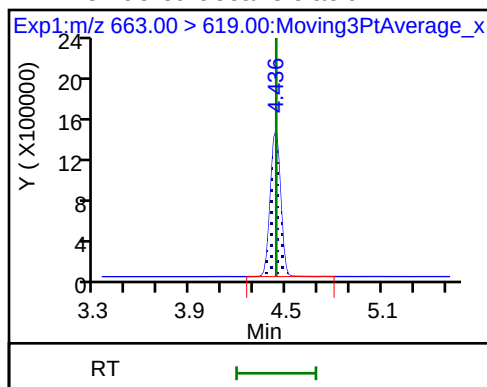
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

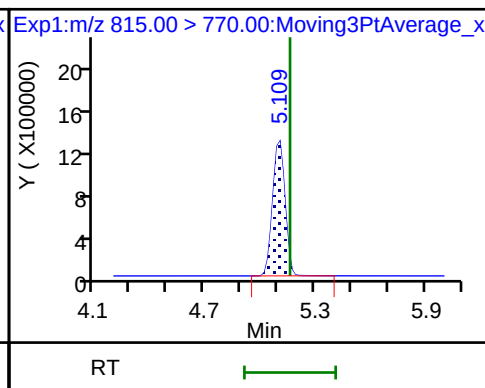
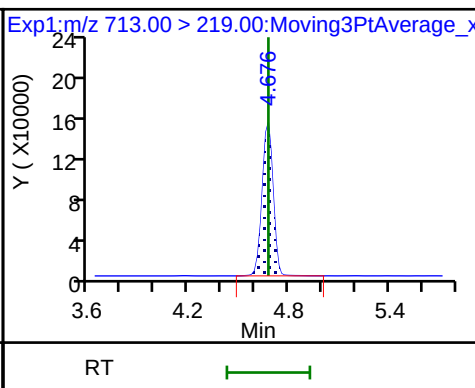
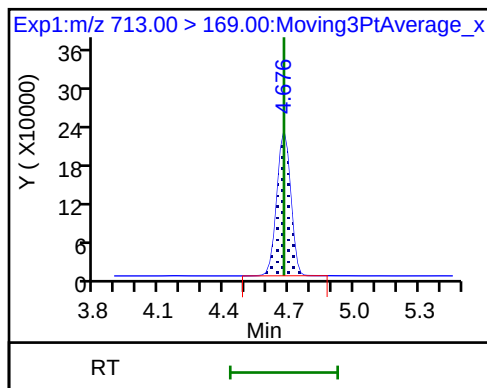
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

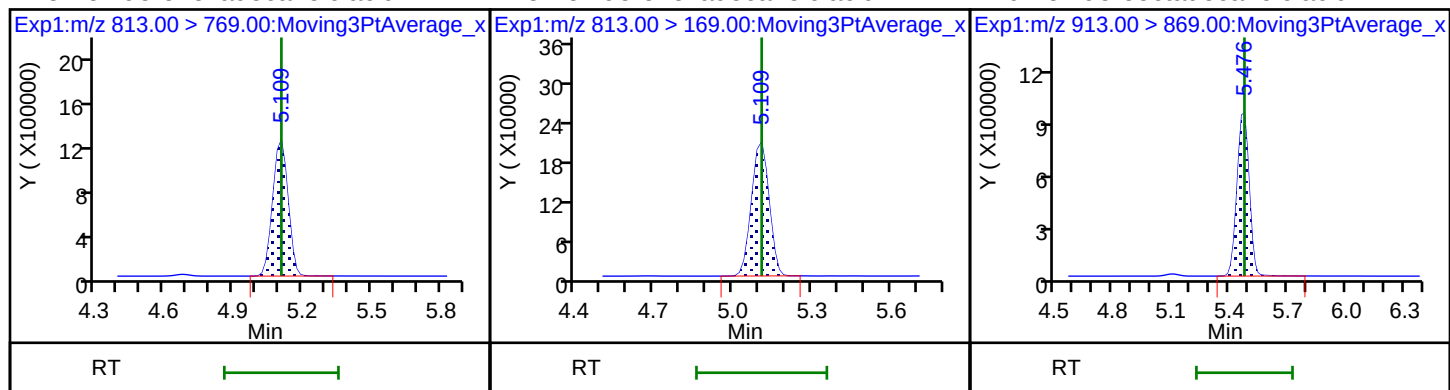
D 44 13C2-PFHxDA



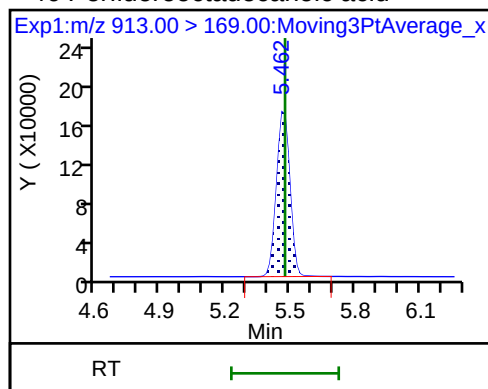
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Lab Sample ID: CCV 320-244760/1 Calibration Date: 09/10/2018 12:24

Instrument ID: A9 Calib Start Date: 08/28/2018 10:20

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05

Lab File ID: 2018.09.10LLAA_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9128	0.9436		2.58	2.50	3.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.014	1.021		2.52	2.50	0.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	105.1	113.9		2.40	2.21	8.4	50.0
4:2 FTS	AveID	21.61	21.83		2.36	2.34	1.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9107	0.9165		2.52	2.50	0.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.87	51.81		2.44	2.35	3.9	50.0
HFPO-DA (GenX)	AveID	1.768	1.791		2.53	2.50	1.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.020	1.095		2.68	2.50	7.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.237	1.205		2.22	2.28	-2.6	40.0
DONA	AveID	2.585	2.881		2.62	2.36	11.4	50.0
6:2 FTS	AveID	2.140	2.267		2.51	2.37	5.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9846	1.157		2.80	2.38	17.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.076	1.056		2.45	2.50	-1.9	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9779	1.023		2.61	2.50	4.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.055	1.121		2.46	2.32	6.2	40.0
F-53B Major	AveID	1.158	1.281		2.58	2.33	10.6	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	2.964	3.217		2.71	2.50	8.5	40.0
8:2 FTS	AveID	15.14	13.74		2.17	2.40	-9.2	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6458	0.7592		2.82	2.40	17.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.162		2.55	2.50	2.1	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9938	0.9856		2.48	2.50	-0.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8133	0.9484		2.81	2.41	16.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9299	0.9787		2.63	2.50	5.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8971	0.9644		2.69	2.50	7.5	40.0
F-53B Minor	AveID	1.278	1.370		2.52	2.36	7.2	50.0
10:2 FTS	AveID	10.16	8.537		2.03	2.41	-15.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.008	1.020		2.53	2.50	1.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0930	0.0945		2.46	2.42	1.7	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8023	0.8347		2.60	2.50	4.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1614	0.1591		2.46	2.50	-1.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Lab Sample ID: CCV 320-244760/1 Calibration Date: 09/10/2018 12:24
 Instrument ID: A9 Calib Start Date: 08/28/2018 10:20
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05
 Lab File ID: 2018.09.10LLAA_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9419		2.58	2.50	3.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6377	0.6356		2.49	2.50	-0.3	50.0
13C4 PFBA	Ave	0.9623	0.9381		2.44	2.50	-2.5	50.0
13C5 PFPeA	Ave	0.8584	0.8552		2.49	2.50	-0.4	50.0
13C3-PFBS	Ave	0.0113	0.0108		2.24	2.33	-3.8	50.0
M2-4:2FTS	Ave	0.0968	0.0884		2.13	2.34	-8.7	50.0
13C2 PFHxA	Ave	0.9075	0.8815		2.43	2.50	-2.9	50.0
13C3 HFPO-DA	Ave	0.0984	0.0941		2.39	2.50	-4.3	50.0
13C4-PFHpA	Ave	1.082	1.083		2.50	2.50	0.0	50.0
18O2 PFHxS	Ave	0.6655	0.6913		2.46	2.37	3.9	50.0
M2-6:2FTS	Ave	0.1063	0.0949		2.12	2.38	-10.7	40.0
13C4 PFOA	Ave	1.008	0.9855		2.45	2.50	-2.2	50.0
13C8 PFOA	Ave	2891770	2768648		2.34	2.45	-4.3	50.0
13C4 PFOS	Ave	0.7151	0.6717		2.24	2.39	-6.1	50.0
13C5 PFNA	Ave	0.9437	0.9105		2.41	2.50	-3.5	50.0
13C8 PFOS	Ave	513610	480723		2.24	2.39	-6.4	50.0
13C8 FOSA	Ave	0.3783	0.3578		2.36	2.50	-5.4	50.0
M2-8:2FTS	Ave	0.0156	0.0144		2.21	2.40	-7.7	40.0
13C2 PFDA	Ave	0.9426	0.9308		2.47	2.50	-1.2	50.0
d3-NMeFOSAA	Ave	0.4249	0.4095		2.41	2.50	-3.6	50.0
d5-NEtFOSAA	Ave	0.3342	0.3118		2.33	2.50	-6.7	50.0
13C2 PFUnA	Ave	0.8023	0.7843		2.44	2.50	-2.2	50.0
13C2 PFDoA	Ave	0.9759	0.9573		2.45	2.50	-1.9	50.0
13C2-PFTeDA	Ave	0.7774	0.7621		2.45	2.50	-2.0	50.0
13C2-PFHxDA	Ave	0.7882	0.7423		2.35	2.50	-5.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_017.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 10-Sep-2018 12:24:48 ALS Bottle#: 14 Worklist Smp#: 1
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 07:59:07 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 07:59:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.497	1.499	-0.002	0.536	7709953	2.44		97.5	12602	
2 Perfluorobutyric acid										
212.90 > 169.00	1.497	1.497	0.0	1.000	7275225	2.58		103	694	
D 3 13C5-PFPeA										
267.90 > 223.00	1.777	1.781	-0.004	0.637	7028775	2.49		99.6	13678	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.777	1.777	0.0	1.000	7176752	2.52		101	621	
D 47 13C3-PFBS										
301.90 > 83.00	1.818	1.822	-0.004	0.652	82882	2.24		96.2	556	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.818	1.818	0.0	1.000	8973645	2.40		108	2835	
298.90 > 99.00	1.818	1.818	0.0	1.000	3093151		2.90(1.35-4.05)		1638	
D 60 M2-4:2FTS										
329.00 > 81.00	2.033	2.038	-0.005	0.729	678470	2.13		91.3	607	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.033	2.033	0.0	1.118	1817493	2.36		101	4128	
D 7 13C2 PFHxA										
315.00 > 270.00	2.074	2.079	-0.005	0.743	7244874	2.43		97.1	8140	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.074	2.074	0.0	1.000	6639840	2.52		101	1390	
313.00 > 119.00	2.074	2.074	0.0	1.000	492355		13.49(6.96-20.87)		967	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.094	2.094	0.0	1.152	4331303	2.44		104	5307	
349.00 > 99.00	2.094	2.094	0.0	1.152	2018073		2.15(1.15-3.45)		2763	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.176	2.181	-0.005	0.780	773718	2.39		95.7	2927	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.176	2.176	0.0	1.000	1385977	2.53		101	613	
D 9 13C4-PFHpA										
367.00 > 322.00	2.406	2.413	-0.007	0.862	8901621	2.50		100	8582	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.419	2.419	0.0	1.005	9748650	2.68		107	1158	
363.00 > 169.00	2.419	2.419	0.0	1.005	2089212		4.67(2.17-6.52)		3188	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.432	2.432	0.0	1.000	6232050	2.22		97.4	3001	
399.00 > 99.00	2.432	2.432	0.0	1.000	1763642		3.53(1.90-5.70)		1467	
D 11 18O2 PFHxS										
403.00 > 84.00	2.432	2.439	-0.007	0.872	5374845	2.46		104	6181	
76 DONA										
377.00 > 251.00	2.458	2.458	0.0	0.777	14978789	2.62		111	15655	
377.00 > 85.00	2.458	2.458	0.0	0.777	6974031		2.15(1.13-3.39)		2377	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.759	2.759	0.0	1.000	1676640	2.51		106	919	
D 12 M2-6:2FTS										
429.00 > 81.00	2.759	2.767	-0.008	0.989	741092	2.12		89.3	1227	
D 73 13C8 PFOA										
421.00 > 376.00	2.774	2.783	-0.009		6776267	2.34		95.7	9074	
D 14 13C4 PFOA										
417.00 > 372.00	2.774	2.783	-0.009	0.994	8099292	2.45		97.8	6882	
* 62 13C2-PFOA										
415.00 > 370.00	2.790	2.790	0.0		8218460	2.50			6016	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.790	2.790	0.0	1.006	8558710	2.45		98.1	535	
413.00 > 169.00	2.790	2.790	0.0	1.006	3180188		2.69(1.36-4.08)		3335	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.790	2.790	0.0	0.882	6081763	2.80		118	4311	
449.00 > 99.00	2.790	2.790	0.0	0.882	1433802		4.24(1.84-5.53)		3213	
D 72 13C8 PFOS										
507.00 > 99.00	3.163	3.173	-0.010		1148928	2.24		93.6	2088	
D 18 13C4 PFOS										
503.00 > 80.00	3.163	3.173	-0.010	1.134	5277117	2.24		93.9	3456	
D 19 13C5 PFNA										
468.00 > 423.00	3.163	3.173	-0.010	1.134	7482621	2.41		96.5	7601	
20 Perfluorononanoic acid										
463.00 > 419.00	3.163	3.163	0.0	1.000	7652764	2.61		105	805	
463.00 > 169.00	3.163	3.163	0.0	1.000	1452254		5.27(2.68-8.03)		2118	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.163	3.163	0.0	1.000	5740139	2.46		106	2260	
499.00 > 99.00	3.163	3.163	0.0	1.000	1334945		4.30(2.04-6.12)		1774	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.376	3.376	0.0	1.067	6588746	2.58		111	4563	
D 21 13C8 FOSA										
506.00 > 78.00	3.490	3.498	-0.008	1.251	2940332	2.36		94.6	3937	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.490	3.490	0.0	1.000	9458089	2.71		109	5273	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.520	3.520	0.0	1.000	1562687	2.17		90.8	3003	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.520	3.520	0.0	1.113	4023205	2.82		118	4430	
549.00 > 99.00	3.520	3.520	0.0	1.113	620404		6.48(3.02-9.05)		1461	
D 23 13C2 PFDA										
515.00 > 470.00	3.535	3.529	0.006	1.267	7649686	2.47		98.8	6219	
D 26 M2-8:2FTS										
529.00 > 81.00	3.520	3.529	-0.009	1.262	113715	2.21		92.3	620	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.535	3.535	0.0	1.000	8892279	2.55		102	1311	
513.00 > 169.00	3.535	3.535	0.0	1.000	608990		14.60(7.12-21.35)		538	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.677	3.685	-0.008	1.318	3365628	2.41		96.4	1798	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.691	3.691	0.0	1.004	3317141	2.48		99.2	915	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.833	3.833	0.0	1.212	5046734	2.81		117	2938	
599.00 > 99.00	3.833	3.833	0.0	1.212	1010942		4.99(2.14-6.43)		1991	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.849	3.857	-0.008	1.379	2562289	2.33		93.3	2983	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.865	3.865	0.0	1.004	2507616	2.63		105	3186	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.865	3.865	0.0	1.000	6215788	2.69		107	1167	
563.00 > 169.00	3.865	3.865	0.0	1.000	543983		11.43(5.24-15.72)		1537	
D 30 13C2 PFUnA										
565.00 > 520.00	3.865	3.872	-0.007	1.385	6445429	2.44		97.8	4251	
35 MeFOSA										
512.00 > 169.00	3.971	3.971	0.0		1703222	NC			955	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.019	4.019	0.0	1.271	7122536	2.52		107	6176	
D 36 13C2 PFDaA										
615.00 > 570.00	4.153	4.160	-0.007	1.488	7867159	2.45		98.1	8757	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.153	4.153	0.0	1.000	8024986	2.53		101	1772	
613.00 > 169.00	4.153	4.153	0.0	1.000	874903		9.17(4.68-14.05)		1573	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.153	4.153	0.0	1.180	976876	2.03		84.1	1590	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.171	4.171	0.0		1725366	NC			515	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.399	4.399	0.0	1.391	505017	2.46		102	1365	
699.00 > 99.00	4.399	4.399	0.0	1.391	876952		0.58(0.28-0.83)		2254	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.415	4.415	0.0	1.063	6566711	2.60		104	2169	
663.00 > 169.00	4.430	4.415	0.015	1.067	1098586		5.98(3.09-9.27)		2584	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.671	4.671	0.0	1.000	996744	2.46		98.6	2695	
713.00 > 219.00	4.656	4.671	-0.015	0.997	739723		1.35(0.70-2.09)		2302	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.671	4.680	-0.009	1.674	6263257	2.45		98.0	8969	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.088	5.088	0.0	1.000	5746081	2.58		103	1271	
813.00 > 169.00	5.088	5.088	0.0	1.000	1021322		5.63(2.77-8.32)		1592	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.088	5.096	-0.008	1.823	6100551	2.35		94.2	7269	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.459	5.459	0.0	1.073	3877322	2.49		99.7	1092	
913.00 > 169.00	5.444	5.459	-0.014	1.070	703132		5.51(2.55-7.64)		2184	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_017.d

Injection Date: 10-Sep-2018 12:24:48

Instrument ID: A9

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 1

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

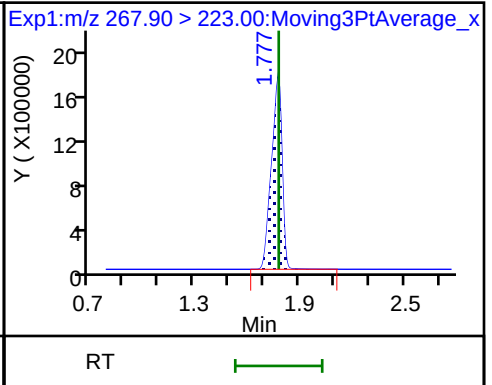
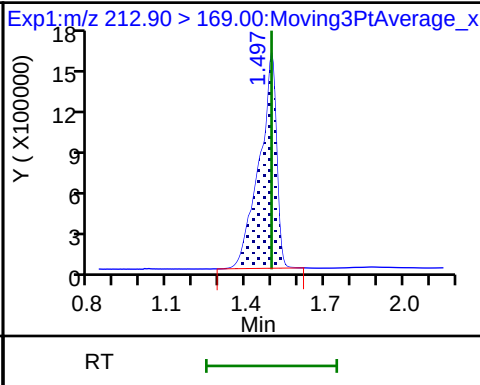
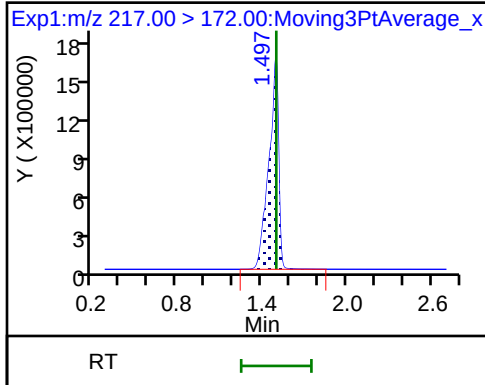
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

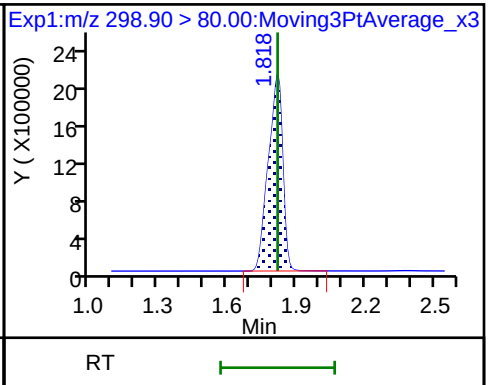
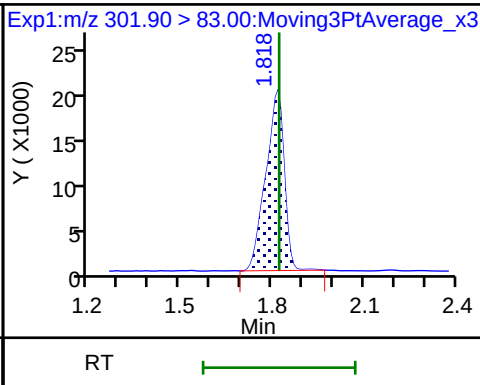
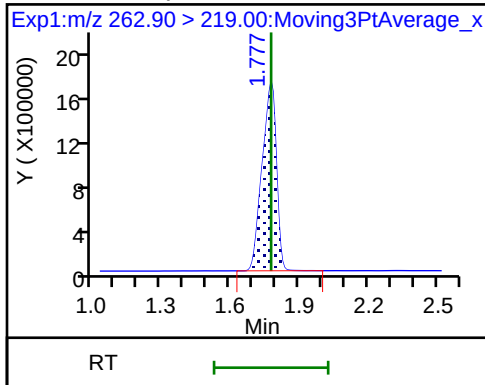
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

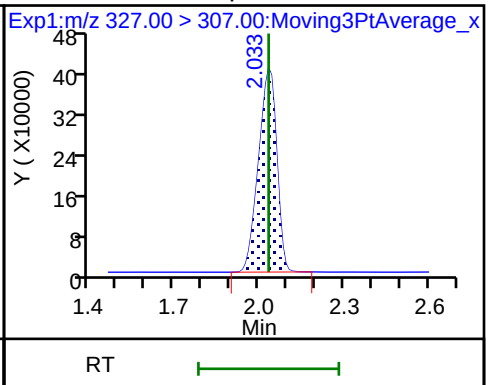
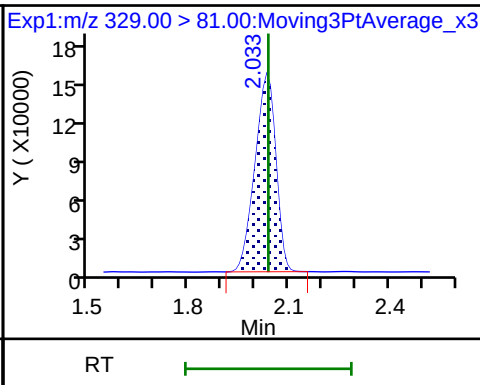
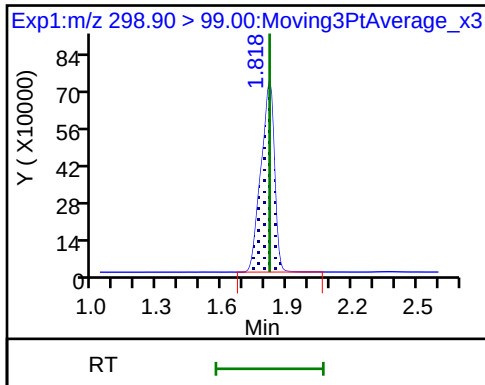
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

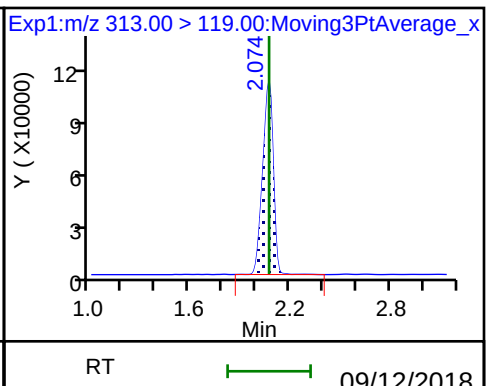
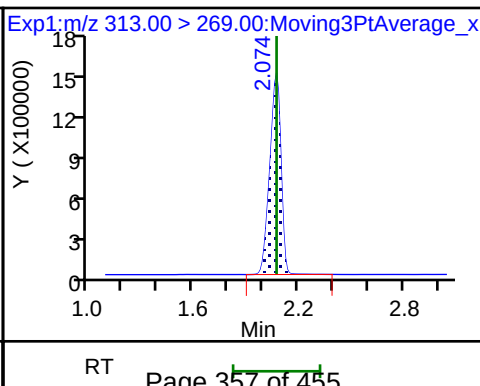
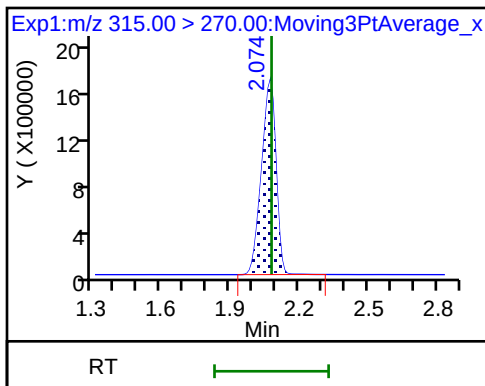
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

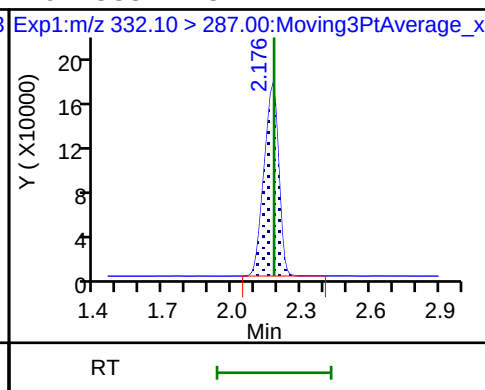
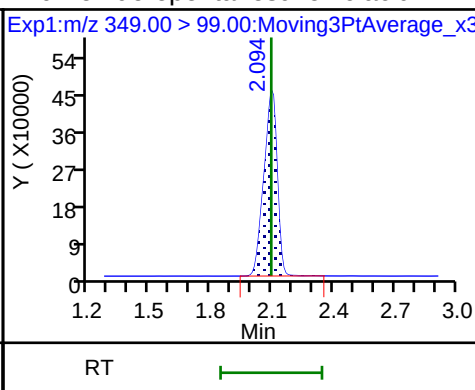
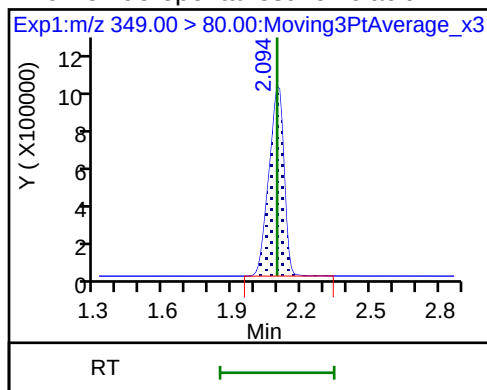
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

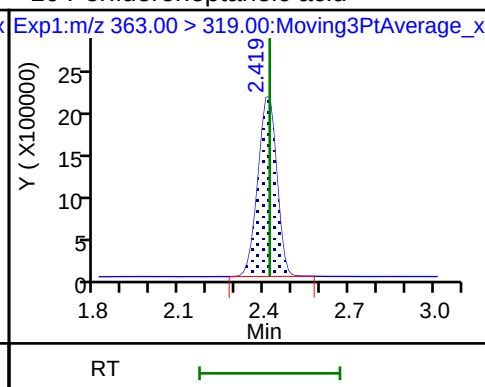
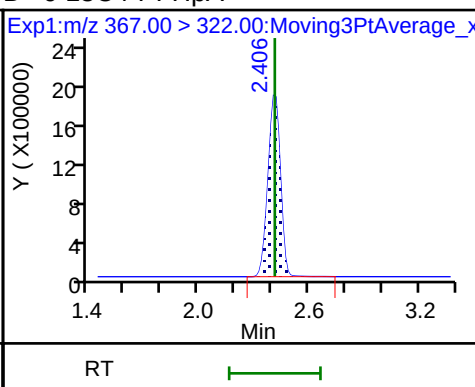
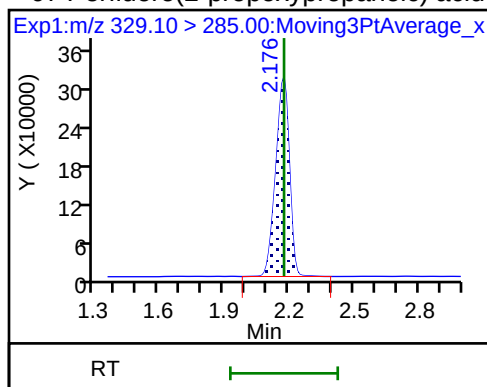
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4-PFHpA

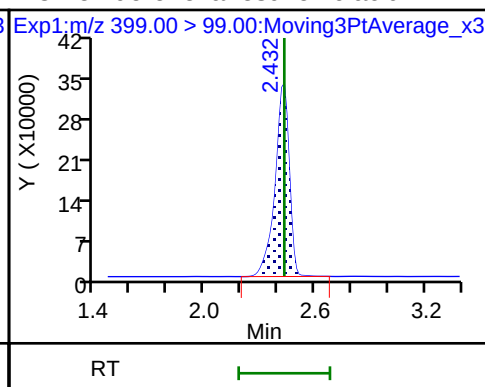
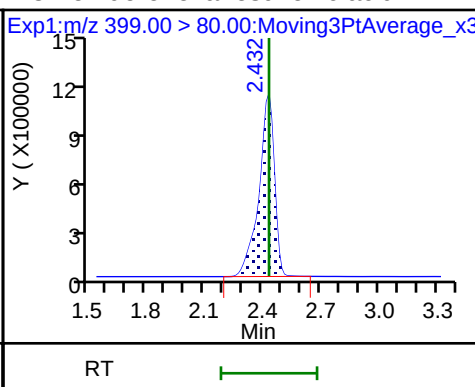
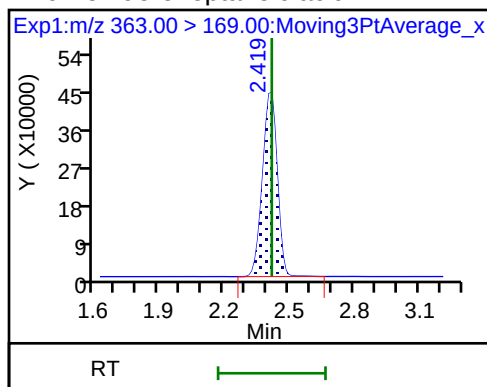
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

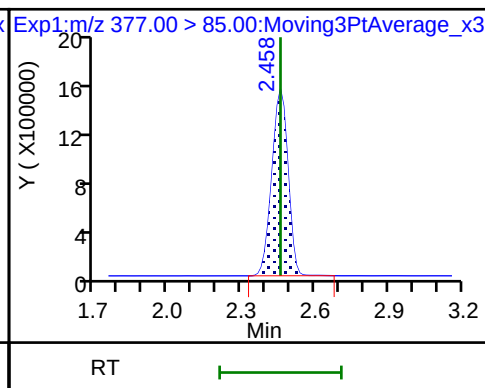
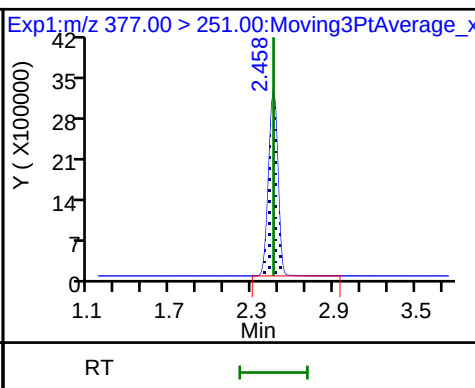
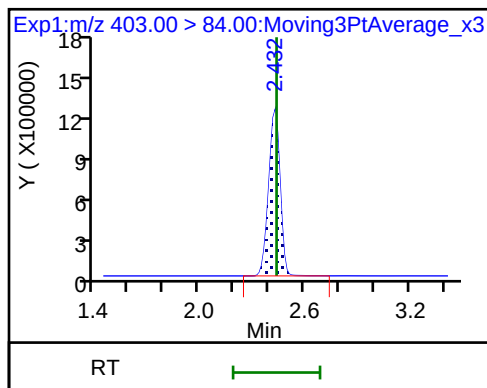
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

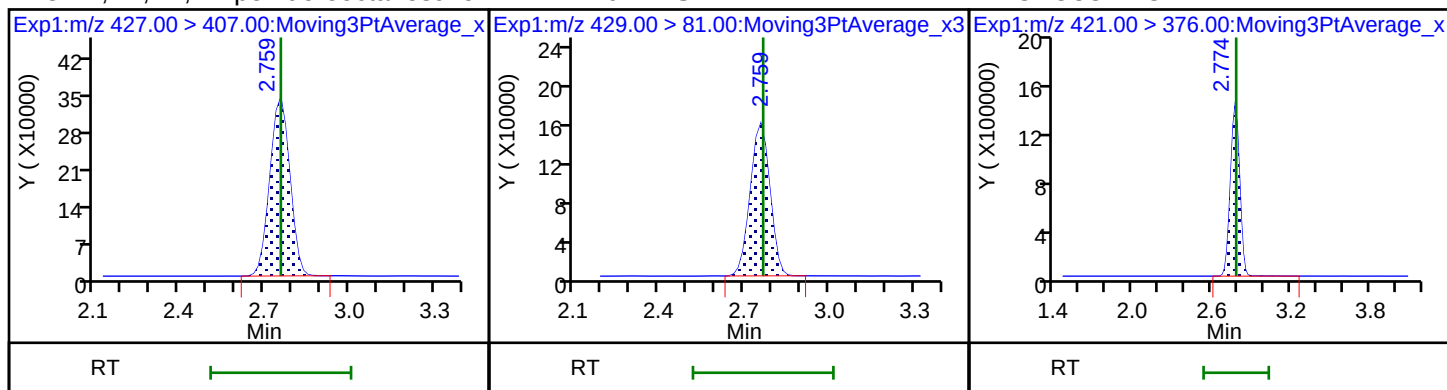
76 DONA

76 DONA



13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

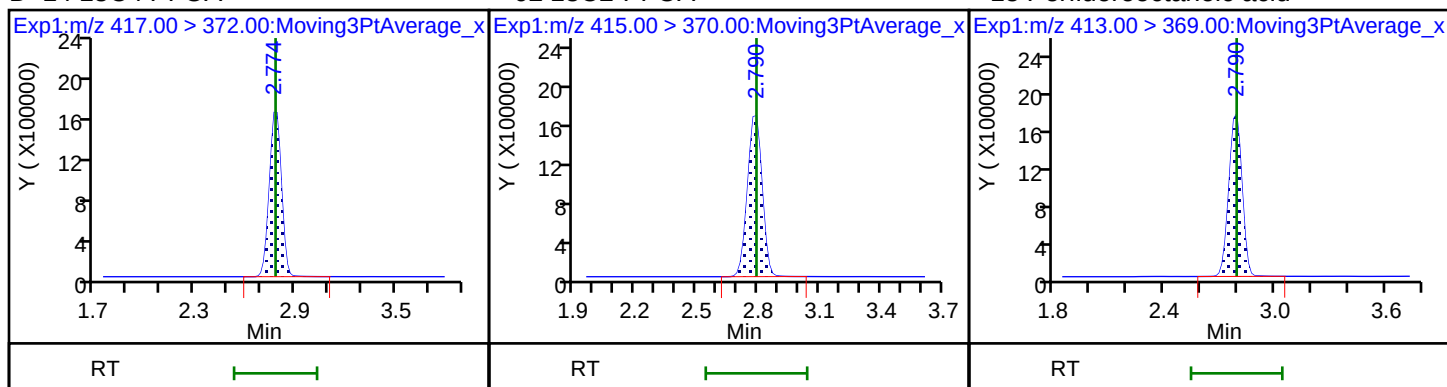
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

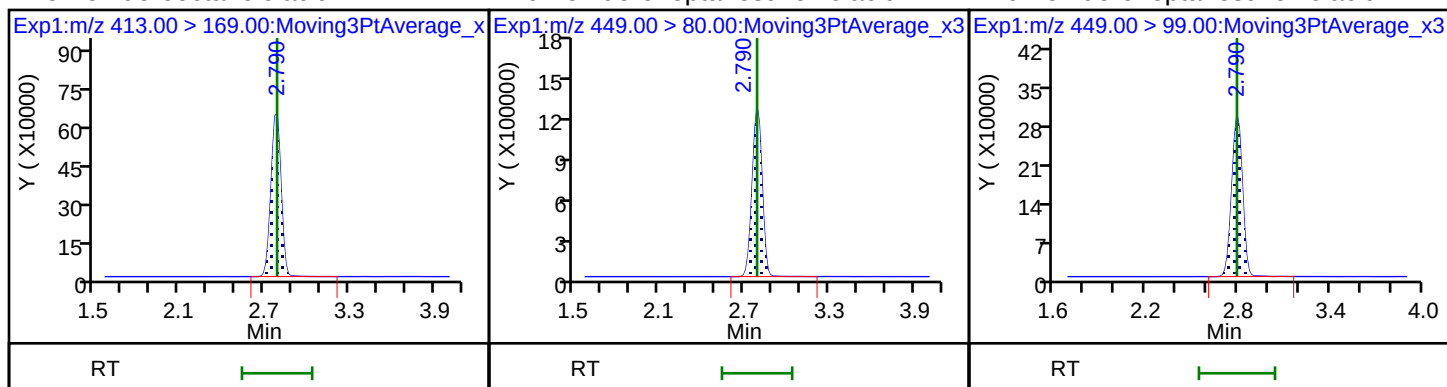
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

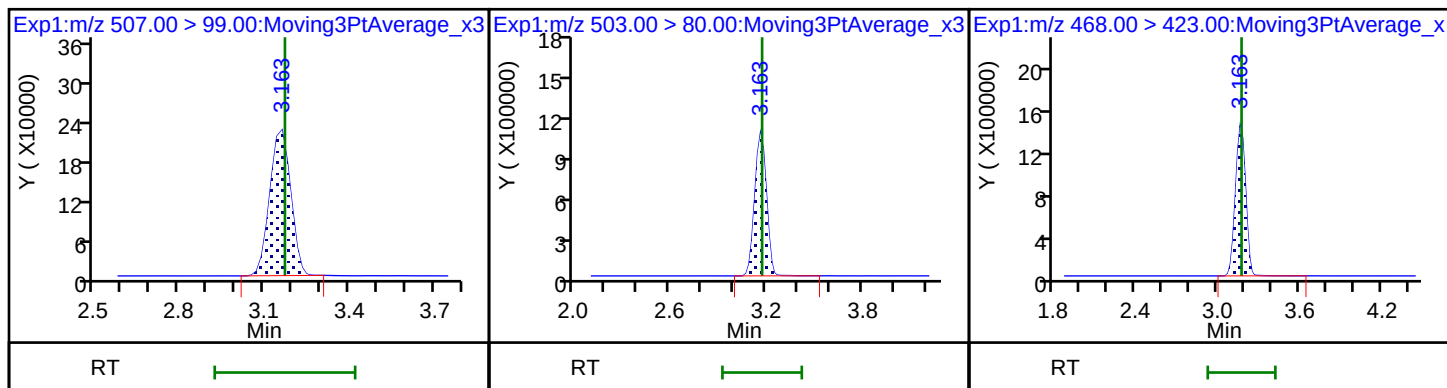
16 Perfluoroheptanesulfonic acid

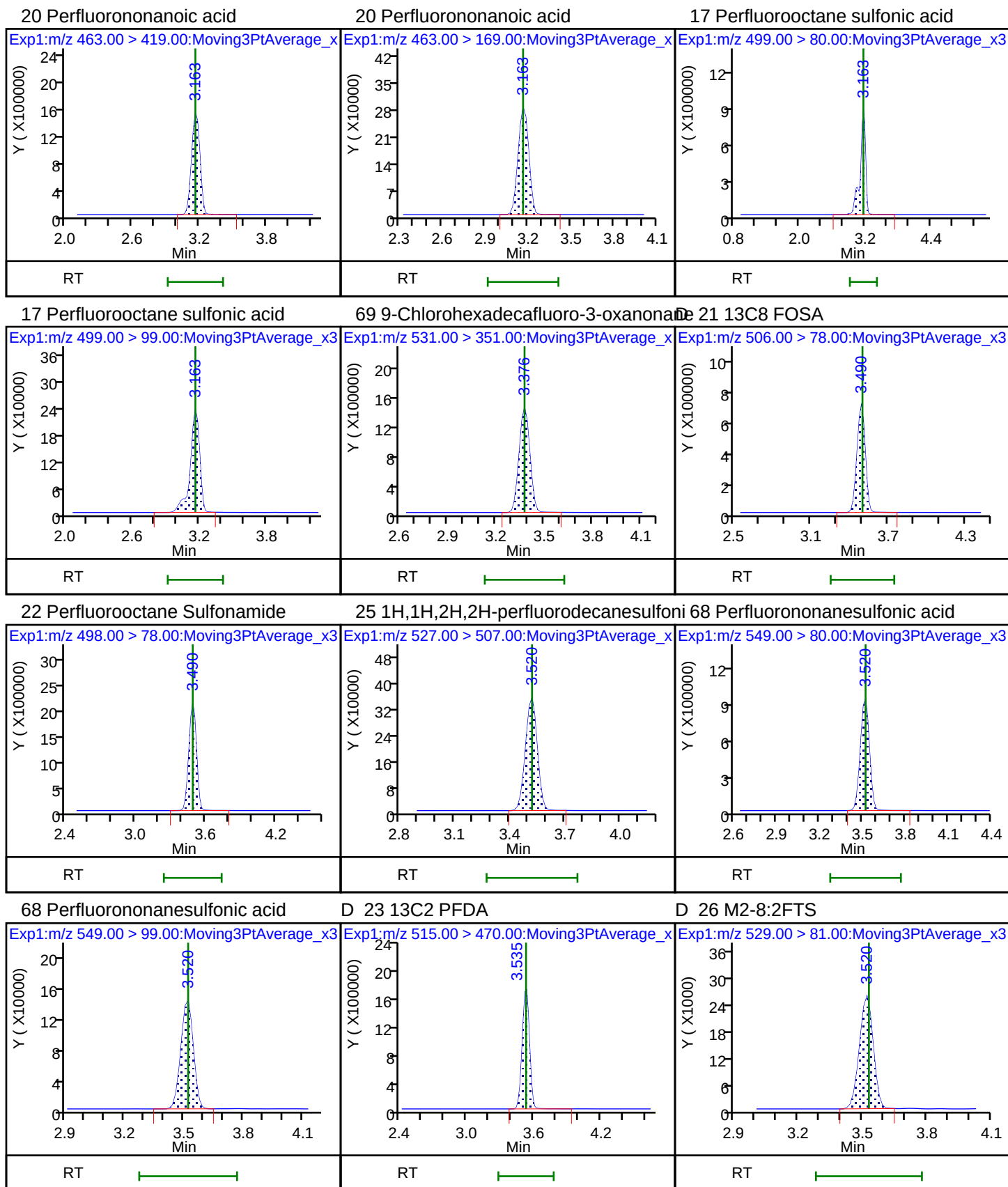


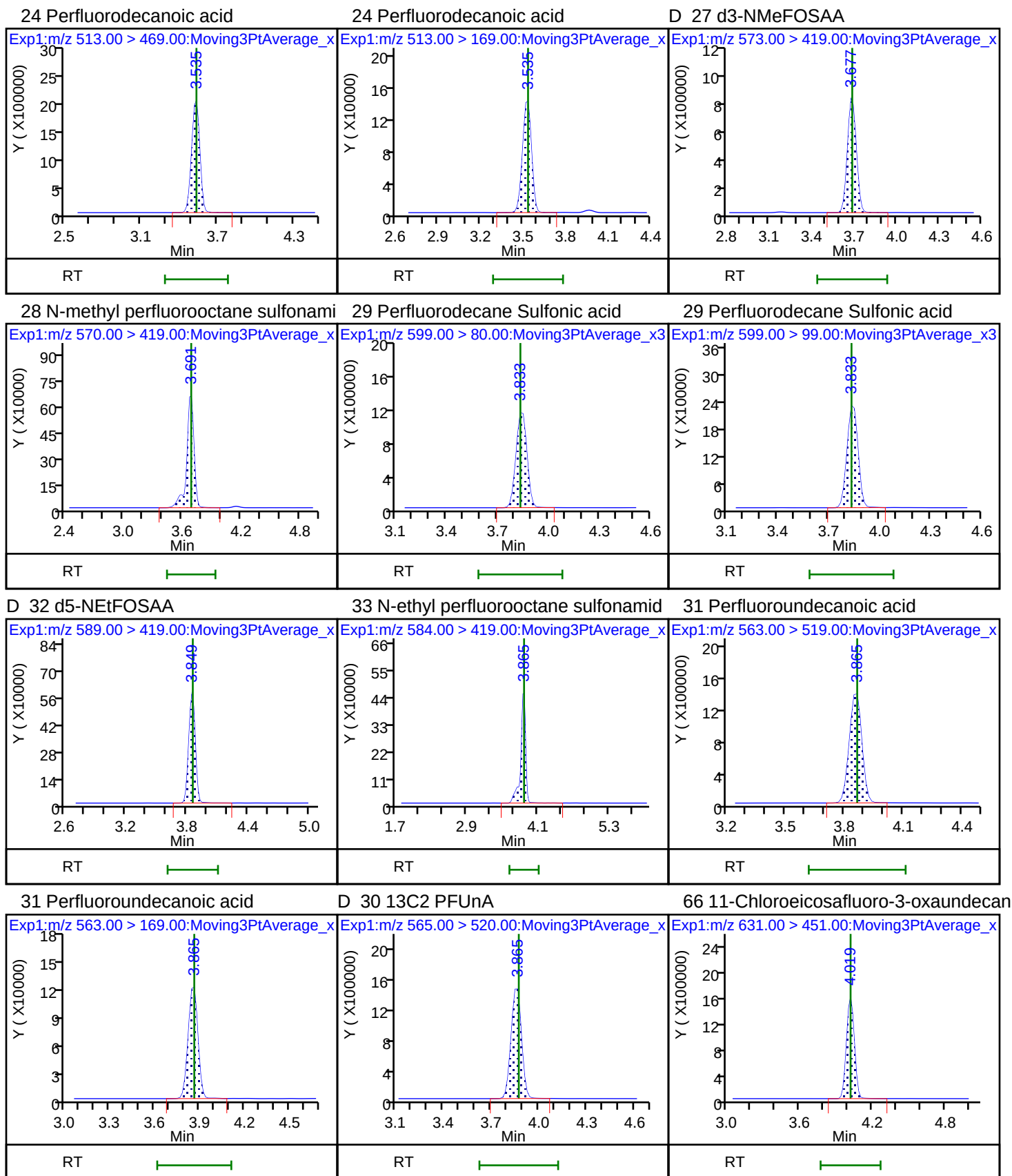
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA



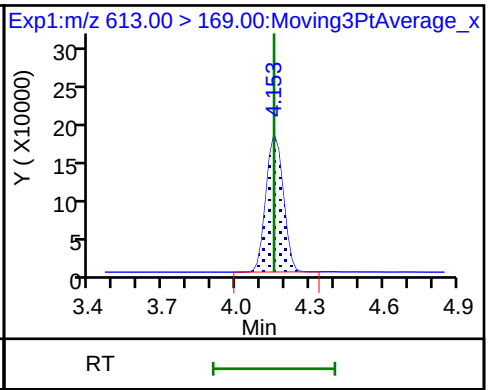
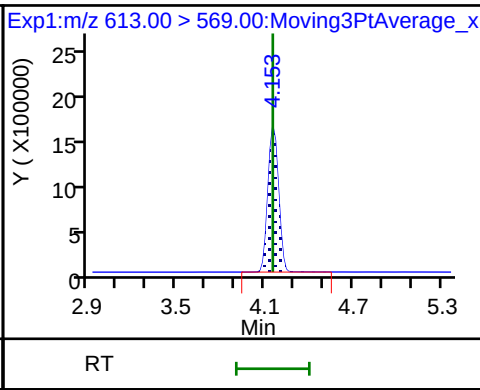
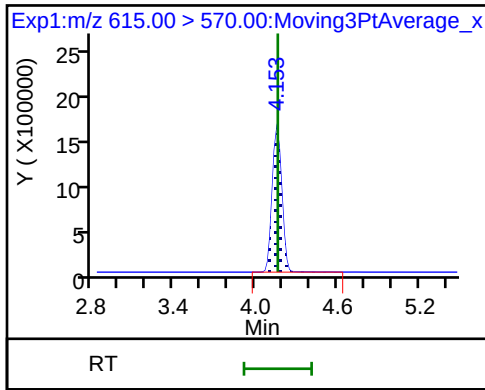




