



October 29, 2018

John Swartwout
New York State Department of Environmental Conservation
625 Broadway, 12th floor
Albany, NY 12233-7015

**RE: Camp Hero State Park, Spill No. 1805382, Montauk Highway, Montauk – September 2018
Groundwater Sampling**

Dear Mr. Swartwout:

This letter report summarizes recent field activities conducted by Environmental Assessment & Remediations (EAR) at the above referenced site in response to directives provided in New York State Department of Environmental Conservation (NYSDEC) Standby Contractor Authorization Form, Callout ID: 136035. The scope of work included the collection of groundwater samples from three monitoring wells for analysis of emerging contaminants.

A site location map is provided as Figure 1.

Groundwater Sampling

On September 19, 2018, EAR collected groundwater samples from 3 monitoring wells: MW019, MW020, and MW023. Groundwater sampling was conducted under the oversight of U.S. Army Corp of Engineers personnel.

Although the callout directed sampling activities at MW019, MW022, and MW023, MW022 was not sampled as this well contained a water column of only 0.28-feet. Alternate sampling locations MW021, MW017, and MW016 were evaluated but found to be either dry (MW021) or to contain light, non-aqueous phase liquid (~0.02-feet thickness at MW016 and ~3.0-feet thickness at MW017). MW020 was selected as an alternate sampling location as this location contained a suitable water column and did not contain light non-aqueous phase liquid.

Monitoring well locations are illustrated in Figure 2.

Groundwater samples were collected utilizing peristaltic pumps and HDPE tubing. A new length of HDPE tubing was utilized at each well. Prior to sample collection, depth-to-water and total well depths were gauged to the nearest 0.01 foot and recorded. A water quality meter (YSI 556 or equivalent) was used to monitor water quality parameters. Each monitoring well was purged of at least one standing well volume then screened for pH, temperature, and conductivity until stabilization was reached. Dissolved



oxygen concentrations, and oxidation reduction potential (ORP) were recorded as well. Purge water was containerized in one (1) 55-gallon drum, labeled, and staged onsite for transportation and offsite disposal following characterization.

Groundwater samples collected for lab analysis were placed into the appropriate sample containers provided by the laboratory and immediately placed in a cooler with ice to maintain a temperature of 4 degrees Celsius. A total of 5 water samples (including 1 field duplicate and 1 equipment blank) were submitted to an ELAP-certified laboratory (Test America, Inc.) for analysis of perfluorinated compounds (PFCs) via modified EPA Method 537 and 1,4-dioxane via EPA Method 8270 SIM.

All samples were submitted for standard 10-day turn around with NYSDEC ASP Category B deliverables requested.

Analytical results are summarized in Tables 1-2. Field screening results are provided in Table 3. A relative percent difference analysis between the duplicate sample and parent sample is summarized in Table 4. Field notes which provide well gauging data and purge volumes are provided as Appendix A. Laboratory analytical reports are provided as Appendix B.

Data Usability

Data validation services were provided by an EAR chemist and included Data Usability Summary Report (DUSR) generation and EQUIS EDD file validation. The DUSR indicated no rejections of the data and reported the data as usable for intended purposes. DUSRs are included as Appendix C. Laboratory analytical data is currently being compiled into an EQUIS EDD file package for submission to NYENVDATA.

Waste Characterization & Disposal

Following groundwater sampling activities on September 19, 2018, a grab sample was collected from the purge water drum and submitted to Test America, Inc. for analysis of volatile organic compounds via EPA Method 8260, semi-volatile organic compounds via EPA Method 8270, and TCLP RCRA metals via EPA Methods 6010 and 7470. The laboratory analytical report is included in Appendix B.

Following receipt and review of the waste characterization analytical results, the purge water drum was picked up by NYSDEC response contractor AB Environmental (Bohemia, NY) on October 11, 2018, for transportation and offsite disposal. A waste manifest is provided as Appendix D.

If you have any questions or would like to discuss further, please feel free to contact me at 631.241.8741.

Sincerely,

Ian Hofmann
Project Manager



Cc:
Ancona, R. (EAR)
Lawrence, J. (EAR)



Tables

Table 1: Groundwater Analytical Results (EPA Method 537 modified)

Table 2: Groundwater Analytical Results (EPA Method 8270DSIM)

Table 3: EAR Field Screening

Table 4: Relative Percent Difference Analysis

Table 1

Camp Hero State Park
Montauk Highway
Montauk, NY
Spill # 1805382



Groundwater Analytical Results (ng/L)

TestAmerica, Inc.

Methods: Modified 537

Location	MW019	MW020	MW023	Equipment Blank
Date Collected	9/19/2018	9/19/2018	9/19/2018	9/19/2018
Time Collected	10:15 AM	2:00 PM	12:15 PM	9:45 AM
2-(N-methyl perfluorooctanesulfonamido) acetic acid	<17.90	<19	<18.50	<18.60
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	<17.90	<19	<18.50	<18.60
Perfluorobutanesulfonic Acid (PFBS)	0.80 J	1.37 J	0.61 J	<1.86
Perfluorobutyric Acid (PFBA)	<1.79	1.63 J	<1.85	<1.86
Perfluorodecane Sulfonic Acid	<1.79	<1.90	<1.85	<1.86
Perfluorodecanoic Acid (PFDA)	<1.79	<1.90	<1.85	<1.86
Perfluorododecanoic Acid (PFDoA)	<1.79	<1.90	<1.85	<1.86
Perfluoroheptane Sulfonate (PFHpS)	0.33 J	0.26 J	<1.85	<1.86
Perfluoroheptanoic Acid (PFHpA)	0.60 J	1.22 J	0.84 J	<1.86
Perfluorohexanesulfonic Acid (PFHxS)	6.96	21.9	8.72	0.26 BJ
Perfluorohexanoic Acid (PFHxA)	<1.79	2.81	1.50 J	<1.86
Perfluorononanoic Acid (PFNA)	<1.79	0.41 J	0.46 J	<1.86
Perfluorooctane Sulfonamide (FOSA)	1.24 J	0.51 J	<1.85	<1.86
Perfluorooctanesulfonic Acid (PFOS)	11.5	7.54	16.1	<1.86
Perfluorooctanoic Acid (PFOA)	4.98	4.7	2.46	<1.86
Perfluoropentanoic Acid (PFPeA)	<1.79	1.95	<1.85	<1.86
Perfluorotetradecanoic Acid (PFTeA)	<1.79	0.38 J	0.54 J	<1.86
Perfluorotridecanoic Acid (PFTriA)	<1.79	<1.90	<1.85	<1.86
Perfluoroundecanoic Acid (PFUnA)	<1.79	<1.90	<1.85	<1.86
SODIUM 1H,1H,2H,2H-PERFLUORODECANE SULFONATE (8:2)	<17.90	<19	<18.50	<18.60
SODIUM 1H,1H,2H,2H-PERFLUOROOCTANE SULFONATE (6:2)	<17.90	<19	<18.50	<18.60
Combined PFOA & PFOS	16.48	12.24	18.56	<3.72

Notes:

J - Indicates an estimated value below laboratory reporting limits

B - Indicates the analyte was found in the associated lab blank

Table 2

Camp Hero State Park
 Montauk Highway
 Montauk, NY
 Spill # 1805382



ENVIRONMENTAL
 ASSESSMENT &
 REMEDIATIONS

Groundwater Analytical Results (ug/L)

TestAmerica, Inc.

Methods: SW8270DSIM

Location	Date Collected	Time Collected	1,4-Dioxane
EQUIPMENT BLANK	9/18/2018	9:45 AM	<0.20
MW019	9/18/2018	10:15 AM	0.4
MW020	9/18/2018	2:00 PM	<0.20
MW023	9/18/2018	12:15 PM	<0.20

Table 3

Camp Hero State Park
 Montauk Highway
 Montauk, NY
 Spill # 1805382



Groundwater Analytical Results
 EAR Field Screening

Location	Date Collected	Time Collected	Total Well Depth <i>ft</i>	Depth to Water <i>ft</i>	Purged Volume at Sampling <i>gal</i>	Dissolved Oxygen <i>mg/l</i>	Temperature <i>°C</i>	pH -	ORP (Oxidation Reduction Potential) <i>mV</i>	Conductivity <i>us/cm</i>
MW019	9/19/2018	10:15	22.95	19.39	1.25	3.29	16.42	6.66	25.40	226
MW023	9/19/2018	12:15	26.56	10.02	4.00	1.88	15.42	6.01	19.20	212
MW020	9/19/2018	14:00	25.63	10.10	3.00	1.09	17.07	6.63	-67.70	216

Camp Hero State Park
Montauk Highway
Montauk, NY
Spill # 1805382



Relative Percent Difference (RPD) of Duplicates Collected

TestAmerica, Inc.

Methods: Modified 537 (ng/L)

Location	Parent Sample	Blind Duplicate	Relative Percent Difference
	MW023	Field Duplicate	
	9/19/2018	9/19/2018	
Date Collected	9/19/2018	9/19/2018	
2-(N-methyl perfluorooctanesulfonamido) acetic acid	<18.50	<19	0.0%
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	<18.50	<19	0.0%
Perfluorobutanesulfonic Acid (PFBS)	0.61 J	0.70 J	n/a
Perfluorobutyric Acid (PFBA)	<1.85	0.83 BJ	n/a
Perfluorodecane Sulfonic Acid	<1.85	<1.90	0.0%
Perfluorodecanoic Acid (PFDA)	<1.85	<1.90	0.0%
Perfluorododecanoic Acid (PFDoA)	<1.85	<1.90	0.0%
Perfluoroheptane Sulfonate (PFHpS)	<1.85	0.21 J	n/a
Perfluoroheptanoic Acid (PFHpA)	0.84 J	0.75 J	n/a
Perfluorohexanesulfonic Acid (PFHxS)	8.72	8.08	7.6%
Perfluorohexanoic Acid (PFHxA)	1.50 J	1.45 J	n/a
Perfluorononanoic Acid (PFNA)	0.46 J	0.47 J	n/a
Perfluorooctane Sulfonamide (FOSA)	<1.85	<1.90	0.0%
Perfluorooctanesulfonic Acid (PFOS)	16.1	15.1	6.4%
Perfluorooctanoic Acid (PFOA)	2.46	2.4	2.5%
Perfluoropentanoic Acid (PFPeA)	<1.85	<1.90	0.0%
Perfluorotetradecanoic Acid (PFTeA)	0.54 J	<1.90	n/a
Perfluorotridecanoic Acid (PFTrIA)	<1.85	<1.90	0.0%
Perfluoroundecanoic Acid (PFUnA)	<1.85	<1.90	0.0%
SODIUM 1H,1H,2H,2H-PERFLUORODECANE SULFONATE (8:2)	<18.50	<19	0.0%
SODIUM 1H,1H,2H,2H-PERFLUOROOCTANE SULFONATE (6:2)	<18.50	5.80 BJ	n/a

Methods: 8270DSIM (ug/L)

Location	Parent Sample	Blind Duplicate	Relative Percent Difference
	MW023	Field Duplicate	
	9/19/2018	9/19/2018	
Date Collected	9/19/2018	9/19/2018	
1,4-dioxane	<0.20	<0.20	0.0%

Notes:

n/a - Not applicable

J - Indicates an estimated value below laboratory reporting limits

B - Indicates the analyte was found in the associated lab blank



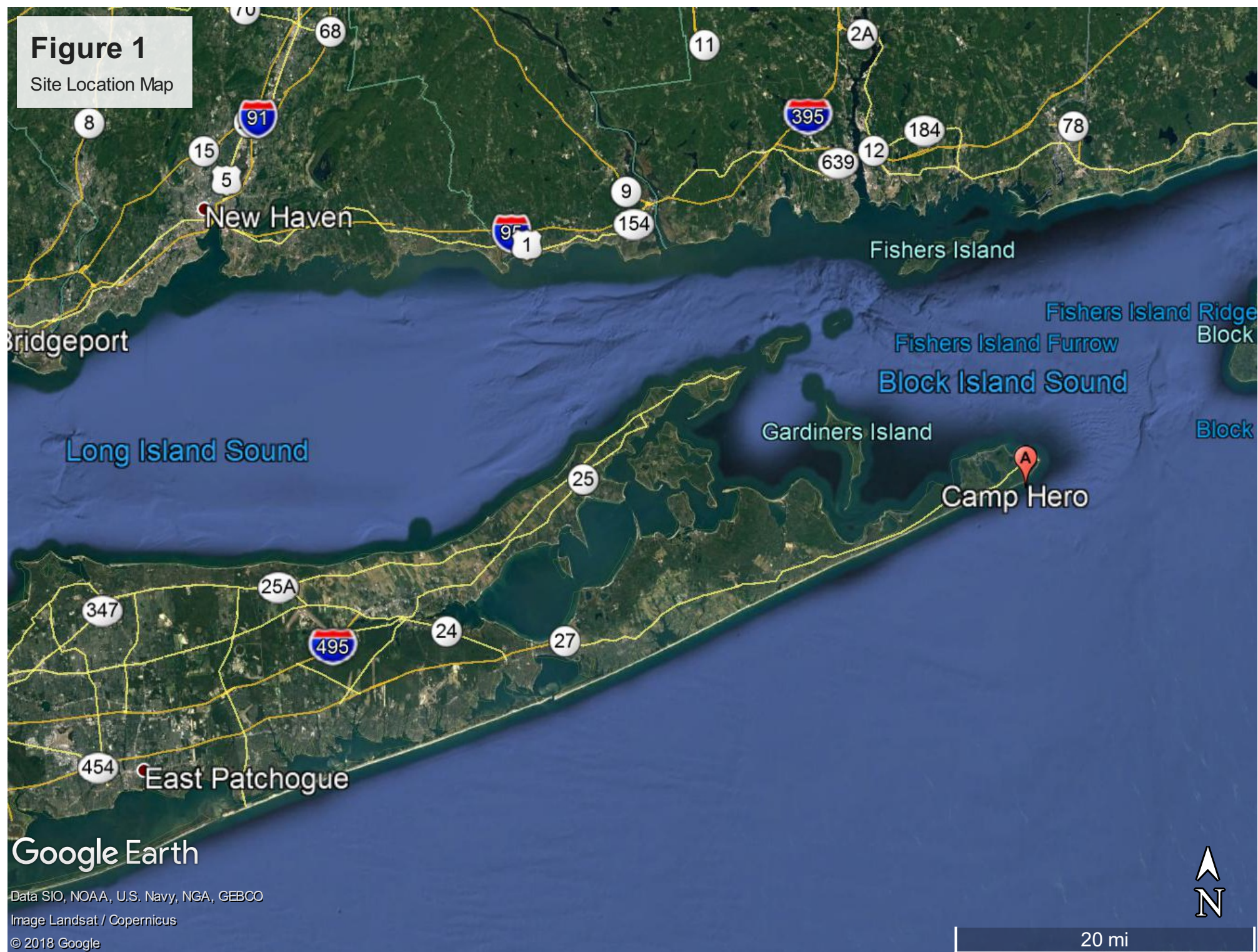
Figures

Figure 1: Site Location Map

Figure 2: Site Map

Figure 1

Site Location Map

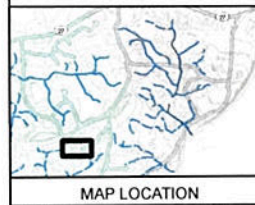
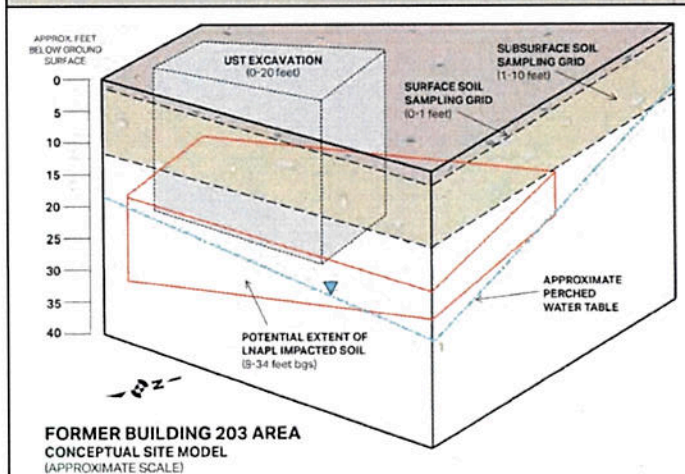
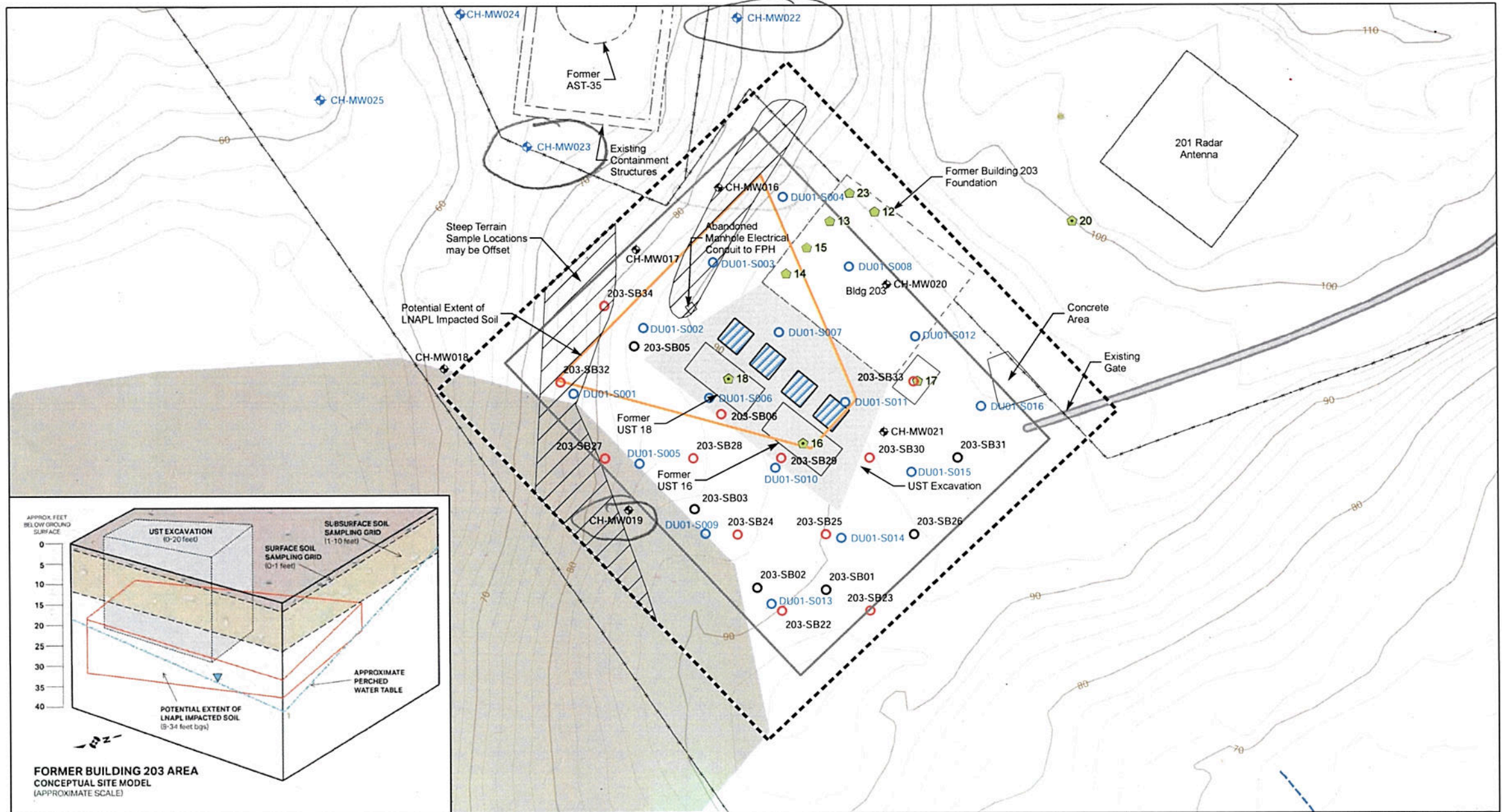


Google Earth

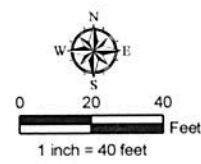
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Image Landsat / Copernicus

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Camp Hero Built Features - Proposed Subsurface Soil Sample Location - Subsurface Soil - No Exceedance - Subsurface Soil - Exceedance - Decision Unit		Storage Tanks - AST (closed) - UST (closed) - AST to be Investigated		- Fence - Cesspool - Topographic Contours 10 ft 2 ft		- Former Radiators - Limited Accessibility - Prior Phase II RI Surface Soil Sampling Grid		Camp Hero Natural - DEC Wetlands - Class 2 - Surface Water - Intermittent Drainage without	



AECOM

3101 Wilson Blvd., Suite 900
Arlington, VA 22201
T 703-682-4900 F 703-682-4901

Proposed Phase III RI Sampling Locations
DU01, Building 203 Area
Camp Hero Remedial Investigation
Montauk, New York

PROJECT NO. 60443903	PREPARED BY DDS	DATE April 2017	Figure 17-3



Appendix A: Field Notes

Groundwater Sampling Sheet: Stabilization Purge Method

Site: DEZ-MONTANA-CAMP IHERO

Start Time: 0530

Equipment: _____

Date: 9/19/18

End Time: 1830

Techs: MF/BCC

								[check units on YSI and confirm that parameter is in the correct units]					NOTES
WELL ID	Well Size (inches)	Total Well Depth (ft.)	Depth to Water (ft.)	Length of Column (ft.)	One Standing Water Well Volume (gal.)	Total Gallons Purged (gal.)	Time Sampled (hh:mm)	DO (mg/L)	Temp. (°C)	pH	ORP (mV)	Specific Conductance (uS/cm)	
MW 019	2.0	22.95	19.39	3.56	.62	1.25	1015	3.29	16.42	6.66	25.4	226.	
MW 022	2.0	18.73	18.45	.28	ONLY RECOVERED 100 ML OF WATER. NO SAMPLE								
MW 023	2.0	26.56	10.02	16.54	2.89	4.00	1215	1.88	15.42	6.01	19.2	212.	
~~MW 016~~	~~2.0~~												
MW 020	2.0	25.63	10.10	15.53	2.71	3.00	1400	1.09	17.07	6.63	-67.7	216.	

Well Size (inches)	0.5	0.75	1	1.5	2	4	6	8
Multiplier based on 4 well volume	0.06	0.11	0.18	0.42	0.7	2.65	6	10.4
Multiplier based on 1 well volume	0.015	0.0275	0.045	0.105	0.175	0.663	1.5	2.6

Guidelines for Field Screening Values:

pH range = 5 - 9

Temperature range = 10 - 19 (except for VERY warm days - please try to keep purge container cool/shaded area)

DO range = less than 12 (unless very close to a sparge well)

If readings are not in this range please try to recalibrate (except for temp, which cannot be calibrated). If they remain out of range, please do not write the value on the sheet - it is an equipment error.

PLEASE CONTACT THE PMs IF THERE IS A PROBLEM. THIS DATA IS IMPORTANT AND INCORRECT DATA IS WORSE THAN NO DATA. WE REALLY APPRECIATE YOUR WORK TO KEEP E.A.R. A TOP COMPANY IN THE FIELD

FIELD Dup. collected @ MW 023

Purge a minimum of 1 well volume & then wait for stabilization

Tolerance for stability:
Specific Conductance (3%)
temperature (3%)
pH +/- 0.1 units

Record DO & ORP but DO NOT use for stability

PFCs Sampling Checklist

Date: 9/19/18

Weather (temp./precipitation): OVERCAST
70°

Site Name: DEL-MONTAGUE-CAMP ITERO

Field Clothing and PPE:

- ☒ No clothing or boots containing Gore-Tex™
- ☒ All safety boots made from polyurethane and PVC
- ☒ No materials containing Tyvek®
- ☒ Field crew has not used fabric softener on clothing
- ☒ Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- ☒ Field crew has not applied unauthorized sunscreen or insect repellent

Field Equipment:

- ☒ No Teflon® or LDPE containing materials on-site
- ☒ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- ☒ No waterproof field books on-site
- ☒ No plastic clipboards, binders, or spiral hard cover notebooks on-site
- ☒ No adhesives (Post-It Notes) on-site

- ☒ Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- ☒ All sample containers made of HDPE or polypropylene
- ☒ Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- ☒ Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- ☒ "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- ☒ Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- ☒ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

Field Lead Name: MTB FORD

Field Lead Signature: MTB Ford

Time: 0945

TestAmerica

BURTON: EAR

277 New Durham Road
Edison, New Jersey 08817
Phone: (732) 543-3900 Fax: (732) 549-3629
SACRAMENTO

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

[illegible]

Special instructions

MYSDC ASP CAT 'B' DELIVERABLES

Water Metals Filtered (Yes/No)?

Relinquished by	Company	Date / Time	Received by	Company
1) <i>[Signature]</i>	<i>SP</i>	1930 18	1) <i>Samuel Bester</i>	<i>SP</i>
Relinquished by	Company	Date / Time	Received by	Company
2)			2)	
Relinquished by	Company	Date / Time	Received by	Company
3)			3)	
Relinquished by	Company	Date / Time	Received by	Company
4)			4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

TAL - 0016 (0715)

Massachusetts (M-NJ312), North Carolina (No. 578)

TestAmerica

Bill To: EHR

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice)		Samples Name (Printed)		Site/Project Identification	
TAN HOFMAN		EHR-MF		DEC-MONTAGUE - CAMP HERO	
Company		P. O. #		State (Location of site): NJ ☐ NY ☒ Other:	
EHR		DEC-MONTAGUE		Regulatory Program: NYSD&C	
Address		Analysis Turnaround Time		LAB USE ONLY	
225 Atlantic Avenue		Standard ☐		Project No:	
City		Rush Charges Authorized For:		Job No:	
Paterson NJ 11732		1 Week ☐		Sample Numbers	
Phone		2 Week ☐			
631-447-6400		Other ☒ 30 DAY			
Fax					
Sample Identification		Date	Time	Matrix	No. of Cont.
MW019	9/18/19	1015	40	2	2
MW023	9/18/19	1215	40	2	2
MW030	9/18/19	1400	40	2	2
FIELD ~~Blank~~ Duplicates	9/18/19	X	40	2	2
EQUIPMENT BLANK	9/18/19	0945	40	2	2
Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH					
6 = Other: , 7 = Other:					
Soil:					
Water: 1					

Special Instructions NYSD&C ASP CAT 'B' DELIVERABLES

Relinquished by	Company	Date / Time	Received by	Company	Water Metals Filtered (Yes/No)?
MW019	EHR	9/30/19	1) SAMPLE REENTER	EHR	
2)	Company	Date / Time	Received by	Company	
3)	Company	Date / Time	Received by	Company	
4)	Company	Date / Time	Received by	Company	



Appendix B: Laboratory Analytical Reports

ANALYTICAL REPORT

Job Number: 320-43466-1

Job Description: DEC-MONTAUK-Camp Hero

For:

Environmental Assessment & Remediations
dba Env Assessment & Remediation

225 Atlantic Avenue
Patchogue, NY 11772

Attention: Mr. Ian Hofmann



Approved for release.
Allison L. Bennett
Project Manager I
10/15/2018 6:43 PM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
10/15/2018

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LA000132

TestAmerica Laboratories, Inc.

TestAmerica Sacramento 880 Riverside Parkway, West Sacramento, CA 95605

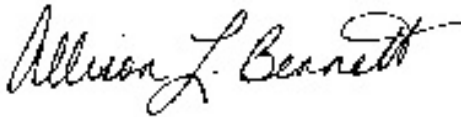
Tel (916) 373-5600 Fax (916) 372-1059 www.testamericainc.com



Job Number: 320-43466-1

Job Description: DEC-MONTAUK-Camp Hero

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

A handwritten signature in black ink that reads "Allison L. Bennett". The signature is written in a cursive style with a horizontal line extending from the end of the name.

Approved for release.
Allison L. Bennett
Project Manager I
10/15/2018 6:43 PM

Designee for
Melissa Haas

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CASE NARRATIVE

Client: Environmental Assessment & Remediations

Project: DEC-MONTAUK-Camp Hero

Report Number: 320-43466-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

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

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

RECEIPT

The samples were received on 9/21/2018 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

PERFLUORINATED HYDROCARBONS (PFC)

Samples MW019 (320-43466-1), MW023 (320-43466-2), MW020 (320-43466-3), Field Duplicate (320-43466-4) and Equipment Blank (320-43466-5) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with PFC. The samples were prepared on 10/01/2018 and 10/02/2018 and analyzed on 10/02/2018, 10/03/2018 and 10/06/2018.

Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS in the following samples: MW020 (320-43466-3). Re-analysis was performed with concurring results. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for 6:2 FTS in the following samples: (480-141919-Y-2-A), (480-141919-Y-2-B MS) and (480-141919-Y-2-C MSD). This IDA was also outside control limits in the analysis of the undiluted extract; however, results were reported from dilution due to improved IDA recovery. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Results for samples (480-141919-Y-2-A), (480-141919-Y-2-B MS) and (480-141919-Y-2-C MSD) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

6:2 FTS, Perfluorobutanoic acid (PFBA) and Perfluorohexanesulfonic acid (PFHxS) were detected in method blank MB 320-248703/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Perfluorohexanesulfonic acid (PFHxS) was detected in method blank MB 320-248967/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Organic Prep

Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-248967.

Method(s) 3535: Sample extracts were observed to be cloudy: MW019 (320-43466-1).

Refer to the QC report for details.

No other difficulties were encountered during the Perfluorinated Hydrocarbons (PFC) analysis.

All other quality control parameters were within the acceptance limits.

Sample Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-43466-1	MW019	Water	09/19/18 10:15	09/21/18 09:20
320-43466-2	MW023	Water	09/19/18 12:15	09/21/18 09:20
320-43466-3	MW020	Water	09/19/18 14:00	09/21/18 09:20
320-43466-4	Feild Duplicate	Water	09/19/18 00:00	09/21/18 09:20
320-43466-5	Equipment Blank	Water	09/19/18 09:45	09/21/18 09:20

Detection Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Client Sample ID: MW019

Lab Sample ID: 320-43466-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.60	J	1.79	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.98		1.79	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.80	J	1.79	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.96	B	1.79	0.15	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.33	J	1.79	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	11.5		1.79	0.48	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	1.24	J	1.79	0.31	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW023

Lab Sample ID: 320-43466-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.50	J	1.85	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.84	J	1.85	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	2.46		1.85	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.46	J	1.85	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.54	J	1.85	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.61	J	1.85	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.72	B	1.85	0.16	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	16.1		1.85	0.50	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW020

Lab Sample ID: 320-43466-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.63	J	1.90	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.95		1.90	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.81		1.90	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.22	J	1.90	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.70		1.90	0.81	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.41	J	1.90	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.38	J	1.90	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.37	J	1.90	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	21.9	B	1.90	0.16	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.26	J	1.90	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.54		1.90	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.51	J	1.90	0.33	ng/L	1		537 (modified)	Total/NA

Client Sample ID: Feild Duplicate

Lab Sample ID: 320-43466-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.83	J B	1.90	0.33	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.45	J	1.90	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.75	J	1.90	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	2.40		1.90	0.81	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.47	J	1.90	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.70	J	1.90	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.08	B	1.90	0.16	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.21	J	1.90	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	15.1		1.90	0.51	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Client Sample ID: Feild Duplicate (Continued)

Lab Sample ID: 320-43466-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
6:2 FTS	5.80	J B	19.0	1.90	ng/L	1		537 (modified)	Total/NA

Client Sample ID: Equipment Blank

Lab Sample ID: 320-43466-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	1.86	0.16	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Method Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
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 SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Client Sample ID: MW019

Date Collected: 09/19/18 10:15

Date Received: 09/21/18 09:20

Lab Sample ID: 320-43466-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.79	U	1.79	0.31	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluoropentanoic acid (PFPeA)	1.79	U	1.79	0.44	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorohexanoic acid (PFHxA)	1.79	U	1.79	0.52	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluoroheptanoic acid (PFHpA)	0.60	J	1.79	0.22	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorooctanoic acid (PFOA)	4.98		1.79	0.76	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorononanoic acid (PFNA)	1.79	U	1.79	0.24	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorodecanoic acid (PFDA)	1.79	U	1.79	0.28	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluoroundecanoic acid (PFUnA)	1.79	U	1.79	0.98	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorododecanoic acid (PFDoA)	1.79	U	1.79	0.49	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorotridecanoic acid (PFTriA)	1.79	U	1.79	1.16	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorotetradecanoic acid (PFTeA)	1.79	U	1.79	0.26	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorobutanesulfonic acid (PFBS)	0.80	J	1.79	0.18	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorohexanesulfonic acid (PFHxS)	6.96	B	1.79	0.15	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.33	J	1.79	0.17	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorooctanesulfonic acid (PFOS)	11.5		1.79	0.48	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorodecanesulfonic acid (PFDS)	1.79	U	1.79	0.29	ng/L		10/02/18 04:35	10/02/18 23:47	1
Perfluorooctanesulfonamide (FOSA)	1.24	J	1.79	0.31	ng/L		10/02/18 04:35	10/02/18 23:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17.9	U	17.9	2.77	ng/L		10/02/18 04:35	10/02/18 23:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17.9	U	17.9	1.70	ng/L		10/02/18 04:35	10/02/18 23:47	1
6:2 FTS	17.9	U	17.9	1.79	ng/L		10/02/18 04:35	10/02/18 23:47	1
8:2 FTS	17.9	U	17.9	1.79	ng/L		10/02/18 04:35	10/02/18 23:47	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	85		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C5 PFPeA	94		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C2 PFHxA	100		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C4 PFHpA	100		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C4 PFOA	104		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C5 PFNA	102		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C2 PFDA	96		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C2 PFUnA	98		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C2 PFDoA	96		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C2 PFTeDA	102		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C3 PFBS	99		25 - 150	10/02/18 04:35	10/02/18 23:47	1
18O2 PFHxS	94		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C4 PFOS	96		25 - 150	10/02/18 04:35	10/02/18 23:47	1
13C8 FOSA	93		25 - 150	10/02/18 04:35	10/02/18 23:47	1
d3-NMeFOSAA	86		25 - 150	10/02/18 04:35	10/02/18 23:47	1
d5-NEtFOSAA	92		25 - 150	10/02/18 04:35	10/02/18 23:47	1
M2-6:2 FTS	89		25 - 150	10/02/18 04:35	10/02/18 23:47	1
M2-8:2 FTS	76		25 - 150	10/02/18 04:35	10/02/18 23:47	1

TestAmerica Sacramento

Client Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Client Sample ID: MW023

Date Collected: 09/19/18 12:15

Date Received: 09/21/18 09:20

Lab Sample ID: 320-43466-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.85	U	1.85	0.32	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluoropentanoic acid (PFPeA)	1.85	U	1.85	0.45	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorohexanoic acid (PFHxA)	1.50	J	1.85	0.54	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluoroheptanoic acid (PFHpA)	0.84	J	1.85	0.23	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorooctanoic acid (PFOA)	2.46		1.85	0.79	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorononanoic acid (PFNA)	0.46	J	1.85	0.25	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorodecanoic acid (PFDA)	1.85	U	1.85	0.29	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluoroundecanoic acid (PFUnA)	1.85	U	1.85	1.02	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorododecanoic acid (PFDoA)	1.85	U	1.85	0.51	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorotridecanoic acid (PFTriA)	1.85	U	1.85	1.20	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorotetradecanoic acid (PFTeA)	0.54	J	1.85	0.27	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorobutanesulfonic acid (PFBS)	0.61	J	1.85	0.18	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorohexanesulfonic acid (PFHxS)	8.72	B	1.85	0.16	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.85	U	1.85	0.18	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorooctanesulfonic acid (PFOS)	16.1		1.85	0.50	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorodecanesulfonic acid (PFDS)	1.85	U	1.85	0.30	ng/L		10/02/18 04:35	10/02/18 23:54	1
Perfluorooctanesulfonamide (FOSA)	1.85	U	1.85	0.32	ng/L		10/02/18 04:35	10/02/18 23:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	18.5	U	18.5	2.87	ng/L		10/02/18 04:35	10/02/18 23:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18.5	U	18.5	1.76	ng/L		10/02/18 04:35	10/02/18 23:54	1
6:2 FTS	18.5	U	18.5	1.85	ng/L		10/02/18 04:35	10/02/18 23:54	1
8:2 FTS	18.5	U	18.5	1.85	ng/L		10/02/18 04:35	10/02/18 23:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	69		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C5 PFPeA	80		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C2 PFHxA	90		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C4 PFHpA	93		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C4 PFOA	95		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C5 PFNA	91		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C2 PFDA	89		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C2 PFUnA	90		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C2 PFDoA	76		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C2 PFTeDA	79		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C3 PFBS	86		25 - 150	10/02/18 04:35	10/02/18 23:54	1
18O2 PFHxS	92		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C4 PFOS	91		25 - 150	10/02/18 04:35	10/02/18 23:54	1
13C8 FOSA	77		25 - 150	10/02/18 04:35	10/02/18 23:54	1
d3-NMeFOSAA	81		25 - 150	10/02/18 04:35	10/02/18 23:54	1
d5-NEtFOSAA	87		25 - 150	10/02/18 04:35	10/02/18 23:54	1
M2-6:2 FTS	93		25 - 150	10/02/18 04:35	10/02/18 23:54	1
M2-8:2 FTS	72		25 - 150	10/02/18 04:35	10/02/18 23:54	1

TestAmerica Sacramento

Client Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Client Sample ID: MW020

Date Collected: 09/19/18 14:00

Date Received: 09/21/18 09:20

Lab Sample ID: 320-43466-3

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.63	J	1.90	0.33	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluoropentanoic acid (PFPeA)	1.95		1.90	0.47	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorohexanoic acid (PFHxA)	2.81		1.90	0.55	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluoroheptanoic acid (PFHpA)	1.22	J	1.90	0.24	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorooctanoic acid (PFOA)	4.70		1.90	0.81	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorononanoic acid (PFNA)	0.41	J	1.90	0.26	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorodecanoic acid (PFDA)	1.90	U	1.90	0.30	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluoroundecanoic acid (PFUnA)	1.90	U	1.90	1.05	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorododecanoic acid (PFDoA)	1.90	U	1.90	0.52	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorotridecanoic acid (PFTriA)	1.90	U	1.90	1.24	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorotetradecanoic acid (PFTeA)	0.38	J	1.90	0.28	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorobutanesulfonic acid (PFBS)	1.37	J	1.90	0.19	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorohexanesulfonic acid (PFHxS)	21.9	B	1.90	0.16	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.26	J	1.90	0.18	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorooctanesulfonic acid (PFOS)	7.54		1.90	0.51	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorodecanesulfonic acid (PFDS)	1.90	U	1.90	0.30	ng/L		10/02/18 04:35	10/03/18 00:02	1
Perfluorooctanesulfonamide (FOSA)	0.51	J	1.90	0.33	ng/L		10/02/18 04:35	10/03/18 00:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.0	U	19.0	2.95	ng/L		10/02/18 04:35	10/03/18 00:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.0	U	19.0	1.81	ng/L		10/02/18 04:35	10/03/18 00:02	1
6:2 FTS	19.0	U	19.0	1.90	ng/L		10/02/18 04:35	10/03/18 00:02	1
8:2 FTS	19.0	U	19.0	1.90	ng/L		10/02/18 04:35	10/03/18 00:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	73		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C5 PFPeA	88		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C2 PFHxA	96		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C4 PFHpA	105		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C4 PFOA	102		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C5 PFNA	106		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C2 PFDA	107		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C2 PFUnA	114		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C2 PFDoA	97		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C2 PFTeDA	100		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C3 PFBS	101		25 - 150	10/02/18 04:35	10/03/18 00:02	1
18O2 PFHxS	106		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C4 PFOS	104		25 - 150	10/02/18 04:35	10/03/18 00:02	1
13C8 FOSA	102		25 - 150	10/02/18 04:35	10/03/18 00:02	1
d3-NMeFOSAA	100		25 - 150	10/02/18 04:35	10/03/18 00:02	1
d5-NEtFOSAA	116		25 - 150	10/02/18 04:35	10/03/18 00:02	1
M2-6:2 FTS	183	*	25 - 150	10/02/18 04:35	10/03/18 00:02	1
M2-8:2 FTS	175	*	25 - 150	10/02/18 04:35	10/03/18 00:02	1

TestAmerica Sacramento

Client Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Client Sample ID: Feild Duplicate

Lab Sample ID: 320-43466-4

Date Collected: 09/19/18 00:00

Matrix: Water

Date Received: 09/21/18 09:20

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.83	J B	1.90	0.33	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluoropentanoic acid (PFPeA)	1.90	U	1.90	0.47	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorohexanoic acid (PFHxA)	1.45	J	1.90	0.55	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluoroheptanoic acid (PFHpA)	0.75	J	1.90	0.24	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorooctanoic acid (PFOA)	2.40		1.90	0.81	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorononanoic acid (PFNA)	0.47	J	1.90	0.26	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorodecanoic acid (PFDA)	1.90	U	1.90	0.29	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluoroundecanoic acid (PFUnA)	1.90	U	1.90	1.04	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorododecanoic acid (PFDoA)	1.90	U	1.90	0.52	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorotridecanoic acid (PFTriA)	1.90	U	1.90	1.23	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorotetradecanoic acid (PFTeA)	1.90	U	1.90	0.28	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorobutanesulfonic acid (PFBS)	0.70	J	1.90	0.19	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorohexanesulfonic acid (PFHxS)	8.08	B	1.90	0.16	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.21	J	1.90	0.18	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorooctanesulfonic acid (PFOS)	15.1		1.90	0.51	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorodecanesulfonic acid (PFDS)	1.90	U	1.90	0.30	ng/L		10/01/18 05:03	10/06/18 19:20	1
Perfluorooctanesulfonamide (FOSA)	1.90	U	1.90	0.33	ng/L		10/01/18 05:03	10/06/18 19:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.0	U	19.0	2.94	ng/L		10/01/18 05:03	10/06/18 19:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.0	U	19.0	1.80	ng/L		10/01/18 05:03	10/06/18 19:20	1
6:2 FTS	5.80	J B	19.0	1.90	ng/L		10/01/18 05:03	10/06/18 19:20	1
8:2 FTS	19.0	U	19.0	1.90	ng/L		10/01/18 05:03	10/06/18 19:20	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	70		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C5 PFPeA	82		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C2 PFHxA	88		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C4 PFHpA	91		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C4 PFOA	94		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C5 PFNA	90		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C2 PFDA	88		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C2 PFUnA	93		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C2 PFDoA	93		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C2 PFTeA	86		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C3 PFBS	83		25 - 150	10/01/18 05:03	10/06/18 19:20	1
18O2 PFHxS	88		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C4 PFOS	87		25 - 150	10/01/18 05:03	10/06/18 19:20	1
13C8 FOSA	84		25 - 150	10/01/18 05:03	10/06/18 19:20	1
d3-NMeFOSAA	116		25 - 150	10/01/18 05:03	10/06/18 19:20	1
d5-NEtFOSAA	107		25 - 150	10/01/18 05:03	10/06/18 19:20	1
M2-6:2 FTS	138		25 - 150	10/01/18 05:03	10/06/18 19:20	1
M2-8:2 FTS	122		25 - 150	10/01/18 05:03	10/06/18 19:20	1

TestAmerica Sacramento

Client Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Client Sample ID: Equipment Blank

Lab Sample ID: 320-43466-5

Date Collected: 09/19/18 09:45

Matrix: Water

Date Received: 09/21/18 09:20

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.86	U	1.86	0.33	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluoropentanoic acid (PFPeA)	1.86	U	1.86	0.46	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorohexanoic acid (PFHxA)	1.86	U	1.86	0.54	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluoroheptanoic acid (PFHpA)	1.86	U	1.86	0.23	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorooctanoic acid (PFOA)	1.86	U	1.86	0.79	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorononanoic acid (PFNA)	1.86	U	1.86	0.25	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorodecanoic acid (PFDA)	1.86	U	1.86	0.29	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluoroundecanoic acid (PFUnA)	1.86	U	1.86	1.02	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorododecanoic acid (PFDoA)	1.86	U	1.86	0.51	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorotridecanoic acid (PFTriA)	1.86	U	1.86	1.21	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorotetradecanoic acid (PFTeA)	1.86	U	1.86	0.27	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorobutanesulfonic acid (PFBS)	1.86	U	1.86	0.19	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	1.86	0.16	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.86	U	1.86	0.18	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorooctanesulfonic acid (PFOS)	1.86	U	1.86	0.50	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorodecanesulfonic acid (PFDS)	1.86	U	1.86	0.30	ng/L		10/02/18 04:35	10/03/18 00:09	1
Perfluorooctanesulfonamide (FOSA)	1.86	U	1.86	0.33	ng/L		10/02/18 04:35	10/03/18 00:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	18.6	U	18.6	2.88	ng/L		10/02/18 04:35	10/03/18 00:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18.6	U	18.6	1.77	ng/L		10/02/18 04:35	10/03/18 00:09	1
6:2 FTS	18.6	U	18.6	1.86	ng/L		10/02/18 04:35	10/03/18 00:09	1
8:2 FTS	18.6	U	18.6	1.86	ng/L		10/02/18 04:35	10/03/18 00:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	92		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C5 PFPeA	97		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C2 PFHxA	102		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C4 PFHpA	99		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C4 PFOA	99		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C5 PFNA	103		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C2 PFDA	102		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C2 PFUnA	95		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C2 PFDoA	83		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C2 PFTeDA	96		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C3 PFBS	94		25 - 150	10/02/18 04:35	10/03/18 00:09	1
18O2 PFHxS	88		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C4 PFOS	92		25 - 150	10/02/18 04:35	10/03/18 00:09	1
13C8 FOSA	89		25 - 150	10/02/18 04:35	10/03/18 00:09	1
d3-NMeFOSAA	81		25 - 150	10/02/18 04:35	10/03/18 00:09	1
d5-NEtFOSAA	86		25 - 150	10/02/18 04:35	10/03/18 00:09	1
M2-6:2 FTS	81		25 - 150	10/02/18 04:35	10/03/18 00:09	1
M2-8:2 FTS	74		25 - 150	10/02/18 04:35	10/03/18 00:09	1

TestAmerica Sacramento

Isotope Dilution Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

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)
320-43466-1	MW019	85	94	100	100	104	102	96	98
320-43466-2	MW023	69	80	90	93	95	91	89	90
320-43466-3	MW020	73	88	96	105	102	106	107	114
320-43466-4	Feild Duplicate	70	82	88	91	94	90	88	93
320-43466-5	Equipment Blank	92	97	102	99	99	103	102	95
480-141919-Y-2-B MS - DL	Matrix Spike	65							
480-141919-Y-2-B MS	Matrix Spike		54	74	87	102	119	131	130
480-141919-Y-2-C MSD - DL	Matrix Spike Duplicate	70							
480-141919-Y-2-C MSD	Matrix Spike Duplicate		55	70	87	104	115	124	127
LCS 320-248703/2-A	Lab Control Sample	103	101	102	102	106	102	96	102
LCS 320-248967/2-A	Lab Control Sample	100	106	109	104	105	102	100	102
LCSD 320-248967/3-A	Lab Control Sample Dup	95	98	100	96	96	99	97	96
MB 320-248703/1-A	Method Blank	99	95	102	101	102	98	96	99
MB 320-248967/1-A	Method Blank	98	104	104	103	107	102	99	103

		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)
320-43466-1	MW019	96	102	99	94	96	93	86	92
320-43466-2	MW023	76	79	86	92	91	77	81	87
320-43466-3	MW020	97	100	101	106	104	102	100	116
320-43466-4	Feild Duplicate	93	86	83	88	87	84	116	107
320-43466-5	Equipment Blank	83	96	94	88	92	89	81	86
480-141919-Y-2-B MS - DL	Matrix Spike							122	123
480-141919-Y-2-B MS	Matrix Spike	120	112	96	100	116	108		
480-141919-Y-2-C MSD - DL	Matrix Spike Duplicate							144	115
480-141919-Y-2-C MSD	Matrix Spike Duplicate	119	109	97	101	106	109		
LCS 320-248703/2-A	Lab Control Sample	107	117	96	96	99	100	114	117
LCS 320-248967/2-A	Lab Control Sample	96	115	104	103	102	96	82	90
LCSD 320-248967/3-A	Lab Control Sample Dup	96	106	93	90	98	92	87	90
MB 320-248703/1-A	Method Blank	101	106	97	94	96	98	112	116
MB 320-248967/1-A	Method Blank	94	99	97	94	101	89	83	102

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
320-43466-1	MW019	89	76
320-43466-2	MW023	93	72
320-43466-3	MW020	183 *	175 *
320-43466-4	Feild Duplicate	138	122
320-43466-5	Equipment Blank	81	74
480-141919-Y-2-B MS - DL	Matrix Spike	234 *	123
480-141919-Y-2-B MS	Matrix Spike		
480-141919-Y-2-C MSD - DL	Matrix Spike Duplicate	247 *	139
480-141919-Y-2-C MSD	Matrix Spike Duplicate		
LCS 320-248703/2-A	Lab Control Sample	125	117
LCS 320-248967/2-A	Lab Control Sample	82	80
LCSD 320-248967/3-A	Lab Control Sample Dup	74	81

TestAmerica Sacramento

Isotope Dilution Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

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)
MB 320-248703/1-A	Method Blank	120	112
MB 320-248967/1-A	Method Blank	75	76

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
PFDoA = 13C2 PFDoA
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 = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-248703/1-A

Matrix: Water

Analysis Batch: 250091

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 248703

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.494	J	2.00	0.35	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluoropentanoic acid (PFPeA)	2.00	U	2.00	0.49	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorohexanoic acid (PFHxA)	2.00	U	2.00	0.58	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.25	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.85	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.27	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorodecanoic acid (PFDA)	2.00	U	2.00	0.31	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	1.10	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.55	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorotridecanoic acid (PFTriA)	2.00	U	2.00	1.30	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorotetradecanoic acid (PFTeA)	2.00	U	2.00	0.29	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.20	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorohexanesulfonic acid (PFHxS)	0.290	J	2.00	0.17	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.00	U	2.00	0.19	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.54	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.32	ng/L		10/01/18 05:03	10/06/18 18:20	1
Perfluorooctanesulfonamide (FOSA)	2.00	U	2.00	0.35	ng/L		10/01/18 05:03	10/06/18 18:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20.0	U	20.0	3.10	ng/L		10/01/18 05:03	10/06/18 18:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20.0	U	20.0	1.90	ng/L		10/01/18 05:03	10/06/18 18:20	1
6:2 FTS	2.268	J	20.0	2.00	ng/L		10/01/18 05:03	10/06/18 18:20	1
8:2 FTS	20.0	U	20.0	2.00	ng/L		10/01/18 05:03	10/06/18 18:20	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	99		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C5 PFPeA	95		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C2 PFHxA	102		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C4 PFHpA	101		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C4 PFOA	102		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C5 PFNA	98		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C2 PFDA	96		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C2 PFUnA	99		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C2 PFDoA	101		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C2 PFTeDA	106		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C3 PFBS	97		25 - 150	10/01/18 05:03	10/06/18 18:20	1
18O2 PFHxS	94		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C4 PFOS	96		25 - 150	10/01/18 05:03	10/06/18 18:20	1
13C8 FOSA	98		25 - 150	10/01/18 05:03	10/06/18 18:20	1
d3-NMeFOSAA	112		25 - 150	10/01/18 05:03	10/06/18 18:20	1
d5-NEtFOSAA	116		25 - 150	10/01/18 05:03	10/06/18 18:20	1
M2-6:2 FTS	120		25 - 150	10/01/18 05:03	10/06/18 18:20	1
M2-8:2 FTS	112		25 - 150	10/01/18 05:03	10/06/18 18:20	1

TestAmerica Sacramento

QC Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

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

Lab Sample ID: LCS 320-248703/2-A

Matrix: Water

Analysis Batch: 250091

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 248703

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	36.79		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	37.25		ng/L		93	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	38.88		ng/L		97	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.07		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	35.78		ng/L		89	64 - 124
Perfluorononanoic acid (PFNA)	40.0	37.38		ng/L		93	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.17		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	36.91		ng/L		92	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	35.22		ng/L		88	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	40.72		ng/L		102	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	40.40		ng/L		101	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	33.71		ng/L		95	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.59		ng/L		92	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.76		ng/L		99	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	35.30		ng/L		95	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	38.35		ng/L		99	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	38.26		ng/L		96	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.50		ng/L		96	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.54		ng/L		96	65 - 125
6:2 FTS	37.9	33.16		ng/L		87	66 - 126
8:2 FTS	38.3	38.78		ng/L		101	67 - 127

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	103		25 - 150
13C5 PFPeA	101		25 - 150
13C2 PFHxA	102		25 - 150
13C4 PFHpA	102		25 - 150
13C4 PFOA	106		25 - 150
13C5 PFNA	102		25 - 150
13C2 PFDA	96		25 - 150
13C2 PFUnA	102		25 - 150
13C2 PFDoA	107		25 - 150
13C2 PFTeA	117		25 - 150
13C3 PFBS	96		25 - 150
18O2 PFHxS	96		25 - 150
13C4 PFOS	99		25 - 150
13C8 FOSA	100		25 - 150
d3-NMeFOSAA	114		25 - 150
d5-NEtFOSAA	117		25 - 150

TestAmerica Sacramento

QC Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

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

Lab Sample ID: LCS 320-248703/2-A

Matrix: Water

Analysis Batch: 250091

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 248703

<i>Isotope Dilution</i>	<i>LCS %Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
M2-6:2 FTS	125		25 - 150
M2-8:2 FTS	117		25 - 150

Lab Sample ID: 480-141919-Y-2-B MS

Matrix: Water

Analysis Batch: 250091

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 248703

<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>
Perfluoropentanoic acid (PFPeA)	49.9		37.5	87.50		ng/L		100	66 - 126
Perfluorohexanoic acid (PFHxA)	144		37.5	171.4		ng/L		74	66 - 126
Perfluoroheptanoic acid (PFHpA)	33.6		37.5	79.88		ng/L		123	66 - 126
Perfluorooctanoic acid (PFOA)	112		37.6	147.0		ng/L		94	64 - 124
Perfluorononanoic acid (PFNA)	1.30	J	37.5	34.86		ng/L		89	68 - 128
Perfluorodecanoic acid (PFDA)	1.78	U	37.5	36.42		ng/L		97	69 - 129
Perfluoroundecanoic acid (PFUnA)	1.78	U	37.5	39.22		ng/L		104	60 - 120
Perfluorododecanoic acid (PFDoA)	1.78	U	37.5	36.07		ng/L		96	71 - 131
Perfluorotridecanoic acid (PFTriA)	1.78	U	37.5	38.31		ng/L		102	72 - 132
Perfluorotetradecanoic acid (PFTeA)	1.78	U	37.5	41.11		ng/L		110	68 - 128
Perfluorobutanesulfonic acid (PFBS)	12.6		33.2	41.93		ng/L		88	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	17.1	B	34.2	47.10		ng/L		88	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	1.56	J	35.7	36.30		ng/L		97	68 - 128
Perfluorooctanesulfonic acid (PFOS)	69.6		34.8	100.8		ng/L		90	67 - 127
Perfluorodecanesulfonic acid (PFDS)	1.78	U	36.2	33.32		ng/L		92	68 - 128
Perfluorooctanesulfonamide (FOSA)	0.64	J	37.5	39.32		ng/L		103	70 - 130

<i>Isotope Dilution</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
13C5 PFPeA	54		25 - 150
13C2 PFHxA	74		25 - 150
13C4 PFHpA	87		25 - 150
13C4 PFOA	102		25 - 150
13C5 PFNA	119		25 - 150
13C2 PFDA	131		25 - 150
13C2 PFUnA	130		25 - 150
13C2 PFDoA	120		25 - 150
13C2 PFTeDA	112		25 - 150
13C3 PFBS	96		25 - 150
18O2 PFHxS	100		25 - 150
13C4 PFOS	116		25 - 150
13C8 FOSA	108		25 - 150

TestAmerica Sacramento

QC Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

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

Lab Sample ID: 480-141919-Y-2-C MSD

Matrix: Water

Analysis Batch: 250091

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 248703

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)	49.9		35.5	84.89		ng/L		98	66 - 126	3	30
Perfluorohexanoic acid (PFHxA)	144		35.5	180.9		ng/L		105	66 - 126	5	30
Perfluoroheptanoic acid (PFHpA)	33.6		35.5	72.92		ng/L		111	66 - 126	9	30
Perfluorooctanoic acid (PFOA)	112		35.6	145.1		ng/L		93	64 - 124	1	30
Perfluorononanoic acid (PFNA)	1.30	J	35.5	34.88		ng/L		94	68 - 128	0	30
Perfluorodecanoic acid (PFDA)	1.78	U	35.5	34.53		ng/L		97	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)	1.78	U	35.5	36.88		ng/L		104	60 - 120	6	30
Perfluorododecanoic acid (PFDoA)	1.78	U	35.5	33.23		ng/L		93	71 - 131	8	30
Perfluorotridecanoic acid (PFTriA)	1.78	U	35.5	34.33		ng/L		97	72 - 132	11	30
Perfluorotetradecanoic acid (PFTeA)	1.78	U	35.5	39.49		ng/L		111	68 - 128	4	30
Perfluorobutanesulfonic acid (PFBS)	12.6		31.4	42.47		ng/L		95	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)	17.1	B	32.3	47.61		ng/L		94	63 - 123	1	30
Perfluoroheptanesulfonic Acid (PFHpS)	1.56	J	33.8	39.14		ng/L		111	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)	69.6		33.0	110.0		ng/L		123	67 - 127	9	30
Perfluorodecanesulfonic acid (PFDS)	1.78	U	34.3	33.78		ng/L		99	68 - 128	1	30
Perfluorooctanesulfonamide (FOSA)	0.64	J	35.5	36.94		ng/L		102	70 - 130	6	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
¹³ C5 PFPeA	55		25 - 150
¹³ C2 PFHxA	70		25 - 150
¹³ C4 PFHpA	87		25 - 150
¹³ C4 PFOA	104		25 - 150
¹³ C5 PFNA	115		25 - 150
¹³ C2 PFDA	124		25 - 150
¹³ C2 PFUnA	127		25 - 150
¹³ C2 PFDoA	119		25 - 150
¹³ C2 PFTeA	109		25 - 150
¹³ C3 PFBS	97		25 - 150
¹⁸ O2 PFHxS	101		25 - 150
¹³ C4 PFOS	106		25 - 150
¹³ C8 FOSA	109		25 - 150

Lab Sample ID: MB 320-248967/1-A

Matrix: Water

Analysis Batch: 249235

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 248967

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.00	U	2.00	0.35	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluoropentanoic acid (PFPeA)	2.00	U	2.00	0.49	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorohexanoic acid (PFHxA)	2.00	U	2.00	0.58	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.25	ng/L		10/02/18 04:35	10/02/18 22:24	1

TestAmerica Sacramento

QC Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

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

Lab Sample ID: MB 320-248967/1-A

Matrix: Water

Analysis Batch: 249235

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 248967

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.85	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.27	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorodecanoic acid (PFDA)	2.00	U	2.00	0.31	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	1.10	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.55	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorotridecanoic acid (PFTriA)	2.00	U	2.00	1.30	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorotetradecanoic acid (PFTeA)	2.00	U	2.00	0.29	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.20	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorohexanesulfonic acid (PFHxS)	0.433	J	2.00	0.17	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.00	U	2.00	0.19	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.54	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.32	ng/L		10/02/18 04:35	10/02/18 22:24	1
Perfluorooctanesulfonamide (FOSA)	2.00	U	2.00	0.35	ng/L		10/02/18 04:35	10/02/18 22:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20.0	U	20.0	3.10	ng/L		10/02/18 04:35	10/02/18 22:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20.0	U	20.0	1.90	ng/L		10/02/18 04:35	10/02/18 22:24	1
6:2 FTS	20.0	U	20.0	2.00	ng/L		10/02/18 04:35	10/02/18 22:24	1
8:2 FTS	20.0	U	20.0	2.00	ng/L		10/02/18 04:35	10/02/18 22:24	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C5 PFPeA	104		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C2 PFHxA	104		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C4 PFHpA	103		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C4 PFOA	107		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C5 PFNA	102		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C2 PFDA	99		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C2 PFUnA	103		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C2 PFDoA	94		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C2 PFTeDA	99		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C3 PFBS	97		25 - 150	10/02/18 04:35	10/02/18 22:24	1
18O2 PFHxS	94		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C4 PFOS	101		25 - 150	10/02/18 04:35	10/02/18 22:24	1
13C8 FOSA	89		25 - 150	10/02/18 04:35	10/02/18 22:24	1
d3-NMeFOSAA	83		25 - 150	10/02/18 04:35	10/02/18 22:24	1
d5-NEtFOSAA	102		25 - 150	10/02/18 04:35	10/02/18 22:24	1
M2-6:2 FTS	75		25 - 150	10/02/18 04:35	10/02/18 22:24	1
M2-8:2 FTS	76		25 - 150	10/02/18 04:35	10/02/18 22:24	1

Lab Sample ID: LCS 320-248967/2-A

Matrix: Water

Analysis Batch: 249235

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 248967

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	39.74		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	39.69		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	38.63		ng/L		97	66 - 126

TestAmerica Sacramento

QC Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

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

Lab Sample ID: LCS 320-248967/2-A

Matrix: Water

Analysis Batch: 249235

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 248967

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanoic acid (PFHpA)	40.0	41.60		ng/L		104	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	41.08		ng/L		103	64 - 124
Perfluorononanoic acid (PFNA)	40.0	42.35		ng/L		106	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	41.42		ng/L		104	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	40.18		ng/L		100	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	42.20		ng/L		106	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	47.75		ng/L		119	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.95		ng/L		92	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.81		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.60		ng/L		92	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.25		ng/L		98	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	35.83		ng/L		97	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	37.44		ng/L		97	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	42.57		ng/L		106	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.51		ng/L		101	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.07		ng/L		98	65 - 125
6:2 FTS	37.9	34.47		ng/L		91	66 - 126
8:2 FTS	38.3	40.74		ng/L		106	67 - 127

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	100		25 - 150
13C5 PFPeA	106		25 - 150
13C2 PFHxA	109		25 - 150
13C4 PFHpA	104		25 - 150
13C4 PFOA	105		25 - 150
13C5 PFNA	102		25 - 150
13C2 PFDA	100		25 - 150
13C2 PFUnA	102		25 - 150
13C2 PFDoA	96		25 - 150
13C2 PFTeDA	115		25 - 150
13C3 PFBS	104		25 - 150
18O2 PFHxS	103		25 - 150
13C4 PFOS	102		25 - 150
13C8 FOSA	96		25 - 150
d3-NMeFOSAA	82		25 - 150
d5-NEtFOSAA	90		25 - 150
M2-6:2 FTS	82		25 - 150
M2-8:2 FTS	80		25 - 150

TestAmerica Sacramento

QC Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

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

Lab Sample ID: LCSD 320-248967/3-A

Matrix: Water

Analysis Batch: 249235

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 248967

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	40.66		ng/L		102	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	40.0	41.92		ng/L		105	66 - 126	5	30
Perfluorohexanoic acid (PFHxA)	40.0	41.34		ng/L		103	66 - 126	7	30
Perfluoroheptanoic acid (PFHpA)	40.0	43.71		ng/L		109	66 - 126	5	30
Perfluorooctanoic acid (PFOA)	40.0	43.51		ng/L		109	64 - 124	6	30
Perfluorononanoic acid (PFNA)	40.0	44.15		ng/L		110	68 - 128	4	30
Perfluorodecanoic acid (PFDA)	40.0	40.83		ng/L		102	69 - 129	1	30
Perfluoroundecanoic acid (PFUnA)	40.0	42.23		ng/L		106	60 - 120	5	30
Perfluorododecanoic acid (PFDoA)	40.0	38.44		ng/L		96	71 - 131	9	30
Perfluorotridecanoic acid (PFTriA)	40.0	42.69		ng/L		107	72 - 132	11	30
Perfluorotetradecanoic acid (PFTeA)	40.0	38.85		ng/L		97	68 - 128	5	30
Perfluorobutanesulfonic acid (PFBS)	35.4	37.17		ng/L		105	73 - 133	7	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	37.10		ng/L		102	63 - 123	10	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	36.76		ng/L		97	68 - 128	1	30
Perfluorooctanesulfonic acid (PFOS)	37.1	35.49		ng/L		96	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)	38.6	39.01		ng/L		101	68 - 128	4	30
Perfluorooctanesulfonamide (FOSA)	40.0	42.33		ng/L		106	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	37.40		ng/L		93	67 - 127	8	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.99		ng/L		95	65 - 125	3	30
6:2 FTS	37.9	38.98		ng/L		103	66 - 126	12	30
8:2 FTS	38.3	37.35		ng/L		97	67 - 127	9	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFBA	95		25 - 150
13C5 PFPeA	98		25 - 150
13C2 PFHxA	100		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	96		25 - 150
13C5 PFNA	99		25 - 150
13C2 PFDA	97		25 - 150
13C2 PFUnA	96		25 - 150
13C2 PFDoA	96		25 - 150
13C2 PFTeA	106		25 - 150
13C3 PFBS	93		25 - 150
18O2 PFHxS	90		25 - 150
13C4 PFOS	98		25 - 150
13C8 FOSA	92		25 - 150
d3-NMeFOSAA	87		25 - 150
d5-NEtFOSAA	90		25 - 150

TestAmerica Sacramento

QC Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

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

Lab Sample ID: LCSD 320-248967/3-A

Matrix: Water

Analysis Batch: 249235

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 248967

<i>Isotope Dilution</i>	<i>LCSD %Recovery</i>	<i>LCSD Qualifier</i>	<i>Limits</i>
M2-6:2 FTS	74		25 - 150
M2-8:2 FTS	81		25 - 150

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

Lab Sample ID: 480-141919-Y-2-B MS

Matrix: Water

Analysis Batch: 250091

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 248703

<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) - DL	221	B	37.5	255.1		ng/L		91	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) - DL	178	U	37.5	38.48	J	ng/L		103	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) - DL	27.2	J	37.5	55.68	J	ng/L		76	65 - 125
6:2 FTS - DL	43.8	J B	35.6	88.08	J	ng/L		124	66 - 126
8:2 FTS - DL	178	U	36.0	39.57	J	ng/L		110	67 - 127
<i>Isotope Dilution</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>						
13C4 PFBA - DL	65		25 - 150						
d3-NMeFOSAA - DL	122		25 - 150						
d5-NEtFOSAA - DL	123		25 - 150						
M2-6:2 FTS - DL	234	*	25 - 150						
M2-8:2 FTS - DL	123		25 - 150						

Lab Sample ID: 480-141919-Y-2-C MSD

Matrix: Water

Analysis Batch: 250091

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 248703

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Perfluorobutanoic acid (PFBA) - DL	221	B	35.5	260.4		ng/L		111	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) - DL	178	U	35.5	32.13	J	ng/L		90	67 - 127	18	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) - DL	27.2	J	35.5	59.93	J	ng/L		92	65 - 125	7	30
6:2 FTS - DL	43.8	J B	33.7	84.15	J	ng/L		120	66 - 126	5	30
8:2 FTS - DL	178	U	34.1	32.03	J	ng/L		94	67 - 127	21	30
<i>Isotope Dilution</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>								
13C4 PFBA - DL	70		25 - 150								
d3-NMeFOSAA - DL	144		25 - 150								
d5-NEtFOSAA - DL	115		25 - 150								
M2-6:2 FTS - DL	247	*	25 - 150								
M2-8:2 FTS - DL	139		25 - 150								

TestAmerica Sacramento

Definitions/Glossary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Qualifiers

LCMS

Qualifier	Qualifier Description
U	Analyzed for but not detected.
J	Indicates an estimated value.
B	The analyte was found in an associated blank, as well as in the sample.
*	Isotope Dilution analyte is outside acceptance limits.

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)

QC Association Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

LCMS

Prep Batch: 248703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-43466-4	Feild Duplicate	Total/NA	Water	3535	
MB 320-248703/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-248703/2-A	Lab Control Sample	Total/NA	Water	3535	
480-141919-Y-2-B MS - DL	Matrix Spike	Total/NA	Water	3535	
480-141919-Y-2-B MS	Matrix Spike	Total/NA	Water	3535	
480-141919-Y-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	3535	
480-141919-Y-2-C MSD - DL	Matrix Spike Duplicate	Total/NA	Water	3535	

Prep Batch: 248967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-43466-1	MW019	Total/NA	Water	3535	
320-43466-2	MW023	Total/NA	Water	3535	
320-43466-3	MW020	Total/NA	Water	3535	
320-43466-5	Equipment Blank	Total/NA	Water	3535	
MB 320-248967/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-248967/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-248967/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 249235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-43466-1	MW019	Total/NA	Water	537 (modified)	248967
320-43466-2	MW023	Total/NA	Water	537 (modified)	248967
320-43466-3	MW020	Total/NA	Water	537 (modified)	248967
320-43466-5	Equipment Blank	Total/NA	Water	537 (modified)	248967
MB 320-248967/1-A	Method Blank	Total/NA	Water	537 (modified)	248967
LCS 320-248967/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	248967
LCSD 320-248967/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	248967

Analysis Batch: 250091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-43466-4	Feild Duplicate	Total/NA	Water	537 (modified)	248703
MB 320-248703/1-A	Method Blank	Total/NA	Water	537 (modified)	248703
LCS 320-248703/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	248703
480-141919-Y-2-B MS - DL	Matrix Spike	Total/NA	Water	537 (modified)	248703
480-141919-Y-2-B MS	Matrix Spike	Total/NA	Water	537 (modified)	248703
480-141919-Y-2-C MSD - DL	Matrix Spike Duplicate	Total/NA	Water	537 (modified)	248703
480-141919-Y-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	537 (modified)	248703

Lab Chronicle

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Client Sample ID: MW019

Date Collected: 09/19/18 10:15

Date Received: 09/21/18 09:20

Lab Sample ID: 320-43466-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			248967	10/02/18 04:35	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	249235	10/02/18 23:47	ABH	TAL SAC

Client Sample ID: MW023

Date Collected: 09/19/18 12:15

Date Received: 09/21/18 09:20

Lab Sample ID: 320-43466-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			248967	10/02/18 04:35	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	249235	10/02/18 23:54	ABH	TAL SAC

Client Sample ID: MW020

Date Collected: 09/19/18 14:00

Date Received: 09/21/18 09:20

Lab Sample ID: 320-43466-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			248967	10/02/18 04:35	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	249235	10/03/18 00:02	ABH	TAL SAC

Client Sample ID: Feild Duplicate

Date Collected: 09/19/18 00:00

Date Received: 09/21/18 09:20

Lab Sample ID: 320-43466-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			248703	10/01/18 05:03	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	250091	10/06/18 19:20	CBW	TAL SAC

Client Sample ID: Equipment Blank

Date Collected: 09/19/18 09:45

Date Received: 09/21/18 09:20

Lab Sample ID: 320-43466-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			248967	10/02/18 04:35	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	249235	10/03/18 00:09	ABH	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 320-43466-1

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11666	03-31-19

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

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	6:2 FTS
537 (modified)	3535	Water	8:2 FTS
537 (modified)	3535	Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537 (modified)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxA)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctanesulfonamide (FOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: TestAmerica Edison

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11452	04-01-19

Method PFC IDA

Fluorinated Hydrocarbons by Method
PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
SDG No.: _____
Matrix: Water Level: Low
GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	M262FTS #	M282FTS #	d3NMFOS #	d5NEFOS #
	480-141919-Y-2-B MS DL	65	234 *	123	122	123
	480-141919-Y-2-C MSD DL	70	247 *	139	144	115

	<u>QC LIMITS</u>
PFBA = 13C4 PFBA	25-150
M262FTS = M2-6:2 FTS	25-150
M282FTS = M2-8:2 FTS	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	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.: 320-43466-1

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 #
MW019	320-43466-1	85	94	99	100	100	94	89	104
MW023	320-43466-2	69	80	86	90	93	92	93	95
MW020	320-43466-3	73	88	101	96	105	106	183 *	102
Equipment Blank	320-43466-5	92	97	94	102	99	88	81	99
	MB 320-248967/1-A	98	104	97	104	103	94	75	107
	LCS 320-248967/2-A	100	106	104	109	104	103	82	105
	LCSD 320-248967/3-A	95	98	93	100	96	90	74	96

QC LIMITS

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 = M2-6:2 FTS	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.: 320-43466-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	M282FTS #	PFDA #	PFOSA #	d3NMFOS #	d5NEFOS #	PFUnA #
MW019	320-43466-1	102	96	76	96	93	86	92	98
MW023	320-43466-2	91	91	72	89	77	81	87	90
MW020	320-43466-3	106	104	175 *	107	102	100	116	114
Equipment Blank	320-43466-5	103	92	74	102	89	81	86	95
	MB 320-248967/1-A	102	101	76	99	89	83	102	103
	LCS 320-248967/2-A	102	102	80	100	96	82	90	102
	LCSD 320-248967/3-A	99	98	81	97	92	87	90	96

	<u>QC LIMITS</u>
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
M282FTS = M2-8:2 FTS	25-150
PFDA = 13C2 PFDA	25-150
PFOSA = 13C8 FOSA	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.: 320-43466-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFD _o A #	PFTD _A #
MW019	320-43466-1	96	102
MW023	320-43466-2	76	79
MW020	320-43466-3	97	100
Equipment Blank	320-43466-5	83	96
	MB 320-248967/1-A	94	99
	LCS 320-248967/2-A	96	115
	LCSD 320-248967/3-A	96	106

PFD_oA = 13C2 PFD_oA
PFTD_A = 13C2 PFTeD_A

QC LIMITS
25-150
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.: 320-43466-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
Field Duplicate	320-43466-4	70	82	83	88	91	88	138	94
	MB 320-248703/1-A	99	95	97	102	101	94	120	102
	LCS 320-248703/2-A	103	101	96	102	102	96	125	106

	<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 = M2-6:2 FTS	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.: 320-43466-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
Feild Duplicate	320-43466-4	90	87	84	122	88	116	107	93
	MB 320-248703/1-A	98	96	98	112	96	112	116	99
	LCS 320-248703/2-A	102	99	100	117	96	114	117	102

	<u>QC LIMITS</u>
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2 FTS	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.: 320-43466-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFD _o A #	PFTD _A #
Field Duplicate	320-43466-4	93	86
	MB 320-248703/1-A	101	106
	LCS 320-248703/2-A	107	117

PFD_oA = 13C2 PFD_oA
PFTD_A = 13C2 PFTeD_A

QC LIMITS
25-150
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.: 320-43466-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFNA #	PFOS #
	480-141919-Y-2-B MS	54	96	74	87	100	102	119	116
	480-141919-Y-2-C MSD	55	97	70	87	101	104	115	106

PFPeA = 13C5 PFPeA
 PFBS = 13C3 PFBS
 PFHxA = 13C2 PFHxA
 PFHpA = 13C4 PFHpA
 PFHxS = 18O2 PFHxS
 PFOA = 13C4 PFOA
 PFOS = 13C4 PFOS
 PFNA = 13C5 PFNA

QC LIMITS
 25-150
 25-150
 25-150
 25-150
 25-150
 25-150
 25-150
 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.: 320-43466-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFOSA #	PFDA #	PFUnA #	PFDoA #	PFTDA #
	480-141919-Y-2-B MS	108	131	130	120	112
	480-141919-Y-2-C MSD	109	124	127	119	109

	<u>QC LIMITS</u>
PFOSA = 13C8 FOSA	25-150
PFDA = 13C2 PFDA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2 PFTeDA	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.: 320-43466-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.06LLAAA_007.d
 Lab ID: LCS 320-248703/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	36.79	92	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	37.25	93	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	38.88	97	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	39.07	98	66-126	
Perfluorooctanoic acid (PFOA)	40.0	35.78	89	64-124	
Perfluorononanoic acid (PFNA)	40.0	37.38	93	68-128	
Perfluorodecanoic acid (PFDA)	40.0	39.17	98	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	36.91	92	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	35.22	88	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	40.72	102	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	40.40	101	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	33.71	95	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.59	92	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.76	99	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	35.30	95	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	38.35	99	68-128	
Perfluorooctanesulfonamide (FOSA)	40.0	38.26	96	70-130	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	38.50	96	67-127	
N-ethylperfluorooctanesulfonam idoacetic acid (NEtFOSAA)	40.0	38.54	96	65-125	
6:2 FTS	37.9	33.16	87	66-126	
8:2 FTS	38.3	38.78	101	67-127	
13C4 PFBA	100	103.1	103	25-150	
13C5 PFPeA	100	101.2	101	25-150	
13C2 PFHxA	100	101.8	102	25-150	
13C4 PFHpA	100	101.9	102	25-150	
13C4 PFOA	100	105.9	106	25-150	
13C5 PFNA	100	101.9	102	25-150	
13C2 PFDA	100	96.12	96	25-150	
13C2 PFUnA	100	101.7	102	25-150	
13C2 PFDoA	100	106.7	107	25-150	
13C2 PFTeDA	100	116.7	117	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.: 320-43466-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.06LLAAA_007.d
 Lab ID: LCS 320-248703/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C3 PFBS	93.0	89.46	96	25-150	
18O2 PFHxS	94.6	90.80	96	25-150	
13C4 PFOS	95.6	94.63	99	25-150	
13C8 FOSA	100	100.4	100	25-150	
d3-NMeFOSAA	100	114.4	114	25-150	
d5-NEtFOSAA	100	116.9	117	25-150	
M2-6:2 FTS	95.0	118.8	125	25-150	
M2-8:2 FTS	95.8	111.7	117	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.: 320-43466-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.02LLAA_042.d
 Lab ID: LCS 320-248967/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	39.74	99	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	39.69	99	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	38.63	97	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	41.60	104	66-126	
Perfluorooctanoic acid (PFOA)	40.0	41.08	103	64-124	
Perfluorononanoic acid (PFNA)	40.0	42.35	106	68-128	
Perfluorodecanoic acid (PFDA)	40.0	41.42	104	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	40.18	100	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	42.20	106	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	47.75	119	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	36.95	92	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	34.81	98	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.60	92	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.25	98	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	35.83	97	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	37.44	97	68-128	
Perfluorooctanesulfonamide (FOSA)	40.0	42.57	106	70-130	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	40.51	101	67-127	
N-ethylperfluorooctanesulfonam idoacetic acid (NEtFOSAA)	40.0	39.07	98	65-125	
6:2 FTS	37.9	34.47	91	66-126	
8:2 FTS	38.3	40.74	106	67-127	
13C4 PFBA	100	99.74	100	25-150	
13C5 PFPeA	100	105.9	106	25-150	
13C2 PFHxA	100	108.8	109	25-150	
13C4 PFHpA	100	104.2	104	25-150	
13C4 PFOA	100	105.1	105	25-150	
13C5 PFNA	100	102.2	102	25-150	
13C2 PFDA	100	99.80	100	25-150	
13C2 PFUnA	100	102.5	102	25-150	
13C2 PFDoA	100	96.18	96	25-150	
13C2 PFTeDA	100	115.5	115	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.: 320-43466-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.02LLAA_042.d
 Lab ID: LCS 320-248967/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C3 PFBS	93.0	96.79	104	25-150	
18O2 PFHxS	94.6	97.73	103	25-150	
13C4 PFOS	95.6	97.51	102	25-150	
13C8 FOSA	100	95.53	96	25-150	
d3-NMeFOSAA	100	82.00	82	25-150	
d5-NEtFOSAA	100	90.50	90	25-150	
M2-6:2 FTS	95.0	77.88	82	25-150	
M2-8:2 FTS	95.8	76.62	80	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.: 320-43466-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.02LLAA_043.d
 Lab ID: LCSD 320-248967/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	40.0	40.66	102	2	30	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	41.92	105	5	30	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	41.34	103	7	30	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	43.71	109	5	30	66-126	
Perfluorooctanoic acid (PFOA)	40.0	43.51	109	6	30	64-124	
Perfluorononanoic acid (PFNA)	40.0	44.15	110	4	30	68-128	
Perfluorodecanoic acid (PFDA)	40.0	40.83	102	1	30	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	42.23	106	5	30	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	38.44	96	9	30	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	42.69	107	11	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	38.85	97	5	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	37.17	105	7	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	37.10	102	10	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	36.76	97	1	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	35.49	96	1	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	39.01	101	4	30	68-128	
Perfluorooctanesulfonamide (FOSA)	40.0	42.33	106	1	30	70-130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	37.40	93	8	30	67-127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.99	95	3	30	65-125	
6:2 FTS	37.9	38.98	103	12	30	66-126	
8:2 FTS	38.3	37.35	97	9	30	67-127	
13C4 PFBA	100	95.05	95			25-150	
13C5 PFPeA	100	97.83	98			25-150	
13C2 PFHxA	100	99.86	100			25-150	
13C4 PFHpA	100	96.48	96			25-150	
13C4 PFOA	100	95.93	96			25-150	
13C5 PFNA	100	99.38	99			25-150	
13C2 PFDA	100	97.47	97			25-150	
13C2 PFUnA	100	95.70	96			25-150	
13C2 PFDoA	100	95.93	96			25-150	
13C2 PFTeDA	100	106.0	106			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.: 320-43466-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.02LLAA_043.d
 Lab ID: LCSD 320-248967/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
13C3 PFBS	93.0	86.03	93			25-150	
18O2 PFHxS	94.6	85.19	90			25-150	
13C4 PFOS	95.6	93.25	98			25-150	
13C8 FOSA	100	92.17	92			25-150	
d3-NMeFOSAA	100	86.82	87			25-150	
d5-NEtFOSAA	100	90.43	90			25-150	
M2-6:2 FTS	95.0	70.63	74			25-150	
M2-8:2 FTS	95.8	77.28	81			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.: 320-43466-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.06LLAA_020.d
 Lab ID: 480-141919-Y-2-B MS Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluoropentanoic acid (PFPeA)	37.5	49.9	87.50	100	66-126	
Perfluorohexanoic acid (PFHxA)	37.5	144	171.4	74	66-126	
Perfluoroheptanoic acid (PFHpA)	37.5	33.6	79.88	123	66-126	
Perfluorooctanoic acid (PFOA)	37.6	112	147.0	94	64-124	
Perfluorononanoic acid (PFNA)	37.5	1.30 J	34.86	89	68-128	
Perfluorodecanoic acid (PFDA)	37.5	1.78 U	36.42	97	69-129	
Perfluoroundecanoic acid (PFUnA)	37.5	1.78 U	39.22	104	60-120	
Perfluorododecanoic acid (PFDoA)	37.5	1.78 U	36.07	96	71-131	
Perfluorotridecanoic acid (PFTriA)	37.5	1.78 U	38.31	102	72-132	
Perfluorotetradecanoic acid (PFTeA)	37.5	1.78 U	41.11	110	68-128	
Perfluorobutanesulfonic acid (PFBS)	33.2	12.6	41.93	88	73-133	
Perfluorohexanesulfonic acid (PFHxS)	34.2	17.1	47.10	88	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	35.7	1.56 J	36.30	97	68-128	
Perfluorooctanesulfonic acid (PFOS)	34.8	69.6	100.8	90	67-127	
Perfluorodecanesulfonic acid (PFDS)	36.2	1.78 U	33.32	92	68-128	
Perfluorooctanesulfonamide (FOSA)	37.5	0.64 J	39.32	103	70-130	
13C5 PFPeA	93.8	47.7	50.63	54	25-150	
13C2 PFHxA	93.8	65.5	69.82	74	25-150	
13C4 PFHpA	93.8	81.7	81.48	87	25-150	
13C4 PFOA	93.8	93.5	95.38	102	25-150	
13C5 PFNA	93.8	105	111.8	119	25-150	
13C2 PFDA	93.8	117	123.1	131	25-150	
13C2 PFUnA	93.8	113	121.7	130	25-150	
13C2 PFDoA	93.8	109	112.2	120	25-150	
13C2 PFTeDA	93.8	104	105.4	112	25-150	
13C3 PFBS	87.3	82.2	83.80	96	25-150	
18O2 PFHxS	88.8	86.2	88.67	100	25-150	
13C4 PFOS	89.7	98.0	103.7	116	25-150	
13C8 FOSA	93.8	101	101.6	108	25-150	

Column to be used to flag recovery and RPD values

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.06LLAAA_019.d
 Lab ID: 480-141919-Y-2-B MS DL Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	37.5	221	255.1	91	70-130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	37.5	178 U	38.48 J	103	67-127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	37.5	27.2 J	55.68 J	76	65-125	
6:2 FTS	35.6	43.8 J	88.08 J	124	66-126	
8:2 FTS	36.0	178 U	39.57 J	110	67-127	
13C4 PFBA	93.8	62.6	60.62	65	25-150	
d3-NMeFOSAA	93.8	108	114.9	122	25-150	
d5-NEtFOSAA	93.8	102	115.4	123	25-150	
M2-6:2 FTS	89.2	211	208.4	234	25-150	*
M2-8:2 FTS	89.9	110	111.0	123	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.: 320-43466-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.10.06LLAAA_022.d

Lab ID: 480-141919-Y-2-C MSD

Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluoropentanoic acid (PFPeA)	35.5	84.89	98	3	30	66-126	
Perfluorohexanoic acid (PFHxA)	35.5	180.9	105	5	30	66-126	
Perfluoroheptanoic acid (PFHpA)	35.5	72.92	111	9	30	66-126	
Perfluorooctanoic acid (PFOA)	35.6	145.1	93	1	30	64-124	
Perfluorononanoic acid (PFNA)	35.5	34.88	94	0	30	68-128	
Perfluorodecanoic acid (PFDA)	35.5	34.53	97	5	30	69-129	
Perfluoroundecanoic acid (PFUnA)	35.5	36.88	104	6	30	60-120	
Perfluorododecanoic acid (PFDoA)	35.5	33.23	93	8	30	71-131	
Perfluorotridecanoic acid (PFTriA)	35.5	34.33	97	11	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	35.5	39.49	111	4	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	31.4	42.47	95	1	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	32.3	47.61	94	1	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	33.8	39.14	111	8	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	33.0	110.0	123	9	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	34.3	33.78	99	1	30	68-128	
Perfluorooctanesulfonamide (FOSA)	35.5	36.94	102	6	30	70-130	
13C5 PFPeA	88.9	48.94	55			25-150	
13C2 PFHxA	88.9	62.09	70			25-150	
13C4 PFHpA	88.9	77.14	87			25-150	
13C4 PFOA	88.9	92.35	104			25-150	
13C5 PFNA	88.9	101.9	115			25-150	
13C2 PFDA	88.9	110.5	124			25-150	
13C2 PFUnA	88.9	112.6	127			25-150	
13C2 PFDoA	88.9	105.9	119			25-150	
13C2 PFTeDA	88.9	97.28	109			25-150	
13C3 PFBS	82.7	80.57	97			25-150	
18O2 PFHxS	84.1	84.97	101			25-150	
13C4 PFOS	85.0	90.21	106			25-150	
13C8 FOSA	88.9	97.28	109			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.: 320-43466-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.06LLAAA_021.d
 Lab ID: 480-141919-Y-2-C MSD DL Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	35.5	260.4	111	2	30	70-130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	35.5	32.13 J	90	18	30	67-127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	35.5	59.93 J	92	7	30	65-125	
6:2 FTS	33.7	84.15 J	120	5	30	66-126	
8:2 FTS	34.1	32.03 J	94	21	30	67-127	
13C4 PFBA	88.9	62.63	70			25-150	
d3-NMeFOSAA	88.9	127.7	144			25-150	
d5-NEtFOSAA	88.9	102.3	115			25-150	
M2-6:2 FTS	84.4	208.4	247			25-150	*
M2-8:2 FTS	85.1	118.0	139			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.: 320-43466-1
 SDG No.: _____
 Lab File ID: 2018.10.06LLAAA_006.d Lab Sample ID: MB 320-248703/1-A
 Matrix: Water Date Extracted: 10/01/2018 05:03
 Instrument ID: A8_N Date Analyzed: 10/06/2018 18:20
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-248703/2-A	2018.10.06L LAAA 007.d	10/06/2018 18:27
Feild Duplicate	320-43466-4	2018.10.06L LAAA 014.d	10/06/2018 19:20
	480-141919-Y-2-B MS DL	2018.10.06L LAAA 019.d	10/06/2018 19:57
	480-141919-Y-2-B MS	2018.10.06L LAAA 020.d	10/06/2018 20:04
	480-141919-Y-2-C MSD DL	2018.10.06L LAAA 021.d	10/06/2018 20:12
	480-141919-Y-2-C MSD	2018.10.06L LAAA 022.d	10/06/2018 20:19

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab File ID: 2018.10.02LLAA_041.d Lab Sample ID: MB 320-248967/1-A
 Matrix: Water Date Extracted: 10/02/2018 04:35
 Instrument ID: A9 Date Analyzed: 10/02/2018 22:24
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-248967/2-A	2018.10.02L LAA 042.d	10/02/2018 22:32
	LCSD 320-248967/3-A	2018.10.02L LAA 043.d	10/02/2018 22:39
MW019	320-43466-1	2018.10.02L LAA 052.d	10/02/2018 23:47
MW023	320-43466-2	2018.10.02L LAA 053.d	10/02/2018 23:54
MW020	320-43466-3	2018.10.02L LAA 054.d	10/03/2018 00:02
Equipment Blank	320-43466-5	2018.10.02L LAA 055.d	10/03/2018 00:09

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Sample No.: IC 320-249554/5 Date Analyzed: 10/04/2018 04:59
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.10.03LLICALAAA Heated Purge: (Y/N) N
 Calibration ID: 41411

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		2740052	2.64				
UPPER LIMIT		4110078	2.84				
LOWER LIMIT		1370026	2.44				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-249554/9		2888885	2.64				
ICV 320-249554/10		2851696	2.65				
CCV 320-250091/3 CCVIS		2371040	2.65				

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.: 320-43466-1
 SDG No.: _____
 Sample No.: CCV 320-250091/3 Date Analyzed: 10/06/2018 18:13
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.10.06LLAAA_005 Heated Purge: (Y/N) N
 Calibration ID: 41411

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		2371040	2.65				
UPPER LIMIT		3556560	2.85				
LOWER LIMIT		1185520	2.45				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-250091/1		2372983	2.64				
CCVL 320-250091/2		2381849	2.64				
MB 320-248703/1-A		2369951	2.64				
LCS 320-248703/2-A		2679419	2.64				
320-43466-4	Feild Duplicate	2674622	2.64				
CCV 320-250091/14		2279805	2.64				
480-141919-Y-2-B MS DL		325269*	2.64				
480-141919-Y-2-B MS		2570408	2.64				
480-141919-Y-2-C MSD DL		266192*	2.64				
480-141919-Y-2-C MSD		2500922	2.64				
CCV 320-250091/25		2241436	2.65				

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.: 320-43466-1
 SDG No.: _____
 Sample No.: IC 320-247100/5 Date Analyzed: 09/21/2018 13:58
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.09.21LLAICAL_0 Heated Purge: (Y/N) N
 Calibration ID: 41233

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	8503409	2.78				
UPPER LIMIT	12755114	2.98				
LOWER LIMIT	4251705	2.58				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICB 320-247100/12		8447876	2.77			
ICV 320-247100/13		8405327	2.77			
CCV 320-249188/3 CCVIS		7813799	2.73			

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.: 320-43466-1
 SDG No.: _____
 Sample No.: CCV 320-249188/3 Date Analyzed: 10/02/2018 16:01
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.10.02LLA_010.d Heated Purge: (Y/N) N
 Calibration ID: 41233

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		7813799	2.73				
UPPER LIMIT		11720699	2.93				
LOWER LIMIT		3906900	2.53				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-249188/1		7548319	2.73				
CCVL 320-249188/2		8191472	2.74				
CCV 320-249235/1		7714494	2.73				
MB 320-248967/1-A		8108947	2.73				
LCS 320-248967/2-A		8115082	2.73				
LCSD 320-248967/3-A		8532179	2.73				
CCV 320-249235/12		8427299	2.73				
320-43466-1	MW019	8806837	2.74				
320-43466-2	MW023	8714033	2.73				
320-43466-3	MW020	8096816	2.73				
320-43466-5	Equipment Blank	8954234	2.73				
CCV 320-249235/25		8498743	2.74				

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>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>MW019</u>	Lab Sample ID: <u>320-43466-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_052.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 10:15</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>279.9 (mL)</u>	Date Analyzed: <u>10/02/2018 23:47</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.79	U	1.79	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.79	U	1.79	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	1.79	U	1.79	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.60	J	1.79	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	4.98		1.79	0.76
375-95-1	Perfluorononanoic acid (PFNA)	1.79	U	1.79	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	1.79	U	1.79	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.79	U	1.79	0.98
307-55-1	Perfluorododecanoic acid (PFDoA)	1.79	U	1.79	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.79	U	1.79	1.16
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.79	U	1.79	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.80	J	1.79	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	6.96	B	1.79	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.33	J	1.79	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	11.5		1.79	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.79	U	1.79	0.29
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.24	J	1.79	0.31
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17.9	U	17.9	2.77
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17.9	U	17.9	1.70
27619-97-2	6:2 FTS	17.9	U	17.9	1.79
39108-34-4	8:2 FTS	17.9	U	17.9	1.79

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>MW019</u>	Lab Sample ID: <u>320-43466-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_052.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 10:15</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>279.9 (mL)</u>	Date Analyzed: <u>10/02/2018 23:47</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	85		25-150
STL01893	13C5 PFPeA	94		25-150
STL00993	13C2 PFHxA	100		25-150
STL01892	13C4 PFHpA	100		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	96		25-150
STL00997	13C2 PFUnA	98		25-150
STL00998	13C2 PFDoA	96		25-150
STL02116	13C2 PFTeDA	102		25-150
STL02337	13C3 PFBS	99		25-150
STL00994	18O2 PFHxS	94		25-150
STL00991	13C4 PFOS	96		25-150
STL01056	13C8 FOSA	93		25-150
STL02118	d3-NMeFOSAA	86		25-150
STL02117	d5-NEtFOSAA	92		25-150
STL02279	M2-6:2 FTS	89		25-150
STL02280	M2-8:2 FTS	76		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_052.d
 Lims ID: 320-43466-A-1-A
 Client ID: MW019
 Sample Type: Client
 Inject. Date: 02-Oct-2018 23:47:08 ALS Bottle#: 29 Worklist Smp#: 13
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 320-43466-a-1-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 12:12:17 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 05-Oct-2018 10:24:56

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	1.483	0.001	0.543	6854629	2.11		84.5	7976	
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.763	0.001	0.645	6934664	2.35		94.0	5003	
D 47 13C3-PFBS										
301.90 > 83.00	1.797	1.805	-0.008	0.657	92763	2.31		99.3	271	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.806	1.805	0.001	1.005	92812	0.0225			8.3	M
298.90 > 99.00	1.806	1.805	0.001	1.005	38667		2.40(1.35-4.05)		6.3	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.047	0.001	0.749	7845316	2.51		100	7524	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.048	2.048	0.0	1.000	34822	0.0123			1.2	M
313.00 > 119.00	1.997	2.048	-0.051	0.975	2157		16.14(6.96-20.87)		1.8	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	9350193	2.51		100	13658	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.373	2.373	0.0	1.000	66704	0.0168			3.1	
363.00 > 169.00	2.373	2.373	0.0	1.000	14975		4.45(2.17-6.52)		14.4	
D 11 18O2 PFHxS										
403.00 > 84.00	2.386	2.399	-0.013	0.873	5349983	2.23		94.2	7230	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.386	2.400	-0.014	1.000	554663	0.1948			294	
399.00 > 99.00	2.386	2.400	-0.014	1.000	148706		3.73(1.90-5.70)		101	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	820600	2.12		89.4	947	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	2586	0.003430			1.3	

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	2.735	2.734	0.001	1.000	9157007	2.60		104	8678	
* 62 13C2-PFOA										
415.00 > 370.00	2.735	2.734	0.001		8806837	2.50			7831	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.735	2.734	0.001	1.000	535037	0.1393			30.9	
413.00 > 169.00	2.735	2.734	0.001	1.000	208599		2.56(1.36-4.08)		144	M
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.735	2.734	0.001	0.883	22771	0.009349			19.0	M
449.00 > 99.00	2.735	2.734	0.001	0.883	4251		5.36(1.84-5.53)		8.5	M
D 18 13C4 PFOS										
503.00 > 80.00	3.099	3.098	0.001	1.133	5686627	2.28		95.6	4302	
D 19 13C5 PFNA										
468.00 > 423.00	3.099	3.098	0.001	1.133	8183463	2.55		102	8250	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.099	3.098	0.001	1.000	809013	0.3210			184	
499.00 > 99.00	3.099	3.098	0.001	1.000	168160		4.81(2.04-6.12)		328	
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	89452	1.83		76.3	530	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.464	0.001	1.267	3092668	2.33		93.1	4153	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.464	0.001	1.267	8005748	2.41		96.3	5132	
24 Perfluorodecanoic acid										R
513.00 > 469.00	3.449	3.465	-0.016	0.995	8399	0.002393			1.6	R
513.00 > 169.00	3.542	3.465	0.077	1.022	1569		5.35(7.12-21.35)		2.4	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	126393	0.0346			87.4	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.612	0.001	1.321	3173236	2.15		86.2	4582	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.000	1688	0.001386			0.6	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.775	0.001	1.381	6942369	2.46		98.4	9352	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	2655449	2.30		92.0	2509	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	2786	0.002808			5.9	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.072	0.001	1.489	8049576	2.40		95.9	8351	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.572	0.001	1.672	6727325	2.54		102	10392	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_052.d

Injection Date: 02-Oct-2018 23:47:08

Instrument ID: A9

Lims ID: 320-43466-A-1-A

Lab Sample ID: 320-43466-1

Client ID: MW019

Operator ID: A9\Administrator

ALS Bottle#: 29

Worklist Smp#: 13

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

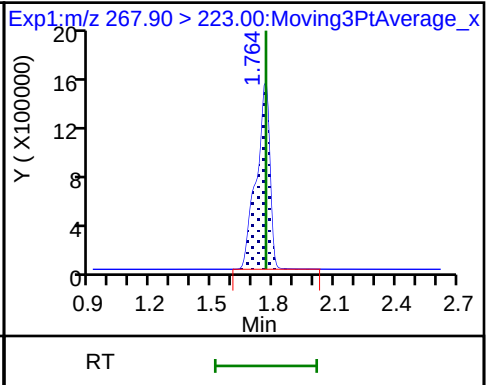
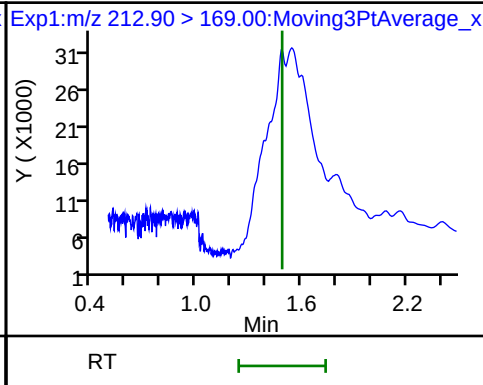
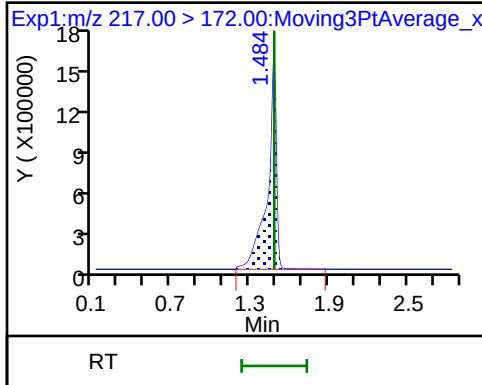
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (ND)

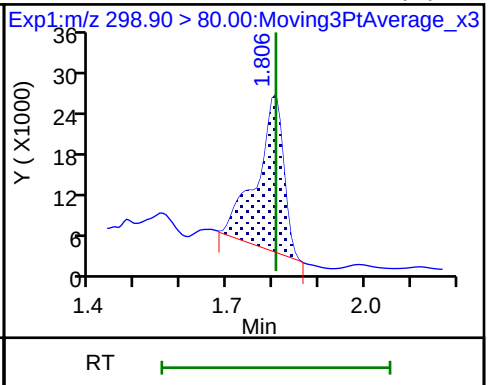
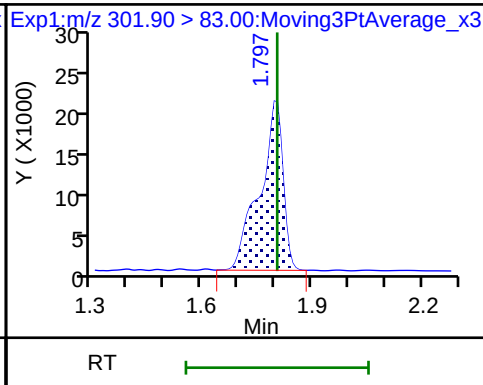
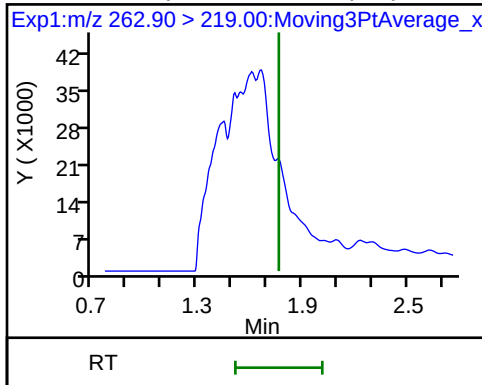
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (ND)

D 47 13C3-PFBS

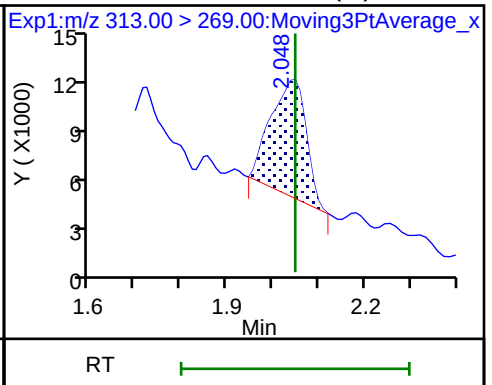
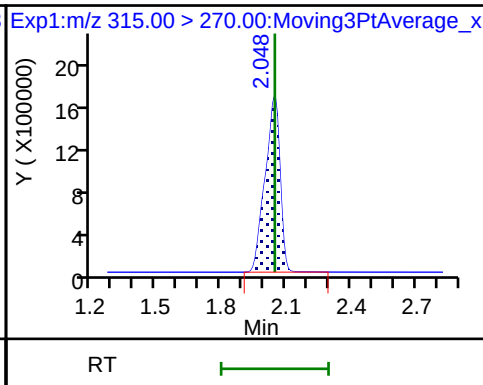
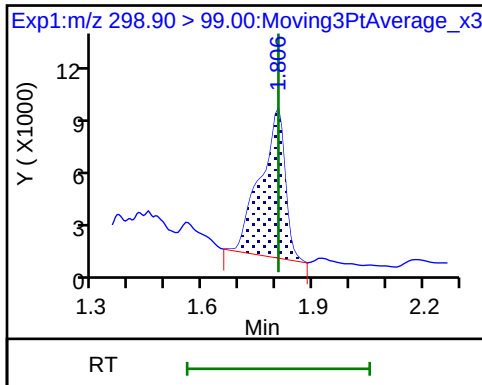
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid

D 7 13C2 PFHxA

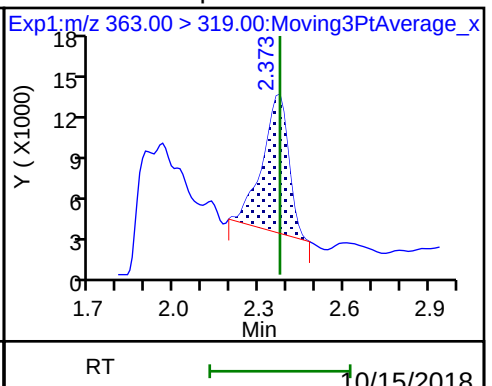
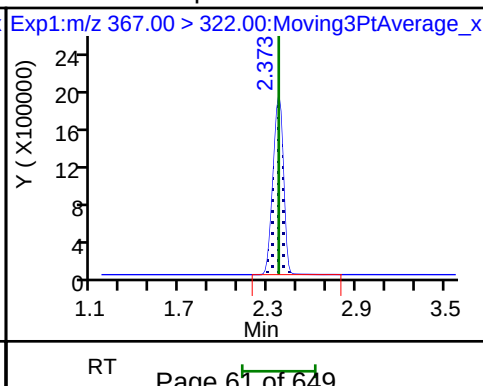
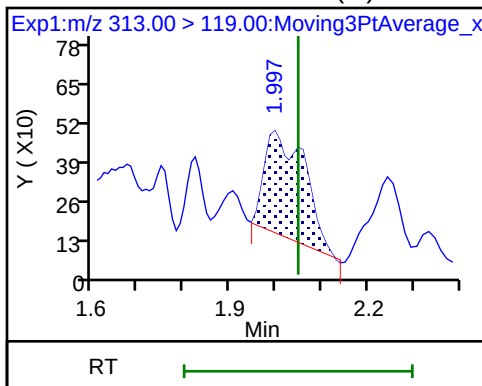
6 Perfluorohexanoic acid (M)

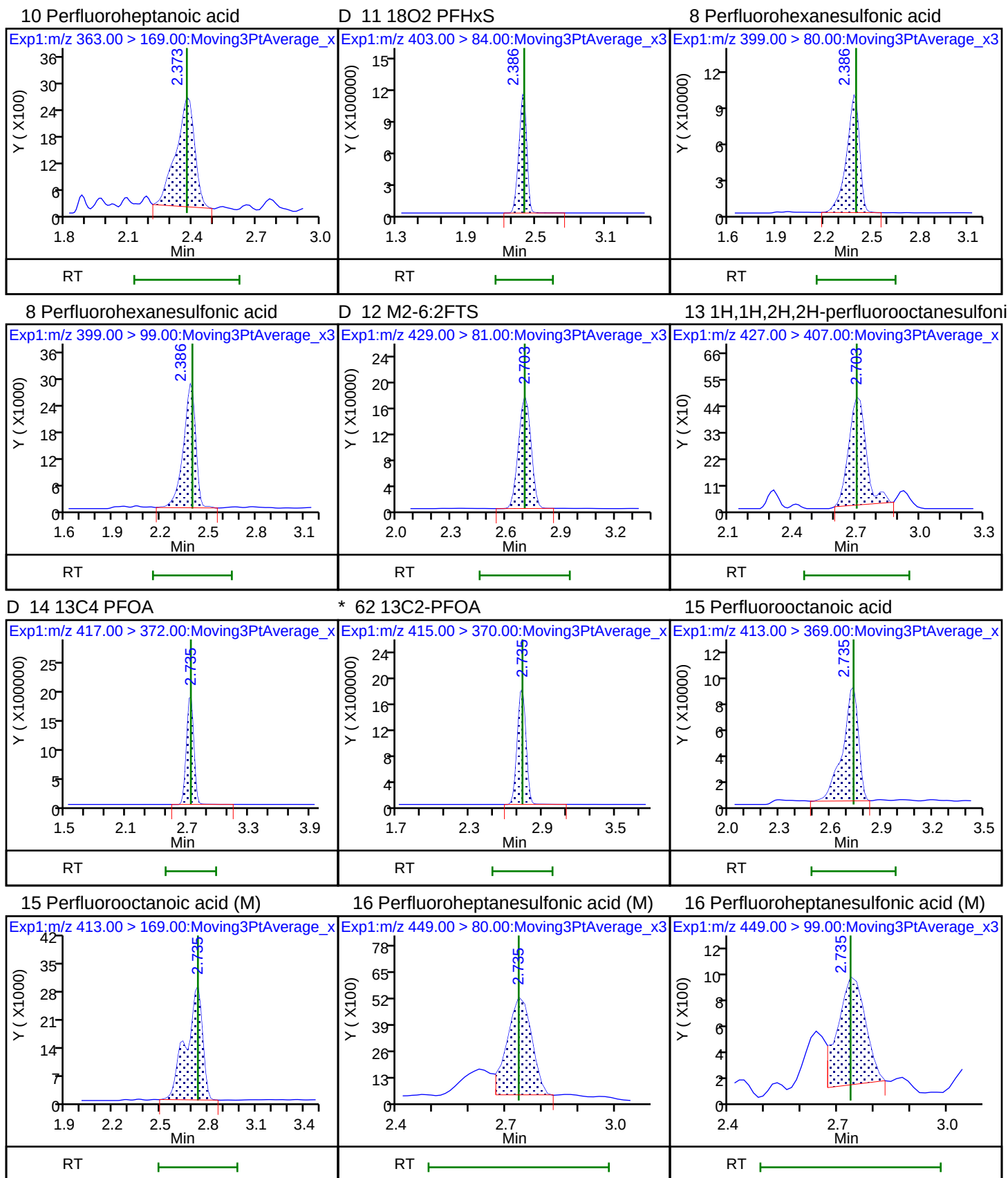


6 Perfluorohexanoic acid (M)

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

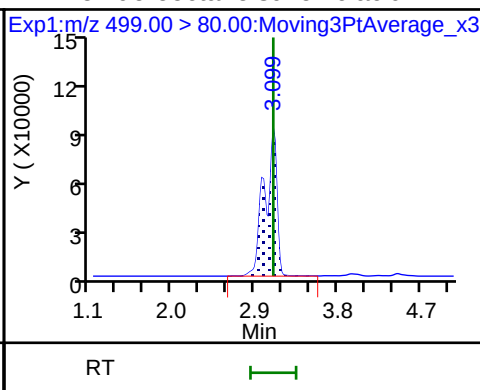
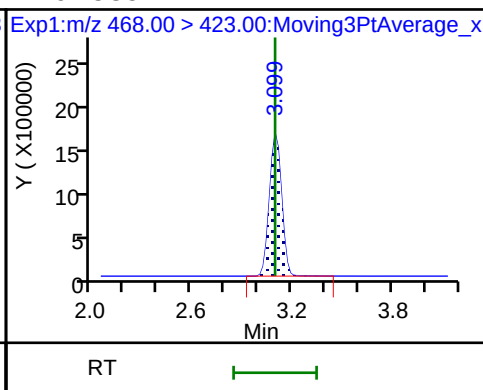
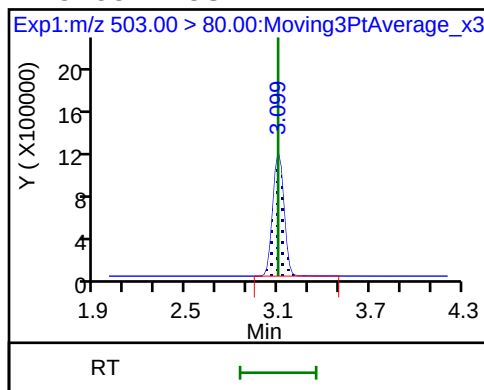




D 18 13C4 PFOS

D 19 13C5 PFNA

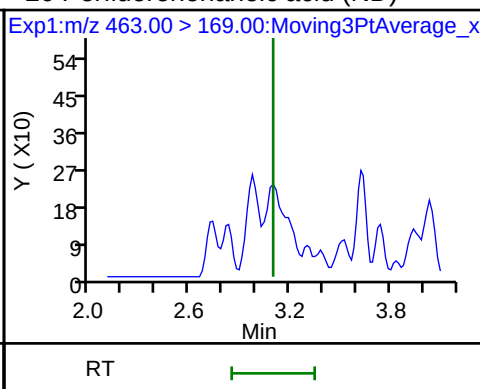
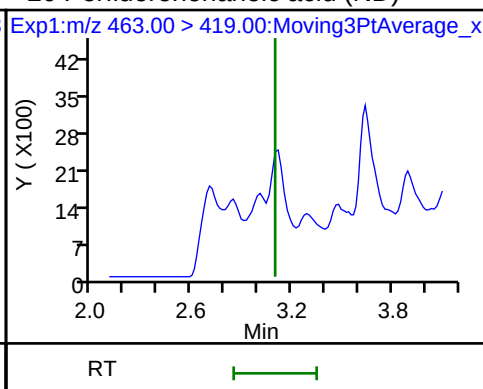
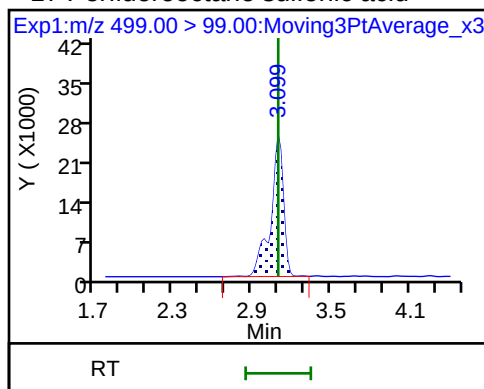
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

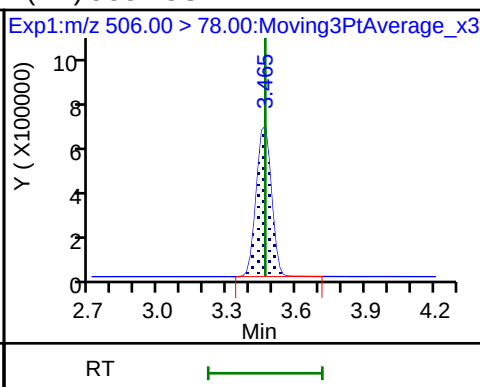
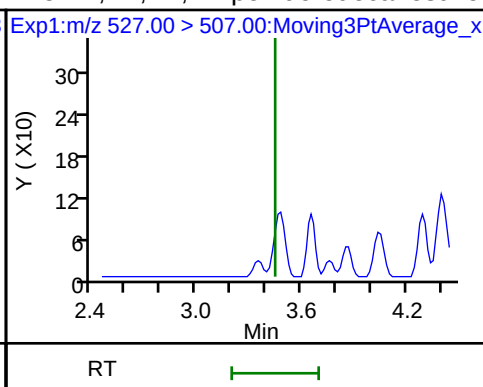
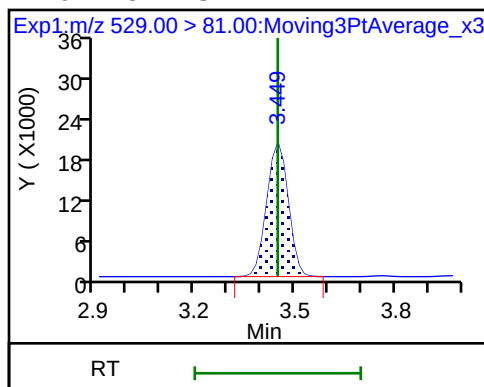
20 Perfluorononanoic acid (ND)

20 Perfluorononanoic acid (ND)



D 26 M2-8:2FTS

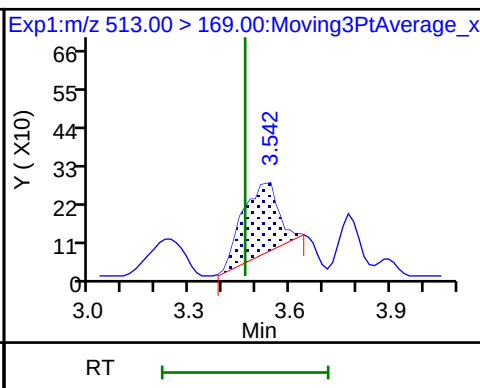
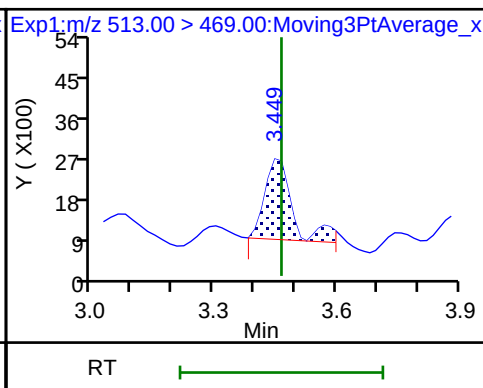
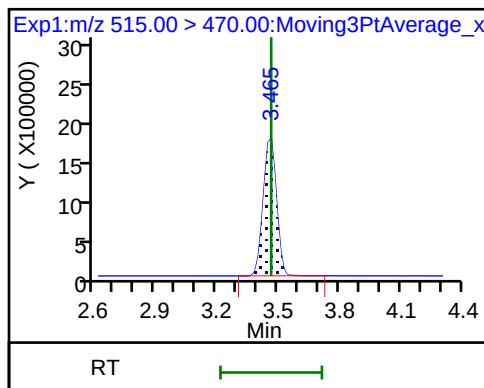
25 1H,1H,2H,2H-perfluorodecanesulfonate (ND) 13C8 FOSA

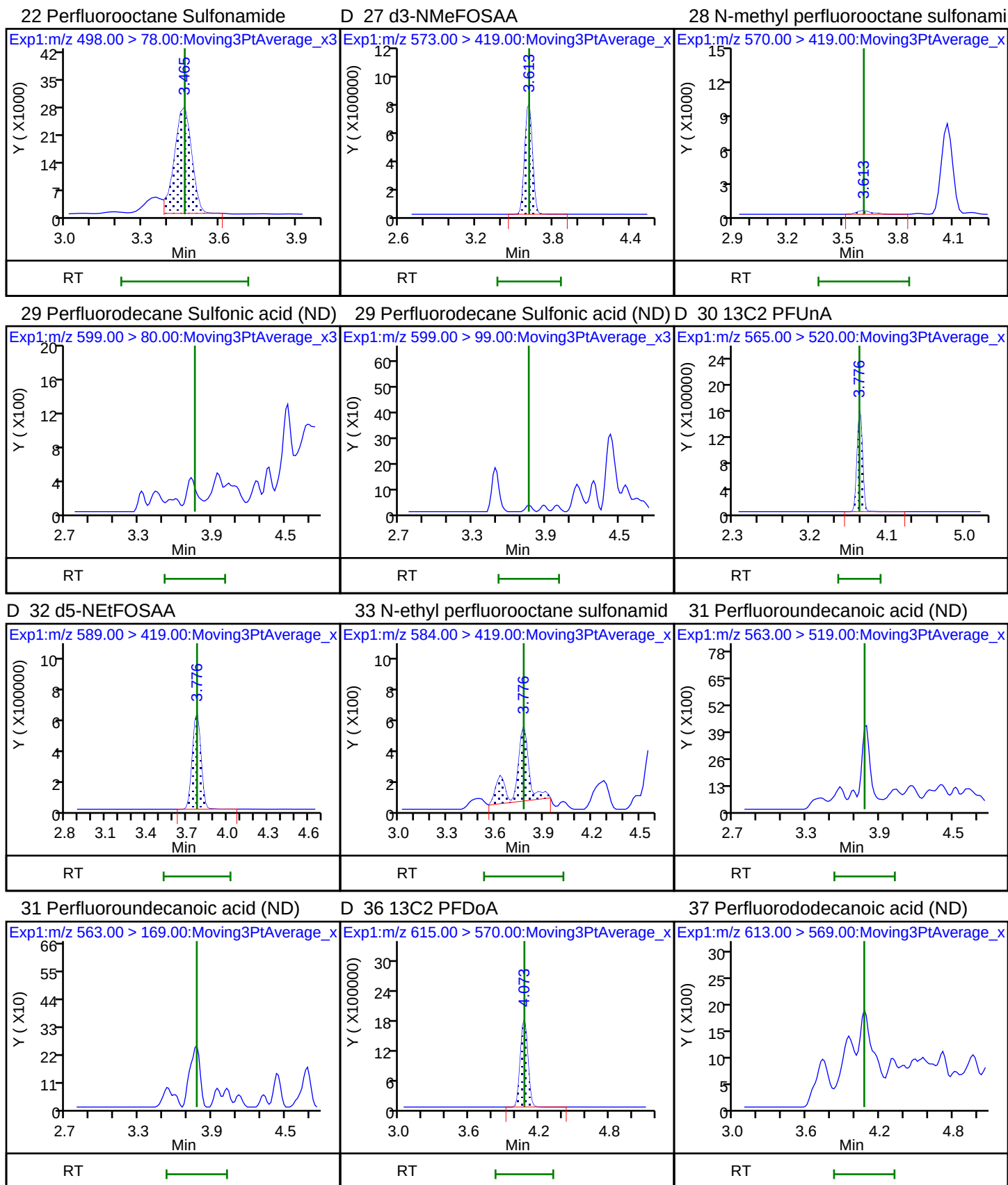


D 23 13C2 PFDA

24 Perfluorodecanoic acid

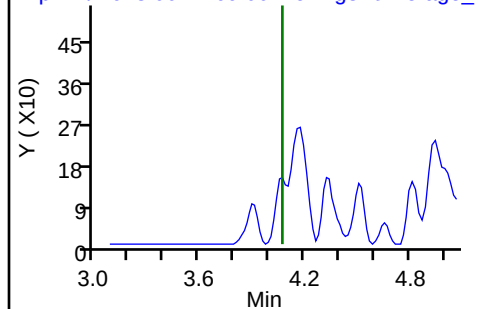
24 Perfluorodecanoic acid





37 Perfluorododecanoic acid (ND)

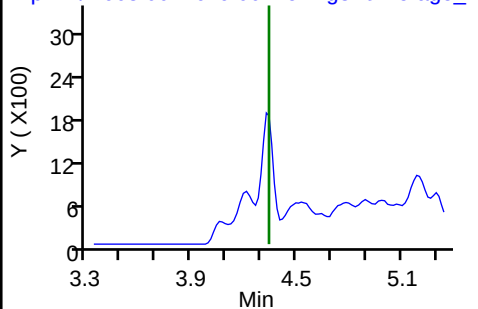
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RT

41 Perfluorotridecanoic acid (ND)

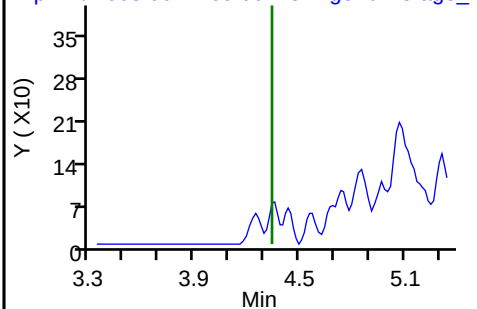
Exp1:m/z 663.00 > 619.00:Moving3PtAverage_x



RT

41 Perfluorotridecanoic acid (ND)

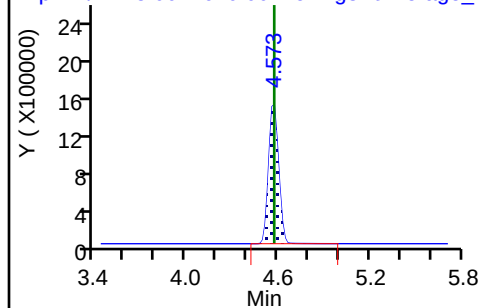
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RT

D 43 13C2-PFTeDA

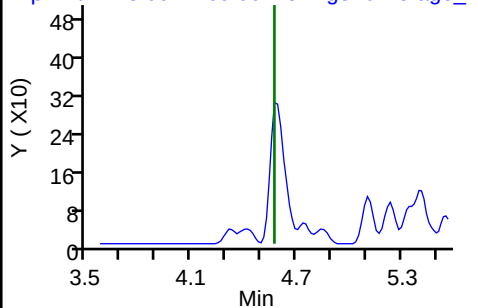
Exp1:m/z 715.00 > 670.00:Moving3PtAverage_x



RT

42 Perfluorotetradecanoic acid (ND)

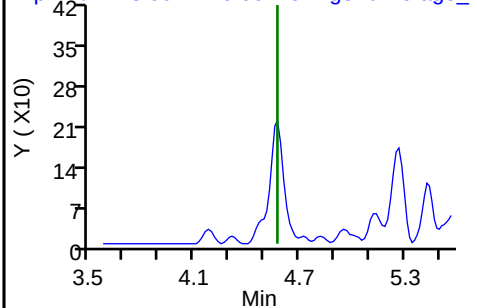
Exp1:m/z 713.00 > 169.00:Moving3PtAverage_x



RT

42 Perfluorotetradecanoic acid (ND)

Exp1:m/z 713.00 > 219.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

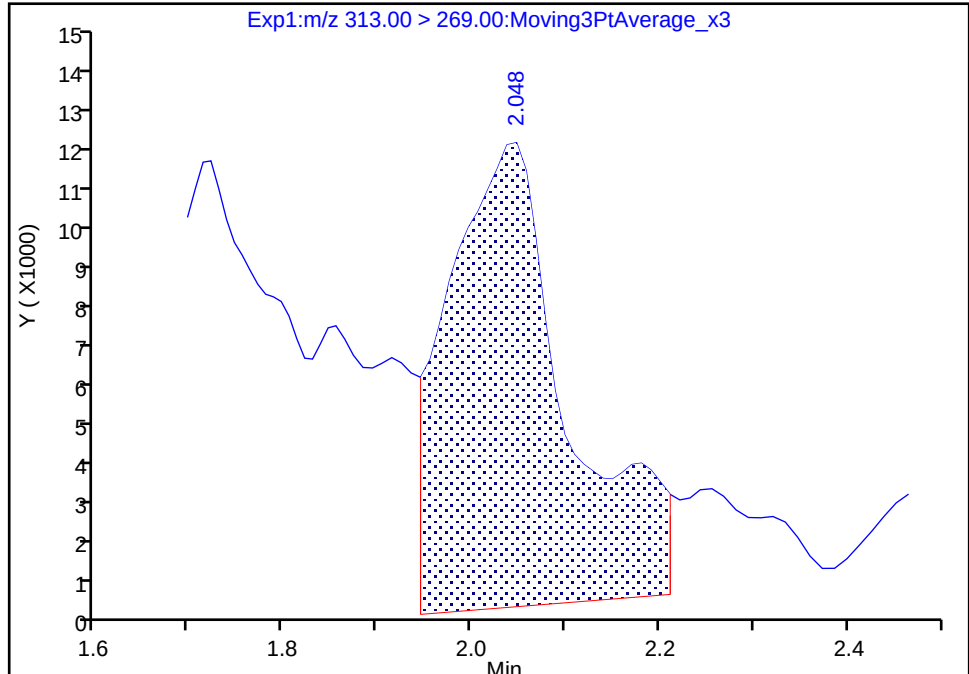
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_052.d				
Injection Date:	02-Oct-2018 23:47:08	Instrument ID:	A9		
Lims ID:	320-43466-A-1-A	Lab Sample ID:	320-43466-1		
Client ID:	MW019				
Operator ID:	A9\Administrator	ALS Bottle#:	29	Worklist Smp#:	13
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

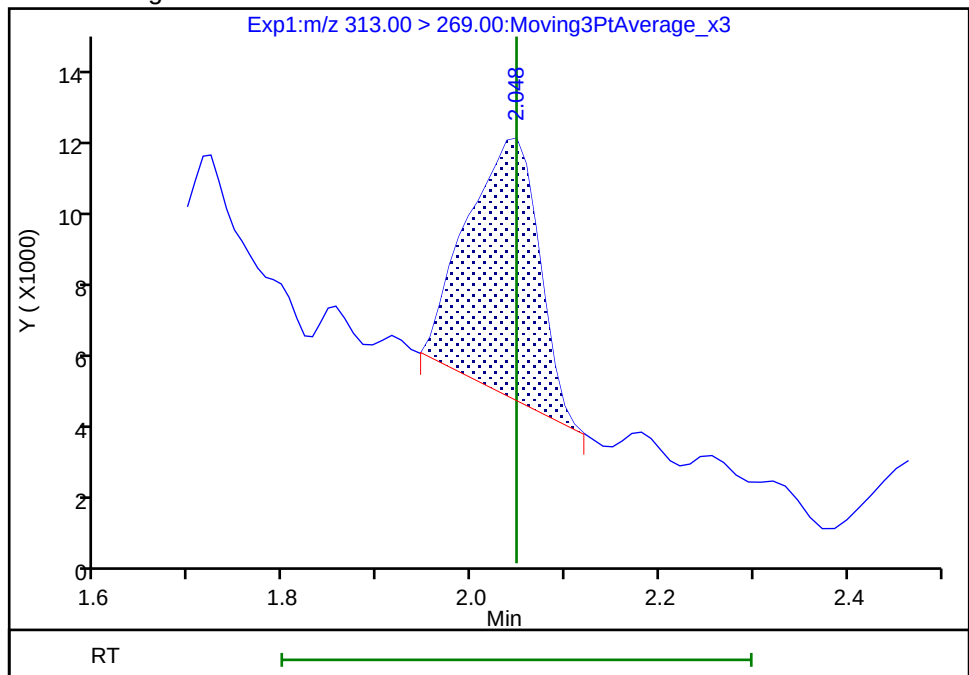
RT: 2.05
Area: 96462
Amount: 0.034181
Amount Units: ng/ml

Processing Integration Results



RT: 2.05
Area: 34822
Amount: 0.012339
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:05:00
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

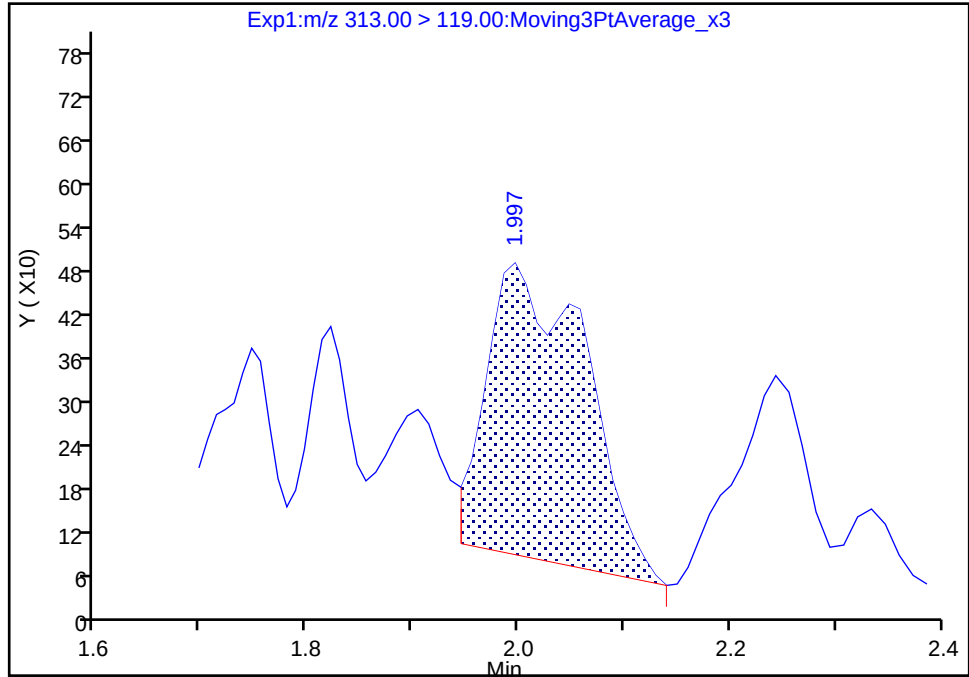
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_052.d
Injection Date: 02-Oct-2018 23:47:08 Instrument ID: A9
Lims ID: 320-43466-A-1-A Lab Sample ID: 320-43466-1
Client ID: MW019
Operator ID: A9\Administrator ALS Bottle#: 29 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

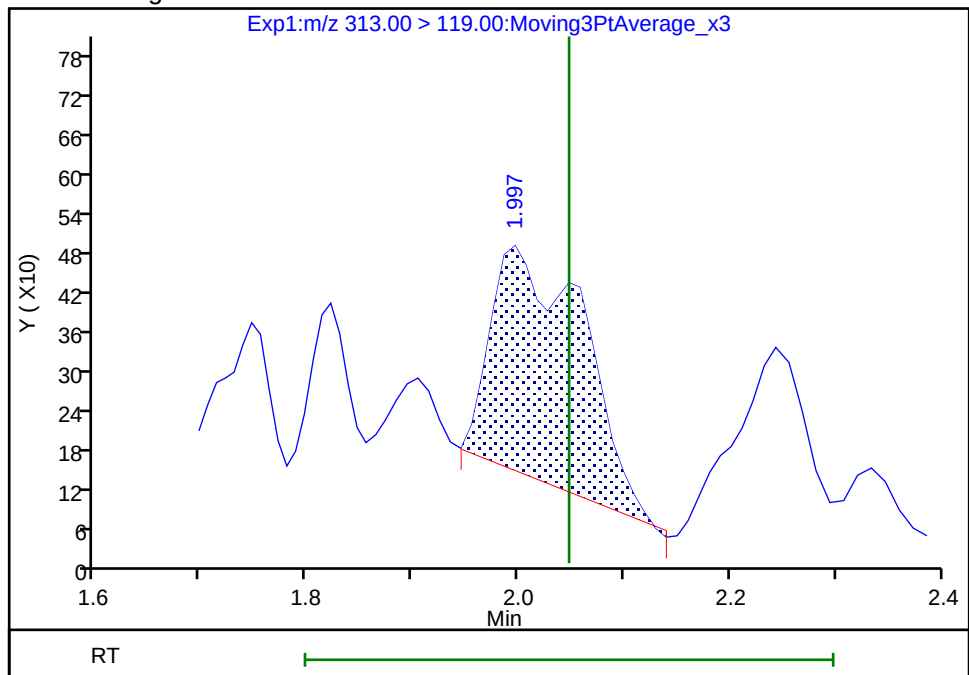
RT: 2.00
Area: 2664
Amount: 0.034181
Amount Units: ng/ml

Processing Integration Results



RT: 2.00
Area: 2157
Amount: 0.012339
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:05:04

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

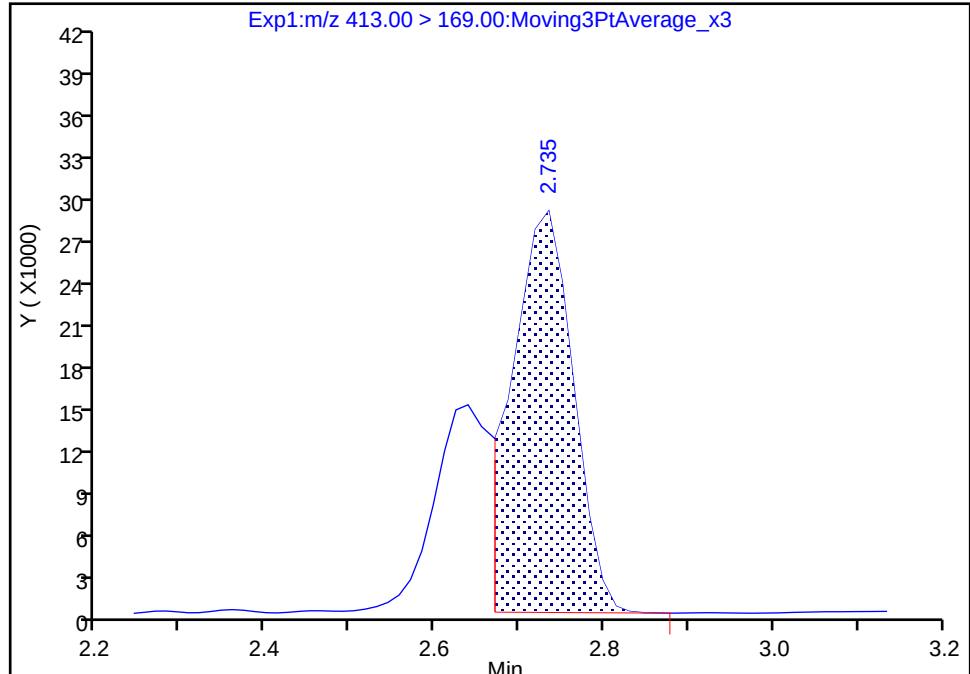
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_052.d		
Injection Date:	02-Oct-2018 23:47:08	Instrument ID:	A9
Lims ID:	320-43466-A-1-A	Lab Sample ID:	320-43466-1
Client ID:	MW019		
Operator ID:	A9\Administrator	ALS Bottle#:	29
Injection Vol:	20.0 ul	Dil. Factor:	1.0000
Method:	PFAS_A9	Limit Group:	LC PFC ICAL
Column:		Detector:	EXP1
		Worklist Smp#:	13

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

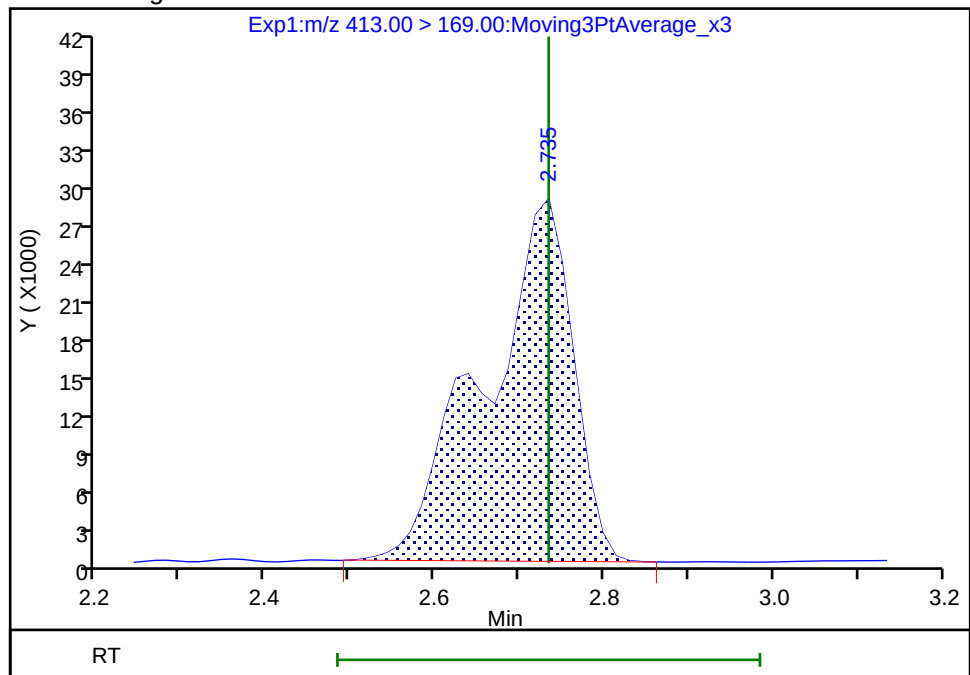
RT: 2.73
Area: 141817
Amount: 0.139275
Amount Units: ng/ml

Processing Integration Results



RT: 2.73
Area: 208599
Amount: 0.139275
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:05:30
Audit Action: Manually Integrated

Audit Reason: Isomers
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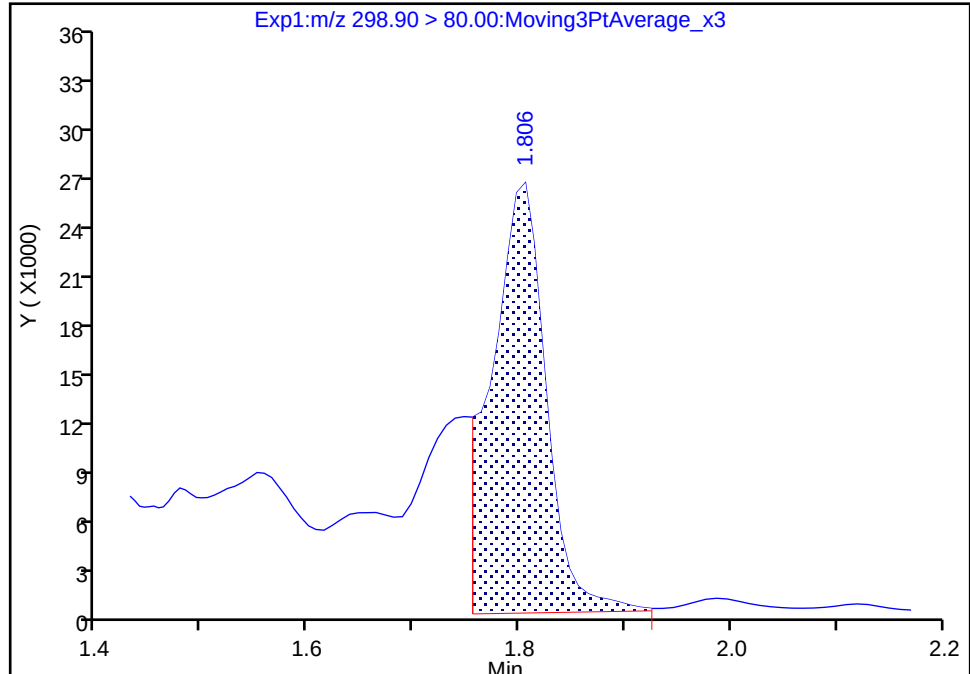
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_052.d				
Injection Date:	02-Oct-2018 23:47:08	Instrument ID:	A9		
Lims ID:	320-43466-A-1-A	Lab Sample ID:	320-43466-1		
Client ID:	MW019				
Operator ID:	A9\Administrator	ALS Bottle#:	29	Worklist Smp#:	13
Injection Vol:	20.0 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

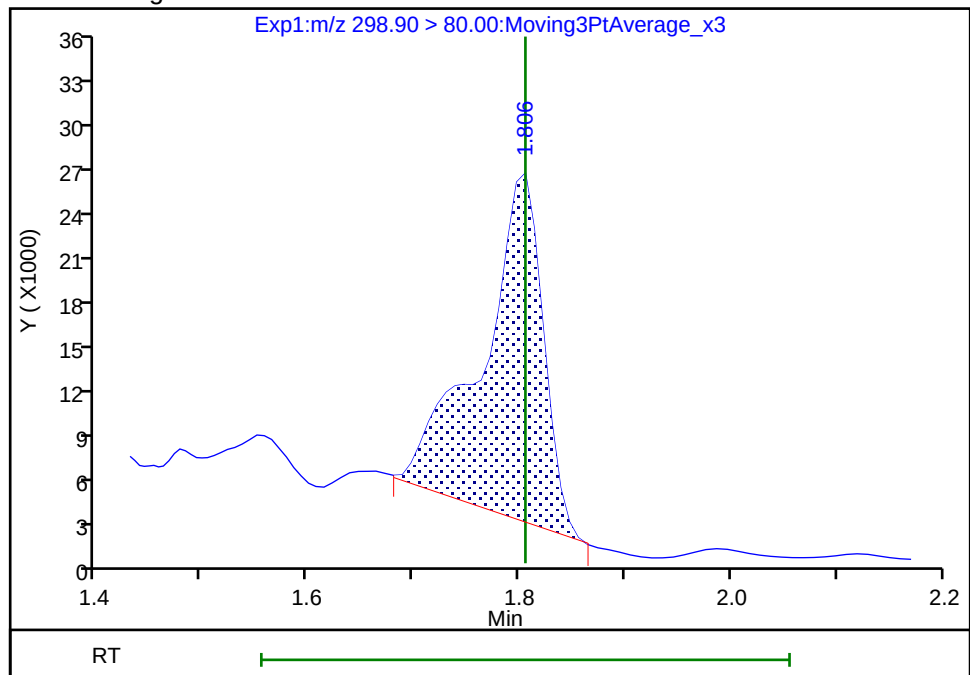
RT: 1.81
Area: 90967
Amount: 0.022067
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 92812
Amount: 0.022514
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:04:51
Audit Action: Manually Integrated

Audit Reason: Baseline
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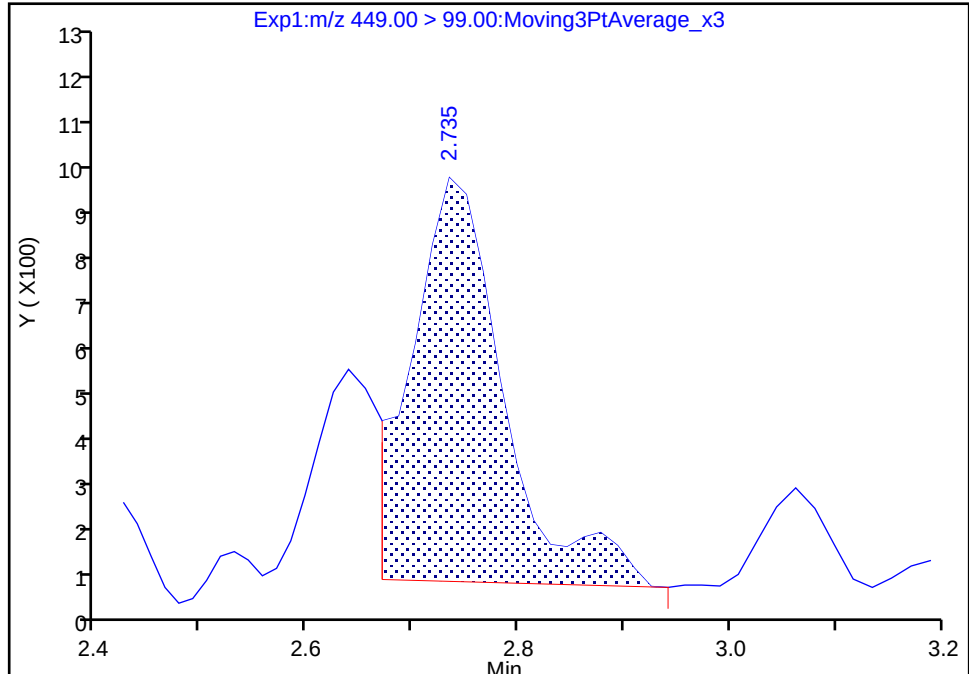
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_052.d
Injection Date: 02-Oct-2018 23:47:08 Instrument ID: A9
Lims ID: 320-43466-A-1-A Lab Sample ID: 320-43466-1
Client ID: MW019
Operator ID: A9\Administrator ALS Bottle#: 29 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

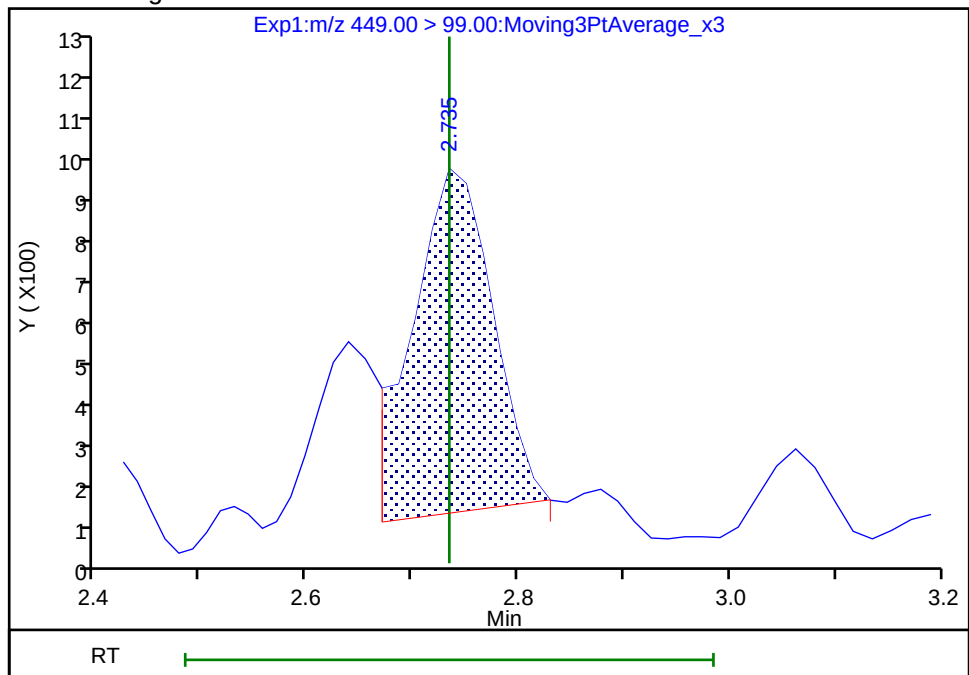
RT: 2.73
Area: 5218
Amount: 0.009581
Amount Units: ng/ml

Processing Integration Results



RT: 2.73
Area: 4251
Amount: 0.009349
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:05:45
Audit Action: Manually Integrated

Audit Reason: Isomers
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TestAmerica Sacramento

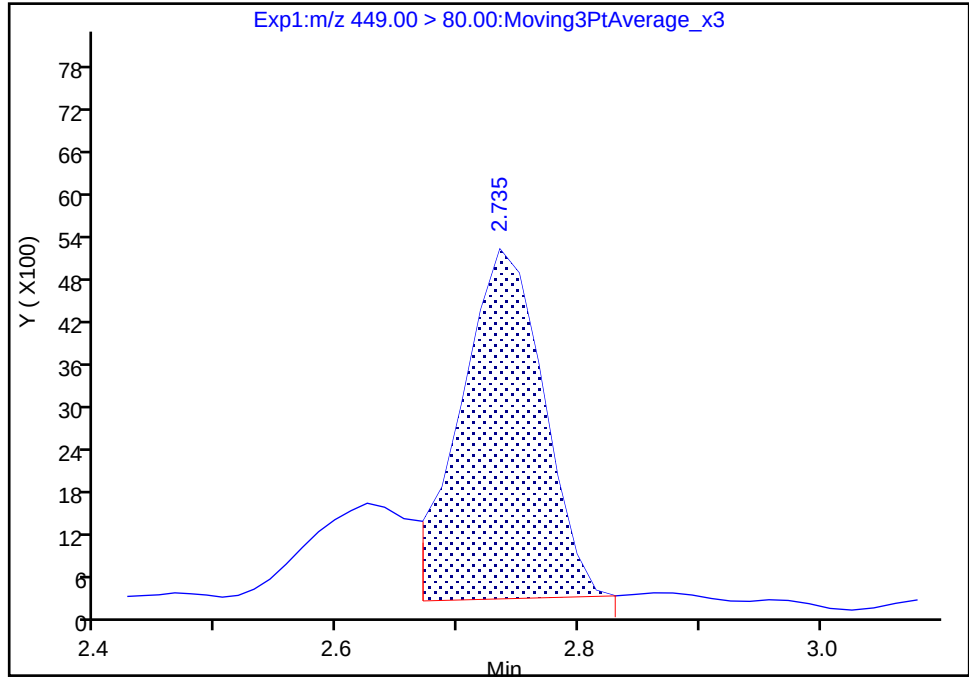
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_052.d
Injection Date: 02-Oct-2018 23:47:08 Instrument ID: A9
Lims ID: 320-43466-A-1-A Lab Sample ID: 320-43466-1
Client ID: MW019
Operator ID: A9\Administrator ALS Bottle#: 29 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

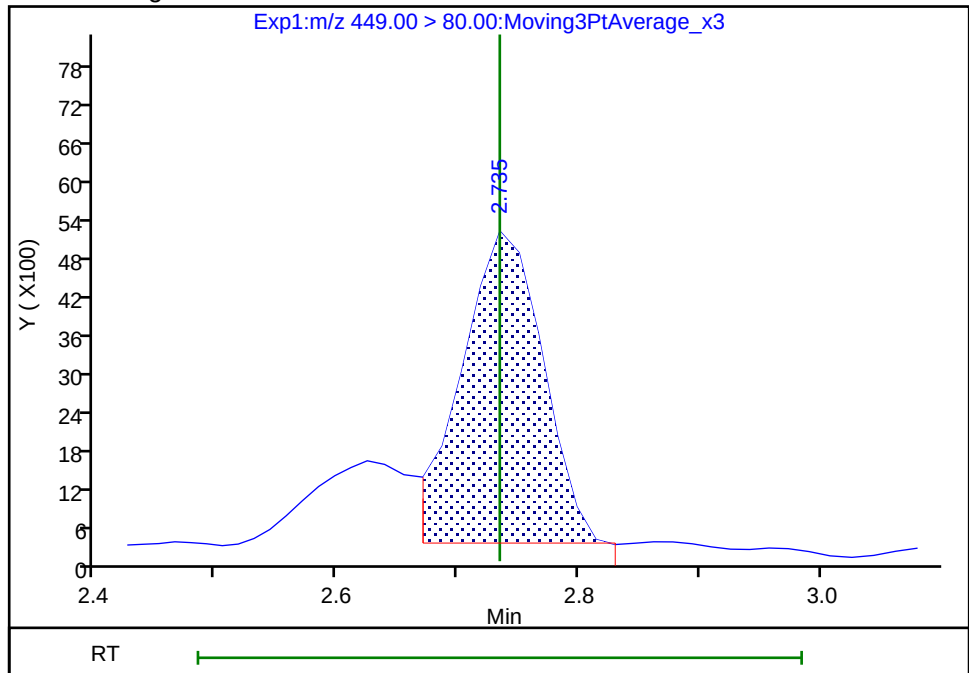
RT: 2.73
Area: 23334
Amount: 0.009581
Amount Units: ng/ml

Processing Integration Results



RT: 2.73
Area: 22771
Amount: 0.009349
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:05:52

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>MW023</u>	Lab Sample ID: <u>320-43466-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_053.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 12:15</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>270.3 (mL)</u>	Date Analyzed: <u>10/02/2018 23:54</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.85	U	1.85	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.85	U	1.85	0.45
307-24-4	Perfluorohexanoic acid (PFHxA)	1.50	J	1.85	0.54
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.84	J	1.85	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	2.46		1.85	0.79
375-95-1	Perfluorononanoic acid (PFNA)	0.46	J	1.85	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	1.85	U	1.85	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.85	U	1.85	1.02
307-55-1	Perfluorododecanoic acid (PFDoA)	1.85	U	1.85	0.51
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.85	U	1.85	1.20
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.54	J	1.85	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.61	J	1.85	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.72	B	1.85	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.85	U	1.85	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	16.1		1.85	0.50
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.85	U	1.85	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.85	U	1.85	0.32
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	18.5	U	18.5	2.87
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18.5	U	18.5	1.76
27619-97-2	6:2 FTS	18.5	U	18.5	1.85
39108-34-4	8:2 FTS	18.5	U	18.5	1.85

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>MW023</u>	Lab Sample ID: <u>320-43466-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_053.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 12:15</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>270.3 (mL)</u>	Date Analyzed: <u>10/02/2018 23:54</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	69		25-150
STL01893	13C5 PFPeA	80		25-150
STL00993	13C2 PFHxA	90		25-150
STL01892	13C4 PFHpA	93		25-150
STL00990	13C4 PFOA	95		25-150
STL00995	13C5 PFNA	91		25-150
STL00996	13C2 PFDA	89		25-150
STL00997	13C2 PFUnA	90		25-150
STL00998	13C2 PFDoA	76		25-150
STL02116	13C2 PFTeDA	79		25-150
STL02337	13C3 PFBS	86		25-150
STL00994	18O2 PFHxS	92		25-150
STL00991	13C4 PFOS	91		25-150
STL01056	13C8 FOSA	77		25-150
STL02118	d3-NMeFOSAA	81		25-150
STL02117	d5-NEtFOSAA	87		25-150
STL02279	M2-6:2 FTS	93		25-150
STL02280	M2-8:2 FTS	72		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_053.d
 Lims ID: 320-43466-A-2-A
 Client ID: MW023
 Sample Type: Client
 Inject. Date: 02-Oct-2018 23:54:39 ALS Bottle#: 30 Worklist Smp#: 14
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 320-43466-a-2-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 12:12:17 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 05-Oct-2018 12:07:53

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	1.483	0.001	0.543	5504039	1.71		68.6	5594	
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.763	0.001	0.645	5867135	2.01		80.4	2142	
D 47 13C3-PFBS										
301.90 > 83.00	1.805	1.805	0.0	0.660	79339	2.00		85.9	106	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.805	1.805	0.0	1.000	57799	0.0164			2.5	M
298.90 > 99.00	1.805	1.805	0.0	1.000	16292		3.55(1.35-4.05)		1.5	M
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.047	0.001	0.749	6981863	2.26		90.3	6409	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	101617	0.0405			1.6	
313.00 > 119.00	2.048	2.048	0.0	1.000	7776		13.07(6.96-20.87)		3.3	
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	8585350	2.33		93.2	9090	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.373	2.373	0.0	1.000	83188	0.0228			2.0	
363.00 > 169.00	2.373	2.373	0.0	1.000	14520		5.73(2.17-6.52)		10.9	
D 11 18O2 PFHxS										
403.00 > 84.00	2.386	2.399	-0.013	0.873	5192689	2.19		92.4	7085	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.386	2.400	-0.014	1.000	651695	0.2358			150	
399.00 > 99.00	2.386	2.400	-0.014	1.000	160873		4.05(1.90-5.70)		74.9	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	843559	2.21		92.9	731	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	3205	0.004136			1.3	

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	2.734	2.734	0.0	1.000	8289463	2.38		95.0	12483	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		8714033	2.50			6901	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	231289	0.0665			11.5	M
413.00 > 169.00	2.734	2.734	0.0	1.000	87800		2.63(1.36-4.08)		63.9	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.734	2.734	0.0	0.883	8927	0.003878			5.5	M
449.00 > 99.00	2.734	2.734	0.0	0.883	3514		2.54(1.84-5.53)		7.7	
D 18 13C4 PFOS										
503.00 > 80.00	3.098	3.098	0.0	1.133	5374468	2.18		91.3	2664	
D 19 13C5 PFNA										
468.00 > 423.00	3.098	3.098	0.0	1.133	7210840	2.27		90.9	4202	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.098	3.098	0.0	1.000	1036169	0.4350			276	
499.00 > 99.00	3.098	3.098	0.0	1.000	254608		4.07(2.04-6.12)		633	
20 Perfluorononanoic acid										
463.00 > 419.00	3.098	3.098	0.0	1.000	35522	0.0125			3.2	M
463.00 > 169.00	3.117	3.098	0.019	1.006	8841		4.02(2.68-8.03)		15.4	M
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	83844	1.73		72.3	584	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.464	0.001	1.267	2534373	1.93		77.1	3601	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.464	0.001	1.267	7307652	2.22		88.9	7764	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.465	0.0	1.000	17545	0.005477			3.0	
513.00 > 169.00	3.465	3.465	0.0	1.000	1189		14.76(7.12-21.35)		2.4	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	3728	0.001247			7.6	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.612	0.001	1.321	2955462	2.03		81.1	3775	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.000	4852	0.004276			0.9	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.775	0.001	1.381	6309989	2.26		90.4	7255	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	2483284	2.17		87.0	2850	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	4111	0.004430			13.5	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.776	3.776	0.0	1.000	13842	0.006081			3.4	
563.00 > 169.00	3.791	3.776	0.015	1.004	2020		6.85(5.24-15.72)		8.8	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.072	0.001	1.489	6269370	1.89		75.5	6395	

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	4.342	4.342	0.0	1.066	20221	0.0103			12.0	
663.00 > 169.00	4.342	4.342	0.0	1.066	3380		5.98(3.09-9.27)		10.6	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.572	0.001	1.672	5147863	1.97		78.7	8356	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.573	4.573	0.0	1.000	4915	0.0145			20.5	
713.00 > 219.00	4.558	4.573	-0.015	0.997	3120		1.58(0.70-2.09)		15.3	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_053.d

Injection Date: 02-Oct-2018 23:54:39

Instrument ID: A9

Lims ID: 320-43466-A-2-A

Lab Sample ID: 320-43466-2

Client ID: MW023

Operator ID: A9\Administrator

ALS Bottle#: 30

Worklist Smp#: 14

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

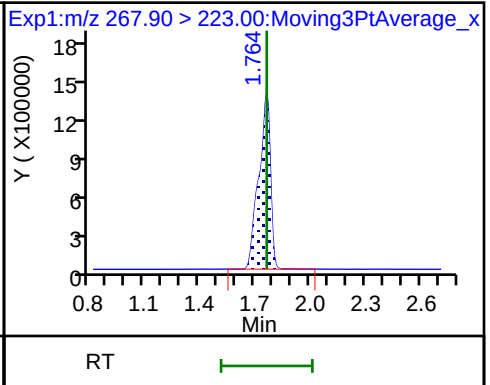
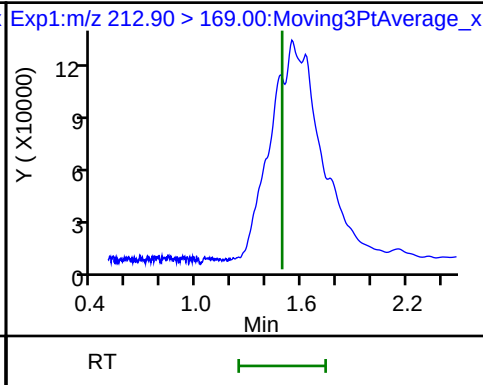
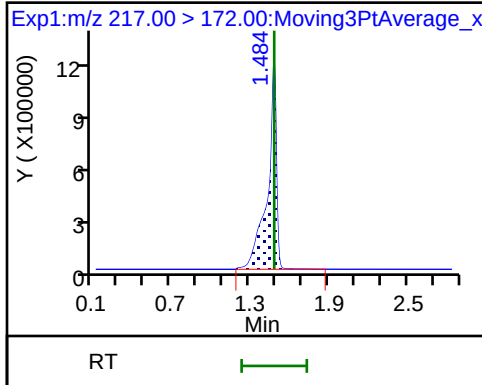
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (ND)

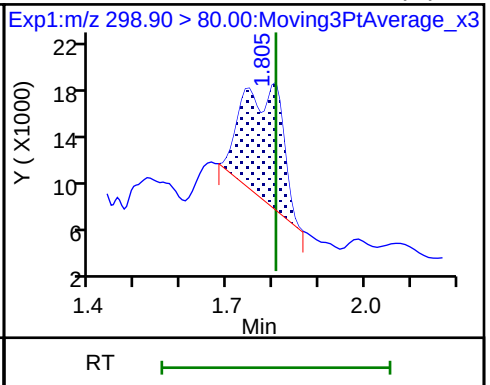
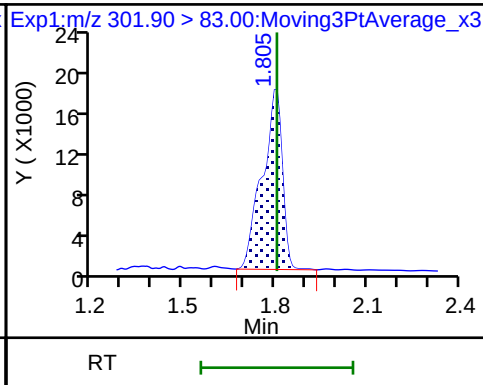
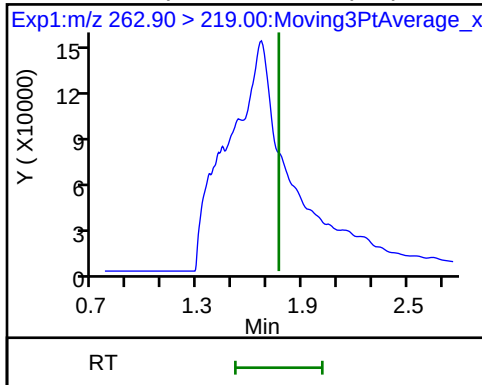
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (ND)

D 47 13C3-PFBS

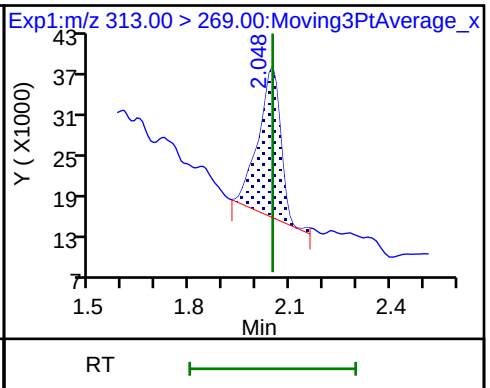
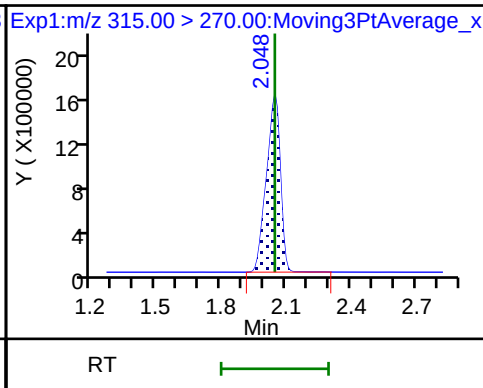
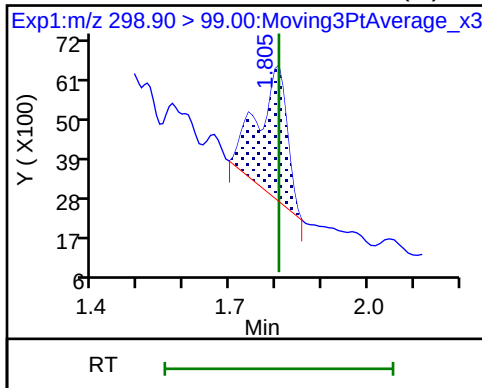
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid (M)

D 7 13C2 PFHxA

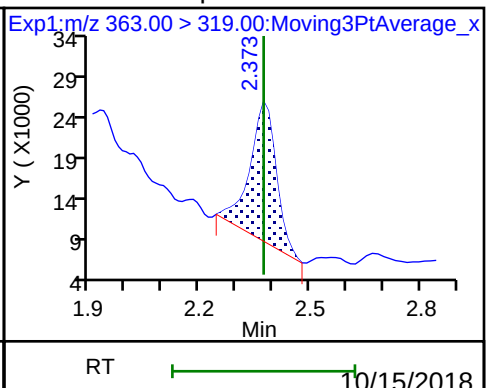
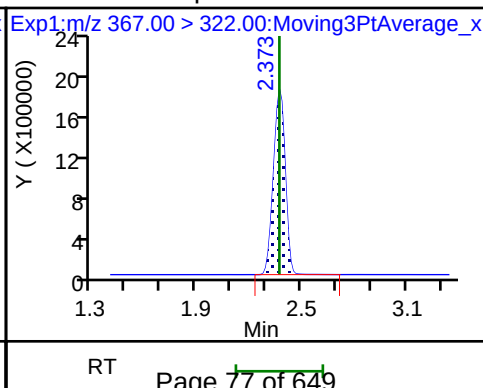
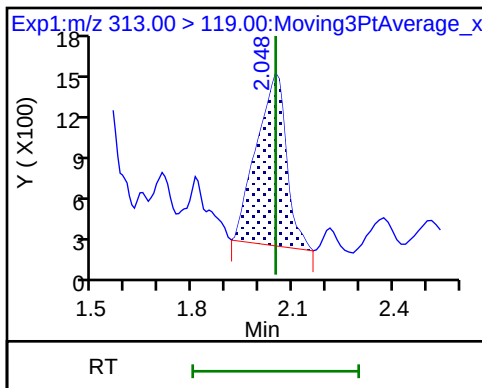
6 Perfluorohexanoic acid

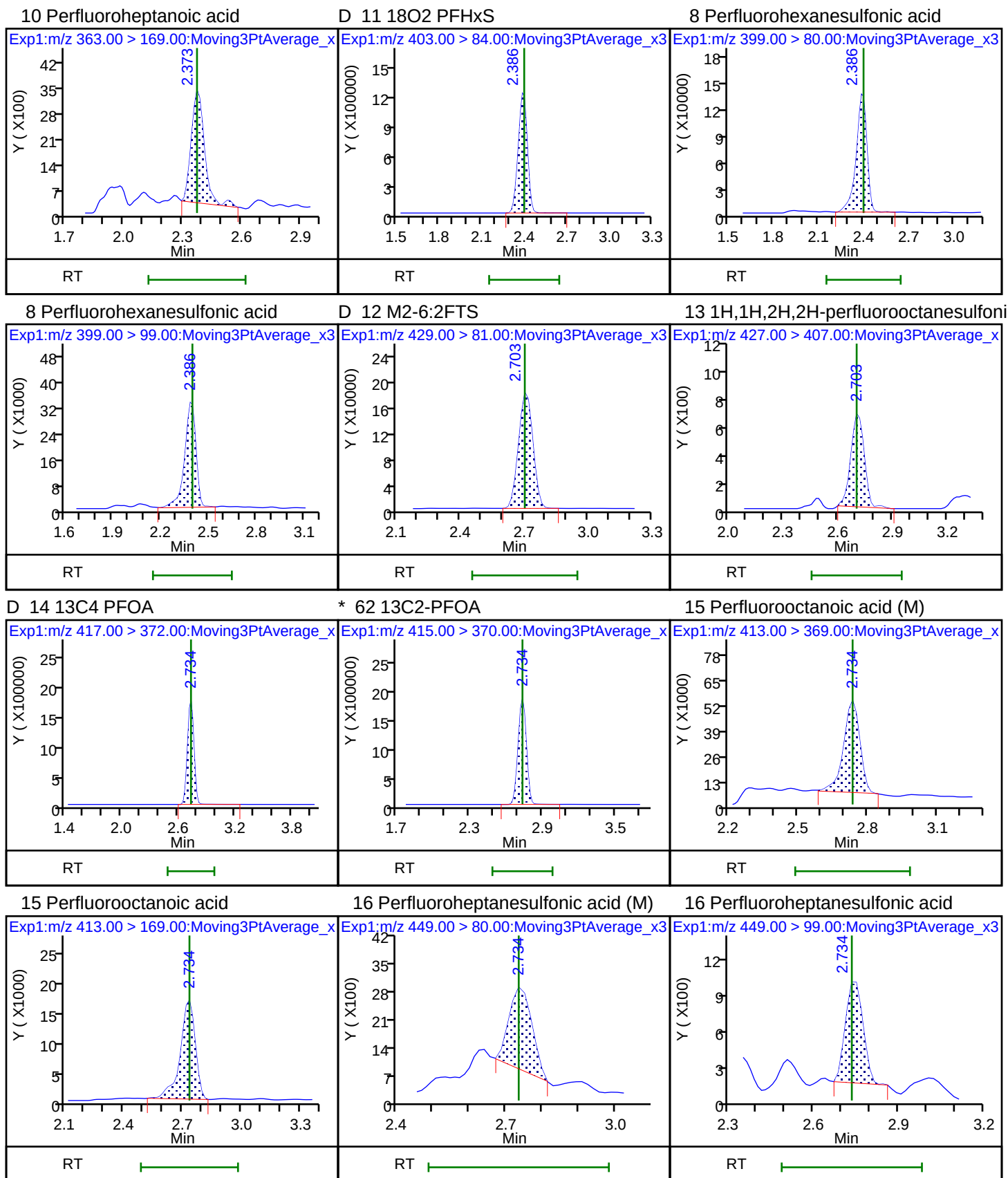


6 Perfluorohexanoic acid

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

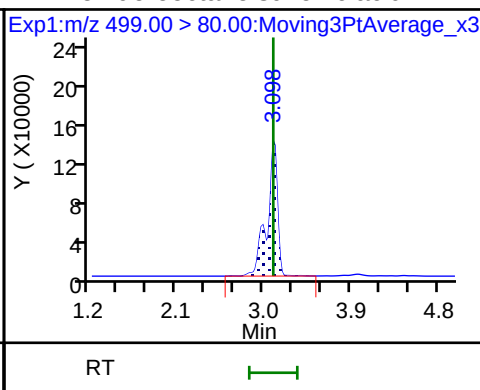
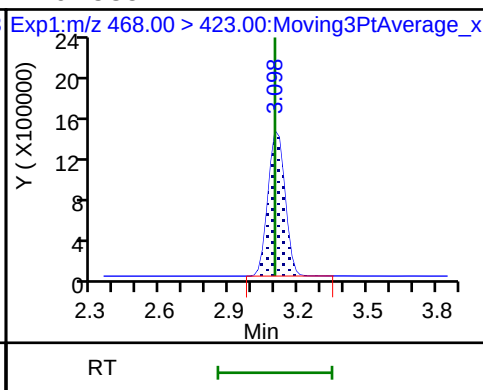
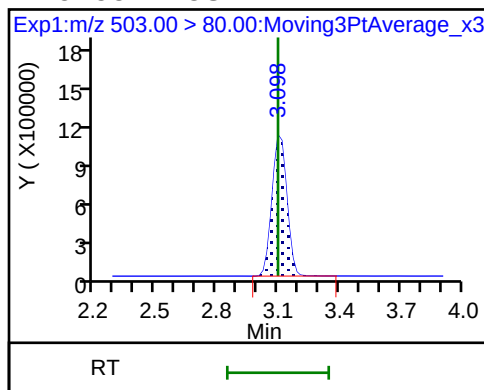




D 18 13C4 PFOS

D 19 13C5 PFNA

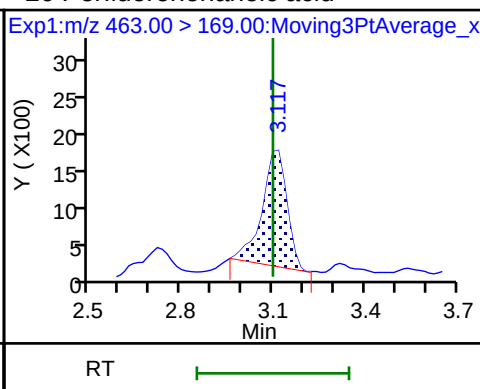
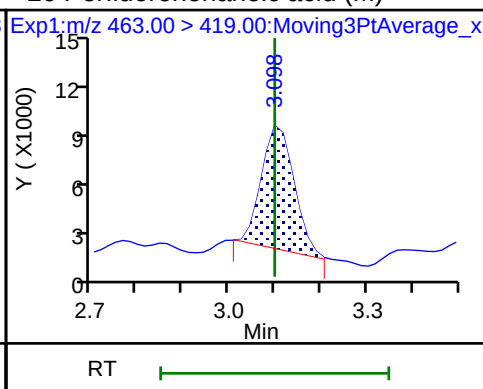
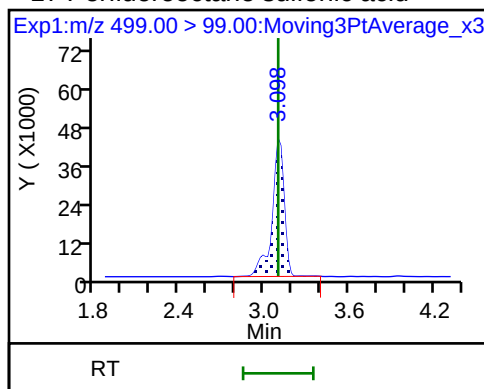
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid (M)