D 36 13C2 PFDaA

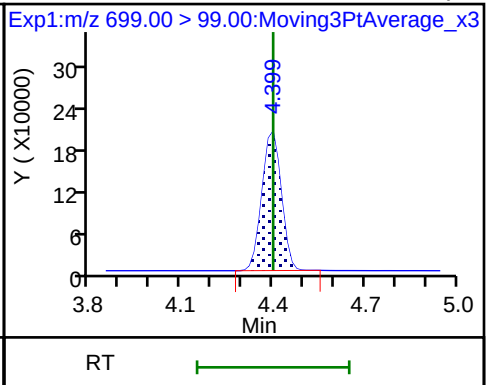
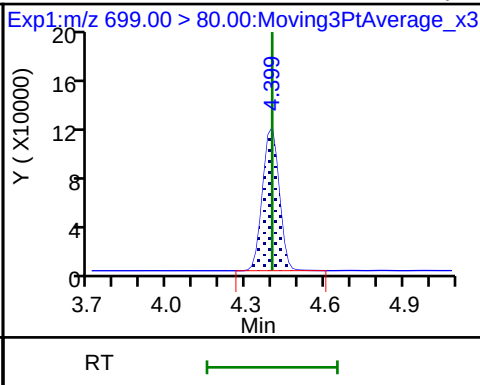
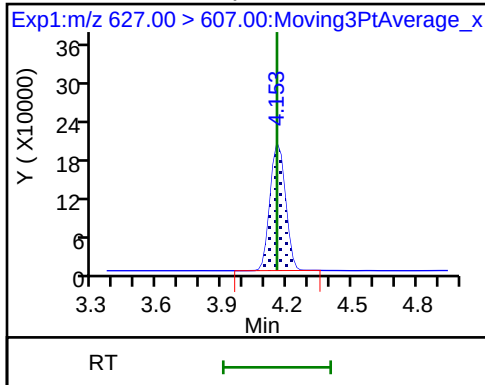
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

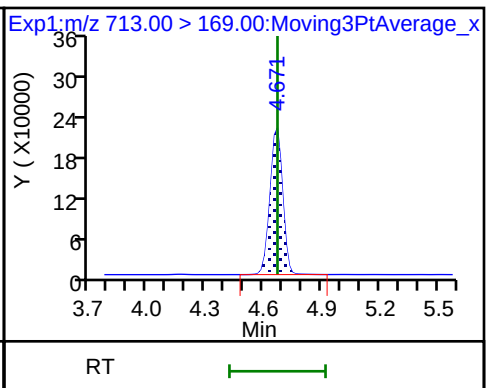
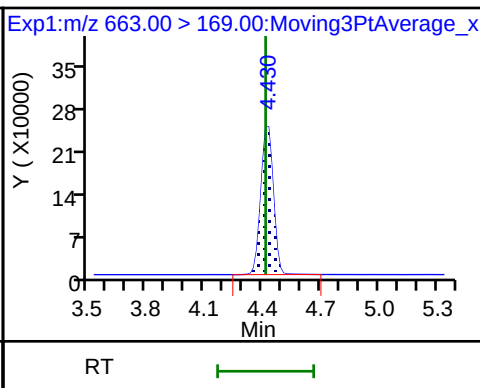
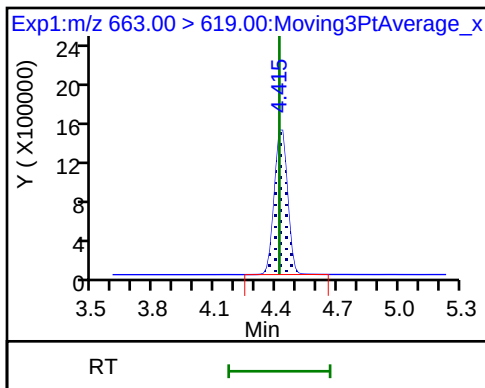
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

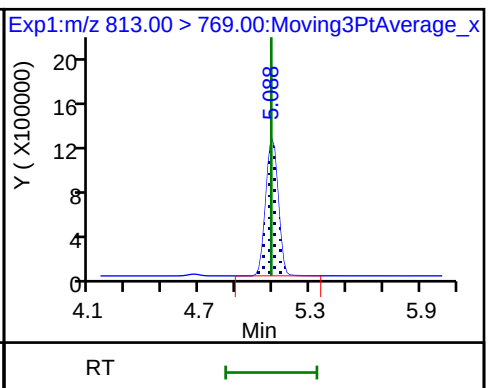
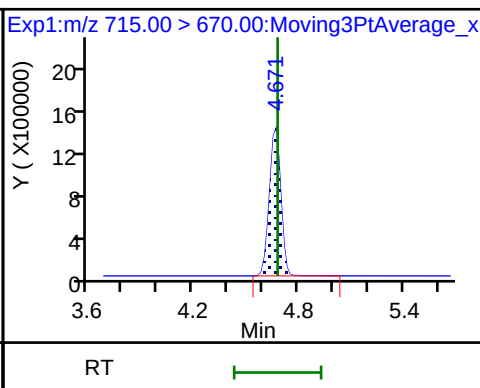
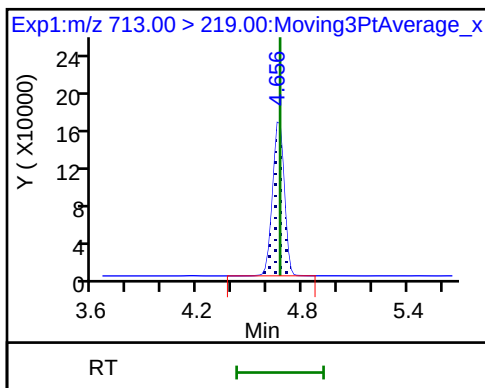
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

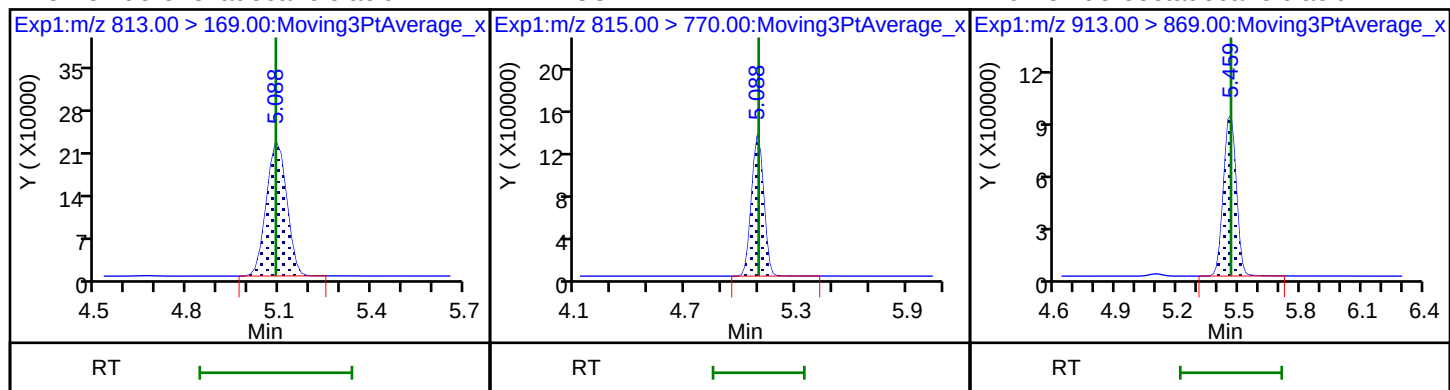
45 Perfluorohexadecanoic acid



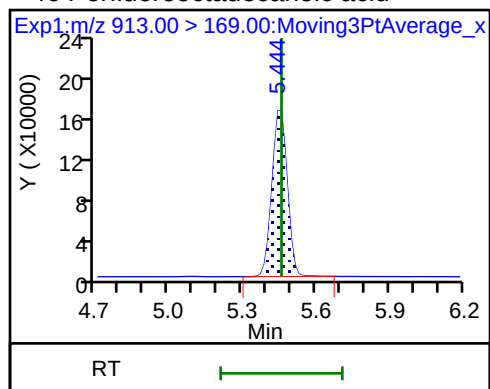
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Lab Sample ID: CCV 320-244760/12 Calibration Date: 09/10/2018 13:47

Instrument ID: A9 Calib Start Date: 08/28/2018 10:20

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05

Lab File ID: 2018.09.10LLAA_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9128	0.9364		1.03	1.00	2.6	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.014	0.9894		0.975	1.00	-2.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	105.1	108.3		0.911	0.884	3.1	50.0
4:2 FTS	AveID	21.61	20.31		0.878	0.934	-6.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9107	0.9152		1.01	1.00	0.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.87	50.66		0.953	0.938	1.6	50.0
HFPO-DA (GenX)	AveID	1.768	1.551		0.877	1.00	-12.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.020	1.115		1.09	1.00	9.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.237	1.192		0.877	0.910	-3.7	40.0
DONA	AveID	2.585	2.868		1.05	0.942	10.9	50.0
6:2 FTS	AveID	2.140	2.035		0.901	0.948	-4.9	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.076	1.052		0.978	1.00	-2.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9846	1.068		1.03	0.952	8.5	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9779	1.064		1.09	1.00	8.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.055	1.043		0.917	0.928	-1.1	40.0
F-53B Major	AveID	1.158	1.202		0.967	0.932	3.8	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	2.964	3.190		1.08	1.00	7.6	40.0
8:2 FTS	AveID	15.14	14.02		0.887	0.958	-7.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6458	0.6624		0.985	0.960	2.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.228		1.08	1.00	7.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9938	1.034		1.04	1.00	4.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8133	0.8681		1.03	0.964	6.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9299	0.9258		0.996	1.00	-0.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8971	0.9355		1.04	1.00	4.3	40.0
F-53B Minor	AveID	1.278	1.317		0.971	0.942	3.1	50.0
10:2 FTS	AveID	10.16	8.093		0.768	0.964	-20.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.008	1.078		1.07	1.00	7.0	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0930	0.0934		0.972	0.968	0.5	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8023	0.8288		1.03	1.00	3.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1614	0.1716		1.06	1.00	6.3	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1
 SDG No.: _____
 Lab Sample ID: CCV 320-244760/12 Calibration Date: 09/10/2018 13:47
 Instrument ID: A9 Calib Start Date: 08/28/2018 10:20
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 08/28/2018 11:05
 Lab File ID: 2018.09.10LLAA_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9445		1.02	1.00	2.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6377	0.6270		0.983	1.00	-1.7	50.0
13C4 PFBA	Ave	0.9623	0.8986		2.33	2.50	-6.6	50.0
13C5 PFPeA	Ave	0.8584	0.8070		2.35	2.50	-6.0	50.0
13C3-PFBS	Ave	0.0113	0.0108		2.23	2.33	-4.2	50.0
M2-4:2FTS	Ave	0.0968	0.0899		2.17	2.34	-7.2	50.0
13C2 PFHxA	Ave	0.9075	0.8607		2.37	2.50	-5.2	50.0
13C3 HFPO-DA	Ave	0.0984	0.0995		2.53	2.50	1.1	50.0
13C4-PFHpA	Ave	1.082	1.034		2.39	2.50	-4.5	50.0
18O2 PFHxS	Ave	0.6655	0.6425		2.28	2.37	-3.5	50.0
M2-6:2FTS	Ave	0.1063	0.1051		2.35	2.38	-1.1	40.0
13C4 PFOA	Ave	1.008	0.9746		2.42	2.50	-3.3	50.0
13C8 PFOA	Ave	2891770	2692208		2.28	2.45	-6.9	50.0
13C8 PFOS	Ave	513610	501194		2.33	2.39	-2.4	50.0
13C4 PFOS	Ave	0.7151	0.6928		2.32	2.39	-3.1	50.0
13C5 PFNA	Ave	0.9437	0.9146		2.42	2.50	-3.1	50.0
13C8 FOSA	Ave	0.3783	0.3572		2.36	2.50	-5.6	50.0
M2-8:2FTS	Ave	0.0156	0.0146		2.23	2.40	-6.7	40.0
13C2 PFDA	Ave	0.9426	0.9481		2.51	2.50	0.6	50.0
d3-NMeFOSAA	Ave	0.4249	0.3798		2.23	2.50	-10.6	50.0
13C2 PFUnA	Ave	0.8023	0.7628		2.38	2.50	-4.9	50.0
d5-NEtFOSAA	Ave	0.3342	0.3150		2.36	2.50	-5.8	50.0
13C2 PFDoA	Ave	0.9759	0.8909		2.28	2.50	-8.7	50.0
13C2-PFTeDA	Ave	0.7774	0.7507		2.41	2.50	-3.4	50.0
13C2-PFHxDA	Ave	0.7882	0.7666		2.43	2.50	-2.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_028.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 10-Sep-2018 13:47:21 ALS Bottle#: 13 Worklist Smp#: 12
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 08:08:06 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d

Column 1 : Det: EXP1

Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 08:08:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.504	1.504	0.0	1.000	2894730	1.03		103	98.9	
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.499	0.005	0.541	7728193	2.33		93.4	12953	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.789	0.0	1.005	2746816	0.9755		97.5	150	
D 3 13C5-PFPeA										
267.90 > 223.00	1.781	1.781	0.0	0.640	6940740	2.35		94.0	9639	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.822	0.0	1.000	3553879	0.9112		103	1343	
298.90 > 99.00	1.822	1.822	0.0	1.000	1197768		2.97(1.35-4.05)		499	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.822	0.0	0.655	86313	2.23		95.8	335	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.038	0.0	1.118	704089	0.8777		94.0	2761	
D 60 M2-4:2FTS										
329.00 > 81.00	2.038	2.038	0.0	0.732	722238	2.17		92.8	625	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.079	2.079	0.0	1.000	2709907	1.01		101	304	
313.00 > 119.00	2.079	2.079	0.0	1.000	196648		13.78(6.96-20.87)		299	
D 7 13C2 PFHxA										
315.00 > 270.00	2.079	2.079	0.0	0.747	7402196	2.37		94.8	11884	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.099	0.0	1.152	1764107	0.9528		102	2940	
349.00 > 99.00	2.099	2.099	0.0	1.152	818402		2.16(1.15-3.45)		741	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.181	0.0	1.000	531063	0.8772		87.7	188	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.181	2.181	0.0	0.784	855978	2.53		101	2364	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.413	0.0	0.867	8892598	2.39		95.5	8220	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.000	3965936	1.09		109	375	
363.00 > 169.00	2.413	2.413	0.0	1.000	832903		4.76(2.17-6.52)		1153	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	0.995	2397344	0.8765		96.3	1734	
399.00 > 99.00	2.426	2.426	0.0	0.995	681679		3.52(1.90-5.70)		491	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.439	0.0	0.877	5227546	2.28		96.5	6986	
76 DONA										
377.00 > 251.00	2.466	2.466	0.0	0.777	6440141	1.05		111	8930	
377.00 > 85.00	2.466	2.466	0.0	0.777	2643164		2.44(1.13-3.39)		937	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.767	2.767	0.0	1.000	697690	0.9014		95.1	629	
D 12 M2-6:2FTS										
429.00 > 81.00	2.767	2.767	0.0	0.994	858927	2.35		98.9	1190	
D 73 13C8 PFOA										
421.00 > 376.00	2.783	2.783	0.0		6589180	2.28		93.1	5185	
D 14 13C4 PFOA										
417.00 > 372.00	2.783	2.783	0.0	1.000	8382279	2.42		96.7	7317	
* 62 13C2-PFOA										
415.00 > 370.00	2.783	2.783	0.0		8600686	2.50			6891	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.783	2.783	0.0	1.000	3529795	0.9782		97.7	213	
413.00 > 169.00	2.783	2.783	0.0	1.000	1232648		2.86(1.36-4.08)		1094	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.799	2.799	0.0	0.882	2422965	1.03		108	2904	
449.00 > 99.00	2.799	2.799	0.0	0.882	604843		4.01(1.84-5.53)		1361	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.173	3.173	0.0	1.000	2307007	0.9173		98.9	1530	
499.00 > 99.00	3.173	3.173	0.0	1.000	525893		4.39(2.04-6.12)		950	
20 Perfluorononanoic acid										
463.00 > 419.00	3.173	3.173	0.0	1.000	3348901	1.09		109	322	
463.00 > 169.00	3.173	3.173	0.0	1.000	591266		5.66(2.68-8.03)		895	
D 19 13C5 PFNA										
468.00 > 423.00	3.173	3.173	0.0	1.140	7866318	2.42		96.9	8883	
D 18 13C4 PFOS										
503.00 > 80.00	3.173	3.173	0.0	1.140	5696497	2.32		96.9	3907	
D 72 13C8 PFOS										
507.00 > 99.00	3.155	3.173	-0.018		1197853	2.33		97.6	2767	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.369	3.369	0.0	1.062	2670000	0.9673		104	2793	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.498	3.498	0.0	1.000	3919811	1.08		108	3846	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.498	3.498	0.0	1.257	3072376	2.36		94.4	6313	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.514	3.514	0.0	1.000	674007	0.8870		92.6	2098	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.514	3.514	0.0	1.108	1515695	0.9846		103	1752	
549.00 > 99.00	3.514	3.514	0.0	1.108	236467		6.41(3.02-9.05)		1537	
D 23 13C2 PFDA										
515.00 > 470.00	3.530	3.529	0.001	1.268	8154271	2.51		101	6246	
D 26 M2-8:2FTS										
529.00 > 81.00	3.514	3.529	-0.015	1.263	120218	2.23		93.3	495	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.530	3.530	0.0	1.000	4004150	1.08		108	553	
513.00 > 169.00	3.530	3.530	0.0	1.000	232719		17.21(7.12-21.35)		285	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.685	3.685	0.0	1.324	3266671	2.23		89.4	3108	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.685	3.685	0.0	1.000	1350517	1.04		104	412	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.842	3.842	0.0	1.211	1994694	1.03		107	2258	
599.00 > 99.00	3.842	3.842	0.0	1.211	408594		4.88(2.14-6.43)		1106	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.857	3.857	0.0	1.386	2709383	2.36		94.2	2295	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.857	3.857	0.0	1.000	1003348	1.00		99.6	1473	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.857	3.857	0.0	1.000	2455109	1.04		104	472	
563.00 > 169.00	3.857	3.857	0.0	1.000	235598		10.42(5.24-15.72)		799	
D 30 13C2 PFUnA										
565.00 > 520.00	3.857	3.872	-0.015	1.386	6560746	2.38		95.1	10013	
35 MeFOSA										
512.00 > 169.00	3.978	3.978	0.0		666433	NC			808	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.010	4.010	0.0	1.264	2957816	0.9708		103	4197	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.160	4.160	0.0	1.000	3304851	1.07		107	695	
613.00 > 169.00	4.160	4.160	0.0	1.000	347838		9.50(4.68-14.05)		830	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.160	4.160	0.0	1.184	391589	0.7681		79.7	1097	
D 36 13C2 PFDaA										
615.00 > 570.00	4.160	4.160	0.0	1.495	7662018	2.28		91.3	6991	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.179	4.179	0.0		683872	NC			429	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.391	4.391	0.0	1.384	215439	0.9724		100	627	
699.00 > 99.00	4.391	4.391	0.0	1.384	371131		0.58(0.28-0.83)		1442	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.422	4.422	0.0	1.063	2540102	1.03		103	944	
663.00 > 169.00	4.422	4.422	0.0	1.063	429346		5.92(3.09-9.27)		809	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.665	4.665	0.0	1.000	443215	1.06		106	1288	
713.00 > 219.00	4.665	4.665	0.0	1.000	296036		1.50(0.70-2.09)		1270	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.665	4.680	-0.015	1.676	6456324	2.41		96.6	8716	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.079	5.079	0.0	1.000	2490856	1.02		102	630	
813.00 > 169.00	5.079	5.079	0.0	1.000	461112		5.40(2.77-8.32)		987	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.079	5.096	-0.017	1.825	6593359	2.43		97.3	6475	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.437	5.437	0.0	1.070	1653570	0.9832		98.3	610	
913.00 > 169.00	5.437	5.437	0.0	1.070	303361		5.45(2.55-7.64)		1534	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_028.d

Injection Date: 10-Sep-2018 13:47:21

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 12

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

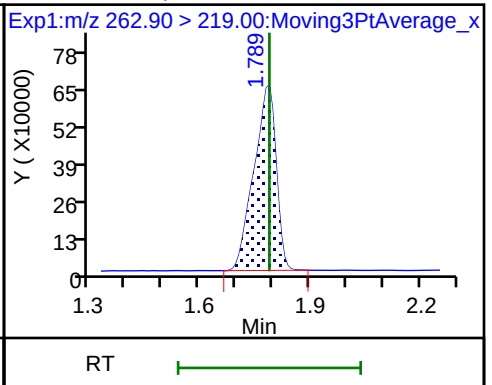
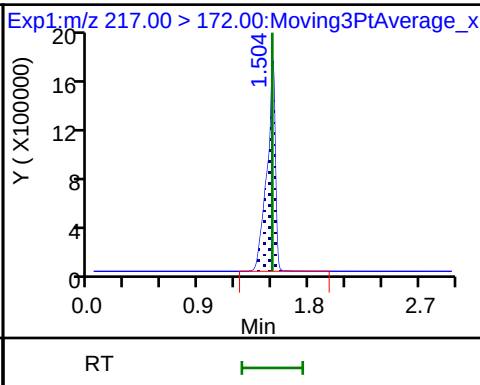
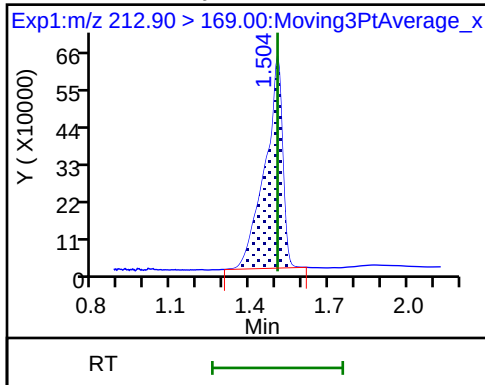
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

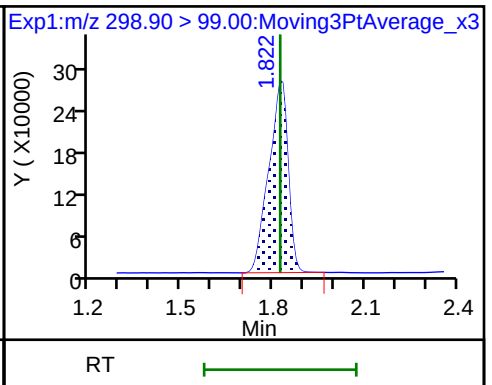
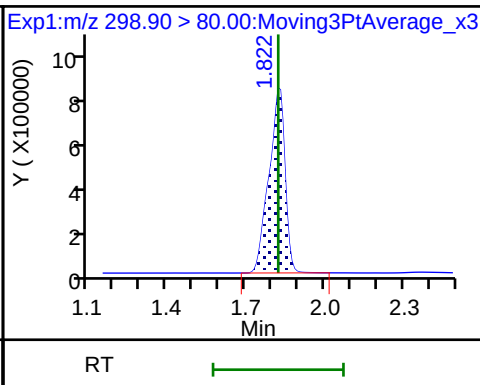
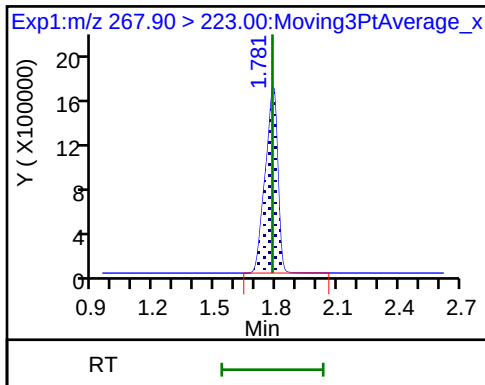
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

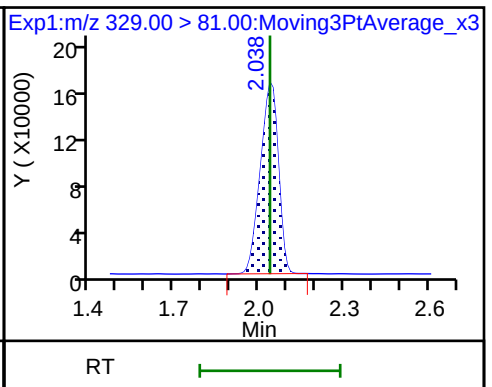
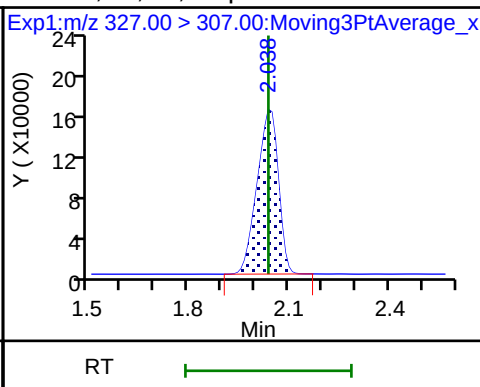
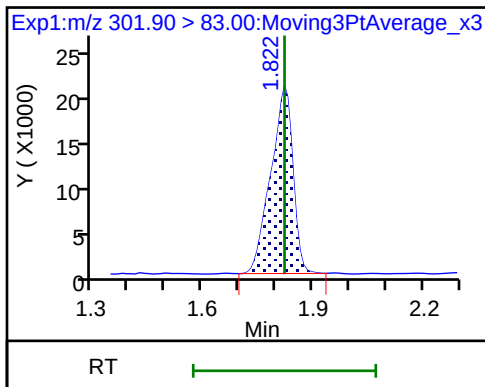
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

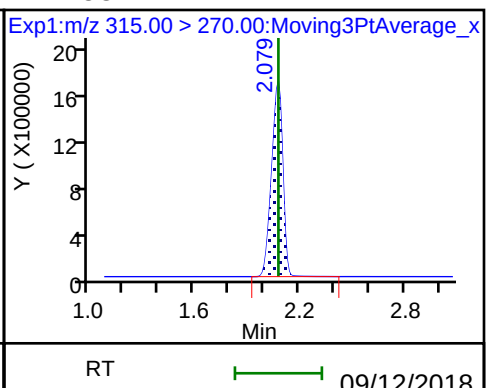
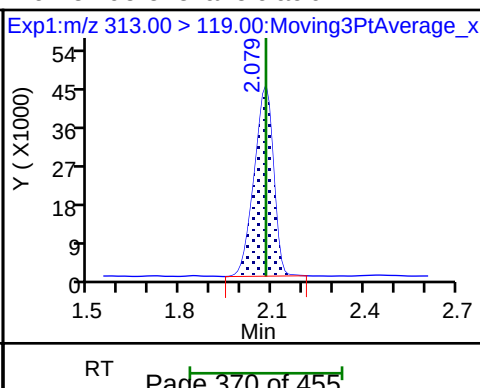
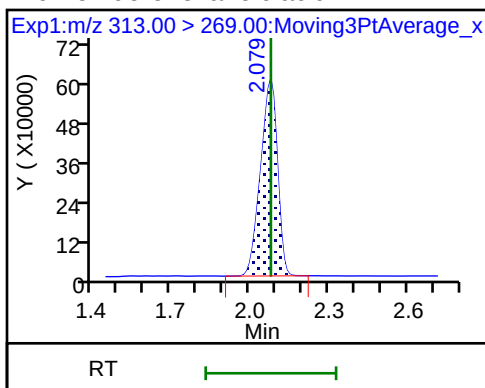
D 60 M2-4:2FTS

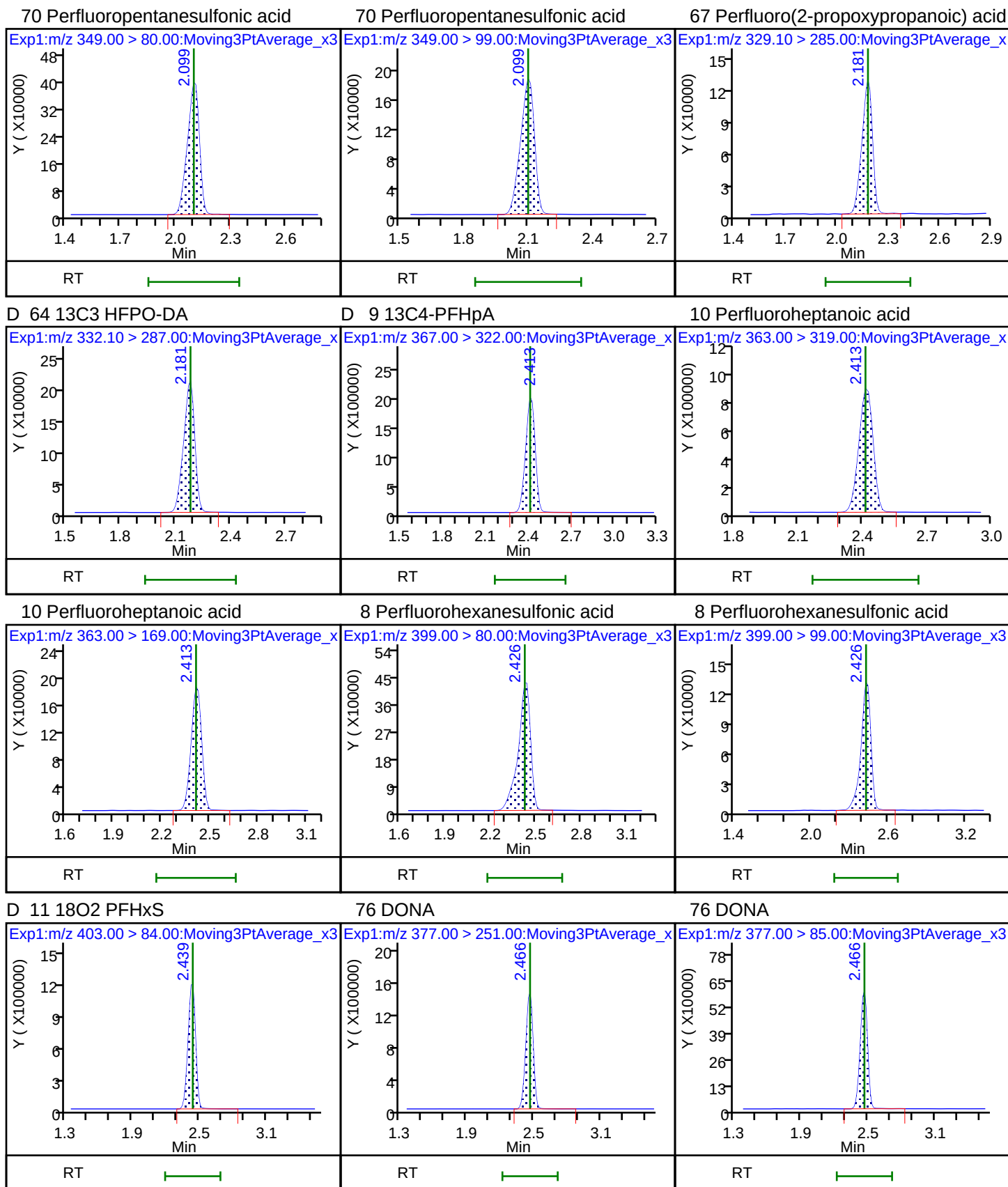


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

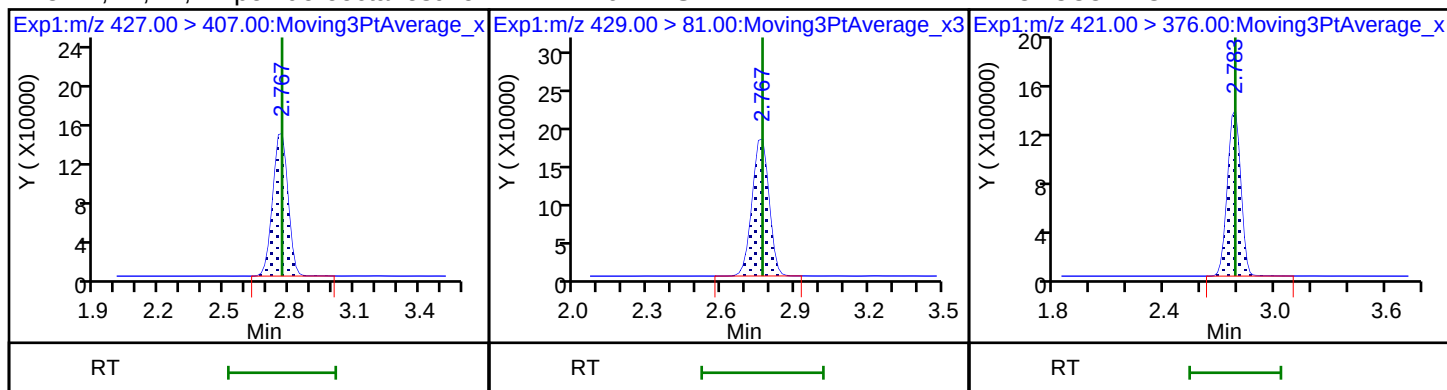
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

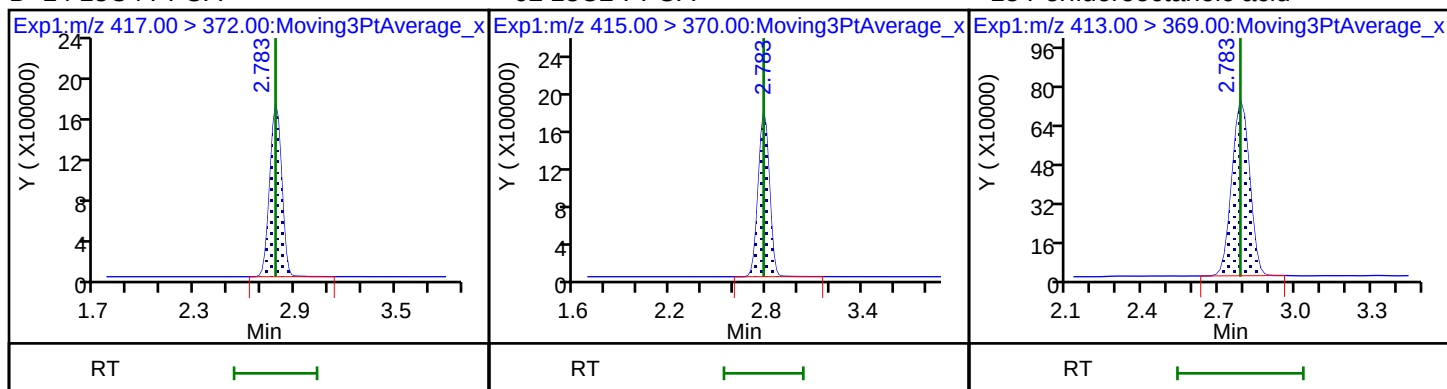
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

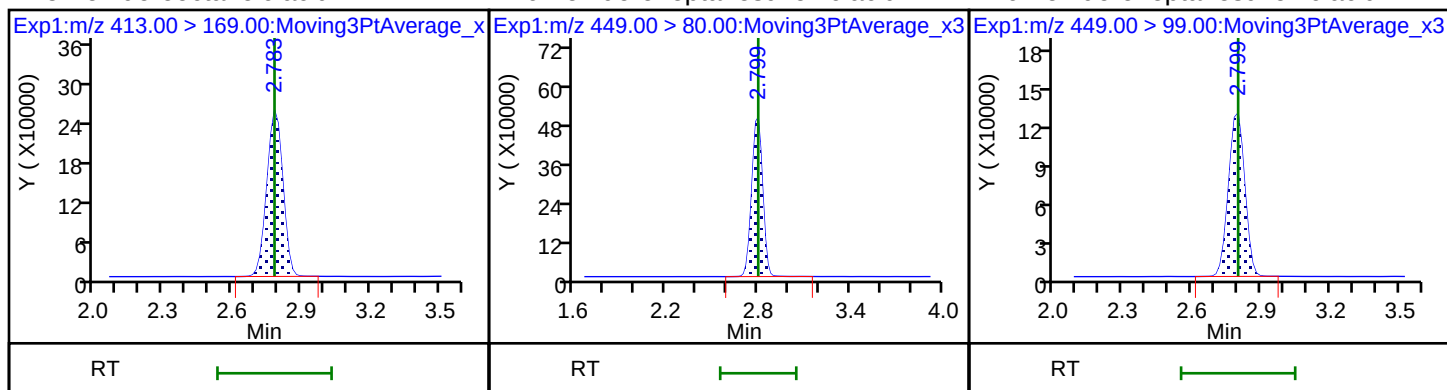
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

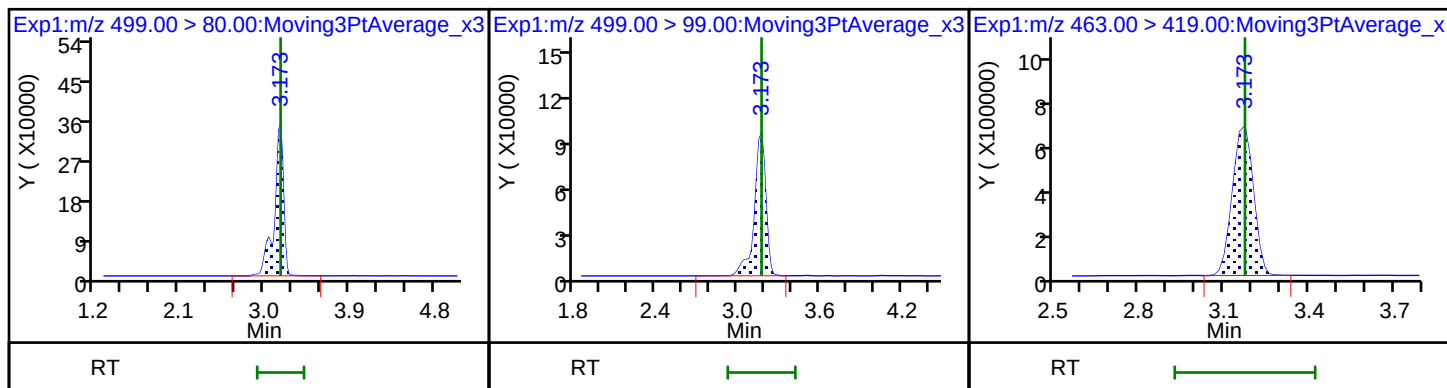
16 Perfluoroheptanesulfonic acid

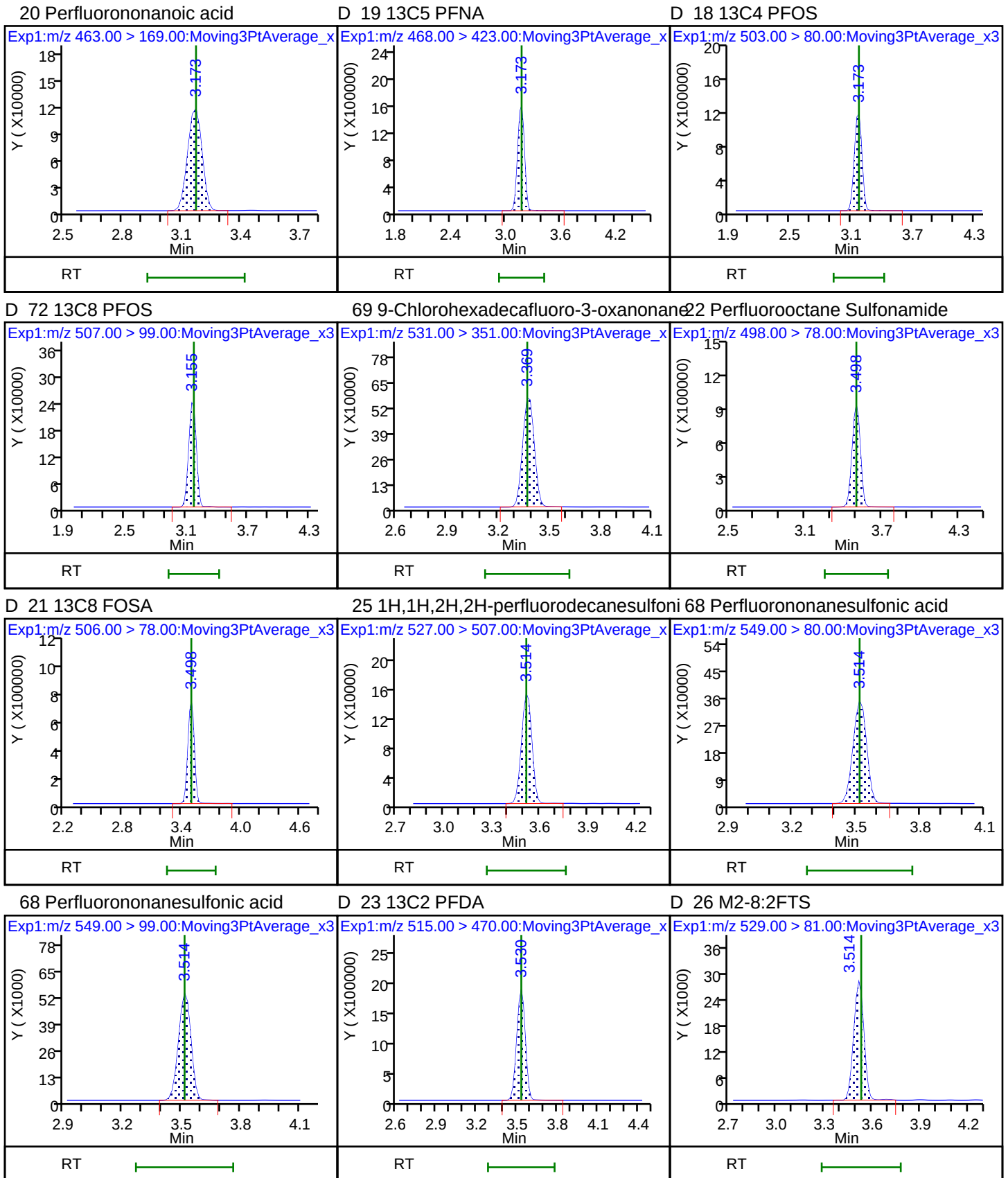


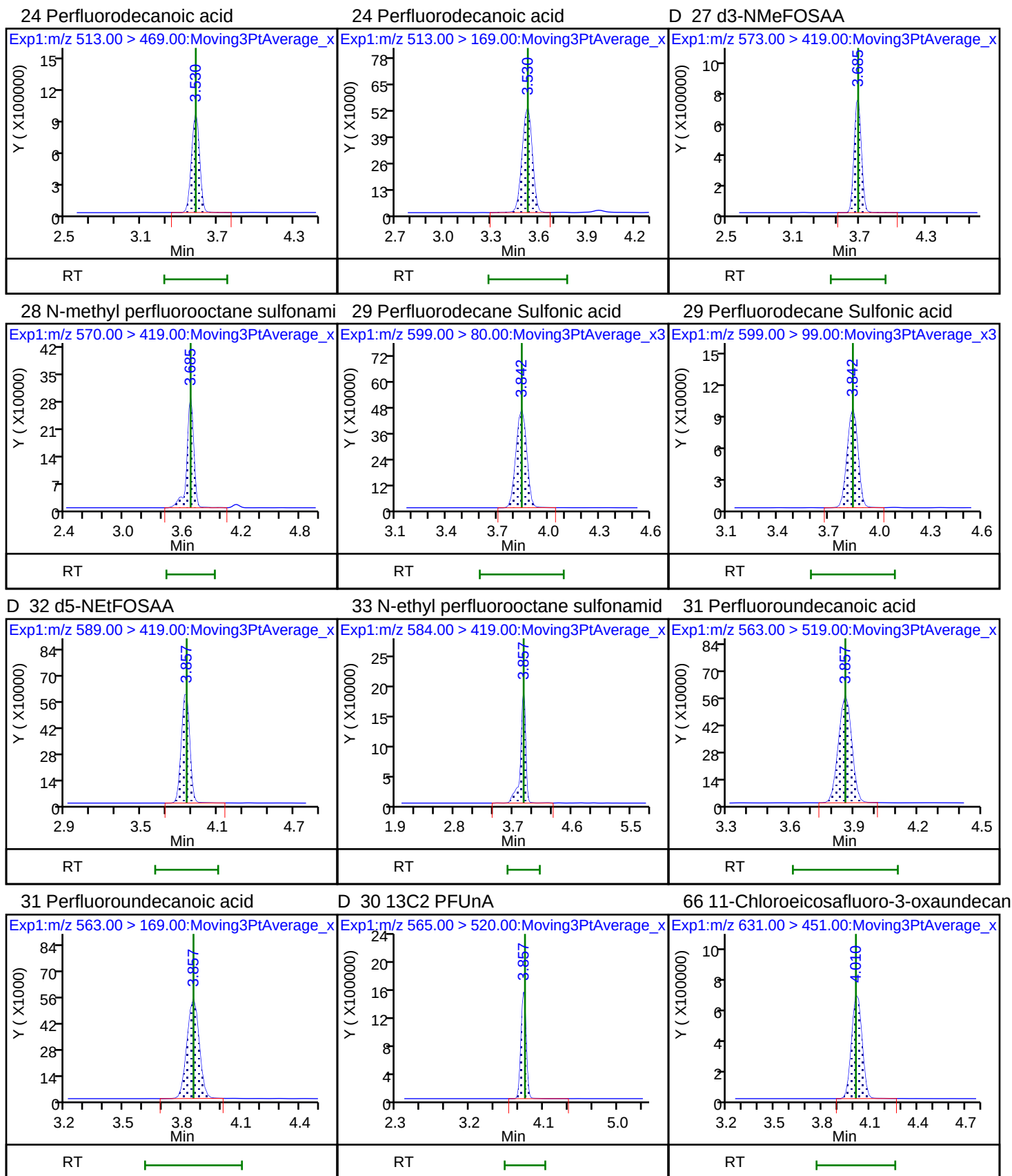
17 Perfluorooctane sulfonic acid

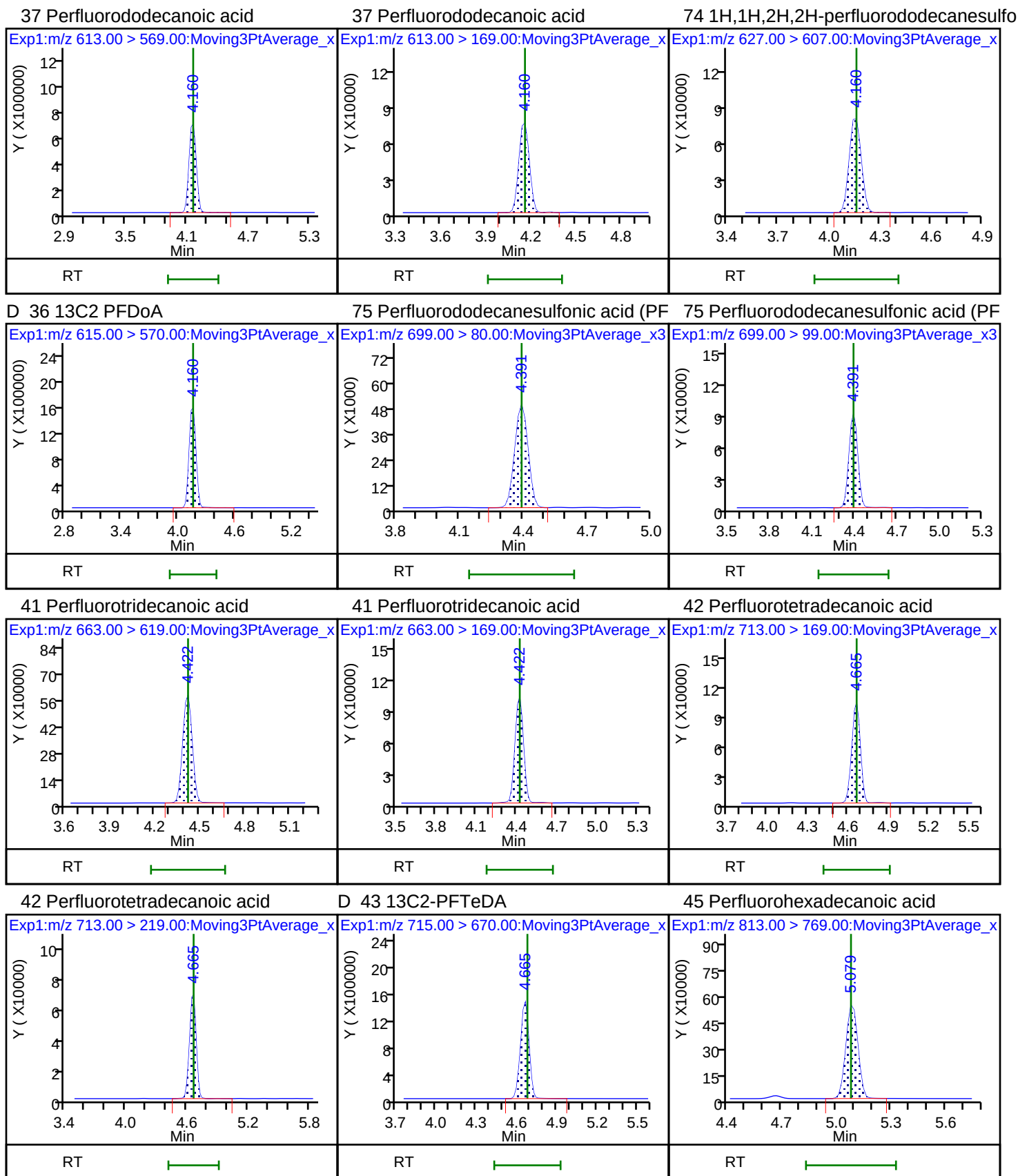
17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid





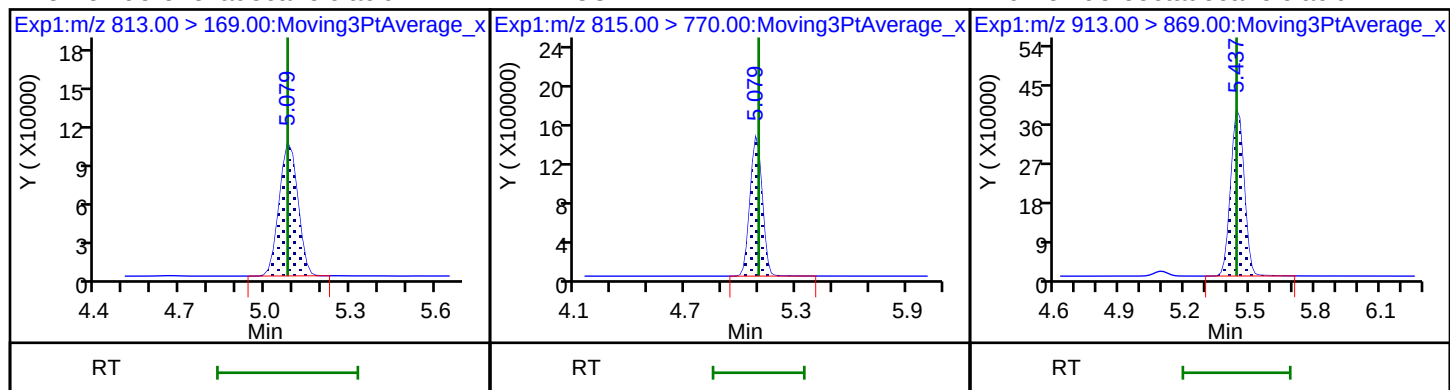




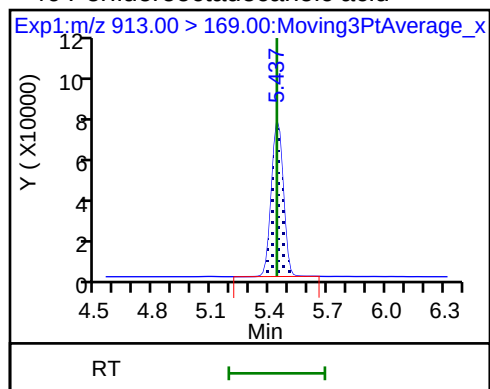
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-244587/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_007.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>09/10/2018 10:32</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	ND		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	ND		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	ND		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.334	J	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	ND		20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-244587/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_007.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>09/10/2018 10:32</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	95		25-150
STL01893	13C5 PFPeA	91		25-150
STL00993	13C2 PFHxA	95		25-150
STL01892	13C4-PFHpA	93		25-150
STL00990	13C4 PFOA	97		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	103		25-150
STL00997	13C2 PFUnA	99		25-150
STL00998	13C2 PFDoA	88		25-150
STL02116	13C2-PFTeDA	93		25-150
STL02337	13C3-PFBS	95		25-150
STL00994	18O2 PFHxS	94		25-150
STL00991	13C4 PFOS	102		25-150
STL01056	13C8 FOSA	92		25-150
STL02118	d3-NMeFOSAA	94		25-150
STL02117	d5-NEtFOSAA	100		25-150
STL02279	M2-6:2FTS	104		25-150
STL02280	M2-8:2FTS	103		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_007.d
 Lims ID: MB 320-244587/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 10-Sep-2018 10:32:13 ALS Bottle#: 1 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: MB 320-244587/1-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 07:38:47 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 07:38:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.505	1.505	-0.001	0.534	7802887	2.37		94.7	17785	
D 3 13C5-PFPeA										
267.90 > 223.00	1.797	1.791	0.006	0.639	6722850	2.29		91.5	12630	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.791	-0.002	0.995	12050	0.004418			1.2	
D 47 13C3-PFBS										
301.90 > 83.00	1.831	1.832	-0.001	0.650	85615	2.22		95.4	684	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	2.060	-0.114	0.691	1817	0.005479		0.0	1.6	
D 7 13C2 PFHxA										
315.00 > 270.00	2.099	2.091	0.009	0.746	7376618	2.37		95.0	13732	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.202	2.193	0.009	0.782	722400	2.14		85.8	2475	
D 9 13C4-PFHpA										
367.00 > 322.00	2.440	2.441	-0.001	0.867	8636670	2.33		93.2	8365	
D 11 18O2 PFHxS										
403.00 > 84.00	2.466	2.454	0.012	0.876	5084359	2.23		94.3	11208	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.466	2.454	0.012	1.000	22213	0.008350			31.9	
399.00 > 99.00	2.466	2.454	0.012	1.000	6222		3.57(1.90-5.70)		10.2	
D 12 M2-6:2FTS										
429.00 > 81.00	2.799	2.784	0.015	0.994	899472	2.47		104	1305	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.799	2.784	0.015	1.000	3615	0.004460			2.9	
D 73 13C8 PFOA										
421.00 > 376.00	2.815	2.816	-0.001		8271	0.002860		0.0	46.3	
D 14 13C4 PFOA										
417.00 > 372.00	2.815	2.816	-0.001	1.000	8276642	2.43		97.1	10552	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.815	2.816	-0.001		8560271	2.50			10021	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.831	2.816	0.015	1.006	15800	0.004381			1.2	
413.00 > 169.00	2.831	2.816	0.015	1.006	4964		3.18(1.36-4.08)		9.1	
D 18 13C4 PFOS										
503.00 > 80.00	3.209	3.210	-0.001	1.140	5980267	2.44		102	5033	
D 19 13C5 PFNA										
468.00 > 423.00	3.209	3.210	-0.001	1.140	8131633	2.52		101	8884	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.209	3.210	-0.001	1.000	12119	0.004590			11.4	M
499.00 > 99.00	3.209	3.210	-0.001	1.000	4768		2.54(2.04-6.12)		25.0	M
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.418	3.419	-0.001	1.065	1855	0.000640			5.6	
D 21 13C8 FOSA										
506.00 > 78.00	3.498	3.499	-0.001	1.243	2980011	2.30		92.0	4892	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.498	3.499	-0.001	1.000	5748	0.001627			10.5	
D 26 M2-8:2FTS										
529.00 > 81.00	3.558	3.558	0.0	1.264	131692	2.46		103	590	
D 23 13C2 PFDA										
515.00 > 470.00	3.573	3.573	0.0	1.269	8342307	2.58		103	8486	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.731	3.732	-0.001	1.326	3419716	2.35		94.0	5641	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.715	3.732	-0.017	0.996	8677	0.006383			4.7	
D 30 13C2 PFUnA										
565.00 > 520.00	3.900	3.901	-0.001	1.386	6831179	2.49		99.5	6865	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.886	3.901	-0.015	1.381	2857296	2.50		99.9	3281	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.900	3.901	-0.001	1.004	9200	0.008657			23.2	M
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.900	3.901	-0.001	1.000	21409	0.008733			5.0	
563.00 > 169.00	3.900	3.901	-0.001	1.000	2200		9.73(5.24-15.72)		11.1	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.059	4.060	-0.001	1.265	8140	0.002545			22.1	
D 36 13C2 PFDaA										
615.00 > 570.00	4.197	4.216	-0.019	1.491	7318290	2.19		87.6	5397	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.215	4.216	-0.001	1.004	17187	0.005825			5.1	
613.00 > 169.00	4.215	4.216	-0.001	1.004	2930		5.87(4.68-14.05)		5.1	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.468	4.484	-0.016	1.065	13086	0.005572			7.1	
663.00 > 169.00	4.468	4.484	-0.016	1.065	2281		5.74(3.09-9.27)		7.3	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.723	4.727	-0.004	1.678	6163975	2.32		92.6	9500	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.723	4.727	-0.004	1.000	2446	0.006145			9.5	
713.00 > 219.00	4.708	4.727	-0.019	0.997	3109		0.79(0.70-2.09)		9.5	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.160	5.164	-0.004	1.833	5892470	2.18		87.3	6568	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.160	5.164	-0.004	1.000	58451	0.002020			21.3	
813.00 > 169.00	5.160	5.164	-0.004	1.000	11229		5.21(2.77-8.32)		35.4	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_007.d

Injection Date: 10-Sep-2018 10:32:13

Instrument ID: A9

Lims ID: MB 320-244587/1-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 1

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

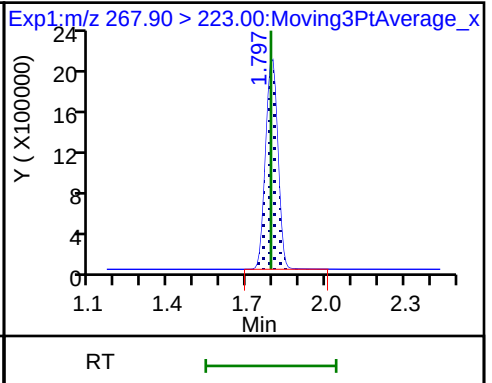
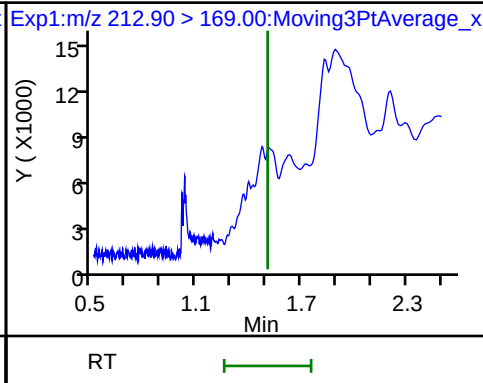
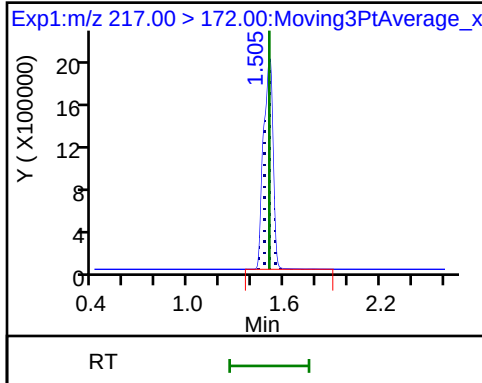
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (ND)

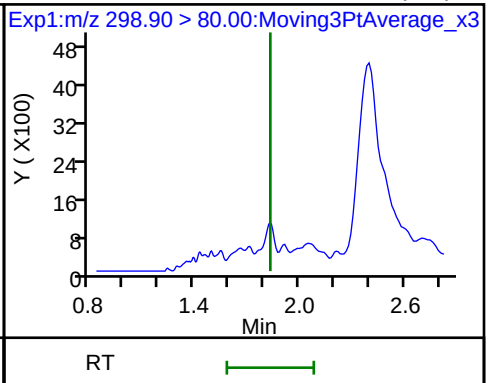
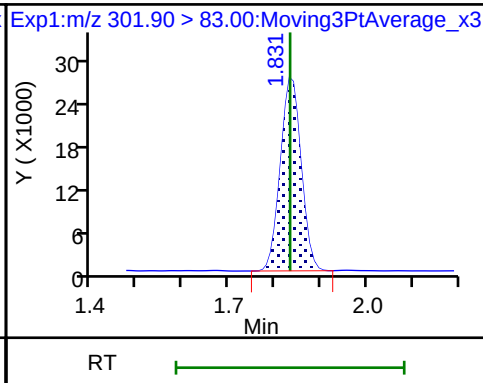
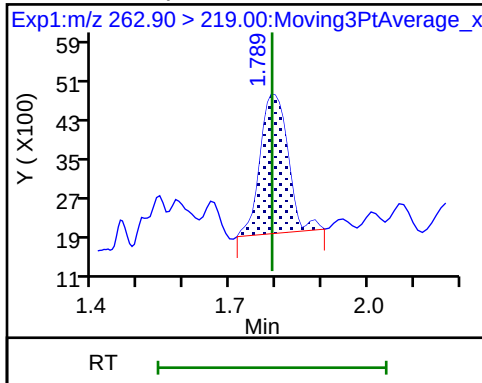
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

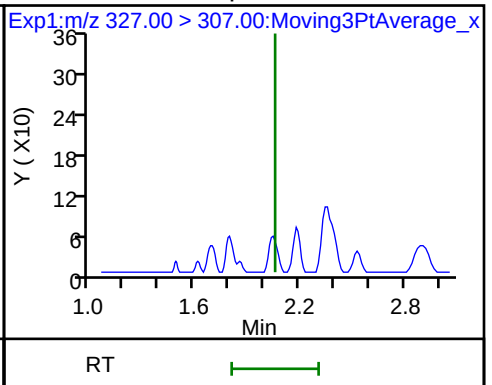
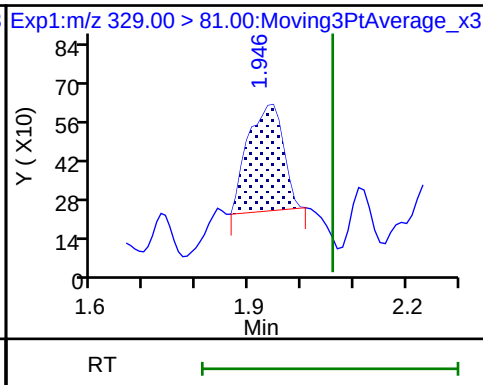
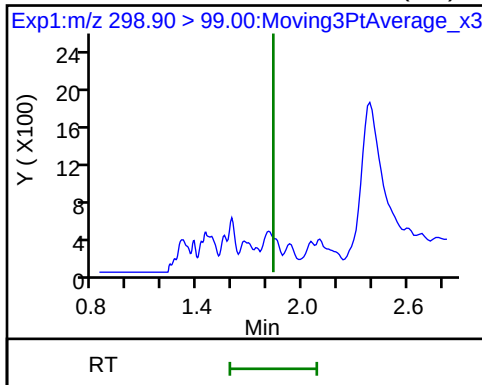
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 60 M2-4:2FTS

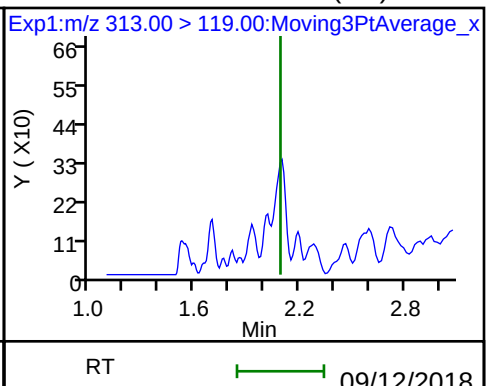
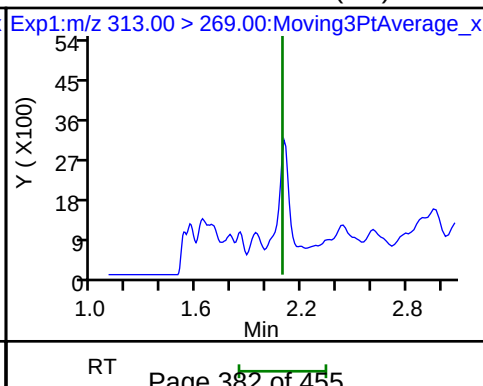
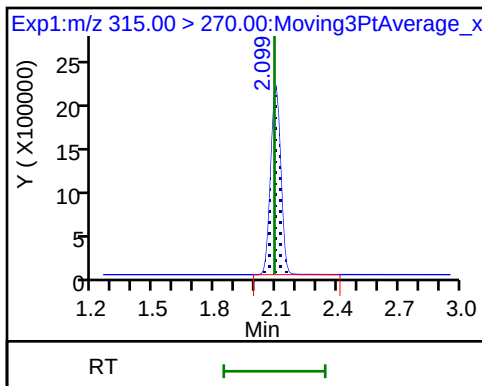
61 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



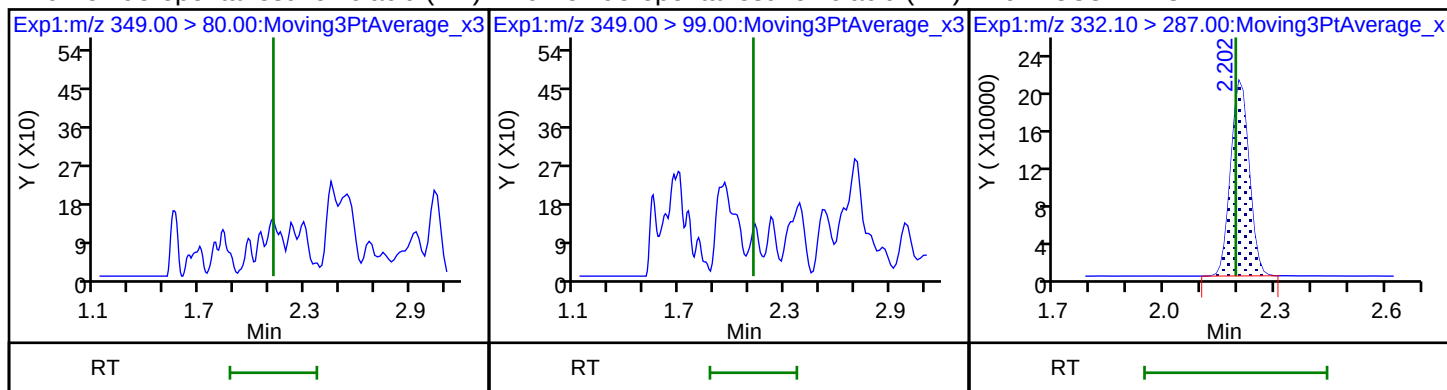
D 7 13C2 PFHxA

6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)

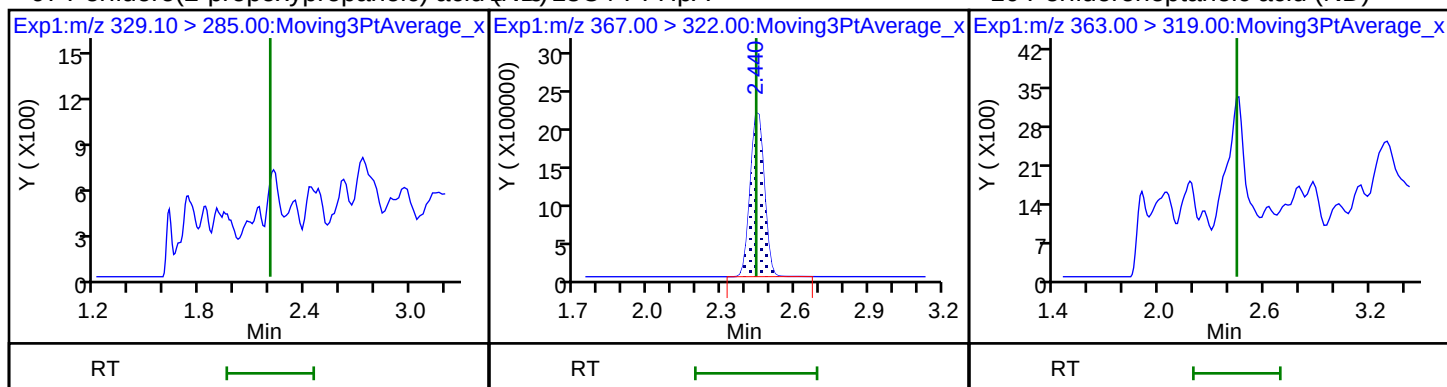


70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid (ND) 13C4-PFHpA

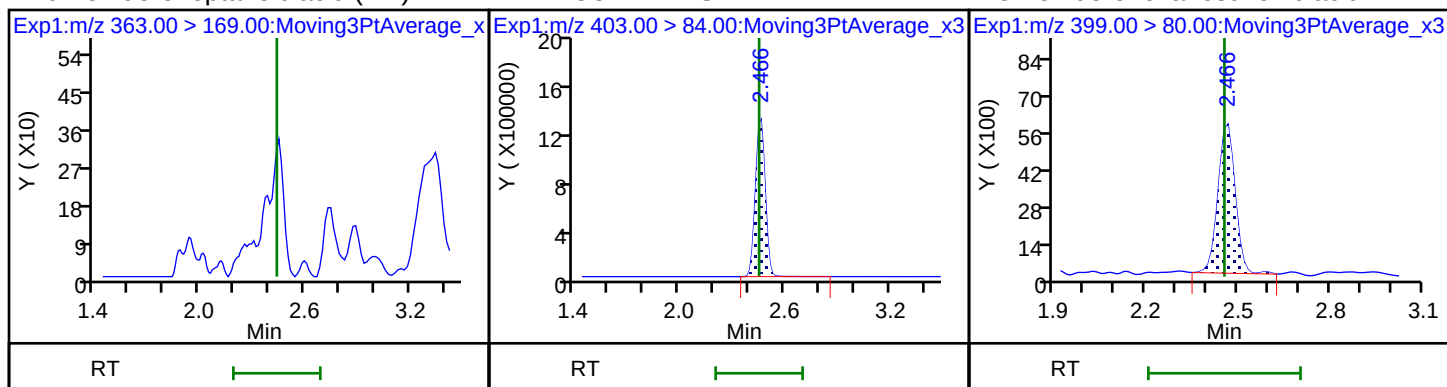
10 Perfluoroheptanoic acid (ND)



10 Perfluoroheptanoic acid (ND)

D 11 18O2 PFHxS

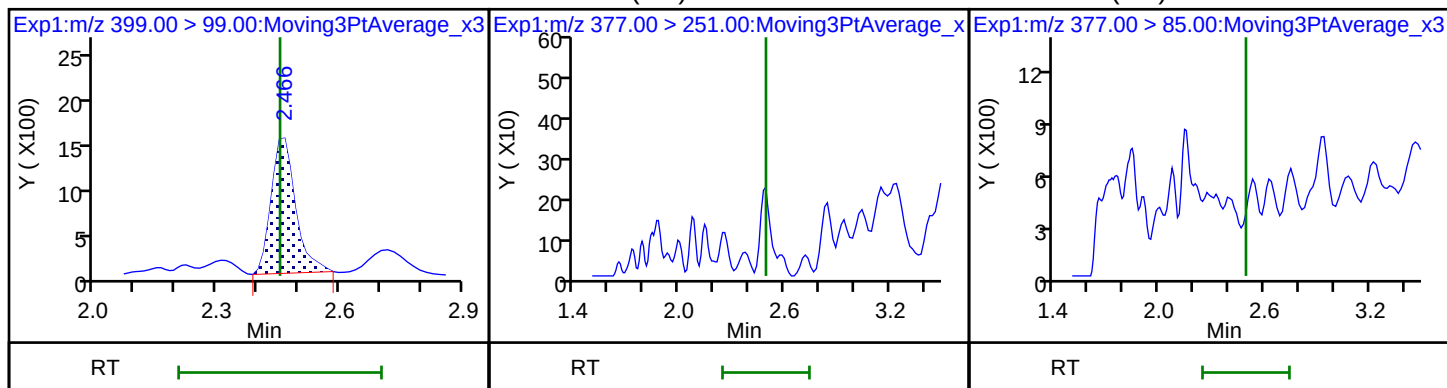
8 Perfluorohexanesulfonic acid



8 Perfluorohexanesulfonic acid

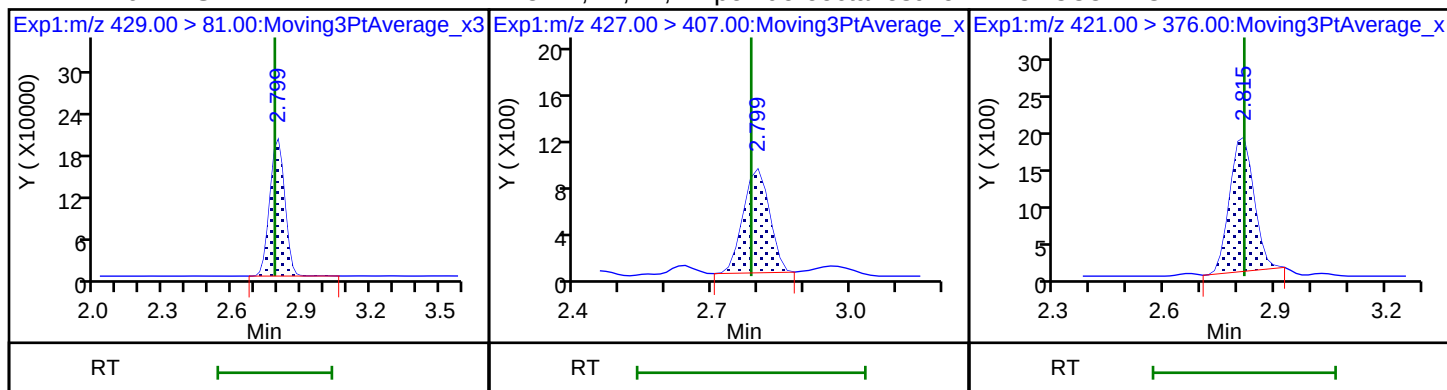
76 DONA (ND)

76 DONA (ND)



D 12 M2-6:2FTS

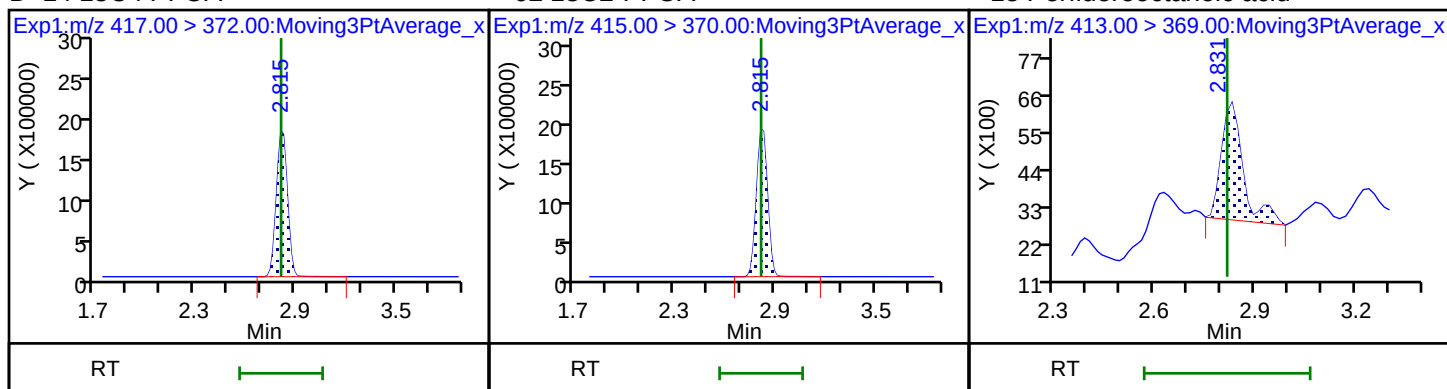
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

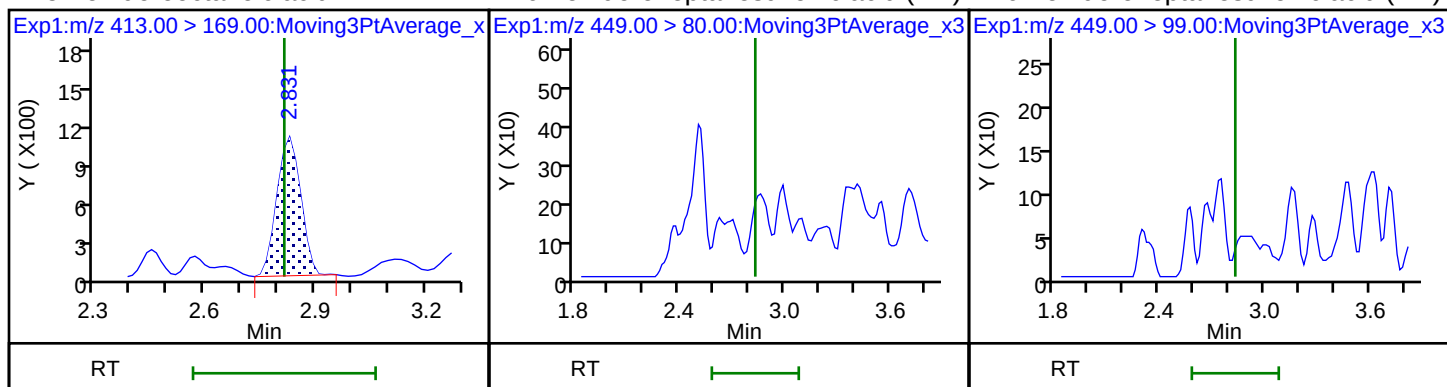
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid (ND)

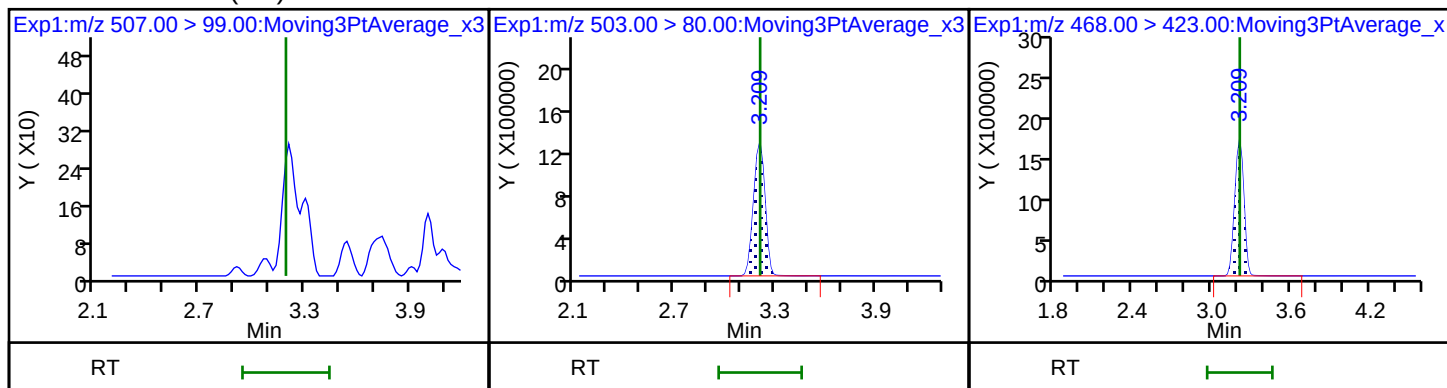
16 Perfluoroheptanesulfonic acid (ND)

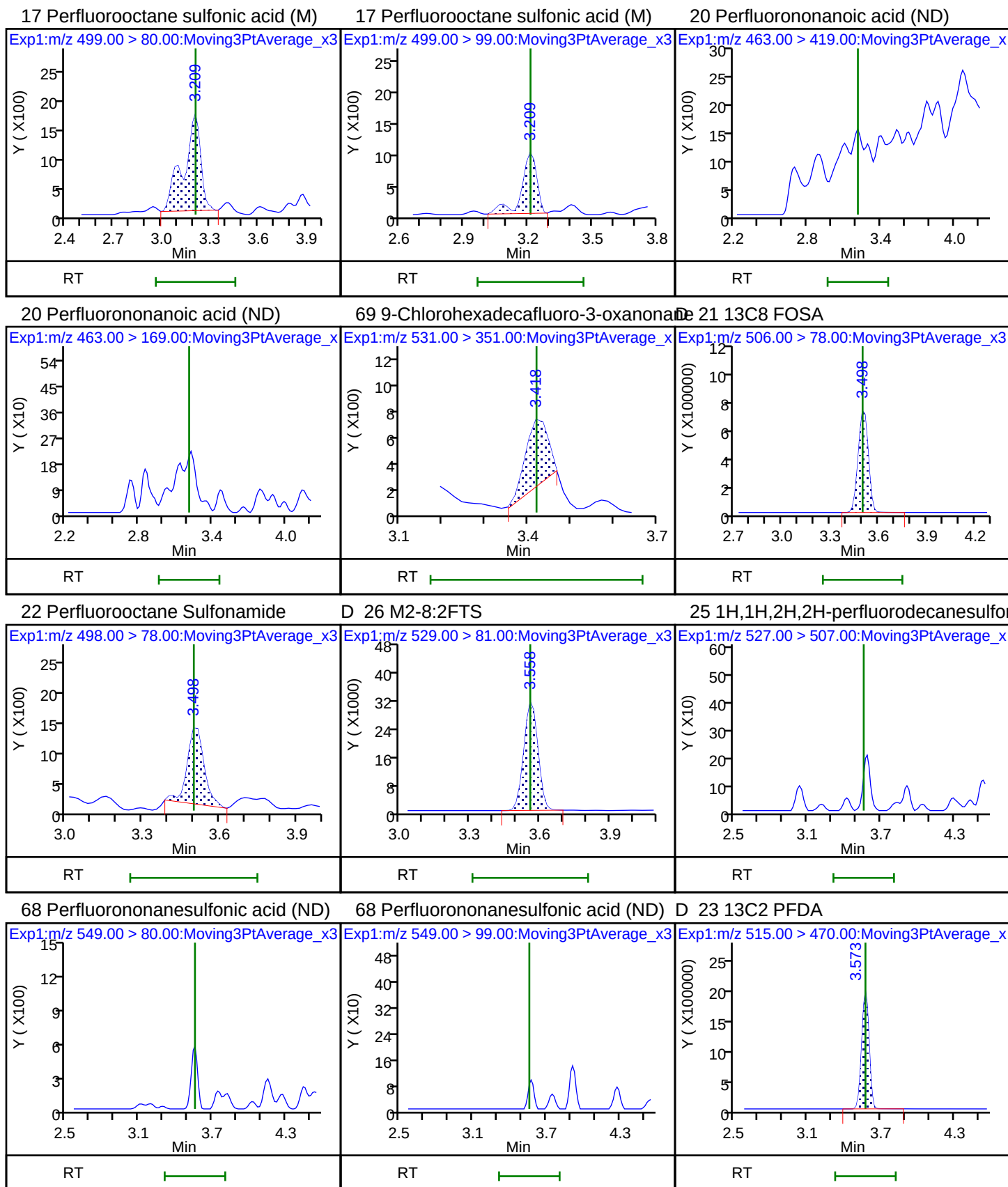


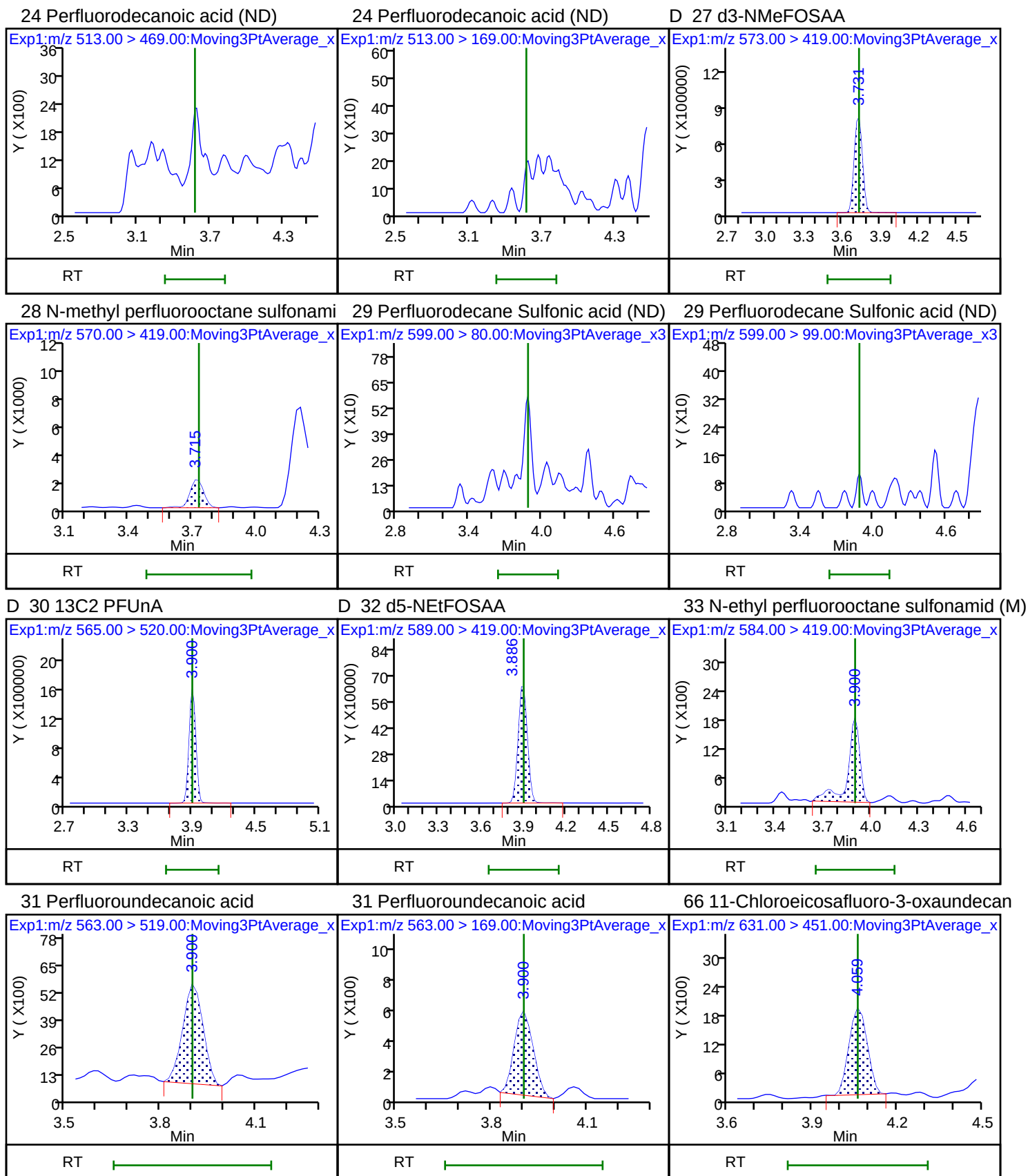
D 72 13C8 PFOS (ND)

D 18 13C4 PFOS

D 19 13C5 PFNA



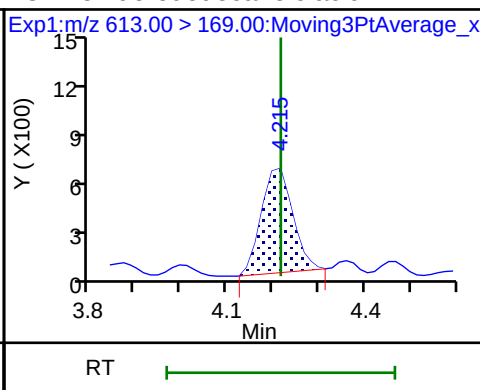
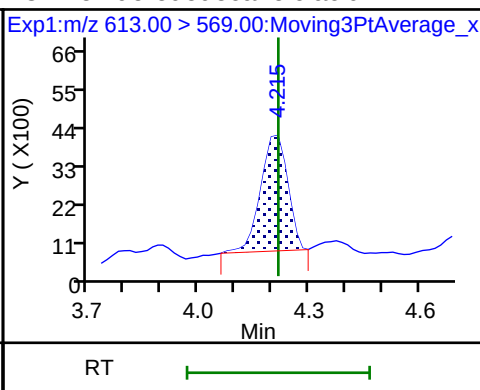
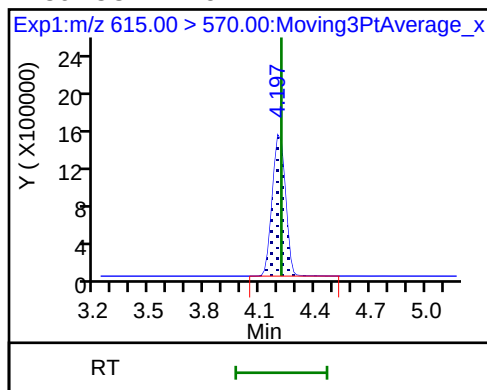




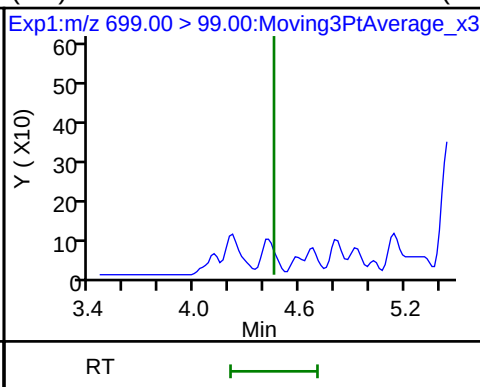
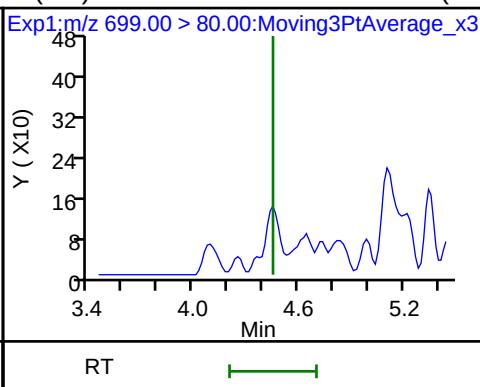
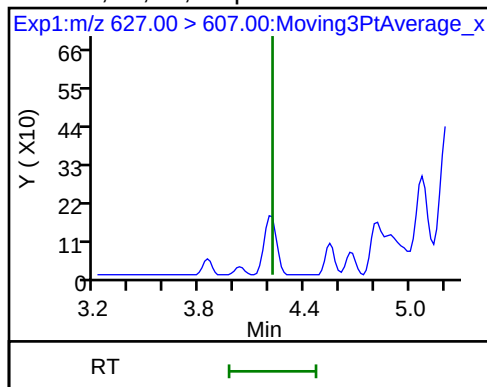
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



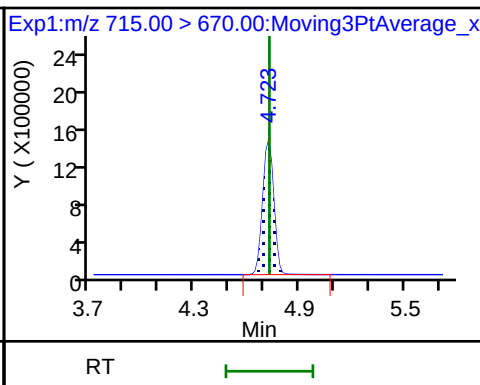
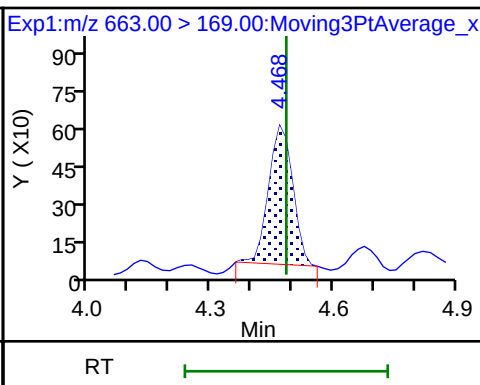
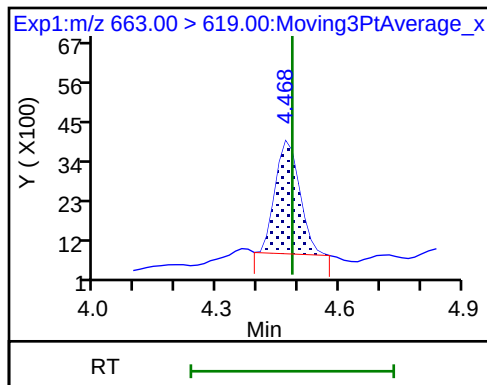
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

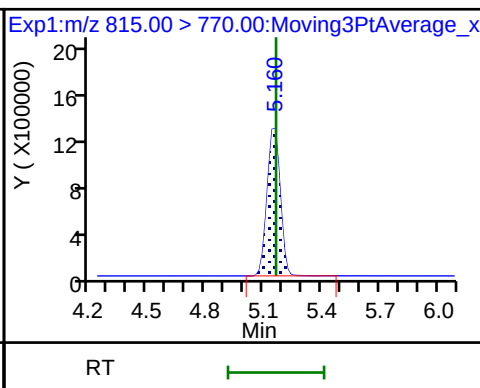
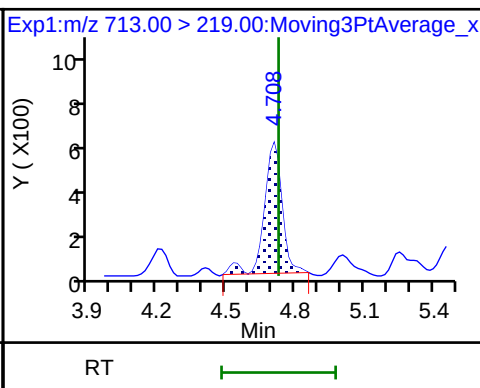
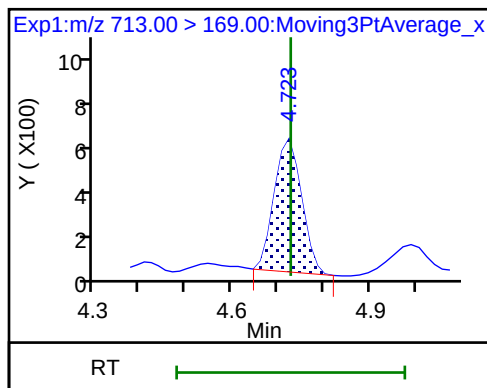
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