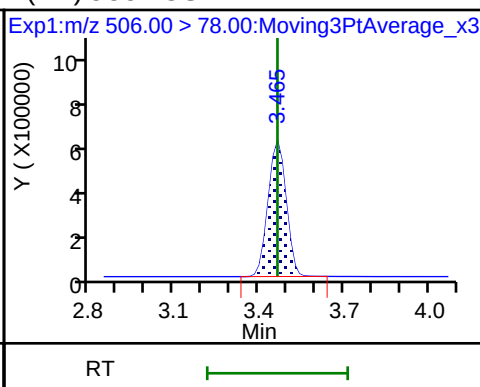
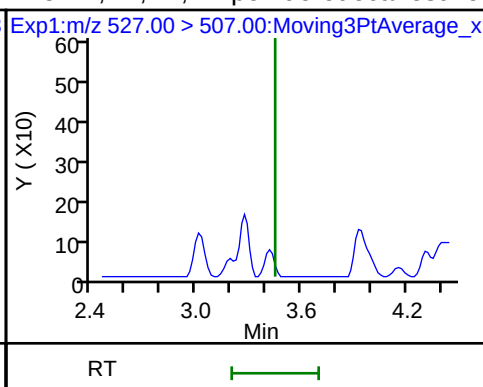
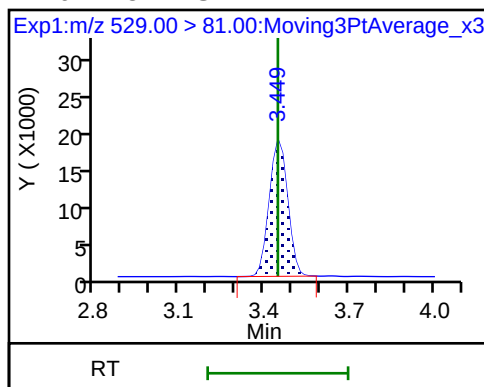
20 Perfluorononanoic acid



D 26 M2-8:2FTS

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

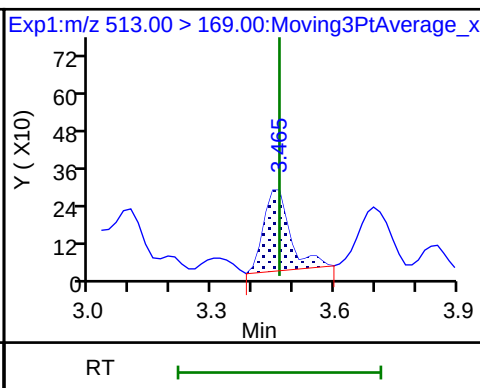
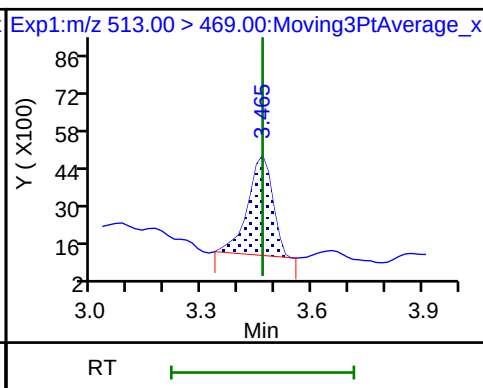
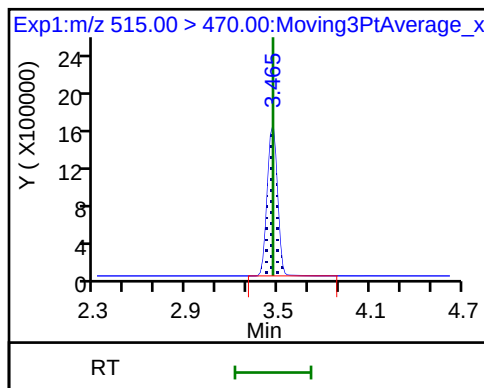
D 27 13C8 FOSA

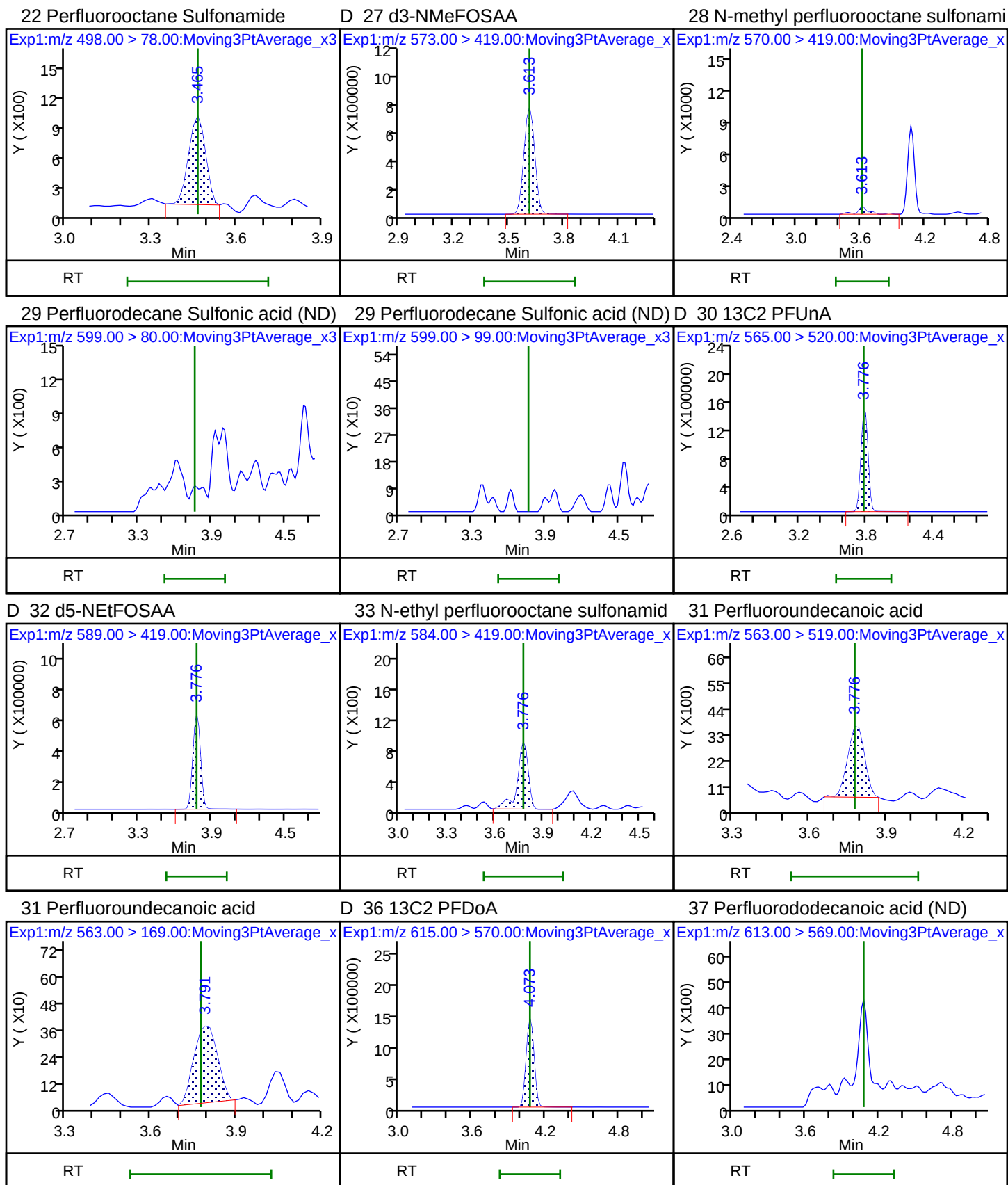


D 23 13C2 PFDA

24 Perfluorodecanoic acid

24 Perfluorodecanoic acid





37 Perfluorododecanoic acid (ND)

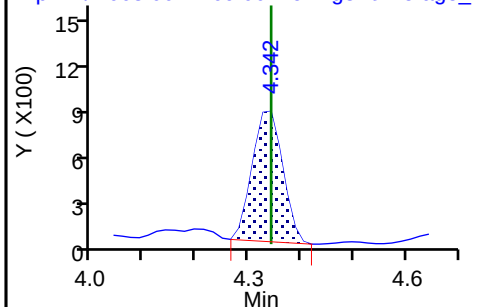
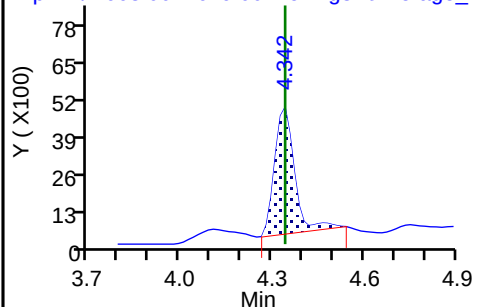
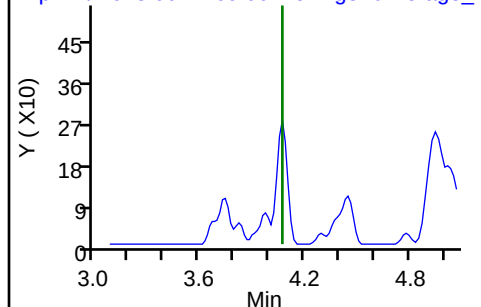
41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

Exp1:m/z 613.00 > 169.00:Moving3PtAverage_x

Exp1:m/z 663.00 > 619.00:Moving3PtAverage_x

Exp1:m/z 663.00 > 169.00:Moving3PtAverage_x



RT

RT

RT

D 43 13C2-PFTeDA

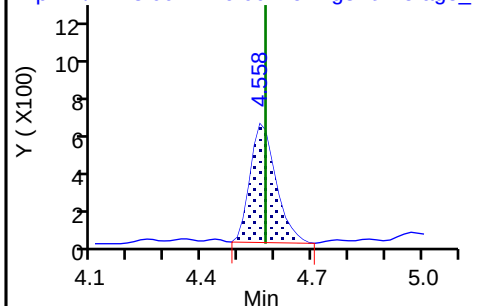
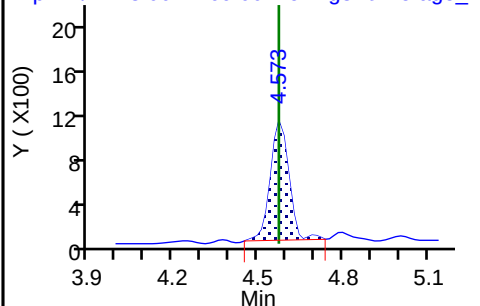
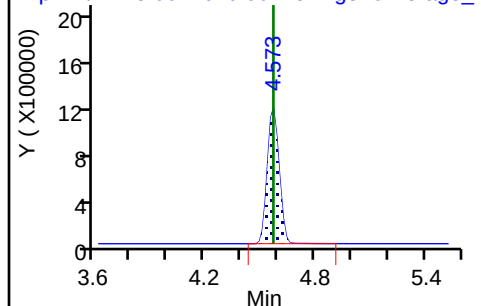
42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

Exp1:m/z 715.00 > 670.00:Moving3PtAverage_x

Exp1:m/z 713.00 > 169.00:Moving3PtAverage_x

Exp1:m/z 713.00 > 219.00:Moving3PtAverage_x



RT

RT

RT

TestAmerica Sacramento

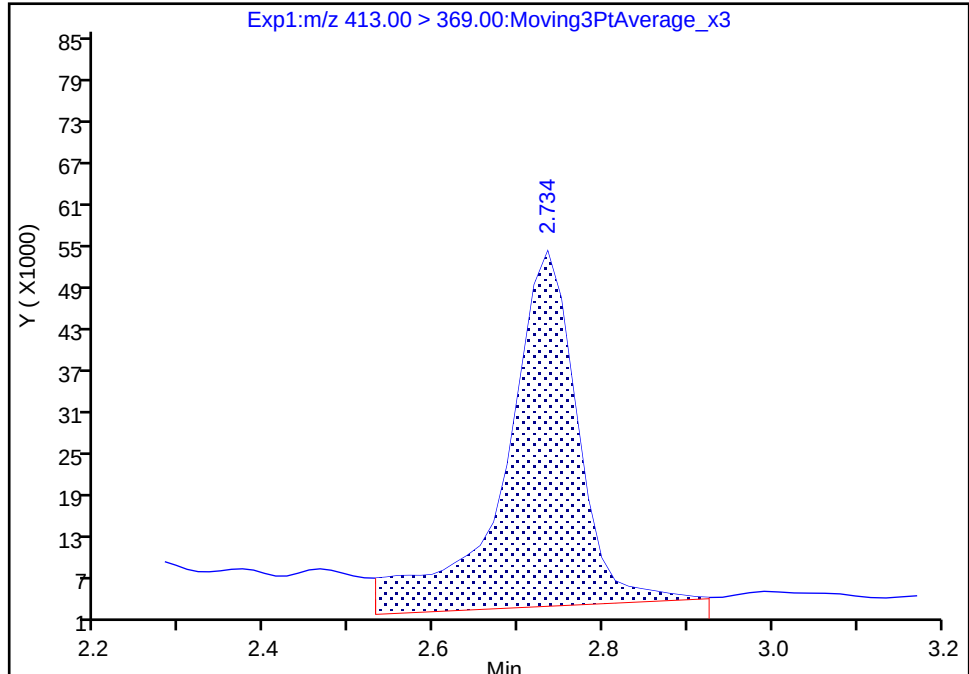
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_053.d				
Injection Date:	02-Oct-2018 23:54:39	Instrument ID:	A9		
Lims ID:	320-43466-A-2-A	Lab Sample ID:	320-43466-2		
Client ID:	MW023				
Operator ID:	A9\Administrator	ALS Bottle#:	30	Worklist Smp#:	14
Injection Vol:	20.0 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

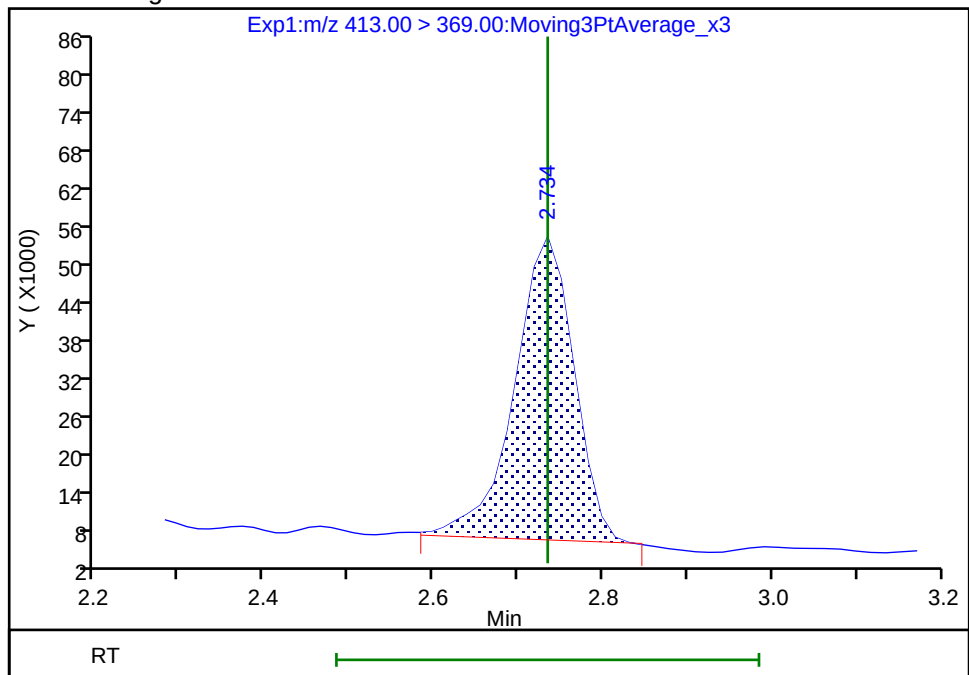
RT: 2.73
Area: 306233
Amount: 0.088058
Amount Units: ng/ml

Processing Integration Results



RT: 2.73
Area: 231289
Amount: 0.066507
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:07:14
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

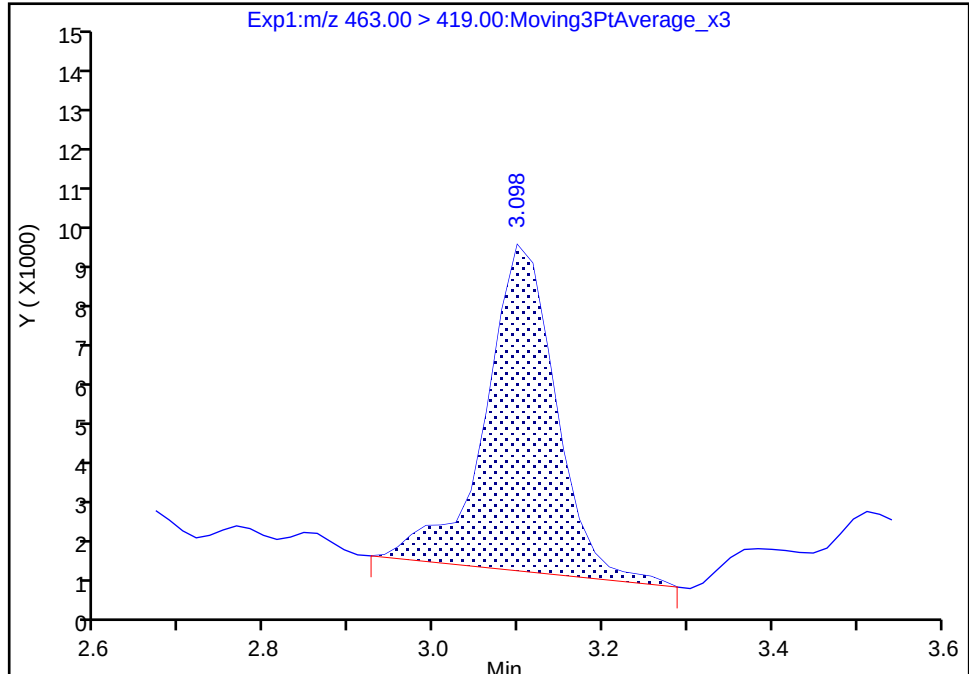
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_053.d				
Injection Date:	02-Oct-2018 23:54:39	Instrument ID:	A9		
Lims ID:	320-43466-A-2-A	Lab Sample ID:	320-43466-2		
Client ID:	MW023				
Operator ID:	A9\Administrator	ALS Bottle#:	30	Worklist Smp#:	14
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

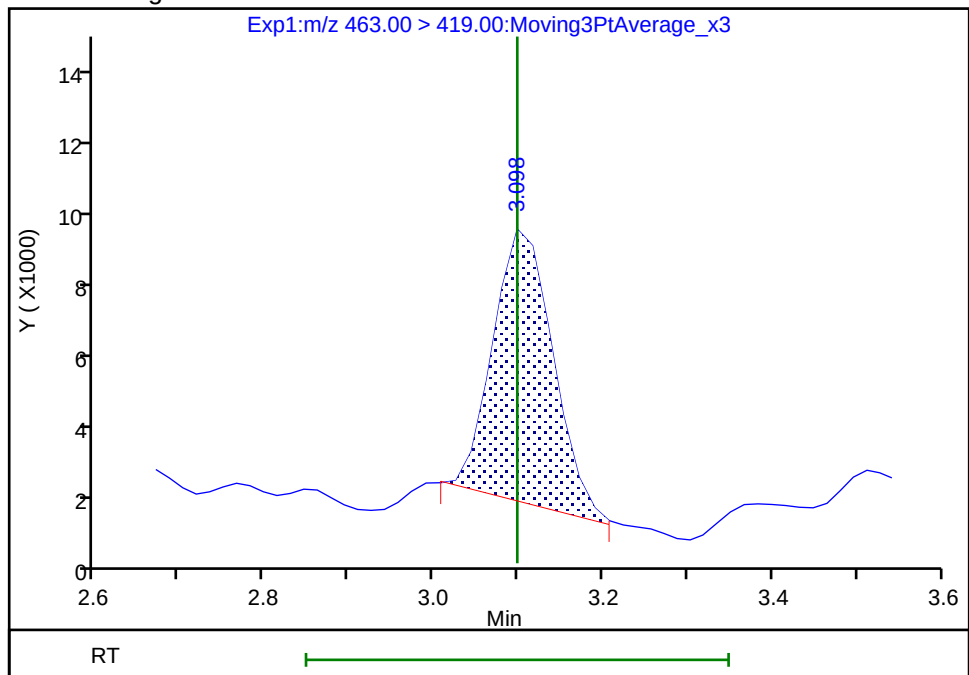
RT: 3.10
Area: 45510
Amount: 0.016065
Amount Units: ng/ml

Processing Integration Results



RT: 3.10
Area: 35522
Amount: 0.012539
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:07:37
Audit Action: Manually Integrated

Audit Reason: Baseline
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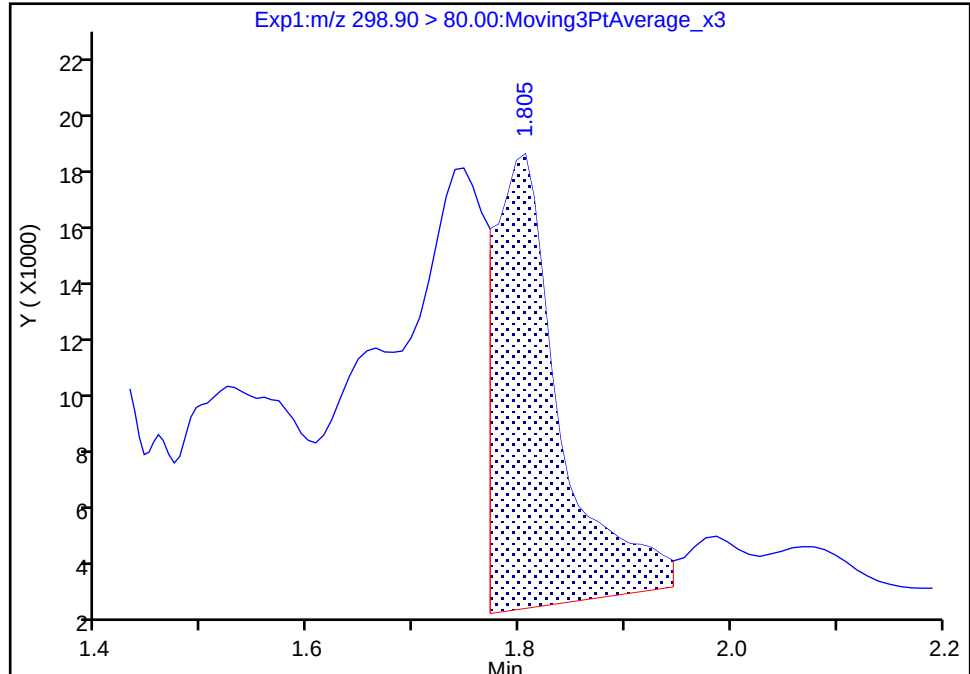
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_053.d
Injection Date: 02-Oct-2018 23:54:39 Instrument ID: A9
Lims ID: 320-43466-A-2-A Lab Sample ID: 320-43466-2
Client ID: MW023
Operator ID: A9\Administrator ALS Bottle#: 30 Worklist Smp#: 14
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

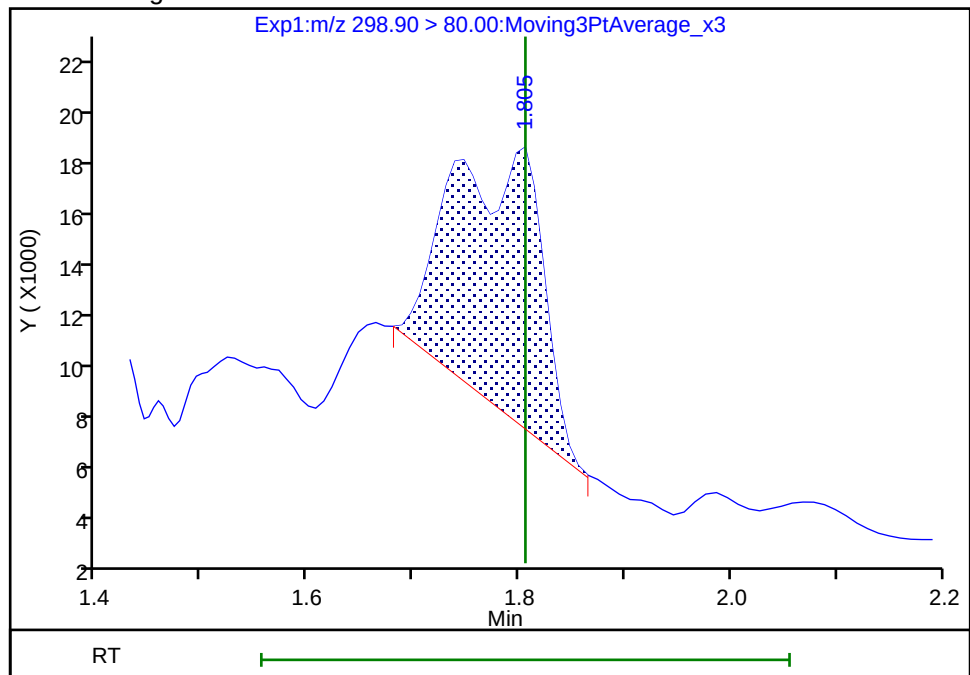
RT: 1.81
Area: 63863
Amount: 0.018113
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 57799
Amount: 0.016393
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:06:56
Audit Action: Manually Integrated

Audit Reason: Baseline
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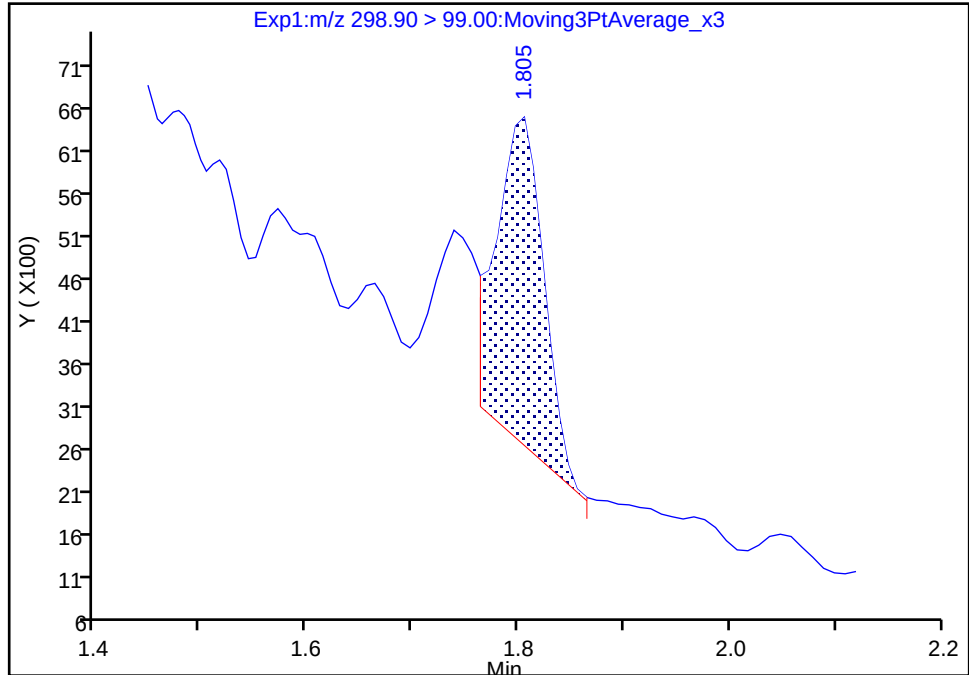
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_053.d
Injection Date: 02-Oct-2018 23:54:39 Instrument ID: A9
Lims ID: 320-43466-A-2-A Lab Sample ID: 320-43466-2
Client ID: MW023
Operator ID: A9\Administrator ALS Bottle#: 30 Worklist Smp#: 14
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

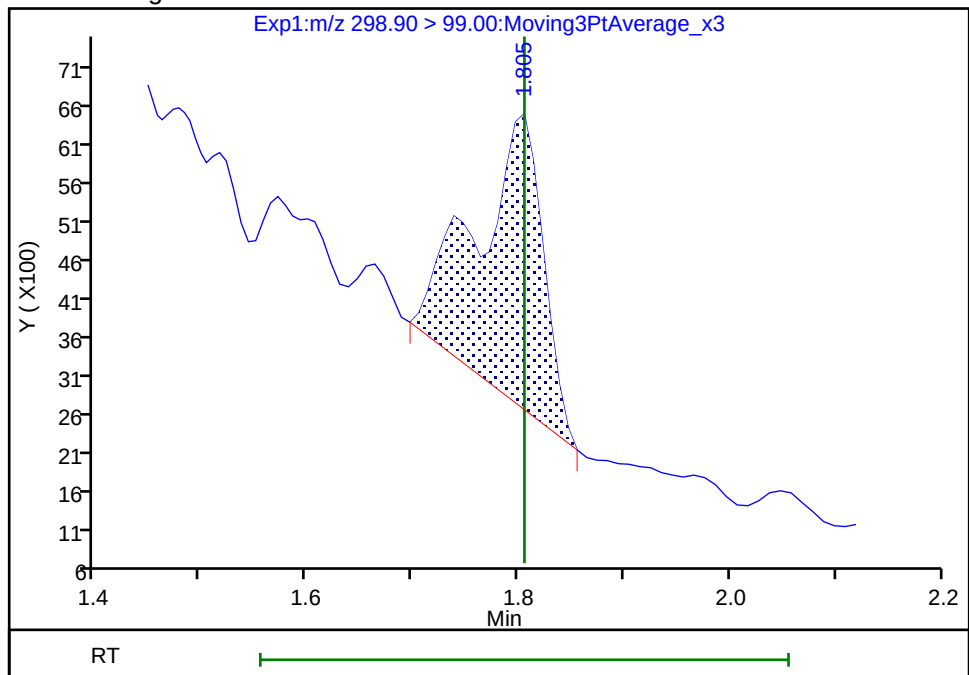
RT: 1.81
Area: 11677
Amount: 0.018113
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 16292
Amount: 0.016393
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:07:00

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

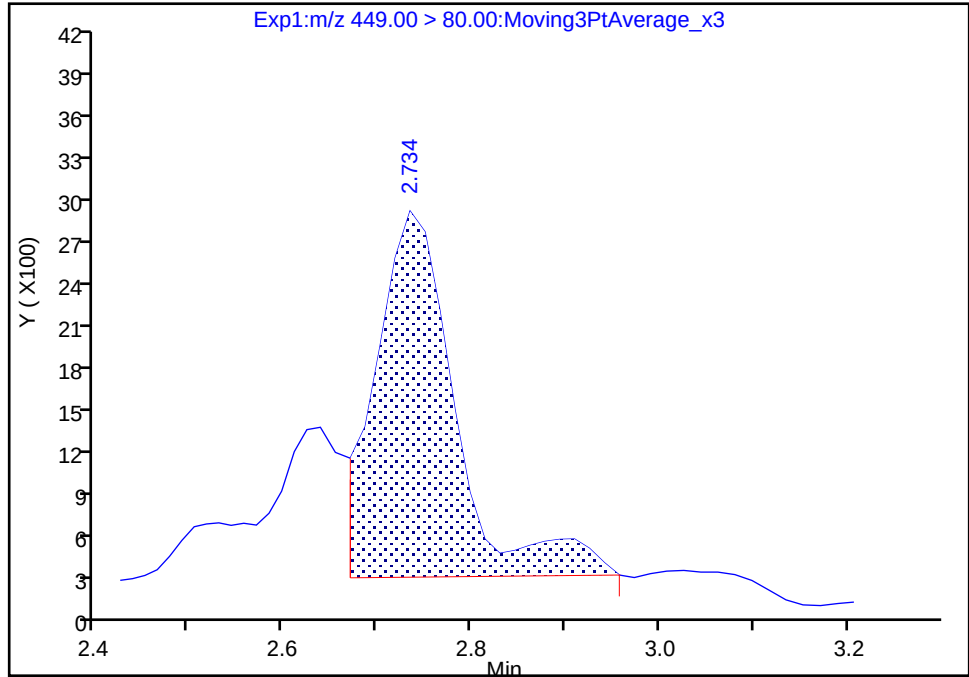
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_053.d				
Injection Date:	02-Oct-2018 23:54:39	Instrument ID:	A9		
Lims ID:	320-43466-A-2-A	Lab Sample ID:	320-43466-2		
Client ID:	MW023				
Operator ID:	A9\Administrator	ALS Bottle#:	30	Worklist Smp#:	14
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

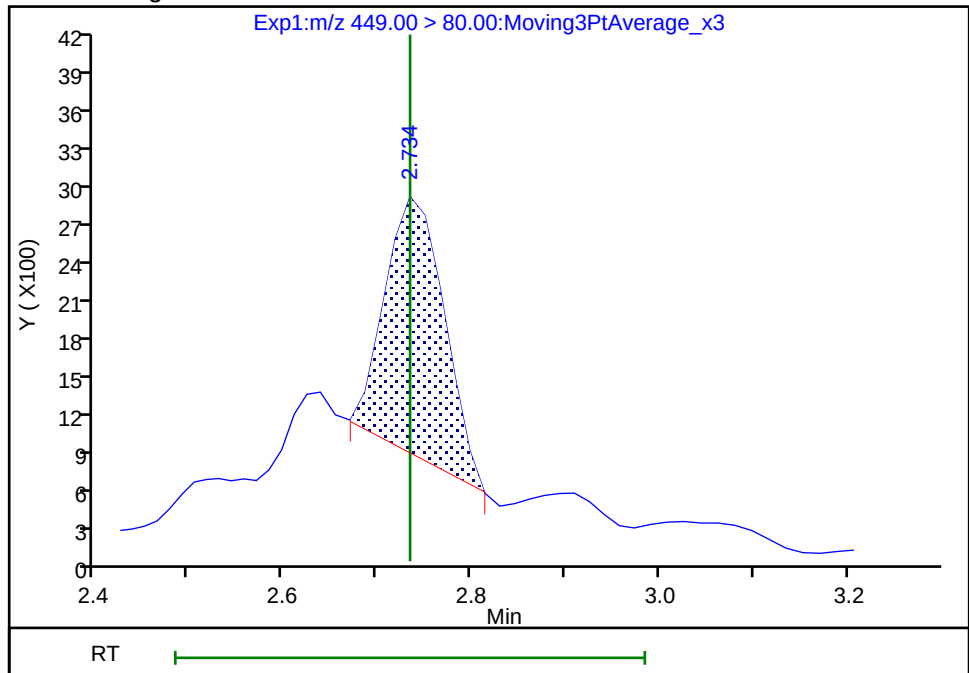
RT: 2.73
Area: 15421
Amount: 0.006699
Amount Units: ng/ml

Processing Integration Results



RT: 2.73
Area: 8927
Amount: 0.003878
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:07:24
Audit Action: Manually Integrated

Audit Reason: Baseline
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>MW020</u>	Lab Sample ID: <u>320-43466-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_054.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 14:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>262.5 (mL)</u>	Date Analyzed: <u>10/03/2018 00:02</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.63	J	1.90	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.95		1.90	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	2.81		1.90	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.22	J	1.90	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	4.70		1.90	0.81
375-95-1	Perfluorononanoic acid (PFNA)	0.41	J	1.90	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.90	U	1.90	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.90	U	1.90	1.05
307-55-1	Perfluorododecanoic acid (PFDoA)	1.90	U	1.90	0.52
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.90	U	1.90	1.24
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.38	J	1.90	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.37	J	1.90	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	21.9	B	1.90	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.26	J	1.90	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	7.54		1.90	0.51
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.90	U	1.90	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.51	J	1.90	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.0	U	19.0	2.95
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.0	U	19.0	1.81
27619-97-2	6:2 FTS	19.0	U	19.0	1.90
39108-34-4	8:2 FTS	19.0	U	19.0	1.90

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>MW020</u>	Lab Sample ID: <u>320-43466-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_054.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 14:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>262.5 (mL)</u>	Date Analyzed: <u>10/03/2018 00:02</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	73		25-150
STL01893	13C5 PFPeA	88		25-150
STL00993	13C2 PFHxA	96		25-150
STL01892	13C4 PFHpA	105		25-150
STL00990	13C4 PFOA	102		25-150
STL00995	13C5 PFNA	106		25-150
STL00996	13C2 PFDA	107		25-150
STL00997	13C2 PFUnA	114		25-150
STL00998	13C2 PFDoA	97		25-150
STL02116	13C2 PFTeDA	100		25-150
STL02337	13C3 PFBS	101		25-150
STL00994	18O2 PFHxS	106		25-150
STL00991	13C4 PFOS	104		25-150
STL01056	13C8 FOSA	102		25-150
STL02118	d3-NMeFOSAA	100		25-150
STL02117	d5-NEtFOSAA	116		25-150
STL02279	M2-6:2 FTS	183	*	25-150
STL02280	M2-8:2 FTS	175	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d
 Lims ID: 320-43466-A-3-A
 Client ID: MW020
 Sample Type: Client
 Inject. Date: 03-Oct-2018 00:02:10 ALS Bottle#: 31 Worklist Smp#: 15
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 320-43466-a-3-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 12:12:17 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 05-Oct-2018 12:10:30

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	1.483	0.001	0.543	5480979	1.84		73.5	5128	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.484	1.489	-0.005	1.000	85770	0.0427			2.9	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.763	0.001	0.645	5954223	2.20		87.8	1793	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.756	1.764	-0.008	0.995	121221	0.0511			0.5	M
D 47 13C3-PFBS										
301.90 > 83.00	1.805	1.805	0.0	0.660	86382	2.34		101	101	
5 Perfluorobutanesulfonic acid										RM
298.90 > 80.00	1.805	1.805	0.0	1.000	137695	0.0359			2.1	RM
298.90 > 99.00	1.805	1.805	0.0	1.000	30590		4.50(1.35-4.05)		2.1	M
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.047	0.001	0.749	6924103	2.41		96.4	5240	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.048	2.048	0.0	1.000	183879	0.0738			1.5	
313.00 > 119.00	2.048	2.048	0.0	1.000	14541		12.65(6.96-20.87)		5.0	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	8948822	2.61		105	6219	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.373	2.373	0.0	1.000	121241	0.0319			1.6	M
363.00 > 169.00	2.373	2.373	0.0	1.000	31548		3.84(2.17-6.52)		18.8	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.386	2.399	-0.013	0.873	5510541	2.50		106	9625	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.386	2.400	-0.014	1.000	1684556	0.5743			155	
399.00 > 99.00	2.386	2.400	-0.014	1.000	448335		3.76(1.90-5.70)		102	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	1541754	4.34		183	506	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	2894	0.002043			0.9	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.734	0.0	1.000	8234806	2.54		102	6663	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		8096816	2.50			5354	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	426059	0.1233			7.4	M
413.00 > 169.00	2.734	2.734	0.0	1.000	171031		2.49(1.36-4.08)		76.8	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.734	2.734	0.0	0.883	16374	0.006748			1.3	RM
449.00 > 99.00	2.734	2.734	0.0	0.883	2872		5.70(1.84-5.53)		3.3	RM
D 18 13C4 PFOS										
503.00 > 80.00	3.098	3.098	0.0	1.133	5665902	2.48		104	1060	
D 19 13C5 PFNA										
468.00 > 423.00	3.098	3.098	0.0	1.133	7794077	2.64		106	4397	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.098	3.098	0.0	1.000	497072	0.1979			47.6	M
499.00 > 99.00	3.098	3.098	0.0	1.000	94869		5.24(2.04-6.12)		122	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.098	3.098	0.0	1.000	33231	0.0109			1.5	M
463.00 > 169.00	3.098	3.098	0.0	1.000	7519		4.42(2.68-8.03)		6.8	M
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	188692	4.19		175	597	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.464	0.001	1.267	3127583	2.56		102	4785	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.464	0.001	1.267	8168870	2.67		107	5678	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.449	3.465	-0.016	0.995	16874	0.004712			1.4	
513.00 > 169.00	3.465	3.465	0.0	1.000	1400		12.05(7.12-21.35)		2.0	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	48953	0.0133			38.0	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.612	0.001	1.321	3399026	2.51		100	5581	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.000	7967	0.006105			2.7	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.775	0.001	1.381	7381818	2.85		114	6665	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	3086910	2.91		116	3356	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.791	3.776	0.015	1.004	14309	0.0124			30.6	M
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.072	0.001	1.489	7464843	2.42		96.8	7272	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.073	0.0	1.000	13020	0.004356			3.9	
613.00 > 169.00	4.073	4.073	0.0	1.000	2052		6.35(4.68-14.05)		5.9	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.342	4.342	0.0	1.066	21503	0.009187			12.1	
663.00 > 169.00	4.326	4.342	-0.016	1.062	3512		6.12(3.09-9.27)		6.3	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.572	0.001	1.672	6057326	2.49		99.6	10358	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.573	4.573	0.0	1.000	4001	0.0101			20.3	
713.00 > 219.00	4.558	4.573	-0.015	0.997	3106		1.29(0.70-2.09)		15.7	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d

Injection Date: 03-Oct-2018 00:02:10

Instrument ID: A9

Lims ID: 320-43466-A-3-A

Lab Sample ID: 320-43466-3

Client ID: MW020

Operator ID: A9\Administrator

ALS Bottle#: 31

Worklist Smp#: 15

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

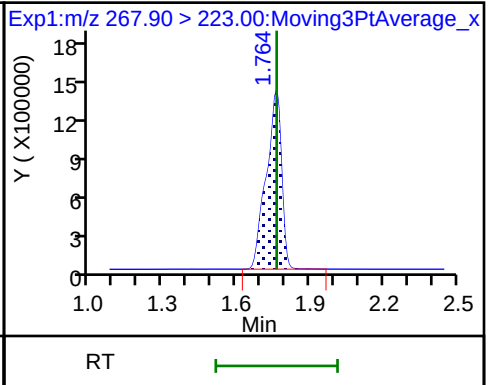
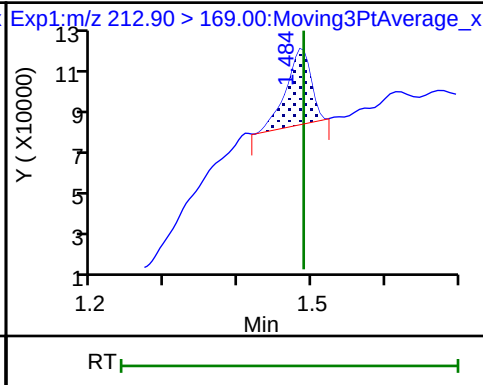
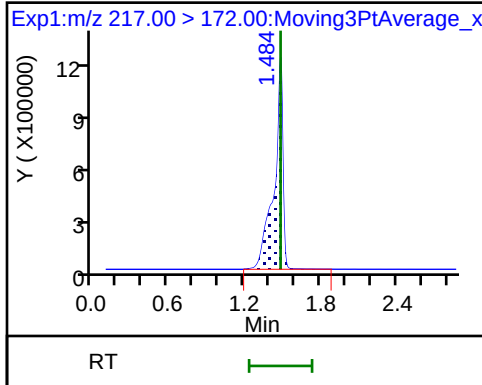
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

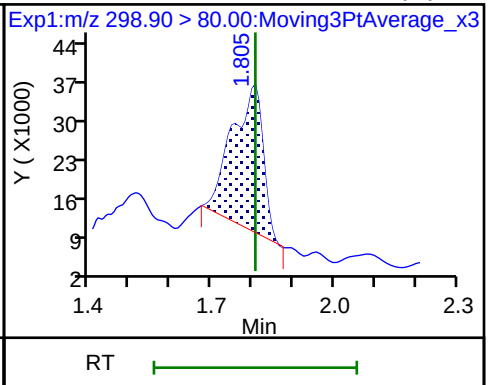
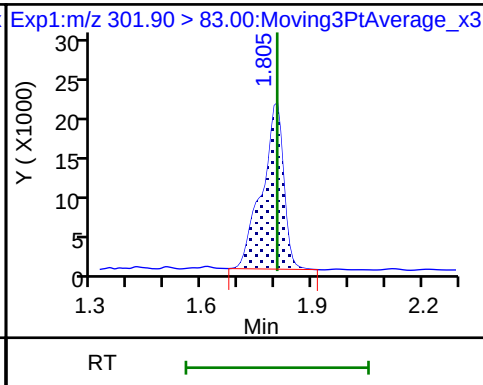
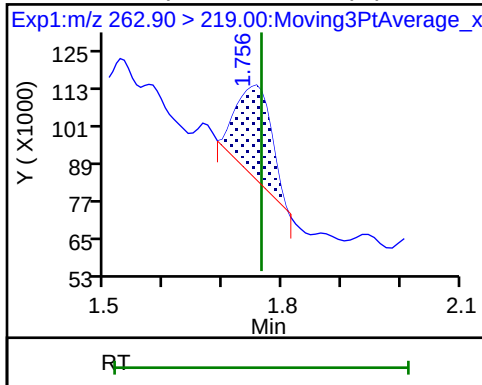
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3-PFBS

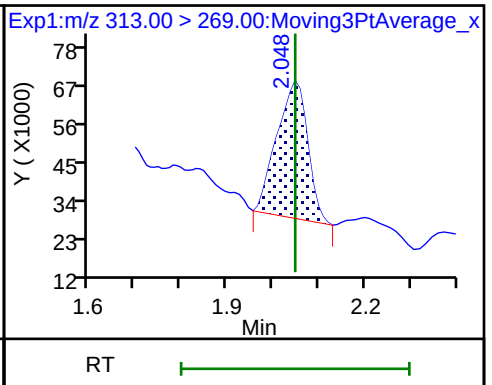
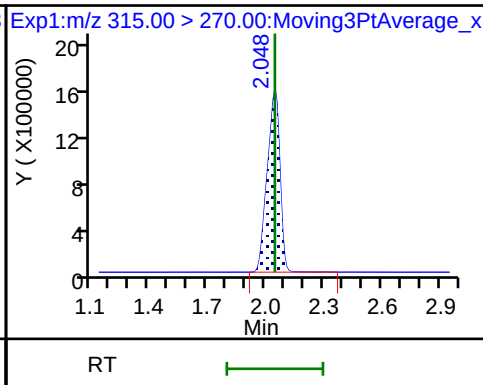
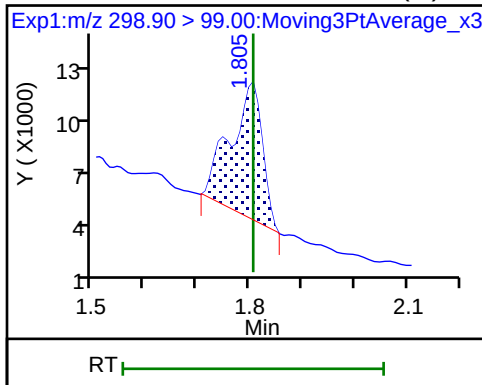
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid (M)

D 7 13C2 PFHxA

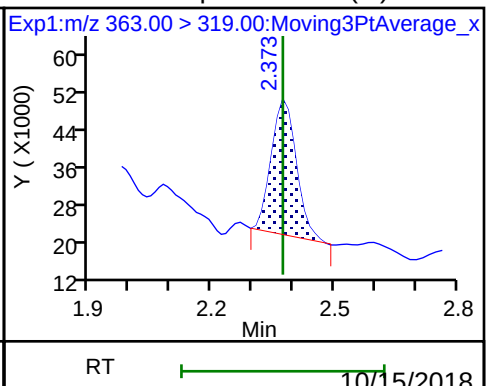
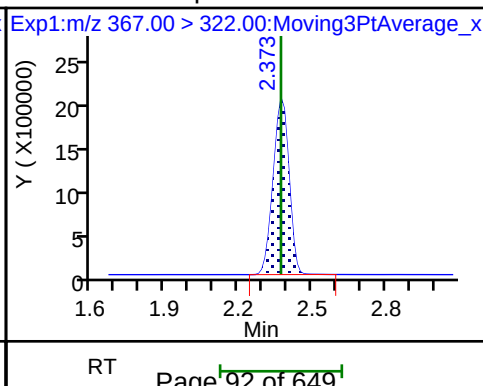
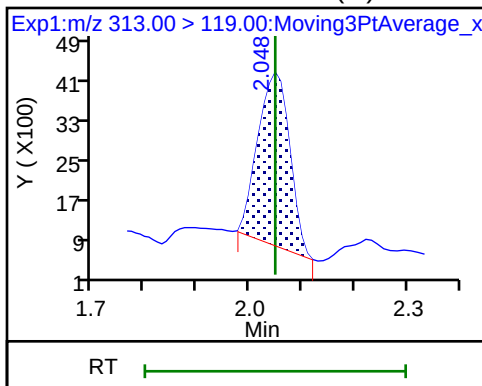
6 Perfluorohexanoic acid

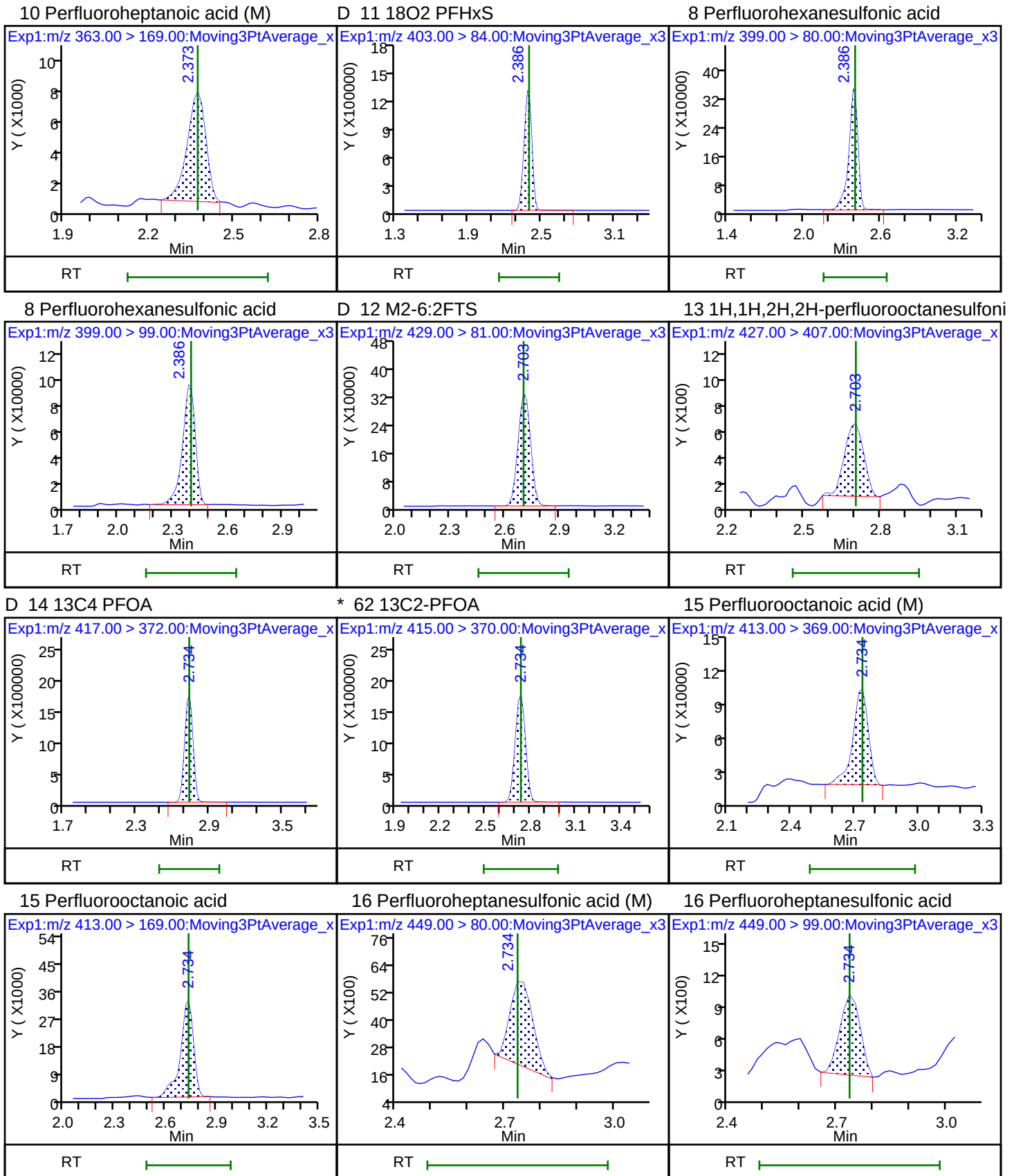


6 Perfluorohexanoic acid (M)

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid (M)

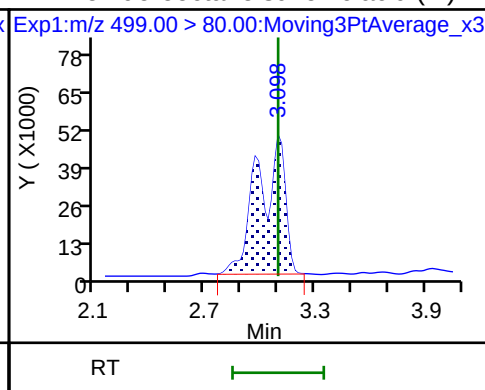
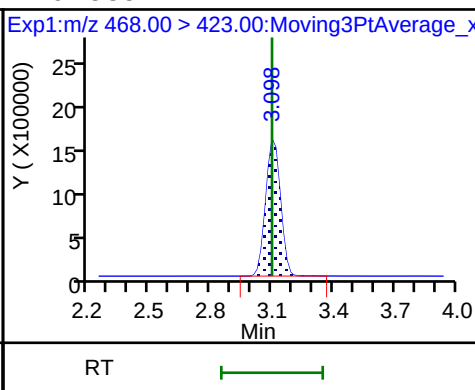
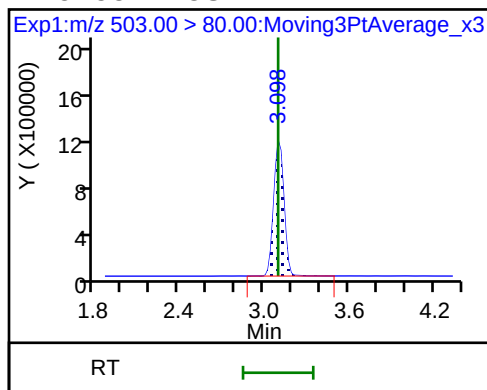




D 18 13C4 PFOS

D 19 13C5 PFNA

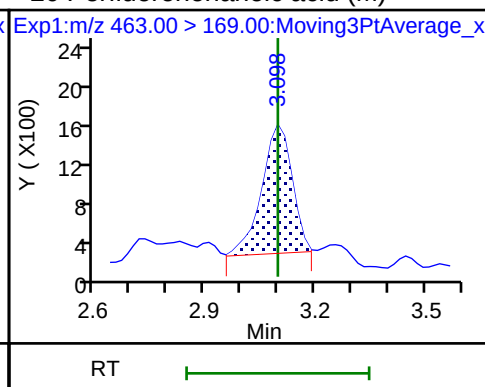
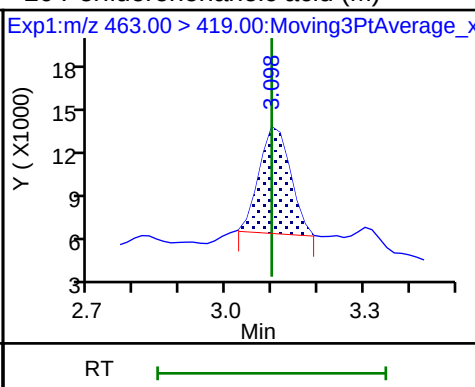
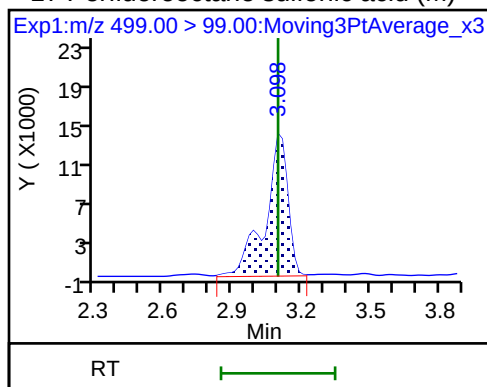
17 Perfluorooctane sulfonic acid (M)



17 Perfluorooctane sulfonic acid (M)

20 Perfluorononanoic acid (M)

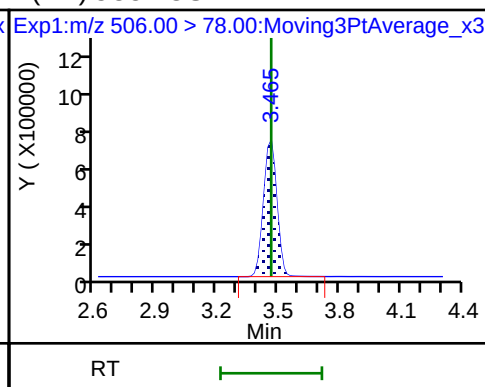
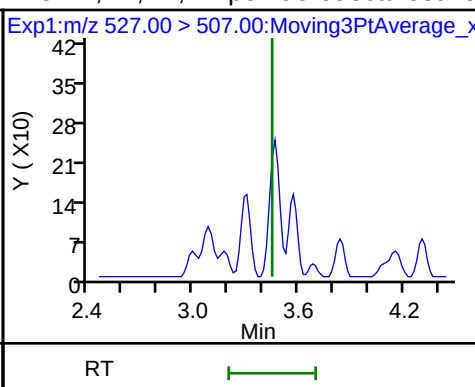
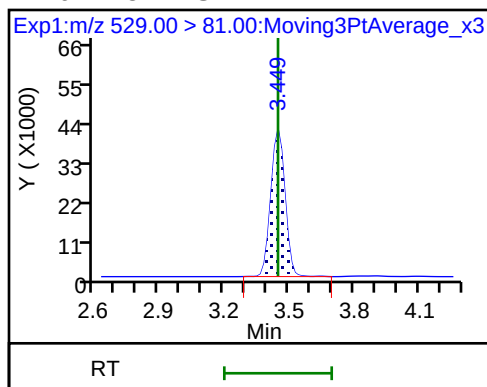
20 Perfluorononanoic acid (M)



D 26 M2-8:2FTS

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

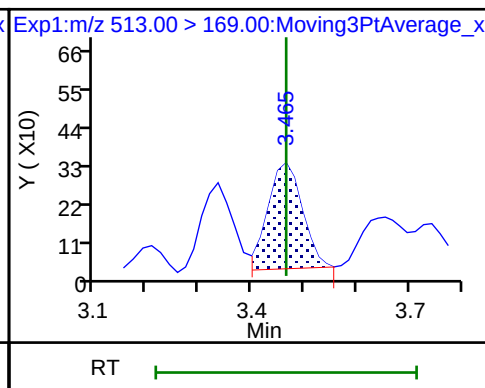
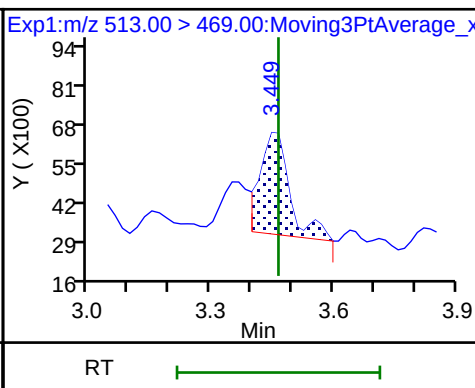
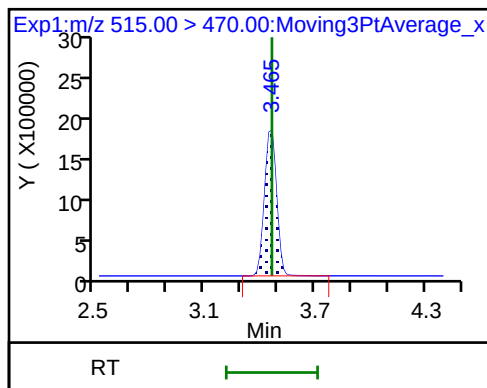
D 23 13C8 FOSA

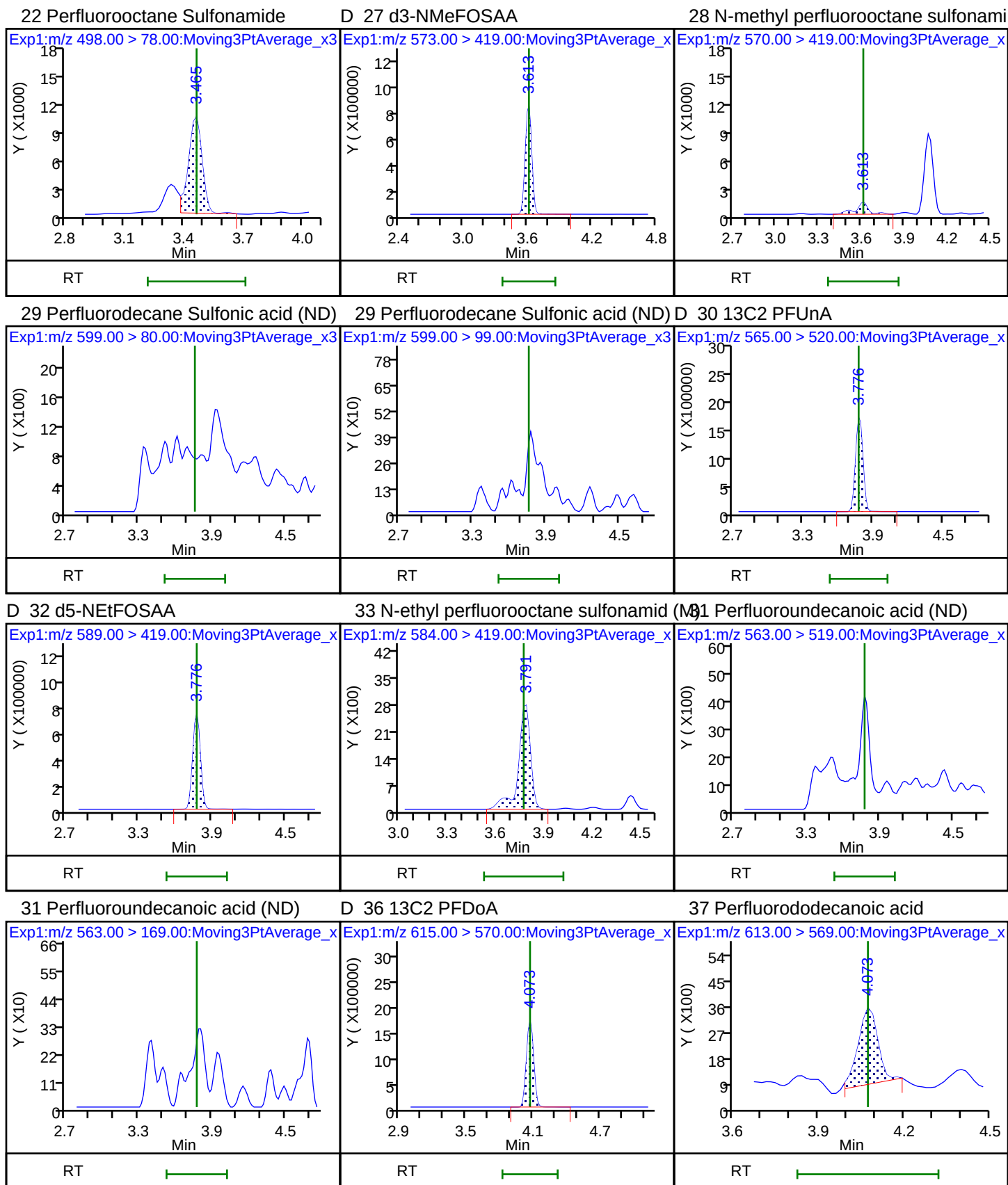


D 23 13C2 PFDA

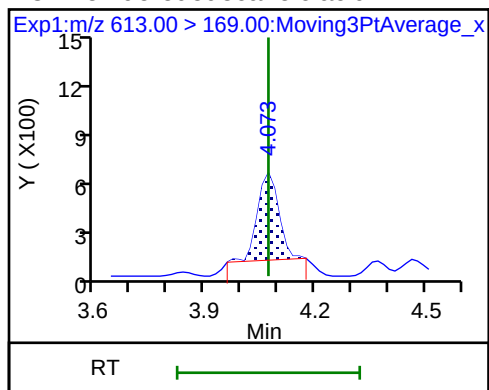
24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

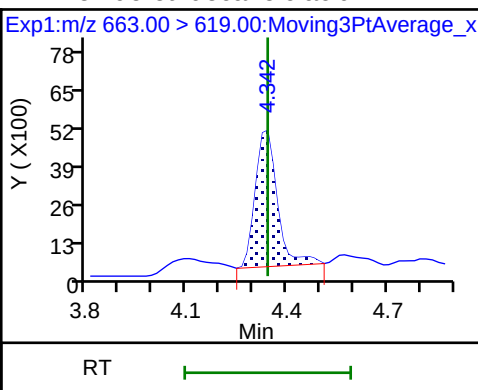




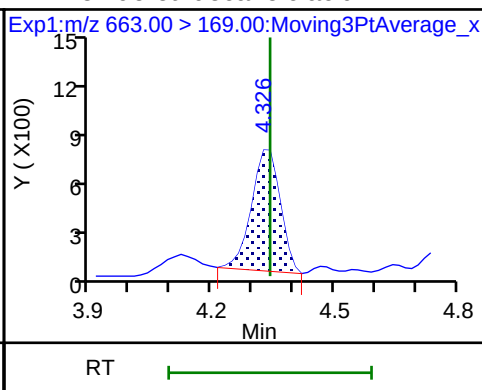
37 Perfluorododecanoic acid



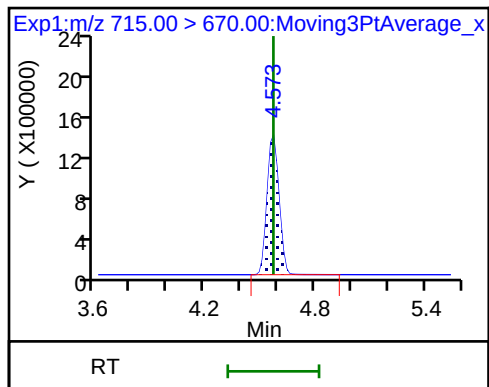
41 Perfluorotridecanoic acid



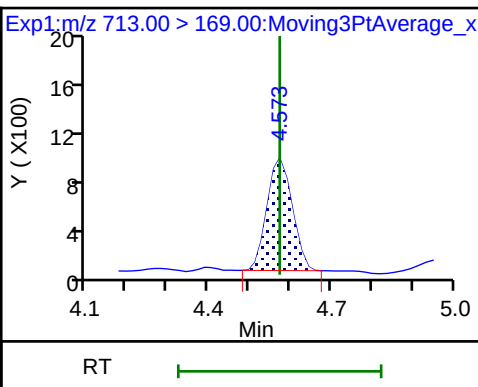
41 Perfluorotridecanoic acid



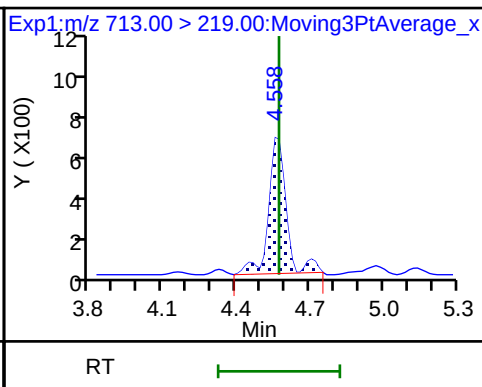
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



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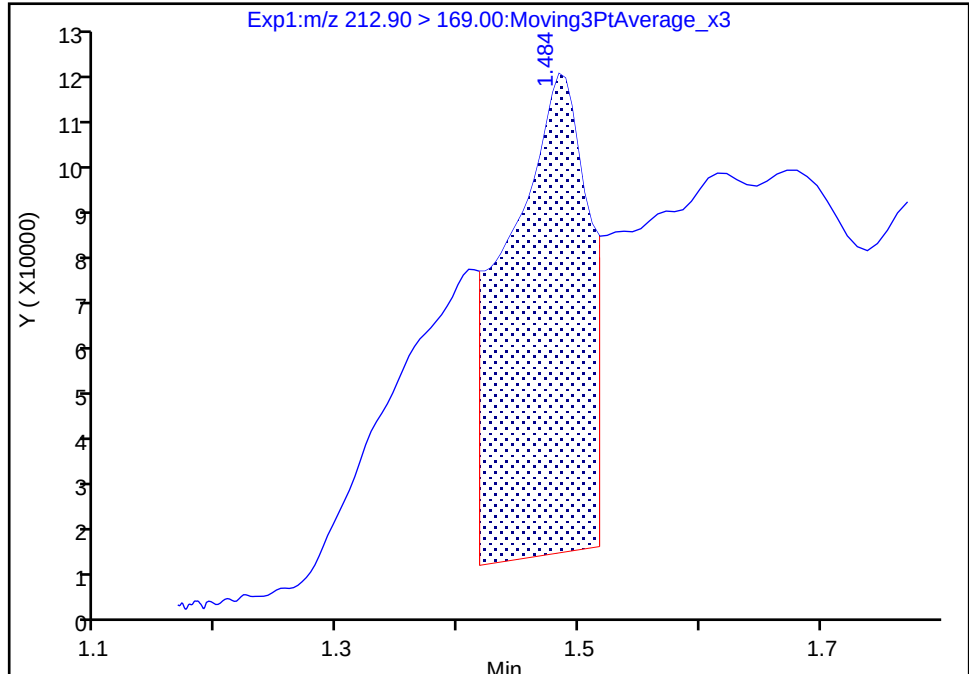
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Injection Date:	03-Oct-2018 00:02:10	Instrument ID:	A9		
Lims ID:	320-43466-A-3-A	Lab Sample ID:	320-43466-3		
Client ID:	MW020				
Operator ID:	A9\Administrator	ALS Bottle#:	31	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

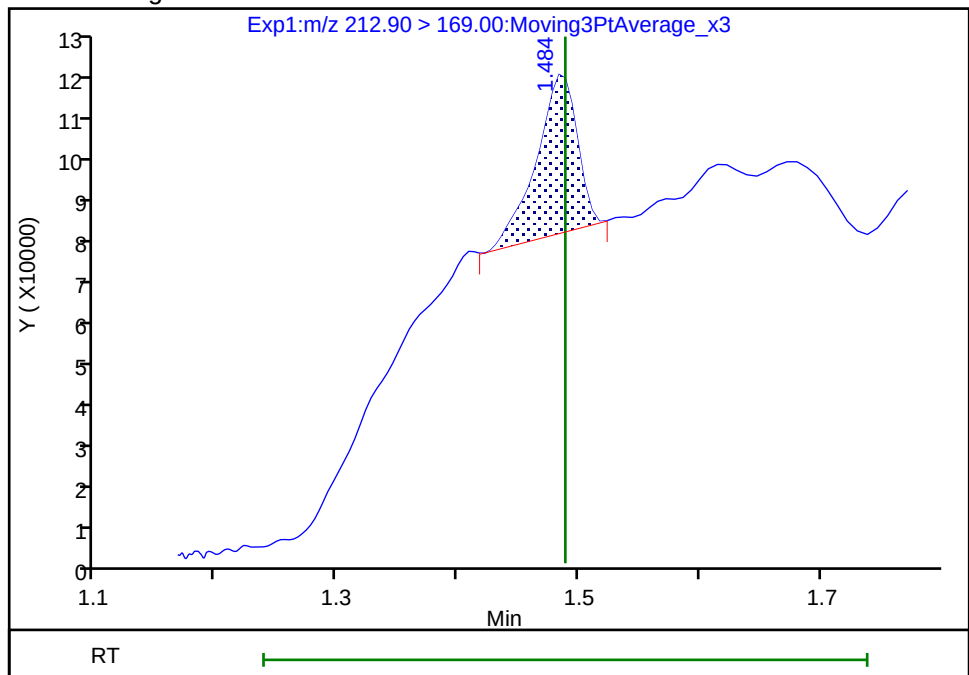
RT: 1.48
Area: 459809
Amount: 0.228789
Amount Units: ng/ml

Processing Integration Results



RT: 1.48
Area: 85770
Amount: 0.042677
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:08:21
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

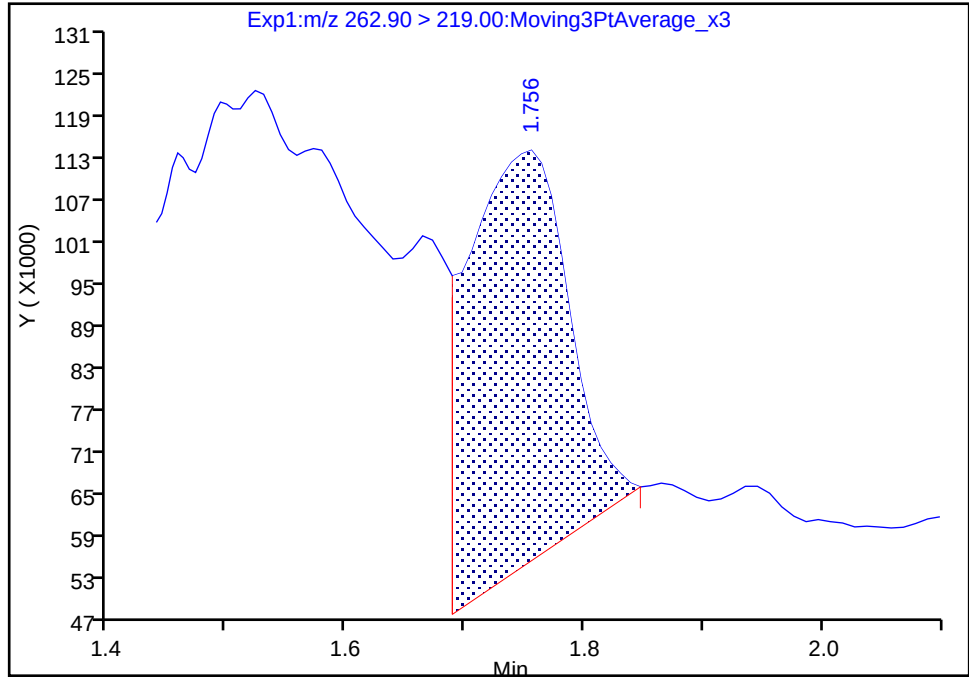
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Injection Date:	03-Oct-2018 00:02:10	Instrument ID:	A9		
Lims ID:	320-43466-A-3-A	Lab Sample ID:	320-43466-3		
Client ID:	MW020				
Operator ID:	A9\Administrator	ALS Bottle#:	31	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

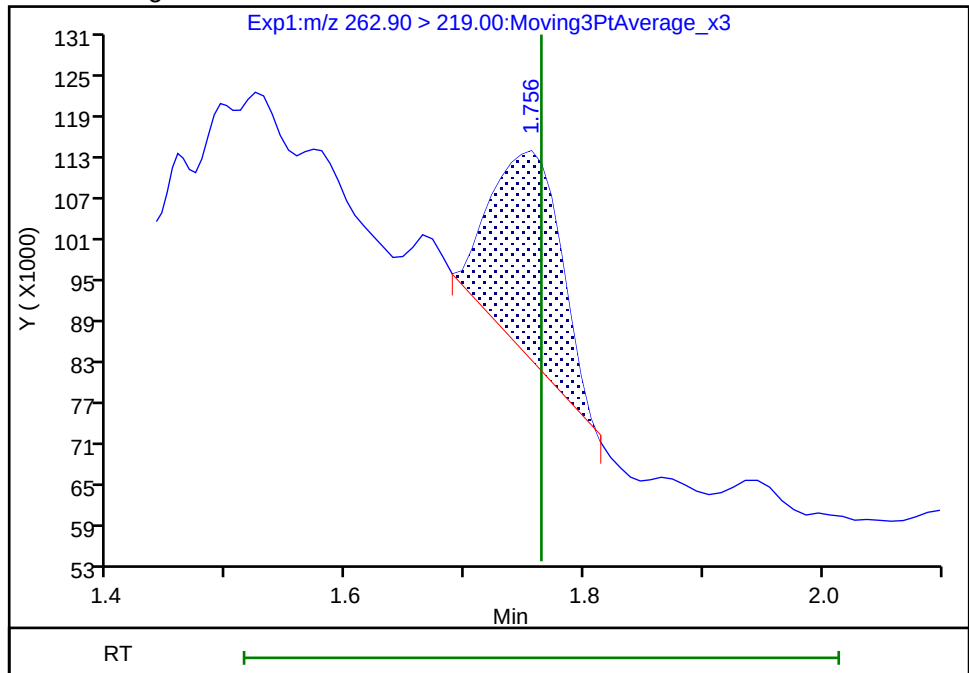
RT: 1.76
Area: 350763
Amount: 0.147923
Amount Units: ng/ml

Processing Integration Results



RT: 1.76
Area: 121221
Amount: 0.051121
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:08:36
Audit Action: Manually Integrated

Audit Reason: Baseline
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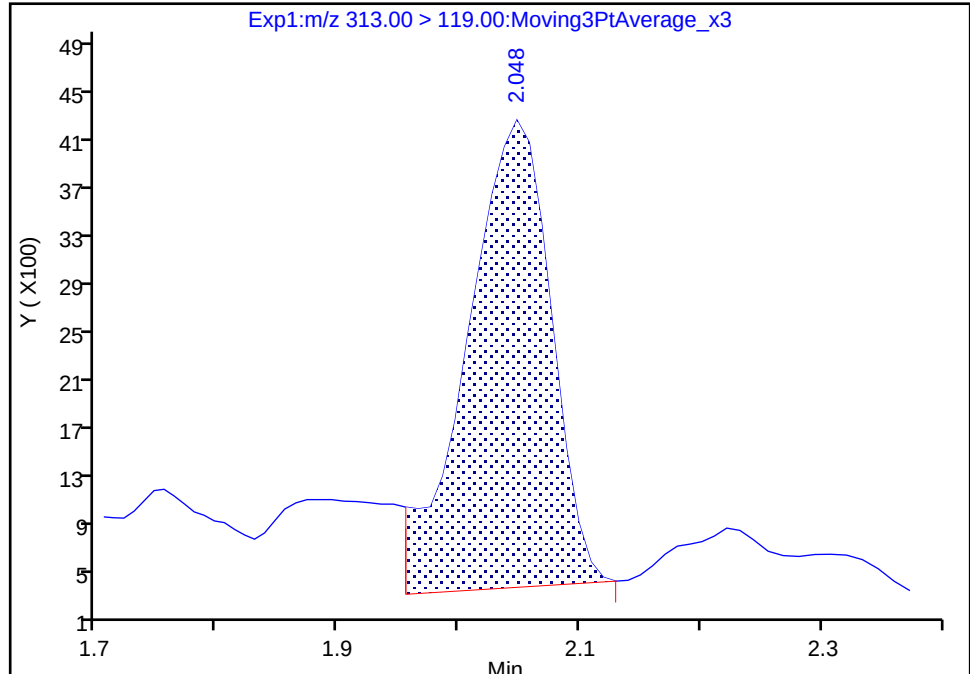
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Injection Date:	03-Oct-2018 00:02:10	Instrument ID:	A9		
Lims ID:	320-43466-A-3-A	Lab Sample ID:	320-43466-3		
Client ID:	MW020				
Operator ID:	A9\Administrator	ALS Bottle#:	31	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

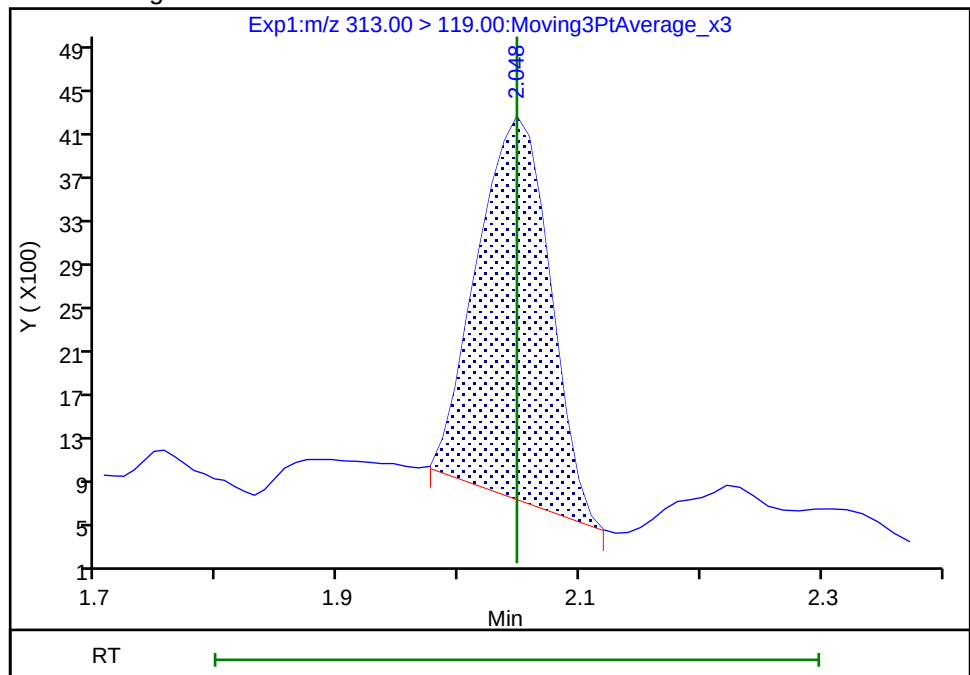
RT: 2.05
Area: 18475
Amount: 0.073826
Amount Units: ng/ml

Processing Integration Results



RT: 2.05
Area: 14541
Amount: 0.073826
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:09:00
Audit Action: Manually Integrated

Audit Reason: Baseline
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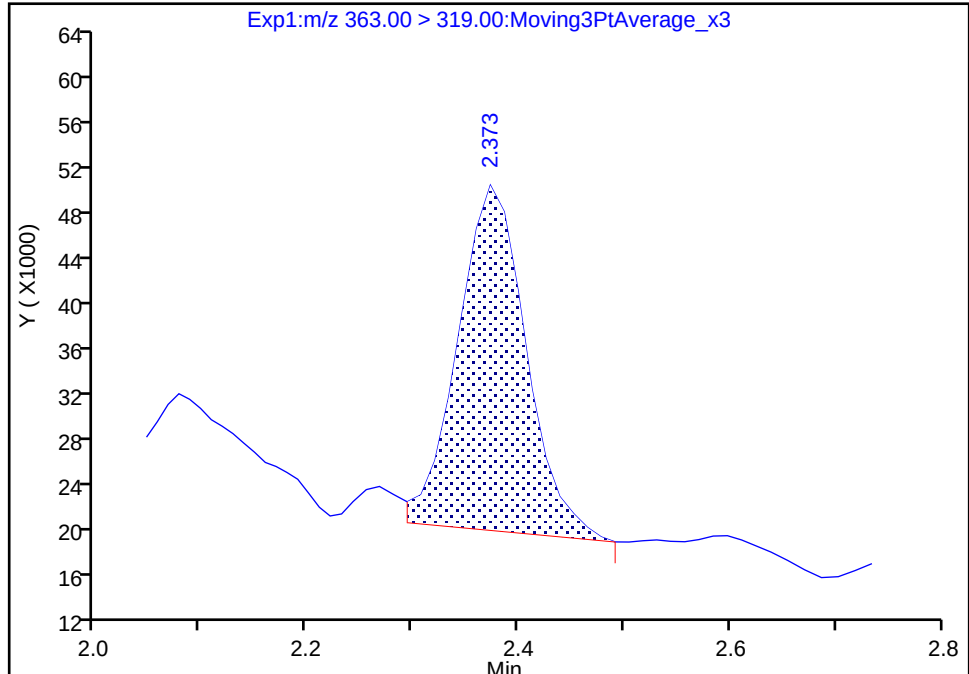
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Injection Date: 03-Oct-2018 00:02:10 Instrument ID: A9
Lims ID: 320-43466-A-3-A Lab Sample ID: 320-43466-3
Client ID: MW020
Operator ID: A9\Administrator ALS Bottle#: 31 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

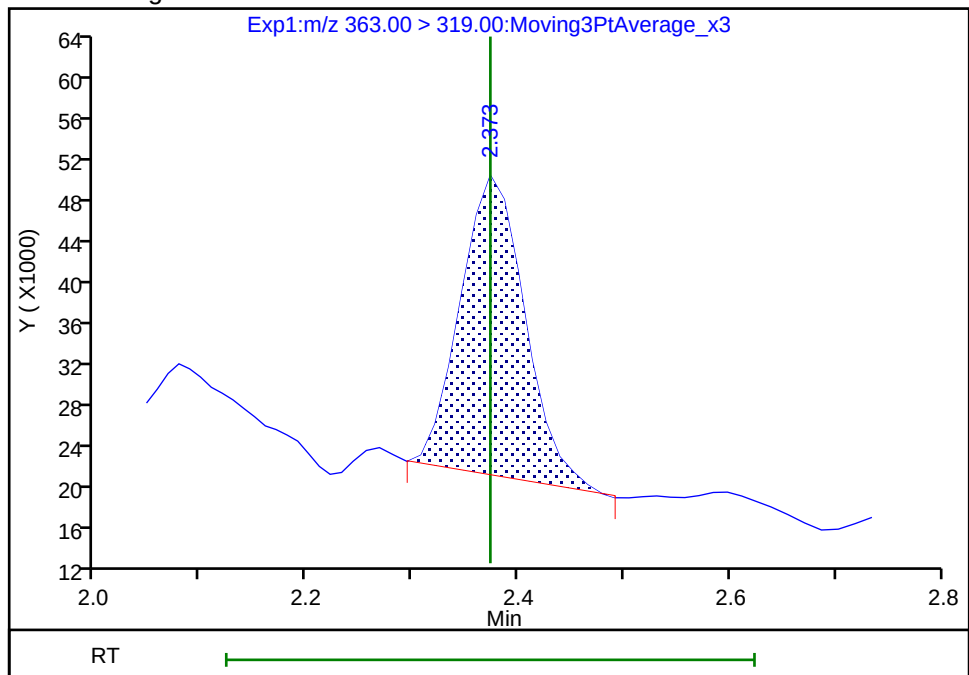
RT: 2.37
Area: 133601
Amount: 0.035147
Amount Units: ng/ml

Processing Integration Results



RT: 2.37
Area: 121241
Amount: 0.031896
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:09:09
Audit Action: Manually Integrated

Audit Reason: Baseline
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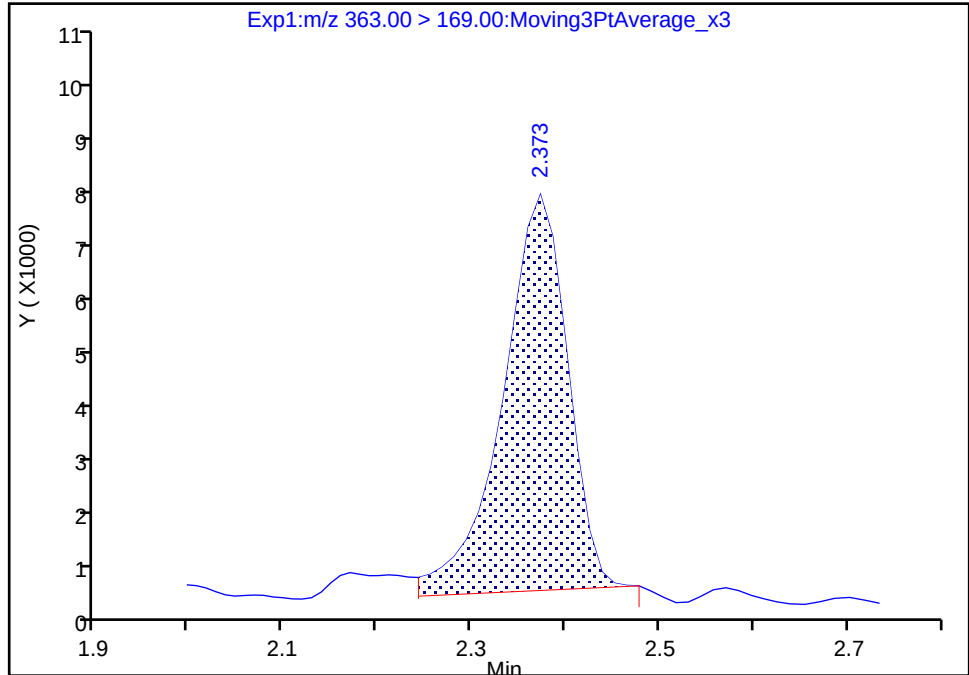
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Injection Date: 03-Oct-2018 00:02:10 Instrument ID: A9
Lims ID: 320-43466-A-3-A Lab Sample ID: 320-43466-3
Client ID: MW020
Operator ID: A9\Administrator ALS Bottle#: 31 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

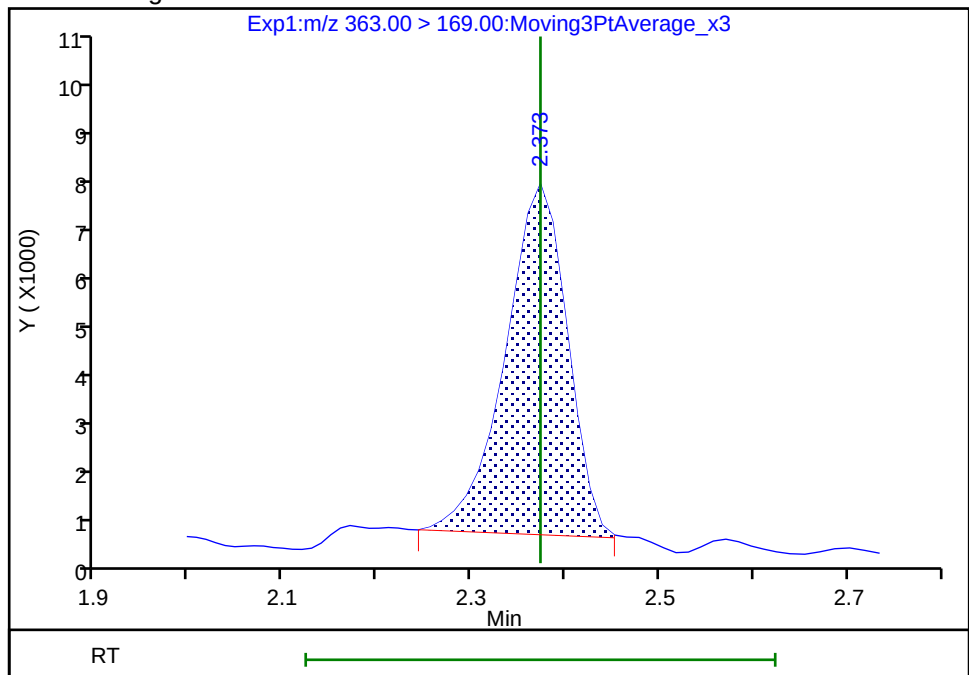
RT: 2.37
Area: 33770
Amount: 0.035147
Amount Units: ng/ml

Processing Integration Results



RT: 2.37
Area: 31548
Amount: 0.031896
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:09:14

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

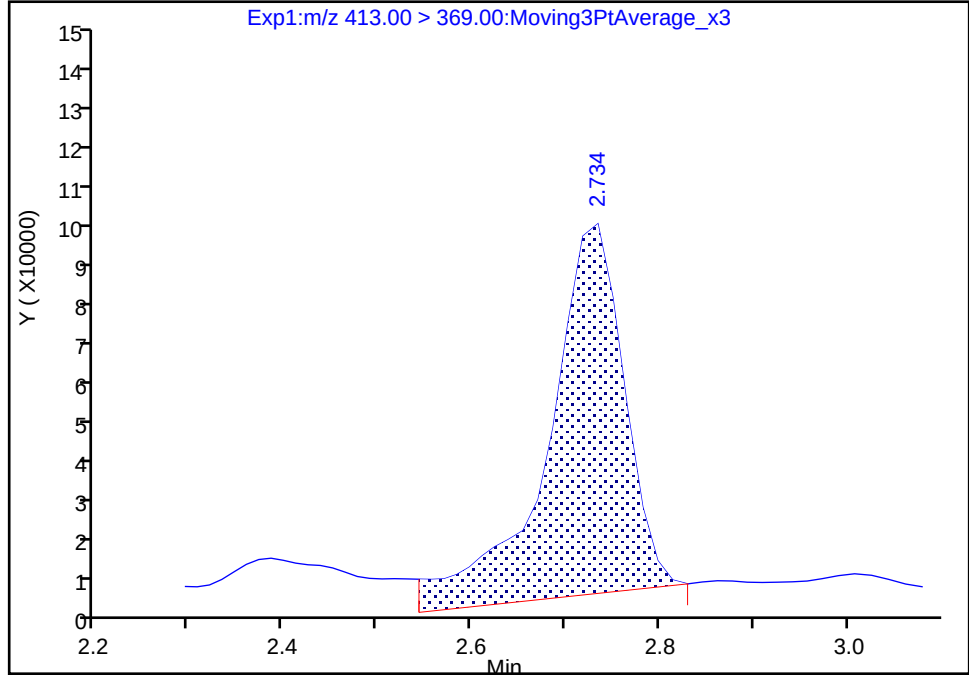
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Injection Date:	03-Oct-2018 00:02:10	Instrument ID:	A9
Lims ID:	320-43466-A-3-A	Lab Sample ID:	320-43466-3
Client ID:	MW020		
Operator ID:	A9\Administrator	ALS Bottle#:	31
Injection Vol:	20.0 ul	Dil. Factor:	1.0000
Method:	PFAS_A9	Limit Group:	LC PFC ICAL
Column:		Detector:	EXP1
		Worklist Smp#:	15

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

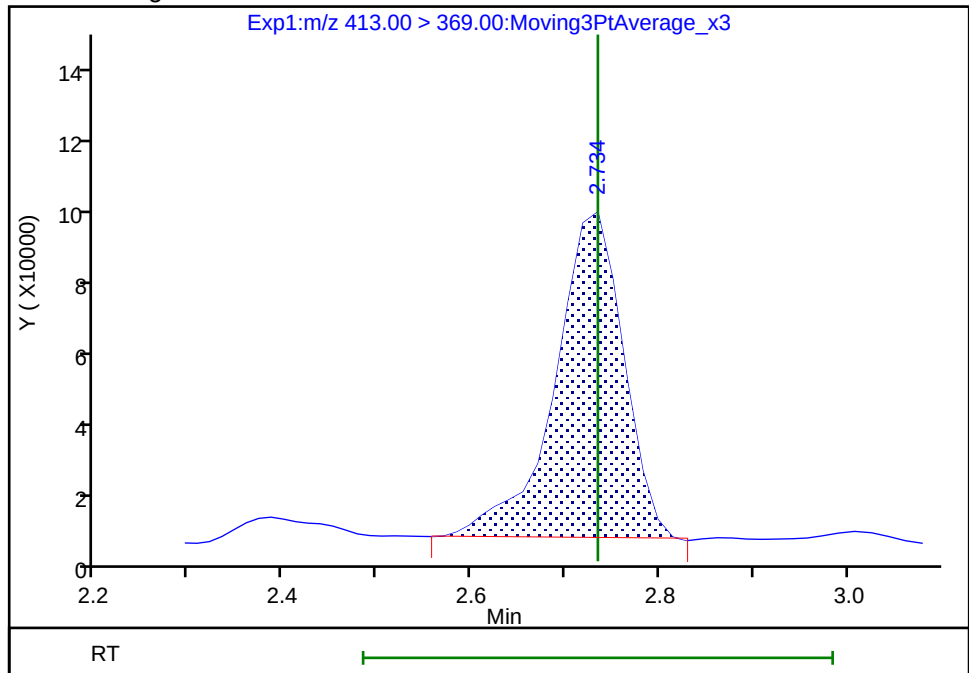
RT: 2.73
Area: 499562
Amount: 0.144603
Amount Units: ng/ml

Processing Integration Results



RT: 2.73
Area: 426059
Amount: 0.123327
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:09:26
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/15/2018

TestAmerica Sacramento

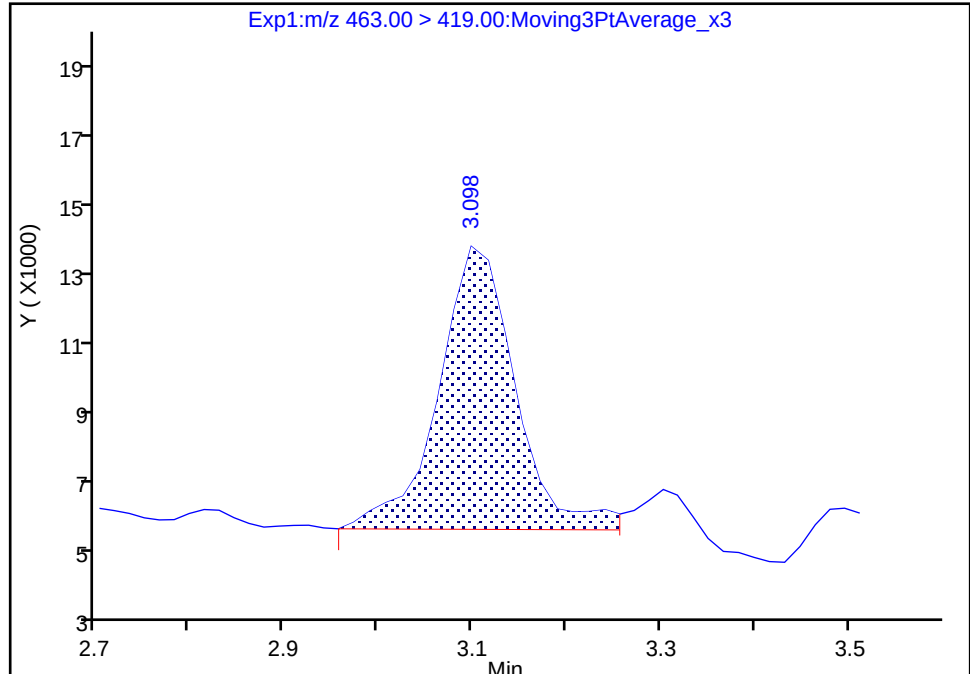
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d				
Injection Date:	03-Oct-2018 00:02:10	Instrument ID:	A9		
Lims ID:	320-43466-A-3-A	Lab Sample ID:	320-43466-3		
Client ID:	MW020				
Operator ID:	A9\Administrator	ALS Bottle#:	31	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

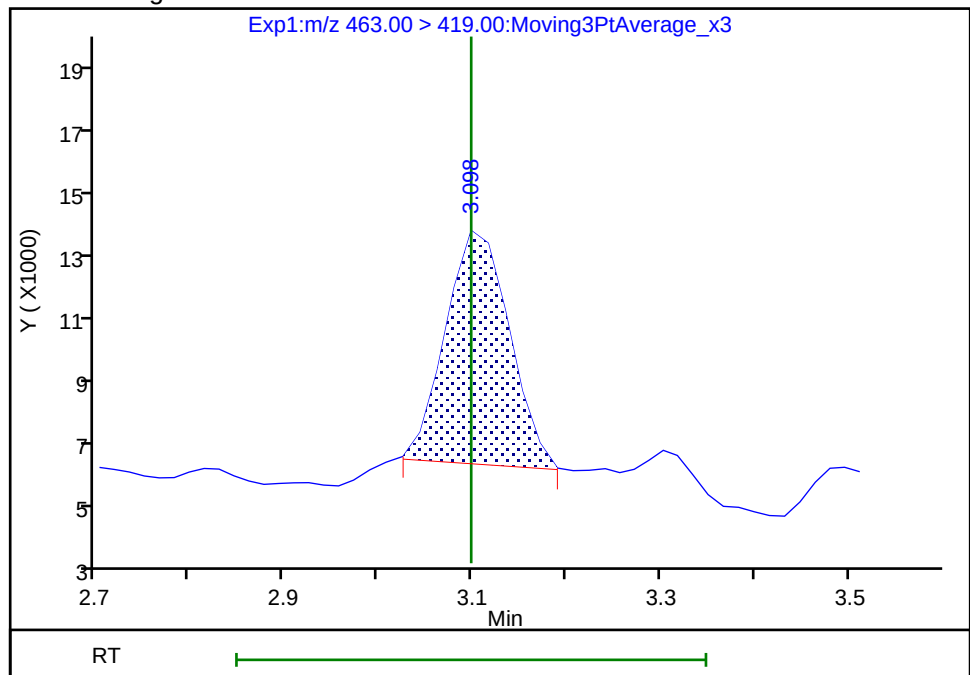
RT: 3.10
Area: 43764
Amount: 0.014292
Amount Units: ng/ml

Processing Integration Results



RT: 3.10
Area: 33231
Amount: 0.010852
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:09:56
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

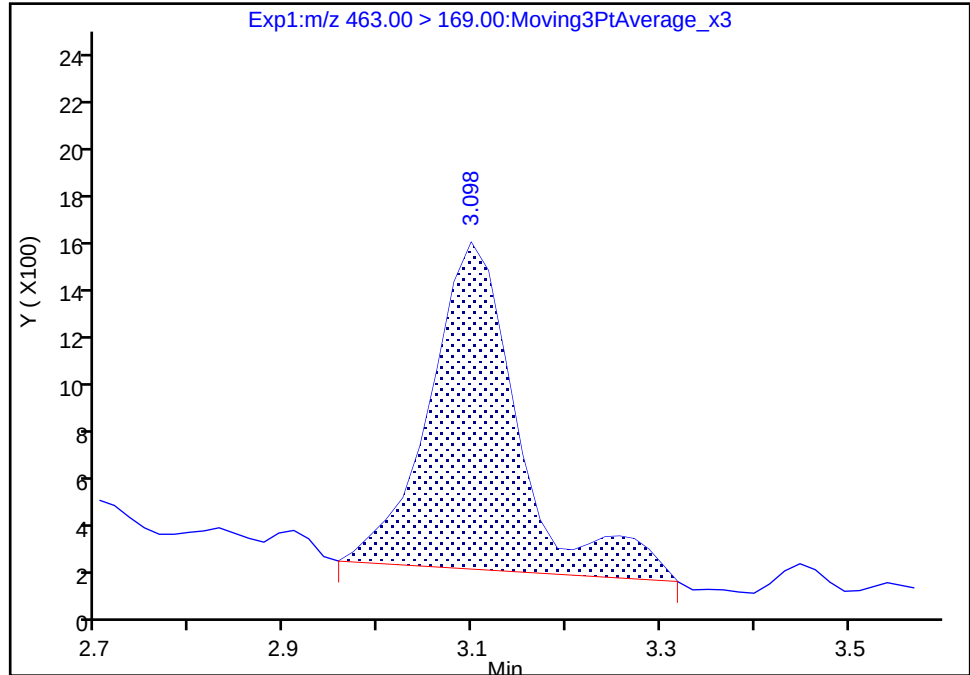
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d
Injection Date: 03-Oct-2018 00:02:10 Instrument ID: A9
Lims ID: 320-43466-A-3-A Lab Sample ID: 320-43466-3
Client ID: MW020
Operator ID: A9\Administrator ALS Bottle#: 31 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

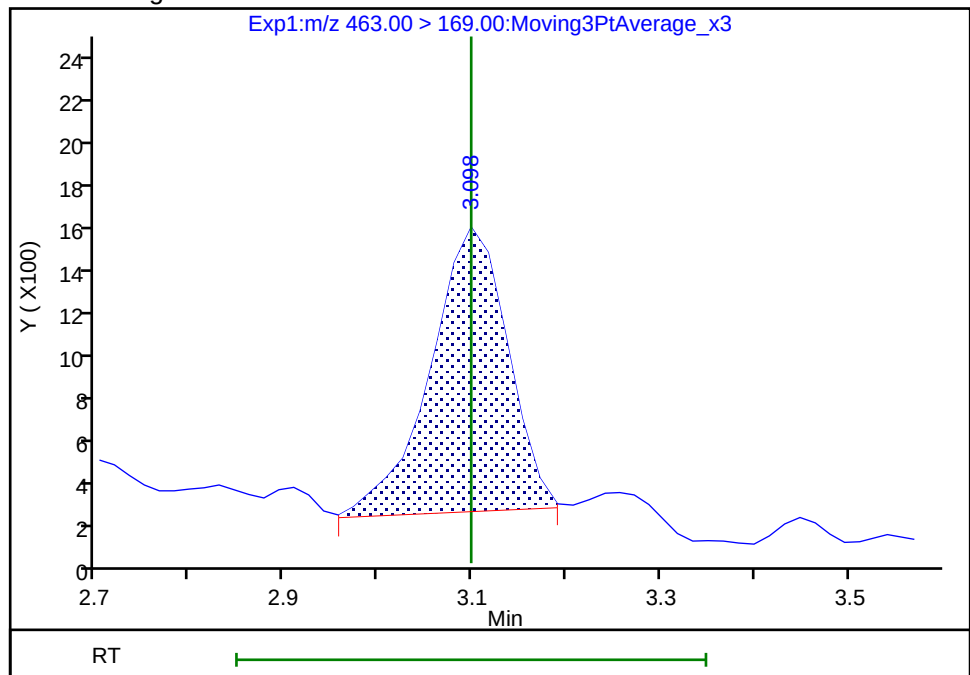
RT: 3.10
Area: 9010
Amount: 0.014292
Amount Units: ng/ml

Processing Integration Results



RT: 3.10
Area: 7519
Amount: 0.010852
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:10:01

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

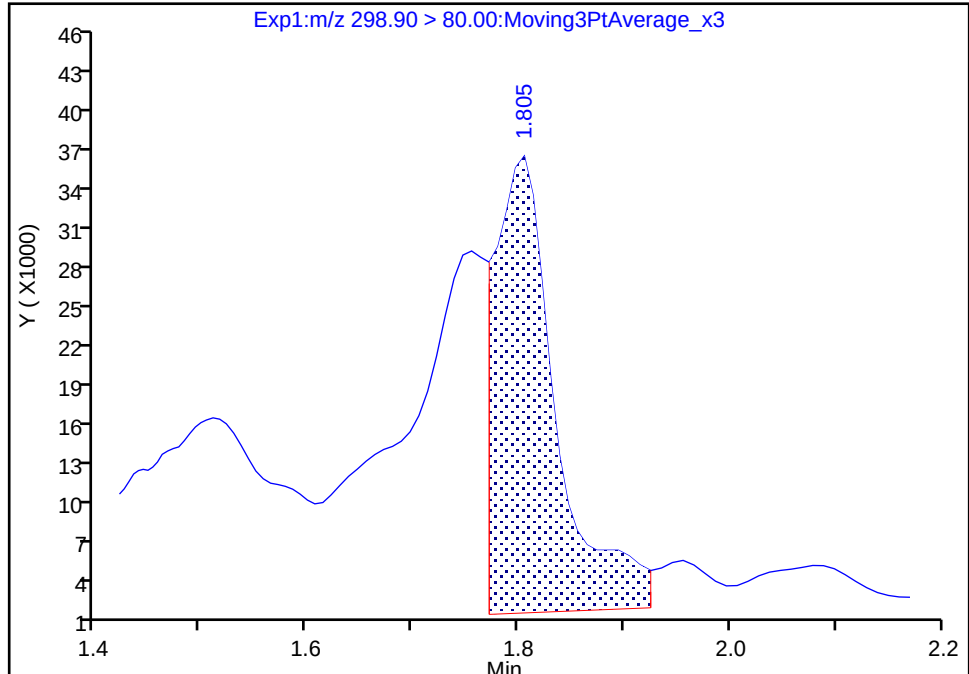
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d				
Injection Date:	03-Oct-2018 00:02:10	Instrument ID:	A9		
Lims ID:	320-43466-A-3-A	Lab Sample ID:	320-43466-3		
Client ID:	MW020				
Operator ID:	A9\Administrator	ALS Bottle#:	31	Worklist Smp#:	15
Injection Vol:	20.0 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

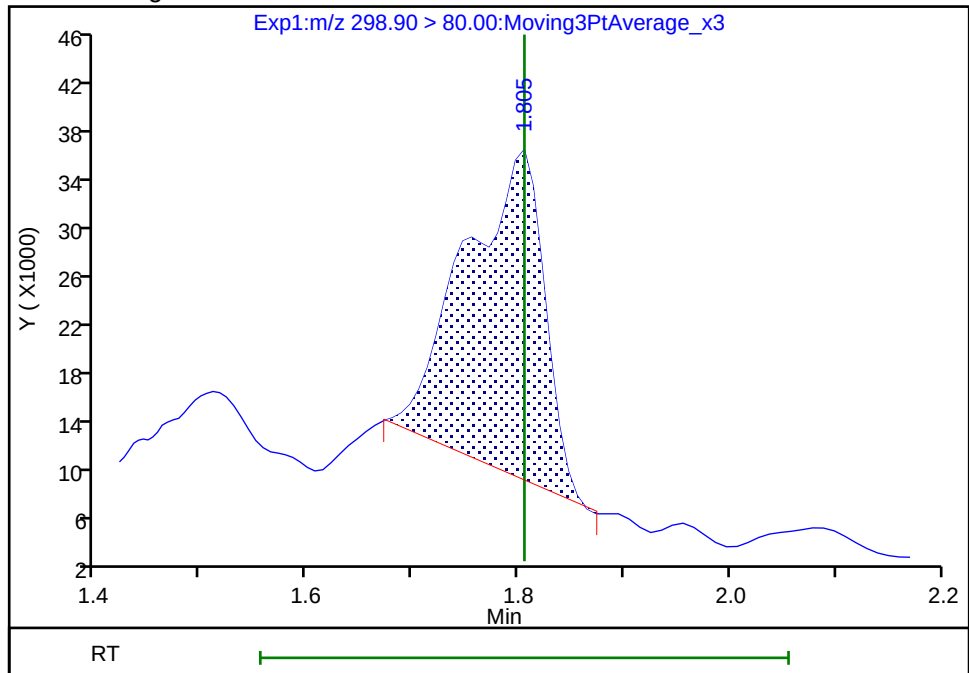
RT: 1.81
Area: 135802
Amount: 0.035376
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 137695
Amount: 0.035870
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:08:46

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

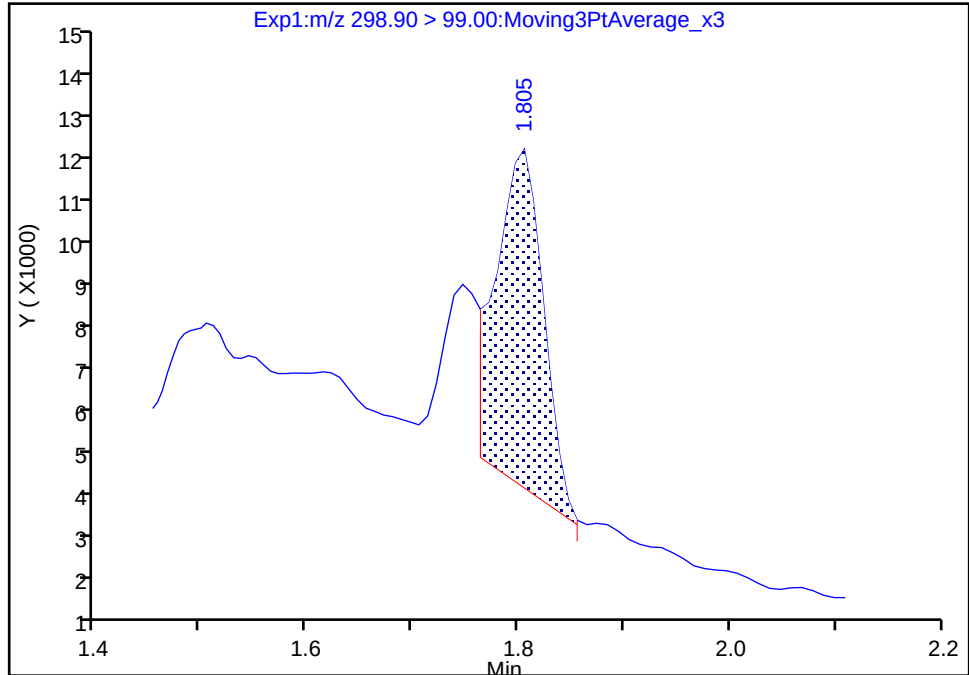
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d
Injection Date: 03-Oct-2018 00:02:10 Instrument ID: A9
Lims ID: 320-43466-A-3-A Lab Sample ID: 320-43466-3
Client ID: MW020
Operator ID: A9\Administrator ALS Bottle#: 31 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

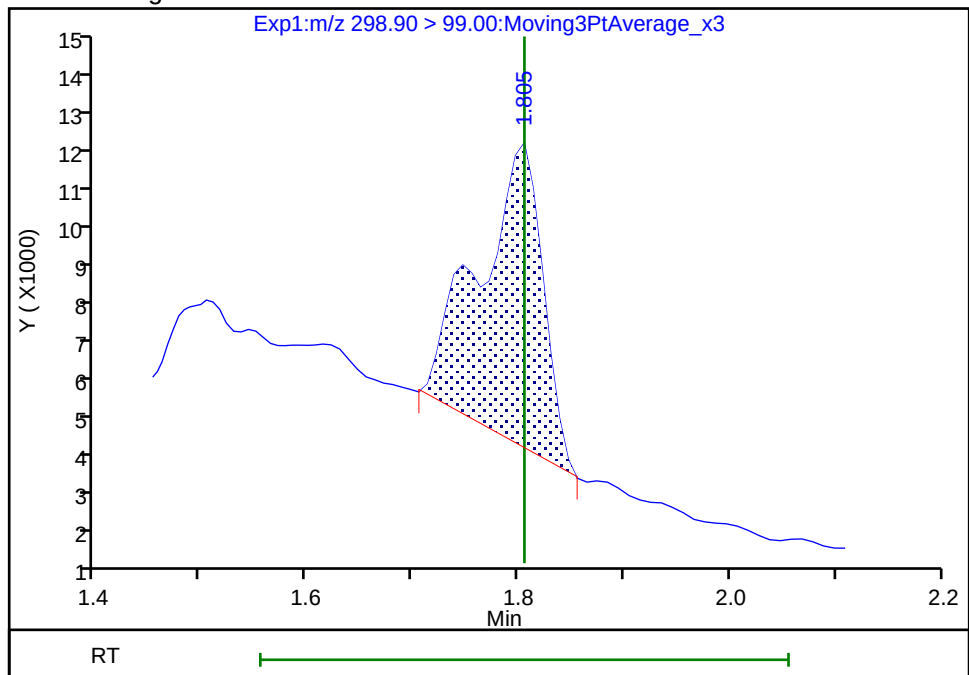
RT: 1.81
Area: 22954
Amount: 0.035376
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 30590
Amount: 0.035870
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:08:52

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

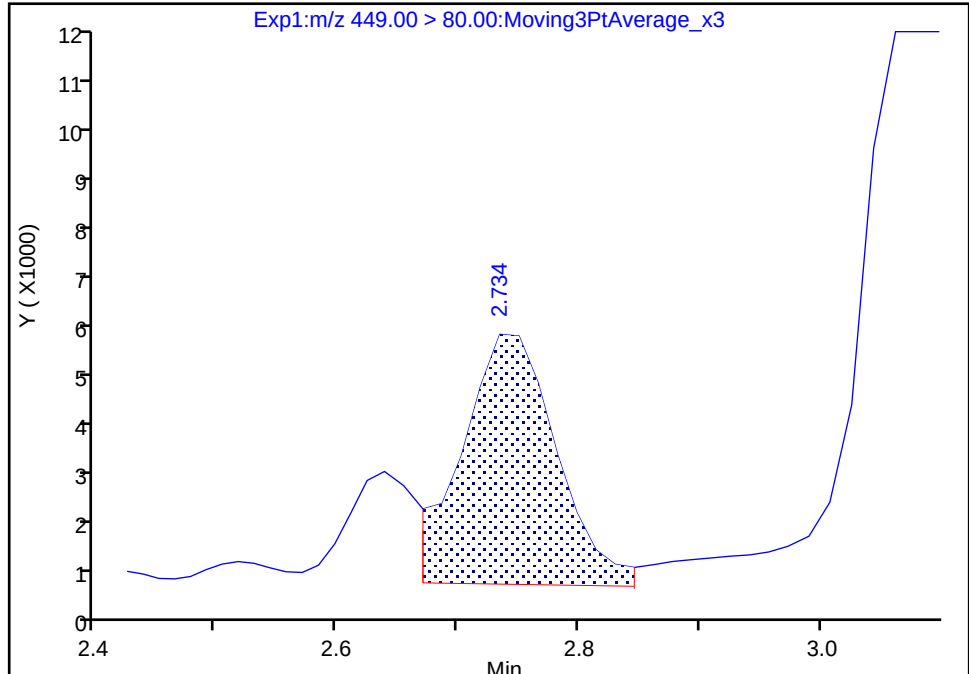
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d				
Injection Date:	03-Oct-2018 00:02:10	Instrument ID:	A9		
Lims ID:	320-43466-A-3-A	Lab Sample ID:	320-43466-3		
Client ID:	MW020				
Operator ID:	A9\Administrator	ALS Bottle#:	31	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

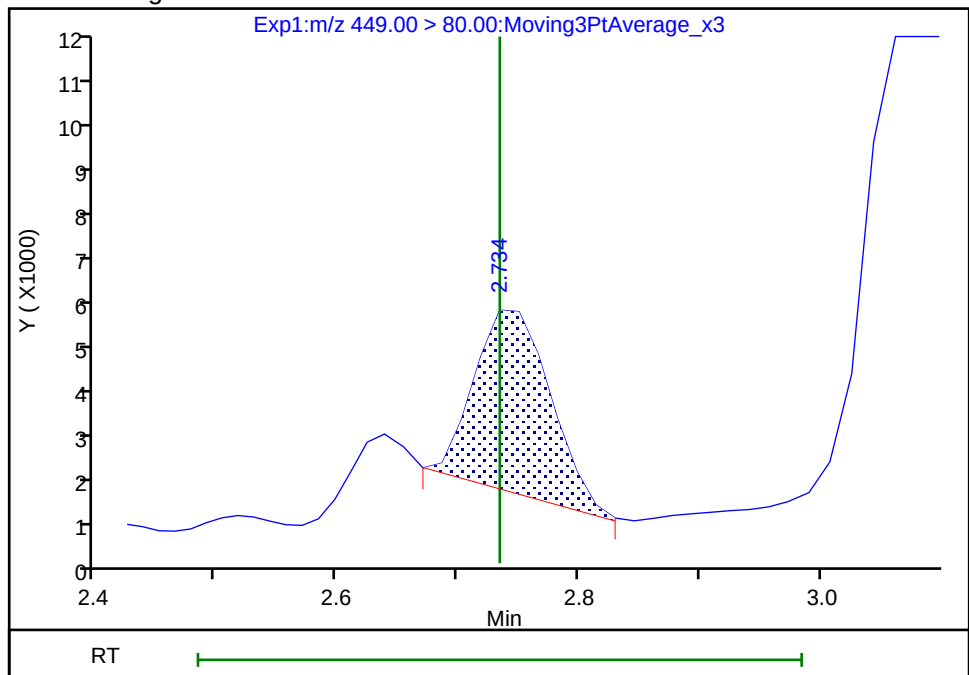
RT: 2.73
Area: 24907
Amount: 0.010264
Amount Units: ng/ml

Processing Integration Results



RT: 2.73
Area: 16374
Amount: 0.006748
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:09:36
Audit Action: Manually Integrated

Audit Reason: Baseline
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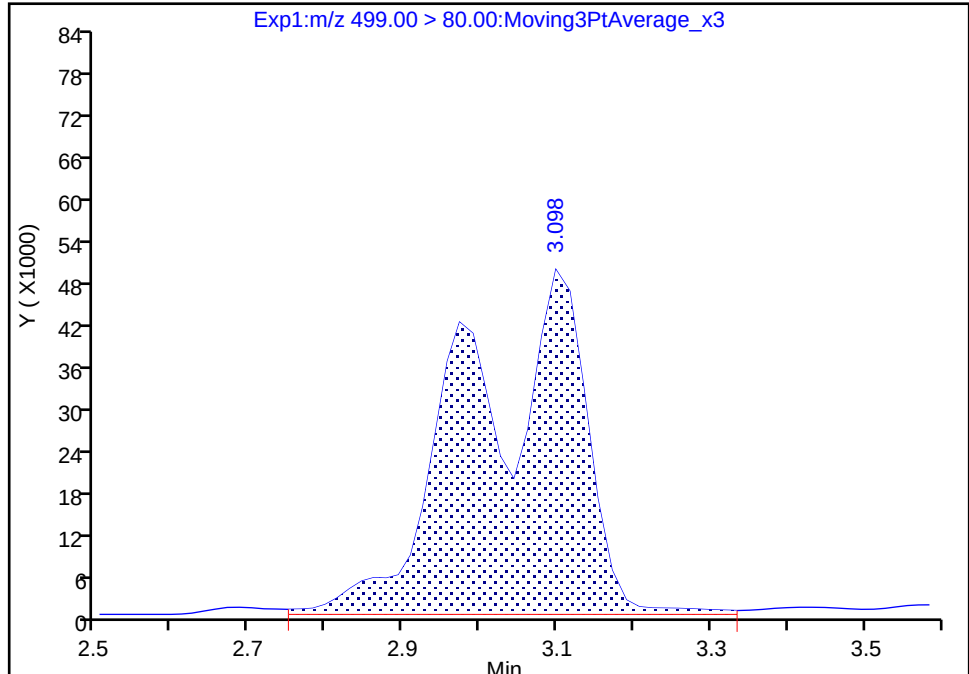
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d		
Injection Date:	03-Oct-2018 00:02:10	Instrument ID:	A9
Lims ID:	320-43466-A-3-A	Lab Sample ID:	320-43466-3
Client ID:	MW020		
Operator ID:	A9\Administrator	ALS Bottle#:	31
Injection Vol:	20.0 ul	Dil. Factor:	1.0000
Method:	PFAS_A9	Limit Group:	LC PFC ICAL
Column:		Detector:	EXP1
		Worklist Smp#:	15

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

Signal: 1

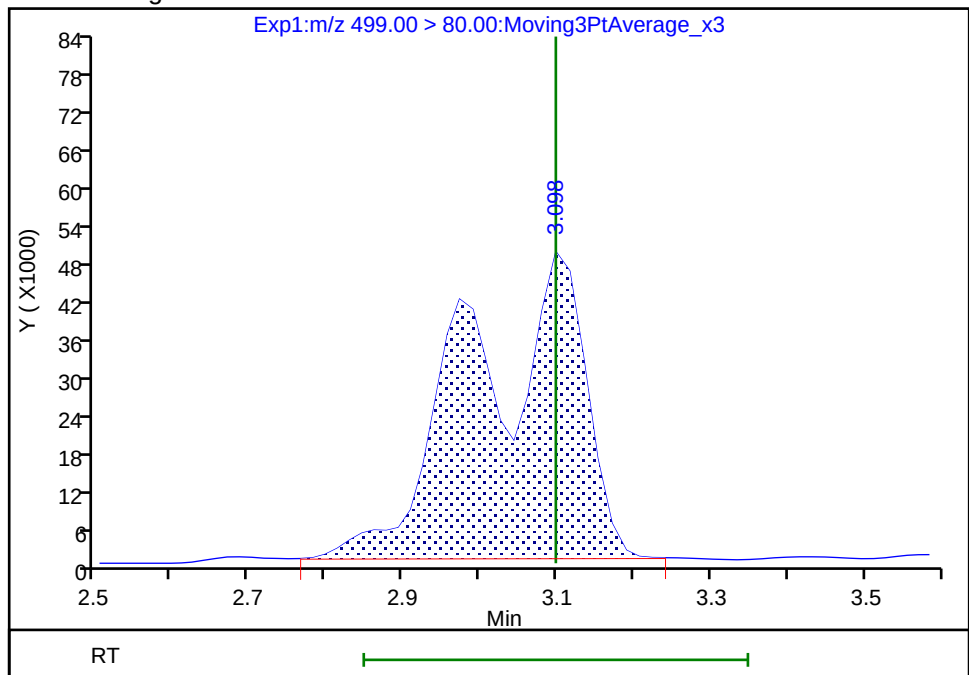
RT: 3.10
Area: 521760
Amount: 0.207770
Amount Units: ng/ml

Processing Integration Results



RT: 3.10
Area: 497072
Amount: 0.197939
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:09:43
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

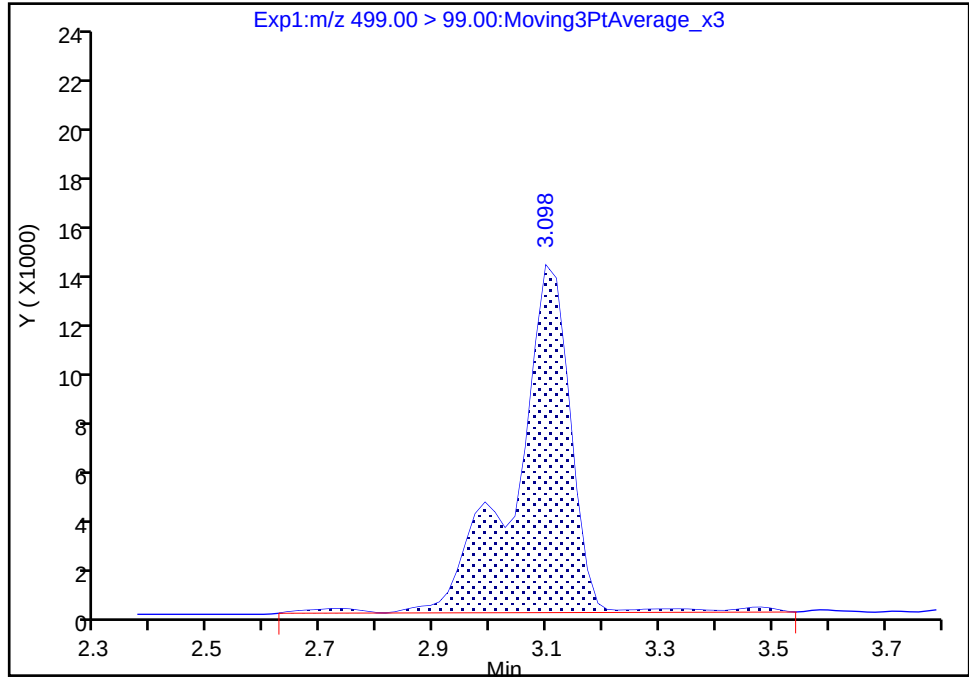
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d
Injection Date: 03-Oct-2018 00:02:10 Instrument ID: A9
Lims ID: 320-43466-A-3-A Lab Sample ID: 320-43466-3
Client ID: MW020
Operator ID: A9\Administrator ALS Bottle#: 31 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

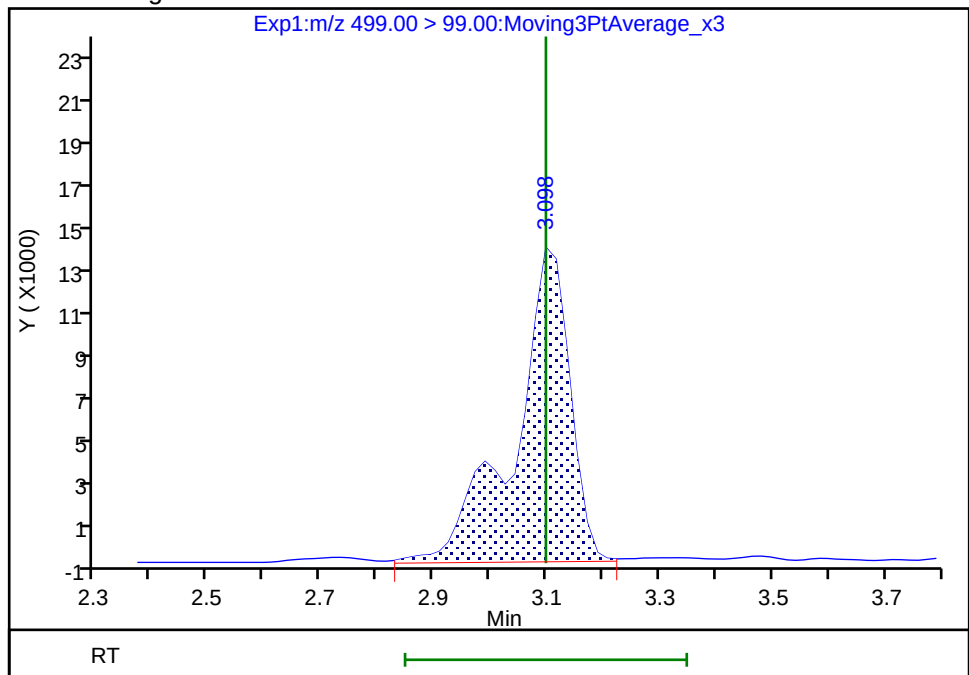
RT: 3.10
Area: 96743
Amount: 0.207770
Amount Units: ng/ml

Processing Integration Results



RT: 3.10
Area: 94869
Amount: 0.197939
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:09:47

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

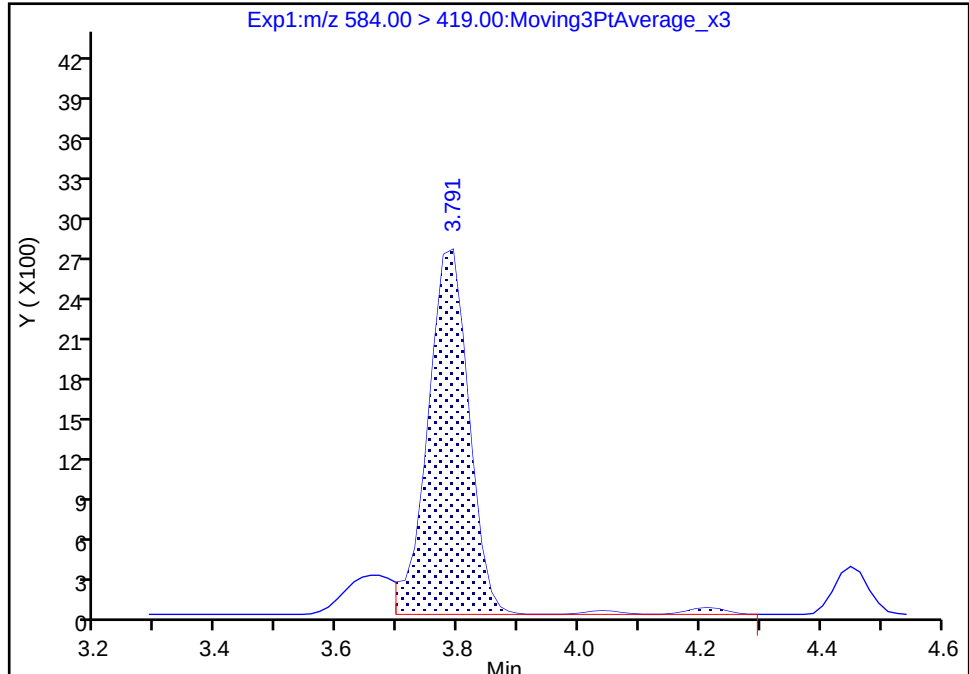
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_054.d
Injection Date: 03-Oct-2018 00:02:10 Instrument ID: A9
Lims ID: 320-43466-A-3-A Lab Sample ID: 320-43466-3
Client ID: MW020
Operator ID: A9\Administrator ALS Bottle#: 31 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 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

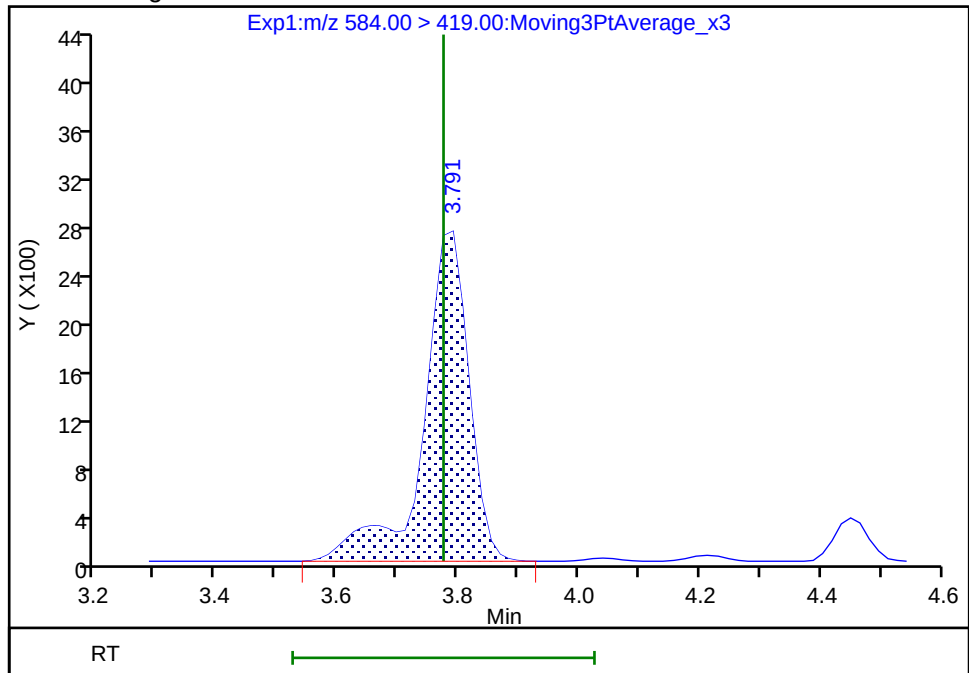
RT: 3.79
Area: 13041
Amount: 0.011306
Amount Units: ng/ml

Processing Integration Results



RT: 3.79
Area: 14309
Amount: 0.012405
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:10:19
Audit Action: Manually Integrated

Audit Reason: Isomers
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10/15/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>Feild Duplicate</u>	Lab Sample ID: <u>320-43466-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_014.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 00:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>263.3 (mL)</u>	Date Analyzed: <u>10/06/2018 19:20</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.83	J B	1.90	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.90	U	1.90	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.45	J	1.90	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.75	J	1.90	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	2.40		1.90	0.81
375-95-1	Perfluorononanoic acid (PFNA)	0.47	J	1.90	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.90	U	1.90	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.90	U	1.90	1.04
307-55-1	Perfluorododecanoic acid (PFDoA)	1.90	U	1.90	0.52
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.90	U	1.90	1.23
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.90	U	1.90	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.70	J	1.90	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.08	B	1.90	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.21	J	1.90	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15.1		1.90	0.51
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.90	U	1.90	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.90	U	1.90	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.0	U	19.0	2.94
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.0	U	19.0	1.80
27619-97-2	6:2 FTS	5.80	J B	19.0	1.90
39108-34-4	8:2 FTS	19.0	U	19.0	1.90

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>Feild Duplicate</u>	Lab Sample ID: <u>320-43466-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_014.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 00:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>263.3 (mL)</u>	Date Analyzed: <u>10/06/2018 19:20</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	70		25-150
STL01893	13C5 PFPeA	82		25-150
STL00993	13C2 PFHxA	88		25-150
STL01892	13C4 PFHpA	91		25-150
STL00990	13C4 PFOA	94		25-150
STL00995	13C5 PFNA	90		25-150
STL00996	13C2 PFDA	88		25-150
STL00997	13C2 PFUnA	93		25-150
STL00998	13C2 PFDoA	93		25-150
STL02116	13C2 PFTeDA	86		25-150
STL02337	13C3 PFBS	83		25-150
STL00994	18O2 PFHxS	88		25-150
STL00991	13C4 PFOS	87		25-150
STL01056	13C8 FOSA	84		25-150
STL02118	d3-NMeFOSAA	116		25-150
STL02117	d5-NEtFOSAA	107		25-150
STL02279	M2-6:2 FTS	138		25-150
STL02280	M2-8:2 FTS	122		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_014.d
 Lims ID: 320-43466-A-4-A
 Client ID: Feild Duplicate
 Sample Type: Client
 Inject. Date: 06-Oct-2018 19:20:00 ALS Bottle#: 9 Worklist Smp#: 12
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 320-43466-a-4-a
 Misc. Info.: Plate: 1 Rack: 6
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:26:59 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1
 Process Host: XAWRK010

First Level Reviewer: ruangyotsakuld

Date: 11-Oct-2018 10:26:58

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	1.421	1.423	-0.002	0.537	2818237	1.74		69.7	6070	

2 Perfluorobutyric acid

212.90 > 169.00	1.421	1.431	-0.010	1.000	23346	0.0218		2.6		M

D 3 13C5-PFPeA

267.90 > 223.00	1.687	1.684	0.003	0.638	2233442	2.06		82.3	2310	

D 47 13C3-PFBS

301.90 > 83.00	1.720	1.716	0.004	0.650	44560	1.92		82.8	115	

5 Perfluorobutanesulfonic acid

298.90 > 80.00	1.720	1.734	-0.014	1.000	27339	0.0183		0.9		M

298.90 > 99.00	1.728	1.734	-0.006	1.005	8321		3.29(1.25-3.74)	0.8		M

D 7 13C2 PFHxA

315.00 > 270.00	1.966	1.960	0.006	0.743	2630853	2.21		88.2	8072	

6 Perfluorohexanoic acid

313.00 > 269.00	1.966	1.975	-0.009	1.000	39642	0.0382		1.9		M

313.00 > 119.00	1.955	1.975	-0.020	0.995	2642		15.00(5.03-15.10)	4.5		M

D 9 13C4-PFHpA

367.00 > 322.00	2.289	2.281	0.008	0.866	2450319	2.29		91.5	7562	

10 Perfluoroheptanoic acid

363.00 > 319.00	2.289	2.299	-0.010	1.000	21800	0.0198		2.3		

363.00 > 169.00	2.289	2.299	-0.010	1.000	8953		2.43(1.13-3.40)	6.0		

D 11 18O2 PFHxS

403.00 > 84.00	2.312	2.303	0.009	0.874	2773662	2.07		87.6	7233	

8 Perfluorohexanesulfonic acid

399.00 > 80.00	2.312	2.321	-0.009	1.000	274968	0.2128		117		M

399.00 > 99.00	2.312	2.321	-0.009	1.000	83044		3.31(1.50-4.49)	73.4		M

D 12 M2-6:2FTS

429.00 > 81.00	2.613	2.609	0.004	0.988	591546	3.28		138	985	

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	2.613	2.627	-0.014	1.000	64725	0.1527		152	
D 14 13C4 PFOA	417.00 > 372.00	2.644	2.640	0.004	1.000	2433241	2.34	93.6	8826	
* 62 13C2-PFOA	415.00 > 370.00	2.644	2.651	-0.007		2674622	2.50		9856	
15 Perfluorooctanoic acid	413.00 > 369.00	2.644	2.651	-0.007	1.000	72583	0.0633		7.2	M
413.00 > 169.00	2.644	2.651	-0.007	1.000	42518		1.71(0.84-2.52)		44.9	M
16 Perfluoroheptanesulfonic acid	449.00 > 80.00	2.652	2.658	-0.006	0.879	5292	0.005581		9.8	
449.00 > 99.00	2.644	2.658	-0.014	0.877	1789		2.96(1.94-5.82)		4.1	
D 19 13C5 PFNA	468.00 > 423.00	3.016	3.006	0.010	1.141	1963081	2.24	89.8	7172	
D 18 13C4 PFOS	503.00 > 80.00	3.016	3.014	0.002	1.141	1810764	2.09	87.4	5047	
17 Perfluorooctane sulfonic acid	499.00 > 80.00	3.016	3.023	-0.007	1.000	344244	0.3978		192	M
499.00 > 99.00	3.016	3.023	-0.007	1.000	79213		4.35(2.31-6.93)		210	M
20 Perfluorononanoic acid	463.00 > 419.00	3.009	3.023	-0.014	0.997	10426	0.0123		3.2	R
463.00 > 169.00	3.024	3.023	0.001	1.003	1696		6.15(1.90-5.69)		11.4	R
D 26 M2-8:2FTS	529.00 > 81.00	3.365	3.362	0.003	1.273	556129	2.91	122	2072	
D 21 13C8 FOSA	506.00 > 78.00	3.358	3.362	-0.004	1.270	2530757	2.10	84.0	6257	
D 23 13C2 PFDA	515.00 > 470.00	3.373	3.369	0.004	1.275	1704350	2.20	88.1	5101	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.532	3.529	0.003	1.336	910802	2.90	116	2864	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.703	3.699	0.004	1.400	906797	2.68	107	1443	
D 30 13C2 PFUnA	565.00 > 520.00	3.711	3.707	0.004	1.404	1376376	2.33	93.2	5336	
D 36 13C2 PFDaA	615.00 > 570.00	4.008	4.003	0.005	1.516	1442601	2.32	92.7	3340	
D 43 13C2-PFTeDA	715.00 > 670.00	4.511	4.504	0.007	1.706	1614333	2.16	86.3	5034	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_014.d

Injection Date: 06-Oct-2018 19:20:00

Instrument ID: A8_N

Lims ID: 320-43466-A-4-A

Lab Sample ID: 320-43466-4

Client ID: Feild Duplicate

Operator ID: SACINSTLCMS01

ALS Bottle#: 9

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

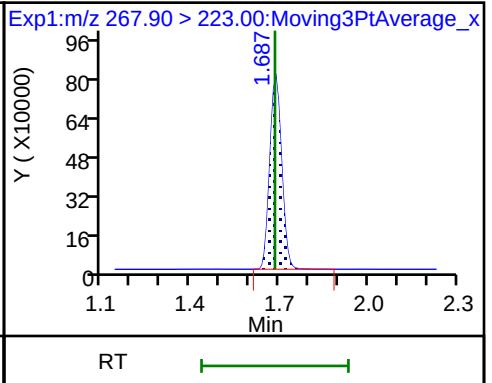
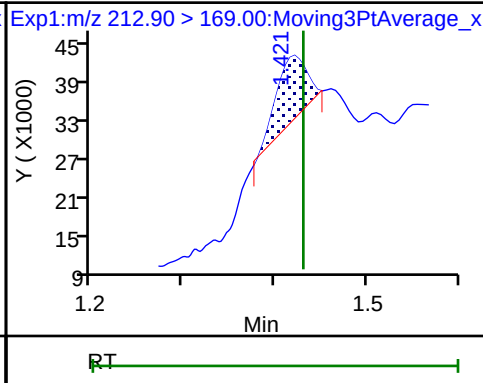
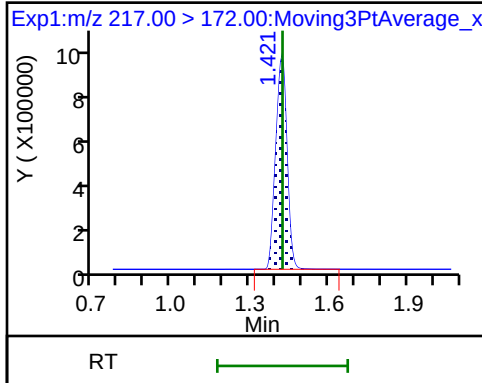
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

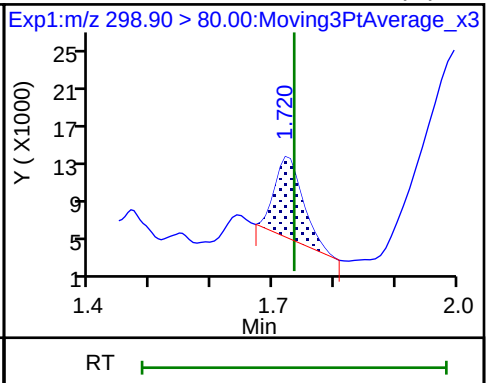
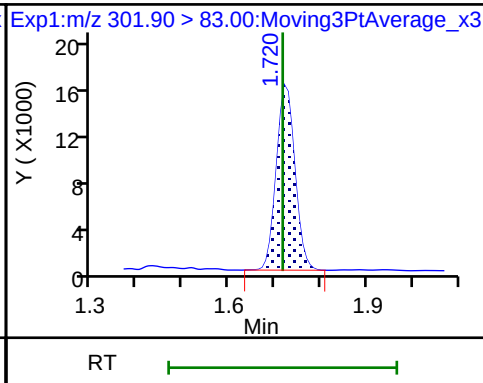
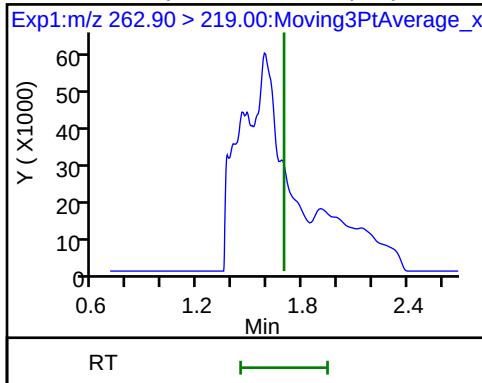
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (ND)

D 47 13C3-PFBS

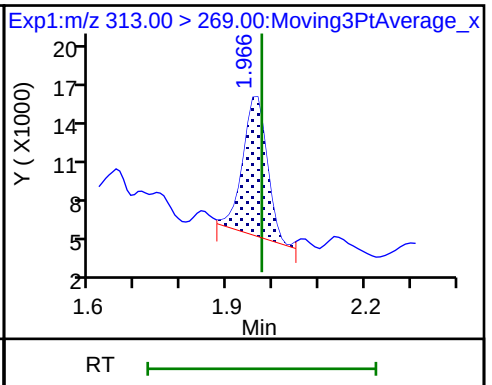
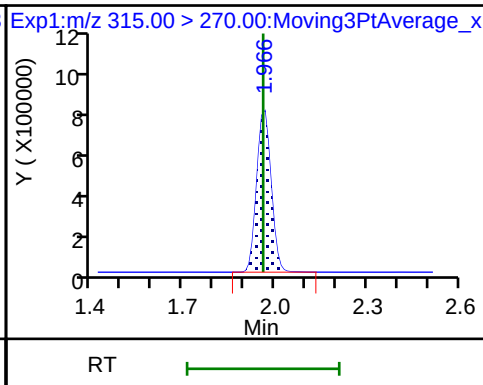
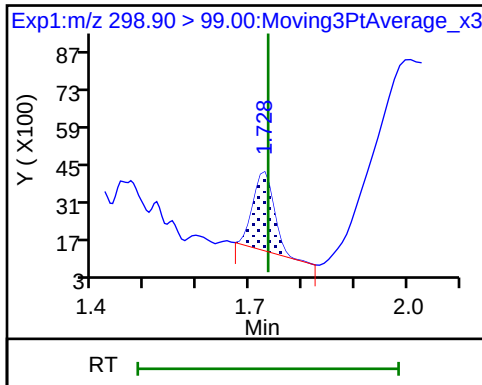
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid

D 7 13C2 PFHxA

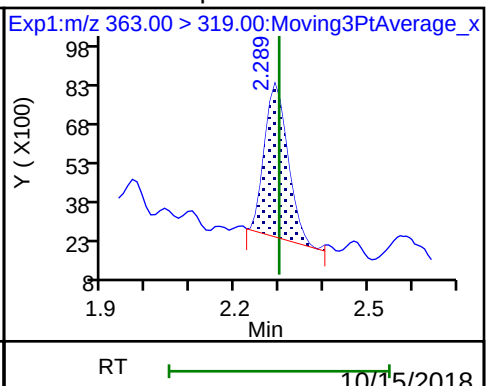
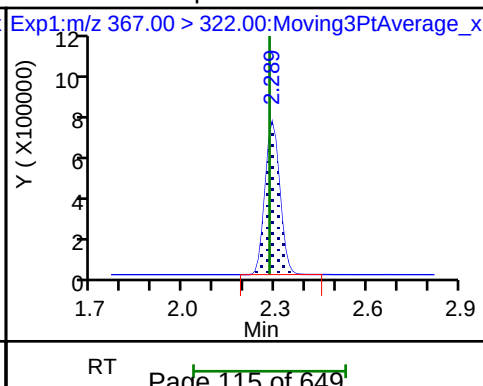
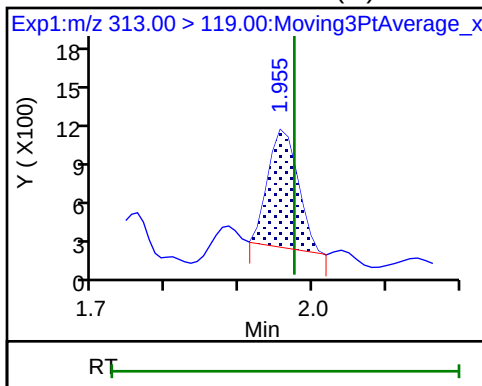
6 Perfluorohexanoic acid

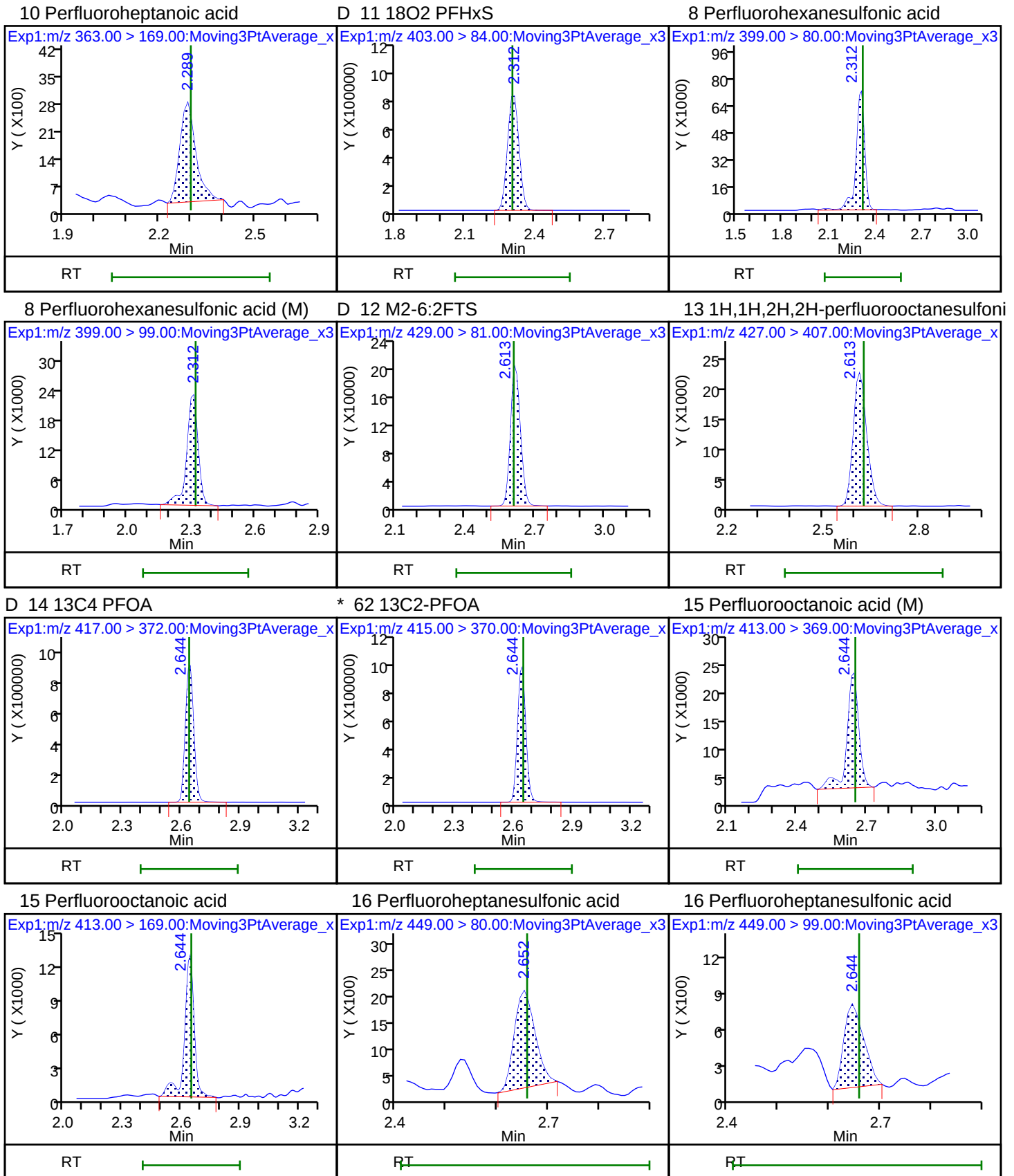


6 Perfluorohexanoic acid (M)

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

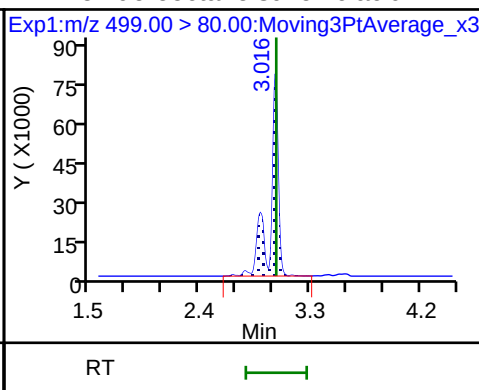
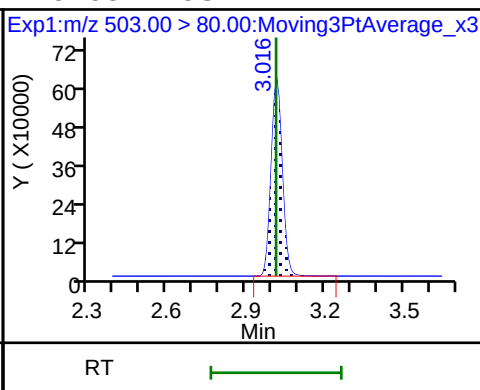
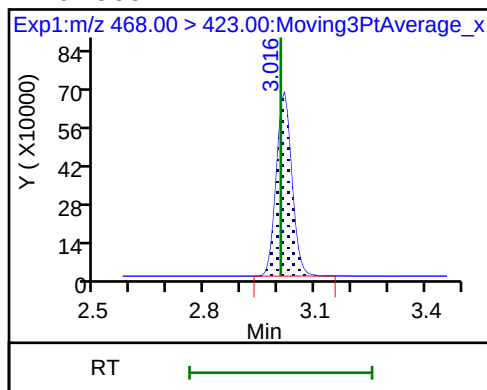




D 19 13C5 PFNA

D 18 13C4 PFOS

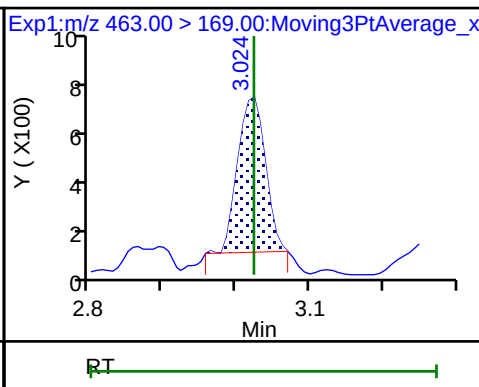
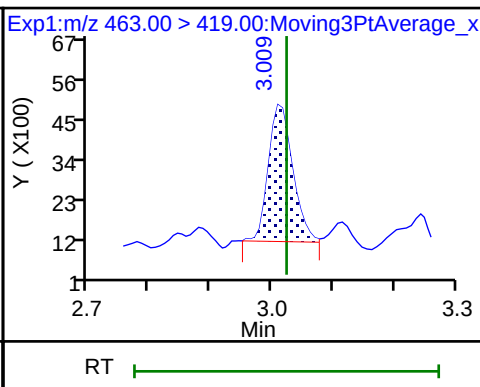
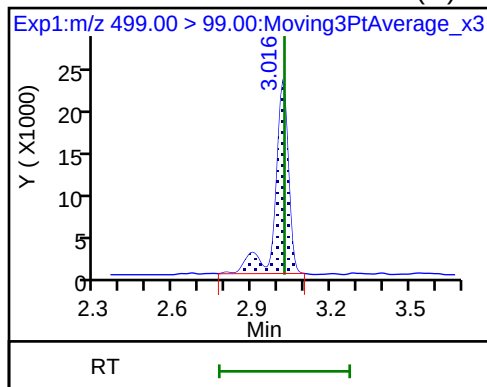
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid (M)

20 Perfluorononanoic acid

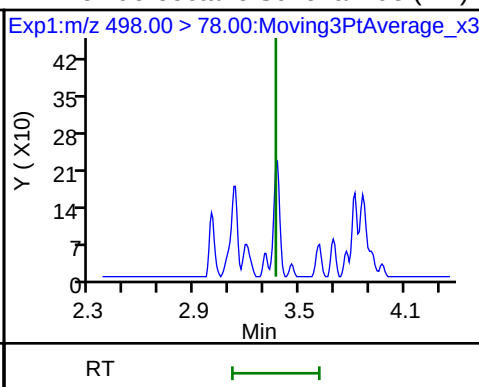
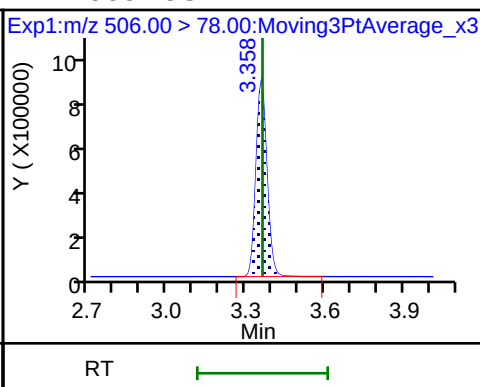
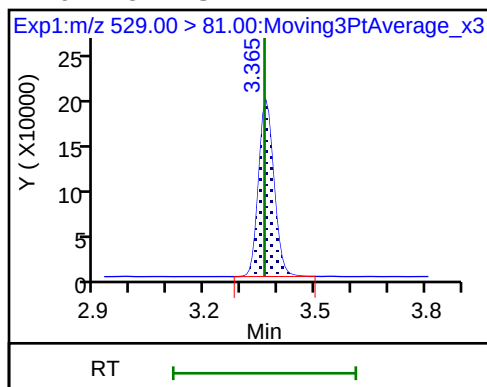
20 Perfluorononanoic acid



D 26 M2-8:2FTS

D 21 13C8 FOSA

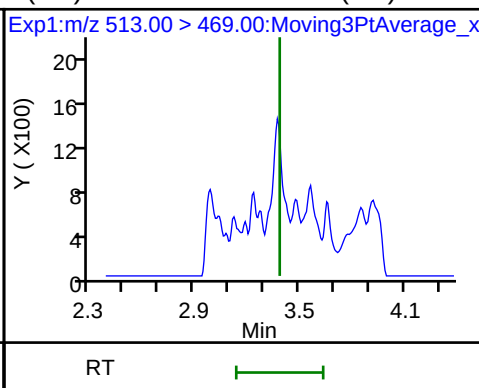
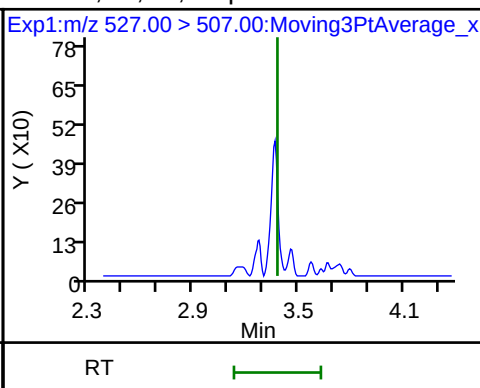
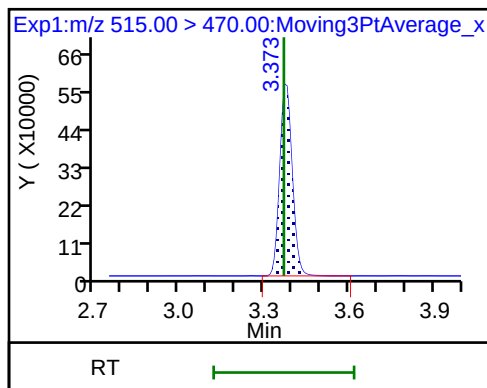
22 Perfluorooctane Sulfonamide (ND)

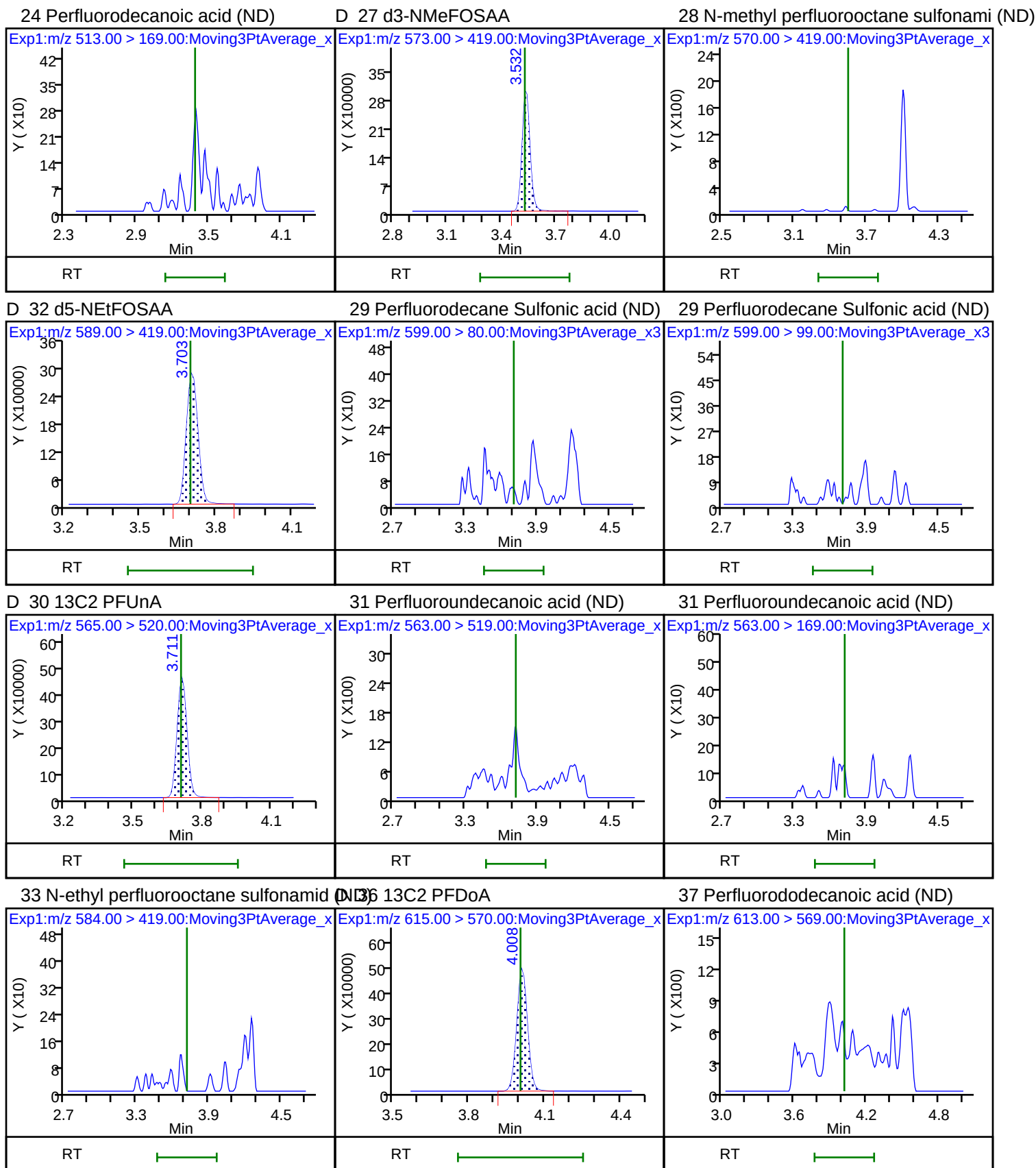


D 23 13C2 PFDA

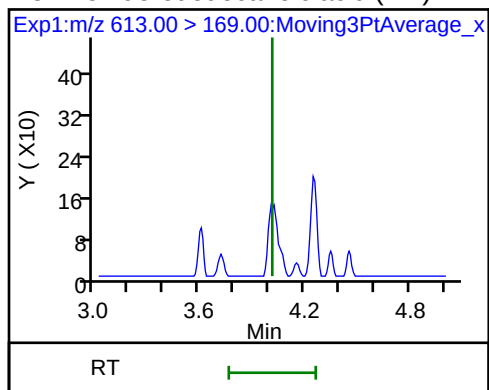
25 1H,1H,2H,2H-perfluorodecanesulfonic acid (ND)

24 Perfluorodecanoic acid (ND)

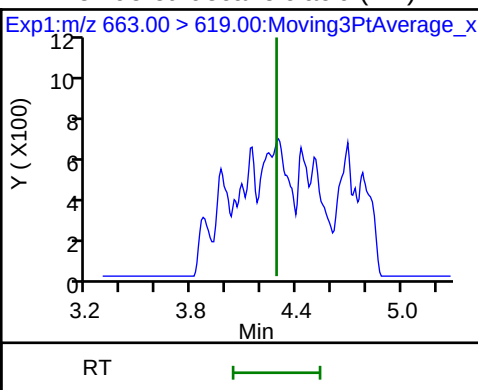




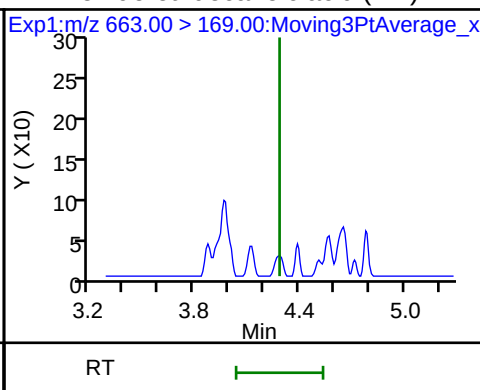
37 Perfluorododecanoic acid (ND)



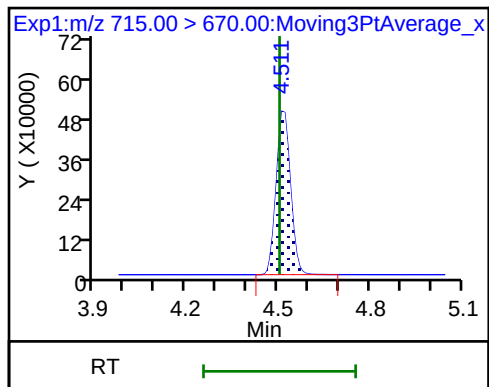
41 Perfluorotridecanoic acid (ND)



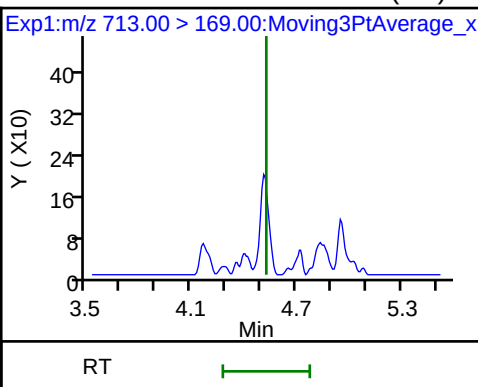
41 Perfluorotridecanoic acid (ND)



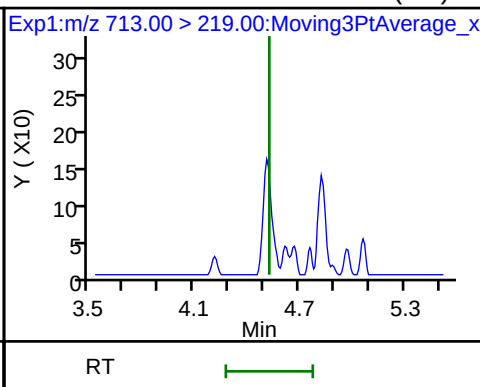
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



TestAmerica Sacramento

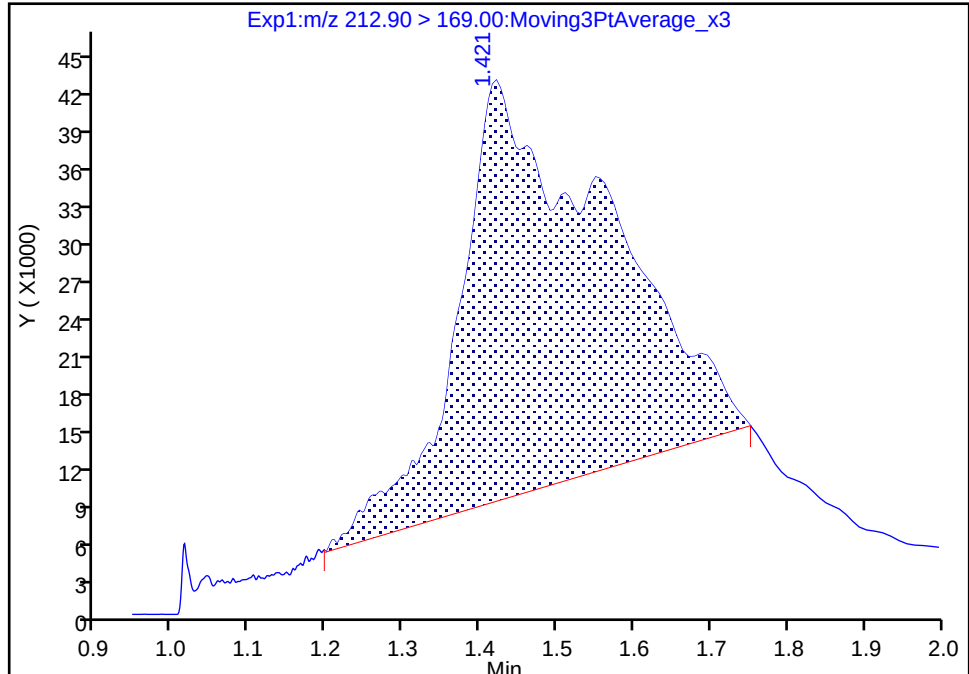
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_014.d				
Injection Date:	06-Oct-2018 19:20:00	Instrument ID:	A8_N		
Lims ID:	320-43466-A-4-A	Lab Sample ID:	320-43466-4		
Client ID:	Feild Duplicate				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

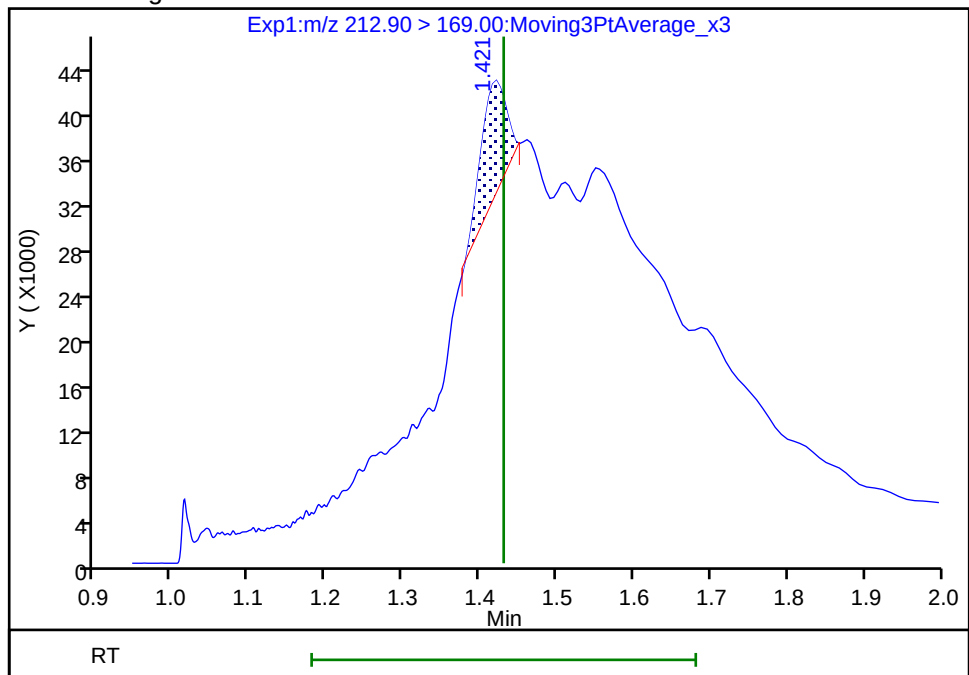
RT: 1.42
Area: 452861
Amount: 0.423023
Amount Units: ng/ml

Processing Integration Results



RT: 1.42
Area: 23346
Amount: 0.021808
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:26:00

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

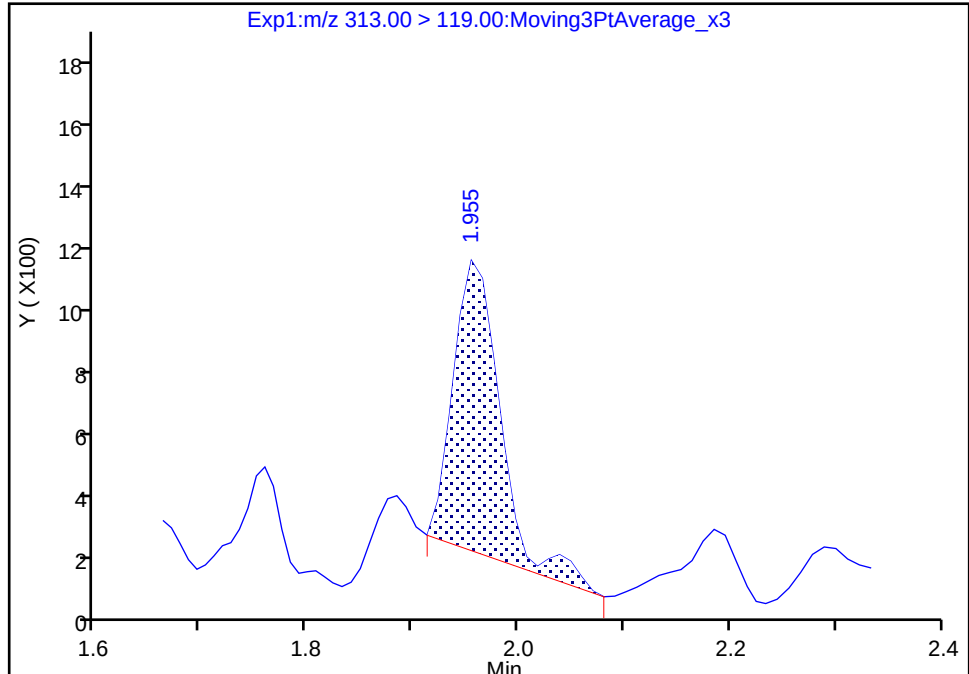
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_014.d				
Injection Date:	06-Oct-2018 19:20:00	Instrument ID:	A8_N		
Lims ID:	320-43466-A-4-A	Lab Sample ID:	320-43466-4		
Client ID:	Feild Duplicate				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