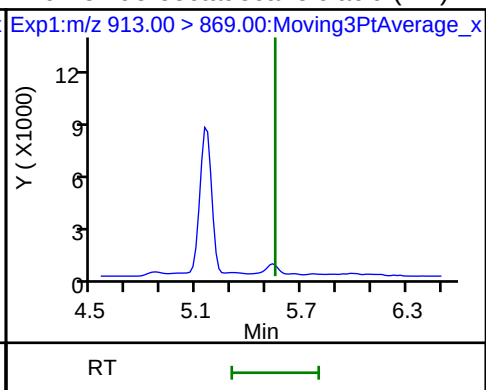
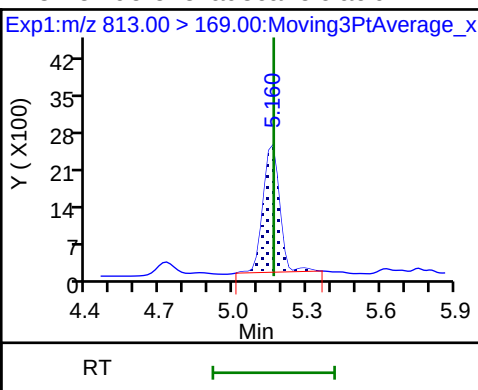
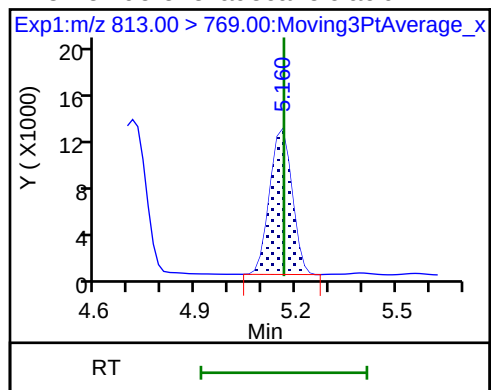
D 44 13C2-PFHxDA



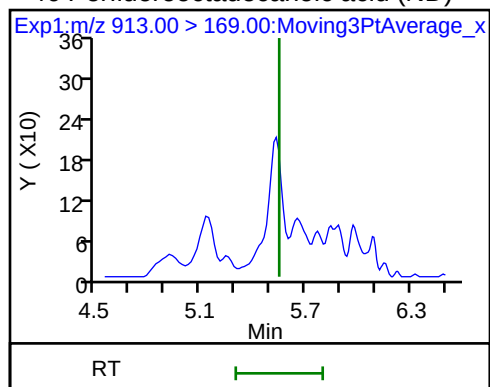
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



TestAmerica Sacramento

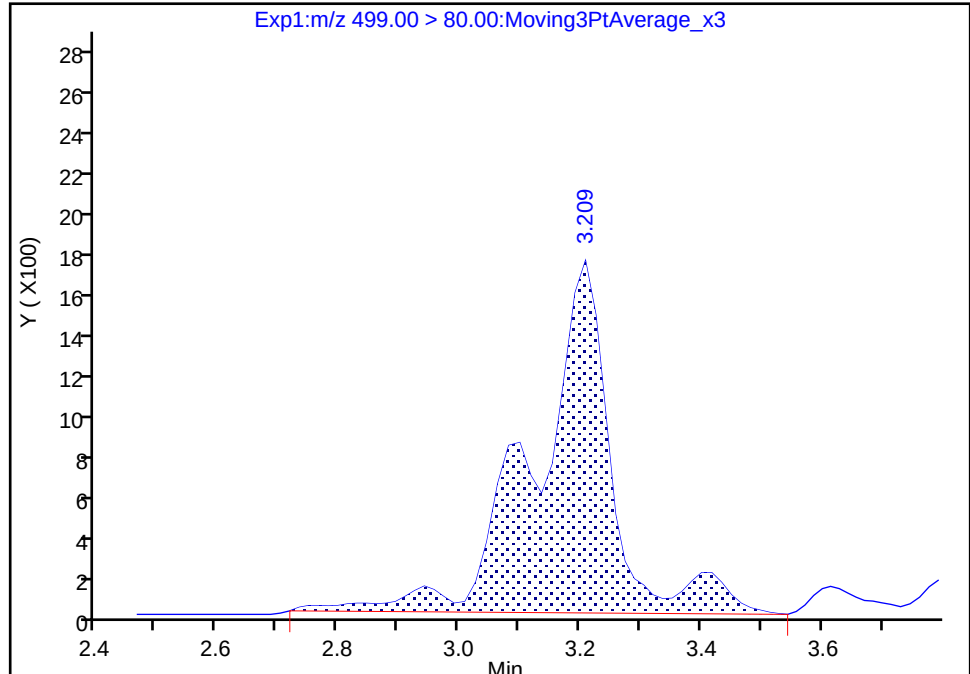
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_007.d
Injection Date: 10-Sep-2018 10:32:13 Instrument ID: A9
Lims ID: MB 320-244587/1-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

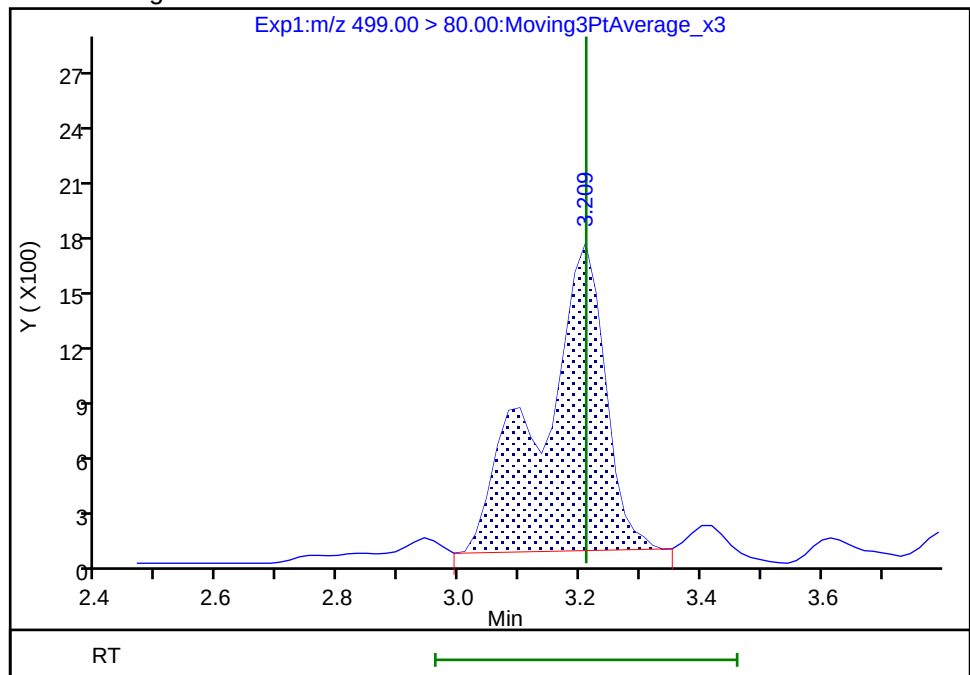
RT: 3.21
Area: 15210
Amount: 0.005761
Amount Units: ng/ml

Processing Integration Results



RT: 3.21
Area: 12119
Amount: 0.004590
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:37:12
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 389 of 455

09/12/2018

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_007.d

Injection Date: 10-Sep-2018 10:32:13

Instrument ID: A9

Lims ID: MB 320-244587/1-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

1

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

Detector

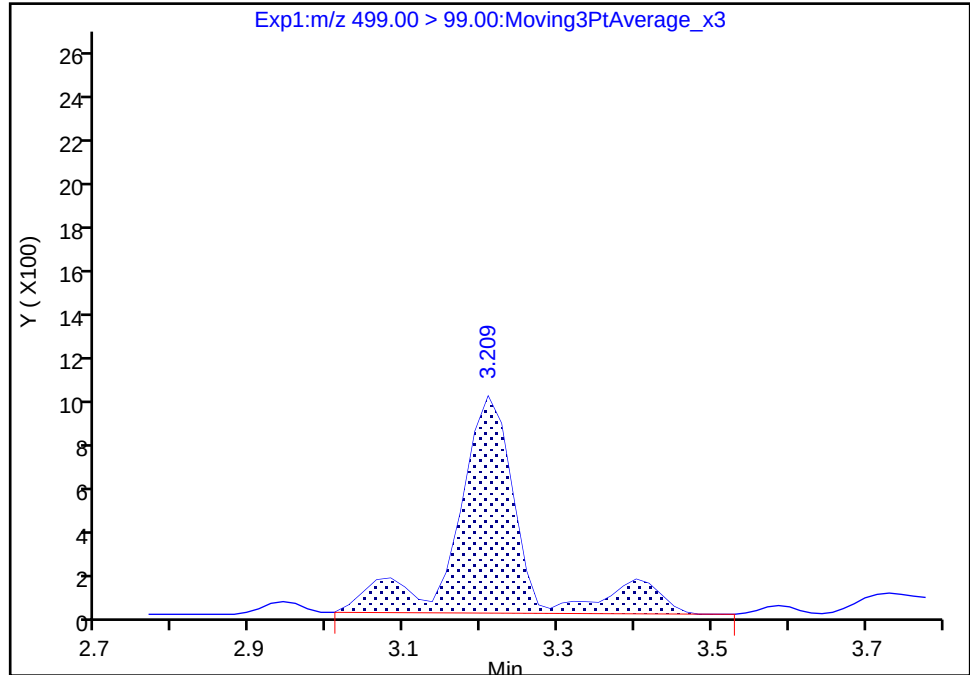
EXP1

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

Signal: 2

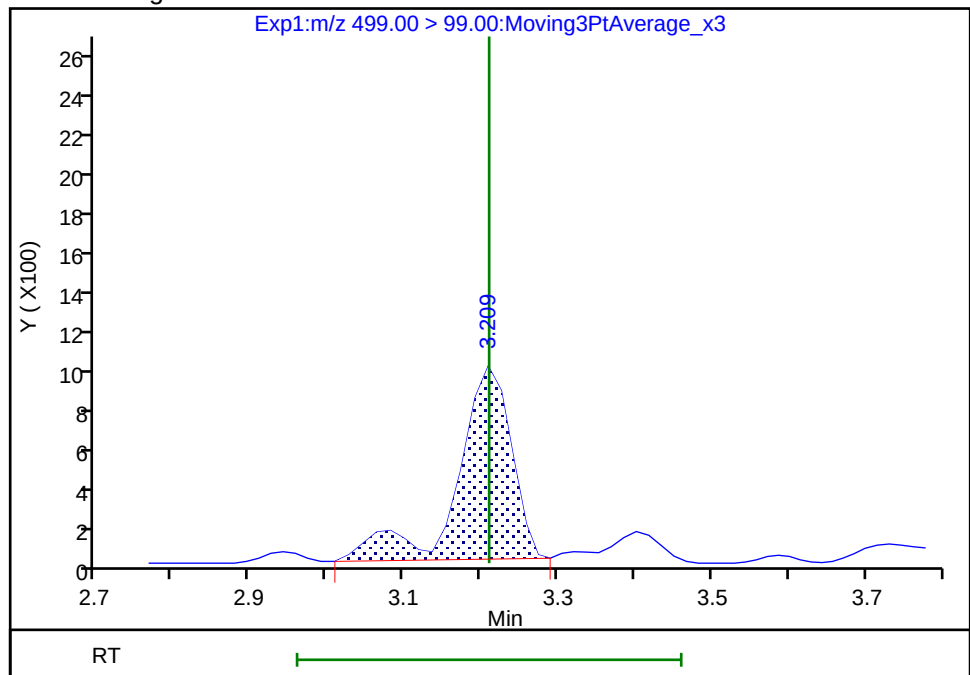
RT: 3.21
Area: 5765
Amount: 0.005761
Amount Units: ng/ml

Processing Integration Results



RT: 3.21
Area: 4768
Amount: 0.004590
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:37:20

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_007.d

Injection Date: 10-Sep-2018 10:32:13

Instrument ID: A9

Lims ID: MB 320-244587/1-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 1 Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

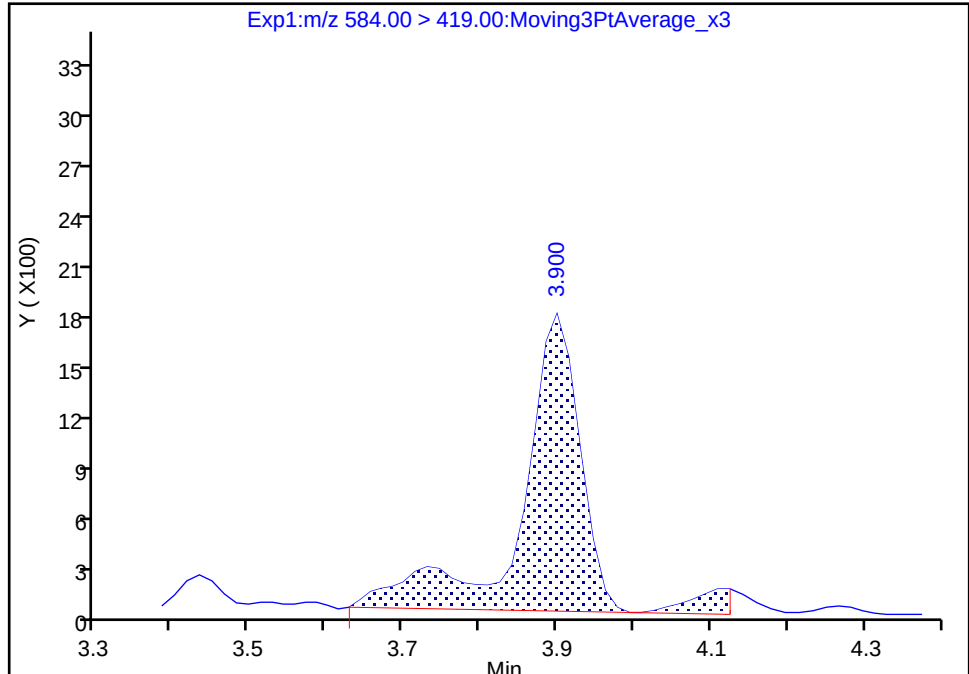
Detector: EXP1

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

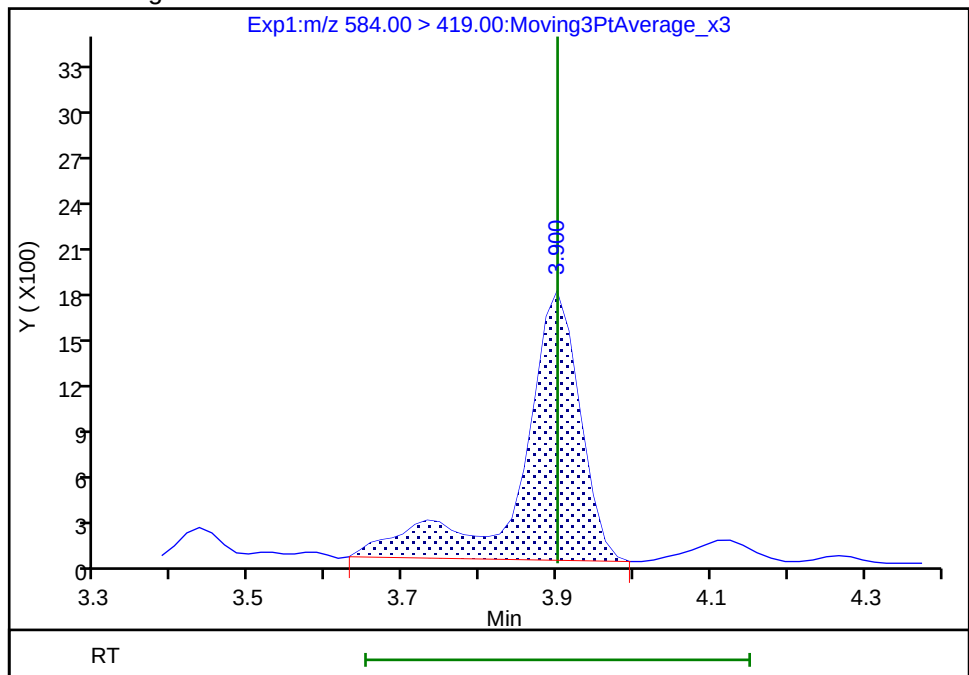
RT: 3.90
Area: 9714
Amount: 0.009140
Amount Units: ng/ml

Processing Integration Results



RT: 3.90
Area: 9200
Amount: 0.008657
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:37:37

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-244587/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_008.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>09/10/2018 10:39</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	42.2		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	41.1		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	38.9		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	42.4		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	39.3		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	44.3		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	41.3		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	36.4		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	42.8		2.0	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	45.2		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	40.5		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36.0		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	34.8		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	40.7		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	35.8		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	40.7		2.0	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	45.1		2.0	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	37.4		20	3.1
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.5		20	1.9
27619-97-2	6:2 FTS	36.3		20	2.0
39108-34-4	8:2 FTS	34.7		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-244587/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_008.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>09/10/2018 10:39</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	93		25-150
STL01893	13C5 PFPeA	94		25-150
STL00993	13C2 PFHxA	94		25-150
STL01892	13C4-PFHpA	97		25-150
STL00990	13C4 PFOA	100		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	97		25-150
STL00997	13C2 PFUnA	108		25-150
STL00998	13C2 PFDoA	89		25-150
STL02116	13C2-PFTeDA	87		25-150
STL02337	13C3-PFBS	94		25-150
STL00994	18O2 PFHxS	102		25-150
STL00991	13C4 PFOS	99		25-150
STL01056	13C8 FOSA	91		25-150
STL02118	d3-NMeFOSAA	91		25-150
STL02117	d5-NEtFOSAA	95		25-150
STL02279	M2-6:2FTS	110		25-150
STL02280	M2-8:2FTS	102		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_008.d
 Lims ID: LCS 320-244587/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 10-Sep-2018 10:39:45 ALS Bottle#: 2 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 320-244587/2-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 07:38:47 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 07:39:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.505	1.505	0.0	0.535	7566450	2.31		92.5	19597	
2 Perfluorobutyric acid										
212.90 > 169.00	1.511	1.505	0.006	1.004	2912990	1.05		105	304	
D 3 13C5-PFPeA										
267.90 > 223.00	1.789	1.791	-0.002	0.636	6838449	2.34		93.8	10102	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.791	-0.002	1.000	2847871	1.03		103	257	
D 47 13C3-PFBS										
301.90 > 83.00	1.831	1.832	-0.001	0.650	83903	2.19		94.2	585	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.831	1.832	-0.001	1.000	3415898	0.9009		102	1147	
298.90 > 99.00	1.831	1.832	-0.001	1.000	1160872		2.94(1.35-4.05)		712	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.060	-0.012	1.119	844683	1.08		116	3651	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.001	0.742	7261022	2.35		94.2	13432	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.091	-0.001	1.000	2569068	0.9713		97.1	595	
313.00 > 119.00	2.089	2.091	-0.001	1.000	197828		12.99(6.96-20.87)		579	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.120	2.121	-0.001	1.158	1754686	0.9749		104	3383	
349.00 > 99.00	2.120	2.121	-0.001	1.158	822533		2.13(1.15-3.45)		1616	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.191	2.193	-0.002	0.779	759091	2.27		90.8	2552	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.191	2.203	-0.012	1.000	537711	1.00		100	240	
D 9 13C4-PFHpA										
367.00 > 322.00	2.439	2.441	-0.002	0.867	8949997	2.43		97.3	13224	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.439	2.441	-0.002	1.000	3871503	1.06		106	578	
363.00 > 169.00	2.439	2.441	-0.002	1.000	843627		4.59(2.17-6.52)		1623	
D 11 18O2 PFHxS										
403.00 > 84.00	2.453	2.454	-0.001	0.871	5441137	2.41		102	8334	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.453	2.454	-0.001	1.000	2475041	0.8694		95.5	2156	
399.00 > 99.00	2.453	2.454	-0.001	1.000	691381		3.58(1.90-5.70)		681	
76 DONA										
377.00 > 251.00	2.479	2.493	-0.014	0.777	6632755	1.07		113	11516	
377.00 > 85.00	2.479	2.493	-0.014	0.777	2912739		2.28(1.13-3.39)		1327	
D 12 M2-6:2FTS										
429.00 > 81.00	2.783	2.784	-0.001	0.989	948006	2.62		110	1635	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.783	2.784	-0.001	1.000	775556	0.9079		95.8	689	
D 14 13C4 PFOA										
417.00 > 372.00	2.815	2.816	-0.001	1.000	8601945	2.51		100	7365	
* 62 13C2-PFOA										
415.00 > 370.00	2.815	2.816	-0.001		8497247	2.50			9905	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.815	2.816	-0.001	1.000	3634540	0.9815		98.1	248	
413.00 > 169.00	2.815	2.816	-0.001	1.000	1336919		2.72(1.36-4.08)		1771	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.815	2.832	-0.017	0.882	2406677	1.02		107	2519	
449.00 > 99.00	2.815	2.832	-0.017	0.882	574308		4.19(1.84-5.53)		1638	
D 18 13C4 PFOS										
503.00 > 80.00	3.192	3.210	-0.018	1.134	5743583	2.36		98.9	4298	
D 19 13C5 PFNA										
468.00 > 423.00	3.192	3.210	-0.018	1.134	7828346	2.44		97.6	4115	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.192	3.210	-0.018	1.000	2268246	0.8945		96.4	1306	
499.00 > 99.00	3.192	3.210	-0.018	1.000	555767		4.08(2.04-6.12)		1534	
20 Perfluorononanoic acid										
463.00 > 419.00	3.192	3.210	-0.018	1.000	3389073	1.11		111	436	
463.00 > 169.00	3.192	3.210	-0.018	1.000	635860		5.33(2.68-8.03)		1802	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.402	3.419	-0.017	1.066	2636876	0.9475		102	2382	
D 21 13C8 FOSA										
506.00 > 78.00	3.498	3.499	-0.001	1.243	2927208	2.28		91.1	5143	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.498	3.499	-0.001	1.000	3913346	1.13		113	3992	
D 26 M2-8:2FTS										
529.00 > 81.00	3.544	3.558	-0.014	1.259	130266	2.45		102	526	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.544	3.558	-0.014	1.000	714771	0.8681		90.6	1815	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.544	3.558	-0.014	1.110	1589824	1.02		107	1845	
549.00 > 99.00	3.544	3.558	-0.014	1.110	250882		6.34(3.02-9.05)		1082	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.558	3.573	-0.015	1.264	7794440	2.43		97.3	9092	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.558	3.573	-0.015	1.000	3661447	1.03		103	605	
513.00 > 169.00	3.558	3.573	-0.015	1.000	265483		13.79(7.12-21.35)		705	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.715	3.732	-0.017	1.320	3278159	2.27		90.8	2727	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.715	3.732	-0.017	1.000	1218008	0.9347		93.5	514	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.872	3.887	-0.015	1.213	1988826	1.02		106	1642	
599.00 > 99.00	3.872	3.887	-0.015	1.213	470551		4.23(2.14-6.43)		1759	
D 30 13C2 PFUnA										
565.00 > 520.00	3.886	3.901	-0.015	1.381	7332056	2.69		108	8011	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.886	3.901	-0.015	1.381	2692311	2.37		94.8	3188	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.886	3.901	-0.015	1.000	1015126	1.01		101	1466	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.886	3.901	-0.015	1.000	2395306	0.9104		91.0	537	
563.00 > 169.00	3.886	3.901	-0.015	1.000	233106		10.28(5.24-15.72)		675	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.059	4.060	-0.001	1.272	2755278	0.8969		95.2	4693	
D 36 13C2 PFDaA										
615.00 > 570.00	4.197	4.216	-0.019	1.491	7420099	2.24		89.5	6764	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.197	4.216	-0.019	1.000	3200856	1.07		107	843	
613.00 > 169.00	4.197	4.216	-0.019	1.000	308876		10.36(4.68-14.05)		482	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.197	4.216	-0.019	1.184	475598	0.8609		89.3	702	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.438	4.453	-0.015	1.390	215255	0.9636		99.5	716	
699.00 > 99.00	4.438	4.453	-0.015	1.390	380117		0.57(0.28-0.83)		1124	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.469	4.484	-0.015	1.065	2689021	1.13		113	1178	
663.00 > 169.00	4.453	4.484	-0.031	1.061	425684		6.32(3.09-9.27)		874	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.711	4.727	-0.016	1.674	5717757	2.16		86.6	7953	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.711	4.727	-0.016	1.000	373927	1.01		101	1102	
713.00 > 219.00	4.711	4.727	-0.016	1.000	255167		1.47(0.70-2.09)		874	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.147	5.164	-0.017	1.829	5371551	2.01		80.2	5420	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.147	5.164	-0.017	1.000	2138796	1.08		108	640	
813.00 > 169.00	5.147	5.164	-0.017	1.000	369502		5.79(2.77-8.32)		785	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.522	5.549	-0.027	1.073	1363942	1.00		99.6	547	
913.00 > 169.00	5.522	5.549	-0.027	1.073	255941		5.33(2.55-7.64)		1002	

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_008.d

Injection Date: 10-Sep-2018 10:39:45

Instrument ID: A9

Lims ID: LCS 320-244587/2-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 2

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

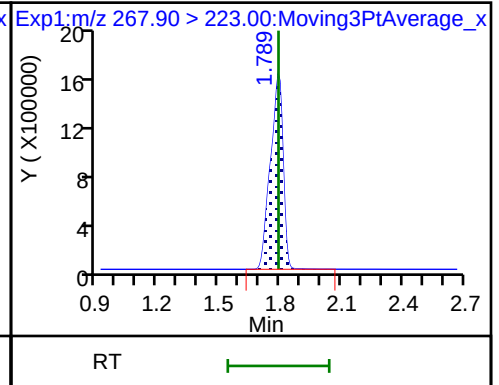
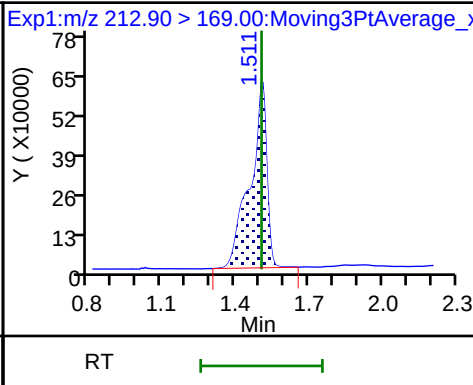
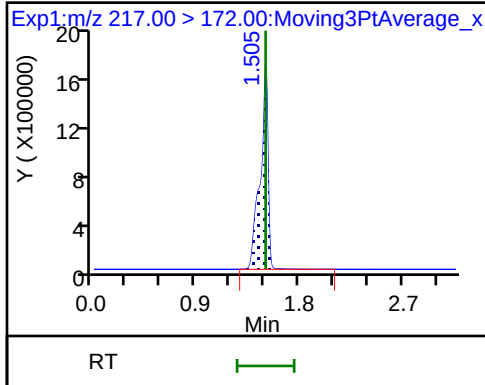
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

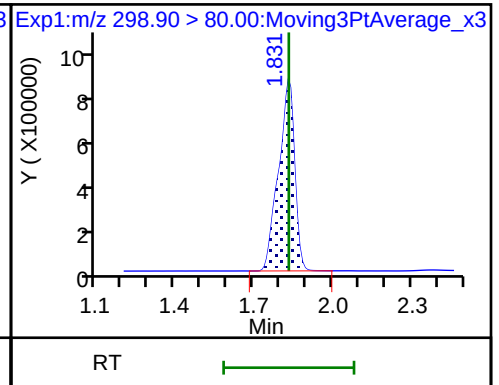
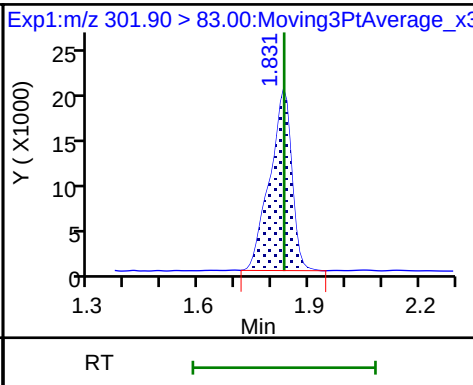
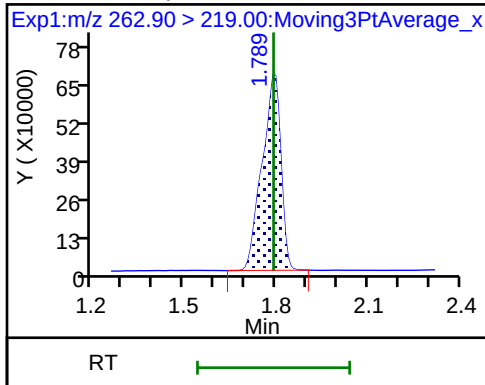
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

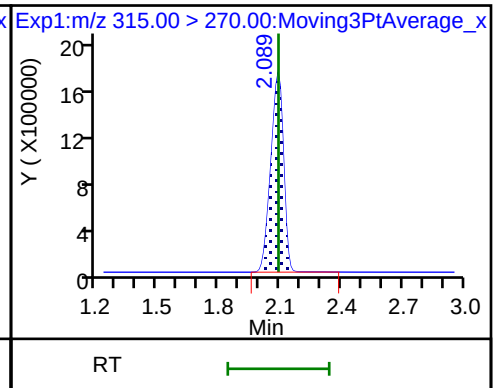
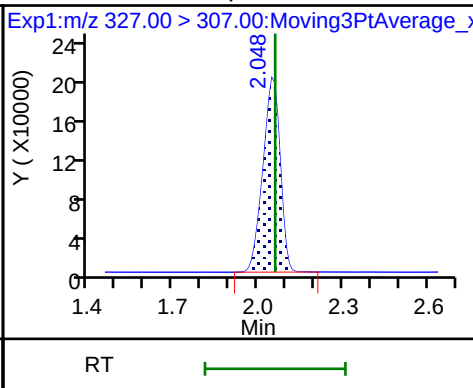
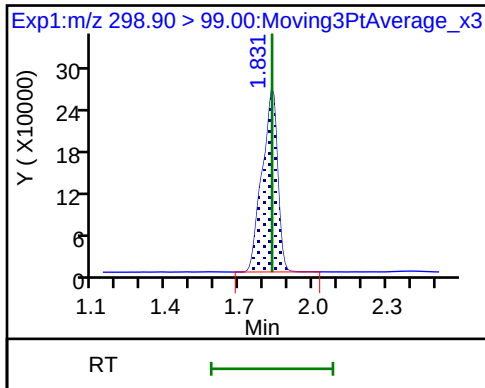
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

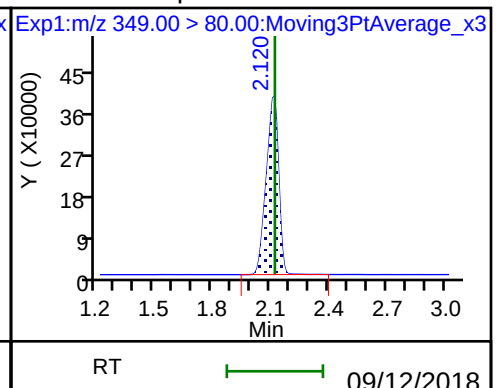
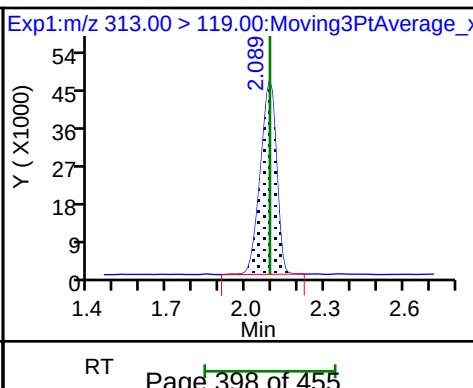
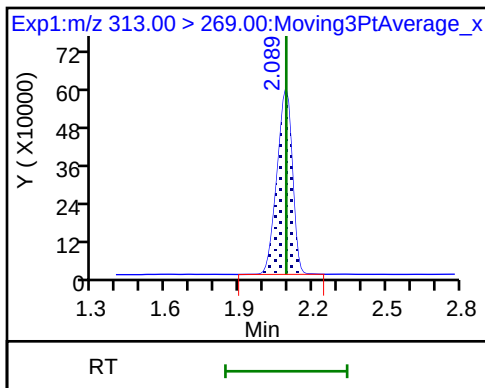
D 7 13C2 PFHxA

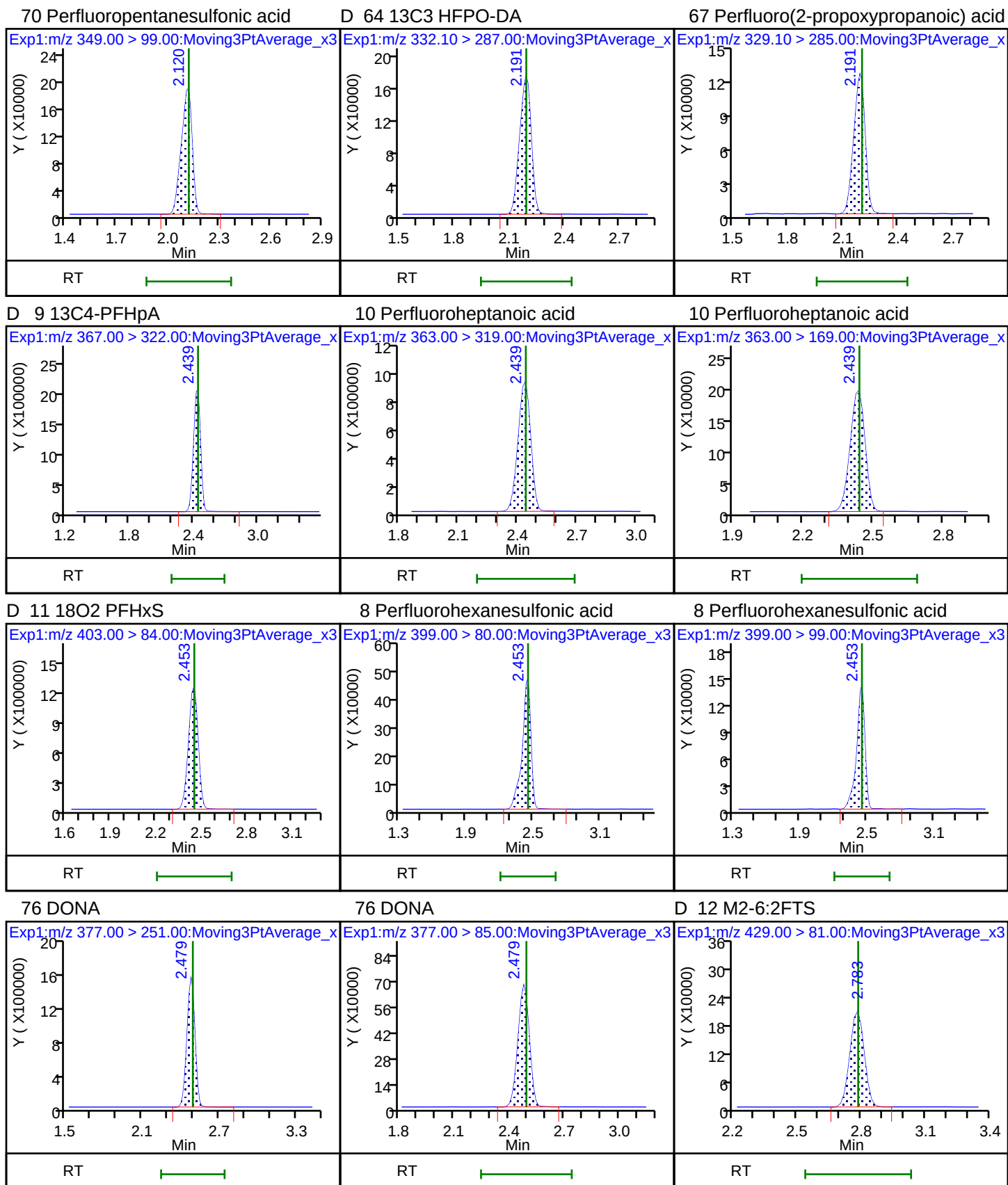


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

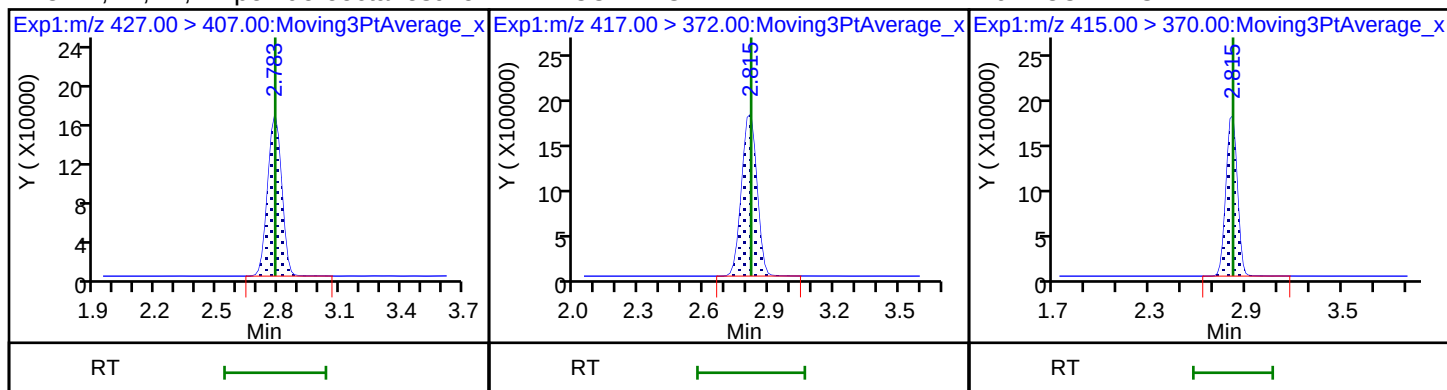
70 Perfluoropentanesulfonic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA

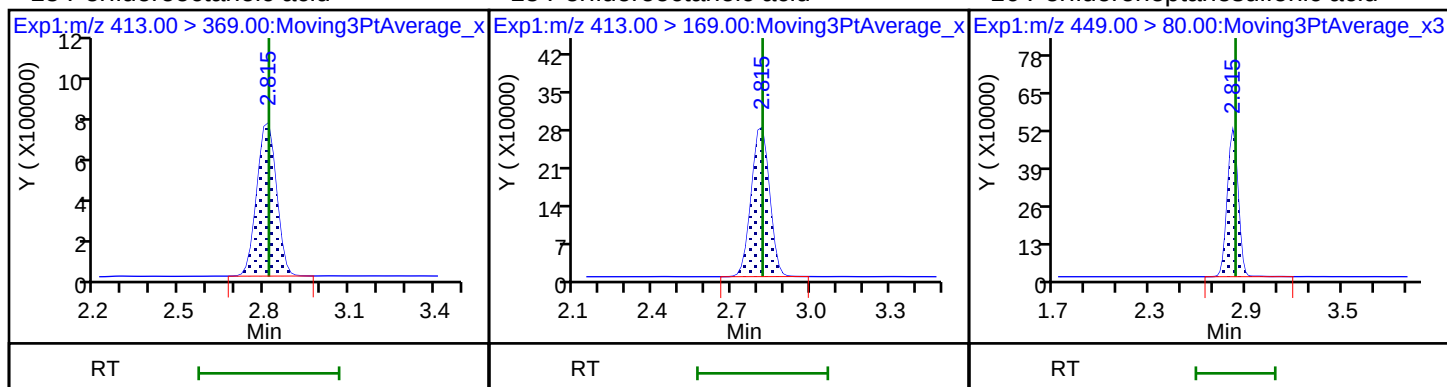
* 62 13C2-PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

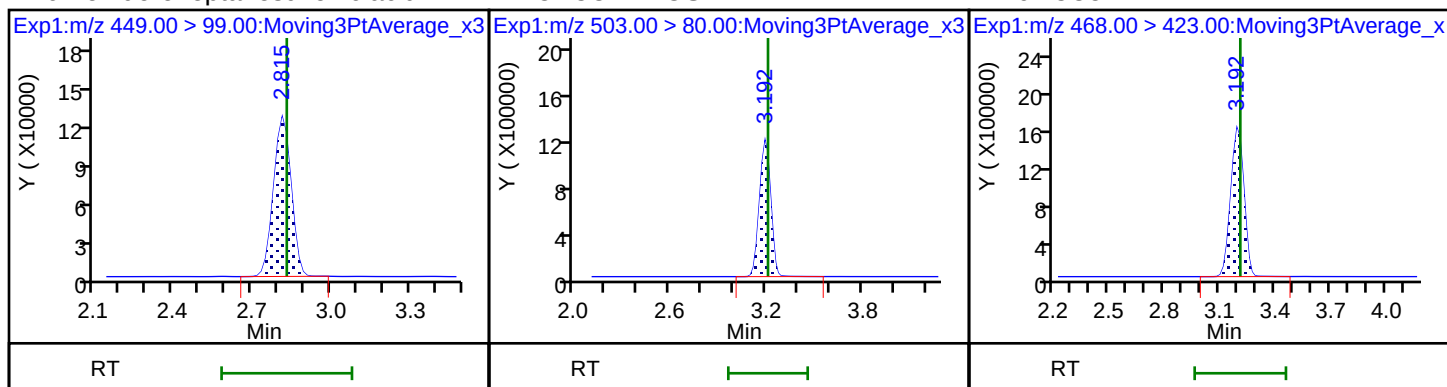
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

D 18 13C4 PFOS

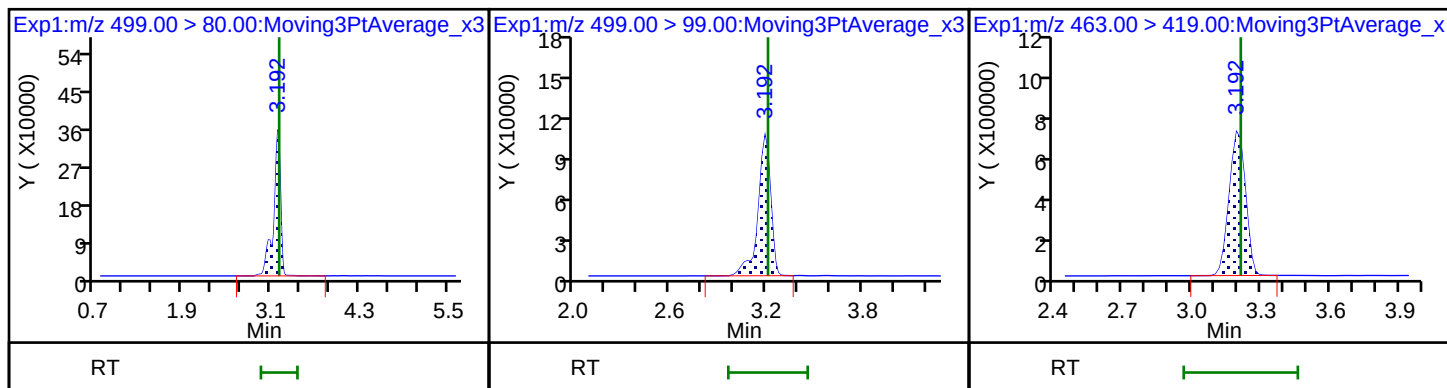
D 19 13C5 PFNA



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

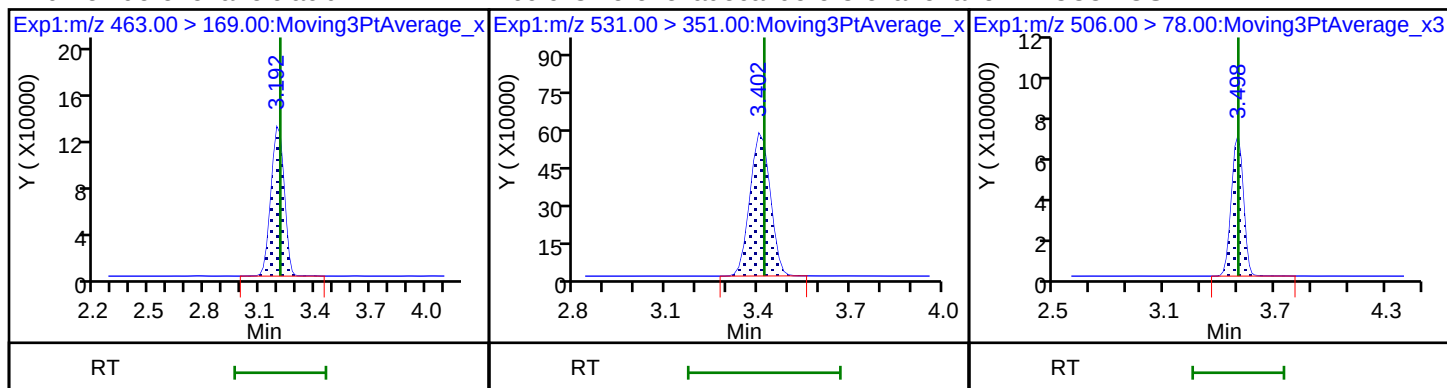
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonadecanoic acid

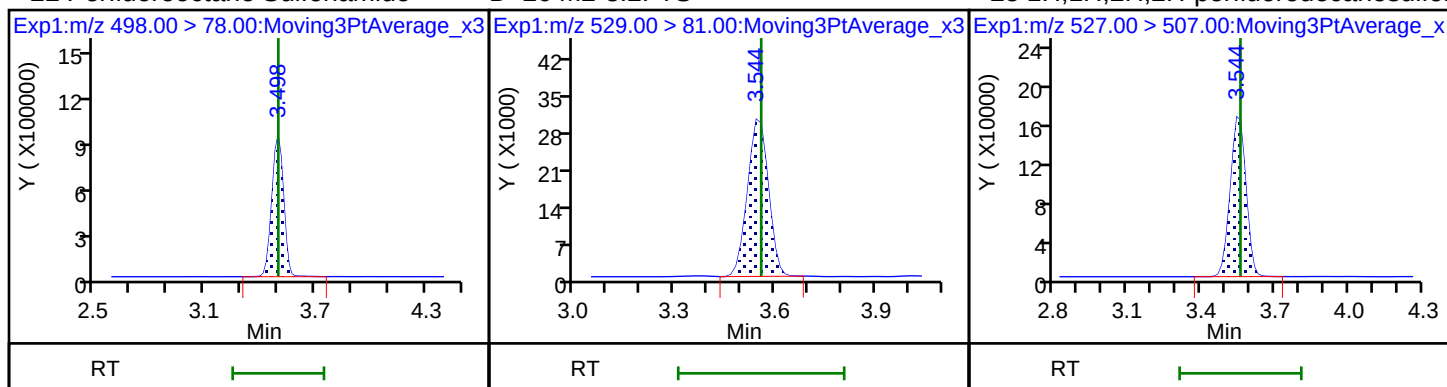
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

D 26 M2-8:2FTS

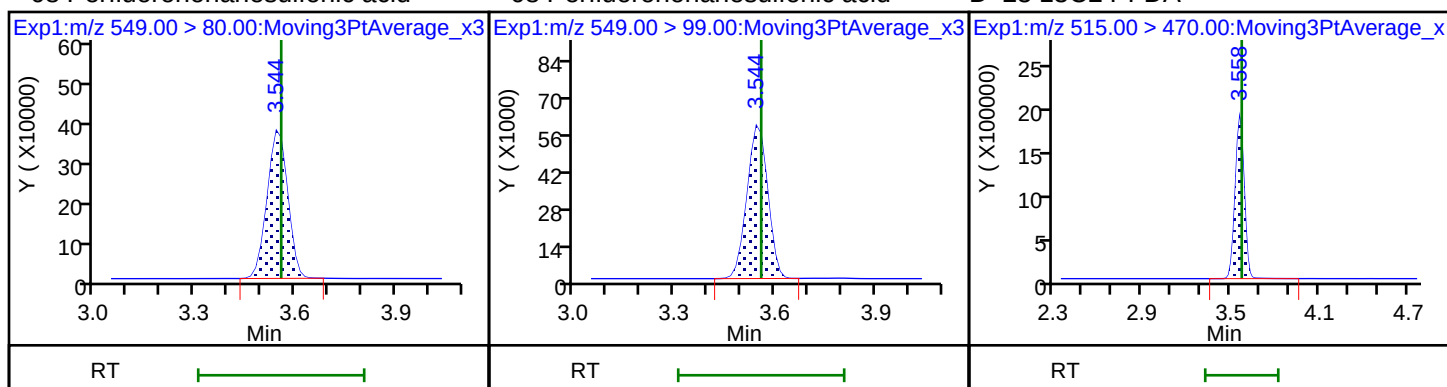
25 1H,1H,2H,2H-perfluorodecanesulfonamide