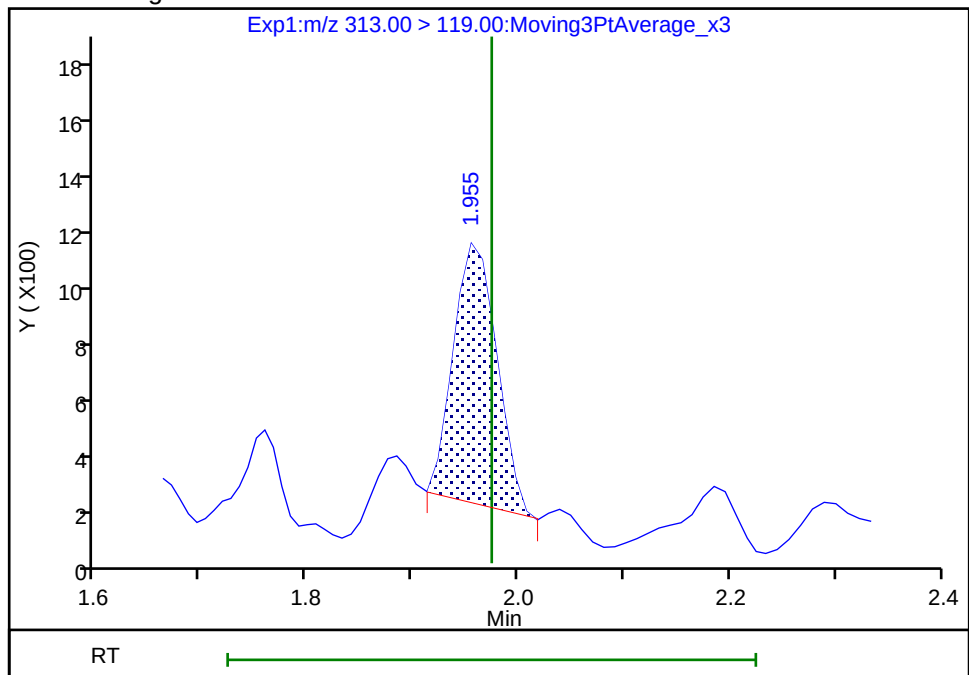
RT: 1.96
Area: 2905
Amount: 0.038242
Amount Units: ng/ml

Processing Integration Results



RT: 1.96
Area: 2642
Amount: 0.038242
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:26:13

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

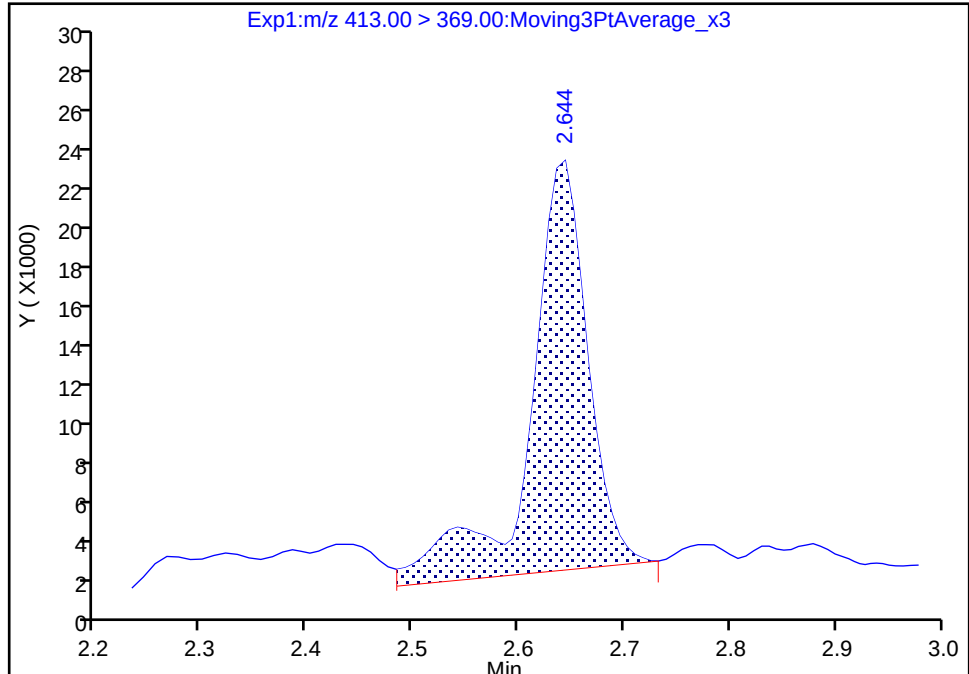
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_014.d				
Injection Date:	06-Oct-2018 19:20:00	Instrument ID:	A8_N		
Lims ID:	320-43466-A-4-A	Lab Sample ID:	320-43466-4		
Client ID:	Feild Duplicate				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

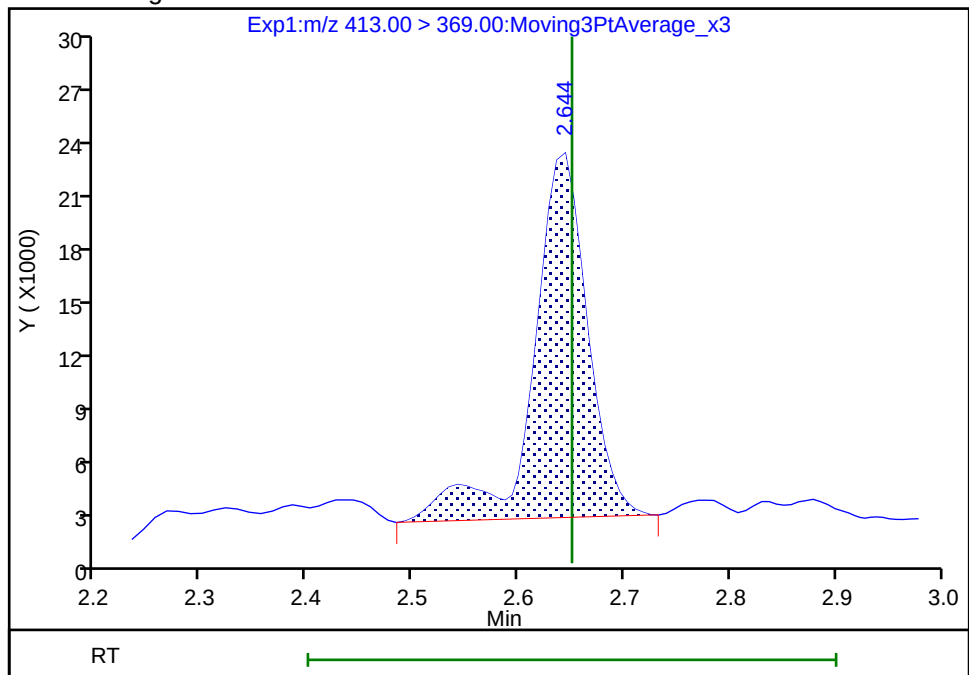
RT: 2.64
Area: 79096
Amount: 0.068988
Amount Units: ng/ml

Processing Integration Results



RT: 2.64
Area: 72583
Amount: 0.063307
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:26:36

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

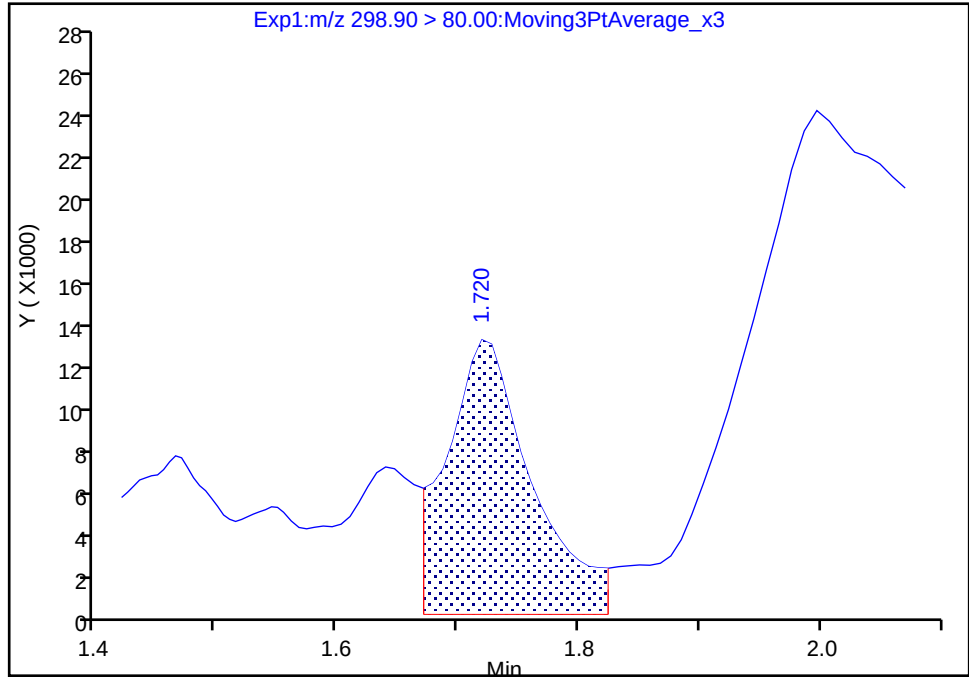
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_014.d				
Injection Date:	06-Oct-2018 19:20:00	Instrument ID:	A8_N		
Lims ID:	320-43466-A-4-A	Lab Sample ID:	320-43466-4		
Client ID:	Feild Duplicate				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

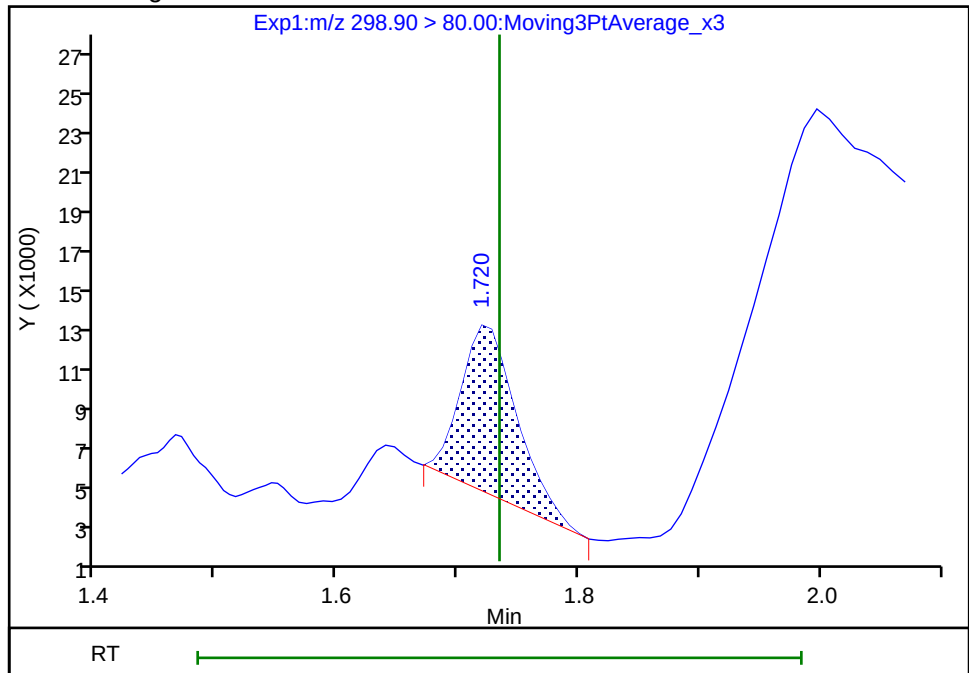
RT: 1.72
Area: 63946
Amount: 0.042919
Amount Units: ng/ml

Processing Integration Results



RT: 1.72
Area: 27339
Amount: 0.018349
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:25:52

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

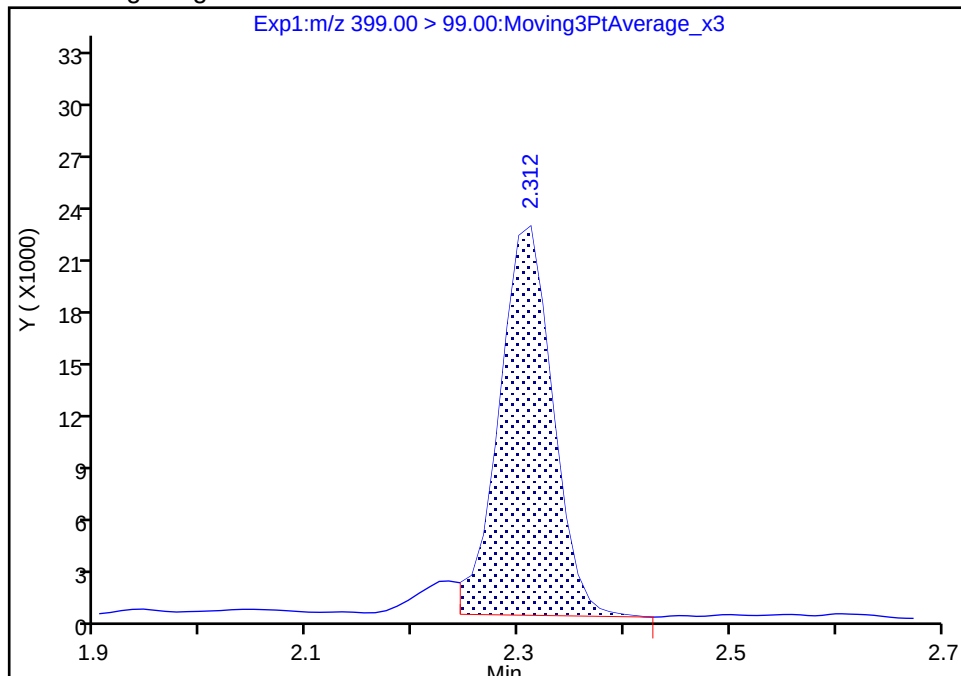
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_014.d				
Injection Date:	06-Oct-2018 19:20:00	Instrument ID:	A8_N		
Lims ID:	320-43466-A-4-A	Lab Sample ID:	320-43466-4		
Client ID:	Feild Duplicate				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

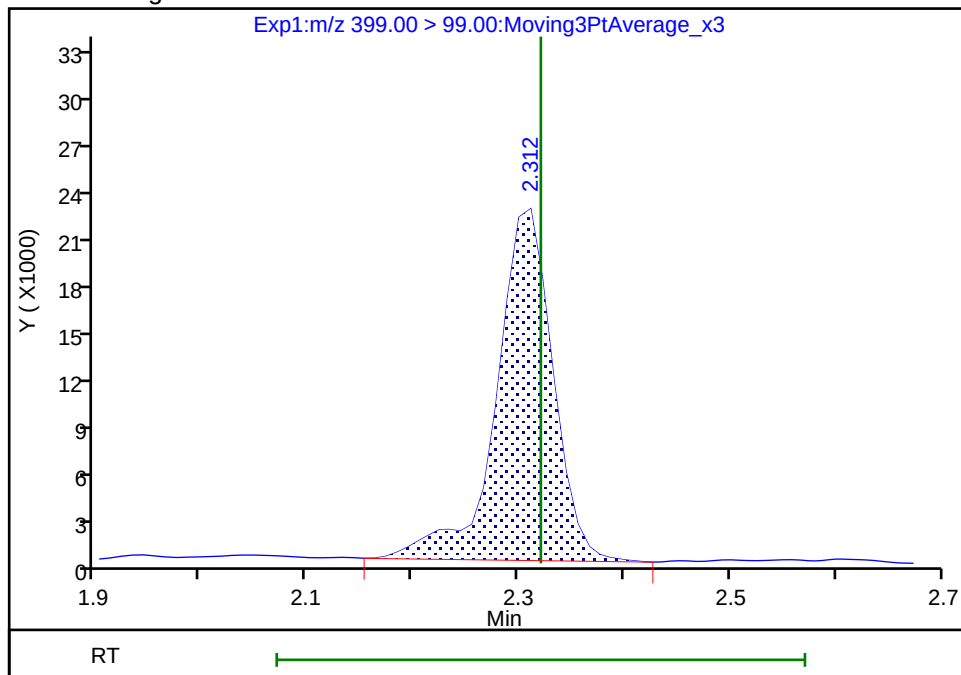
RT: 2.31
Area: 77823
Amount: 0.212771
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 83044
Amount: 0.212771
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:26:25

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

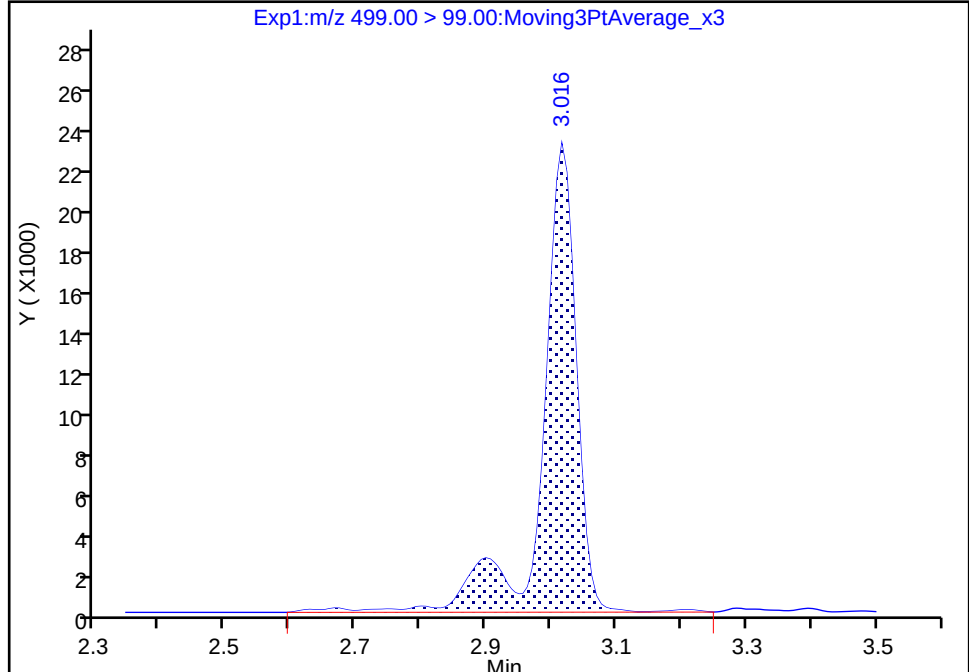
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_014.d				
Injection Date:	06-Oct-2018 19:20:00	Instrument ID:	A8_N		
Lims ID:	320-43466-A-4-A	Lab Sample ID:	320-43466-4		
Client ID:	Feild Duplicate				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

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

Signal: 2

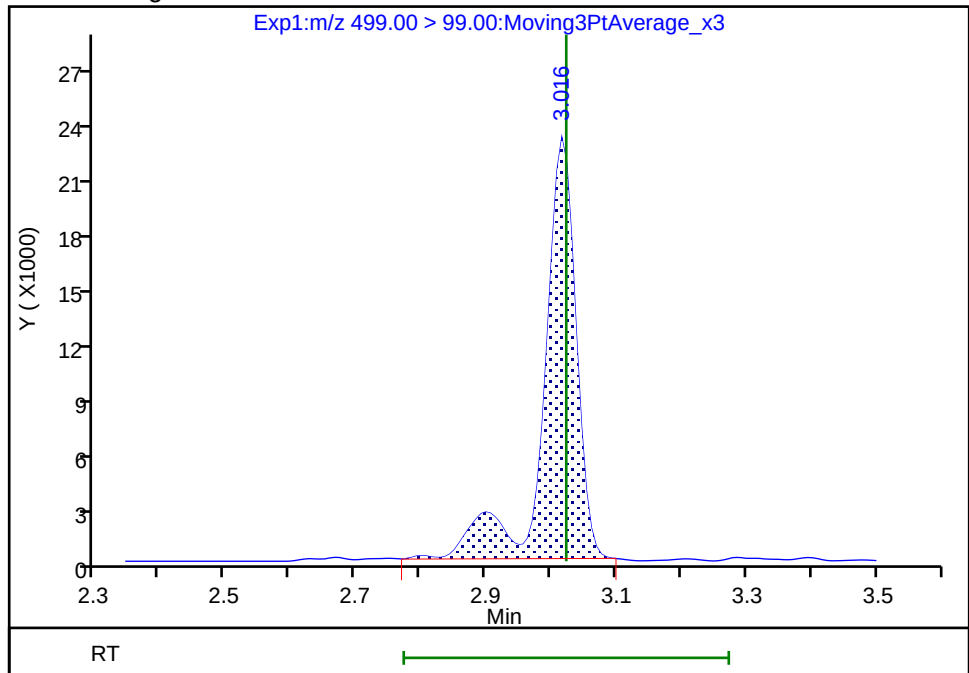
RT: 3.02
Area: 83548
Amount: 0.397794
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 79213
Amount: 0.397794
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:26:48

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>Equipment Blank</u>	Lab Sample ID: <u>320-43466-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_055.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 09:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>269.1 (mL)</u>	Date Analyzed: <u>10/03/2018 00:09</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.86	U	1.86	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.86	U	1.86	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	1.86	U	1.86	0.54
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.86	U	1.86	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	1.86	U	1.86	0.79
375-95-1	Perfluorononanoic acid (PFNA)	1.86	U	1.86	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	1.86	U	1.86	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.86	U	1.86	1.02
307-55-1	Perfluorododecanoic acid (PFDoA)	1.86	U	1.86	0.51
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.86	U	1.86	1.21
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.86	U	1.86	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.86	U	1.86	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	1.86	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.86	U	1.86	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.86	U	1.86	0.50
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.86	U	1.86	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.86	U	1.86	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	18.6	U	18.6	2.88
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18.6	U	18.6	1.77
27619-97-2	6:2 FTS	18.6	U	18.6	1.86
39108-34-4	8:2 FTS	18.6	U	18.6	1.86

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: <u>Equipment Blank</u>	Lab Sample ID: <u>320-43466-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_055.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/19/2018 09:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>269.1 (mL)</u>	Date Analyzed: <u>10/03/2018 00:09</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	92		25-150
STL01893	13C5 PFPeA	97		25-150
STL00993	13C2 PFHxA	102		25-150
STL01892	13C4 PFHpA	99		25-150
STL00990	13C4 PFOA	99		25-150
STL00995	13C5 PFNA	103		25-150
STL00996	13C2 PFDA	102		25-150
STL00997	13C2 PFUnA	95		25-150
STL00998	13C2 PFDoA	83		25-150
STL02116	13C2 PFTeDA	96		25-150
STL02337	13C3 PFBS	94		25-150
STL00994	18O2 PFHxS	88		25-150
STL00991	13C4 PFOS	92		25-150
STL01056	13C8 FOSA	89		25-150
STL02118	d3-NMeFOSAA	81		25-150
STL02117	d5-NEtFOSAA	86		25-150
STL02279	M2-6:2 FTS	81		25-150
STL02280	M2-8:2 FTS	74		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_055.d
 Lims ID: 320-43466-A-5-A
 Client ID: Equipment Blank
 Sample Type: Client
 Inject. Date: 03-Oct-2018 00:09:40 ALS Bottle#: 32 Worklist Smp#: 16
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 320-43466-a-5-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 12:12:17 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1
 Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 05-Oct-2018 12:12:17

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	1.489	1.483	0.006	0.544	7551576	2.29		91.6	11465	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.763	0.009	0.648	7299870	2.43		97.4	8435	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.764	0.008	1.000	4262	0.001466			0.6	
D 47 13C3-PFBS										M
301.90 > 83.00	1.805	1.805	0.0	0.660	89049	2.18		93.8	394	M
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.047	0.011	0.753	8094652	2.55		102	9958	
D 9 13C4-PFHpA										
367.00 > 322.00	2.386	2.373	0.013	0.873	9359936	2.47		98.9	9091	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.399	0.001	0.878	5079946	2.08		88.0	8733	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	19279	0.007130			28.1	
399.00 > 99.00	2.400	2.400	0.0	1.000	9215		2.09(1.90-5.70)		6.3	
D 12 M2-6:2FTS										
429.00 > 81.00	2.719	2.702	0.017	0.994	755722	1.92		81.0	1597	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	0.994	1860	0.002679			1.3	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.734	0.0	1.000	8829956	2.46		98.5	8216	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		8954234	2.50			8520	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	20273	0.005473			1.8	
413.00 > 169.00	2.734	2.734	0.0	1.000	7226		2.81(1.36-4.08)		6.9	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.098	0.019	1.140	5560295	2.20		91.9	1738	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.098	0.019	1.140	8418586	2.58		103	9466	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.117	3.098	0.019	1.000	6927	0.002811			1.6	M
499.00 > 99.00	3.099	3.098	0.0	0.994	1194		5.80(2.04-6.12)		1.8	M
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	88064	1.77		73.9	461	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.464	0.001	1.267	2989483	2.21		88.6	5963	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.464	0.001	1.267	8585690	2.54		102	5272	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.465	0.0	1.000	7224	0.001919			1.3	R
513.00 > 169.00	3.481	3.465	0.015	1.004	1279		5.65(7.12-21.35)		2.7	R
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	5734	0.001626			10.0	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.612	0.001	1.321	3038300	2.03		81.1	5148	
D 30 13C2 PFUnA										
565.00 > 520.00	3.792	3.775	0.017	1.387	6824915	2.38		95.1	5992	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	2531589	2.16		86.3	2557	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	1803	0.001906			3.3	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.792	3.776	0.016	1.000	18899	0.007677			4.4	
563.00 > 169.00	3.792	3.776	0.016	1.000	2493		7.58(5.24-15.72)		14.8	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.072	0.001	1.489	7092287	2.08		83.1	5761	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.572	0.001	1.672	6430171	2.39		95.6	10278	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.573	4.573	0.0	1.000	2577	0.006100			12.6	
713.00 > 219.00	4.573	4.573	0.0	1.000	2281		1.13(0.70-2.09)		11.2	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_055.d

Injection Date: 03-Oct-2018 00:09:40

Instrument ID: A9

Lims ID: 320-43466-A-5-A

Lab Sample ID: 320-43466-5

Client ID: Equipment Blank

Operator ID: A9\Administrator

ALS Bottle#: 32

Worklist Smp#: 16

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

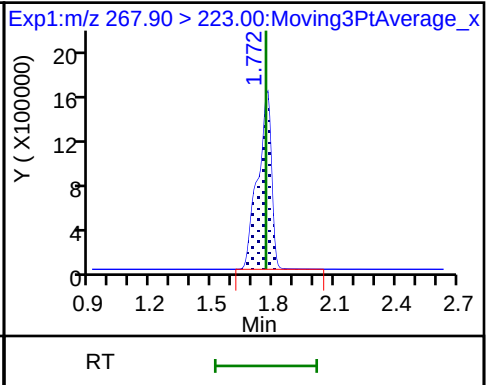
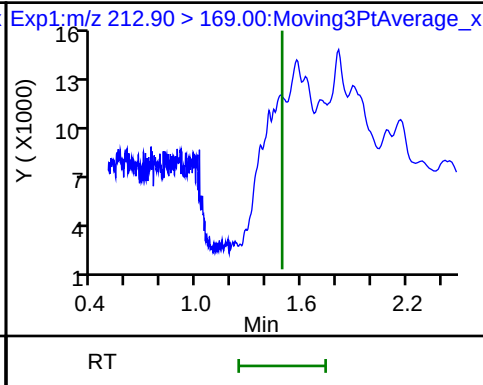
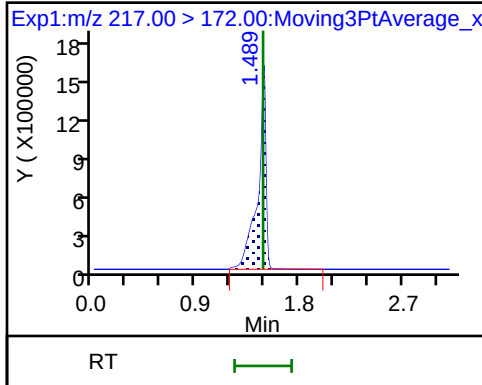
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (ND)

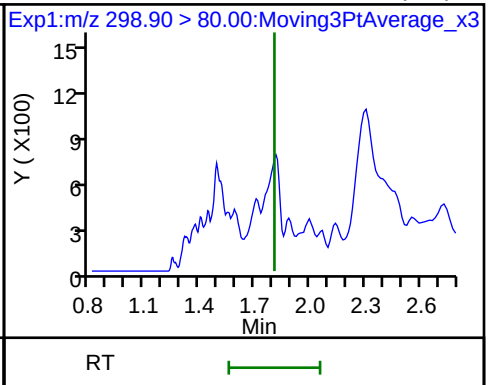
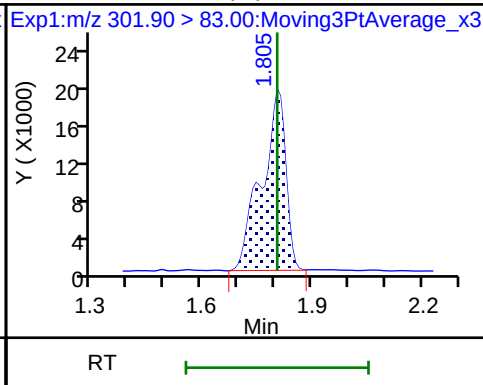
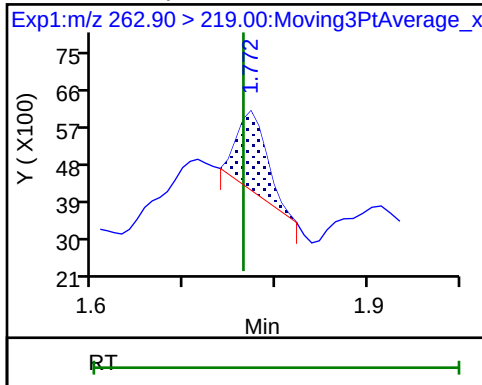
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS (M)

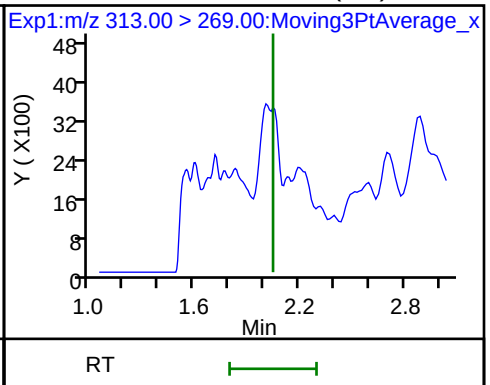
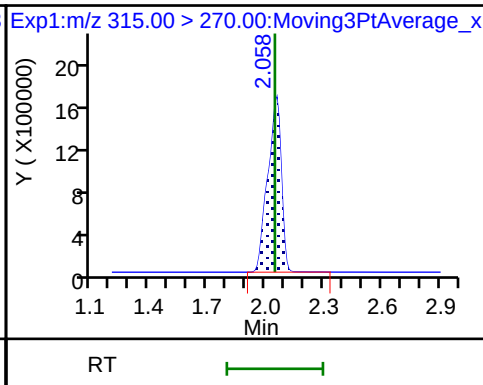
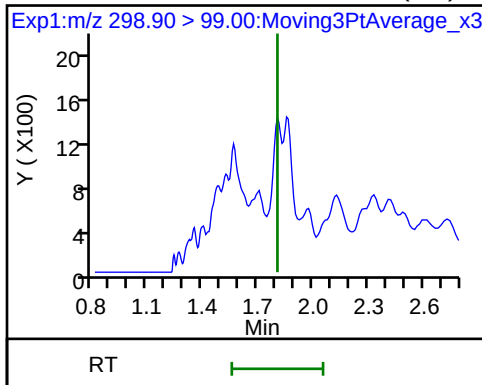
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 7 13C2 PFHxA

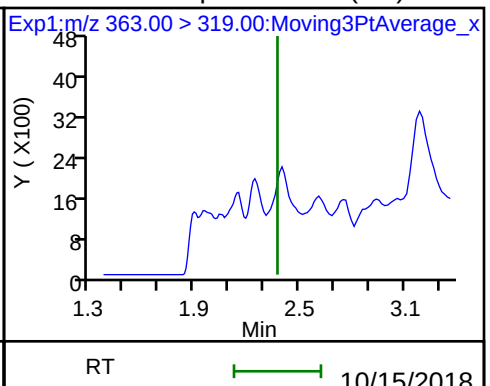
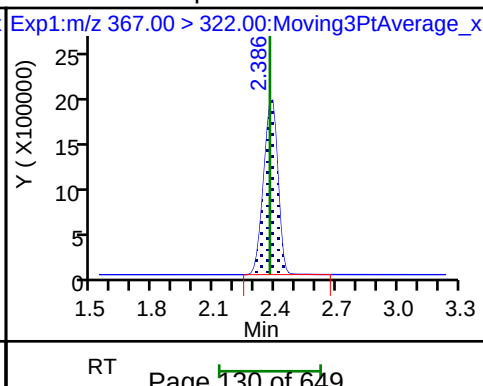
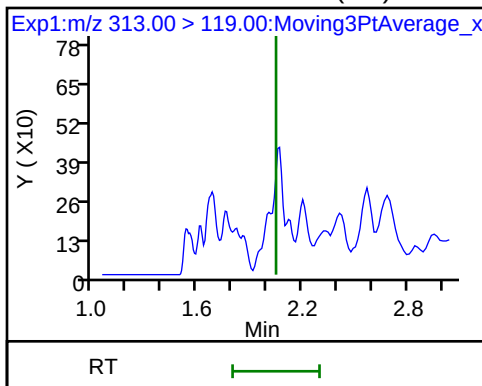
6 Perfluorohexanoic acid (ND)

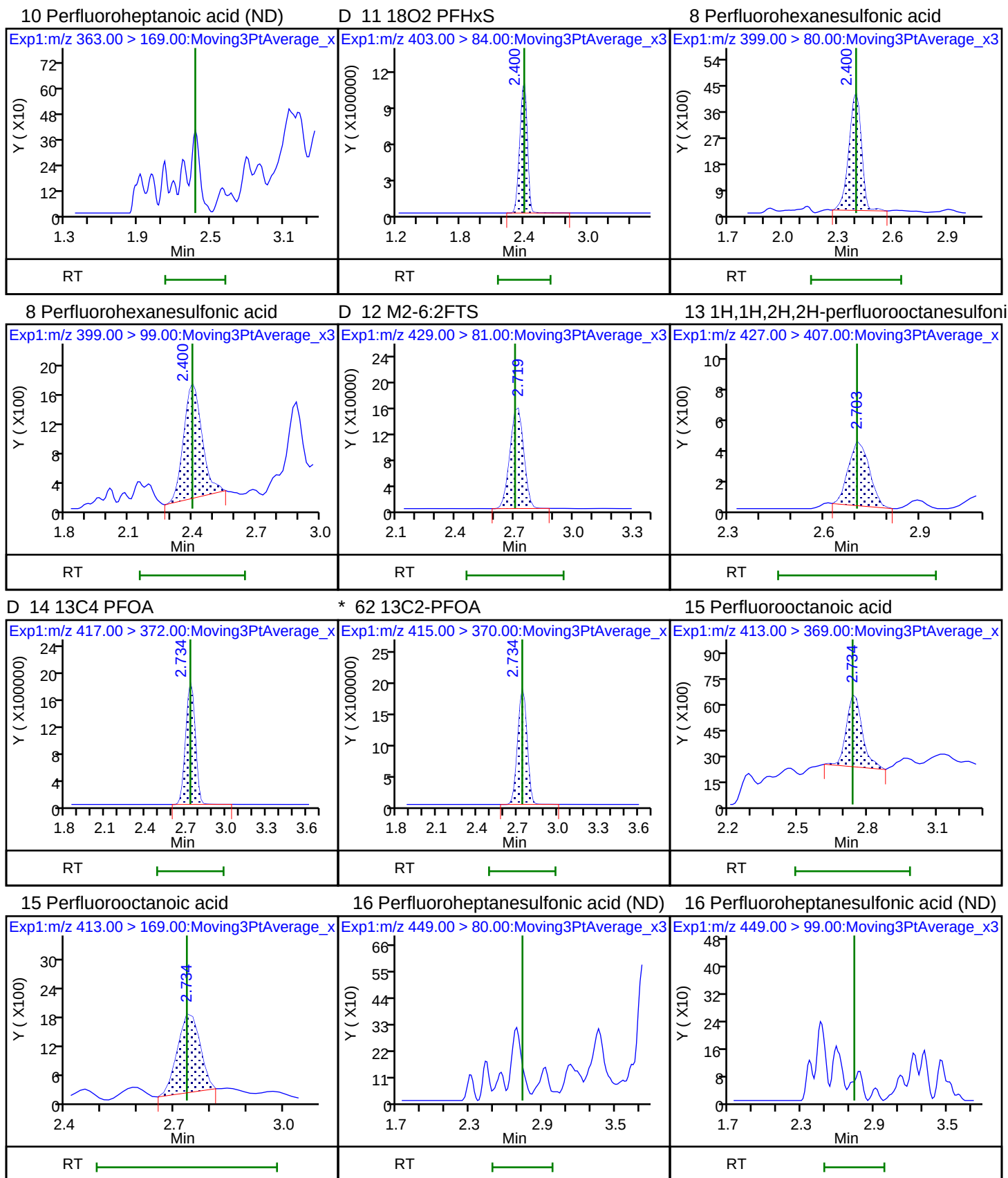


6 Perfluorohexanoic acid (ND)

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid (ND)

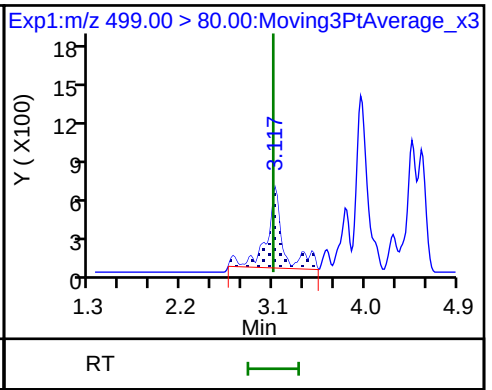
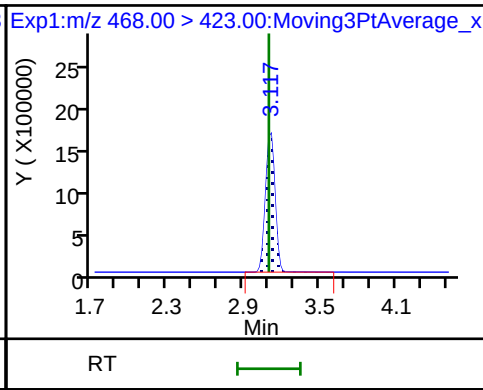
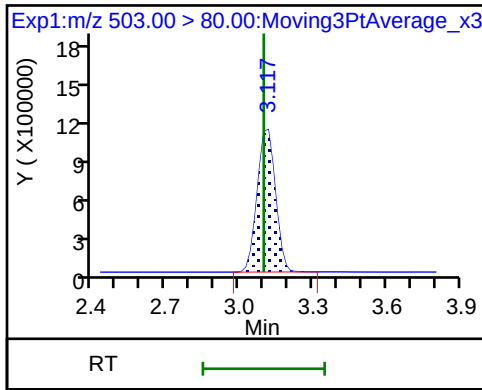




D 18 13C4 PFOS

D 19 13C5 PFNA

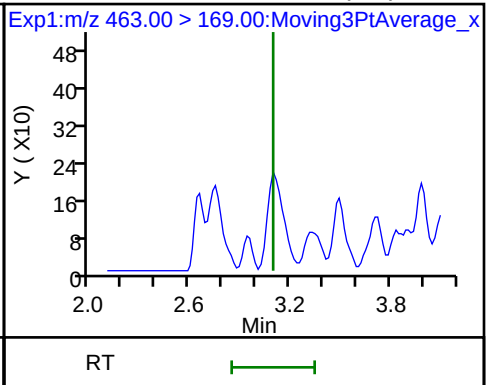
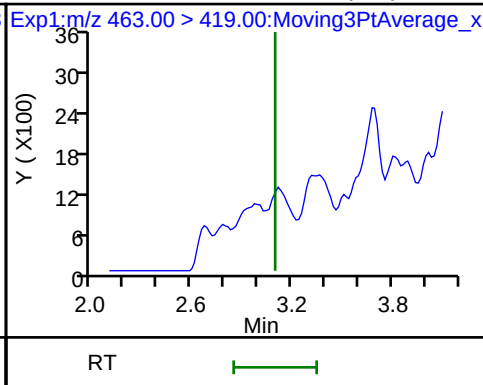
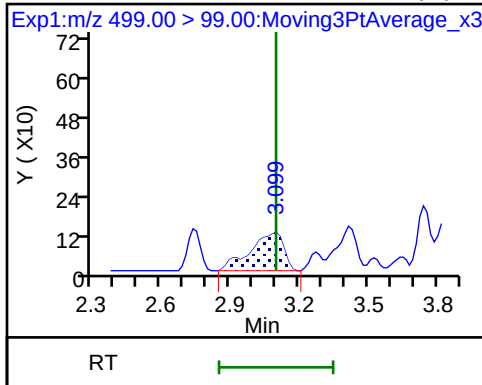
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid (M)

20 Perfluorononanoic acid (ND)

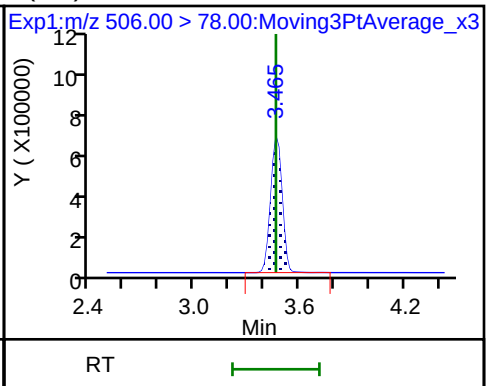
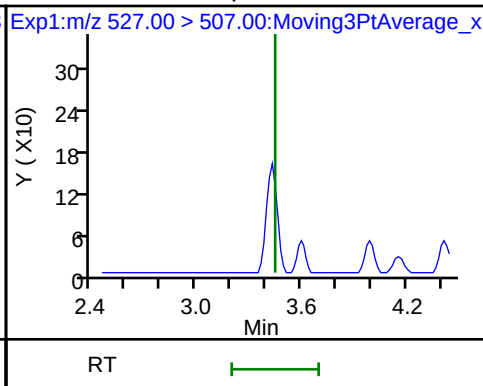
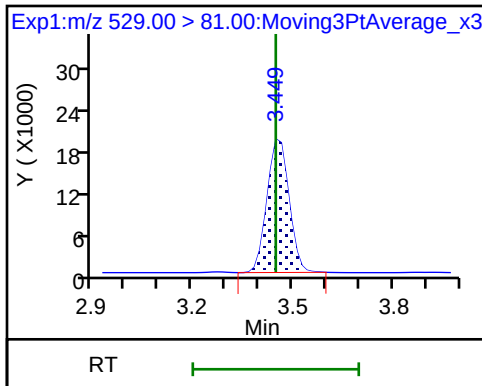
20 Perfluorononanoic acid (ND)



D 26 M2-8:2FTS

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

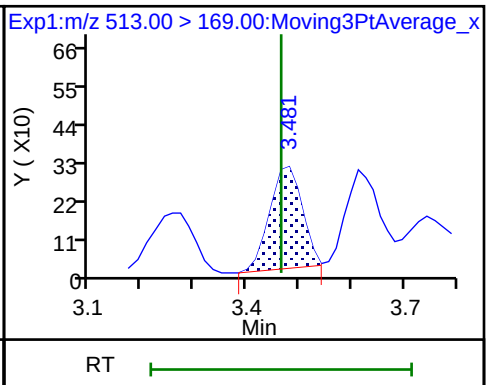
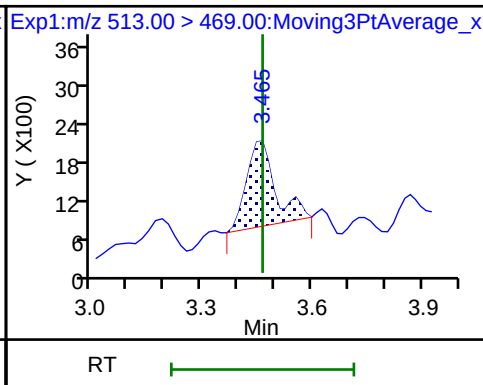
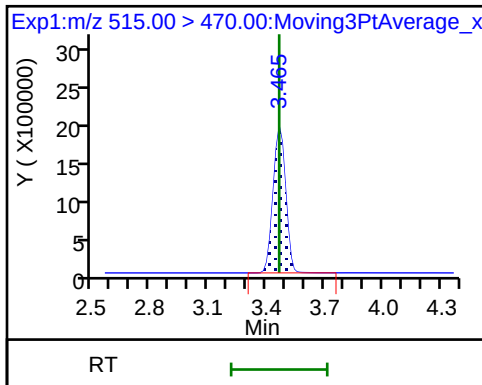
13C8 FOSA

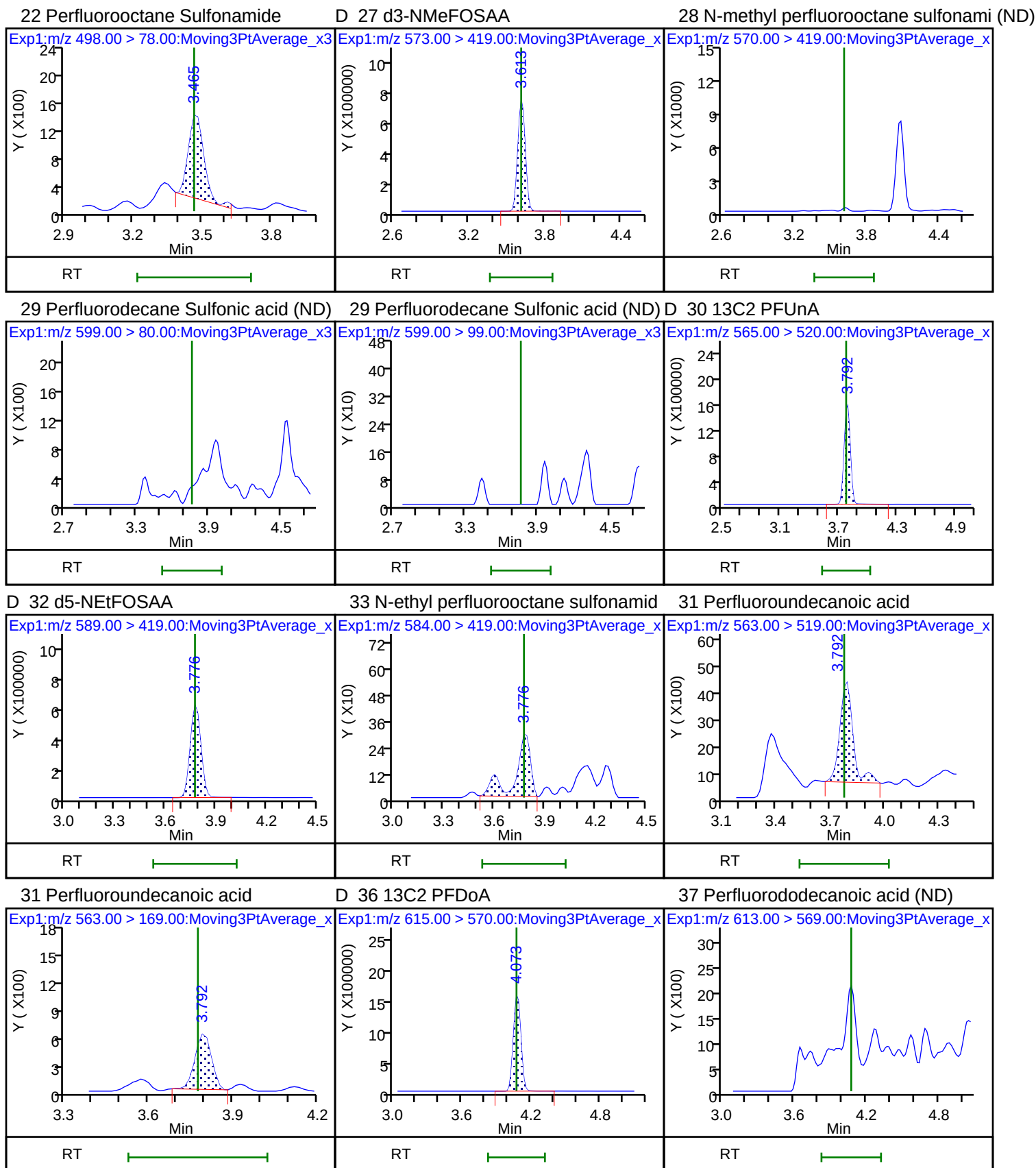


D 23 13C2 PFDA

24 Perfluorodecanoic acid

24 Perfluorodecanoic acid



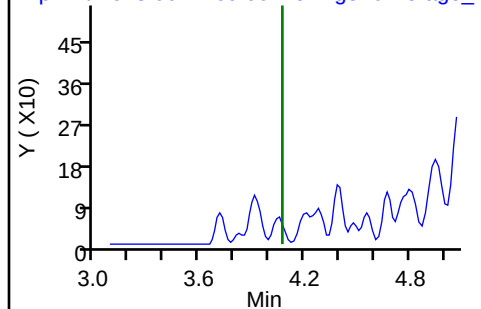


37 Perfluorododecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

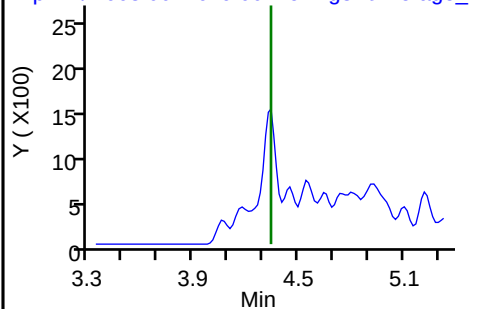
41 Perfluorotridecanoic acid (ND)

Exp1:m/z 613.00 > 169.00:Moving3PtAverage_x



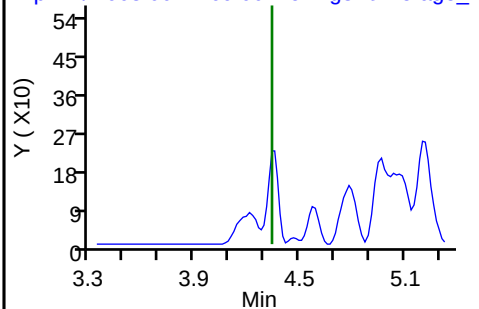
RT

Exp1:m/z 663.00 > 619.00:Moving3PtAverage_x



RT

Exp1:m/z 663.00 > 169.00:Moving3PtAverage_x



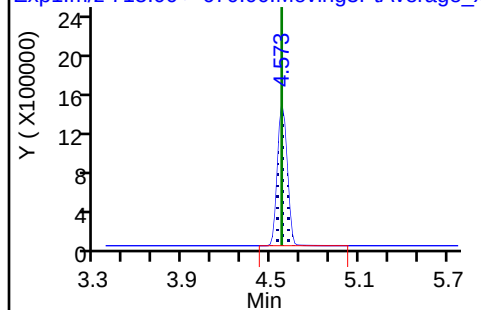
RT

D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

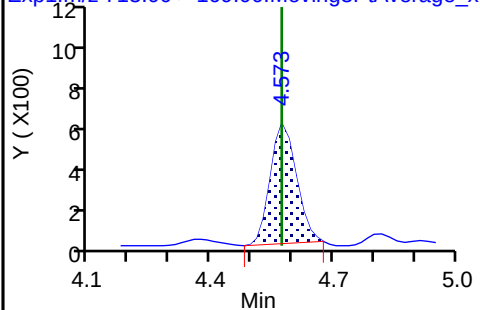
42 Perfluorotetradecanoic acid

Exp1:m/z 715.00 > 670.00:Moving3PtAverage_x



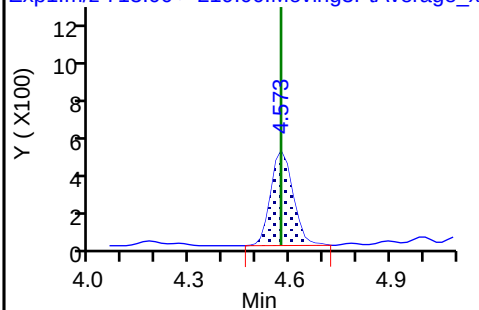
RT

Exp1:m/z 713.00 > 169.00:Moving3PtAverage_x



RT

Exp1:m/z 713.00 > 219.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

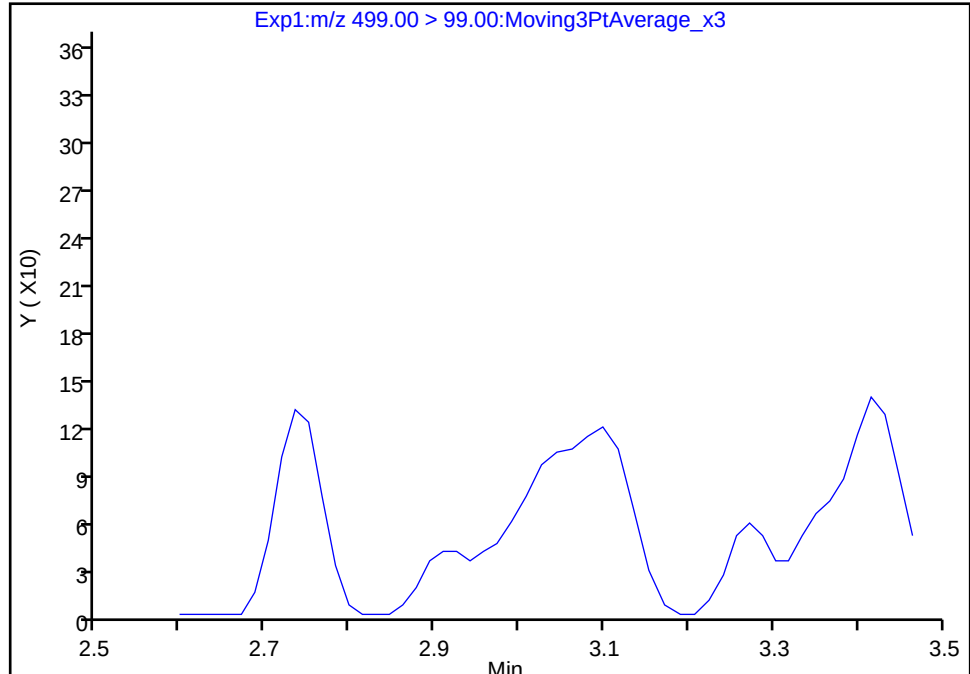
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Injection Date: 03-Oct-2018 00:09:40 Instrument ID: A9
Lims ID: 320-43466-A-5-A Lab Sample ID: 320-43466-5
Client ID: Equipment Blank
Operator ID: A9\Administrator ALS Bottle#: 32 Worklist Smp#: 16
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

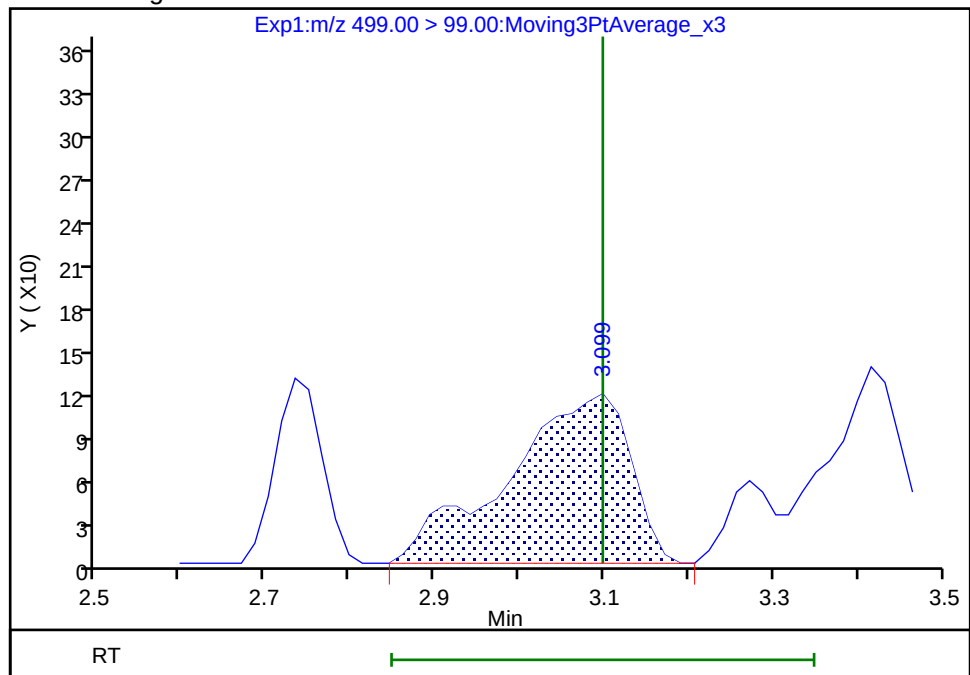
RT: 3.10
Area: 0
Amount: 0.002811
Amount Units: ng/ml

Processing Integration Results



RT: 3.10
Area: 1194
Amount: 0.002811
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:12:04
Audit Action: Manually Integrated

Audit Reason: Assign Peak
Page 135 of 649

10/15/2018

TestAmerica Sacramento

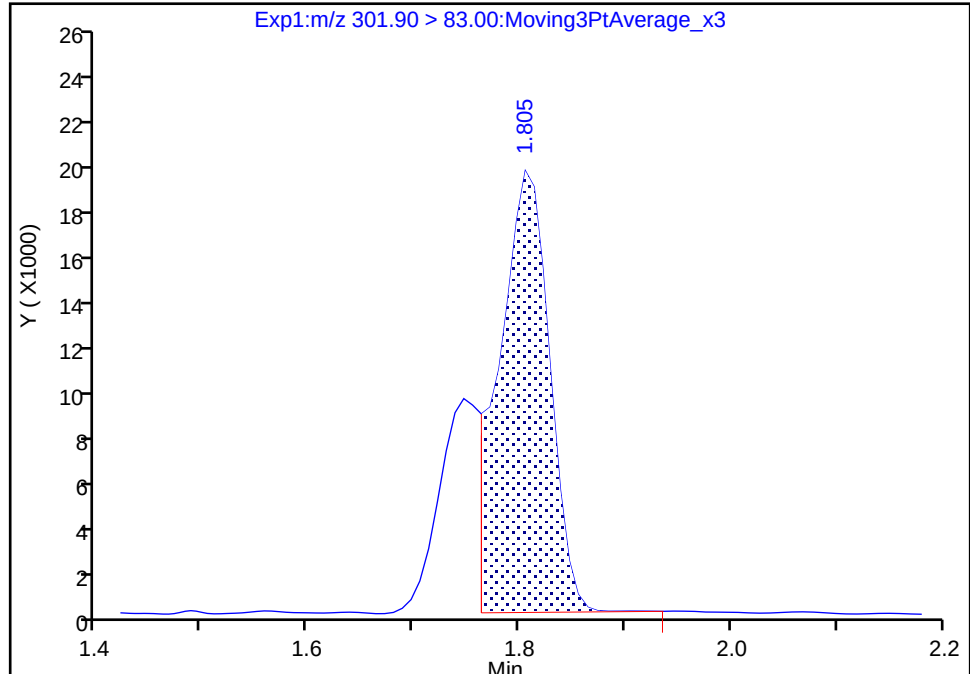
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Injection Date:	03-Oct-2018 00:09:40	Instrument ID:	A9		
Lims ID:	320-43466-A-5-A	Lab Sample ID:	320-43466-5		
Client ID:	Equipment Blank				
Operator ID:	A9\Administrator	ALS Bottle#:	32	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

D 47 13C3-PFBS, CAS: STL02337

Signal: 1

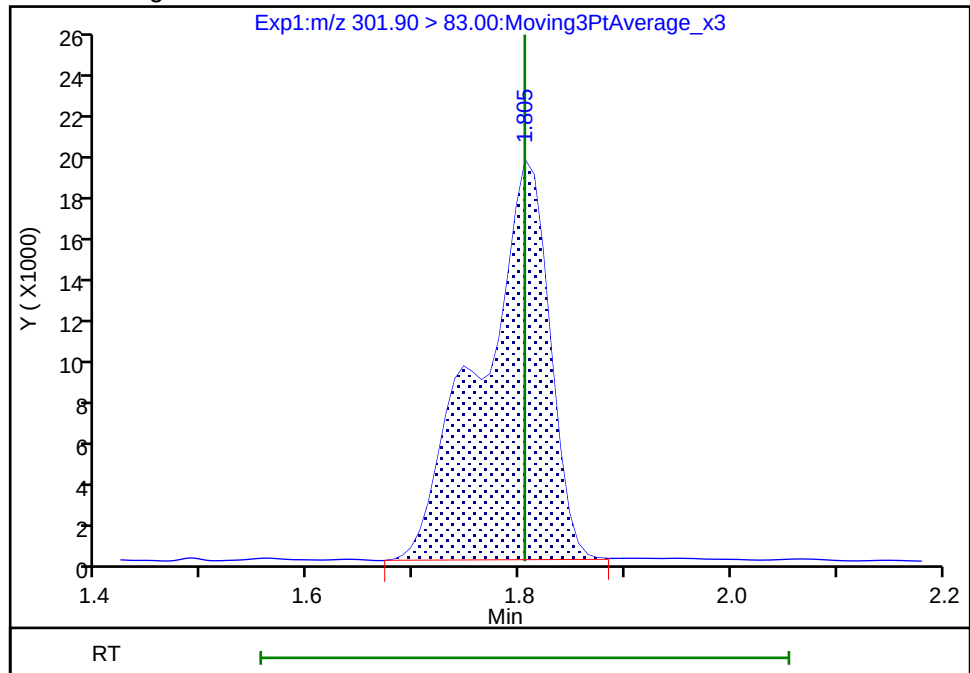
RT: 1.81
Area: 64316
Amount: 1.574910
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 89049
Amount: 2.180548
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 12:11:37

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

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

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1 Analy Batch No.: 249554

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/04/2018 04:37 Calibration End Date: 10/04/2018 05:22 Calibration ID: 41411

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-249554/2	2018.10.03LLICALAAA_002.d
Level 2	IC 320-249554/3	2018.10.03LLICALAAA_003.d
Level 3	IC 320-249554/4	2018.10.03LLICALAAA_004.d
Level 4	IC 320-249554/5	2018.10.03LLICALAAA_005.d
Level 5	IC 320-249554/6	2018.10.03LLICALAAA_006.d
Level 6	IC 320-249554/7	2018.10.03LLICALAAA_007.d
Level 7	IC 320-249554/8	2018.10.03LLICALAAA_008.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 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9854 0.9528	0.9684 0.9318	0.9217	0.9411	0.9462	AveID		0.9496				2.3		35.0			
Perfluoropentanoic acid (PFPeA)	1.2639 1.0935	1.1440 1.0372	1.0753	1.0357	1.1196	AveID		1.1099				7.1		35.0			
Perfluorobutanesulfonic acid (PFBS)	83.933 78.114	77.249 68.083	79.366	81.032	76.403	AveID		77.740				6.4		50.0			
4:2 FTS	14.694 13.489	11.759 12.445	13.305	12.593	12.536	AveID		12.974				7.3		50.0			
Perfluorohexanoic acid (PFHxA)	1.0429 1.0303	0.9450 0.9395	0.9715	0.9564	1.0097	AveID		0.9850				4.3		35.0			
Perfluoropentanesulfonic acid (PFPeS)	72.431 65.359	67.568 60.932	67.673	67.971	67.185	AveID		67.017				5.1		50.0			
HFPO-DA (GenX)	2.9257 3.0531	2.8739 2.8036	2.9609	2.6271	2.8992	AveID		2.8776				4.7		35.0			
Perfluoroheptanoic acid (PFHpA)	1.2293 1.1297	1.0539 1.1282	1.0809	1.0399	1.1844	AveID		1.1209				6.2		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.2361 1.0835	1.1747 1.0748	1.0757	1.0181	1.0505	AveID		1.1019				6.9		35.0			
DONA	3.7020 3.8995	3.9897 3.1611	4.0178	4.0721	4.3689	AveID		3.8873				9.7		50.0			
6:2 FTS	2.1551 1.6676	1.6771 1.4766	1.7723	1.5998	1.5657	AveID		1.7020				13.0		35.0			
Perfluorooctanoic acid (PFOA)	1.2457 1.0594	1.3973 1.0403	1.1790	1.1489	1.1752	AveID		1.1780				10.2		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.1474 1.3611	1.2118 1.2111	1.2243	1.2749	1.3307	AveID		1.2516				6.0		50.0			
Perfluorooctanesulfonic acid (PFOS)	+++++ 1.1458	1.2553 1.1243	1.0878	1.0847	1.1553	AveID		1.1422				5.5		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.: 320-43466-1 Analy Batch No.: 249554
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/04/2018 04:37 Calibration End Date: 10/04/2018 05:22 Calibration ID: 41411

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								
Perfluorononanoic acid (PFNA)	1.1188 1.0582	1.2371 0.9939	0.9490	1.0571	1.1253	AveID		1.0771				8.8		35.0			
F-53B Major	1.7873 1.9895	1.8631 1.9118	1.8193	1.9351	1.9194	AveID		1.8893				3.7		50.0			
Perfluorooctanesulfonamide (FOSA)	0.9616 1.0394	0.8643 0.9851	0.9076	0.9411	1.0374	AveID		0.9624				6.7		35.0			
8:2 FTS	1.2698 1.2058	1.1982 1.2725	1.0691	1.2201	1.2230	AveID		1.2084				5.6		35.0			
Perfluorononanesulfonic acid (PFNS)	0.8603 0.8753	0.7288 0.8111	0.7938	0.8368	0.8378	AveID		0.8206				6.0		50.0			
Perfluorodecanoic acid (PFDA)	0.9597 0.9856	0.9792 1.0029	1.0052	1.0876	1.0058	AveID		1.0037				4.1		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.8124 0.9676	1.2065 0.9940	0.9240	0.9236	0.9556	AveID		0.9691				12.3		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.7218 0.6356	0.6012 0.6374	0.6218	0.6229	0.6497	AveID		0.6415				6.0		50.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.8809 0.8559	0.9003 0.8660	0.8734	0.8153	0.9018	AveID		0.8705				3.4		35.0			
Perfluoroundecanoic acid (PFUnA)	1.0152 0.8992	0.8131 0.9221	0.8170	0.8199	0.8509	AveID		0.8768				8.5		35.0			
F-53B Minor	2.7235 2.9371	2.8729 2.5053	2.7760	2.9075	3.2387	AveID		2.8516				7.9		50.0			
Perfluorododecanoic acid (PFDoA)	1.1417 1.0875	1.0777 1.0862	1.0546	1.1341	1.0897	AveID		1.0959				2.8		35.0			
10:2 FTS	0.7915 0.8975	0.8640 0.8701	0.8240	0.8947	0.8606	AveID		0.8575				4.4		50.0			
Perfluorododecanesulfonic acid (PFDoS)	0.2902 0.3172	0.2603 0.2974	0.2722	0.2959	0.3049	AveID		0.2912				6.6		50.0			
Perfluorotridecanoic acid (PFTriA)	1.1246 1.0353	1.0426 1.0280	1.1236	0.9879	1.0894	AveID		1.0616				4.9		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.1956 0.2508	0.2712 0.2434	0.2484	0.2404	0.2700	AveID		0.2457				10.3		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	++++ 0.8882	1.3613 ++++	0.9596	0.8600	0.8727	LlID	0.0226	0.8725							1.0000		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.9999 1.1079	1.1207 0.9941	1.0530	1.0339	1.0537	AveID		1.0519				4.6		50.0			
13C4 PFBA	1.4516 1.5146	1.4979 1.5922	1.5035	1.4977	1.5282	Ave		1.5122				2.8		50.0			
13C5 PFPeA	0.9778 0.9817	1.0046 1.0747	1.0089	1.0431	1.0142	Ave		1.0150				3.4		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.: 320-43466-1 Analy Batch No.: 249554
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/04/2018 04:37 Calibration End Date: 10/04/2018 05:22 Calibration ID: 41411

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								
13C3 PFBS	0.0198 0.0214	0.0219 0.0234	0.0207	0.0216	0.0228	Ave		0.0216				5.6		50.0			
M2-4:2 FTS	0.1151 0.1109	0.1245 0.1274	0.1185	0.1138	0.1252	Ave		0.1194				5.4		50.0			
13C2 PFHxA	1.0938 1.0497	1.1565 1.1540	1.0928	1.1156	1.1399	Ave		1.1146				3.5		50.0			
13C3 HFPO-DA	0.0741 0.0752	0.0810 0.0893	0.0832	0.0841	0.0798	Ave		0.0809				6.5		50.0			
13C4 PFHpA	0.9595 0.9782	1.0375 1.0079	0.9921	1.0574	0.9778	Ave		1.0015				3.5		50.0			
18O2 PFHxS	1.2161 1.1780	1.3231 1.2530	1.2657	1.2769	1.2458	Ave		1.2512				3.7		50.0			
M2-6:2 FTS	0.1583 0.1601	0.1676 0.1823	0.1667	0.1710	0.1742	Ave		0.1686				4.9		50.0			
13C8 PFOA	1.4507 1.6430	1.5771 1.6429	1.6794	1.6140	1.7510	Ave		1.6226				5.8		50.0			
13C4 PFOA	0.9594 0.9599	0.9835 1.0000	0.9559	0.9720	0.9748	Ave		0.9722				1.6		50.0			
13C8 PFOS	0.4118 0.4225	0.4300 0.4328	0.4406	0.4282	0.4347	Ave		0.4286				2.2		50.0			
13C5 PFNA	0.7957 0.8143	0.7916 0.8521	0.8658	0.8155	0.7874	Ave		0.8175				3.7		50.0			
13C4 PFOS	0.7930 0.7803	0.8311 0.8321	0.8271	0.8147	0.7905	Ave		0.8098				2.7		50.0			
13C8 FOSA	1.0853 1.0644	1.1784 1.1179	1.1741	1.1800	1.0867	Ave		1.1267				4.4		50.0			
M2-8:2 FTS	0.1755 0.1729	0.1757 0.1821	0.1893	0.1760	0.1788	Ave		0.1786				3.1		50.0			
13C2 PFDA	0.7318 0.7137	0.7533 0.7113	0.7322	0.7038	0.7155	Ave		0.7231				2.3		50.0			
d3-NMeFOSAA	0.2845 0.2866	0.2886 0.3061	0.3028	0.2937	0.2940	Ave		0.2938				2.8		50.0			
d5-NEtFOSAA	0.3065 0.3013	0.3291 0.3138	0.3218	0.3319	0.3087	Ave		0.3162				3.7		50.0			
13C2 PFUnA	0.5292 0.5413	0.5571 0.5674	0.5637	0.5573	0.5508	Ave		0.5524				2.4		50.0			
13C2 PFDoA	0.5522 0.5722	0.5905 0.5987	0.5800	0.5848	0.5952	Ave		0.5820				2.7		50.0			
13C2 PFTeDA	0.6780 0.7026	0.7165 0.7298	0.7067	0.7110	0.6526	Ave		0.6996				3.7		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.: 320-43466-1 Analy Batch No.: 249554
 SDG No.: _____
 Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N
 Calibration Start Date: 10/04/2018 04:37 Calibration End Date: 10/04/2018 05:22 Calibration ID: 41411

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
13C2 PFHxDA	1.1967 1.2441	1.2164 1.3035	1.2947	1.2866	1.3000	Ave		1.2632				3.5		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
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1 Analy Batch No.: 249554

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/04/2018 04:37 Calibration End Date: 10/04/2018 05:22 Calibration ID: 41411

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-249554/2	2018.10.03LLICALAAA_002.d
Level 2	IC 320-249554/3	2018.10.03LLICALAAA_003.d
Level 3	IC 320-249554/4	2018.10.03LLICALAAA_004.d
Level 4	IC 320-249554/5	2018.10.03LLICALAAA_005.d
Level 5	IC 320-249554/6	2018.10.03LLICALAAA_006.d
Level 6	IC 320-249554/7	2018.10.03LLICALAAA_007.d
Level 7	IC 320-249554/8	2018.10.03LLICALAAA_008.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	43735 8251489	83797 17883956	426669	1544807	4062613	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	37784 6138355	66388 13436398	334011	1184077	3190130	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	44936 8436291	86466 16959194	446214	1693917	4324081	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	8312 1539192	13906 3275210	79036	278141	749643	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	34878 6183728	63137 13068194	326862	1169456	3233546	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	41147 7490008	80250 16105060	403716	1507668	4034663	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	6627 1312794	13444 3017073	75817	242086	649637	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	36061 6318514	63164 13707053	330157	1205203	3253678	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	41824 6641280	81705 14771886	381461	1296504	3345851	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	84558 16389161	180448 29869470	963823	3425097	9140129	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	9886 1446947	15394 3076865	86213	284175	726468	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	36579 5820507	79461 12552381	347327	1225259	3221865	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	26487 5781376	55388 11564870	296815	1083749	2813526	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	+++++ 4744347	55930 10465504	257071	898816	2381076	+++++ 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	27220 4927178	56569 10209177	252961	944750	2489413	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1 Analy Batch No.: 249554

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/04/2018 04:37 Calibration End Date: 10/04/2018 05:22 Calibration ID: 41411

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	40390 8272930	83372 17872346	431792	1610398	3972794	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctanesulfonamide (FOSA)		AveID	31910 6325877	58834 13275080	328067	1217157	3167292	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	6527 1142292	11652 2675747	59688	225498	588432	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorononanesulfonic acid (PFNS)		AveID	20026 3749305	33594 7810945	194061	717275	1786304	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	21472 4022336	42610 8599087	226616	838937	2021893	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	7066 1585547	20118 3667665	86135	297319	789320	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	16872 2733859	27825 6163169	152651	536199	1390975	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	8255 1474681	17114 3275179	86523	296626	782173	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	16427 2783201	26166 6306847	141802	500834	1316824	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	62208 12344455	129934 23672313	665935	2445527	6775548	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	19278 3558010	36764 7839266	188337	726934	1822133	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	4094 855548	8455 1840976	46293	166387	416654	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	6812 1370155	12096 2887260	67105	255749	655584	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	18989 3387175	35567 7419476	200660	633199	1821500	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	4056 1007355	11227 2141069	54035	187320	495052	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L1ID	++++ 6318605	95654 ++++	382536	1212698	3187679	++++ 5.00	0.0500 ++++	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	36587 7881799	78746 15619365	419765	1458049	3848622	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	4438136 4330101	4326452 4798140	4629010	4103746	4293457	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	2989551 2806749	2901613 3238655	3106188	2858077	2849343	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	56324 56810	58878 65514	59148	54980	59541	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	328793 296116	335848 358707	340895	291262	328595	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.: 320-43466-1 Analy Batch No.: 249554

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/04/2018 04:37 Calibration End Date: 10/04/2018 05:22 Calibration ID: 41411

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	3344419 3001039	3340421 3477504	3364429	3056818	3202615	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	226511 214993	233900 269035	256062	230371	224077	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	2933554 2796620	2996668 3037274	3054428	2897288	2747005	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	3517306 3185958	3615137 3571951	3686415	3309719	3311090	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	459684 434744	459910 522039	487479	445011	464979	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C8 PFOA	13PF OA	Ave	4342418 4598575	4459523 4847066	5062030	4329479	4816231	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C4 PFOA	13PF OA	Ave	2933373 2744321	2840631 3013559	2943055	2663391	2738792	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOS	13PF OA	Ave	1203636 1154808	1187221 1246752	1296813	1121568	1167667	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	2432952 2328150	2286288 2567879	2665521	2234395	2212226	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	2318045 2132695	2295011 2397350	2434546	2134052	2123164	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C8 FOSA	13PF OA	Ave	3318403 3042973	3403655 3368803	3614795	3233380	3053046	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	513998 473668	486241 525682	558299	462050	481119	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	2237416 2040497	2175850 2143562	2254487	1928353	2010213	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	869730 819321	833719 922469	932198	804808	826023	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	937065 861454	950459 945539	990697	909519	867340	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	1618162 1547645	1609076 1709926	1735645	1527074	1547519	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	1688485 1635901	1705665 1804357	1785854	1602444	1672081	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	2073120 2008607	2069504 2199263	2175718	1948194	1833365	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	3659021 3556979	3513397 3928065	3986334	3525464	3652470	2.50 2.50	2.50 2.50	2.50	2.50	2.50

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

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1 Analy Batch No.: 249554
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/04/2018 04:37 Calibration End Date: 10/04/2018 05:22 Calibration ID: 41411

Curve Type Legend:

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

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 04-Oct-2018 04:37:43 ALS Bottle#: 10 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L1-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 04-Oct-2018 10:33:16 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: roycea

Date: 04-Oct-2018 08:40:13

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	1.436	1.430	0.006	0.542	4438136	2.40		96.0	10350	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.436	1.431	0.005	1.000	43735	0.0259		104	5.4	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.688	0.006	0.639	2989551	2.41		96.3	12245	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.689	0.005	1.000	37784	0.0285		114	9.3	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.722	0.004	0.651	56324	2.13		91.5	383	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.726	1.725	0.001	1.000	44936	0.0239		108	12.1	
298.90 > 99.00	1.726	1.725	0.001	1.000	21319		2.11(1.25-3.74)	108	9.6	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.933	1.929	0.004	1.120	8312	0.0264		113	107	
D 60 M2-4:2FTS										
329.00 > 81.00	1.933	1.929	0.004	0.729	328793	2.25		96.5	366	
D 7 13C2 PFHxA										
315.00 > 270.00	1.964	1.961	0.003	0.741	3344419	2.45		98.1	13322	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.964	1.962	0.002	1.000	34878	0.0265		106	14.0	M
313.00 > 119.00	1.975	1.962	0.013	1.005	2990		11.66(5.03-15.10)	106	10.5	M
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.996	1.988	0.008	1.156	41147	0.0253		108	124	
349.00 > 99.00	1.996	1.988	0.008	1.156	12728		3.23(1.36-4.07)	108	49.1	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.069	2.061	0.008	1.000	6627	0.0254		102	11.3	

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	2.069	2.061	0.008	0.780	226511	2.29		91.5	1826	
D 9 13C4-PFHpA										
367.00 > 322.00	2.299	2.295	0.004	0.867	2933554	2.40		95.8	8490	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.295	0.004	1.000	36061	0.0274		110	12.9	
363.00 > 169.00	2.299	2.295	0.004	1.000	15009		2.40(1.13-3.40)	110	26.9	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.310	2.308	0.002	1.000	41824	0.0255		112	59.5	
399.00 > 99.00	2.310	2.308	0.002	1.000	12953		3.23(1.50-4.49)	112	27.0	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.309	0.001	0.872	3517306	2.30		97.2	4235	
77 DONA										
377.00 > 251.00	2.344	2.336	0.008	0.775	84558	0.0224		95.2	233	
377.00 > 85.00	2.344	2.336	0.008	0.775	49401		1.71(0.85-2.54)	95.2	196	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.627	2.621	0.006	1.000	9886	0.0300		127	34.5	
D 12 M2-6:2FTS										
429.00 > 81.00	2.627	2.621	0.006	0.991	459684	2.23		93.9	1958	
D 73 13C8 PFOA										
421.00 > 376.00	2.643	2.637	0.006	0.997	4342418	2.19		89.4	9726	
* 62 13C2-PFOA										
415.00 > 370.00	2.651	2.645	0.006		3057488	2.50			8897	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.651	2.645	0.006	1.000	36579	0.0265		106	9.4	M
413.00 > 169.00	2.651	2.645	0.006	1.000	20079		1.82(0.84-2.52)	106	55.4	M
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.645	0.006	1.000	2933373	2.47		98.7	6926	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.658	2.654	0.004	0.879	26487	0.0218		91.7	137	
449.00 > 99.00	2.665	2.654	0.011	0.882	7754		3.42(1.94-5.82)	91.7	45.1	
D 72 13C8 PFOS										
507.00 > 99.00	3.023	3.018	0.005	1.140	1203636	2.30		96.1	5069	
D 19 13C5 PFNA										
468.00 > 423.00	3.023	3.019	0.004	1.140	2432952	2.43		97.3	7721	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.023	3.020	0.003	1.000	39422	0.0356		153	31.4	M
499.00 > 99.00	3.030	3.020	0.010	1.003	10568		3.73(2.31-6.93)	153	48.5	M
D 18 13C4 PFOS										
503.00 > 80.00	3.023	3.020	0.003	1.140	2318045	2.34		97.9	4189	
20 Perfluorononanoic acid										
463.00 > 419.00	3.023	3.020	0.003	1.000	27220	0.0260		104	11.9	
463.00 > 169.00	3.023	3.020	0.003	1.000	6676		4.08(1.90-5.69)	104	46.1	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.243	3.235	0.008	1.073	40390	0.0220		94.6	60.8	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.371	3.366	0.005	1.000	31910	0.0250		99.9	368	

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	3.371	3.366	0.005	1.272	3318403	2.41		96.3	6172	
D 26 M2-8:2FTS										
529.00 > 81.00	3.379	3.370	0.009	1.275	513998	2.35		98.2	3512	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.371	3.370	0.001	0.998	6527	0.0252		105	64.9	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.379	3.372	0.007	1.118	20026	0.0252		105	124	
549.00 > 99.00	3.371	3.372	-0.001	1.115	5698		3.51(1.33-3.97)	105	39.6	
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.381	0.005	1.277	2237416	2.53		101	7507	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.386	3.382	0.004	1.000	21472	0.0239		95.6	19.0	
513.00 > 169.00	3.393	3.382	0.011	1.002	3653		5.88(2.36-7.09)	95.6	20.9	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.539	3.536	0.002	1.335	869730	2.42		96.8	1350	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.546	3.542	0.004	1.002	7066	0.0210		83.8		M
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.700	3.698	0.002	1.224	16872	0.0271		113	69.0	
599.00 > 99.00	3.700	3.698	0.002	1.224	4146		4.07(1.39-4.16)	113	34.9	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.709	3.706	0.003	1.399	937065	2.42		96.9	979	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.717	3.712	0.005	1.002	8255	0.0253		101	36.3	
D 30 13C2 PFUnA										
565.00 > 520.00	3.717	3.712	0.005	1.402	1618162	2.40		95.8	4587	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.717	3.714	0.003	1.000	16427	0.0289		116	17.8	
563.00 > 169.00	3.717	3.714	0.003	1.000	3863		4.25(2.12-6.36)	116	29.5	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.876	3.873	0.003	1.282	62208	0.0225		95.5	149	
35 MeFOSA										
512.00 > 169.00	3.876	3.879	-0.003		9244	NC			71.3	
D 36 13C2 PFDaA										
615.00 > 570.00	4.011	4.007	0.004	1.513	1688485	2.37		94.9	6773	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.011	4.008	0.003	1.000	19278	0.0260		104	20.3	
613.00 > 169.00	4.011	4.008	0.003	1.000	4172		4.62(2.13-6.40)	104	23.3	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.011	4.013	-0.002	1.187	4094	0.0222		92.3	51.4	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.243	4.250	-0.007	1.404	6812	0.0241		99.7	92.1	
699.00 > 99.00	4.252	4.250	0.002	1.407	11168		0.61(0.00-0.00)	99.7	110	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.280	4.276	0.004	1.067	18989	0.0265		106	19.0	
663.00 > 169.00	4.280	4.276	0.004	1.067	5520		3.44(1.25-3.76)	106	52.8	

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	4.513	4.515	-0.002	1.000	4056	0.0199		79.6	42.5	
713.00 > 219.00	4.513	4.515	-0.002	1.000	3784		1.07(0.71-2.13)	79.6	84.9	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.513	4.515	-0.002	1.702	2073120	2.42		96.9	5181	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.935	4.933	0.002	1.862	3659021	2.37		94.7	6099	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.935	4.934	0.001	1.000	65801	0.0256		102	15.7	
813.00 > 169.00	4.935	4.934	0.001	1.000	12169		5.41(2.86-8.58)	102	112	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.293	5.285	0.008	1.073	36587	0.0238		95.1	8.3	
913.00 > 169.00	5.286	5.285	0.001	1.071	4411		8.29(3.83-11.48)	95.1	57.3	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d

Injection Date: 04-Oct-2018 04:37:43

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

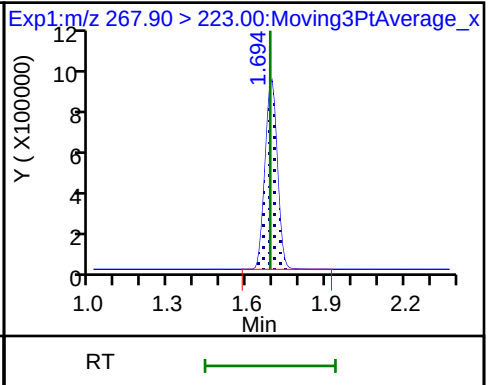
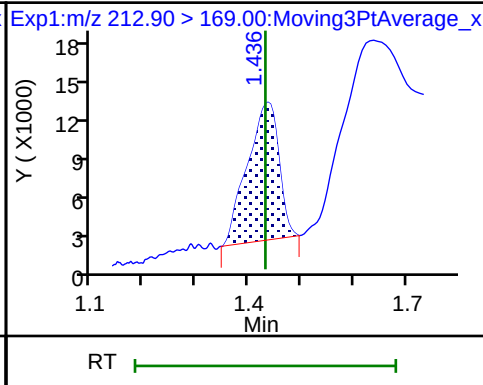
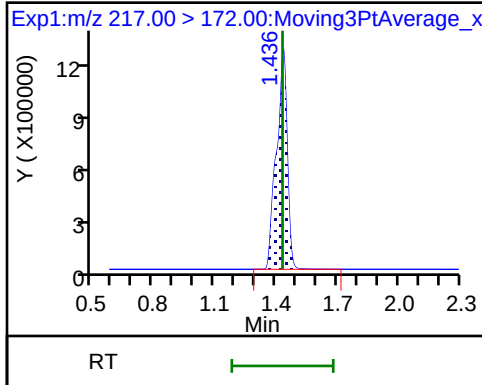
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

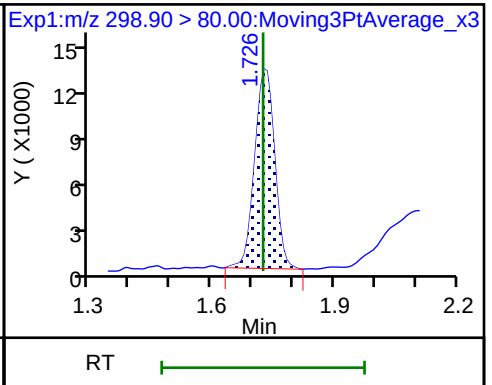
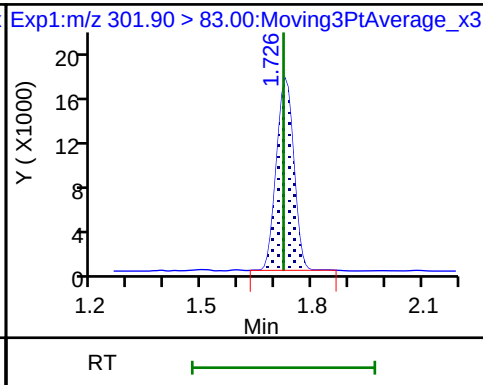
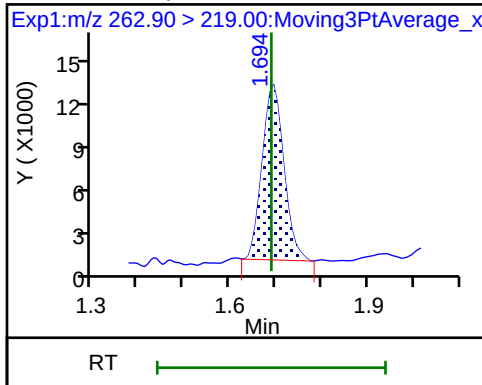
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

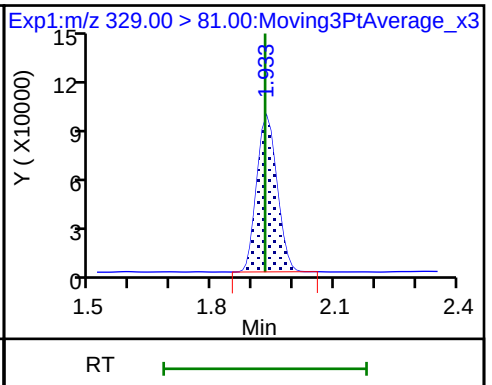
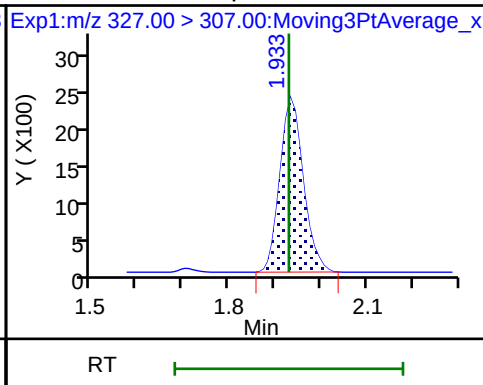
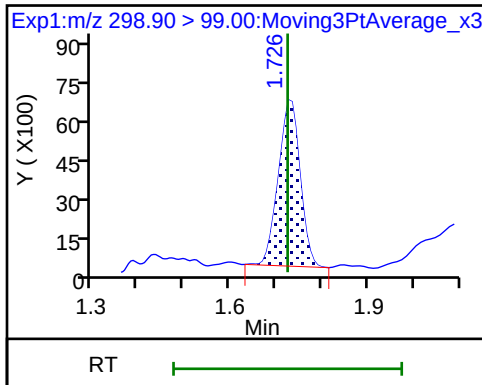
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

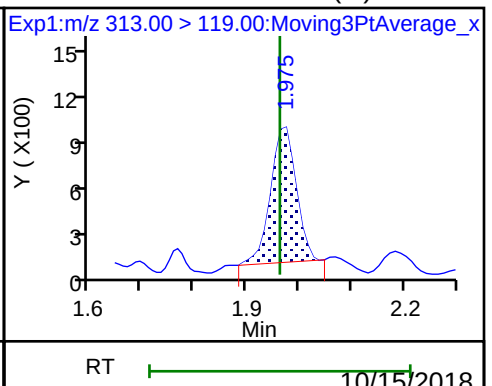
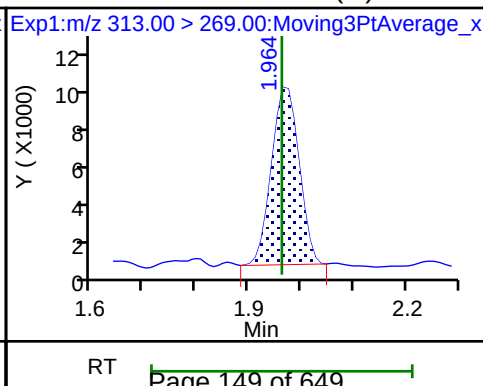
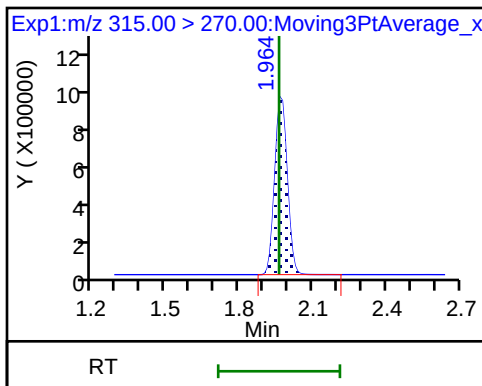
D 60 M2-4:2FTS

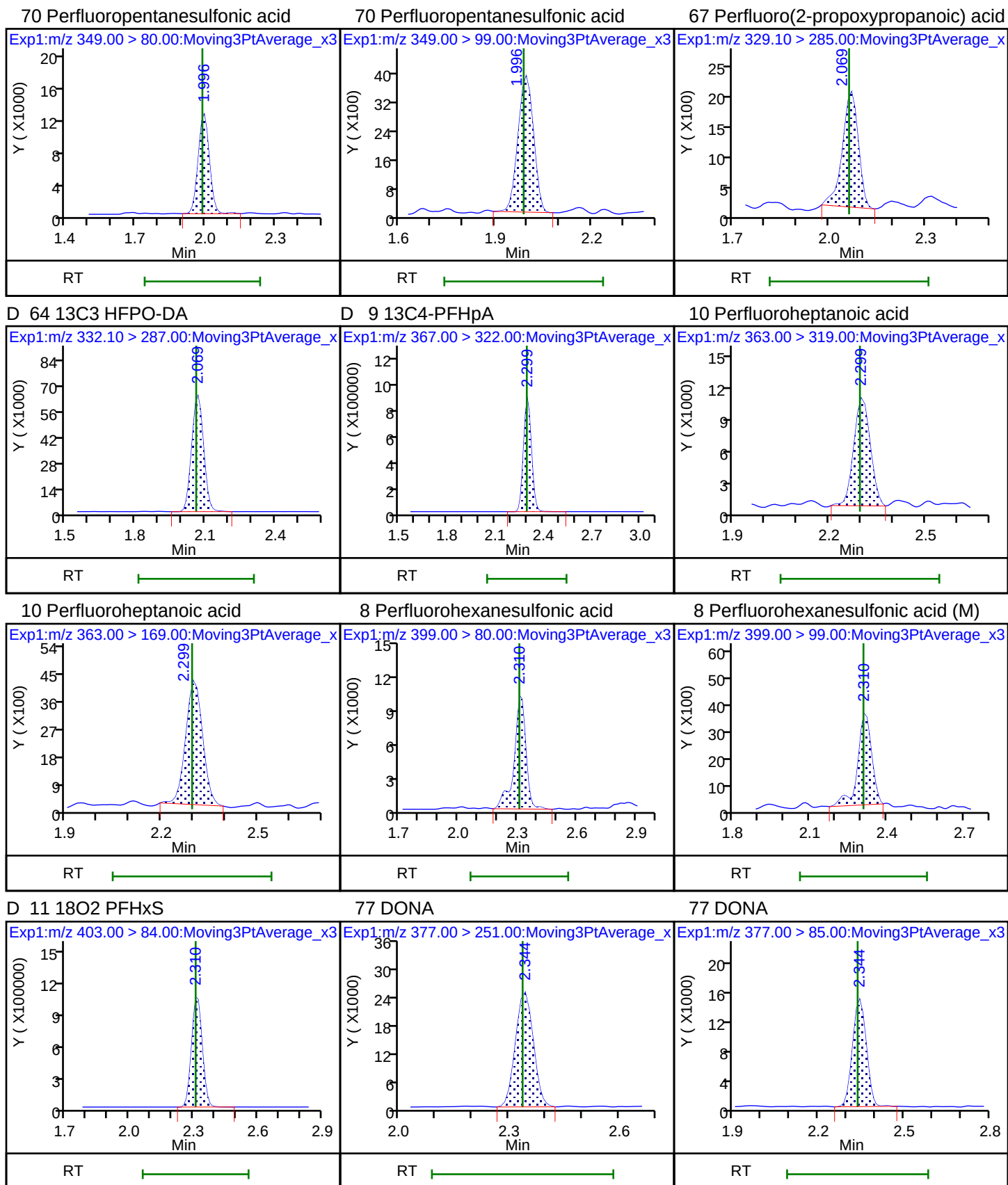


D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

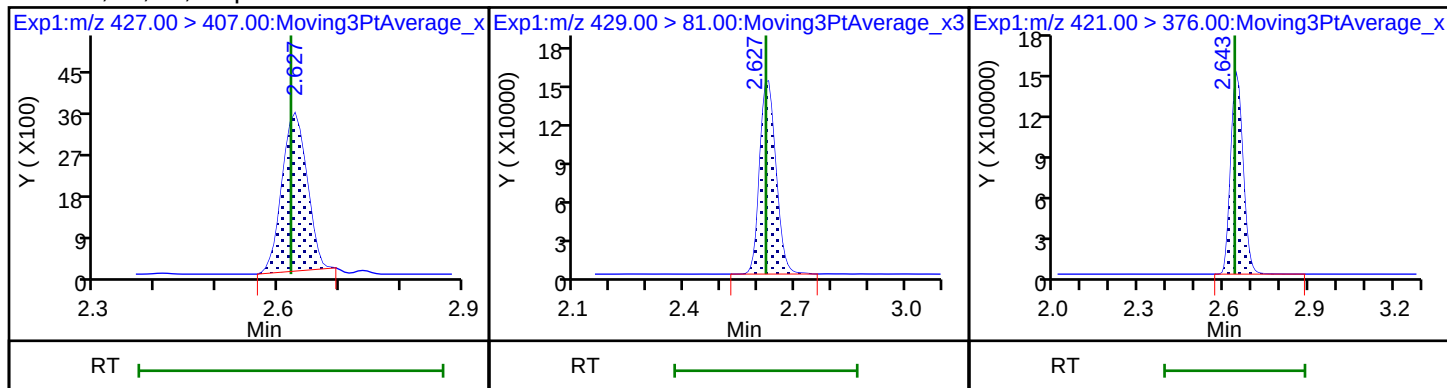
6 Perfluorohexanoic acid (M)





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

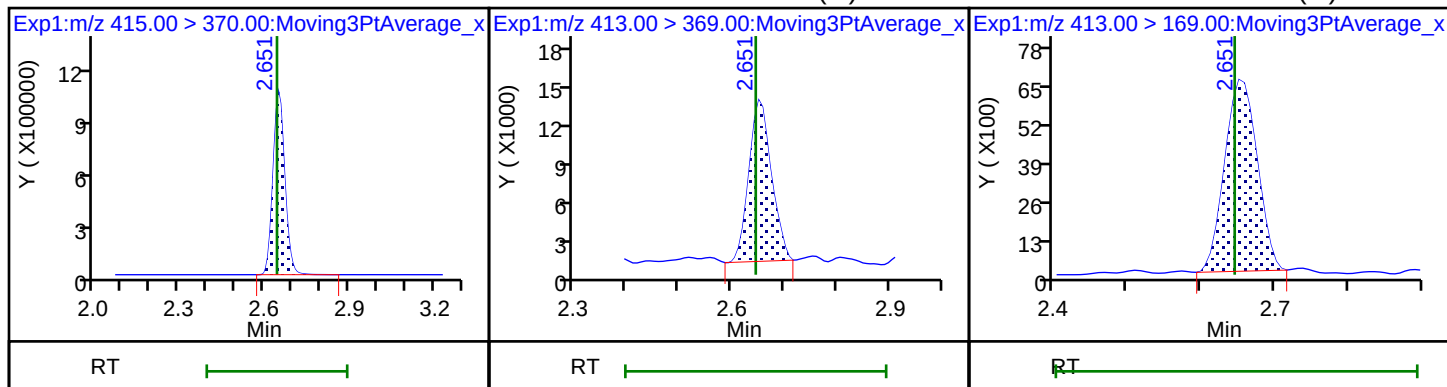
D 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

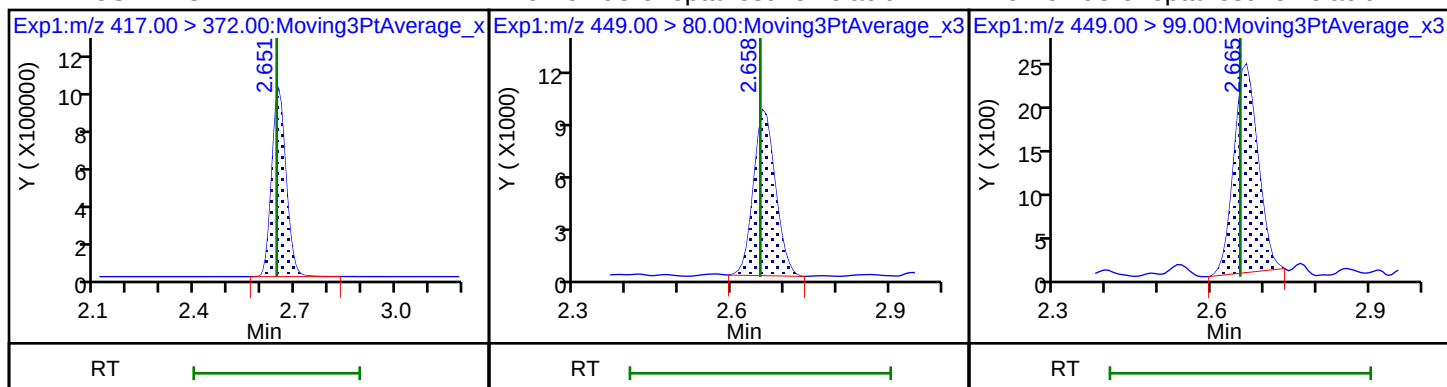
15 Perfluorooctanoic acid (M)



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

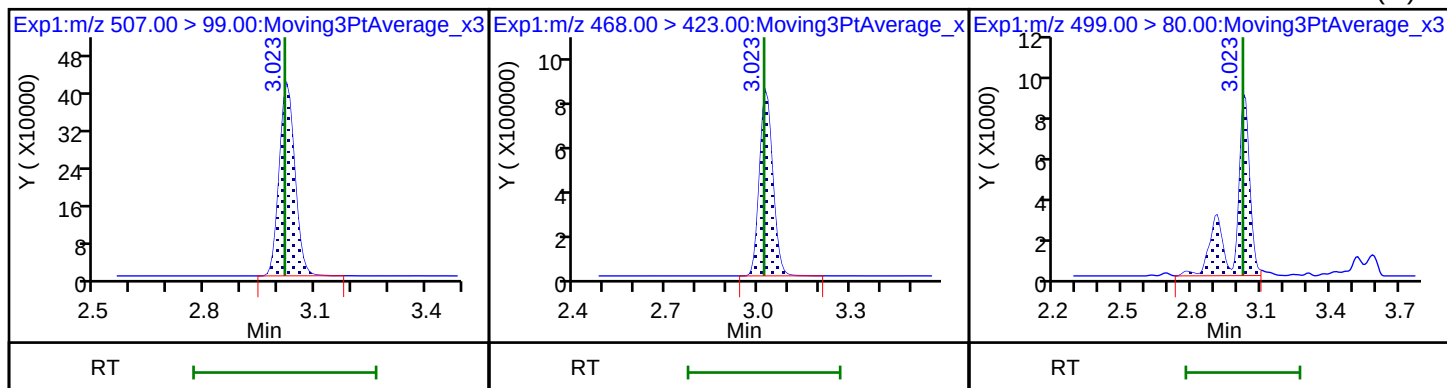
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

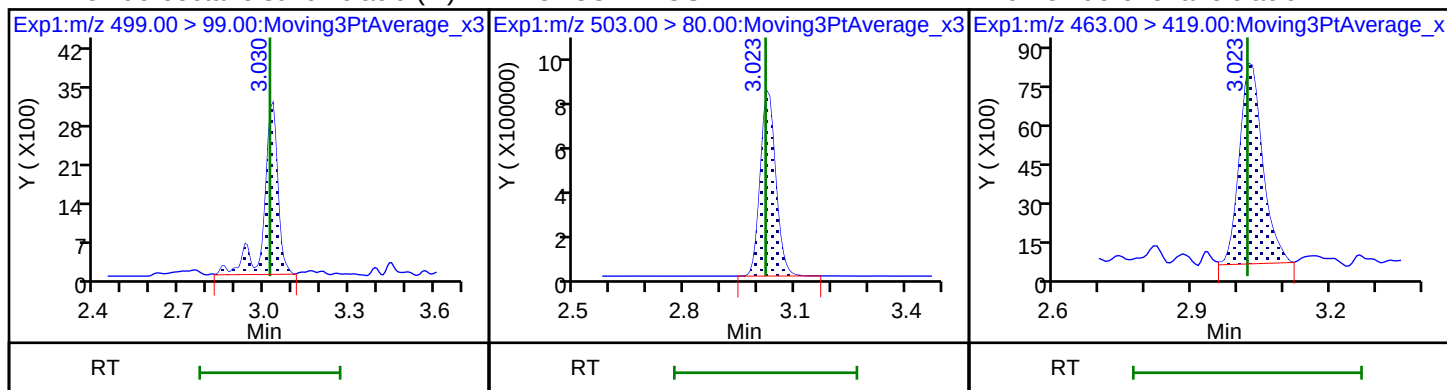
D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid (M)



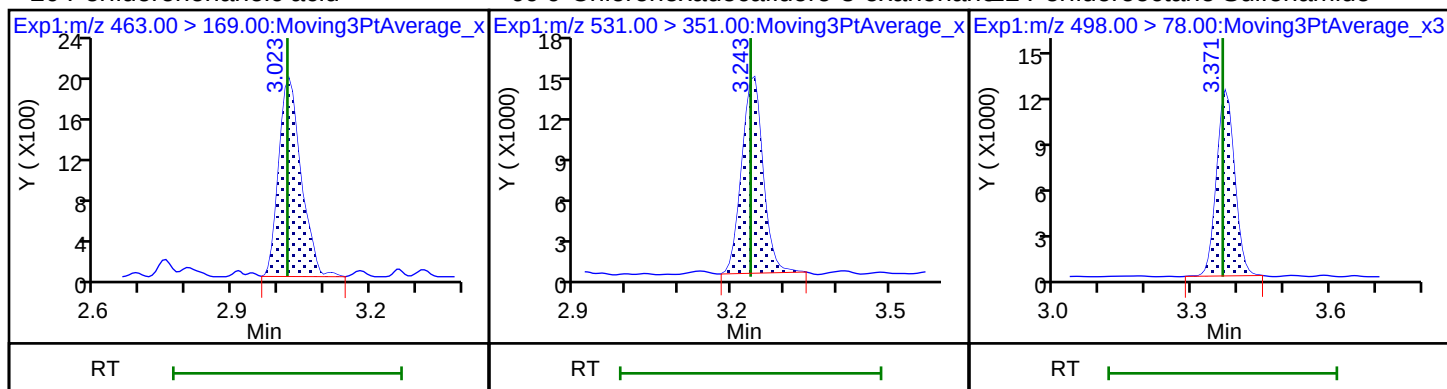
17 Perfluorooctane sulfonic acid (M) D 18 13C4 PFOS

20 Perfluorononanoic acid



20 Perfluorononanoic acid

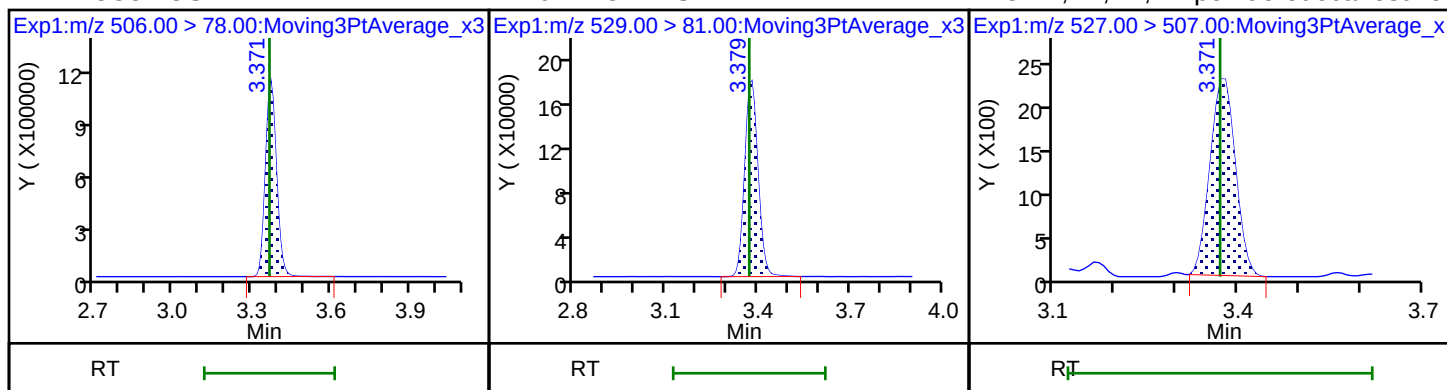
69 9-Chlorohexadecafluoro-3-oxanonan-2-yl Perfluorooctane Sulfonamide



D 21 13C8 FOSA

D 26 M2-8:2FTS

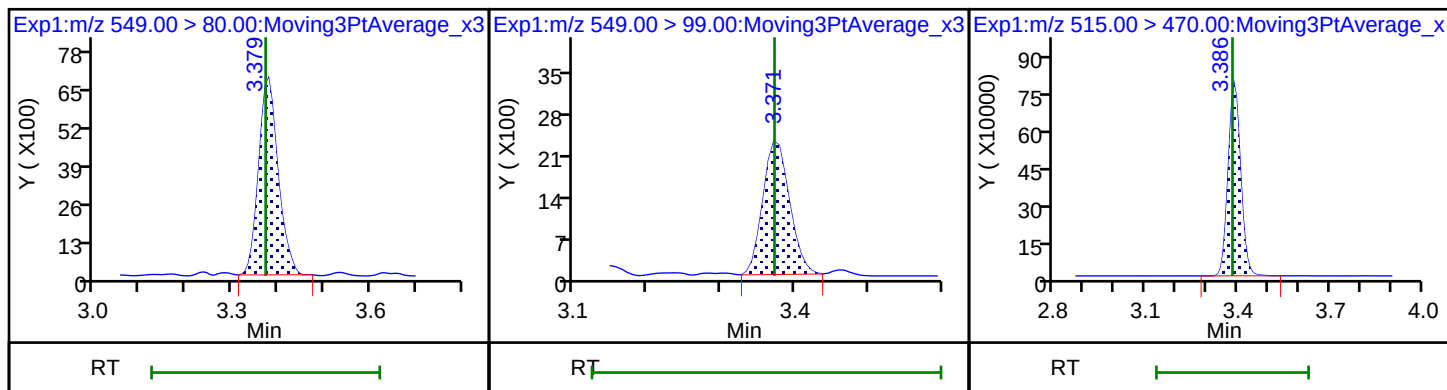
25 1H,1H,2H,2H-perfluorodecanesulfoni

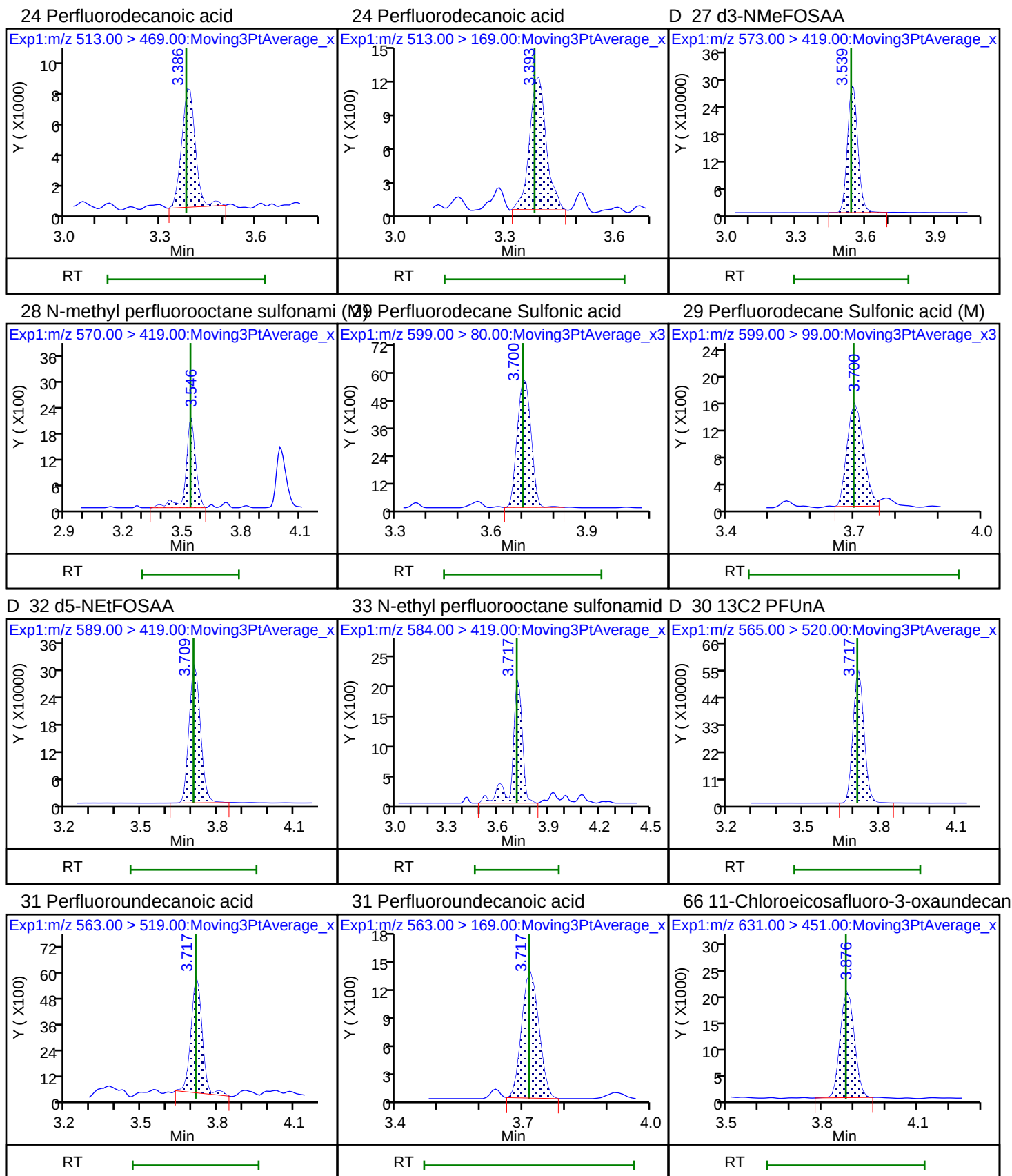


68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

D 23 13C2 PFDA

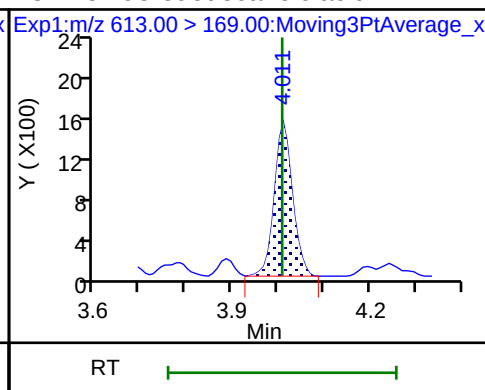
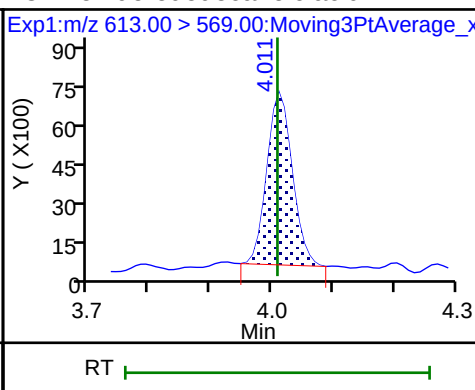
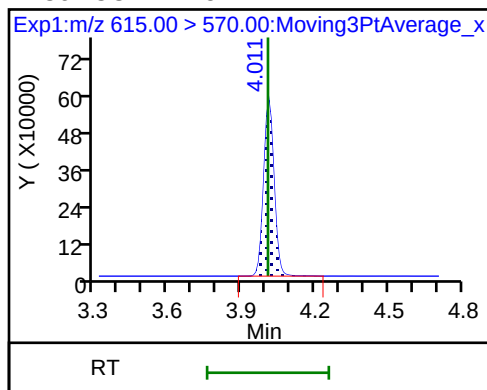




D 36 13C2 PFDaA

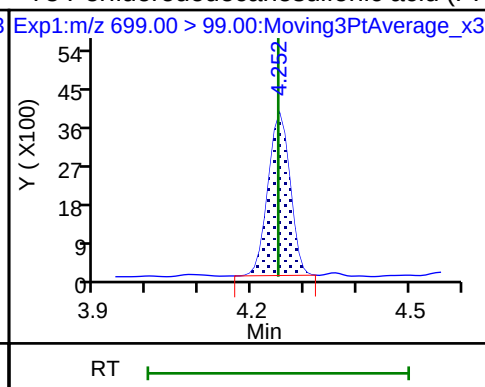
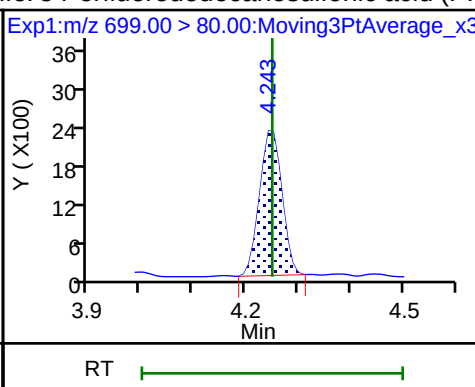
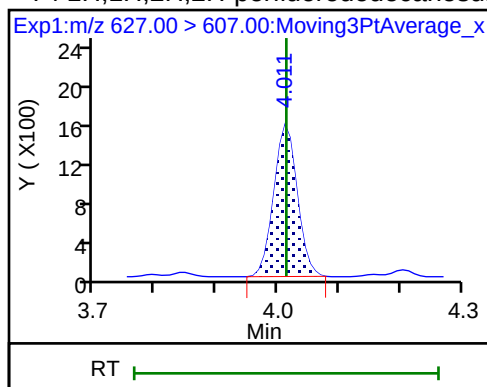
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

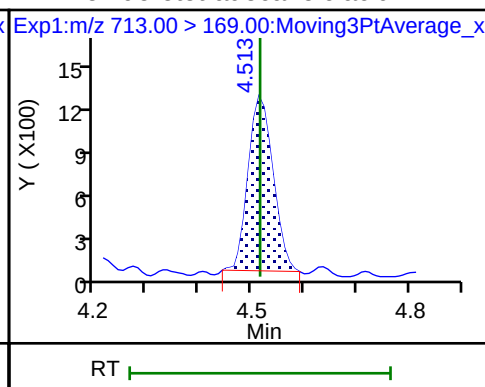
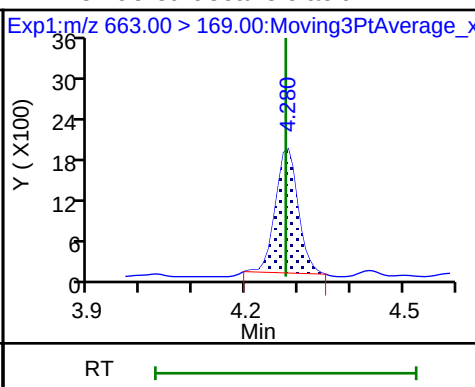
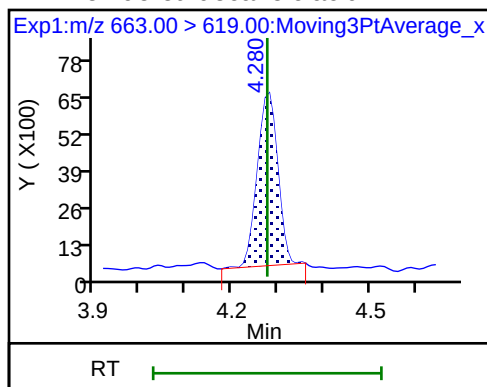
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

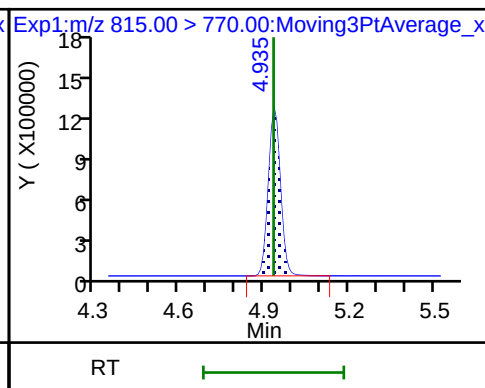
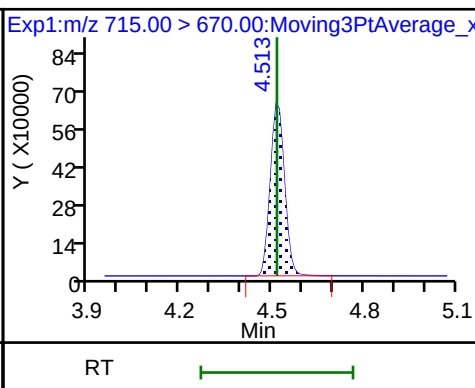
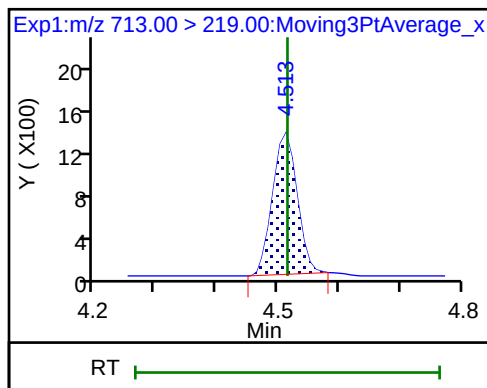
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

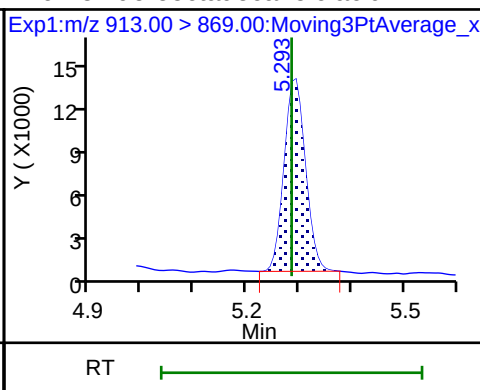
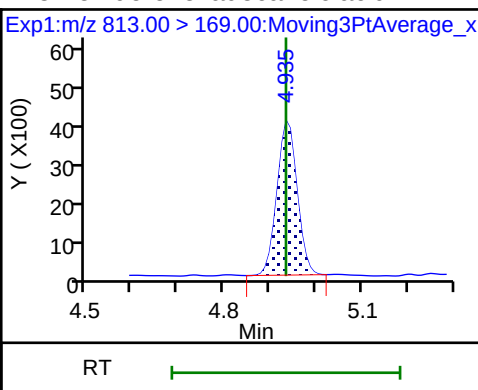
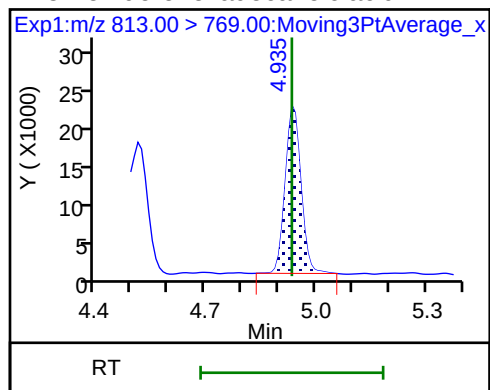
D 44 13C2-PFHxDA



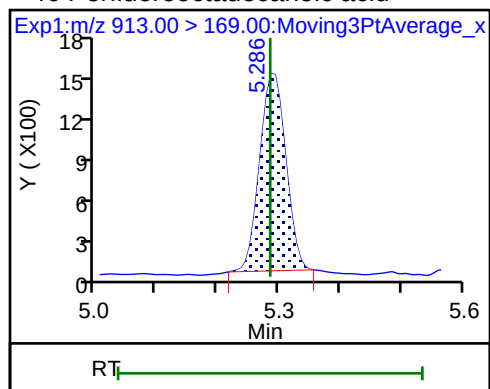
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



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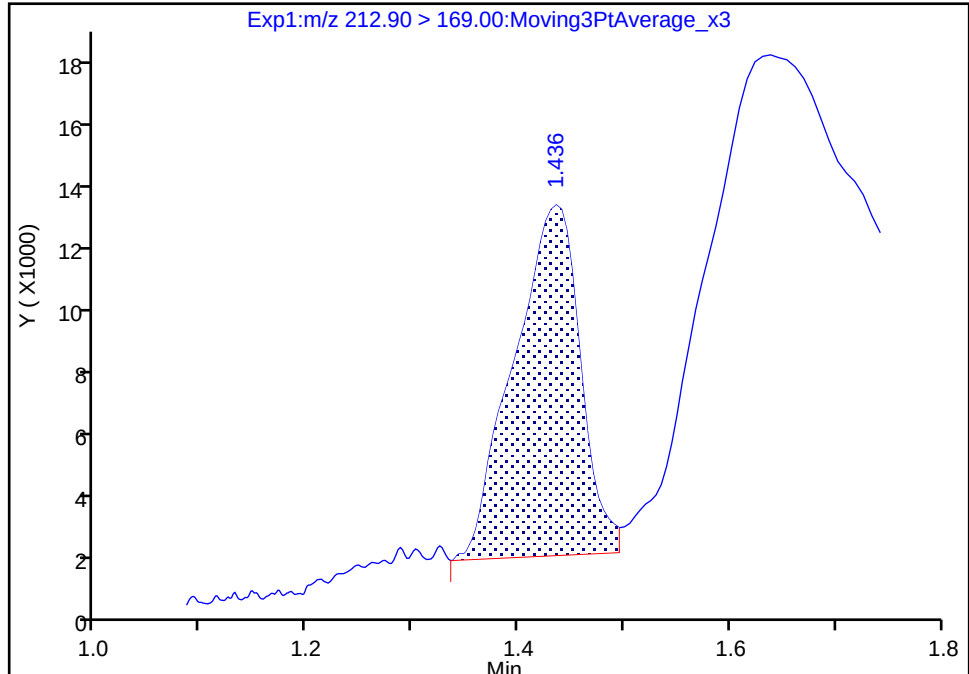
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

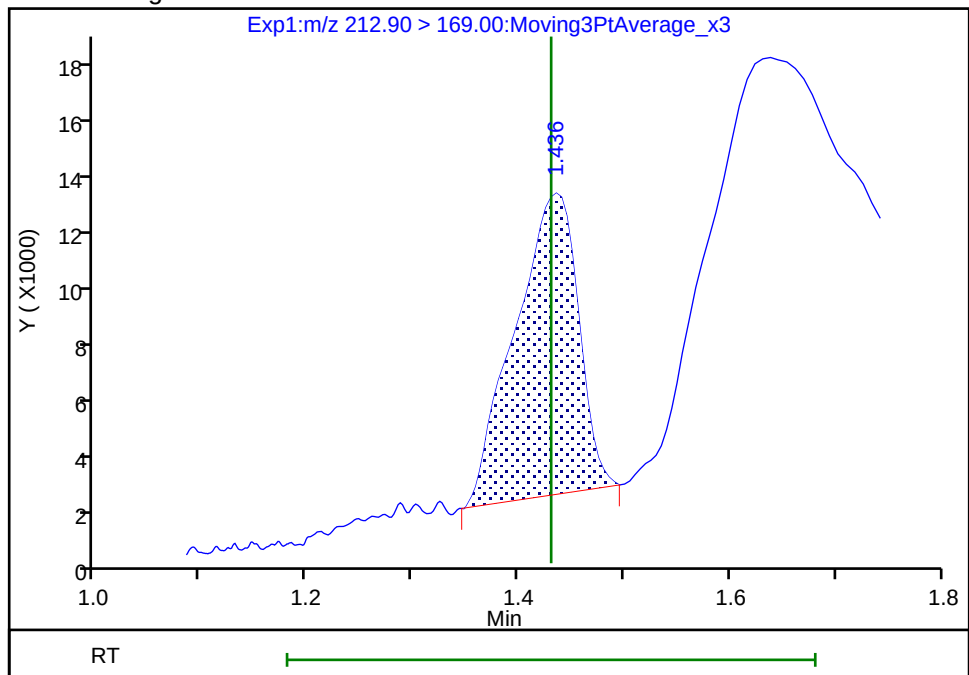
RT: 1.44
Area: 48216
Amount: 0.027900
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 43735
Amount: 0.025942
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:35:51
Audit Action: Manually Integrated

Audit Reason: Baseline
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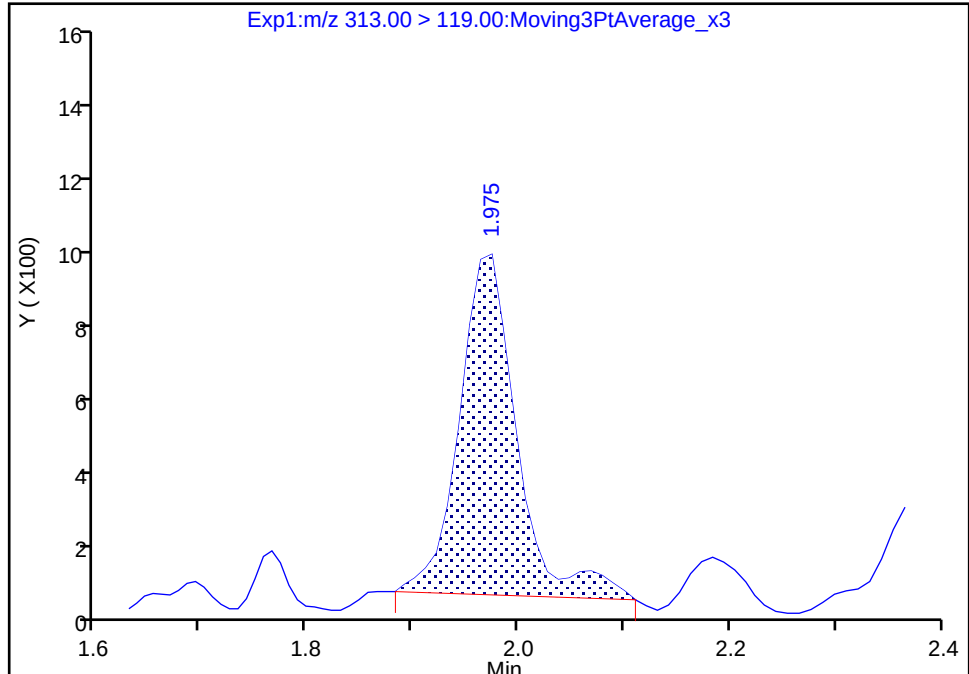
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

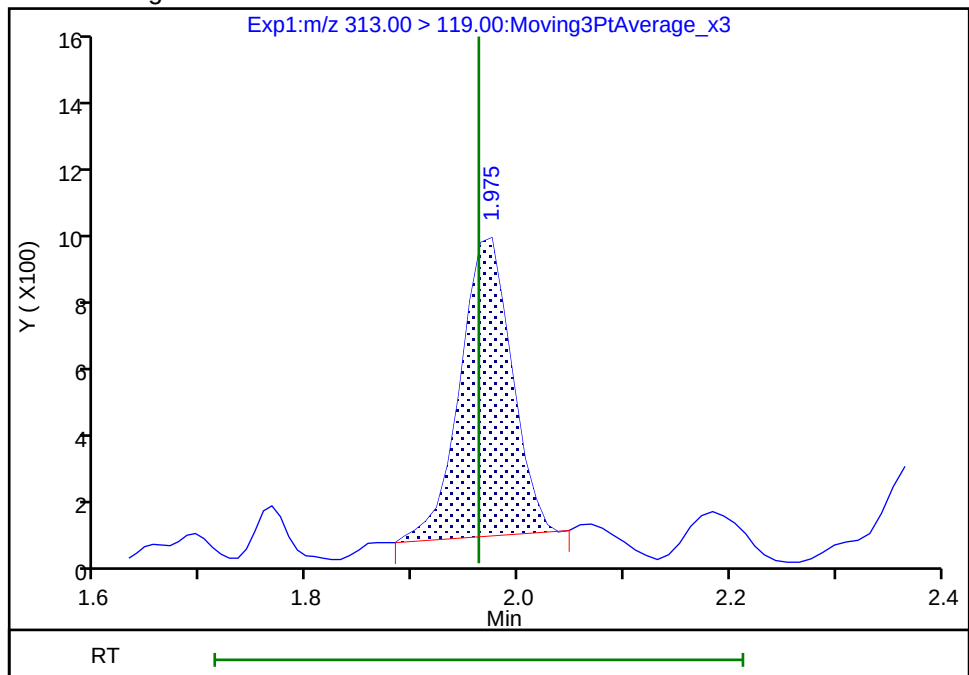
RT: 1.97
Area: 3432
Amount: 0.027028
Amount Units: ng/ml

Processing Integration Results



RT: 1.97
Area: 2990
Amount: 0.026468
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:36:03
Audit Action: Manually Integrated

Audit Reason: Baseline
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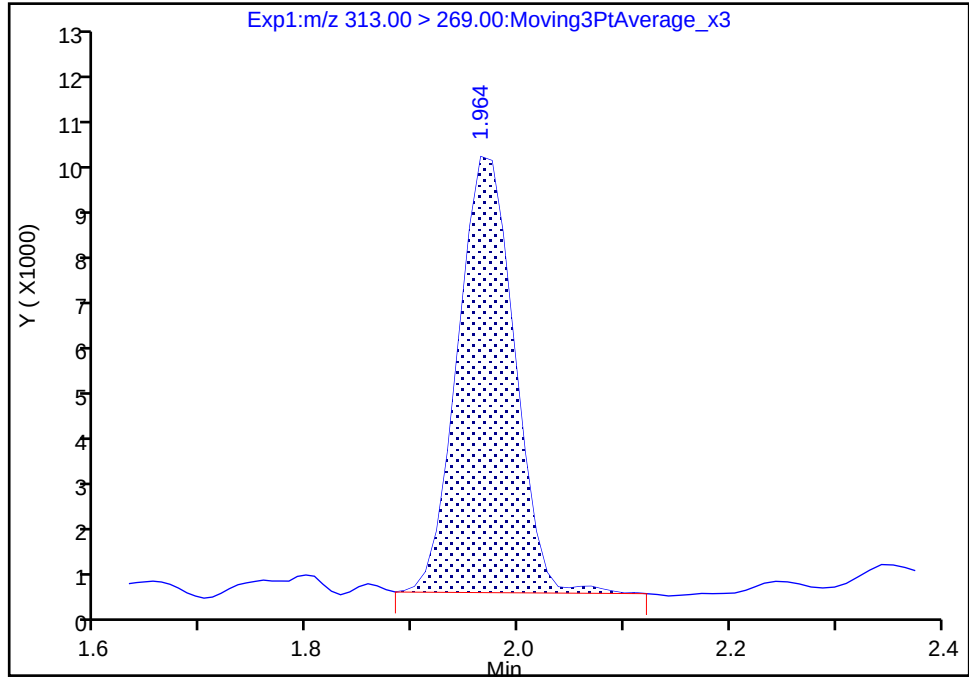
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

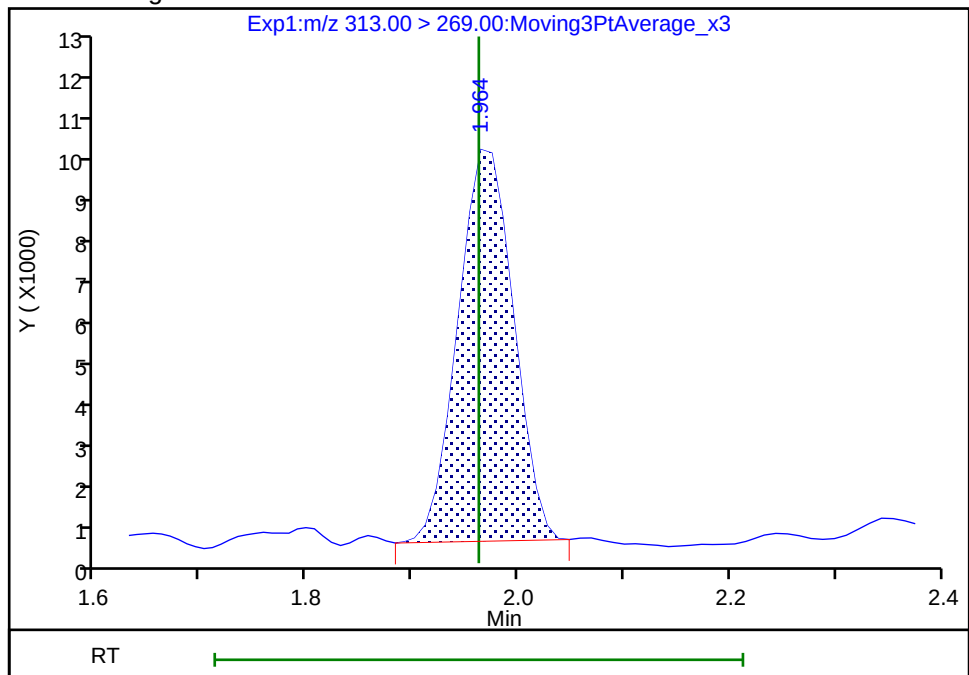
RT: 1.96
Area: 35751
Amount: 0.027028
Amount Units: ng/ml

Processing Integration Results



RT: 1.96
Area: 34878
Amount: 0.026468
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:36:11

Audit Action: Manually Integrated

Audit Reason: Baseline

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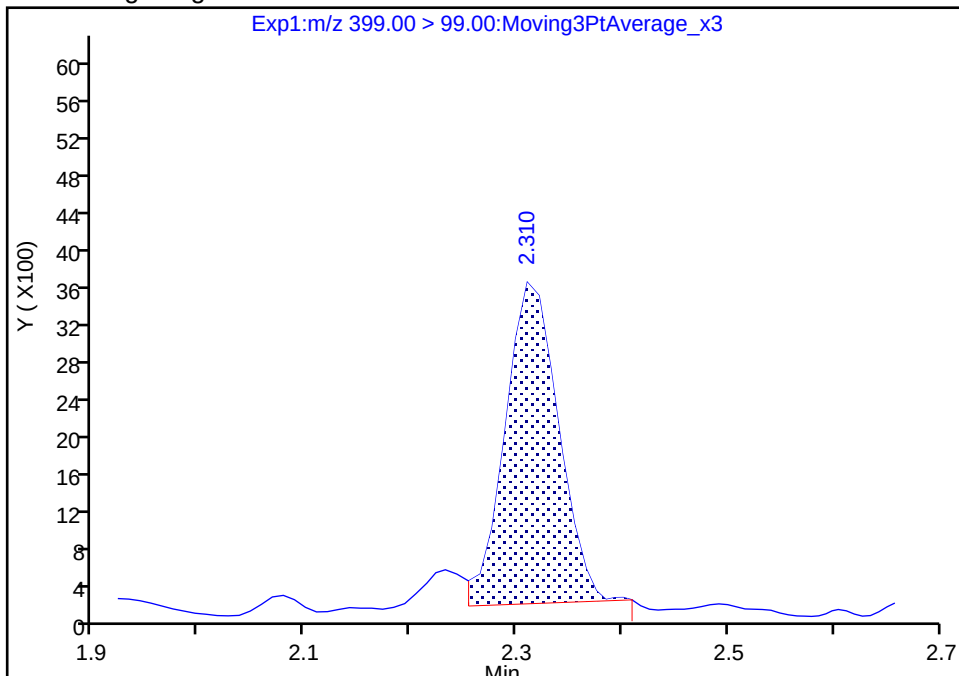
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

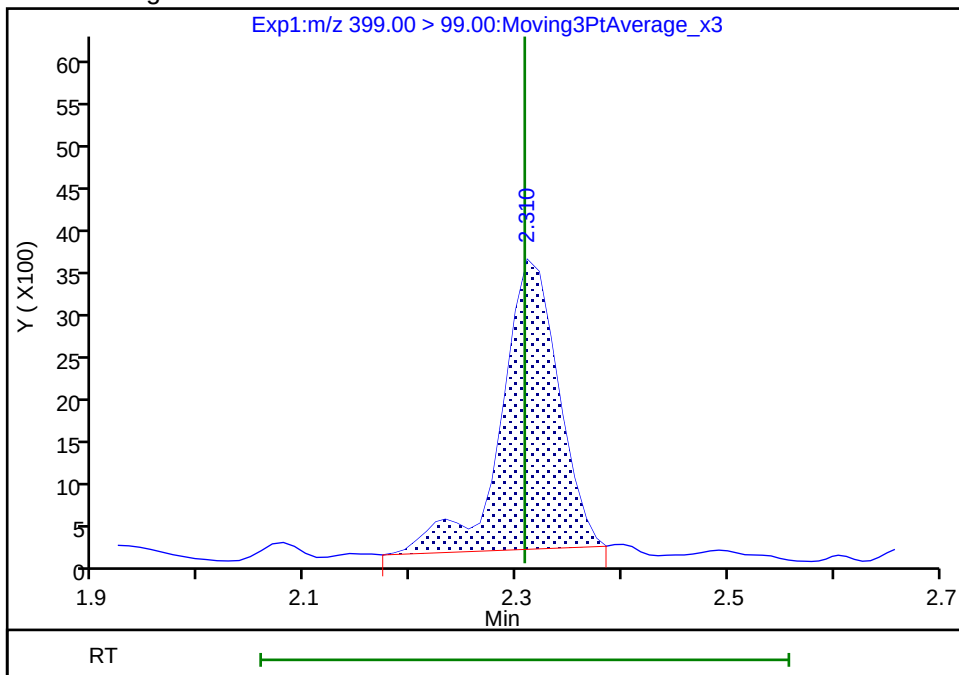
RT: 2.31
Area: 12039
Amount: 0.025521
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 12953
Amount: 0.025521
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:36:27

Audit Action: Manually Integrated

Audit Reason: Isomers

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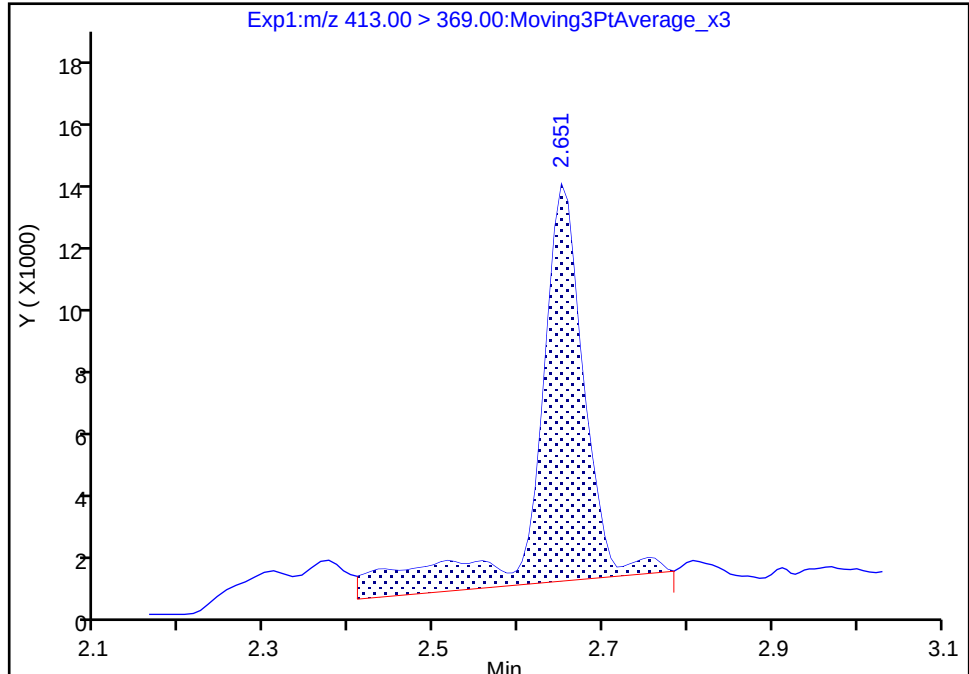
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

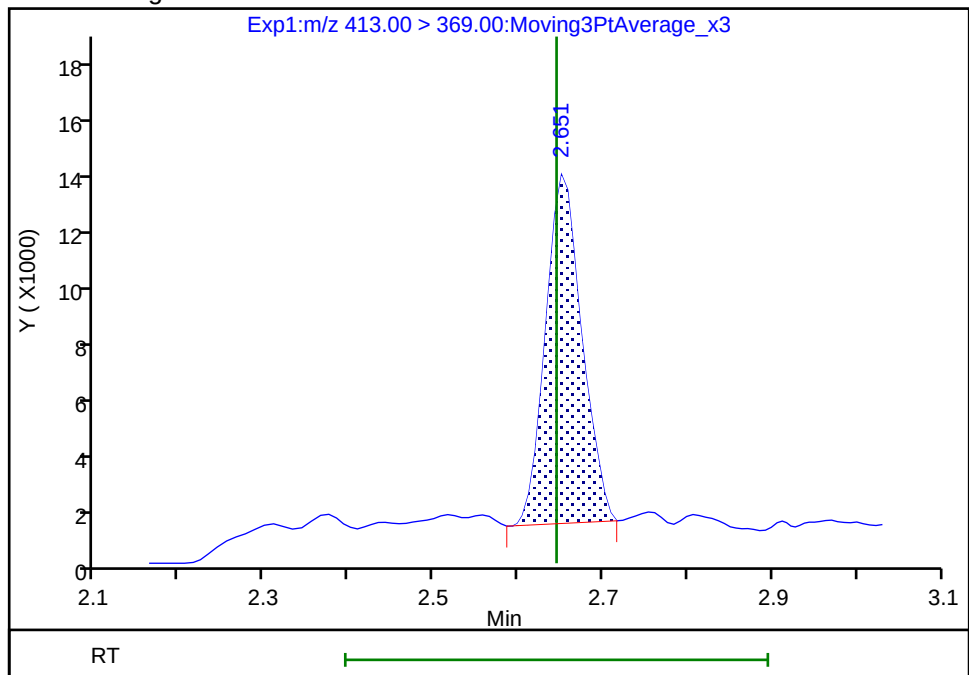
RT: 2.65
Area: 49273
Amount: 0.033873
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 36579
Amount: 0.026465
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:36:51
Audit Action: Manually Integrated

Audit Reason: Baseline
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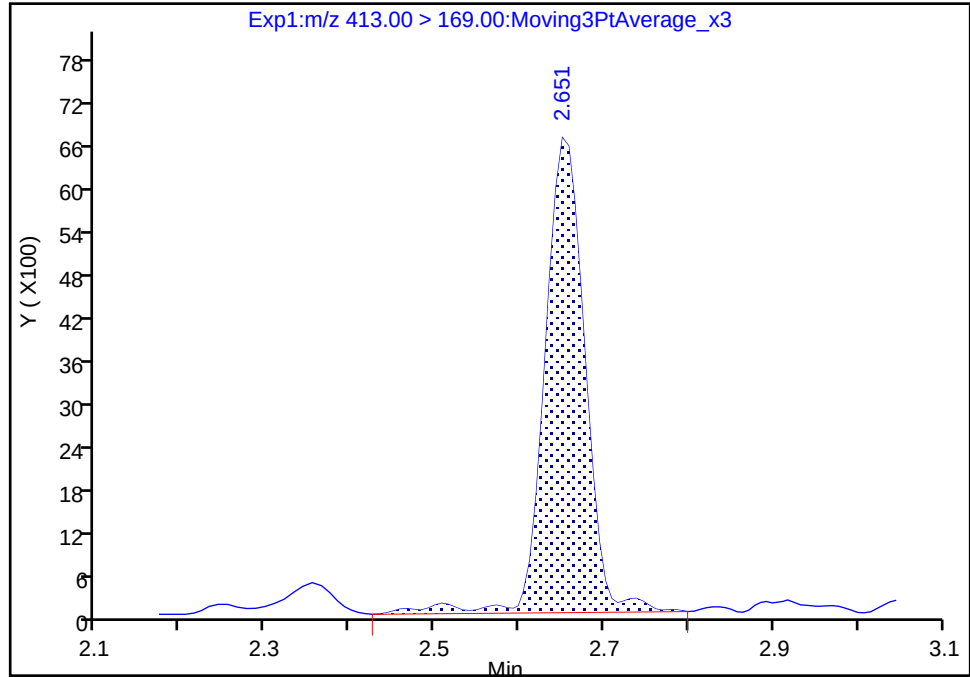
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

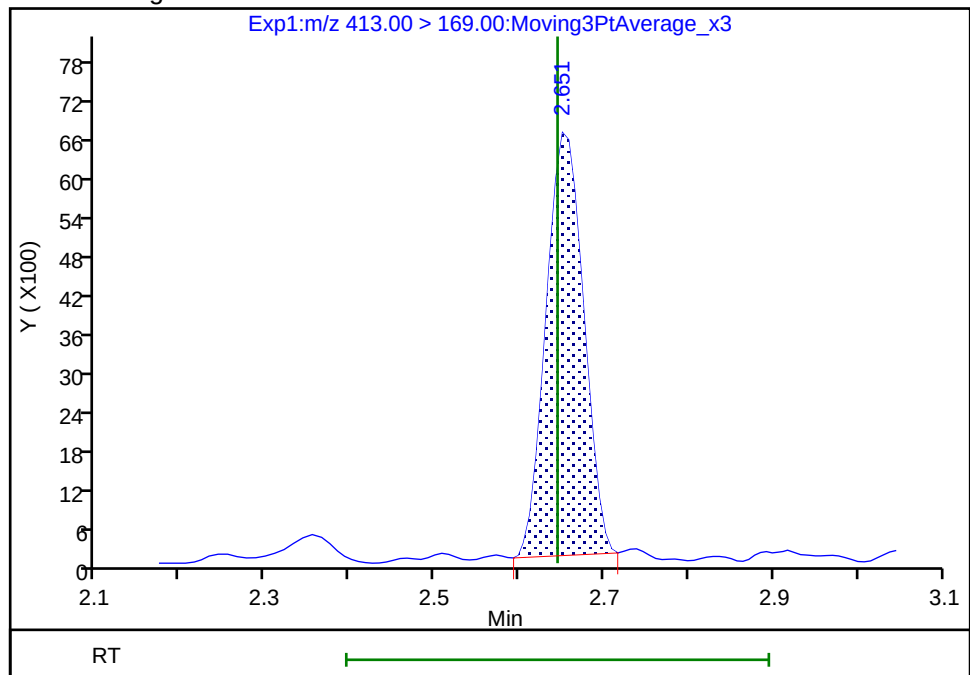
RT: 2.65
Area: 21925
Amount: 0.033873
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 20079
Amount: 0.026465
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:36:58

Audit Action: Manually Integrated

Audit Reason: Baseline

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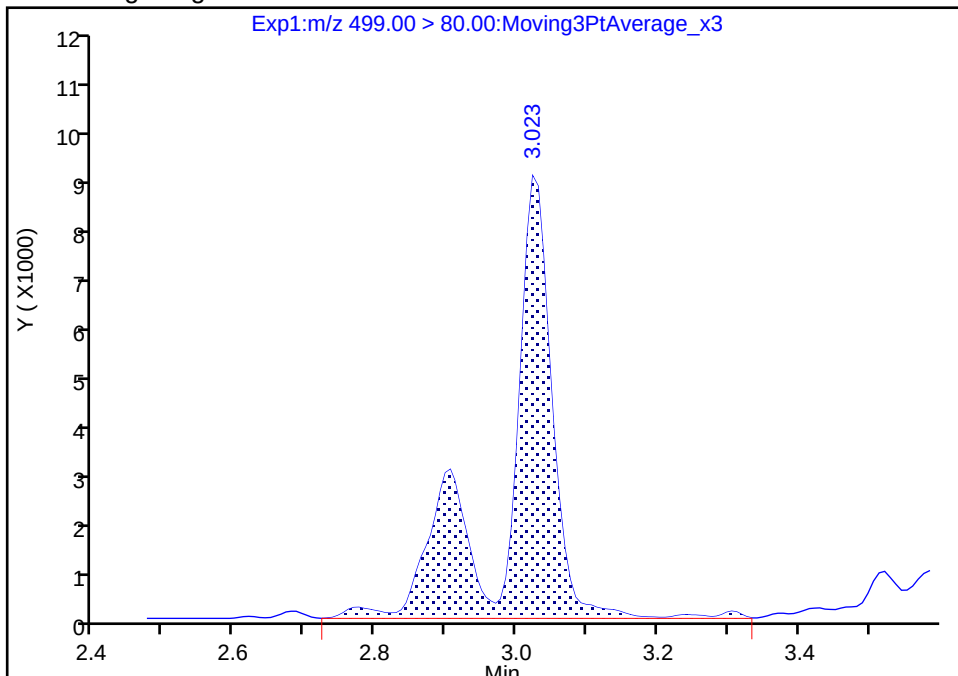
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

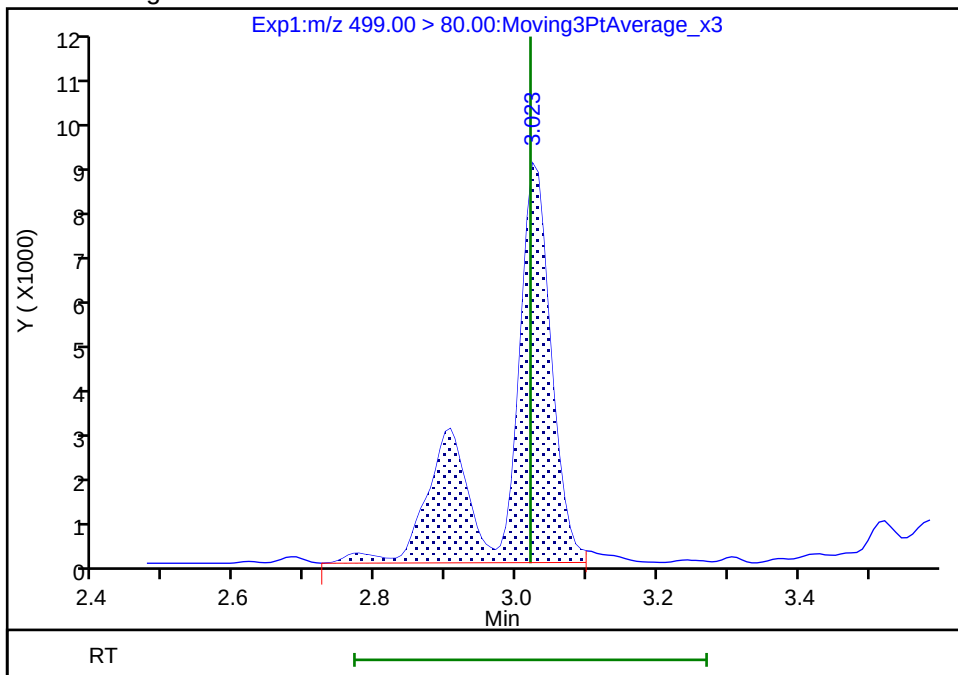
RT: 3.02
Area: 40888
Amount: 0.034036
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 39422
Amount: 0.035585
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:37:44

Audit Action: Manually Integrated

Audit Reason: Baseline

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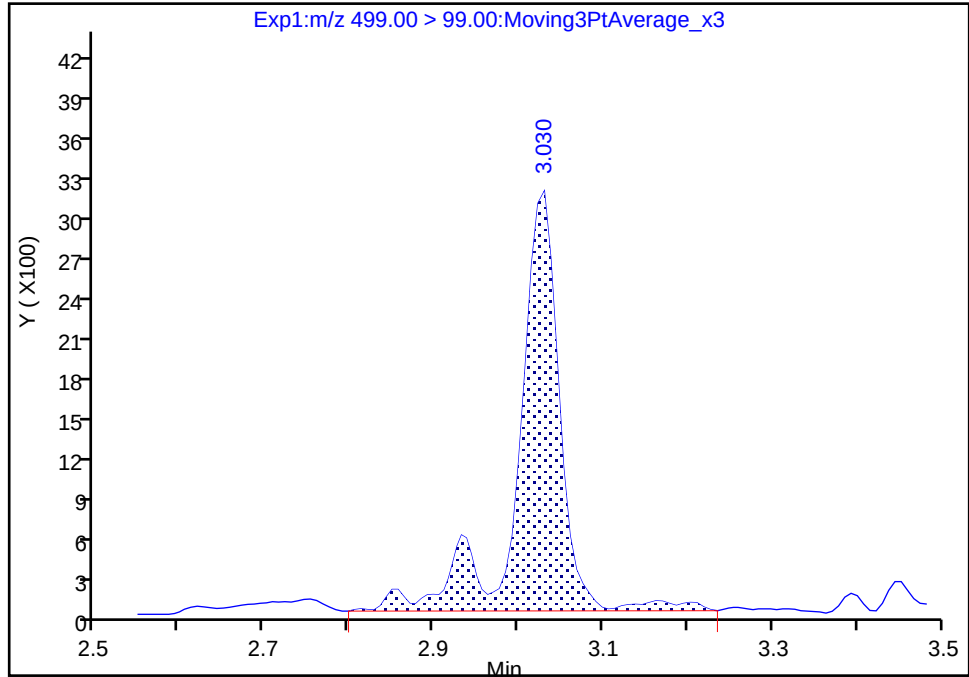
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

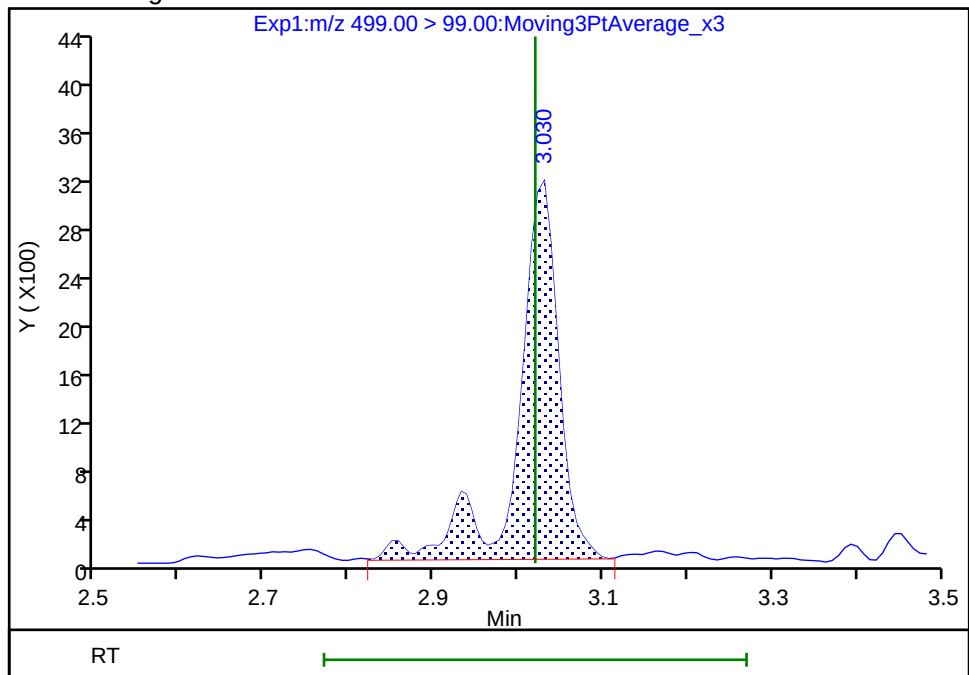
RT: 3.03
Area: 11007
Amount: 0.034036
Amount Units: ng/ml

Processing Integration Results



RT: 3.03
Area: 10568
Amount: 0.035585
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:39:38

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

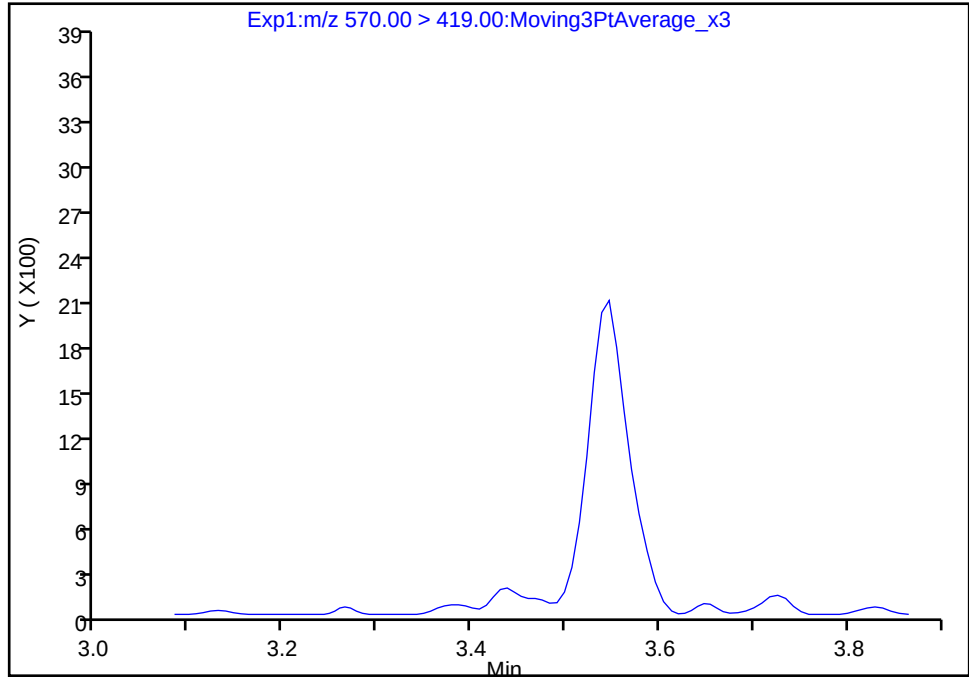
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

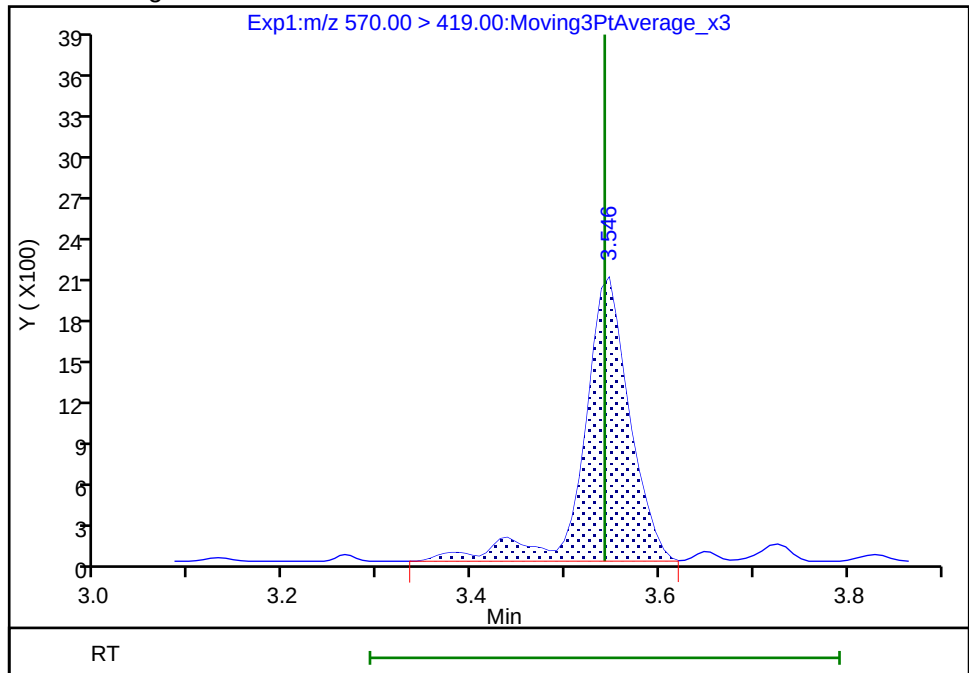
Not Detected
Expected RT: 3.54

Processing Integration Results



RT: 3.55
Area: 7066
Amount: 0.020959
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:38:03
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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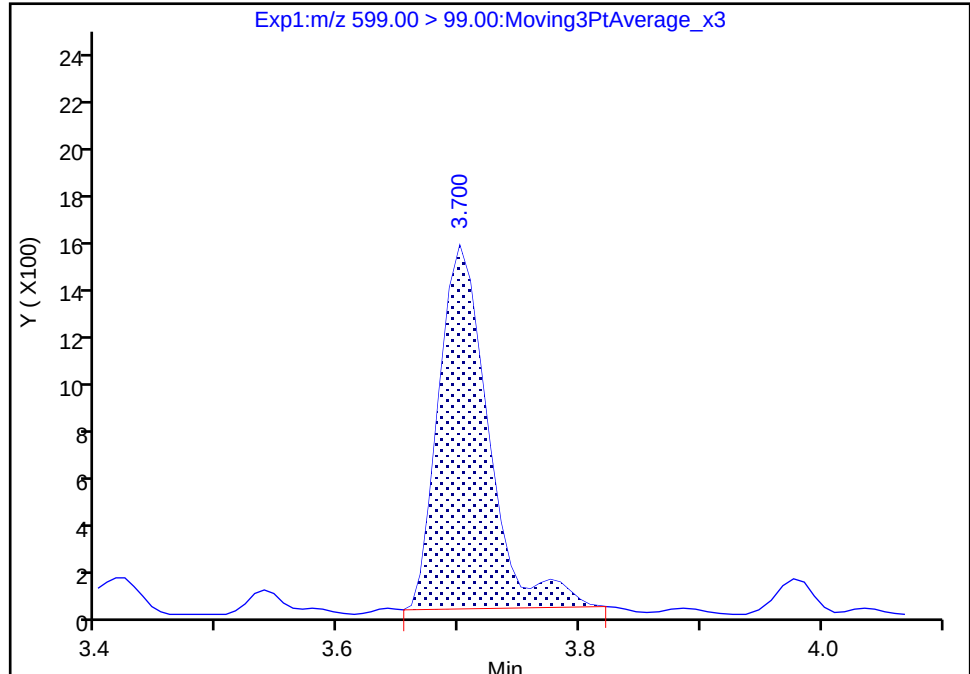
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_002.d
Injection Date: 04-Oct-2018 04:37:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 2

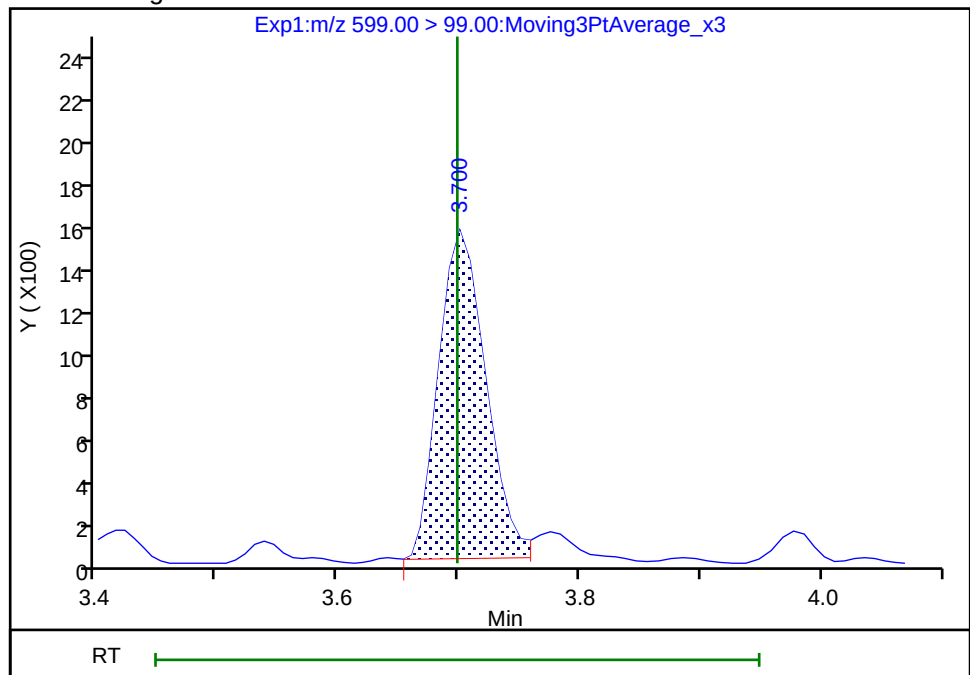
RT: 3.70
Area: 4373
Amount: 0.027118
Amount Units: ng/ml

Processing Integration Results



RT: 3.70
Area: 4146
Amount: 0.027118
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:38:15
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_003.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 04-Oct-2018 04:45:06 ALS Bottle#: 11 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L2-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 04-Oct-2018 10:33:26 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: roycea

Date: 04-Oct-2018 08:42:25

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	1.433	1.430	0.003	0.541	4326452	2.48		99.1	9371	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.433	1.431	0.002	1.000	83797	0.0510		102	11.8	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.688	0.004	0.638	2901613	2.47		99.0	10244	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.692	1.689	0.003	1.000	66388	0.0515		103	16.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.724	1.722	0.002	0.650	58878	2.35		101	361	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.724	1.725	-0.001	1.000	86466	0.0439		99.4	22.4	
298.90 > 99.00	1.724	1.725	-0.001	1.000	38804		2.23(1.25-3.74)	99.4	17.3	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.933	1.929	0.004	1.121	13906	0.0423		90.6	247	
D 60 M2-4:2FTS										
329.00 > 81.00	1.933	1.929	0.004	0.729	335848	2.44		104	425	
D 7 13C2 PFHxA										
315.00 > 270.00	1.965	1.961	0.004	0.741	3340421	2.59		104	8767	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.965	1.962	0.003	1.000	63137	0.0480		95.9	30.0	
313.00 > 119.00	1.965	1.962	0.003	1.000	6701		9.42(5.03-15.10)	95.9	26.1	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.996	1.988	0.008	1.158	80250	0.0473		101	280	
349.00 > 99.00	1.986	1.988	-0.002	1.152	28530		2.81(1.36-4.07)	101	110	
67 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	2.069	2.061	0.008	1.000	13444	0.0499		99.9	17.5	M

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	2.069	2.061	0.008	0.780	233900	2.50		100	1369	
D 9 13C4-PFHpA										
367.00 > 322.00	2.299	2.295	0.004	0.867	2996668	2.59		104	7524	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.295	0.004	1.000	63164	0.0470		94.0	22.6	
363.00 > 169.00	2.299	2.295	0.004	1.000	29257		2.16(1.13-3.40)	94.0	46.6	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.310	2.308	0.002	1.000	81705	0.0485		107	110	M
399.00 > 99.00	2.322	2.308	0.014	1.005	27120		3.01(1.50-4.49)	107	52.0	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.309	0.001	0.871	3615137	2.50		106	5426	
77 DONA										
377.00 > 251.00	2.344	2.336	0.008	0.775	180448	0.0483		103	571	
377.00 > 85.00	2.344	2.336	0.008	0.775	107562		1.68(0.85-2.54)	103	451	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.628	2.621	0.007	1.000	15394	0.0467		98.5	58.9	
D 12 M2-6:2FTS										
429.00 > 81.00	2.628	2.621	0.007	0.991	459910	2.36		99.4	1656	
D 73 13C8 PFOA										
421.00 > 376.00	2.643	2.637	0.006	0.997	4459523	2.38		97.2	8757	
* 62 13C2-PFOA										
415.00 > 370.00	2.651	2.645	0.006		2888347	2.50			10099	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.651	2.645	0.006	1.000	79461	0.0594		119	18.0	
413.00 > 169.00	2.651	2.645	0.006	1.000	37619		2.11(0.84-2.52)	119	123	
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.645	0.006	1.000	2840631	2.53		101	7089	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.658	2.654	0.004	0.879	55388	0.0461		96.8	348	
449.00 > 99.00	2.658	2.654	0.004	0.879	15897		3.48(1.94-5.82)	96.8	84.4	
D 72 13C8 PFOS										
507.00 > 99.00	3.024	3.018	0.006	1.141	1187221	2.40		100	5426	
D 19 13C5 PFNA										
468.00 > 423.00	3.024	3.019	0.005	1.141	2286288	2.42		96.8	7919	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.024	3.020	0.004	1.000	55930	0.0510		110	71.7	M
499.00 > 99.00	3.024	3.020	0.004	1.000	12522		4.47(2.31-6.93)	110	51.9	M
D 18 13C4 PFOS										
503.00 > 80.00	3.024	3.020	0.004	1.141	2295011	2.45		103	6420	
20 Perfluorononanoic acid										
463.00 > 419.00	3.024	3.020	0.004	1.000	56569	0.0574		115	23.1	
463.00 > 169.00	3.024	3.020	0.004	1.000	12725		4.45(1.90-5.69)	115	94.0	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.244	3.235	0.009	1.073	83372	0.0460		98.6	193	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.373	3.366	0.007	1.000	58834	0.0449		89.8	392	

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	3.373	3.366	0.007	1.272	3403655	2.61		105	5970	
D 26 M2-8:2FTS										
529.00 > 81.00	3.373	3.370	0.003	1.272	486241	2.36		98.4	2589	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.373	3.370	0.003	1.000	11652	0.0475		99.2	147	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.380	3.372	0.008	1.118	33594	0.0426		88.8	301	
549.00 > 99.00	3.373	3.372	0.001	1.115	12018		2.80(1.33-3.97)	88.8	91.5	
D 23 13C2 PFDA										
515.00 > 470.00	3.387	3.381	0.006	1.278	2175850	2.60		104	7805	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.387	3.382	0.005	1.000	42610	0.0488		97.6	41.8	
513.00 > 169.00	3.380	3.382	-0.002	0.998	7662		5.56(2.36-7.09)	97.6	50.6	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.540	3.536	0.004	1.335	833719	2.46		98.3	1315	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.548	3.542	0.006	1.002	20118	0.0622		124	35.2	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.703	3.698	0.005	1.225	27825	0.0452		93.7	182	
599.00 > 99.00	3.703	3.698	0.005	1.225	9320		2.99(1.39-4.16)	93.7	69.5	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.711	3.706	0.005	1.400	950459	2.60		104	1071	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.720	3.712	0.008	1.002	17114	0.0517		103	109	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.720	3.712	0.008	1.403	1609076	2.52		101	3967	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.720	3.714	0.006	1.000	26166	0.0464		92.7	31.3	
563.00 > 169.00	3.720	3.714	0.006	1.000	7870		3.32(2.12-6.36)	92.7	56.3	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.873	3.873	0.0	1.281	129934	0.0475		101	274	
35 MeFOSA										
512.00 > 169.00	3.883	3.879	0.004		17726	NC			132	
D 36 13C2 PFDaA										
615.00 > 570.00	4.009	4.007	0.002	1.512	1705665	2.54		101	4747	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.017	4.008	0.009	1.002	36764	0.0492		98.3	45.4	
613.00 > 169.00	4.009	4.008	0.001	1.000	8807		4.17(2.13-6.40)	98.3	62.0	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.017	4.013	0.004	1.191	8455	0.0486		101	128	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.259	4.250	0.009	1.409	12096	0.0433		89.4	170	
699.00 > 99.00	4.250	4.250	0.0	1.405	19387		0.62(0.00-0.00)	89.4	149	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.276	0.003	1.067	35567	0.0491		98.2	40.1	
663.00 > 169.00	4.279	4.276	0.003	1.067	11655		3.05(1.25-3.76)	98.2	138	

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	4.521	4.515	0.006	1.000	11227	0.0552		110	180	
713.00 > 219.00	4.521	4.515	0.006	1.000	7391		1.52(0.71-2.13)	110	89.2	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.521	4.515	0.006	1.705	2069504	2.56		102	5563	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.935	4.933	0.002	1.861	3513397	2.41		96.3	6806	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.935	4.934	0.001	1.000	95654	0.0521		104	22.0	
813.00 > 169.00	4.935	4.934	0.001	1.000	15629		6.12(2.86-8.58)	104	169	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.293	5.285	0.008	1.073	78746	0.0533		107	17.3	
913.00 > 169.00	5.286	5.285	0.001	1.071	9945		7.92(3.83-11.48)	107	124	

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\A8_N\20181004-65218.b\2018.10.03LLICALAAA_003.d

Injection Date: 04-Oct-2018 04:45:06

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 11

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

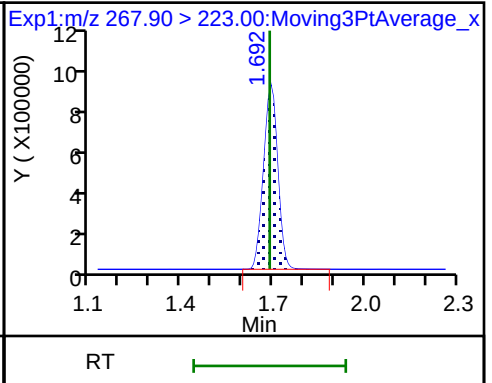
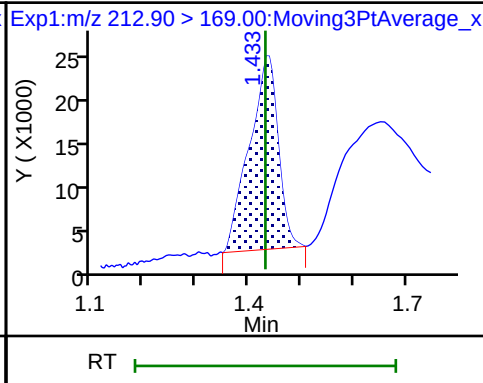
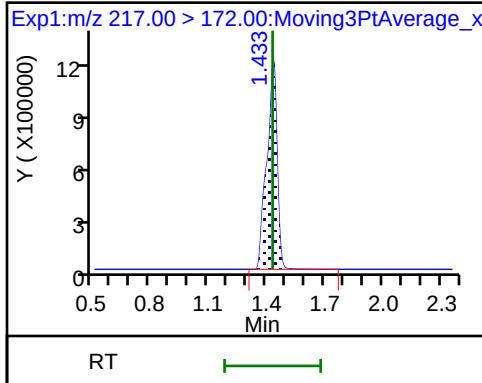
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

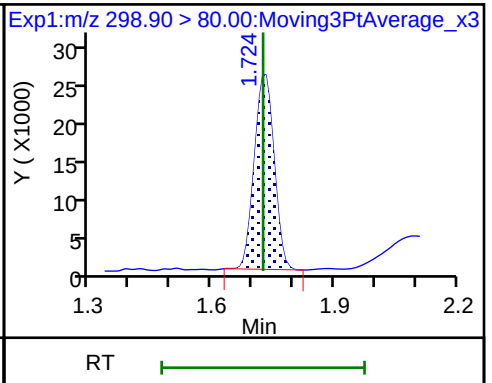
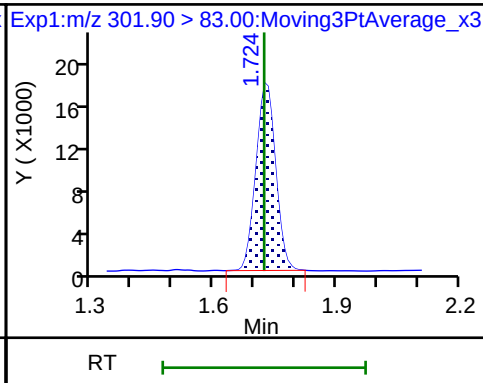
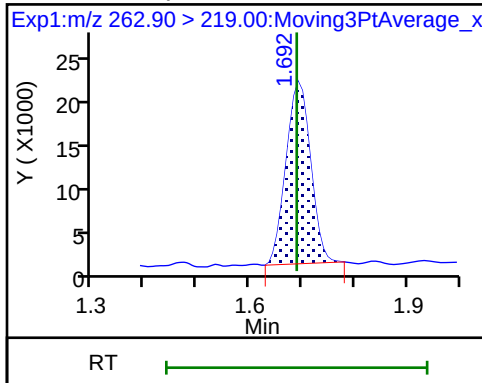
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

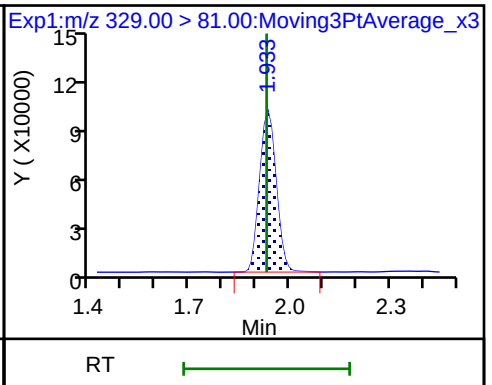
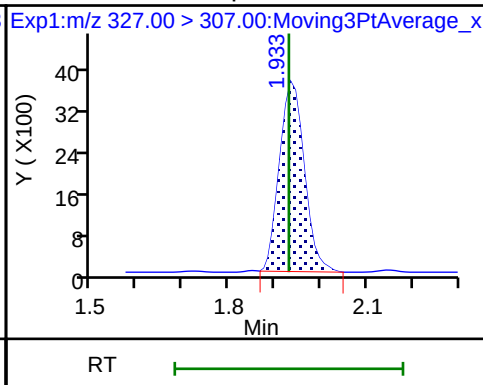
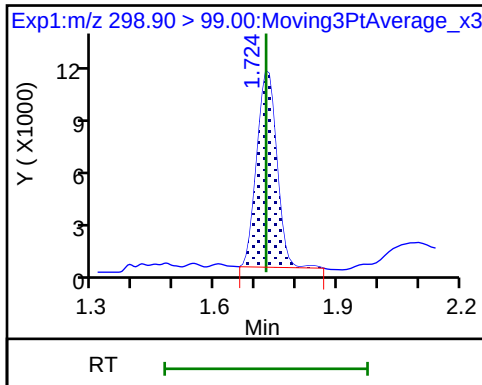
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

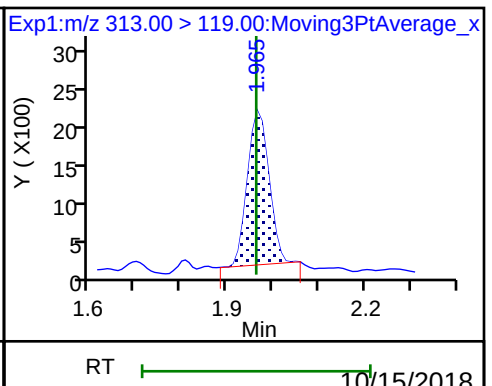
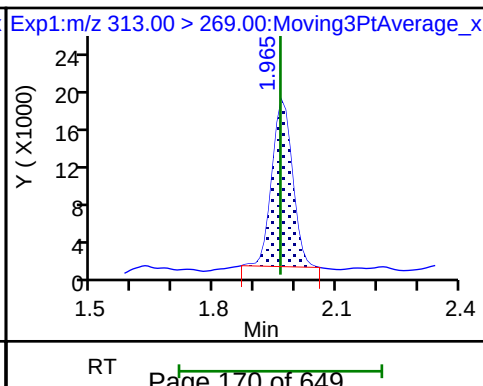
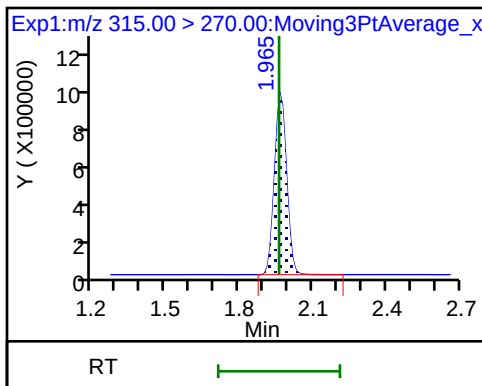
D 60 M2-4:2FTS

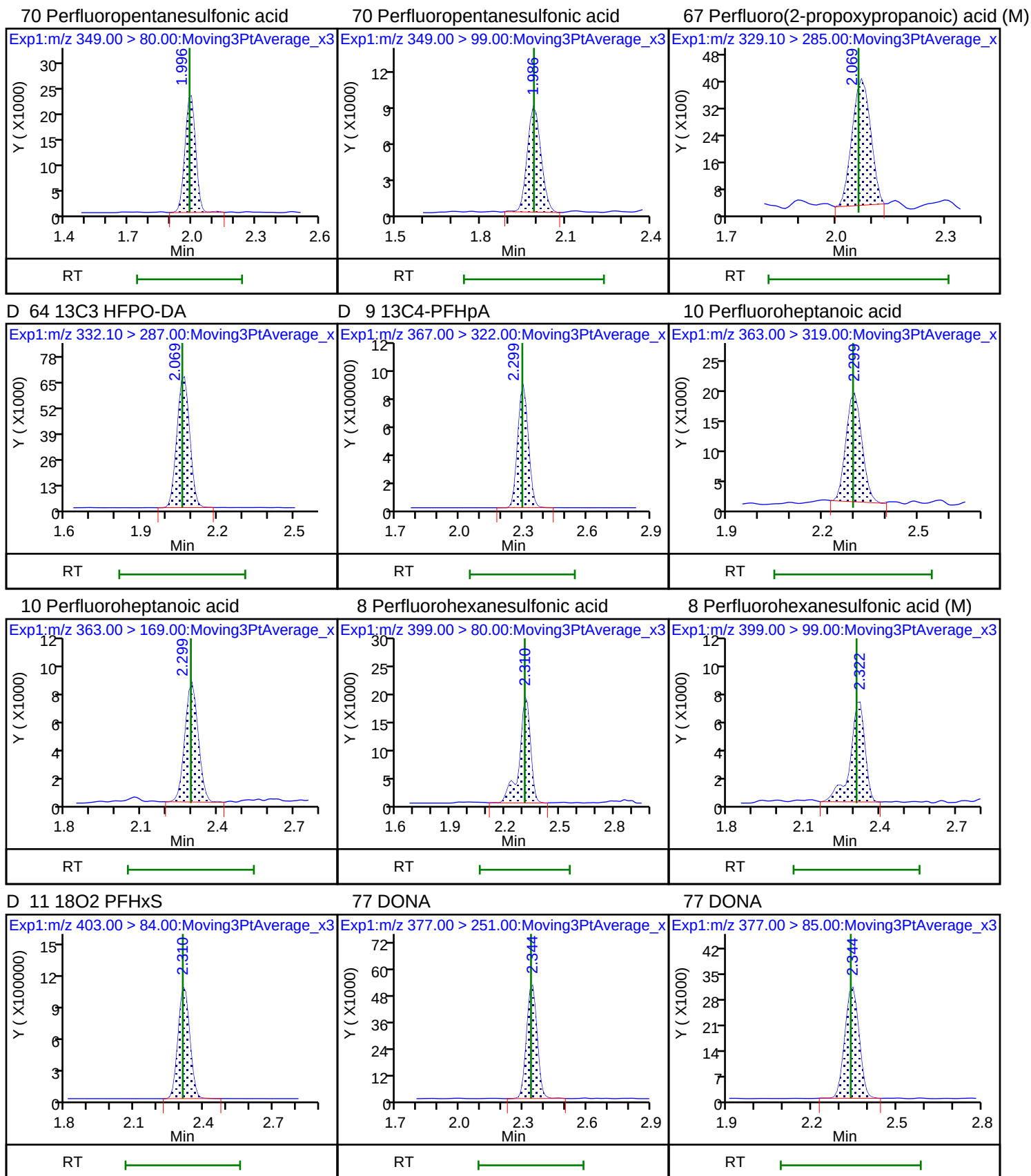


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

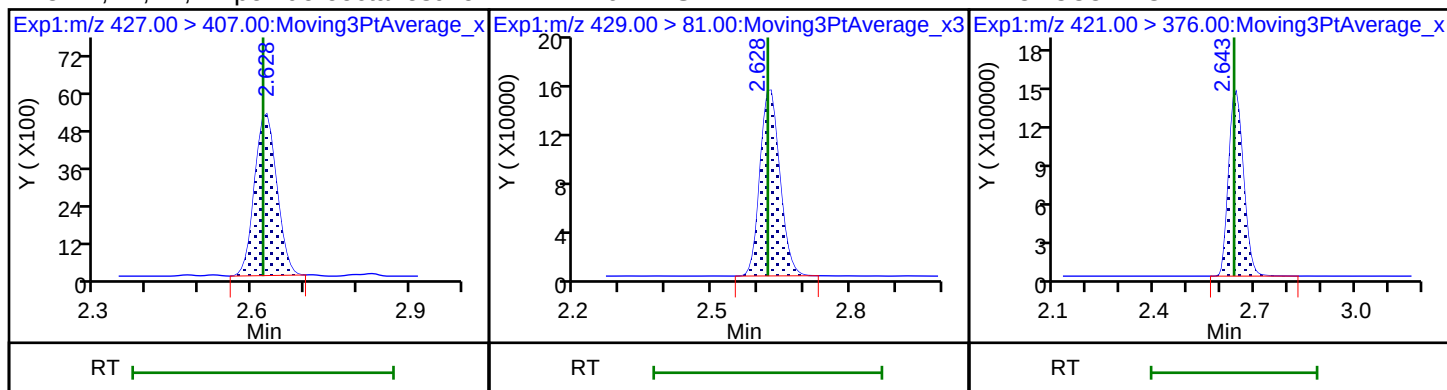
6 Perfluorohexanoic acid





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

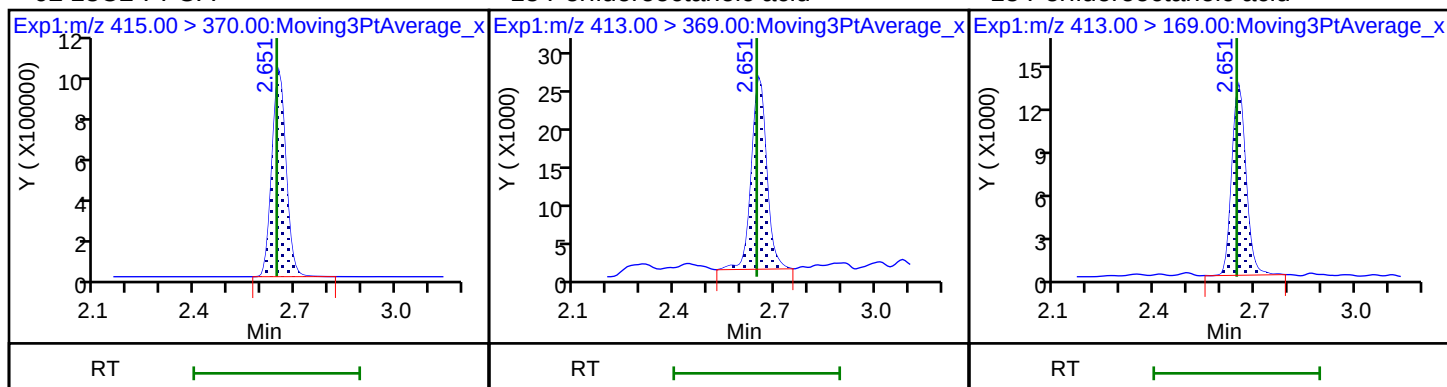
D 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

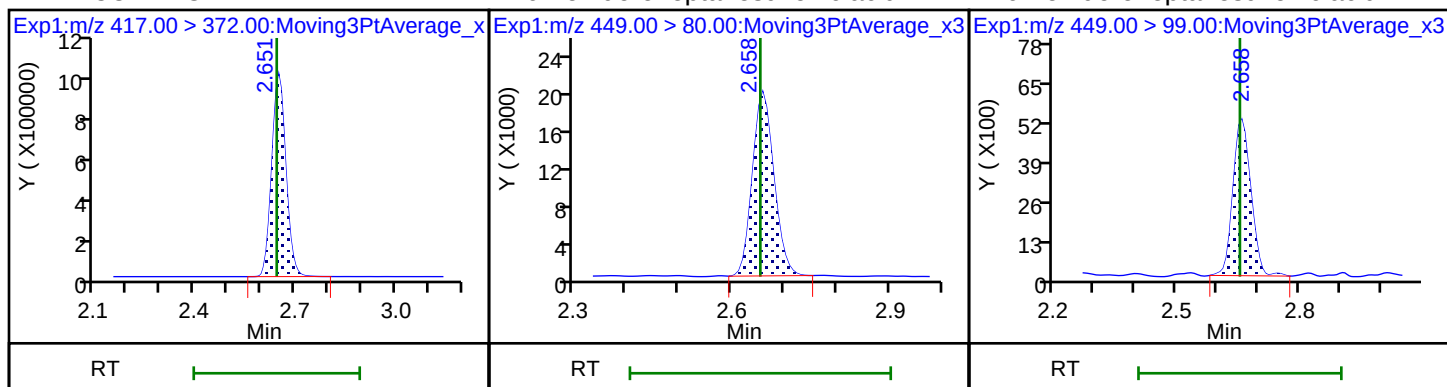
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

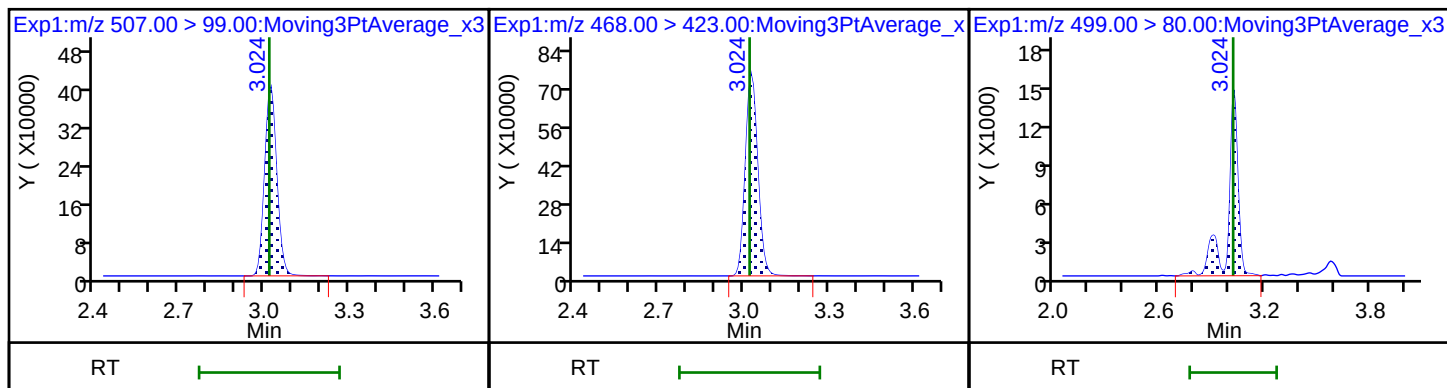
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

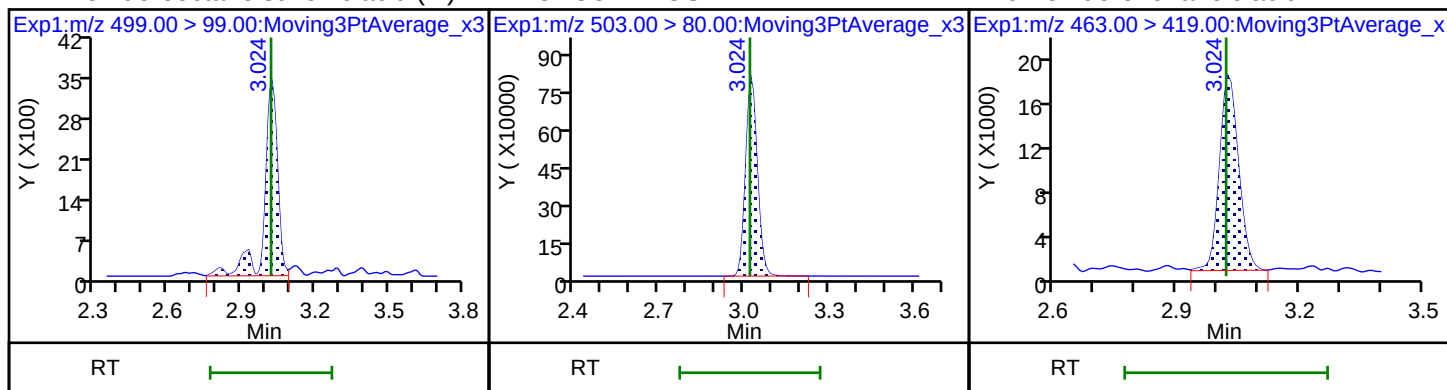
D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid



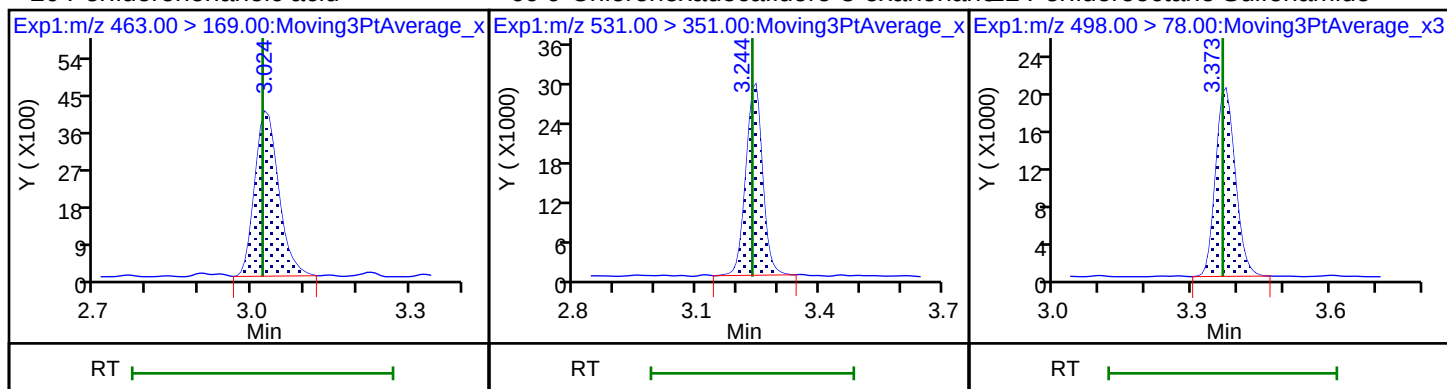
17 Perfluorooctane sulfonic acid (M) D 18 13C4 PFOS

20 Perfluorononanoic acid



20 Perfluorononanoic acid

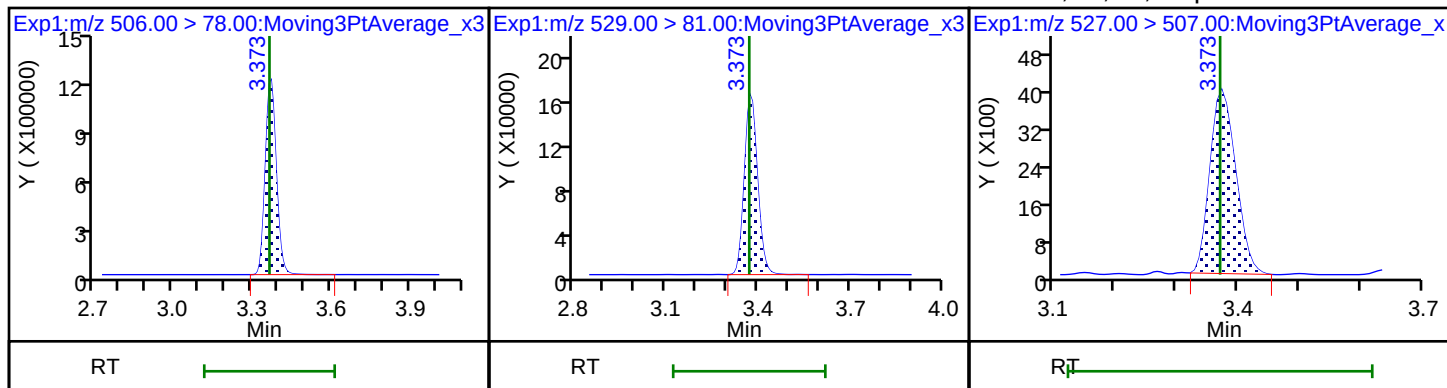
69 9-Chlorohexadecafluoro-3-oxanonan-2-yl Perfluorooctane Sulfonamide



D 21 13C8 FOSA

D 26 M2-8:2FTS

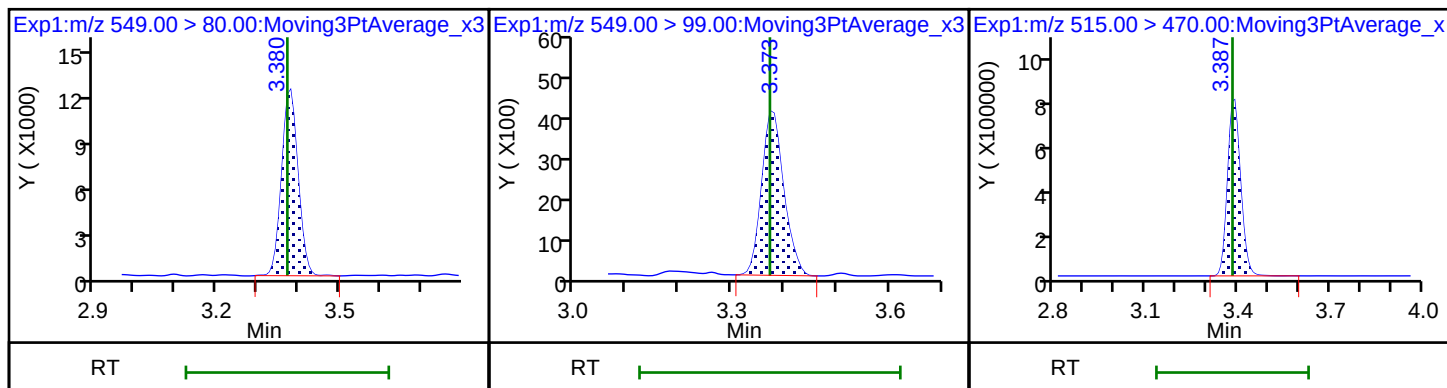
25 1H,1H,2H,2H-perfluorodecanesulfoni

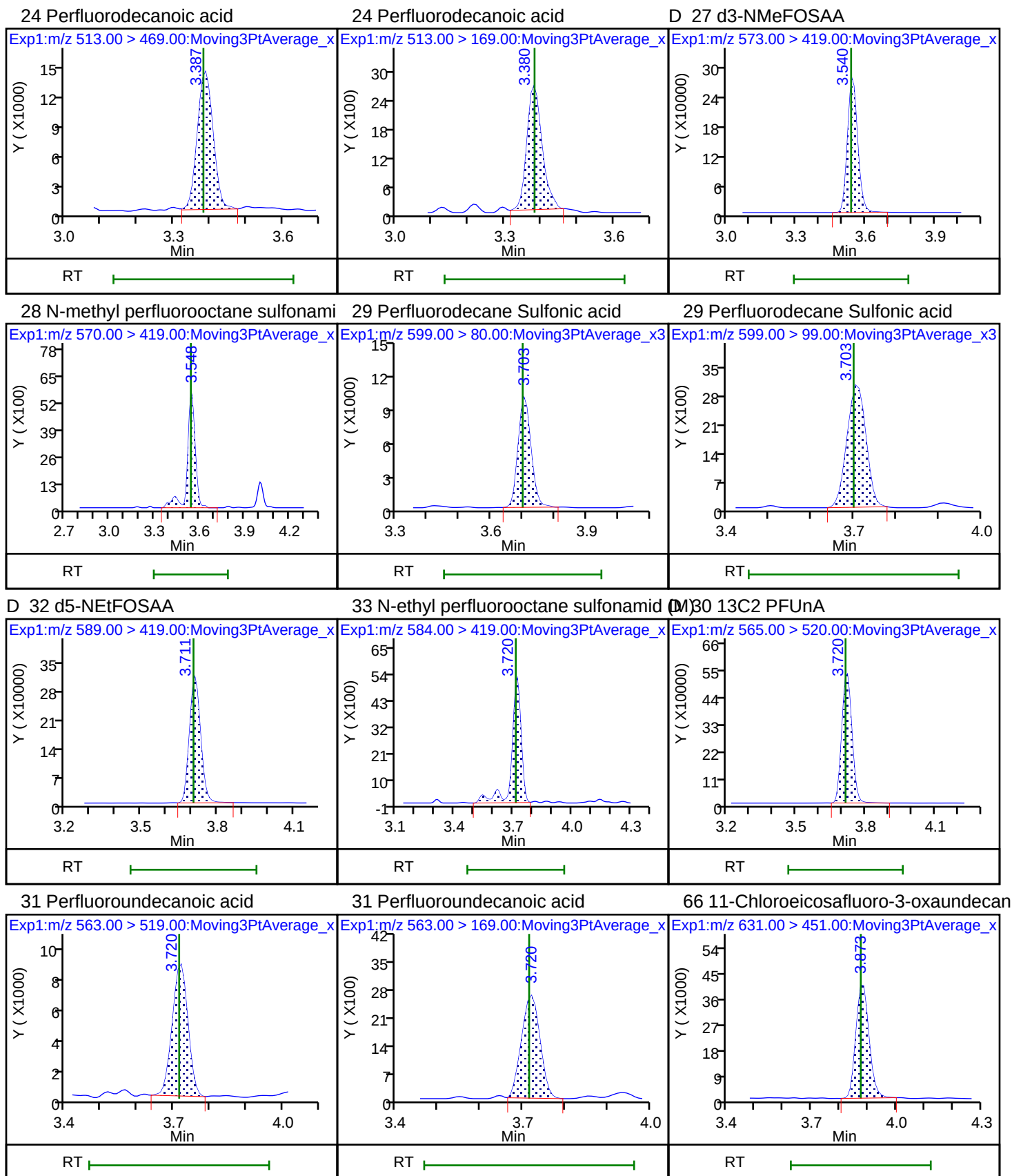


68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

D 23 13C2 PFDA

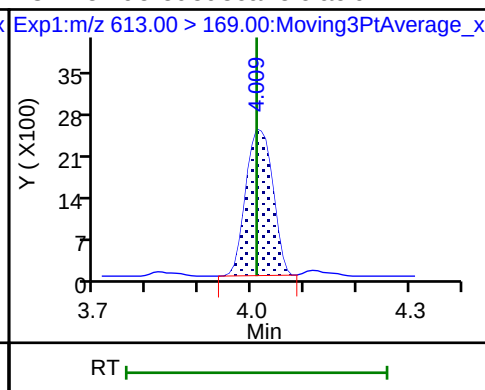
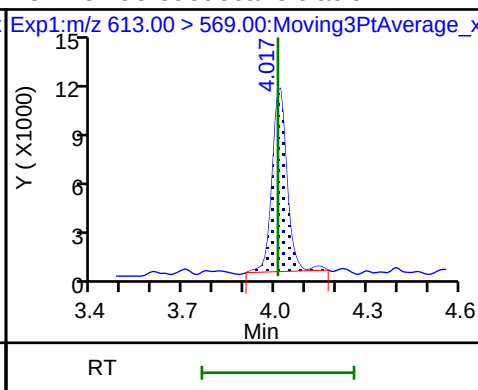
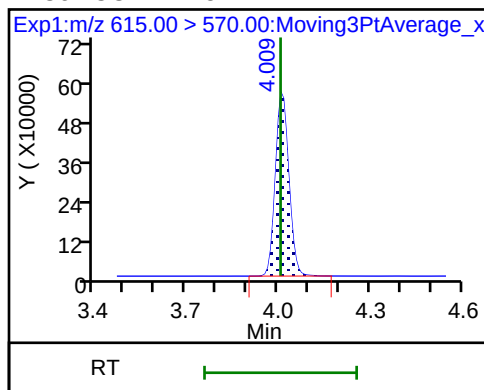




D 36 13C2 PFDaA

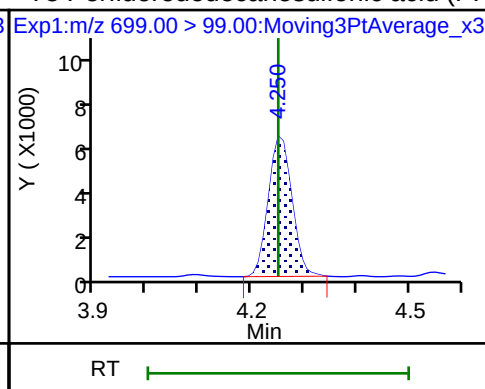
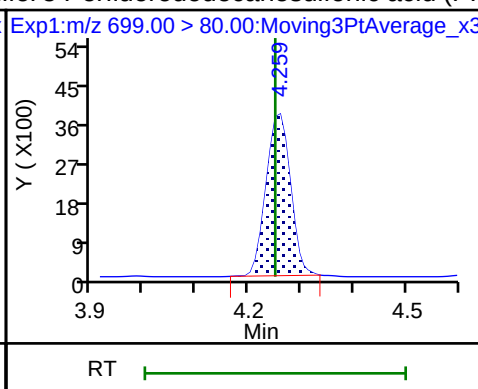
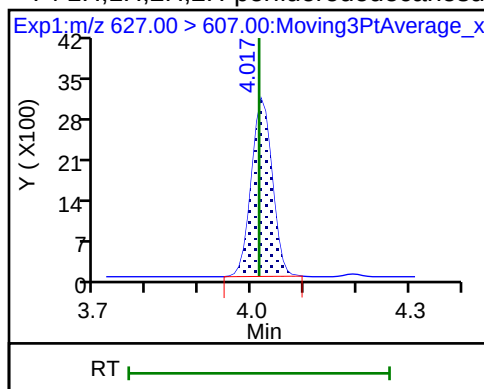
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

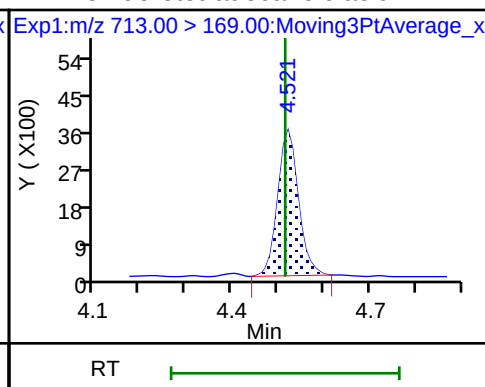
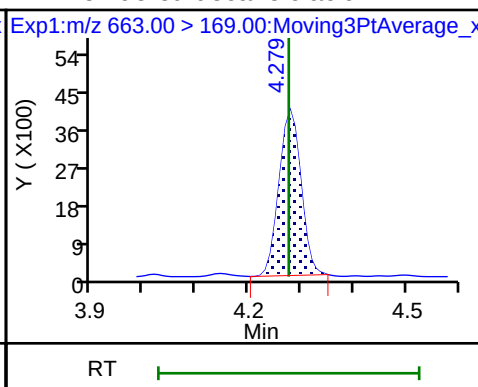
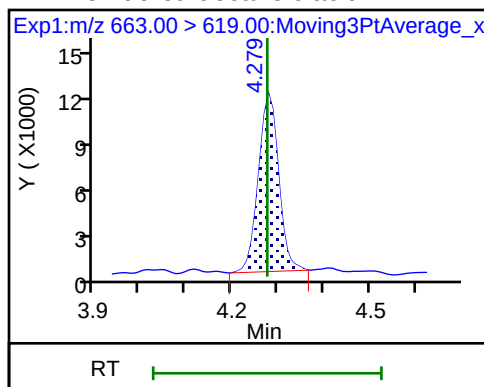
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

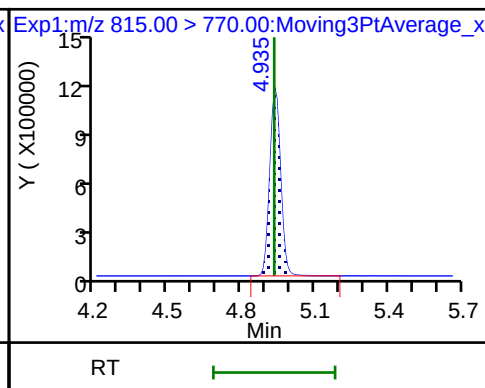
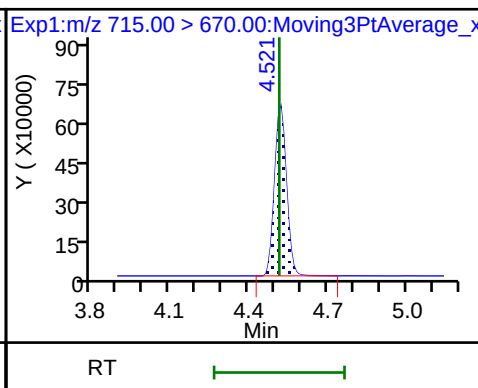
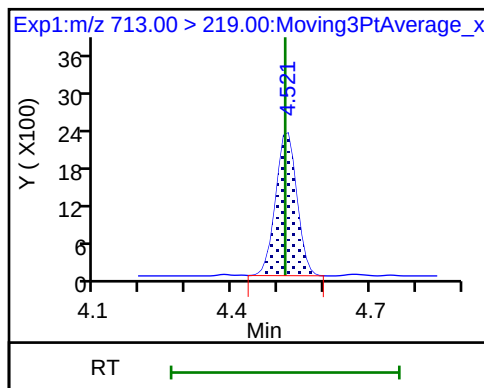
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

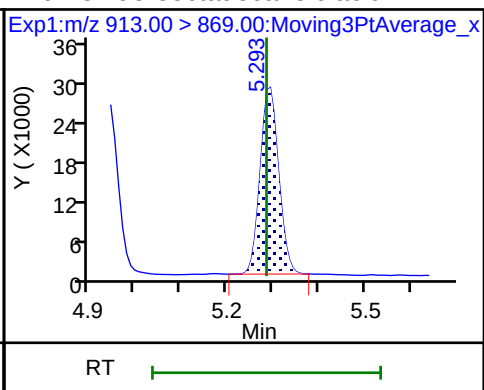
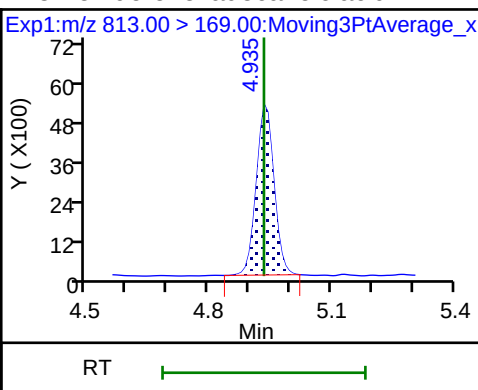
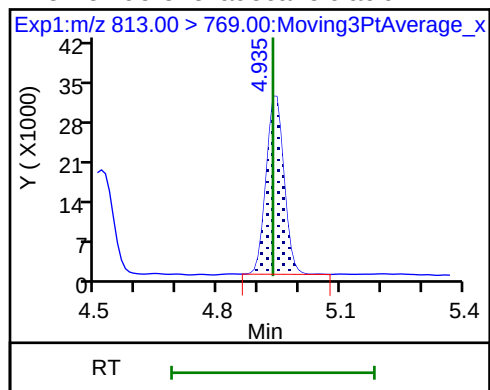
D 44 13C2-PFHxDA



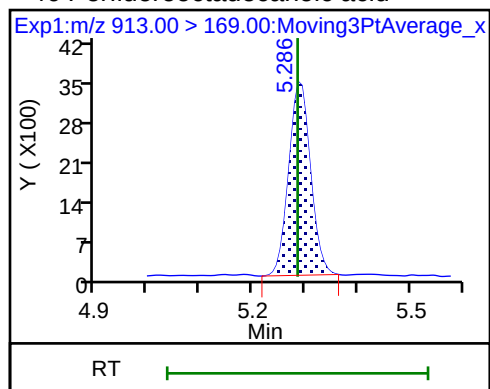
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



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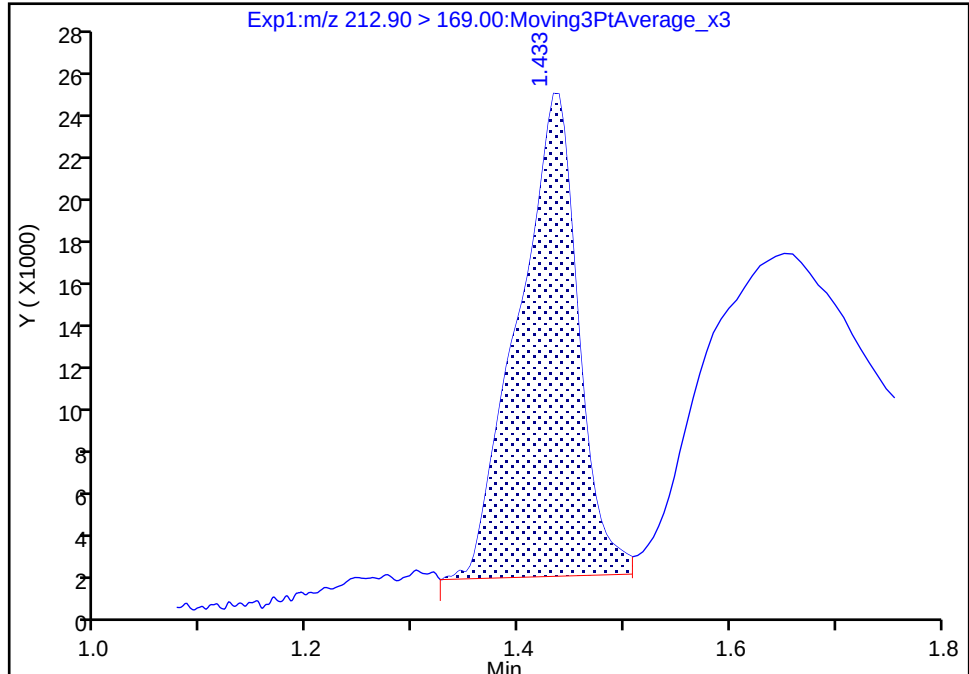
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_003.d
Injection Date: 04-Oct-2018 04:45:06 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

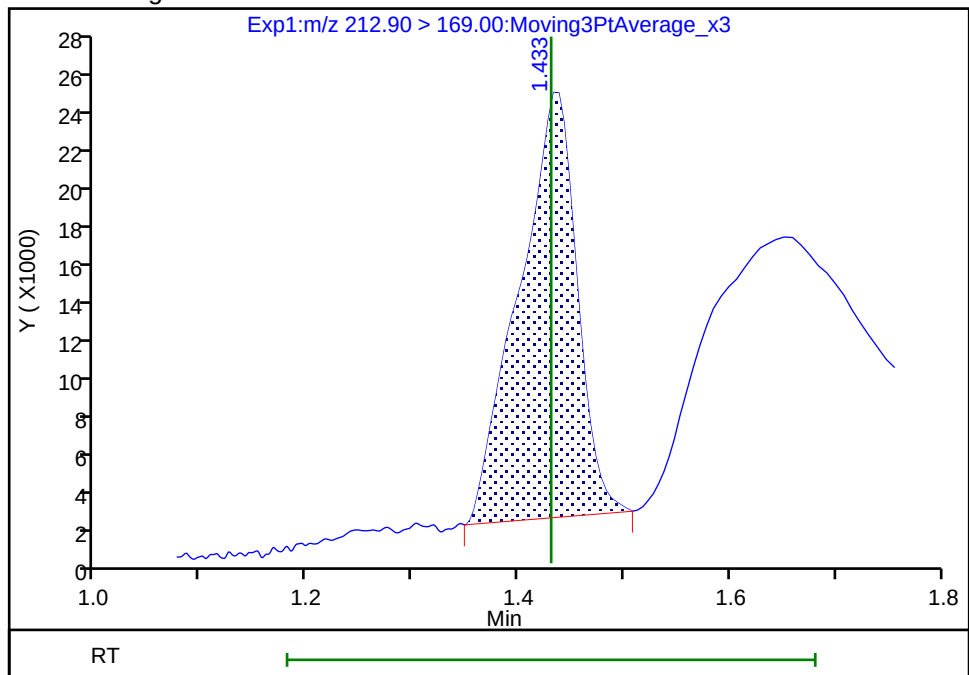
RT: 1.43
Area: 89494
Amount: 0.053921
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 83797
Amount: 0.050989
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:40:36
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

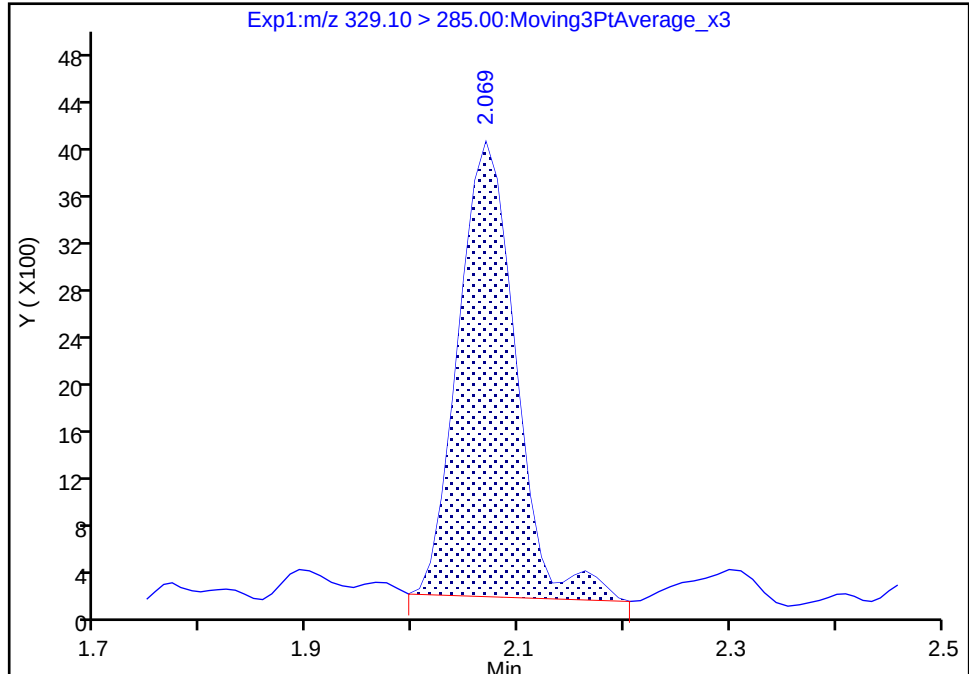
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_003.d
Injection Date: 04-Oct-2018 04:45:06 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

67 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

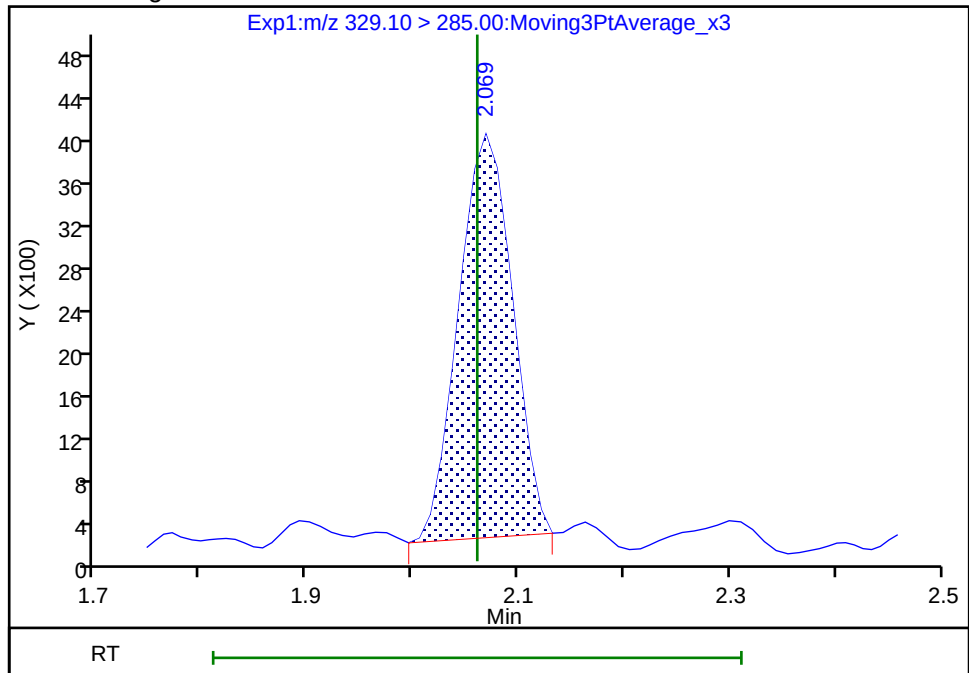
RT: 2.07
Area: 14603
Amount: 0.053580
Amount Units: ng/ml

Processing Integration Results



RT: 2.07
Area: 13444
Amount: 0.049935
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:40:46
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

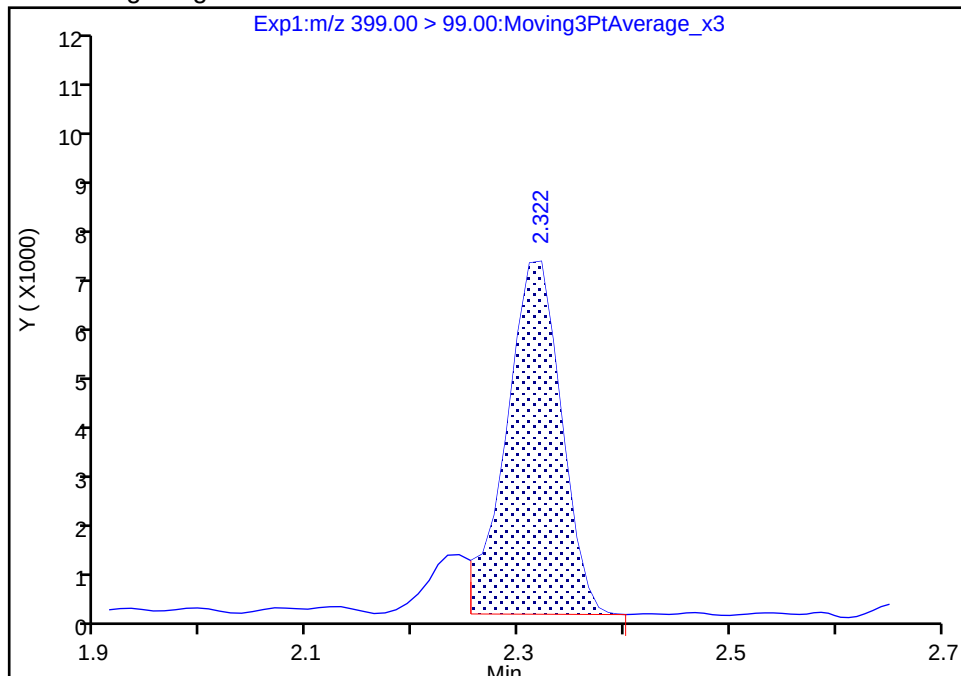
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_003.d
Injection Date: 04-Oct-2018 04:45:06 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

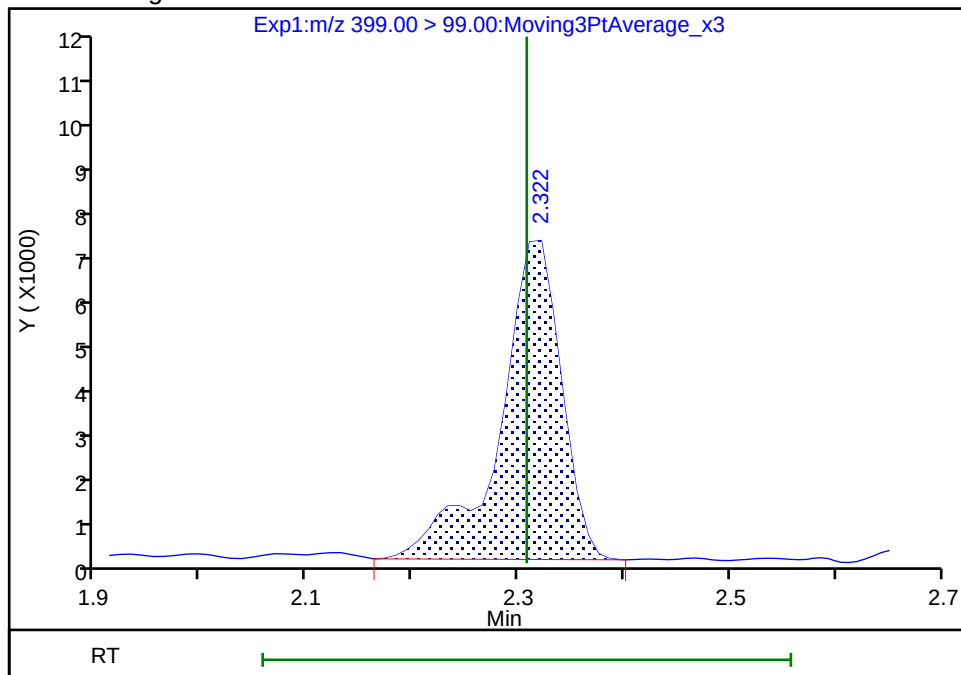
RT: 2.32
Area: 24111
Amount: 0.048507
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 27120
Amount: 0.048507
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:40:57

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

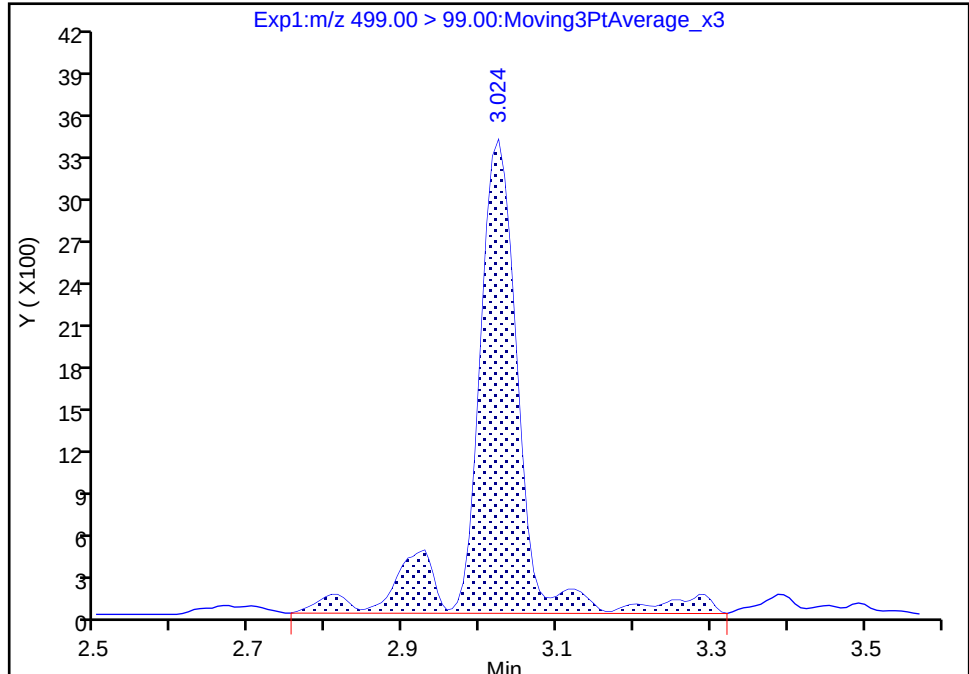
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_003.d
Injection Date: 04-Oct-2018 04:45:06 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

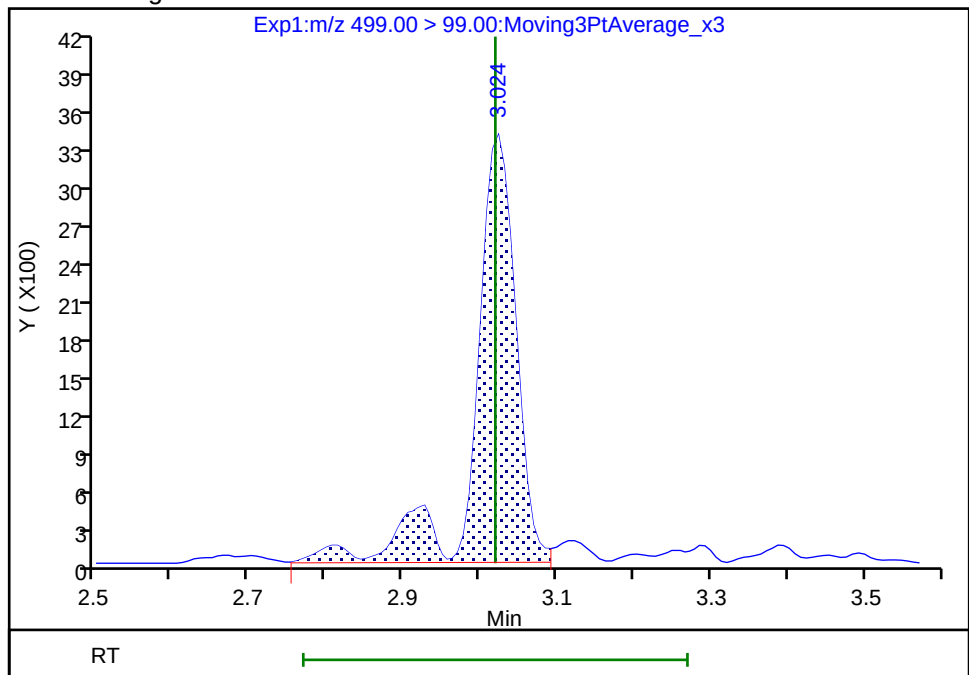
RT: 3.02
Area: 13580
Amount: 0.047380
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 12522
Amount: 0.050993
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:41:19
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

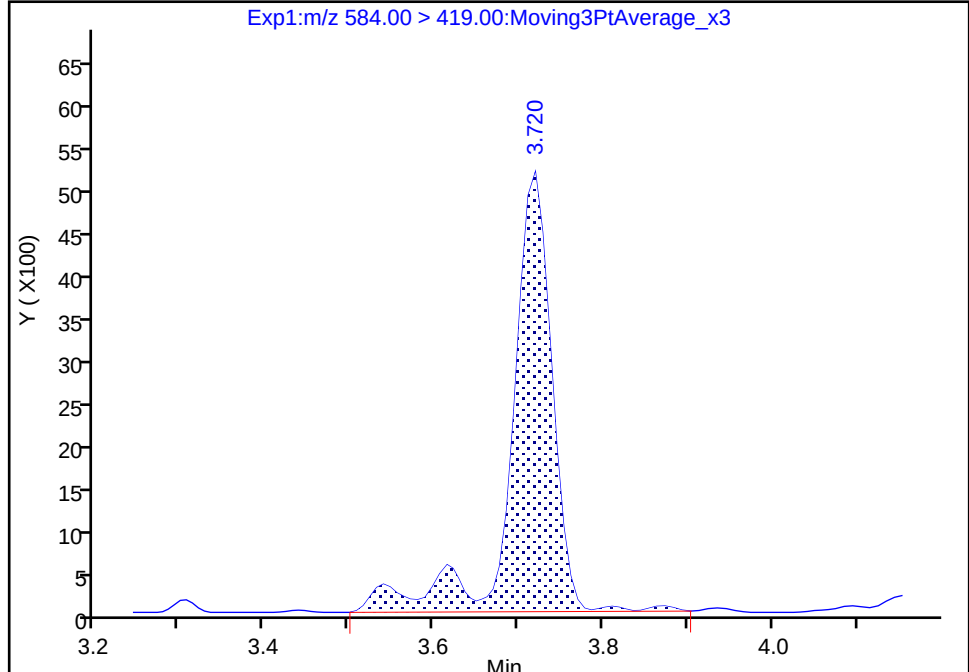
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Injection Date: 04-Oct-2018 04:45:06 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

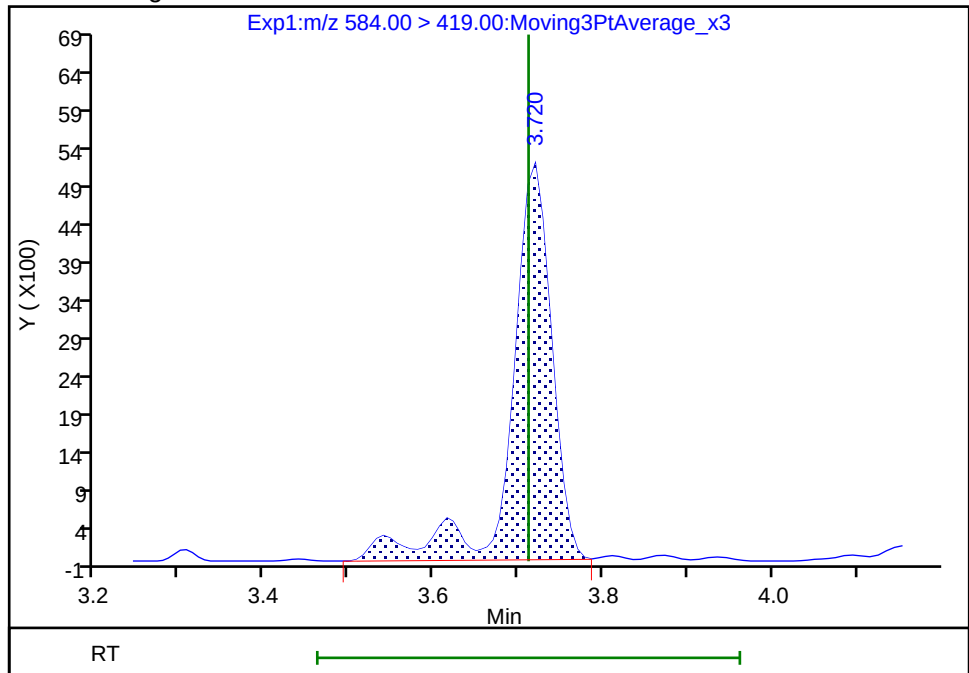
RT: 3.72
Area: 17424
Amount: 0.053689
Amount Units: ng/ml

Processing Integration Results



RT: 3.72
Area: 17114
Amount: 0.051711
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:41:40
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_004.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 04-Oct-2018 04:52:30 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L3-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 04-Oct-2018 10:33:36 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: roycea

Date: 04-Oct-2018 08:43:40

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	1.431	1.430	0.001	0.541	4629010	2.49		99.4	10372	
2 Perfluorobutyric acid										
212.90 > 169.00	1.431	1.431	0.0	1.000	426669	0.2426		97.1	58.9	
D 3 13C5-PFPeA										
267.90 > 223.00	1.686	1.688	-0.002	0.638	3106188	2.48		99.4	10268	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.686	1.689	-0.003	1.000	334011	0.2422		96.9	80.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.718	1.722	-0.004	0.650	59148	2.22		95.5	379	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.726	1.725	0.001	1.005	446214	0.2256		102	118	
298.90 > 99.00	1.726	1.725	0.001	1.005	185069		2.41(1.25-3.74)	102	84.7	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.933	1.929	0.004	1.125	79036	0.2395		103	755	
D 60 M2-4:2FTS										
329.00 > 81.00	1.933	1.929	0.004	0.731	340895	2.32		99.3	371	
D 7 13C2 PFHxA										
315.00 > 270.00	1.964	1.961	0.003	0.743	3364429	2.45		98.0	9828	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.964	1.962	0.002	1.000	326862	0.2466		98.6	161	
313.00 > 119.00	1.964	1.962	0.002	1.000	28503		11.47(5.03-15.10)	98.6	78.2	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.985	1.988	-0.003	1.155	403716	0.2368		101	927	
349.00 > 99.00	1.985	1.988	-0.003	1.155	148137		2.73(1.36-4.07)	101	369	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.059	2.061	-0.003	1.000	75817	0.2572		103	129	

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	2.059	2.061	-0.003	0.779	256062	2.57		103	1570	
D 9 13C4-PFHpA										
367.00 > 322.00	2.299	2.295	0.004	0.870	3054428	2.48		99.1	9028	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.295	0.004	1.000	330157	0.2411		96.4	122	
363.00 > 169.00	2.299	2.295	0.004	1.000	120155		2.75(1.13-3.40)	96.4	208	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.310	2.308	0.002	1.000	381461	0.2221		97.6	462	
399.00 > 99.00	2.310	2.308	0.002	1.000	128960		2.96(1.50-4.49)	97.6	195	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.309	0.001	0.874	3686415	2.39		101	7752	
77 DONA										
377.00 > 251.00	2.333	2.336	-0.003	0.774	963823	0.2434		103	2229	
377.00 > 85.00	2.333	2.336	-0.003	0.774	558587		1.73(0.85-2.54)	103	1812	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.620	2.621	-0.001	1.000	86213	0.2468		104	346	
D 12 M2-6:2FTS										
429.00 > 81.00	2.620	2.621	-0.001	0.991	487479	2.35		98.9	2222	
D 73 13C8 PFOA										
421.00 > 376.00	2.635	2.637	-0.002	0.997	5062030	2.53		104	17053	
* 62 13C2-PFOA										
415.00 > 370.00	2.643	2.645	-0.002		3078850	2.50			8465	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.643	2.645	-0.002	1.000	347327	0.2505		100	79.2	
413.00 > 169.00	2.643	2.645	-0.002	1.000	185188		1.88(0.84-2.52)	100	446	
D 14 13C4 PFOA										
417.00 > 372.00	2.643	2.645	-0.002	1.000	2943055	2.46		98.3	5713	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.651	2.654	-0.003	0.879	296815	0.2328		97.8	885	
449.00 > 99.00	2.651	2.654	-0.003	0.879	78339		3.79(1.94-5.82)	97.8	393	
D 72 13C8 PFOS										
507.00 > 99.00	3.015	3.018	-0.003	1.141	1296813	2.46		103	6712	
D 19 13C5 PFNA										
468.00 > 423.00	3.015	3.019	-0.004	1.141	2665521	2.65		106	6746	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.015	3.020	-0.005	1.000	257071	0.2209		95.2	208	
499.00 > 99.00	3.015	3.020	-0.005	1.000	59220		4.34(2.31-6.93)	95.2	153	
D 18 13C4 PFOS										
503.00 > 80.00	3.015	3.020	-0.005	1.141	2434546	2.44		102	4967	
20 Perfluorononanoic acid										
463.00 > 419.00	3.015	3.020	-0.005	1.000	252961	0.2203		88.1	102	
463.00 > 169.00	3.015	3.020	-0.005	1.000	63226		4.00(1.90-5.69)	88.1	499	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.227	3.235	-0.008	1.070	431792	0.2244		96.3	774	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.364	3.366	-0.002	1.000	328067	0.2358		94.3	1465	

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	3.364	3.366	-0.002	1.273	3614795	2.61		104	5071	
D 26 M2-8:2FTS										
529.00 > 81.00	3.364	3.370	-0.006	1.273	558299	2.54		106	3481	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.364	3.370	-0.006	1.000	59688	0.2119		88.5	398	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.364	3.372	-0.008	1.116	194061	0.2322		96.7	1043	
549.00 > 99.00	3.371	3.372	-0.001	1.118	67486		2.88(1.33-3.97)	96.7	427	
D 23 13C2 PFDA										
515.00 > 470.00	3.379	3.381	-0.002	1.278	2254487	2.53		101	7152	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.379	3.382	-0.003	1.000	226616	0.2504		100	228	
513.00 > 169.00	3.379	3.382	-0.003	1.000	36752		6.17(2.36-7.09)	100	162	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.531	3.536	-0.005	1.336	932198	2.58		103	1666	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.539	3.542	-0.003	1.002	86135	0.2384		95.3	79.9	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.692	3.698	-0.006	1.224	152651	0.2336		96.9	859	
599.00 > 99.00	3.692	3.698	-0.006	1.224	52367		2.92(1.39-4.16)	96.9	372	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.700	3.706	-0.006	1.400	990697	2.54		102	1484	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.709	3.712	-0.003	1.002	86523	0.2508		100	598	
D 30 13C2 PFUnA										
565.00 > 520.00	3.709	3.712	-0.003	1.403	1735645	2.55		102	6816	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.709	3.714	-0.005	1.000	141802	0.2330		93.2	169	
563.00 > 169.00	3.709	3.714	-0.005	1.000	36434		3.89(2.12-6.36)	93.2	284	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.869	3.873	-0.004	1.283	665935	0.2293		97.4	1252	
35 MeFOSA										
512.00 > 169.00	3.879	3.879	0.0		104855	NC			451	
D 36 13C2 PFDaA										
615.00 > 570.00	4.004	4.007	-0.003	1.515	1785854	2.49		99.7	8723	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.004	4.008	-0.004	1.000	188337	0.2406		96.2	179	
613.00 > 169.00	4.004	4.008	-0.004	1.000	52861		3.56(2.13-6.40)	96.2	423	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.013	4.013	0.0	1.193	46293	0.2316		96.1	346	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.246	4.250	-0.004	1.408	67105	0.2263		93.5	796	
699.00 > 99.00	4.246	4.250	-0.004	1.408	107266		0.63(0.00-0.00)	93.5	720	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.275	4.276	-0.001	1.067	200660	0.2646		106	223	
663.00 > 169.00	4.275	4.276	-0.001	1.067	67012		2.99(1.25-3.76)	106	463	

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	4.515	4.515	0.0	1.000	54035	0.2527		101	601	
713.00 > 219.00	4.515	4.515	0.0	1.000	36111		1.50(0.71-2.13)	101	427	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.515	4.515	0.0	1.708	2175718	2.53		101	5604	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.936	4.933	0.003	1.867	3986334	2.56		102	6188	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.936	4.934	0.002	1.000	382536	0.2490		99.6	82.8	
813.00 > 169.00	4.936	4.934	0.002	1.000	66435		5.76(2.86-8.58)	99.6	668	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.287	5.285	0.002	1.071	419765	0.2503		100	86.4	
913.00 > 169.00	5.287	5.285	0.002	1.071	54644		7.68(3.83-11.48)	100	653	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_004.d

Injection Date: 04-Oct-2018 04:52:30

Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 12

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

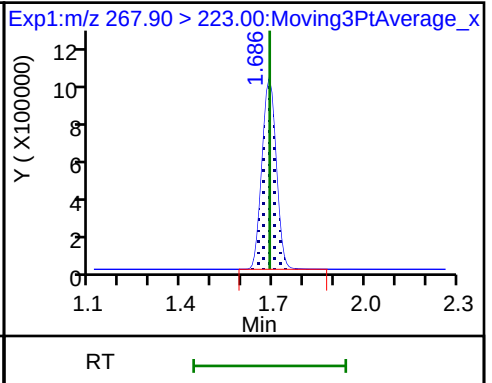
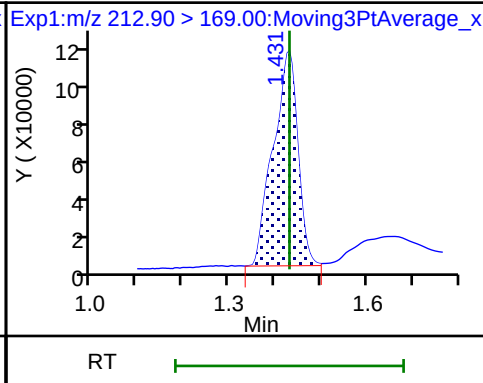
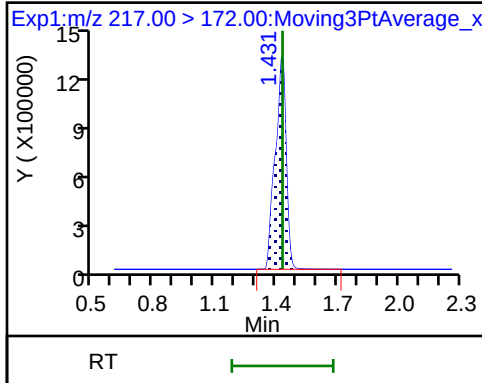
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

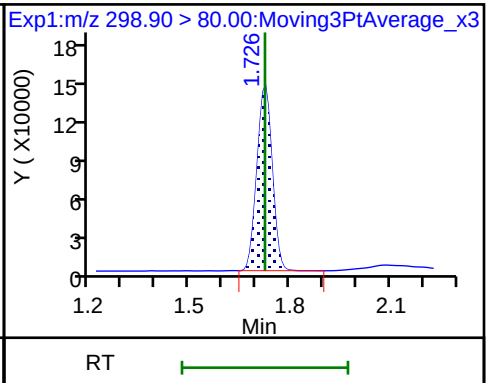
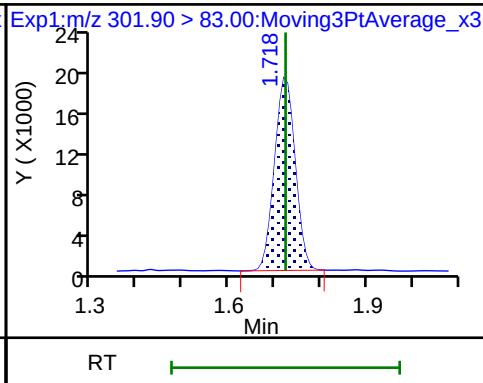
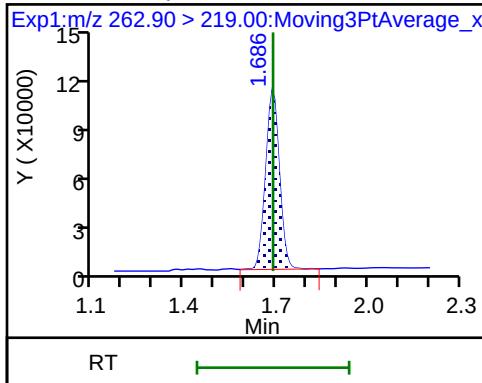
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

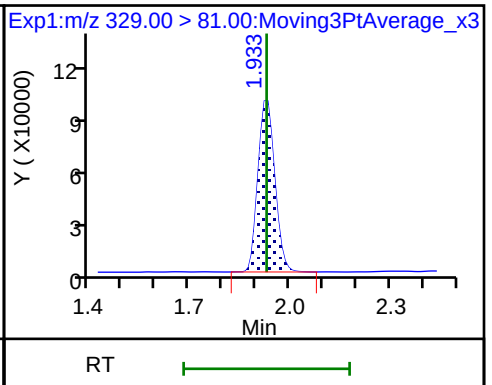
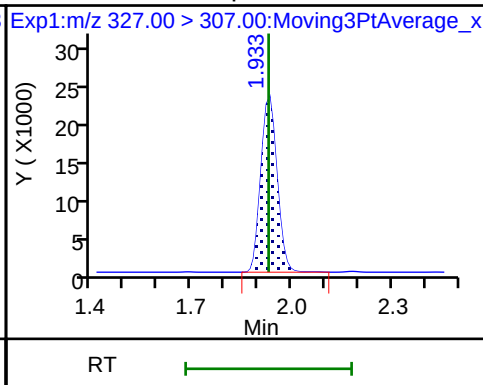
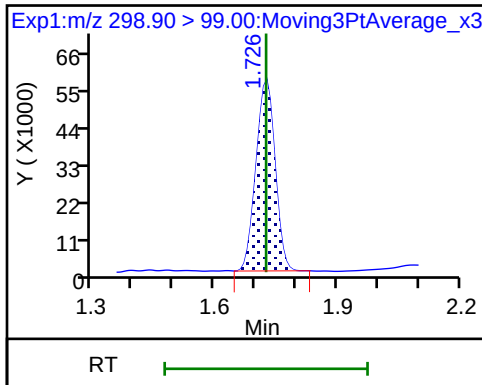
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

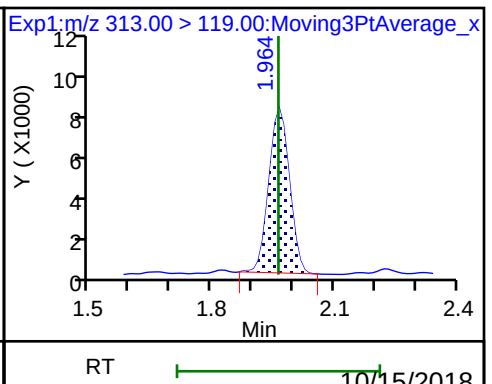
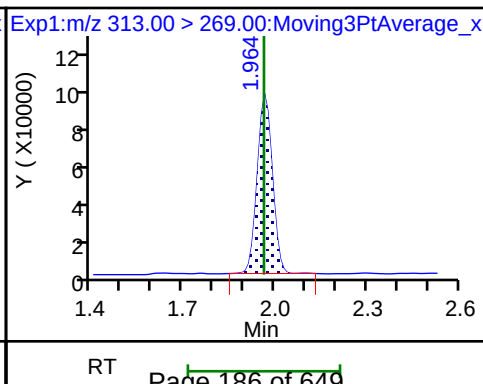
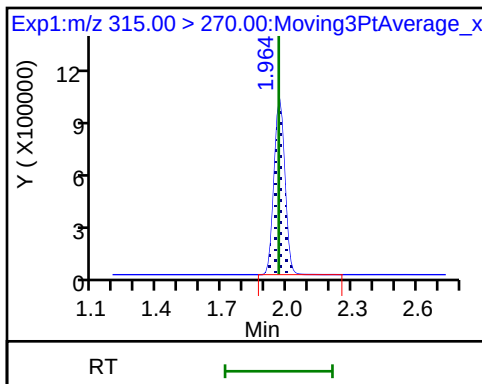
D 60 M2-4:2FTS

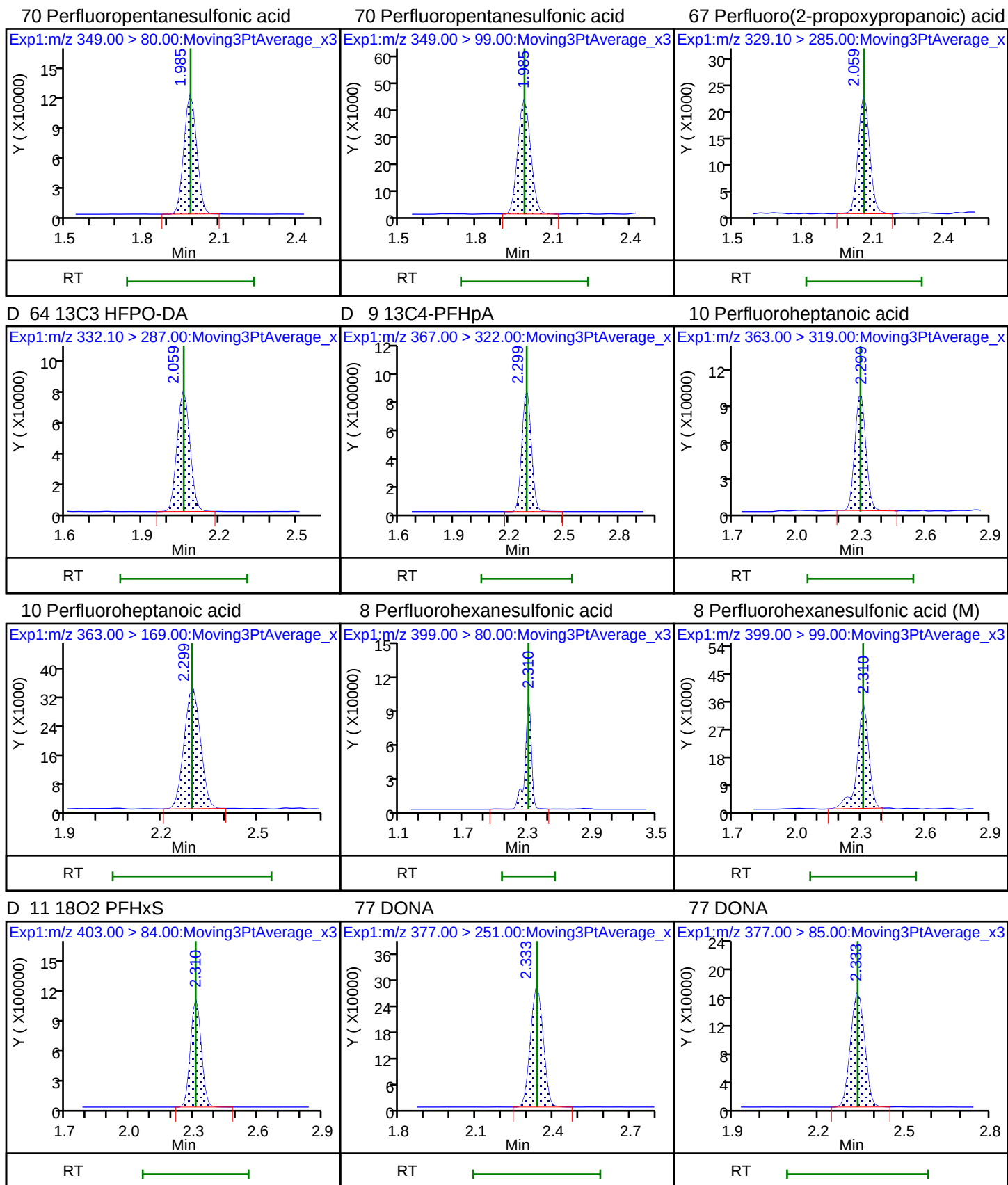


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

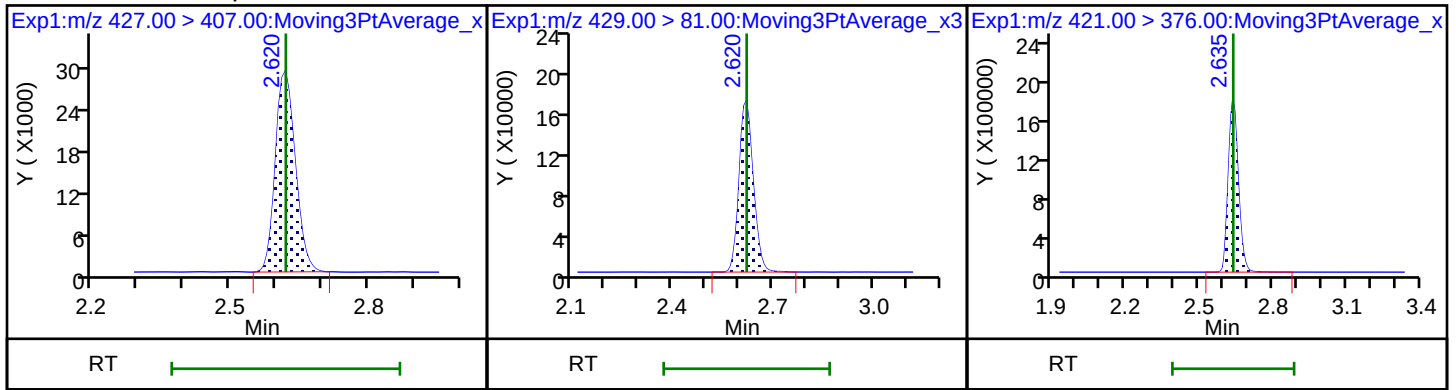
6 Perfluorohexanoic acid





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

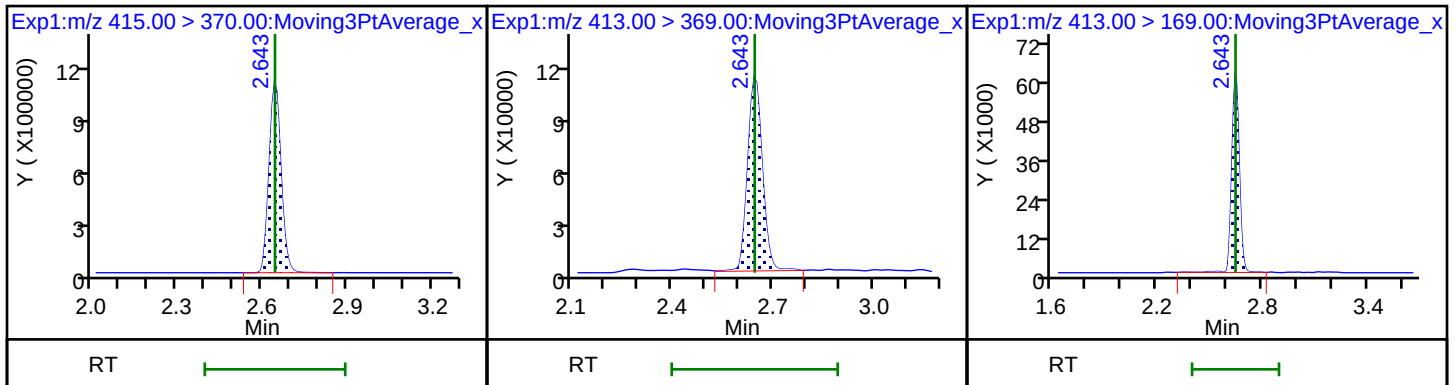
D 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

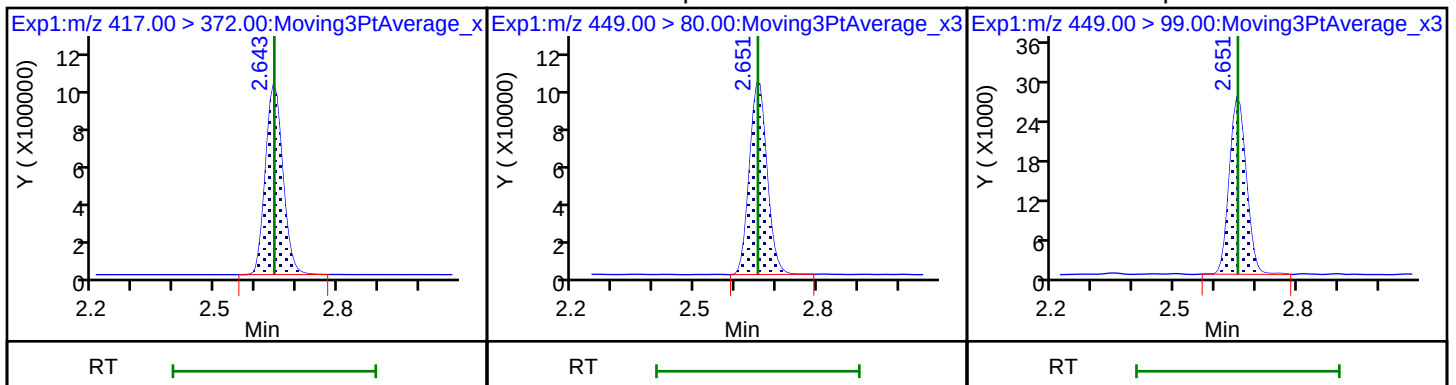
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

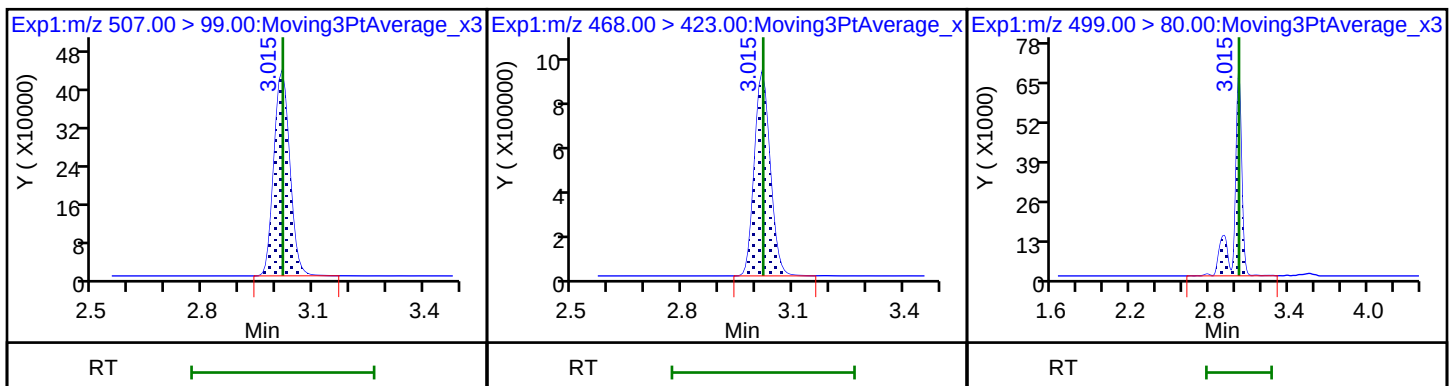
16 Perfluoroheptanesulfonic acid

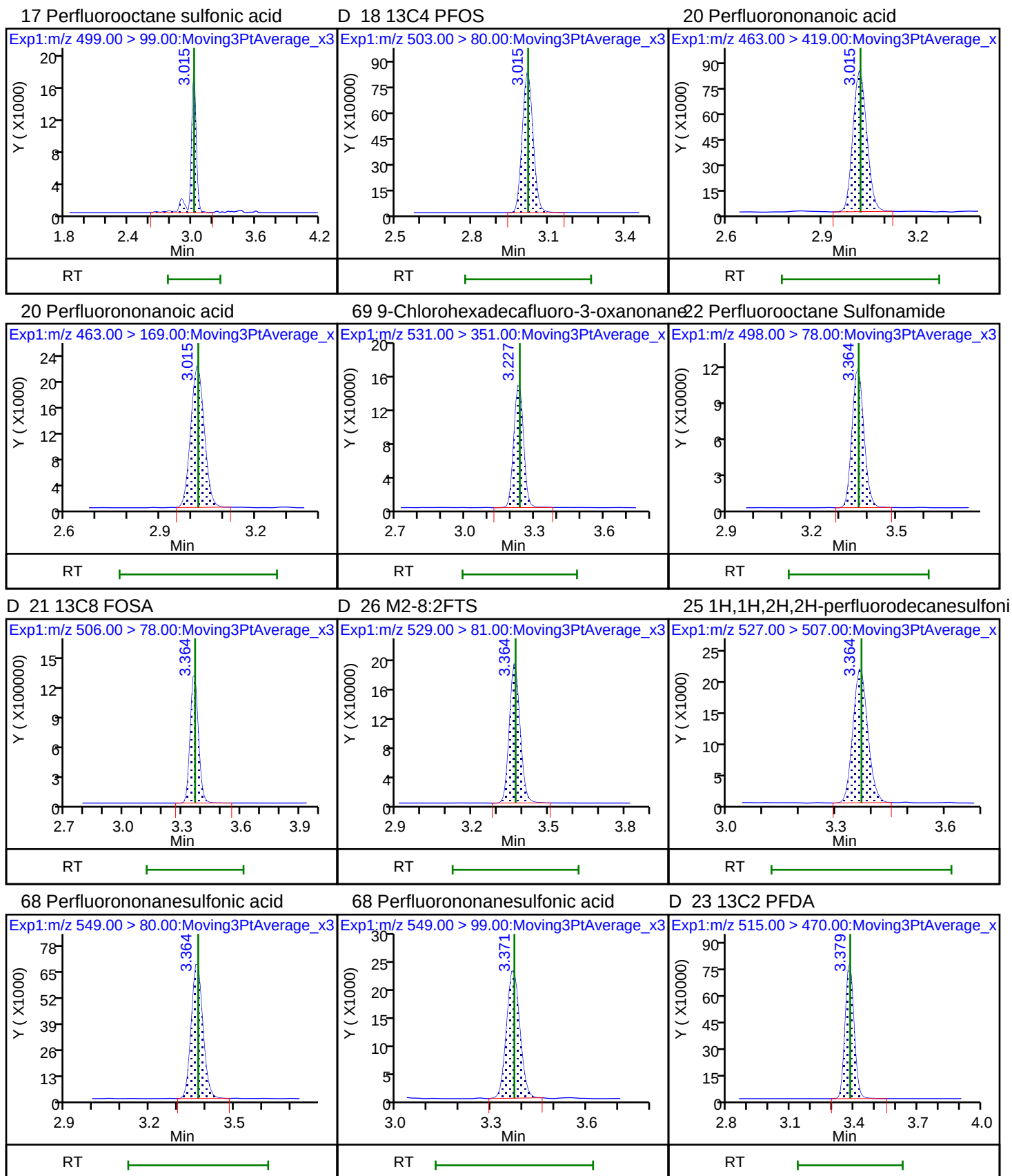


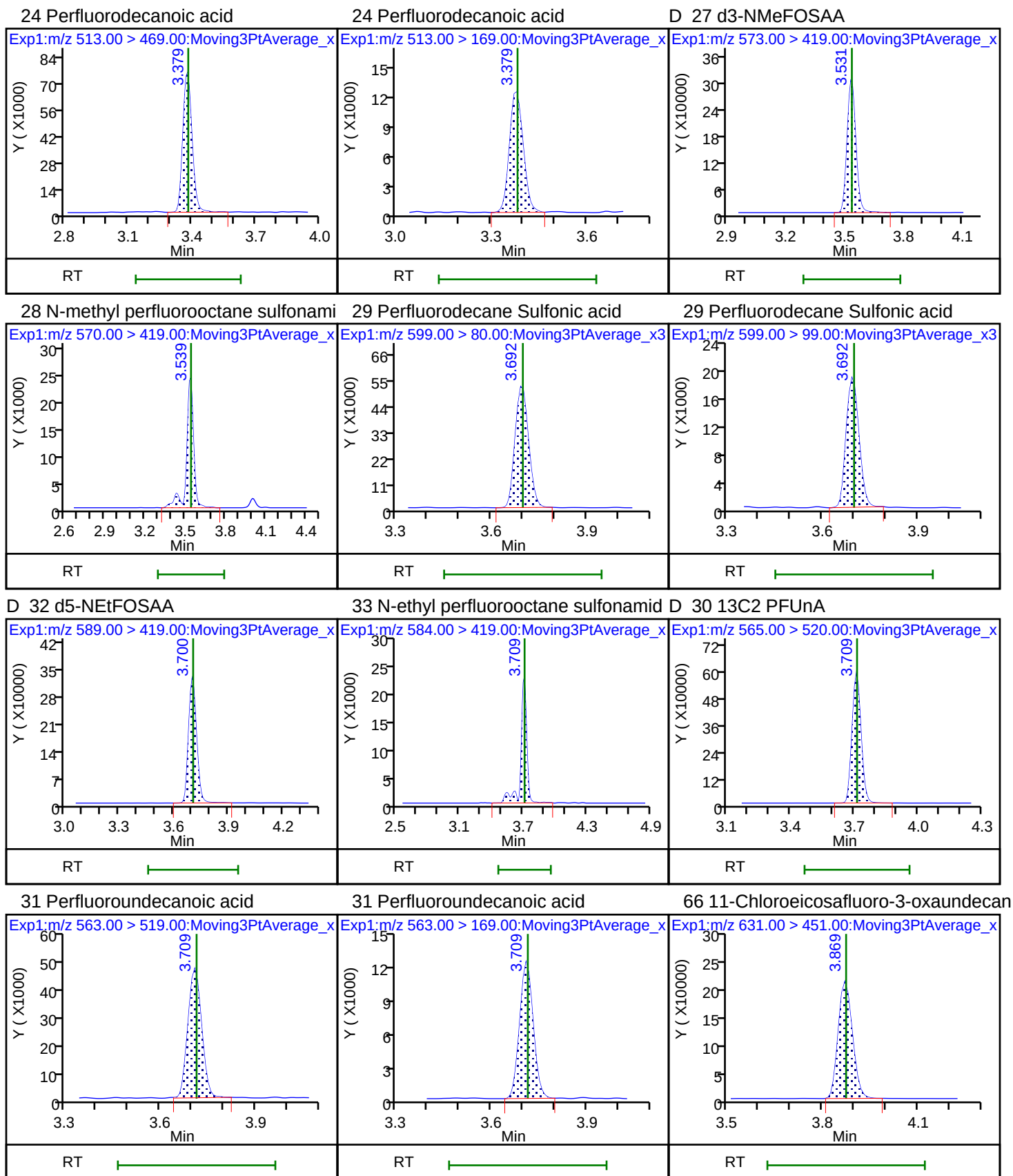
D 72 13C8 PFOS

D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid



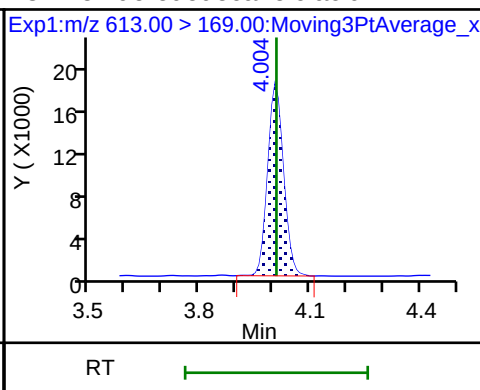
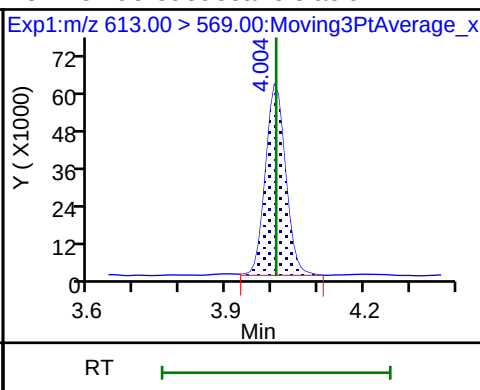
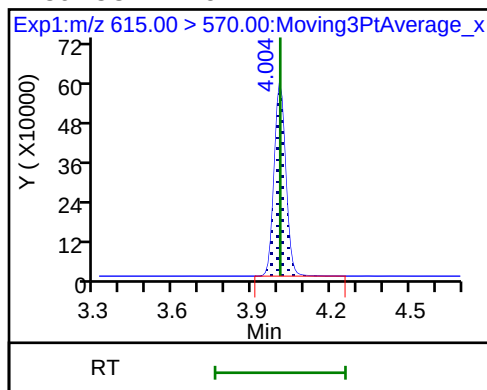




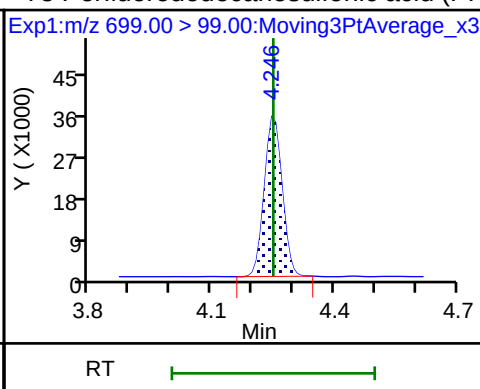
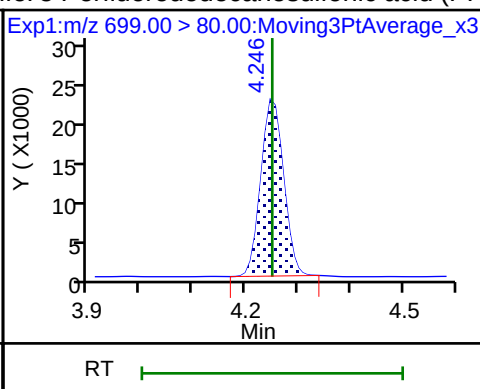
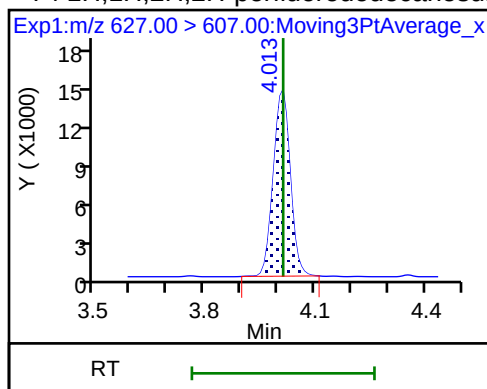
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



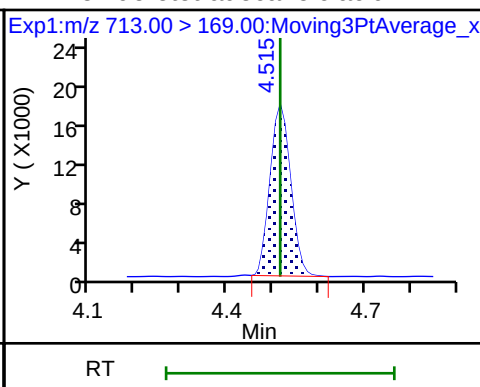
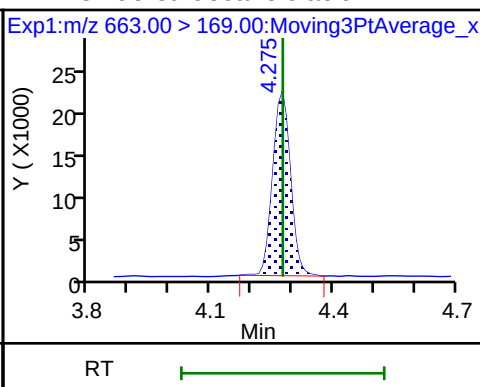
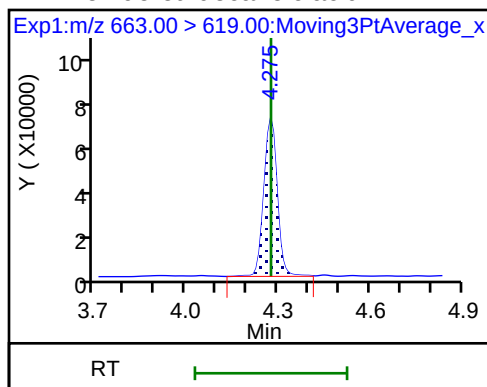
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

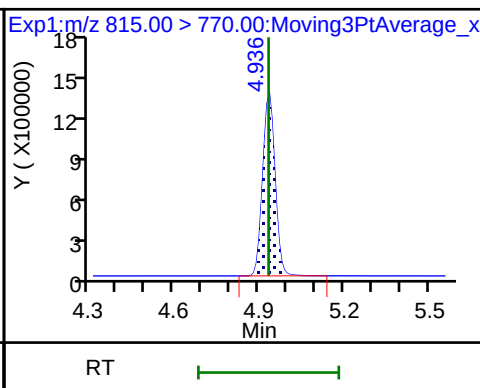
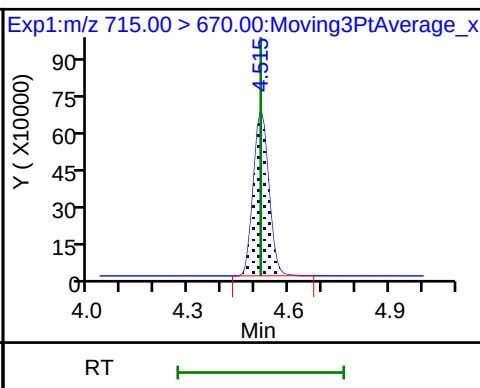
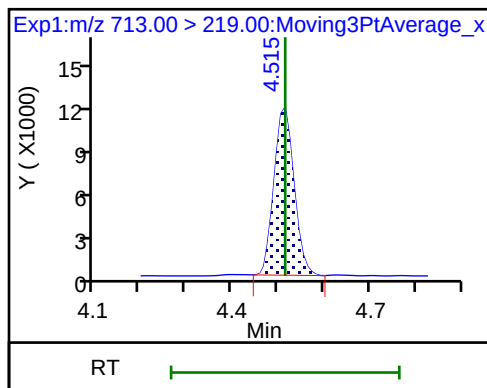
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

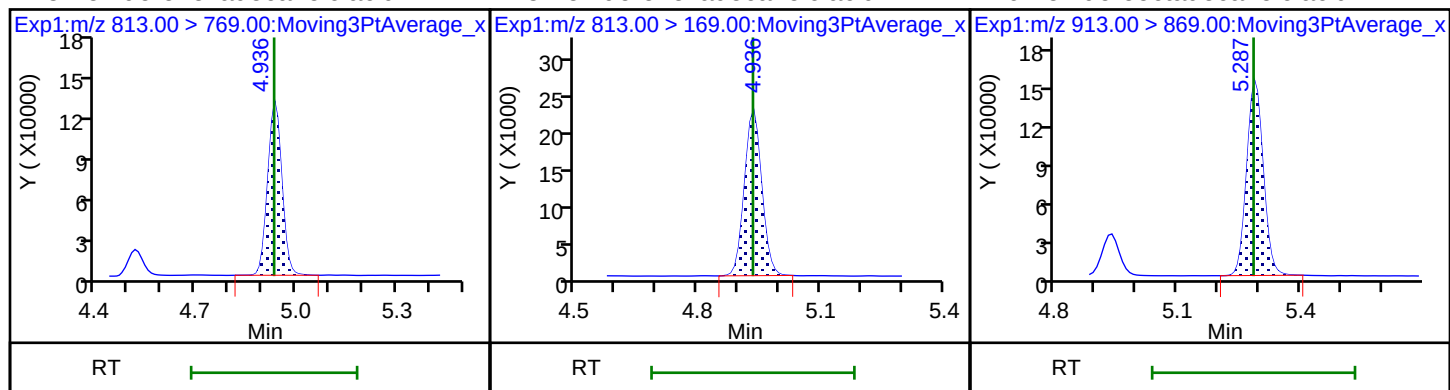
D 44 13C2-PFHxDA



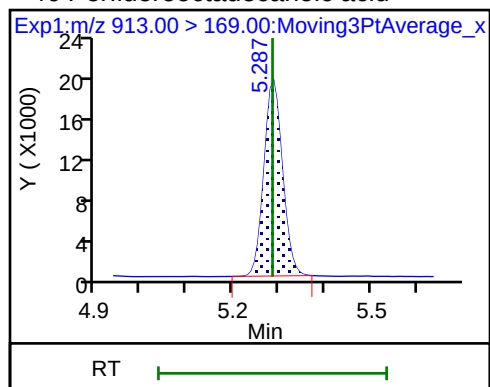
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

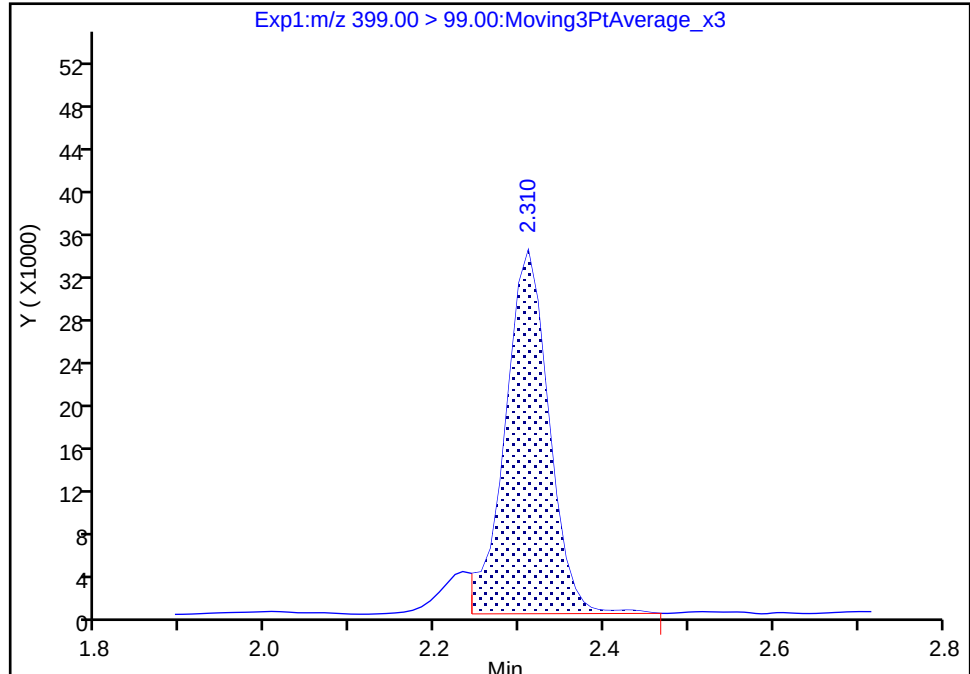
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Injection Date: 04-Oct-2018 04:52:30 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

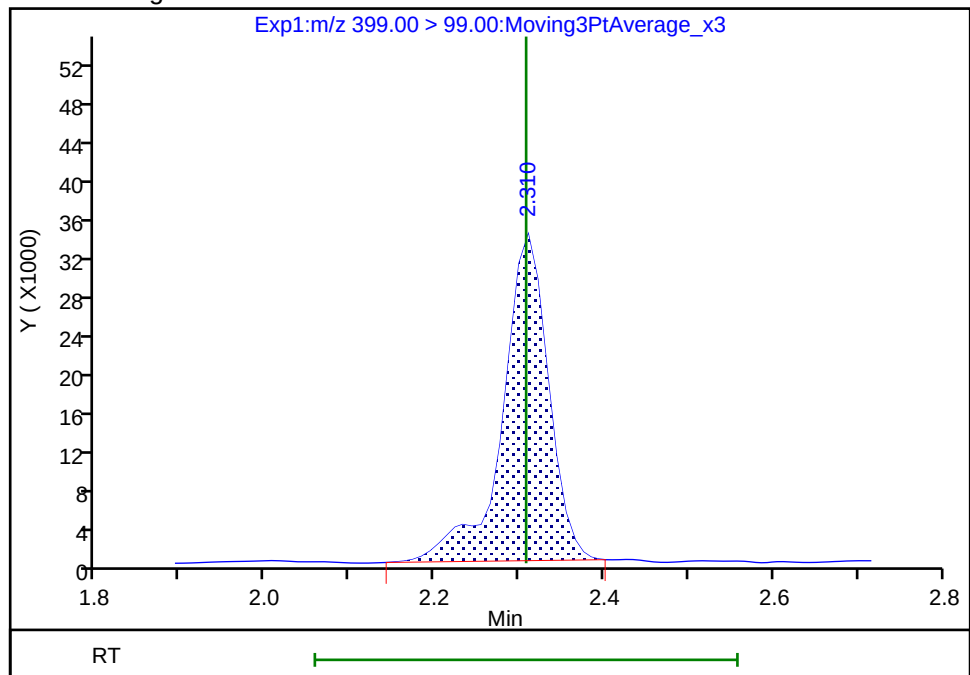
RT: 2.31
Area: 122332
Amount: 0.222090
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 128960
Amount: 0.222090
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:43:04
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 193 of 649

10/15/2018

TestAmerica Sacramento
Target Compound Quantitation Report

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 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 04-Oct-2018 04:59:54 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L4-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 04-Oct-2018 10:33:47 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: roycea

Date: 04-Oct-2018 08:44:36

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	1.426	1.430	-0.004	0.539	4103746	2.48		99.0	9684	
2 Perfluorobutyric acid										
212.90 > 169.00	1.426	1.431	-0.005	1.000	1544807	0.99		99.1	216	
D 3 13C5-PFPeA										
267.90 > 223.00	1.686	1.688	-0.002	0.638	2858077	2.57		103	10469	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.686	1.689	-0.003	1.000	1184077	0.9332		93.3	272	
D 47 13C3-PFBS										
301.90 > 83.00	1.718	1.722	-0.004	0.650	54980	2.32		99.7	307	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.718	1.725	-0.007	1.000	1693917	0.9214		104	498	
298.90 > 99.00	1.718	1.725	-0.007	1.000	677578		2.50(1.25-3.74)	104	302	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.922	1.929	-0.007	1.119	278141	0.9066		97.1	3742	
D 60 M2-4:2FTS										
329.00 > 81.00	1.922	1.929	-0.007	0.727	291262	2.23		95.3	342	
D 7 13C2 PFHxA										
315.00 > 270.00	1.954	1.961	-0.007	0.739	3056818	2.50		100	8497	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.954	1.962	-0.008	1.000	1169456	0.9710		97.1	494	
313.00 > 119.00	1.964	1.962	0.002	1.005	115975		10.08(5.03-15.10)	97.1	267	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.985	1.988	-0.003	1.155	1507668	0.9513		101	3746	
349.00 > 99.00	1.985	1.988	-0.003	1.155	548620		2.75(1.36-4.07)	101	1501	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.058	2.061	-0.003	1.000	242086	0.9129		91.3	351	

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	2.058	2.061	-0.003	0.779	230371	2.60		104	1347	
D 9 13C4-PFHpA										
367.00 > 322.00	2.288	2.295	-0.007	0.866	2897288	2.64		106	7301	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.288	2.295	-0.007	1.000	1205203	0.9278		92.8	447	
363.00 > 169.00	2.288	2.295	-0.007	1.000	485992		2.48(1.13-3.40)	92.8	793	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.310	2.308	0.002	1.000	1296504	0.8407		92.4	952	
399.00 > 99.00	2.310	2.308	0.002	1.000	422494		3.07(1.50-4.49)	92.4	717	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.309	0.001	0.874	3309719	2.41		102	6783	
77 DONA										
377.00 > 251.00	2.332	2.336	-0.004	0.771	3425097	0.9868		105	6550	
377.00 > 85.00	2.332	2.336	-0.004	0.771	2028146		1.69(0.85-2.54)	105	5529	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.620	2.621	-0.001	1.000	284175	0.8911		94.0	1022	
D 12 M2-6:2FTS										
429.00 > 81.00	2.620	2.621	-0.001	0.991	445011	2.41		101	2038	
D 73 13C8 PFOA										
421.00 > 376.00	2.635	2.637	-0.002	0.997	4329479	2.43		99.5	8240	
* 62 13C2-PFOA										
415.00 > 370.00	2.643	2.645	-0.002		2740052	2.50			11239	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.643	2.645	-0.002	1.000	1225259	0.9763		97.5	273	
413.00 > 169.00	2.643	2.645	-0.002	1.000	626186		1.96(0.84-2.52)	97.5	1694	
D 14 13C4 PFOA										
417.00 > 372.00	2.643	2.645	-0.002	1.000	2663391	2.50		100.0	6137	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.651	2.654	-0.003	0.877	1083749	0.9697		102	2660	
449.00 > 99.00	2.658	2.654	0.004	0.879	292854		3.70(1.94-5.82)	102	1356	
D 72 13C8 PFOS										
507.00 > 99.00	3.016	3.018	-0.002	1.141	1121568	2.39		99.9	4874	
D 19 13C5 PFNA										
468.00 > 423.00	3.016	3.019	-0.003	1.141	2234395	2.49		99.8	7354	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.023	3.020	0.003	1.000	898816	0.8813		95.0	928	
499.00 > 99.00	3.023	3.020	0.003	1.000	200438		4.48(2.31-6.93)	95.0	1198	
D 18 13C4 PFOS										
503.00 > 80.00	3.023	3.020	0.003	1.144	2134052	2.40		101	5772	
20 Perfluorononanoic acid										
463.00 > 419.00	3.023	3.020	0.003	1.003	944750	0.9814		98.1	448	
463.00 > 169.00	3.023	3.020	0.003	1.003	239083		3.95(1.90-5.69)	98.1	1151	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.236	3.235	0.001	1.070	1610398	0.9546		102	2400	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.364	3.366	-0.002	1.000	1217157	0.9779		97.8	2144	

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	3.364	3.366	-0.002	1.273	3233380	2.62		105	5719	
D 26 M2-8:2FTS										
529.00 > 81.00	3.372	3.370	0.002	1.276	462050	2.36		98.5	2042	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.372	3.370	0.002	1.000	225498	0.9673		101	1319	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.372	3.372	0.0	1.115	717275	0.9789		102	3615	
549.00 > 99.00	3.372	3.372	0.0	1.115	245059		2.93(1.33-3.97)	102	1151	
D 23 13C2 PFDA										
515.00 > 470.00	3.379	3.381	-0.002	1.279	1928353	2.43		97.3	6402	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.379	3.382	-0.003	1.000	838937	1.08		108	726	
513.00 > 169.00	3.379	3.382	-0.003	1.000	142509		5.89(2.36-7.09)	108	303	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.539	3.536	0.003	1.339	804808	2.50		100.0	1345	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.539	3.542	-0.003	1.000	297319	0.9530		95.3	332	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.701	3.698	0.003	1.224	536199	0.9361		97.1	2507	
599.00 > 99.00	3.701	3.698	0.003	1.224	183183		2.93(1.39-4.16)	97.1	885	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.701	3.706	-0.005	1.400	909519	2.62		105	1029	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.710	3.712	-0.002	1.002	296626	0.9366		93.7	897	
D 30 13C2 PFUnA										
565.00 > 520.00	3.710	3.712	-0.002	1.404	1527074	2.52		101	4277	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.718	3.714	0.004	1.002	500834	0.9352		93.5	532	
563.00 > 169.00	3.718	3.714	0.004	1.002	131344		3.81(2.12-6.36)	93.5	785	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.871	3.873	-0.002	1.280	2445527	0.9605		102	3269	
35 MeFOSA										
512.00 > 169.00	3.881	3.879	0.002		360670	NC			579	
D 36 13C2 PFDaA										
615.00 > 570.00	4.007	4.007	0.0	1.516	1602444	2.51		100	4698	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.007	4.008	-0.001	1.000	726934	1.03		103	675	
613.00 > 169.00	4.007	4.008	-0.001	1.000	173147		4.20(2.13-6.40)	103	1379	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.015	4.013	0.002	1.191	166387	1.01		104	1858	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.248	4.250	-0.002	1.405	255749	0.9837		102	2038	
699.00 > 99.00	4.248	4.250	-0.002	1.405	380417		0.67(0.00-0.00)	102	1556	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.277	4.276	0.001	1.067	633199	0.9305		93.1	596	
663.00 > 169.00	4.277	4.276	0.001	1.067	219666		2.88(1.25-3.76)	93.1	1390	

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	4.518	4.515	0.003	1.000	187320	0.9784		97.8	1379	
713.00 > 219.00	4.508	4.515	-0.007	0.998	138859		1.35(0.71-2.13)	97.8	1189	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.518	4.515	0.003	1.710	1948194	2.54		102	4386	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.933	4.933	0.0	1.866	3525464	2.55		102	5351	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.933	4.934	-0.001	1.000	1212698	0.9597		96.0	276	
813.00 > 169.00	4.933	4.934	-0.001	1.000	223546		5.42(2.86-8.58)	96.0	1503	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.284	5.285	-0.001	1.071	1458049	0.9829		98.3	290	
913.00 > 169.00	5.284	5.285	-0.001	1.071	179549		8.12(3.83-11.48)	98.3	1370	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_005.d

Injection Date: 04-Oct-2018 04:59:54

Instrument ID: A8_N

Lims ID: IC L4 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

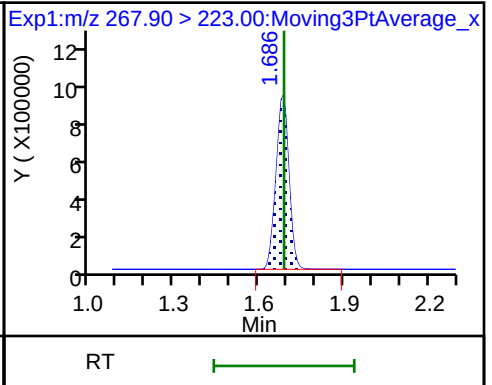
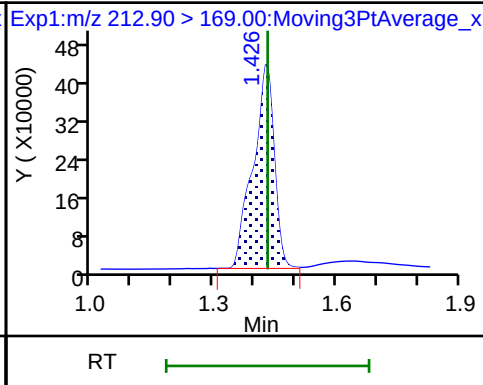
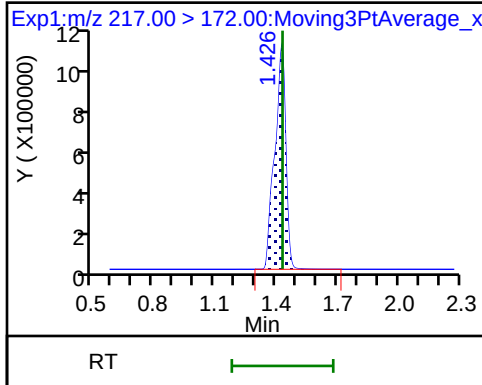
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

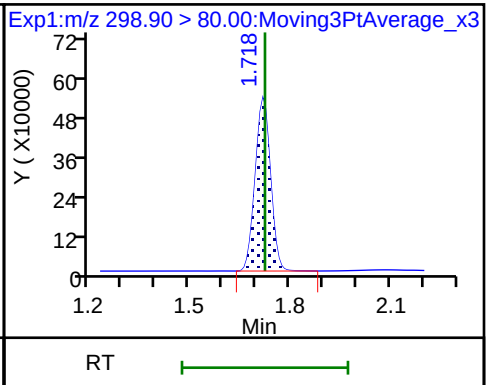
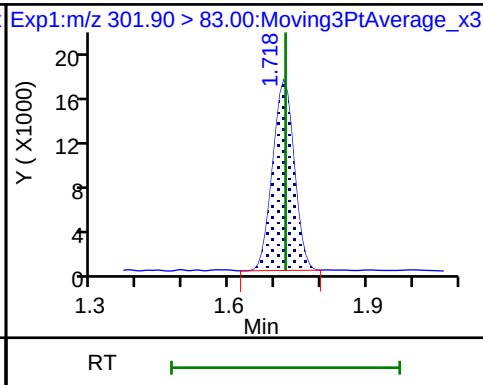
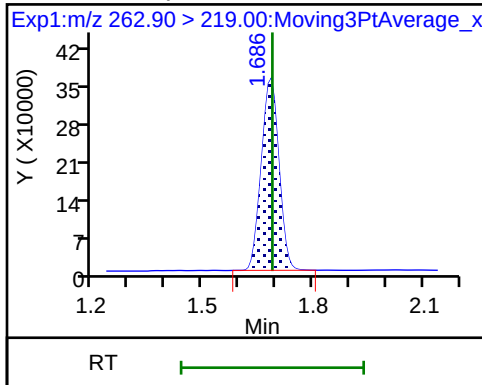
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

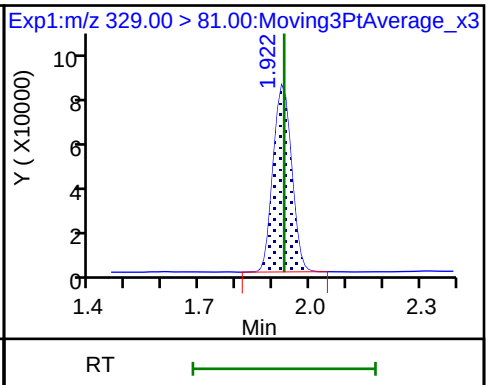
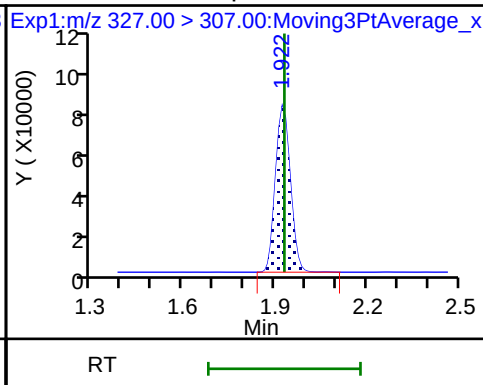
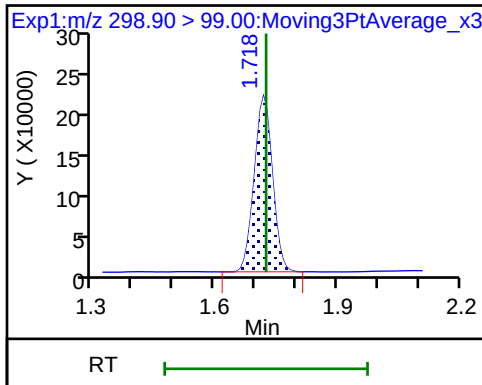
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

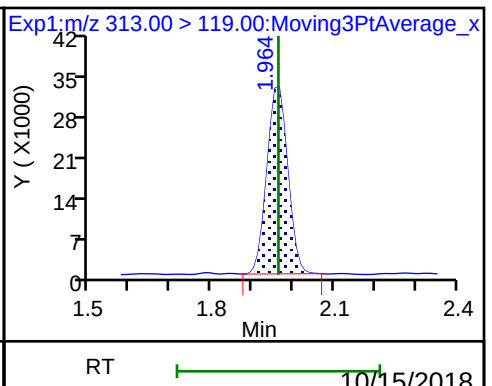
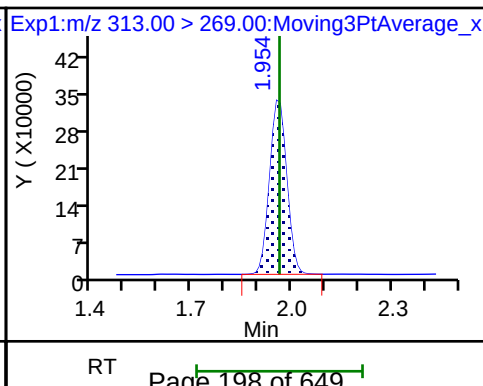
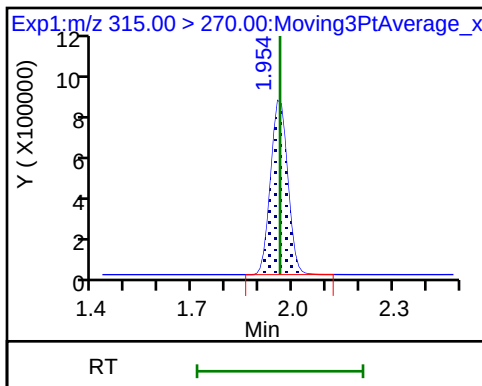
D 60 M2-4:2FTS

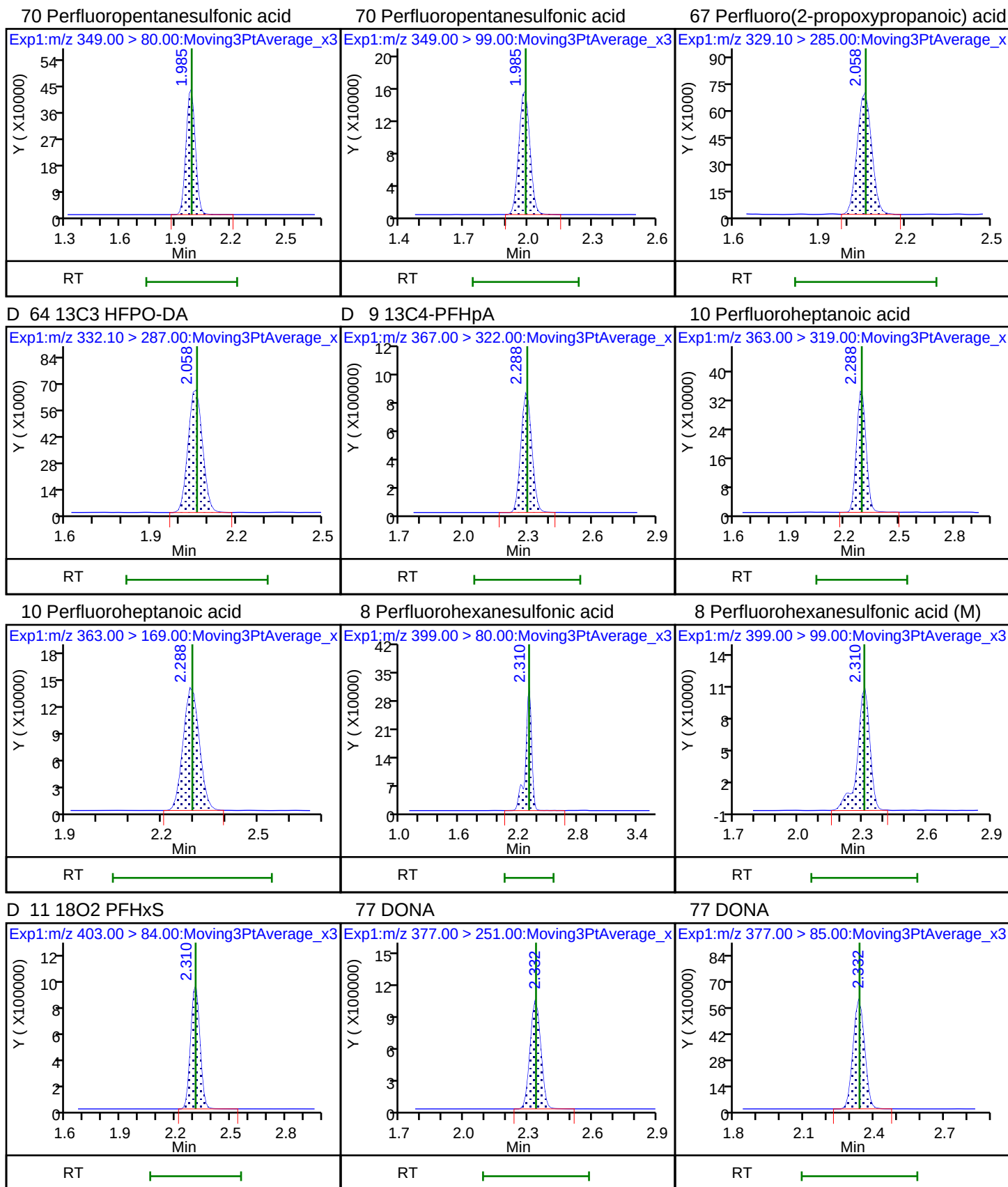


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

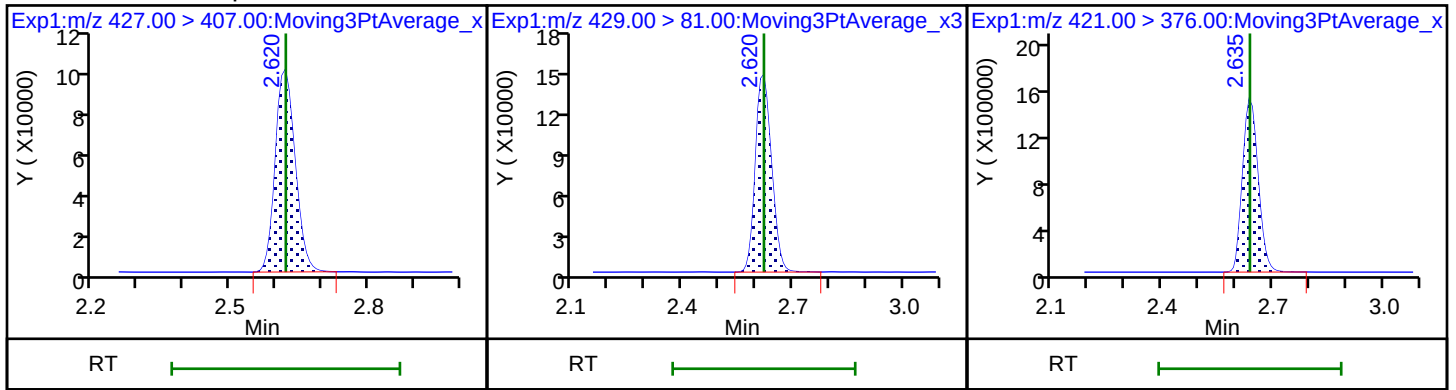
6 Perfluorohexanoic acid





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

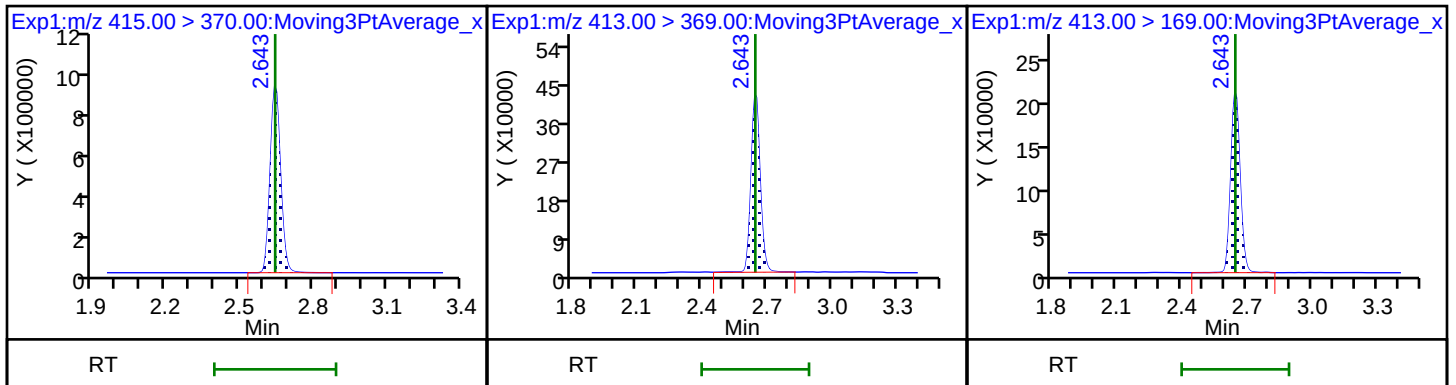
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* 62 13C2-PFOA

15 Perfluorooctanoic acid

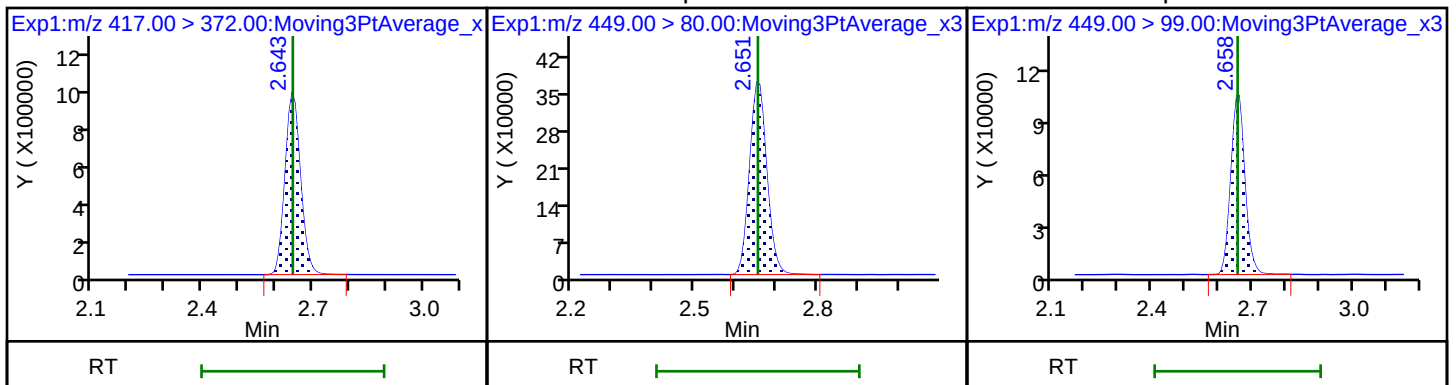
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

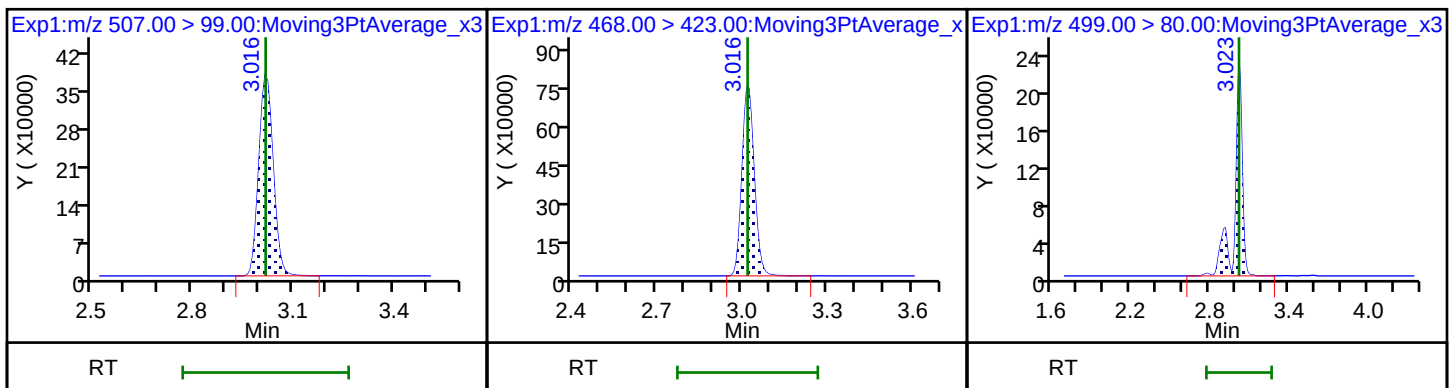
16 Perfluoroheptanesulfonic acid

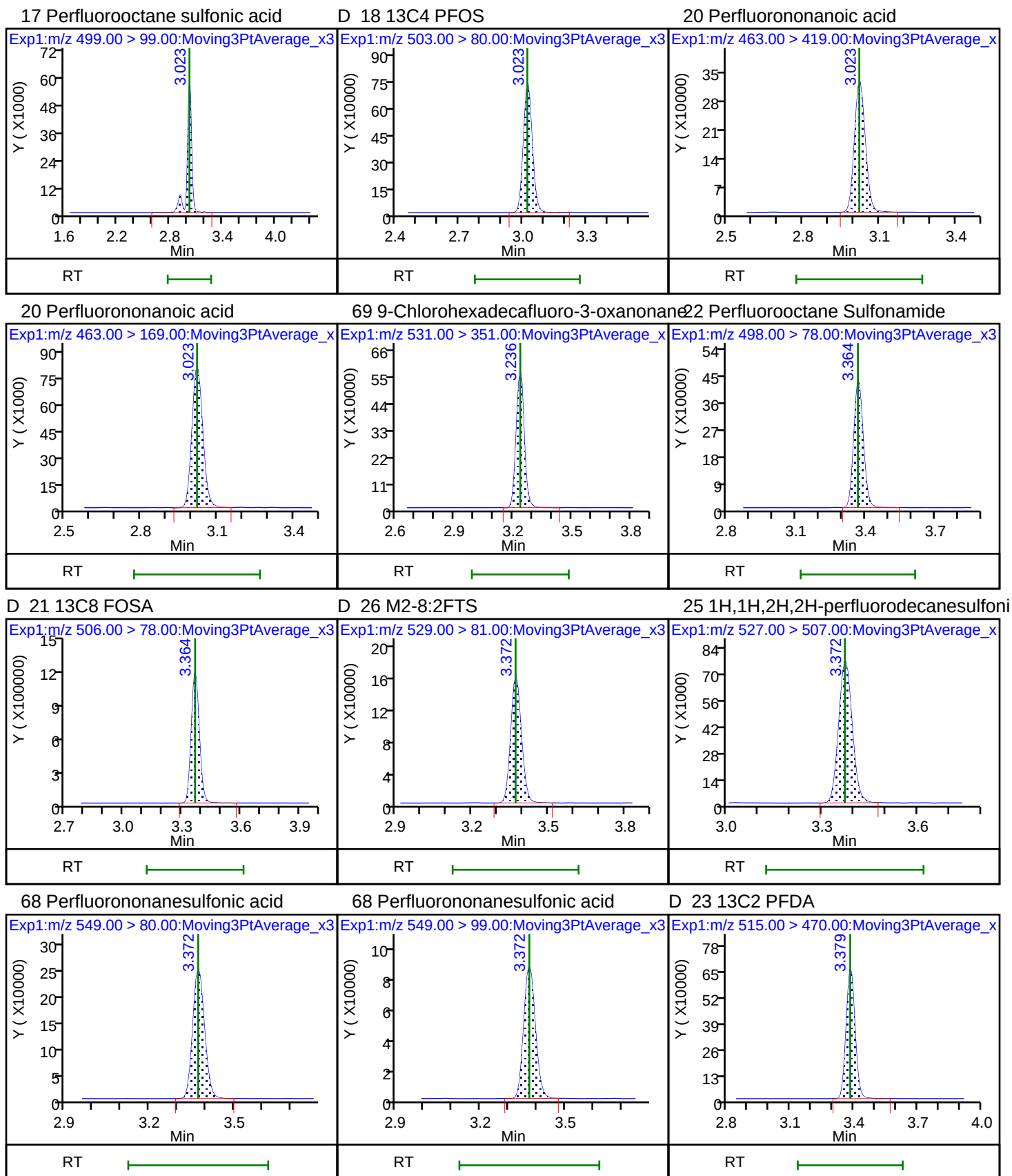


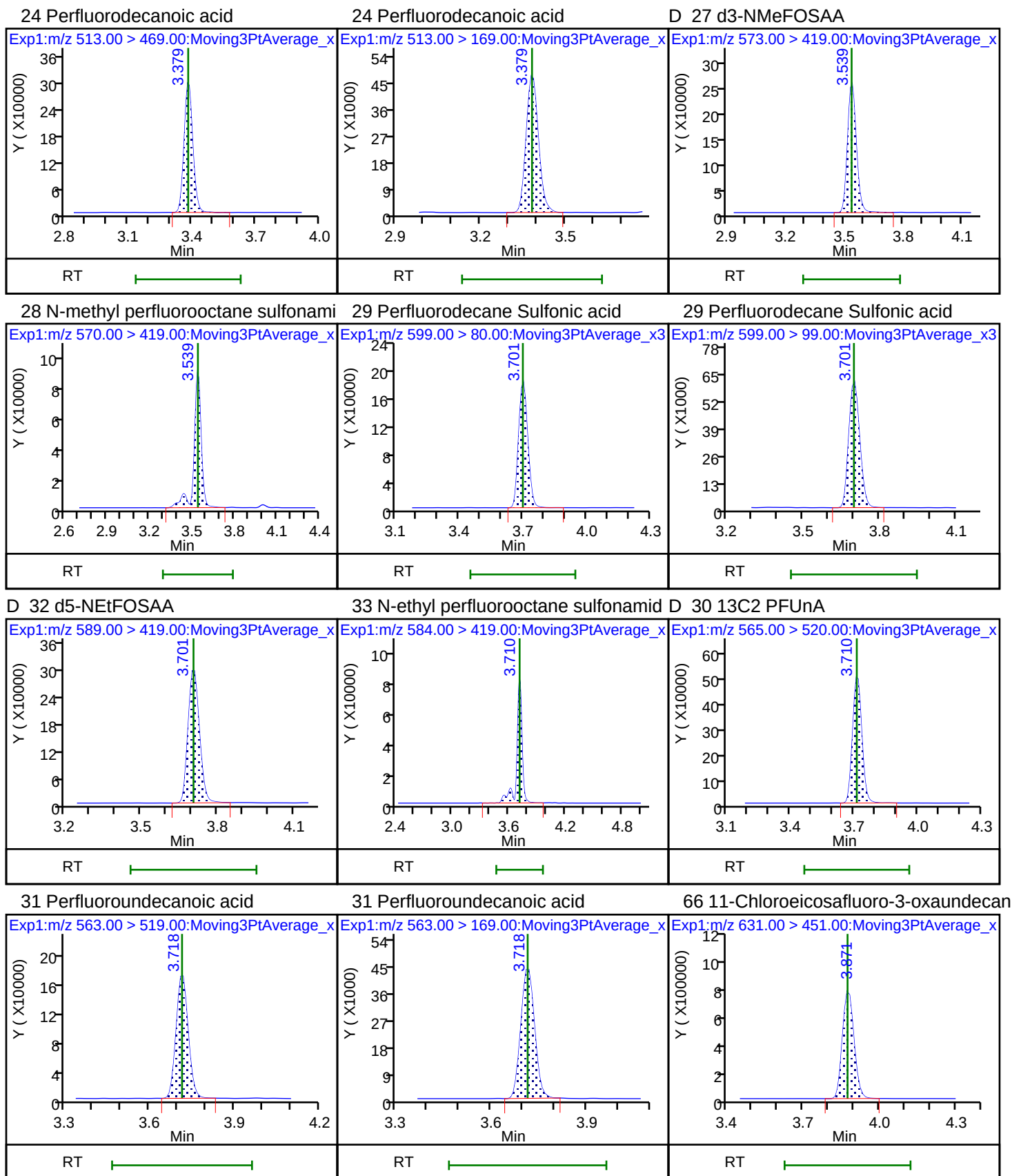
D 72 13C8 PFOS

D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid



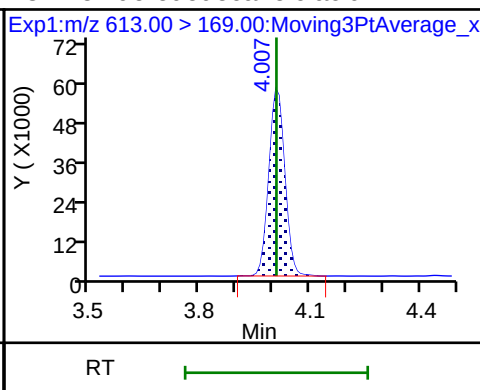
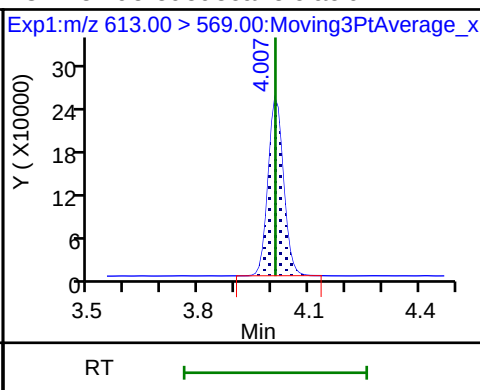
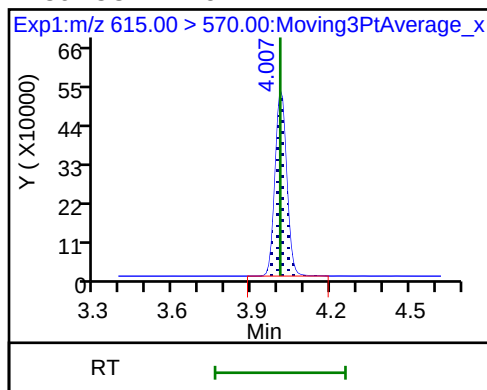




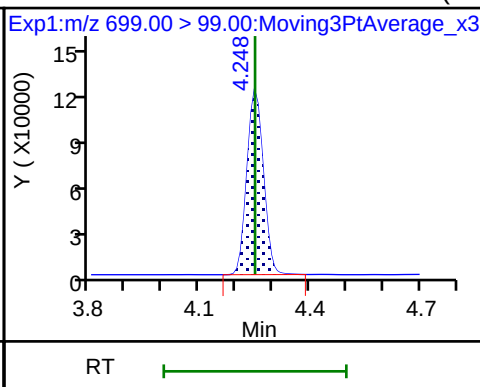
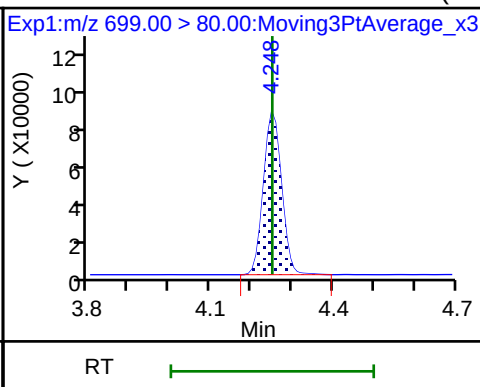
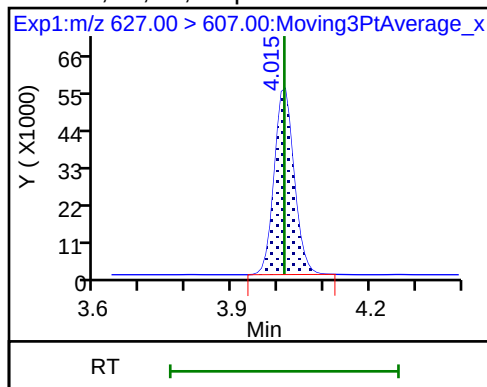
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



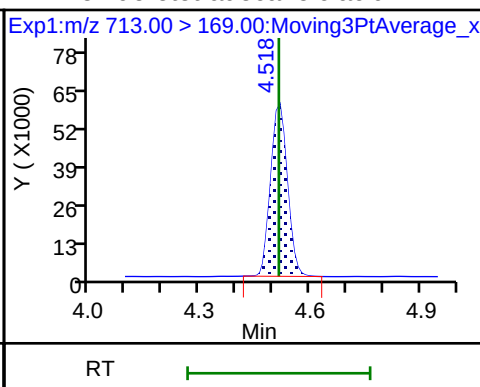
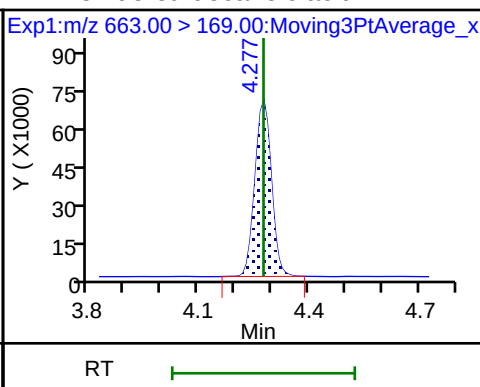
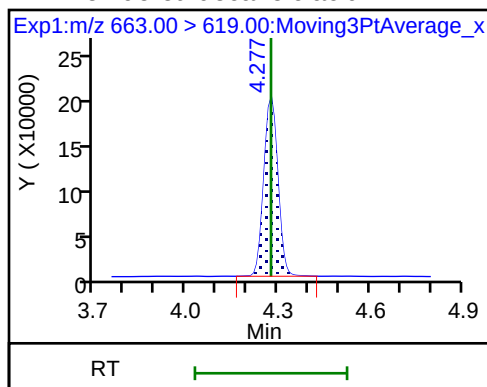
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

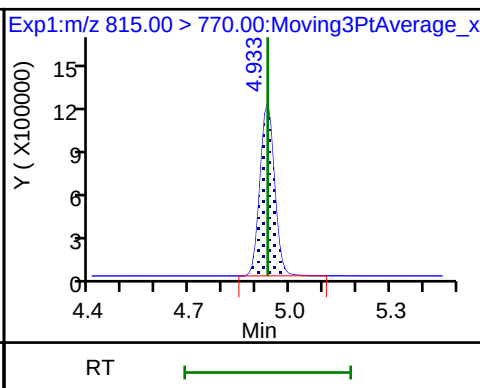
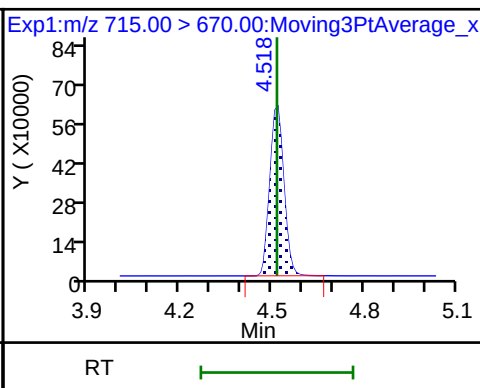
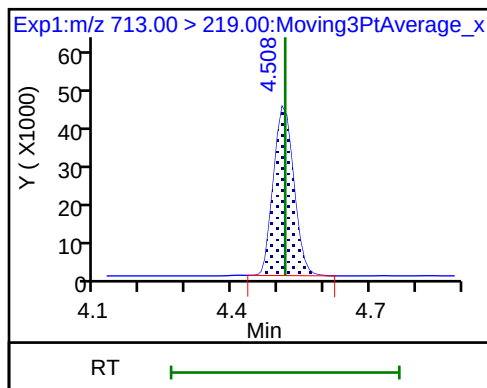
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

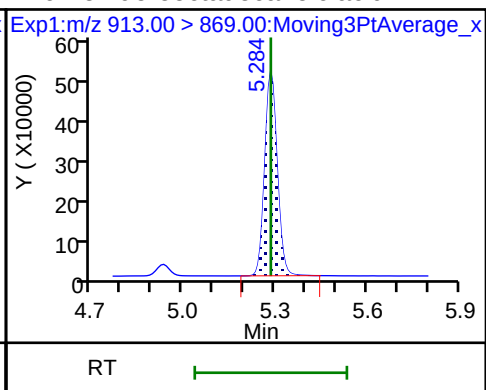
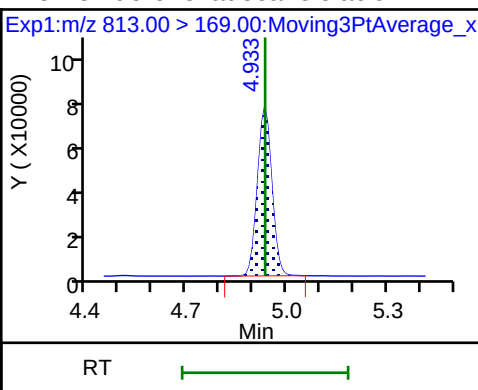
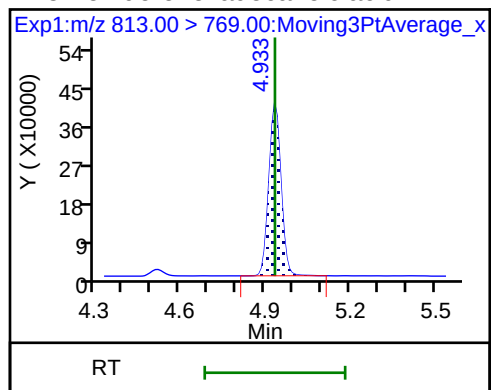
D 44 13C2-PFHxDA



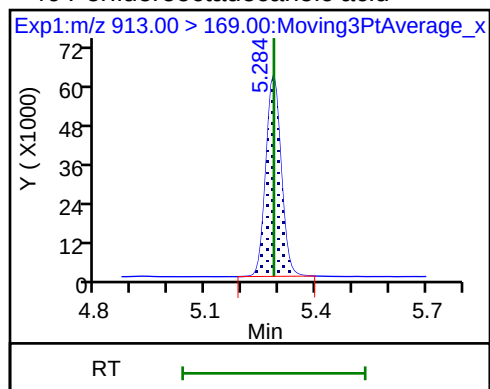
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

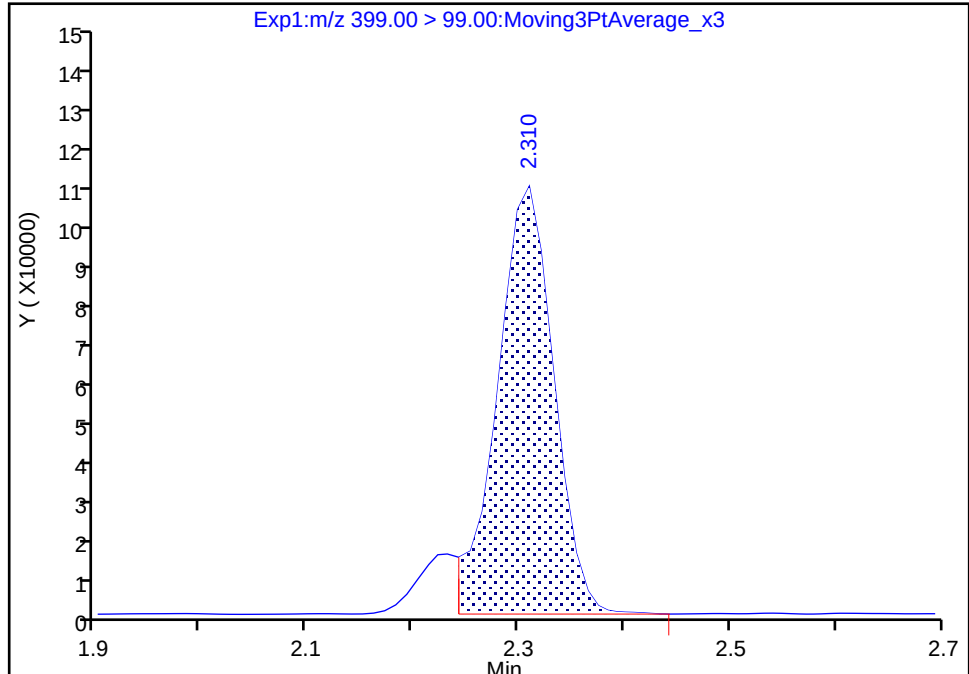
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Injection Date: 04-Oct-2018 04:59:54 Instrument ID: A8_N
Lims ID: IC L4 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

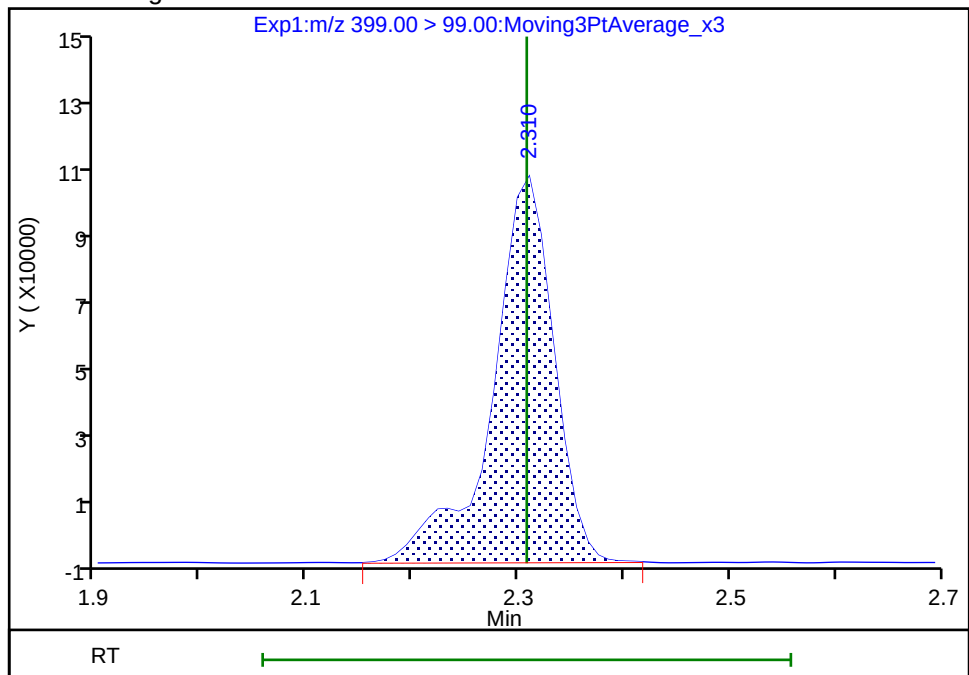
RT: 2.31
Area: 384270
Amount: 0.840747
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 422494
Amount: 0.840747
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:44:08
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 205 of 649

10/15/2018

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_006.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 04-Oct-2018 05:07:17 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L5-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 04-Oct-2018 10:33:56 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: roycea

Date: 04-Oct-2018 08:45:56

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	1.426	1.430	-0.004	0.539	4293457	2.53		101	9664	
2 Perfluorobutyric acid										
212.90 > 169.00	1.431	1.431	0.0	1.003	4062613	2.49		99.6	569	
D 3 13C5-PFPeA										
267.90 > 223.00	1.686	1.688	-0.002	0.638	2849343	2.50		99.9	10259	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.686	1.689	-0.003	1.000	3190130	2.52		101	715	
D 47 13C3-PFBS										
301.90 > 83.00	1.719	1.722	-0.004	0.650	59541	2.45		105	395	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.727	1.725	0.002	1.005	4324081	2.17		98.3	1068	
298.90 > 99.00	1.727	1.725	0.002	1.005	1785428		2.42(1.25-3.74)	98.3	704	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.923	1.929	-0.006	1.119	749643	2.26		96.6	5827	
D 60 M2-4:2FTS										
329.00 > 81.00	1.923	1.929	-0.006	0.727	328595	2.45		105	391	
D 7 13C2 PFHxA										
315.00 > 270.00	1.954	1.961	-0.007	0.739	3202615	2.56		102	10483	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.965	1.962	0.003	1.005	3233546	2.56		102	1332	
313.00 > 119.00	1.965	1.962	0.003	1.005	287510		11.25(5.03-15.10)	102	630	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.986	1.988	-0.002	1.155	4034663	2.35		100	8261	
349.00 > 99.00	1.986	1.988	-0.002	1.155	1427734		2.83(1.36-4.07)	100	4459	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.059	2.061	-0.002	1.000	649637	2.52		101	968	

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	2.059	2.061	-0.002	0.779	224077	2.46		98.5	2240	
D 9 13C4-PFHpA										
367.00 > 322.00	2.288	2.295	-0.007	0.866	2747005	2.44		97.6	5978	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.288	2.295	-0.007	1.000	3253678	2.64		106	1127	
363.00 > 169.00	2.288	2.295	-0.007	1.000	1188716		2.74(1.13-3.40)	106	1901	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.300	2.308	-0.008	0.995	3345851	2.17		95.3	2097	
399.00 > 99.00	2.311	2.308	0.003	1.000	1114251		3.00(1.50-4.49)	95.3	1550	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.311	2.309	0.002	0.874	3311090	2.35		99.6	5913	
77 DONA										
377.00 > 251.00	2.333	2.336	-0.003	0.773	9140129	2.65		112	10477	
377.00 > 85.00	2.333	2.336	-0.003	0.773	5111732		1.79(0.85-2.54)	112	10338	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.613	2.621	-0.008	1.000	726468	2.18		92.0	1859	
D 12 M2-6:2FTS										
429.00 > 81.00	2.613	2.621	-0.008	0.988	464979	2.45		103	2060	
D 73 13C8 PFOA										
421.00 > 376.00	2.635	2.637	-0.002	0.997	4816231	2.64		108	10316	
* 62 13C2-PFOA										
415.00 > 370.00	2.643	2.645	-0.002		2809502	2.50			7340	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.643	2.645	-0.002	1.000	3221865	2.50		99.8	703	
413.00 > 169.00	2.643	2.645	-0.002	1.000	1601366		2.01(0.84-2.52)	99.8	2993	
D 14 13C4 PFOA										
417.00 > 372.00	2.643	2.645	-0.002	1.000	2738792	2.51		100	5812	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.651	2.654	-0.003	0.879	2813526	2.53		106	4557	
449.00 > 99.00	2.651	2.654	-0.003	0.879	710614		3.96(1.94-5.82)	106	2357	
D 72 13C8 PFOS										
507.00 > 99.00	3.010	3.018	-0.008	1.139	1167667	2.42		101	4332	
D 19 13C5 PFNA										
468.00 > 423.00	3.018	3.019	-0.001	1.142	2212226	2.41		96.3	6135	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.018	3.020	-0.002	1.000	2381076	2.35		101	1342	
499.00 > 99.00	3.018	3.020	-0.002	1.000	514954		4.62(2.31-6.93)	101	1174	
D 18 13C4 PFOS										
503.00 > 80.00	3.018	3.020	-0.002	1.142	2123164	2.33		97.6	6190	
20 Perfluorononanoic acid										
463.00 > 419.00	3.018	3.020	-0.002	1.000	2489413	2.61		104	1156	
463.00 > 169.00	3.018	3.020	-0.002	1.000	564963		4.41(1.90-5.69)	104	2426	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.229	3.235	-0.006	1.070	3972794	2.37		102	3879	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.359	3.366	-0.007	1.000	3167292	2.69		108	3298	

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	3.359	3.366	-0.007	1.271	3053046	2.41		96.4	4821	
D 26 M2-8:2FTS										
529.00 > 81.00	3.366	3.370	-0.004	1.273	481119	2.40		100	2167	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.366	3.370	-0.004	1.000	588432	2.42		101	2838	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.366	3.372	-0.006	1.116	1786304	2.45		102	3771	
549.00 > 99.00	3.366	3.372	-0.006	1.116	572671		3.12(1.33-3.97)	102	1866	
D 23 13C2 PFDA										
515.00 > 470.00	3.373	3.381	-0.008	1.276	2010213	2.47		99.0	6818	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.381	3.382	-0.001	1.002	2021893	2.51		100	1351	
513.00 > 169.00	3.373	3.382	-0.009	1.000	362705		5.57(2.36-7.09)	100	338	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.533	3.536	-0.003	1.337	826023	2.50		100	1080	
28 N-methyl perfluorooctane sulfonami										M
570.00 > 419.00	3.541	3.542	-0.001	1.002	789320	2.47		98.6	613	M
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.696	3.698	-0.002	1.225	1390975	2.44		101	5234	
599.00 > 99.00	3.696	3.698	-0.002	1.225	451136		3.08(1.39-4.16)	101	1868	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.705	3.706	-0.001	1.402	867340	2.44		97.6	1437	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.705	3.712	-0.007	1.000	782173	2.59		104	1138	
D 30 13C2 PFUnA										
565.00 > 520.00	3.705	3.712	-0.007	1.402	1547519	2.49		99.7	4708	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.714	3.714	0.0	1.002	1316824	2.43		97.1	1272	
563.00 > 169.00	3.714	3.714	0.0	1.002	311067		4.23(2.12-6.36)	97.1	1185	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.876	3.873	0.003	1.284	6775548	2.67		114	9594	
35 MeFOSA										
512.00 > 169.00	3.876	3.879	-0.003		976218	NC			721	
D 36 13C2 PFDaA										
615.00 > 570.00	4.003	4.007	-0.004	1.514	1672081	2.56		102	6428	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.003	4.008	-0.005	1.000	1822133	2.49		99.4	1389	
613.00 > 169.00	4.003	4.008	-0.005	1.000	444147		4.10(2.13-6.40)	99.4	1683	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.011	4.013	-0.002	1.192	416654	2.42		100	3667	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.252	4.250	0.002	1.409	655584	2.53		105	7449	
699.00 > 99.00	4.243	4.250	-0.007	1.406	988785		0.66(0.00-0.00)	105	3717	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.271	4.276	-0.005	1.067	1821500	2.57		103	1620	
663.00 > 169.00	4.271	4.276	-0.005	1.067	570776		3.19(1.25-3.76)	103	2944	

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	4.514	4.515	-0.001	1.000	495052	2.75		110	2931	
713.00 > 219.00	4.504	4.515	-0.011	0.998	352984		1.40(0.71-2.13)	110	1168	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.514	4.515	-0.001	1.708	1833365	2.33		93.3	6466	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.927	4.933	-0.006	1.864	3652470	2.57		103	6322	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.936	4.934	0.002	1.002	3187679	2.47		99.0	673	
813.00 > 169.00	4.936	4.934	0.002	1.002	555784		5.74(2.86-8.58)	99.0	2645	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.281	5.285	-0.004	1.072	3848622	2.50		100	663	
913.00 > 169.00	5.281	5.285	-0.004	1.072	464357		8.29(3.83-11.48)	100	2271	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_006.d

Injection Date: 04-Oct-2018 05:07:17

Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

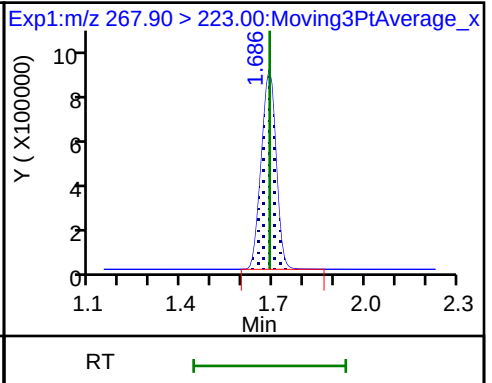
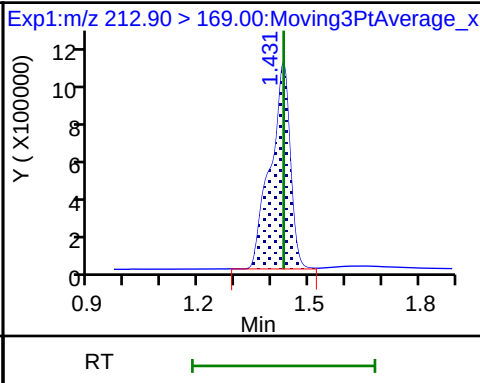
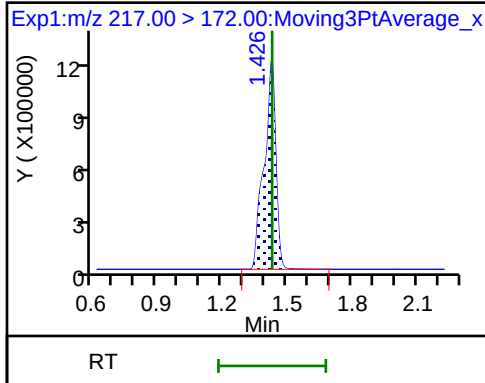
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

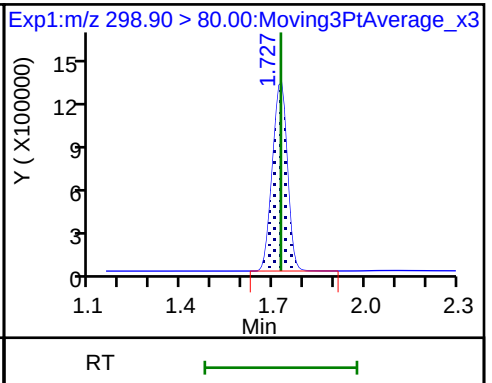
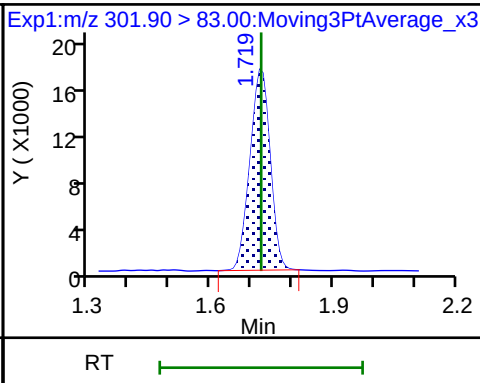
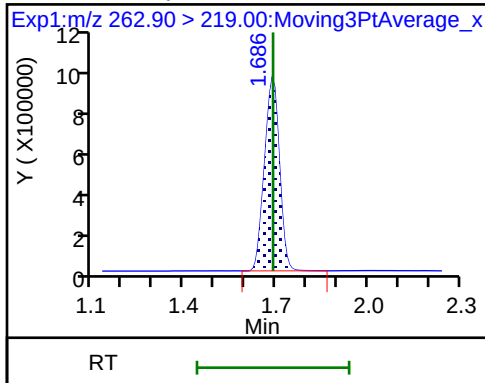
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

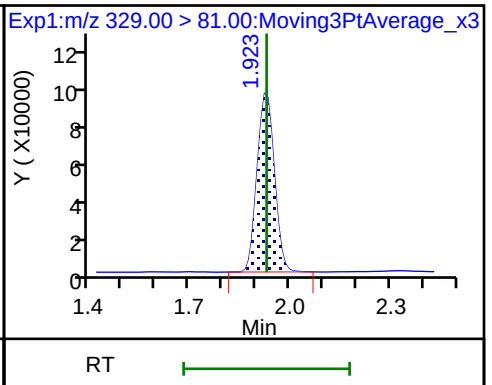
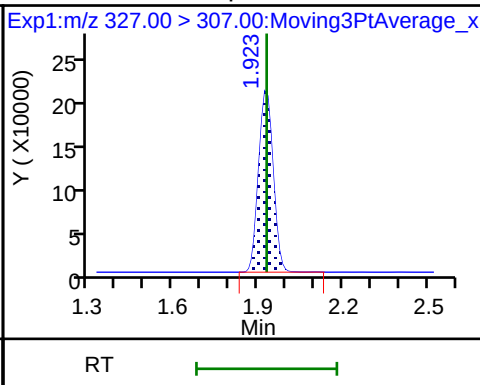
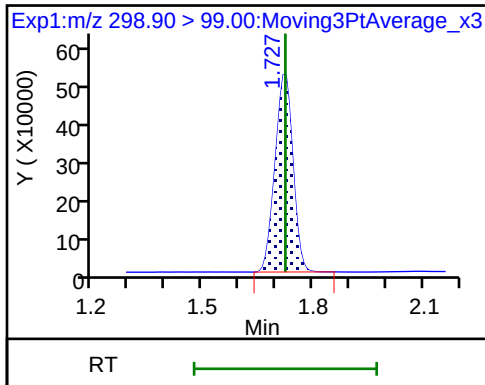
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

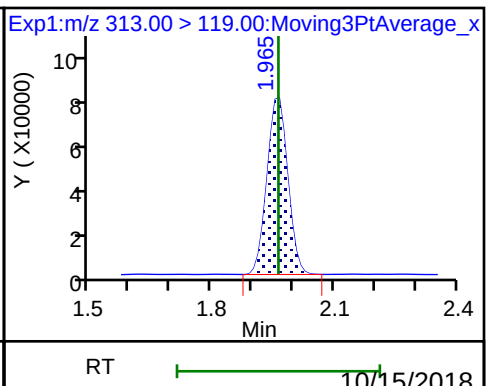
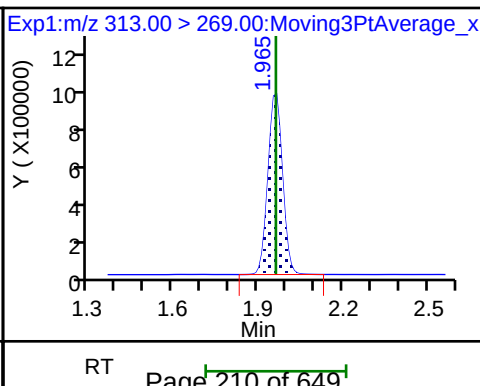
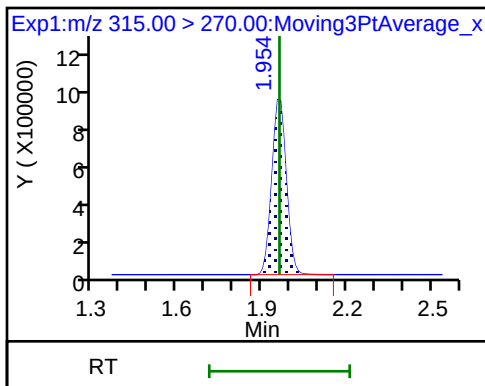
D 60 M2-4:2FTS