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

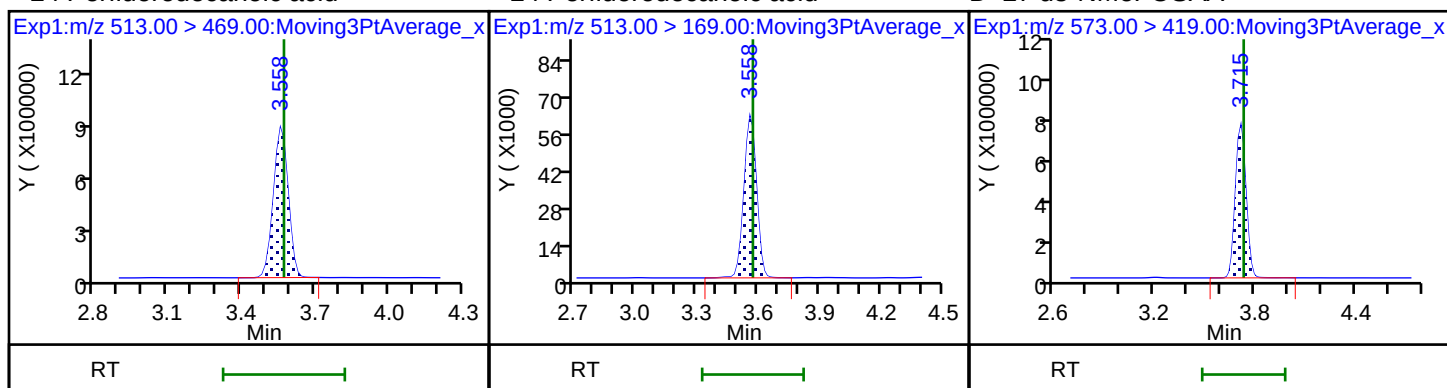
D 23 13C2 PFDA



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

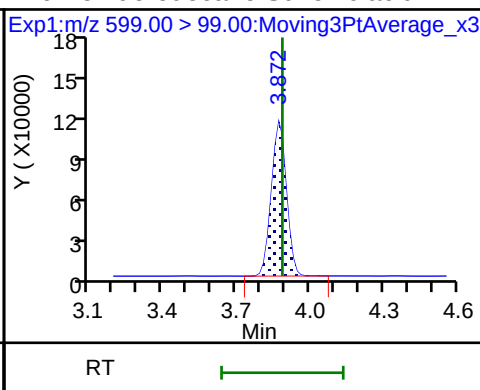
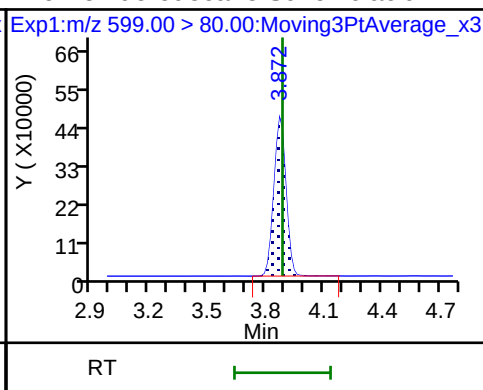
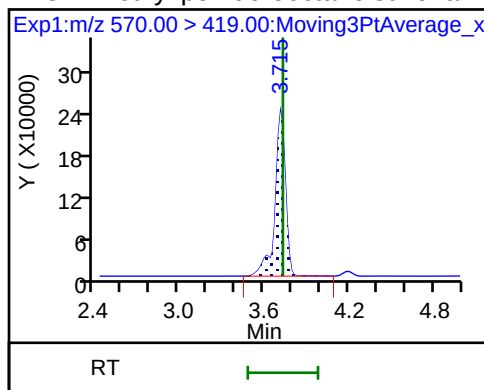
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

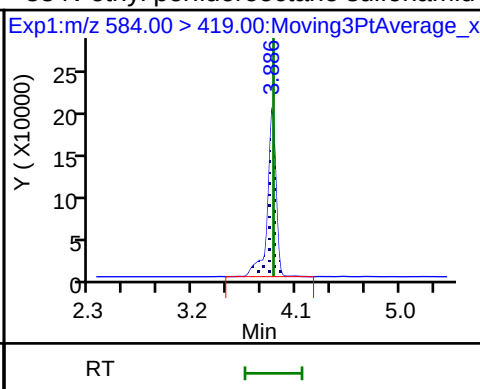
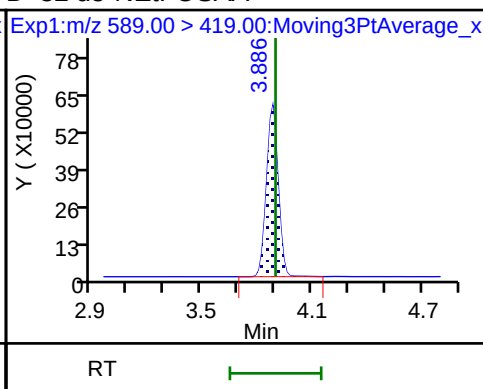
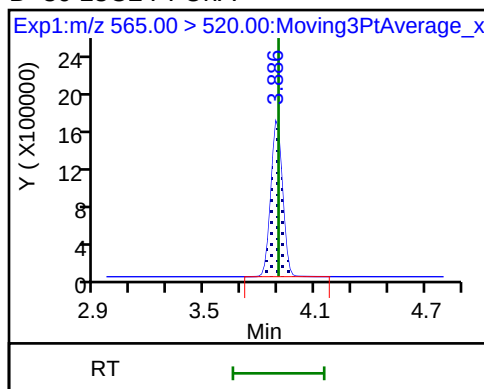
29 Perfluorodecane Sulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

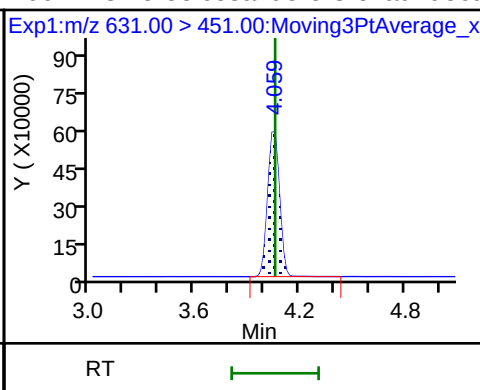
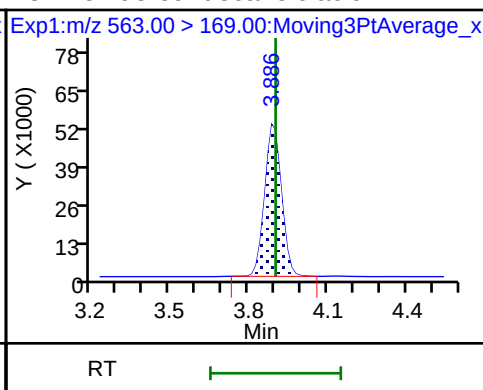
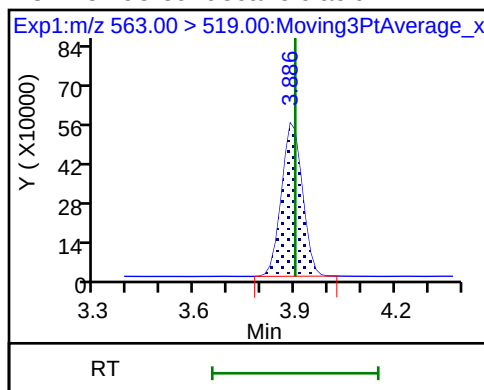
33 N-ethyl perfluorooctane sulfonamid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

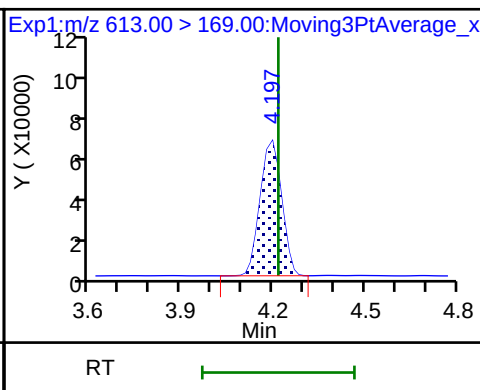
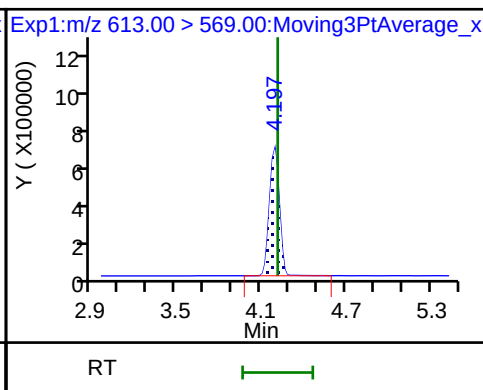
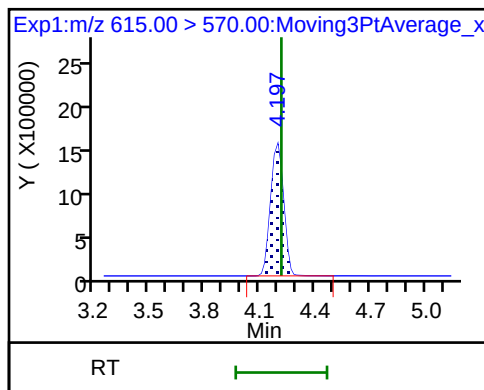
66 11-Chloroeicosafluoro-3-oxaundecan



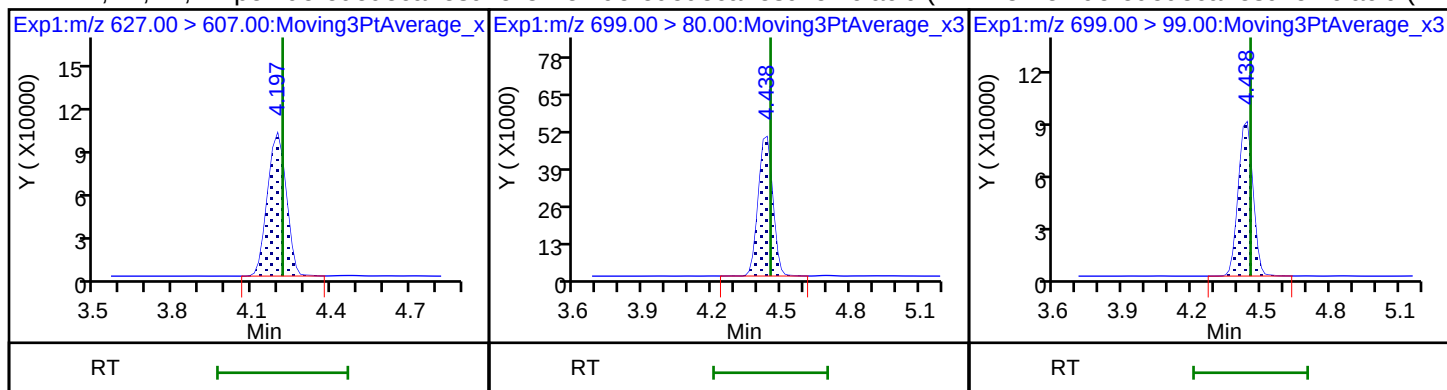
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



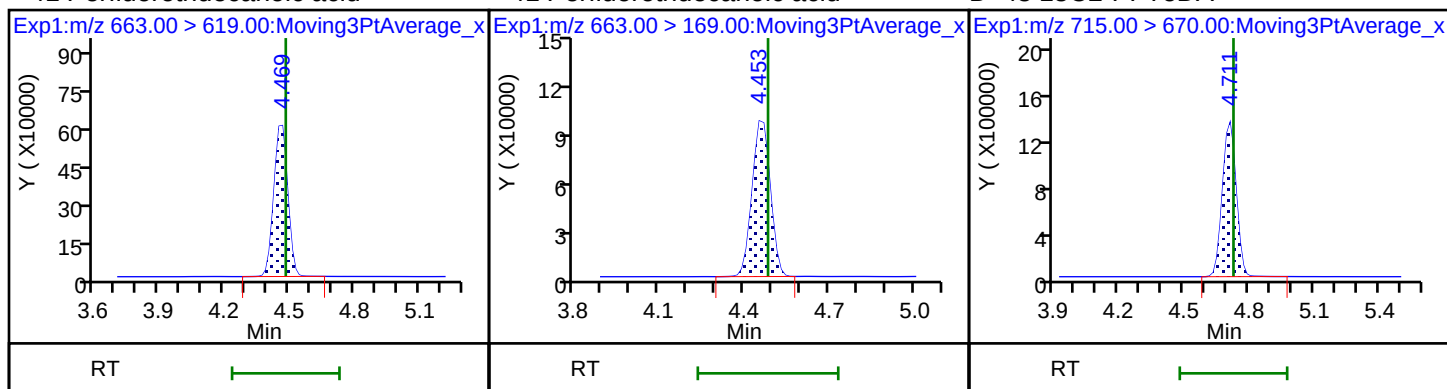
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

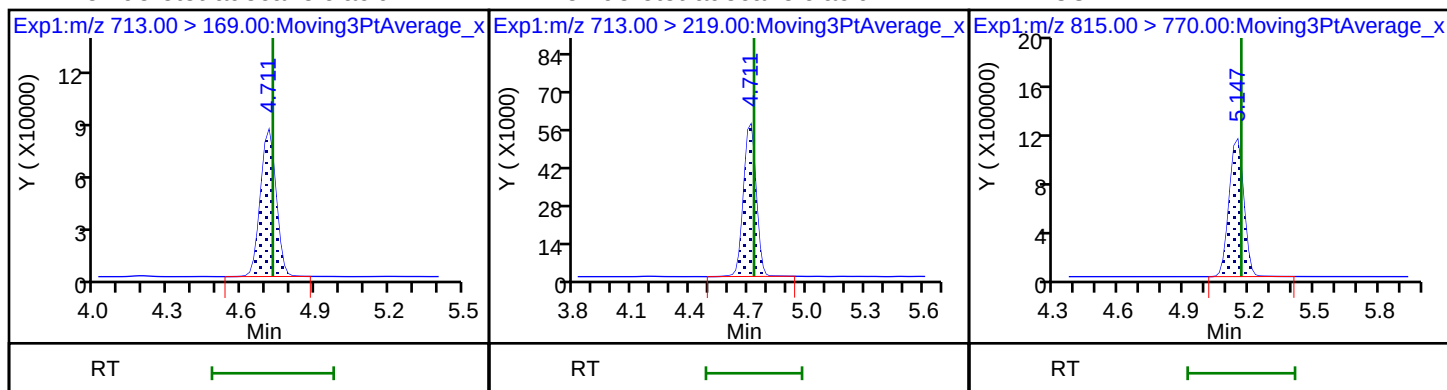
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

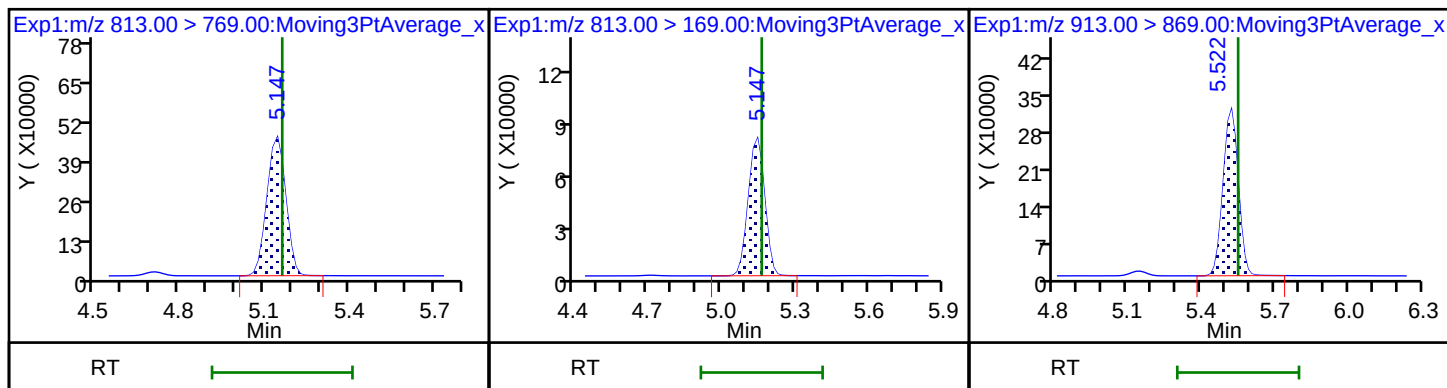
D 44 13C2-PFHxDA



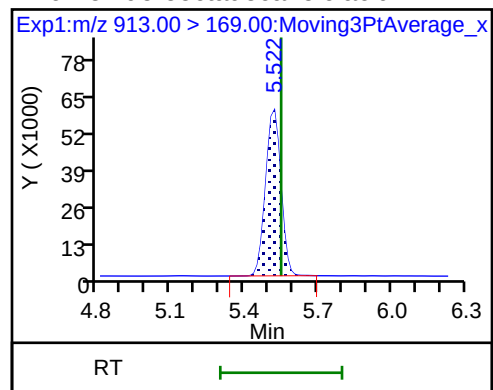
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCSD 320-244587/3-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_009.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>09/10/2018 10:47</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	43.0		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	41.6		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	39.9		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	45.2		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	41.1		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	47.5		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	42.2		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	41.4		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	42.4		2.0	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	45.6		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	40.2		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36.7		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	34.3		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	40.9		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	36.0		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	43.3		2.0	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	44.2		2.0	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	42.6		20	3.1
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	38.4		20	1.9
27619-97-2	6:2 FTS	45.8		20	2.0
39108-34-4	8:2 FTS	39.1		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCSD 320-244587/3-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_009.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>09/10/2018 10:47</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	94		25-150
STL01893	13C5 PFPeA	95		25-150
STL00993	13C2 PFHxA	94		25-150
STL01892	13C4-PFHpA	95		25-150
STL00990	13C4 PFOA	96		25-150
STL00995	13C5 PFNA	94		25-150
STL00996	13C2 PFDA	98		25-150
STL00997	13C2 PFUnA	103		25-150
STL00998	13C2 PFDoA	89		25-150
STL02116	13C2-PFTeDA	92		25-150
STL02337	13C3-PFBS	96		25-150
STL00994	18O2 PFHxS	101		25-150
STL00991	13C4 PFOS	97		25-150
STL01056	13C8 FOSA	91		25-150
STL02118	d3-NMeFOSAA	93		25-150
STL02117	d5-NEtFOSAA	97		25-150
STL02279	M2-6:2FTS	95		25-150
STL02280	M2-8:2FTS	98		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_009.d
 Lims ID: LCSD 320-244587/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 10-Sep-2018 10:47:16 ALS Bottle#: 3 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: LCSD 320-244587/3-A
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 07:39:54 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 07:39:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.505	-0.001	0.538	7523984	2.34		93.8	14180	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.511	1.505	0.006	1.004	2952064	1.07		107	336	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.789	1.791	-0.002	0.639	6766108	2.36		94.5	7608	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.791	-0.002	1.000	2856626	1.04		104	260	
D 47 13C3-PFBS										
301.90 > 83.00	1.830	1.832	-0.002	0.654	83780	2.23		95.9	401	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.832	-0.002	1.000	3476332	0.9182		104	1189	
298.90 > 99.00	1.830	1.832	-0.002	1.000	1159563		3.00(1.35-4.05)		769	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.060	-0.002	1.124	817736	1.05		112	2951	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.001	0.746	7111037	2.35		94.0	7934	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.091	-0.001	1.000	2585051	1.00		99.8	664	
313.00 > 119.00	2.089	2.091	-0.001	1.000	186790		13.84(6.96-20.87)		509	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.121	-0.012	1.152	1722400	0.9584		102	2459	
349.00 > 99.00	2.109	2.121	-0.012	1.152	822984		2.09(1.15-3.45)		1475	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.191	2.193	-0.002	0.783	789081	2.40		96.2	1966	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.191	2.203	-0.012	1.000	576426	1.03		103	287	
D 9 13C4-PFHpA										
367.00 > 322.00	2.426	2.441	-0.015	0.867	8529946	2.36		94.5	5077	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.441	-0.015	1.000	3928819	1.13		113	555	
363.00 > 169.00	2.426	2.441	-0.015	1.000	843630		4.66(2.17-6.52)		2110	
D 11 18O2 PFHxS										
403.00 > 84.00	2.452	2.454	-0.002	0.876	5320200	2.40		101	8434	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.452	2.454	-0.002	1.000	2390304	0.8587		94.4	1717	
399.00 > 99.00	2.452	2.454	-0.002	1.000	710526		3.36(1.90-5.70)		998	
76 DONA										
377.00 > 251.00	2.479	2.493	-0.014	0.777	6525314	1.09		115	11560	
377.00 > 85.00	2.479	2.493	-0.014	0.777	2930423		2.23(1.13-3.39)		1532	
D 12 M2-6:2FTS										
429.00 > 81.00	2.783	2.784	-0.001	0.994	799813	2.26		94.9	1409	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.783	2.784	-0.001	1.000	825789	1.15		121	607	
D 14 13C4 PFOA										
417.00 > 372.00	2.799	2.816	-0.017	1.000	8049774	2.40		95.8	7747	
* 62 13C2-PFOA										
415.00 > 370.00	2.799	2.816	-0.017		8337758	2.50			12375	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.799	2.816	-0.017	1.000	3564302	1.03		103	251	
413.00 > 169.00	2.799	2.816	-0.017	1.000	1356726		2.63(1.36-4.08)		1826	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.815	2.832	-0.018	0.882	2338666	1.02		107	2007	
449.00 > 99.00	2.815	2.832	-0.018	0.882	575251		4.07(1.84-5.53)		1830	
D 18 13C4 PFOS										
503.00 > 80.00	3.192	3.210	-0.018	1.140	5550652	2.33		97.4	4312	
D 19 13C5 PFNA										
468.00 > 423.00	3.192	3.210	-0.018	1.140	7377219	2.34		93.8	8518	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.192	3.210	-0.018	1.000	2208483	0.9012		97.1	1230	
499.00 > 99.00	3.192	3.210	-0.018	1.000	538140		4.10(2.04-6.12)		1755	
20 Perfluorononanoic acid										
463.00 > 419.00	3.192	3.210	-0.018	1.000	3430232	1.19		119	443	
463.00 > 169.00	3.192	3.210	-0.018	1.000	571081		6.01(2.68-8.03)		1107	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.402	3.419	-0.017	1.066	2607035	0.9693		104	2795	
D 21 13C8 FOSA										
506.00 > 78.00	3.498	3.499	-0.001	1.250	2879649	2.28		91.3	4508	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.498	3.499	-0.001	1.000	3775000	1.11		111	3169	
D 26 M2-8:2FTS										
529.00 > 81.00	3.544	3.558	-0.014	1.266	122648	2.35		98.2	628	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.544	3.558	-0.014	1.000	758003	0.9777		102	1962	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.544	3.558	-0.014	1.110	1676231	1.12		116	2388	
549.00 > 99.00	3.544	3.558	-0.014	1.110	264820		6.33(3.02-9.05)		1777	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.558	3.573	-0.015	1.271	7690100	2.45		97.9	13052	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.558	3.573	-0.015	1.000	3695561	1.06		106	682	
513.00 > 169.00	3.558	3.573	-0.015	1.000	231316		15.98(7.12-21.35)		498	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.715	3.732	-0.017	1.327	3306641	2.33		93.3	2748	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.715	3.732	-0.017	1.000	1398586	1.06		106	460	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.872	3.887	-0.015	1.213	2044873	1.08		112	1740	
599.00 > 99.00	3.872	3.887	-0.015	1.213	436018		4.69(2.14-6.43)		1330	
D 30 13C2 PFUnA										
565.00 > 520.00	3.886	3.901	-0.015	1.389	6856838	2.56		103	9252	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.886	3.901	-0.015	1.389	2707417	2.43		97.2	3027	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.886	3.901	-0.015	1.000	967298	0.9605		96.1	1585	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.886	3.901	-0.015	1.000	2545601	1.03		103	569	
563.00 > 169.00	3.886	3.901	-0.015	1.000	228080		11.16(5.24-15.72)		908	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.042	4.060	-0.018	1.266	2831789	0.9538		101	3106	
D 36 13C2 PFDaA										
615.00 > 570.00	4.178	4.216	-0.038	1.493	7268909	2.23		89.3	6402	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.178	4.216	-0.038	1.000	3109304	1.06		106	810	
613.00 > 169.00	4.178	4.216	-0.038	1.000	349877		8.89(4.68-14.05)		823	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.178	4.216	-0.038	1.179	504108	0.9692		101	763	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.421	4.453	-0.032	1.385	198789	0.9208		95.1	560	
699.00 > 99.00	4.421	4.453	-0.032	1.385	336063		0.59(0.28-0.83)		1092	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.452	4.484	-0.032	1.066	2660542	1.14		114	1141	
663.00 > 169.00	4.452	4.484	-0.032	1.066	404004		6.59(3.09-9.27)		1211	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.708	4.727	-0.019	1.682	5961246	2.30		92.0	10796	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.708	4.727	-0.019	1.000	387298	1.01		101	1215	
713.00 > 219.00	4.692	4.727	-0.035	0.997	290237		1.33(0.70-2.09)		804	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.143	5.164	-0.021	1.838	5555211	2.11		84.5	9004	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.143	5.164	-0.021	1.000	2209536	1.08		108	592	
813.00 > 169.00	5.143	5.164	-0.021	1.000	384618		5.74(2.77-8.32)		912	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.518	5.549	-0.031	1.073	1402367	0.9897		99.0	538	
913.00 > 169.00	5.504	5.549	-0.045	1.070	258068		5.43(2.55-7.64)		1146	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_009.d

Injection Date: 10-Sep-2018 10:47:16

Instrument ID: A9

Lims ID: LCSD 320-244587/3-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 3

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

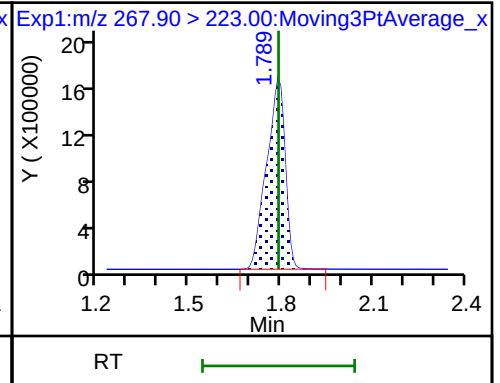
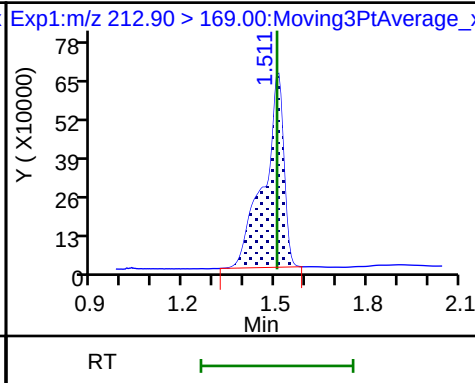
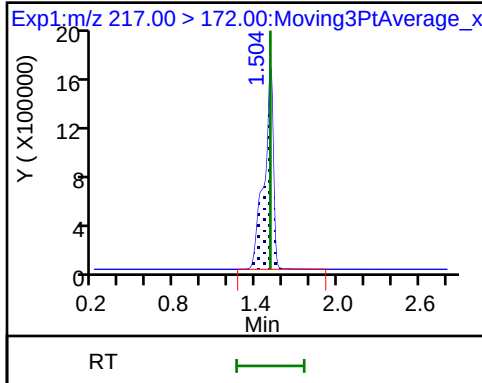
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

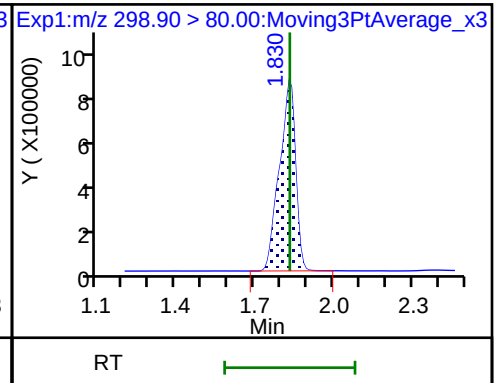
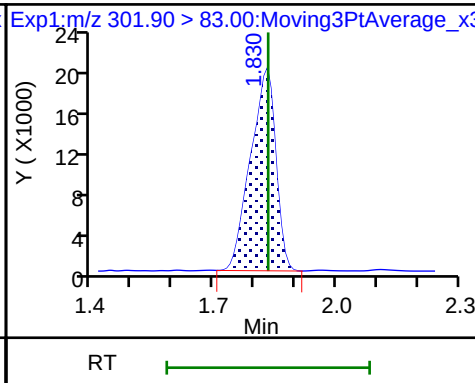
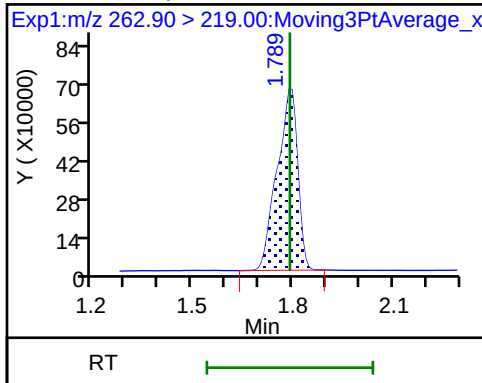
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

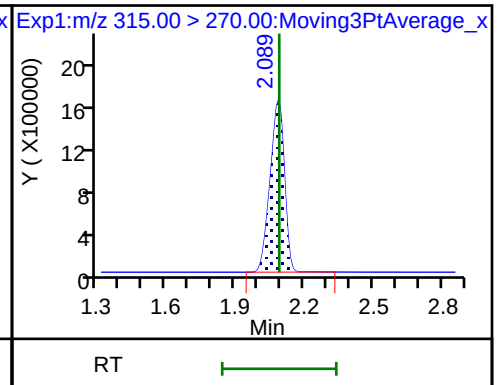
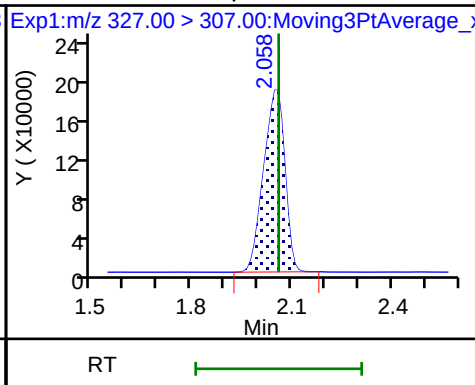
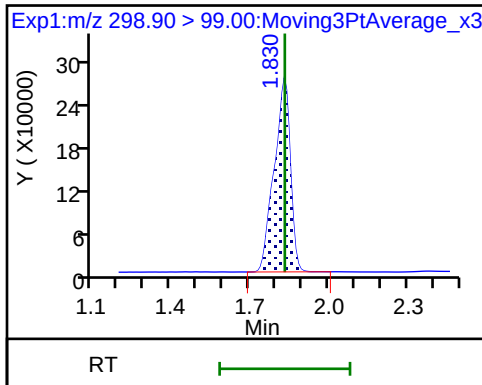
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

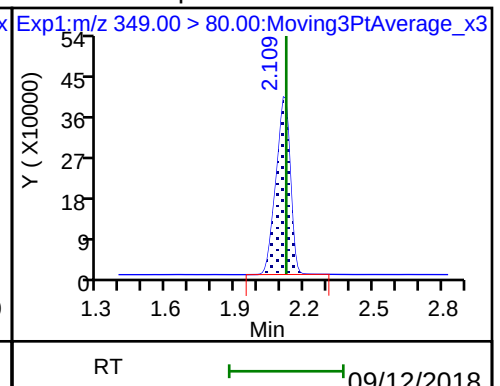
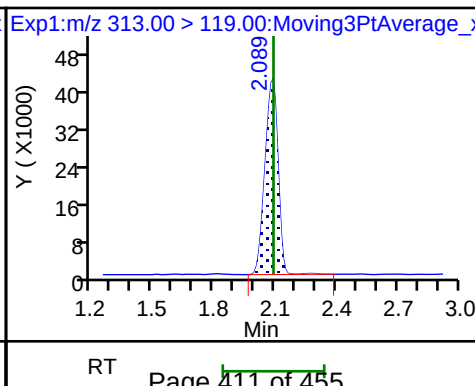
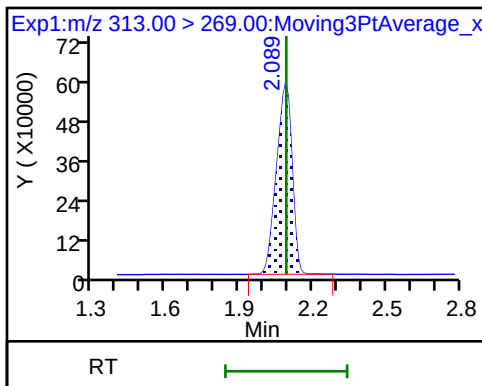
D 7 13C2 PFHxA



6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

70 Perfluoropentanesulfonic acid

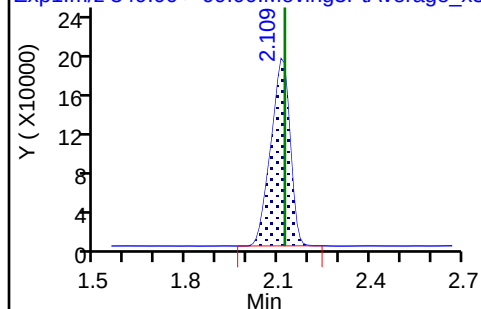


70 Perfluoropentanesulfonic acid

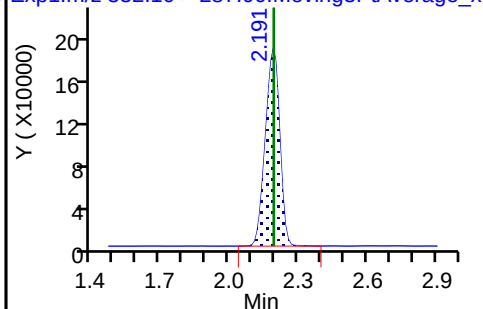
D 64 13C3 HFPO-DA

67 Perfluoro(2-propoxypropanoic) acid

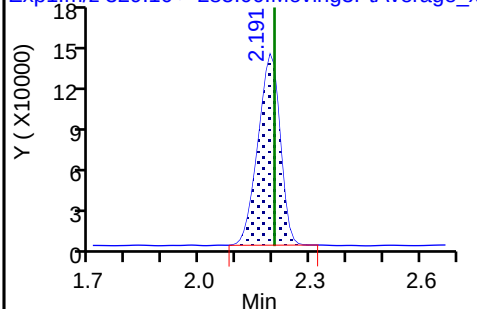
Exp1:m/z 349.00 > 99.00:Moving3PtAverage_x3



Exp1:m/z 332.10 > 287.00:Moving3PtAverage_x3



Exp1:m/z 329.10 > 285.00:Moving3PtAverage_x3

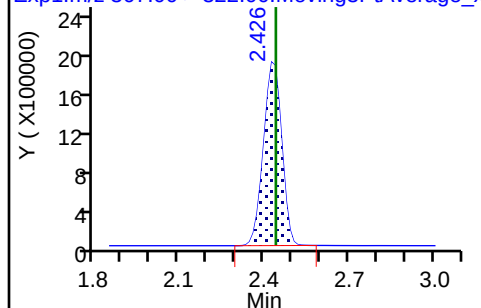


D 9 13C4-PFHpA

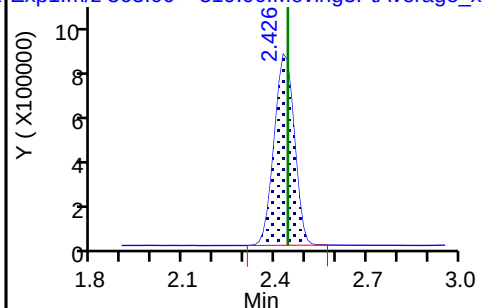
10 Perfluoroheptanoic acid

10 Perfluoroheptanoic acid

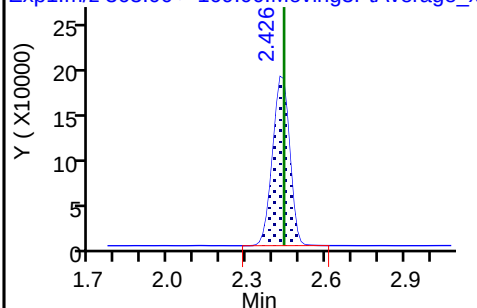
Exp1:m/z 367.00 > 322.00:Moving3PtAverage_x3



Exp1:m/z 363.00 > 319.00:Moving3PtAverage_x3



Exp1:m/z 363.00 > 169.00:Moving3PtAverage_x3

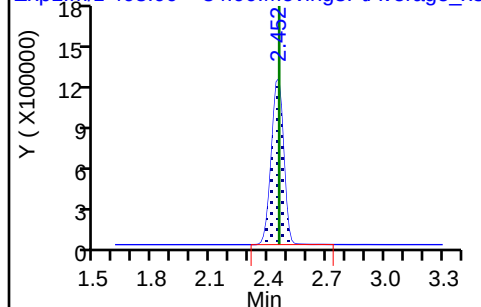


D 11 18O2 PFHxS

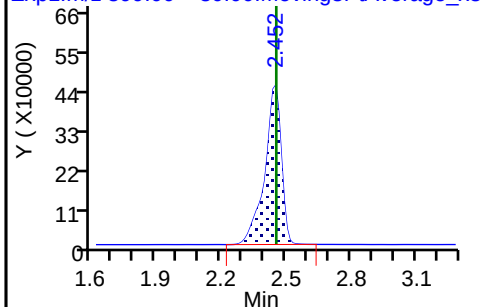
8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid

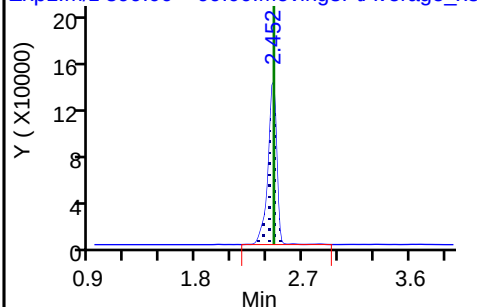
Exp1:m/z 403.00 > 84.00:Moving3PtAverage_x3



Exp1:m/z 399.00 > 80.00:Moving3PtAverage_x3



Exp1:m/z 399.00 > 99.00:Moving3PtAverage_x3

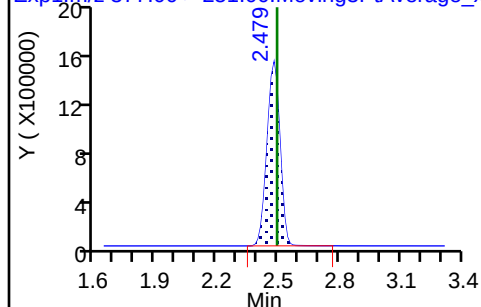


76 DONA

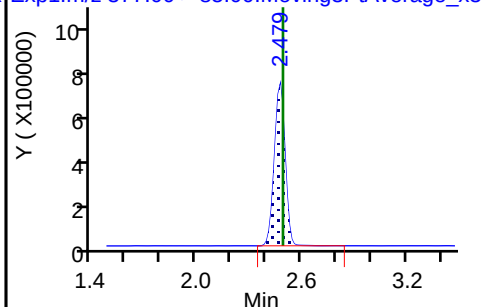
76 DONA

D 12 M2-6:2FTS

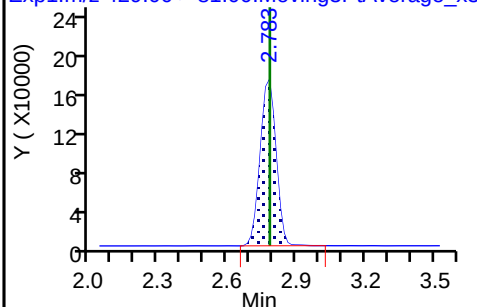
Exp1:m/z 377.00 > 251.00:Moving3PtAverage_x3



Exp1:m/z 377.00 > 85.00:Moving3PtAverage_x3

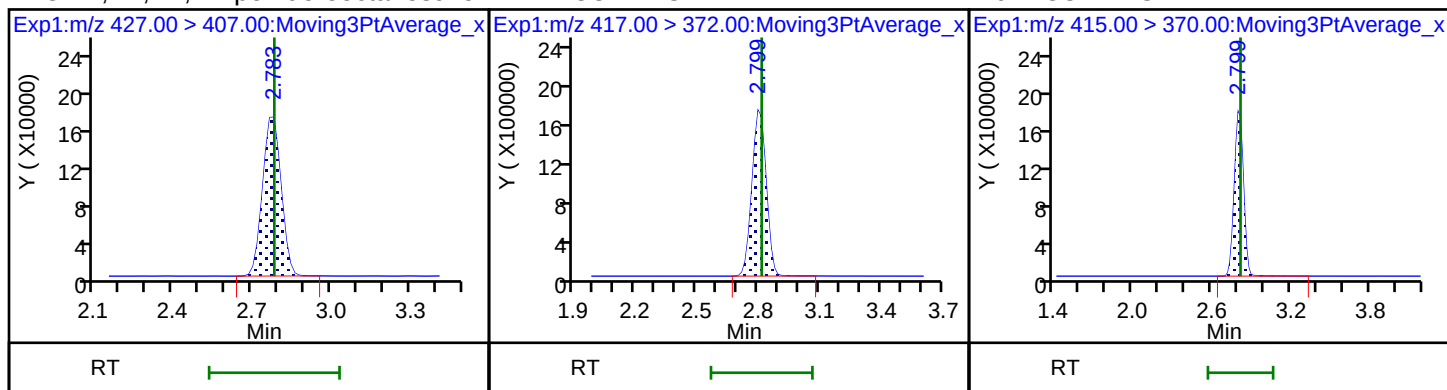


Exp1:m/z 429.00 > 81.00:Moving3PtAverage_x3



13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA

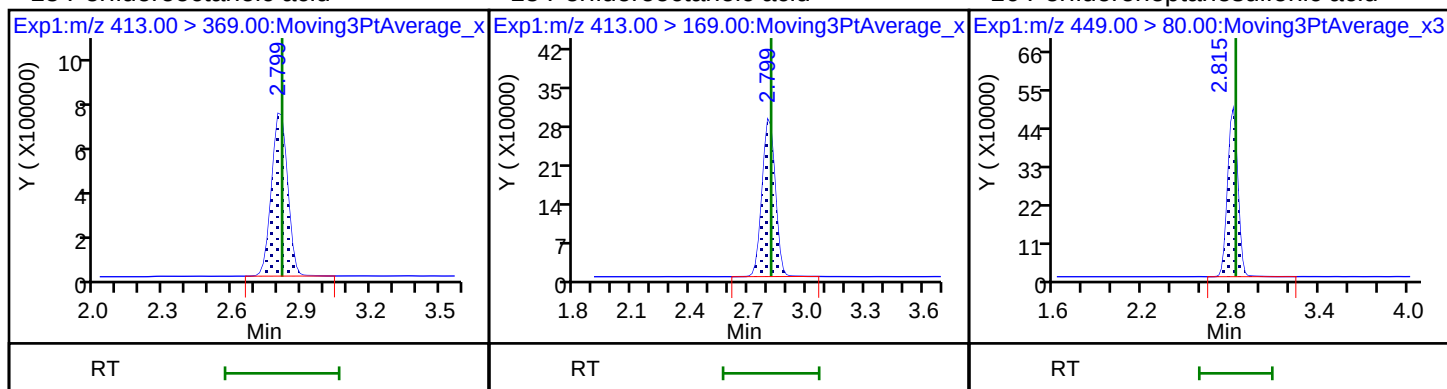
* 62 13C2-PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

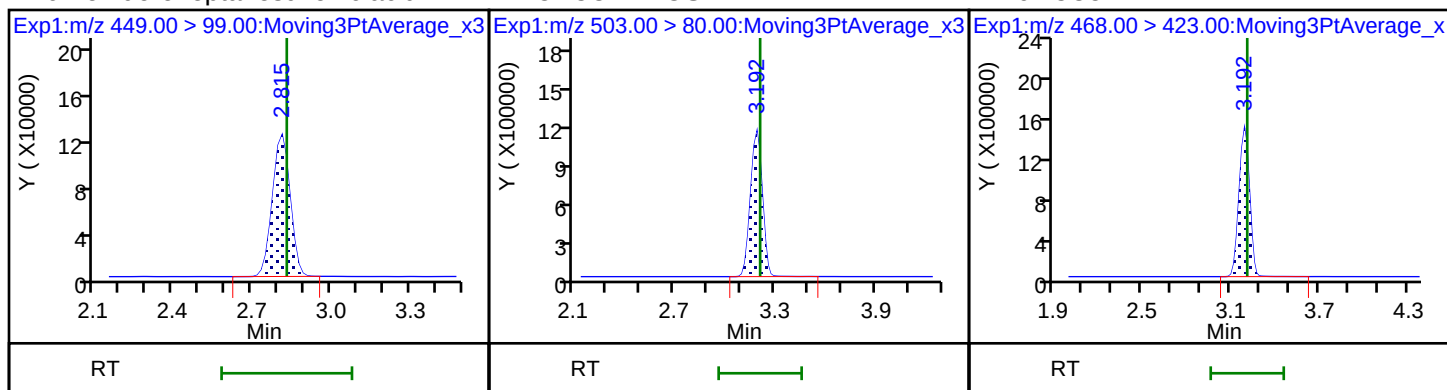
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