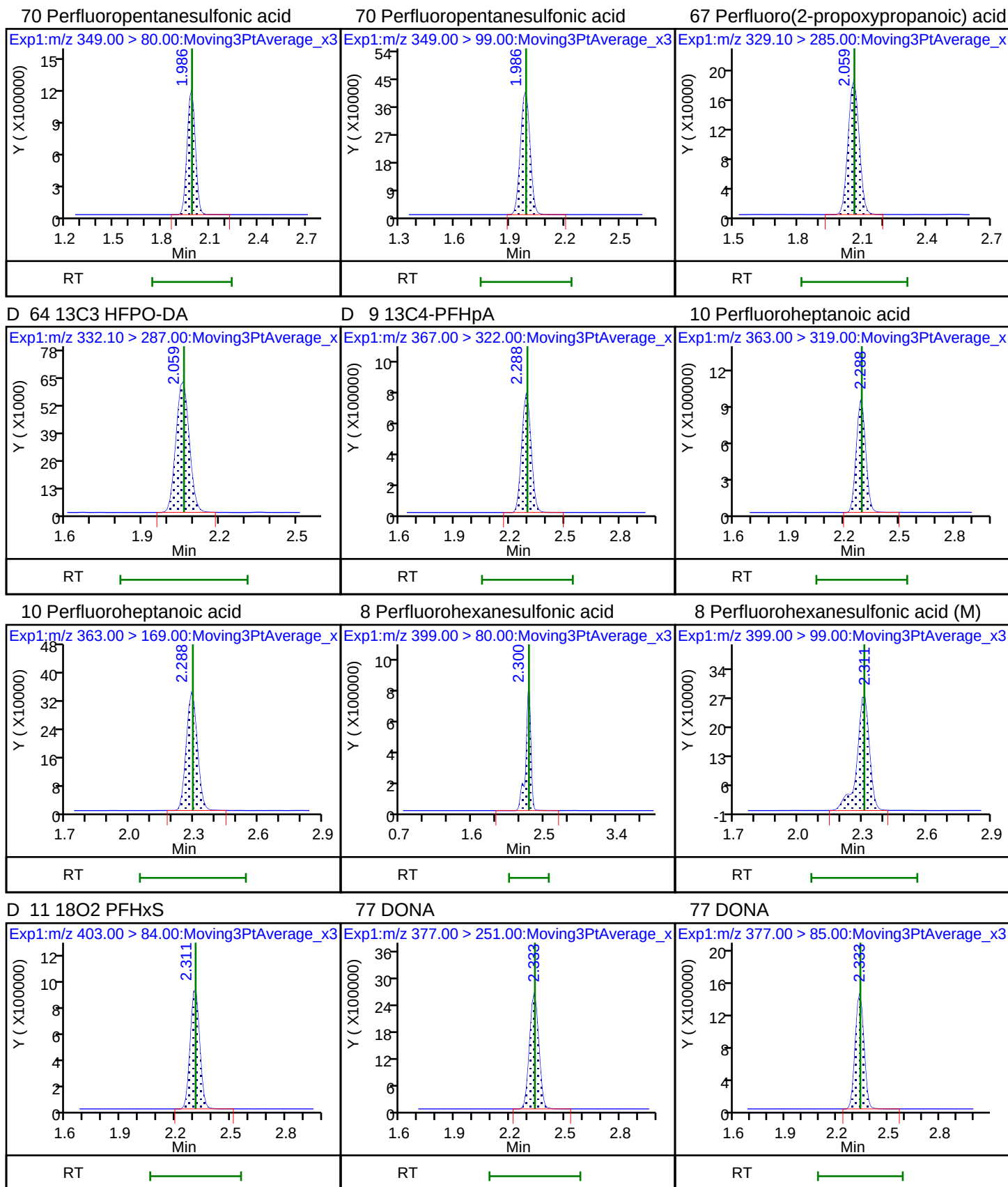


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

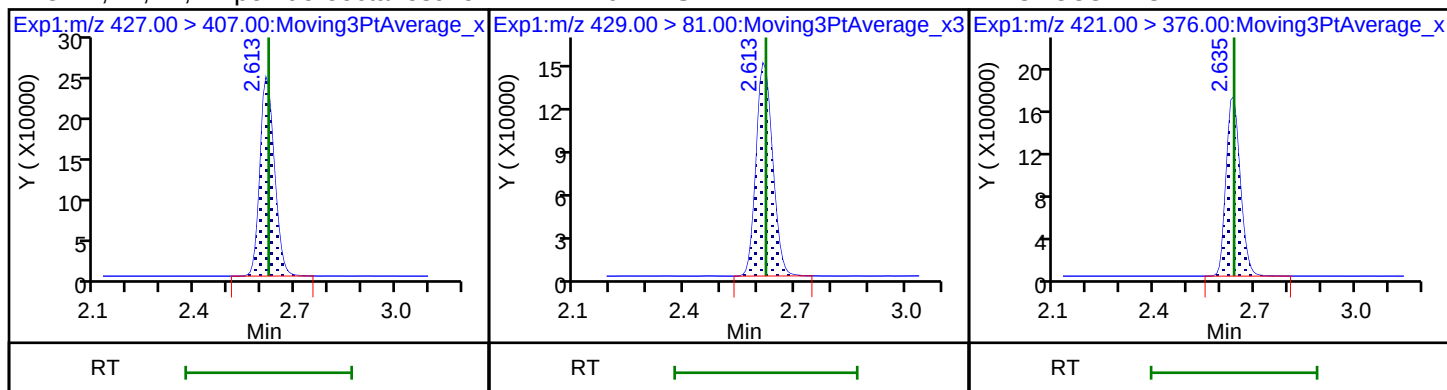
6 Perfluorohexanoic acid





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

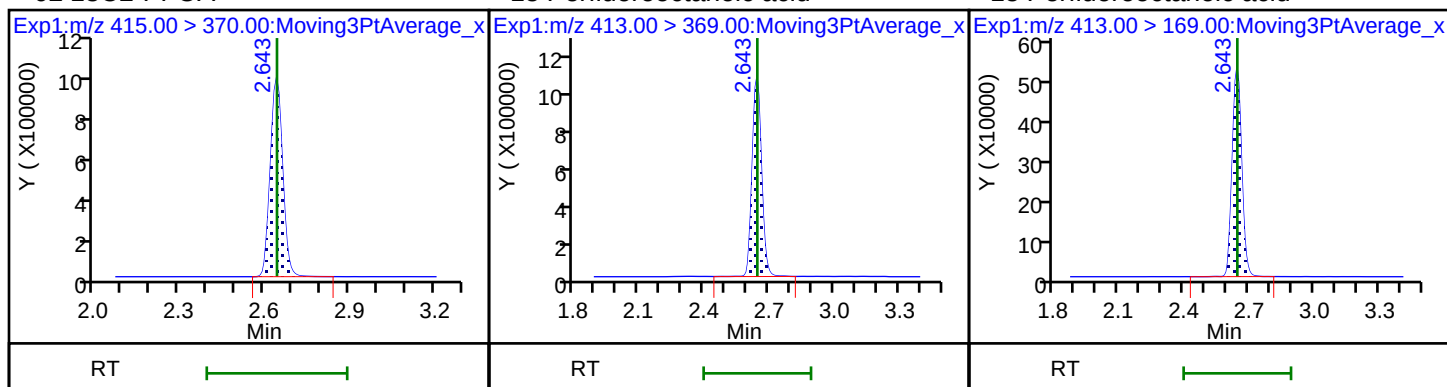
D 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

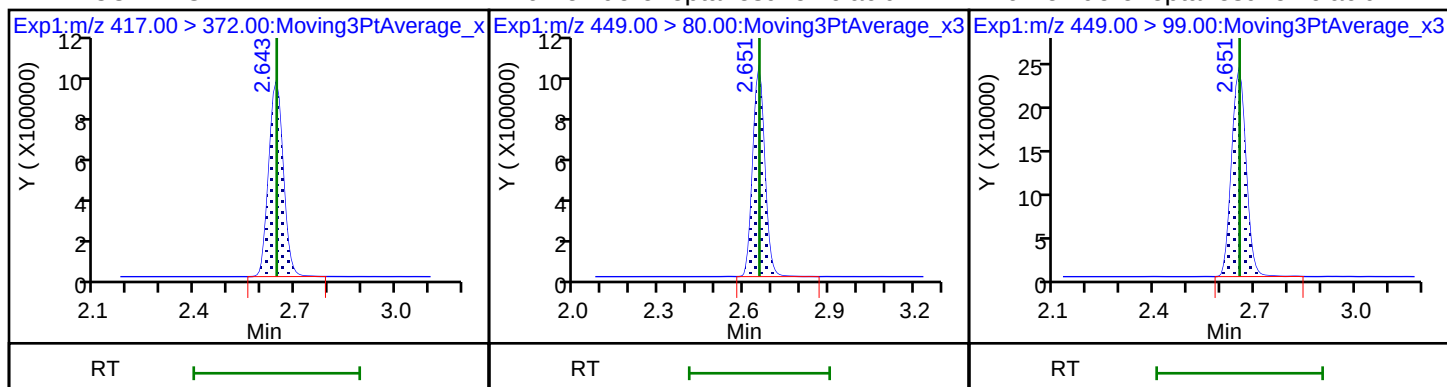
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

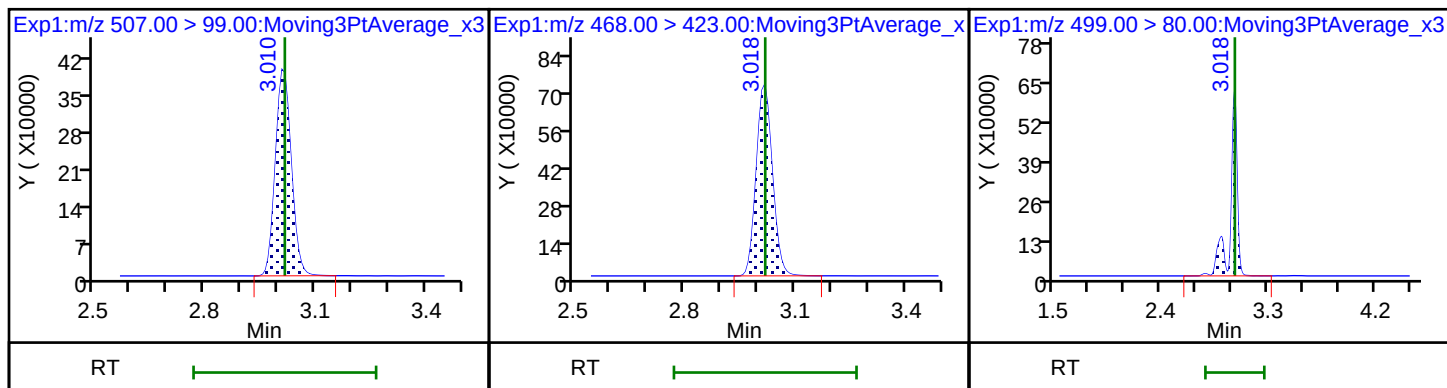
16 Perfluoroheptanesulfonic acid

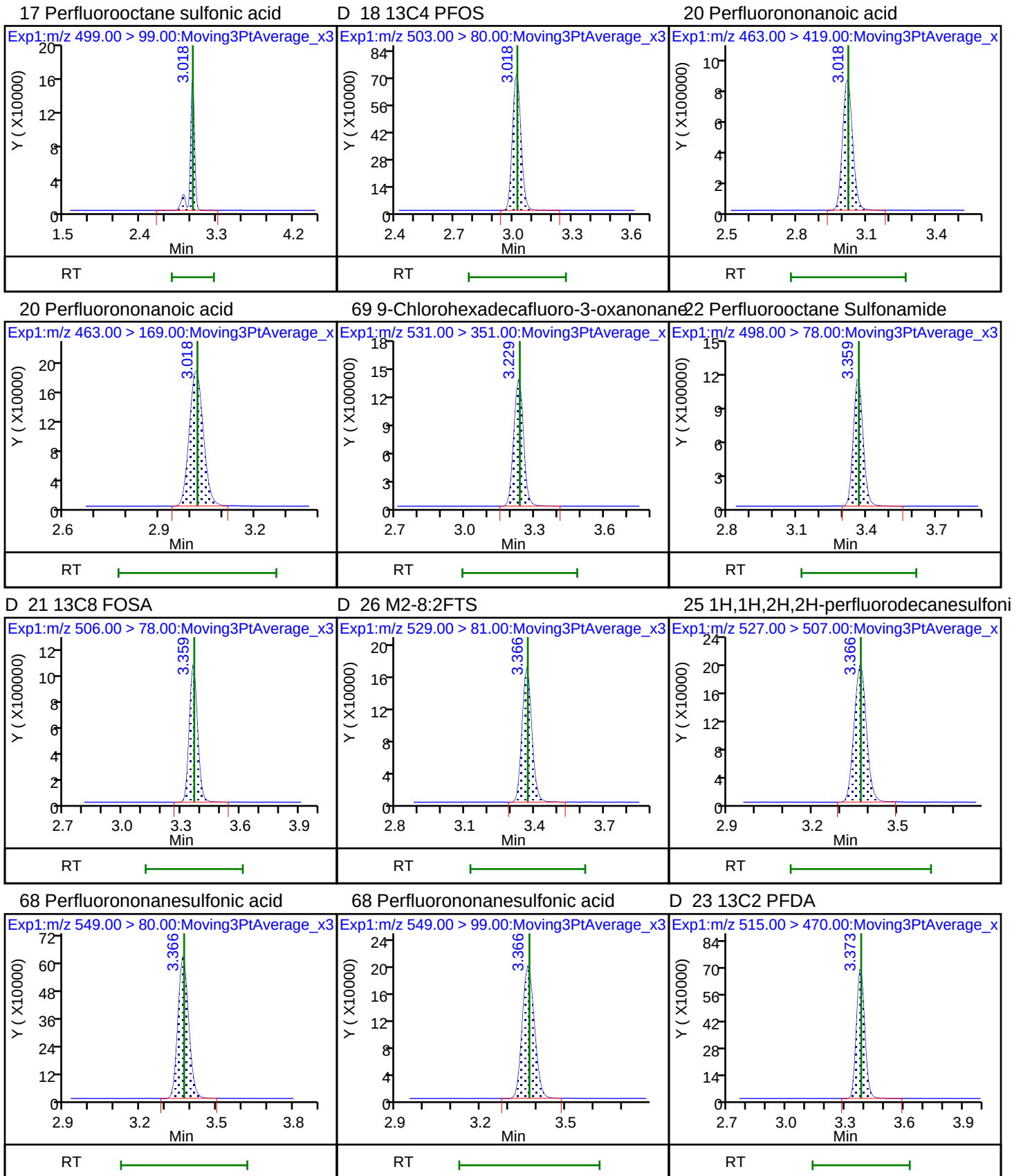


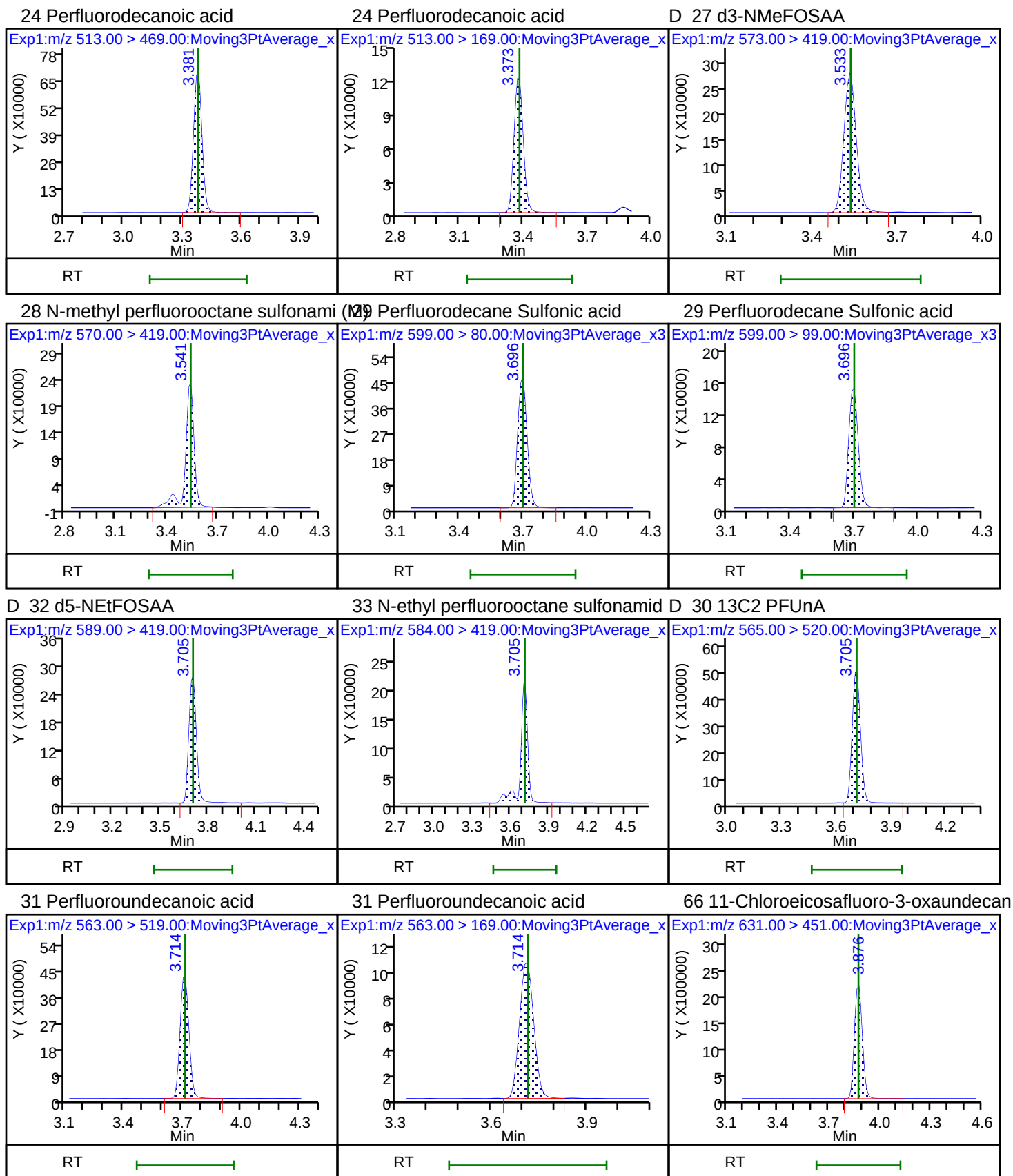
D 72 13C8 PFOS

D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid



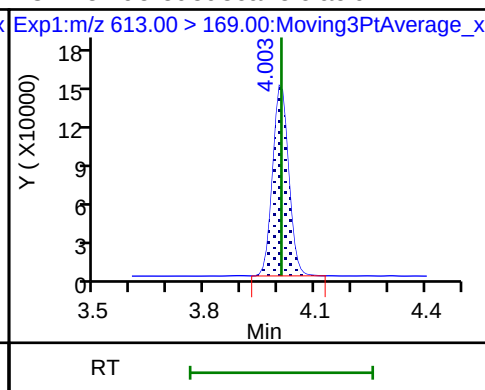
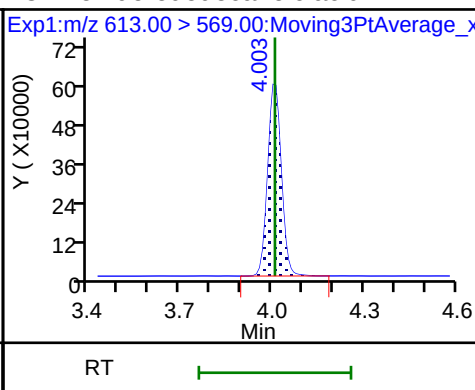
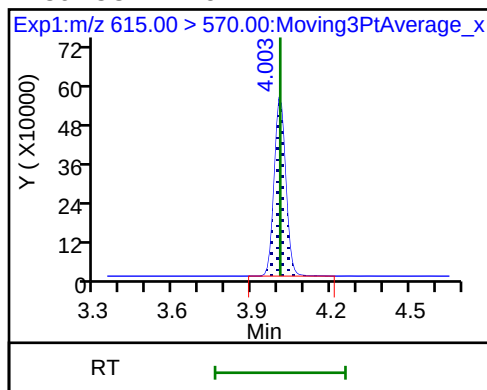




D 36 13C2 PFDaA

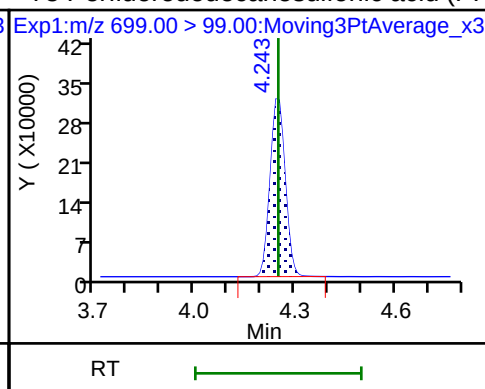
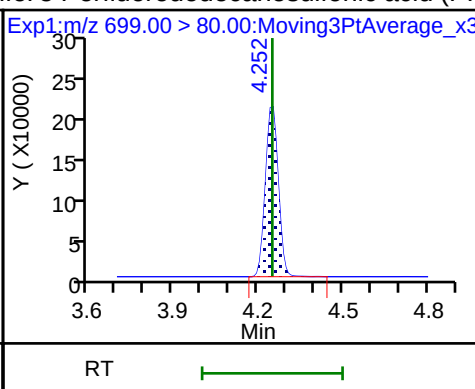
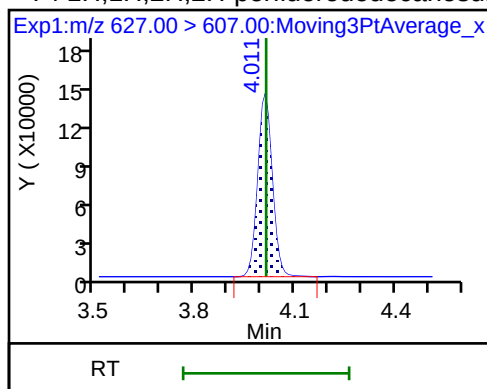
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

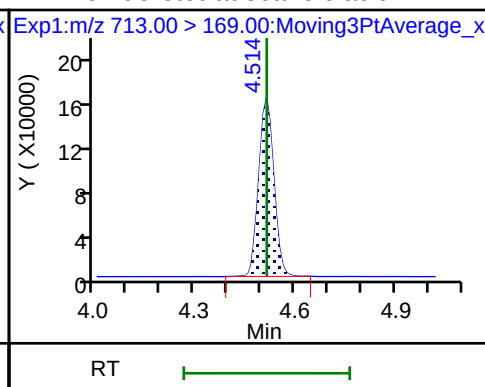
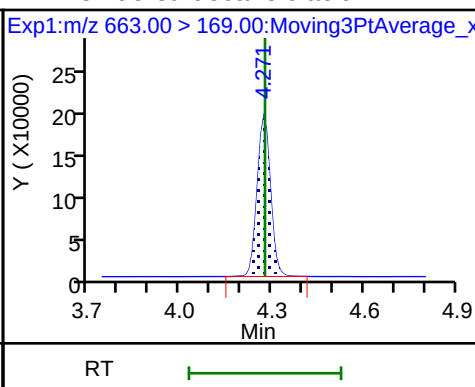
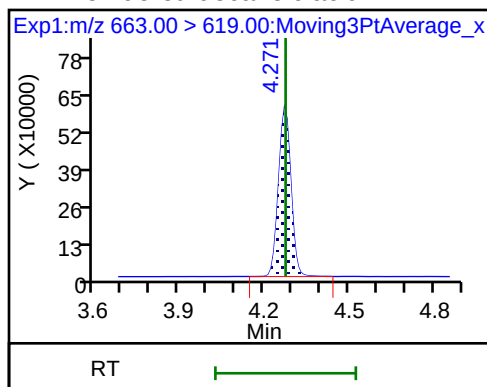
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

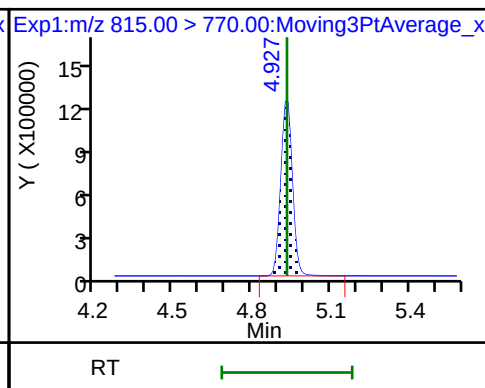
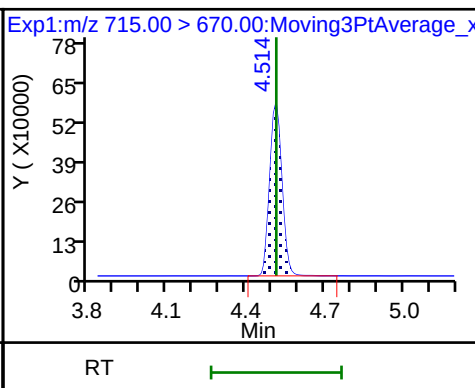
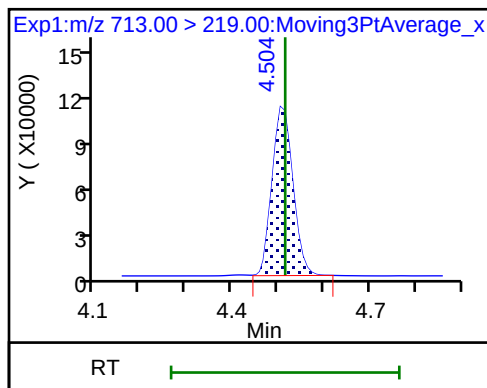
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

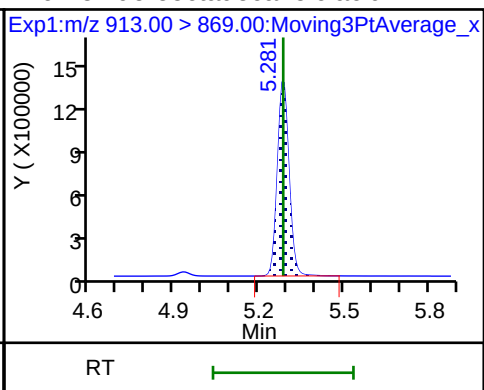
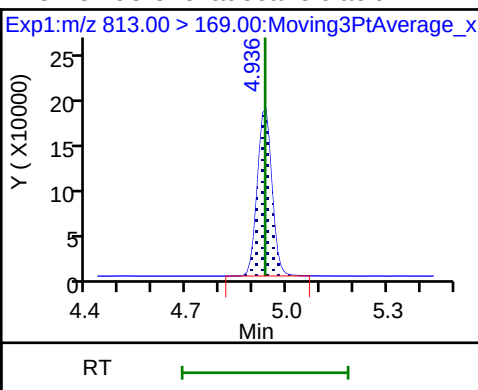
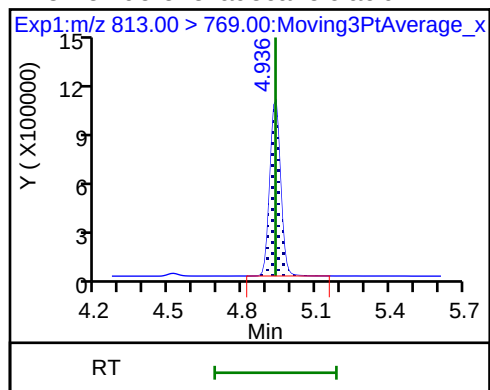
D 44 13C2-PFHxDA



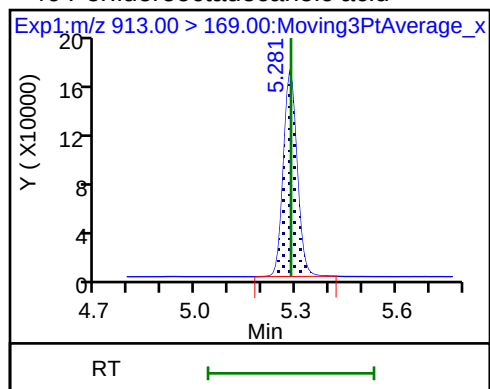
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

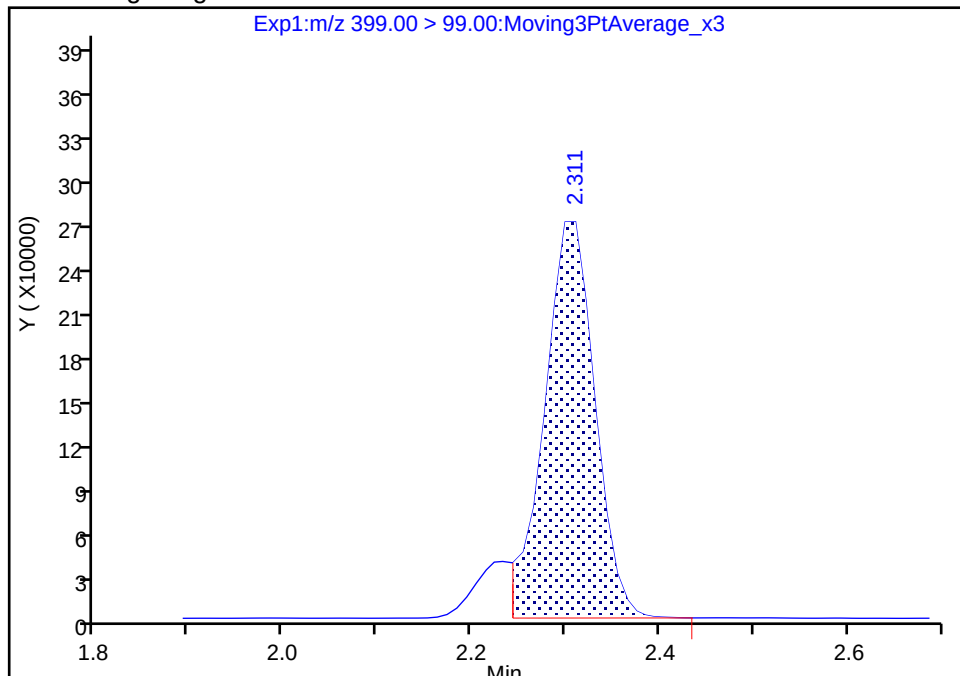
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_006.d
Injection Date: 04-Oct-2018 05:07:17 Instrument ID: A8_N
Lims ID: IC L5 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

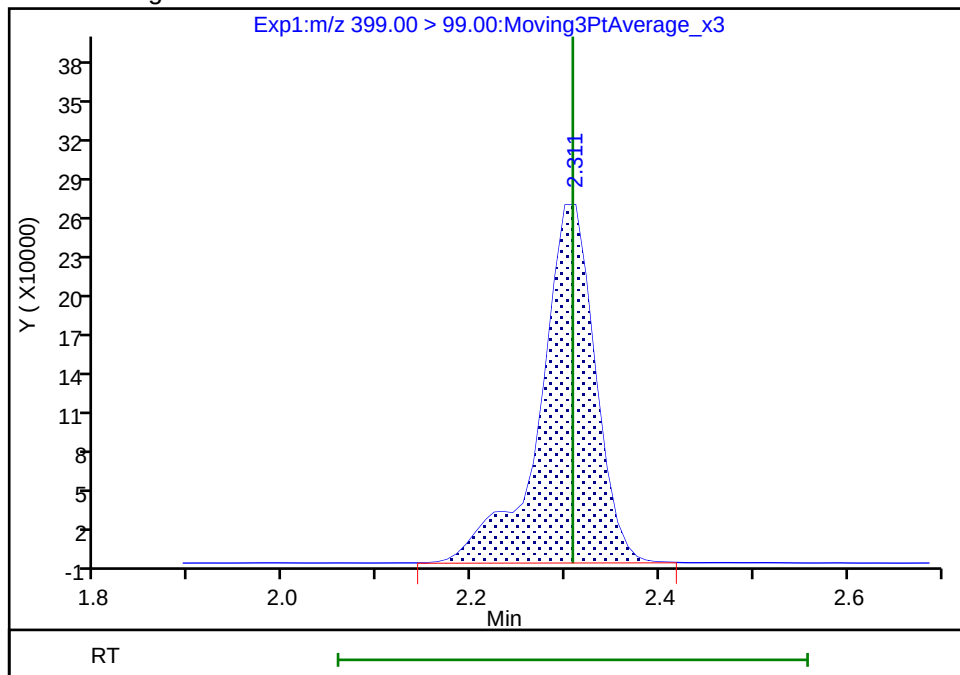
RT: 2.31
Area: 1007267
Amount: 2.168795
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 1114251
Amount: 2.168795
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:45:04

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

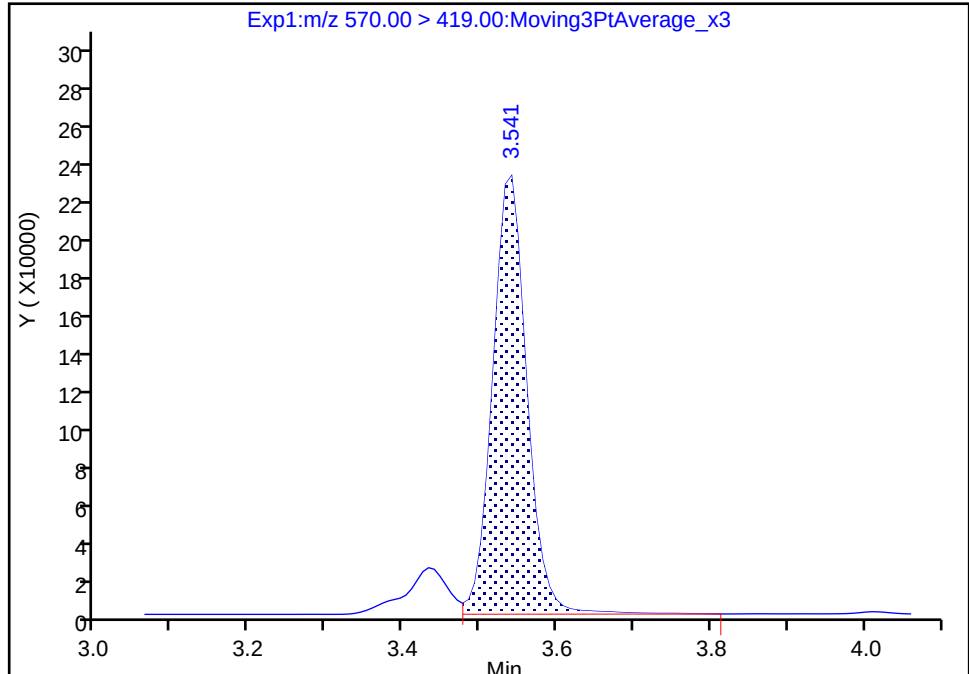
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Injection Date: 04-Oct-2018 05:07:17 Instrument ID: A8_N
Lims ID: IC L5 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

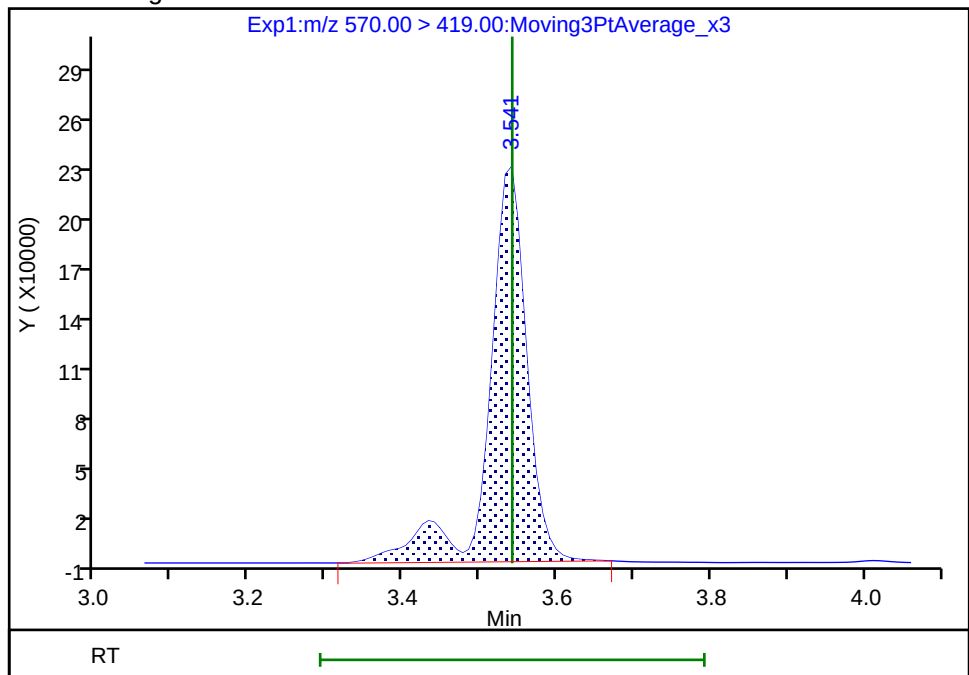
RT: 3.54
Area: 709202
Amount: 2.247011
Amount Units: ng/ml

Processing Integration Results



RT: 3.54
Area: 789320
Amount: 2.465097
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:45:25
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 218 of 649

10/15/2018

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_007.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 04-Oct-2018 05:14:40 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L6-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 04-Oct-2018 10:33:06 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: roycea

Date: 04-Oct-2018 08:49:38

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	1.428	1.430	-0.002	0.541	4330101	2.50		100	8968	
2 Perfluorobutyric acid										
212.90 > 169.00	1.428	1.431	-0.003	1.000	8251489	5.02		100	1091	
D 3 13C5-PFPeA										
267.90 > 223.00	1.684	1.688	-0.004	0.638	2806749	2.42		96.7	11713	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.684	1.689	-0.005	1.000	6138355	4.93		98.5	1360	
D 47 13C3-PFBS										
301.90 > 83.00	1.724	1.722	0.002	0.653	56810	2.30		98.7	406	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.724	1.725	-0.001	1.000	8436291	4.44		100	2064	
298.90 > 99.00	1.716	1.725	-0.009	0.995	3494957		2.41(1.25-3.74)	100	1419	
D 60 M2-4:2FTS										
329.00 > 81.00	1.928	1.929	-0.001	0.731	296116	2.17		92.9	321	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.928	1.929	-0.001	1.119	1539192	4.86		104	14630	
D 7 13C2 PFHxA										
315.00 > 270.00	1.960	1.961	-0.001	0.742	3001039	2.35		94.2	7470	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.960	1.962	-0.002	1.000	6183728	5.23		105	2396	
313.00 > 119.00	1.960	1.962	-0.002	1.000	525099		11.78(5.03-15.10)	105	1310	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.981	1.988	-0.007	1.149	7490008	4.57		97.5	9408	
349.00 > 99.00	1.981	1.988	-0.007	1.149	2900062		2.58(1.36-4.07)	97.5	6113	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.054	2.061	-0.007	0.778	214993	2.32		92.9	1501	

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	2.054	2.061	-0.007	1.000	1312794	5.30		106	1636	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.292	2.295	-0.003	1.000	6318514	5.04		101	1996	
363.00 > 169.00	2.292	2.295	-0.003	1.000	2364455		2.67(1.13-3.40)	101	2700	
D 9 13C4-PFHpA										
367.00 > 322.00	2.292	2.295	-0.003	0.868	2796620	2.44		97.7	5473	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.303	2.308	-0.005	1.000	6641280	4.47		98.3	2755	
399.00 > 99.00	2.303	2.308	-0.005	1.000	2171386		3.06(1.50-4.49)	98.3	1904	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.303	2.309	-0.006	0.872	3185958	2.23		94.1	6223	
77 DONA										
377.00 > 251.00	2.336	2.336	0.0	0.775	16389161	4.72		100	13636	
377.00 > 85.00	2.336	2.336	0.0	0.775	10110218		1.62(0.85-2.54)	100	16353	
D 12 M2-6:2FTS										
429.00 > 81.00	2.616	2.621	-0.005	0.991	434744	2.25		94.9	2140	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.616	2.621	-0.005	1.000	1446947	4.64		98.0	3515	
D 73 13C8 PFOA										
421.00 > 376.00	2.632	2.637	-0.005	0.997	4598575	2.48		101	7183	
D 14 13C4 PFOA										
417.00 > 372.00	2.639	2.645	-0.006	1.000	2744321	2.47		98.7	7728	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.639	2.645	-0.006	1.000	5820507	4.50		89.9	1161	
413.00 > 169.00	2.639	2.645	-0.006	1.000	3173848		1.83(0.84-2.52)	89.9	5215	
* 62 13C2-PFOA										
415.00 > 370.00	2.639	2.645	-0.006		2858975	2.50			7327	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.647	2.654	-0.007	0.878	5781376	5.18		109	6069	
449.00 > 99.00	2.647	2.654	-0.007	0.878	1499114		3.86(1.94-5.82)	109	4118	
D 72 13C8 PFOS										
507.00 > 99.00	3.015	3.018	-0.003	1.142	1154808	2.36		98.6	4621	
D 19 13C5 PFNA										
468.00 > 423.00	3.015	3.019	-0.004	1.142	2328150	2.49		99.6	8869	
20 Perfluorononanoic acid										
463.00 > 419.00	3.015	3.020	-0.005	1.000	4927178	4.91		98.2	2123	
463.00 > 169.00	3.015	3.020	-0.005	1.000	1164844		4.23(1.90-5.69)	98.2	4334	
D 18 13C4 PFOS										
503.00 > 80.00	3.015	3.020	-0.005	1.142	2132695	2.30		96.4	4145	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.015	3.020	-0.005	1.000	4744347	4.65		100	2333	
499.00 > 99.00	3.015	3.020	-0.005	1.000	989031		4.80(2.31-6.93)	100	2829	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.235	3.235	0.0	1.073	8272930	4.91		105	8202	
D 21 13C8 FOSA										
506.00 > 78.00	3.363	3.366	-0.003	1.274	3042973	2.36		94.5	5842	

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	3.363	3.366	-0.003	1.000	6325877	5.40		108	4154	
D 26 M2-8:2FTS										
529.00 > 81.00	3.370	3.370	0.0	1.277	473668	2.32		96.8	2707	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.370	3.370	0.0	1.000	1142292	4.78		99.8	3674	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.370	3.372	-0.002	1.118	3749305	5.12		107	7239	
549.00 > 99.00	3.370	3.372	-0.002	1.118	1243692		3.01(1.33-3.97)	107	3950	
D 23 13C2 PFDA										
515.00 > 470.00	3.377	3.381	-0.004	1.280	2040497	2.47		98.7	6153	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.377	3.382	-0.005	1.000	4022336	4.91		98.2	2530	
513.00 > 169.00	3.377	3.382	-0.005	1.000	726679		5.54(2.36-7.09)	98.2	436	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.537	3.536	0.001	1.340	819321	2.44		97.6	1082	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.537	3.542	-0.005	1.000	1585547	4.99		99.8	837	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.699	3.698	0.001	1.227	2733859	4.78		99.1	7443	
599.00 > 99.00	3.699	3.698	0.001	1.227	908144		3.01(1.39-4.16)	99.1	3455	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.708	3.706	0.002	1.405	861454	2.38		95.3	1061	
D 30 13C2 PFUnA										
565.00 > 520.00	3.708	3.712	-0.004	1.405	1547645	2.45		98.0	3750	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.708	3.712	-0.004	1.000	1474681	4.92		98.3	1569	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.708	3.714	-0.006	1.000	2783201	5.13		103	2370	
563.00 > 169.00	3.708	3.714	-0.006	1.000	646773		4.30(2.12-6.36)	103	2188	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.869	3.873	-0.004	1.283	12344455	4.85		103	13413	
35 MeFOSA										
512.00 > 169.00	3.879	3.879	0.0		2013572	NC			665	
D 36 13C2 PFDaA										
615.00 > 570.00	4.004	4.007	-0.003	1.517	1635901	2.46		98.3	7894	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.004	4.008	-0.004	1.000	3558010	4.96		99.2	3255	
613.00 > 169.00	4.004	4.008	-0.004	1.000	872763		4.08(2.13-6.40)	99.2	5557	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.013	4.013	0.0	1.191	855548	5.04		105	4228	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.246	4.250	-0.004	1.408	1370155	5.27		109	7134	
699.00 > 99.00	4.246	4.250	-0.004	1.408	2031125		0.67(0.00-0.00)	109	7095	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.274	4.276	-0.002	1.067	3387175	4.88		97.5	2382	
663.00 > 169.00	4.274	4.276	-0.002	1.067	1119938		3.02(1.25-3.76)	97.5	4868	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.507	4.515	-0.008	1.707	2008607	2.51		100	5167	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.507	4.515	-0.008	1.000	1007355	5.10		102	4406	
713.00 > 219.00	4.507	4.515	-0.008	1.000	696854		1.45(0.71-2.13)	102	1619	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.928	4.933	-0.005	1.867	3556979	2.46		98.5	6091	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.928	4.934	-0.006	1.000	6318605	5.06		101	1079	
813.00 > 169.00	4.928	4.934	-0.006	1.000	1118091		5.65(2.86-8.58)	101	4975	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.274	5.285	-0.011	1.070	7881799	5.27		105	1217	
913.00 > 169.00	5.274	5.285	-0.011	1.070	981979		8.03(3.83-11.48)	105	3169	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL6_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_007.d

Injection Date: 04-Oct-2018 05:14:40

Instrument ID: A8_N

Lims ID: IC L6 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 15

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

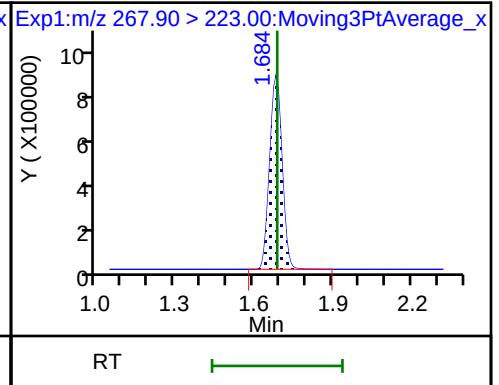
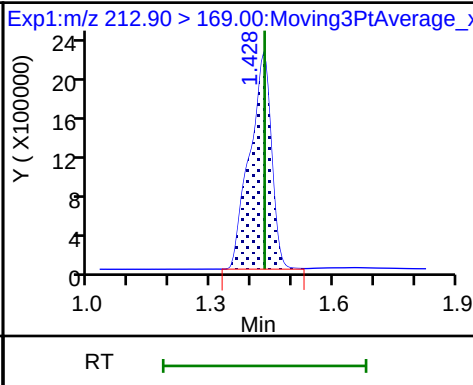
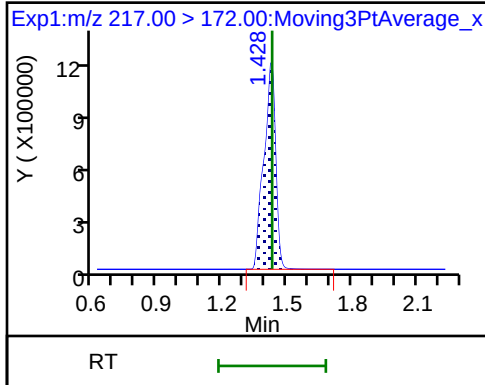
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

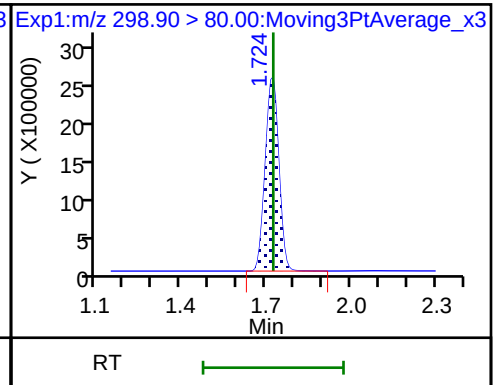
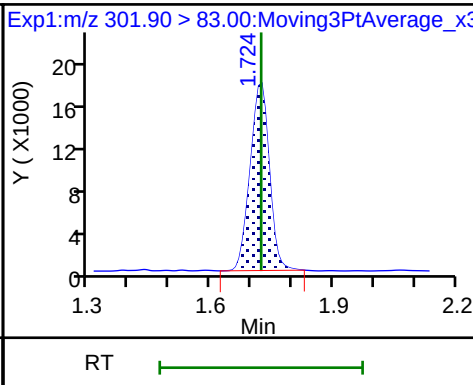
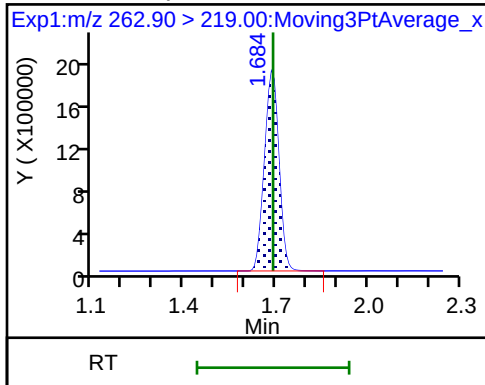
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

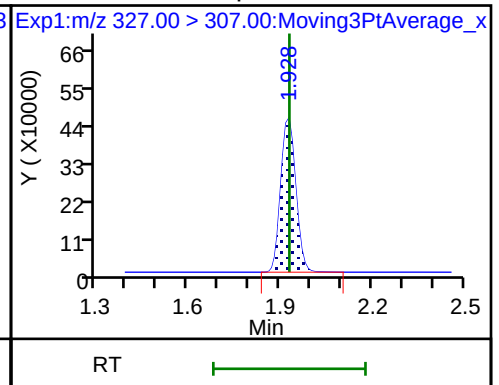
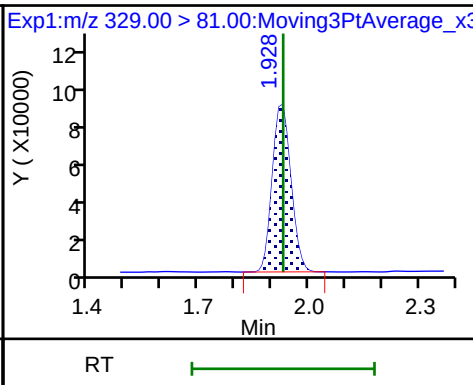
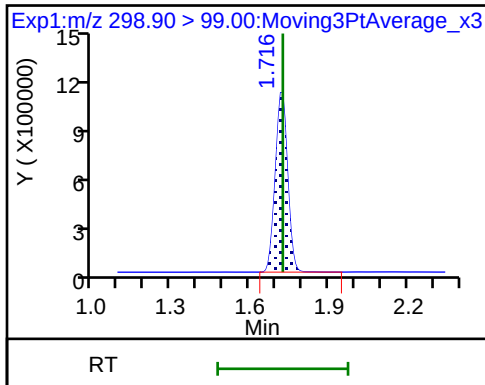
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

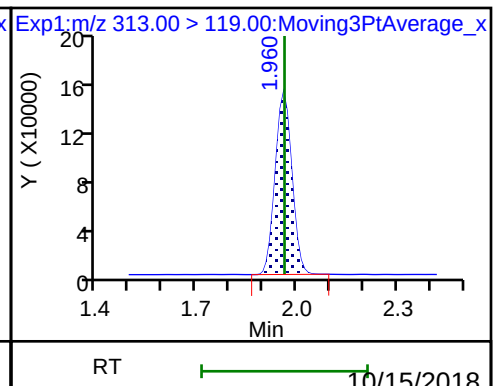
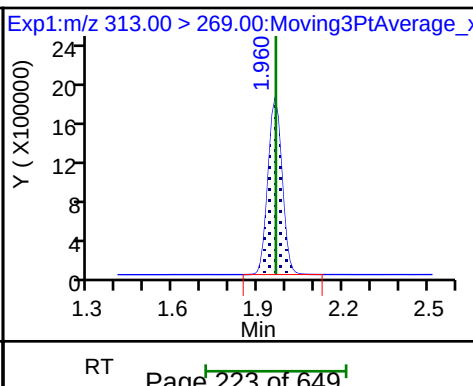
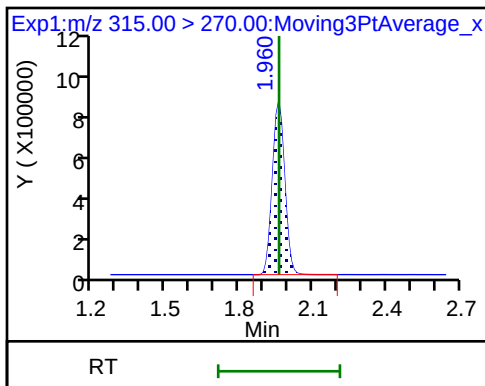
61 1H,1H,2H,2H-perfluorohexanesulfoni

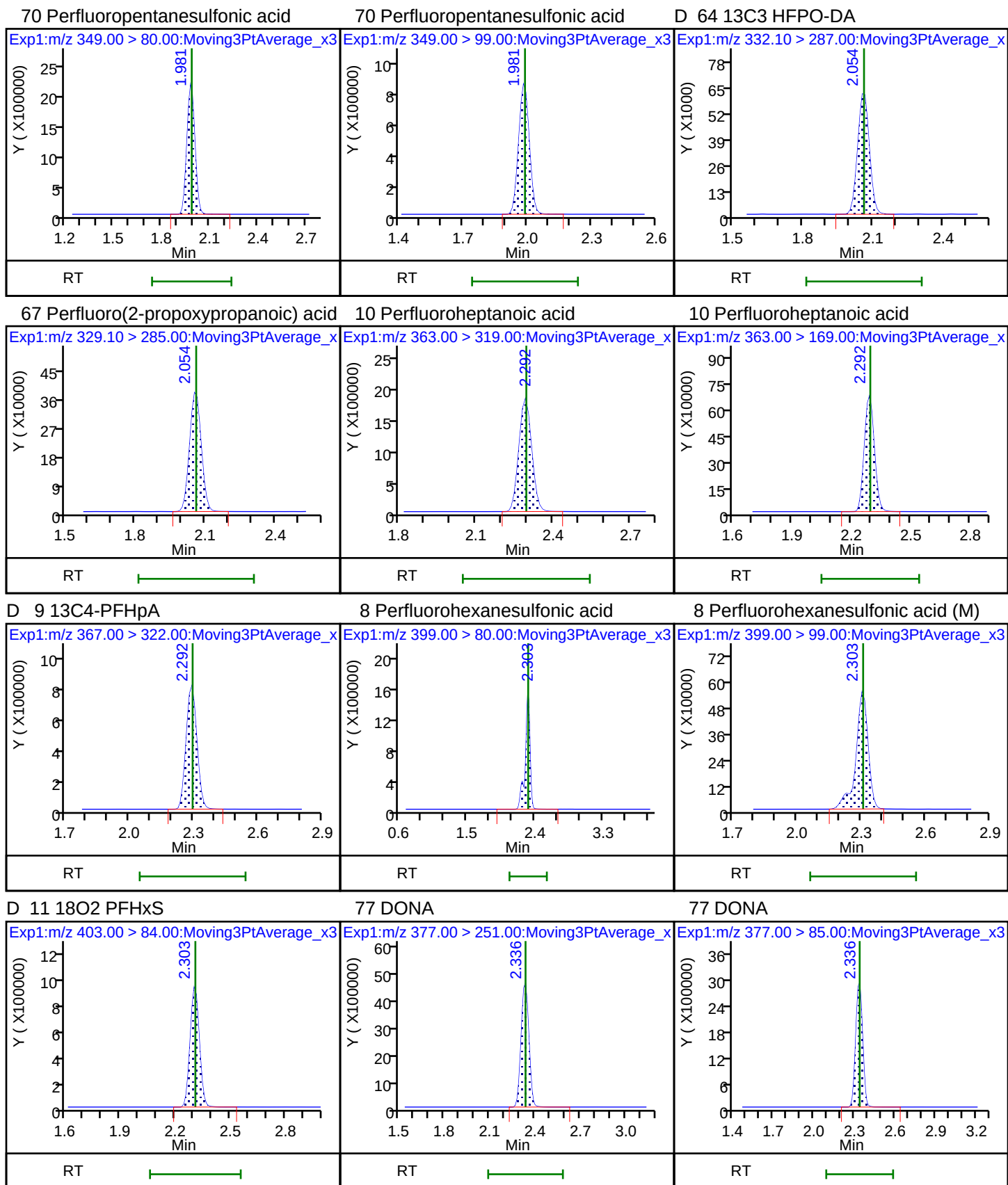


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

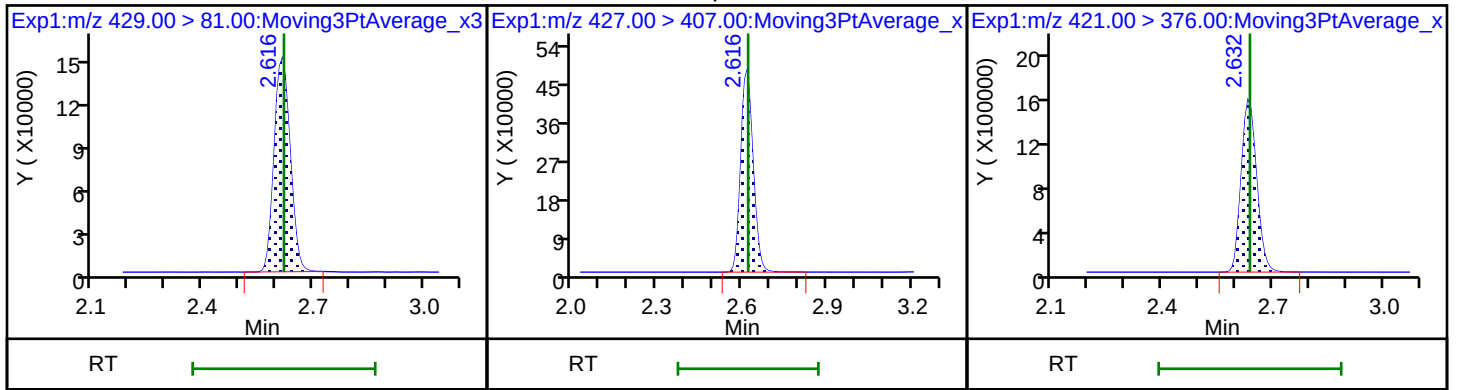
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

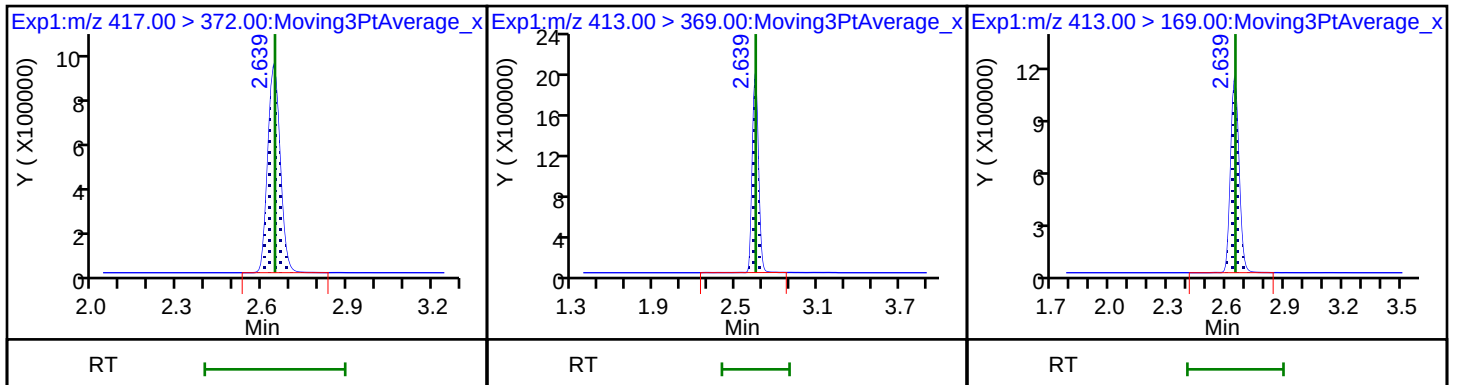
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

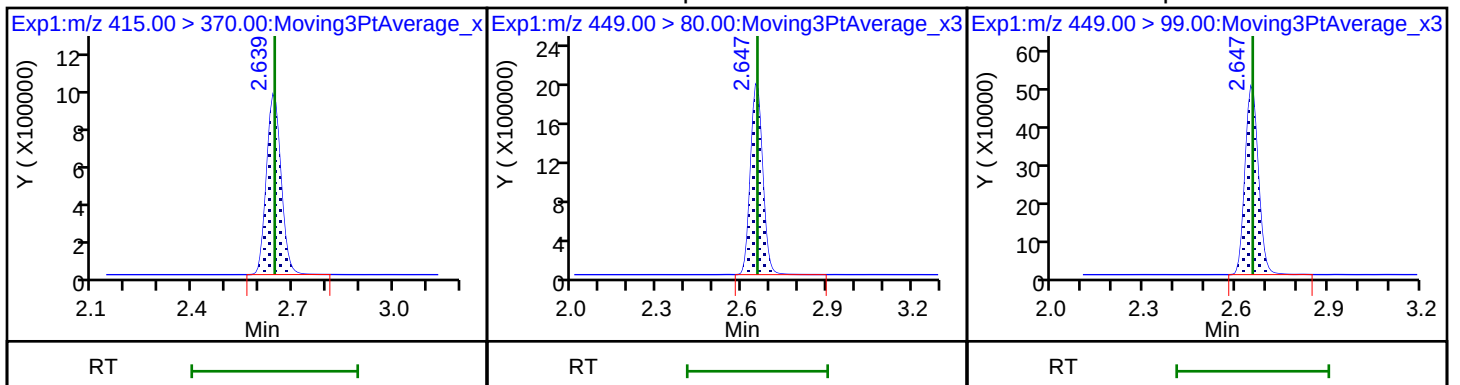
15 Perfluorooctanoic acid



* 62 13C2-PFOA

16 Perfluoroheptanesulfonic acid

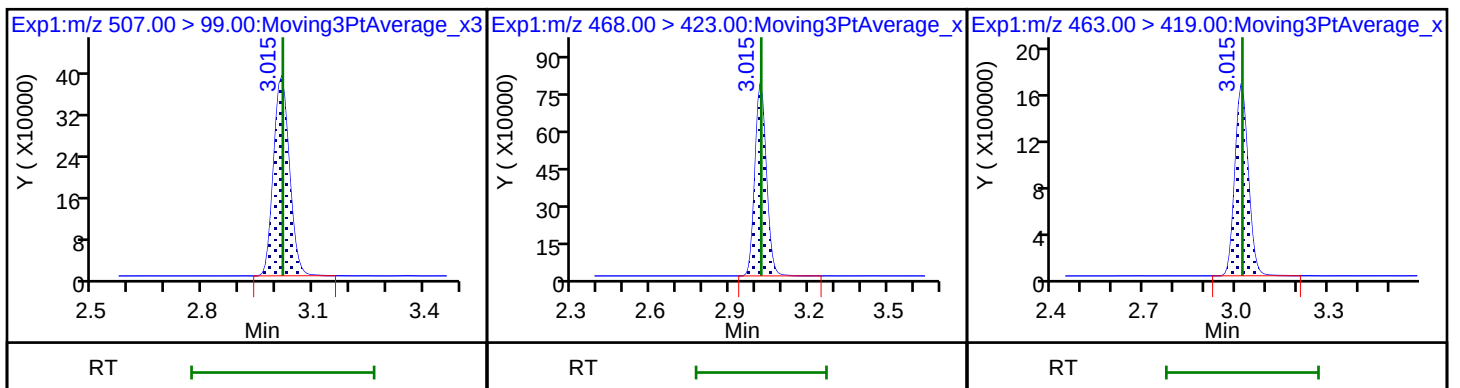
16 Perfluoroheptanesulfonic acid

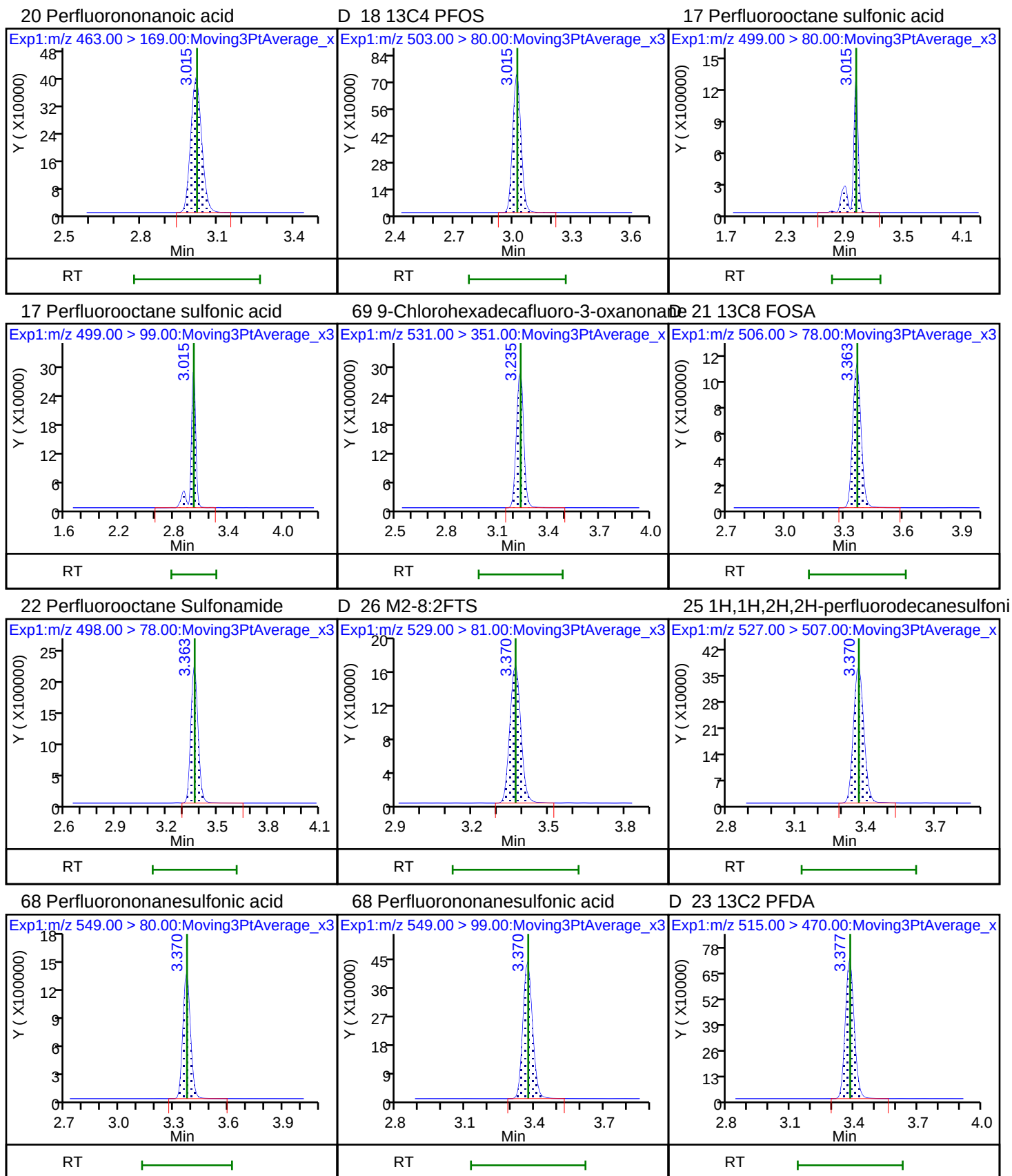


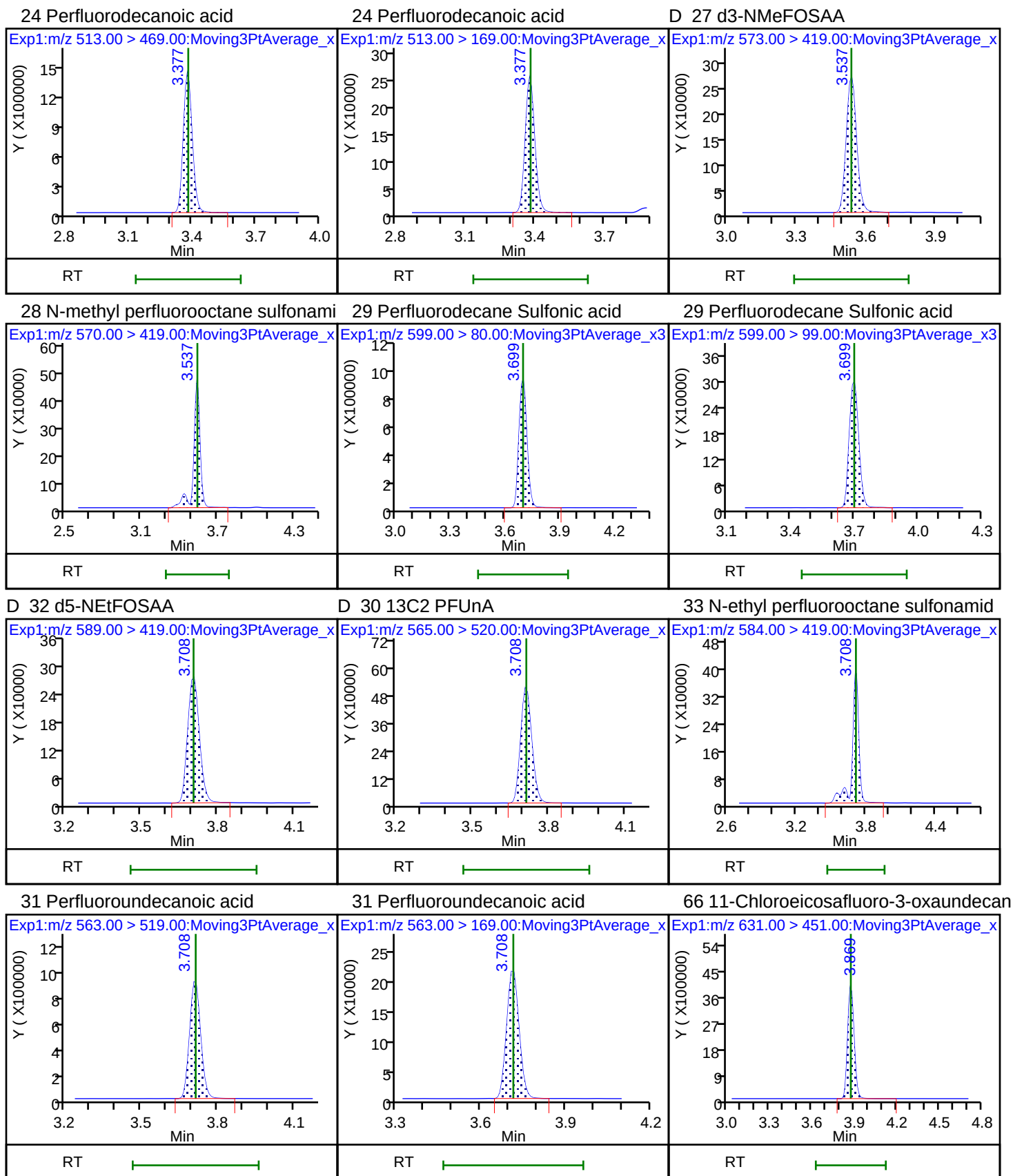
D 72 13C8 PFOS

D 19 13C5 PFNA

20 Perfluorononanoic acid



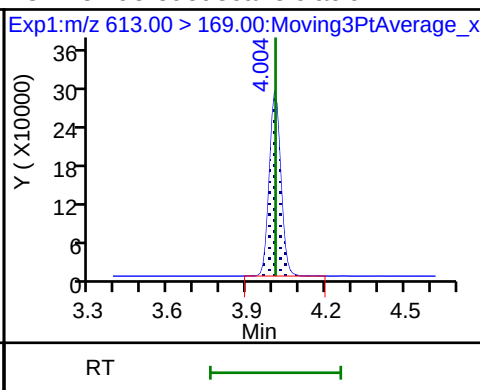
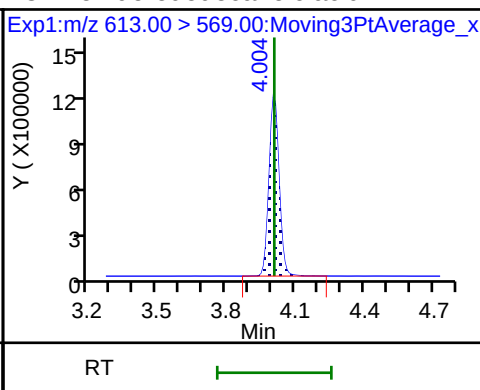
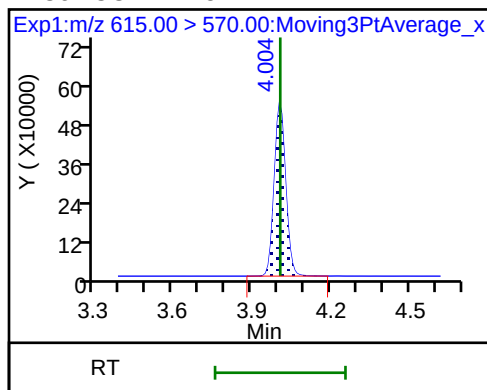




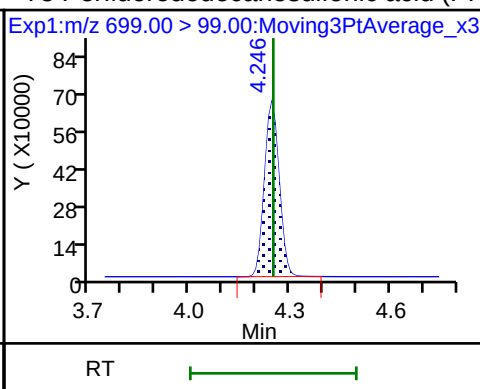
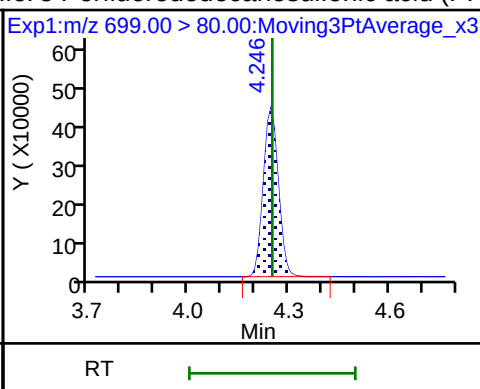
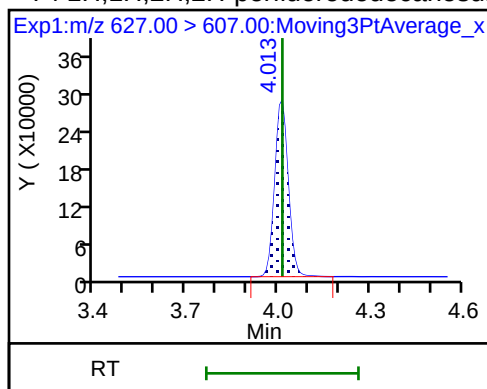
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



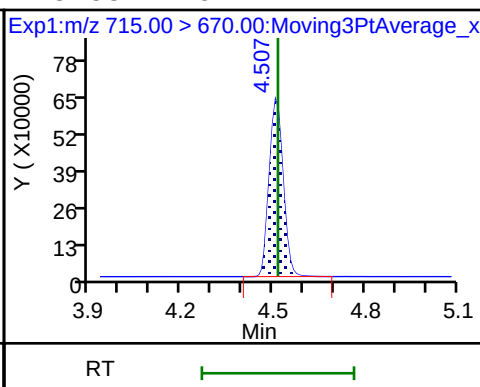
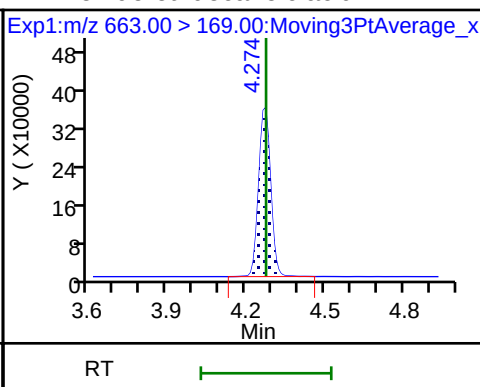
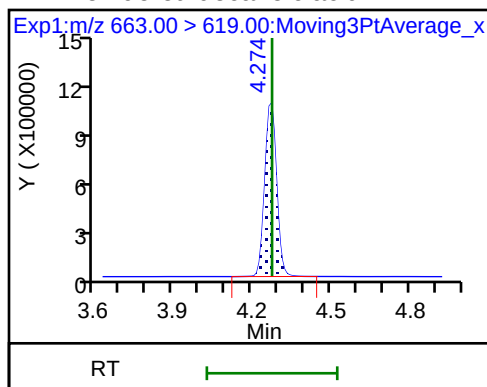
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

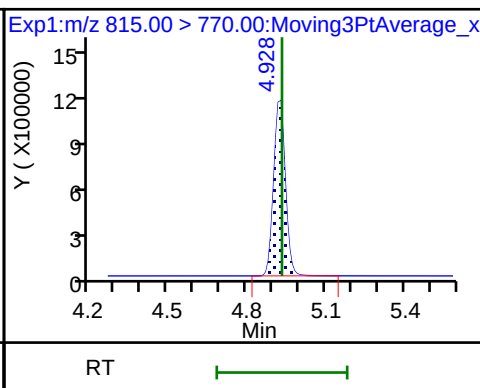
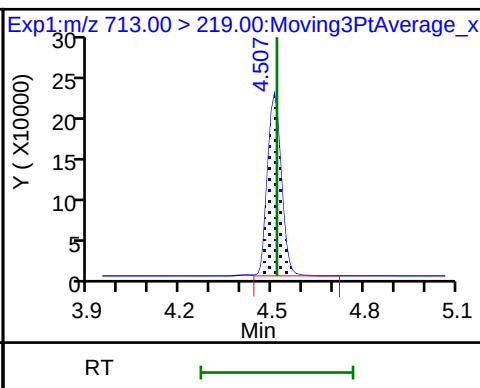
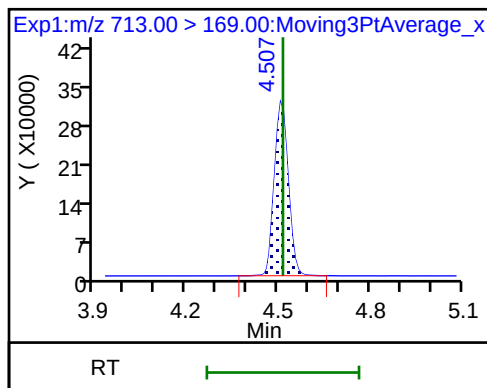
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

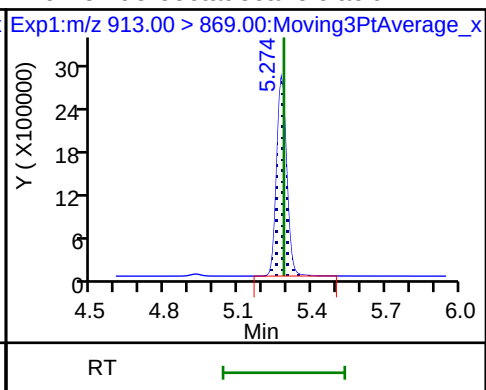
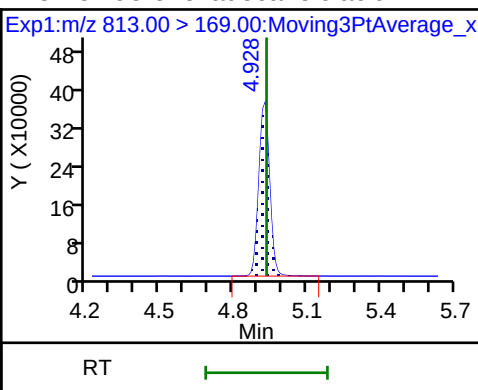
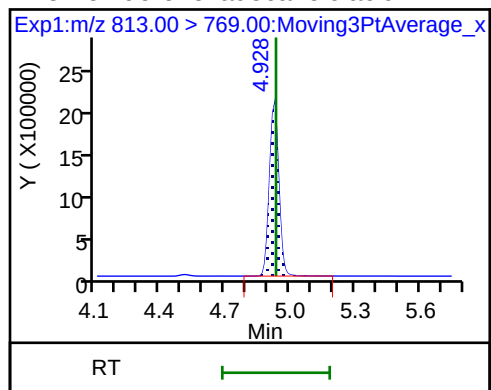
D 44 13C2-PFHxDA



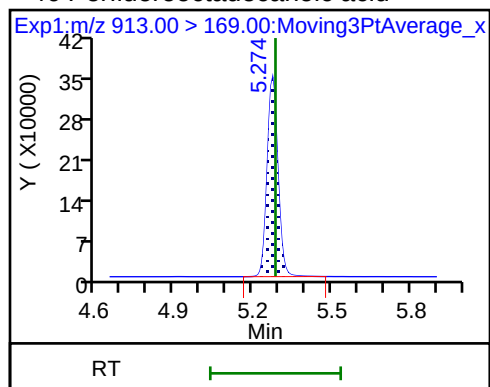
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

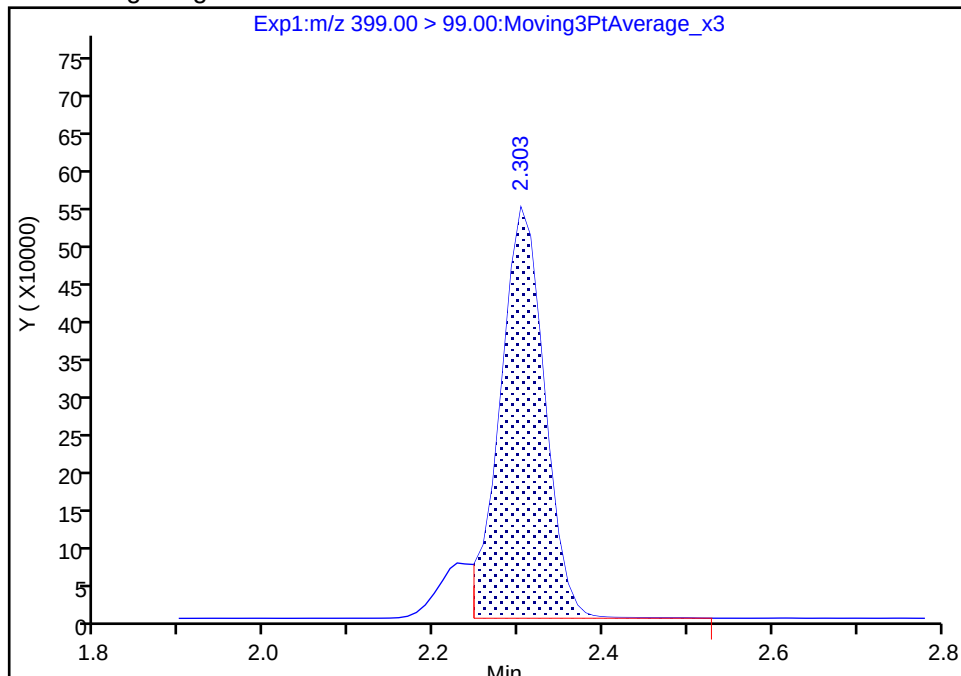
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Injection Date: 04-Oct-2018 05:14:40 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

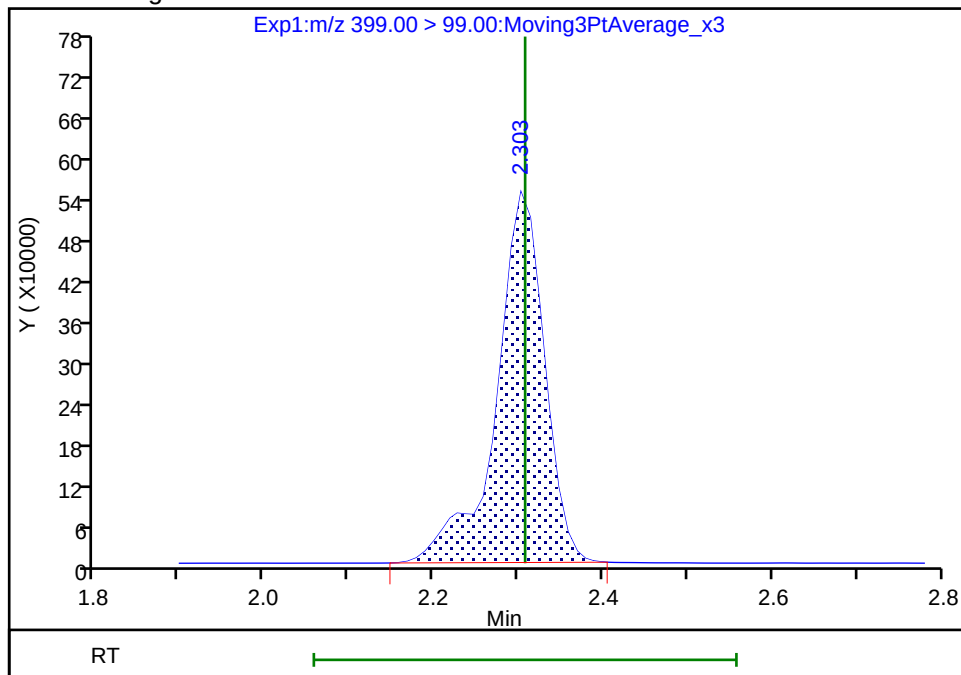
RT: 2.30
Area: 1979939
Amount: 4.473985
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 2171386
Amount: 4.473985
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:46:27

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d
 Lims ID: IC L7 Full
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 04-Oct-2018 05:22:04 ALS Bottle#: 16 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: L7-FULL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 04-Oct-2018 10:34:05 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: roycea

Date: 04-Oct-2018 08:50:51

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	1.431	1.430	0.001	0.541	4798140	2.63		105	10400	
2 Perfluorobutyric acid										
212.90 > 169.00	1.431	1.431	0.0	1.000	17883956	9.81		98.1	2623	
D 3 13C5-PFPeA										
267.90 > 223.00	1.686	1.688	-0.002	0.638	3238655	2.65		106	13091	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.689	0.005	1.005	13436398	9.35		93.5	2931	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.722	0.005	0.653	65514	2.51		108	404	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.727	1.725	0.002	1.000	16959194	7.74		87.6	3819	
298.90 > 99.00	1.727	1.725	0.002	1.000	7791696		2.18(1.25-3.74)	87.6	3324	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.933	1.929	0.004	1.120	3275210	8.96		95.9	15152	
D 60 M2-4:2FTS										
329.00 > 81.00	1.933	1.929	0.004	0.731	358707	2.49		107	398	
D 7 13C2 PFHxA										
315.00 > 270.00	1.965	1.961	0.004	0.743	3477504	2.59		104	12228	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.965	1.962	0.003	1.000	13068194	9.54		95.4	4619	
313.00 > 119.00	1.965	1.962	0.003	1.000	1265318		10.33(5.03-15.10)	95.4	3058	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.986	1.988	-0.002	1.150	16105060	8.53		90.9	12997	
349.00 > 99.00	1.986	1.988	-0.002	1.150	6115560		2.63(1.36-4.07)	90.9	9284	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.059	2.061	-0.002	1.000	3017073	9.74		97.4	2866	

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	2.059	2.061	-0.002	0.779	269035	2.76		110	2351	
D 9 13C4-PFHpA										
367.00 > 322.00	2.299	2.295	0.004	0.870	3037274	2.52		101	6446	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.295	0.004	1.000	13707053	10.1		101	4146	
363.00 > 169.00	2.299	2.295	0.004	1.000	5444517		2.52(1.13-3.40)	101	5680	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.311	2.308	0.003	1.000	14771886	8.88		97.5	5348	
399.00 > 99.00	2.311	2.308	0.003	1.000	5030563		2.94(1.50-4.49)	97.5	2587	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.311	2.309	0.002	0.874	3571951	2.37		100	4342	
77 DONA										
377.00 > 251.00	2.333	2.336	-0.003	0.772	29869470	7.66		81.3	16028	
377.00 > 85.00	2.333	2.336	-0.003	0.772	19301624		1.55(0.85-2.54)	81.3	11006	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.621	2.621	0.0	1.000	3076865	8.22		86.8	5673	
D 12 M2-6:2FTS										
429.00 > 81.00	2.621	2.621	0.0	0.991	522039	2.57		108	2699	
D 73 13C8 PFOA										
421.00 > 376.00	2.636	2.637	-0.001	0.997	4847066	2.48		101	8836	
* 62 13C2-PFOA										
415.00 > 370.00	2.644	2.645	-0.001		3013552	2.50			7556	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.644	2.645	-0.001	1.000	12552381	8.84		88.3	2492	
413.00 > 169.00	2.644	2.645	-0.001	1.000	7131229		1.76(0.84-2.52)	88.3	7345	
D 14 13C4 PFOA										
417.00 > 372.00	2.644	2.645	-0.001	1.000	3013559	2.57		103	10863	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.659	2.654	0.005	0.880	11564870	9.21		96.8	5305	
449.00 > 99.00	2.659	2.654	0.005	0.880	3186637		3.63(1.94-5.82)	96.8	5069	
D 72 13C8 PFOS										
507.00 > 99.00	3.020	3.018	0.002	1.142	1246752	2.41		101	4420	
D 19 13C5 PFNA										
468.00 > 423.00	3.020	3.019	0.001	1.142	2567879	2.61		104	9642	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.020	3.020	0.0	1.000	10465504	9.13		98.4	3902	
499.00 > 99.00	3.020	3.020	0.0	1.000	2237857		4.68(2.31-6.93)	98.4	3792	
D 18 13C4 PFOS										
503.00 > 80.00	3.020	3.020	0.0	1.142	2397350	2.46		103	3627	
20 Perfluorononanoic acid										
463.00 > 419.00	3.020	3.020	0.0	1.000	10209177	9.23		92.3	3613	
463.00 > 169.00	3.020	3.020	0.0	1.000	2607487		3.92(1.90-5.69)	92.3	6585	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.233	3.235	-0.002	1.070	17872346	9.43		101	13304	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.367	3.366	0.001	1.000	13275080	10.2		102	3468	

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	3.367	3.366	0.001	1.274	3368803	2.48		99.2	6575	
D 26 M2-8:2FTS										
529.00 > 81.00	3.367	3.370	-0.003	1.274	525682	2.44		102	2904	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.374	3.370	0.004	1.002	2675747	10.1		105	6898	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.374	3.372	0.002	1.117	7810945	9.49		98.9	11581	
549.00 > 99.00	3.374	3.372	0.002	1.117	2723570		2.87(1.33-3.97)	98.9	5502	
D 23 13C2 PFDA										
515.00 > 470.00	3.382	3.381	0.001	1.279	2143562	2.46		98.4	8284	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.382	3.382	0.0	1.000	8599087	10.0		99.9	4835	
513.00 > 169.00	3.382	3.382	0.0	1.000	1574374		5.46(2.36-7.09)	99.9	463	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.534	3.536	-0.002	1.337	922469	2.61		104	1072	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.542	3.542	0.0	1.002	3667665	10.3		103	1305	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.697	3.698	-0.001	1.224	6163169	9.58		99.4	6964	
599.00 > 99.00	3.697	3.698	-0.001	1.224	2046219		3.01(1.39-4.16)	99.4	4660	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.706	3.706	0.0	1.402	945539	2.48		99.2	1258	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.714	3.712	0.002	1.002	3275179	9.95		99.5	1292	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.714	3.712	0.002	1.405	1709926	2.57		103	4096	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.714	3.714	0.0	1.000	6306847	10.5		105	4836	
563.00 > 169.00	3.714	3.714	0.0	1.000	1379676		4.57(2.12-6.36)	105	2799	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.878	3.873	0.005	1.284	23672313	8.28		87.9	19433	
35 MeFOSA										
512.00 > 169.00	3.878	3.879	-0.001		4459946	NC			728	
D 36 13C2 PFDaA										
615.00 > 570.00	4.012	4.007	0.005	1.518	1804357	2.57		103	9104	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.012	4.008	0.004	1.000	7839266	9.91		99.1	5217	
613.00 > 169.00	4.012	4.008	0.004	1.000	1972866		3.97(2.13-6.40)	99.1	4719	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.012	4.013	-0.001	1.192	1840976	9.78		101	6309	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.254	4.250	0.004	1.408	2887260	9.89		102	10699	
699.00 > 99.00	4.254	4.250	0.004	1.408	4454871		0.65(0.00-0.00)	102	8594	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.273	4.276	-0.003	1.065	7419476	9.68		96.8	5625	
663.00 > 169.00	4.273	4.276	-0.003	1.065	2513497		2.95(1.25-3.76)	96.8	5441	

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	4.516	4.515	0.001	1.000	2141069	9.91		99.1	7120	
713.00 > 219.00	4.516	4.515	0.001	1.000	1547855		1.38(0.71-2.13)	99.1	1600	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.516	4.515	0.001	1.708	2199263	2.61		104	5460	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.936	4.933	0.003	1.867	3928065	2.58		103	5769	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.936	4.934	0.002	1.000	13290074	9.67		96.7	1816	
813.00 > 169.00	4.936	4.934	0.002	1.000	2438786		5.45(2.86-8.58)	96.7	5031	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.281	5.285	-0.004	1.070	15619365	9.45		94.5	1697	
913.00 > 169.00	5.281	5.285	-0.004	1.070	2015451		7.75(3.83-11.48)	94.5	3284	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Injection Date: 04-Oct-2018 05:22:04

Instrument ID: A8_N

Lims ID: IC L7 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 16

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

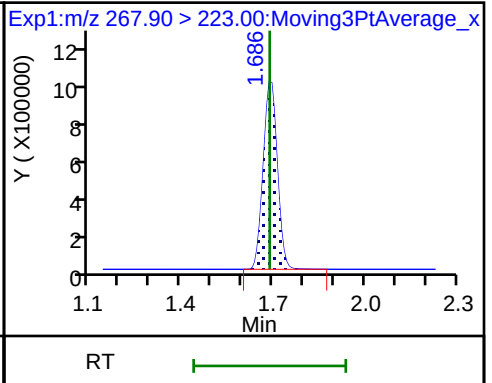
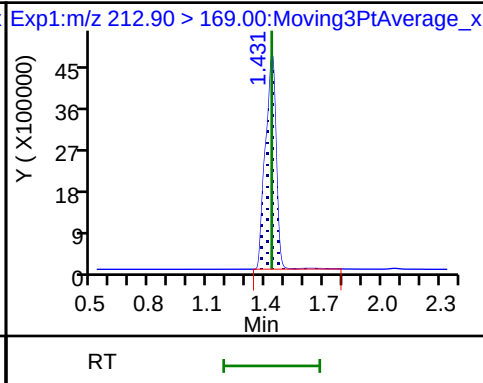
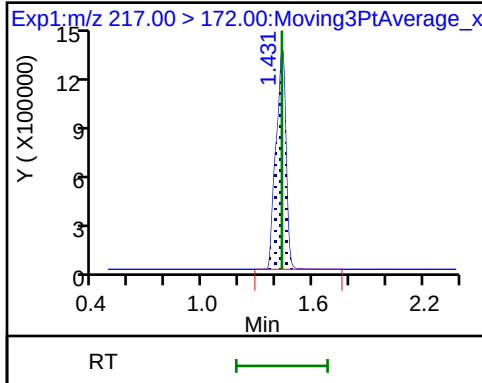
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

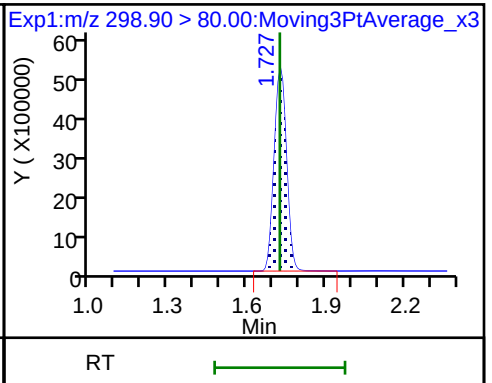
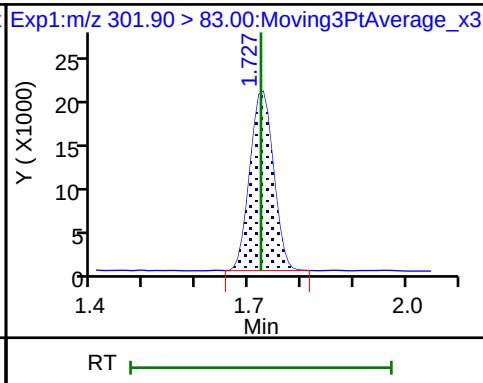
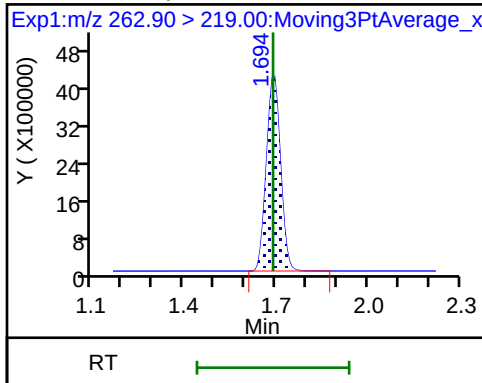
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

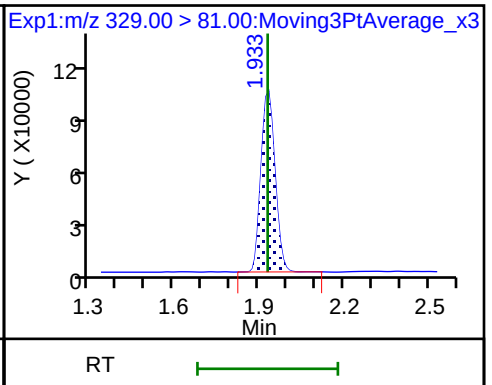
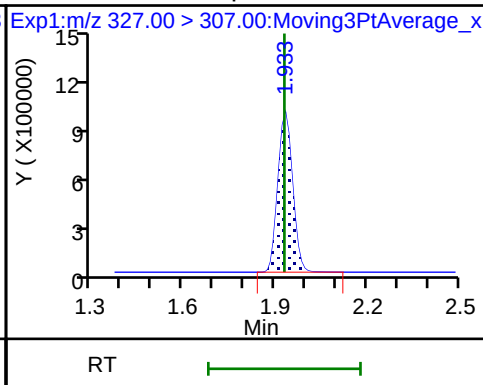
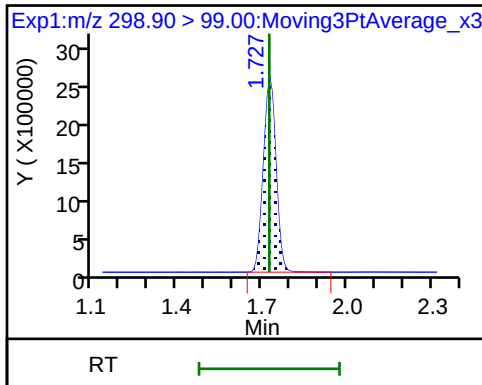
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

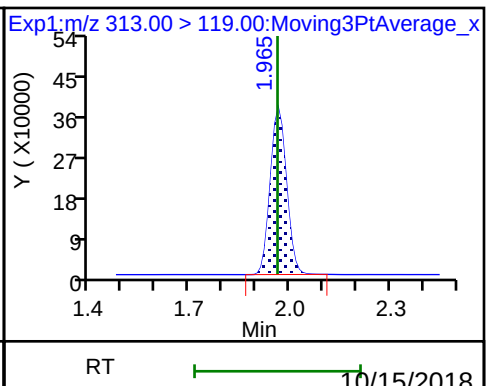
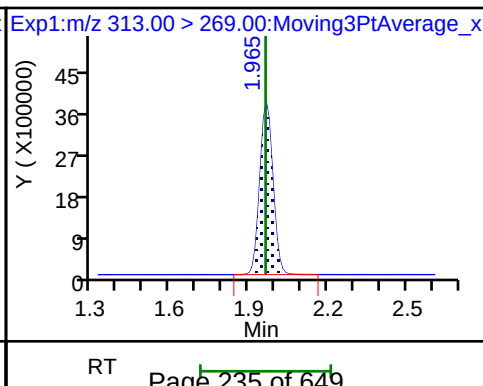
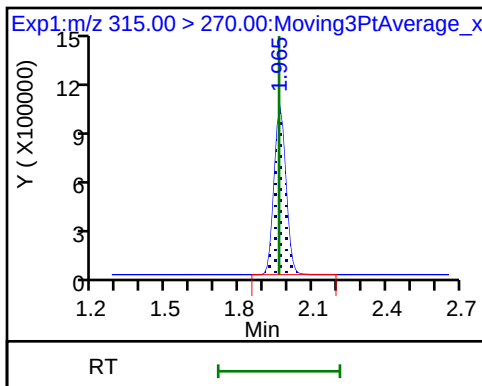
D 60 M2-4:2FTS

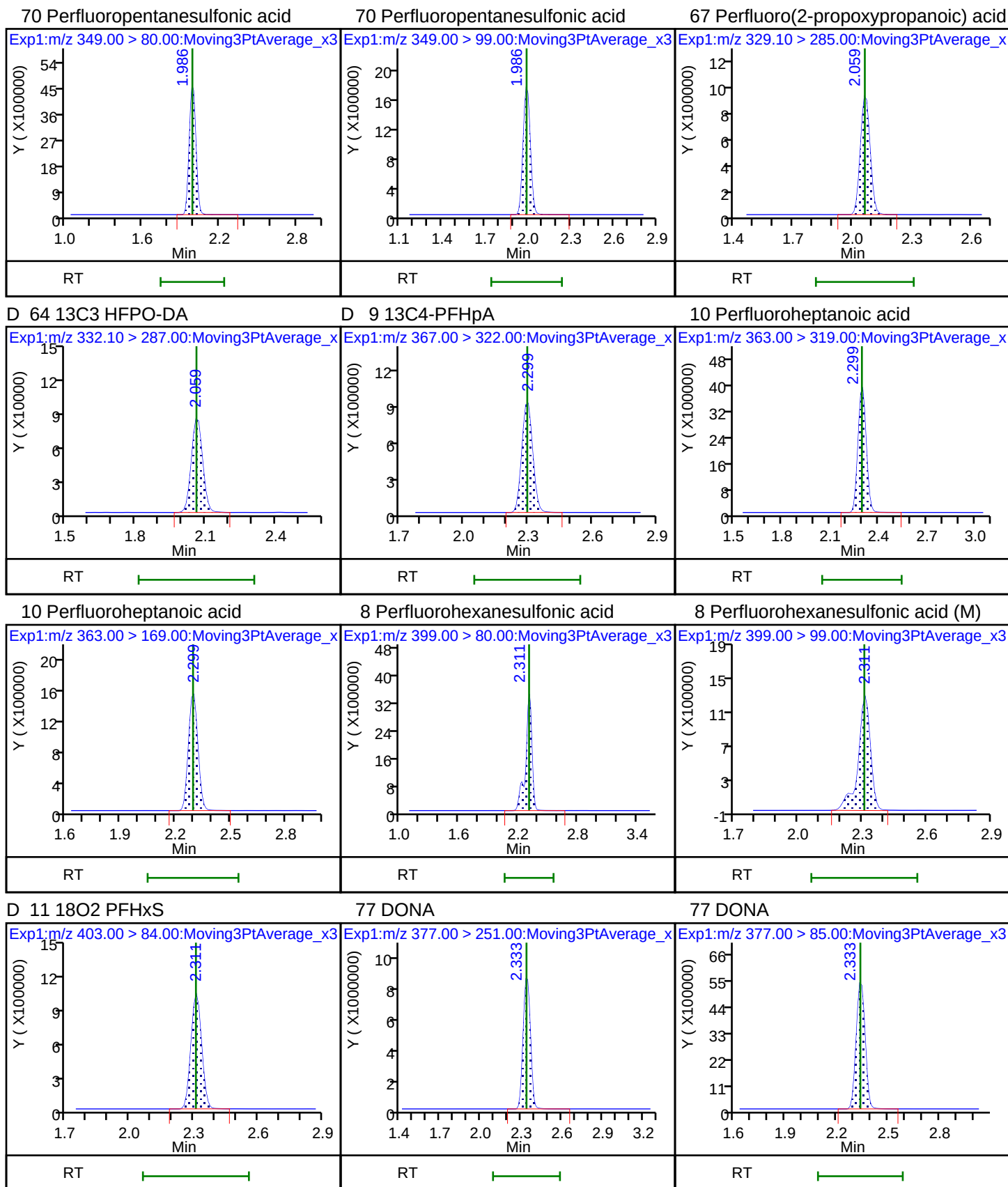


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

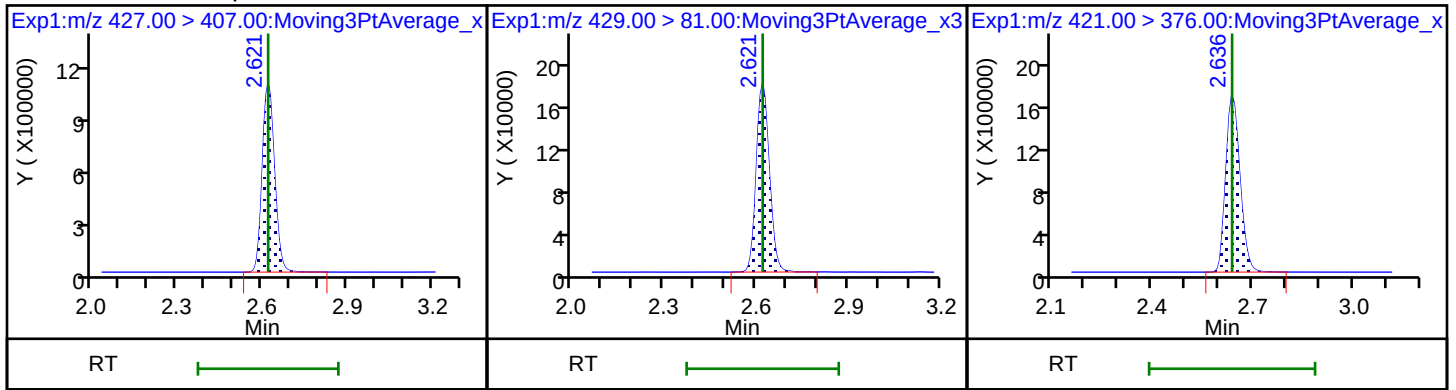
6 Perfluorohexanoic acid





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

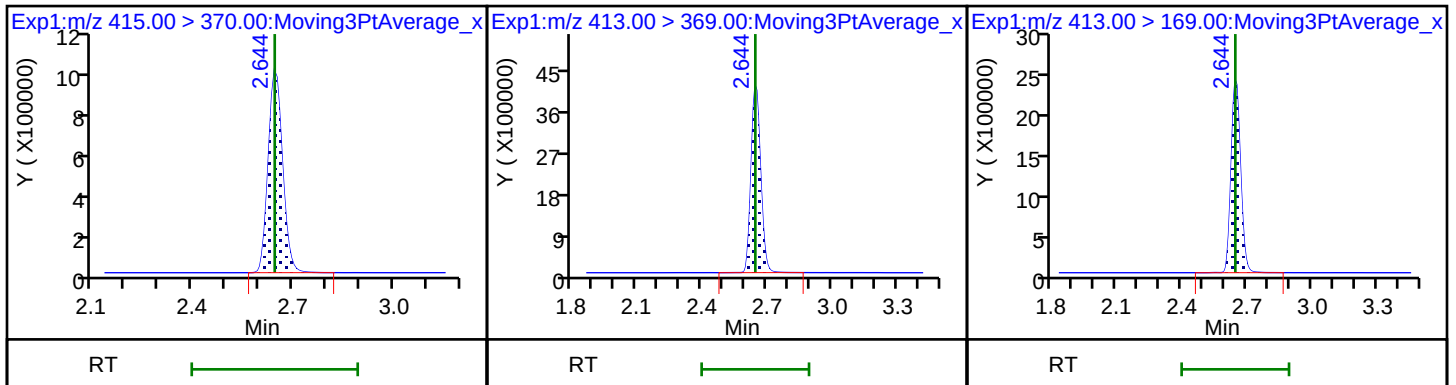
D 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

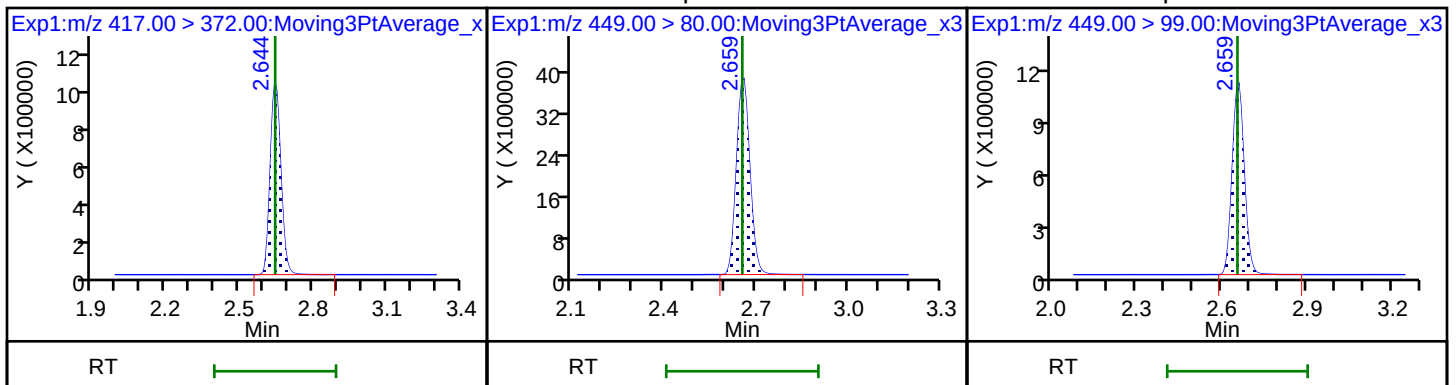
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

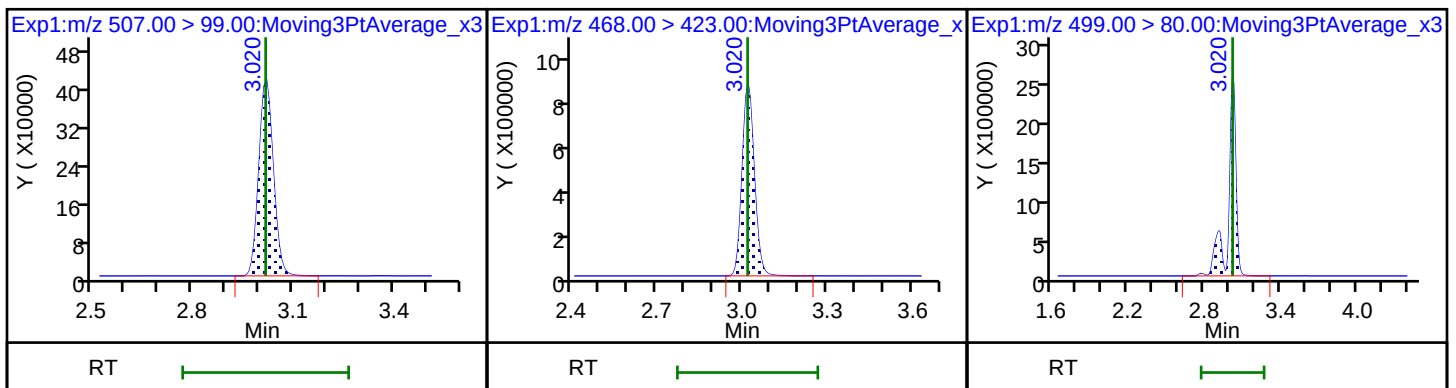
16 Perfluoroheptanesulfonic acid

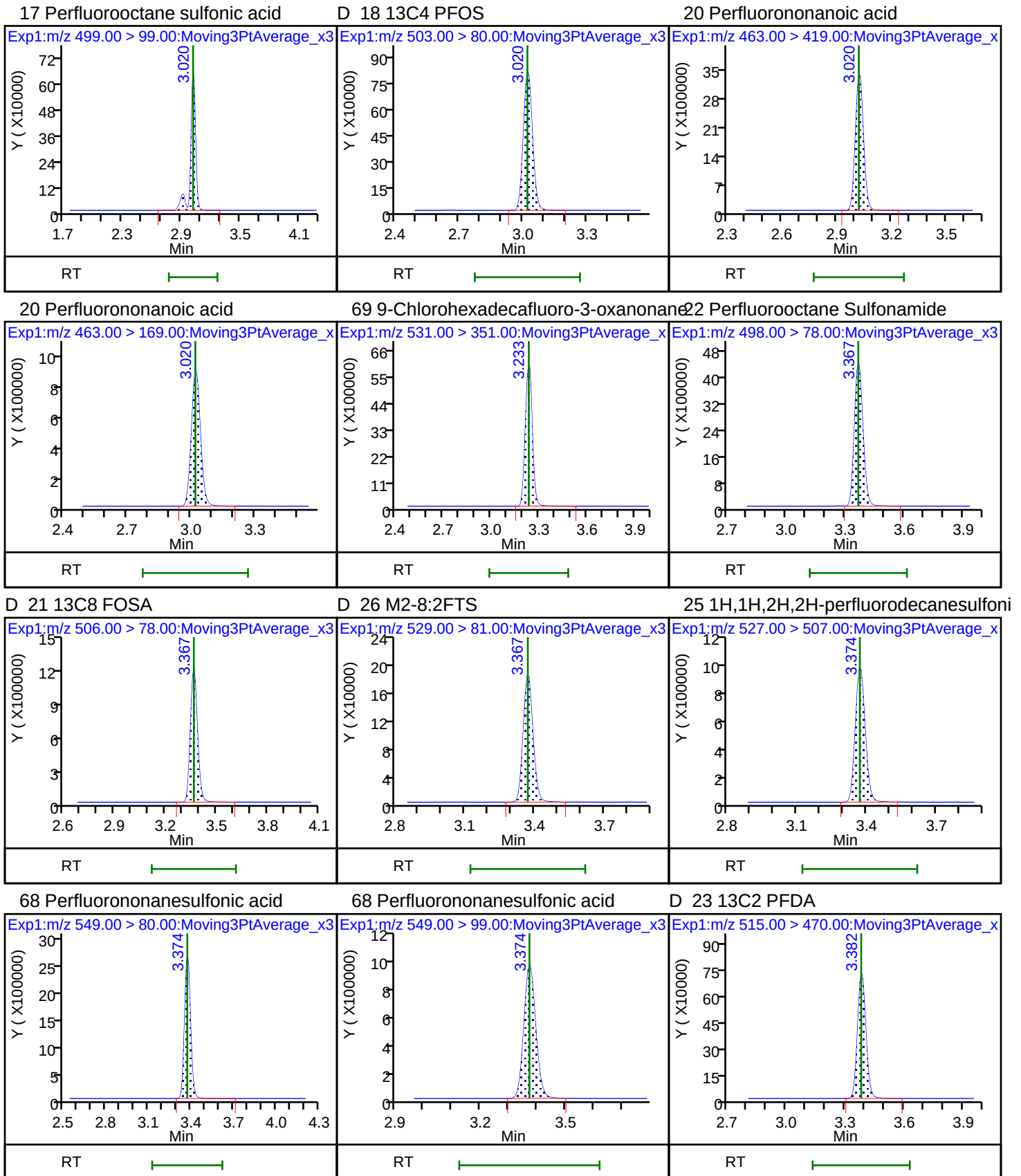


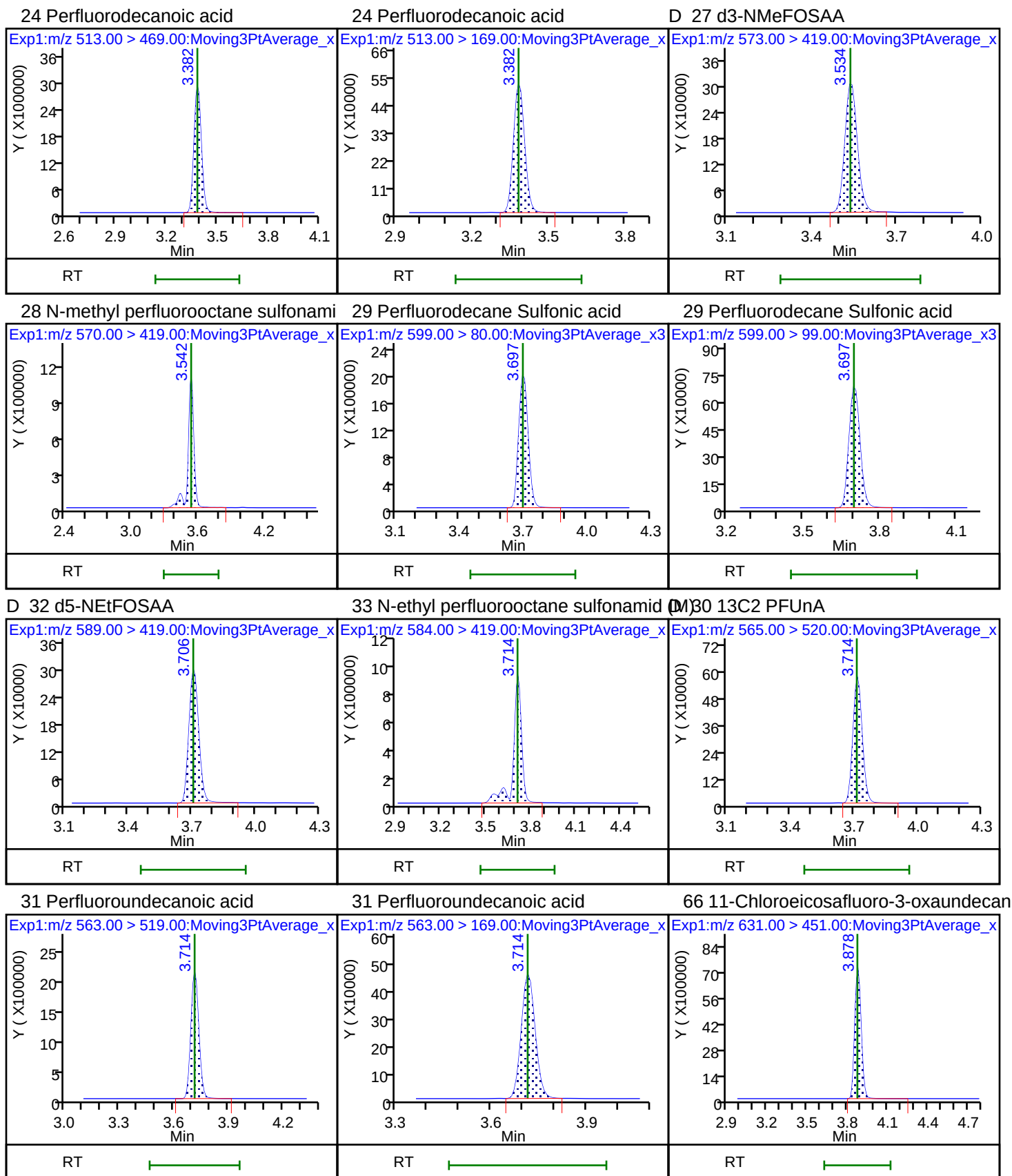
D 72 13C8 PFOS

D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid



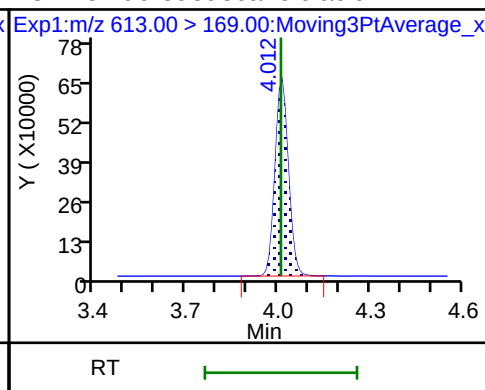
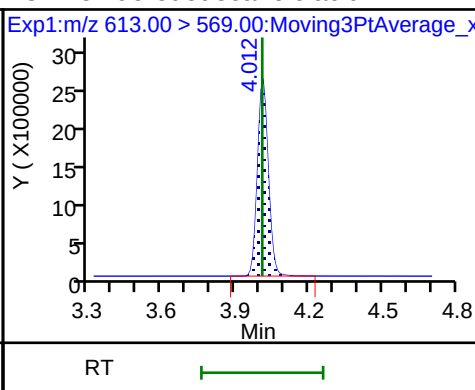
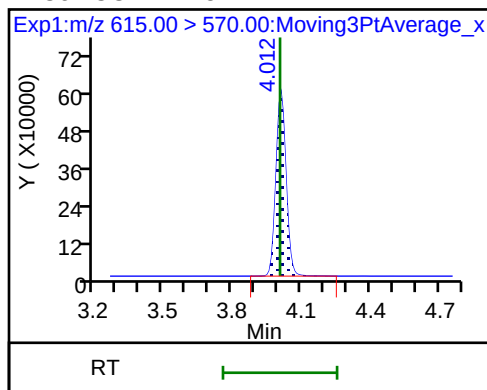




D 36 13C2 PFDaA

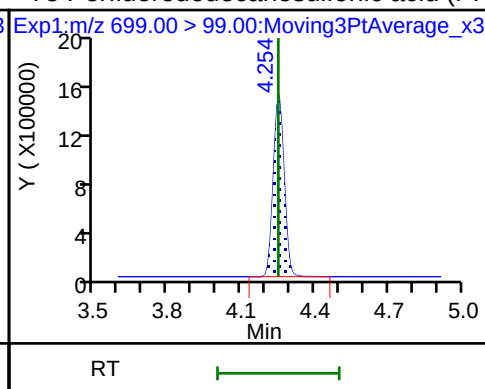
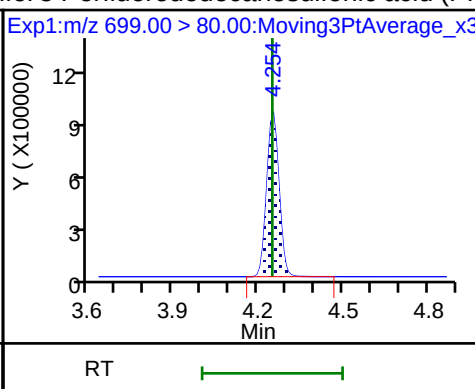
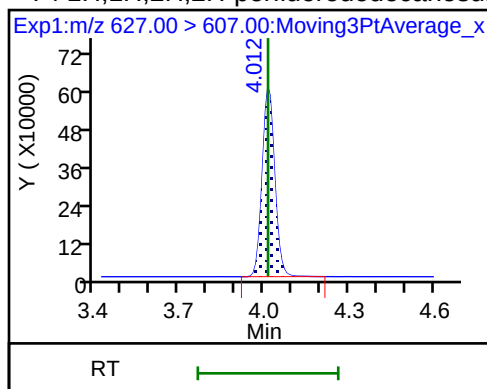
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

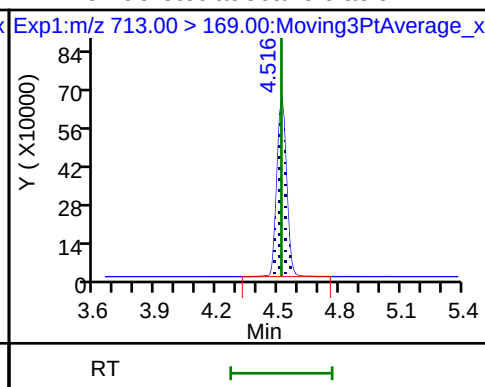
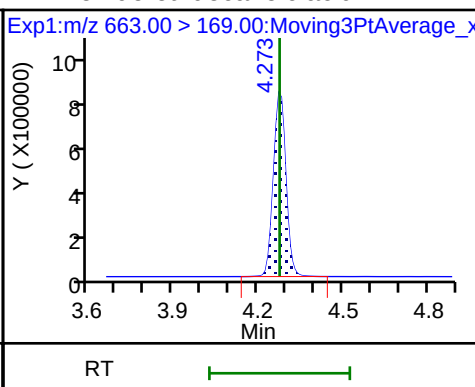
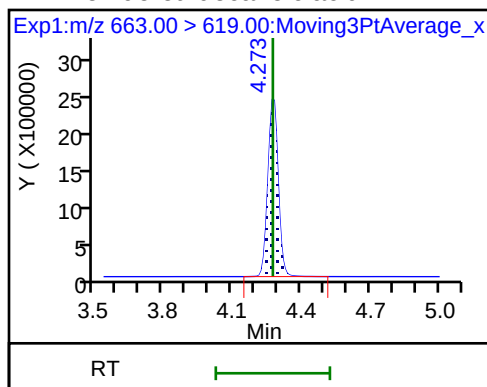
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

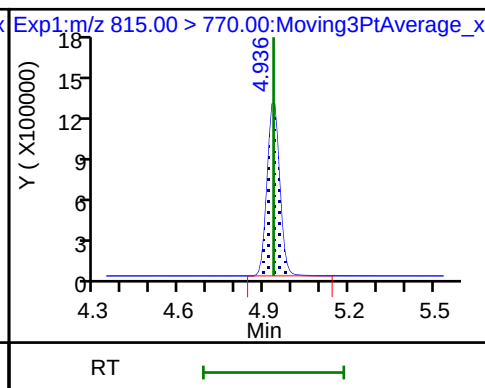
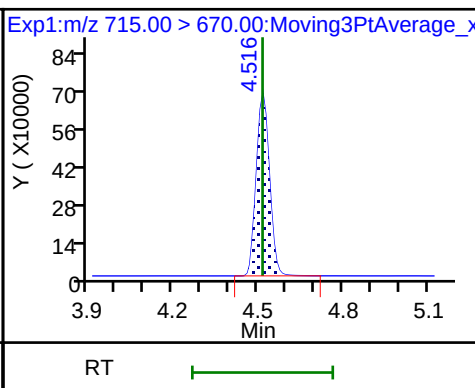
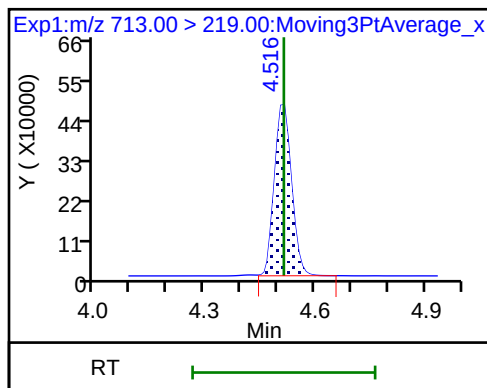
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

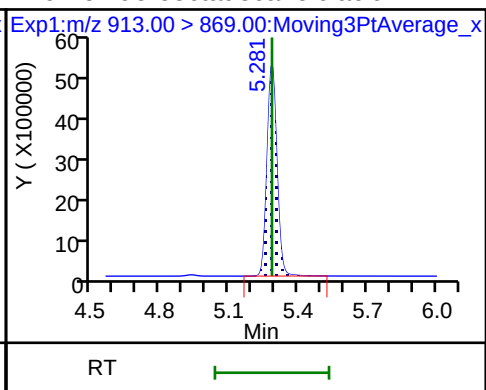
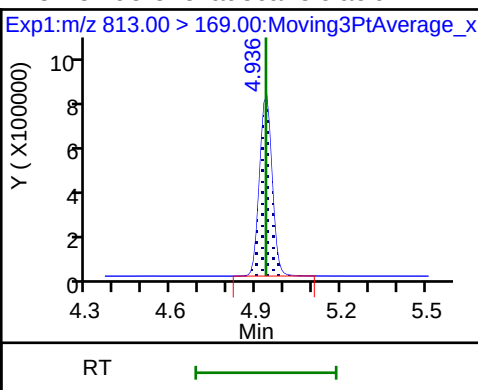
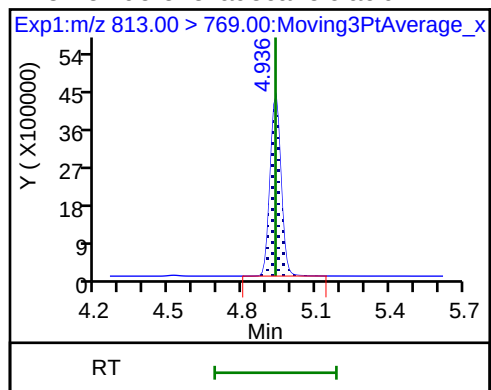
D 44 13C2-PFHxDA



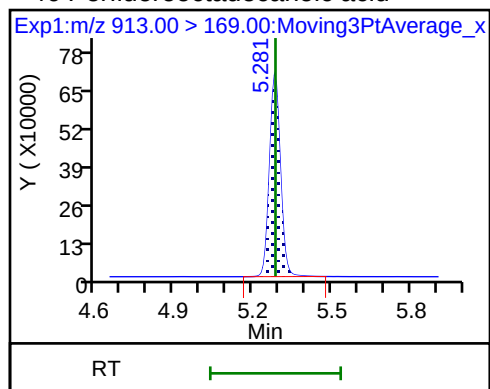
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

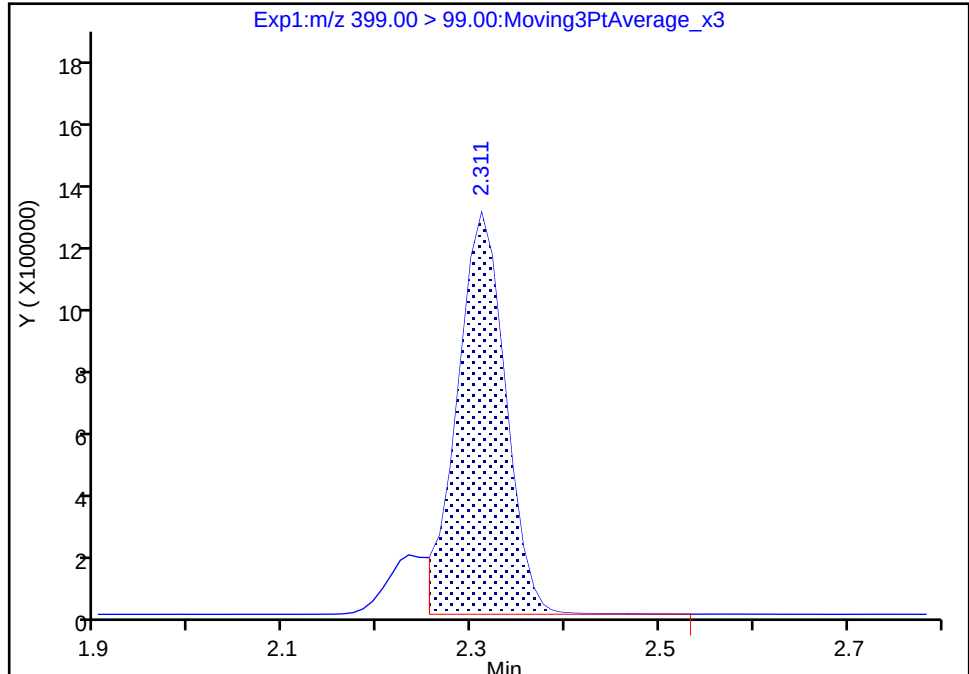
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Injection Date: 04-Oct-2018 05:22:04 Instrument ID: A8_N
Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

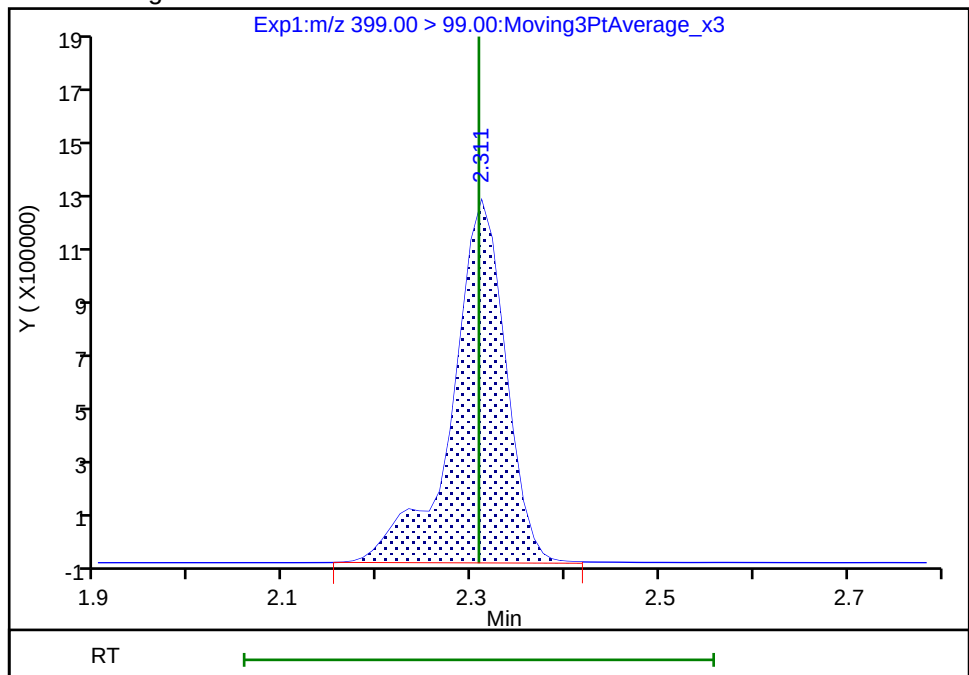
RT: 2.31
Area: 4482571
Amount: 8.875918
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 5030563
Amount: 8.875918
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:50:08
Audit Action: Manually Integrated

Audit Reason: Isomers
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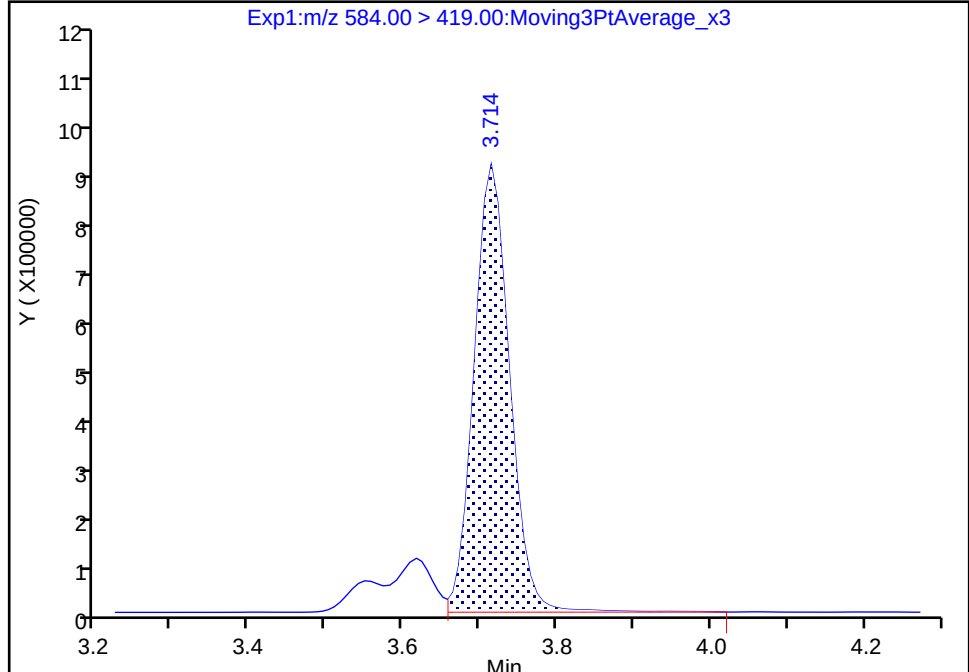
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d
Injection Date: 04-Oct-2018 05:22:04 Instrument ID: A8_N
Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

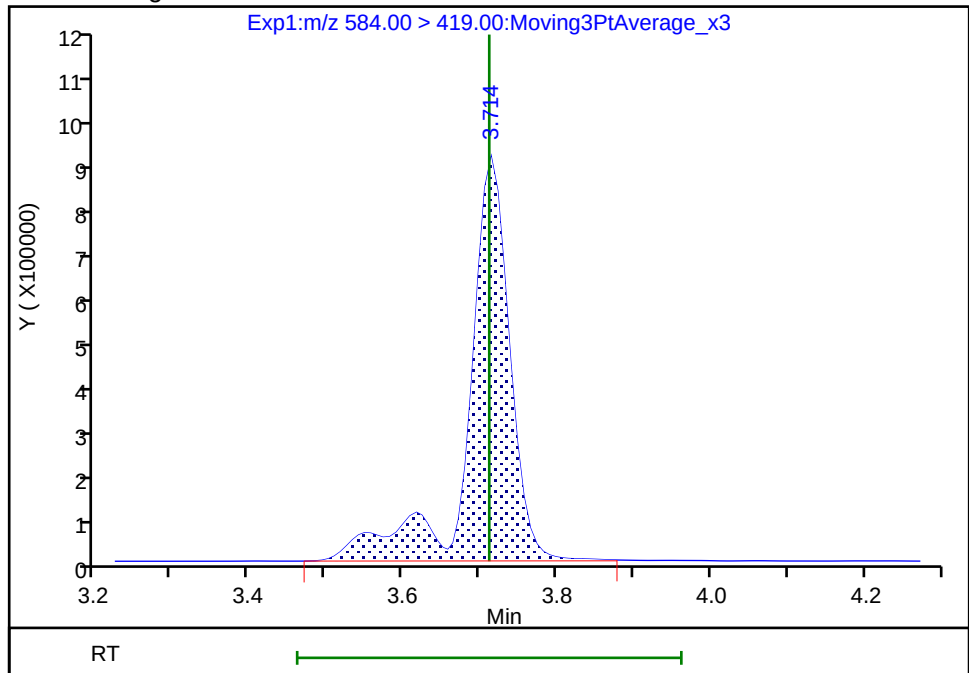
RT: 3.71
Area: 2766508
Amount: 8.592263
Amount Units: ng/ml

Processing Integration Results



RT: 3.71
Area: 3275179
Amount: 9.947592
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 08:50:21

Audit Action: Manually Integrated

Audit Reason: Isomers

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

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1 Analy Batch No.: 247100

SDG No.: _____

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

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-247100/2	2018.09.21LLAICAL_005.d
Level 2	IC 320-247100/11	2018.09.21LLBICAL_006.d
Level 3	IC 320-247100/4	2018.09.21LLAICAL_007.d
Level 4	IC 320-247100/5	2018.09.21LLAICAL_008.d
Level 5	IC 320-247100/6	2018.09.21LLAICAL_009.d
Level 6	IC 320-247100/7	2018.09.21LLAICAL_010.d
Level 7	IC 320-247100/8	2018.09.21LLAICAL_011.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorobutanoic acid (PFBA)	1.504	1.493	1.499	1.494	1.494	1.499	1.489				1.246 - 1.746	1.496
Perfluoropentanoic acid (PFPeA)	1.789	1.772	1.780	1.781	1.780	1.781	1.772				1.529 - 2.029	1.779
Perfluorobutanesulfonic acid (PFBS)	1.830	1.813	1.822	1.822	1.822	1.822	1.814				1.571 - 2.071	1.821
4:2 FTS	2.048	2.027	2.037	2.038	2.037	2.038	2.027				1.786 - 2.286	2.036
Perfluorohexanoic acid (PFHxA)	2.089	2.068	2.078	2.078	2.078	2.078	2.068				1.827 - 2.327	2.077
Perfluoropentanesulfonic acid (PFPeS)	2.109	2.088	2.109	2.099	2.099	2.099	2.089				1.849 - 2.349	2.099
HFPO-DA (GenX)	2.181	2.170	2.180	2.181	2.170	2.181	2.170				1.926 - 2.426	2.176
Perfluoroheptanoic acid (PFHpA)	2.426	2.399	2.425	2.413	2.413	2.413	2.399				2.162 - 2.662	2.413
Perfluorohexanesulfonic acid (PFHxS)	2.439	2.412	2.438	2.426	2.426	2.426	2.426				2.177 - 2.677	2.428
DONA	2.465	2.438	2.465	2.452	2.452	2.465	2.452				2.206 - 2.706	2.456
6:2 FTS	2.766	2.734	2.766	2.750	2.750	2.750	2.750				2.502 - 3.002	2.752
Perfluorooctanoic acid (PFOA)	2.798	2.766	2.782	2.782	2.782	2.782	2.766				2.530 - 3.030	2.780
Perfluoroheptanesulfonic Acid (PFHpS)	2.798	2.766	2.798	2.782	2.782	2.782	2.782				2.534 - 3.034	2.784
Perfluorooctanesulfonic acid (PFOS)	3.171	3.134	3.171	3.153	3.153	3.153	3.153				2.905 - 3.405	3.155
Perfluorononanoic acid (PFNA)	3.190	3.134	3.171	3.153	3.153	3.172	3.153				2.911 - 3.411	3.161
F-53B Major	3.383	3.350	3.383	3.367	3.367	3.367	3.367				3.119 - 3.619	3.369
Perfluorooctanesulfonamide (FOSA)	3.496	3.480	3.480	3.480	3.480	3.481	3.480				3.233 - 3.733	3.482
8:2 FTS	3.527	3.495	3.527	3.512	3.512	3.512	3.496				3.262 - 3.762	3.512
Perfluorononanesulfonic acid (PFNS)	3.527	3.495	3.527	3.512	3.512	3.512	3.496				3.262 - 3.762	3.512
Perfluorotetradecanoic acid (PFDA)	3.542	3.495	3.527	3.527	3.527	3.527	3.512				3.272 - 3.772	3.522
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	3.697	3.654	3.696	3.683	3.683	3.683	3.669				3.431 - 3.931	3.681
Perfluorodecanesulfonic acid (PFDS)	3.854	3.807	3.838	3.839	3.839	3.839	3.823				3.584 - 4.084	3.834
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.869	3.822	3.869	3.855	3.855	3.855	3.839				3.602 - 4.102	3.852
Perfluoroundecanoic acid (PFUnA)	3.869	3.822	3.869	3.855	3.855	3.855	3.839				3.602 - 4.102	3.852
F-53B Minor	4.023	3.991	4.022	4.007	4.007	4.007	4.007				3.759 - 4.259	4.009
Perfluorododecanoic acid (PFDoA)	4.176	4.122	4.157	4.157	4.157	4.139	4.139				3.899 - 4.399	4.150
10:2 FTS	4.176	4.122	4.157	4.157	4.157	4.157	4.139				3.902 - 4.402	4.152
Perfluorododecanesulfonic acid (PFDoS)	4.419	4.372	4.403	4.388	4.388	4.388	4.373				4.140 - 4.640	4.390
Perfluorotridecanoic acid (PFTriA)	4.435	4.388	4.434	4.419	4.419	4.419	4.404				4.167 - 4.667	4.417
Perfluorotetradecanoic acid (PFTeA)	+++++	4.626	4.675	4.660	4.660	4.660	4.644				4.409 - 4.909	4.654
Perfluoro-n-hexadecanoic acid (PFHxDA)	5.108	5.057	5.107	5.091	5.091	+++++	+++++				4.839 - 5.339	5.091
Perfluoro-n-octadecanoic acid (PFODA)	5.477	5.418	5.462	5.447	5.448	5.448	5.434				5.198 - 5.698	5.448

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

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1 Analy Batch No.: 247100

SDG No.: _____

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

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C4 PFBA	1.499	1.493	1.499	1.494	1.494	1.494	1.489				1.245 - 1.745	1.495
13C5 PFPeA	1.789	1.772	1.780	1.781	1.780	1.781	1.772				1.529 - 2.029	1.779
13C3 PFBS	1.822	1.813	1.822	1.814	1.822	1.822	1.814				1.568 - 2.068	1.818
M2-4:2 FTS	2.048	2.027	2.037	2.038	2.037	2.038	2.027				1.786 - 2.286	2.036
13C2 PFHxA	2.078	2.068	2.078	2.068	2.078	2.078	2.068				1.824 - 2.324	2.074
13C3 HFPO-DA	2.181	2.170	2.180	2.181	2.181	2.181	2.170				1.928 - 2.428	2.178
13C4 PFHpA	2.426	2.399	2.425	2.413	2.413	2.413	2.399				2.162 - 2.662	2.413
18O2 PFHxS	2.439	2.412	2.438	2.426	2.426	2.426	2.426				2.177 - 2.677	2.428
M2-6:2 FTS	2.766	2.734	2.766	2.750	2.750	2.750	2.750				2.502 - 3.002	2.752
13C8 PFOA	2.782	2.750	2.782	2.766	2.766	2.766	2.766				2.518 - 3.018	2.768
13C4 PFOA	2.798	2.766	2.782	2.782	2.782	2.782	2.766				2.530 - 3.030	2.780
13C8 PFOS	3.171	3.134	3.171	3.153	3.153	3.153	3.135				2.903 - 3.403	3.153
13C4 PFOS	3.171	3.134	3.171	3.153	3.153	3.153	3.153				2.905 - 3.405	3.155
13C5 PFNA	3.171	3.134	3.171	3.153	3.153	3.153	3.153				2.905 - 3.405	3.155
13C8 FOSA	3.480	3.480	3.480	3.480	3.480	3.481	3.480				3.230 - 3.730	3.480
M2-8:2 FTS	3.527	3.495	3.527	3.512	3.512	3.512	3.496				3.262 - 3.762	3.512
13C2 PFDA	3.542	3.495	3.527	3.527	3.527	3.527	3.512				3.272 - 3.772	3.522
d3-NMeFOSAA	3.697	3.654	3.682	3.683	3.669	3.669	3.669				3.425 - 3.925	3.675
d5-NEtFOSAA	3.869	3.822	3.854	3.839	3.839	3.839	3.839				3.593 - 4.093	3.843
13C2 PFUnA	3.869	3.822	3.869	3.855	3.855	3.855	3.839				3.602 - 4.102	3.852
13C2 PFDoA	4.176	4.122	4.157	4.157	4.139	4.139	4.139				3.897 - 4.397	4.147
13C2 PFTeDA	4.691	4.626	4.675	4.660	4.660	4.660	4.644				4.409 - 4.909	4.659
13C2 PFHxDA	5.108	5.057	5.091	5.091	5.091	5.074	5.074				4.834 - 5.334	5.084

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

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1 Analy Batch No.: 247100

SDG No.: _____

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

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-247100/2	2018.09.21LLAICAL_005.d
Level 2	IC 320-247100/11	2018.09.21LLBICAL_006.d
Level 3	IC 320-247100/4	2018.09.21LLAICAL_007.d
Level 4	IC 320-247100/5	2018.09.21LLAICAL_008.d
Level 5	IC 320-247100/6	2018.09.21LLAICAL_009.d
Level 6	IC 320-247100/7	2018.09.21LLAICAL_010.d
Level 7	IC 320-247100/8	2018.09.21LLAICAL_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	3071729 2867356	2995755 3392472	3239651 3071209	2889404	Ave		3075367.87				6.1		50.0			
13C8 PFOS	536076 511431	525488 629070	570572 489547	521291	Ave		540496.533				8.5		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.: 320-43466-1 Analy Batch No.: 247100
SDG No.: _____
Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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)	0.9236 0.9118	0.9088 0.8494	0.9488	0.9176	0.9568	AveID		0.9167				3.8		35.0			
Perfluoropentanoic acid (PFPeA)	1.0839 0.9454	1.0926 0.8736	1.0063	0.9844	0.9832	AveID		0.9956				7.7		35.0			
Perfluorobutanesulfonic acid (PFBS)	112.76 98.483	108.09 86.242	103.25	103.85	110.58	AveID		103.32				8.7		50.0			
4:2 FTS	22.918 22.709	21.800 22.210	23.463	22.181	22.909	AveID		22.599				2.5		50.0			
Perfluorohexanoic acid (PFHxA)	0.9526 0.8609	0.9496 0.7869	0.9155	0.9227	0.9068	AveID		0.8993				6.5		35.0			
Perfluoropentanesulfonic acid (PFPeS)	45.070 50.058	47.918 45.774	49.833	49.028	51.125	AveID		48.401				4.7		50.0			
HFPO-DA (GenX)	1.7141 1.9716	1.8837 1.7554	1.8353	2.0093	1.9193	AveID		1.8698				5.8		35.0			
Perfluoroheptanoic acid (PFHpA)	1.1808 1.0106	1.1671 0.8506	1.1115	0.9992	1.1136	AveID		1.0619				11.0		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.4203 1.1926	1.4128 1.0816	1.2178	1.2531	1.2334	AveID		1.2588				9.6		35.0			
DONA	2.6202 2.3969	2.9010 2.1052	2.8664	2.9726	2.6511	AveID		2.6448				11.7		50.0			
6:2 FTS	2.1795 2.1216	2.3644 2.1427	2.3030	1.9944	2.1670	AveID		2.1818				5.6		35.0			
Perfluorooctanoic acid (PFOA)	1.1642 0.9279	1.2018 0.8152	1.1059	1.1136	1.0131	AveID		1.0488				13.2		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	0.9944 1.0312	0.9896 0.9931	1.0269	1.0465	1.0837	AveID		1.0236				3.4		50.0			
Perfluorooctanesulfonic acid (PFOS)	0.9674 1.0512	1.1175 1.0539	1.0661	1.1070	1.0520	AveID		1.0593				4.6		35.0			
Perfluorononanoic acid (PFNA)	0.9934 0.8874	1.0741 0.7975	1.0369	1.0468	1.0392	AveID		0.9822				10.4		35.0			
F-53B Major	1.0154 1.1013	1.1537 1.0308	1.1657	1.2088	1.1426	AveID		1.1169				6.4		50.0			
Perfluorooctanesulfonamide (FOSA)	2.6555 2.6721	3.0987 2.4134	3.2712	3.2988	3.2340	AveID		2.9491				12.2		35.0			
8:2 FTS	13.539 16.125	17.037 13.487	14.319	13.943	14.461	AveID		14.701				9.2		35.0			
Perfluorononanesulfonic acid (PFNS)	0.7178 0.6667	0.6707 0.6240	0.6598	0.6655	0.6549	AveID		0.6656				4.2		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.: 320-43466-1 Analy Batch No.: 247100
SDG No.: _____
Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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)	1.2254 1.0093	1.1739 0.8557	1.1841	1.1577	1.0660	AveID		1.0960				11.8		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.8882 0.9387	0.9878 0.8990	1.0322	1.0056	0.9671	AveID		0.9598				5.6		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.7503 0.8464	0.9202 0.7634	0.8615	0.8943	0.9528	AveID		0.8555				8.9		50.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.7744 0.9657	0.8975 1.0173	0.9509	0.9603	0.9733	AveID		0.9342				8.4		35.0			
Perfluoroundecanoic acid (PFUnA)	1.1333 0.8430	0.9438 0.7405	0.9043	0.8800	0.8676	AveID		0.9018				13.3		35.0			
F-53B Minor	1.2628 1.3407	1.3596 1.1921	1.3047	1.3609	1.3878	AveID		1.3155				5.2		50.0			
Perfluorododecanoic acid (PFDoA)	1.1229 0.8762	1.1095 0.7606	1.0186	1.0616	1.0586	AveID		1.0011				13.4		35.0			
10:2 FTS	11.237 10.895	9.4612 10.579	9.2503	8.8084	9.7412	AveID		9.9961				9.1		50.0			
Perfluorododecanesulfonic acid (PFDoS)	0.0997 0.0996	0.1006 0.0959	0.0912	0.0935	0.0899	AveID		0.0958				4.5		50.0			
Perfluorotridecanoic acid (PFTriA)	0.7835 0.7047	0.9152 0.6222	0.8115	0.8497	0.8004	AveID		0.7839				12.2		50.0			
Perfluorotetradecanoic acid (PFTeA)	++++ 0.1727	0.1624 0.1650	0.1592	0.1618	0.1645	AveID		0.1643				2.8		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7966 ++++	1.3414 ++++	1.0223	0.9205	0.9015	L2ID	0.0222	0.9058							1.0000		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.6718 0.6205	0.6822 0.5805	0.6903	0.6350	0.6556	AveID		0.6480				6.0		50.0			
13C4 PFBA	0.9261 0.9630	0.8728 0.9900	0.9386	0.8831	0.8738	Ave		0.9210				5.0		50.0			
13C5 PFPeA	0.8058 0.8727	0.8028 0.8767	0.8596	0.8263	0.8176	Ave		0.8374				3.8		50.0			
13C3 PFBS	0.0110 0.0118	0.0106 0.0123	0.0119	0.0113	0.0109	Ave		0.0114				5.6		50.0			
M2-4:2 FTS	0.1075 0.0968	0.1012 0.1071	0.1160	0.0983	0.1031	Ave		0.1043				6.3		50.0			
13C2 PFHxA	0.8827 0.8999	0.8816 0.9356	0.8994	0.8568	0.8566	Ave		0.8875				3.1		50.0			
13C3 HFPO-DA	0.0990 0.0921	0.0806 0.1049	0.0989	0.0856	0.0858	Ave		0.0924				9.6		50.0			
13C4 PFHpA	1.1065 1.0166	0.9986 1.0812	1.1094	1.0834	1.0006	Ave		1.0566				4.7		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.: 320-43466-1 Analy Batch No.: 247100

SDG No.: _____

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

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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	0.6932 0.6735	0.6634 0.7424	0.6805	0.6632	0.6549	Ave		0.6816				4.4		50.0			
M2-6:2 FTS	0.1167 0.1146	0.1087 0.1075	0.1105	0.1088	0.1009	Ave		0.1097				4.7		50.0			
13C4 PFOA	1.0039 0.9996	1.0214 1.0299	1.0256	0.9437	0.9824	Ave		1.0009				3.0		50.0			
13C4 PFOS	0.7386 0.7042	0.6978 0.6850	0.7343	0.7011	0.6845	Ave		0.7065				3.1		50.0			
13C5 PFNA	0.9312 0.9359	0.9056 0.9278	0.9569	0.8821	0.8361	Ave		0.9108				4.5		50.0			
13C8 FOSA	0.3722 0.3776	0.3675 0.3970	0.3888	0.3785	0.3575	Ave		0.3770				3.5		50.0			
M2-8:2 FTS	0.0147 0.0122	0.0143 0.0132	0.0148	0.0144	0.0137	Ave		0.0139				6.7		50.0			
13C2 PFDA	0.9507 0.8785	0.9125 0.9483	0.9986	0.9861	0.9298	Ave		0.9435				4.4		50.0			
d3-NMeFOSAA	0.4061 0.4586	0.3780 0.4576	0.4169	0.3961	0.4144	Ave		0.4182				7.2		50.0			
d5-NEtFOSAA	0.3816 0.3107	0.3456 0.2911	0.3237	0.3351	0.3055	Ave		0.3276				9.2		50.0			
13C2 PFUnA	0.8340 0.7619	0.7699 0.7599	0.8218	0.8883	0.7721	Ave		0.8011				6.1		50.0			
13C2 PFDoA	0.9472 0.9743	0.9238 0.9735	0.9834	0.9516	0.9164	Ave		0.9529				2.7		50.0			
13C2 PFTeDA	0.7001 0.7552	0.7572 0.8274	0.7415	0.7738	0.7007	Ave		0.7508				5.9		50.0			
13C2 PFHxDA	0.6629 0.7847	0.7578 0.8050	0.7408	0.7736	0.7234	Ave		0.7497				6.3		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.: 320-43466-1 Analy Batch No.: 247100

SDG No.: _____

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

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-247100/2	2018.09.21LLAICAL_005.d
Level 2	IC 320-247100/11	2018.09.21LLBICAL_006.d
Level 3	IC 320-247100/4	2018.09.21LLAICAL_007.d
Level 4	IC 320-247100/5	2018.09.21LLAICAL_008.d
Level 5	IC 320-247100/6	2018.09.21LLAICAL_009.d
Level 6	IC 320-247100/7	2018.09.21LLAICAL_010.d
Level 7	IC 320-247100/8	2018.09.21LLAICAL_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	7518056 8303074	7332111 7516784	7929046	7071816	7017853	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C8 PFOS	Ave	1281222 1503478	1255916 1170018	1363666	1245886	1222321	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.: 320-43466-1 Analy Batch No.: 247100

SDG No.: _____

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

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-247100/2	2018.09.21LLAICAL_005.d
Level 2	IC 320-247100/11	2018.09.21LLBICAL_006.d
Level 3	IC 320-247100/4	2018.09.21LLAICAL_007.d
Level 4	IC 320-247100/5	2018.09.21LLAICAL_008.d
Level 5	IC 320-247100/6	2018.09.21LLAICAL_009.d
Level 6	IC 320-247100/7	2018.09.21LLAICAL_010.d
Level 7	IC 320-247100/8	2018.09.21LLAICAL_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	77055 17281545	135508 28619286	798416	2756176	7252916	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	78683 16238450	149842 26065041	775517	2766671	6973880	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	98473 20193580	172445 32034311	976249	3538619	9234217	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	21146 4919870	36747 8716545	234387	798573	2021321	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	75755 15247478	143018 25055147	738263	2689169	6739358	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	41763 10891174	81120 18041204	499950	1772705	4530111	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	15283 3572548	25929 6264056	162786	584968	1428015	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	117706 20220855	199114 31298210	1105629	3682041	9667715	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	80709 14384660	145720 24867986	676086	2572211	6376580	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	164242 31294393	325759 46231056	1777483	6677901	14831368	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	21721 4536400	41619 7432909	216251	699961	1798266	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	105397 18275076	209915 28602312	1017840	3578089	8643372	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	62995 13605882	112302 22040563	643568	2375847	6127089	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	59737 13520611	123626 22799451	651252	2449918	5797920	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	83336 16345593	166178 25182261	889492	3140933	7537549	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1 Analy Batch No.: 247100

SDG No.: _____

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

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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	62970 14226340	128181 22397136	715170	2686654	6324366	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctanesulfonamide (FOSA)		AveID	89032 19856984	194556 32608152	1140400	4247372	10029311	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	17119 3702598	39972 5817799	181928	652901	1651526	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorononanesulfonic acid (PFNS)		AveID	45856 8870383	76752 13965529	416998	1523710	3733587	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	104958 17451112	182990 27615483	1060083	3882763	8599090	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	32494 8472296	63800 14001333	385771	1354726	3476640	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	48131 11308841	105743 17155341	546672	2055868	5454861	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	26624 5905384	52993 10076333	276010	1094595	2579505	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	85150 12640500	124140 19149013	666267	2658767	5811860	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	79154 17503848	152674 26180127	809080	3057280	7764072	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	95815 16802308	175107 25199086	898058	3435967	8415870	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	14298 2517398	22337 4592235	118262	415059	1119449	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	6423 1335682	11605 2163811	58138	215875	517092	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	66853 13513007	144436 20612834	715480	2750053	6363083	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	++++ 2567080	21006 4644490	105811	425772	1000159	++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	107296 ++++	173671 ++++	679012	2422100	5658034	0.0250 ++++	0.0500 ++++	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	40120 9581981	88318 15904110	458517	1670958	4114602	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	8342977 9476564	7455703 8422985	8414655	7509010	7580397	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	7259389 8588479	6857279 7458806	7706743	7026337	7093002	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	91872 107858	83923 97694	99469	89621	87853	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	904855 890030	807073 851043	971040	780634	835063	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.: 320-43466-1 Analy Batch No.: 247100

SDG No.: _____

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

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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	7952570 8855748	7530157 7960200	8063933	7286027	7431760	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	891586 905993	688254 892112	886972	727812	744031	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	9968243 10004341	8530313 9199009	9946736	9212621	8681131	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	5907514 6269545	5360994 5975198	5771389	5334919	5374593	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	998717 1071332	881970 869086	940959	879255	831601	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	9044329 9837265	8724980 8762277	9194911	8024393	8523187	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	6361401 6625089	5698100 5571777	6293260	5699757	5677498	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	8388965 9209816	7735806 7893873	8578709	7501183	7253244	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	3352703 3715643	3139325 3377811	3486173	3218888	3101165	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	126443 114810	117311 107844	127051	117069	114204	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	8564950 8645119	7794397 8068123	8952864	8385003	8066736	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	3658347 4512795	3229247 3893478	3737383	3367819	3594763	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	3438218 3057484	2952255 2476319	2902553	2849760	2650176	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	7513282 7497732	6576404 6465241	7367515	7553155	6698462	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	8533148 9588251	7891096 8282800	8816999	8091461	7950004	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	6307400 7431707	6467590 7039163	6647508	6579603	6078915	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	5972047 7721737	6473479 6848863	6641856	6578080	6275952	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

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

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-Sep-2018 13:35:59 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\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:05:38 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 14:57:20

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	1.499	1.495	0.004	0.536	8342977	2.51		101	10502	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.504	1.496	0.008	1.003	77055	0.0252		101	3.8	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.779	0.010	1.000	78683	0.0272		109	6.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.789	1.779	0.010	0.639	7259389	2.41		96.2	7261	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.818	0.004	0.651	91872	2.24		96.2	501	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.821	0.009	1.005	98473	0.0241		109	52.4	
298.90 > 99.00	1.822	1.821	0.001	1.000	30993		3.18(1.35-4.05)	109	24.5	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.036	0.012	1.124	21146	0.0237		101	166	
D 60 M2-4:2FTS										
329.00 > 81.00	2.048	2.036	0.012	0.732	904855	2.41		103	897	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.074	0.004	0.743	7952570	2.49		99.5	7639	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.077	0.012	1.005	75755	0.0265		106	17.5	
313.00 > 119.00	2.089	2.077	0.012	1.005	5191		14.59(6.96-20.87)	106	10.7	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.099	0.010	1.158	41763	0.0218		93.1	109	
349.00 > 99.00	2.109	2.099	0.010	1.158	20964		1.99(1.15-3.45)	93.1	68.7	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.000	15283	0.0229		91.7	6.7	

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	2.178	0.003	0.779	891586	2.68		107	2605	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.412	0.014	1.000	117706	0.0278		111	17.9	
363.00 > 169.00	2.426	2.412	0.014	1.000	24162		4.87(2.17-6.52)	111	56.6	
D 9 13C4-PFHpA										
367.00 > 322.00	2.426	2.412	0.014	0.867	9968243	2.62		105	15972	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.427	0.012	0.872	5907514	2.41		102	6280	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.427	0.012	1.000	80709	0.0257		113	85.2	
399.00 > 99.00	2.439	2.427	0.012	1.000	21125		3.82(1.90-5.70)	113	26.2	
76 DONA										
377.00 > 251.00	2.465	2.456	0.009	0.777	164242	0.0233		99.1	474	M
377.00 > 85.00	2.478	2.456	0.022	0.781	69199		2.37(1.13-3.39)	99.1	32.3	M
D 12 M2-6:2FTS										
429.00 > 81.00	2.766	2.752	0.014	0.989	998717	2.53		106	1238	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.766	2.752	0.014	1.000	21721	0.0237		99.9	53.5	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.768	0.014		7518056	2.44		99.9	6091	
* 62 13C2-PFOA										
415.00 > 370.00	2.798	2.780	0.018		9008984	2.50			5796	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.780	0.018	1.000	105397	0.0278		111	6.1	M
413.00 > 169.00	2.798	2.780	0.018	1.000	38631		2.73(1.36-4.08)	111	62.2	M
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.780	0.018	1.000	9044329	2.51		100	17580	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.784	0.014	0.882	62995	0.0231		97.1	105	
449.00 > 99.00	2.798	2.784	0.014	0.882	13214		4.77(1.84-5.53)	97.1	44.9	
D 72 13C8 PFOS										
507.00 > 99.00	3.171	3.153	0.018		1281222	2.37		99.2	3414	
D 19 13C5 PFNA										
468.00 > 423.00	3.171	3.155	0.016	1.133	8388965	2.56		102	8082	
D 18 13C4 PFOS										
503.00 > 80.00	3.171	3.155	0.016	1.133	6361401	2.50		105	4449	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.171	3.155	0.016	1.000	59737	0.0212		91.3	66.9	M
499.00 > 99.00	3.190	3.155	0.035	1.006	16268		3.67(2.04-6.12)	91.3	59.7	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.161	0.029	1.006	83336	0.0253		101	11.2	M
463.00 > 169.00	3.190	3.161	0.029	1.006	15261		5.46(2.68-8.03)	101	34.4	M
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.369	0.014	1.067	62970	0.0212		90.9	129	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.244	3352703	2.47		98.7	7267	

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	3.496	3.483	0.013	1.004	89032	0.0225	90.0	205	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.527	3.512	0.015	1.000	17119	0.0221	92.1	120	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.527	3.512	0.015	1.112	45856	0.0259	108	131	
	549.00 > 99.00	3.527	3.512	0.015	1.112	6461	7.10(3.02-9.05)	108	64.0	
D 26 M2-8:2FTS	529.00 > 81.00	3.527	3.512	0.015	1.261	126443	2.52	105	664	
24 Perfluorodecanoic acid	513.00 > 469.00	3.542	3.522	0.020	1.000	104958	0.0280	112	23.8	
	513.00 > 169.00	3.542	3.522	0.020	1.000	8071	13.00(7.12-21.35)	112	24.1	
D 23 13C2 PFDA	515.00 > 470.00	3.542	3.522	0.020	1.266	8564950	2.52	101	7586	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.697	3.675	0.022	1.321	3658347	2.43	97.1	3409	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.697	3.681	0.016	1.000	32494	0.0231	92.5	10.3	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.854	3.834	0.020	1.215	48131	0.0211	87.7	84.2	
	599.00 > 99.00	3.854	3.834	0.020	1.215	10651	4.52(2.14-6.43)	87.7	49.8	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.869	3.843	0.026	1.383	3438218	2.91	116	3465	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.869	3.852	0.017	1.000	85150	0.0314	126	20.2	
	563.00 > 169.00	3.869	3.852	0.017	1.000	7060	12.06(5.24-15.72)	126	27.8	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.869	3.852	0.017	1.000	26624	0.0207	82.9	51.4	
D 30 13C2 PFUnA	565.00 > 520.00	3.869	3.852	0.017	1.383	7513282	2.60	104	9463	
35 MeFOSA	512.00 > 169.00	3.975	3.965	0.010		15691	NC		62.8	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	4.023	4.009	0.014	1.268	79154	0.0226	96.0	249	
D 36 13C2 PFDaA	615.00 > 570.00	4.176	4.147	0.029	1.492	8533148	2.49	99.4	7351	
37 Perfluorododecanoic acid	613.00 > 569.00	4.176	4.149	0.027	1.000	95815	0.0280	112	26.1	M
	613.00 > 169.00	4.176	4.149	0.027	1.000	8876	10.79(4.68-14.05)	112	19.2	M
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.176	4.152	0.024	1.184	14298	0.0271	112	11.1	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.157	4.157	0.0		19846	NC		78.1	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.419	4.390	0.029	1.393	6423	0.0252	104	14.1	
	699.00 > 99.00	4.404	4.390	0.014	1.389	9818	0.65(0.28-0.83)	104	43.4	

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	4.435	4.417	0.017	1.062	66853	0.0250		99.9	29.9	
663.00 > 169.00	4.435	4.417	0.017	1.062	13058		5.12(3.09-9.27)	99.9	25.1	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.691	4.659	0.032	1.000	14652	0.0354		141	48.3	M
713.00 > 219.00	4.675	4.659	0.016	0.997	8623		1.70(0.70-2.09)	141	23.4	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.691	4.659	0.032	1.677	6307400	2.33		93.2	11718	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.108	5.084	0.024	1.826	5972047	2.21		88.4	6446	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.108	5.089	0.019	1.000	107296	0.0251		100	28.2	
813.00 > 169.00	5.108	5.089	0.019	1.000	20738		5.17(2.77-8.32)	100	36.9	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.477	5.448	0.029	1.072	40120	0.0259		104	19.3	
913.00 > 169.00	5.477	5.448	0.029	1.072	7480		5.36(2.55-7.64)	104	42.1	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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

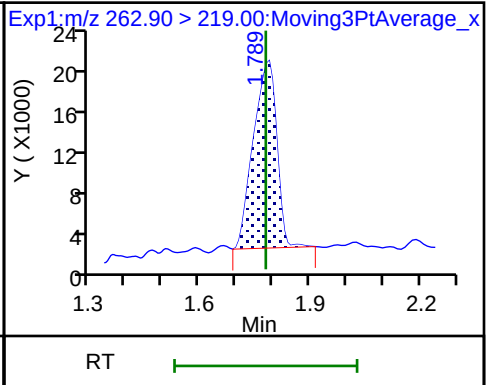
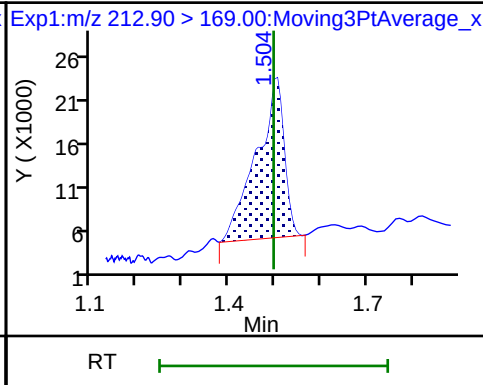
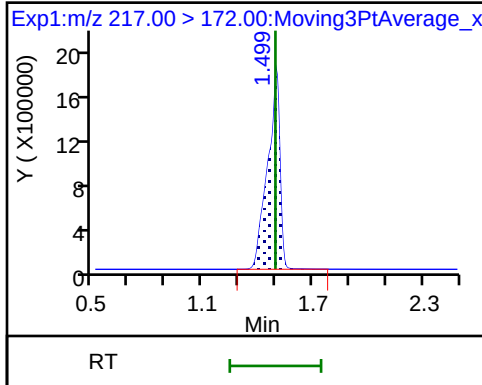
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

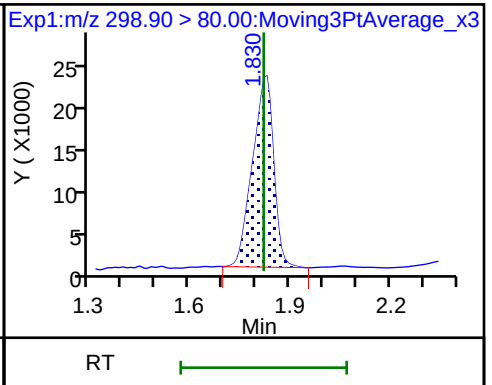
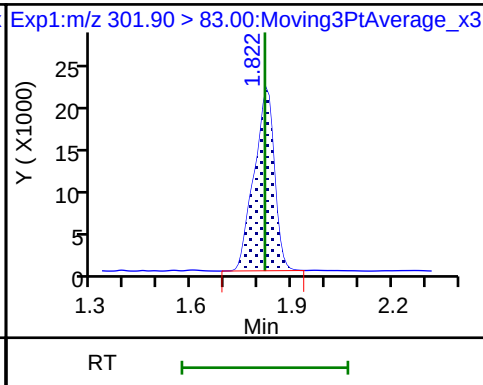
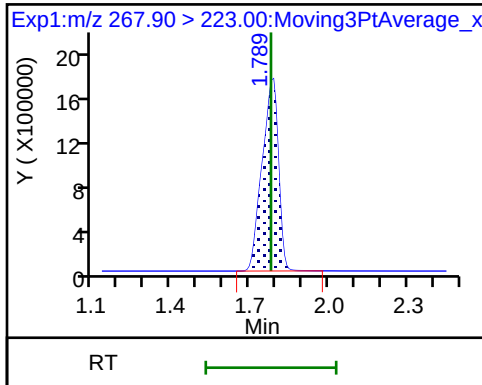
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

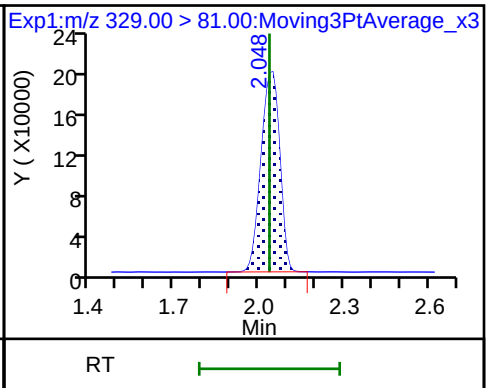
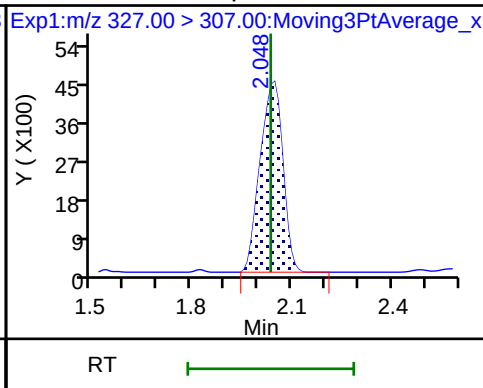
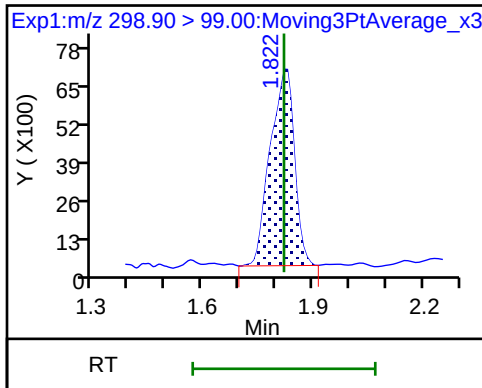
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

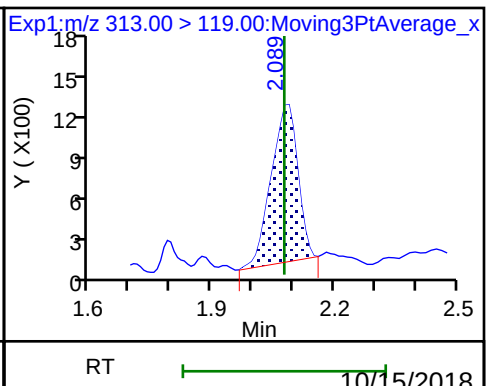
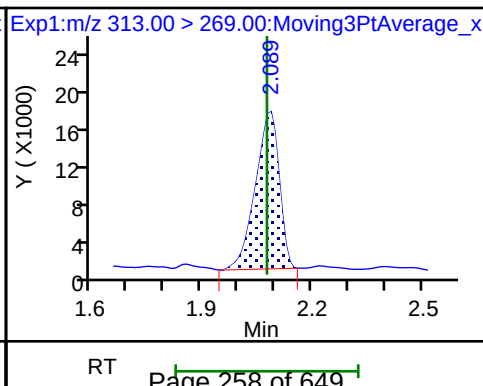
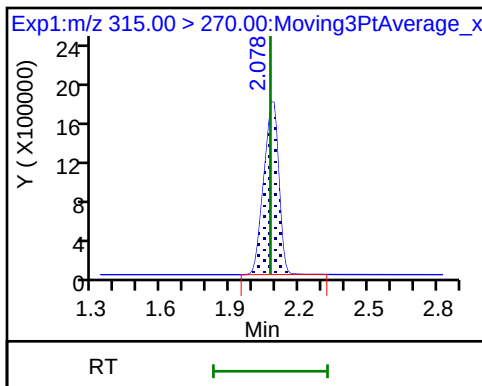
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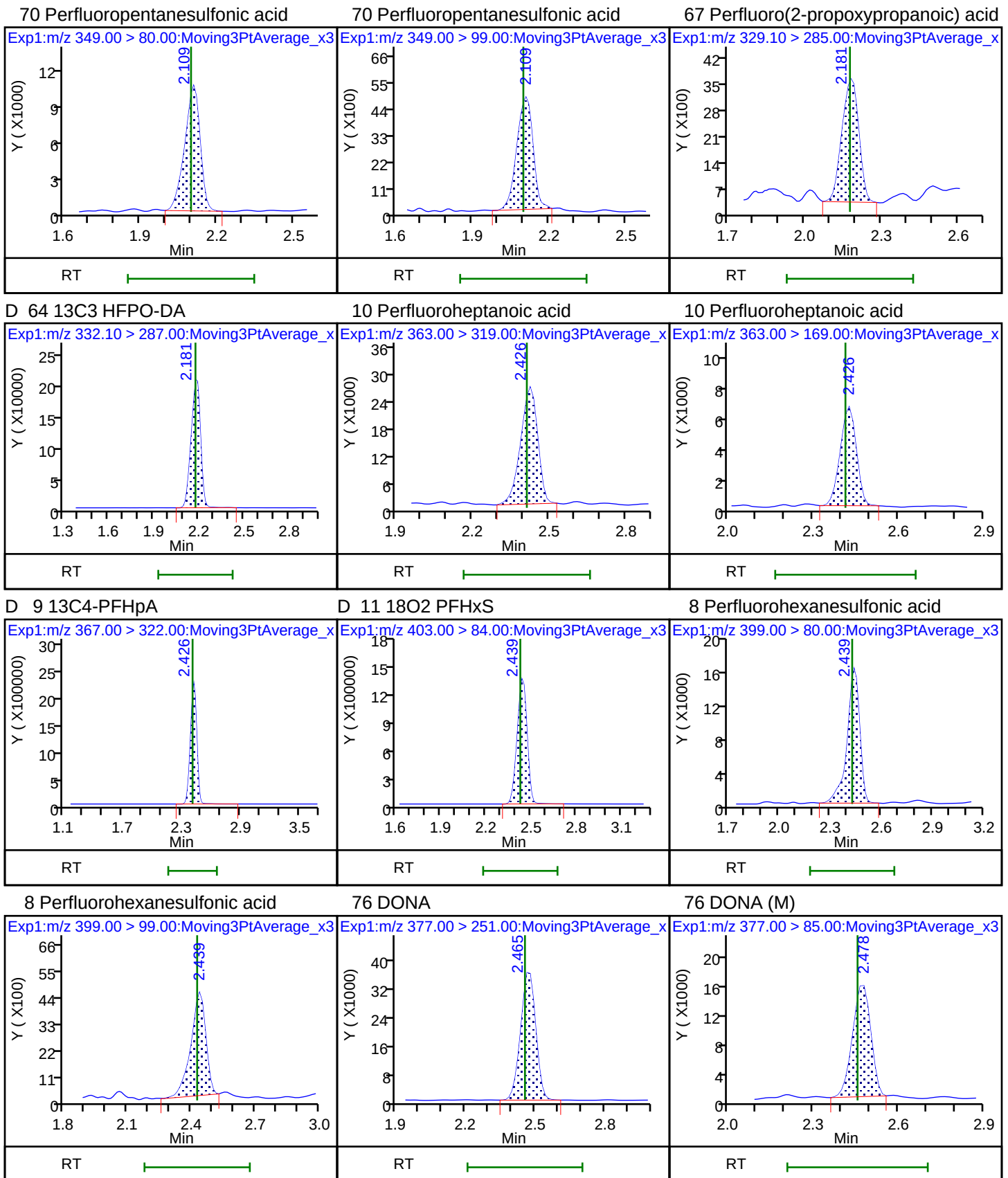