D 18 13C4 PFOS

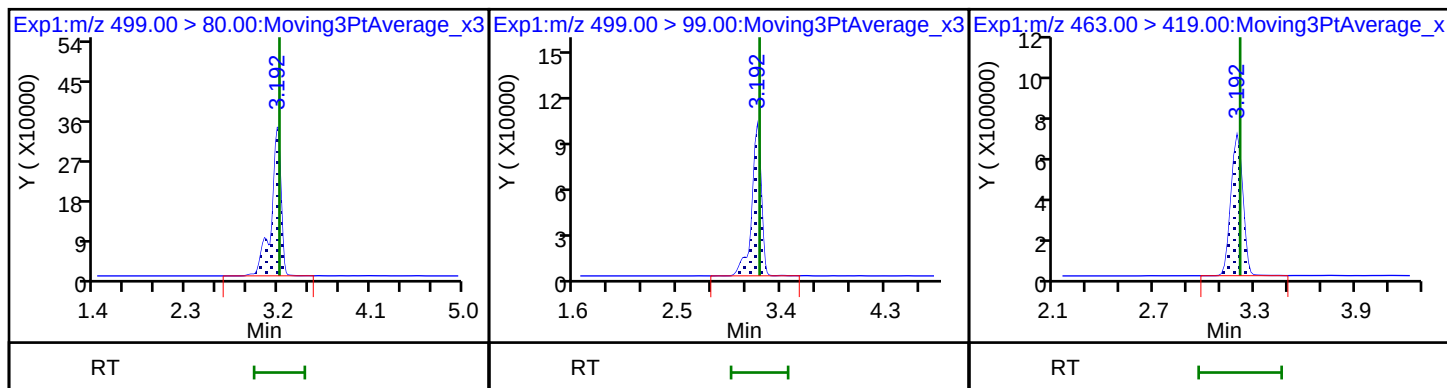
D 19 13C5 PFNA



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

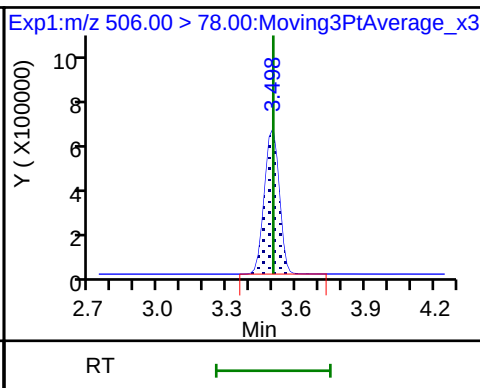
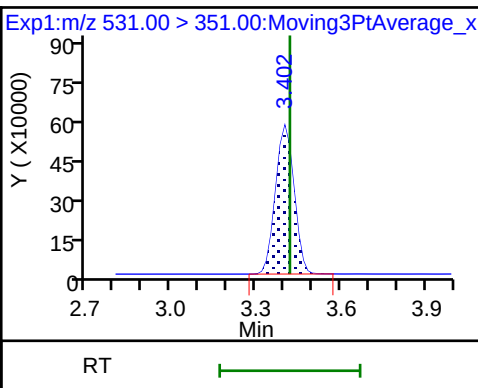
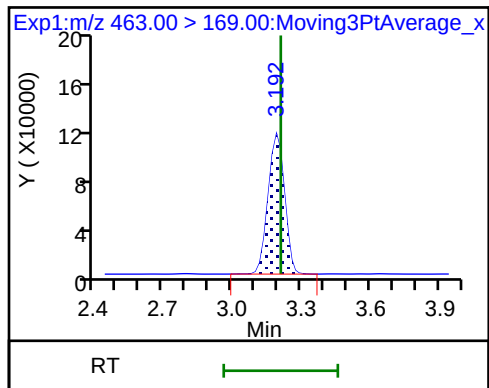
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

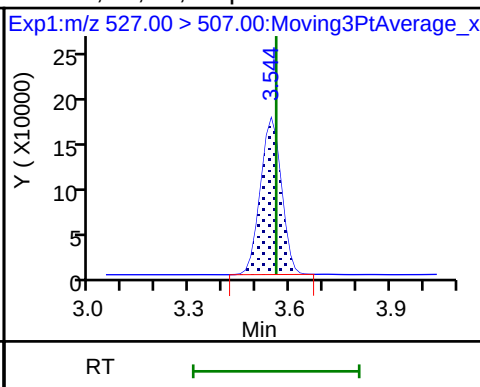
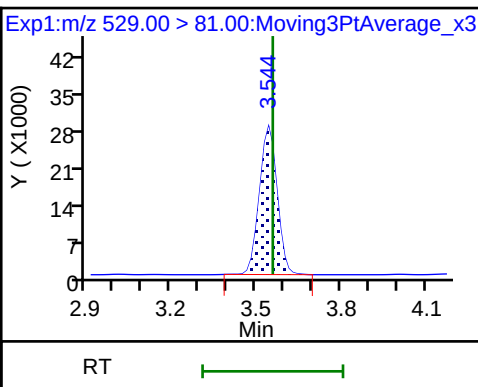
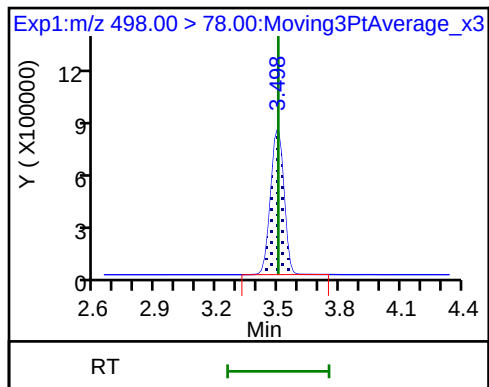
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

D 26 M2-8:2FTS

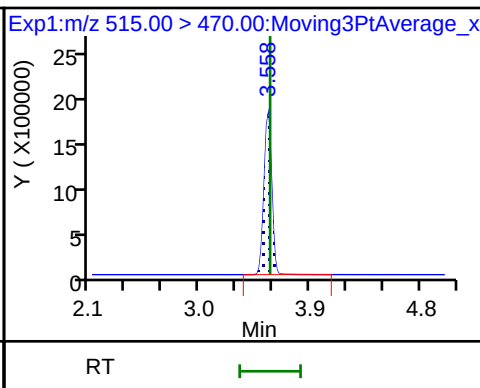
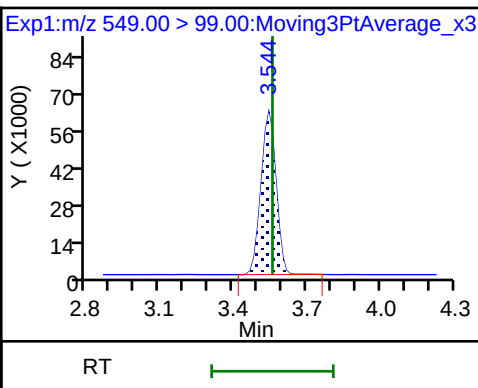
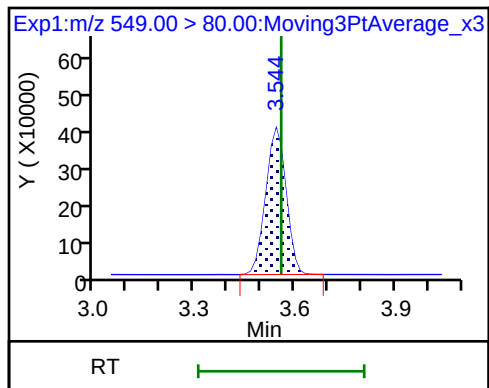
25 1H,1H,2H,2H-perfluorodecanesulfonamide



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

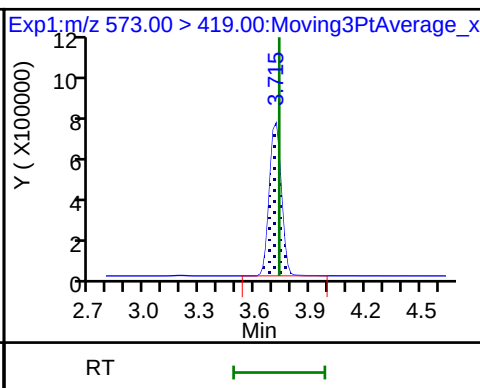
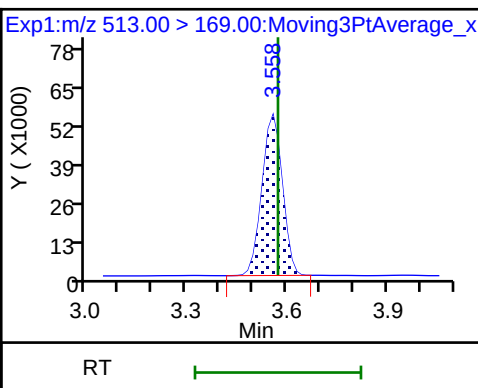
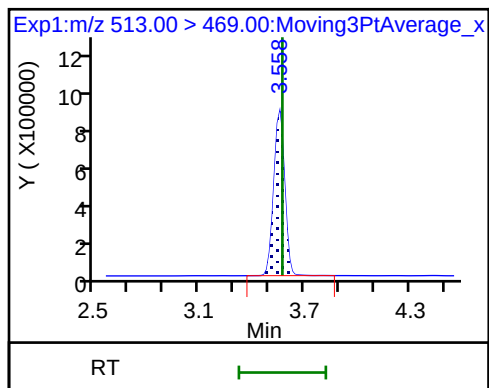
D 23 13C2 PFDA



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

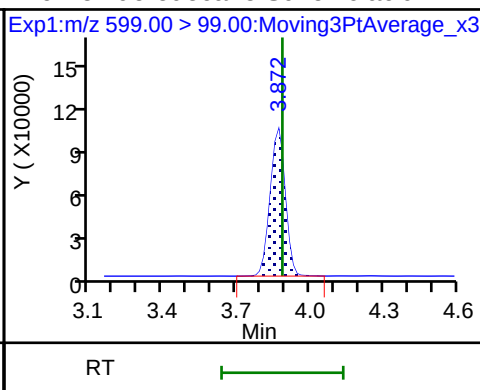
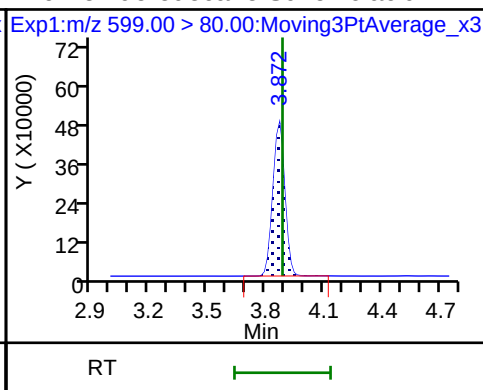
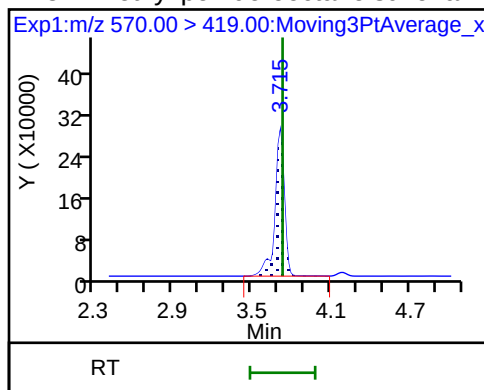
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

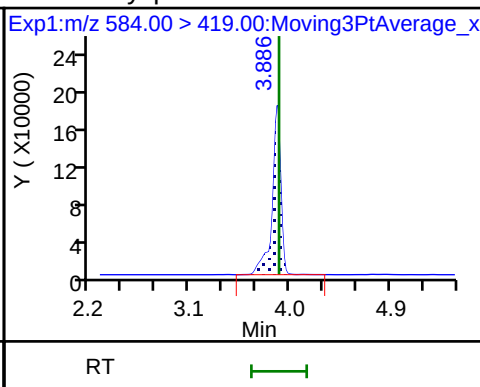
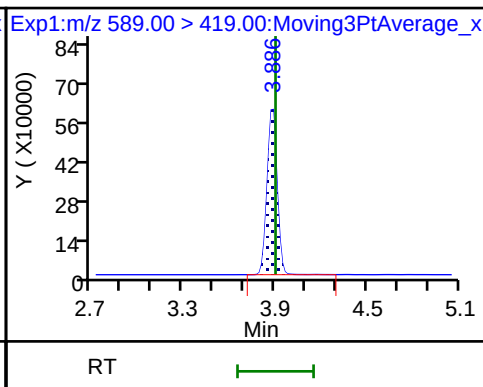
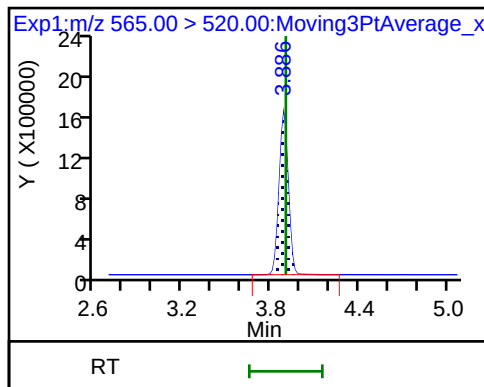
29 Perfluorodecane Sulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

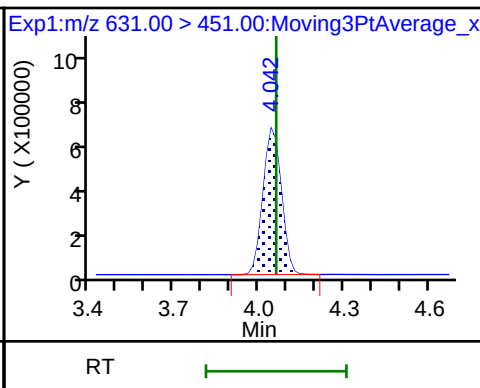
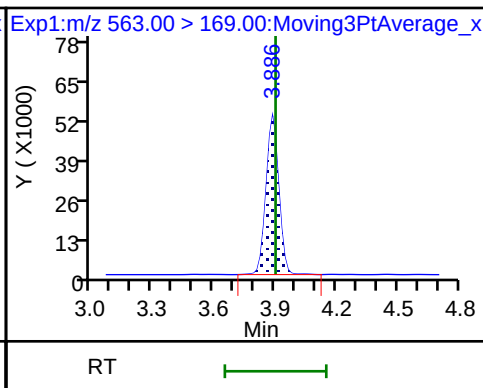
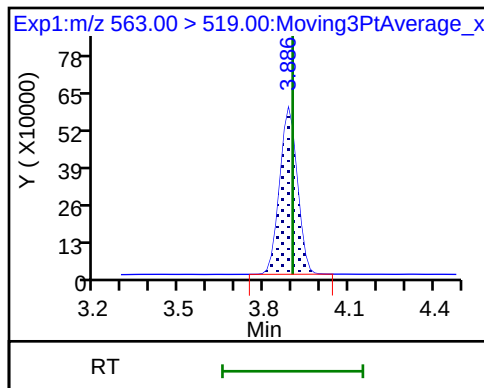
33 N-ethyl perfluorooctane sulfonamid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

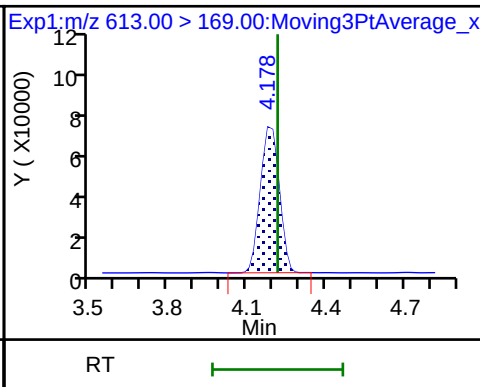
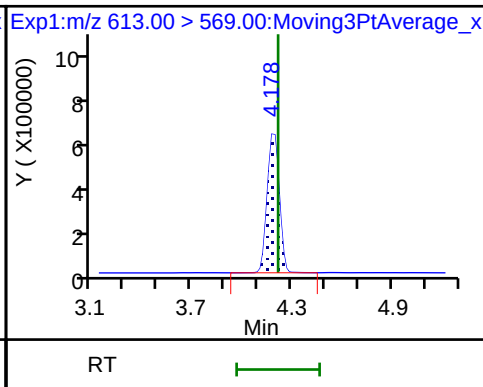
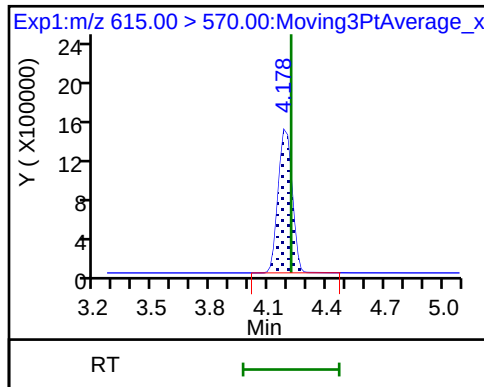
66 11-Chloroeicosafluoro-3-oxaundecan



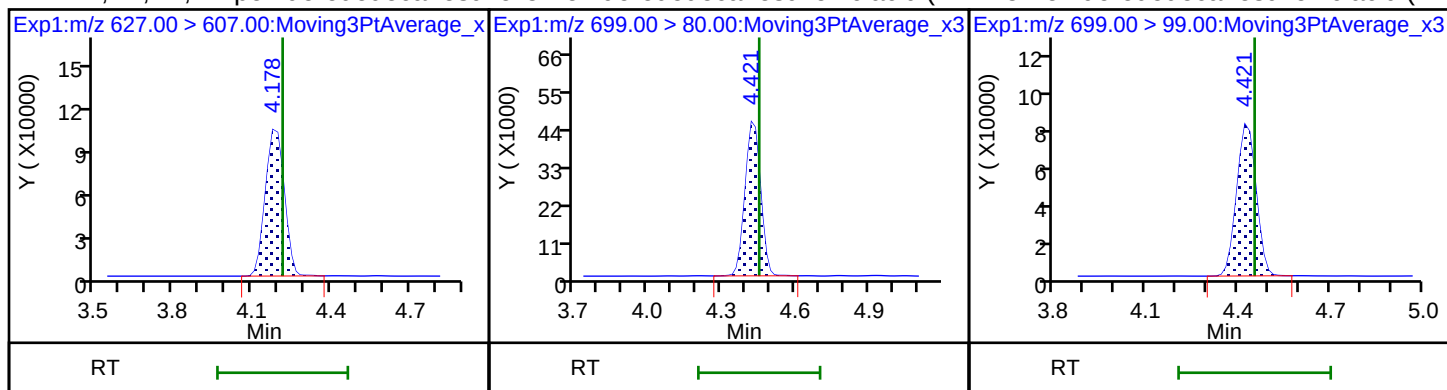
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



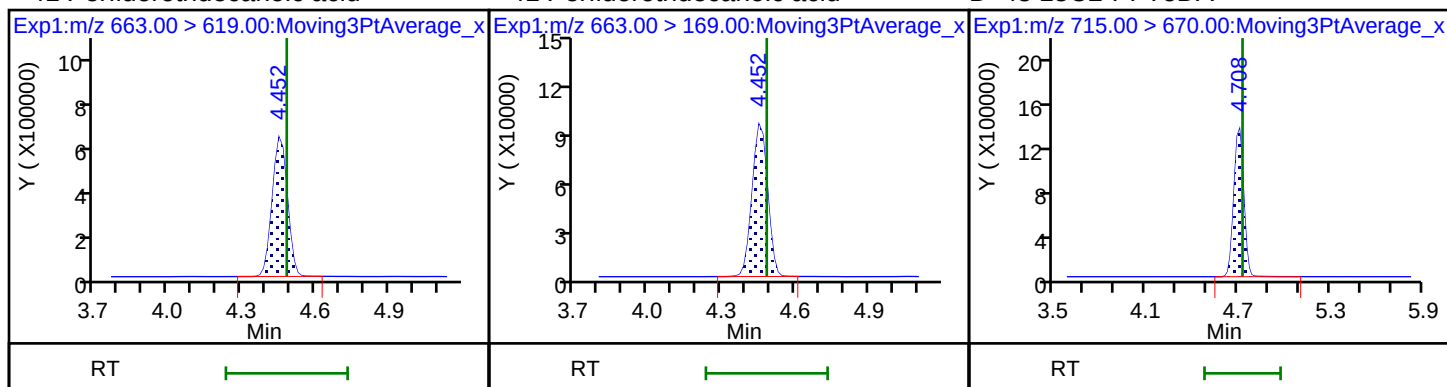
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

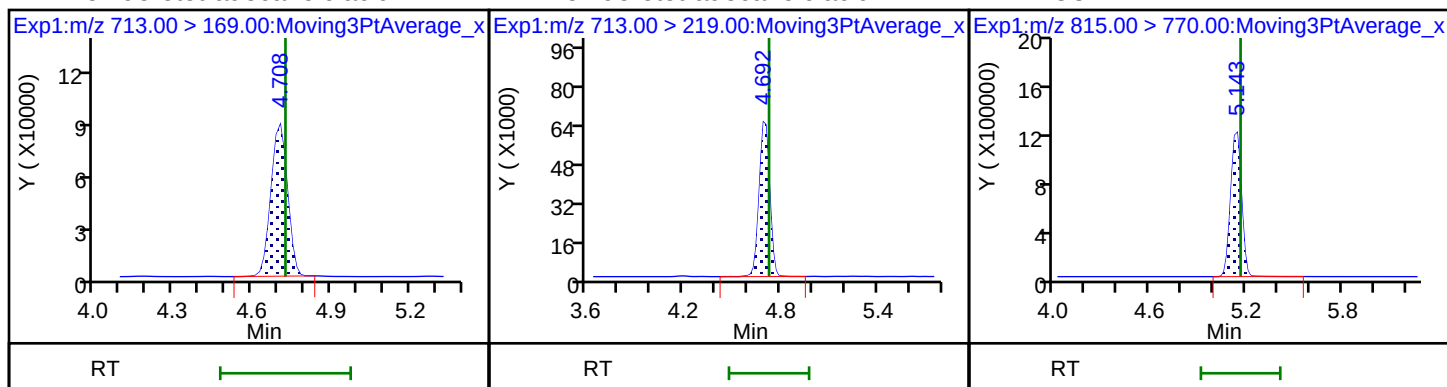
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

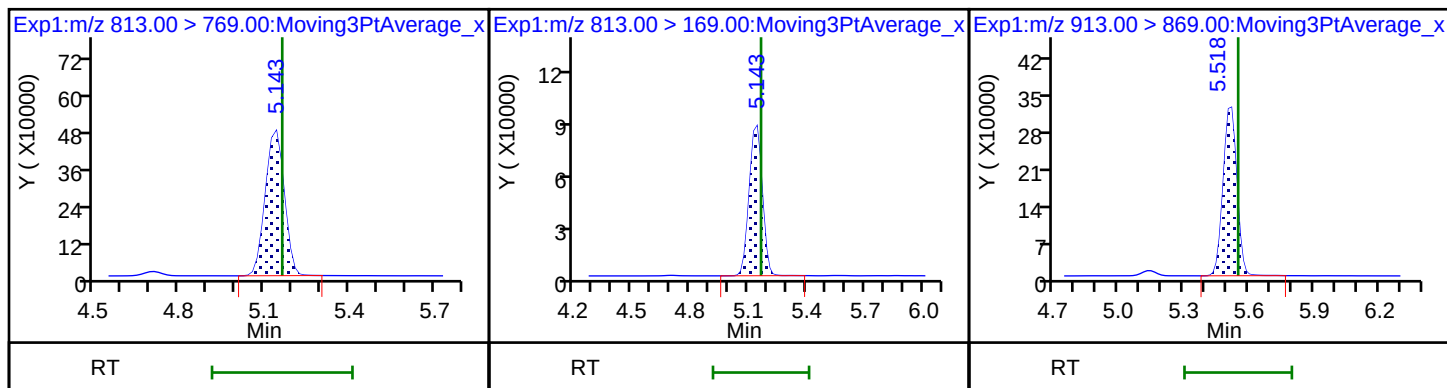
D 44 13C2-PFHxDA



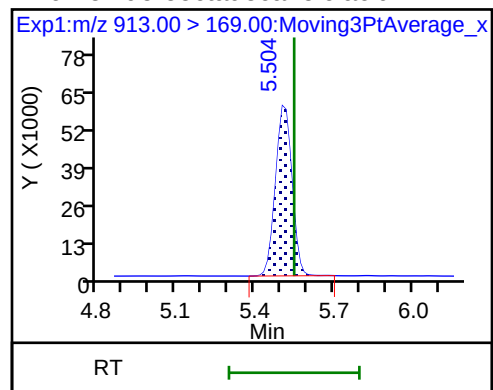
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

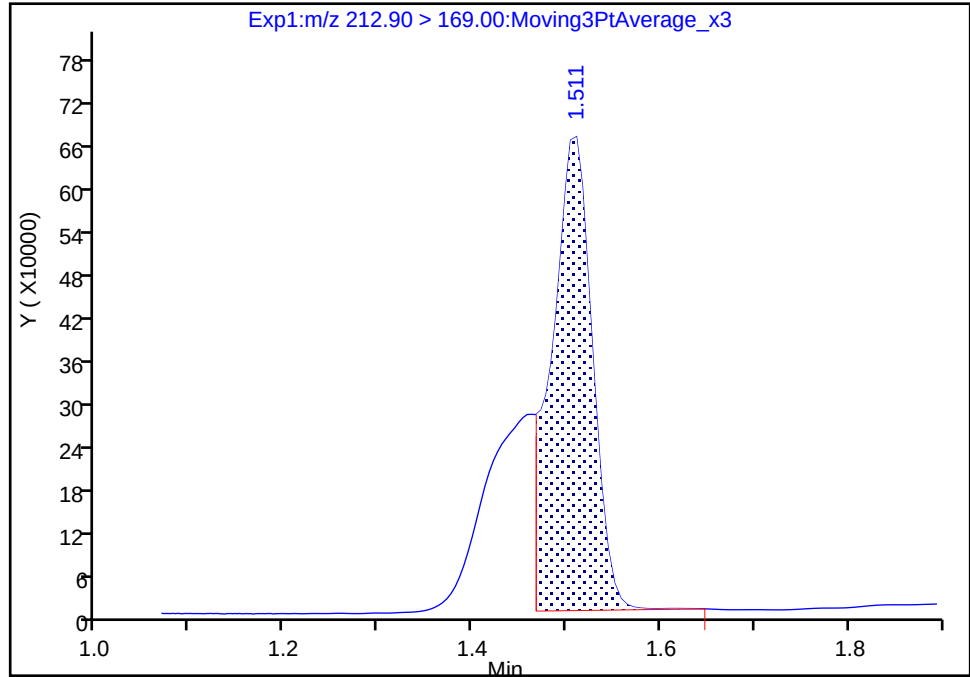
Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_009.d
Injection Date: 10-Sep-2018 10:47:16 Instrument ID: A9
Lims ID: LCSD 320-244587/3-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 3 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

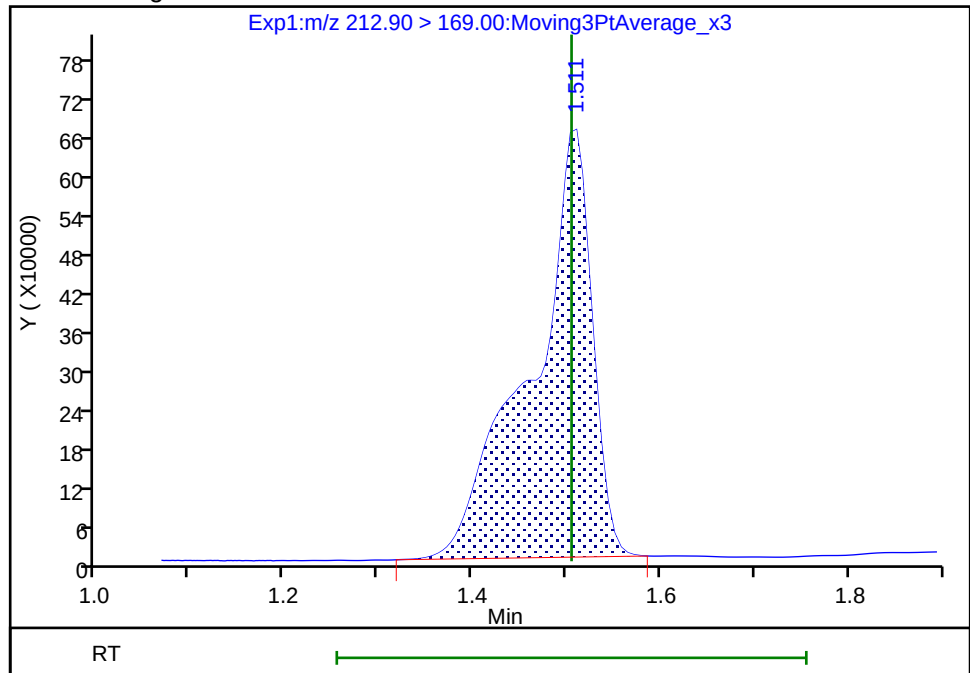
RT: 1.51
Area: 1958766
Amount: 0.713000
Amount Units: ng/ml

Processing Integration Results



RT: 1.51
Area: 2952064
Amount: 1.074565
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 11-Sep-2018 07:39:37
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 418 of 455

09/12/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-1 (082718) MS</u>	Lab Sample ID: <u>480-140926-2 MS</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_016.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 12:02</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>298.2 (mL)</u>	Date Analyzed: <u>09/10/2018 11:39</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	37.6		1.7	0.29
2706-90-3	Perfluoropentanoic acid (PFPeA)	34.1		1.7	0.41
307-24-4	Perfluorohexanoic acid (PFHxA)	34.1		1.7	0.49
375-85-9	Perfluoroheptanoic acid (PFHpA)	38.2		1.7	0.21
335-67-1	Perfluorooctanoic acid (PFOA)	34.6		1.7	0.71
375-95-1	Perfluorononanoic acid (PFNA)	37.7		1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	36.2		1.7	0.26
2058-94-8	Perfluoroundecanoic acid (PFUnA)	34.5		1.7	0.92
307-55-1	Perfluorododecanoic acid (PFDoA)	35.6		1.7	0.46
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	37.4		1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	34.5		1.7	0.24
375-73-5	Perfluorobutanesulfonic acid (PFBS)	32.9		1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	29.1		1.7	0.14
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	36.4		1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	33.6		1.7	0.45
335-77-3	Perfluorodecanesulfonic acid (PFDS)	36.6		1.7	0.27
754-91-6	Perfluorooctane Sulfonamide (FOSA)	37.3		1.7	0.29
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	35.8		17	2.6
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	33.0		17	1.6
27619-97-2	6:2 FTS	32.3		17	1.7
39108-34-4	8:2 FTS	30.5		17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-1 (082718) MS</u>	Lab Sample ID: <u>480-140926-2 MS</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLA_016.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 12:02</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>298.2 (mL)</u>	Date Analyzed: <u>09/10/2018 11:39</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244734</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	94		25-150
STL01893	13C5 PFPeA	102		25-150
STL00993	13C2 PFHxA	99		25-150
STL01892	13C4-PFHpA	101		25-150
STL00990	13C4 PFOA	105		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	107		25-150
STL00997	13C2 PFUnA	106		25-150
STL00998	13C2 PFDoA	90		25-150
STL02116	13C2-PFTeDA	102		25-150
STL02337	13C3-PFBS	102		25-150
STL00994	18O2 PFHxS	107		25-150
STL00991	13C4 PFOS	100		25-150
STL01056	13C8 FOSA	102		25-150
STL02118	d3-NMeFOSAA	103		25-150
STL02117	d5-NEtFOSAA	106		25-150
STL02279	M2-6:2FTS	114		25-150
STL02280	M2-8:2FTS	105		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_016.d
 Lims ID: 480-140926-A-2-B MS
 Client ID: MW-1 (082718)
 Sample Type: MS
 Inject. Date: 10-Sep-2018 11:39:50 ALS Bottle#: 10 Worklist Smp#: 13
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-140926-A-2-B MS
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 07:54:47 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 07:54:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.504	1.494	0.010	1.000	2929737	1.12		112	292	
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.505	-0.001	0.537	7149719	2.35		93.9	9801	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.780	0.009	1.000	2846900	1.02		102	91.3	
D 3 13C5-PFPeA										
267.90 > 223.00	1.789	1.791	-0.002	0.639	6904958	2.54		102	6792	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.831	1.822	0.009	1.000	3752724	0.9808		111	204	
298.90 > 99.00	1.831	1.822	0.009	1.000	1266269		2.96(1.35-4.05)		252	
D 47 13C3-PFBS										
301.90 > 83.00	1.831	1.832	-0.001	0.654	84674	2.37		102	237	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.038	0.010	1.119	1044464	1.33		142	3273	
D 60 M2-4:2FTS										
329.00 > 81.00	1.895	2.060	-0.165	0.677	2481	0.008094		0.0	0.3	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.078	0.011	1.000	2628746	1.02		102	81.8	
313.00 > 119.00	2.089	2.078	0.011	1.000	192432		13.66(6.96-20.87)		214	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.001	0.746	7106160	2.47		99.0	9297	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.099	0.010	1.152	1775448	0.9775		104	292	
349.00 > 99.00	2.109	2.099	0.010	1.152	832270		2.13(1.15-3.45)		317	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.181	0.0	1.000	580075	1.14		114	86.2	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.181	2.193	-0.012	0.779	716470	2.30		92.0	1206	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.413	0.013	1.000	4016595	1.14		114	173	
363.00 > 169.00	2.426	2.413	0.013	1.000	852307		4.71(2.17-6.52)		1542	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.439	0.0	1.000	2412629	0.8686		95.4	551	
399.00 > 99.00	2.439	2.439	0.0	1.000	686865		3.51(1.90-5.70)		523	
D 9 13C4-PFHpA										
367.00 > 322.00	2.426	2.441	-0.015	0.867	8650228	2.53		101	7947	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.454	-0.015	0.872	5308816	2.52		107	11403	
76 DONA										
377.00 > 251.00	2.466	2.465	0.001	0.777	6549704	1.12		118	8796	
377.00 > 85.00	2.466	2.465	0.001	0.777	2871563		2.28(1.13-3.39)		777	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.767	2.767	0.0	1.000	791321	0.9621		101	590	
* 62 13C2-PFOA										
415.00 > 370.00	2.799	2.782	0.017		7912602	2.50			8555	
D 12 M2-6:2FTS										
429.00 > 81.00	2.767	2.784	-0.017	0.989	912797	2.71		114	878	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.799	2.798	0.001	1.000	3713118	1.03		103	190	
413.00 > 169.00	2.799	2.798	0.001	1.000	1350264		2.75(1.36-4.08)		1457	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.799	2.798	0.001	0.882	2423340	1.08		114	1522	
449.00 > 99.00	2.799	2.798	0.001	0.882	598397		4.05(1.84-5.53)		1772	
D 73 13C8 PFOA										
421.00 > 376.00	2.799	2.816	-0.017		6750	0.002334		0.0	41.5	
D 14 13C4 PFOA										
417.00 > 372.00	2.799	2.816	-0.017	1.000	8368149	2.62		105	8352	
20 Perfluorononanoic acid										
463.00 > 419.00	3.192	3.174	0.018	1.000	3338414	1.13		113	354	
463.00 > 169.00	3.192	3.174	0.018	1.000	630925		5.29(2.68-8.03)		1363	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.173	3.174	-0.001	1.000	2396799	1.00		108	768	
499.00 > 99.00	3.173	3.174	-0.001	1.000	542963		4.41(2.04-6.12)		1658	
D 18 13C4 PFOS										
503.00 > 80.00	3.173	3.210	-0.037	1.134	5424743	2.40		100	3119	
D 19 13C5 PFNA										
468.00 > 423.00	3.192	3.210	-0.018	1.140	7583796	2.54		102	7573	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.385	3.386	-0.001	1.067	2811819	1.07		115	2971	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.498	3.499	-0.001	1.000	4020633	1.11		111	3897	
D 21 13C8 FOSA										
506.00 > 78.00	3.498	3.499	-0.001	1.250	3047850	2.55		102	4714	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.529	3.529	0.0	1.000	713941	0.9084		94.8	2063	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.544	3.529	0.015	1.000	3930063	1.08		108	635	
513.00 > 169.00	3.544	3.529	0.015	1.000	238613		16.47(7.12-21.35)		594	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.529	3.529	0.0	1.112	1529118	1.04		109	1754	
549.00 > 99.00	3.529	3.529	0.0	1.112	240734		6.35(3.02-9.05)		1195	
D 26 M2-8:2FTS										
529.00 > 81.00	3.529	3.558	-0.029	1.261	124341	2.51		105	463	
D 23 13C2 PFDA										
515.00 > 470.00	3.544	3.573	-0.029	1.266	7990775	2.68		107	10756	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.699	3.685	0.014	1.000	1473818	1.07		107	595	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.699	3.732	-0.033	1.322	3471548	2.58		103	3122	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.857	3.857	0.0	1.216	2012347	1.09		113	1451	
599.00 > 99.00	3.857	3.857	0.0	1.216	400197		5.03(2.14-6.43)		1621	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.872	3.871	0.001	1.000	2480263	1.03		103	545	
563.00 > 169.00	3.872	3.871	0.001	1.000	217333		11.41(5.24-15.72)		721	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.872	3.871	0.001	1.000	1028123	0.9853		98.5	1577	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.872	3.901	-0.029	1.384	2805480	2.65		106	3192	
D 30 13C2 PFUnA										
565.00 > 520.00	3.872	3.901	-0.029	1.384	6721809	2.65		106	7563	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.042	4.025	0.017	1.274	2967554	1.02		109	5618	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.179	4.160	0.019	1.184	439744	0.8339		86.5	1178	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.179	4.160	0.019	1.000	2967511	1.06		106	570	
613.00 > 169.00	4.179	4.160	0.019	1.000	328311		9.04(4.68-14.05)		738	
D 36 13C2 PFDaA										
615.00 > 570.00	4.179	4.216	-0.037	1.493	6941572	2.25		89.9	4998	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.406	4.405	0.001	1.389	186122	0.8822		91.1	495	
699.00 > 99.00	4.406	4.405	0.001	1.389	358462		0.52(0.28-0.83)		1122	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.437	4.436	0.001	1.062	2483179	1.11		111	1030	
663.00 > 169.00	4.437	4.436	0.001	1.062	427036		5.81(3.09-9.27)		1164	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.677	4.676	0.0	0.997	415247	1.03		103	1284	
713.00 > 219.00	4.677	4.676	0.0	0.997	284507		1.46(0.70-2.09)		1292	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.692	4.727	-0.035	1.677	6256166	2.54		102	10957	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.109	5.109	0.0	1.000	2431899	1.09		109	642	
813.00 > 169.00	5.109	5.109	0.0	1.000	429406		5.66(2.77-8.32)		1230	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.109	5.164	-0.055	1.826	6025502	2.42		96.6	6244	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.476	5.476	0.0	1.072	1551441	1.01		101	500	
913.00 > 169.00	5.476	5.476	0.0	1.072	286116		5.42(2.55-7.64)		1330	

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63951.b\2018.09.10LLA_016.d

Injection Date: 10-Sep-2018 11:39:50

Instrument ID: A9

Lims ID: 480-140926-A-2-B MS

Client ID: MW-1 (082718)

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 13

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

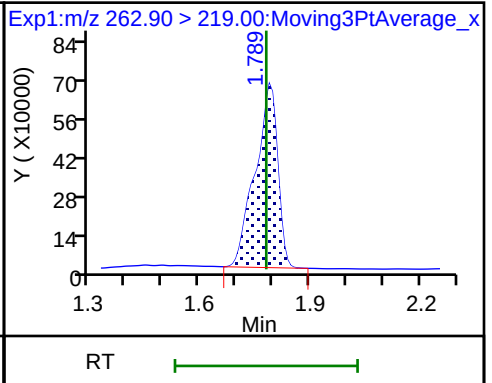
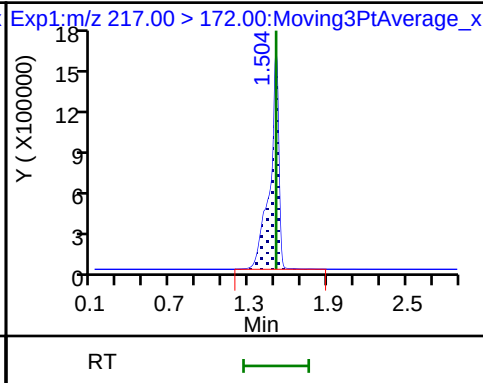
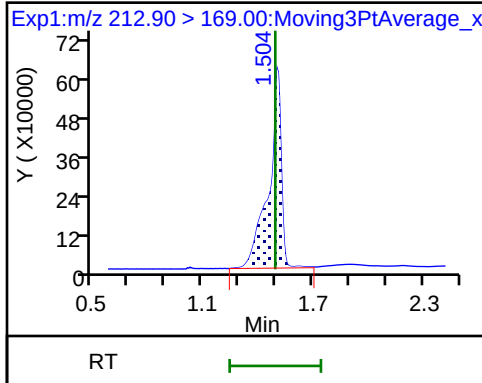
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

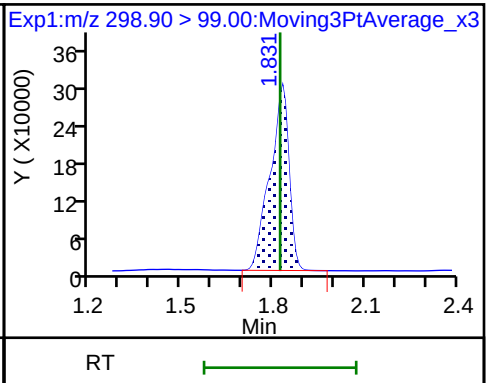
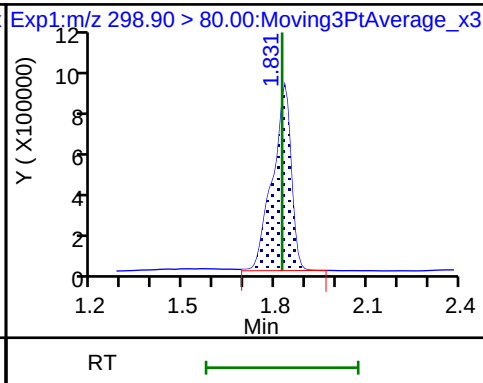
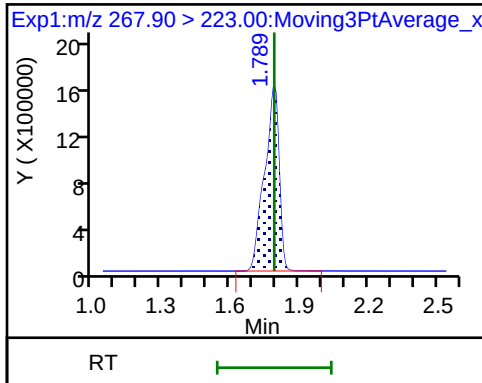
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

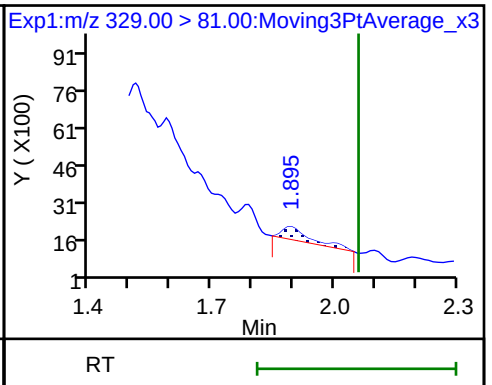
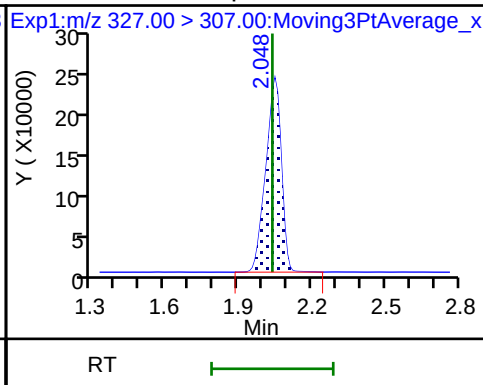
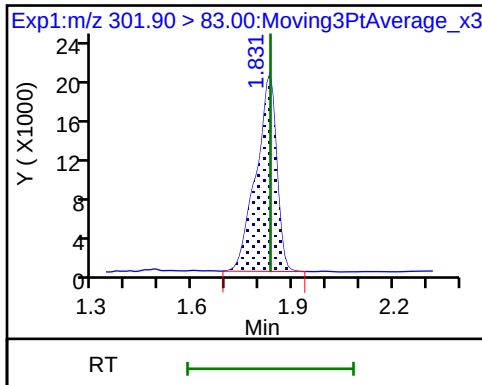
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

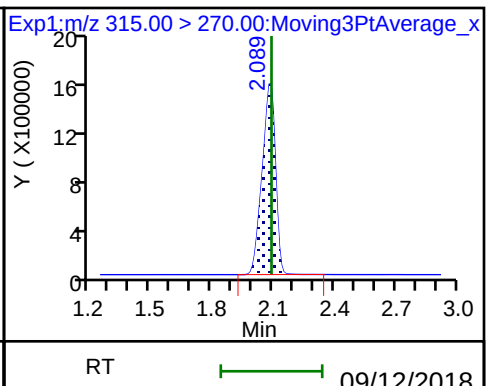
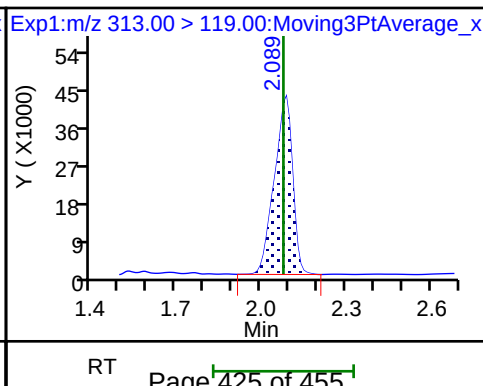
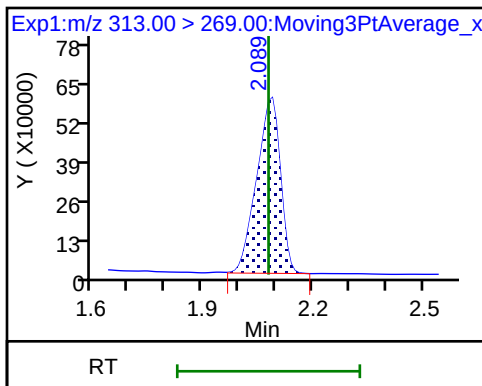
D 60 M2-4:2FTS