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

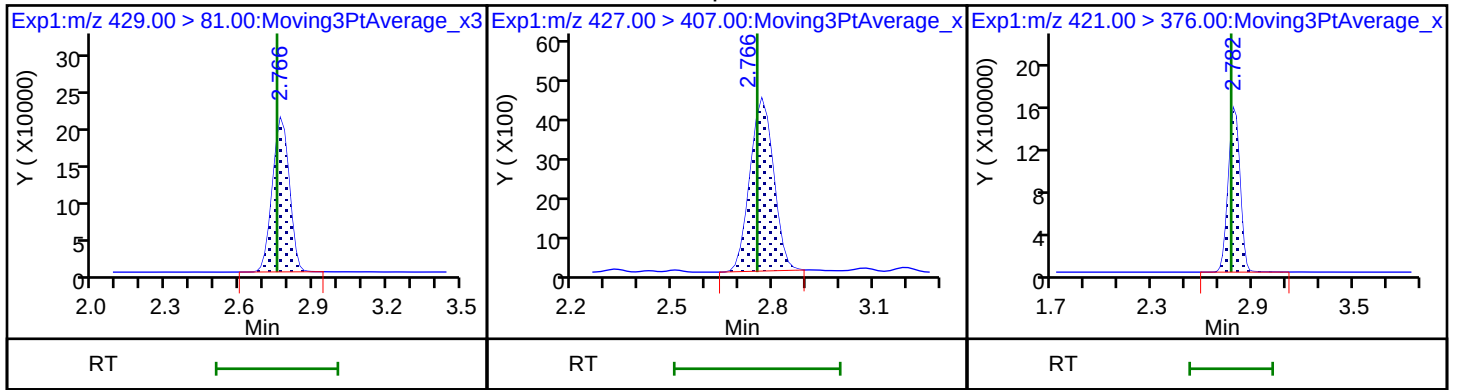
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

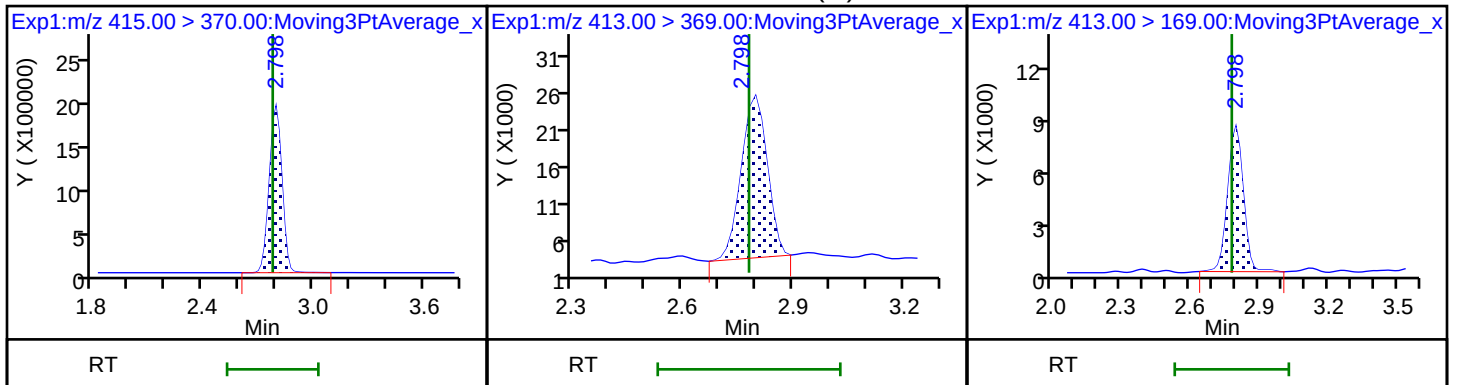
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

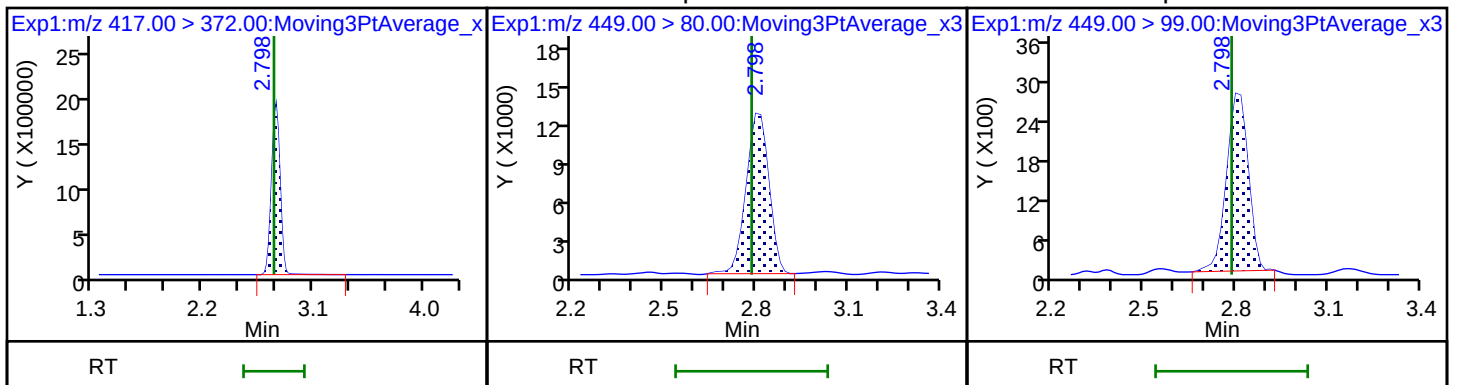
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

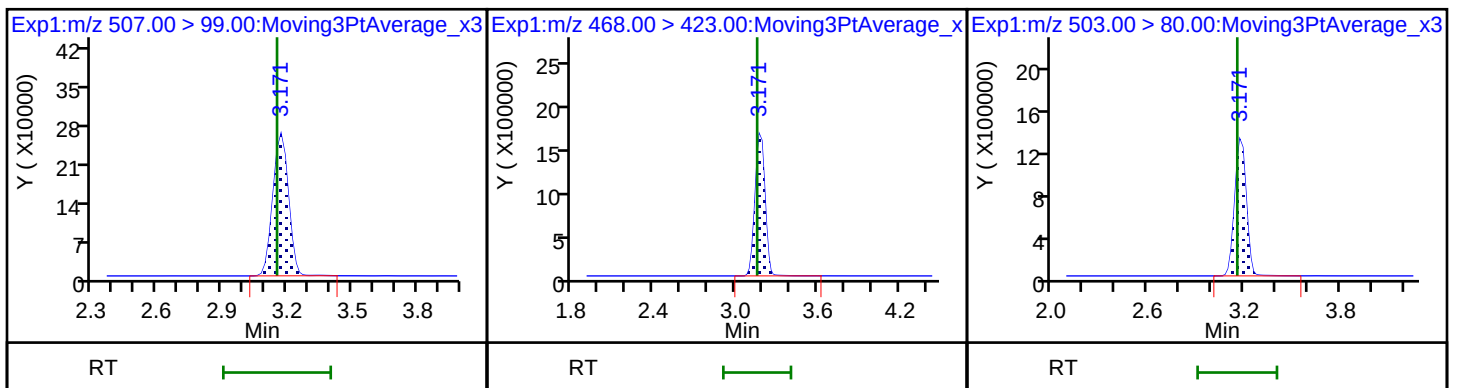
16 Perfluoroheptanesulfonic acid

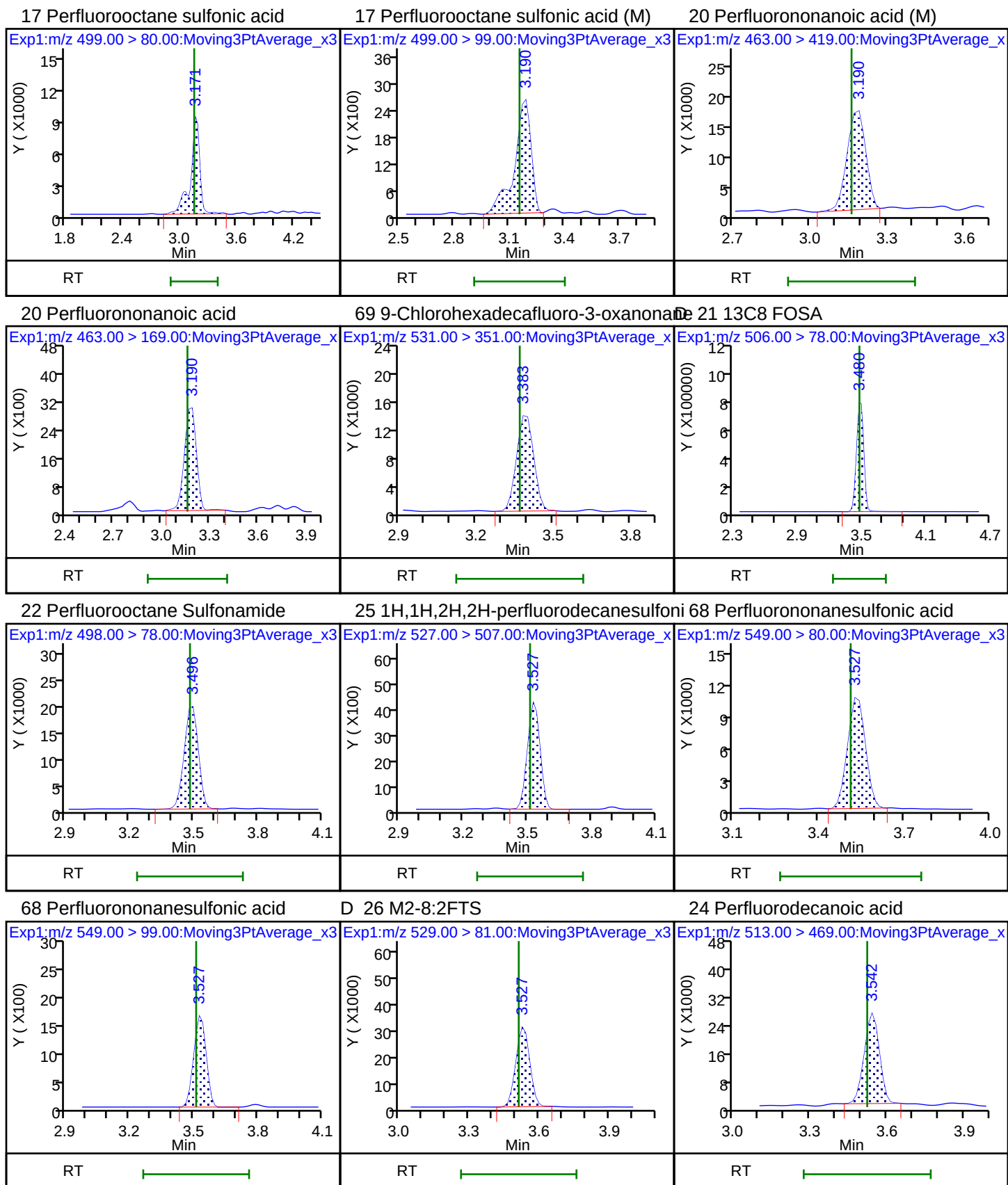


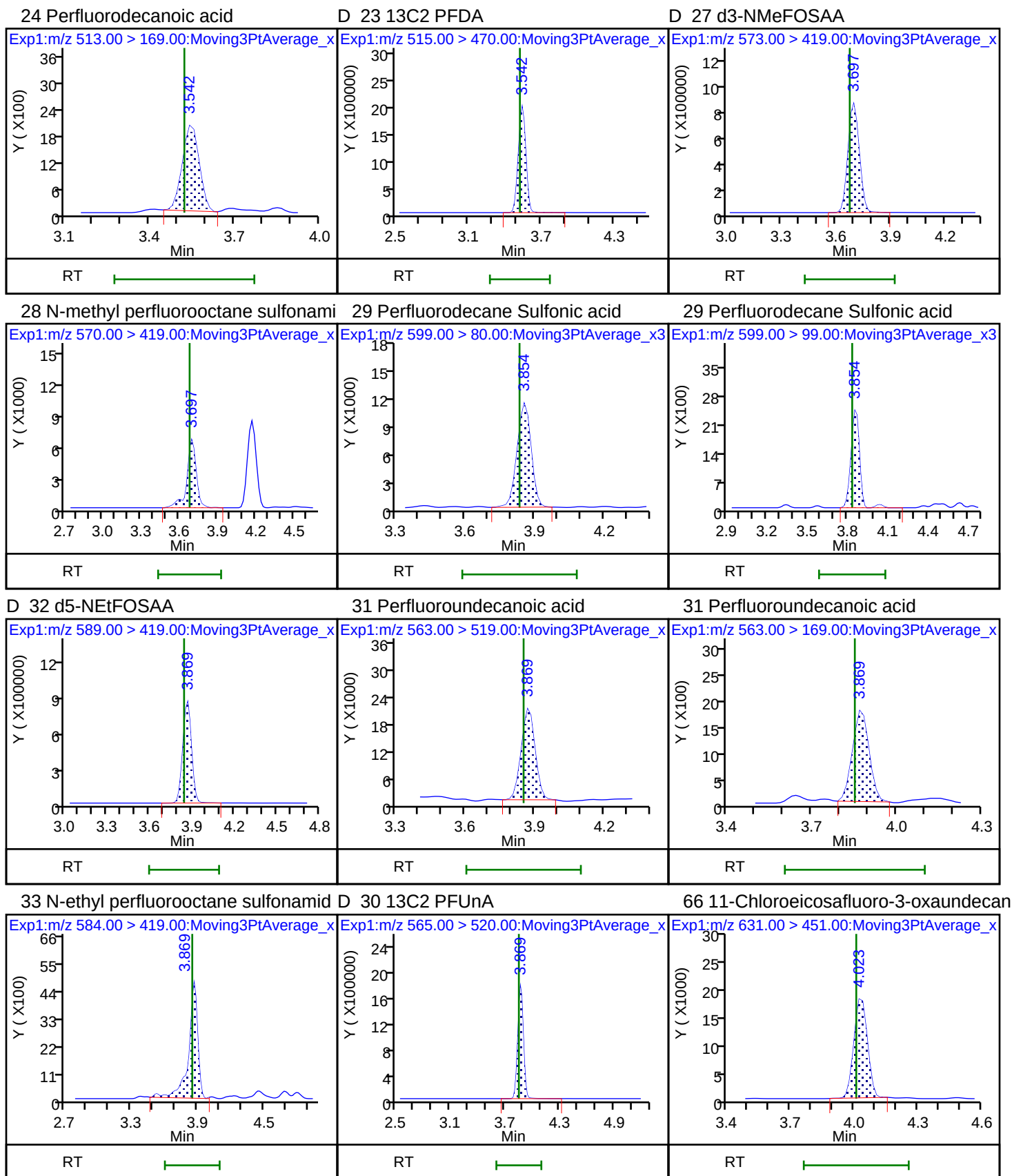
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



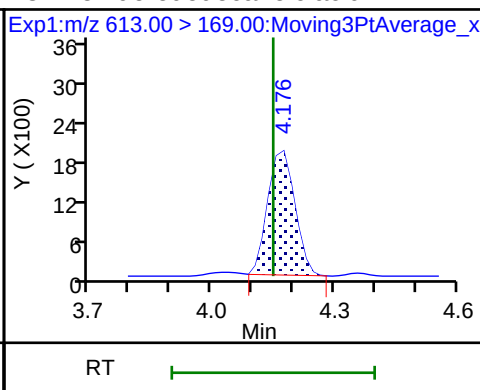
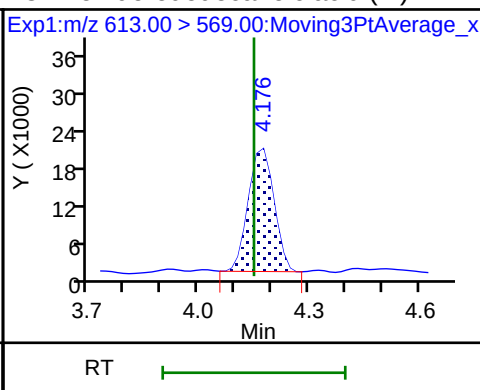
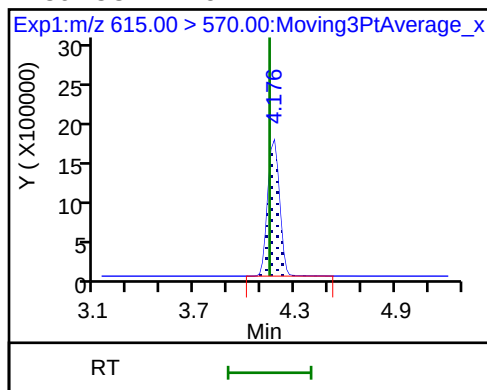




D 36 13C2 PFDaA

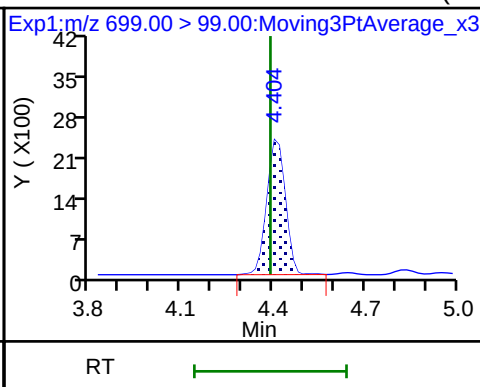
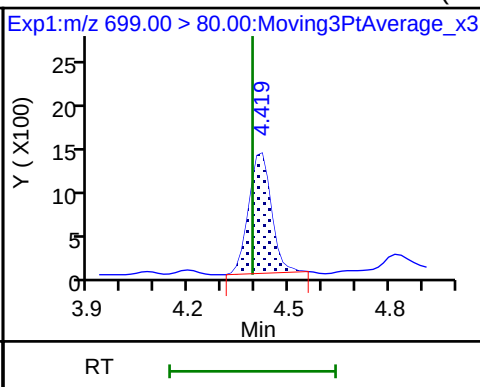
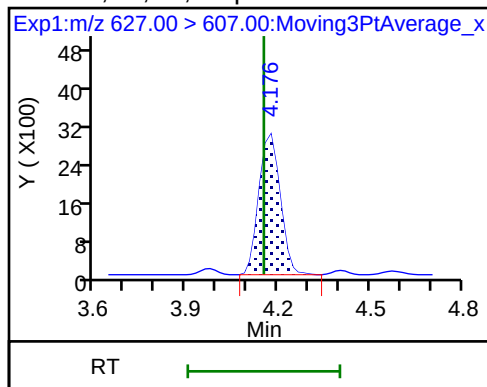
37 Perfluorododecanoic acid (M)

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

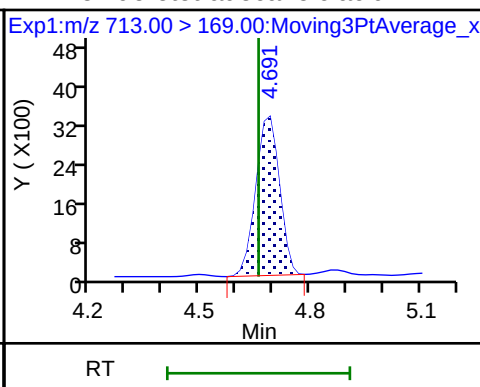
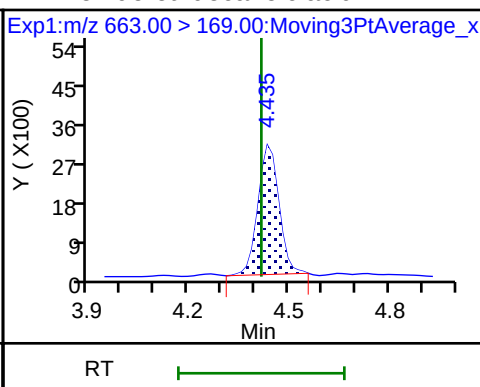
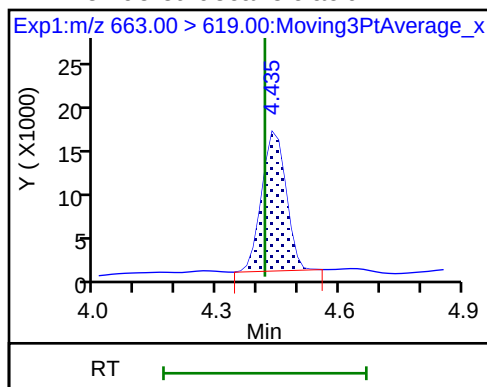
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

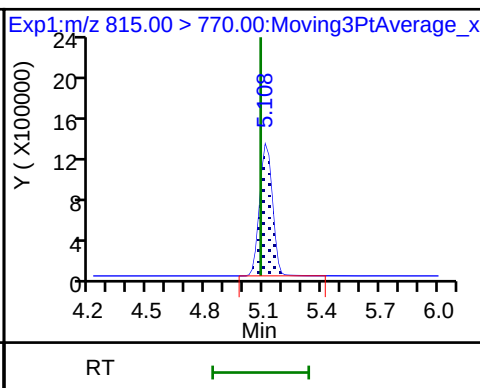
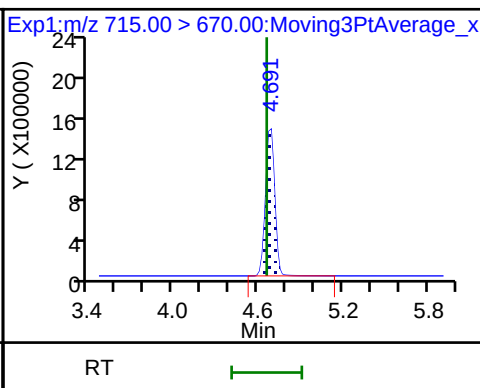
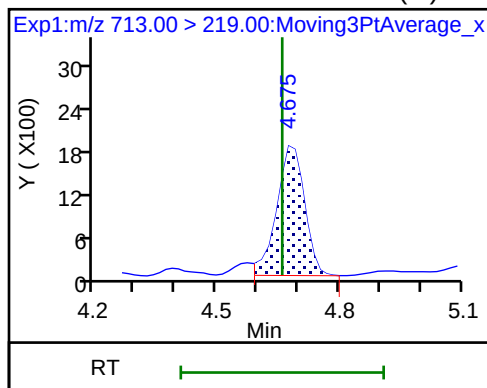
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid (M)

D 43 13C2-PFTeDA

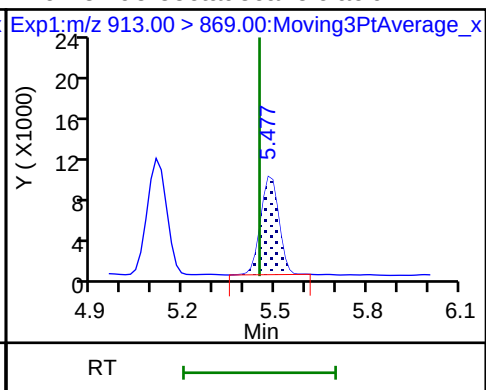
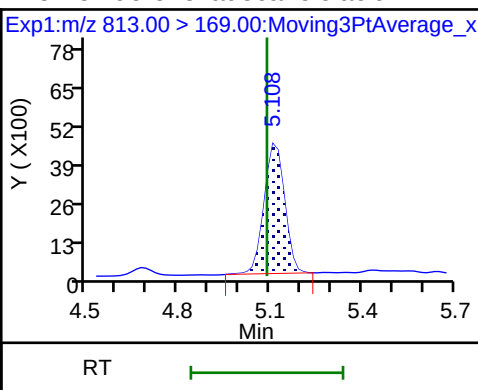
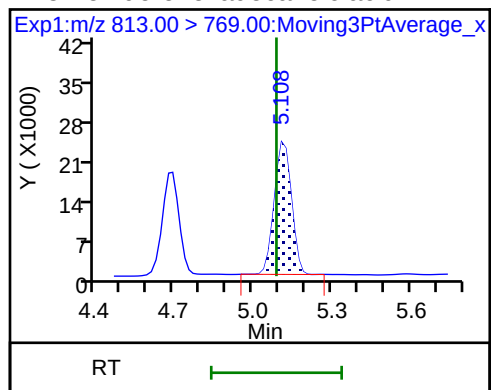
D 44 13C2-PFHxDA



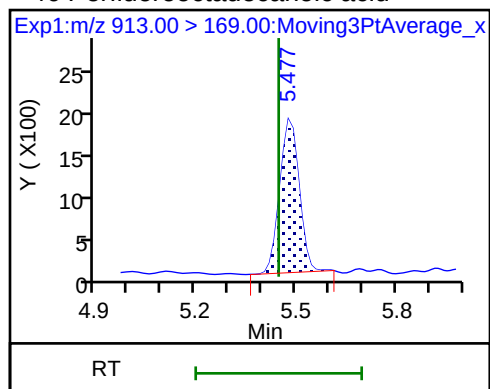
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

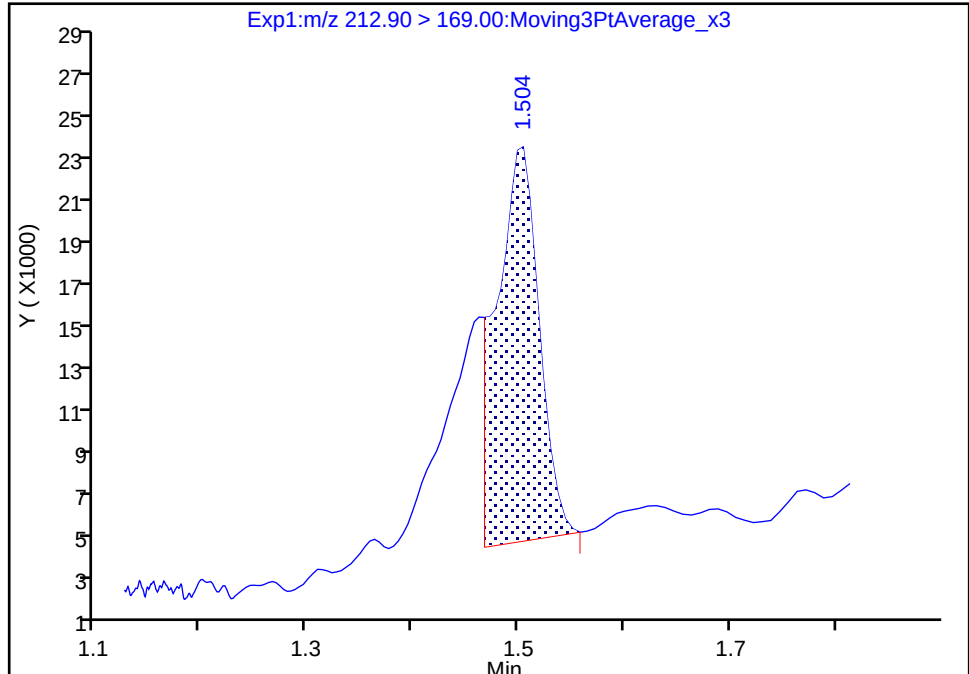
Detector: EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

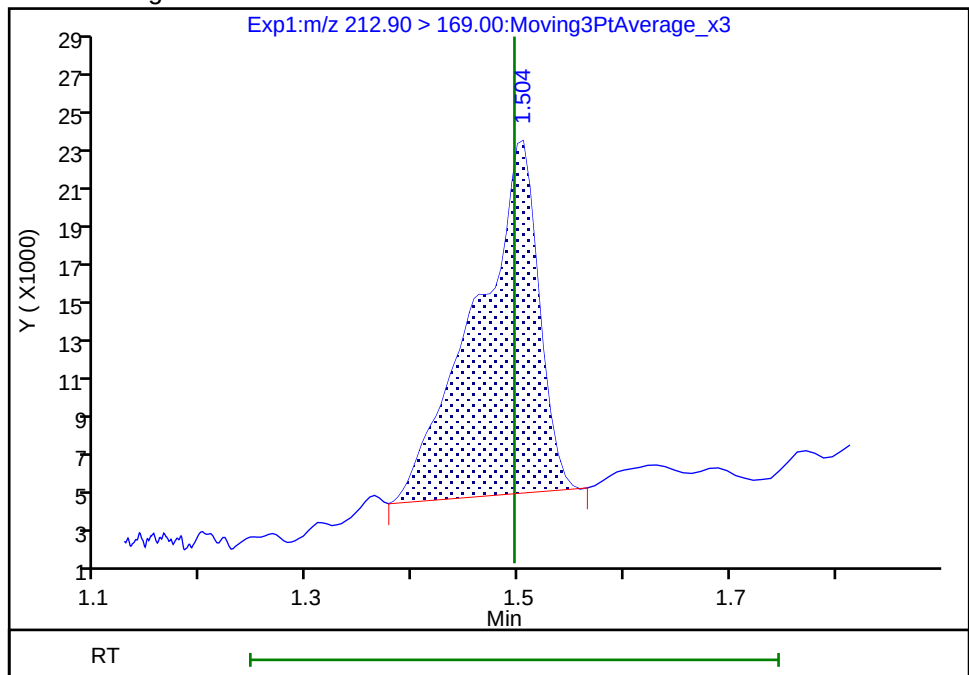
RT: 1.50
Area: 51154
Amount: 0.017430
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 77055
Amount: 0.025188
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:09

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

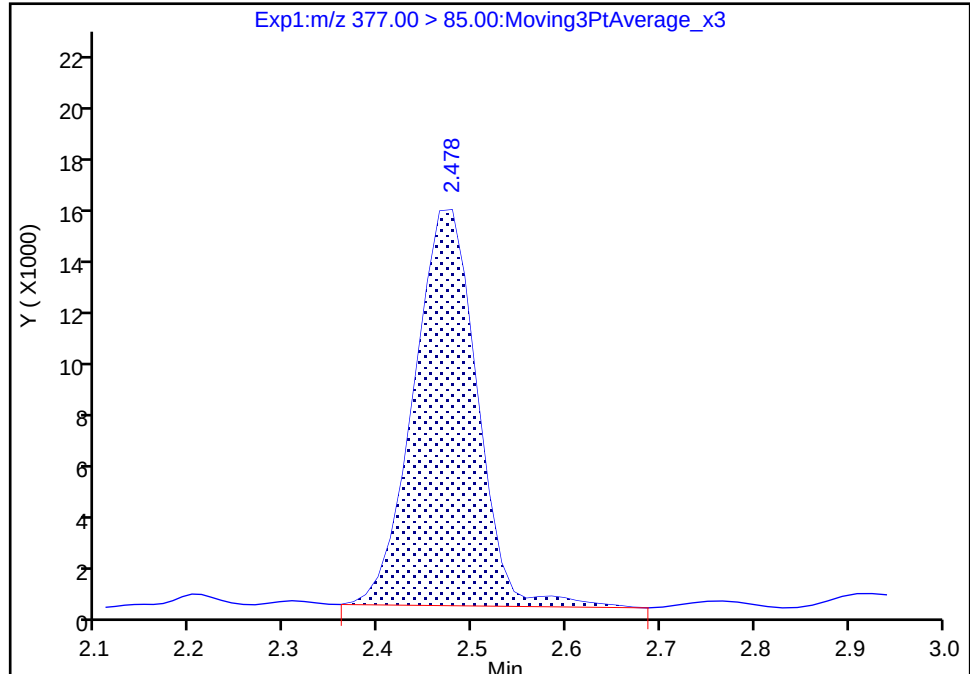
Detector: EXP1

76 DONA, CAS: 919005-14-4

Signal: 2

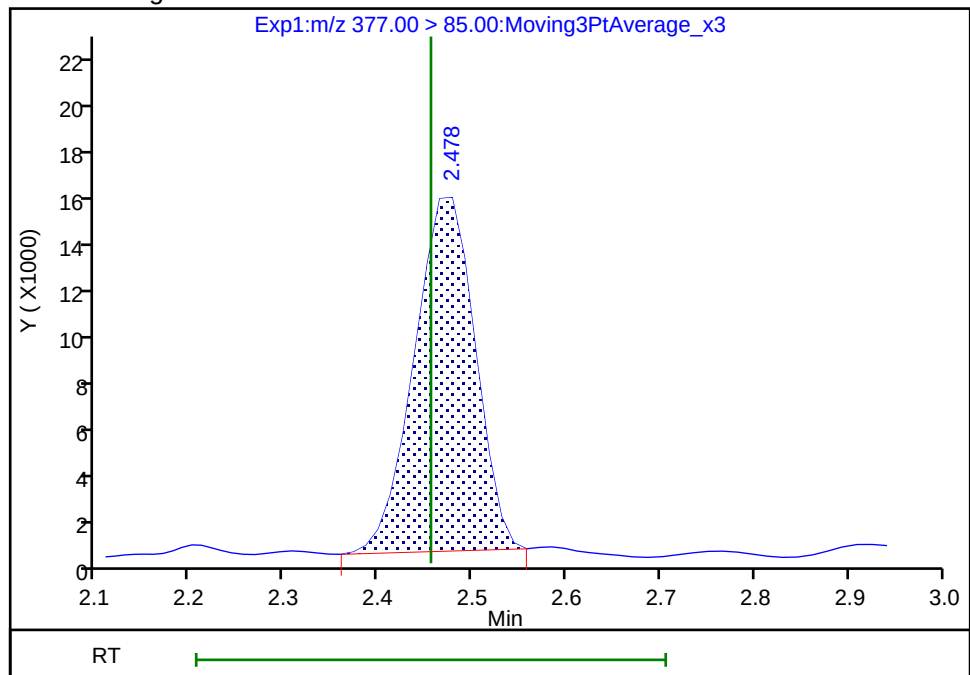
RT: 2.48
Area: 72707
Amount: 0.022502
Amount Units: ng/ml

Processing Integration Results



RT: 2.48
Area: 69199
Amount: 0.023331
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:24

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

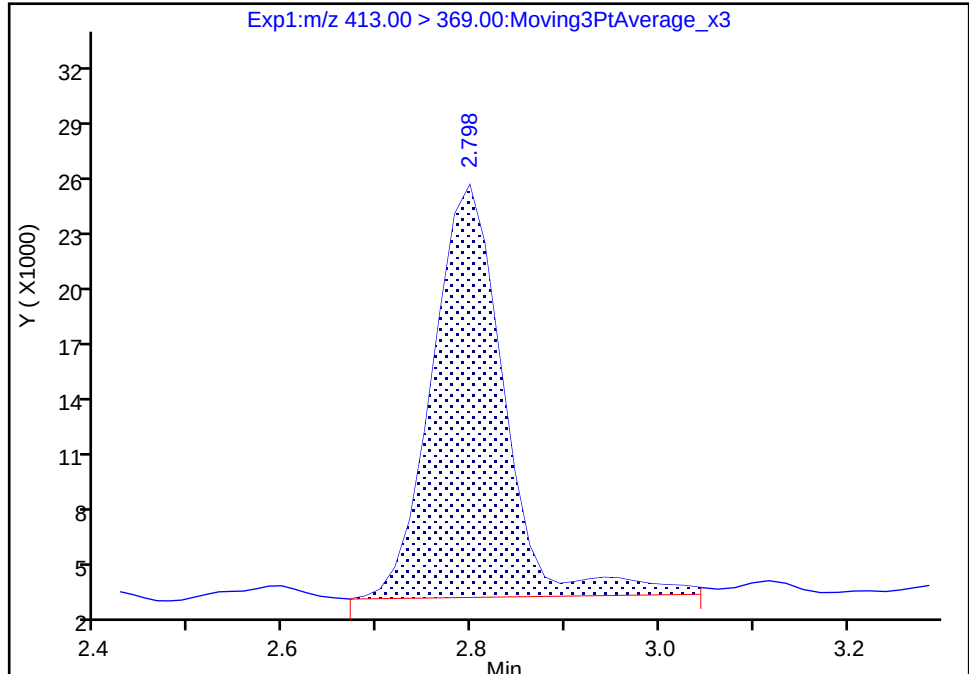
Detector: EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

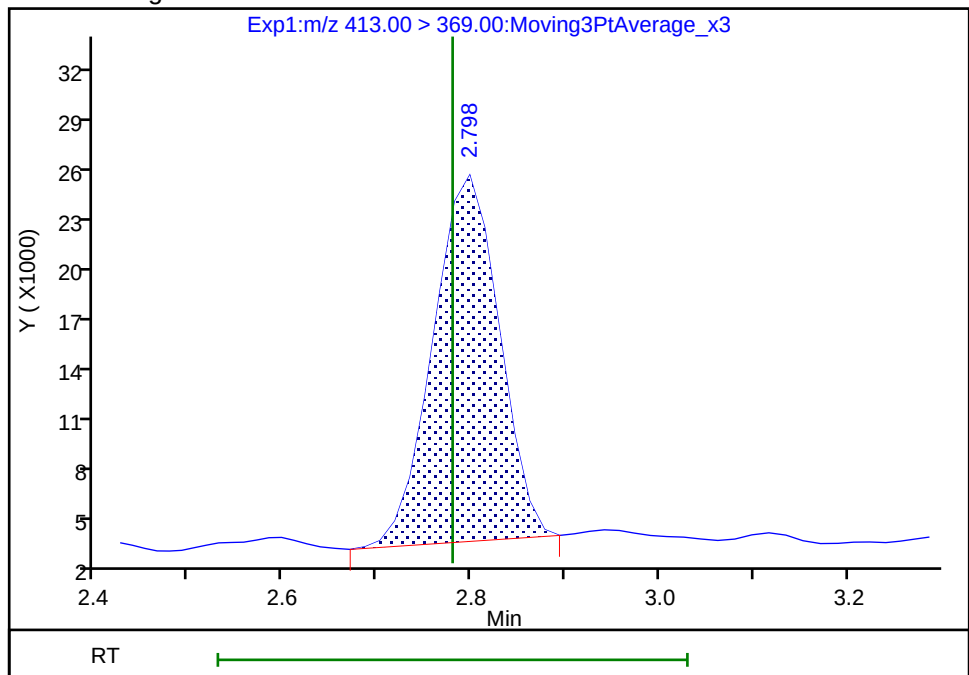
RT: 2.80
Area: 116197
Amount: 0.028612
Amount Units: ng/ml

Processing Integration Results



RT: 2.80
Area: 105397
Amount: 0.027778
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:34

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

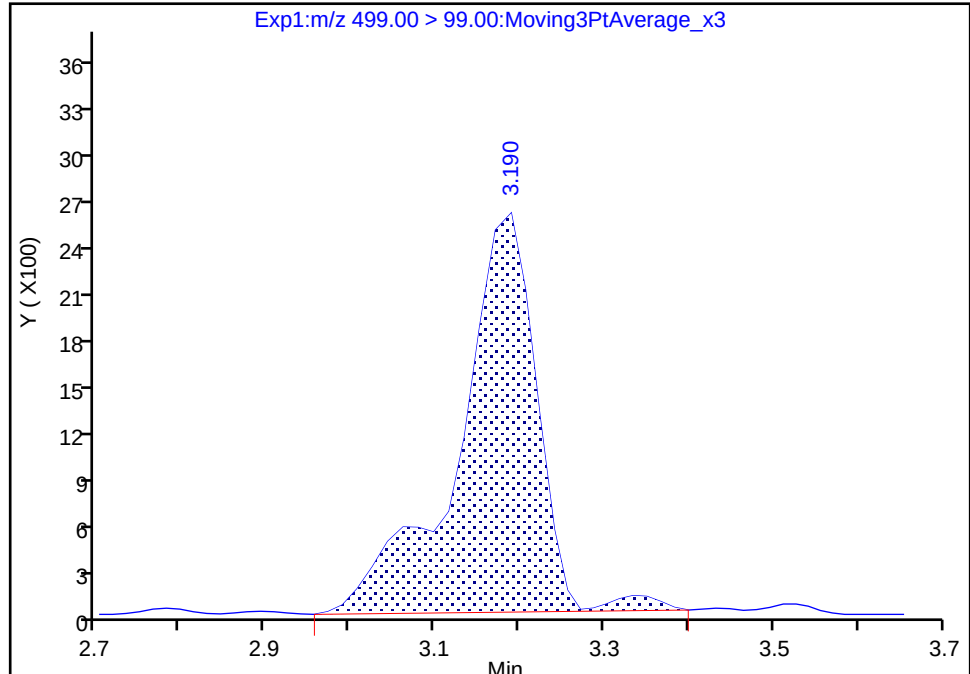
Detector EXP1

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

Signal: 2

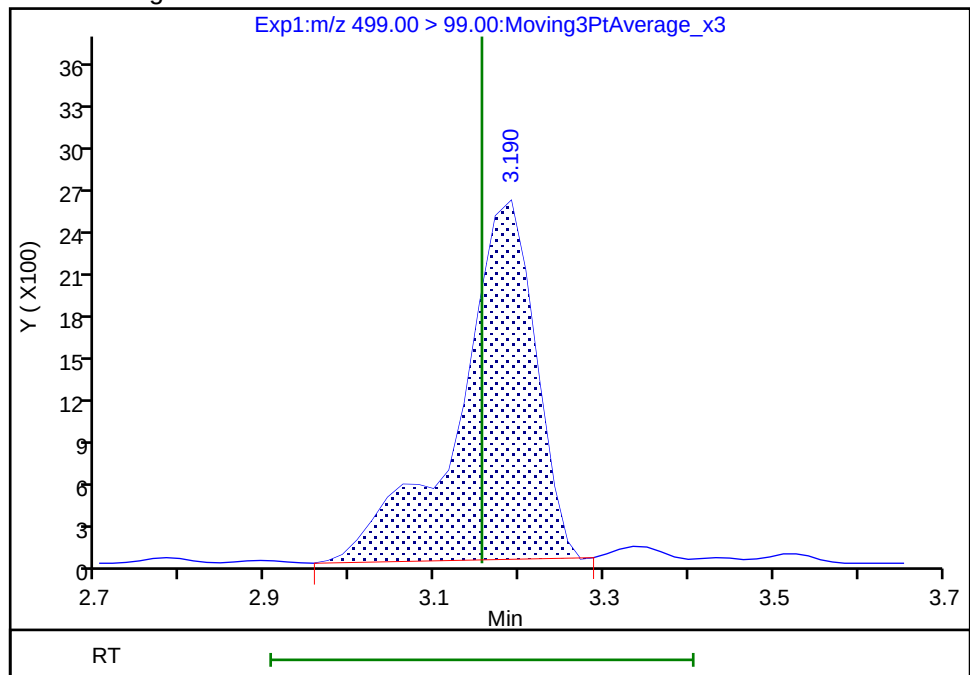
RT: 3.19
Area: 16838
Amount: 0.021539
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 16268
Amount: 0.021187
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:42

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

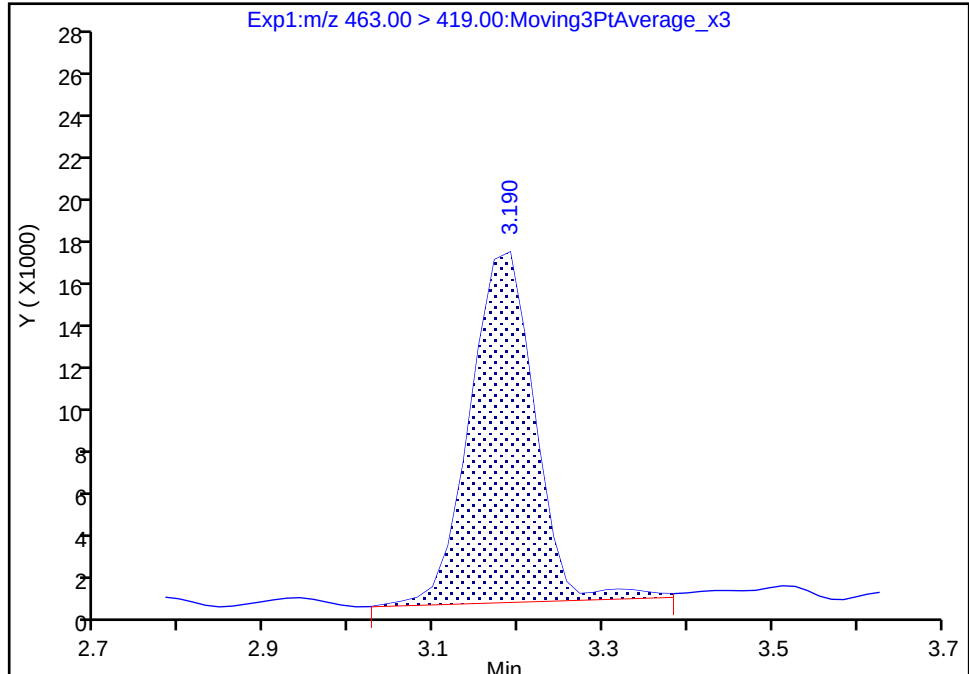
Detector: EXP1

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

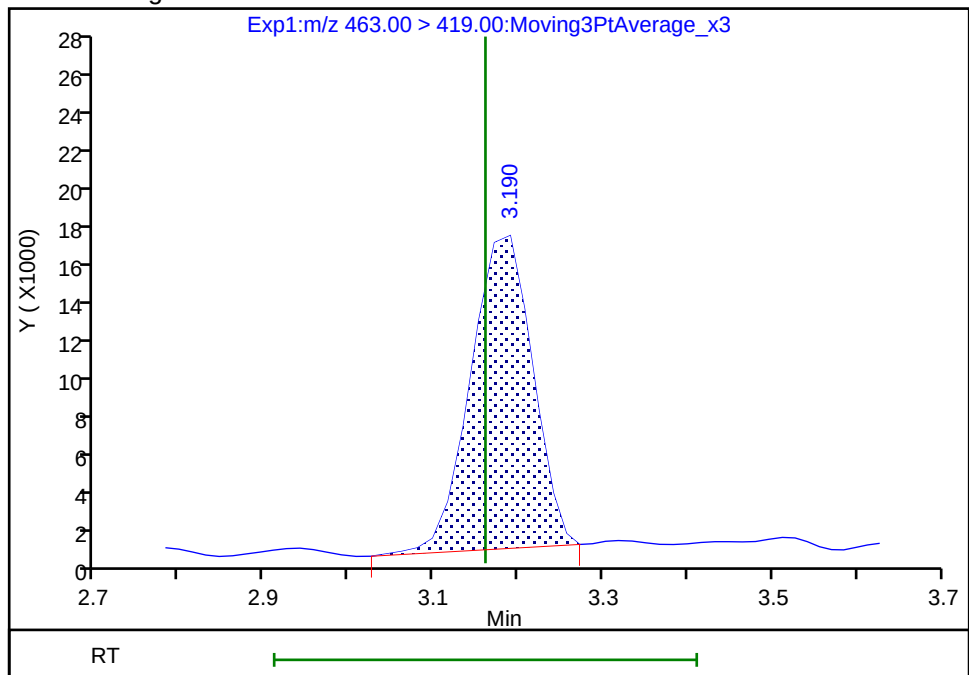
RT: 3.19
Area: 88049
Amount: 0.026347
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 83336
Amount: 0.025286
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:50

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

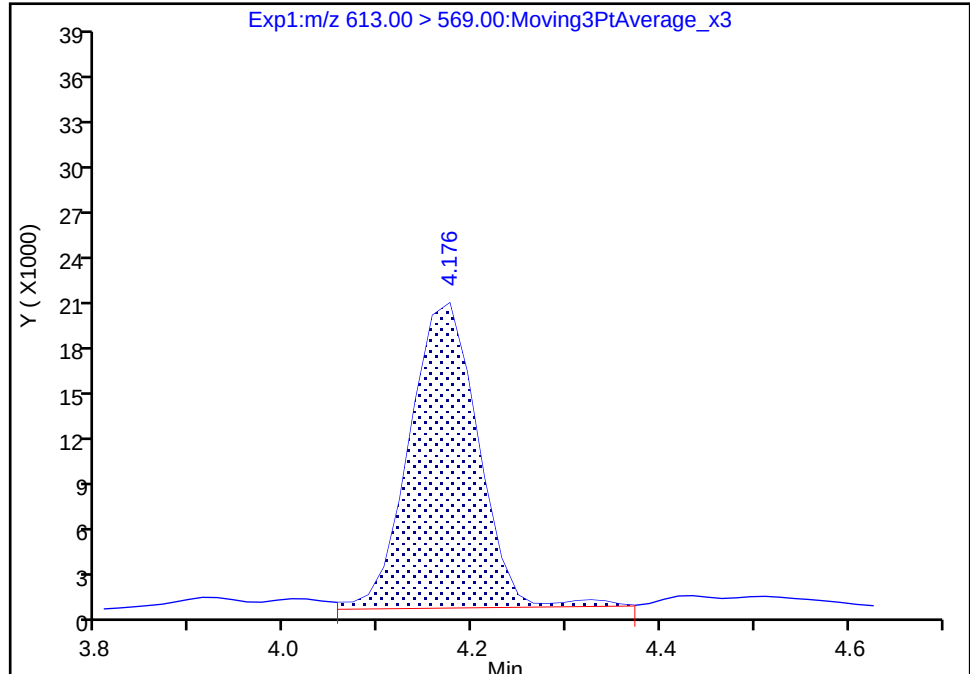
Detector: EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

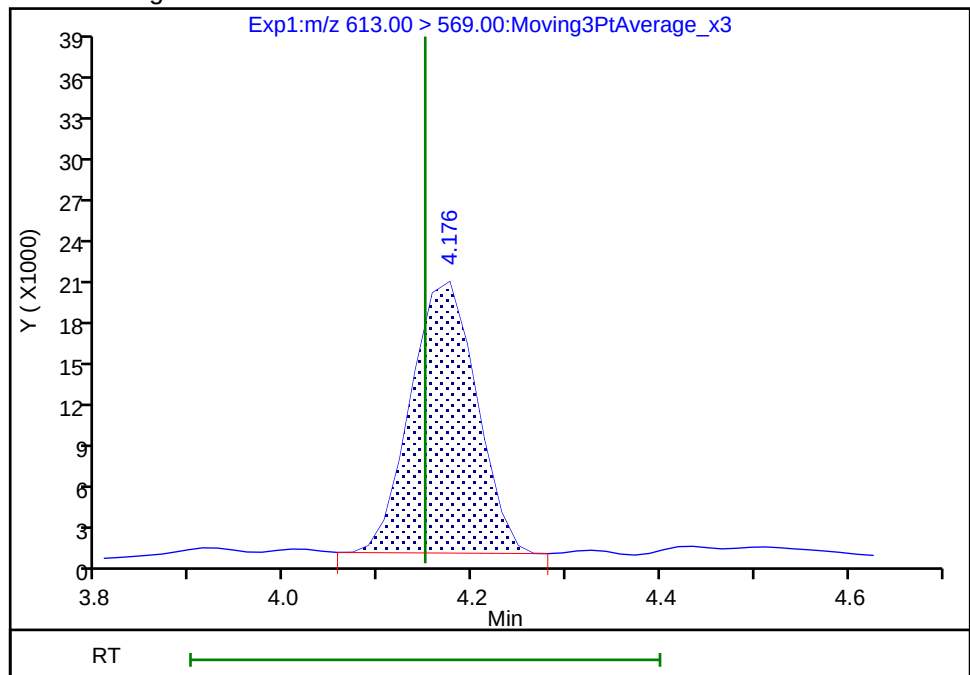
RT: 4.18
Area: 101827
Amount: 0.028510
Amount Units: ng/ml

Processing Integration Results



RT: 4.18
Area: 95815
Amount: 0.028040
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:56:10

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

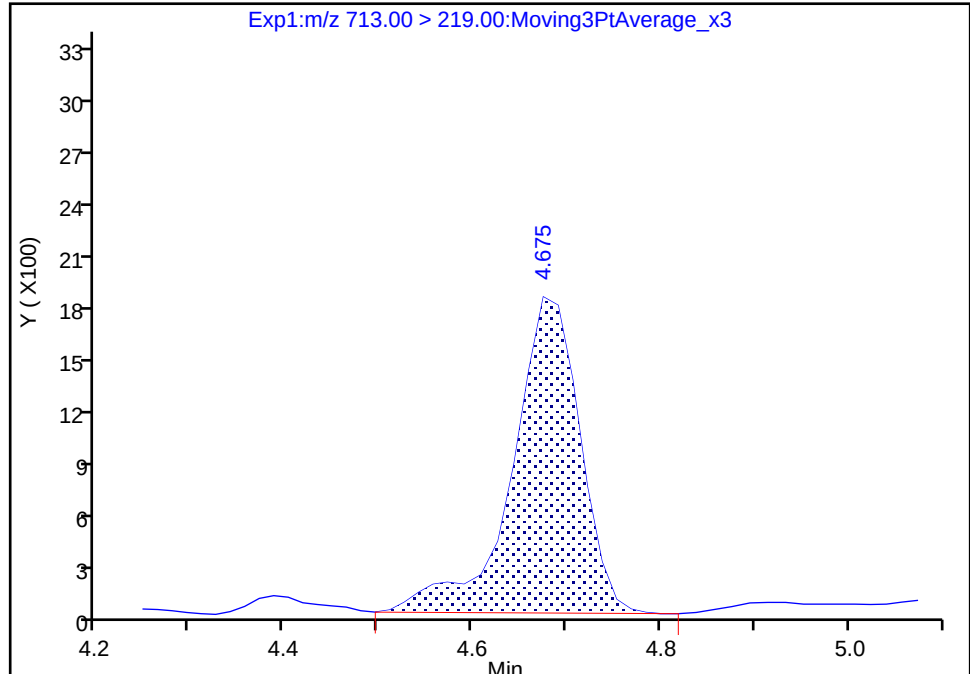
Detector EXP1

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

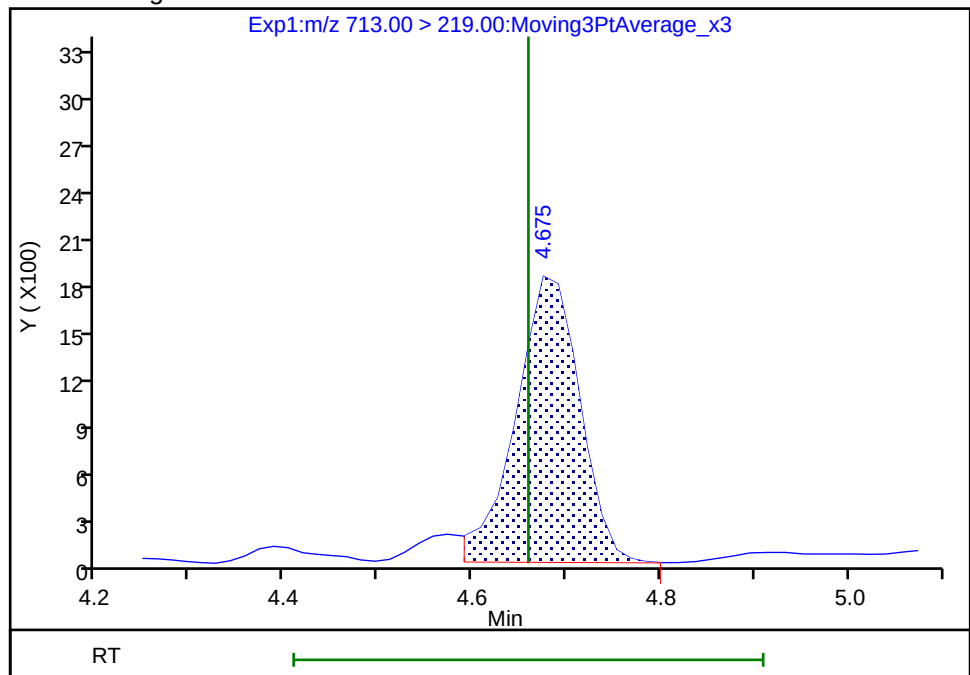
RT: 4.68
Area: 9170
Amount: 0.032950
Amount Units: ng/ml

Processing Integration Results



RT: 4.68
Area: 8623
Amount: 0.035356
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:56:31

Audit Action: Manually Integrated

Audit Reason: Split Peak

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_007.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-Sep-2018 13:51:01 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\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:05:47 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 14:59:57

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	1.499	1.495	0.004	0.539	8414655	2.55		102	7957	
2 Perfluorobutyric acid										
212.90 > 169.00	1.499	1.496	0.003	1.000	798416	0.2588		104	48.1	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.780	1.779	0.001	1.000	775517	0.2527		101	70.2	
D 3 13C5-PFPeA										
267.90 > 223.00	1.780	1.779	0.001	0.640	7706743	2.57		103	11953	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.818	0.004	0.655	99469	2.43		105	471	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.821	0.001	1.000	976249	0.2209		99.9	557	
298.90 > 99.00	1.822	1.821	0.001	1.000	354065		2.76(1.35-4.05)	99.9	338	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.037	2.036	0.001	1.118	234387	0.2424		104	1336	
D 60 M2-4:2FTS										
329.00 > 81.00	2.037	2.036	0.001	0.732	971040	2.60		111	1194	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.074	0.004	0.747	8063933	2.53		101	16428	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.077	0.001	1.000	738263	0.2545		102	162	
313.00 > 119.00	2.078	2.077	0.001	1.000	57603		12.82(6.96-20.87)	102	135	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.099	0.010	1.158	499950	0.2414		103	1115	
349.00 > 99.00	2.109	2.099	0.010	1.158	230966		2.16(1.15-3.45)	103	576	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.180	2.176	0.004	1.000	162786	0.2454		98.2	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	2.180	2.178	0.002	0.784	886972	2.68		107	2339	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.425	2.412	0.013	1.000	1105629	0.2617		105	189	
363.00 > 169.00	2.425	2.412	0.013	1.000	239207		4.62(2.17-6.52)	105	470	
D 9 13C4-PFHpA										
367.00 > 322.00	2.425	2.412	0.013	0.872	9946736	2.62		105	11905	
D 11 18O2 PFHxS										
403.00 > 84.00	2.438	2.427	0.011	0.877	5771389	2.36		99.8	3947	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.438	2.427	0.011	1.000	676086	0.2201		96.7	572	
399.00 > 99.00	2.438	2.427	0.011	1.000	199421		3.39(1.90-5.70)	96.7	265	
76 DONA										
377.00 > 251.00	2.465	2.456	0.009	0.777	1777483	0.2552		108	3310	
377.00 > 85.00	2.465	2.456	0.009	0.777	778944		2.28(1.13-3.39)	108	325	
D 12 M2-6:2FTS										
429.00 > 81.00	2.766	2.752	0.014	0.994	940959	2.39		101	1712	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.766	2.752	0.014	1.000	216251	0.2502		106	728	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.768	0.014		7929046	2.58		105	9391	
* 62 13C2-PFOA										
415.00 > 370.00	2.782	2.780	0.002		8965476	2.50			11800	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.780	0.002	1.000	1017840	0.2639		105	58.5	
413.00 > 169.00	2.782	2.780	0.002	1.000	349595		2.91(1.36-4.08)	105	526	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.780	0.002	1.000	9194911	2.56		102	9949	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.784	0.014	0.882	643568	0.2388		100	850	
449.00 > 99.00	2.798	2.784	0.014	0.882	153003		4.21(1.84-5.53)	100	500	
D 72 13C8 PFOS										
507.00 > 99.00	3.171	3.153	0.018		1363666	2.52		106	3945	
D 19 13C5 PFNA										
468.00 > 423.00	3.171	3.155	0.016	1.140	8578709	2.63		105	10929	
D 18 13C4 PFOS										
503.00 > 80.00	3.171	3.155	0.016	1.140	6293260	2.48		104	3812	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.171	3.155	0.016	1.000	651252	0.2335		101	623	
499.00 > 99.00	3.171	3.155	0.016	1.000	153161		4.25(2.04-6.12)	101	430	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.161	0.010	1.000	889492	0.2639		106	104	
463.00 > 169.00	3.171	3.161	0.010	1.000	161407		5.51(2.68-8.03)	106	361	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.369	0.014	1.067	715170	0.2432		104	1039	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.251	3486173	2.58		103	4087	

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	3.480	3.483	-0.003	1.000	1140400	0.2773	111	1862	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.527	3.512	0.015	1.000	181928	0.2333	97.4	918	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.527	3.512	0.015	1.112	416998	0.2379	99.1	1475	
549.00 > 99.00	3.527	3.512	0.015	1.112	67269		6.20(3.02-9.05)	99.1	371	
D 26 M2-8:2FTS	529.00 > 81.00	3.527	3.512	0.015	1.268	127051	2.55	106	672	
24 Perfluorodecanoic acid	513.00 > 469.00	3.527	3.522	0.005	1.000	1060083	0.2701	108	209	
513.00 > 169.00	3.527	3.522	0.005	1.000	68702		15.43(7.12-21.35)	108	135	
D 23 13C2 PFDA	515.00 > 470.00	3.527	3.522	0.005	1.268	8952864	2.65	106	15190	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.682	3.675	0.007	1.324	3737383	2.49	99.7	4692	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.696	3.681	0.015	1.004	385771	0.2689	108	145	M
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.838	3.834	0.004	1.210	546672	0.2427	101	794	M
599.00 > 99.00	3.854	3.834	0.020	1.215	116984		4.67(2.14-6.43)	101	460	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.854	3.843	0.011	1.386	2902553	2.47	98.8	2128	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.869	3.852	0.017	1.000	666267	0.2507	100	154	
563.00 > 169.00	3.869	3.852	0.017	1.000	61993		10.75(5.24-15.72)	100	249	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.869	3.852	0.017	1.004	276010	0.2545	102	710	
D 30 13C2 PFUnA	565.00 > 520.00	3.869	3.852	0.017	1.391	7367515	2.56	103	7384	
35 MeFOSA	512.00 > 169.00	3.975	3.965	0.010		183964	NC		366	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	4.022	4.009	0.013	1.269	809080	0.2336	99.2	1976	
D 36 13C2 PFDaA	615.00 > 570.00	4.157	4.147	0.010	1.494	8816999	2.58	103	12726	
37 Perfluorododecanoic acid	613.00 > 569.00	4.157	4.149	0.008	1.000	898058	0.2544	102	206	
613.00 > 169.00	4.157	4.149	0.008	1.000	109264		8.22(4.68-14.05)	102	208	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.157	4.152	0.005	1.179	118262	0.2230	92.5	129	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.157	4.157	0.0		193385	NC		381	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.403	4.390	0.013	1.389	58138	0.2305	95.3	148	
699.00 > 99.00	4.403	4.390	0.013	1.389	107333		0.54(0.28-0.83)	95.3	427	

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	4.434	4.417	0.017	1.067	715480	0.2588		104	306	
663.00 > 169.00	4.434	4.417	0.017	1.067	124463		5.75(3.09-9.27)	104	347	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.675	4.659	0.016	1.000	105811	0.2423		96.9	317	
713.00 > 219.00	4.675	4.659	0.016	1.000	74565		1.42(0.70-2.09)	96.9	318	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.675	4.659	0.016	1.681	6647508	2.47		98.8	12336	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.091	5.084	0.007	1.830	6641856	2.47		98.8	5829	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.107	5.089	0.018	1.003	679012	0.2576		103	156	
813.00 > 169.00	5.107	5.089	0.018	1.003	120442		5.64(2.77-8.32)	103	342	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.462	5.448	0.014	1.073	458517	0.2663		107	154	
913.00 > 169.00	5.462	5.448	0.014	1.073	79655		5.76(2.55-7.64)	107	483	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_007.d

Injection Date: 21-Sep-2018 13:51:01

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

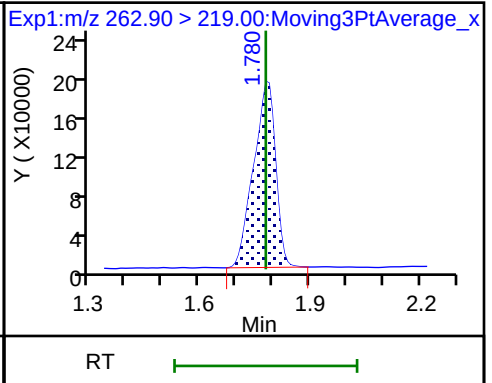
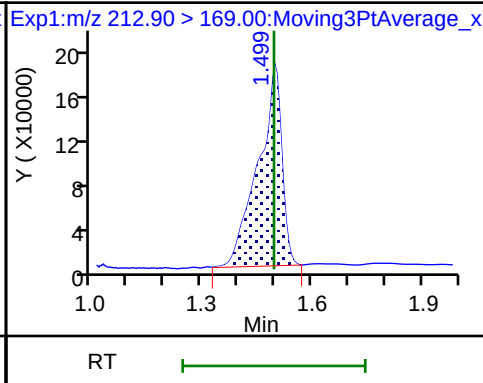
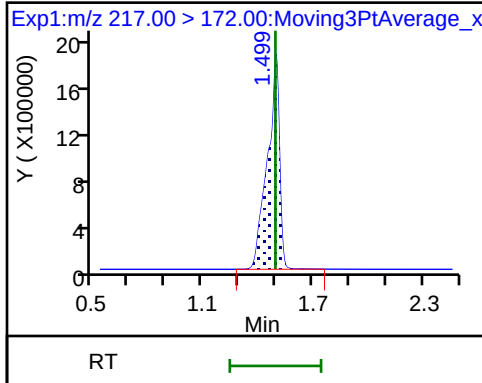
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

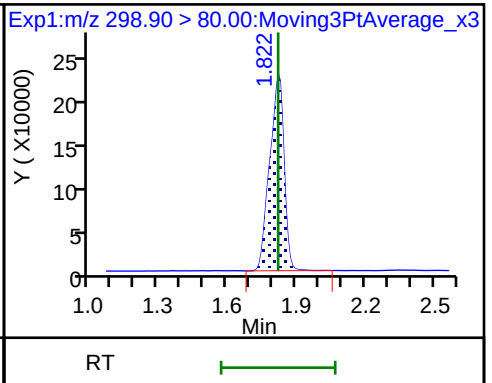
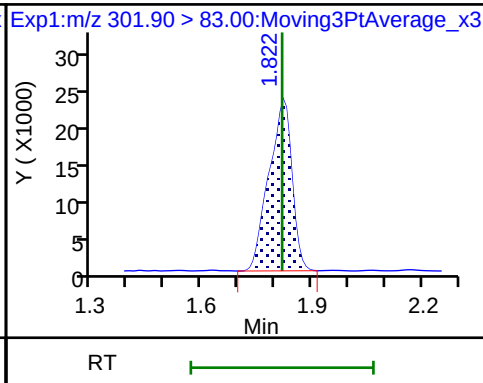
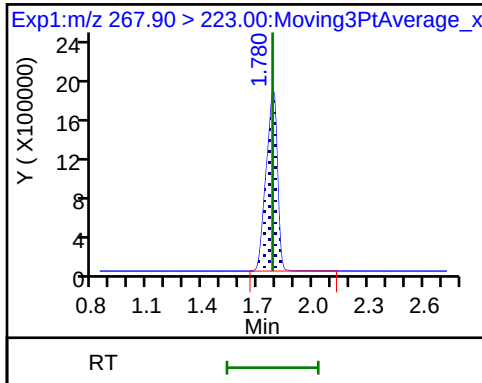
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

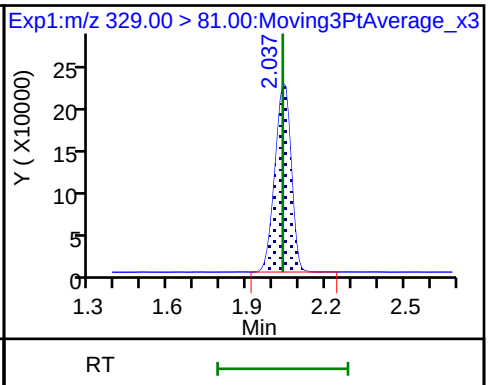
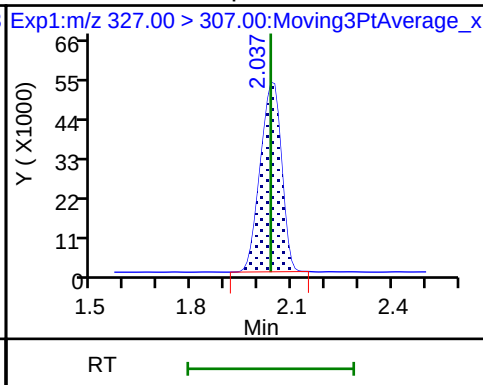
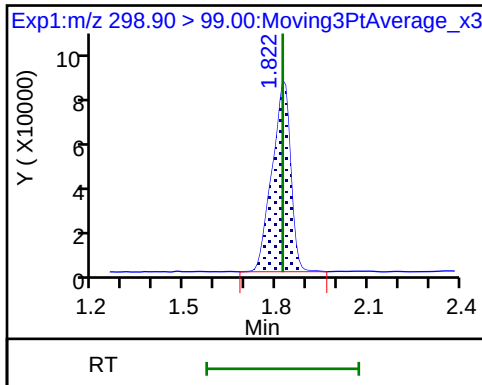
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

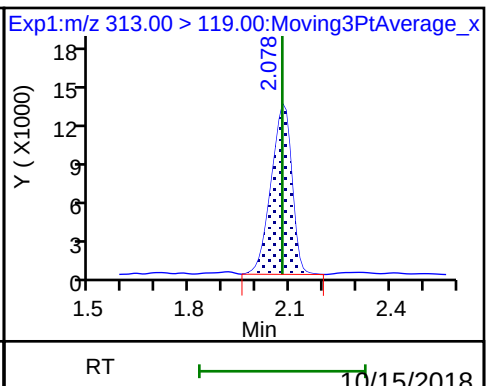
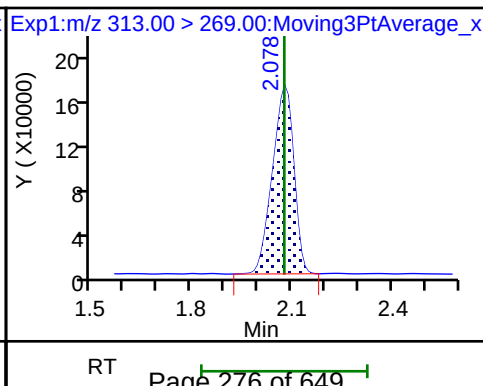
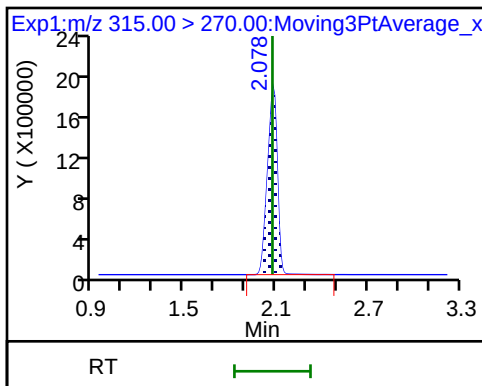
D 60 M2-4:2FTS

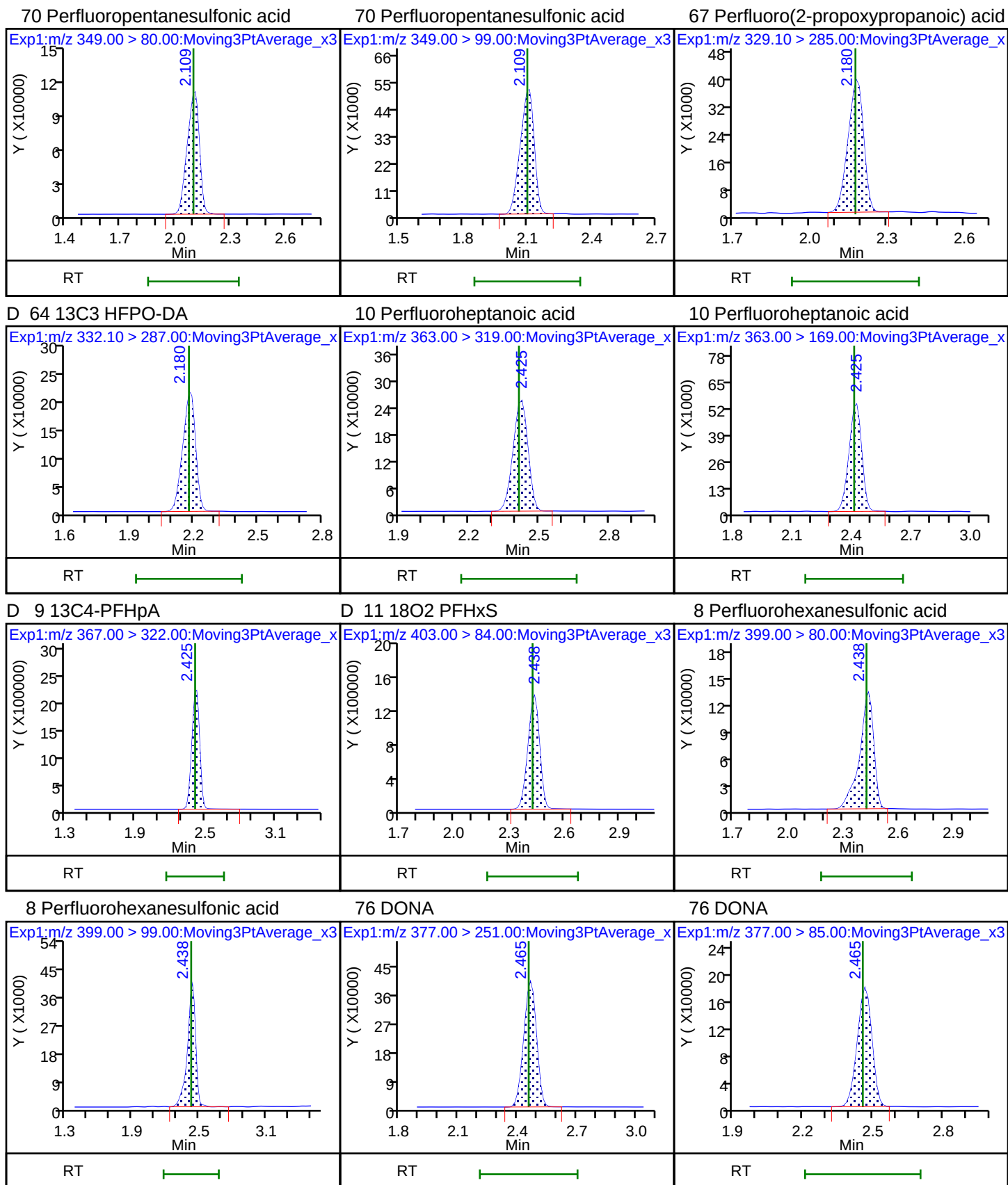


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

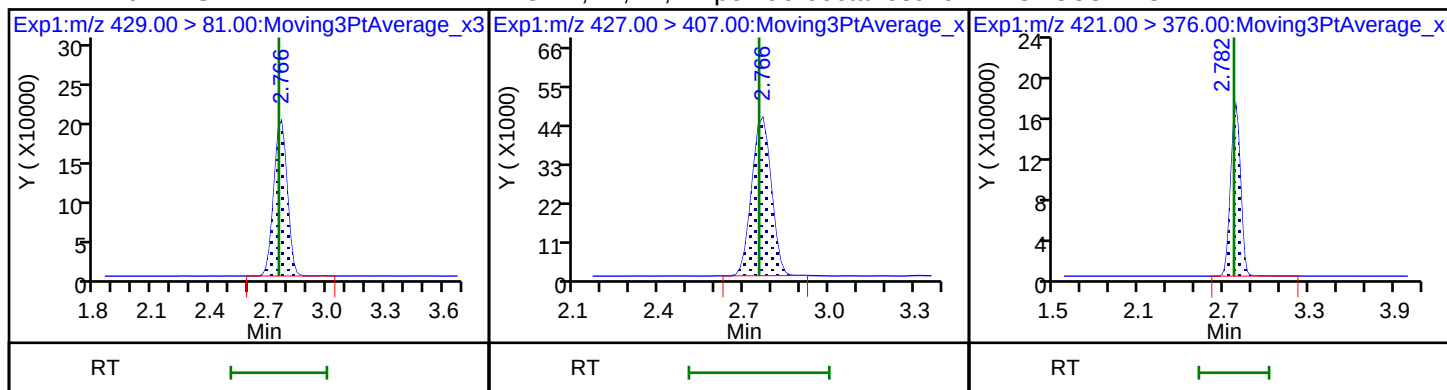
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

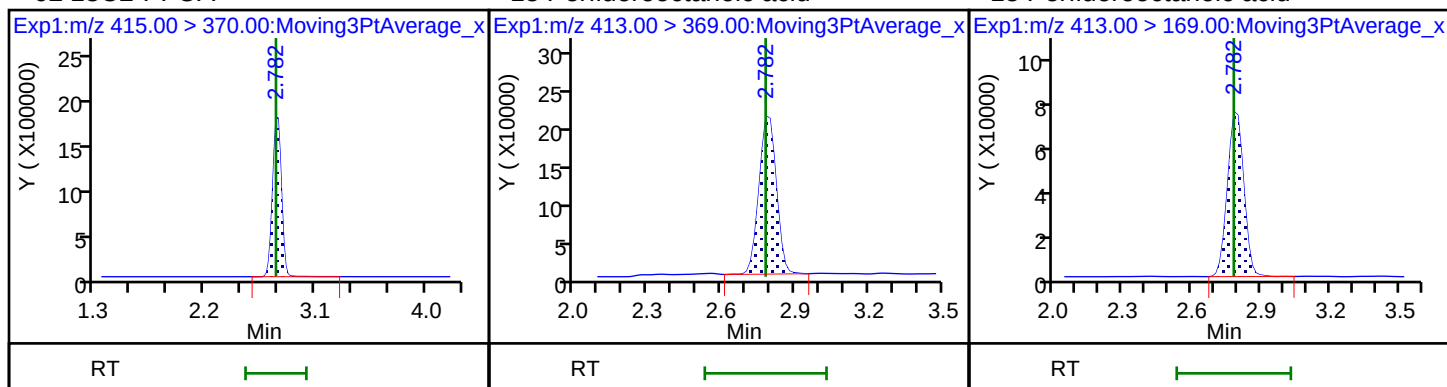
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

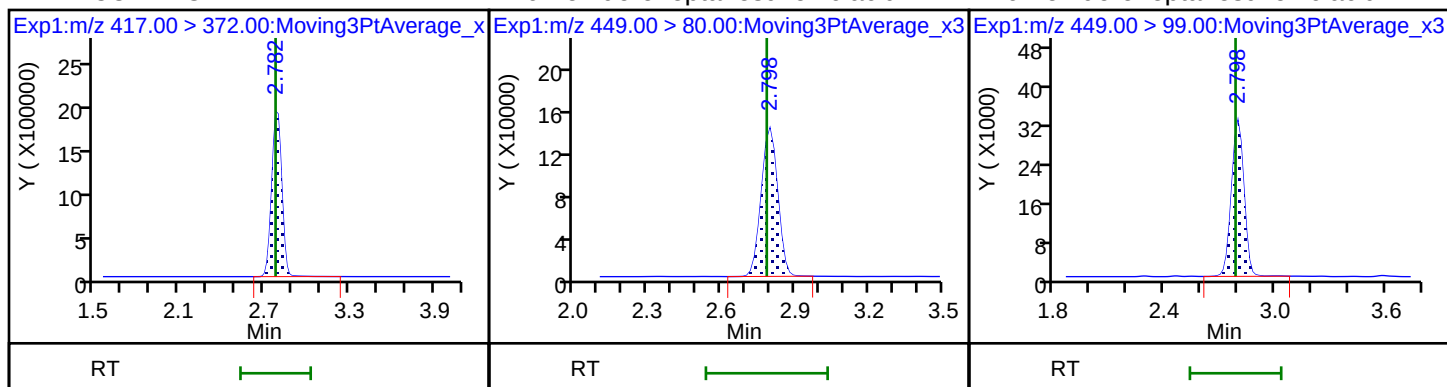
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

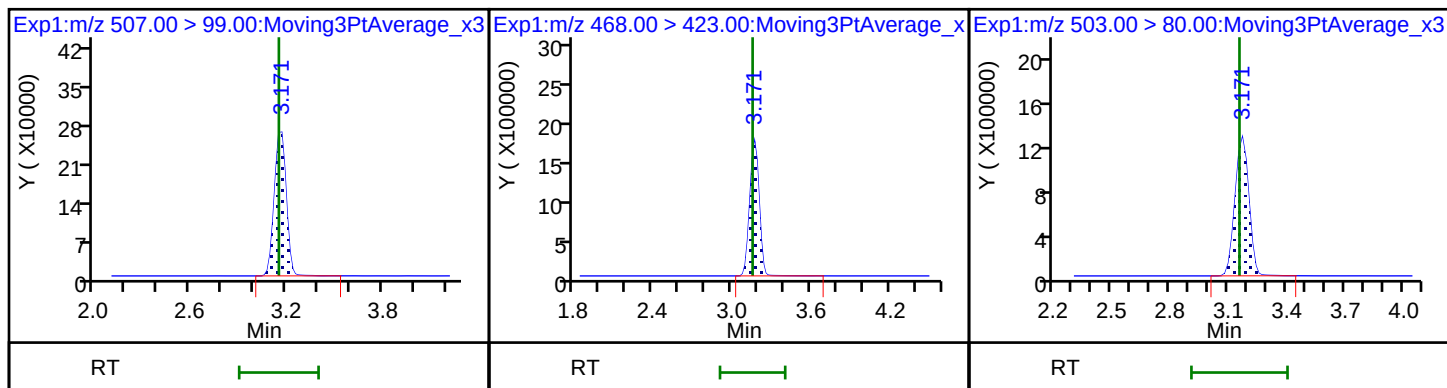
16 Perfluoroheptanesulfonic acid

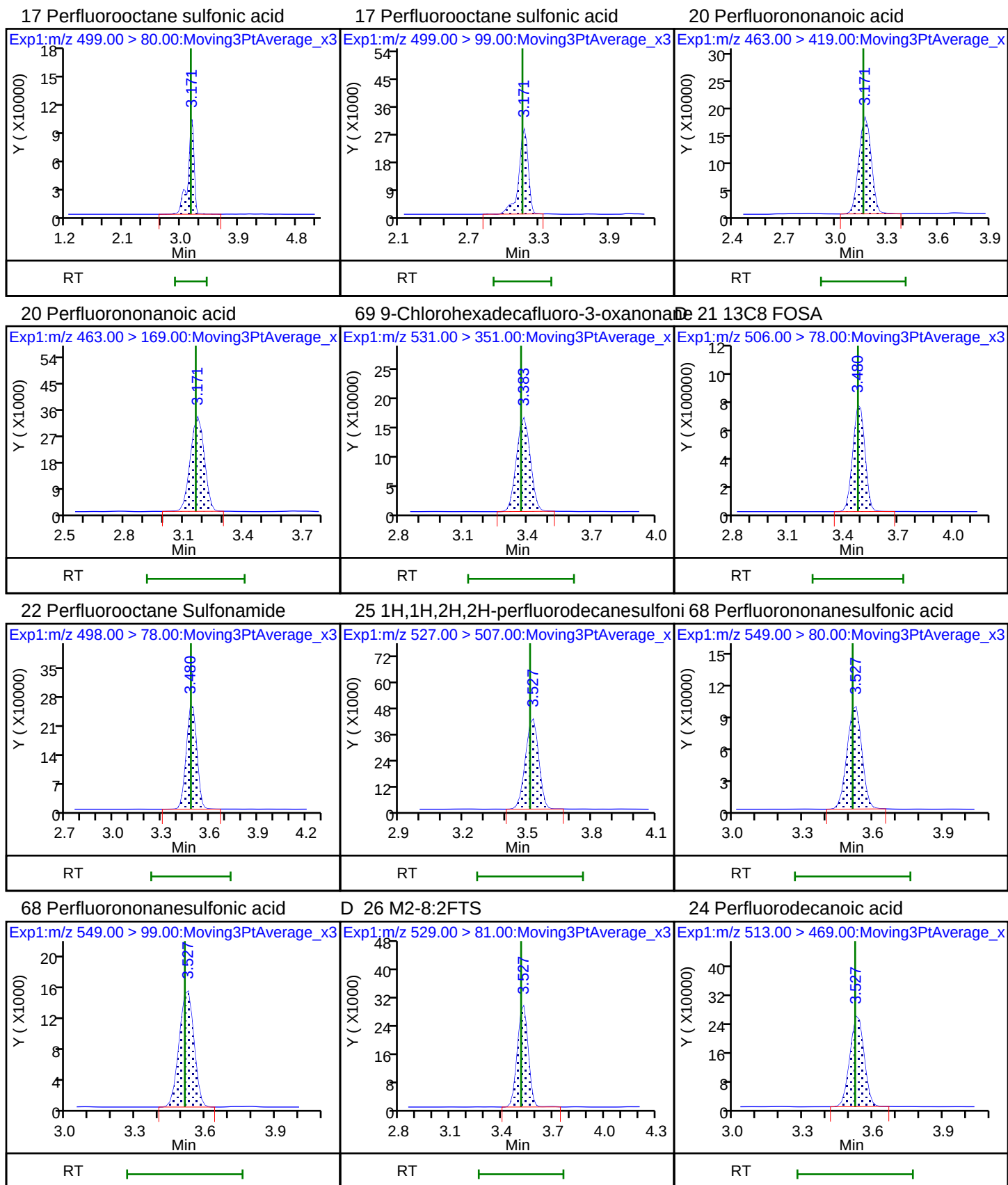


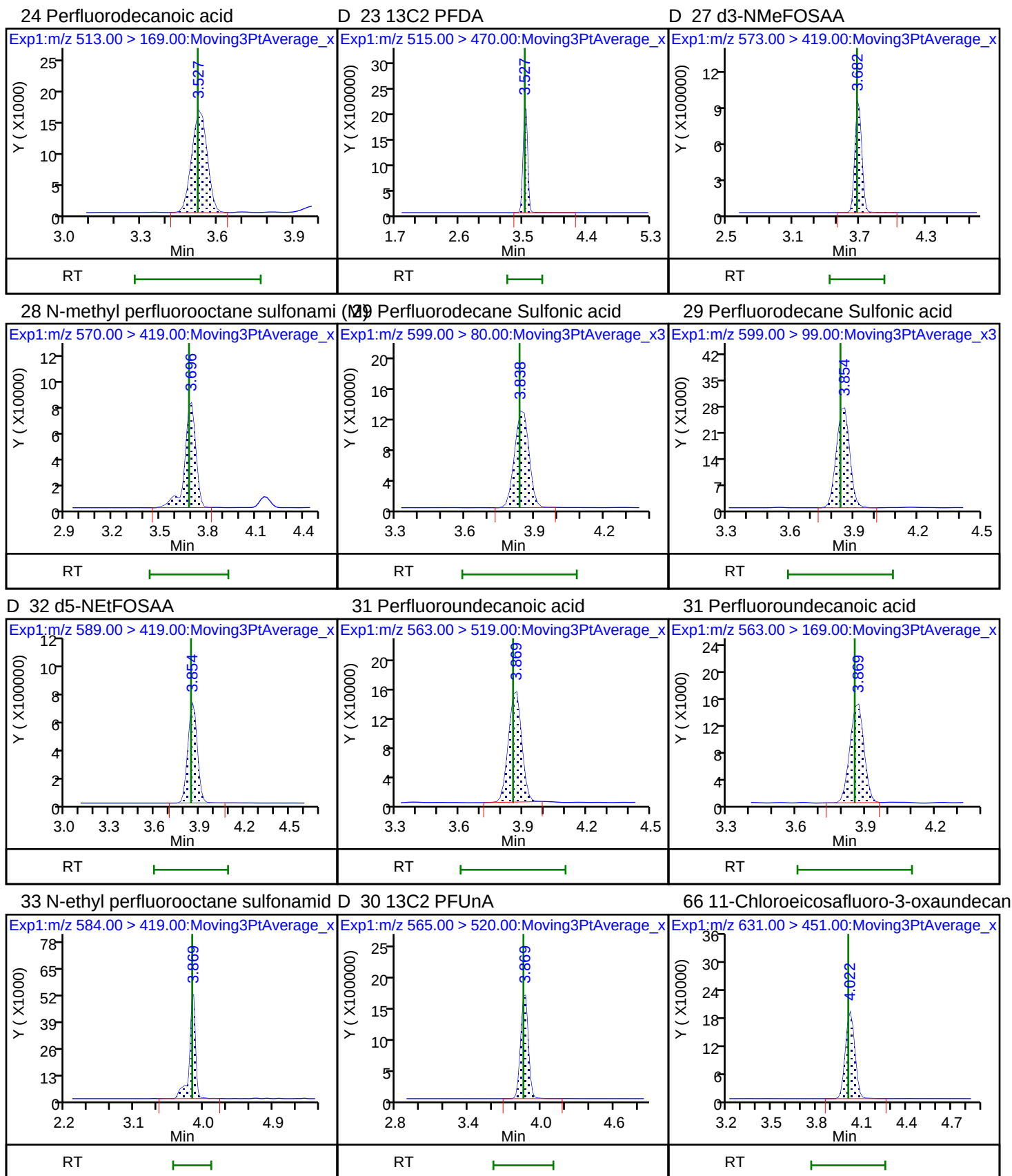
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



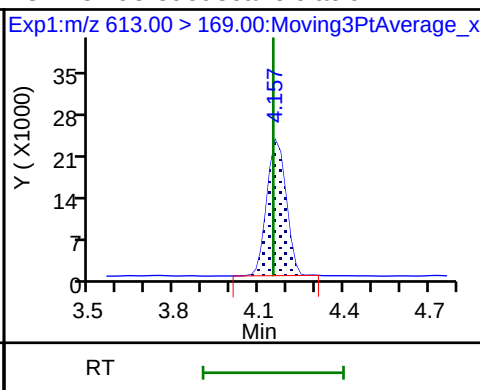
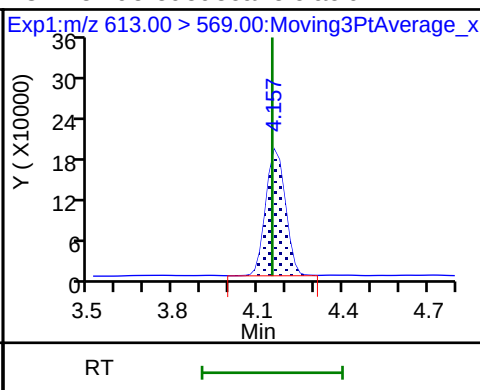
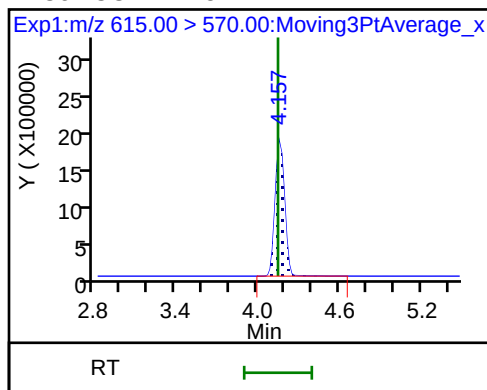




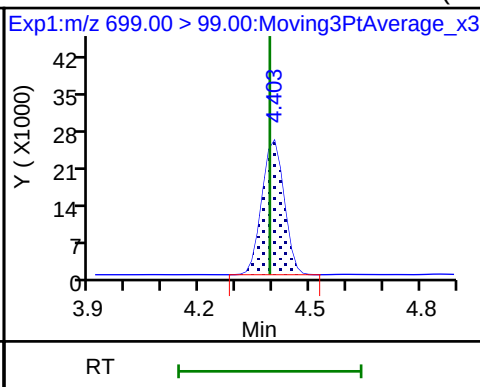
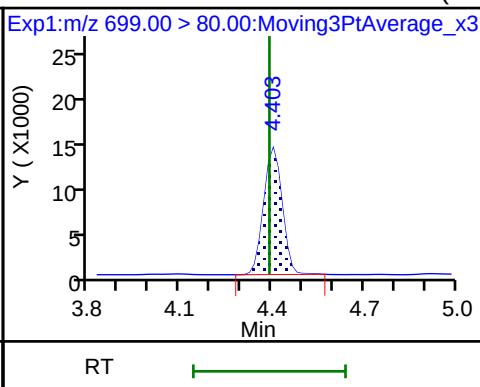
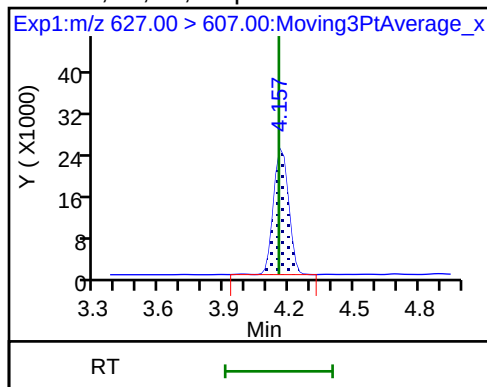
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



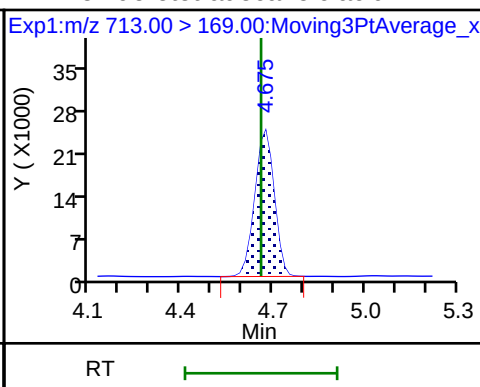
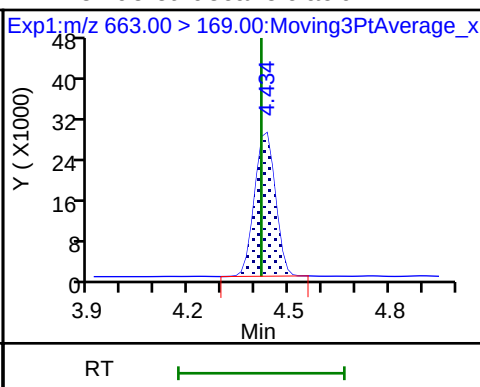
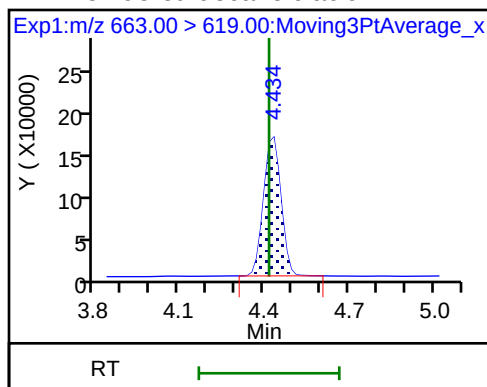
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

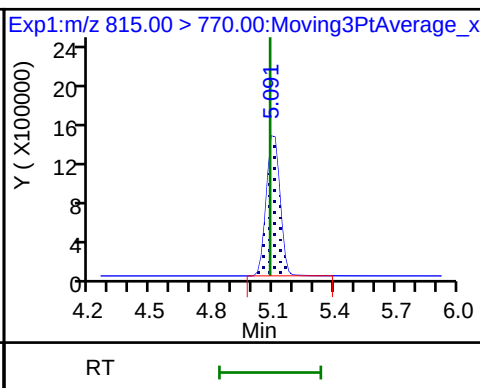
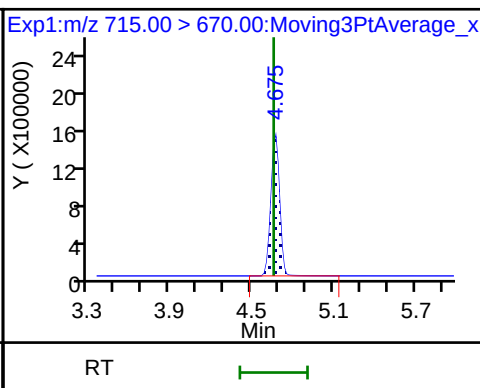
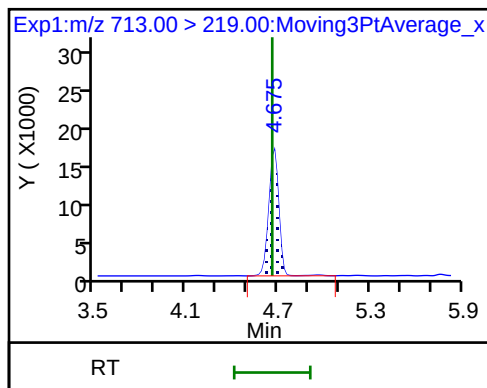
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

D 44 13C2-PFHxDA

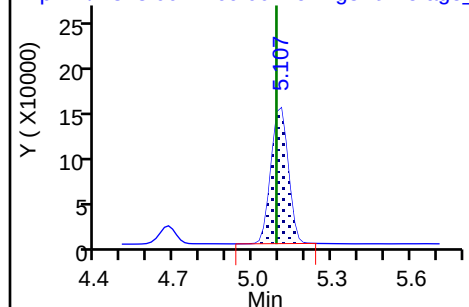


45 Perfluorohexadecanoic acid

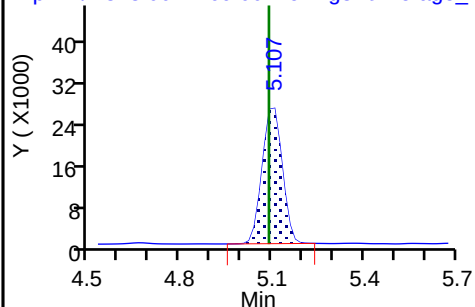
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

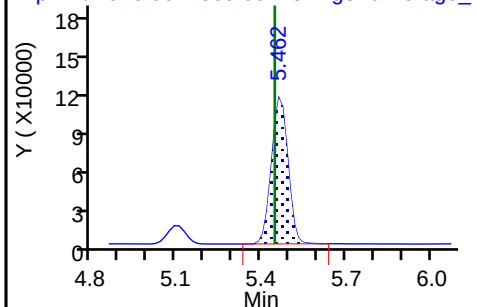
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Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

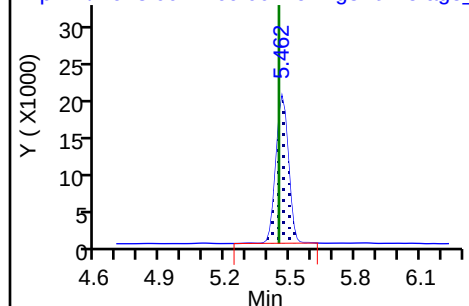


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

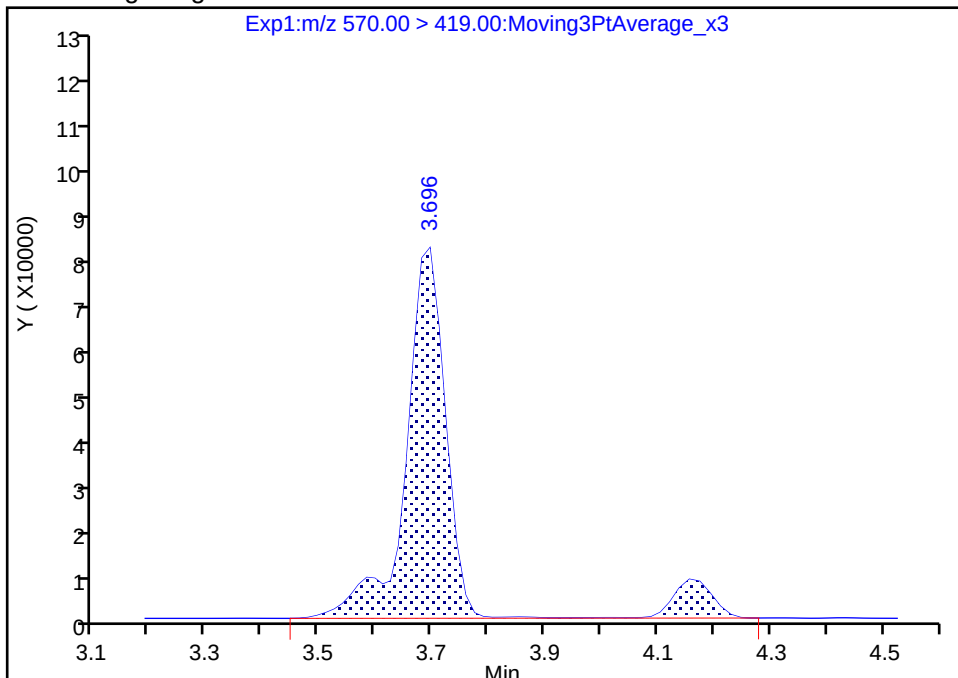
Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_007.d
Injection Date: 21-Sep-2018 13:51:01 Instrument ID: A9
Lims ID: IC L3 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

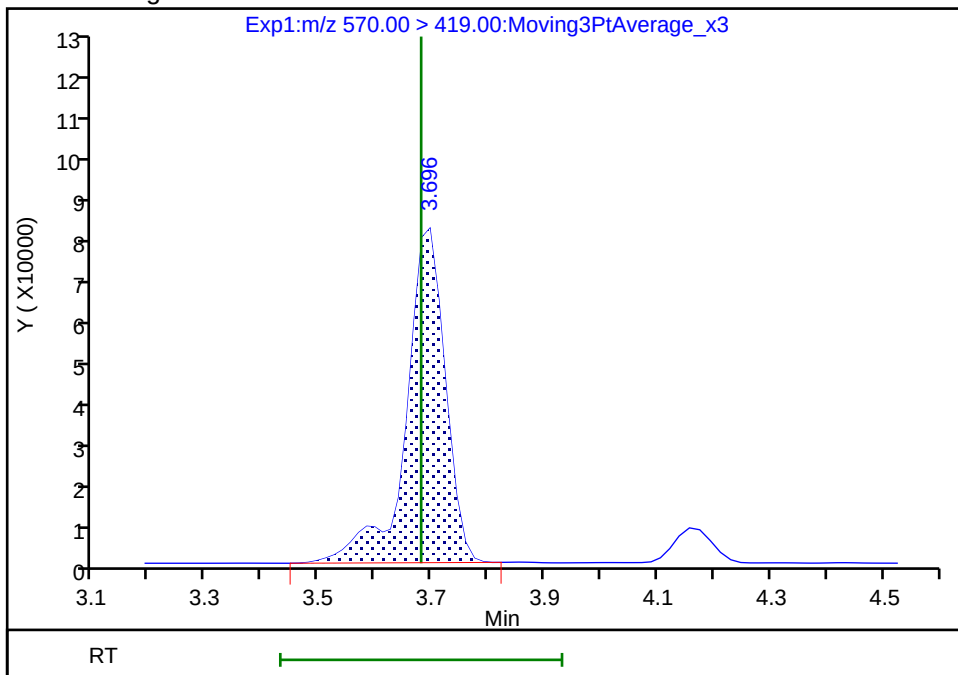
RT: 3.70
Area: 428677
Amount: 0.293426
Amount Units: ng/ml

Processing Integration Results



RT: 3.70
Area: 385771
Amount: 0.268851
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:59:19

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_008.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 21-Sep-2018 13:58:32 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\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:05:24 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: hannigana

Date: 22-Sep-2018 09:05:24

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	1.495	-0.001	0.537	7509010	2.40		95.9	17192	
2 Perfluorobutyric acid										
212.90 > 169.00	1.494	1.496	-0.002	1.000	2756176	1.00		100	159	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.781	1.779	0.002	1.000	2766671	0.9887		98.9	233	
D 3 13C5-PFPeA										
267.90 > 223.00	1.781	1.779	0.002	0.640	7026337	2.47		98.7	8349	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.818	-0.004	0.652	89621	2.31		99.4	437	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.821	0.001	1.005	3538619	0.8885		101	1679	
298.90 > 99.00	1.822	1.821	0.001	1.005	1238638		2.86(1.35-4.05)	101	898	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.036	0.002	1.123	798573	0.9167		98.2	3465	
D 60 M2-4:2FTS										
329.00 > 81.00	2.038	2.036	0.002	0.732	780634	2.20		94.3	769	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.074	-0.006	0.743	7286027	2.41		96.5	9407	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.077	0.001	1.005	2689169	1.03		103	571	
313.00 > 119.00	2.068	2.077	-0.009	1.000	195139		13.78(6.96-20.87)	103	509	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.099	0.0	1.157	1772705	0.9502		101	2616	
349.00 > 99.00	2.099	2.099	0.0	1.157	823512		2.15(1.15-3.45)	101	1347	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.000	584968	1.07		107	239	

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	2.178	0.003	0.784	727812	2.32		92.6	1856	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.412	0.001	1.000	3682041	0.9409		94.1	493	
363.00 > 169.00	2.413	2.412	0.001	1.000	867165		4.25(2.17-6.52)	94.1	1601	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.412	0.001	0.867	9212621	2.56		103	11611	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.427	-0.001	0.872	5334919	2.30		97.3	3153	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.427	-0.001	1.000	2572211	0.9059		99.5	1966	
399.00 > 99.00	2.426	2.427	-0.001	1.000	688090		3.74(1.90-5.70)	99.5	849	
76 DONA										
377.00 > 251.00	2.452	2.456	-0.004	0.778	6677901	1.06		112	10264	
377.00 > 85.00	2.452	2.456	-0.004	0.778	2831100		2.36(1.13-3.39)	112	1142	
D 12 M2-6:2FTS										
429.00 > 81.00	2.750	2.752	-0.002	0.989	879255	2.36		99.2	1184	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.752	-0.002	1.000	699961	0.8666		91.4	1449	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.768	-0.002		7071816	2.30		94.0	10554	
* 62 13C2-PFOA										
415.00 > 370.00	2.782	2.780	0.002		8503409	2.50			13354	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.780	0.002	1.000	3578089	1.06		106	208	
413.00 > 169.00	2.782	2.780	0.002	1.000	1213614		2.95(1.36-4.08)	106	1796	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.780	0.002	1.000	8024393	2.36		94.3	7560	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.784	-0.002	0.882	2375847	0.9732		102	2430	
449.00 > 99.00	2.782	2.784	-0.002	0.882	523272		4.54(1.84-5.53)	102	986	
D 72 13C8 PFOS										
507.00 > 99.00	3.153	3.153	0.0		1245886	2.31		96.4	3469	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.155	-0.002	1.133	7501183	2.42		96.9	3940	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.155	-0.002	1.133	5699757	2.37		99.2	3625	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.153	3.155	-0.002	1.000	2449918	0.9698		105	1924	
499.00 > 99.00	3.153	3.155	-0.002	1.000	575909		4.25(2.04-6.12)	105	1309	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.161	-0.008	1.000	3140933	1.07		107	357	
463.00 > 169.00	3.153	3.161	-0.008	1.000	595490		5.27(2.68-8.03)	107	1225	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.367	3.369	-0.002	1.068	2686654	1.01		108	3117	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.251	3218888	2.51		100	5236	

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	3.480	3.483	-0.003	1.000	4247372	1.12	112	4775	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.512	3.512	0.0	1.000	652901	0.9086	94.8	2662	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.512	3.512	0.0	1.114	1523710	0.9599	100.0	2638	
549.00 > 99.00	3.512	3.512	0.0	1.114	287498		5.30(3.02-9.05)	100.0	1222	
D 26 M2-8:2FTS	529.00 > 81.00	3.512	3.512	0.0	1.262	117069	2.48	103	539	
24 Perfluorodecanoic acid	513.00 > 469.00	3.527	3.522	0.005	1.000	3882763	1.06	106	710	
513.00 > 169.00	3.527	3.522	0.005	1.000	258846		15.00(7.12-21.35)	106	340	
D 23 13C2 PFDA	515.00 > 470.00	3.527	3.522	0.005	1.268	8385003	2.61	105	8716	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.683	3.675	0.008	1.324	3367819	2.37	94.7	3923	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.683	3.681	0.002	1.000	1354726	1.05	105	395	M
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.839	3.834	0.005	1.218	2055868	1.01	105	1820	
599.00 > 99.00	3.839	3.834	0.005	1.218	402420		5.11(2.14-6.43)	105	1046	M
D 32 d5-NEtFOSAA	589.00 > 419.00	3.839	3.843	-0.004	1.380	2849760	2.56	102	2401	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.855	3.852	0.002	1.000	2658767	0.9759	97.6	564	
563.00 > 169.00	3.855	3.852	0.002	1.000	237039		11.22(5.24-15.72)	97.6	948	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.855	3.852	0.002	1.004	1094595	1.03	103	1717	
D 30 13C2 PFUnA	565.00 > 520.00	3.855	3.852	0.002	1.385	7553155	2.77	111	9381	
35 MeFOSA	512.00 > 169.00	3.960	3.965	-0.005		671718	NC		759	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	4.007	4.009	-0.002	1.271	3057280	0.9745	103	4832	
D 36 13C2 PFDaA	615.00 > 570.00	4.157	4.147	0.010	1.494	8091461	2.50	99.9	5699	
37 Perfluorododecanoic acid	613.00 > 569.00	4.157	4.149	0.008	1.000	3435967	1.06	106	708	
613.00 > 169.00	4.157	4.149	0.008	1.000	356569		9.64(4.68-14.05)	106	475	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.157	4.152	0.005	1.184	415059	0.8495	88.1	618	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.157	4.157	0.0		744799	NC		448	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.388	4.390	-0.002	1.392	215875	0.9451	97.6	574	
699.00 > 99.00	4.388	4.390	-0.002	1.392	377045		0.57(0.28-0.83)	97.6	1096	

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	4.419	4.417	0.002	1.063	2750053	1.08		108	1067	
663.00 > 169.00	4.419	4.417	0.002	1.063	464155		5.92(3.09-9.27)	108	1506	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.659	0.001	1.000	425772	0.9849		98.5	1247	
713.00 > 219.00	4.660	4.659	0.001	1.000	323007		1.32(0.70-2.09)	98.5	1124	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.659	0.001	1.675	6579603	2.58		103	10168	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.091	5.084	0.007	1.830	6578080	2.58		103	8758	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.091	5.089	0.002	1.000	2422100	0.99		99.2	552	
813.00 > 169.00	5.091	5.089	0.002	1.000	421868		5.74(2.77-8.32)	99.2	1074	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.447	5.448	-0.001	1.070	1670958	0.9800		98.0	525	
913.00 > 169.00	5.447	5.448	-0.001	1.070	303868		5.50(2.55-7.64)	98.0	1248	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_008.d

Injection Date: 21-Sep-2018 13:58:32

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

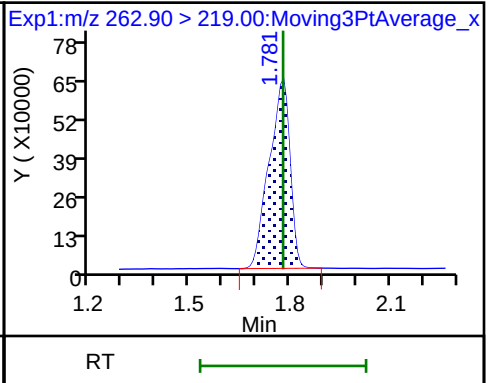
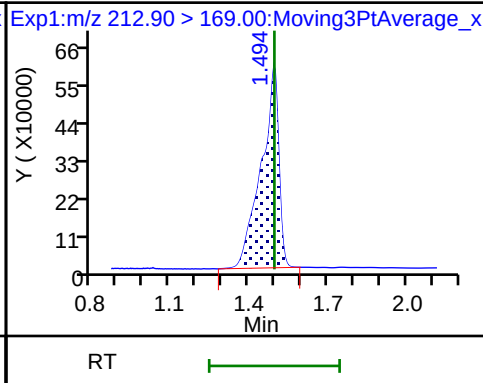
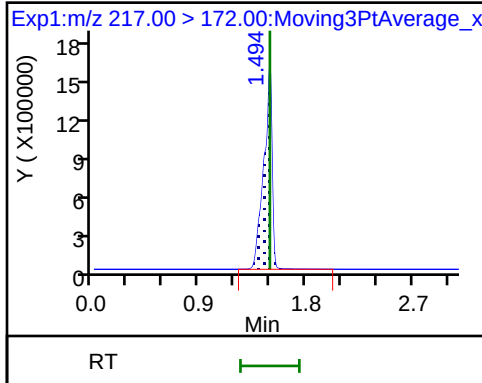
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

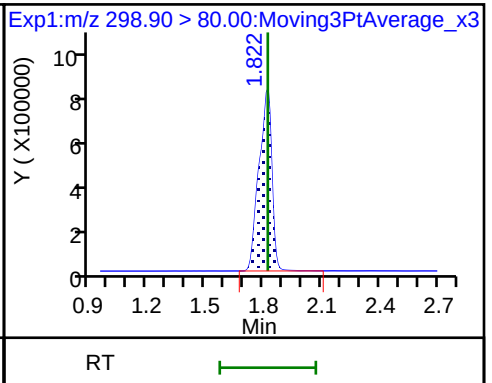
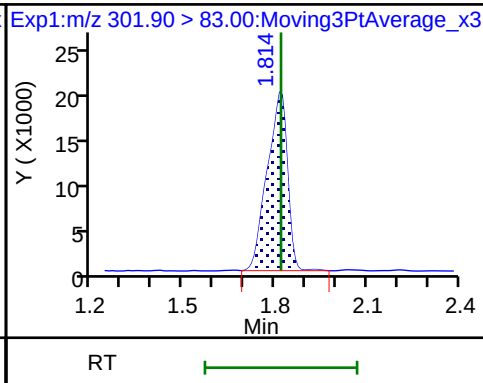
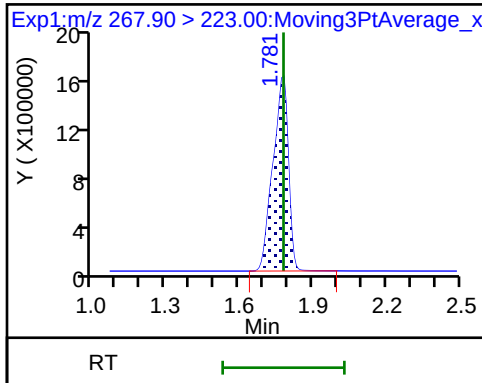
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

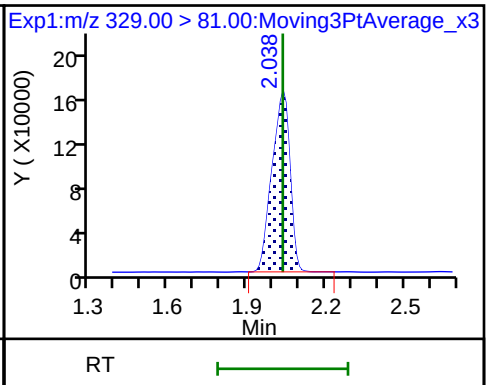
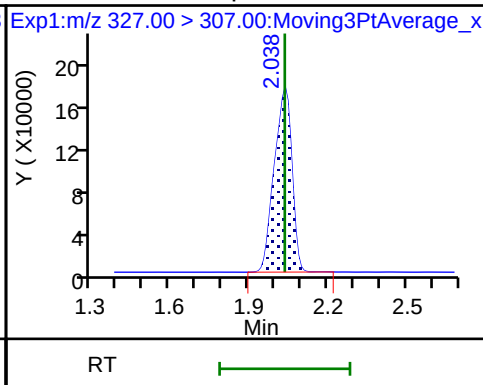
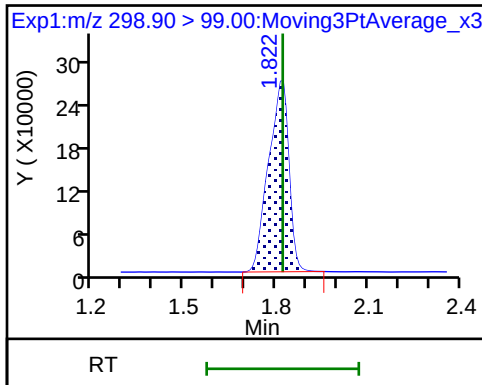
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

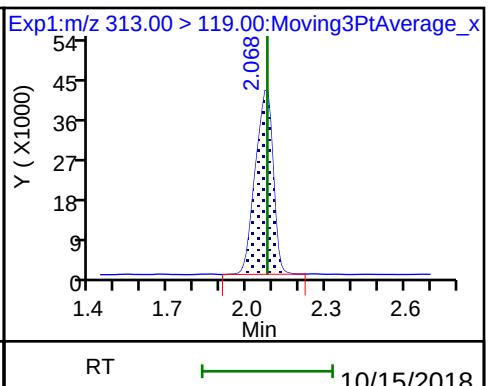
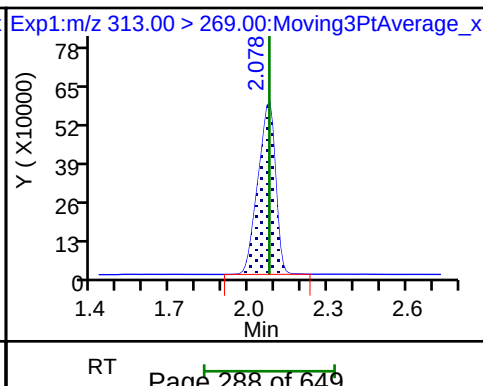
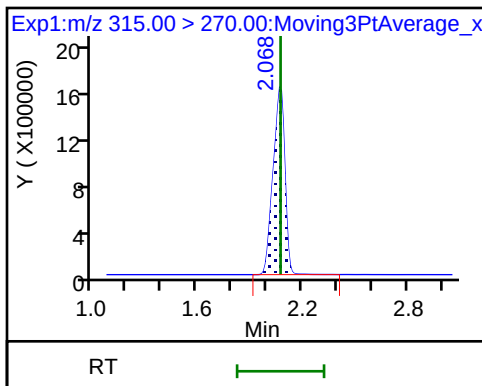
D 60 M2-4:2FTS

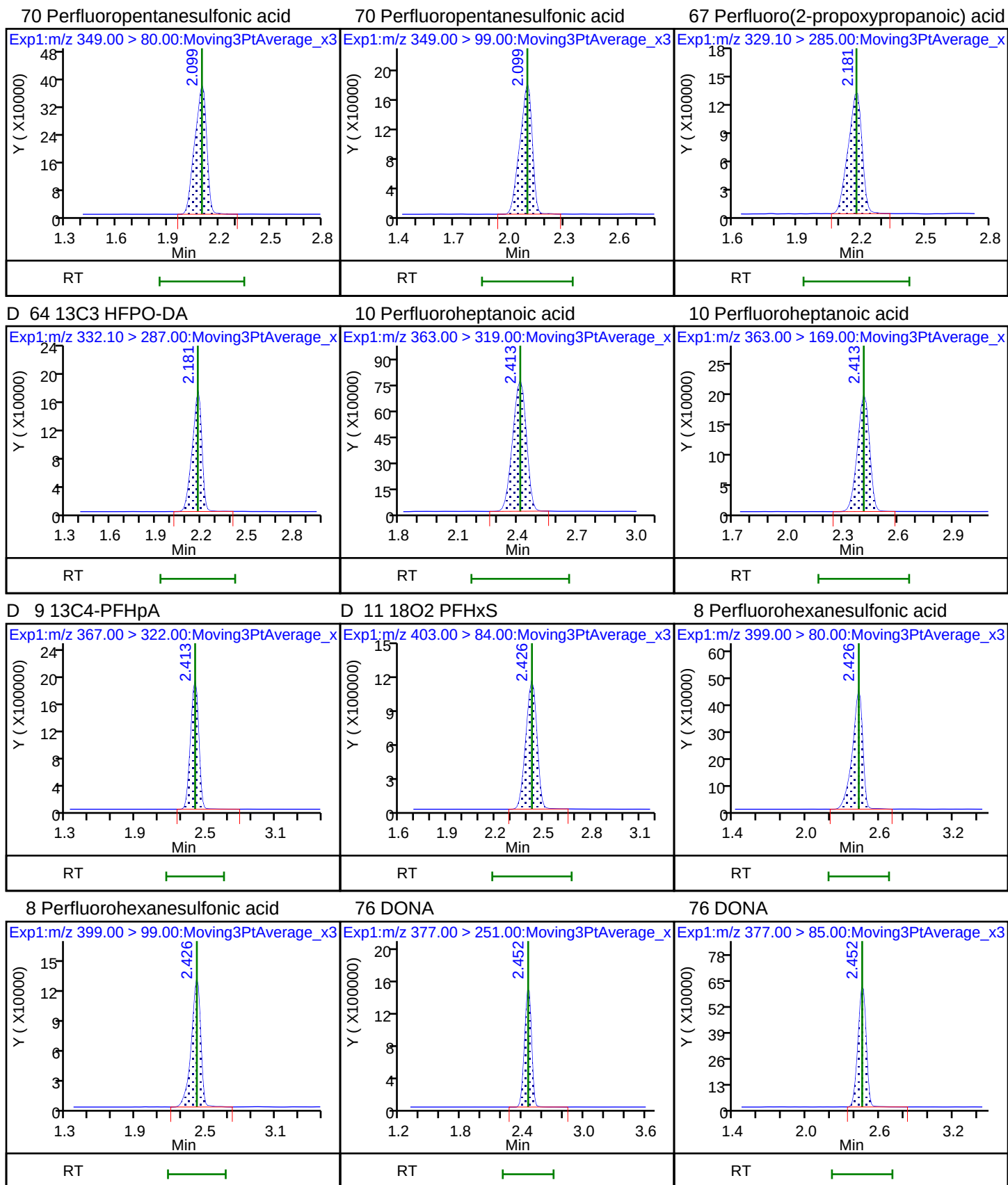


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

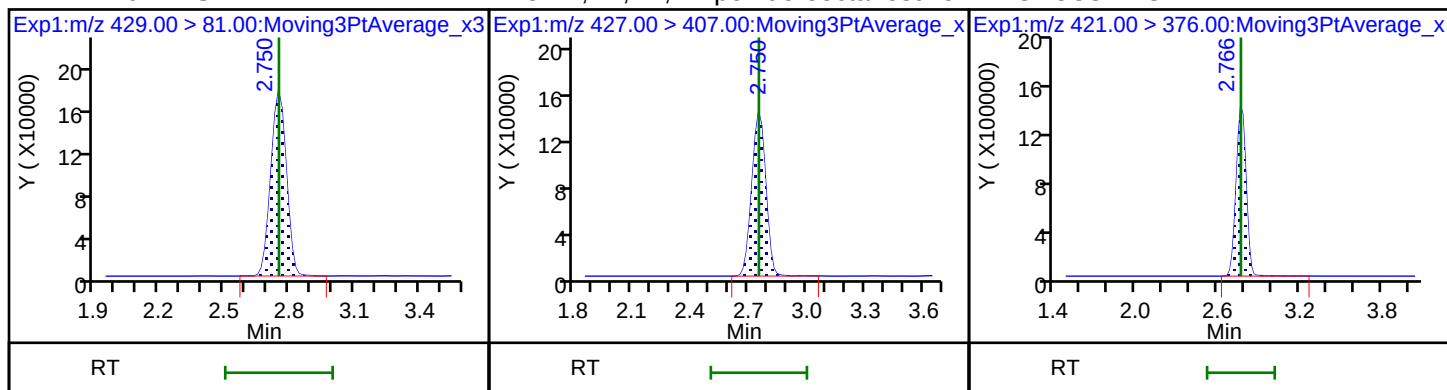
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

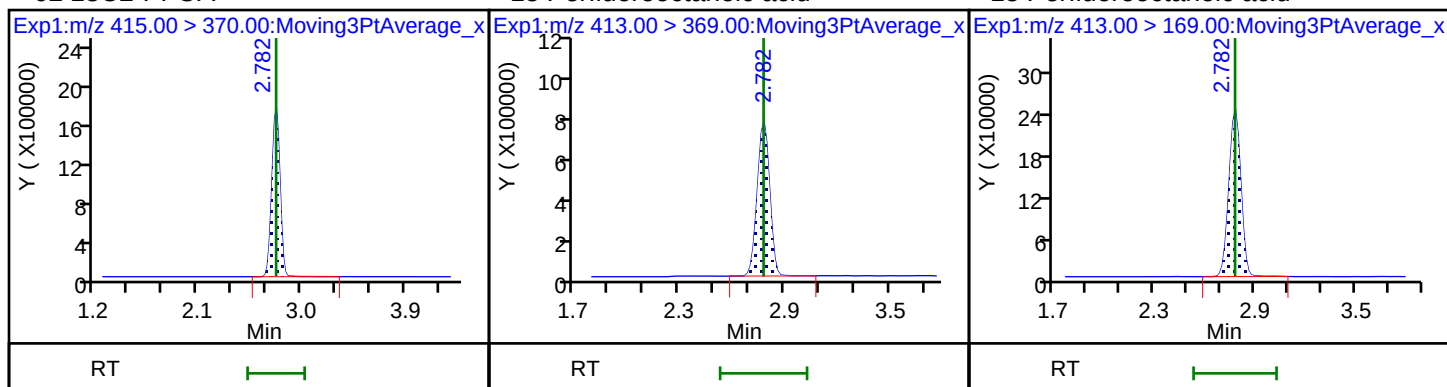
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

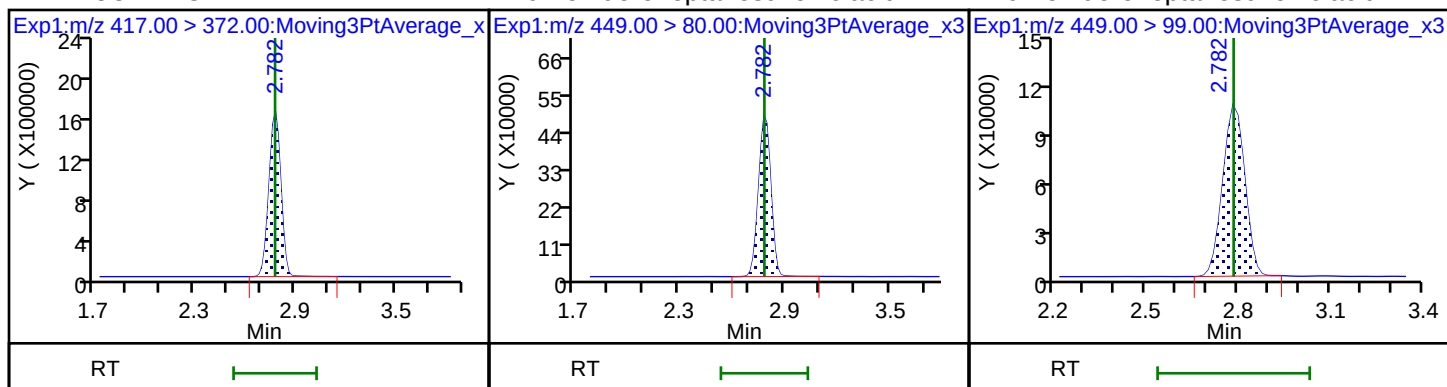
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

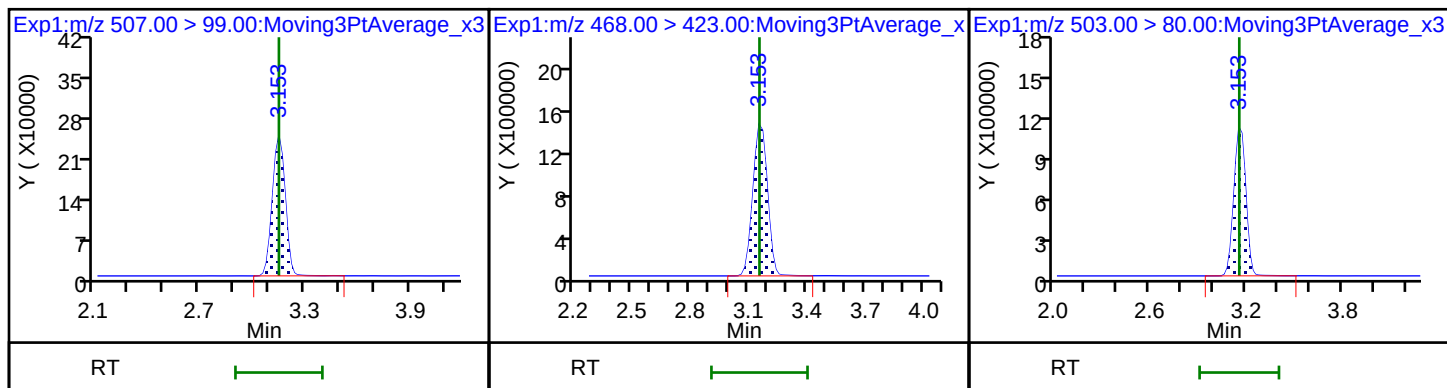
16 Perfluoroheptanesulfonic acid

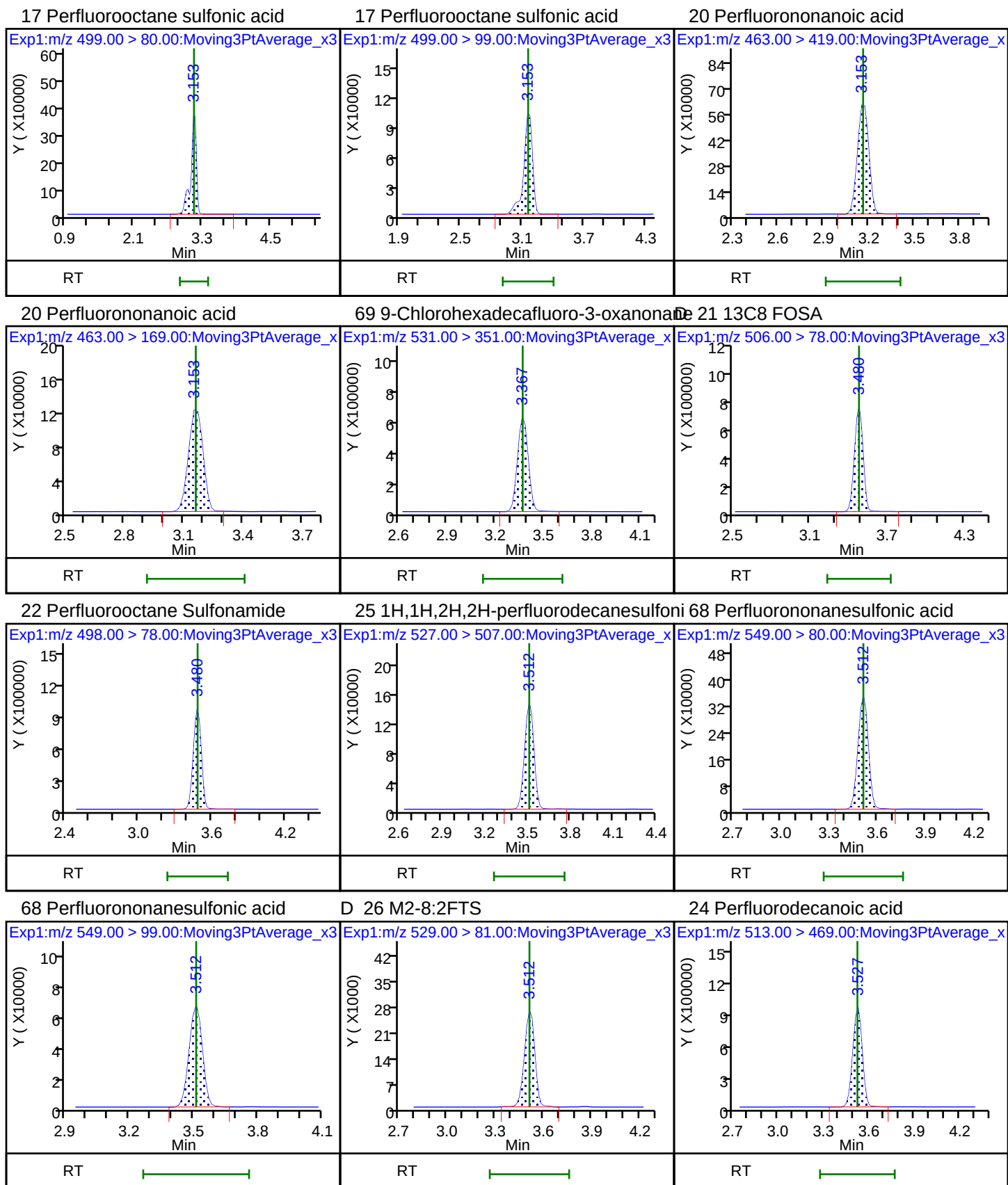


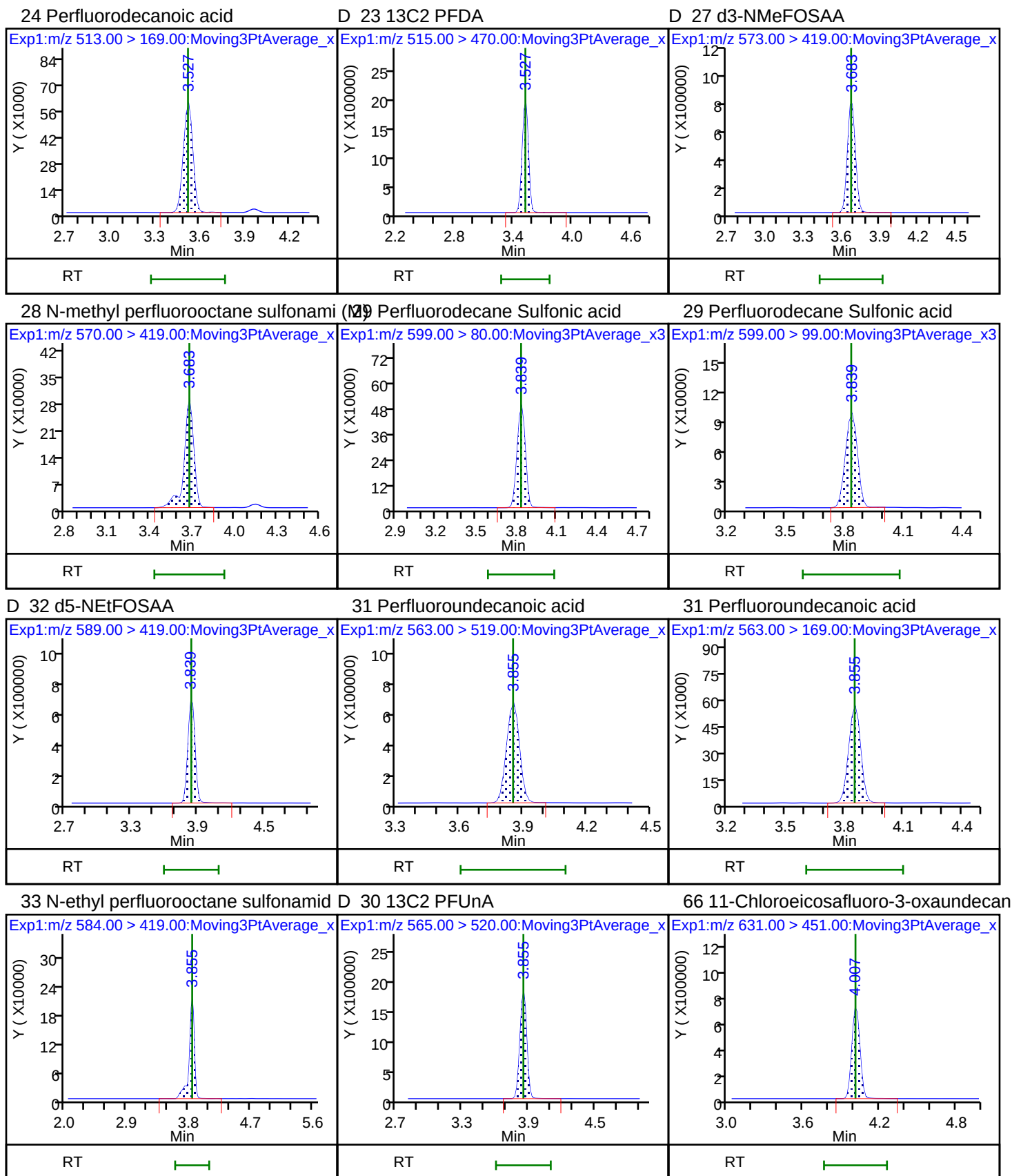
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



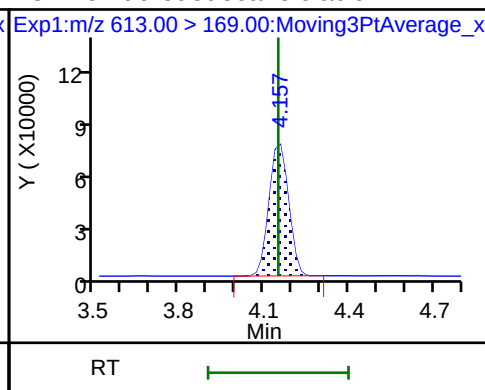
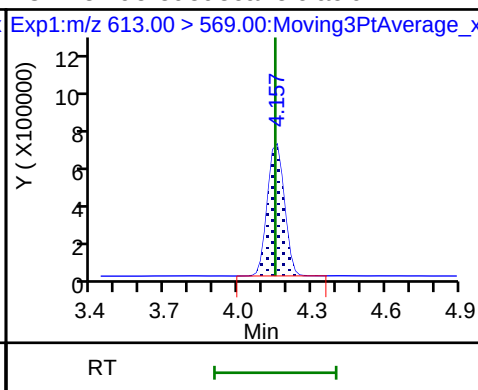
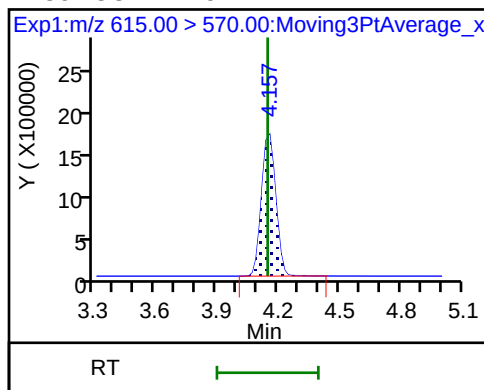




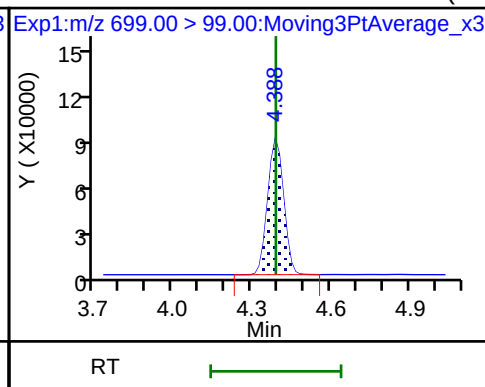
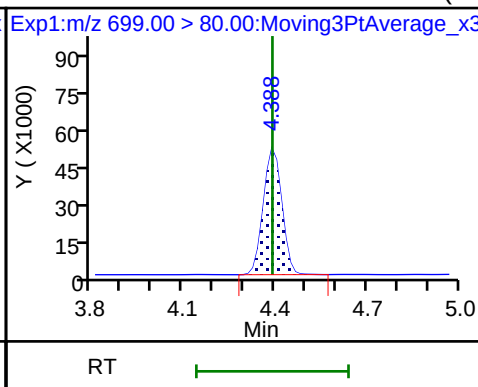
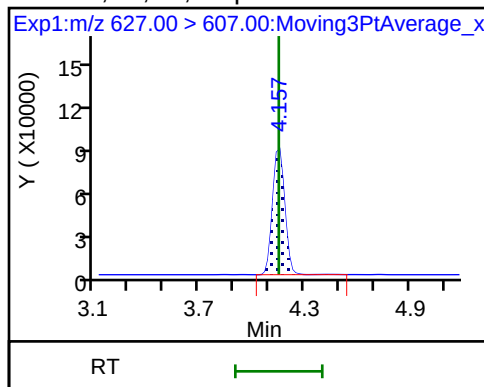
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



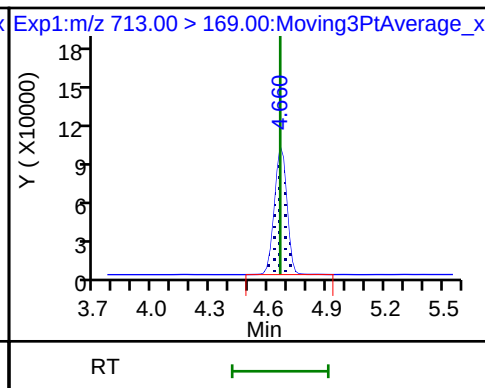
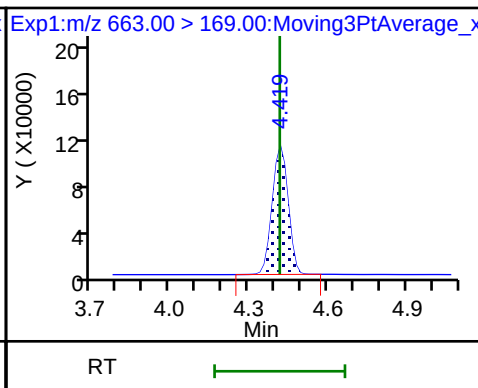
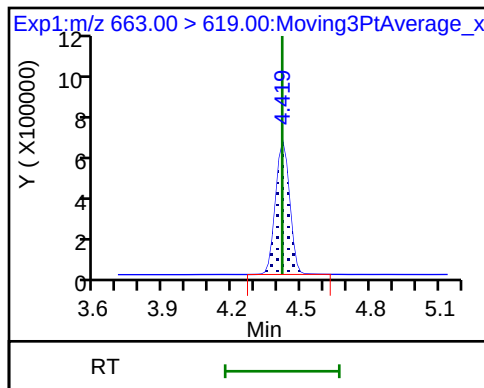
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

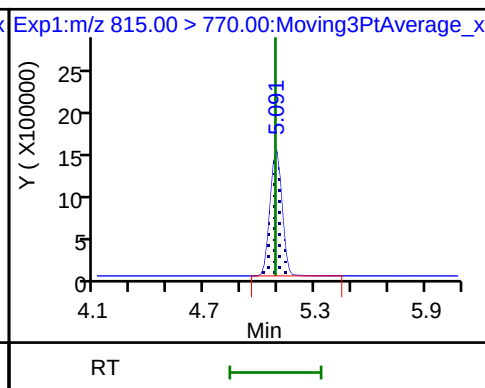
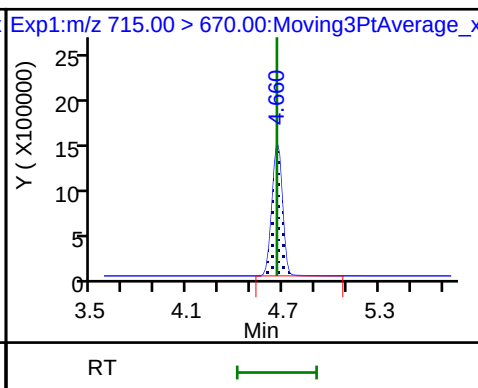
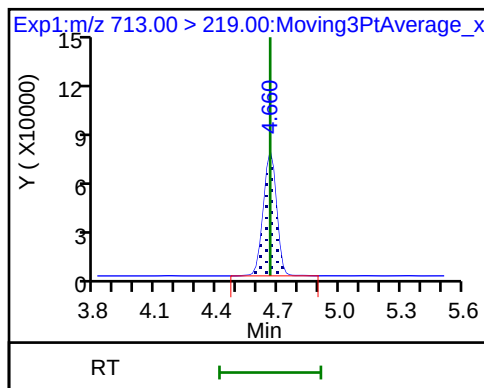
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

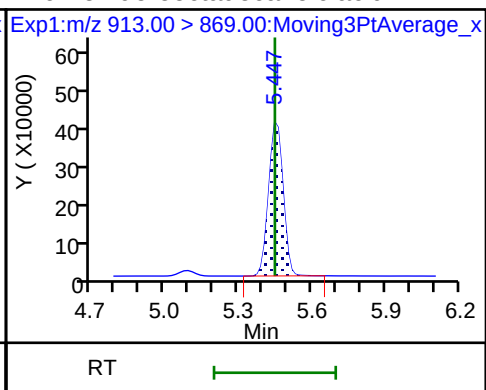
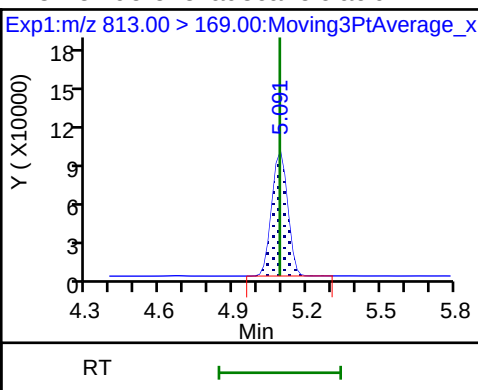
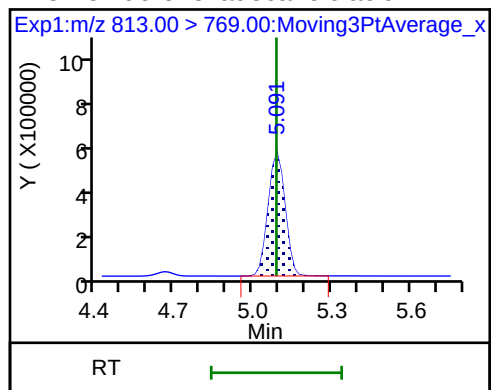
D 44 13C2-PFHxDA



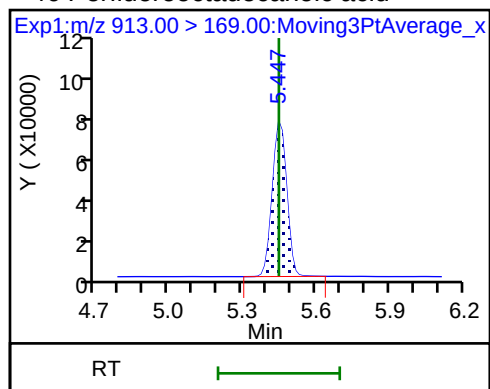
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_008.d

Injection Date: 21-Sep-2018 13:58:32

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

Column:

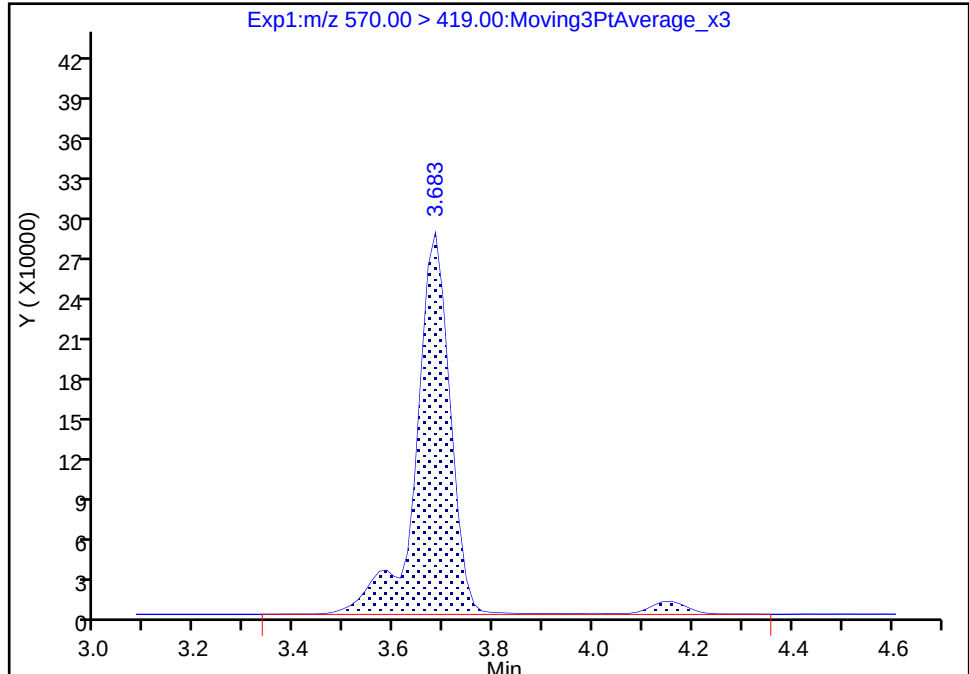
Detector EXP1

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

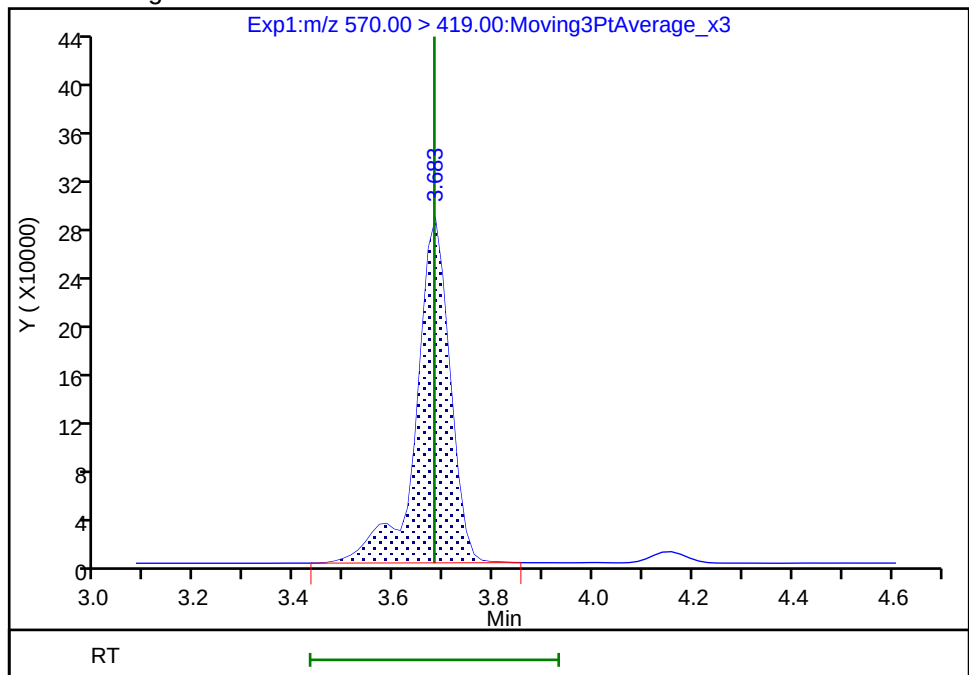
RT: 3.68
Area: 1416600
Amount: 1.097545
Amount Units: ng/ml

Processing Integration Results



RT: 3.68
Area: 1354726
Amount: 1.047735
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 15:01:23

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_009.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-Sep-2018 14:06:01 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\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:05:55 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 17:05:50

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	1.495	-0.001	0.537	7580397	2.37		94.9	20779	
2 Perfluorobutyric acid										
212.90 > 169.00	1.494	1.496	-0.002	1.000	7252916	2.61		104	427	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.780	1.779	0.001	1.000	6973880	2.47		98.8	545	
D 3 13C5-PFPeA										
267.90 > 223.00	1.780	1.779	0.001	0.640	7093002	2.44		97.6	11092	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.818	0.004	0.655	87853	2.22		95.5	594	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.821	0.001	1.000	9234217	2.37		107	3954	
298.90 > 99.00	1.822	1.821	0.001	1.000	3180511		2.90(1.35-4.05)	107	2524	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.037	2.036	0.001	1.118	2021321	2.37		101	6362	
D 60 M2-4:2FTS										
329.00 > 81.00	2.037	2.036	0.001	0.732	835063	2.31		98.8	989	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.074	0.004	0.747	7431760	2.41		96.5	11742	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.077	0.001	1.000	6739358	2.52		101	1256	
313.00 > 119.00	2.078	2.077	0.001	1.000	493612		13.65(6.96-20.87)	101	938	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.099	0.0	1.152	4530111	2.48		106	5379	
349.00 > 99.00	2.099	2.099	0.0	1.152	2144167		2.11(1.15-3.45)	106	4026	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.170	2.176	-0.006	0.995	1428015	2.57		103	597	

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	2.178	0.003	0.784	744031	2.32		92.8	1826	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.412	0.001	1.000	9667715	2.62		105	1247	
363.00 > 169.00	2.413	2.412	0.001	1.000	2138525		4.52(2.17-6.52)	105	2894	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.412	0.001	0.867	8681131	2.37		94.7	13892	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.427	-0.001	0.872	5374593	2.27		96.1	6407	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.427	-0.001	1.000	6376580	2.23		98.0	4169	
399.00 > 99.00	2.426	2.427	-0.001	1.000	1758775		3.63(1.90-5.70)	98.0	1692	
76 DONA										
377.00 > 251.00	2.452	2.456	-0.004	0.778	14831368	2.36		100	13928	
377.00 > 85.00	2.465	2.456	0.009	0.782	7021571		2.11(1.13-3.39)	100	3021	
D 12 M2-6:2FTS										
429.00 > 81.00	2.750	2.752	-0.002	0.989	831601	2.19		92.0	1075	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.752	-0.002	1.000	1798266	2.35		99.3	3476	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.768	-0.002		7017853	2.28		93.2	6328	
* 62 13C2-PFOA										
415.00 > 370.00	2.782	2.780	0.002		8675496	2.50			9589	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.780	0.002	1.000	8643372	2.42		96.6	465	
413.00 > 169.00	2.782	2.780	0.002	1.000	3175847		2.72(1.36-4.08)	96.6	3420	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.780	0.002	1.000	8523187	2.45		98.2	8968	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.784	-0.002	0.882	6127089	2.52		106	5687	
449.00 > 99.00	2.782	2.784	-0.002	0.882	1445394		4.24(1.84-5.53)	106	3455	
D 72 13C8 PFOS										
507.00 > 99.00	3.153	3.153	0.0		1222321	2.26		94.6	2100	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.155	-0.002	1.133	7253244	2.29		91.8	4608	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.155	-0.002	1.133	5677498	2.32		96.9	3083	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.153	3.155	-0.002	1.000	5797920	2.30		99.3	3421	
499.00 > 99.00	3.153	3.155	-0.002	1.000	1391720		4.17(2.04-6.12)	99.3	2461	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.161	-0.008	1.000	7537549	2.65		106	792	
463.00 > 169.00	3.153	3.161	-0.008	1.000	1347734		5.59(2.68-8.03)	106	1948	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.367	3.369	-0.002	1.068	6324366	2.38		102	5106	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.251	3101165	2.37		94.8	6544	

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	3.480	3.483	-0.003	1.000	10029311	2.74		110	11119	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.512	3.512	0.0	1.000	1651526	2.36		98.4	3105	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.512	3.512	0.0	1.114	3733587	2.36		98.4	4142	
549.00 > 99.00	3.512	3.512	0.0	1.114	646578		5.77(3.02-9.05)	98.4	1620	
D 26 M2-8:2FTS										
529.00 > 81.00	3.512	3.512	0.0	1.262	114204	2.37		98.9	755	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.527	3.522	0.005	1.000	8599090	2.43		97.3	1376	
513.00 > 169.00	3.527	3.522	0.005	1.000	577114		14.90(7.12-21.35)	97.3	426	
D 23 13C2 PFDA										
515.00 > 470.00	3.527	3.522	0.005	1.268	8066736	2.46		98.6	5951	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.669	3.675	-0.006	1.319	3594763	2.48		99.1	2996	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.683	3.681	0.002	1.004	3476640	2.52		101	1076	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.839	3.834	0.005	1.218	5454861	2.68		111	4784	
599.00 > 99.00	3.839	3.834	0.005	1.218	1066452		5.11(2.14-6.43)	111	3059	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.839	3.843	-0.004	1.380	2650176	2.33		93.2	2729	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.855	3.852	0.002	1.000	5811860	2.41		96.2	1059	
563.00 > 169.00	3.855	3.852	0.002	1.000	516444		11.25(5.24-15.72)	96.2	1425	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.855	3.852	0.002	1.004	2579505	2.60		104	4216	
D 30 13C2 PFUnA										
565.00 > 520.00	3.855	3.852	0.002	1.385	6698462	2.41		96.4	8989	
35 MeFOSA										
512.00 > 169.00	3.960	3.965	-0.005		1621703	NC			779	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.007	4.009	-0.002	1.271	7764072	2.48		105	7949	
D 36 13C2 PFDaA										
615.00 > 570.00	4.139	4.147	-0.008	1.488	7950004	2.40		96.2	16255	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.149	0.008	1.004	8415870	2.64		106	1572	
613.00 > 169.00	4.139	4.149	-0.010	1.000	924816		9.10(4.68-14.05)	106	1395	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.152	0.005	1.184	1119449	2.35		97.4	1551	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		1764224	NC			449	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.390	-0.002	1.392	517092	2.27		93.9	947	
699.00 > 99.00	4.388	4.390	-0.002	1.392	939260		0.55(0.28-0.83)	93.9	2708	

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	4.419	4.417	0.002	1.068	6363083	2.55		102	2387	
663.00 > 169.00	4.419	4.417	0.002	1.068	1081284		5.88(3.09-9.27)	102	2097	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.659	0.001	1.000	1000159	2.50		100	2351	
713.00 > 219.00	4.660	4.659	0.001	1.000	752006		1.33(0.70-2.09)	100	2800	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.659	0.001	1.675	6078915	2.33		93.3	16003	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.091	5.084	0.007	1.830	6275952	2.41		96.5	7434	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.091	5.089	0.002	1.000	5658034	2.46		98.5	1169	
813.00 > 169.00	5.091	5.089	0.002	1.000	1038740		5.45(2.77-8.32)	98.5	2515	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.448	5.448	0.0	1.070	4114602	2.53		101	1207	
913.00 > 169.00	5.448	5.448	0.0	1.070	758978		5.42(2.55-7.64)	101	2519	

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\20180921-64578.b\2018.09.21LLAICAL_009.d

Injection Date: 21-Sep-2018 14:06:01

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

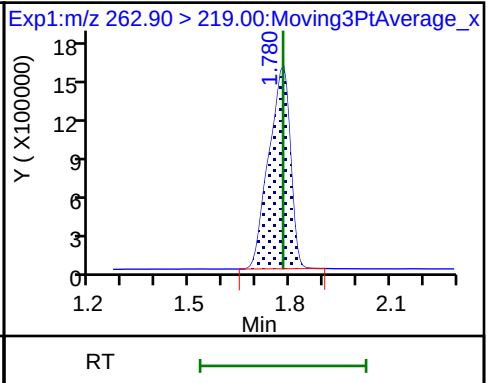
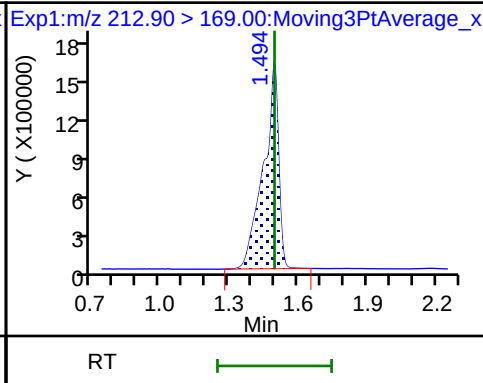
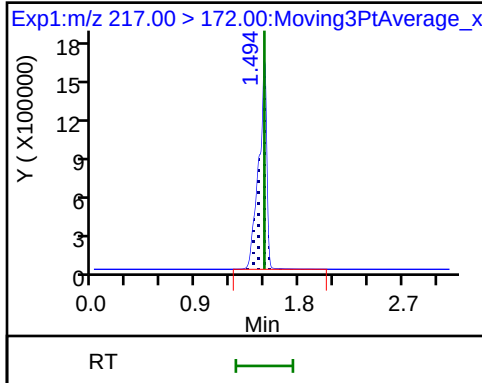
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

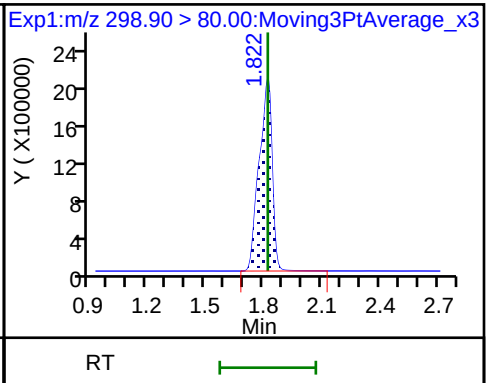
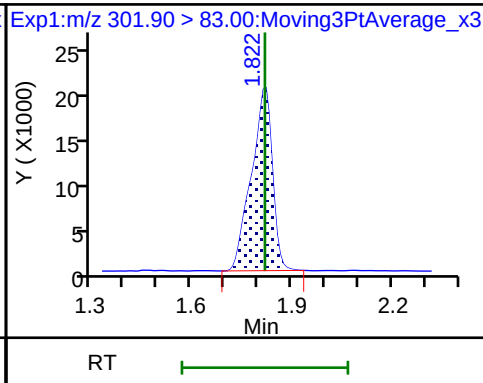
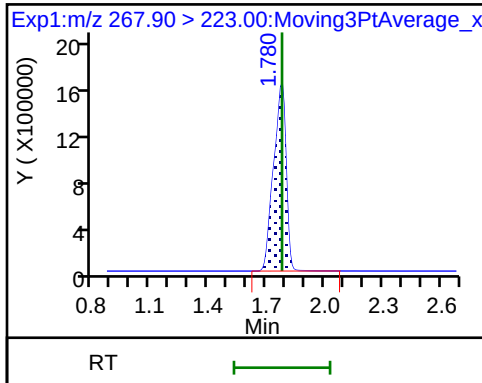
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

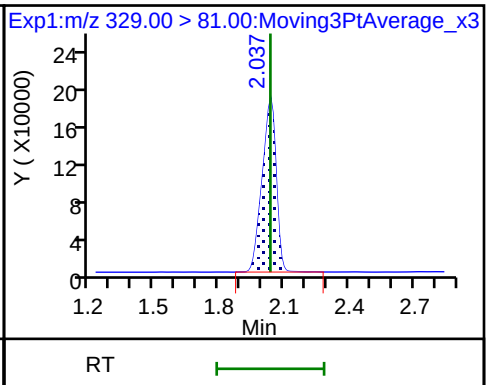
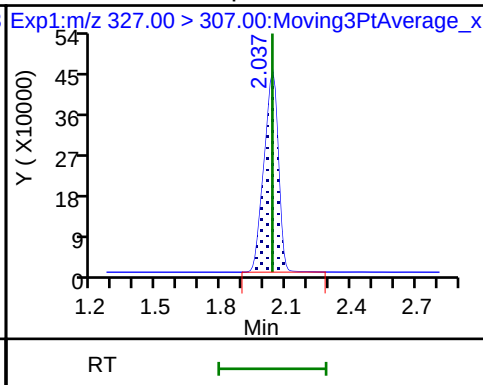
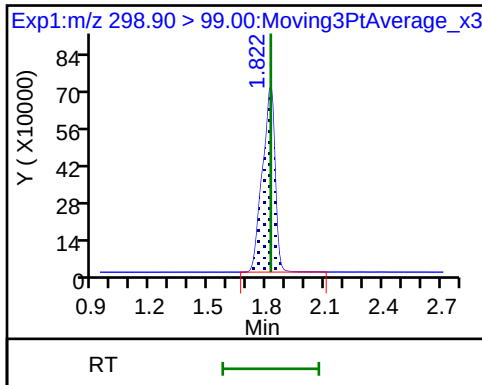
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

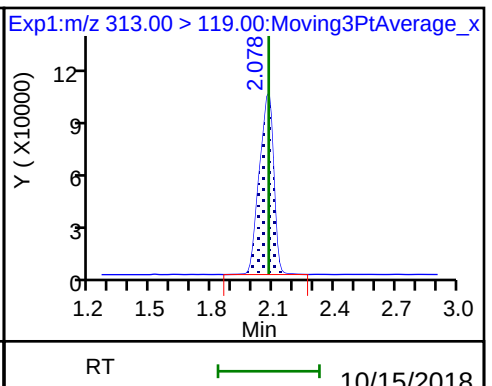
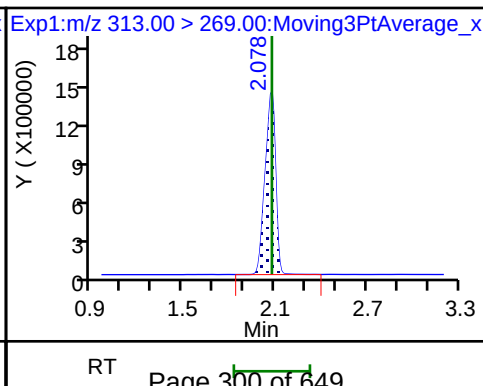
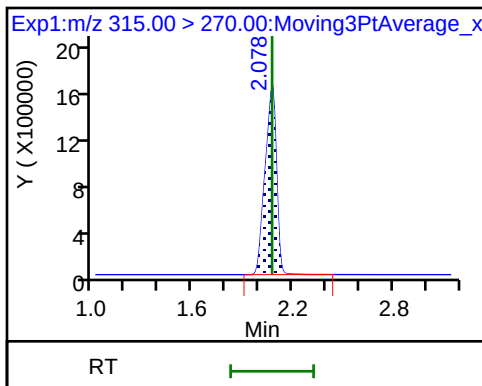
D 60 M2-4:2FTS

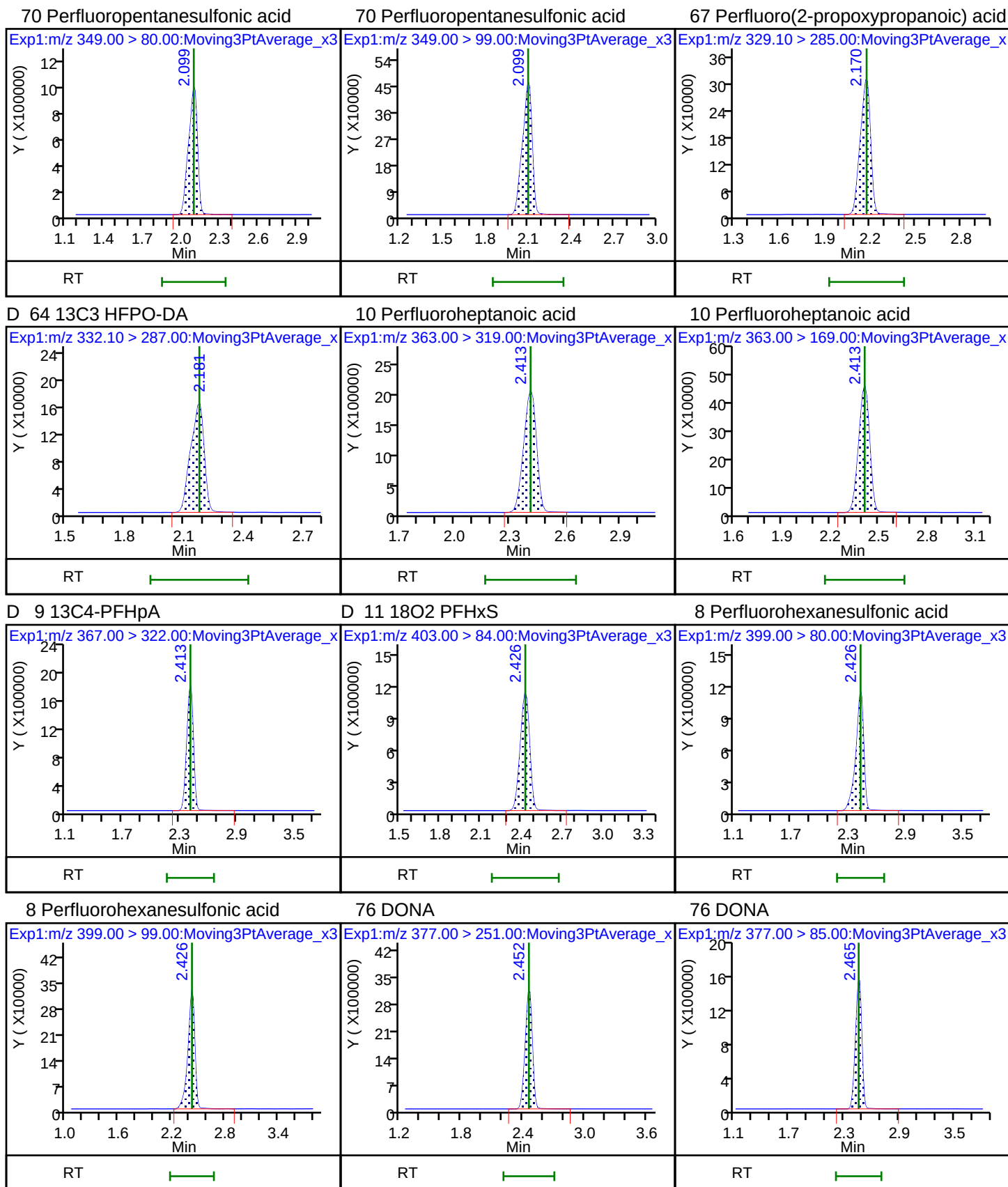


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

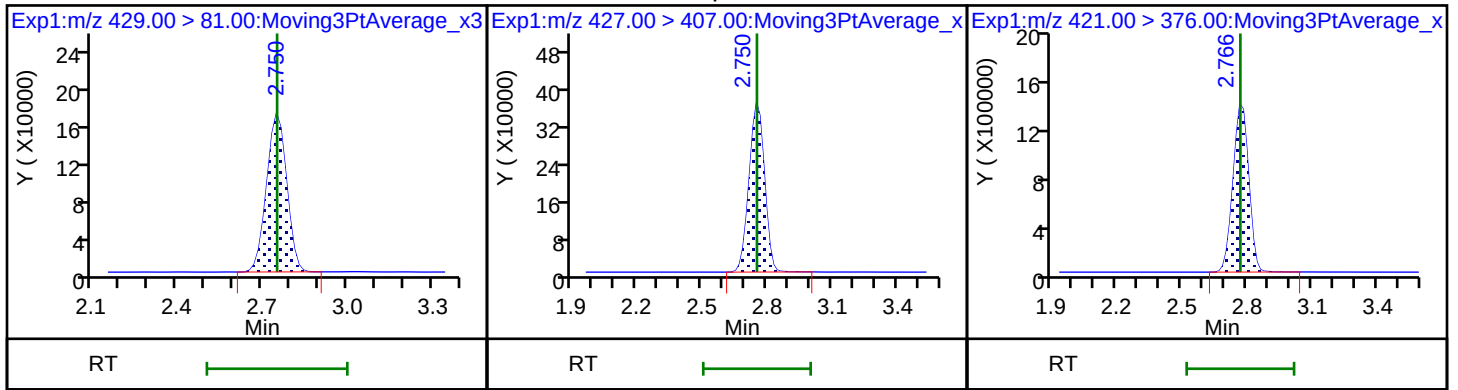
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

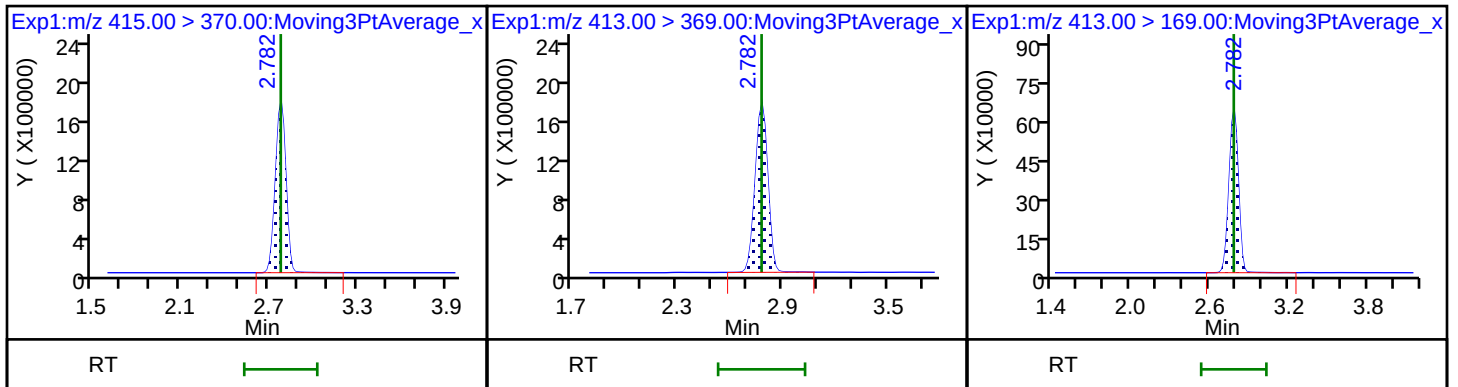
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

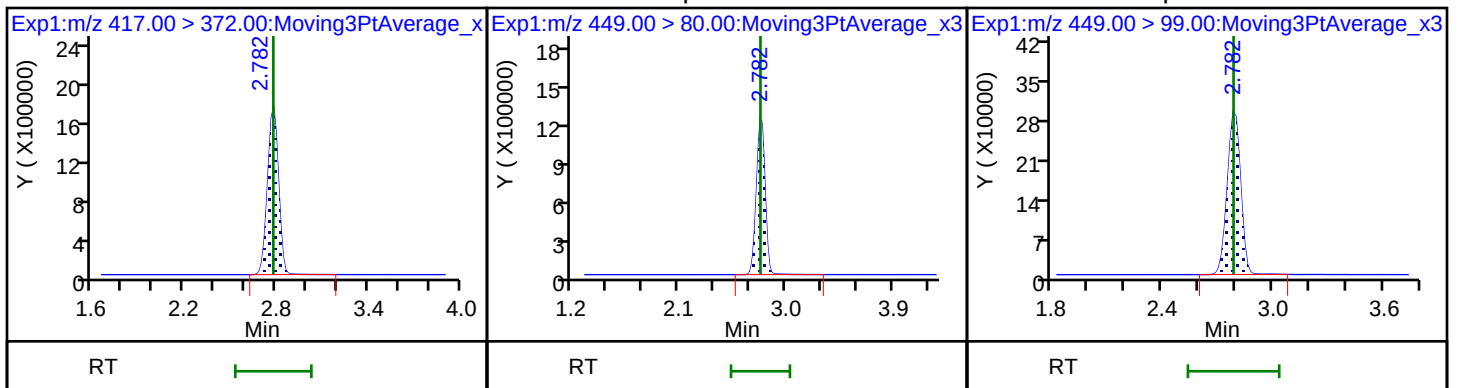
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

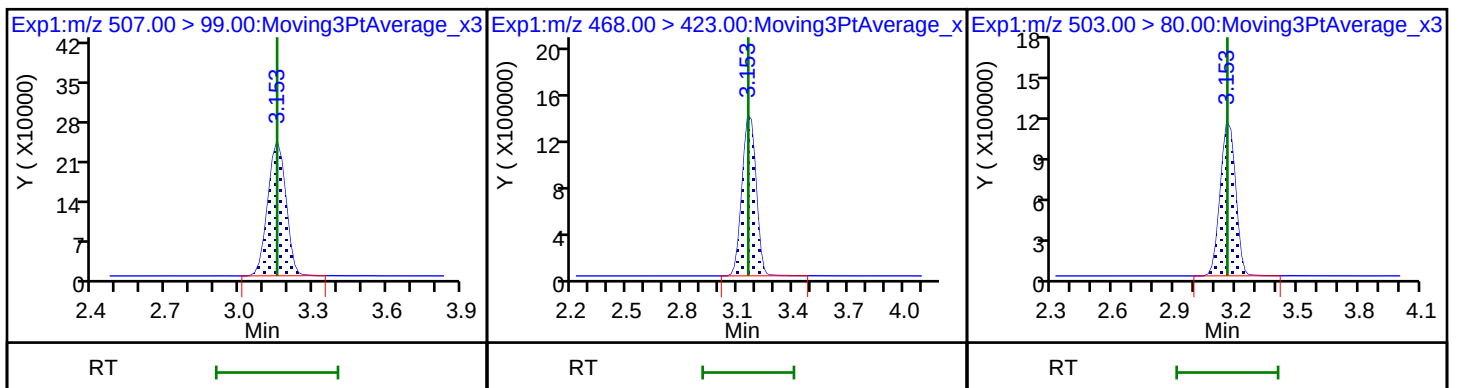
16 Perfluoroheptanesulfonic acid

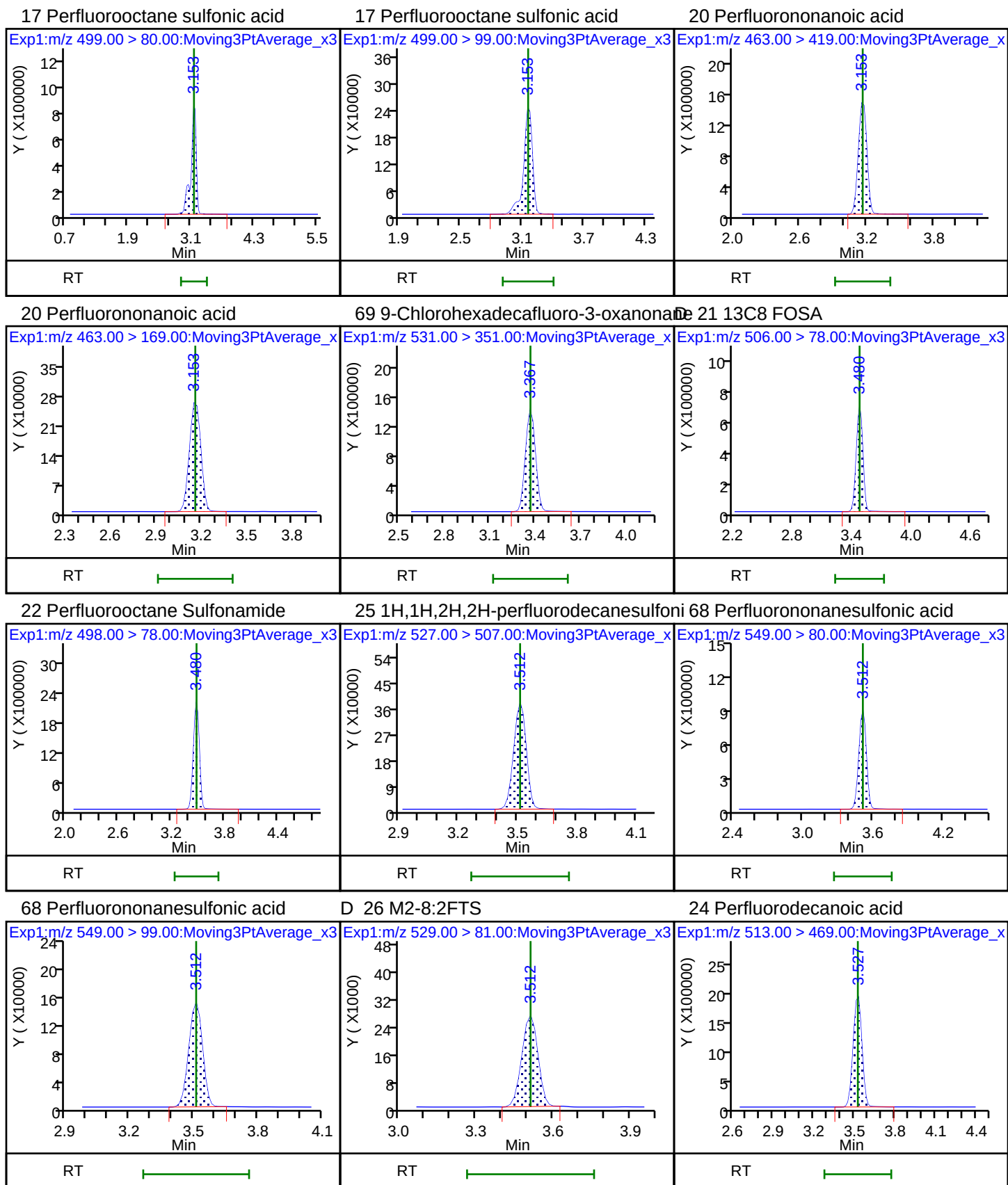


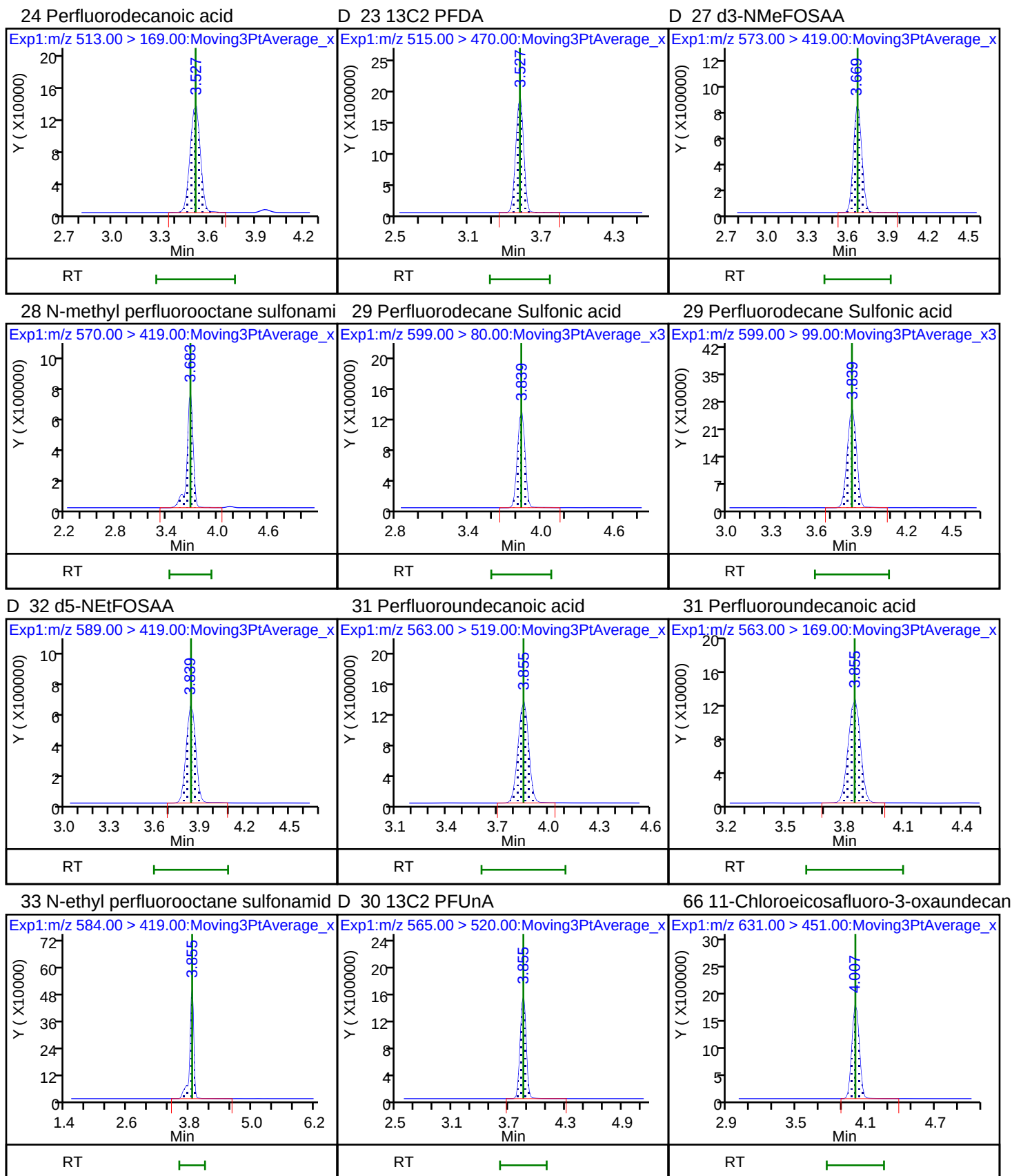
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



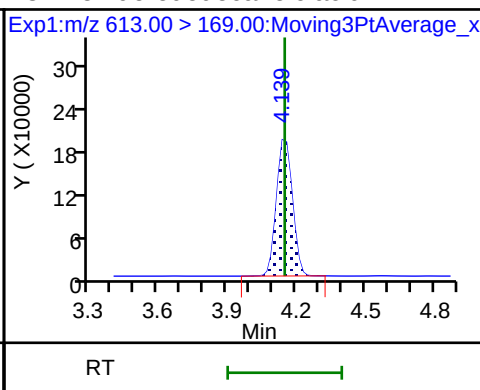
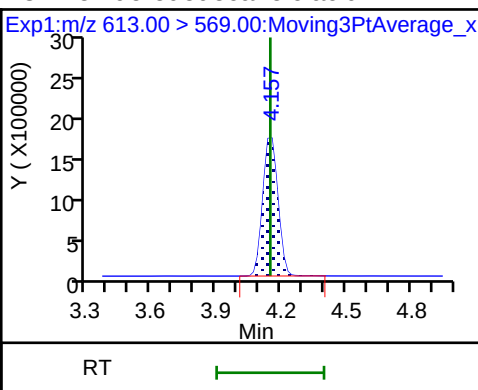
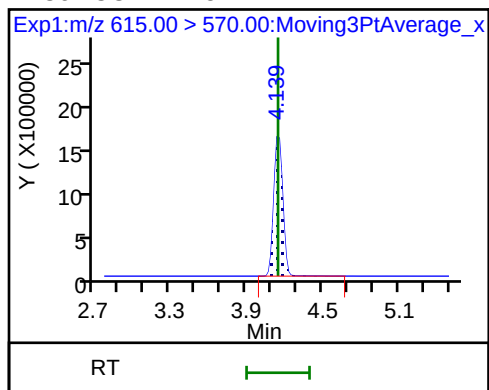




D 36 13C2 PFDaA

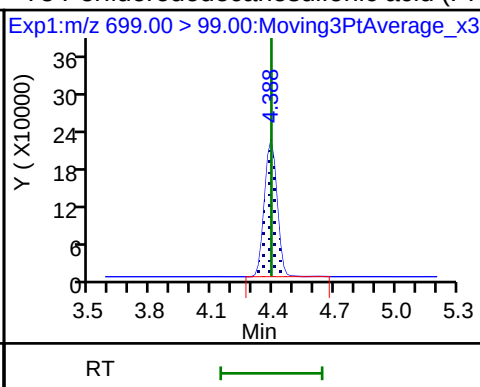
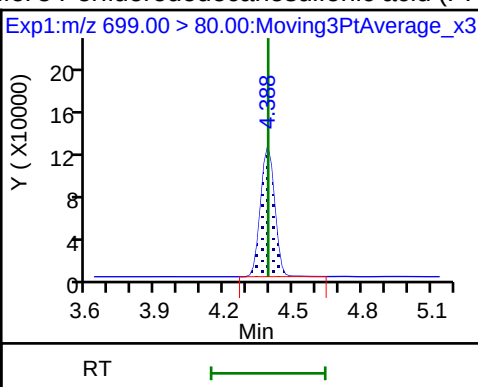
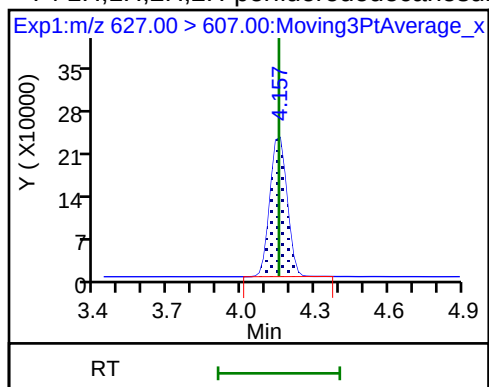
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

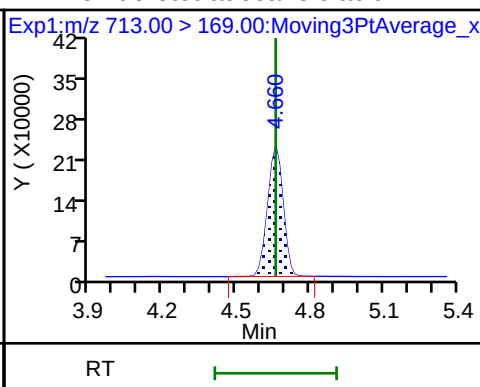
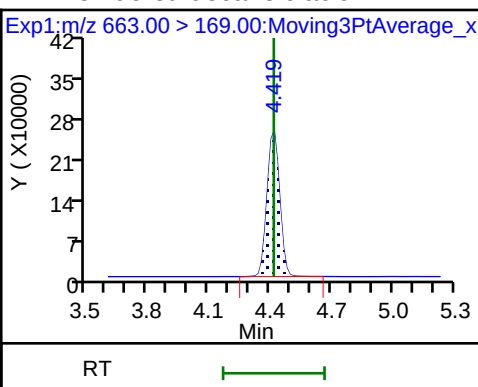
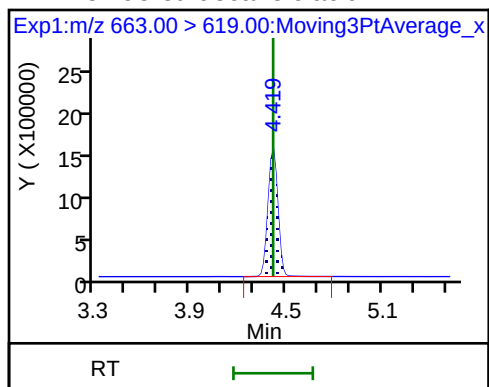
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

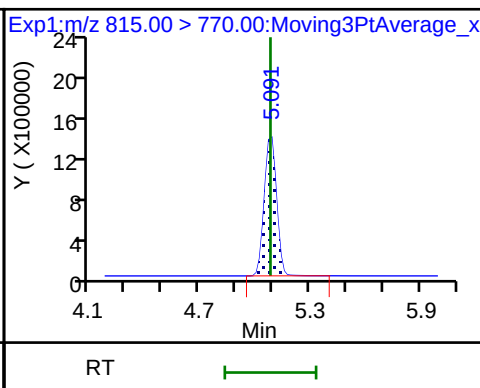
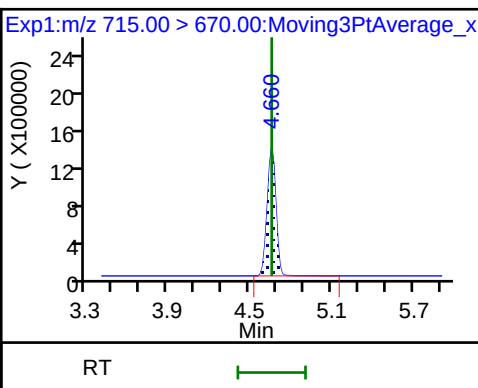
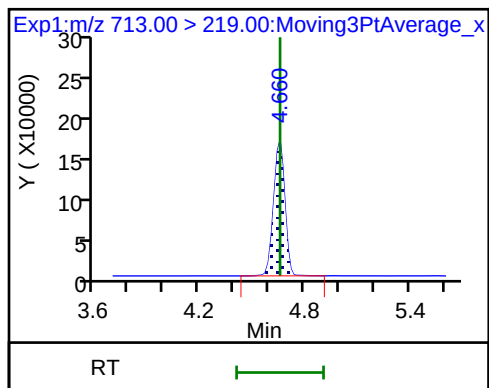
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

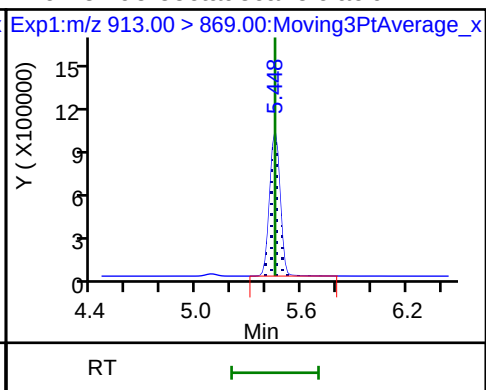
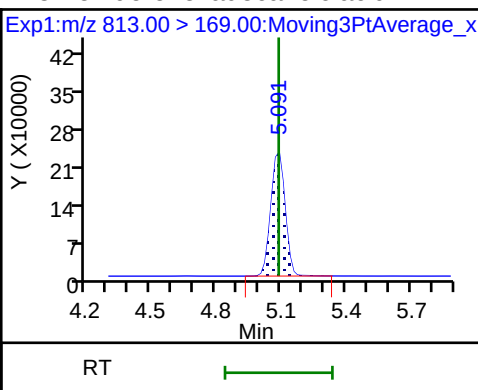
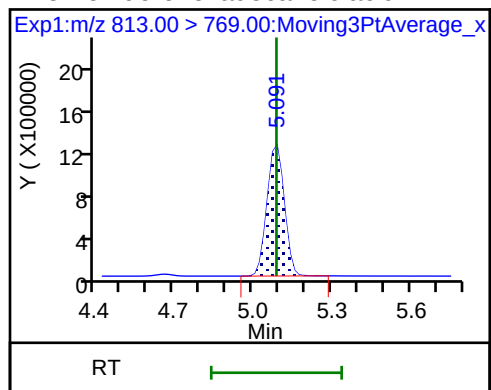
D 44 13C2-PFHxDA



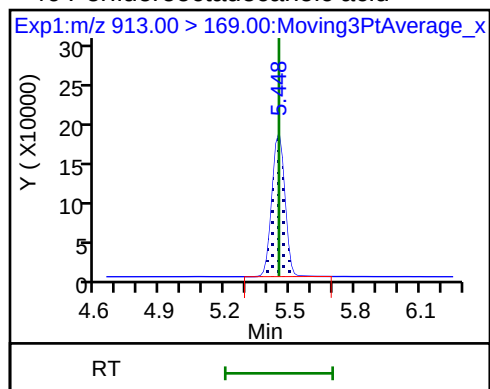
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_010.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-Sep-2018 14:13:31 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\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:06:02 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 15:04:20

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	1.495	-0.001	0.537	9476564	2.61		105	19508	
2 Perfluorobutyric acid										
212.90 > 169.00	1.499	1.496	0.003	1.004	17281545	4.97		99.5	923	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.781	1.779	0.002	1.000	16238450	4.75		95.0	1304	
D 3 13C5-PFPeA										
267.90 > 223.00	1.781	1.779	0.002	0.640	8588479	2.61		104	10424	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.818	0.004	0.655	107858	2.40		103	864	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.821	0.001	1.000	20193580	4.21		95.3	6512	
298.90 > 99.00	1.822	1.821	0.001	1.000	7970511		2.53(1.35-4.05)	95.3	5182	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.036	0.002	1.118	4919870	4.69		100	7064	
D 60 M2-4:2FTS										
329.00 > 81.00	2.038	2.036	0.002	0.732	890030	2.17		92.9	1108	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.074	0.004	0.747	8855748	2.53		101	11459	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.077	0.001	1.000	15247478	4.79		95.7	3150	
313.00 > 119.00	2.078	2.077	0.001	1.000	1197853		12.73(6.96-20.87)	95.7	2428	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.099	0.0	1.152	10891174	4.85		103	9608	
349.00 > 99.00	2.099	2.099	0.0	1.152	5276371		2.06(1.15-3.45)	103	5289	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.000	3572548	5.27		105	1663	

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	2.178	0.003	0.784	905993	2.49		99.6	1774	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.412	0.001	1.000	20220855	4.76		95.2	2218	
363.00 > 169.00	2.413	2.412	0.001	1.000	5308875		3.81(2.17-6.52)	95.2	10174	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.412	0.001	0.867	10004341	2.41		96.2	8647	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.427	-0.001	0.872	6269545	2.34		98.8	6800	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.427	-0.001	1.000	14384660	4.31		94.7	6504	
399.00 > 99.00	2.426	2.427	-0.001	1.000	4176894		3.44(1.90-5.70)	94.7	2878	
76 DONA										
377.00 > 251.00	2.465	2.456	0.009	0.782	31294393	4.27		90.6	35602	
377.00 > 85.00	2.465	2.456	0.009	0.782	16072420		1.95(1.13-3.39)	90.6	5652	
D 12 M2-6:2FTS										
429.00 > 81.00	2.750	2.752	-0.002	0.989	1071332	2.48		104	1365	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.752	-0.002	1.000	4536400	4.61		97.2	5421	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.768	-0.002		8303074	2.70		110	9303	
* 62 13C2-PFOA										
415.00 > 370.00	2.782	2.780	0.002		9840912	2.50			5996	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.780	0.002	1.000	18275076	4.43		88.5	969	
413.00 > 169.00	2.782	2.780	0.002	1.000	7346215		2.49(1.36-4.08)	88.5	4716	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.780	0.002	1.000	9837265	2.50		99.9	8879	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.784	-0.002	0.882	13605882	4.80		101	8394	
449.00 > 99.00	2.782	2.784	-0.002	0.882	3698462		3.68(1.84-5.53)	101	5978	
D 72 13C8 PFOS										
507.00 > 99.00	3.153	3.153	0.0		1503478	2.78		116	2527	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.155	-0.002	1.133	9209816	2.57		103	5436	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.155	-0.002	1.133	6625089	2.38		99.7	4778	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.153	3.155	-0.002	1.000	13520611	4.60		99.2	4756	
499.00 > 99.00	3.153	3.155	-0.002	1.000	3256938		4.15(2.04-6.12)	99.2	3142	
20 Perfluorononanoic acid										
463.00 > 419.00	3.172	3.161	0.011	1.006	16345593	4.52		90.3	1517	
463.00 > 169.00	3.153	3.161	-0.008	1.000	3603040		4.54(2.68-8.03)	90.3	5016	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.367	3.369	-0.002	1.068	14226340	4.60		98.6	4967	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.480	0.001	1.251	3715643	2.50		100	4001	

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	3.481	3.483	-0.002	1.000	19856984	4.53		90.6	8080	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.512	3.512	0.0	1.000	3702598	5.25		110	5567	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.512	3.512	0.0	1.114	8870383	4.81		100	3919	
549.00 > 99.00	3.512	3.512	0.0	1.114	1534385		5.78(3.02-9.05)	100	3194	
D 26 M2-8:2FTS										
529.00 > 81.00	3.512	3.512	0.0	1.262	114810	2.10		87.6	684	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.527	3.522	0.005	1.000	17451112	4.60		92.1	2385	
513.00 > 169.00	3.527	3.522	0.005	1.000	1388343		12.57(7.12-21.35)	92.1	502	
D 23 13C2 PFDA										
515.00 > 470.00	3.527	3.522	0.005	1.268	8645119	2.33		93.1	4870	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.669	3.675	-0.006	1.319	4512795	2.74		110	2881	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.683	3.681	0.002	1.004	8472296	4.89		97.8	1887	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.839	3.834	0.005	1.218	11308841	4.77		98.9	6663	
599.00 > 99.00	3.839	3.834	0.005	1.218	2545577		4.44(2.14-6.43)	98.9	4512	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.839	3.843	-0.004	1.380	3057484	2.37		94.8	2982	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.855	3.852	0.003	1.000	12640500	4.67		93.5	2111	
563.00 > 169.00	3.855	3.852	0.003	1.000	1277053		9.90(5.24-15.72)	93.5	2071	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.855	3.852	0.003	1.004	5905384	5.17		103	6619	
D 30 13C2 PFUnA										
565.00 > 520.00	3.855	3.852	0.003	1.385	7497732	2.38		95.1	11367	
35 MeFOSA										
512.00 > 169.00	3.976	3.965	0.011		4221241	NC			910	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.007	4.009	-0.002	1.271	17503848	4.80		102	11261	
D 36 13C2 PFDaA										
615.00 > 570.00	4.139	4.147	-0.008	1.488	9588251	2.56		102	9173	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.139	4.149	-0.010	1.000	16802308	4.38		87.5	3303	
613.00 > 169.00	4.139	4.149	-0.010	1.000	2173850		7.73(4.68-14.05)	87.5	3104	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.152	0.005	1.184	2517398	5.25		109	3330	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		4372118	NC			548	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.390	-0.002	1.392	1335682	5.03		104	2680	
699.00 > 99.00	4.388	4.390	-0.002	1.392	2221643		0.60(0.28-0.83)	104	3926	

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	4.419	4.417	0.002	1.068	13513007	4.49		89.9	3826	
663.00 > 169.00	4.419	4.417	0.002	1.068	2743699		4.93(3.09-9.27)	89.9	5042	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.659	0.001	1.000	2567080	5.26		105	6295	
713.00 > 219.00	4.660	4.659	0.001	1.000	1687786		1.52(0.70-2.09)	105	5156	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.659	0.001	1.675	7431707	2.51		101	13531	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.074	5.084	-0.010	1.824	7721737	2.62		105	8630	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.091	5.089	0.002	1.003	13245075	4.71		94.2	2217	
813.00 > 169.00	5.074	5.089	-0.015	1.000	2529071		5.24(2.77-8.32)	94.2	3906	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.448	5.448	0.0	1.074	9581981	4.79		95.8	1852	
913.00 > 169.00	5.448	5.448	0.0	1.074	1952496		4.91(2.55-7.64)	95.8	3889	

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\20180921-64578.b\2018.09.21LLAICAL_010.d

Injection Date: 21-Sep-2018 14:13:31

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

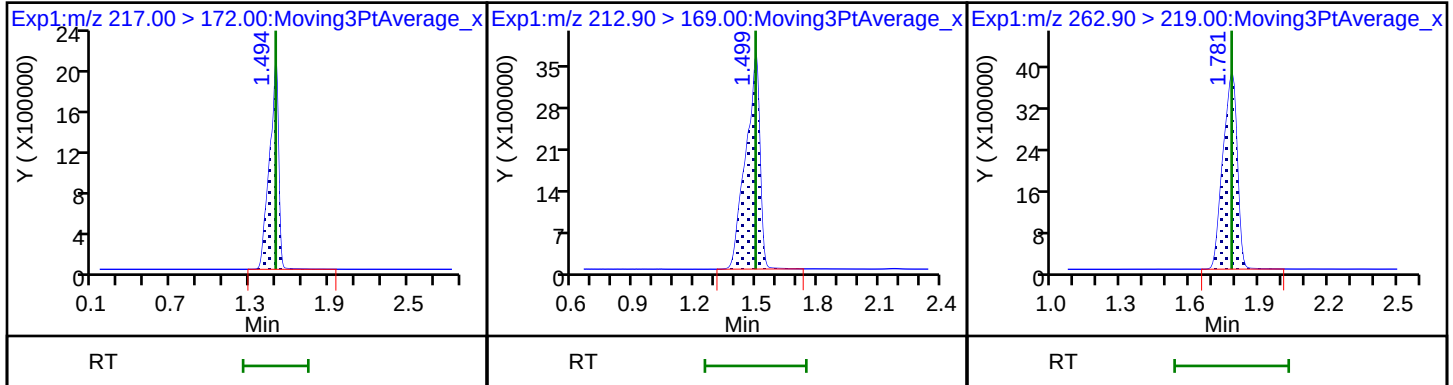
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

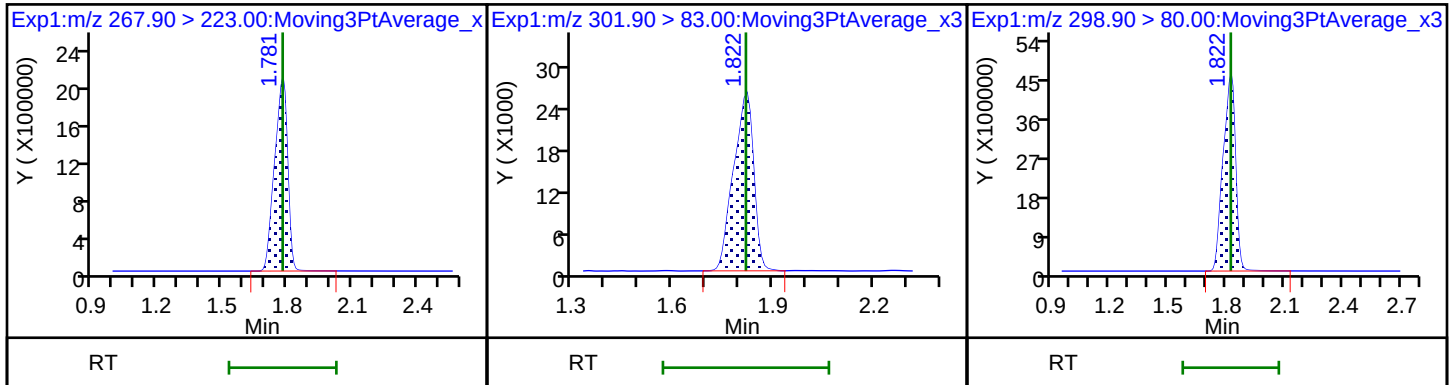
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

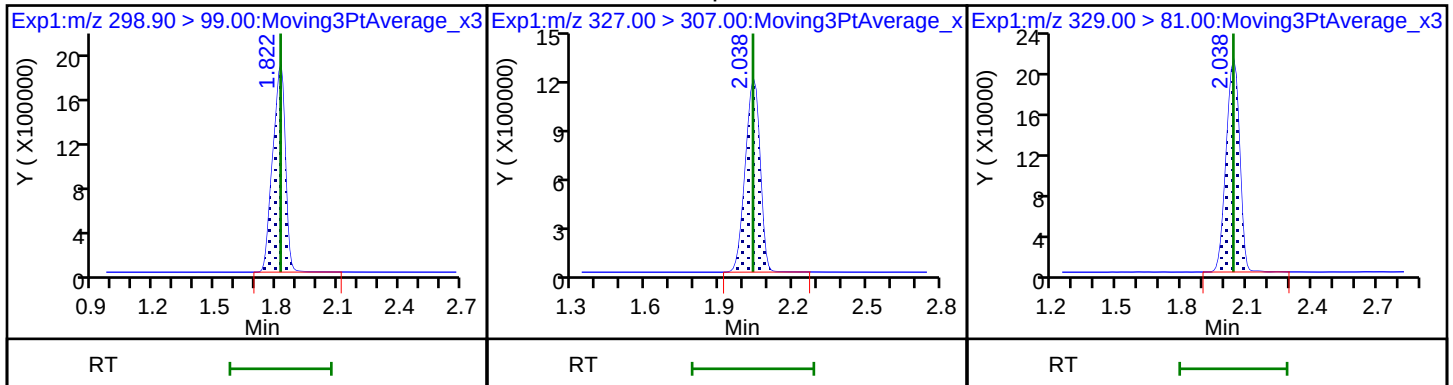
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

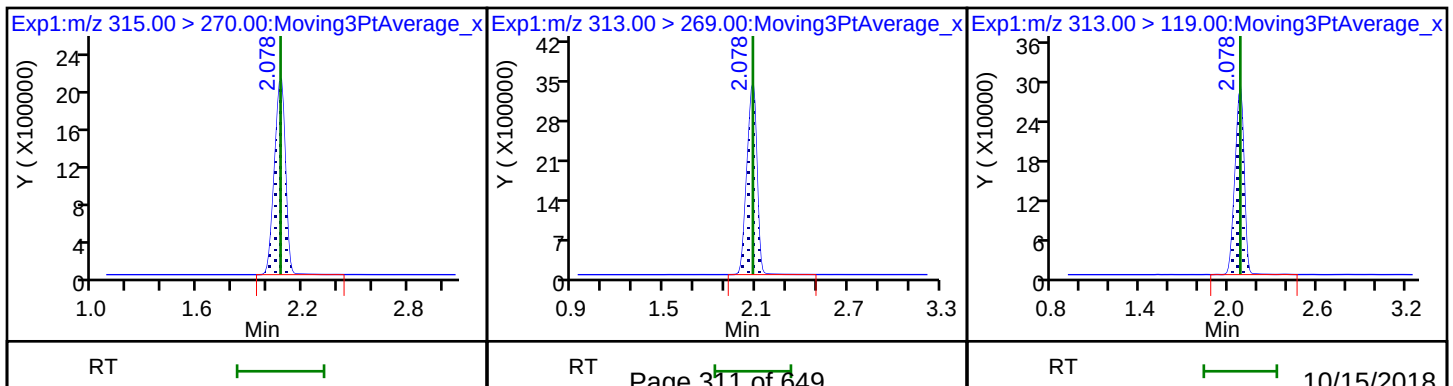
D 60 M2-4:2FTS

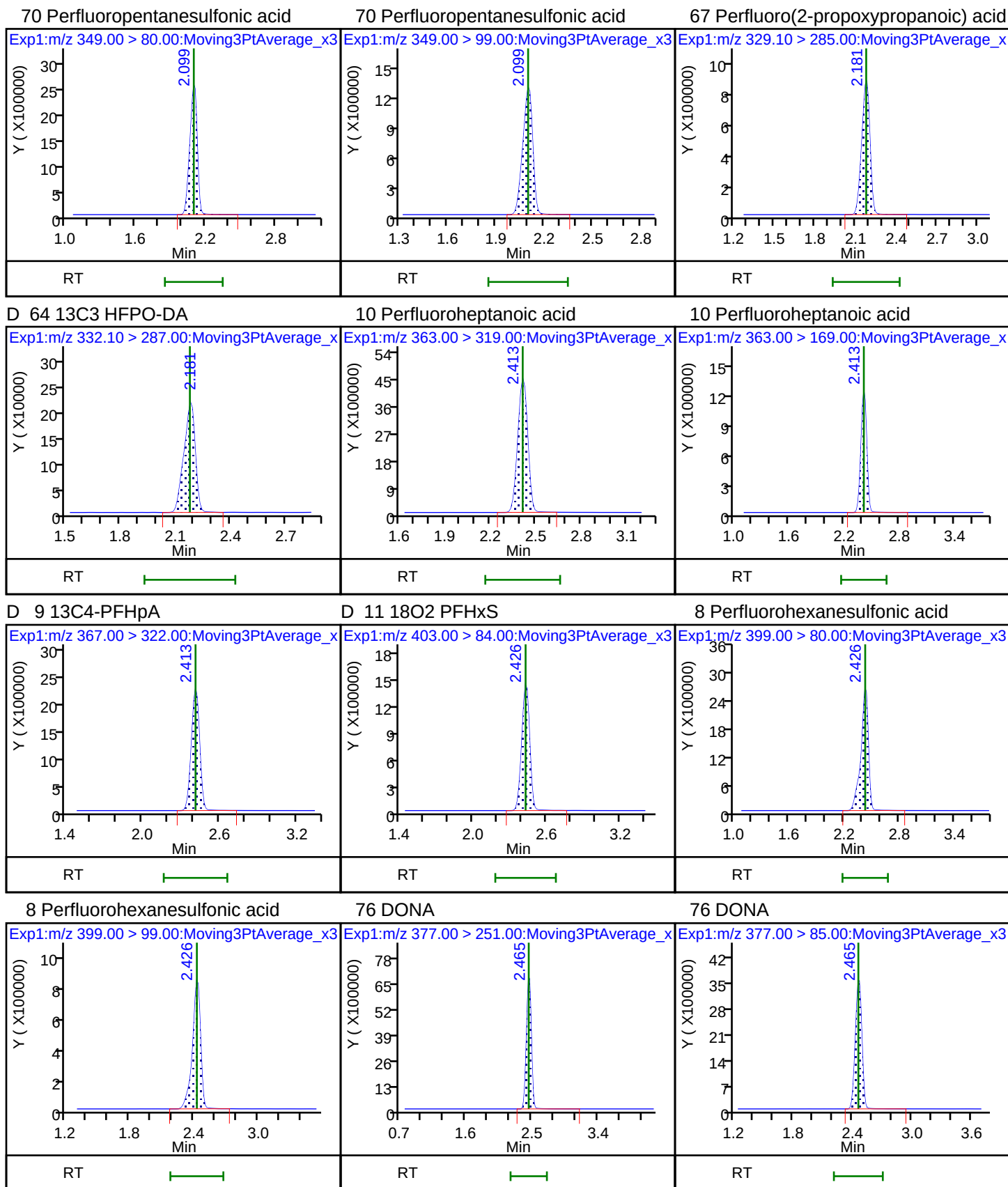


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

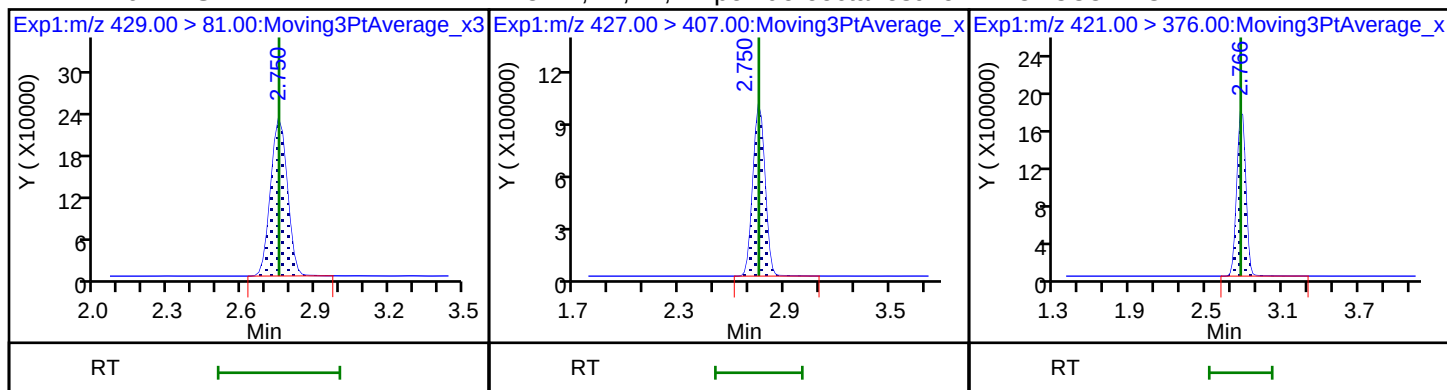
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

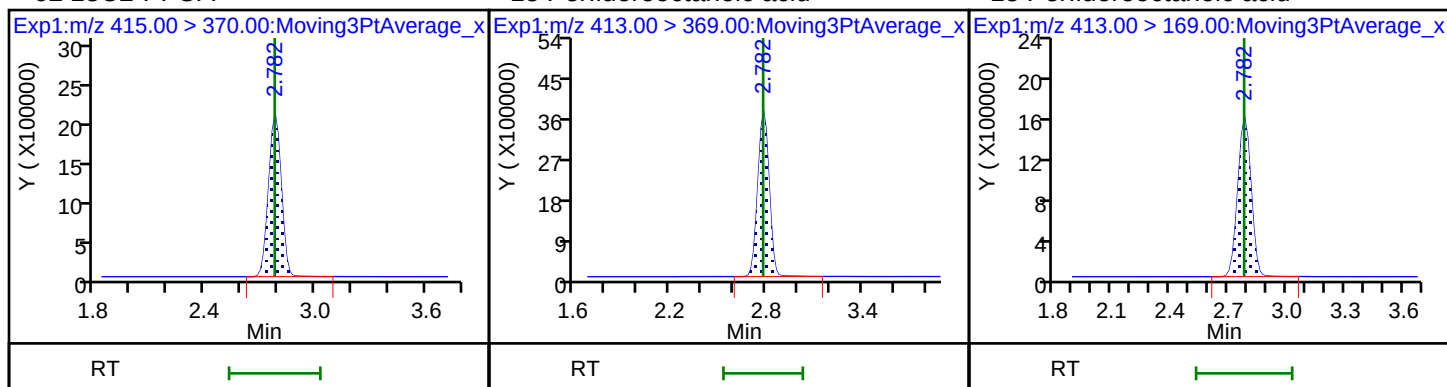
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

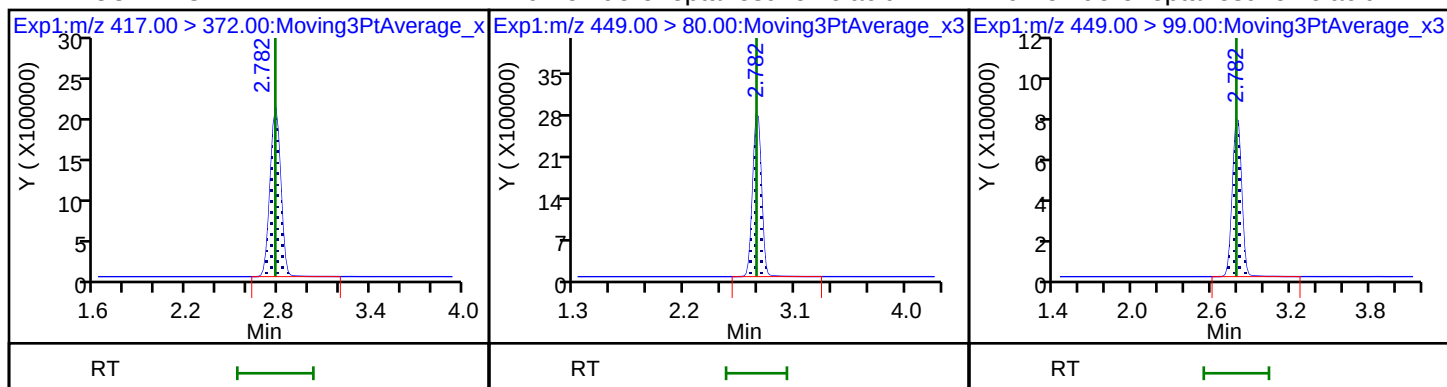
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

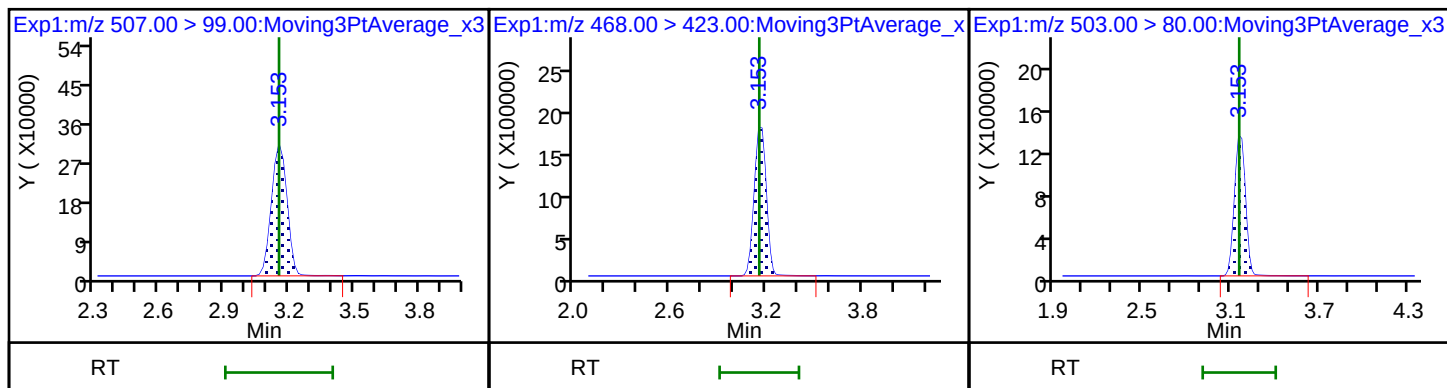
16 Perfluoroheptanesulfonic acid

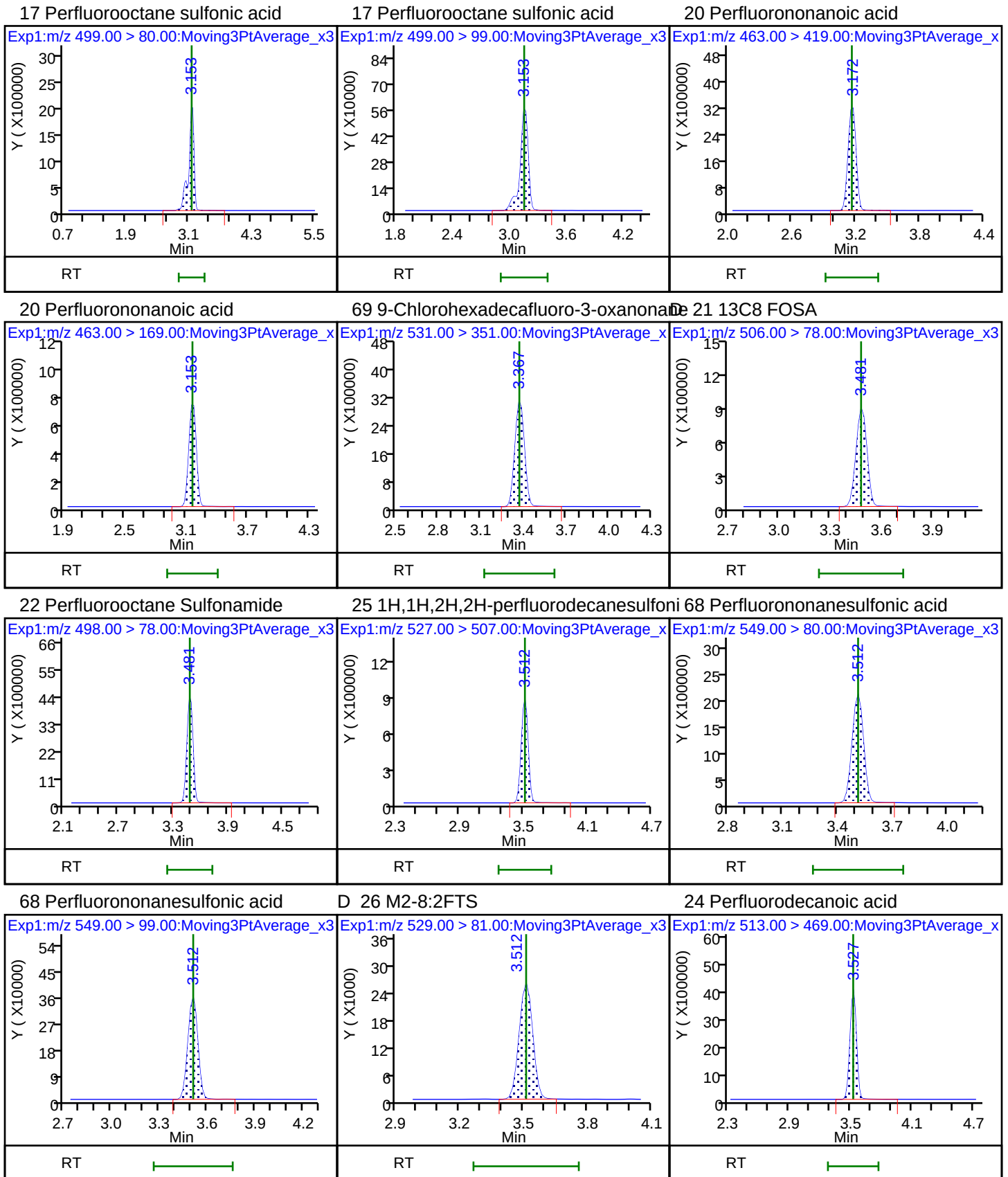


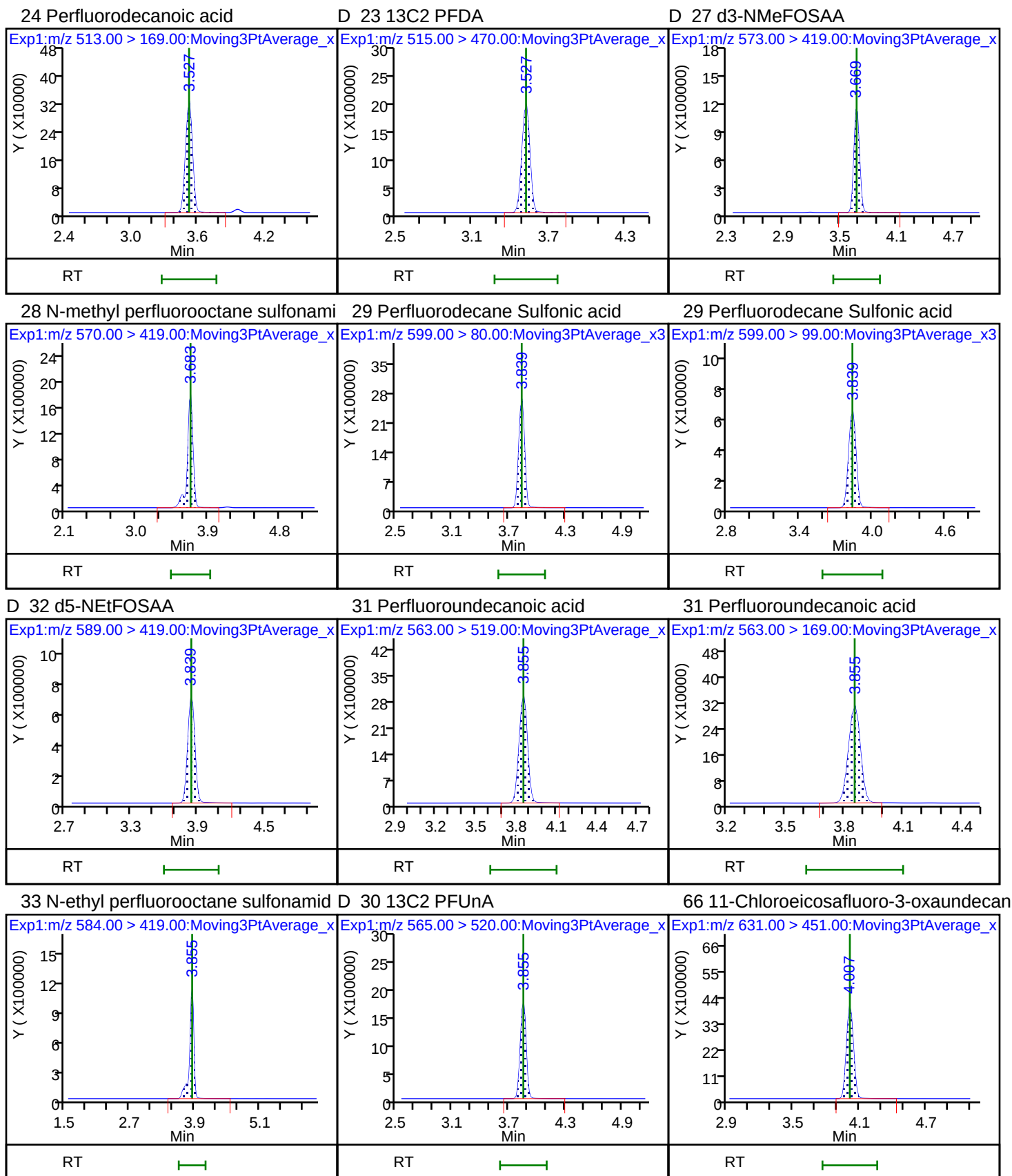
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



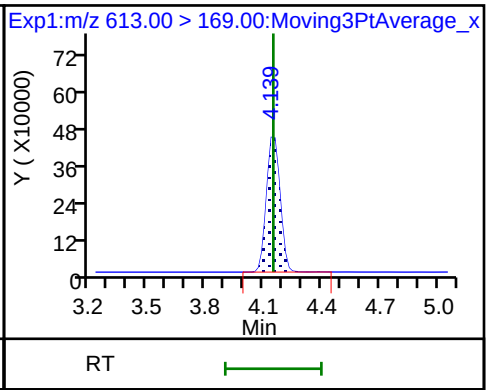
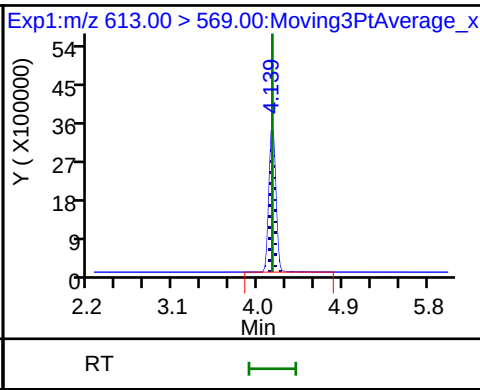
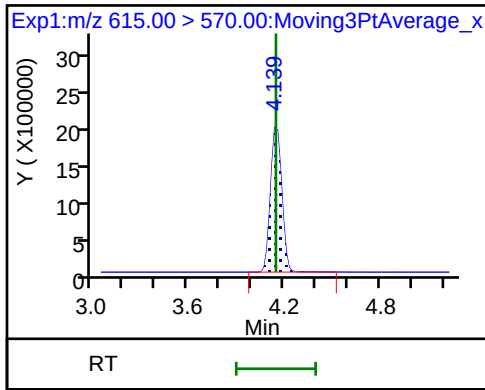




D 36 13C2 PFDaA

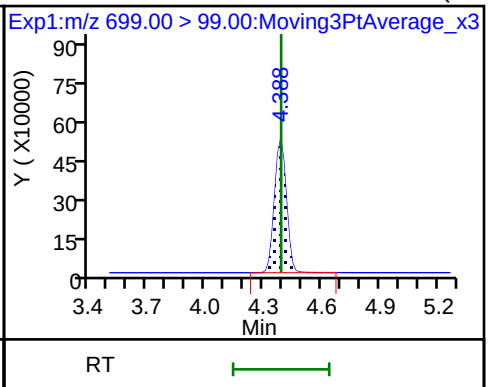
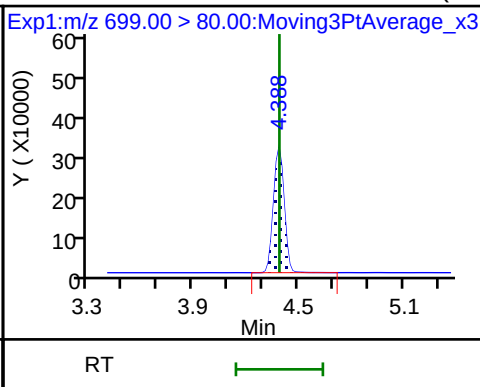
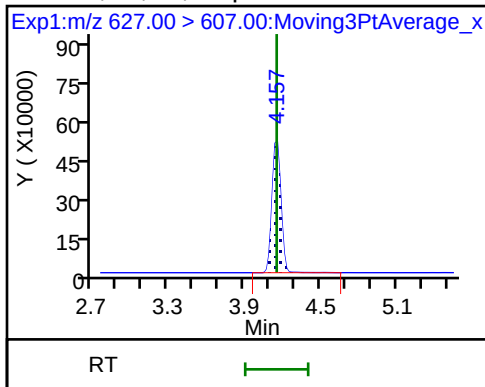
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

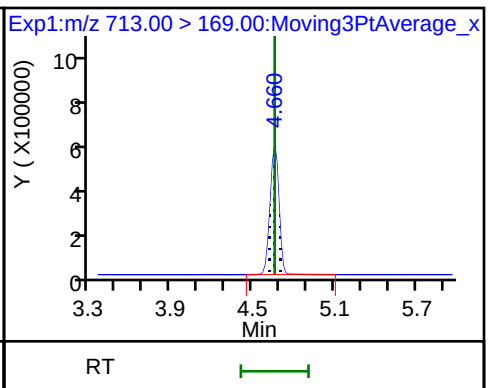
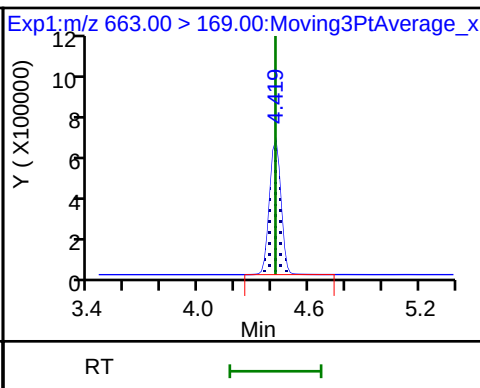
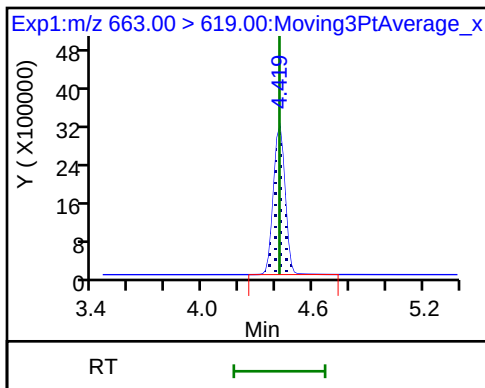
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

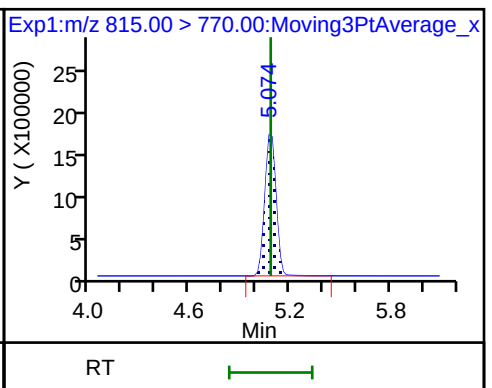
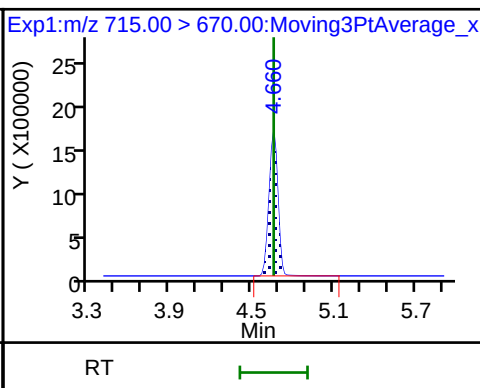
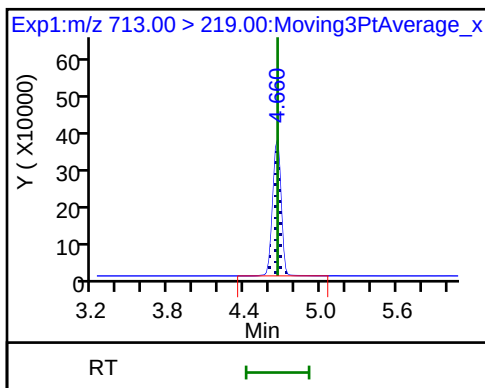
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

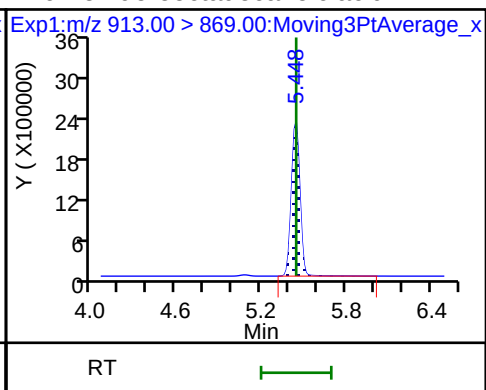
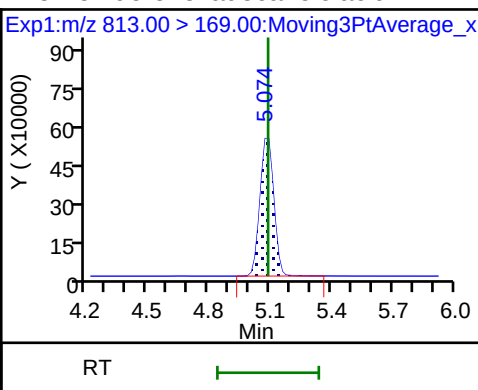
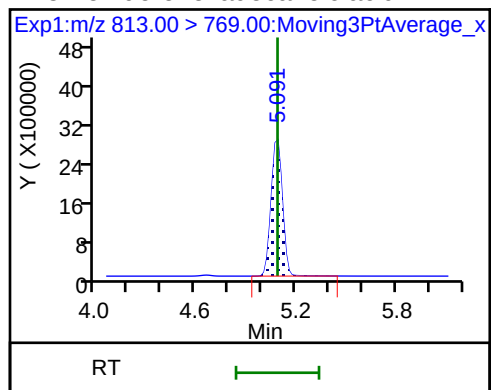
D 44 13C2-PFHxDA



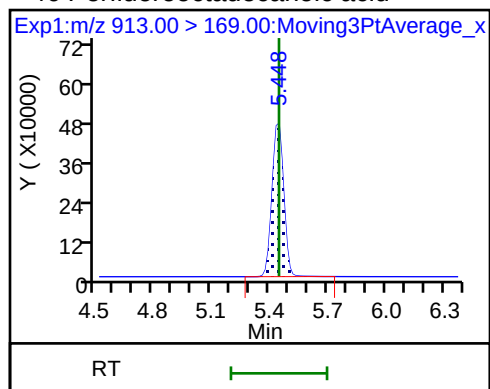
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_011.d
 Lims ID: IC L7 Full
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-Sep-2018 14:21:02 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\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:06:09 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 15:05:39

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	1.495	-0.006	0.538	8422985	2.69		107	23919	
2 Perfluorobutyric acid										
212.90 > 169.00	1.489	1.496	-0.007	1.000	28619286	9.27		92.7	1643	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.779	-0.007	1.000	26065041	8.77		87.7	1835	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.779	-0.007	0.641	7458806	2.62		105	10761	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.818	-0.004	0.656	97694	2.52		108	508	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.821	-0.007	1.000	32034311	7.38		83.5	9123	
298.90 > 99.00	1.814	1.821	-0.007	1.000	13059469		2.45(1.35-4.05)	83.5	4828	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.036	-0.009	1.118	8716545	9.18		98.3	12643	
D 60 M2-4:2FTS										
329.00 > 81.00	2.027	2.036	-0.009	0.733	851043	2.40		103	1013	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.074	-0.006	0.748	7960200	2.64		105	15829	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.077	-0.009	1.000	25055147	8.75		87.5	4943	
313.00 > 119.00	2.068	2.077	-0.009	1.000	2161138		11.59(6.96-20.87)	87.5	3223	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.099	-0.010	1.152	18041204	8.87		94.6	16300	
349.00 > 99.00	2.089	2.099	-0.010	1.152	8802447		2.05(1.15-3.45)	94.6	5749	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.170	2.176	-0.006	1.000	6264056	9.39		93.9	2183	

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	2.170	2.178	-0.008	0.785	892112	2.84		113	1999	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.399	2.412	-0.013	1.000	31298210	8.01		80.1	3204	
363.00 > 169.00	2.399	2.412	-0.013	1.000	9073586		3.45(2.17-6.52)	80.1	10771	
D 9 13C4-PFHpA										
367.00 > 322.00	2.399	2.412	-0.013	0.867	9199009	2.56		102	5649	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.427	-0.001	0.877	5975198	2.58		109	7546	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.427	-0.001	1.000	24867986	7.82		85.9	11890	
399.00 > 99.00	2.426	2.427	-0.001	1.000	7857370		3.16(1.90-5.70)	85.9	4160	
76 DONA										
377.00 > 251.00	2.452	2.456	-0.004	0.778	46231056	7.50		79.6	47343	
377.00 > 85.00	2.452	2.456	-0.004	0.778	25084994		1.84(1.13-3.39)	79.6	10184	
D 12 M2-6:2FTS										
429.00 > 81.00	2.750	2.752	-0.002	0.994	869086	2.33		98.0	1401	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.752	-0.002	1.000	7432909	9.31		98.2	5557	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.768	-0.002		7516784	2.44		99.9	13070	
* 62 13C2-PFOA										
415.00 > 370.00	2.766	2.780	-0.014		8508066	2.50			6567	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.780	-0.014	1.000	28602312	7.78		77.7	1412	
413.00 > 169.00	2.766	2.780	-0.014	1.000	12752630		2.24(1.36-4.08)	77.7	12445	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.780	-0.014	1.000	8762277	2.57		103	9189	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.784	-0.002	0.882	22040563	9.24		97.0	8791	
449.00 > 99.00	2.782	2.784	-0.002	0.882	6474248		3.40(1.84-5.53)	97.0	8521	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.153	-0.018		1170018	2.16		90.6	2070	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.155	-0.002	1.140	7893873	2.55		102	7899	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.155	-0.002	1.140	5571777	2.32		97.0	3073	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.153	3.155	-0.002	1.000	22799451	9.23		99.5	6444	
499.00 > 99.00	3.153	3.155	-0.002	1.000	6030075		3.78(2.04-6.12)	99.5	3690	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.161	-0.008	1.000	25182261	8.12		81.2	2297	
463.00 > 169.00	3.153	3.161	-0.008	1.000	6270761		4.02(2.68-8.03)	81.2	8410	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.367	3.369	-0.002	1.068	22397136	8.60		92.3	6206	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.258	3377811	2.63		105	5669	

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	3.480	3.483	-0.003	1.000	32608152	8.18		81.8	13170	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.512	-0.016	1.000	5817799	8.79		91.7	5085	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.496	3.512	-0.016	1.109	13965529	9.00		93.7	5096	
549.00 > 99.00	3.496	3.512	-0.016	1.109	2721964		5.13(3.02-9.05)	93.7	3551	
D 26 M2-8:2FTS										
529.00 > 81.00	3.496	3.512	-0.016	1.264	107844	2.28		95.2	374	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.512	3.522	-0.010	1.000	27615483	7.81		78.1	3790	
513.00 > 169.00	3.512	3.522	-0.010	1.000	2590251		10.66(7.12-21.35)	78.1	586	
D 23 13C2 PFDA										
515.00 > 470.00	3.512	3.522	-0.010	1.270	8068123	2.51		101	5709	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.669	3.675	-0.006	1.326	3893478	2.74		109	2198	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.669	3.681	-0.012	1.000	14001333	9.37		93.7	2177	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.823	3.834	-0.011	1.213	17155341	8.60		89.2	8380	
599.00 > 99.00	3.823	3.834	-0.011	1.213	4283541		4.00(2.14-6.43)	89.2	8843	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.839	3.843	-0.004	1.388	2476319	2.22		88.8	2130	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.839	3.852	-0.013	1.000	19149013	8.21		82.1	2544	
563.00 > 169.00	3.839	3.852	-0.013	1.000	2219032		8.63(5.24-15.72)	82.1	4493	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.839	3.852	-0.013	1.000	10076333	10.9		109	5515	
D 30 13C2 PFUnA										
565.00 > 520.00	3.839	3.852	-0.013	1.388	6465241	2.37		94.9	6550	
35 MeFOSA										
512.00 > 169.00	3.960	3.965	-0.005		7393519	NC			1009	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.007	4.009	-0.002	1.271	26180127	8.54		90.6	15277	
D 36 13C2 PFDaA										
615.00 > 570.00	4.139	4.147	-0.008	1.496	8282800	2.55		102	10953	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.139	4.149	-0.010	1.000	25199086	7.60		76.0	4469	
613.00 > 169.00	4.139	4.149	-0.010	1.000	3994374		6.31(4.68-14.05)	76.0	5004	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.139	4.152	-0.013	1.184	4592235	10.2		106	4517	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		7490701	NC			556	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.373	4.390	-0.017	1.387	2163811	9.69		100	2897	
699.00 > 99.00	4.373	4.390	-0.017	1.387	4022315		0.54(0.28-0.83)	100	8350	

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	4.404	4.417	-0.013	1.064	20612834	7.94		79.4	5330	
663.00 > 169.00	4.404	4.417	-0.013	1.064	4536067		4.54(3.09-9.27)	79.4	5039	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.644	4.659	-0.015	1.000	4644490	10.0		100	8161	
713.00 > 219.00	4.644	4.659	-0.015	1.000	3168523		1.47(0.70-2.09)	100	8248	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.644	4.659	-0.015	1.679	7039163	2.75		110	11527	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.074	5.084	-0.010	1.834	6848863	2.68		107	12720	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.074	5.089	-0.015	1.000	19994843	8.03		80.3	3389	
813.00 > 169.00	5.074	5.089	-0.015	1.000	4609799		4.34(2.77-8.32)	80.3	5262	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.434	5.448	-0.014	1.071	15904110	8.96		89.6	3076	
913.00 > 169.00	5.434	5.448	-0.014	1.071	3502024		4.54(2.55-7.64)	89.6	5377	

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\20180921-64578.b\2018.09.21LLAICAL_011.d

Injection Date: 21-Sep-2018 14:21:02

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

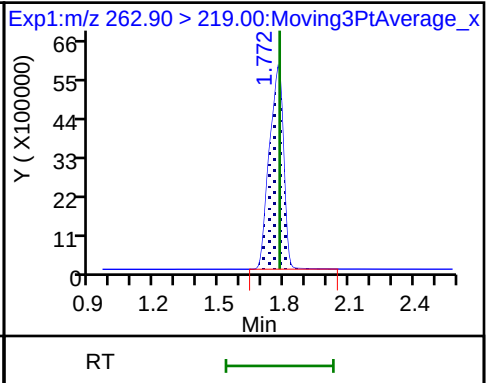
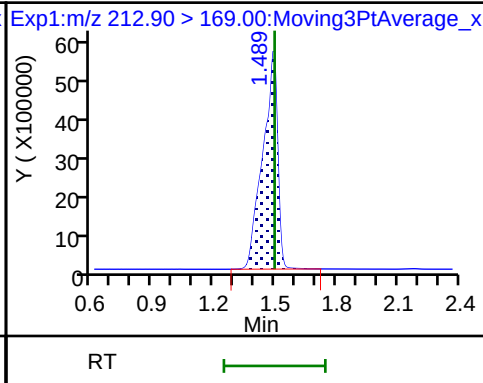
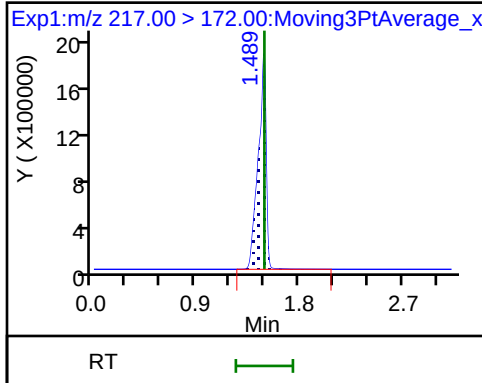
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

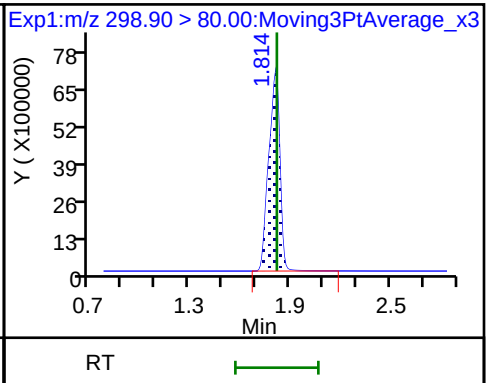
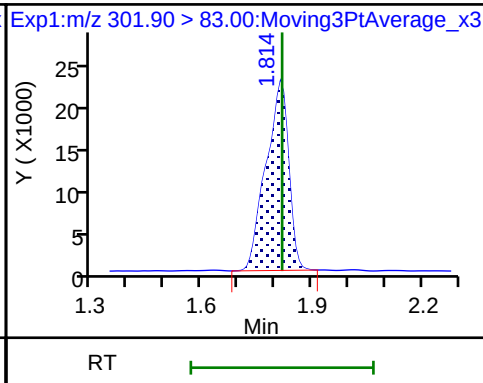
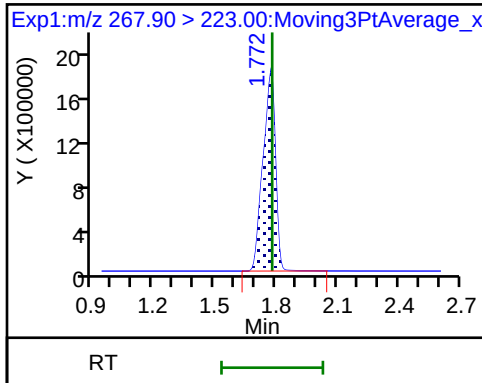
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

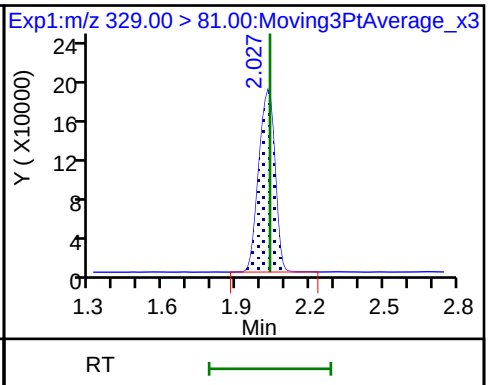
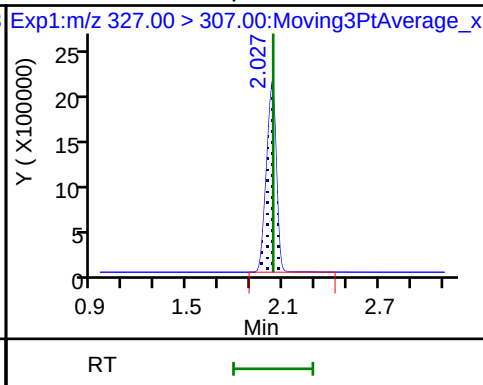
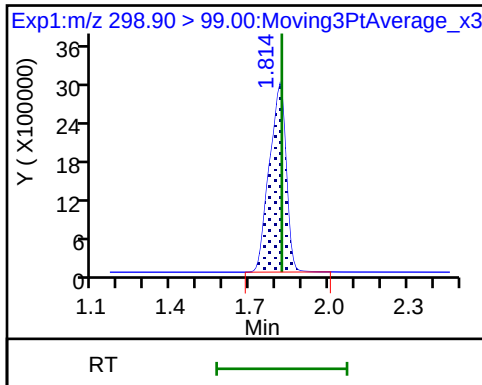
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

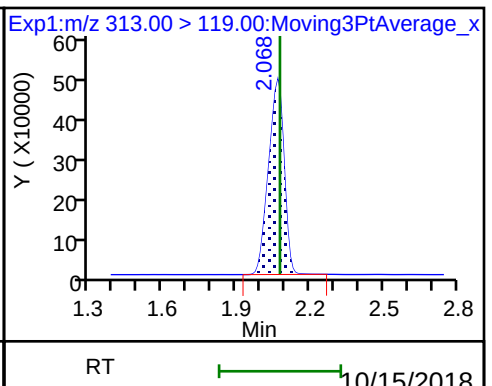
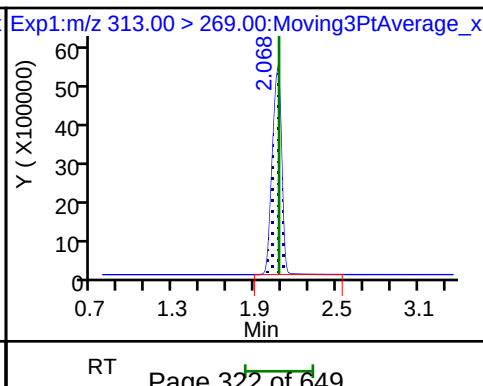
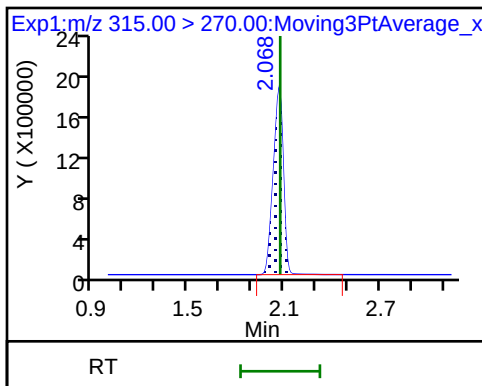
D 60 M2-4:2FTS

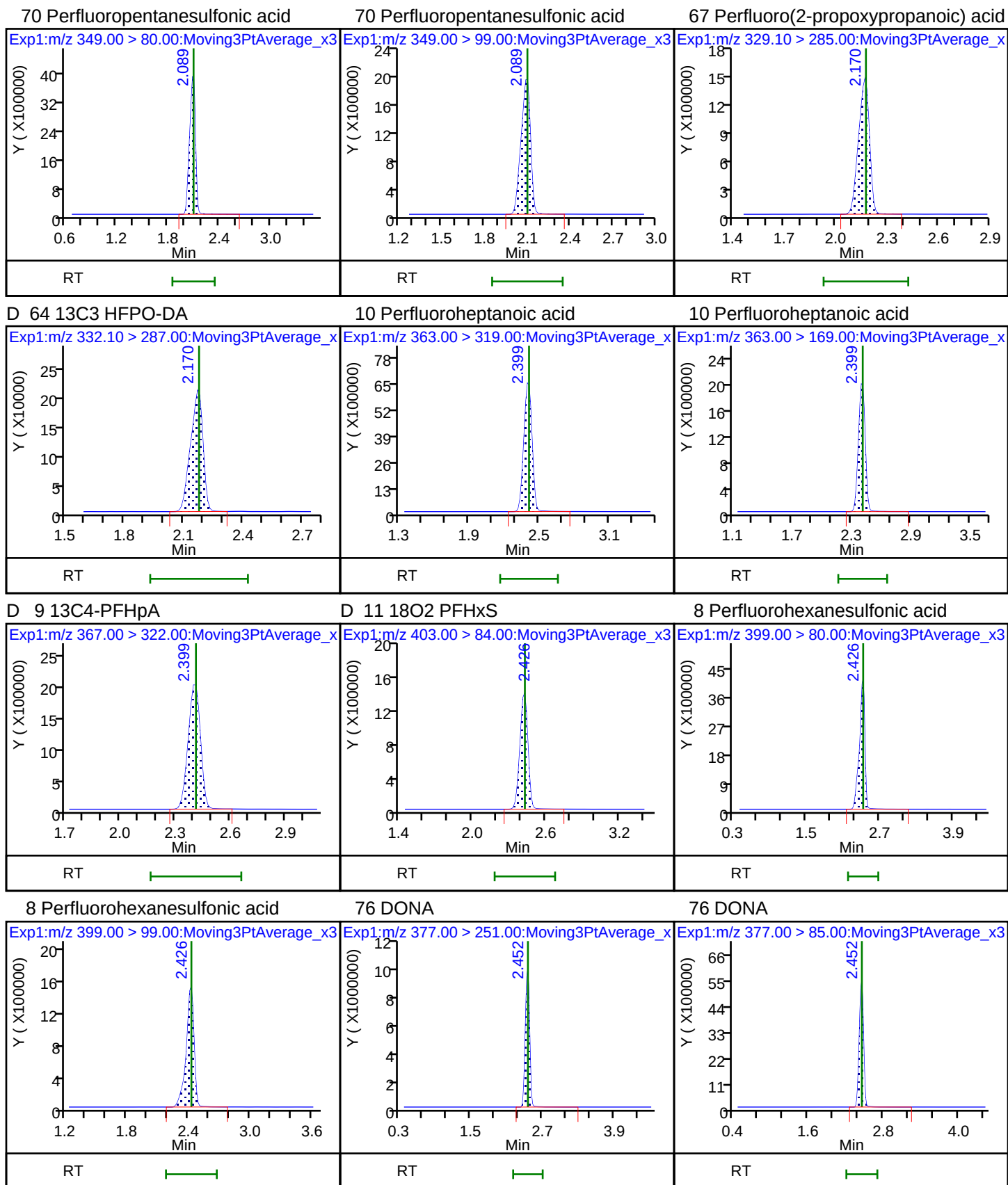


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

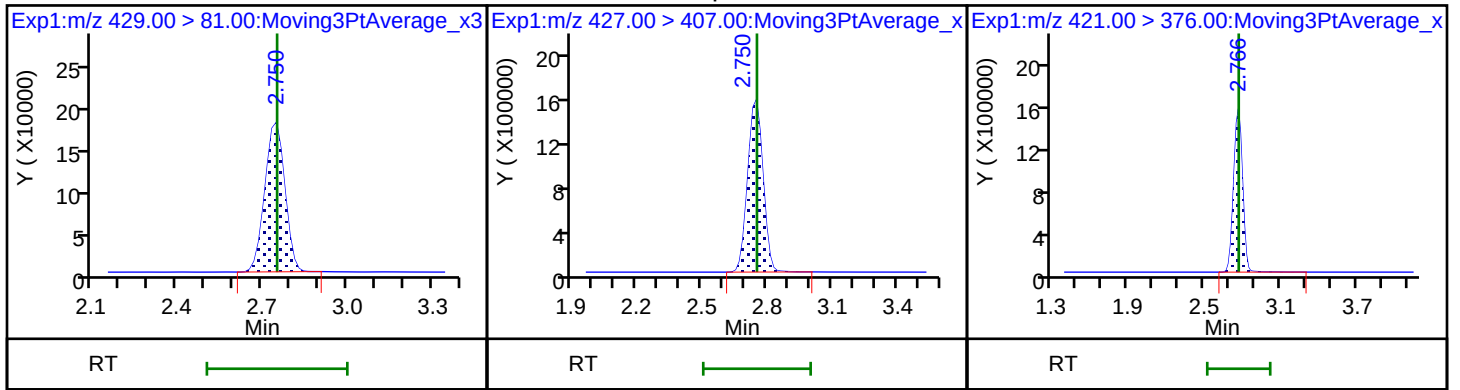
6 Perfluorohexanoic acid





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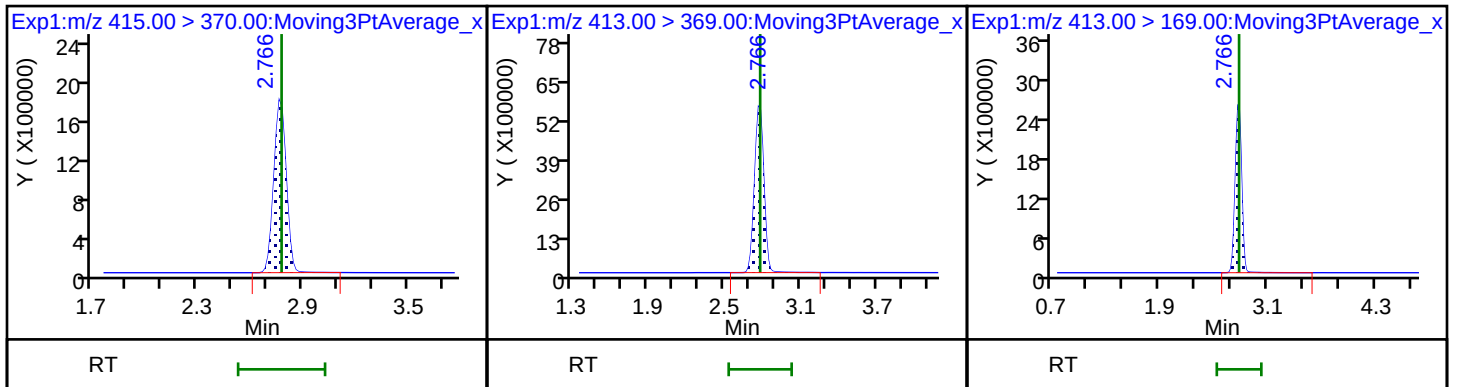
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

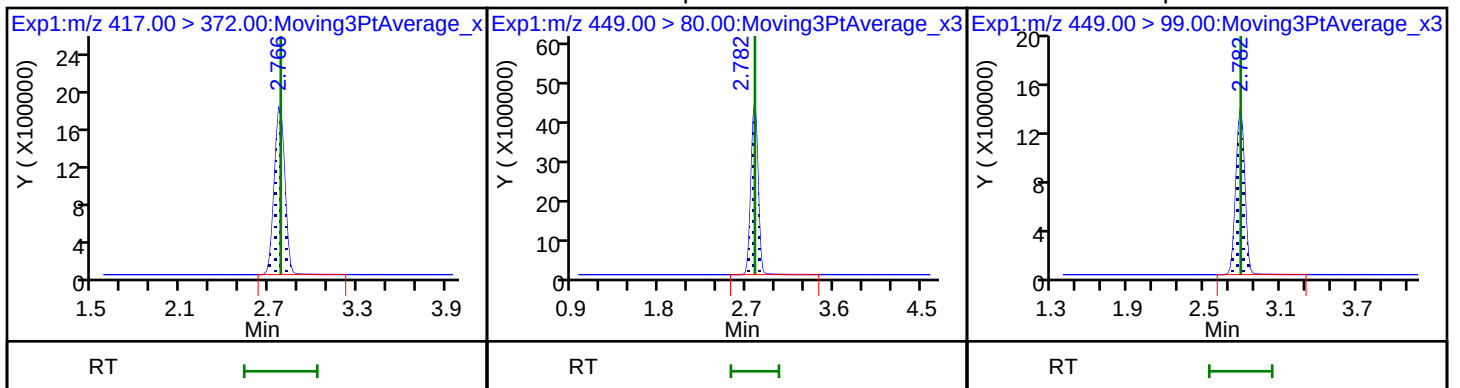
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

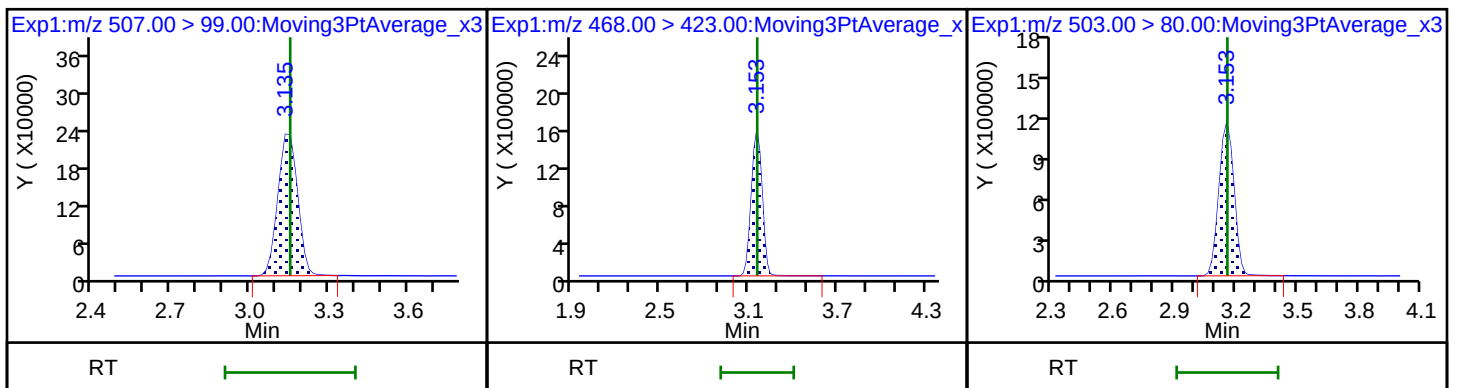
16 Perfluoroheptanesulfonic acid

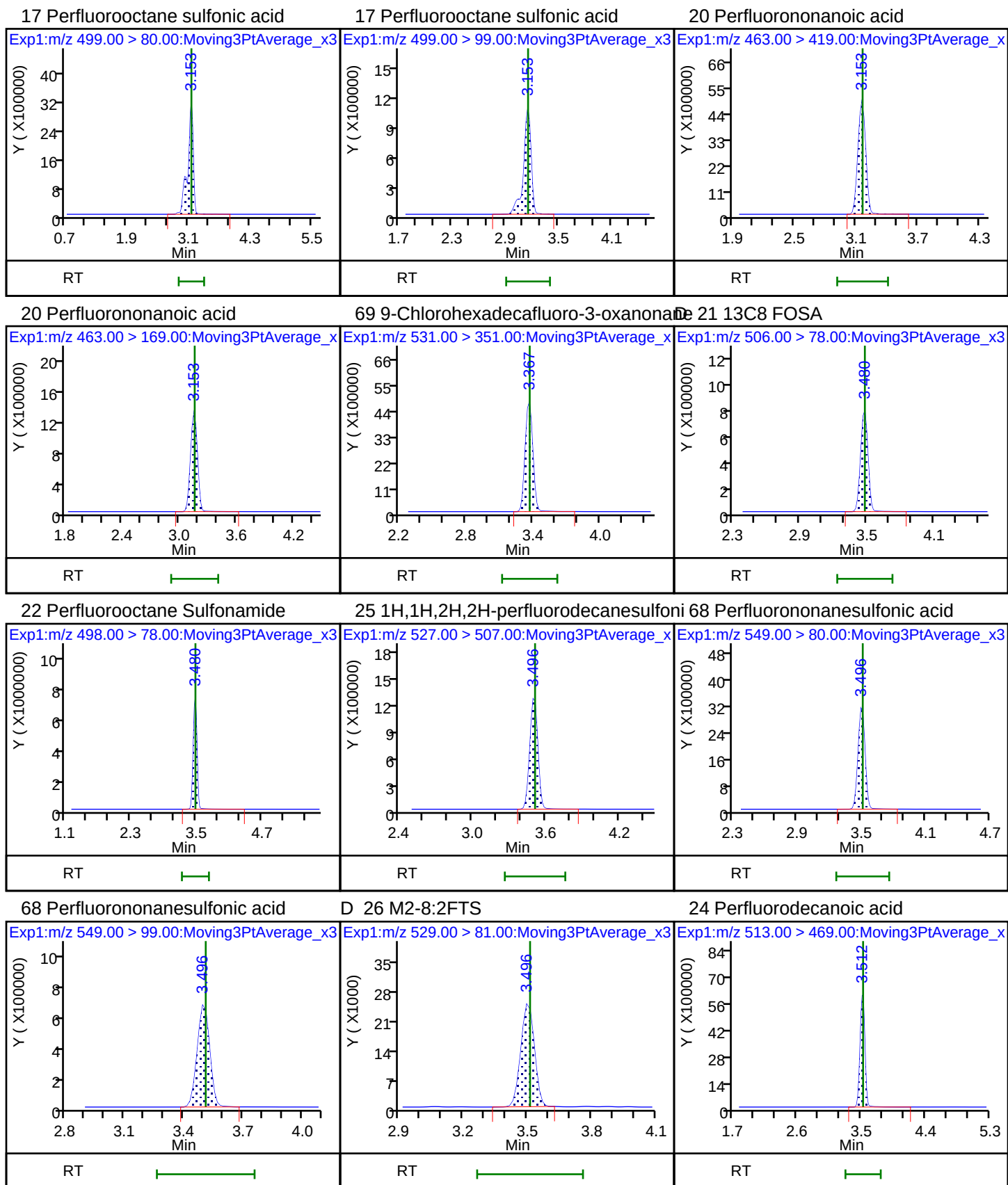


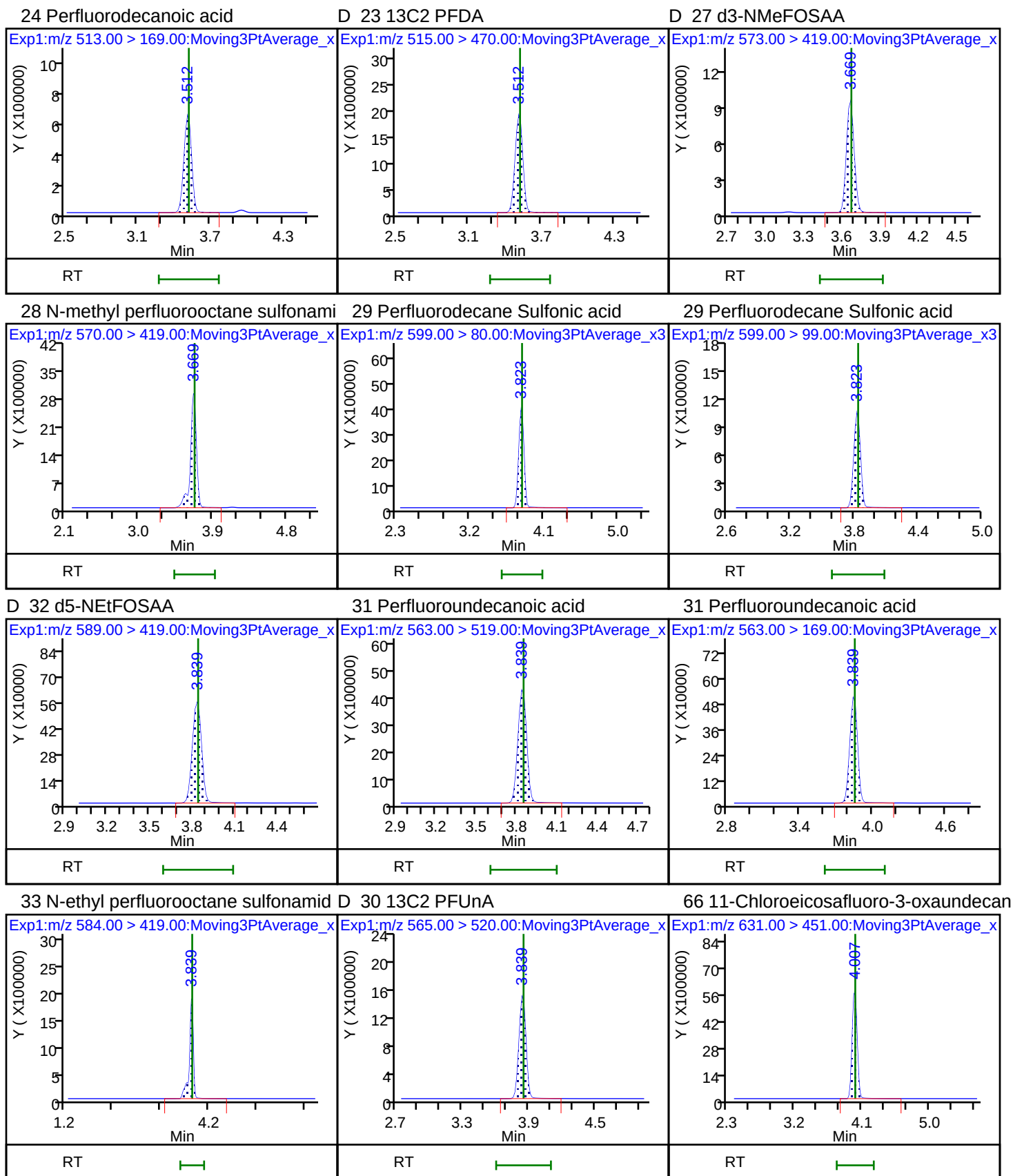
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



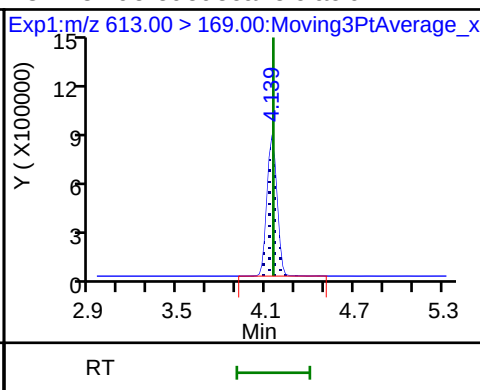
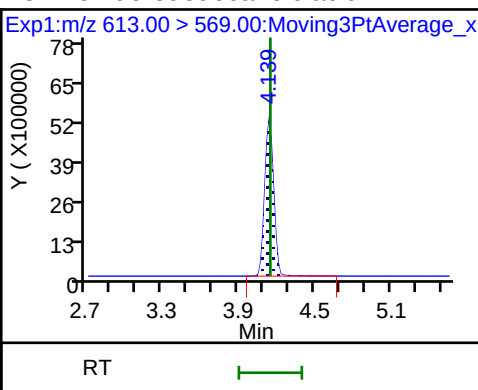
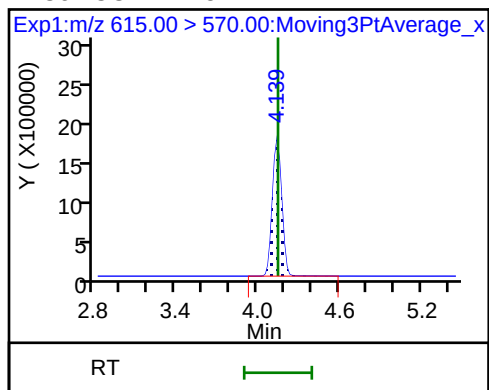




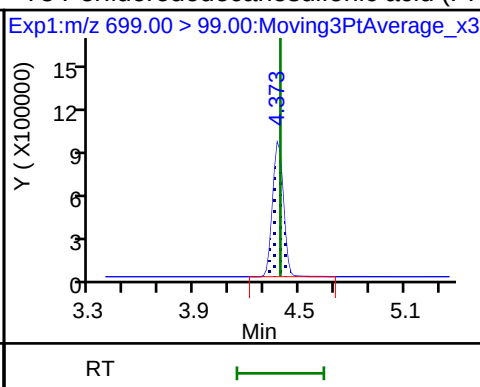
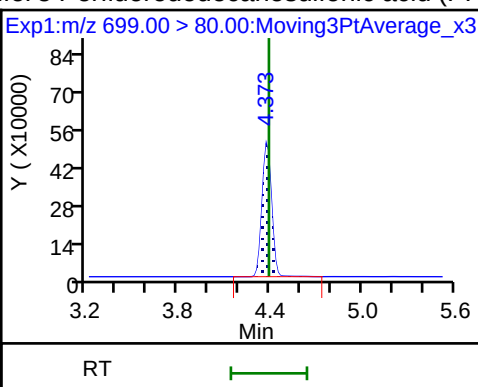
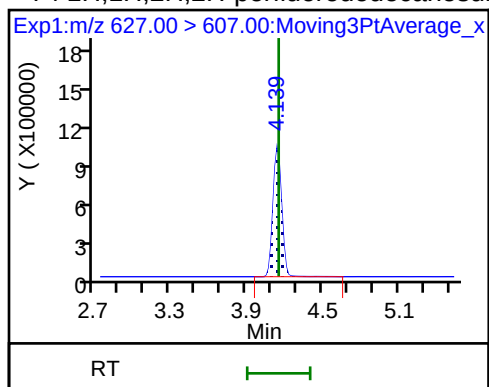
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



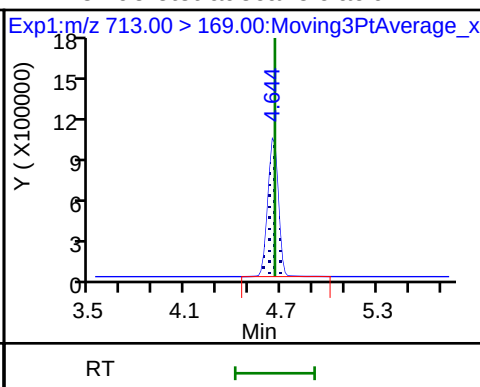
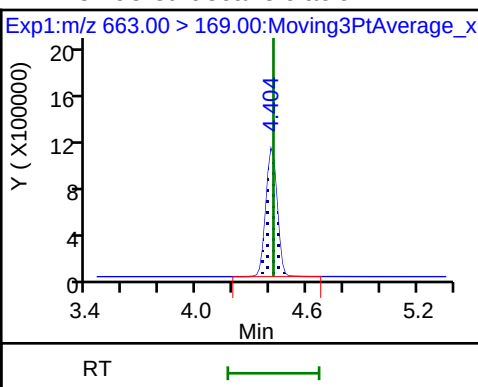
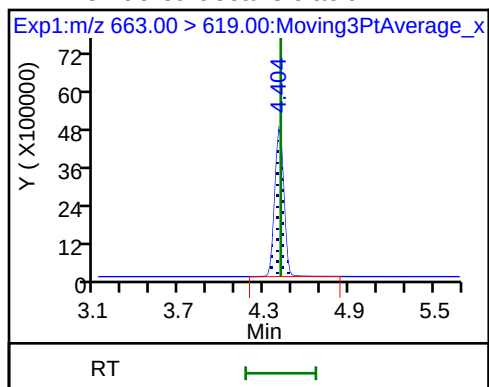
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

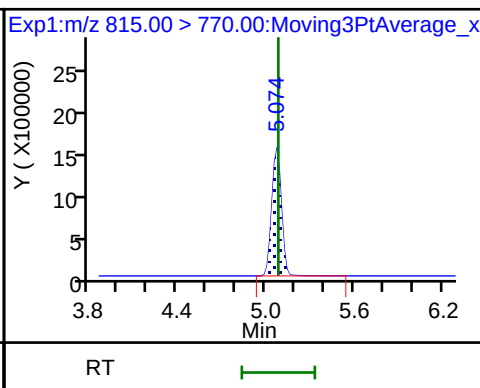
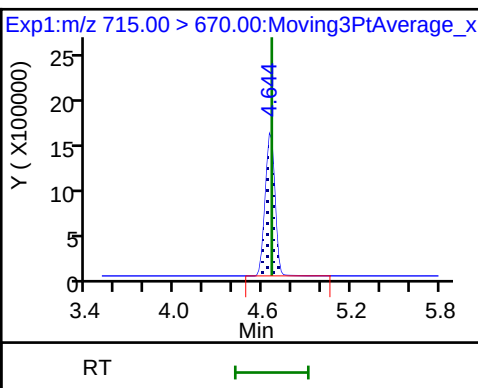
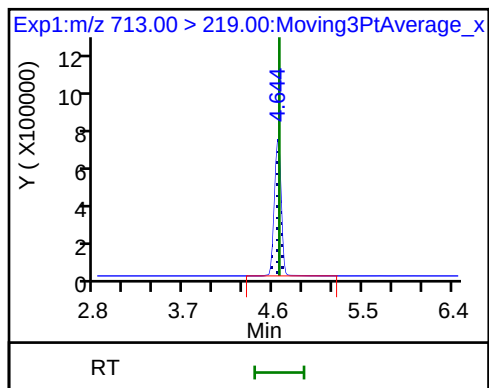
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

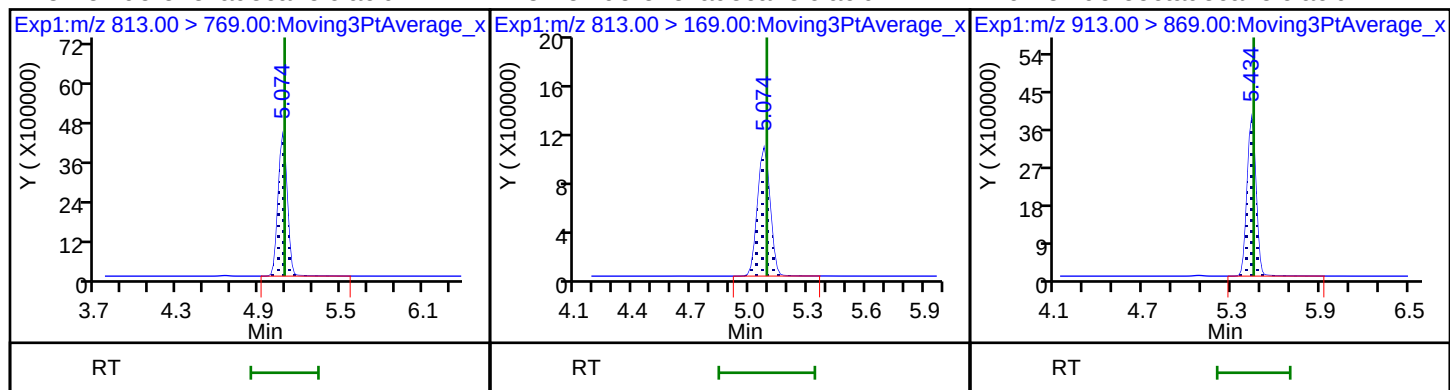
D 44 13C2-PFHxDA



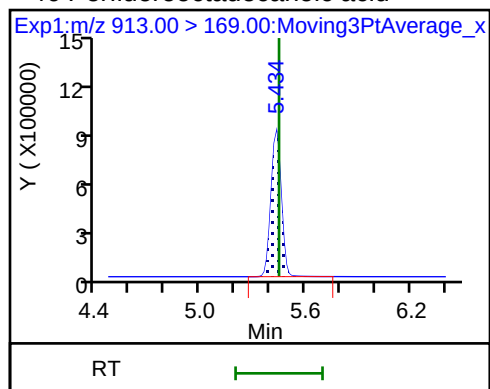
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-Sep-2018 15:36:08 ALS Bottle#: 11 Worklist Smp#: 11
 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\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:06:16 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 15:54:20

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	1.493	1.495	-0.002	0.540	7455703	2.37		94.8	11386	
2 Perfluorobutyric acid										
212.90 > 169.00	1.493	1.496	-0.003	1.000	135508	0.0496		99.1	8.9	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.779	-0.007	1.000	149842	0.0549		110	12.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.779	-0.007	0.641	6857279	2.40		95.9	9489	
D 47 13C3-PFBS										
301.90 > 83.00	1.813	1.818	-0.005	0.656	83923	2.15		92.7	431	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.813	1.821	-0.008	1.000	172445	0.0462		105	97.2	
298.90 > 99.00	1.813	1.821	-0.008	1.000	58528		2.95(1.35-4.05)	105	61.8	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.036	-0.009	1.118	36747	0.0450		96.5	326	
D 60 M2-4:2FTS										
329.00 > 81.00	2.027	2.036	-0.009	0.733	807073	2.27		97.0	902	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.074	-0.006	0.748	7530157	2.48		99.3	8290	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.077	-0.009	1.000	143018	0.0528		106	32.3	
313.00 > 119.00	2.068	2.077	-0.009	1.000	9796		14.60(6.96-20.87)	106	23.3	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.088	2.099	-0.011	1.152	81120	0.0464		99.0	164	
349.00 > 99.00	2.098	2.099	-0.001	1.157	42510		1.91(1.15-3.45)	99.0	102	
67 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	2.170	2.176	-0.006	1.000	25929	0.0504		101	12.8	M

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	2.170	2.178	-0.008	0.785	688254	2.18		87.2	1519	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.399	2.412	-0.013	1.000	199114	0.0550		110	33.2	
363.00 > 169.00	2.399	2.412	-0.013	1.000	44696		4.45(2.17-6.52)	110	112	
D 9 13C4-PFHpA										
367.00 > 322.00	2.399	2.412	-0.013	0.867	8530313	2.36		94.5	11908	
D 11 18O2 PFHxS										
403.00 > 84.00	2.412	2.427	-0.015	0.872	5360994	2.30		97.3	5685	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.412	2.427	-0.015	1.000	145720	0.0511		112	160	
399.00 > 99.00	2.412	2.427	-0.015	1.000	42813		3.40(1.90-5.70)	112	62.4	
76 DONA										
377.00 > 251.00	2.438	2.456	-0.018	0.778	325759	0.0517		110	843	
377.00 > 85.00	2.438	2.456	-0.018	0.778	130047		2.50(1.13-3.39)	110	59.2	
D 12 M2-6:2FTS										
429.00 > 81.00	2.734	2.752	-0.018	0.988	881970	2.35		99.1	1366	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.752	-0.018	1.000	41619	0.0514		108	122	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.768	-0.018		7332111	2.38		97.4	12266	
* 62 13C2-PFOA										
415.00 > 370.00	2.766	2.780	-0.014		8541936	2.50			10031	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.780	-0.014	1.000	209915	0.0573		115	11.2	
413.00 > 169.00	2.766	2.780	-0.014	1.000	74136		2.83(1.36-4.08)	115	116	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.780	-0.014	1.000	8724980	2.55		102	9964	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.766	2.784	-0.018	0.882	112302	0.0460		96.7	156	
449.00 > 99.00	2.766	2.784	-0.018	0.882	27727		4.05(1.84-5.53)	96.7	97.5	
D 72 13C8 PFOS										
507.00 > 99.00	3.134	3.153	-0.019		1255916	2.32		97.2	2636	
D 19 13C5 PFNA										
468.00 > 423.00	3.134	3.155	-0.021	1.133	7735806	2.49		99.4	6498	
D 18 13C4 PFOS										
503.00 > 80.00	3.134	3.155	-0.021	1.133	5698100	2.36		98.8	3992	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.134	3.155	-0.021	1.000	123626	0.0490		105	113	
499.00 > 99.00	3.152	3.155	-0.003	1.006	31718		3.90(2.04-6.12)	105	116	
20 Perfluorononanoic acid										
463.00 > 419.00	3.134	3.161	-0.027	1.000	166178	0.0547		109	18.8	
463.00 > 169.00	3.134	3.161	-0.027	1.000	28535		5.82(2.68-8.03)	109	67.6	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.350	3.369	-0.019	1.069	128181	0.0481		103	329	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.258	3139325	2.44		97.5	6657	

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	3.480	3.483	-0.003	1.000	194556	0.0525		105	344	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.495	3.512	-0.017	1.000	39972	0.0555		116	114	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.495	3.512	-0.017	1.115	76752	0.0484		101	211	
549.00 > 99.00	3.495	3.512	-0.017	1.115	10171		7.55(3.02-9.05)	101	118	
D 26 M2-8:2FTS										
529.00 > 81.00	3.495	3.512	-0.017	1.264	117311	2.47		103	596	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.495	3.522	-0.027	1.000	182990	0.0536		107	36.8	
513.00 > 169.00	3.495	3.522	-0.027	1.000	11451		15.98(7.12-21.35)	107	26.3	
D 23 13C2 PFDA										
515.00 > 470.00	3.495	3.522	-0.027	1.264	7794397	2.42		96.7	10981	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.654	3.675	-0.021	1.321	3229247	2.26		90.4	5166	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.654	3.681	-0.027	1.000	63800	0.0515		103	18.6	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.807	3.834	-0.027	1.215	105743	0.0518		108	185	
599.00 > 99.00	3.807	3.834	-0.027	1.215	21612		4.89(2.14-6.43)	108	104	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.822	3.843	-0.021	1.382	2952255	2.64		105	1883	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.822	3.852	-0.030	1.000	124140	0.0523		105	27.3	
563.00 > 169.00	3.822	3.852	-0.030	1.000	12244		10.14(5.24-15.72)	105	53.4	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.822	3.852	-0.030	1.000	52993	0.0480		96.1	119	
D 30 13C2 PFUnA										
565.00 > 520.00	3.822	3.852	-0.030	1.382	6576404	2.40		96.1	6623	
35 MeFOSA										
512.00 > 169.00	3.959	3.965	-0.006		32369	NC			163	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.991	4.009	-0.018	1.273	152674	0.0487		103	572	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.147	-0.025	1.490	7891096	2.42		96.9	9160	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.122	4.149	-0.027	1.000	175107	0.0554		111	43.7	M
613.00 > 169.00	4.122	4.149	-0.027	1.000	16570		10.57(4.68-14.05)	111	33.9	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.152	-0.030	1.179	22337	0.0456		94.6	70.3	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		34534	NC			94.1	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.372	4.390	-0.018	1.395	11605	0.0508		105	38.4	
699.00 > 99.00	4.357	4.390	-0.033	1.390	19863		0.58(0.28-0.83)	105	70.9	

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	4.388	4.417	-0.029	1.064	144436	0.0584		117	58.5	
663.00 > 169.00	4.388	4.417	-0.029	1.064	24020		6.01(3.09-9.27)	117	89.7	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.626	4.659	-0.033	1.000	21006	0.0494		98.9	87.9	
713.00 > 219.00	4.626	4.659	-0.033	1.000	16648		1.26(0.70-2.09)	98.9	74.2	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.626	4.659	-0.033	1.673	6467590	2.52		101	11176	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.057	5.084	-0.027	1.828	6473479	2.53		101	9887	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.089	-0.032	1.000	173671	0.0495		99.0	47.0	
813.00 > 169.00	5.057	5.089	-0.032	1.000	31450		5.52(2.77-8.32)	99.0	107	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.418	5.448	-0.030	1.071	88318	0.0526		105	27.6	
913.00 > 169.00	5.404	5.448	-0.044	1.069	15788		5.59(2.55-7.64)	105	107	

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\20180921-64578.b\2018.09.21LLBICAL_006.d

Injection Date: 21-Sep-2018 15:36:08

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 11

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

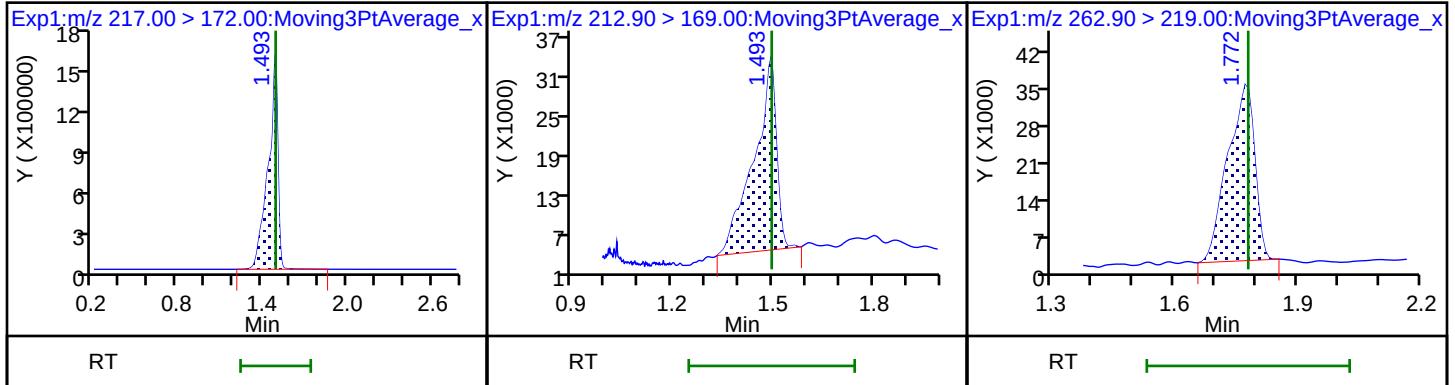
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

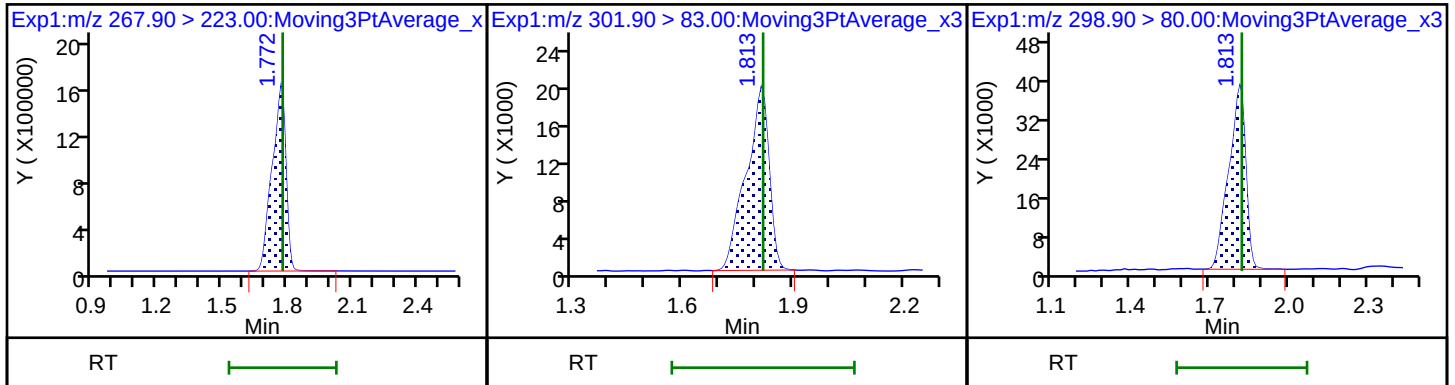
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

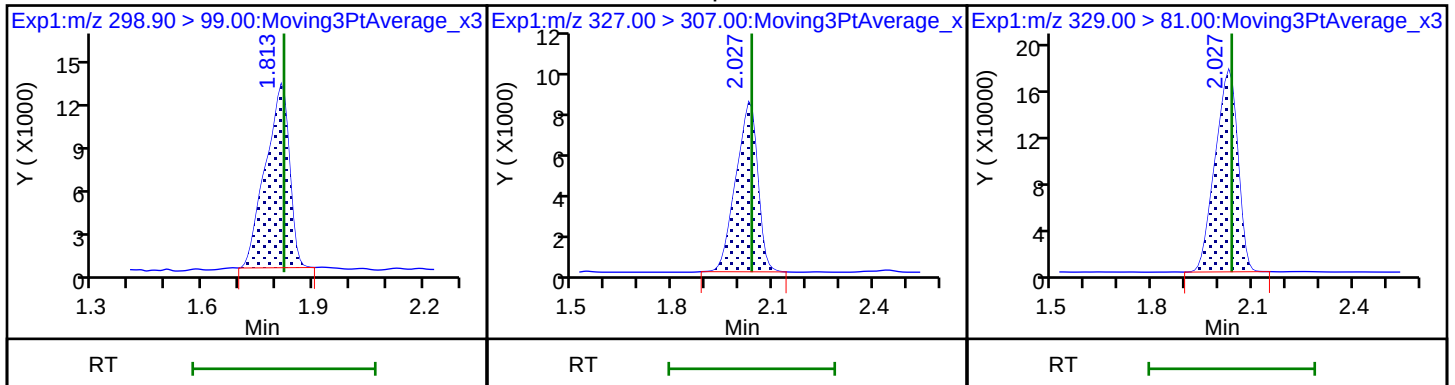
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

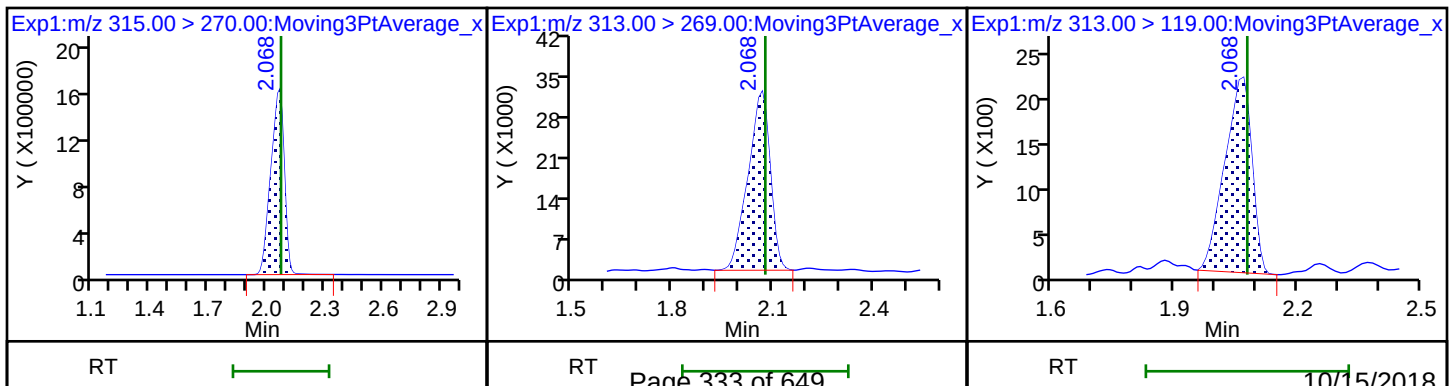
D 60 M2-4:2FTS

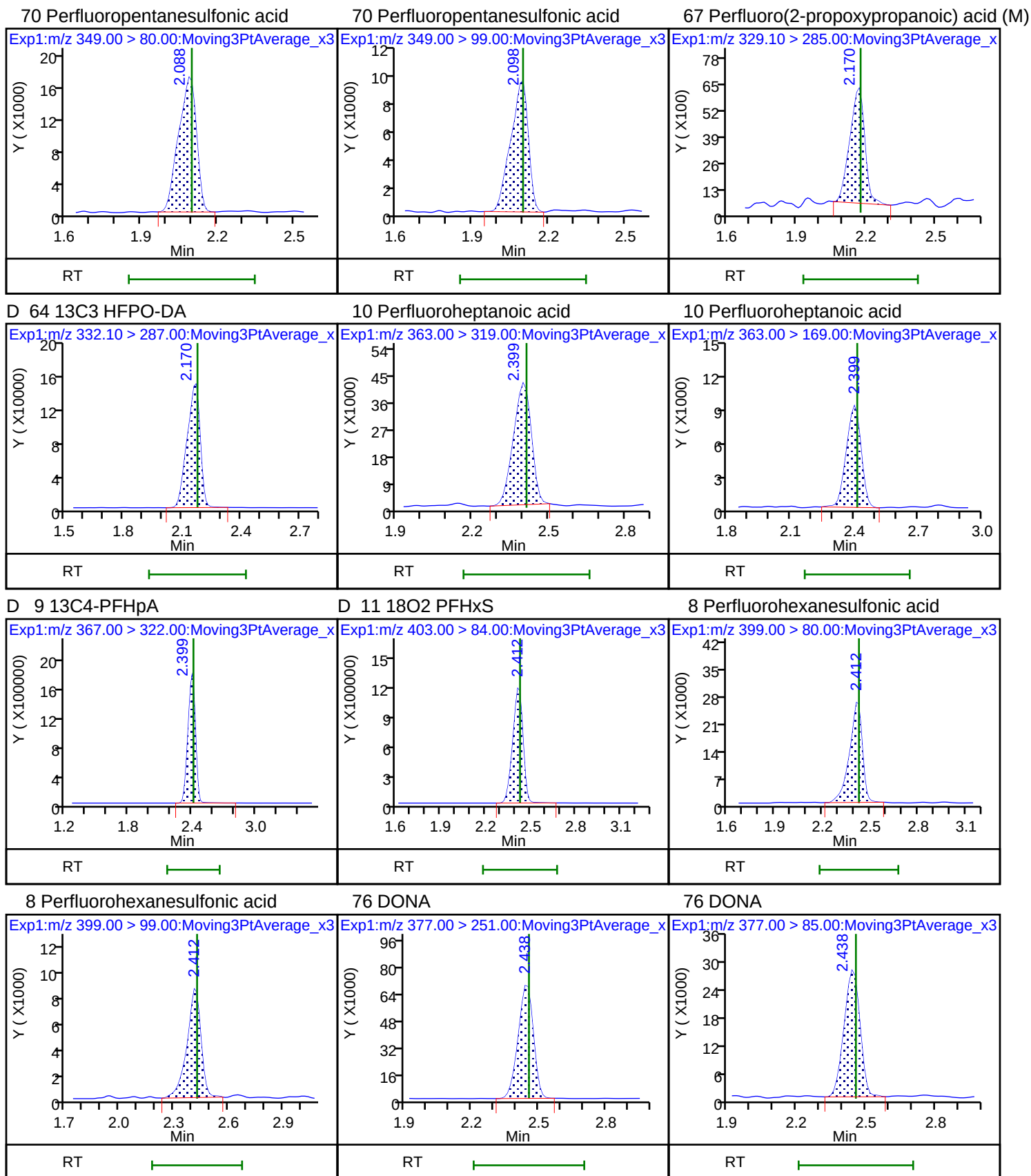


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

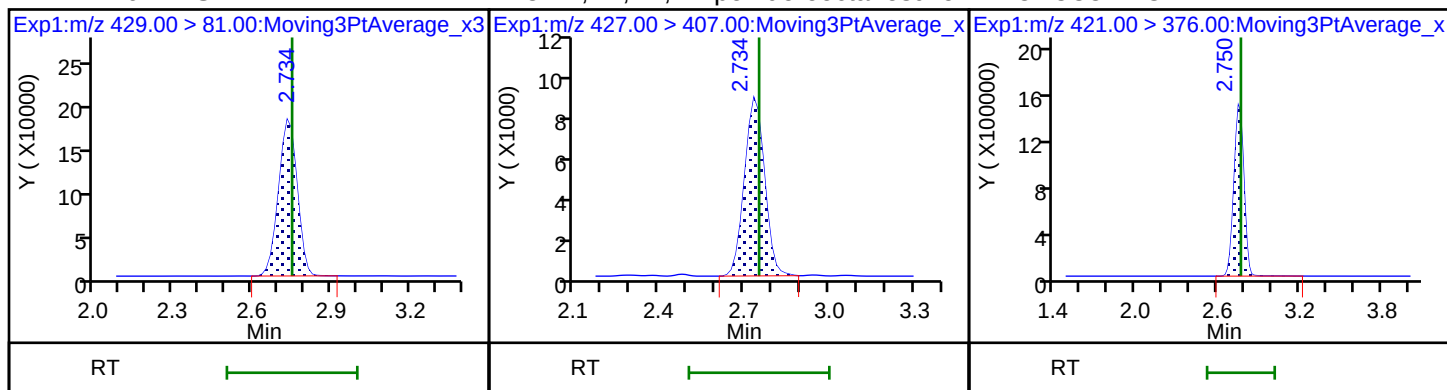
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

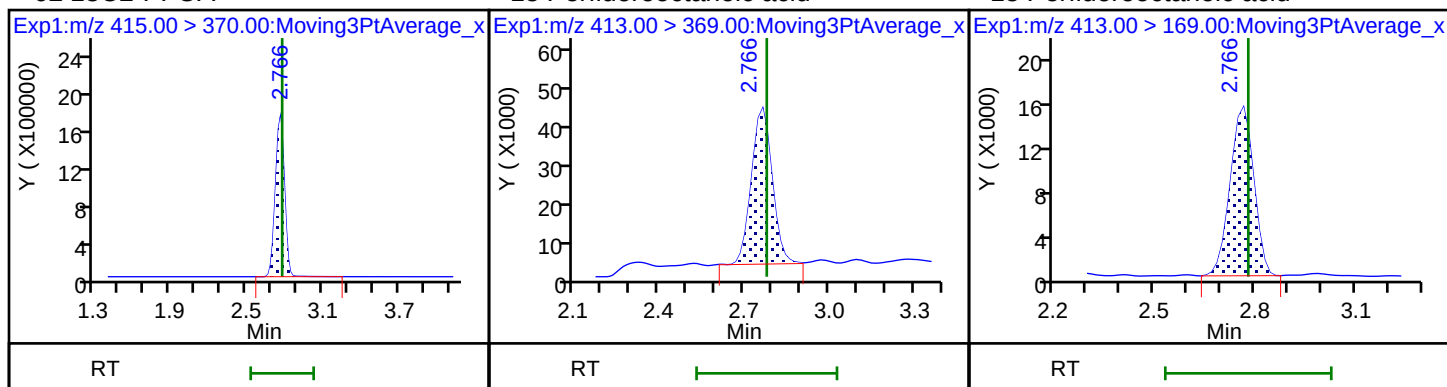
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

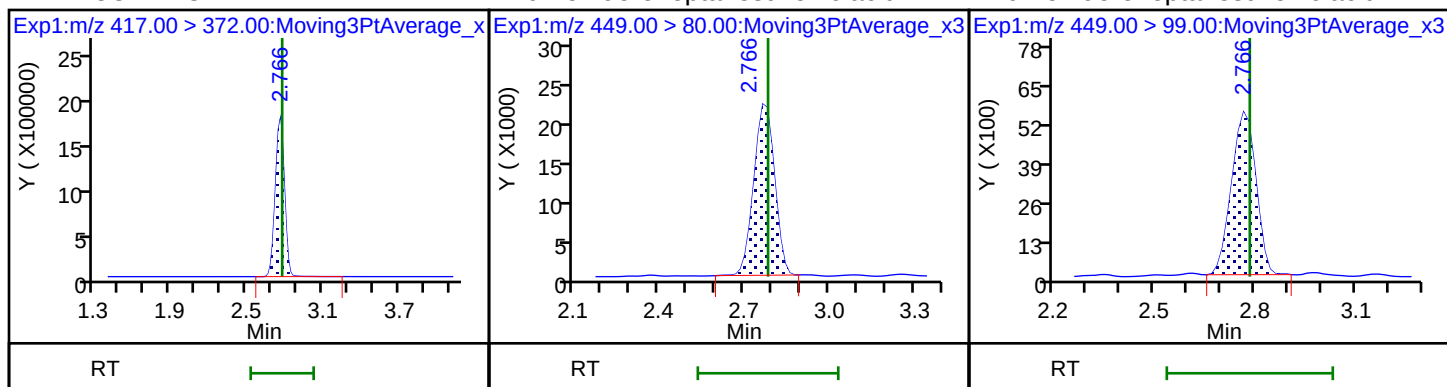
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

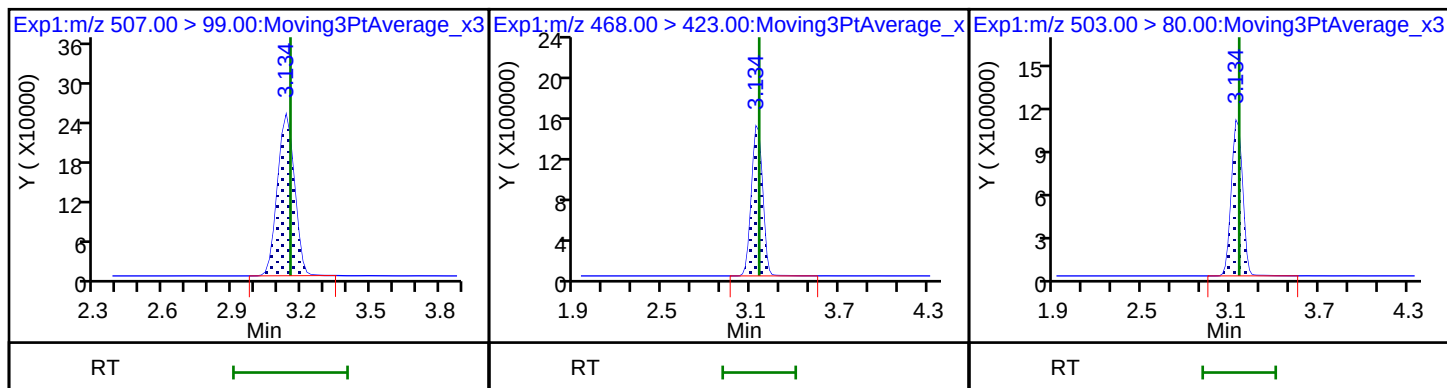
16 Perfluoroheptanesulfonic acid

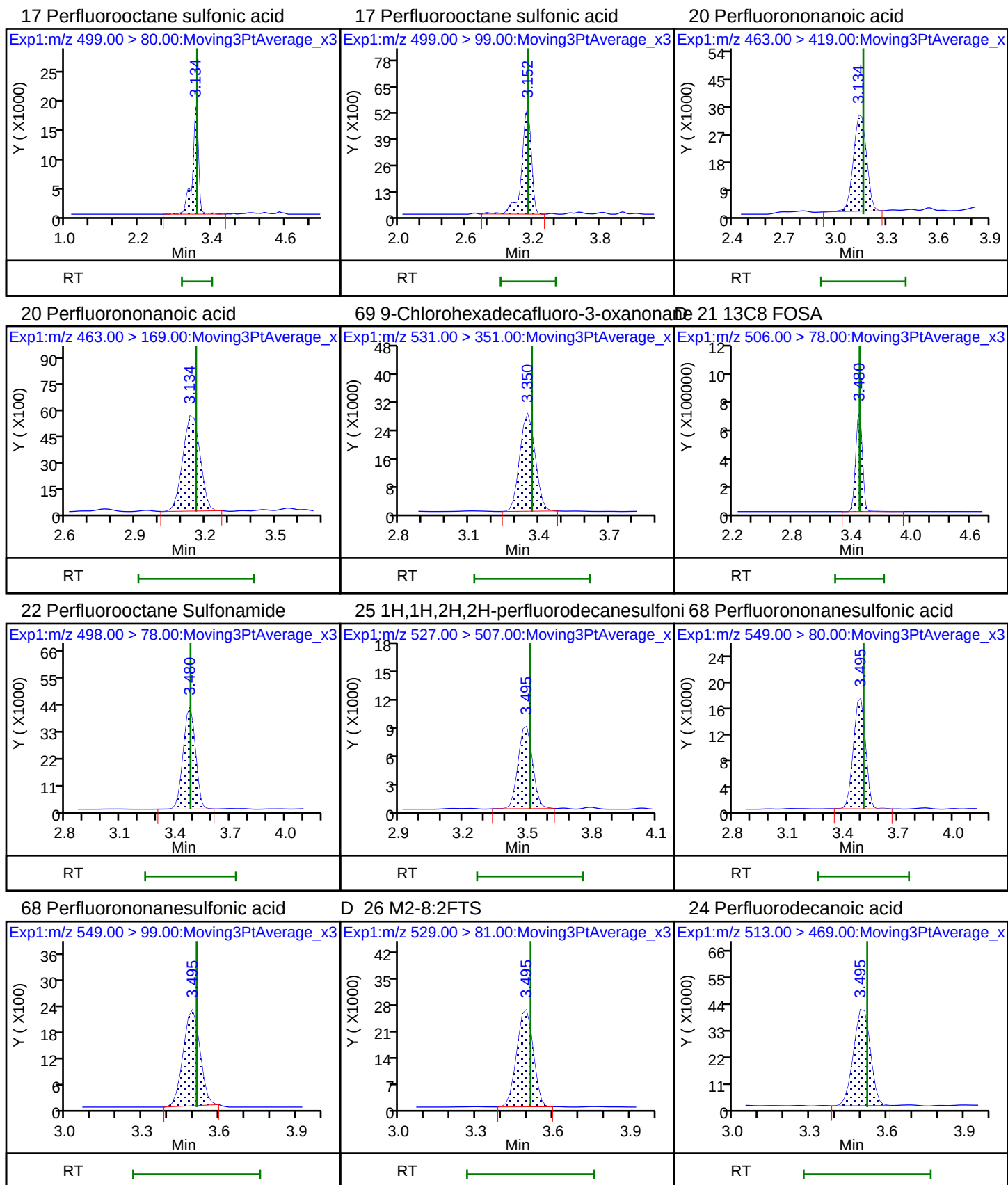


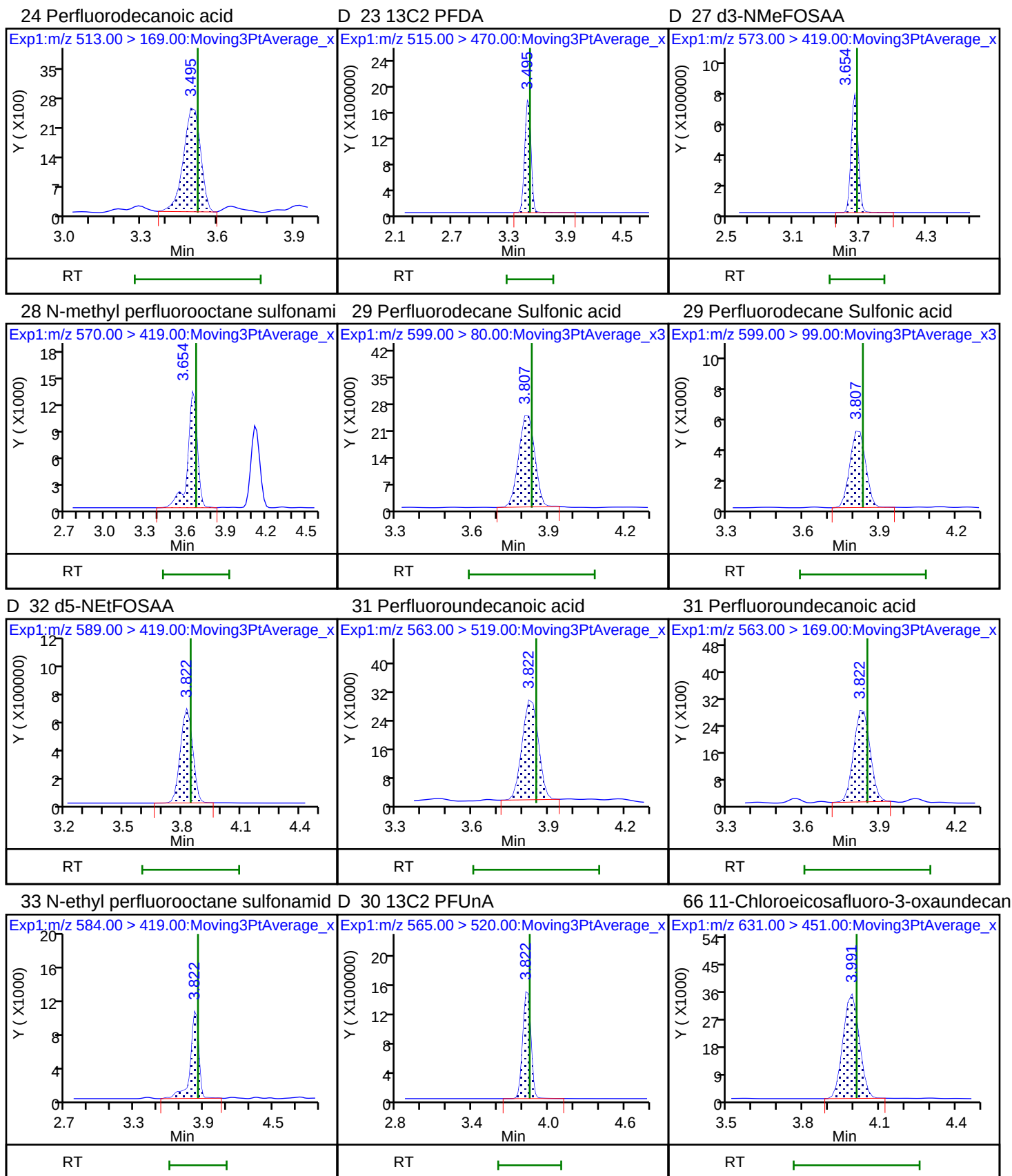
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



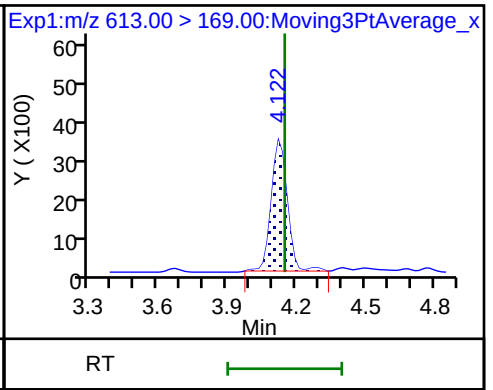
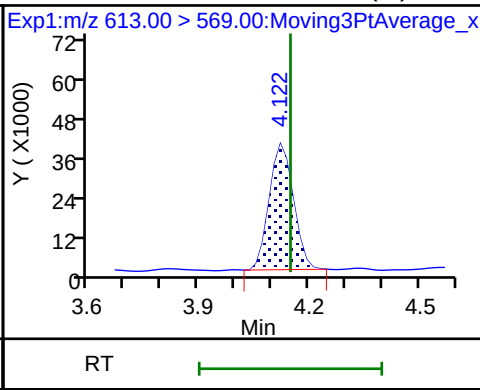
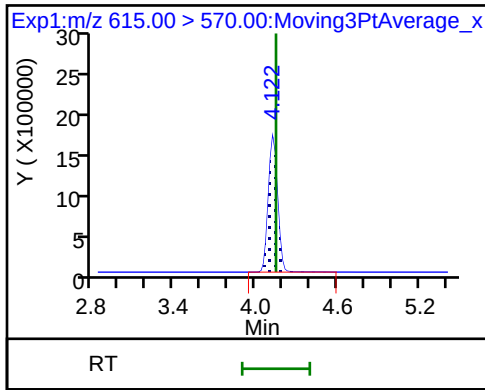




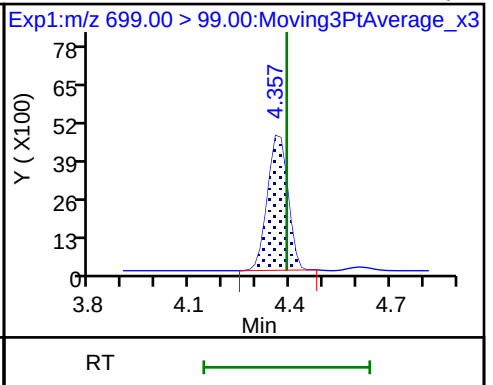
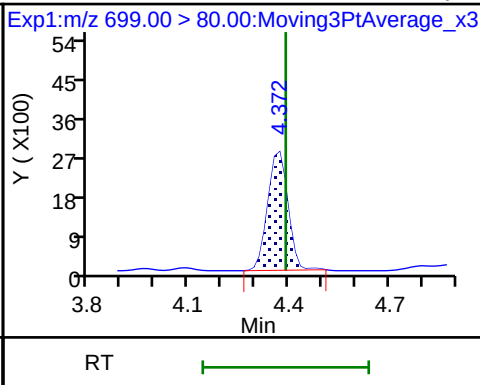
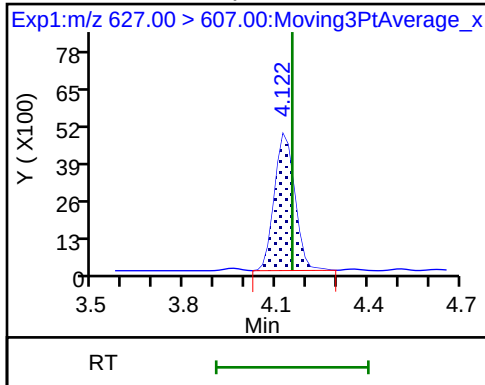
D 36 13C2 PFDaA

37 Perfluorododecanoic acid (M)

37 Perfluorododecanoic acid



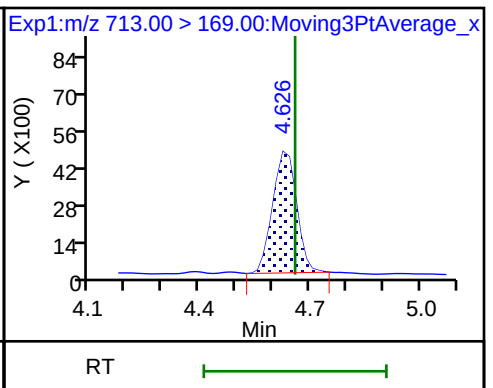
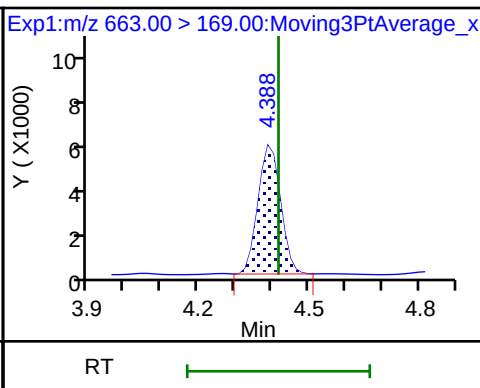
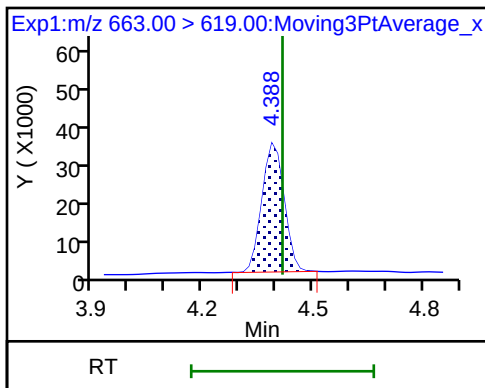
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

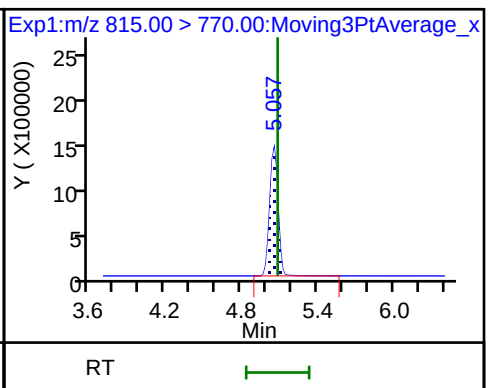
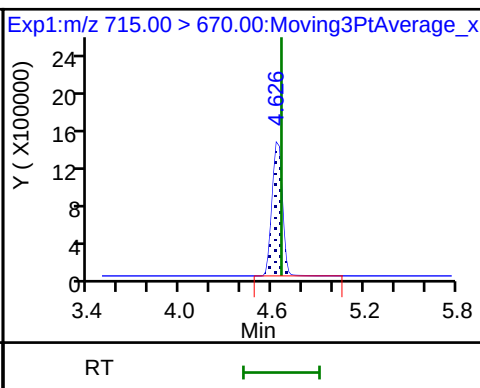
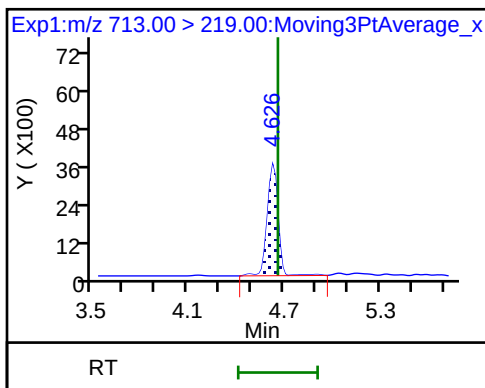
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid

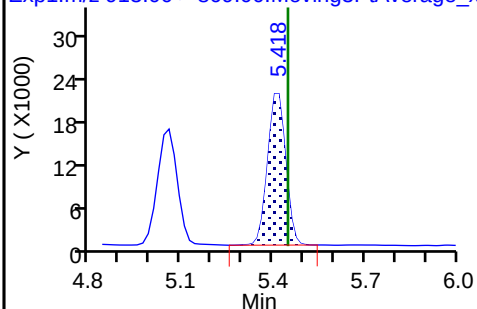
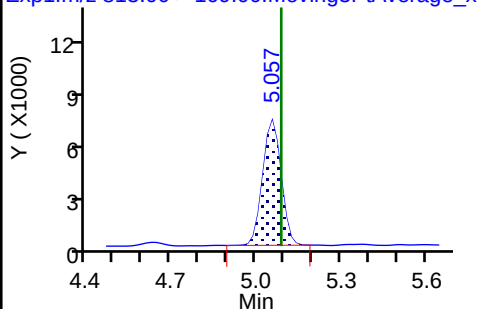
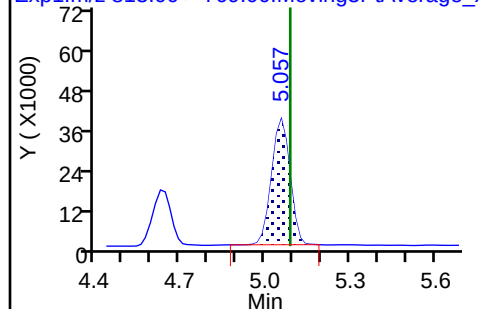
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x

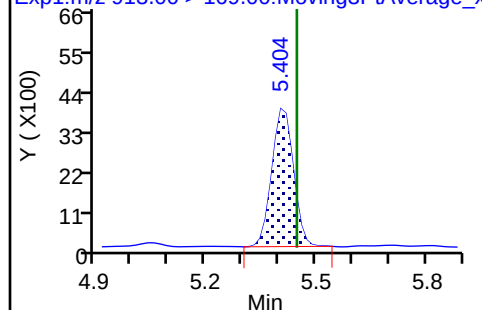
Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Injection Date: 21-Sep-2018 15:36:08

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 11

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

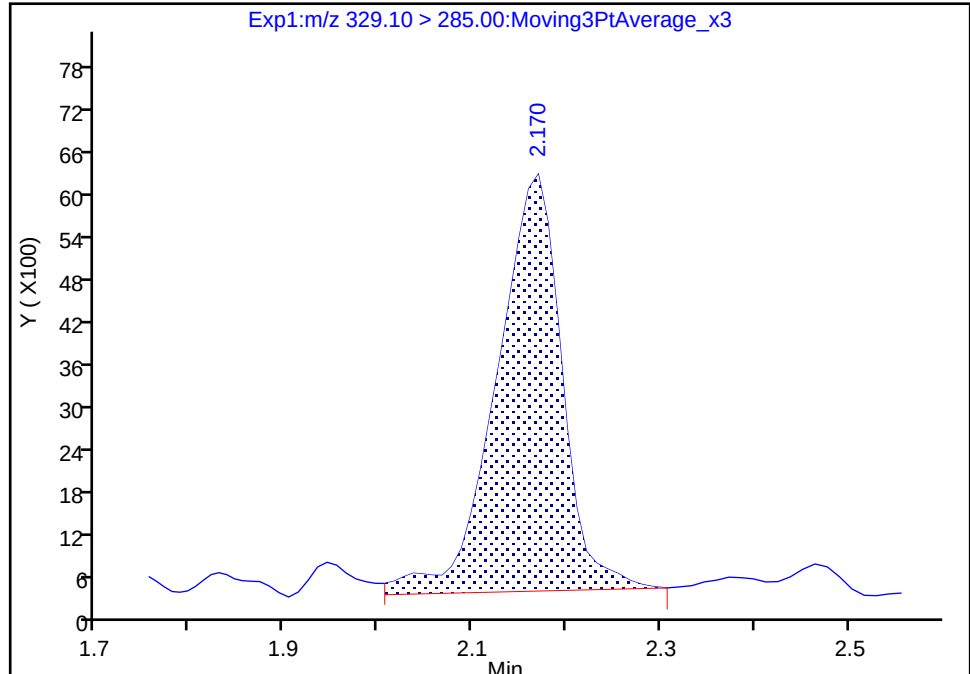
Detector: EXP1

67 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

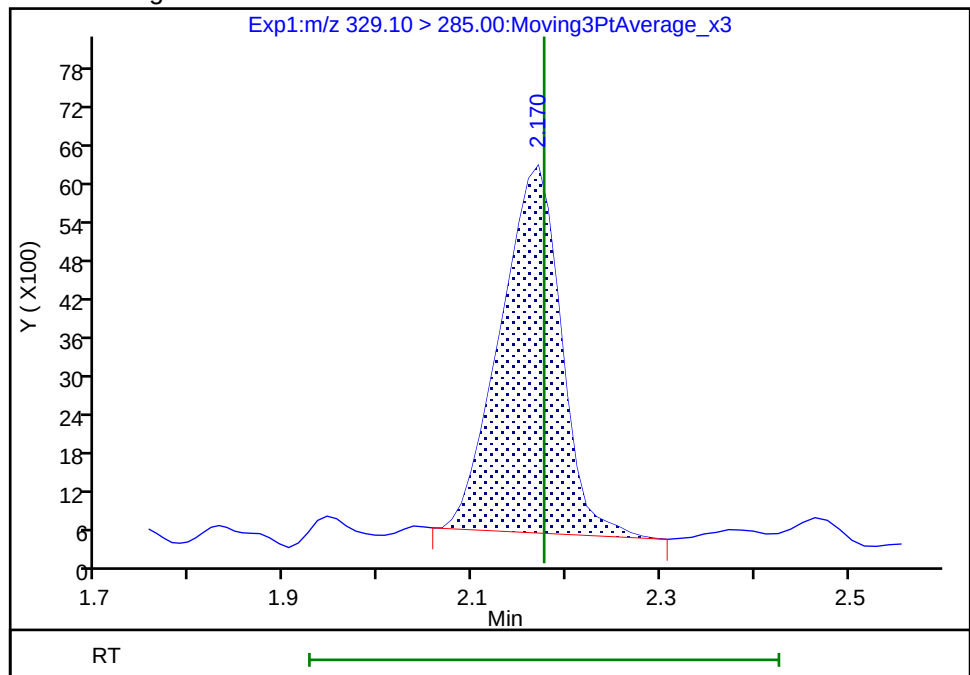
RT: 2.17
Area: 28633
Amount: 0.054801
Amount Units: ng/ml

Processing Integration Results



RT: 2.17
Area: 25929
Amount: 0.050370
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 15:52:43

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Injection Date: 21-Sep-2018 15:36:08

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor:

1.0000

Method: PFAS_A9

Limit Group:

LC PFC ICAL

Column:

Detector

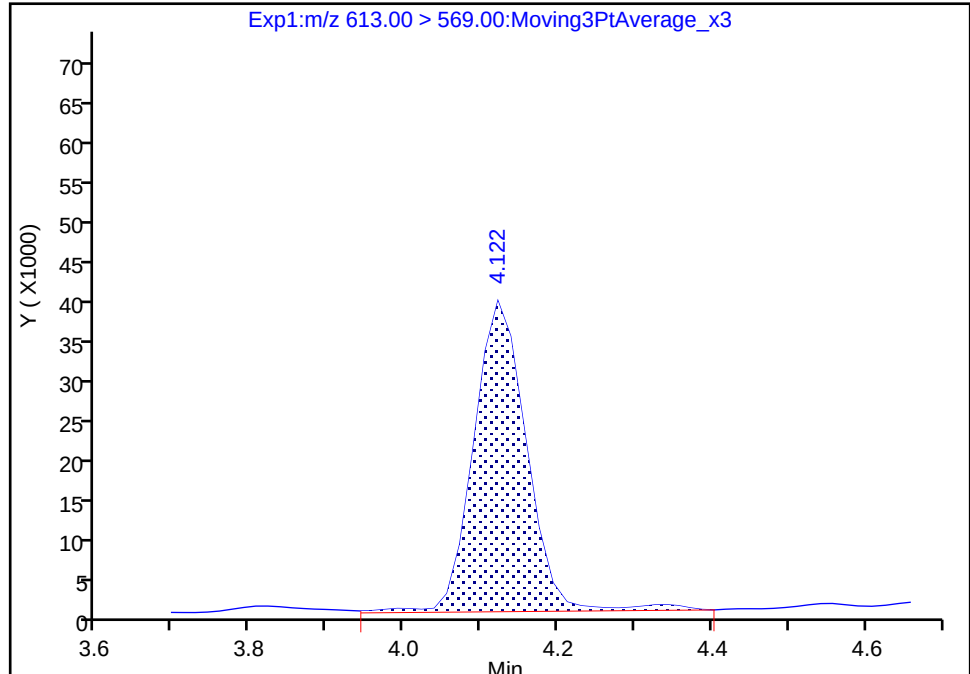
EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

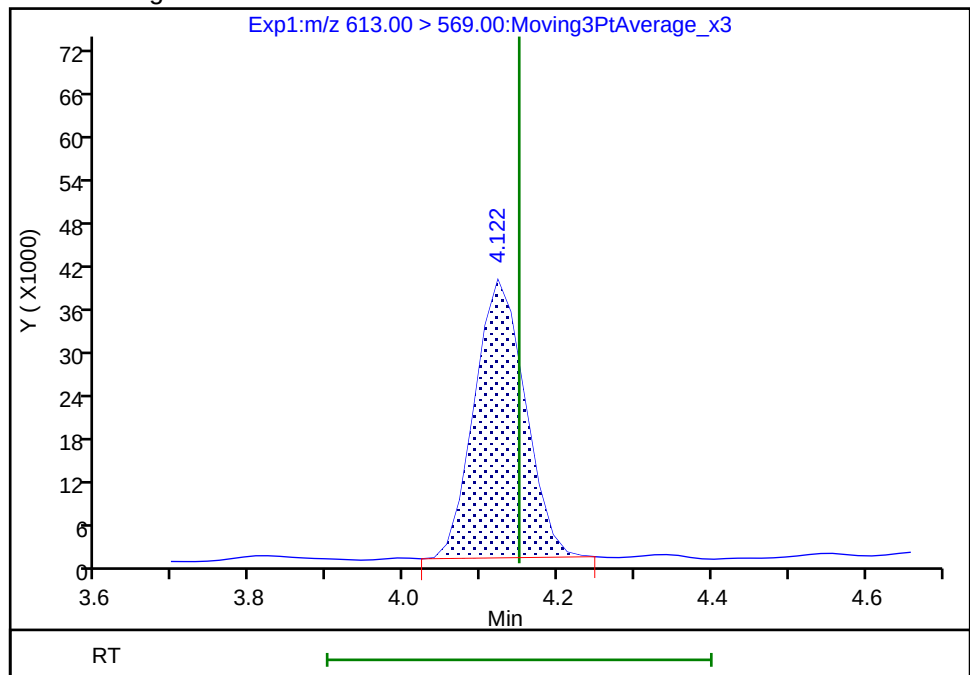
RT: 4.12
Area: 186497
Amount: 0.058416
Amount Units: ng/ml

Processing Integration Results



RT: 4.12
Area: 175107
Amount: 0.055414
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 15:53:03

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: ICV 320-249554/10 Calibration Date: 10/04/2018 05:36

Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22

Lab File ID: 2018.10.03LLICALAAA_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9496	0.9433		2.48	2.50	-0.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.110	1.125		2.53	2.50	1.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.74	80.55		2.29	2.21	3.6	50.0
4:2 FTS	AveID	12.97	13.04		2.35	2.34	0.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9850	0.9897		2.51	2.50	0.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.02	71.70		2.51	2.35	7.0	50.0
HFPO-DA (GenX)	AveID	2.878	2.761		2.40	2.50	-4.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.121	1.093		2.44	2.50	-2.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.102	1.047		2.17	2.28	-5.0	40.0
DONA	AveID	3.887	4.256		2.58	2.36	9.5	50.0
6:2 FTS	AveID	1.702	1.566		2.19	2.38	-8.0	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.178	1.111		2.36	2.50	-5.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.252	1.327		2.52	2.38	6.0	50.0
Perfluorononanoic acid (PFNA)	AveID	1.077	1.032		2.40	2.50	-4.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.142	1.131		2.29	2.31	-1.0	40.0
F-53B Major	AveID	1.889	1.986		2.45	2.33	5.1	50.0
8:2 FTS	AveID	1.208	1.247		2.48	2.40	3.2	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8206	0.8388		2.45	2.40	2.2	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9624	1.022		2.66	2.50	6.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.004	0.9588		2.39	2.50	-4.5	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9691	1.091		2.81	2.50	12.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6415	0.6391		2.40	2.41	-0.4	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8705	0.9708		2.79	2.50	11.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8768	0.7838		2.24	2.50	-10.6	40.0
F-53B Minor	AveID	2.852	3.139		2.59	2.36	10.1	50.0
10:2 FTS	AveID	0.8575	0.8477		2.38	2.41	-1.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.096	1.113		2.54	2.50	1.5	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2912	0.2971		2.47	2.42	2.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.062	1.089		2.57	2.50	2.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2457	0.2417		2.46	2.50	-1.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9521		2.70	2.50	8.1	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: ICV 320-249554/10 Calibration Date: 10/04/2018 05:36
 Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22
 Lab File ID: 2018.10.03LLICALAAA_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.052	1.077		2.56	2.50	2.4	50.0
13C4 PFBA	Ave	1.512	1.521		2.52	2.50	0.6	50.0
13C5 PFPeA	Ave	1.015	0.9948		2.45	2.50	-2.0	50.0
13C3 PFBS	Ave	0.0216	0.0212		2.27	2.33	-2.2	50.0
M2-4:2 FTS	Ave	0.1194	0.1194		2.34	2.34	-0.0	50.0
13C2 PFHxA	Ave	1.115	1.080		2.42	2.50	-3.1	50.0
13C3 HFPO-DA	Ave	0.0809	0.0829		2.56	2.50	2.4	50.0
13C4 PFHpA	Ave	1.001	1.009		2.52	2.50	0.8	50.0
18O2 PFHxS	Ave	1.251	1.242		2.35	2.37	-0.8	50.0
M2-6:2 FTS	Ave	0.1686	0.1745		2.46	2.38	3.5	40.0
13C8 PFOA	Ave	1.623	1.590		2.40	2.45	-2.0	50.0
13C4 PFOA	Ave	0.9722	0.9871		2.54	2.50	1.5	50.0
13C8 PFOS	Ave	0.4286	0.4216		2.35	2.39	-1.7	50.0
13C4 PFOS	Ave	0.8098	0.8041		2.37	2.39	-0.7	50.0
13C5 PFNA	Ave	0.8175	0.8350		2.55	2.50	2.1	50.0
13C8 FOSA	Ave	1.127	1.109		2.46	2.50	-1.6	50.0
M2-8:2 FTS	Ave	0.1786	0.1745		2.34	2.40	-2.3	40.0
13C2 PFDA	Ave	0.7231	0.7308		2.53	2.50	1.1	50.0
d3-NMeFOSAA	Ave	0.2938	0.2967		2.53	2.50	1.0	50.0
d5-NEtFOSAA	Ave	0.3162	0.3210		2.54	2.50	1.5	50.0
13C2 PFUnA	Ave	0.5524	0.5654		2.56	2.50	2.3	50.0
13C2 PFDoA	Ave	0.5820	0.5876		2.52	2.50	1.0	50.0
13C2 PFTeDA	Ave	0.6996	0.7053		2.52	2.50	0.8	50.0
13C2 PFHxDA	Ave	1.263	1.256		2.49	2.50	-0.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_010.d
 Lims ID: ICV FULL
 Client ID:
 Sample Type: ICV
 Inject. Date: 04-Oct-2018 05:36:48 ALS Bottle#: 17 Worklist Smp#: 10
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 04-Oct-2018 10:30:28 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: roycea

Date: 04-Oct-2018 10:16:34

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	1.433	1.430	0.003	0.541	4337713	2.51		101	9552	
2 Perfluorobutyric acid										
212.90 > 169.00	1.433	1.431	0.002	1.000	4091837	2.48			544	
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.688	0.004	0.639	2836778	2.45		98.0	10241	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.692	1.689	0.003	1.000	3191745	2.53			775	
D 47 13C3-PFBS										
301.90 > 83.00	1.724	1.722	0.002	0.651	56104	2.27		97.8	303	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.724	1.725	-0.001	1.000	4300707	2.29			1100	
298.90 > 99.00	1.724	1.725	-0.001	1.000	1787542		2.41(1.25-3.74)		719	
D 60 M2-4:2FTS										
329.00 > 81.00	1.928	1.929	-0.001	0.728	317885	2.33		100.0	367	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.928	1.929	-0.001	1.118	735261	2.35			15208	
D 7 13C2 PFHxA										
315.00 > 270.00	1.970	1.961	0.009	0.744	3079693	2.42		96.9	8525	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.970	1.962	0.008	1.000	3048035	2.51			1291	
313.00 > 119.00	1.960	1.962	-0.002	0.995	279375		10.91(5.03-15.10)		846	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.991	1.988	0.003	1.155	4065833	2.51			9330	
349.00 > 99.00	1.991	1.988	0.003	1.155	1506136		2.70(1.36-4.07)		3708	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.064	2.061	0.003	0.780	236347	2.56		102	1819	

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	2.064	2.061	0.003	1.000	652625	2.40			1102	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.292	2.295	-0.003	1.000	3145456	2.44			1064	
363.00 > 169.00	2.292	2.295	-0.003	1.000	1290042		2.44(1.13-3.40)		2150	
D 9 13C4-PFHpA										
367.00 > 322.00	2.292	2.295	-0.003	0.866	2877457	2.52		101	8638	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.314	2.308	0.006	1.000	3381677	2.17			2607	
399.00 > 99.00	2.314	2.308	0.006	1.000	1159544		2.92(1.50-4.49)		1551	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.314	2.309	0.005	0.874	3349916	2.35		99.2	7931	
77 DONA										
377.00 > 251.00	2.336	2.336	0.0	0.773	9194283	2.58			10282	
377.00 > 85.00	2.336	2.336	0.0	0.773	5182821		1.77(0.85-2.54)		10014	
D 12 M2-6:2FTS										
429.00 > 81.00	2.616	2.621	-0.005	0.988	472647	2.46		103	1705	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.624	2.621	0.003	1.003	740379	2.19			2197	
D 73 13C8 PFOA										
421.00 > 376.00	2.640	2.637	0.003	0.997	4437926	2.40		98.0	11334	
D 14 13C4 PFOA										
417.00 > 372.00	2.648	2.645	0.003	1.000	2814960	2.54		102	6534	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.648	2.645	0.003	1.000	3126131	2.36			761	
413.00 > 169.00	2.648	2.645	0.003	1.000	1661926		1.88(0.84-2.52)		3185	
* 62 13C2-PFOA										
415.00 > 370.00	2.648	2.645	0.003		2851696	2.50			8643	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.655	2.654	0.001	0.879	2890137	2.52			3538	
449.00 > 99.00	2.655	2.654	0.001	0.879	755016		3.83(1.94-5.82)		1957	
D 72 13C8 PFOS										
507.00 > 99.00	3.014	3.018	-0.004	1.139	1149225	2.35		98.3	5036	
D 19 13C5 PFNA										
468.00 > 423.00	3.022	3.019	0.003	1.141	2381245	2.55		102	7194	
20 Perfluorononanoic acid										
463.00 > 419.00	3.022	3.020	0.002	1.000	2458500	2.40			1117	
463.00 > 169.00	3.022	3.020	0.002	1.000	588872		4.17(1.90-5.69)		3721	
D 18 13C4 PFOS										
503.00 > 80.00	3.022	3.020	0.002	1.141	2192193	2.37		99.3	5579	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.022	3.020	0.002	1.000	2399246	2.29			1612	
499.00 > 99.00	3.022	3.020	0.002	1.000	513745		4.67(2.31-6.93)		2375	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.234	3.235	-0.001	1.070	4244205	2.45			4587	
D 21 13C8 FOSA										
506.00 > 78.00	3.362	3.366	-0.004	1.270	3161201	2.46		98.4	4985	

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	3.370	3.366	0.004	1.002	3231980	2.66			2999	
D 26 M2-8:2FTS										
529.00 > 81.00	3.370	3.370	0.0	1.273	476589	2.34		97.7	2687	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.370	3.370	0.0	1.000	595685	2.48			2193	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.370	3.372	-0.002	1.115	1846577	2.45			3422	
549.00 > 99.00	3.370	3.372	-0.002	1.115	641619		2.88(1.33-3.97)		3569	
D 23 13C2 PFDA										
515.00 > 470.00	3.384	3.381	0.003	1.278	2083895	2.53		101	6637	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.384	3.382	0.002	1.000	1997953	2.39			1473	
513.00 > 169.00	3.384	3.382	0.002	1.000	377488		5.29(2.36-7.09)		1516	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.537	3.536	0.001	1.336	846226	2.53		101	912	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.545	3.542	0.003	1.002	923004	2.81			725	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.699	3.698	0.001	1.224	1414221	2.40			5380	
599.00 > 99.00	3.699	3.698	0.001	1.224	472170		3.00(1.39-4.16)		2625	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.707	3.706	0.001	1.400	915482	2.54		102	1280	
D 30 13C2 PFUnA										
565.00 > 520.00	3.716	3.712	0.004	1.403	1612212	2.56		102	4161	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.716	3.712	0.004	1.002	888710	2.79			1483	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.716	3.714	0.002	1.000	1263592	2.23			1248	
563.00 > 169.00	3.716	3.714	0.002	1.000	310742		4.07(2.12-6.36)		1534	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.878	3.873	0.005	1.283	6779697	2.59			7158	
D 36 13C2 PFDaA										
615.00 > 570.00	4.012	4.007	0.005	1.515	1675589	2.52		101	4560	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.012	4.008	0.004	1.000	1864272	2.54			1938	
613.00 > 169.00	4.012	4.008	0.004	1.000	447624		4.16(2.13-6.40)		2815	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.012	4.013	-0.001	1.191	406533	2.38			3756	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.253	4.250	0.003	1.408	659541	2.47			2926	
699.00 > 99.00	4.253	4.250	0.003	1.408	989282		0.67(0.00-0.00)		3949	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.282	4.276	0.006	1.067	1824827	2.56			1500	
663.00 > 169.00	4.273	4.276	-0.004	1.065	595456		3.06(1.25-3.76)		3730	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.514	4.515	-0.001	1.705	2011412	2.52		101	4420	

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	4.514	4.515	-0.001	1.000	486061	2.46			2731	
713.00 > 219.00	4.514	4.515	-0.001	1.000	361287		1.35(0.71-2.13)		2354	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.936	4.933	0.003	1.864	3581884	2.49		99.4	5535	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.936	4.934	0.002	1.000	3410379	2.70			662	
813.00 > 169.00	4.936	4.934	0.002	1.000	574614		5.94(2.86-8.58)		2463	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.295	5.285	0.010	1.073	3858954	2.56			637	
913.00 > 169.00	5.295	5.285	0.010	1.073	481940		8.01(3.83-11.48)		2121	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_010.d

Injection Date: 04-Oct-2018 05:36:48

Instrument ID: A8_N

Lims ID: ICV FULL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 17

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

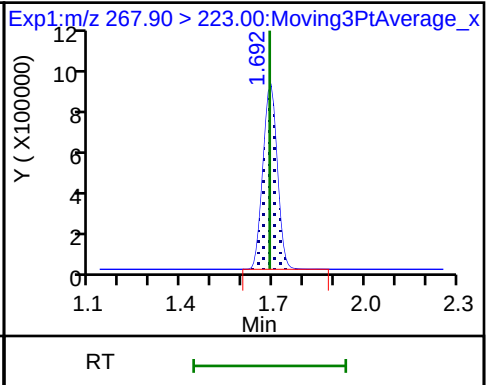
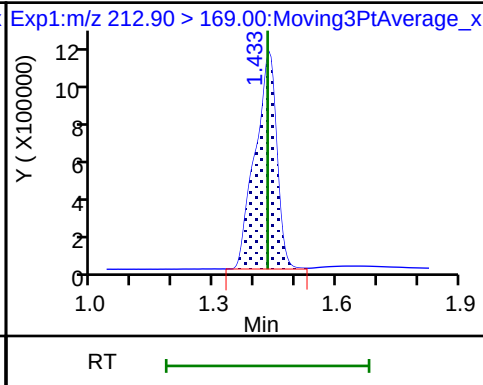
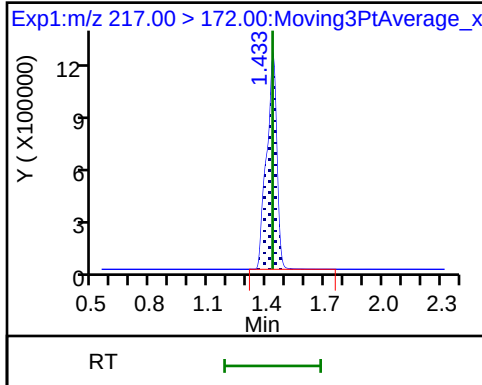
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

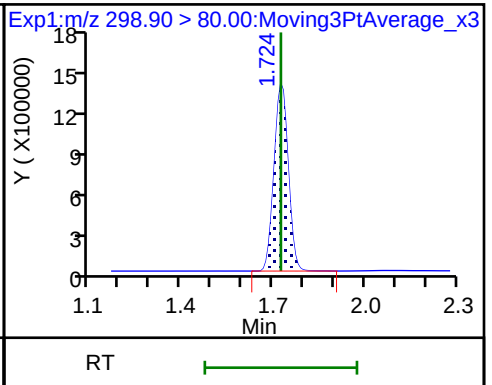
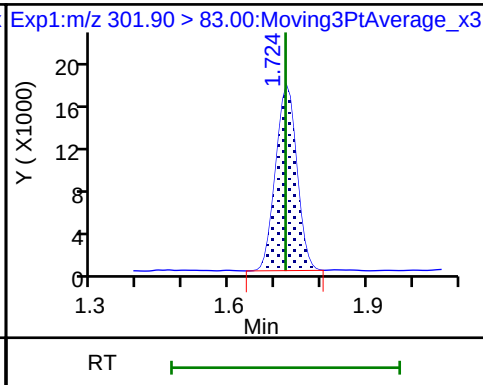
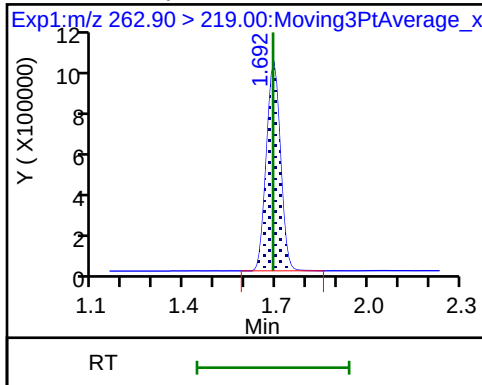
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

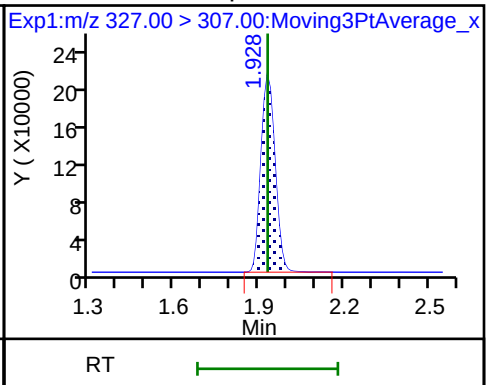
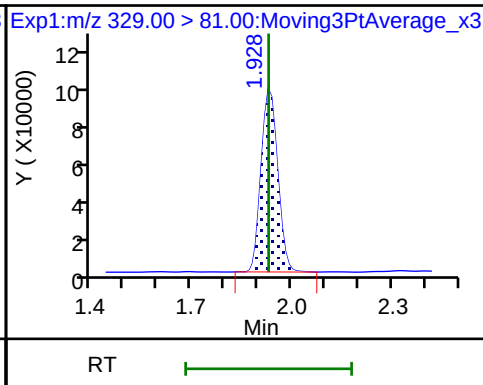
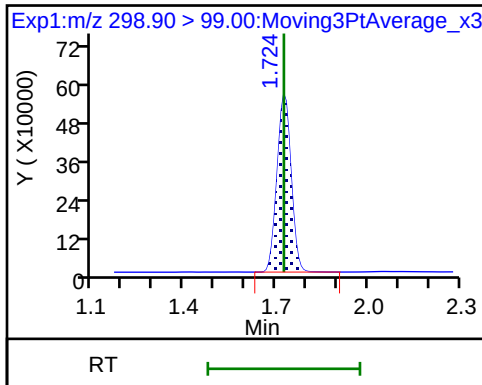
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