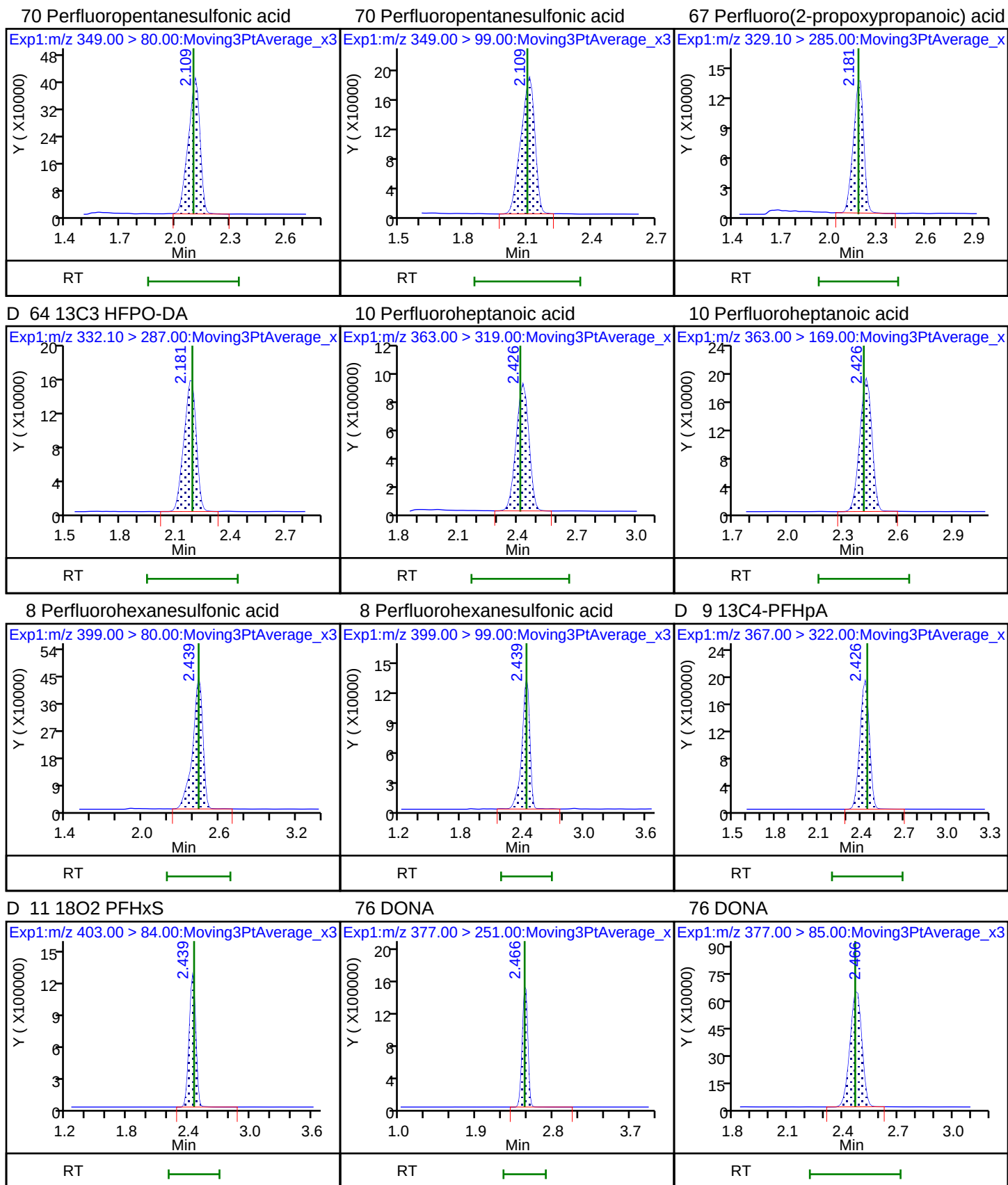


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

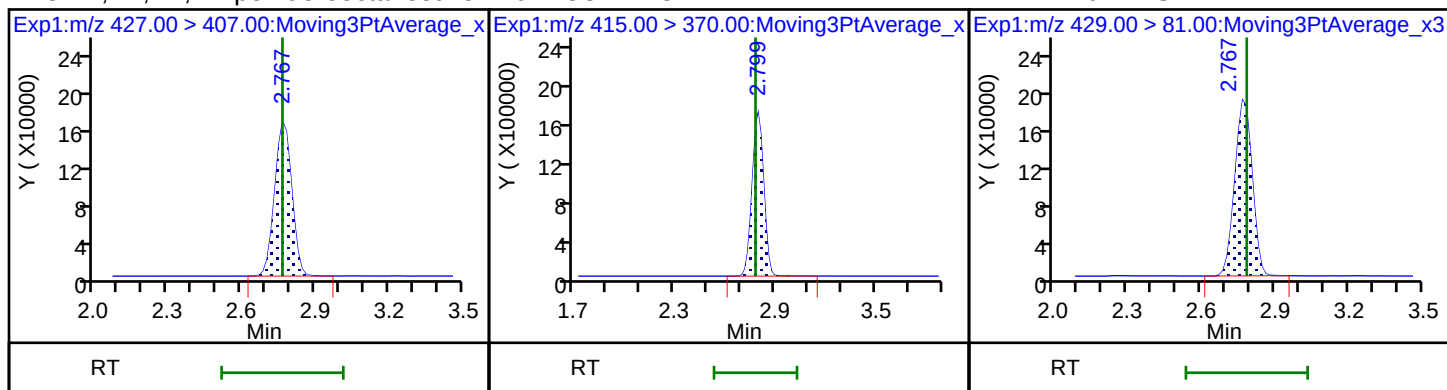
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonate 62 13C2-PFOA

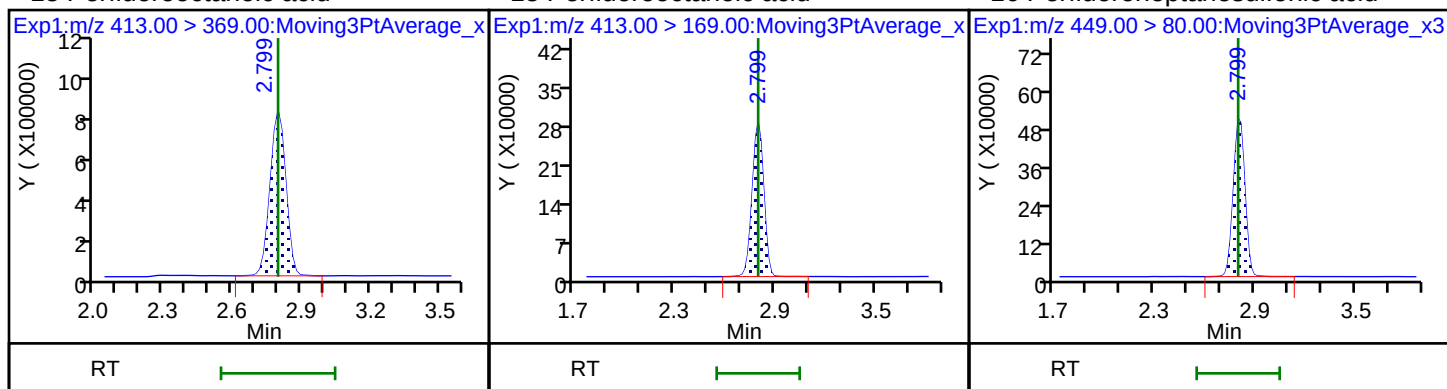
D 12 M2-6:2FTS



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

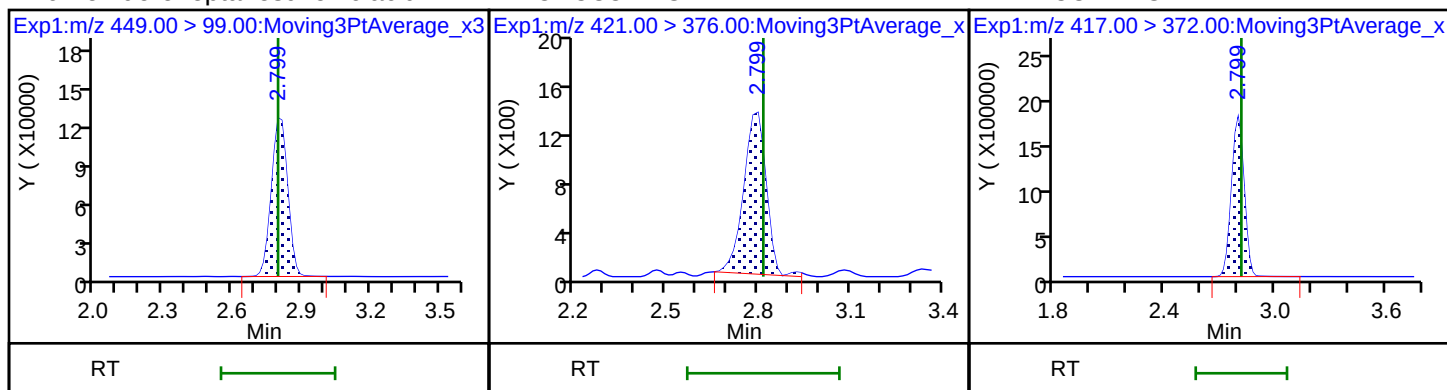
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

D 73 13C8 PFOA

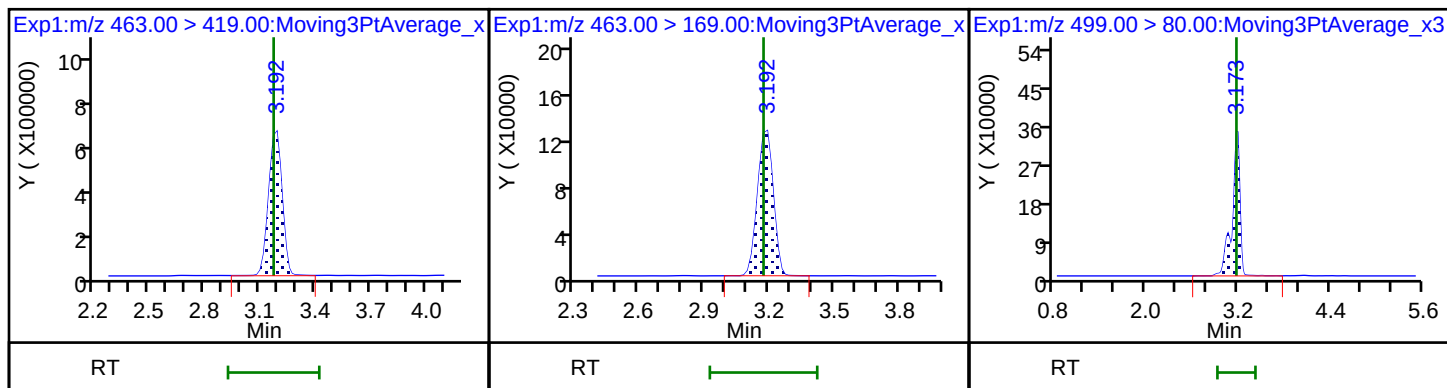
D 14 13C4 PFOA



20 Perfluorononanoic acid

20 Perfluorononanoic acid

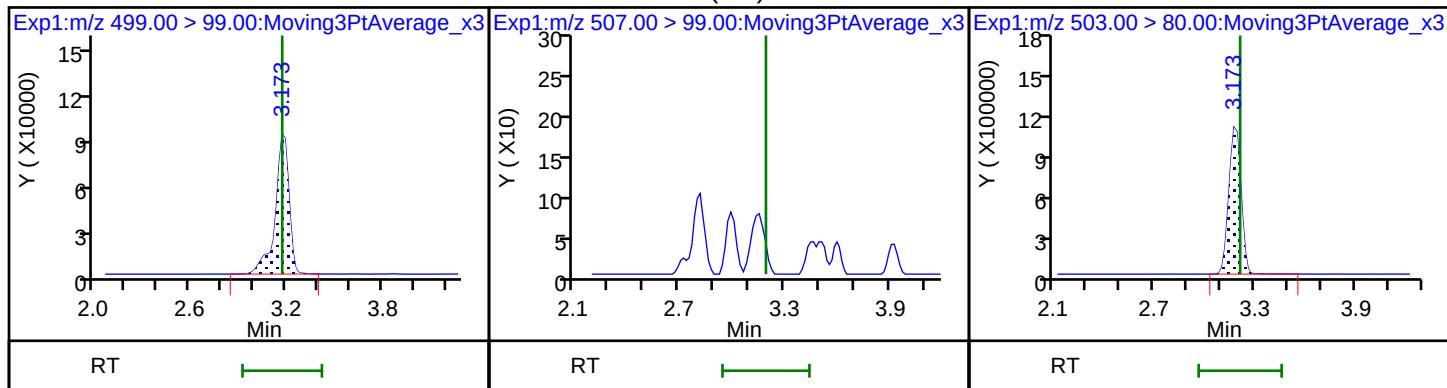
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

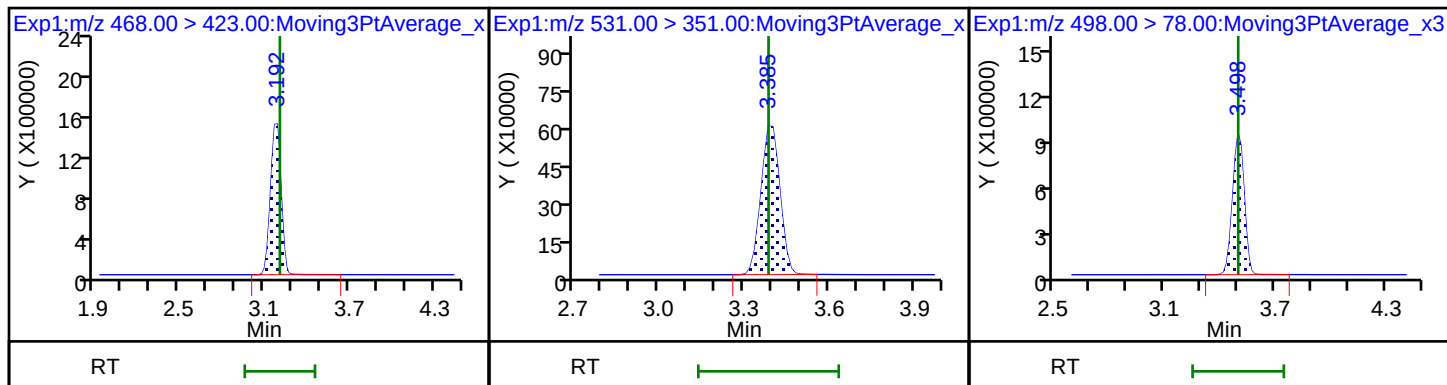
D 72 13C8 PFOS (ND)

D 18 13C4 PFOS



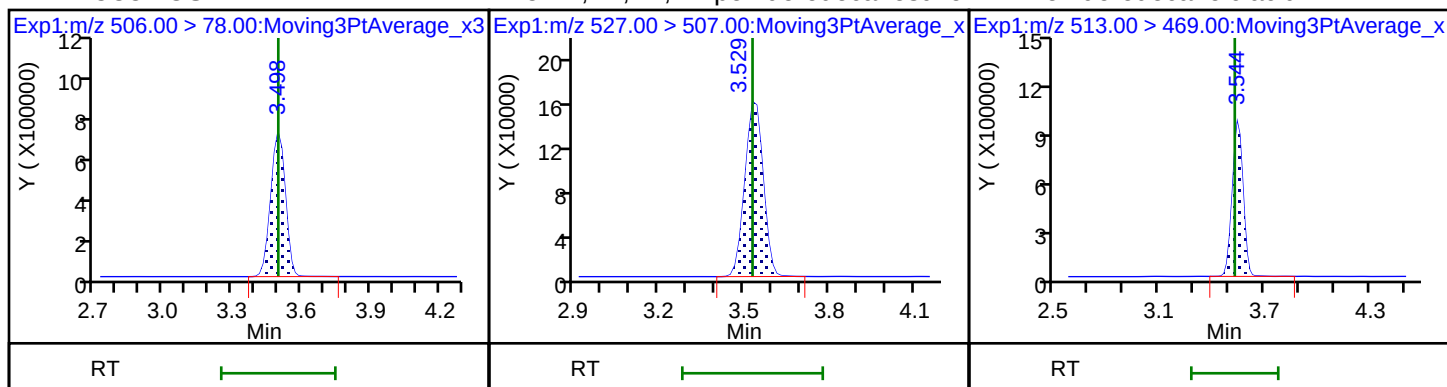
D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonan-2 Perfluorooctane Sulfonamide



D 21 13C8 FOSA

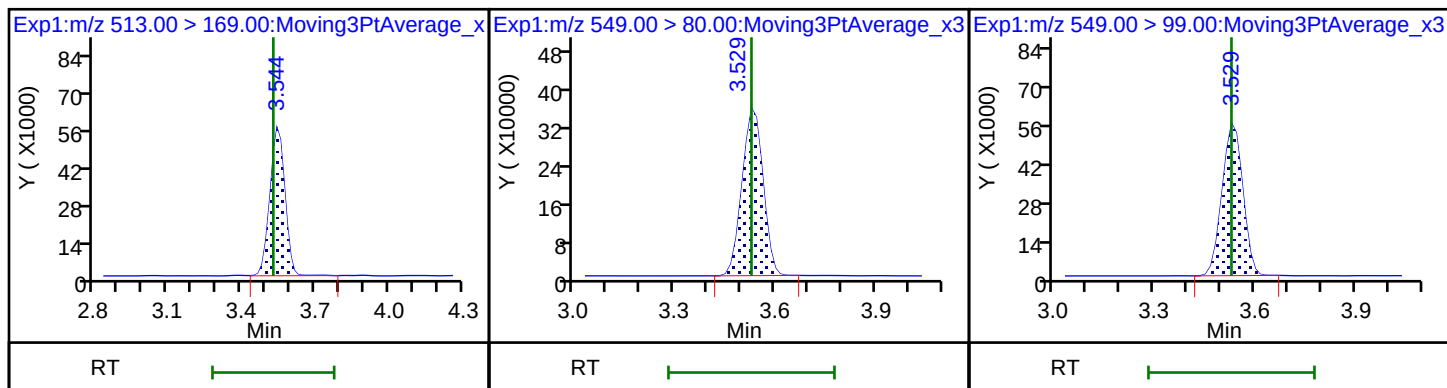
25 1H,1H,2H,2H-perfluorodecanesulfoni 24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid



D 26 M2-8:2FTS

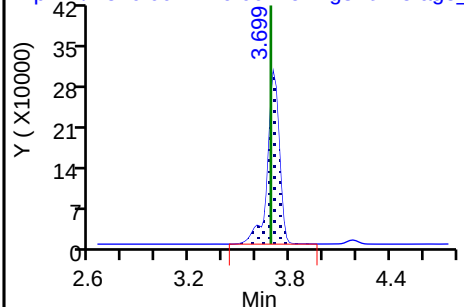
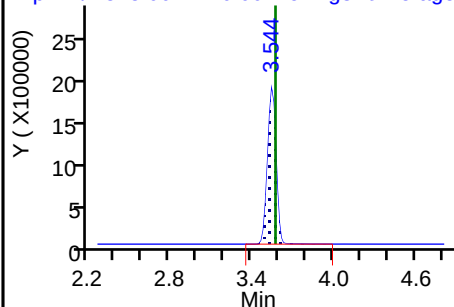
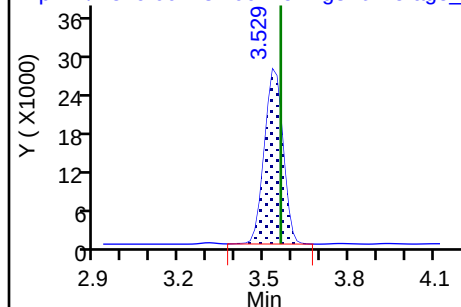
D 23 13C2 PFDA

28 N-methyl perfluorooctane sulfonami

Exp1:m/z 529.00 > 81.00:Moving3PtAverage_x3

Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x3

Exp1:m/z 570.00 > 419.00:Moving3PtAverage_x3



D 27 d3-NMeFOSAA

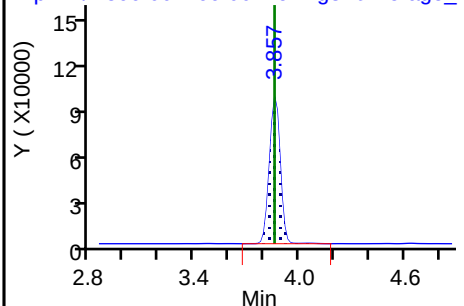
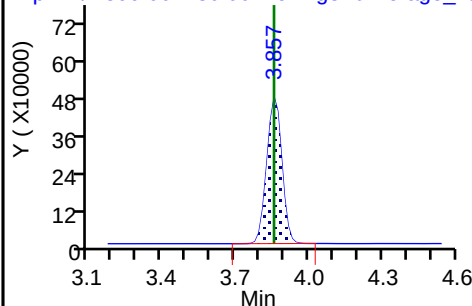
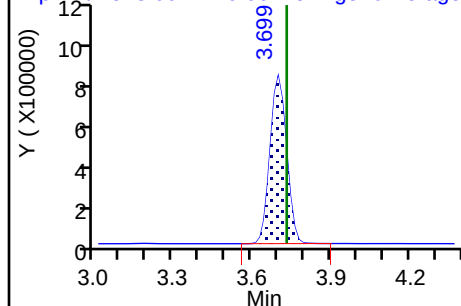
29 Perfluorodecane Sulfonic acid

29 Perfluorodecane Sulfonic acid

Exp1:m/z 573.00 > 419.00:Moving3PtAverage_x3

Exp1:m/z 599.00 > 80.00:Moving3PtAverage_x3

Exp1:m/z 599.00 > 99.00:Moving3PtAverage_x3



31 Perfluoroundecanoic acid

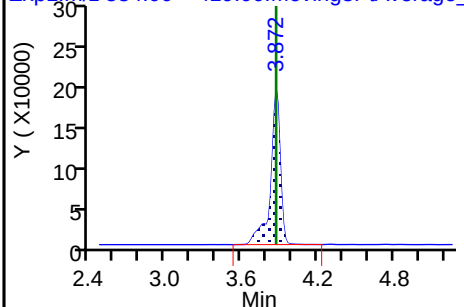
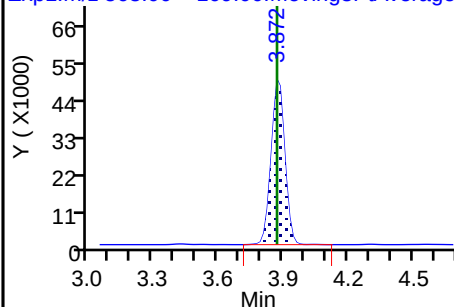
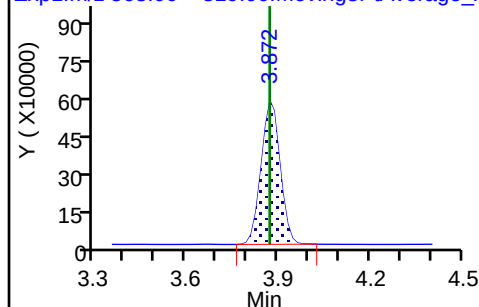
31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid

Exp1:m/z 563.00 > 519.00:Moving3PtAverage_x3

Exp1:m/z 563.00 > 169.00:Moving3PtAverage_x3

Exp1:m/z 584.00 > 419.00:Moving3PtAverage_x3



D 32 d5-NEtFOSAA

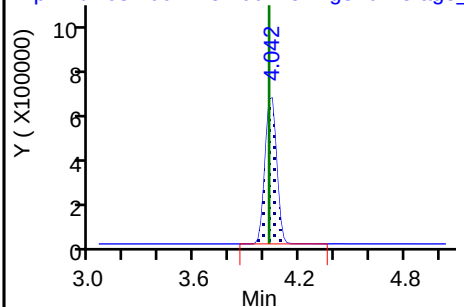
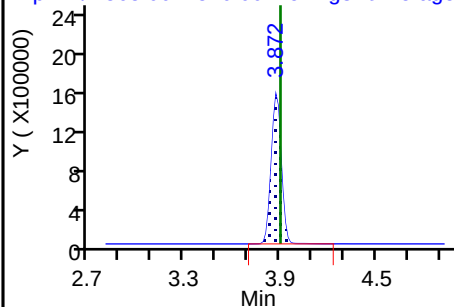
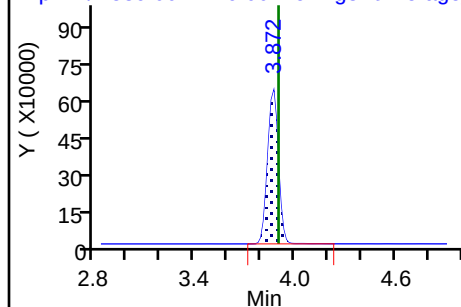
D 30 13C2 PFUnA

66 11-Chloroeicosafuoro-3-oxaundecan

Exp1:m/z 589.00 > 419.00:Moving3PtAverage_x3

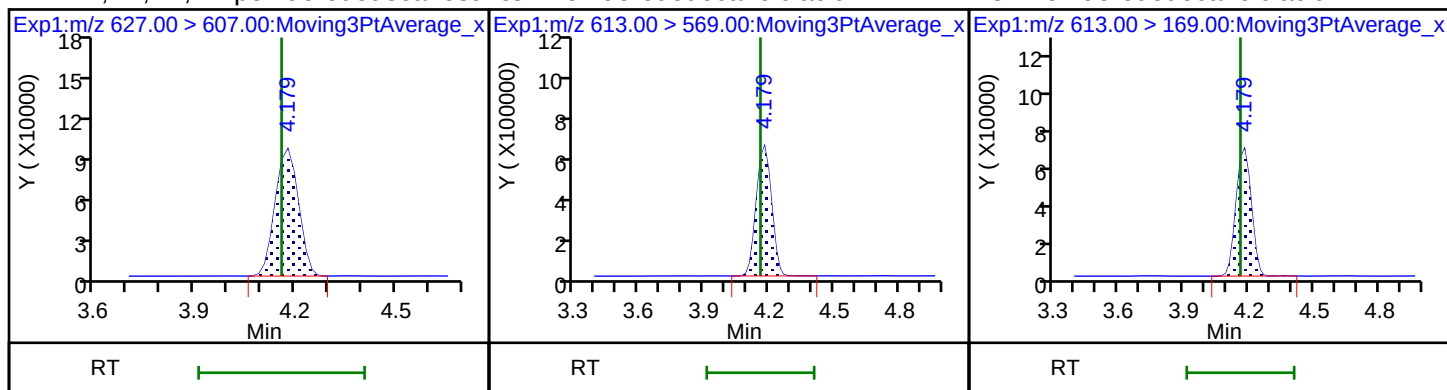
Exp1:m/z 565.00 > 520.00:Moving3PtAverage_x3

Exp1:m/z 631.00 > 451.00:Moving3PtAverage_x3



74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid

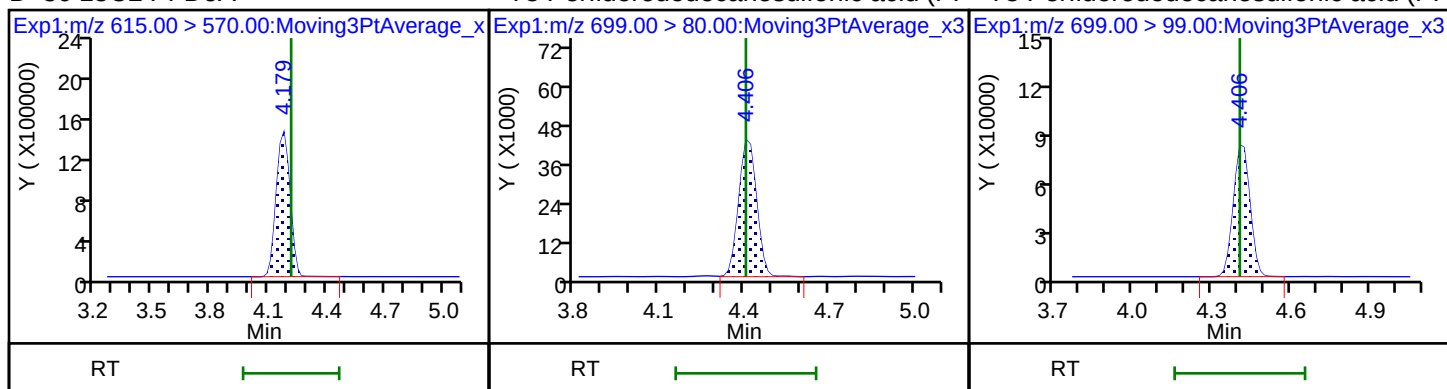
37 Perfluorododecanoic acid



D 36 13C2 PFDaA

75 Perfluorododecanesulfonic acid (PF

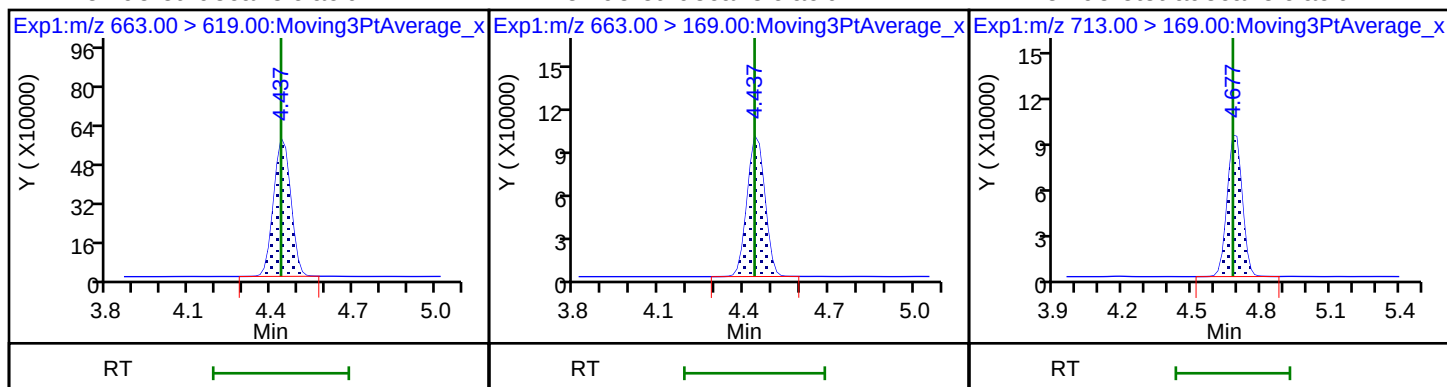
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

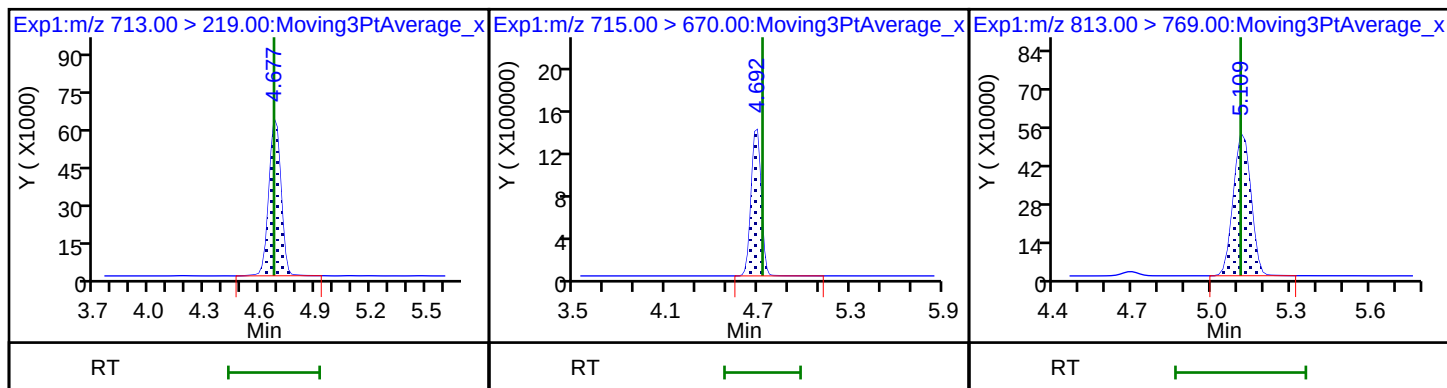
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

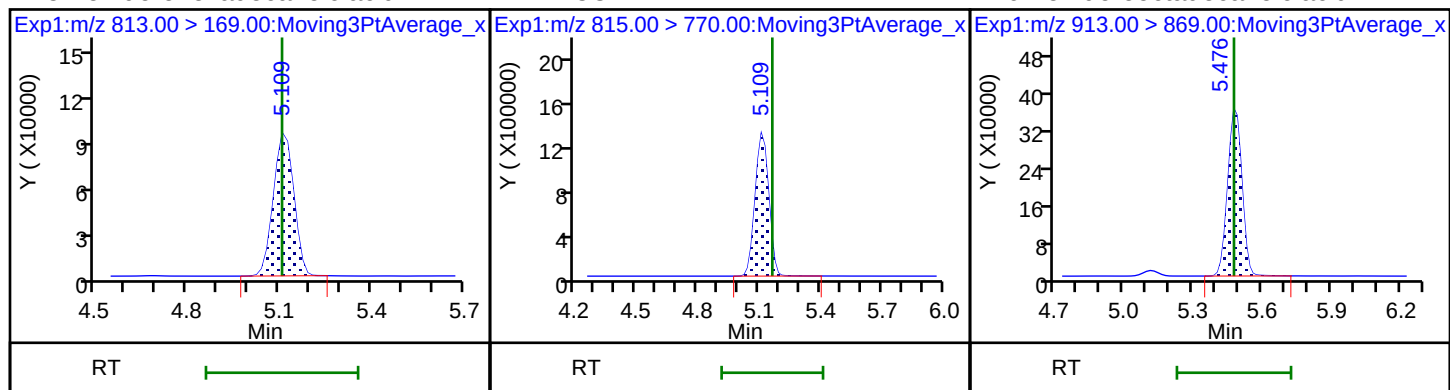
45 Perfluorohexadecanoic acid



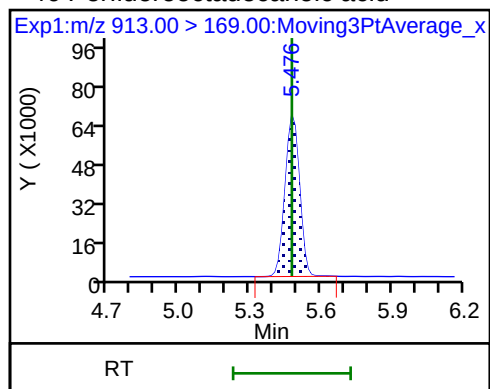
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-1 (082718) MSD</u>	Lab Sample ID: <u>480-140926-2 MSD</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLAA_018.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 12:02</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>298.4 (mL)</u>	Date Analyzed: <u>09/10/2018 12:32</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244760</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	36.2		1.7	0.29
2706-90-3	Perfluoropentanoic acid (PFPeA)	34.6		1.7	0.41
307-24-4	Perfluorohexanoic acid (PFHxA)	33.3		1.7	0.49
375-85-9	Perfluoroheptanoic acid (PFHpA)	36.5		1.7	0.21
335-67-1	Perfluorooctanoic acid (PFOA)	33.7		1.7	0.71
375-95-1	Perfluorononanoic acid (PFNA)	38.5		1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	36.0		1.7	0.26
2058-94-8	Perfluoroundecanoic acid (PFUnA)	33.0		1.7	0.92
307-55-1	Perfluorododecanoic acid (PFDoA)	37.9		1.7	0.46
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	35.2		1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	32.7		1.7	0.24
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36.3		1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	30.8		1.7	0.14
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	36.1		1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	33.6		1.7	0.45
335-77-3	Perfluorodecanesulfonic acid (PFDS)	33.0		1.7	0.27
754-91-6	Perfluorooctane Sulfonamide (FOSA)	38.1		1.7	0.29
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	36.3		17	2.6
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	34.9		17	1.6
27619-97-2	6:2 FTS	35.2		17	1.7
39108-34-4	8:2 FTS	32.5		17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-140926-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-1 (082718) MSD</u>	Lab Sample ID: <u>480-140926-2 MSD</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.10LLAA_018.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>08/27/2018 12:02</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/08/2018 10:16</u>
Sample wt/vol: <u>298.4 (mL)</u>	Date Analyzed: <u>09/10/2018 12:32</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (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>244760</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	92		25-150
STL01893	13C5 PFPeA	98		25-150
STL00993	13C2 PFHxA	101		25-150
STL01892	13C4-PFHpA	99		25-150
STL00990	13C4 PFOA	99		25-150
STL00995	13C5 PFNA	96		25-150
STL00996	13C2 PFDA	107		25-150
STL00997	13C2 PFUnA	97		25-150
STL00998	13C2 PFDoA	95		25-150
STL02116	13C2-PFTeDA	100		25-150
STL02337	13C3-PFBS	89		25-150
STL00994	18O2 PFHxS	102		25-150
STL00991	13C4 PFOS	99		25-150
STL01056	13C8 FOSA	97		25-150
STL02118	d3-NMeFOSAA	94		25-150
STL02117	d5-NEtFOSAA	95		25-150
STL02279	M2-6:2FTS	102		25-150
STL02280	M2-8:2FTS	101		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_018.d
 Lims ID: 480-140926-A-2-C MSD
 Client ID: MW-1 (082718)
 Sample Type: MSD
 Inject. Date: 10-Sep-2018 12:32:17 ALS Bottle#: 11 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-140926-A-2-C MSD
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Sep-2018 07:59:42 Calib Date: 28-Aug-2018 11:05:49
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180828-63368.b\2018.08.28LLICALA_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK024

First Level Reviewer: mongkols

Date: 11-Sep-2018 07:59:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.500	1.497	0.003	1.003	2841562	1.08		108	176	
D 1 13C4 PFBA										
217.00 > 172.00	1.494	1.499	-0.005	0.537	7195716	2.29		91.7	9515	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.781	1.777	0.004	1.000	2861166	1.03		103	91.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.781	1.781	0.0	0.640	6838724	2.44		97.7	7629	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.823	1.818	0.005	1.005	3727723	1.08		123	216	
298.90 > 99.00	1.823	1.818	0.005	1.005	1258521		2.96(1.35-4.05)		243	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.822	-0.008	0.652	76171	2.07		89.1	210	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.033	0.005	1.123	950020	1.34		144	2494	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.069	2.074	-0.005	1.000	2695869	0.99		99.3	81.6	
313.00 > 119.00	2.069	2.074	-0.005	1.000	197643		13.64(6.96-20.87)		194	
D 7 13C2 PFHxA										
315.00 > 270.00	2.069	2.079	-0.010	0.743	7453779	2.52		101	9352	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.100	2.094	0.006	1.157	1792728	1.10		117	334	
349.00 > 99.00	2.100	2.094	0.006	1.157	861382		2.08(1.15-3.45)		318	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.171	2.176	-0.005	1.000	575234	1.03		103	96.9	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.171	2.181	-0.010	0.780	786512	2.45		98.0	1560	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.413	0.0	0.867	8770480	2.48		99.4	12628	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.419	-0.006	1.000	3898108	1.09		109	171	
363.00 > 169.00	2.413	2.419	-0.006	1.000	905386		4.31(2.17-6.52)		1256	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.427	2.432	-0.005	1.000	2528996	0.9193		101	654	
399.00 > 99.00	2.427	2.432	-0.005	1.000	707272		3.58(1.90-5.70)		498	
D 11 18O2 PFHxS										
403.00 > 84.00	2.427	2.439	-0.012	0.872	5257675	2.42		102	12428	
76 DONA										
377.00 > 251.00	2.453	2.458	-0.005	0.773	6605298	1.11		117	9565	
377.00 > 85.00	2.453	2.458	-0.005	0.773	2754983		2.40(1.13-3.39)		726	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.751	2.759	-0.008	1.000	798938	1.05		111	676	
D 12 M2-6:2FTS										
429.00 > 81.00	2.751	2.767	-0.016	0.989	843952	2.43		102	929	
D 73 13C8 PFOA										
421.00 > 376.00	2.783	2.783	0.0		9658	0.003340		0.0	50.5	
D 14 13C4 PFOA										
417.00 > 372.00	2.783	2.783	0.0	1.000	8126012	2.47		98.9	10550	
* 62 13C2-PFOA										
415.00 > 370.00	2.783	2.790	-0.007		8155230	2.50			9257	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.783	2.790	-0.007	1.000	3523013	1.01		101	182	
413.00 > 169.00	2.783	2.790	-0.007	1.000	1303233		2.70(1.36-4.08)		1600	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.783	2.790	-0.007	0.877	2453489	1.08		113	1368	
449.00 > 99.00	2.799	2.790	0.009	0.882	578756		4.24(1.84-5.53)		1422	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.174	3.163	0.011	1.000	2446908	1.00		108	1080	
499.00 > 99.00	3.174	3.163	0.011	1.000	569934		4.29(2.04-6.12)		1278	
20 Perfluorononanoic acid										
463.00 > 419.00	3.174	3.163	0.011	1.000	3309946	1.15		115	328	
463.00 > 169.00	3.174	3.163	0.011	1.000	611697		5.41(2.68-8.03)		1435	
D 19 13C5 PFNA										
468.00 > 423.00	3.174	3.173	0.001	1.140	7357563	2.39		95.6	6017	
D 18 13C4 PFOS										
503.00 > 80.00	3.174	3.173	0.001	1.140	5525416	2.37		99.1	3283	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.386	3.376	0.010	1.067	2528715	0.9445		101	2922	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.499	3.490	0.009	1.000	4015634	1.14		114	5010	
D 21 13C8 FOSA										
506.00 > 78.00	3.499	3.498	0.001	1.257	2977741	2.41		96.5	4133	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.515	3.520	-0.005	1.000	753127	0.9692		101	2575	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.515	3.520	-0.005	1.107	1471926	0.9858		103	1768	
549.00 > 99.00	3.515	3.520	-0.005	1.107	248864		5.91(3.02-9.05)		987	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.530	3.529	0.001	1.268	8244191	2.68		107	10291	
D 26 M2-8:2FTS										
529.00 > 81.00	3.515	3.529	-0.014	1.263	122936	2.41		101	458	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.530	3.535	-0.005	1.000	4029085	1.07		107	631	
513.00 > 169.00	3.530	3.535	-0.005	1.000	259073		15.55(7.12-21.35)		600	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.686	3.685	0.001	1.324	3245614	2.34		93.7	3026	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.686	3.691	-0.005	1.000	1398731	1.08		108	461	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.842	3.833	0.009	1.211	1851280	0.9845		102	1486	
599.00 > 99.00	3.842	3.833	0.009	1.211	389777		4.75(2.14-6.43)		1477	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.858	3.857	0.001	1.386	2602705	2.39		95.5	2608	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.858	3.865	-0.007	1.000	1007766	1.04		104	1525	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.858	3.865	-0.007	1.000	2249174	0.9843		98.4	462	
563.00 > 169.00	3.858	3.865	-0.007	1.000	212317		10.59(5.24-15.72)		853	
D 30 13C2 PFUnA										
565.00 > 520.00	3.858	3.872	-0.014	1.386	6367918	2.43		97.3	6465	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.010	4.019	-0.009	1.264	3030285	1.03		109	5352	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.161	4.153	0.008	1.000	3453352	1.13		113	710	
613.00 > 169.00	4.161	4.153	0.008	1.000	369750		9.34(4.68-14.05)		890	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.161	4.153	0.008	1.184	444659	0.8529		88.5	944	
D 36 13C2 PFDaA										
615.00 > 570.00	4.161	4.160	0.001	1.495	7567219	2.38		95.1	5683	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.391	4.399	-0.008	1.384	190889	0.8883		91.8	428	
699.00 > 99.00	4.391	4.399	-0.008	1.384	348789		0.55(0.28-0.83)		974	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.422	4.415	0.007	1.063	2550897	1.05		105	975	
663.00 > 169.00	4.422	4.415	0.007	1.063	433219		5.89(3.09-9.27)		963	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.661	4.671	-0.010	1.000	399751	0.9756		97.6	1742	
713.00 > 219.00	4.661	4.671	-0.010	1.000	280520		1.43(0.70-2.09)		1027	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.661	4.680	-0.019	1.675	6345249	2.50		100	11291	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.093	5.088	0.005	1.000	2447592	1.10		110	633	
813.00 > 169.00	5.093	5.088	0.005	1.000	413758		5.92(2.77-8.32)		894	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.093	5.096	-0.003	1.830	6018832	2.34		93.6	10962	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.448	5.459	-0.010	1.070	1570981	1.02		102	514	
913.00 > 169.00	5.448	5.459	-0.010	1.070	288598		5.44(2.55-7.64)		1088	

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180910-63958.b\2018.09.10LLAA_018.d

Injection Date: 10-Sep-2018 12:32:17

Instrument ID: A9

Lims ID: 480-140926-A-2-C MSD

Client ID: MW-1 (082718)

Operator ID: A9\Administrator

ALS Bottle#: 11

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

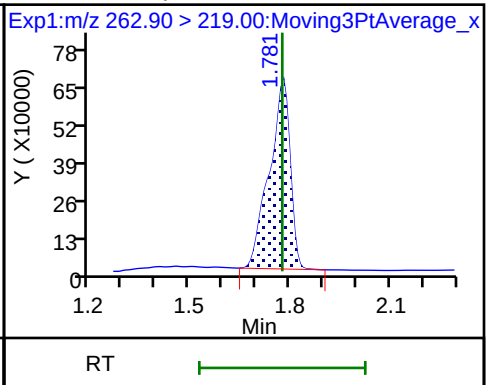
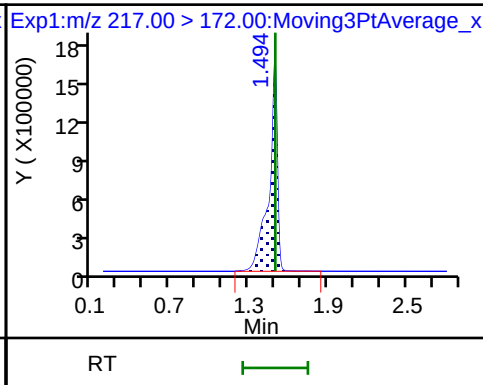
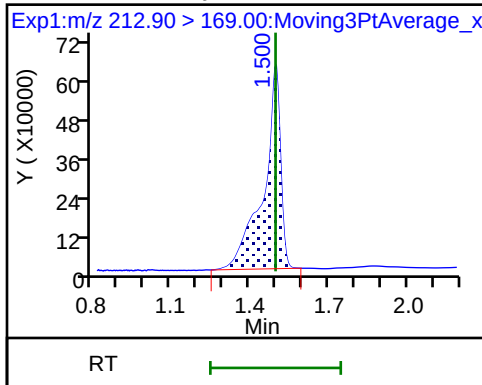
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

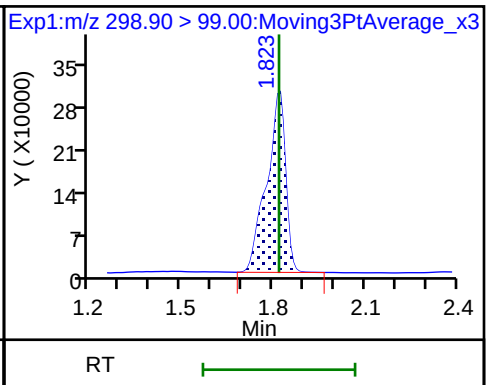
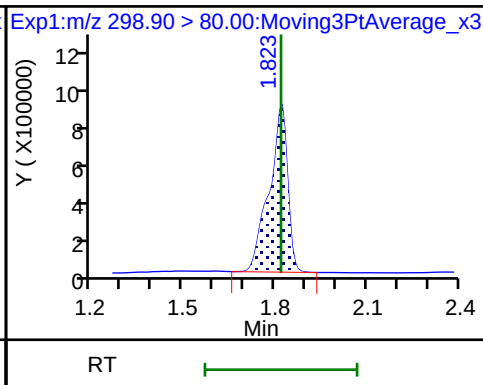
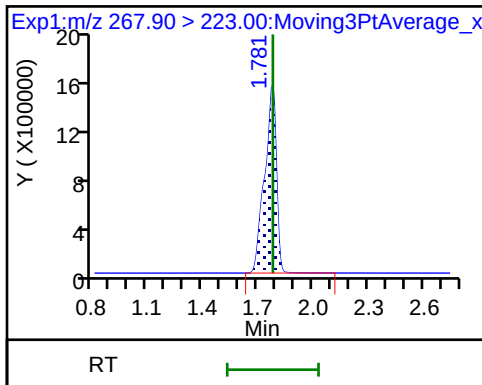
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

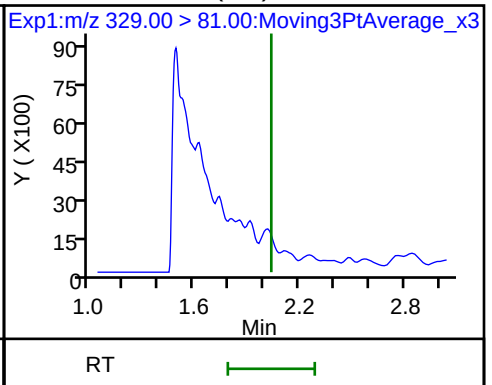
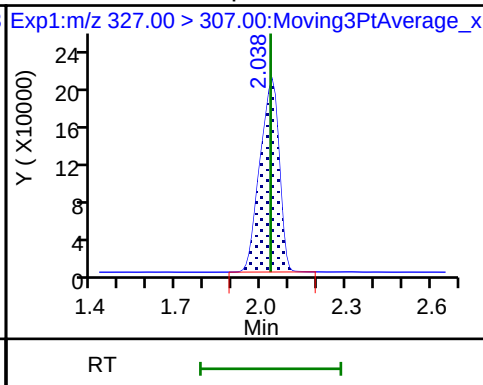
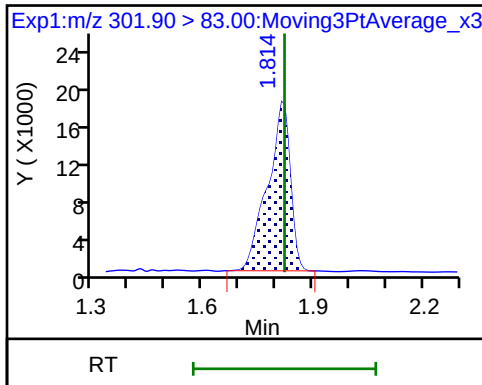
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

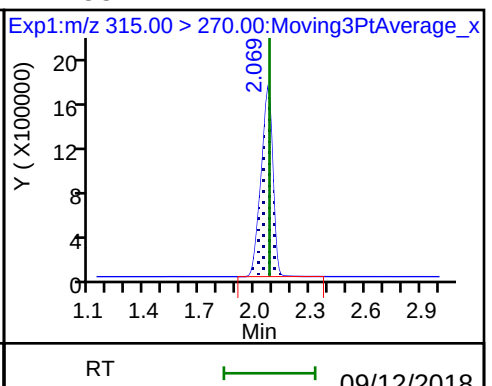
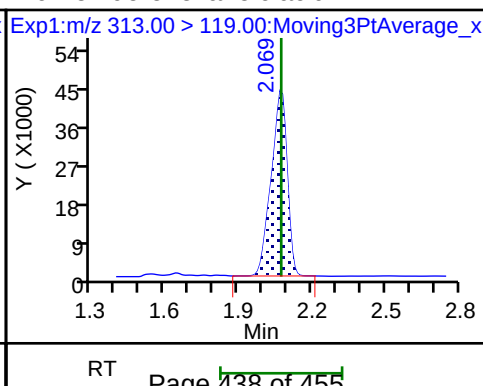
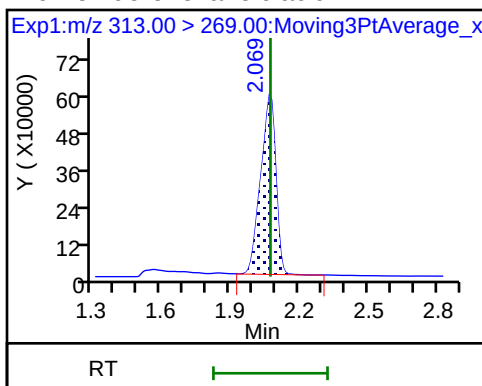
D 60 M2-4:2FTS (ND)

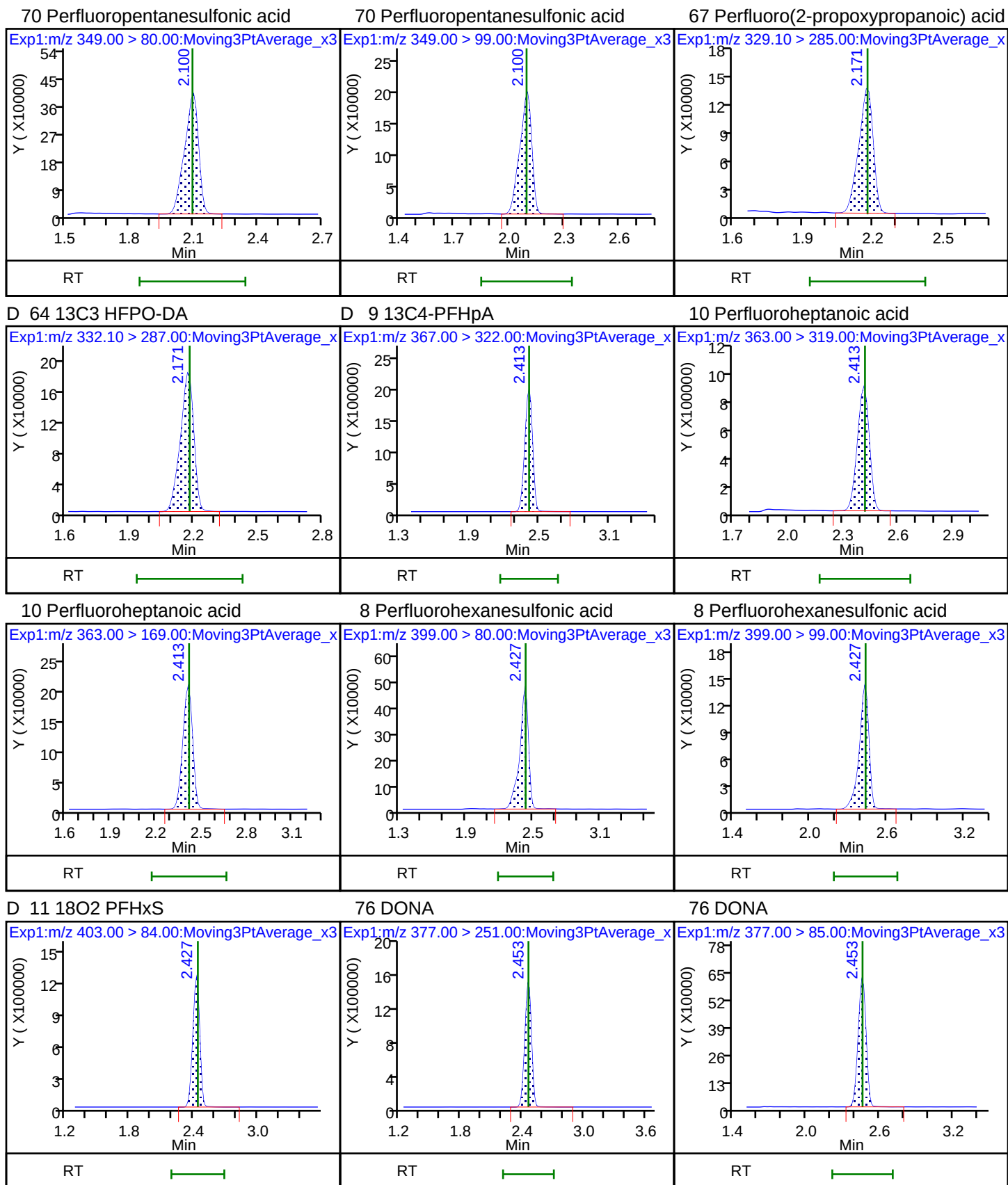


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

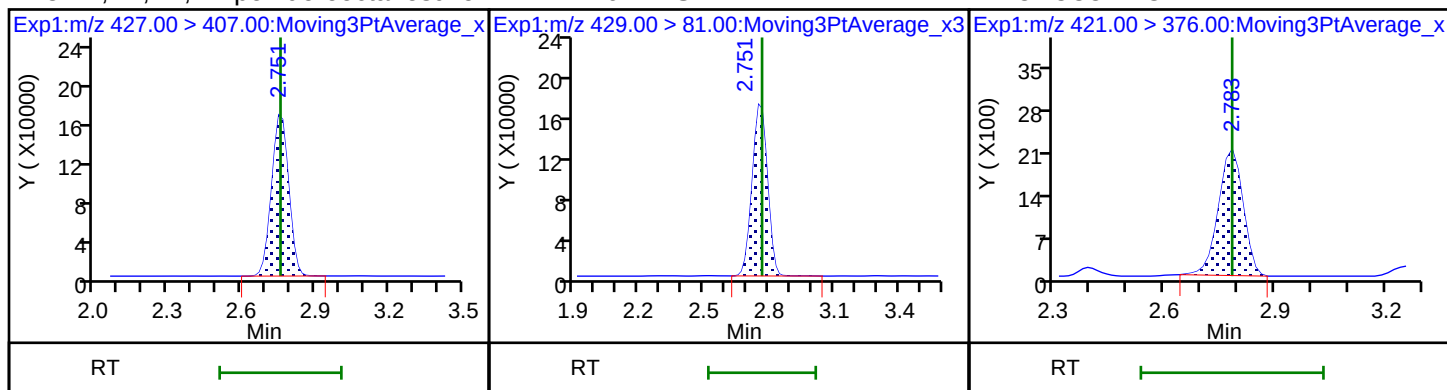
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

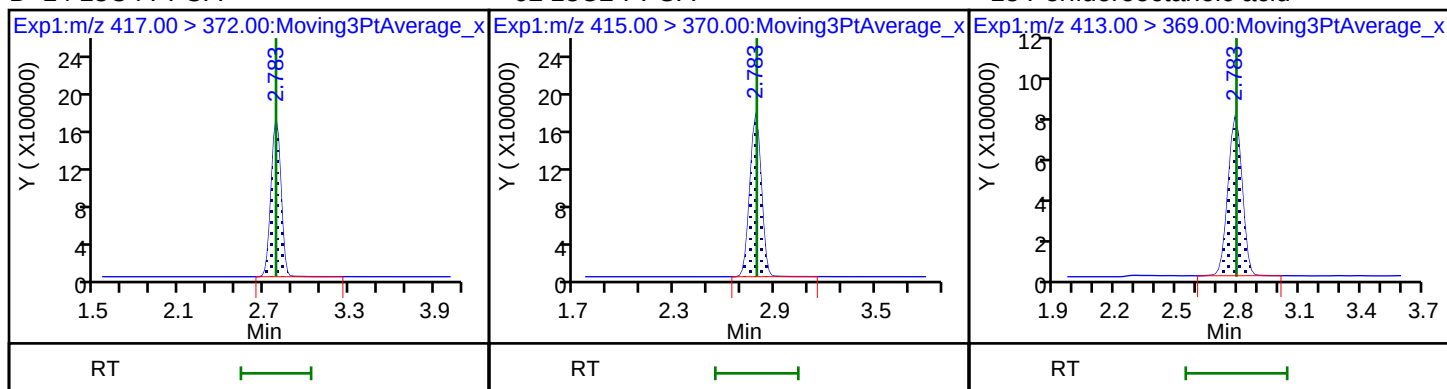
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

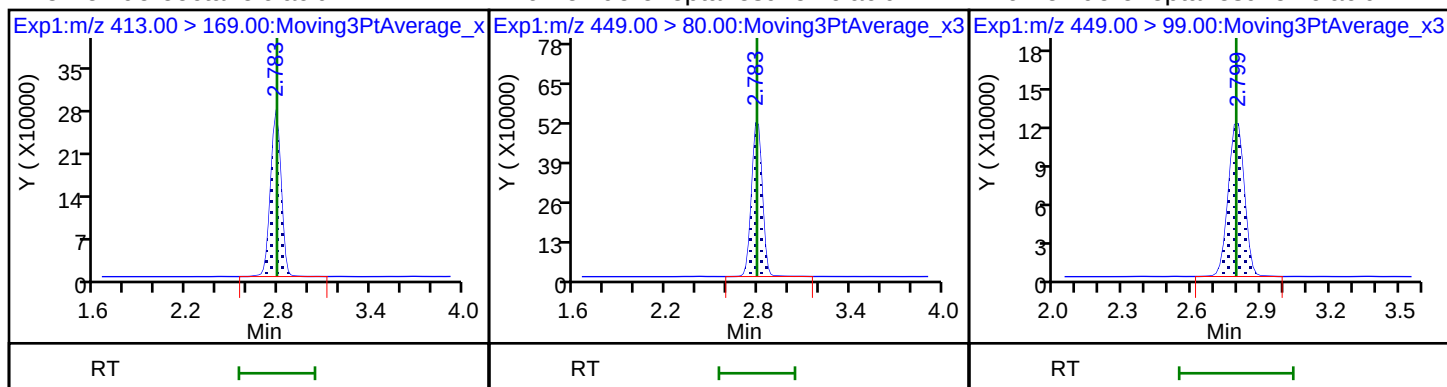
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

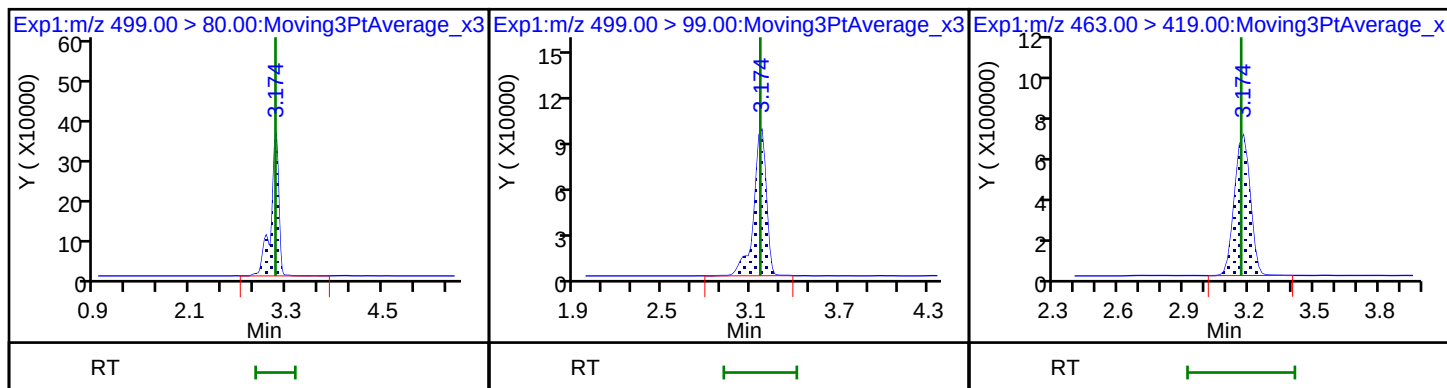
16 Perfluoroheptanesulfonic acid

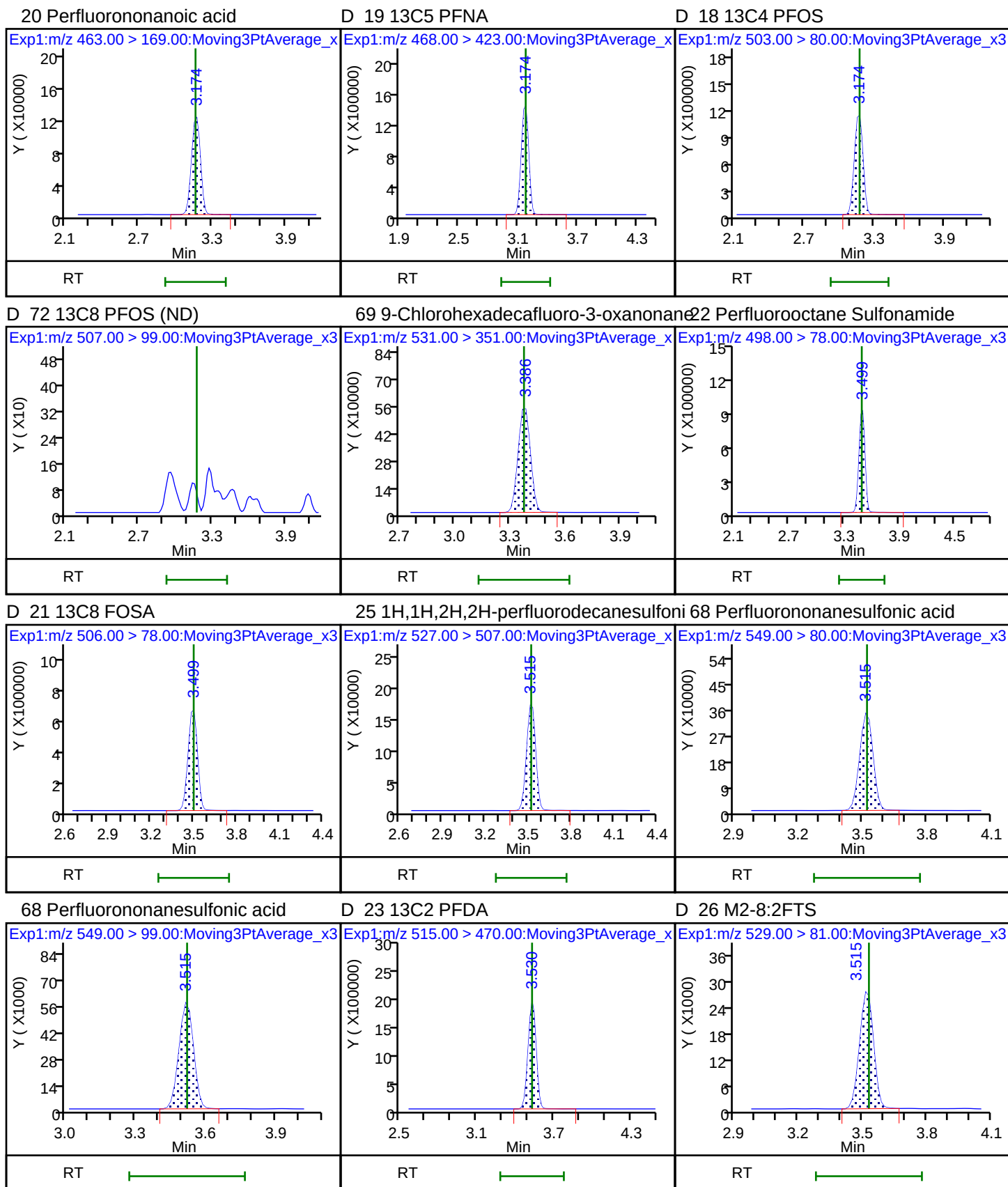


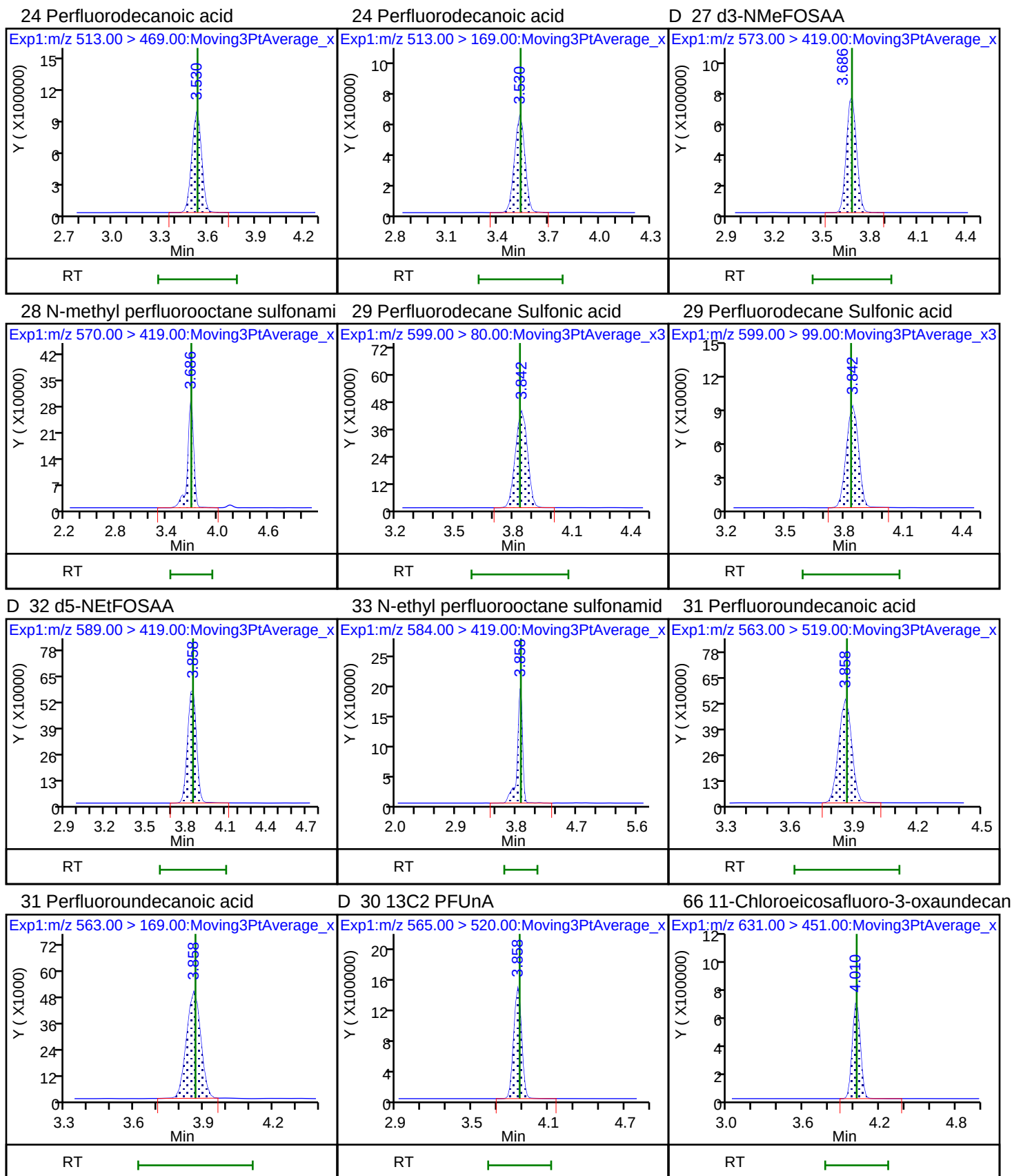
17 Perfluorooctane sulfonic acid

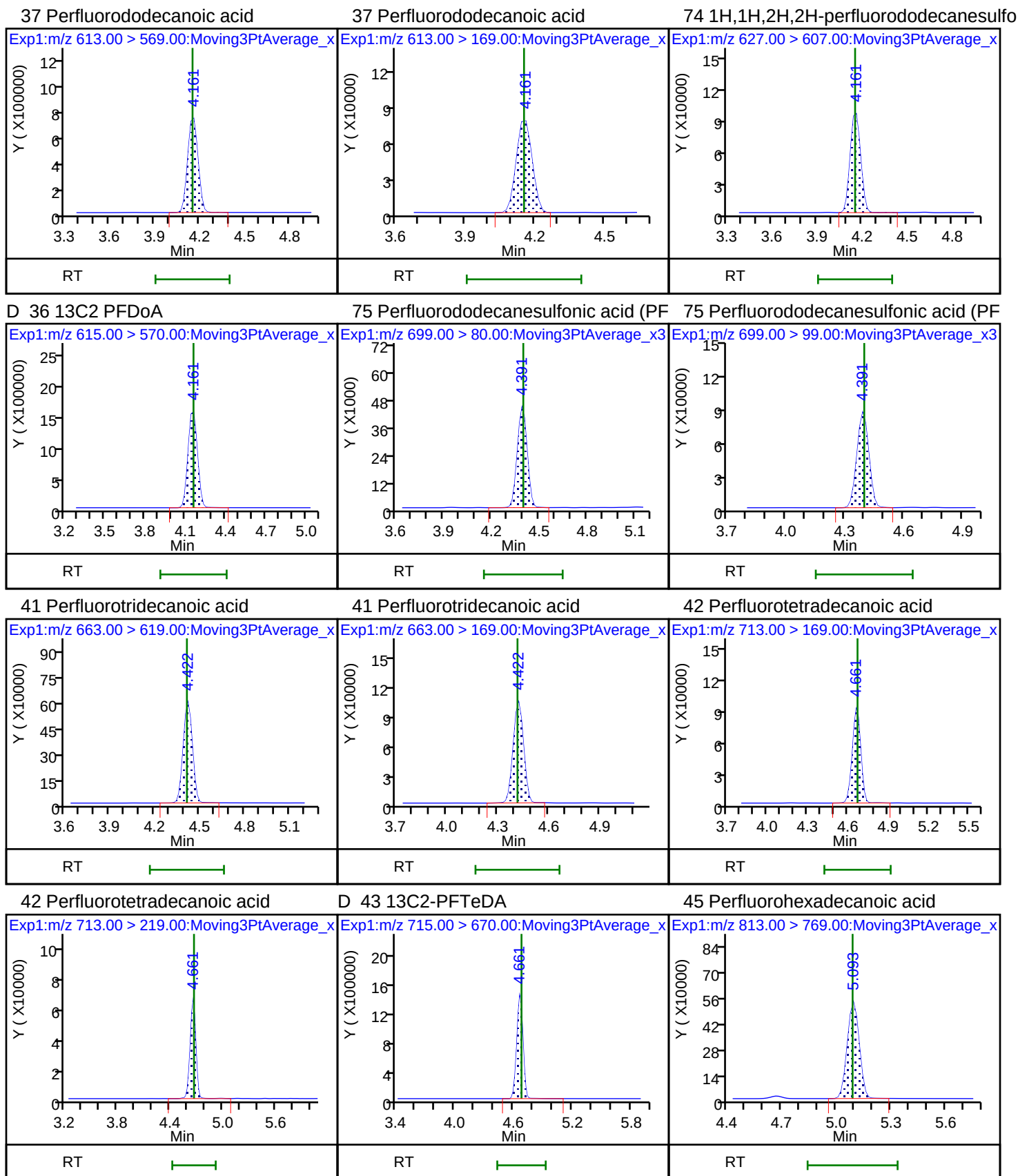
17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid





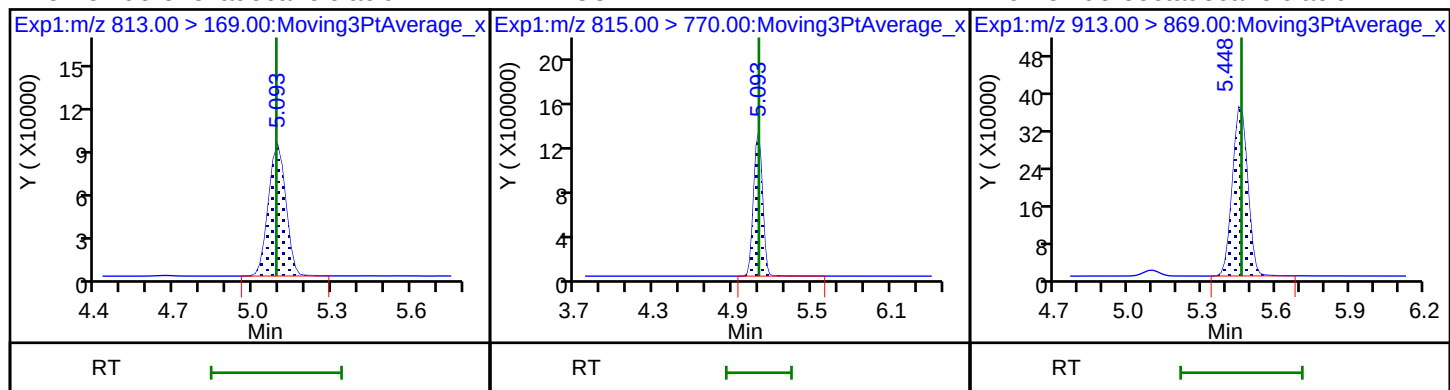




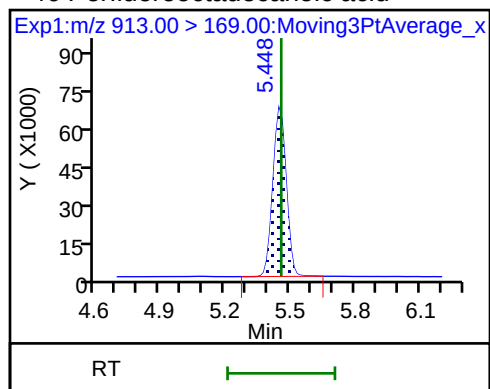
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Instrument ID: A9 Start Date: 08/28/2018 10:20Analysis Batch Number: 242498 End Date: 08/28/2018 11:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-242498/2		08/28/2018 10:20	1	2018.08.28LLICA LA 005.d	Acquity 2.1 (mm)
IC 320-242498/3		08/28/2018 10:28	1	2018.08.28LLICA LA 006.d	Acquity 2.1 (mm)
IC 320-242498/4		08/28/2018 10:35	1	2018.08.28LLICA LA 007.d	Acquity 2.1 (mm)
IC 320-242498/5 ICIS		08/28/2018 10:43	1	2018.08.28LLICA LA 008.d	Acquity 2.1 (mm)
IC 320-242498/6		08/28/2018 10:50	1	2018.08.28LLICA LA 009.d	Acquity 2.1 (mm)
IC 320-242498/7		08/28/2018 10:58	1	2018.08.28LLICA LA 010.d	Acquity 2.1 (mm)
IC 320-242498/8		08/28/2018 11:05	1	2018.08.28LLICA LA 011.d	Acquity 2.1 (mm)
ICB 320-242498/9		08/28/2018 11:13	1	2018.08.28LLICA LA 012.d	Acquity 2.1 (mm)
ICV 320-242498/10		08/28/2018 11:20	1	2018.08.28LLICA LA 013.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 480-140926-1

SDG No.: _____

Instrument ID: A9Start Date: 09/10/2018 10:09Analysis Batch Number: 244734End Date: 09/10/2018 11:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-244734/1		09/10/2018 10:09	1	2018.09.10LLA_04.d	Acquity 2.1 (mm)
CCVL 320-244734/2		09/10/2018 10:17	1	2018.09.10LLA_05.d	Acquity 2.1 (mm)
CCV 320-244734/3 CCVIS		09/10/2018 10:24	1	2018.09.10LLA_06.d	Acquity 2.1 (mm)
MB 320-244587/1-A		09/10/2018 10:32	1	2018.09.10LLA_07.d	Acquity 2.1 (mm)
LCS 320-244587/2-A		09/10/2018 10:39	1	2018.09.10LLA_08.d	Acquity 2.1 (mm)
LCSD 320-244587/3-A		09/10/2018 10:47	1	2018.09.10LLA_09.d	Acquity 2.1 (mm)
ZZZZZ		09/10/2018 10:54	1		Acquity 2.1 (mm)
ZZZZZ		09/10/2018 11:02	1		Acquity 2.1 (mm)
ZZZZZ		09/10/2018 11:09	1		Acquity 2.1 (mm)
ZZZZZ		09/10/2018 11:17	1		Acquity 2.1 (mm)
480-140926-1		09/10/2018 11:24	1	2018.09.10LLA_04.d	Acquity 2.1 (mm)
480-140926-2		09/10/2018 11:32	1	2018.09.10LLA_05.d	Acquity 2.1 (mm)
480-140926-2 MS		09/10/2018 11:39	1	2018.09.10LLA_06.d	Acquity 2.1 (mm)
CCV 320-244734/14		09/10/2018 11:47	1	2018.09.10LLA_07.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Instrument ID: A9 Start Date: 09/10/2018 12:24Analysis Batch Number: 244760 End Date: 09/10/2018 14:02

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-244760/1		09/10/2018 12:24	1	2018.09.10LLAA_017.d	Acquity 2.1 (mm)
480-140926-2 MSD		09/10/2018 12:32	1	2018.09.10LLAA_018.d	Acquity 2.1 (mm)
480-140926-3		09/10/2018 12:39	1	2018.09.10LLAA_019.d	Acquity 2.1 (mm)
480-140926-4		09/10/2018 12:47	1	2018.09.10LLAA_020.d	Acquity 2.1 (mm)
480-140926-5		09/10/2018 12:54	1	2018.09.10LLAA_021.d	Acquity 2.1 (mm)
ZZZZZ		09/10/2018 13:02	1		Acquity 2.1 (mm)
ZZZZZ		09/10/2018 13:09	1		Acquity 2.1 (mm)
ZZZZZ		09/10/2018 13:17	1		Acquity 2.1 (mm)
ZZZZZ		09/10/2018 13:24	1		Acquity 2.1 (mm)
ZZZZZ		09/10/2018 13:32	1		Acquity 2.1 (mm)
ZZZZZ		09/10/2018 13:39	1		Acquity 2.1 (mm)
CCV 320-244760/12		09/10/2018 13:47	1	2018.09.10LLAA_028.d	Acquity 2.1 (mm)
ZZZZZ		09/10/2018 13:54	1		Acquity 2.1 (mm)
CCV 320-244760/14		09/10/2018 14:02	1		Acquity 2.1 (mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Batch Number: 244587 Batch Start Date: 09/08/18 10:12 Batch Analyst: Arauz, Horacio JBatch Method: 3535 Batch End Date: 09/08/18 16:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC ALL_SU 00104	LCPFC-IS 00084
MB 320-244587/1		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCS 320-244587/2		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCSD 320-244587/3		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
480-140926-A-1	EB-01 (082718)	3535, 537 (modified)	T	324.59 g	27.20 g	297.4 mL	10.00 mL	500 uL	500 uL
480-140926-A-2	MW-1 (082718)	3535, 537 (modified)	T	315.82 g	27.58 g	288.2 mL	10.00 mL	500 uL	500 uL
480-140926-A-2 MS	MW-1 (082718)	3535, 537 (modified)	T	325.56 g	27.40 g	298.2 mL	10.00 mL	500 uL	500 uL
480-140926-A-2 MSD	MW-1 (082718)	3535, 537 (modified)	T	325.51 g	27.14 g	298.4 mL	10.00 mL	500 uL	500 uL
480-140926-A-3	MW-3 (082718)	3535, 537 (modified)	T	324.10 g	27.05 g	297.1 mL	10.00 mL	500 uL	500 uL
480-140926-A-4	MW-5 (082718)	3535, 537 (modified)	T	320.50 g	27.17 g	293.3 mL	10.00 mL	500 uL	500 uL
480-140926-A-5	DUP-01 (082718)	3535, 537 (modified)	T	322.15 g	26.95 g	295.2 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00179					
MB 320-244587/1		3535, 537 (modified)							
LCS 320-244587/2		3535, 537 (modified)		500 uL					
LCSD 320-244587/3		3535, 537 (modified)		500 uL					
480-140926-A-1	EB-01 (082718)	3535, 537 (modified)	T						
480-140926-A-2	MW-1 (082718)	3535, 537 (modified)	T						
480-140926-A-2 MS	MW-1 (082718)	3535, 537 (modified)	T	500 uL					
480-140926-A-2 MSD	MW-1 (082718)	3535, 537 (modified)	T	500 uL					
480-140926-A-3	MW-3 (082718)	3535, 537 (modified)	T						
480-140926-A-4	MW-5 (082718)	3535, 537 (modified)	T						

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.

537 (modified)

Page 1 of 2

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 480-140926-1

SDG No.: _____

Batch Number: 244587 Batch Start Date: 09/08/18 10:12 Batch Analyst: Arauz, Horacio JBatch Method: 3535 Batch End Date: 09/08/18 16:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00179					
480-140926-A-5	DUP-01 (082718)	3535, 537 (modified)	T						

Batch Notes	
Analyst ID - Aliquot Step	HJA
Balance ID	QA-070
Batch Comment	Client labels match TA label, HJA 09/8/18.
Analyst ID - Final Volume Step	HJA
H2O ID	09/06/18
Hexane ID	1347703
Internal Standard ID#	1346859
Manifold ID	C; H
Methanol ID	1352677
Sodium Hydroxide ID	1333885
Pipette ID	I46345G
Analyst ID - Reagent Drop	HJA
Analyst ID - IS Reagent Drop	HJA
Analyst ID - IS Reagent Drop Witness	JER
Analyst ID - SU Reagent Drop	HJA
Analyst ID - SU Reagent Drop Witness	KJP
Solvent Lot #	1351807
Solvent Name	0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	500mg
Solid Phase Extraction Disk ID	003938109A

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.

537 (modified)

Page 2 of 2

Shipping and Receiving Documents

Chain of Custody Record

PFC-Q1 → SAC from SYR - PFE



Client Information		Lab PM:	Cal
Client Contact	Stefan Bagnato	Stone, Judy L	
Phone	(516) 986-0248	E-Mail:	judy.stone@testamericainc.com
Company	ARCADIS U.S., Inc.		

Due Date Requested:	
TAT Requested (days):	Standard
PO #	01368050 0000-2015-10-12
WO #	
Project #	48010025
SSOW #	

Address		855 Route 146 Suite 210	
City	Clifton Park		
State, Zip	NY, 12065		
Phone	518-250-7300(Tel)		
E-mail	stefan.bagnato@arcadis-us.com		
Project Name	Orkin Former Abalone Pest Control Site		
Site	Orkin Former Abalone Pest Control Site		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wash/oil, ST=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 Analytes)	8270D_SIM_MS_ID - SIM List	Total Number of Containers	Special Instructions/Note:
EB-01 (082718)	8-27-18	1105	G	Water	N	N	N	N	4	
NW-1 (082718)	8-27-18	1202	G	Water	N	Y	X	X	12	MS/MSD
NW-3 (082718)	8-27-18	1325	G	Water	N	Y	X	X	4	
NW-5 (082718)	8-27-18	1634	G	Water	N	Y	X	X	4	
DUP-01 (082718)	8-27-18	-	G	Water	N	Y	X	X	4	
All empty bottles were returned in coolers. 3 coolers total.										

Possible Hazard Identification		☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	
Deliverable Requested: I, II, III, IV, Other (specify)		Category B deliverable	

Empty Kit Relinquished by:	Date:

Relinquished by:	Date/Time:	Company:
Relinquished by:	8-27-2018 14:15	ARCADIS
Relinquished by:	8-27-18 19:00	SYR
Relinquished by:		

Custody Seals Intact:	Custody Seal No.:
Δ Yes Δ No	18, 16

Chain of Custody Record

PF-01 → SAC from SYR. - PE

Client Information Client Contact: Stefan Bagnato Company: ARCADIS U.S., Inc. Address: 855 Route 146 Suite 210 City: Clifton Park State Zip: NY, 12065 Phone: 518-250-7300 (Tel) Email: stefan.bagnato@arcadis-us.com Project Name: Orkin Former Abalone Pest Control Site Site: Orkin Former Abalone Pest Control Site		Lab PM Sampler: Abbey Thomas Phone: (516) 986-0248 E-Mail: judy.stone@testamerica.com		Carrier Tracking No(s): 480-116938-27007.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): Standard PO #: 01368050.0000-2015-10-12 WO #: 48010025 Project #: 48010025 SSOW#:		Analysis Requested Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)			
Sample Identification EB-01 (082718) MW-1 (082718) MW-3 (082718) MW-5 (082718) DUP-01 (082718)		Sample Date 8-27-18 8-27-18 8-27-18 8-27-18 8-27-18		Sample Time 1105 1202 1325 1634 -	
Sample Type (C=Comp, G=grab) G G G G G		Matrix (Water, Seawater, Groundwater, etc.) Water Water Water Water Water		Field Filtered Sample (Yes or No) N N N N N	
Form MS/MSD (Yes or No) N N N N N		8270D SIM MS ID - SIM List N N N N N		Total Number of Containers 4 12 4 4 4	
Special Instructions/Note: All empty bottle were returned in coolers. 3 coolers total		Special Instructions/Note: All empty bottle were returned in coolers. 3 coolers total			
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify) Category B deliverable					
Empty Kit Relinquished by: Relinquished by: Abbey Thomas Relinquished by: R. Thomas Relinquished by:					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months					
Special Instructions/QC Requirements: Method of Shipment:					
Relinquished by: Relinquished by: R. Thomas Relinquished by:		Date: 8-27-2018 10:15 8-27-18, 19:00 Date/Time:		Date/Time: 8-27-2018 16:45 8/28/18 930 Date/Time:	
Company: ARCADIS SYR SYR		Company: ARCADIS SYR SYR		Company: SYR SYR SYR	
Custody Seals Intact: Yes ☒ No ☐		Custody Seal No.: seal		Cooler Temperature(s) °C and Other Remarks: 7.2	

Project Review Checklist		Project #: <u>480 10025</u>	
Detail Tab	Reviewed	Deliverables Tab (con't)	Reviewed
Project Description is entered and clear	✓	Job-level EDD questions are answered where applicable	✓
The appropriate Market Segment is selected	✓	Invoice questions are added/answered if applicable	—
PO appropriate and WO designations are entered	✓	Other Charges Tab	
A Project Manager/PMA is selected	✓	Other Charges are added for appropriate TA location	—
A Program Manager is selected if applicable	—	Other Charge reporting description is changed if necessary	—
The Project Start date is entered	✓	Other Charge SAP is changed if applicable	—
The appropriate Sample Check List is selected	✓	Other Charge discount, % overprice, or price is adjusted	—
TAT Calculation Type is defined	✓	Other Charge quantity is changed if applicable	—
Turn Around is selected	✓	Analytical Groups Tab	
Method of Disposal is selected	✓	Analysis Group(s) is added with appropriate matrix	✓
Contract ID is entered if applicable	—	Group Description clearly states analysis group contents	✓
Government Designation is selected	✓	Turnaround Time is entered if applicable	✓
Dry Weight Correction is selected if applicable	✓	TAT Price Multiplier is entered if applicable	—
Force Internal COC is selected if applicable	—	If group pricing is applicable, the "Price By Group Only" box is marked and pricing is entered	—
"Site Samples will be Validated" is selected if applicable	—	The required method(s) and sublist(s) is added to the each appropriate analysis group(s)	✓
"Use Verify Time Sample Receipt Holdtime" is selected if applicable	—	The number of TICs are entered and the TIC analyte is added to the method if applicable	—
"Allow only Project Methods at Login" is selected if applicable	—	Method Comments are entered as applicable	—
"Allow Logins to be copied" is selected if applicable	✓	"Do Not Report" is selected for a method if applicable	—
"Do not Price QC" is selected if applicable	✓	Method conditions are properly set to Active/Hold/Cancel as necessary	✓
"Default Client Sub List Description" is selected if applicable	—	Analyte pricing is entered if applicable	✓
"Non-billable QA Project" is selected if applicable	—	Method or analyte SAP codes are entered if applicable	—
"Certs not Required" is selected if applicable	—	Method pricing is entered	✓
Data Retention Years is entered	✓	Method or analyte TAT price multiplier is adjusted if applicable	—
NCM Merge Type is defined	✓	Analyte Synonyms are changed if applicable	—
TAT Price Multiplier is entered if applicable	✓	Reporting units are changed if applicable	—
Disposal Days is defined	✓	Analyte report and spike boxes are appropriately marked	✓
Formatter is selected and meets project need	✓	Analytical Limits Tab	
Alternate Formatter is selected if applicable	—	Project-specific limit groups are created if applicable	NA
Tertiary Formatter is selected if applicable	—	Project-specific limit types are created if applicable	NA
Sample State is identified	✓	Project specific limits are entered if applicable	—
Reporting Limit Scheme is selected if applicable	—	Action Limit Group Tab	
Contacts Tab		Action Limit Group(s) is created if applicable	NA
All required Contacts are added	✓	Action Limit Group Description is entered	NA
Primary Contact is designated	✓	Action Limit Group limit title is selected	—
Report To Contact is designated	✓	Action Limit Group Set Type (Action or TEQ) is changed if applicable	—
Bill To Contact is designated	✓	Limit Set is added to the Action Limit Group	—
Email Sample Confirmation is selected for each applicable contact	✓	Limit Set Basis Rule is changed if applicable	—
"Invoice Attention To" field is edited if applicable	—	Limit Set Basis Code is changed if applicable	—
Clients are set up for Total Access data visibility	✓	Limit Set Display Order is defined	—
Deliverables Tab		Limit Set Notify Rule is changed if applicable	—
All required Deliverables are added (confirmations/report/EDD/invoice)	✓	Limit Set "show on report" setting is changed if applicable	—
Deliverable TATs are adjusted if applicable	✓	Multiplier and/or TEQ multiplier is defined if applicable	—
"Report all QC" box is marked if applicable	—	Sites/Events Tab	
Report Style (by Client or Lab ID) is selected	NA	For routine work, a Site is set up if applicable	NA
Delivery instructions are added for each deliverable (mechanism, media, time) and contact	✓	For routine work, a Sampling Event(s)/Event Group(s) is set up if applicable	—
Appropriate Certification(s) is added	✓	Project Approved	JA

6/19/14

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-140926-1

Login Number: 140926

List Source: TestAmerica Buffalo

List Number: 1

Creator: Williams, Christopher S

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers 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	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	ARCADIS
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-140926-1

Login Number: 140926

List Number: 2

Creator: Her, David A

List Source: TestAmerica Sacramento

List Creation: 08/28/18 11:46 AM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
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.	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	7.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT 3

Data Validation Services

120 Cobble Creek Road P.O. Box 208

North Creek, NY 12853

Phone 518-251-4429

harry@frontiernet.net

October 18, 2018

Stefan Bagnato
ARCADIS of NY, Inc.
855 Route 146 Suite 210
Clifton Park, NY 12065

RE: Validation of the Orkin - Former Abalene Pest Control Analytical Laboratory Data
TestAmerica Laboratories SDG No. 480-140926
Data Usability Summary Report (DUSR)

Dear Mr. Bagnato:

Review has been completed for the data package generated by TestAmerica Laboratories that pertains to samples collected 08/27/18 at the Orkin Former Abalene Pest Control site. Three aqueous samples and a field duplicate were processed for per- and polyfluoroalkyl substances (PFAS) by a modified method 537 and 1,4-dioxane by USEPA SW846 method 8270D.

The data packages submitted by the laboratory contain full deliverables for validation, and this usability report is generated from review of the QC summary form information, with full review of sample raw data and limited review of associated QC raw data. The reported QC summary forms and sample raw data have been reviewed for application of validation qualifiers, with guidance from the USEPA national and regional validation documents, and in consideration for the specific requirements of the analytical methodology and the laboratory modifications. The following items were reviewed:

- * Data Completeness
- * Case Narrative
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Field Duplicate Correlations
- * Isotopic Standard Recoveries
- * Preparation and Field Blanks
- * Laboratory Control Samples (LCSs)
- * Instrumental Tunes
- * Initial and Continuing Calibration Standards
- * Method Compliance
- * Sample Result Verification

The data review includes evaluation of the specific items noted in The NYS DER-10 Appendix B section 2.0 (c) DUSR description. The items listed above that show deficiencies are discussed within the text of this narrative. The laboratory QC forms illustrating the excursions can be found within the laboratory data package.

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with project requirements.

In summary, sample results are usable either as reported or with minor edit.

Data completeness, accuracy, precision, reproducibility, sensitivity, and comparability are acceptable.

The laboratory modifications to the USEPA method 537 are significant, including acceptance ranges, consistent in many respects to the advances in the available monitoring compounds. Validation actions are based on the laboratory procedures, in consideration that the laboratory undergoes NYS DOH and ELAP certifications. PFAS compounds are identified by their common acronyms in this report. The data package report forms reference both the technical names and the acronyms.

The client and laboratory sample identifications are attached to this text, and should be reviewed in conjunction with this report. Also included in this report is the client EDD file, qualified to reflect the qualifications/edits recommended in this report.

Blind Field Duplicate

The blind field duplicate evaluation was performed on MW-3(082718). Correlations are within validation guidelines.

1,4-Dioxane Analyses by USEPA Method 8270D SIM

Holding time requirements were met. Sample surrogate and internal standard recoveries are compliant. Calibration standards show responses within the validation guidelines. Blanks show no contamination.

Matrix spikes of MW-1(082718) show recoveries and correlations within laboratory acceptance range/limit.

PFAS by Modified EPA Method 537

Due to responses in the associated blanks, the detections of PFHxS and PFBA in the samples are considered external contamination. Those results are edited to reflect non-detection at either the reporting limits, or at slightly elevated reporting limits corresponding to the originally reported concentrations, whichever are greater.

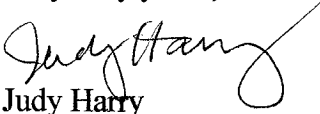
Internal and isotopic standards recoveries are within the laboratory acceptance ranges.

The matrix spikes of MW-1(082718) show recoveries and correlations within laboratory acceptance ranges.

LCS recoveries and calibration standard responses are within validation action guidelines.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,



Judy Harry

Att: Validation Data Qualifier Definitions
Client and Laboratory Identifications
Qualified EQUIS EDDs

VALIDATION DATA QUALIFIER DEFINITIONS

- U** The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
- J** The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
- J-** The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.
- J+** The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased high.
- UJ** The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.
- NJ** The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control limits. The analyte may or may not be present.
- EMPC** The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

Client and Laboratory Sample Identifications

Sample Summary

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 480-140926-1

Project/Site: Orkin Former Abalene Pest Control Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-140926-1	EB-01 (082718)	Water	08/27/18 11:05	08/28/18 00:45
480-140926-2	MW-1 (082718)	Water	08/27/18 12:02	08/28/18 00:45
480-140926-3	MW-3 (082718)	Water	08/27/18 13:25	08/28/18 00:45
480-140926-4	MW-5 (082718)	Water	08/27/18 16:34	08/28/18 00:45
480-140926-5	DUP-01 (082718)	Water	08/27/18 00:00	08/28/18 00:45