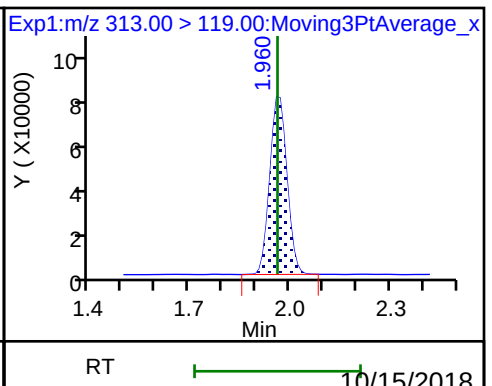
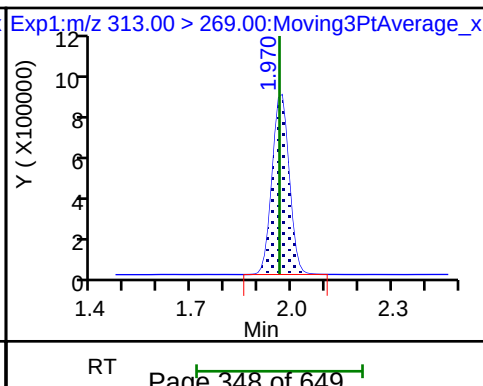
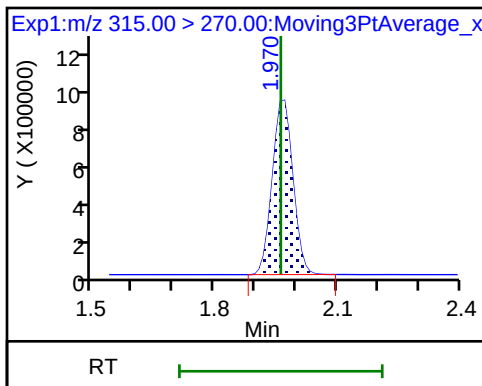
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

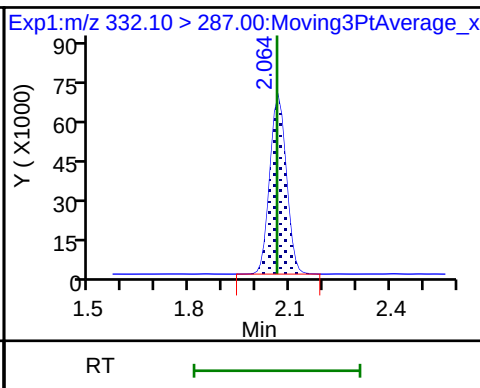
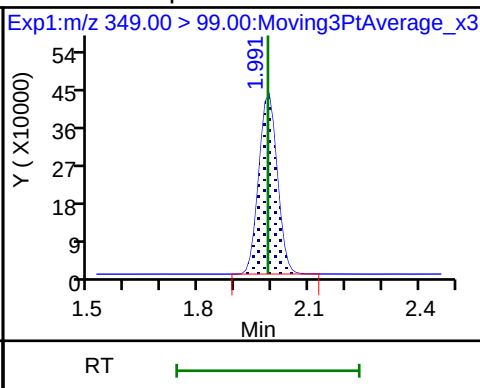
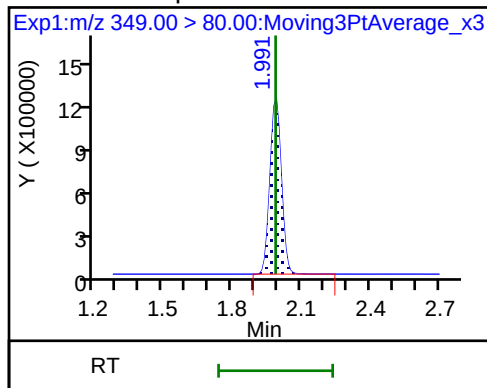
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

70 Perfluoropentanesulfonic acid

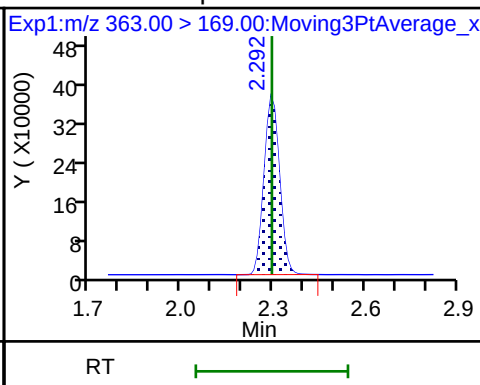
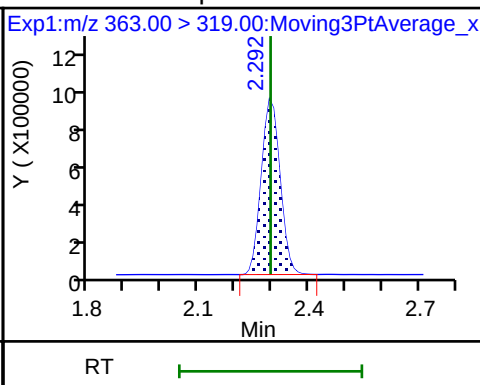
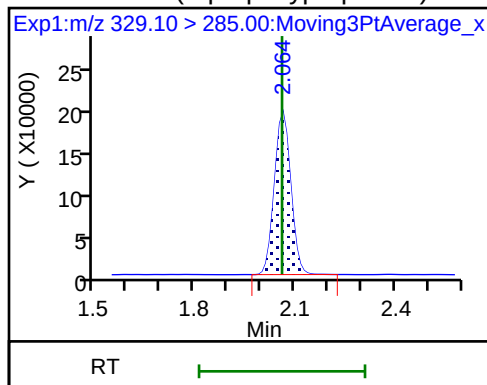
D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid

10 Perfluoroheptanoic acid

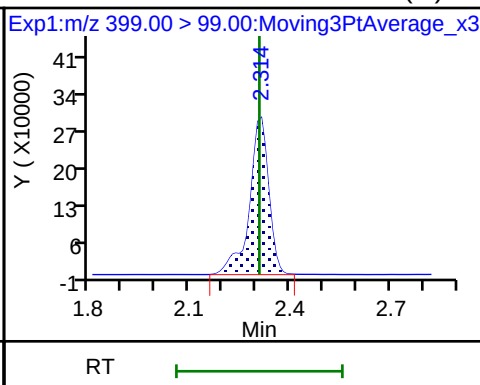
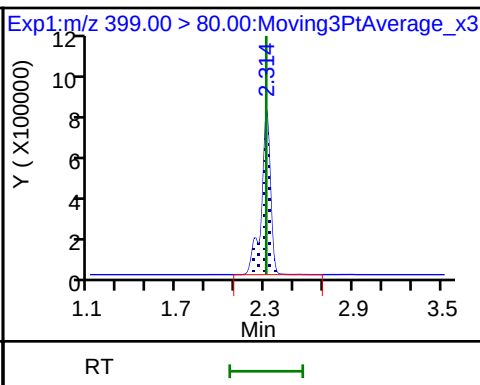
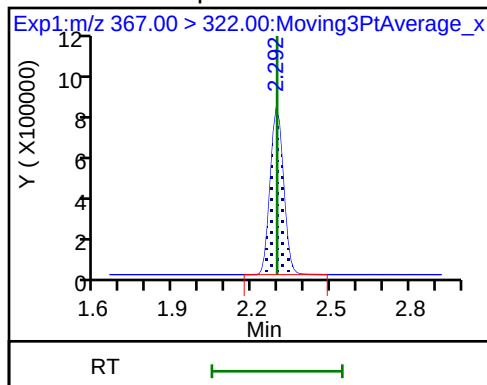
10 Perfluoroheptanoic acid



D 9 13C4-PFHpA

8 Perfluorohexanesulfonic acid

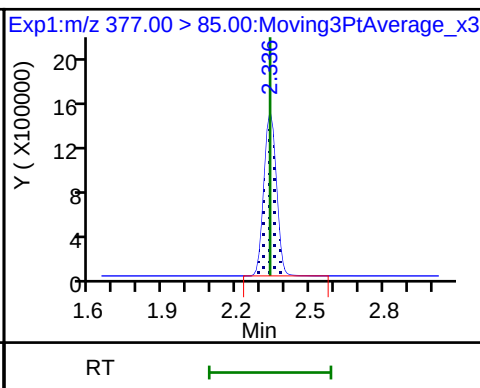
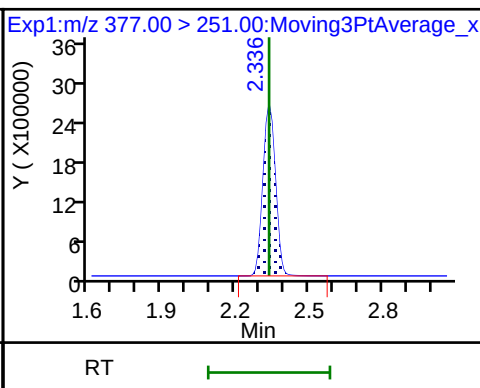
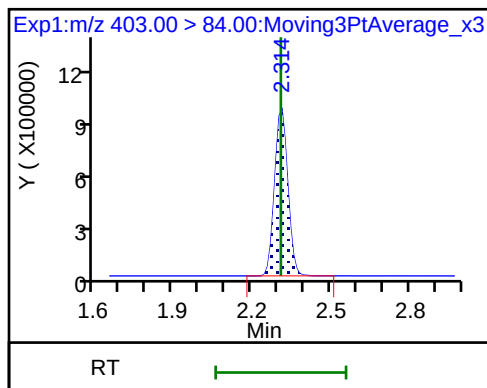
8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

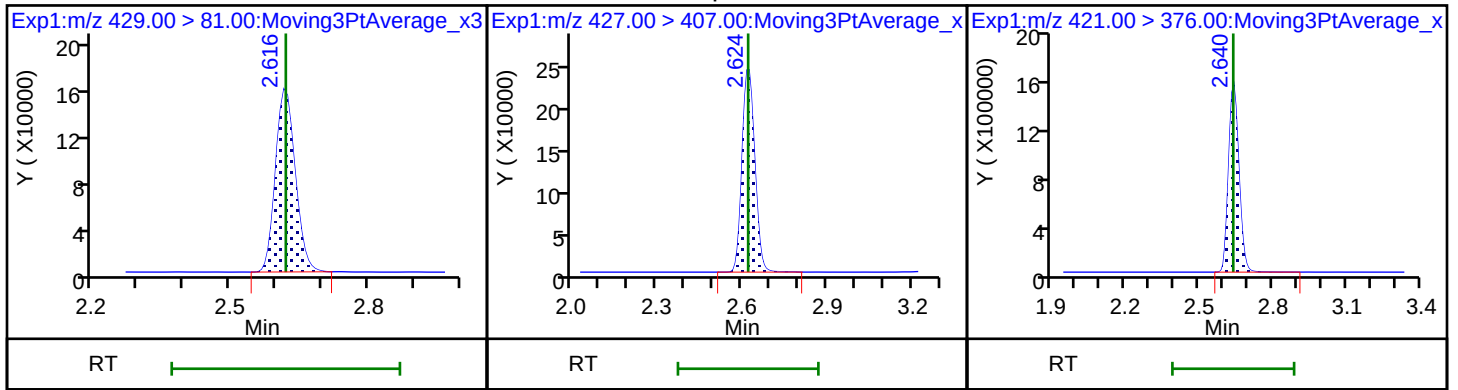
77 DONA

77 DONA



D 12 M2-6:2FTS

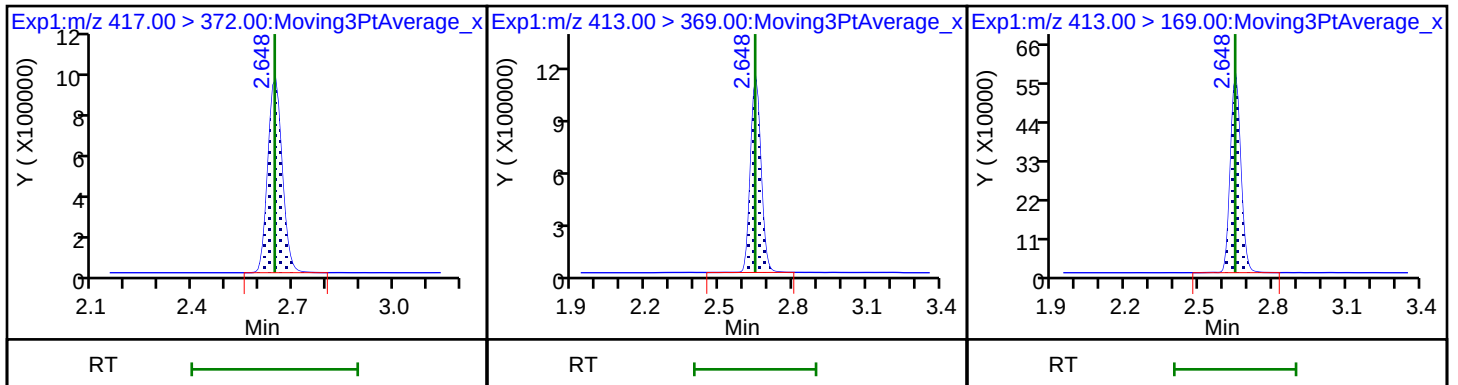
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

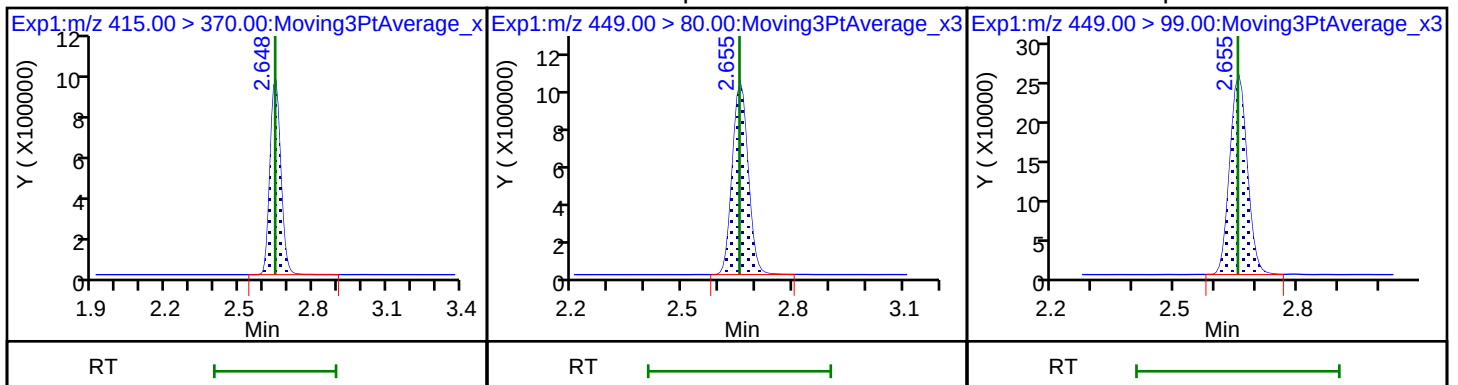
15 Perfluorooctanoic acid



* 62 13C2-PFOA

16 Perfluoroheptanesulfonic acid

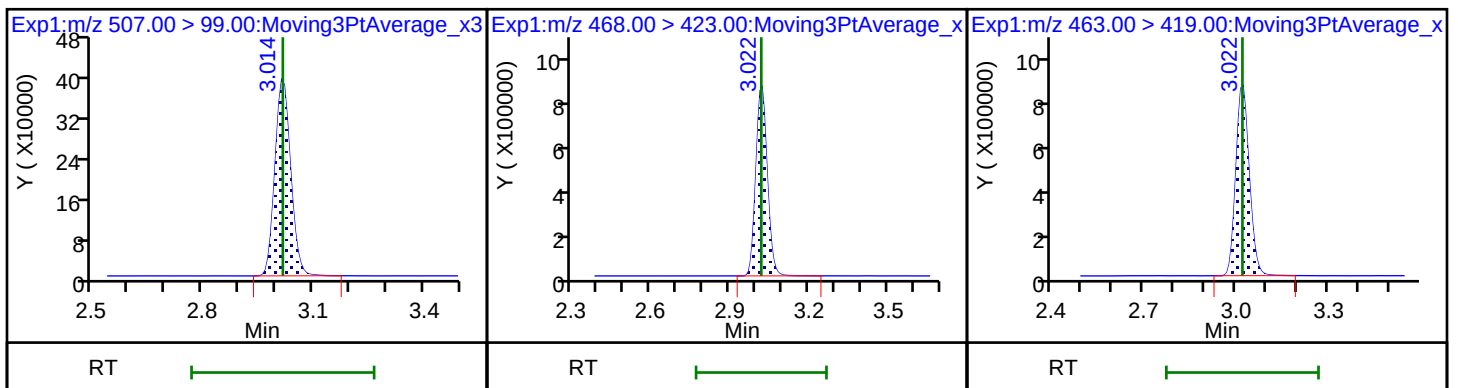
16 Perfluoroheptanesulfonic acid

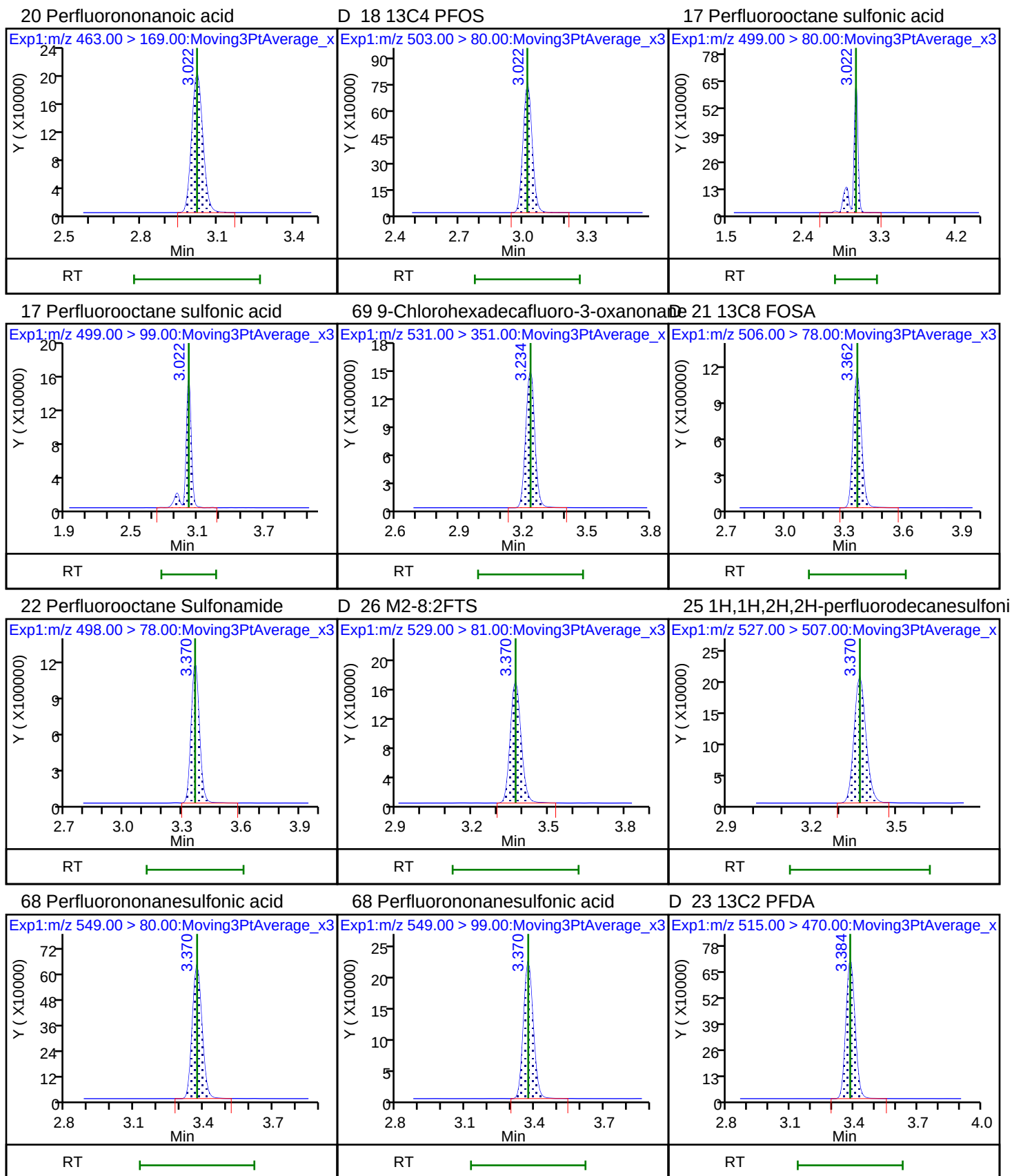


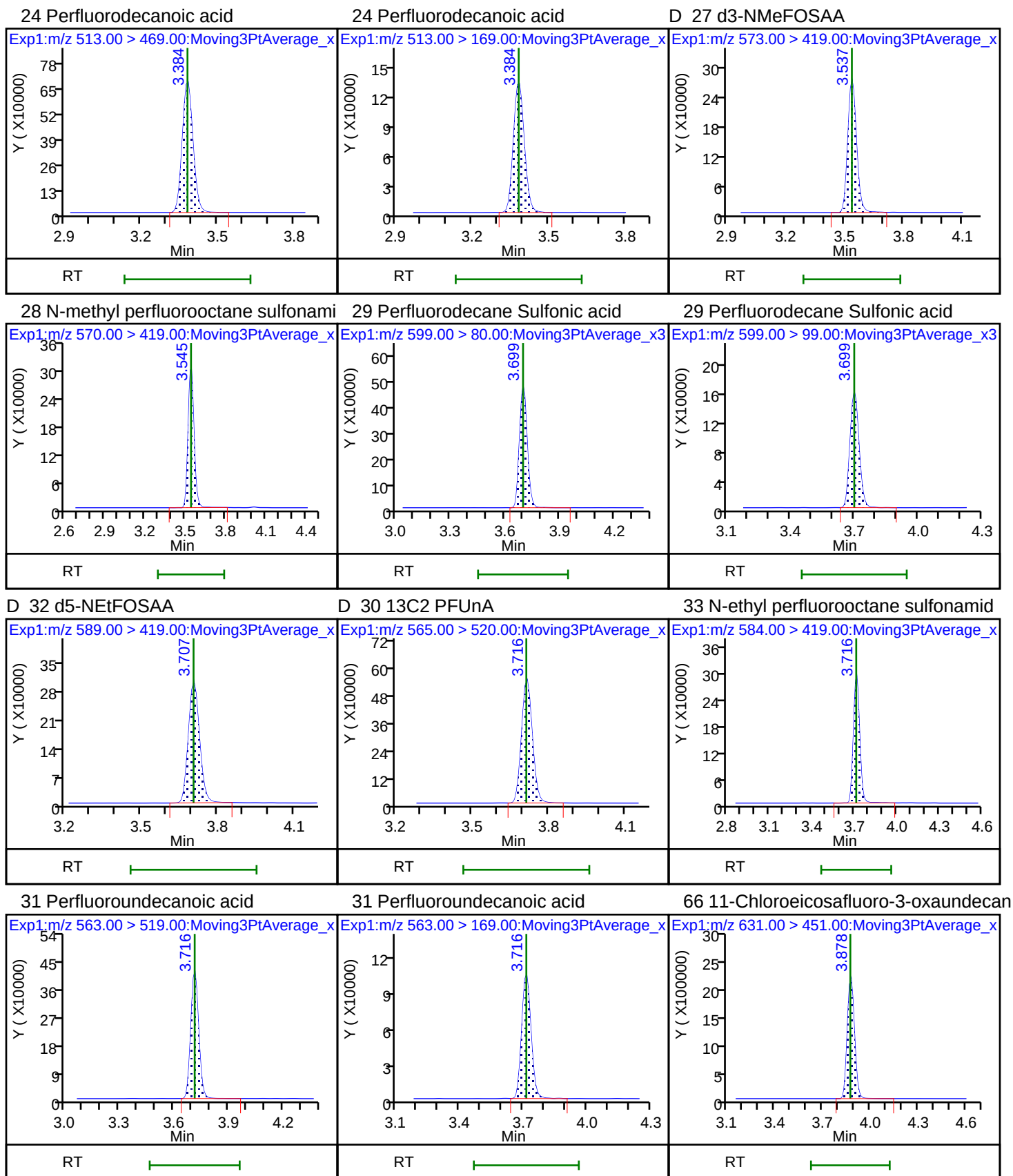
D 72 13C8 PFOS

D 19 13C5 PFNA

20 Perfluorononanoic acid



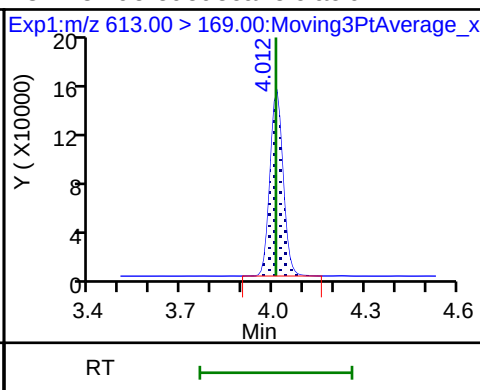
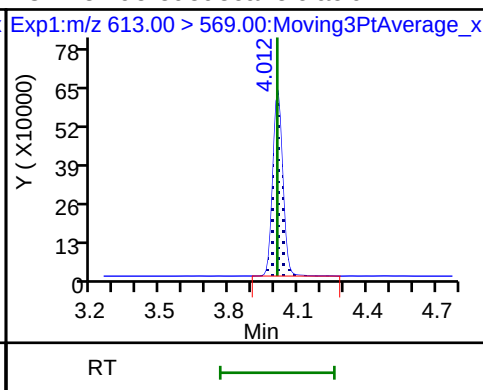
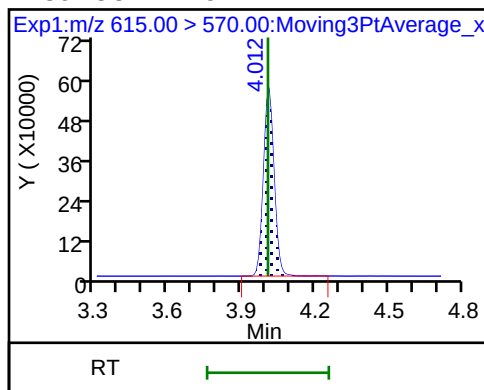




D 36 13C2 PFDaA

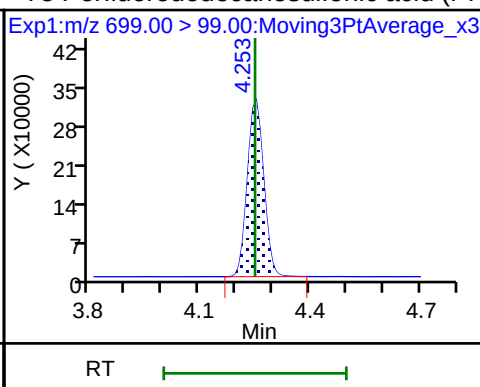
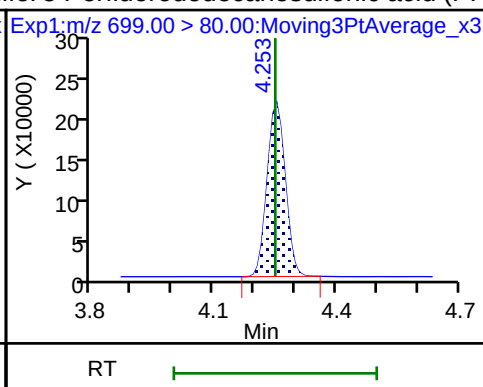
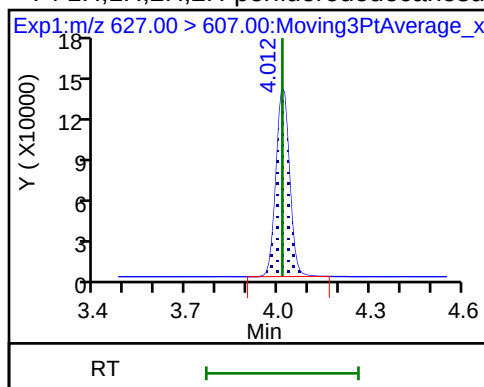
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

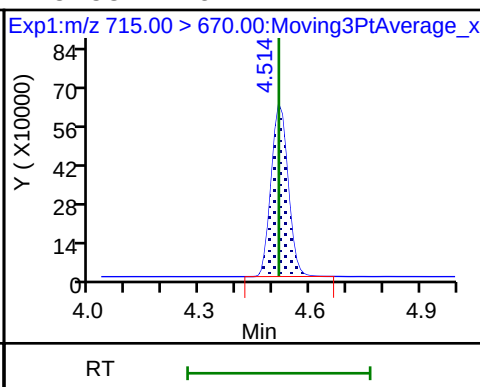
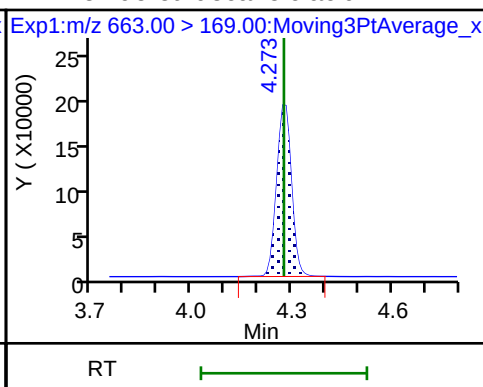
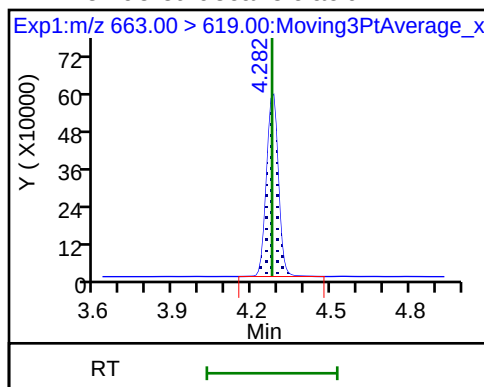
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

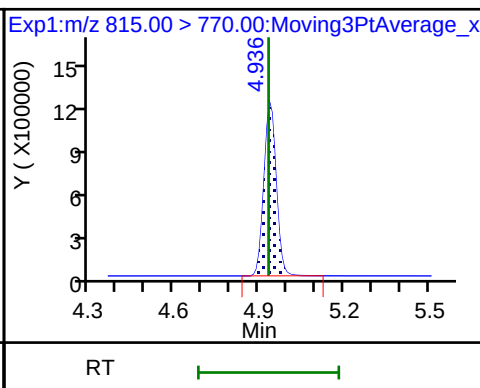
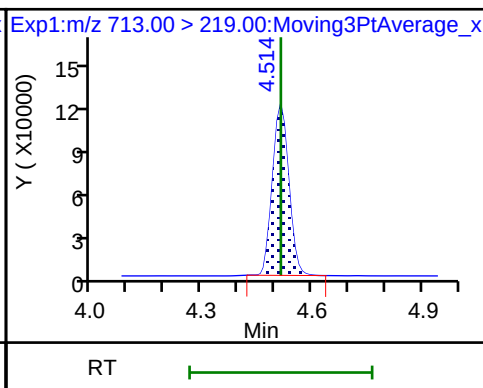
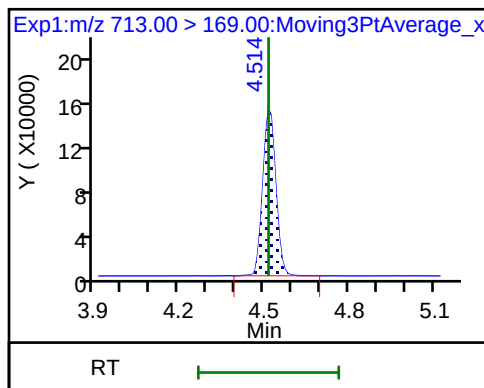
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

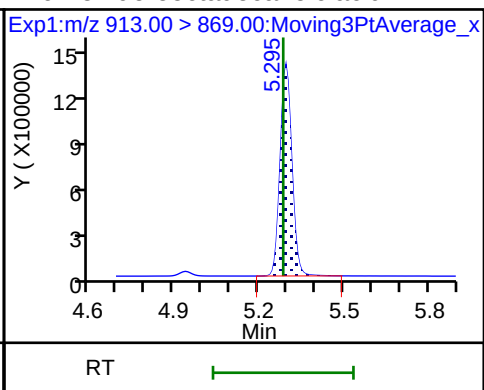
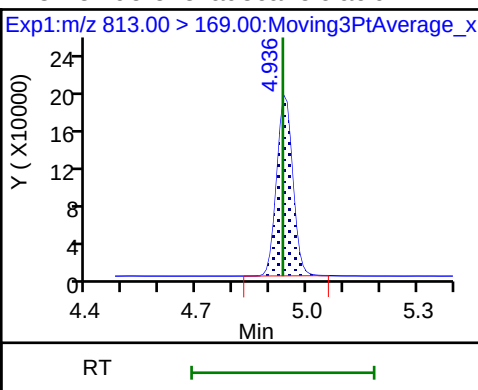
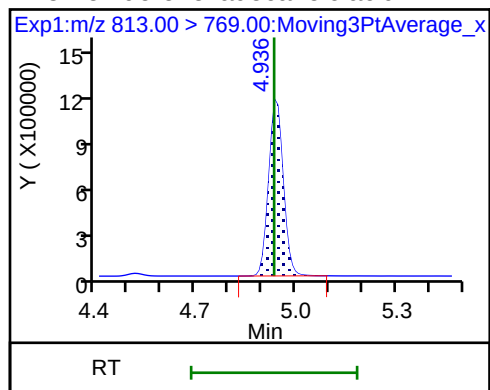
D 44 13C2-PFHxDA



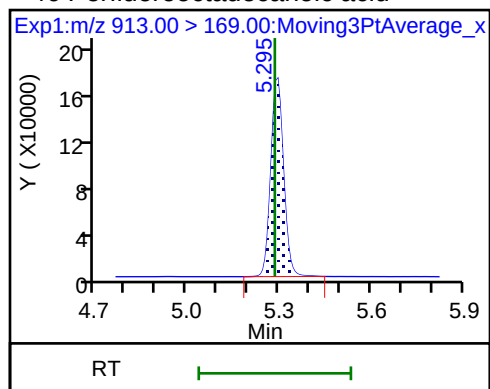
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

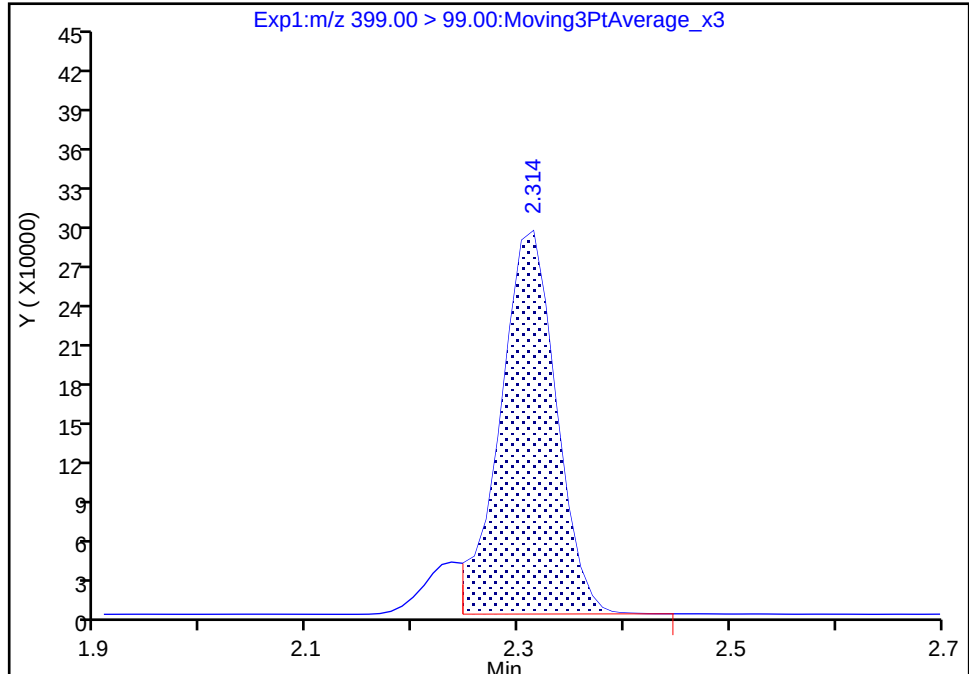
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_010.d
Injection Date: 04-Oct-2018 05:36:48 Instrument ID: A8_N
Lims ID: ICV FULL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

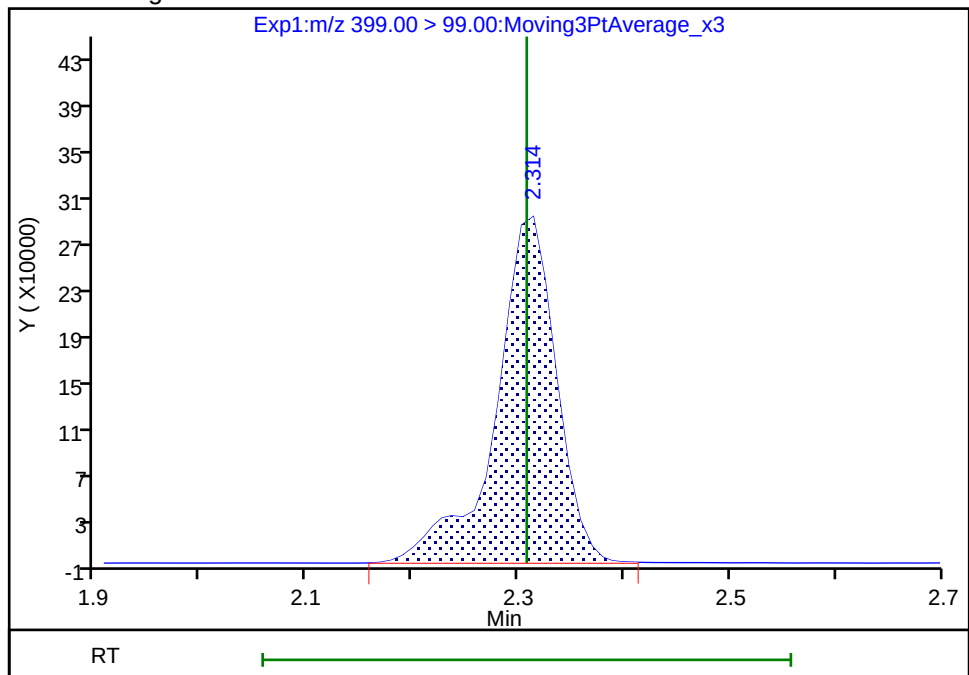
RT: 2.31
Area: 1057237
Amount: 2.166611
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 1159544
Amount: 2.166611
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 04-Oct-2018 10:16:08
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 355 of 649

10/15/2018

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: CCVL 320-250091/2 Calibration Date: 10/06/2018 18:05

Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22

Lab File ID: 2018.10.06LLAAA_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9496	0.9492		0.0500	0.0500	-0.0	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.110	1.097		0.0494	0.0500	-1.2	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.74	77.87		0.0443	0.0442	0.2	50.0
4:2 FTS	AveID	12.97	13.04		0.500	0.0467	0.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9850	1.002		0.0509	0.0500	1.7	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.02	71.47		0.0500	0.0469	6.6	50.0
HFPO-DA (GenX)	AveID	2.878	3.188		0.0554	0.0500	10.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.121	1.058		0.0472	0.0500	-5.6	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.102	1.251		0.0517	0.0455	13.6	50.0
DONA	AveID	3.887	3.916		0.0474	0.0471	0.7	50.0
6:2 FTS	AveID	1.702	1.638		0.500	0.0474	-3.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.178	1.436		0.0610	0.0501	21.9	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.252	1.239		0.0471	0.0476	-1.0	50.0
Perfluorononanoic acid (PFNA)	AveID	1.077	1.223		0.0568	0.0500	13.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.142	1.080		0.0439	0.0464	-5.4	50.0
F-53B Major	AveID	1.889	2.118		0.0522	0.0466	12.1	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9624	1.018		0.0529	0.0500	5.8	50.0
8:2 FTS	AveID	1.208	0.9743		0.500	0.0479	-19.4	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8206	0.8415		0.0492	0.0480	2.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.004	0.9380		0.0467	0.0500	-6.5	50.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.9691	0.8376		0.500	0.0500	-13.6	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6415	0.6989		0.0525	0.0482	9.0	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8768	0.8927		0.0509	0.0500	1.8	50.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.8705	0.8353		0.0480	0.0500	-4.0	50.0
F-53B Minor	AveID	2.852	3.139		0.0518	0.0471	10.1	50.0
10:2 FTS	AveID	0.8575	1.050		0.0590	0.0482	22.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.096	1.000		0.0456	0.0500	-8.7	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2912	0.2690		0.0447	0.0484	-7.6	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.062	1.252		0.0590	0.0500	17.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2457	0.2511		0.0511	0.0500	2.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.321		0.0498	0.0500	-0.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-250091/2 Calibration Date: 10/06/2018 18:05
 Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22
 Lab File ID: 2018.10.06LLAAA_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.052	1.179		0.0560	0.0500	12.1	50.0
13C4 PFBA	Ave	1.512	1.507		2.49	2.50	-0.3	50.0
13C5 PFPeA	Ave	1.015	1.008		2.48	2.50	-0.7	50.0
13C3 PFBS	Ave	0.0216	0.0213		2.28	2.33	-1.8	50.0
M2-4:2 FTS	Ave	0.1194	0.1423		2.78	2.34	19.2	50.0
13C2 PFHxA	Ave	1.115	1.102		2.47	2.50	-1.2	50.0
13C3 HFPO-DA	Ave	0.0809	0.0729		2.25	2.50	-9.9	50.0
13C4 PFHpA	Ave	1.001	1.035		2.58	2.50	3.3	50.0
18O2 PFHxS	Ave	1.251	1.225		2.32	2.37	-2.1	50.0
M2-6:2 FTS	Ave	0.1686	0.1959		2.76	2.38	16.2	50.0
13C8 PFOA	Ave	1.623	1.686		2.54	2.45	3.9	50.0
13C4 PFOA	Ave	0.9722	0.995		2.56	2.50	2.4	50.0
13C8 PFOS	Ave	0.4286	0.4359		2.43	2.39	1.7	50.0
13C4 PFOS	Ave	0.8098	0.7752		2.29	2.39	-4.3	50.0
13C5 PFNA	Ave	0.8175	0.8235		2.52	2.50	0.7	50.0
13C8 FOSA	Ave	1.127	1.191		2.64	2.50	5.7	50.0
M2-8:2 FTS	Ave	0.1786	0.2135		2.86	2.40	19.5	50.0
13C2 PFDA	Ave	0.7231	0.7225		2.50	2.50	-0.0	50.0
d3-NMeFOSAA	Ave	0.2938	0.3413		2.90	2.50	16.2	50.0
d5-NEtFOSAA	Ave	0.3162	0.3689		2.92	2.50	16.7	50.0
13C2 PFUnA	Ave	0.5524	0.5792		2.62	2.50	4.8	50.0
13C2 PFDoA	Ave	0.5820	0.6009		2.58	2.50	3.2	50.0
13C2 PFTeDA	Ave	0.6996	0.7658		2.74	2.50	9.5	50.0
13C2 PFHxDA	Ave	1.263	1.413		2.80	2.50	11.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_004.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 06-Oct-2018 18:05:38 ALS Bottle#: 21 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCVL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 11:12:15 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK018

First Level Reviewer: mongkols

Date: 09-Oct-2018 11:12:15

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	1.421	1.423	-0.002	0.539	3589615	2.49		99.7	10217	
2 Perfluorobutyric acid										
212.90 > 169.00	1.421	1.426	-0.005	1.000	68142	0.0500		99.9	10.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.680	1.684	-0.004	0.637	2400566	2.48		99.3	9921	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.688	1.694	-0.006	1.005	52668	0.0494		98.8	5.3	
D 47 13C3-PFBS										
301.90 > 83.00	1.720	1.716	0.004	0.652	47062	2.28		98.2	495	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.720	1.726	-0.006	1.000	69670	0.0443		100	3.9	
298.90 > 99.00	1.720	1.726	-0.006	1.000	27332		2.55(1.25-3.74)		3.6	
D 60 M2-4:2FTS										
329.00 > 81.00	1.924	1.918	0.006	0.730	316453	2.78		119	459	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.924	1.933	-0.009	1.119	12327	0.0469		101	273	
D 7 13C2 PFHxA										
315.00 > 270.00	1.955	1.960	-0.005	0.742	2623679	2.47		98.8	8386	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.955	1.964	-0.009	1.000	52572	0.0509		102	14.6	
313.00 > 119.00	1.955	1.964	-0.009	1.000	3852		13.65(5.03-15.10)		11.2	M
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.987	1.996	-0.009	1.155	67852	0.0500		107	392	
349.00 > 99.00	1.987	1.996	-0.009	1.155	23455		2.89(1.36-4.07)		95.5	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.060	2.054	0.006	0.781	173649	2.25		90.1	761	

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	2.060	2.069	-0.009	1.000	11073	0.0554		111	16.8	
D 9 13C4-PFHpA										
367.00 > 322.00	2.289	2.281	0.008	0.868	2465024	2.58		103	5667	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.289	2.299	-0.010	1.000	52146	0.0472		94.4	11.5	
363.00 > 169.00	2.289	2.299	-0.010	1.000	25192		2.07(1.13-3.40)		21.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.301	2.303	-0.002	0.873	2760931	2.32		97.9	5872	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.301	2.310	-0.009	1.000	66467	0.0517		114	36.2	
399.00 > 99.00	2.301	2.310	-0.009	1.000	21379		3.11(1.50-4.49)		31.3	M
77 DONA										
377.00 > 251.00	2.334	2.344	-0.010	0.773	136221	0.0474		101	450	
377.00 > 85.00	2.334	2.344	-0.010	0.773	88530		1.54(0.85-2.54)		359	
D 12 M2-6:2FTS										
429.00 > 81.00	2.614	2.609	0.005	0.991	443351	2.76		116	1990	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.614	2.620	-0.006	1.000	14495	0.0456		96.2	42.5	
D 73 13C8 PFOA										
421.00 > 376.00	2.629	2.632	-0.003	0.997	3932340	2.54		104	10549	
D 14 13C4 PFOA										
417.00 > 372.00	2.636	2.640	-0.004	1.000	2370817	2.56		102	9752	
* 62 13C2-PFOA										
415.00 > 370.00	2.636	2.651	-0.015		2381849	2.50			5216	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.636	2.651	-0.015	1.000	68161	0.0610		122	6.5	M
413.00 > 169.00	2.644	2.651	-0.007	1.003	30802		2.21(0.84-2.52)		46.9	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.652	2.658	-0.006	0.879	43558	0.0471		99.0	312	
449.00 > 99.00	2.652	2.658	-0.006	0.879	11355		3.84(1.94-5.82)		64.6	
D 19 13C5 PFNA										
468.00 > 423.00	3.017	3.006	0.011	1.145	1961476	2.52		101	4756	
D 72 13C8 PFOS										
507.00 > 99.00	3.010	3.006	0.004	1.142	992584	2.43		102	4774	
D 18 13C4 PFOS										
503.00 > 80.00	3.017	3.014	0.003	1.145	1765088	2.29		95.7	4628	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.017	3.024	-0.007	1.000	37011	0.0439		94.6	50.5	M
499.00 > 99.00	3.017	3.024	-0.007	1.000	6880		5.38(2.31-6.93)		21.2	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.017	3.024	-0.007	1.000	47969	0.0568		114	15.0	
463.00 > 169.00	3.010	3.024	-0.014	0.997	9561		5.02(1.90-5.69)		67.6	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.229	3.236	-0.007	1.070	72902	0.0522		112	345	
D 26 M2-8:2FTS										
529.00 > 81.00	3.366	3.362	0.004	1.277	487232	2.86		120	2950	

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	3.359	3.362	-0.003	1.274	2837306	2.64		106	5640	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.359	3.364	-0.005	1.000	57751	0.0529		106	491	
D 23 13C2 PFDA										
515.00 > 470.00	3.373	3.369	0.004	1.280	1720837	2.50		99.9	4431	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.366	3.372	-0.006	1.115	29832	0.0492		103	534	
549.00 > 99.00	3.359	3.372	-0.013	1.113	7932		3.76(1.33-3.97)		63.4	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.366	3.372	-0.006	1.000	9494	0.0386		80.6	48.9	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.373	3.379	-0.006	1.000	32283	0.0467		93.5	37.0	
513.00 > 169.00	3.381	3.379	0.002	1.002	7069		4.57(2.36-7.09)		35.4	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.533	3.529	0.004	1.340	812826	2.90		116	1105	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.533	3.539	-0.006	1.000	13617	0.0432		86.4	23.5	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.705	3.699	0.006	1.405	878752	2.92		117	1416	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.696	3.702	-0.006	1.225	24880	0.0525		109	152	
599.00 > 99.00	3.696	3.702	-0.006	1.225	7619		3.27(1.39-4.16)		68.2	
D 30 13C2 PFUnA										
565.00 > 520.00	3.714	3.707	0.007	1.409	1379498	2.62		105	3430	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.705	3.719	-0.014	0.998	24629	0.0509		102	26.9	
563.00 > 169.00	3.714	3.719	-0.005	1.000	6000		4.10(2.12-6.36)		46.4	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.714	3.719	-0.005	1.002	14681	0.0480		96.0	57.1	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.875	3.883	-0.008	1.284	109181	0.0518		110	373	
35 MeFOSA										
512.00 > 169.00	3.865	3.883	-0.018		14001	NC			102	
D 36 13C2 PFDaA										
615.00 > 570.00	4.010	4.003	0.007	1.521	1431139	2.58		103	4760	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.010	4.016	-0.006	1.000	28632	0.0456		91.3	26.1	
613.00 > 169.00	4.010	4.016	-0.006	1.000	8071		3.55(2.13-6.40)		57.4	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.010	4.016	-0.006	1.191	10294	0.0590		122	105	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.252	4.259	-0.007	1.409	9615	0.0447		92.4	85.8	
699.00 > 99.00	4.252	4.259	-0.007	1.409	13000		0.74(0.00-0.00)		173	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.271	4.278	-0.007	1.065	35834	0.0590		118	31.6	R
663.00 > 169.00	4.271	4.278	-0.007	1.065	8562		4.19(1.25-3.76)		136	R

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.512	4.504	0.008	1.712	1823919	2.74		109	4675	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.522	4.520	0.002	1.002	9158	0.0511		102	138	
713.00 > 219.00	4.512	4.520	-0.008	1.000	7728		1.19(0.71-2.13)		123	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.934	4.927	0.007	1.872	3365421	2.80		112	4667	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.934	4.943	-0.009	1.000	88914	0.0498		99.5	17.8	
813.00 > 169.00	4.934	4.943	-0.009	1.000	16654		5.34(2.86-8.58)		199	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.293	5.293	0.0	1.073	79343	0.0560		112	16.1	
913.00 > 169.00	5.293	5.293	0.0	1.073	10078		7.87(3.83-11.48)		150	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_004.d

Injection Date: 06-Oct-2018 18:05:38

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 21

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

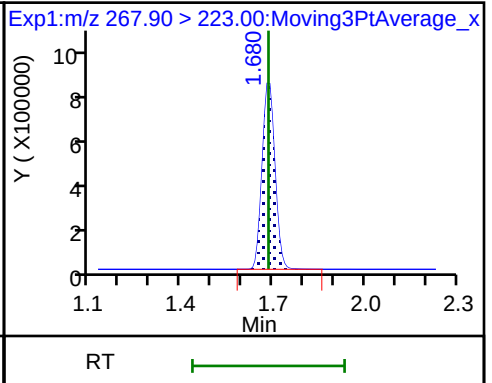
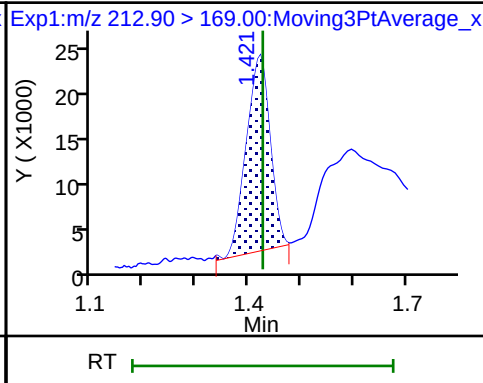
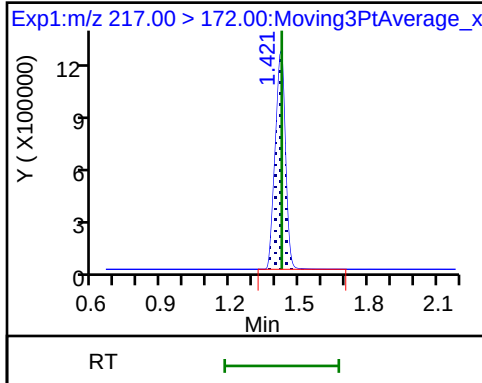
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

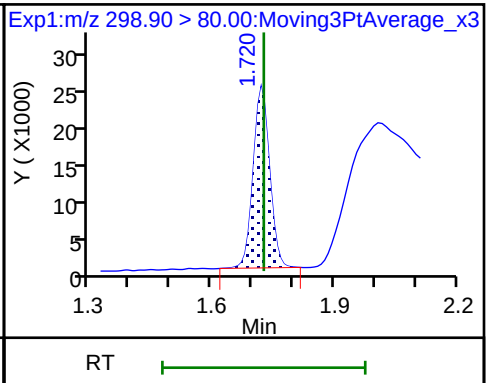
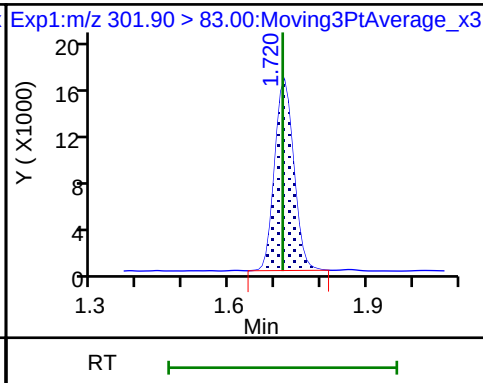
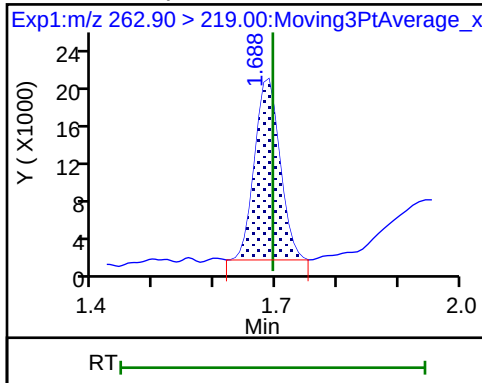
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

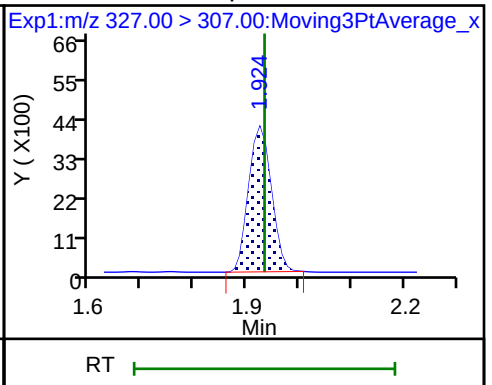
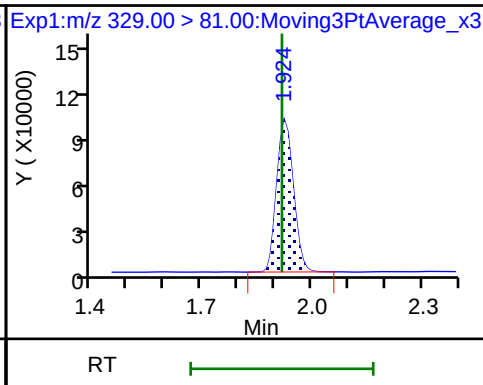
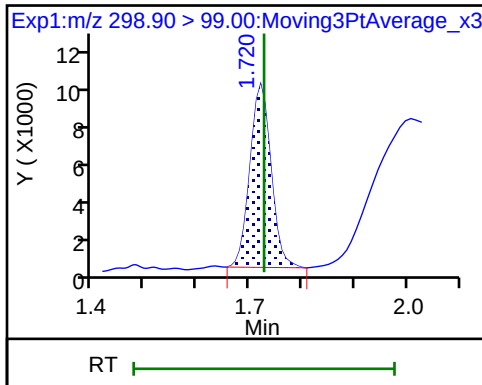
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

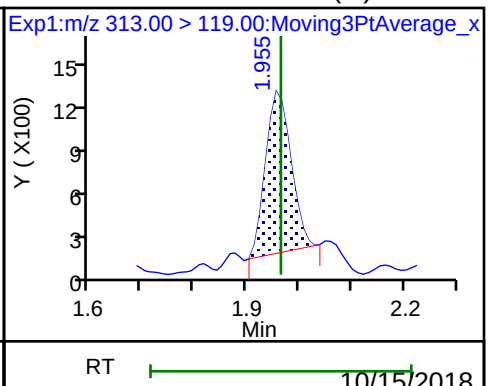
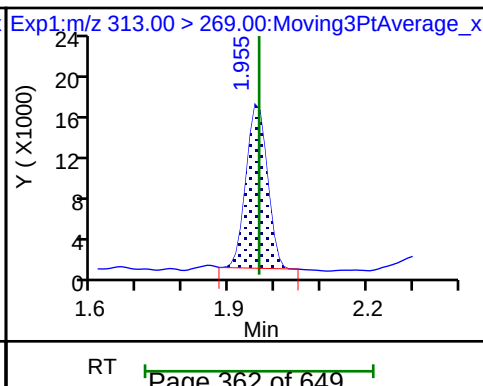
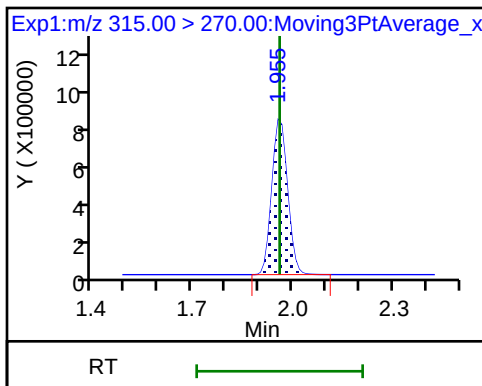
61 1H,1H,2H,2H-perfluorohexanesulfoni

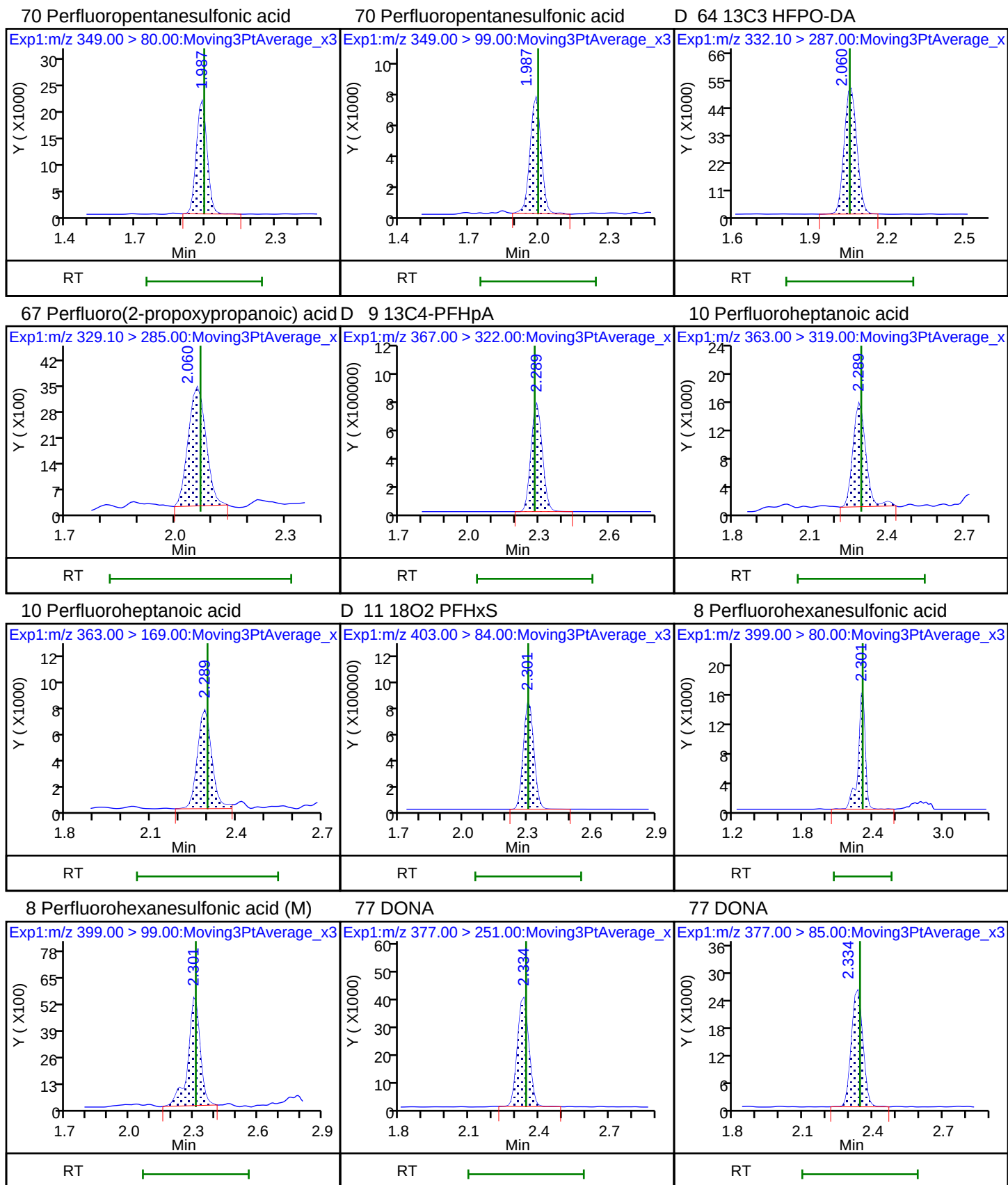


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

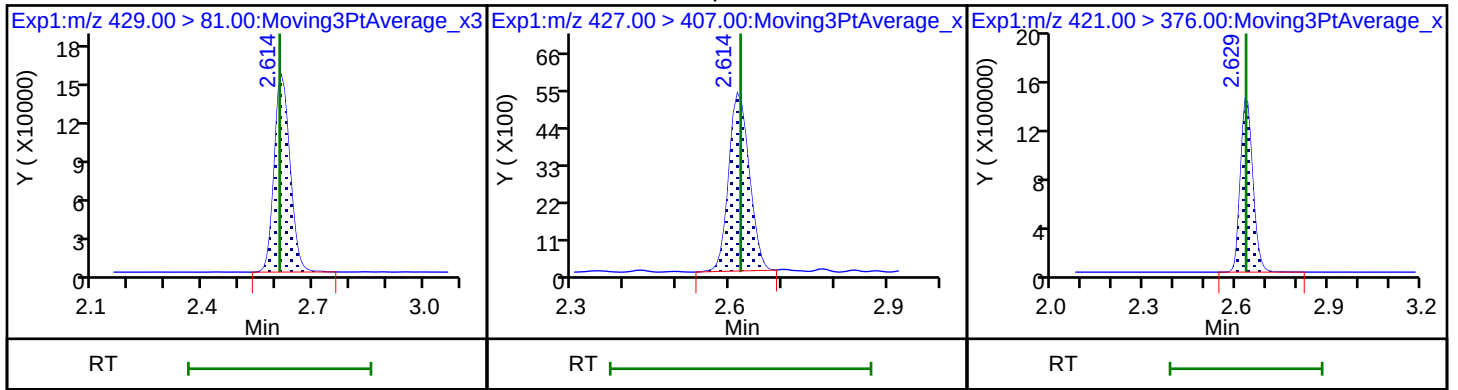
6 Perfluorohexanoic acid (M)





D 12 M2-6:2FTS

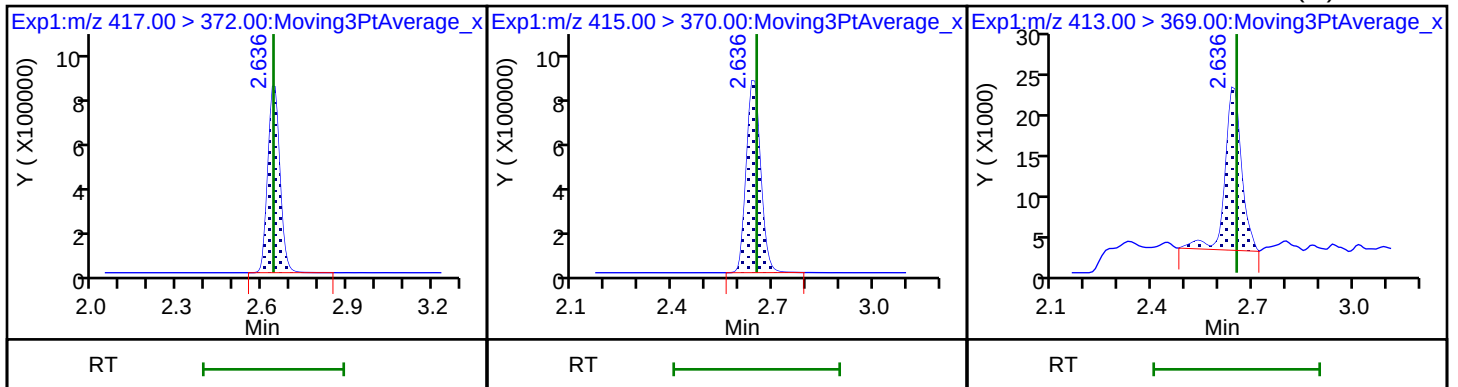
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

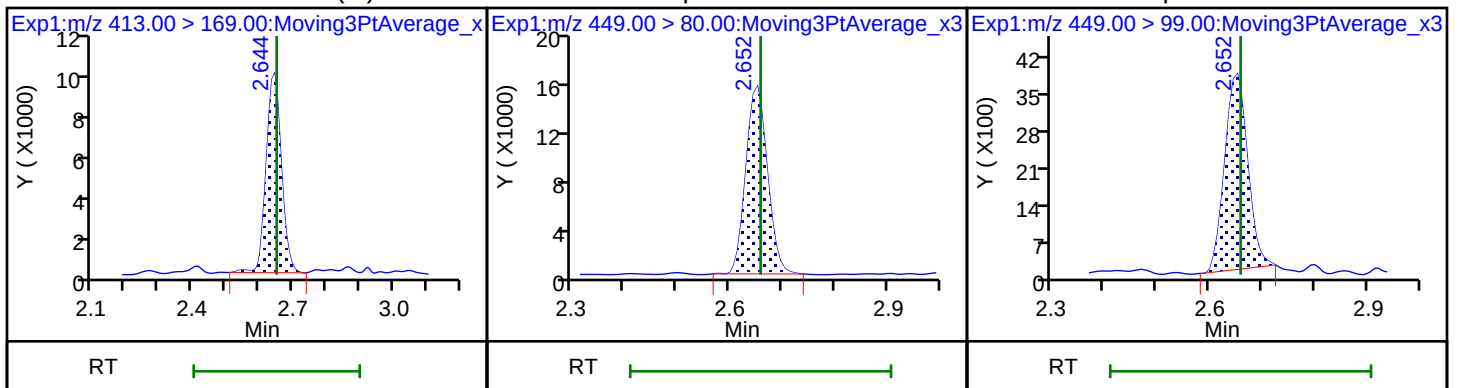
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid (M)

16 Perfluoroheptanesulfonic acid

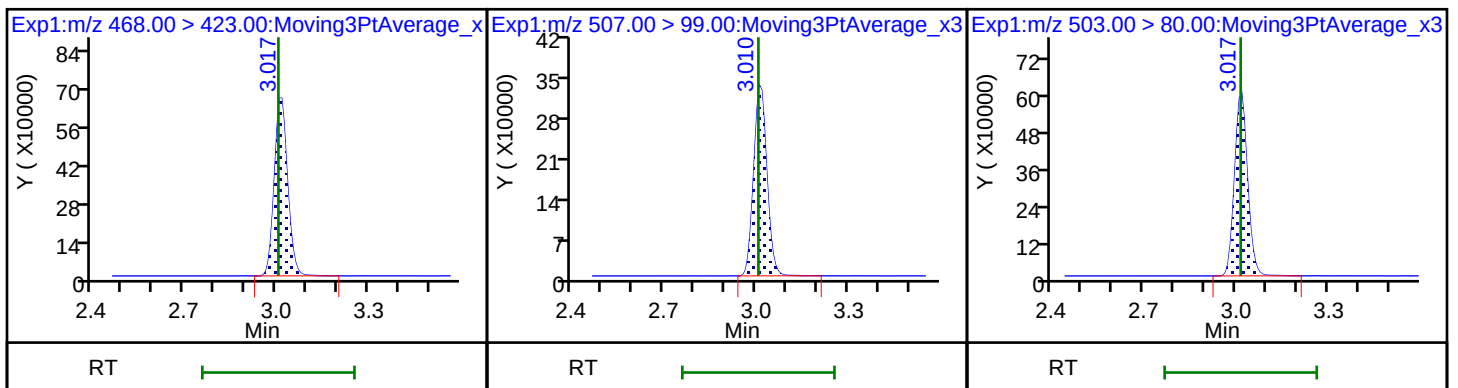
16 Perfluoroheptanesulfonic acid



D 19 13C5 PFNA

D 72 13C8 PFOS

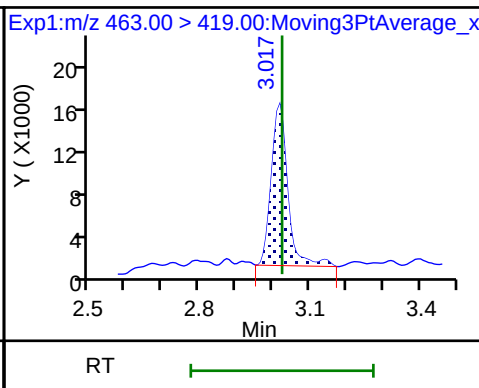
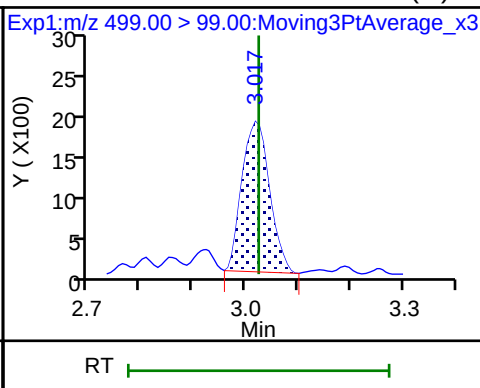
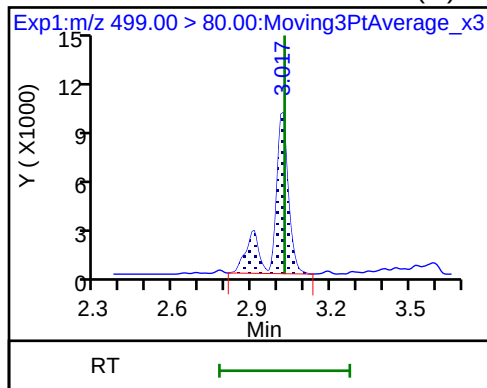
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)

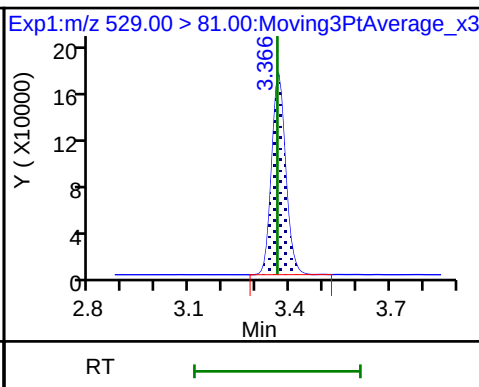
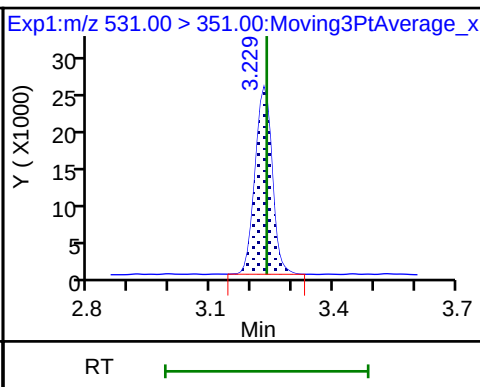
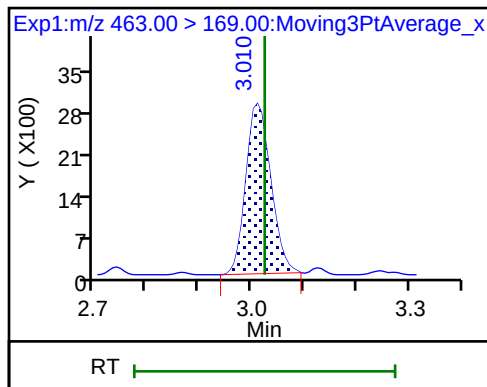
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonane

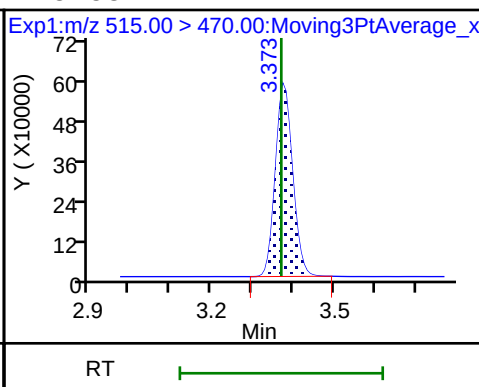
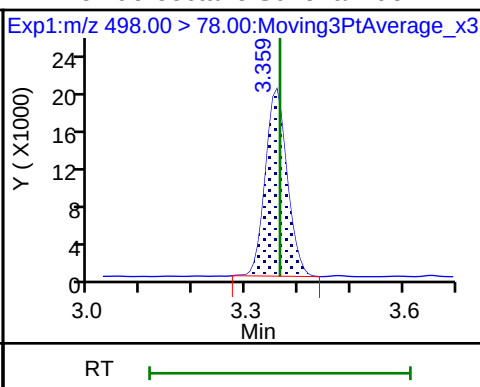
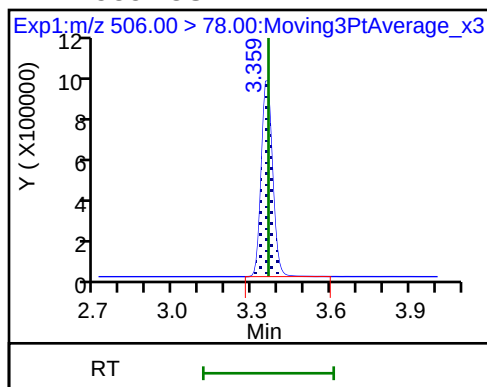
De 26 M2-8:2FTS



D 21 13C8 FOSA

22 Perfluorooctane Sulfonamide

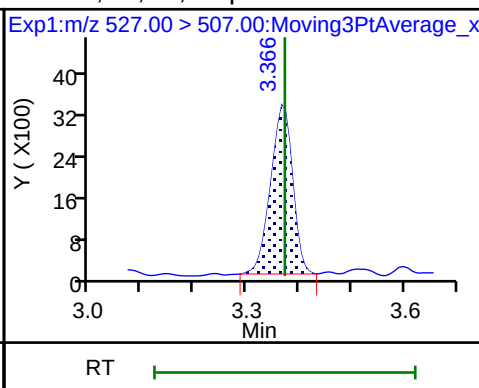
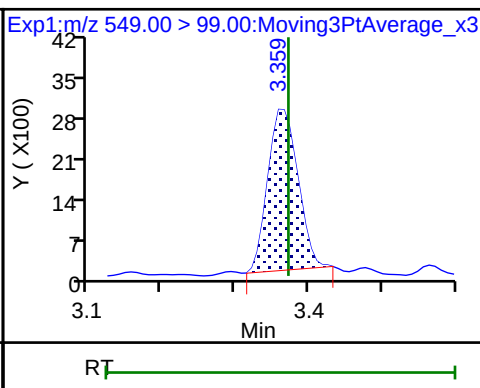
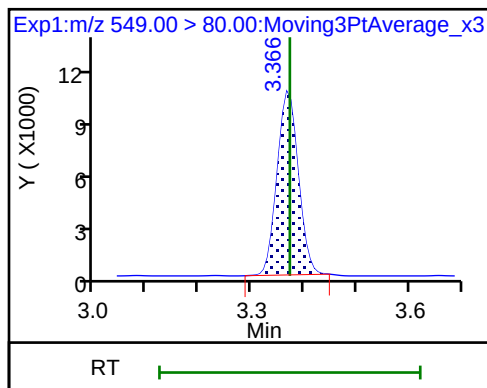
D 23 13C2 PFDA

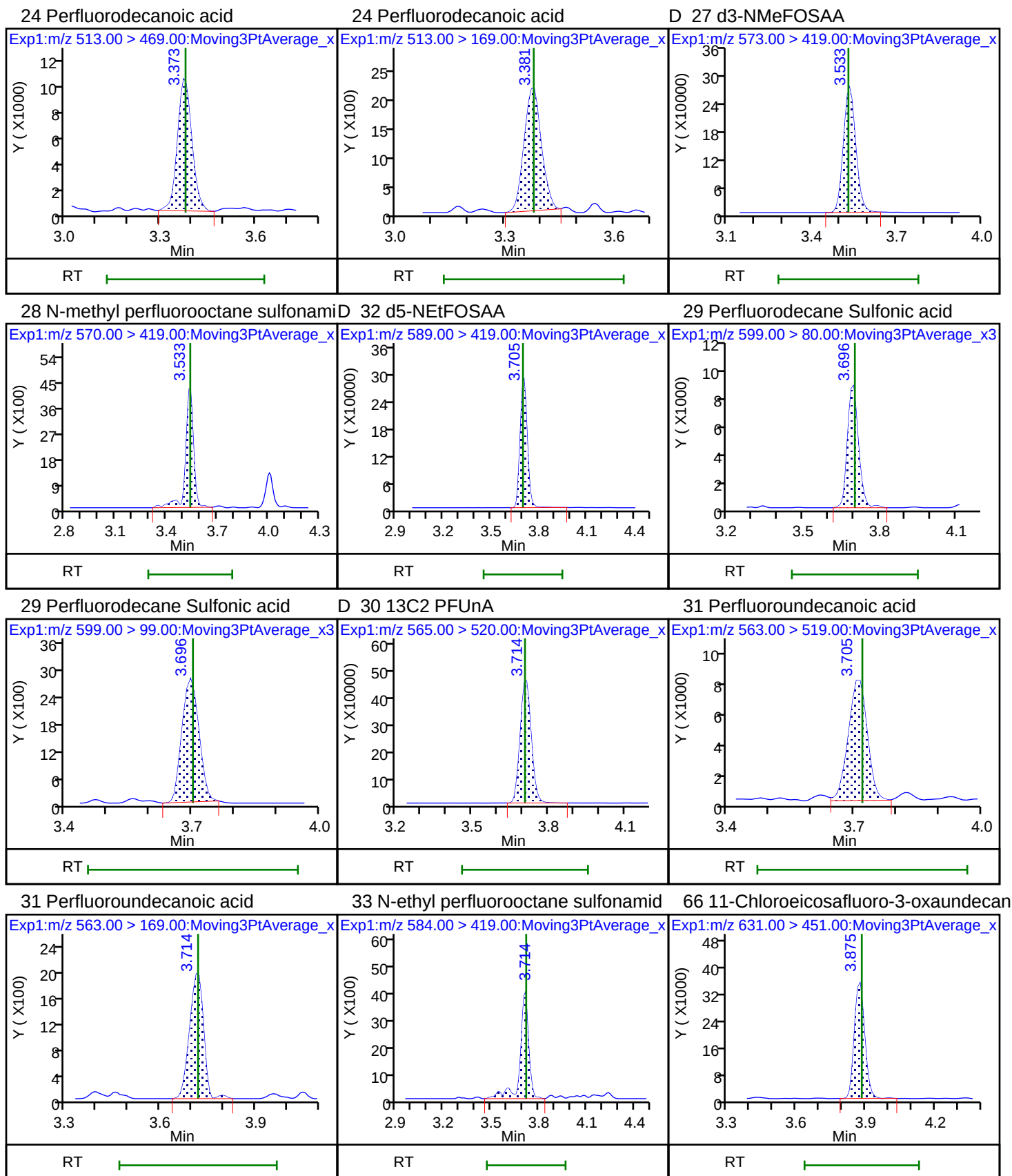


68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

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

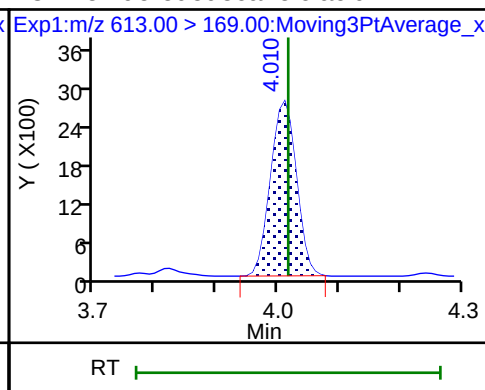
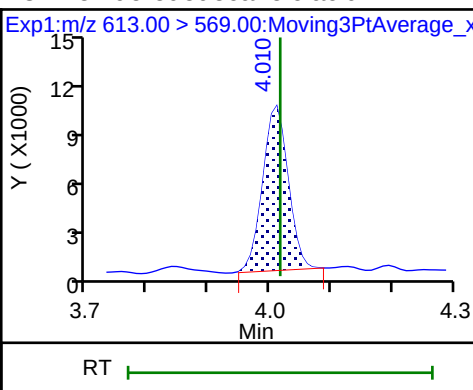
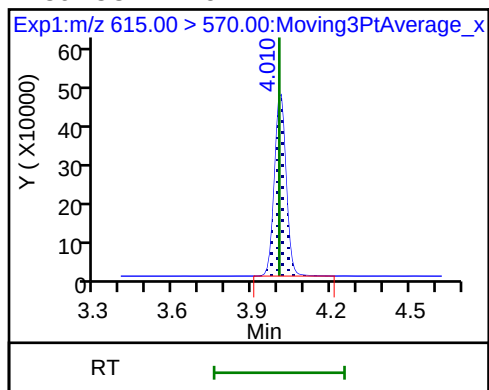




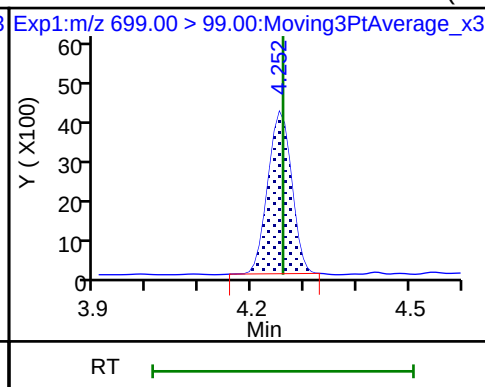
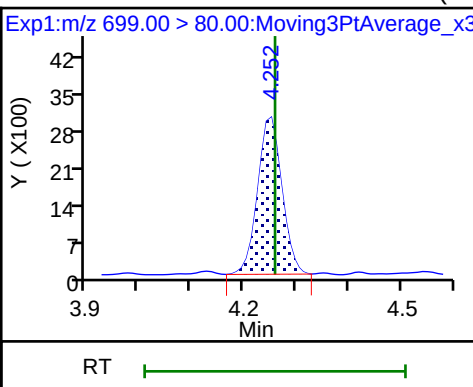
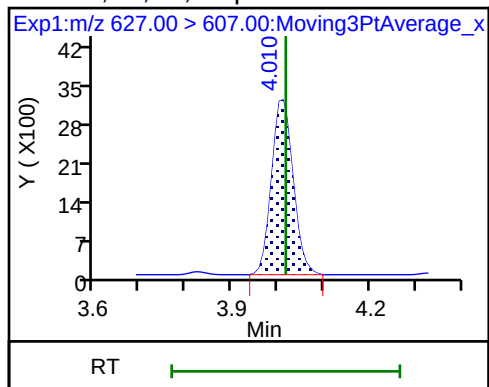
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



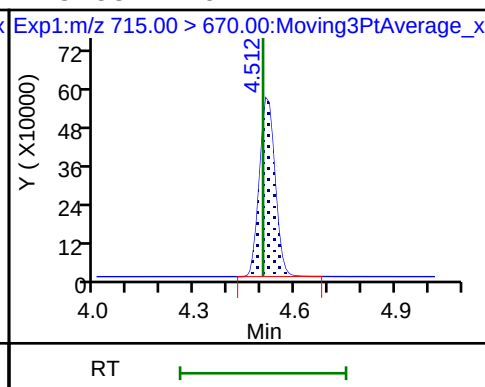
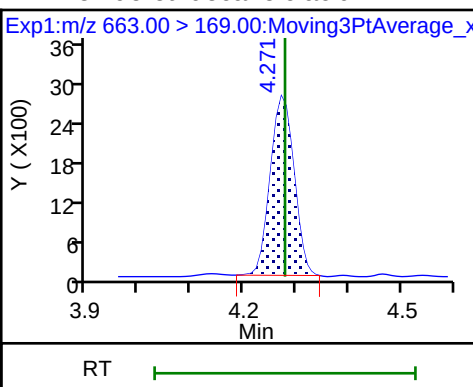
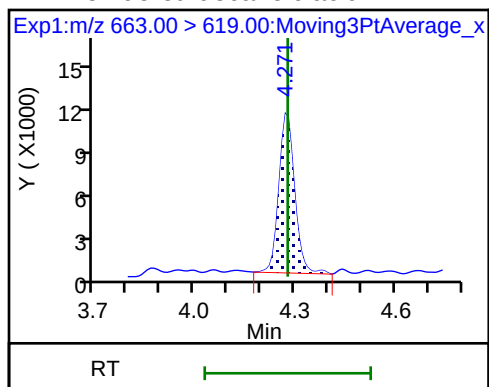
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

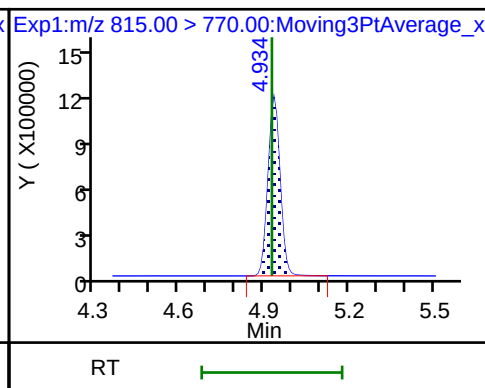
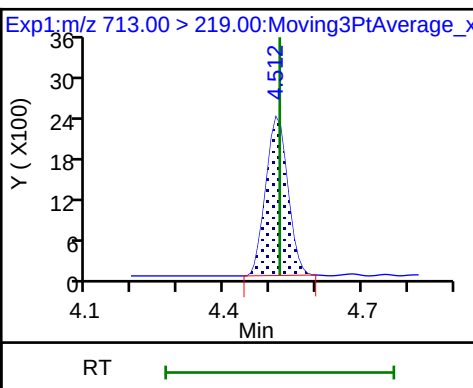
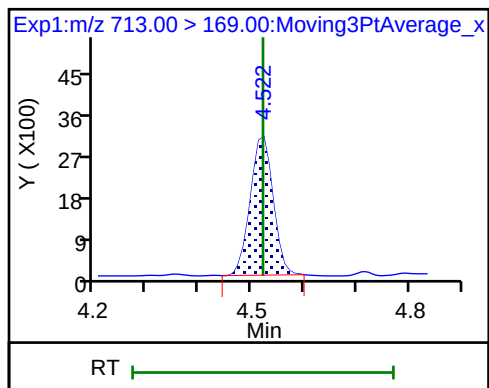
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

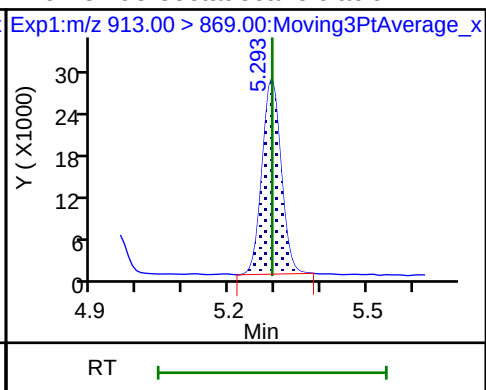
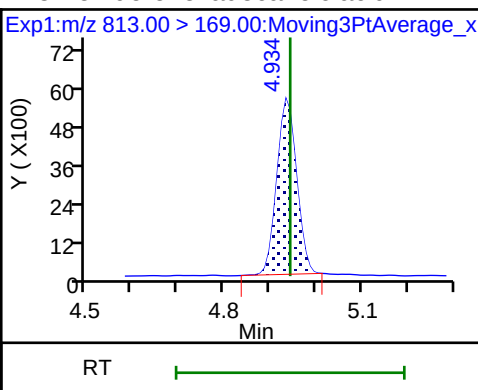
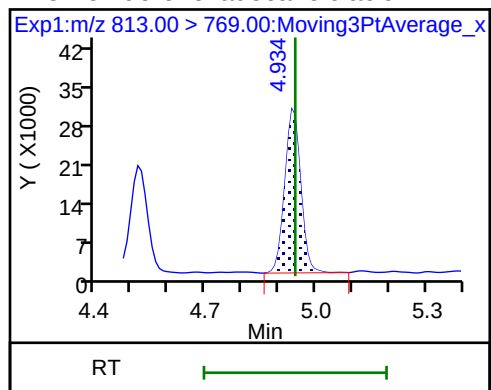
D 44 13C2-PFHxDA



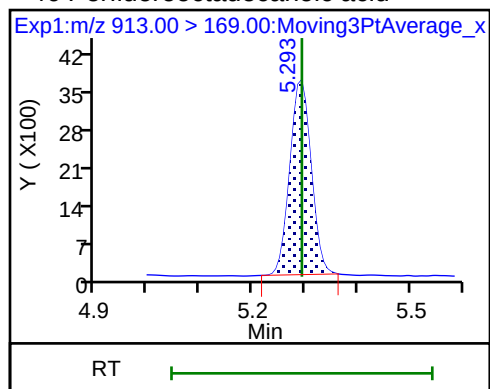
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_004.d

Injection Date: 06-Oct-2018 18:05:38

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

21

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

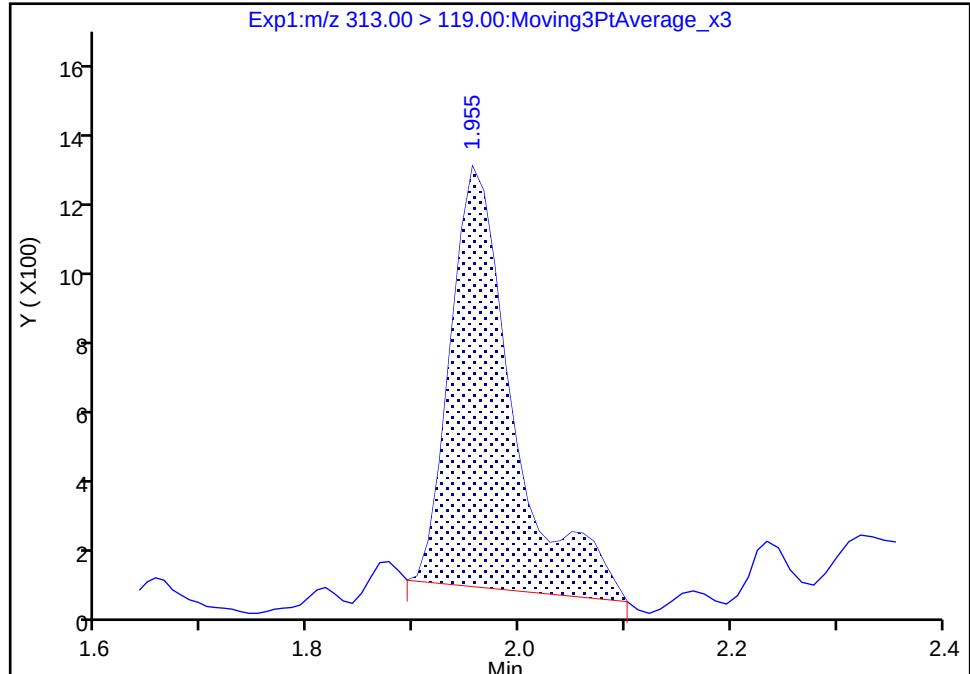
Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

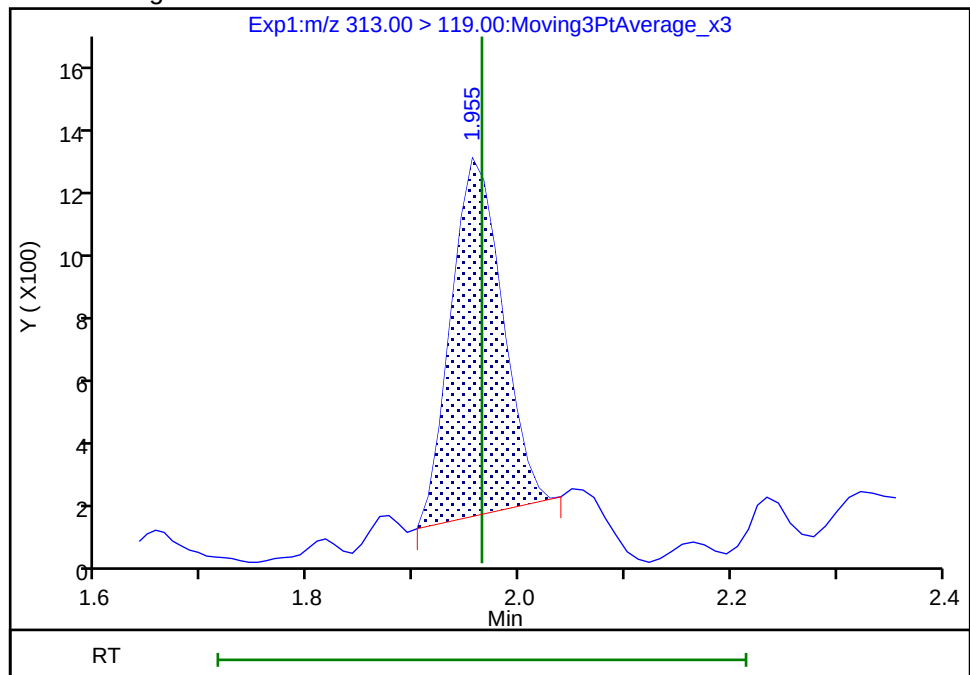
RT: 1.96
Area: 5039
Amount: 0.050855
Amount Units: ng/ml

Processing Integration Results



RT: 1.96
Area: 3852
Amount: 0.050855
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 09-Oct-2018 11:11:29

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

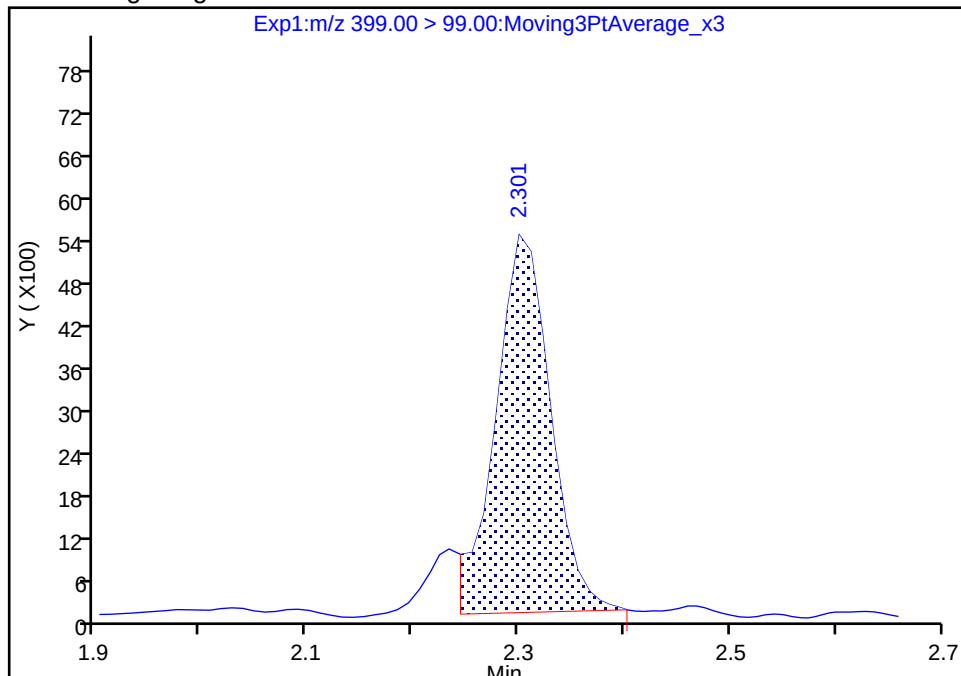
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_004.d
Injection Date: 06-Oct-2018 18:05:38 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

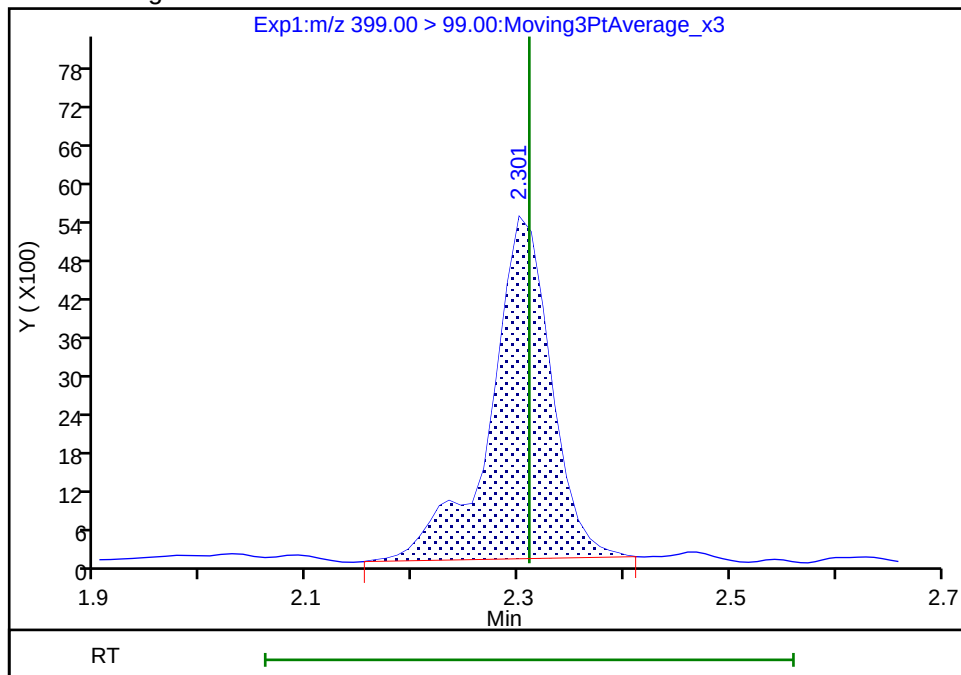
RT: 2.30
Area: 19174
Amount: 0.051669
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 21379
Amount: 0.051669
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 09-Oct-2018 11:11:37

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_004.d

Injection Date: 06-Oct-2018 18:05:38

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

21

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

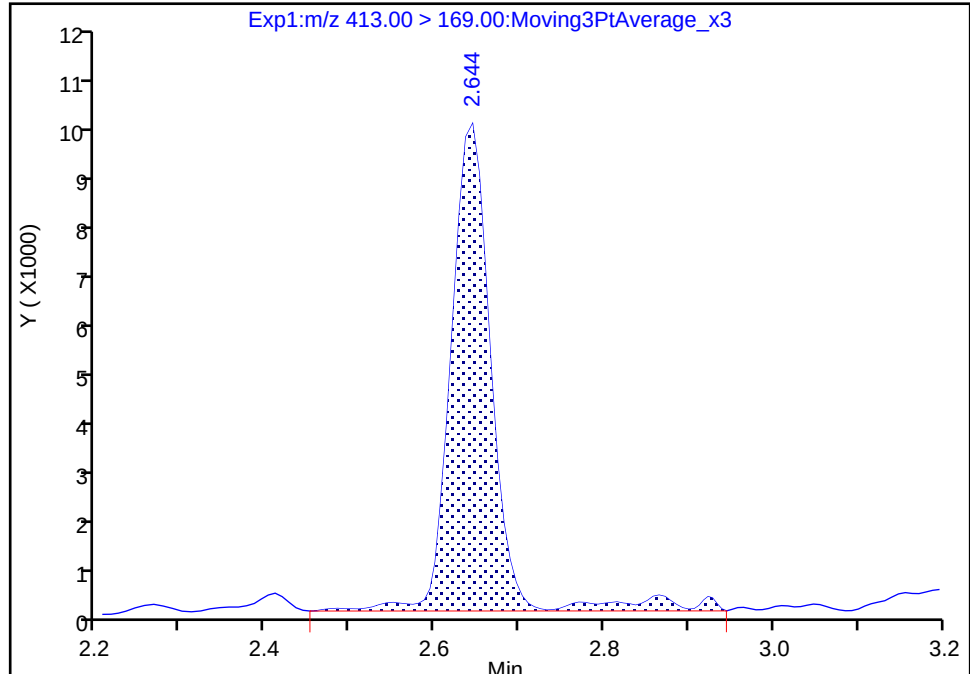
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

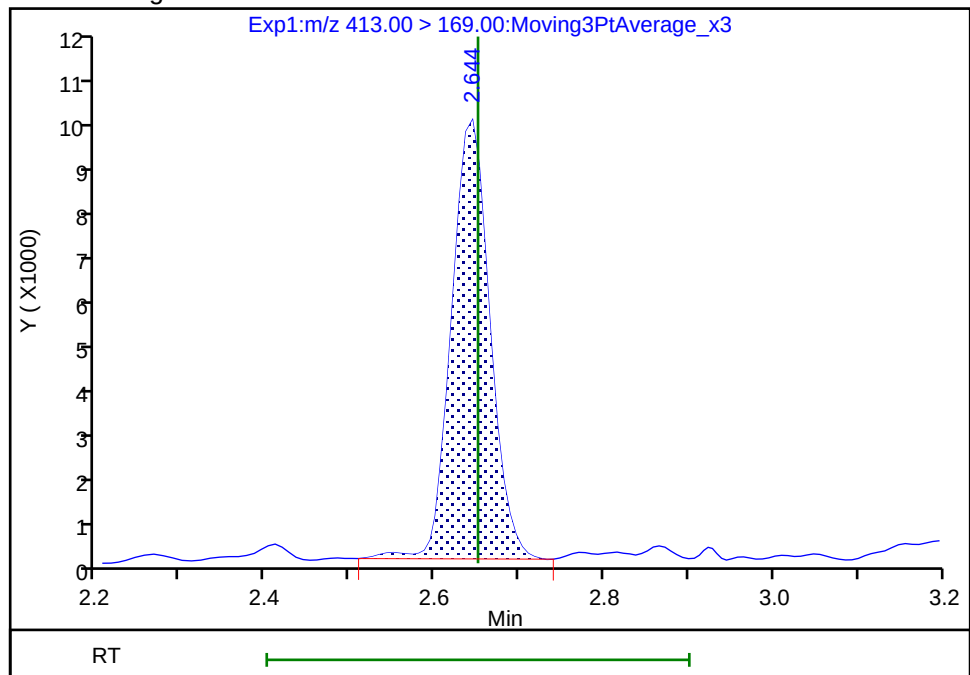
RT: 2.64
Area: 33161
Amount: 0.071680
Amount Units: ng/ml

Processing Integration Results



RT: 2.64
Area: 30802
Amount: 0.061016
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 09-Oct-2018 11:11:48

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_004.d

Injection Date: 06-Oct-2018 18:05:38

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 21

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

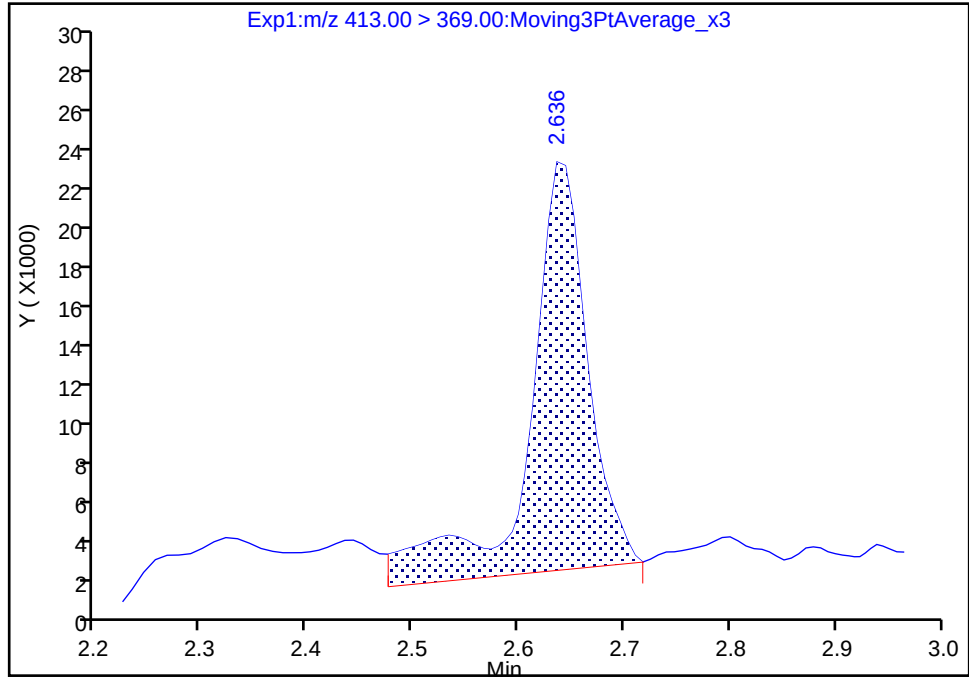
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

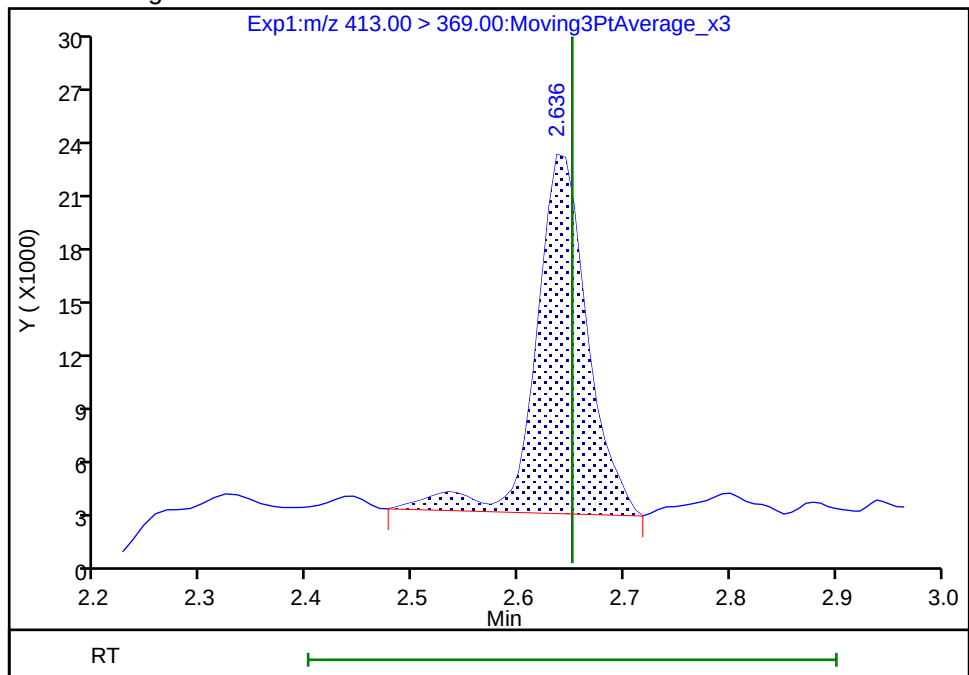
RT: 2.64
Area: 80074
Amount: 0.071680
Amount Units: ng/ml

Processing Integration Results



RT: 2.64
Area: 68161
Amount: 0.061016
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 09-Oct-2018 11:11:51

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_004.d

Injection Date: 06-Oct-2018 18:05:38

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 21

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

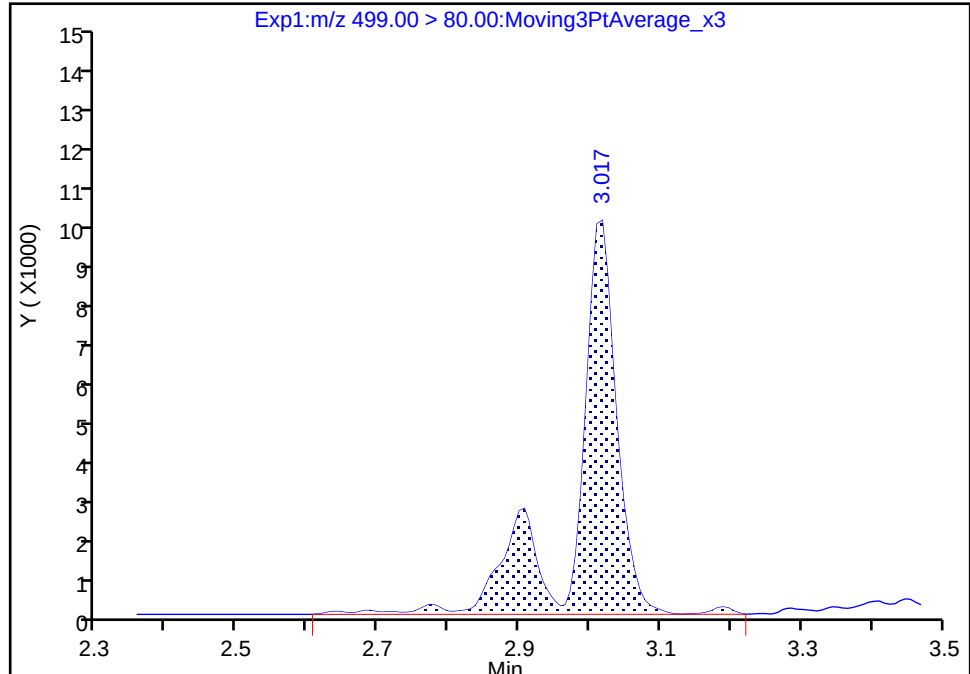
Detector EXP1

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

Signal: 1

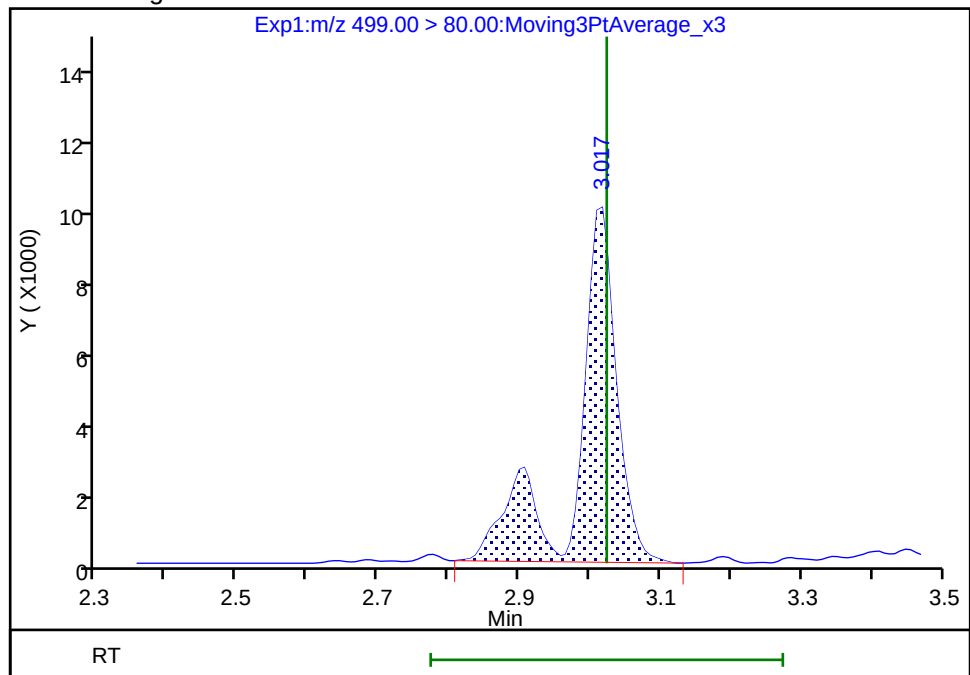
RT: 3.02
Area: 39025
Amount: 0.046263
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 37011
Amount: 0.043875
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 09-Oct-2018 11:11:57

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_004.d

Injection Date: 06-Oct-2018 18:05:38

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 21

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

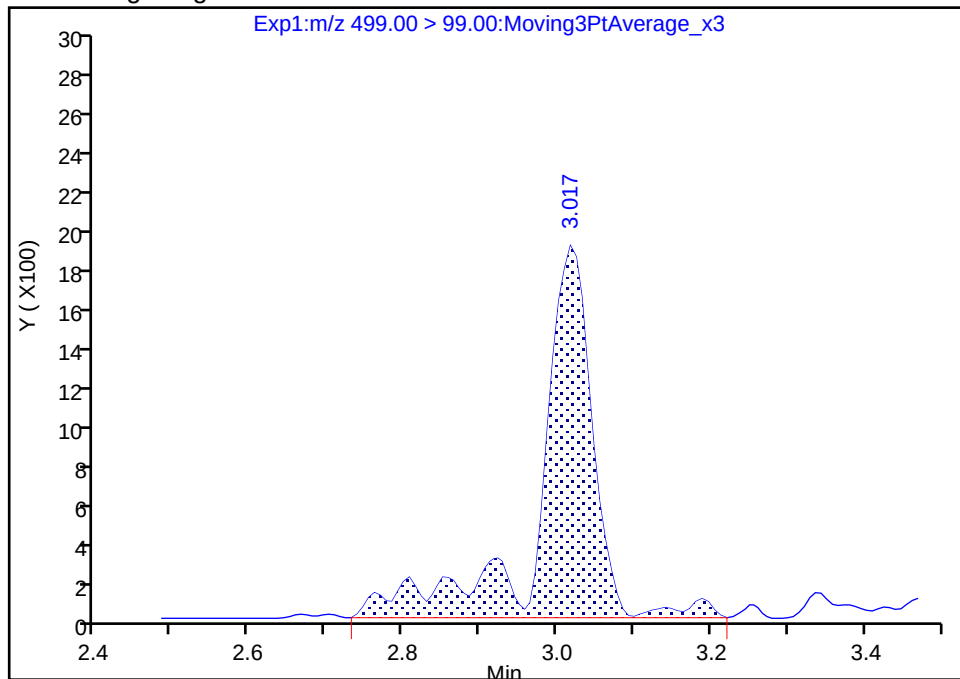
Detector EXP1

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

Signal: 2

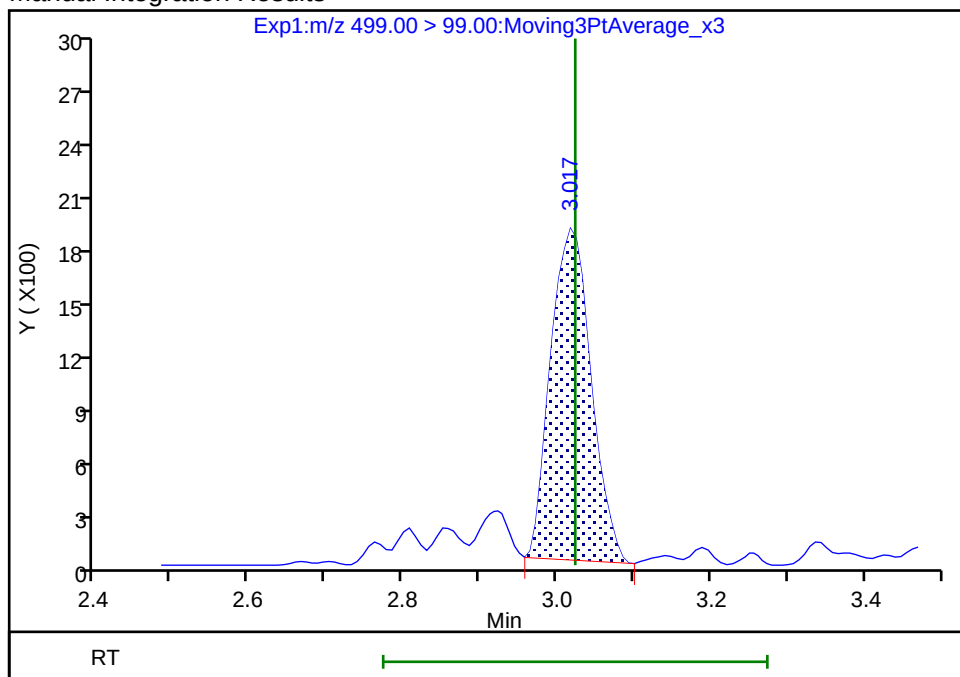
RT: 3.02
Area: 9420
Amount: 0.046263
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 6880
Amount: 0.043875
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 09-Oct-2018 11:12:03

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: CCV 320-250091/3 Calibration Date: 10/06/2018 18:13

Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22

Lab File ID: 2018.10.06LLAAA_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	0.9496	0.9179		0.967	1.00	-3.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.110	1.074		0.968	1.00	-3.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.74	80.20		0.912	0.884	3.2	50.0
4:2 FTS	AveID	12.97	15.06		1.08	0.934	16.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9850	0.9350		0.949	1.00	-5.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.02	70.00		0.980	0.938	4.4	50.0
HFPO-DA (GenX)	AveID	2.878	2.983		1.04	1.00	3.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.121	1.015		0.906	1.00	-9.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.102	1.020		0.842	0.910	-7.4	40.0
DONA	AveID	3.887	3.935		0.954	0.942	1.2	50.0
6:2 FTS	AveID	1.702	1.430		0.797	0.948	-16.0	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.178	1.022		0.869	1.00	-13.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.252	1.326		1.01	0.952	5.9	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.142	1.091		0.886	0.928	-4.5	40.0
Perfluorononanoic acid (PFNA)	AveID	1.077	1.056		0.980	1.00	-2.0	40.0
F-53B Major	AveID	1.889	1.884		0.929	0.932	-0.3	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9624	0.9740		1.01	1.00	1.2	40.0
8:2 FTS	AveID	1.208	1.181		0.936	0.958	-2.3	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8206	0.8027		0.939	0.960	-2.2	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.004	1.040		1.04	1.00	3.7	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9691	0.9735		1.01	1.00	0.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6415	0.6102		0.917	0.964	-4.9	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8705	0.8577		0.985	1.00	-1.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8768	0.8144		0.929	1.00	-7.1	40.0
F-53B Minor	AveID	2.852	2.883		0.952	0.942	1.1	50.0
10:2 FTS	AveID	0.8575	0.8417		0.946	0.964	-1.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.096	1.047		0.955	1.00	-4.5	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2912	0.2784		0.926	0.968	-4.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.062	1.058		0.996	1.00	-0.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2457	0.2489		1.01	1.00	1.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8788		0.981	1.00	-1.9	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: CCV 320-250091/3 Calibration Date: 10/06/2018 18:13
 Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22
 Lab File ID: 2018.10.06LLAAA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.052	1.104		1.05	1.00	5.0	50.0
13C4 PFBA	Ave	1.512	1.578		2.61	2.50	4.3	50.0
13C5 PFPeA	Ave	1.015	1.033		2.55	2.50	1.8	50.0
13C3 PFBS	Ave	0.0216	0.0214		2.30	2.33	-1.0	50.0
M2-4:2 FTS	Ave	0.1194	0.1382		2.70	2.34	15.8	50.0
13C2 PFHxA	Ave	1.115	1.158		2.60	2.50	3.9	50.0
13C3 HFPO-DA	Ave	0.0809	0.0818		2.53	2.50	1.1	50.0
13C4 PFHpA	Ave	1.001	1.112		2.78	2.50	11.0	50.0
18O2 PFHxS	Ave	1.251	1.267		2.40	2.37	1.3	50.0
M2-6:2 FTS	Ave	0.1686	0.2061		2.90	2.38	22.2	40.0
13C4 PFOA	Ave	0.9722	1.037		2.67	2.50	6.6	50.0
13C8 PFOA	Ave	1.623	1.710		2.58	2.45	5.4	50.0
13C4 PFOS	Ave	0.8098	0.8450		2.49	2.39	4.3	50.0
13C5 PFNA	Ave	0.8175	0.8400		2.57	2.50	2.8	50.0
13C8 PFOS	Ave	0.4286	0.4233		2.36	2.39	-1.2	50.0
13C8 FOSA	Ave	1.127	1.168		2.59	2.50	3.7	50.0
M2-8:2 FTS	Ave	0.1786	0.2145		2.88	2.40	20.1	40.0
13C2 PFDA	Ave	0.7231	0.7150		2.47	2.50	-1.1	50.0
d3-NMeFOSAA	Ave	0.2938	0.3422		2.91	2.50	16.5	50.0
d5-NEtFOSAA	Ave	0.3162	0.3545		2.80	2.50	12.1	50.0
13C2 PFUnA	Ave	0.5524	0.5870		2.66	2.50	6.3	50.0
13C2 PFDoA	Ave	0.5820	0.6091		2.62	2.50	4.7	50.0
13C2 PFTeDA	Ave	0.6996	0.8288		2.96	2.50	18.5	50.0
13C2 PFHxDA	Ave	1.263	1.485		2.94	2.50	17.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_005.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 06-Oct-2018 18:13:02 ALS Bottle#: 23 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 11:13:37 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK018

First Level Reviewer: mongkols

Date: 09-Oct-2018 11:13:37

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 1.426 1.423 0.003 0.538 3741265 2.61 104 10309

2 Perfluorobutyric acid

212.90 > 169.00 1.426 1.426 0.0 1.000 1373681 0.9666 96.7 244

D 3 13C5-PFPeA

267.90 > 223.00 1.686 1.684 0.002 0.636 2450117 2.55 102 9387

4 Perfluoropentanoic acid

262.90 > 219.00 1.694 1.694 0.0 1.005 1052913 0.9680 96.8 106

D 47 13C3-PFBS

301.90 > 83.00 1.727 1.716 0.011 0.651 47226 2.30 99.0 463

5 Perfluorobutanesulfonic acid

298.90 > 80.00 1.727 1.727 0.0 1.000 1440049 0.9120 103 76.6

298.90 > 99.00 1.727 1.727 0.0 1.000 597664 2.41(1.25-3.74) 72.9

D 60 M2-4:2FTS

329.00 > 81.00 1.933 1.918 0.015 0.729 306012 2.70 116 473

61 1H,1H,2H,2H-perfluorohexanesulfoni

327.00 > 307.00 1.933 1.933 0.0 1.120 285679 1.08 116 4376

D 7 13C2 PFHxA

315.00 > 270.00 1.965 1.960 0.005 0.741 2744975 2.60 104 10388

6 Perfluorohexanoic acid

313.00 > 269.00 1.965 1.965 0.0 1.000 1026634 0.9492 94.9 246

313.00 > 119.00 1.965 1.965 0.0 1.000 87530 11.73(5.03-15.10) 219

70 Perfluoropentanesulfonic acid

349.00 > 80.00 1.986 1.986 0.0 1.150 1333682 0.9797 104 4122

349.00 > 99.00 1.986 1.986 0.0 1.150 507026 2.63(1.36-4.07) 2092

D 64 13C3 HFPO-DA

332.10 > 287.00 2.069 2.054 0.015 0.780 193920 2.53 101 1169

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	2.069	2.069	0.0	1.000	231395	1.04		104	342	
D 9 13C4-PFHpA										
367.00 > 322.00	2.299	2.281	0.018	0.867	2635939	2.78		111	9535	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.299	0.0	1.000	1070454	0.9057		90.6	249	
363.00 > 169.00	2.299	2.299	0.0	1.000	430027		2.49(1.13-3.40)		352	
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.303	0.007	0.872	2842445	2.40		101	4661	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.310	2.310	0.0	1.000	1115679	0.8424		92.6	538	
399.00 > 99.00	2.310	2.310	0.0	1.000	370478		3.01(1.50-4.49)		438	M
77 DONA										
377.00 > 251.00	2.344	2.344	0.0	0.777	2970974	0.9536		101	5633	
377.00 > 85.00	2.344	2.344	0.0	0.777	1706841		1.74(0.85-2.54)		3890	
D 12 M2-6:2FTS										
429.00 > 81.00	2.620	2.609	0.011	0.988	464197	2.90		122	1745	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.620	2.620	0.0	1.000	265034	0.7967		84.0	488	
D 73 13C8 PFOA										
421.00 > 376.00	2.643	2.632	0.011	0.997	3968167	2.58		105	14408	
D 14 13C4 PFOA										
417.00 > 372.00	2.643	2.640	0.003	0.997	2458274	2.67		107	7870	
* 62 13C2-PFOA										
415.00 > 370.00	2.651	2.651	0.0		2371040	2.50			4857	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.651	2.651	0.0	1.003	1006345	0.8688		86.8	111	M
413.00 > 169.00	2.651	2.651	0.0	1.003	549231		1.83(0.84-2.52)		853	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.658	2.658	0.0	0.881	1011751	1.01		106	3257	
449.00 > 99.00	2.658	2.658	0.0	0.881	239954		4.22(1.94-5.82)		1032	
D 19 13C5 PFNA										
468.00 > 423.00	3.016	3.006	0.010	1.138	1991768	2.57		103	5781	
D 72 13C8 PFOS										
507.00 > 99.00	3.016	3.006	0.010	1.138	959481	2.36		98.8	3482	
D 18 13C4 PFOS										
503.00 > 80.00	3.016	3.014	0.002	1.138	1915408	2.49		104	3778	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.016	3.016	0.0	1.000	811111	0.8861		95.5	564	
499.00 > 99.00	3.024	3.016	0.008	1.003	176998		4.58(2.31-6.93)		549	
20 Perfluorononanoic acid										
463.00 > 419.00	3.024	3.024	0.0	1.003	841111	0.9802		98.0	277	
463.00 > 169.00	3.016	3.024	-0.008	1.000	212919		3.95(1.90-5.69)		1085	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.236	3.236	0.0	1.073	1407041	0.9292		99.7	3385	
D 26 M2-8:2FTS										
529.00 > 81.00	3.373	3.362	0.011	1.272	487262	2.88		120	2600	

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	3.358	3.362	-0.004	1.267	2769901	2.59		104	4060	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.365	3.365	0.0	1.002	1079146	1.01		101	2863	
D 23 13C2 PFDA										
515.00 > 470.00	3.380	3.369	0.011	1.275	1695274	2.47		98.9	6645	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.373	3.373	0.0	1.118	617596	0.9391		97.8	3329	
549.00 > 99.00	3.373	3.373	0.0	1.118	215642		2.86(1.33-3.97)		1219	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.373	3.373	0.0	1.000	230208	0.9364		97.7	1441	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.380	3.380	0.0	1.000	705505	1.04		104	733	
513.00 > 169.00	3.380	3.380	0.0	1.000	132550		5.32(2.36-7.09)		323	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.540	3.529	0.011	1.335	811286	2.91		116	1760	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.540	3.540	0.0	1.000	315906	1.00		100	315	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.705	3.699	0.006	1.397	840491	2.80		112	801	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.705	3.705	0.0	1.228	471443	0.9170		95.1	2210	
599.00 > 99.00	3.694	3.705	-0.011	1.225	159296		2.96(1.39-4.16)		1343	
D 30 13C2 PFUnA										
565.00 > 520.00	3.713	3.707	0.006	1.401	1391803	2.66		106	3918	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.713	3.713	0.0	1.000	453394	0.9289		92.9	456	
563.00 > 169.00	3.713	3.713	0.0	1.000	122997		3.69(2.12-6.36)		1005	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.713	3.713	0.0	1.002	288359	0.9853		98.5	727	M
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.875	3.875	0.0	1.285	2176657	0.9525		101	5396	
35 MeFOSA										
512.00 > 169.00	3.875	3.875	0.0		348845	NC			657	
D 36 13C2 PFDaA										
615.00 > 570.00	4.010	4.003	0.007	1.513	1444257	2.62		105	3099	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.010	4.010	0.0	1.000	604828	0.9553		95.5	552	
613.00 > 169.00	4.010	4.010	0.0	1.000	162546		3.72(2.13-6.40)		1429	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.010	4.010	0.0	1.189	165080	0.9463		98.2	1220	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.252	4.252	0.0	1.409	216000	0.9257		95.6	1475	
699.00 > 99.00	4.252	4.252	0.0	1.409	334547		0.65(0.00-0.00)		3481	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.280	4.280	0.0	1.067	610986	1.00		99.6	515	
663.00 > 169.00	4.280	4.280	0.0	1.067	197945		3.09(1.25-3.76)		1542	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.522	4.504	0.018	1.706	1965047	2.96		118	6996	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.522	4.522	0.0	1.000	195675	1.01		101	1212	
713.00 > 219.00	4.522	4.522	0.0	1.000	141259		1.39(0.71-2.13)		1108	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.943	4.927	0.016	1.865	3521760	2.94		118	5651	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.943	4.943	0.0	1.000	1237936	0.9813		98.1	247	
813.00 > 169.00	4.943	4.943	0.0	1.000	235633		5.25(2.86-8.58)		1550	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.293	5.293	0.0	1.071	1555496	1.05		105	261	
913.00 > 169.00	5.293	5.293	0.0	1.071	202275		7.69(3.83-11.48)		1605	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_005.d

Injection Date: 06-Oct-2018 18:13:02

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 23

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

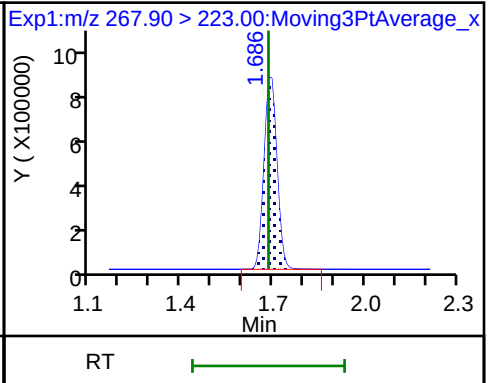
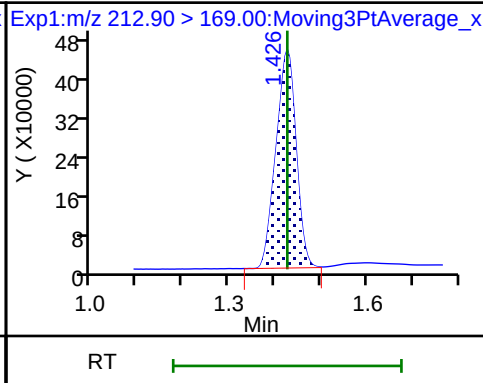
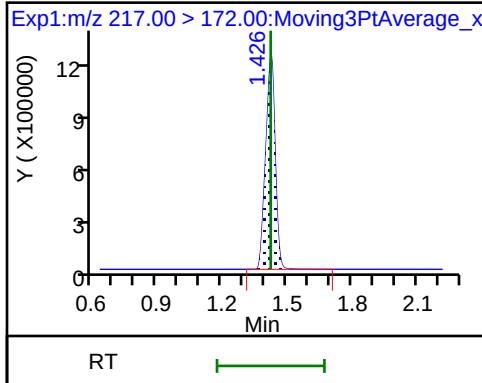
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

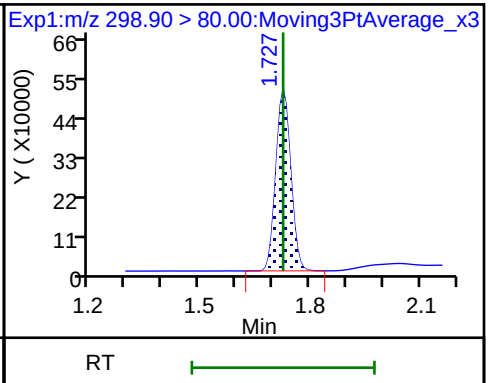
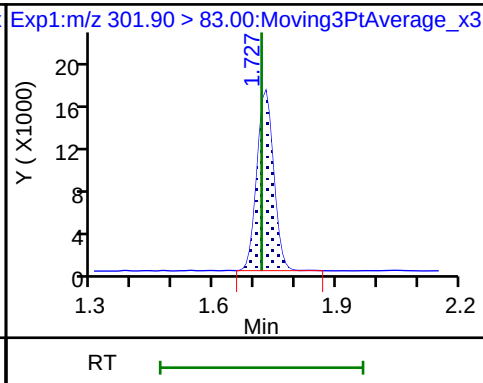
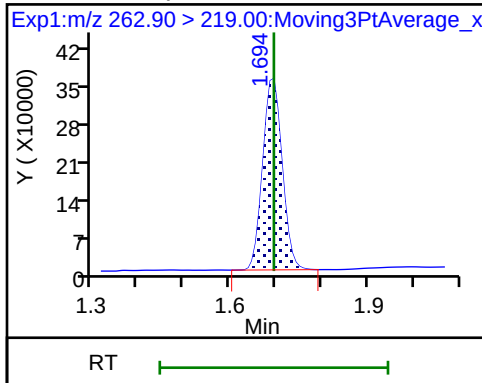
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

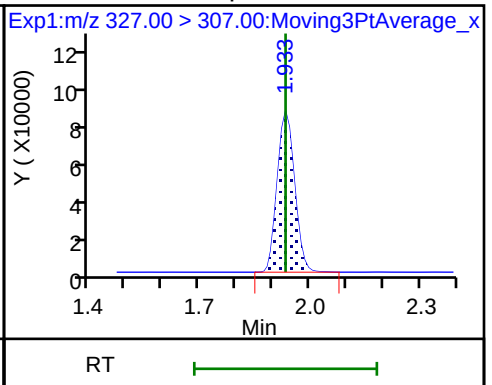
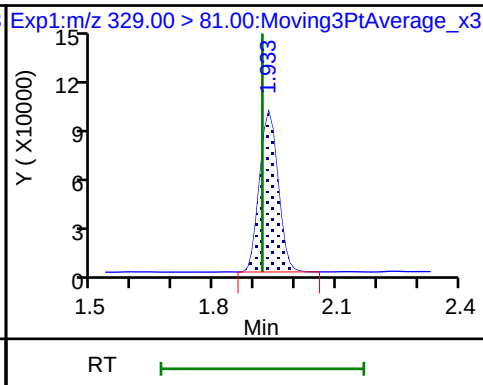
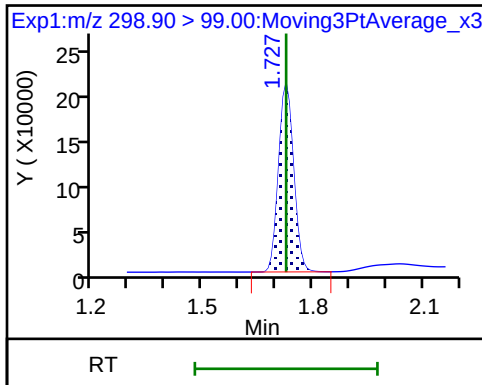
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

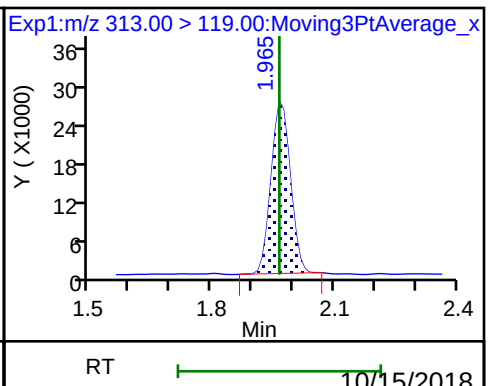
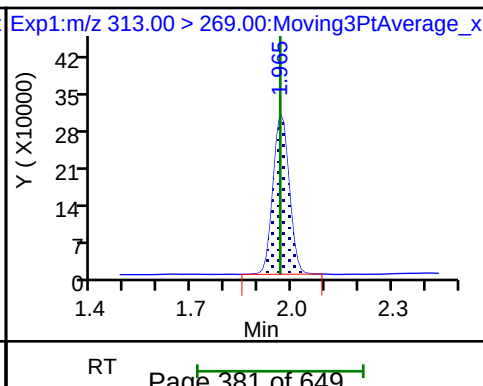
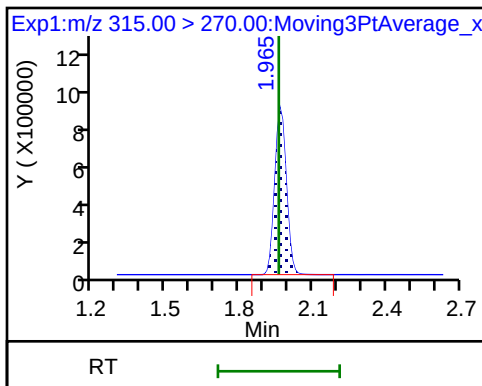
61 1H,1H,2H,2H-perfluorohexanesulfoni

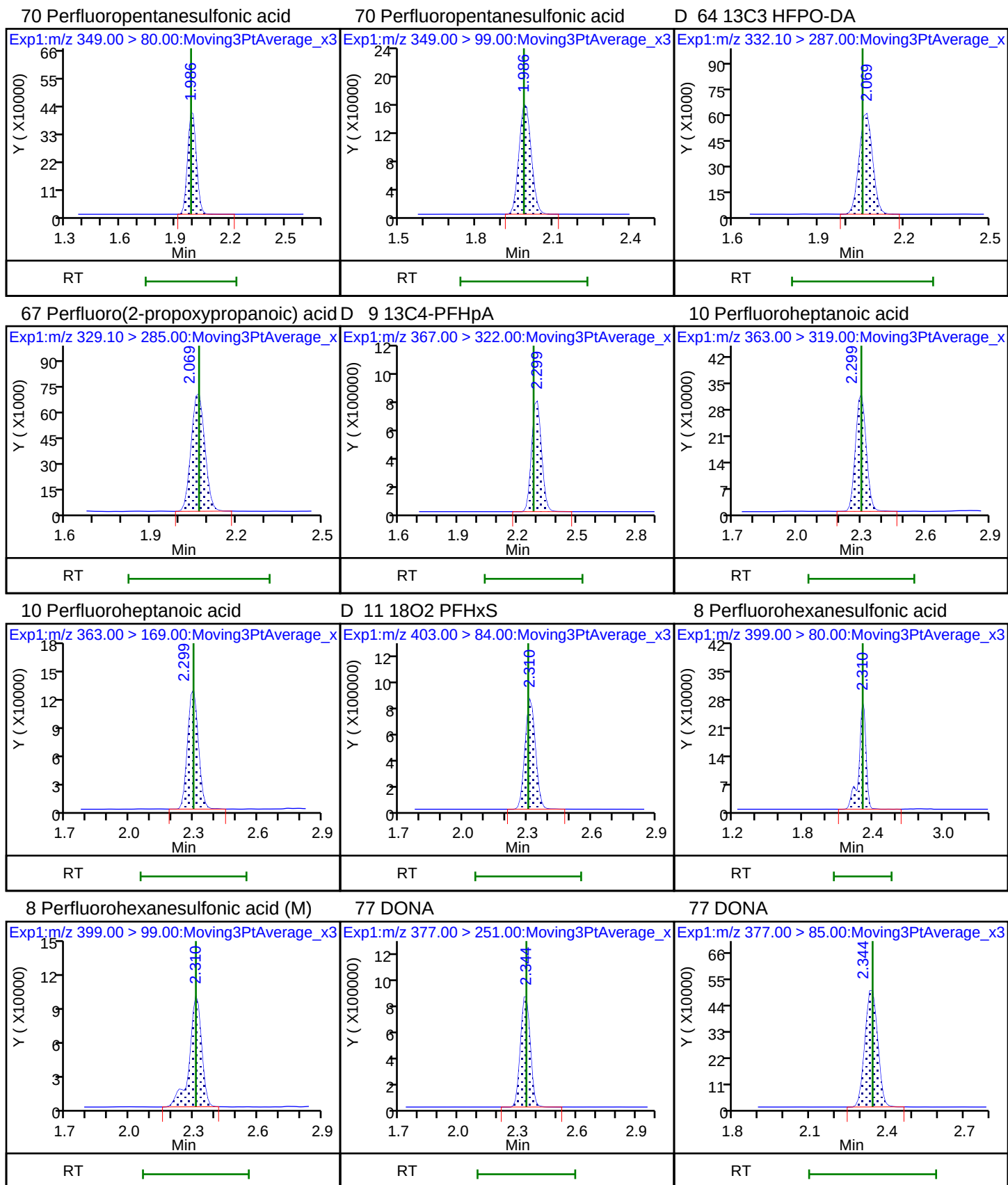


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

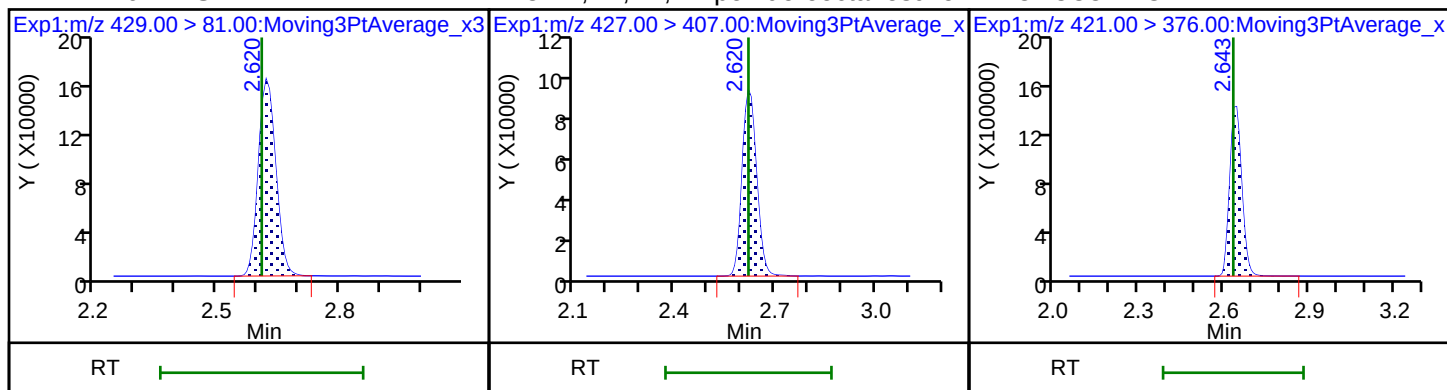
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

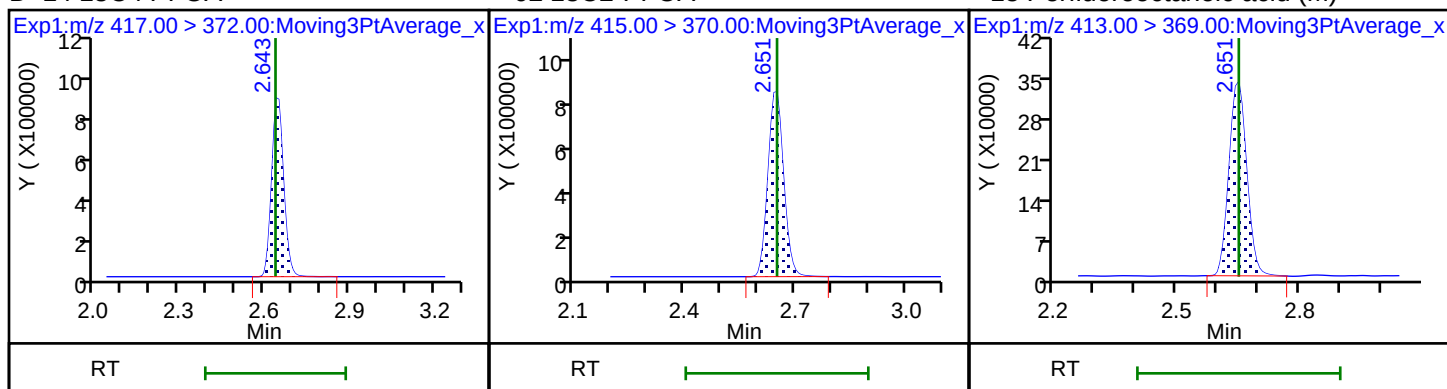
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

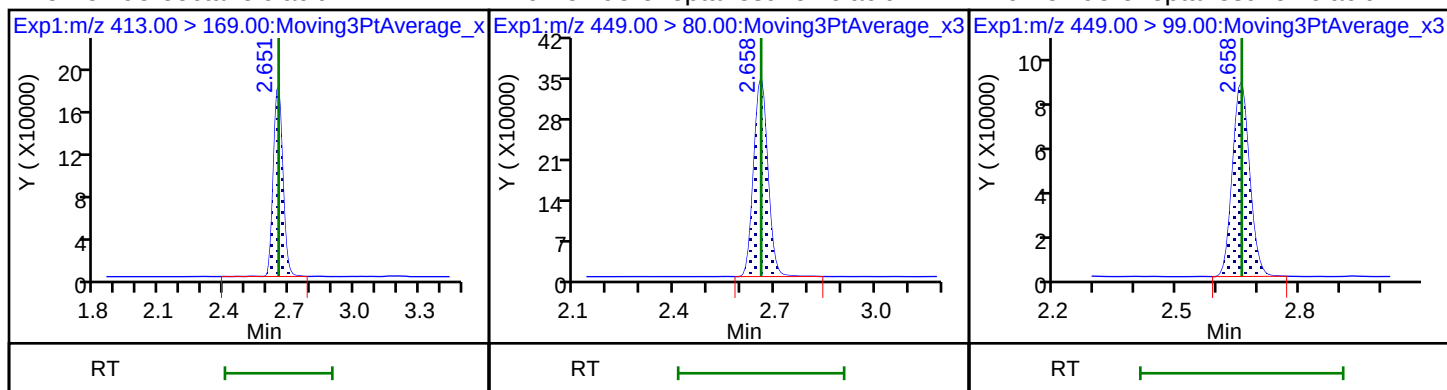
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

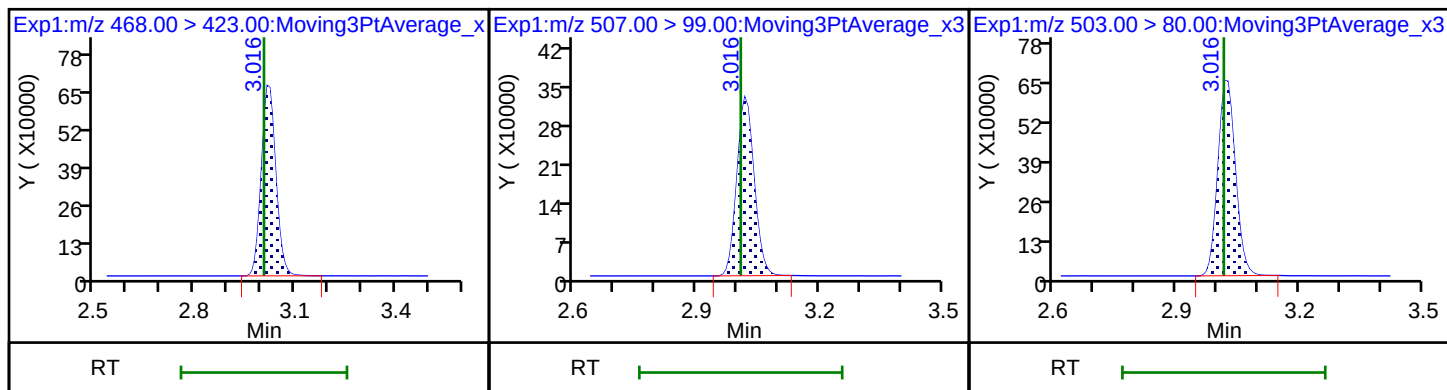
16 Perfluoroheptanesulfonic acid

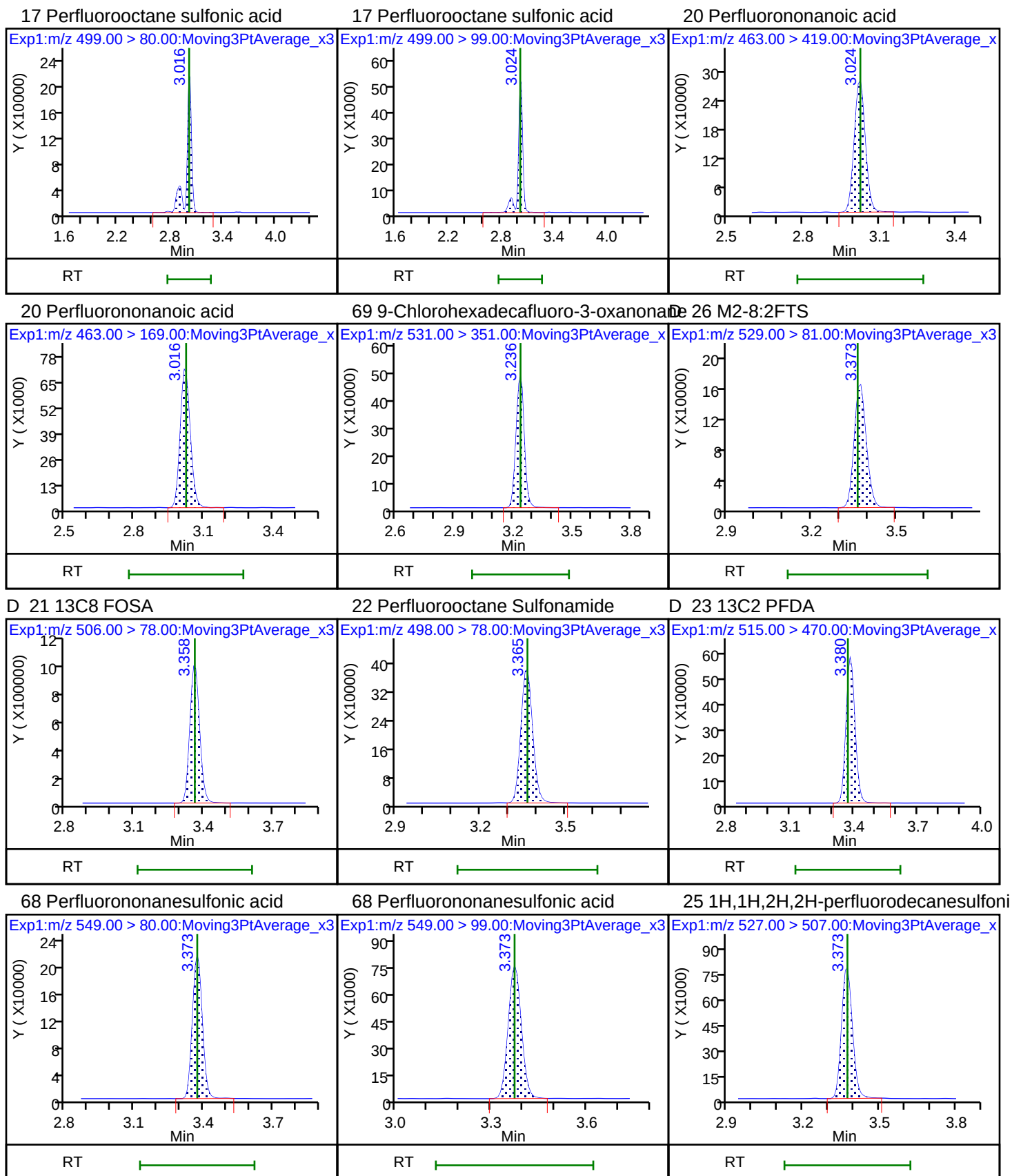


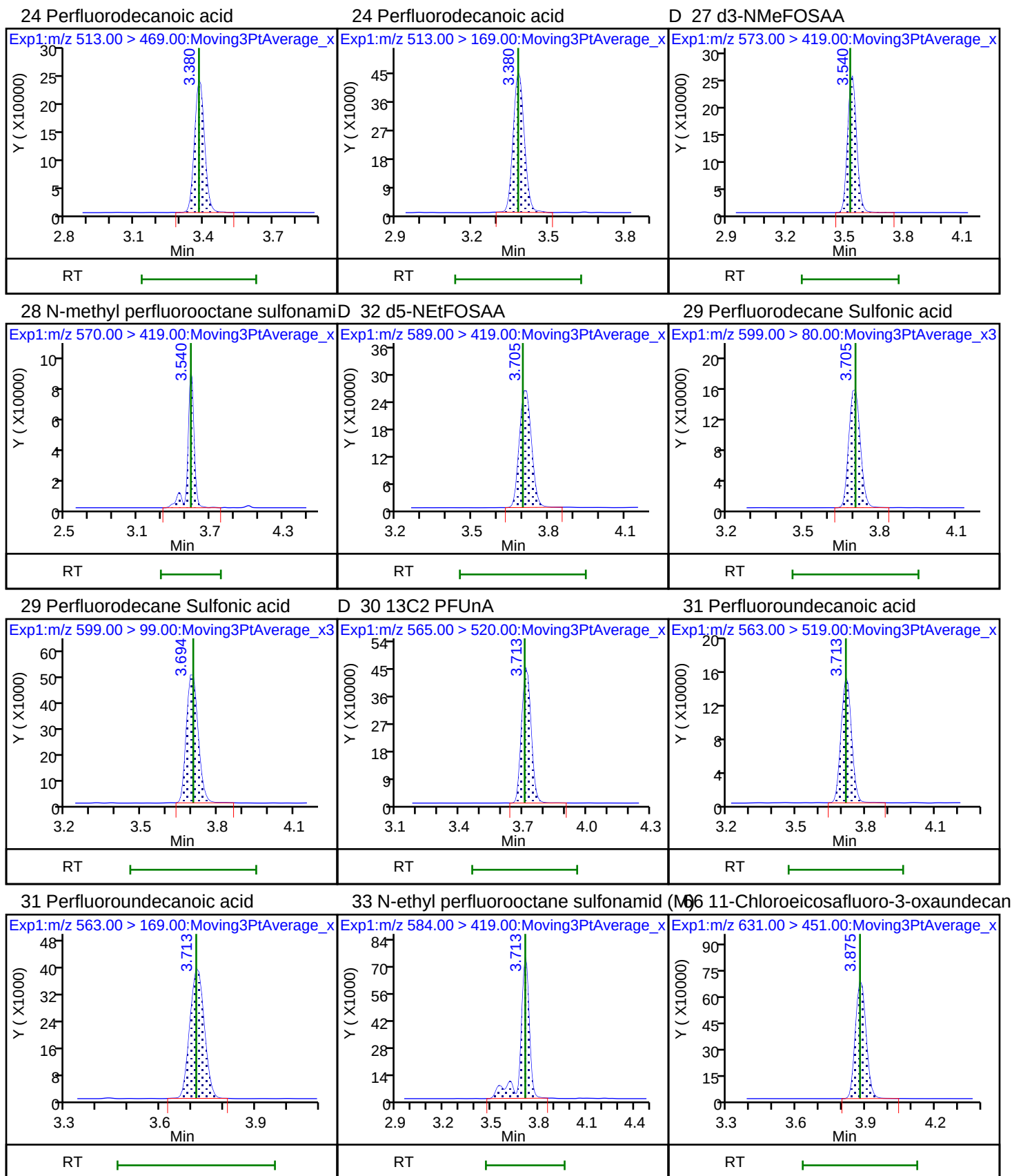
D 19 13C5 PFNA

D 72 13C8 PFOS

D 18 13C4 PFOS



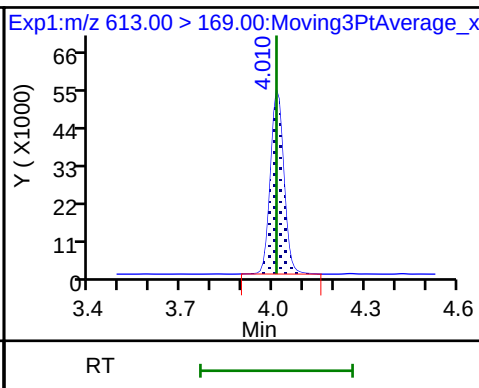
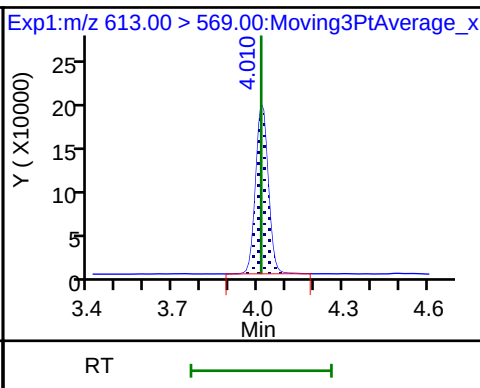
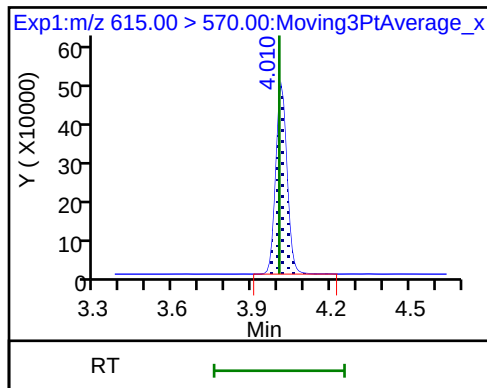




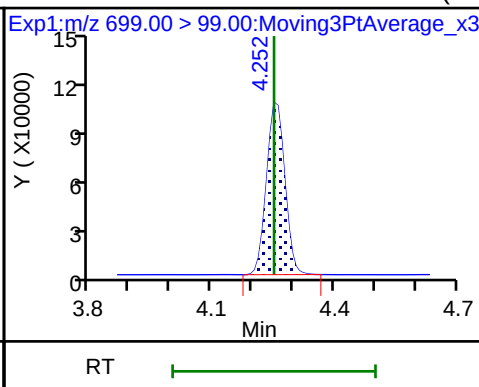
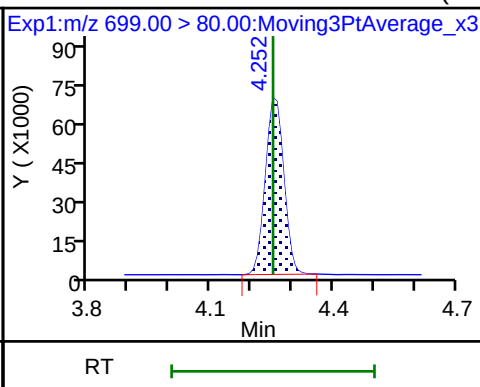
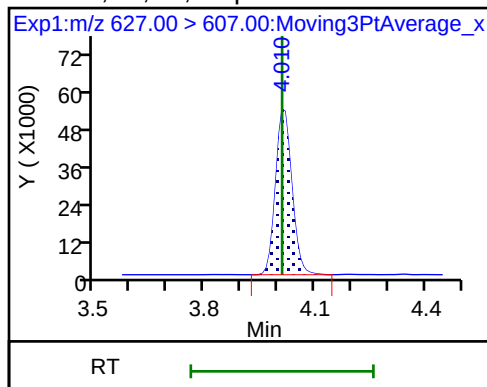
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



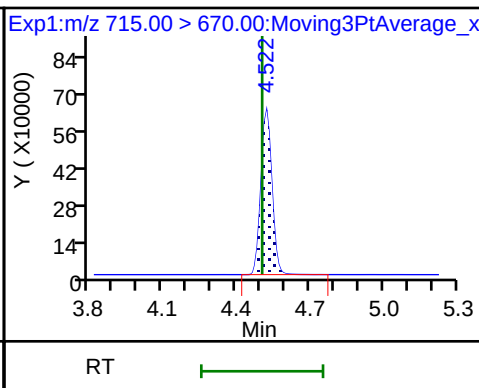
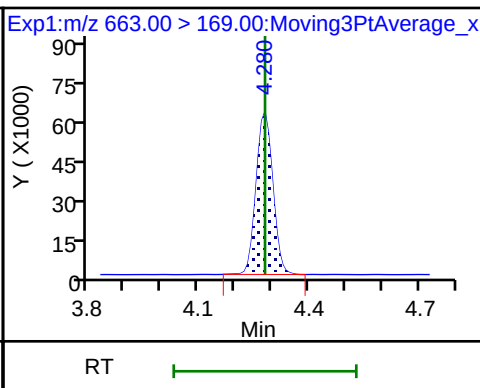
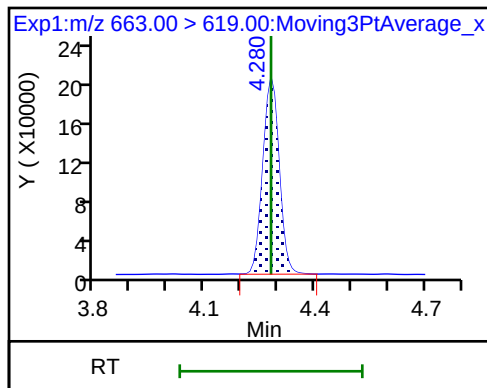
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

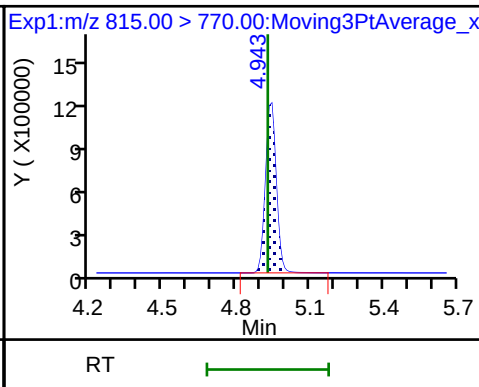
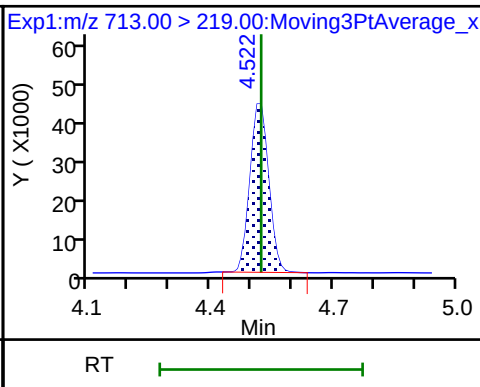
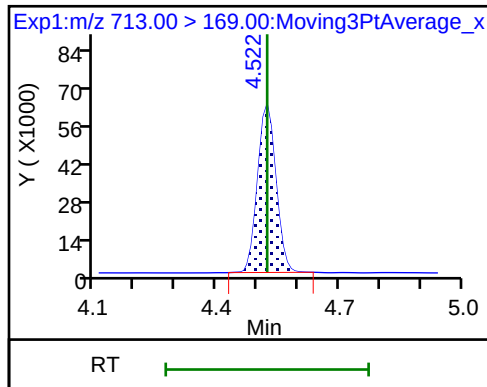
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

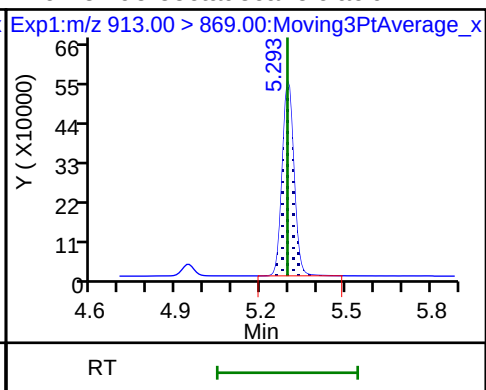
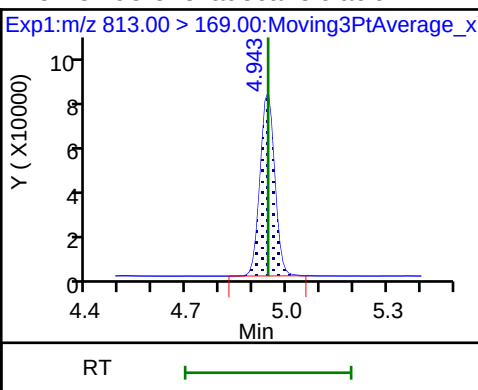
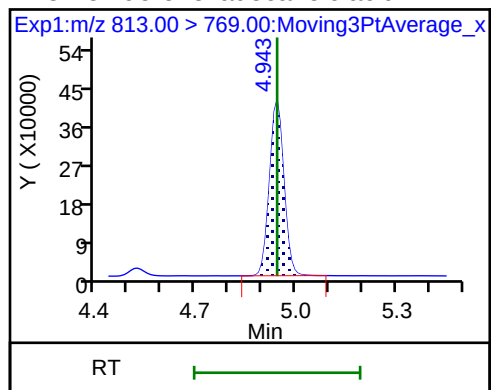
D 44 13C2-PFHxDA



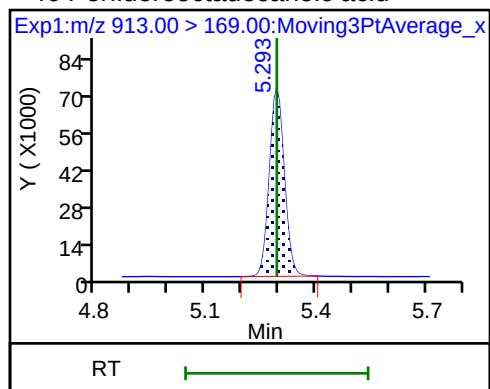
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_005.d

Injection Date: 06-Oct-2018 18:13:02

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

23

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

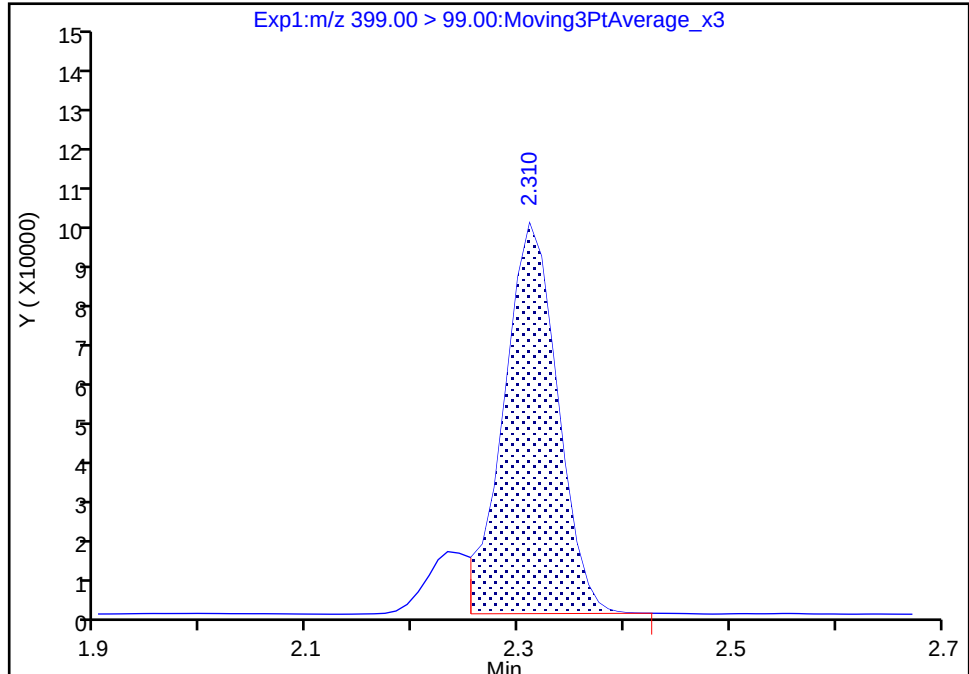
Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

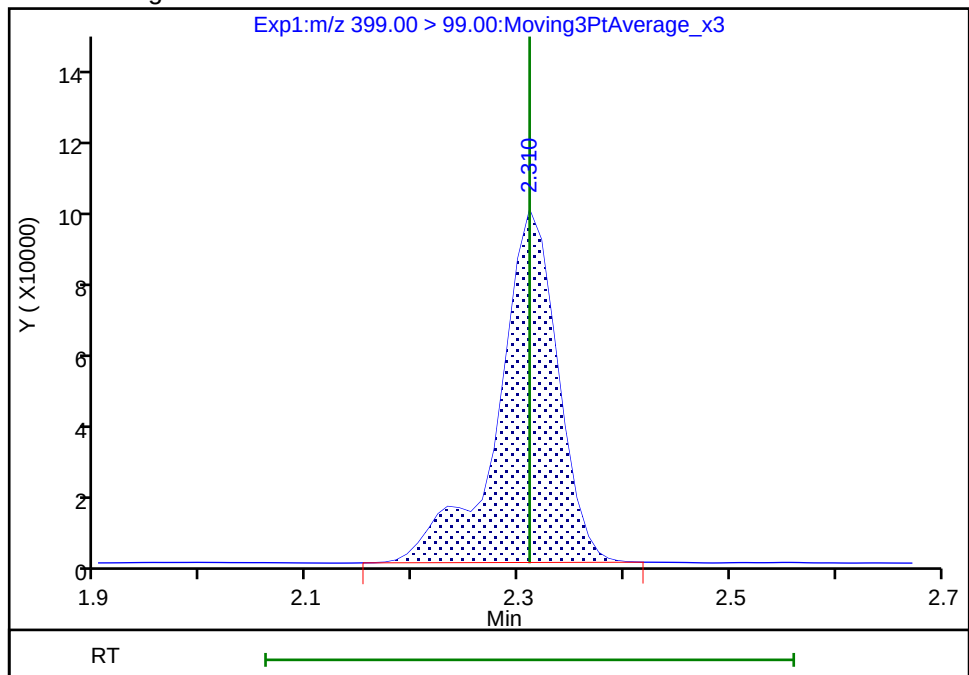
RT: 2.31
Area: 330398
Amount: 0.842423
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 370478
Amount: 0.842423
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 09-Oct-2018 11:13:09

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_005.d

Injection Date: 06-Oct-2018 18:13:02

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

23

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

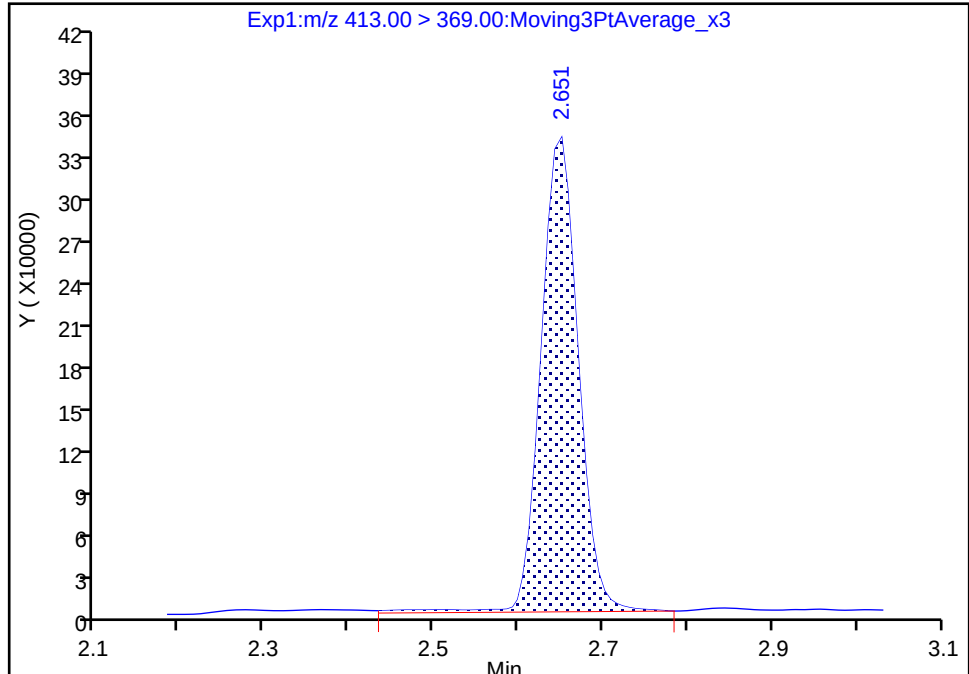
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

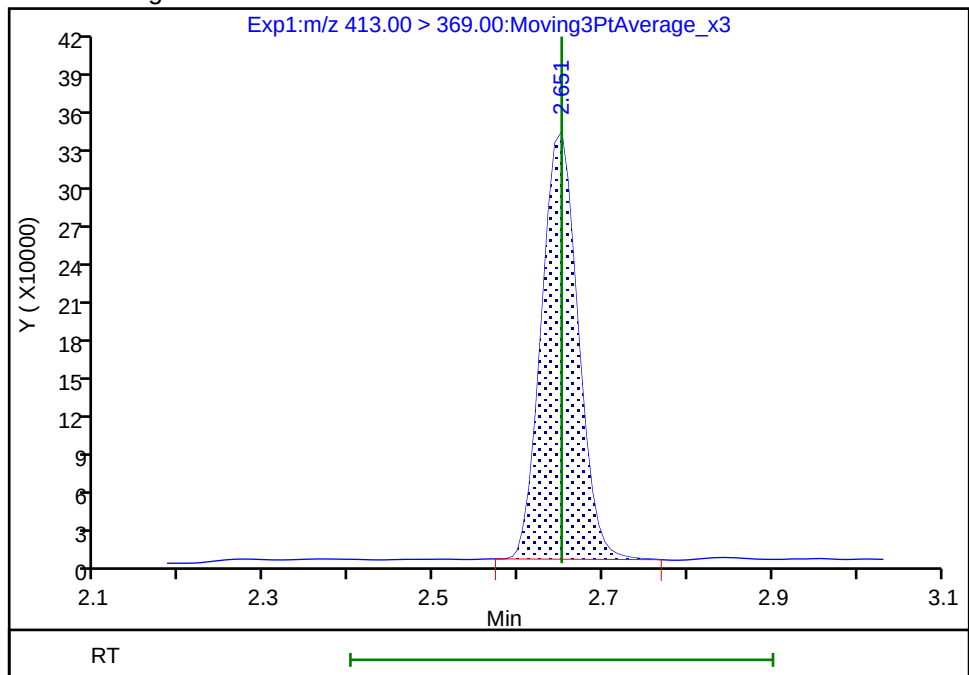
RT: 2.65
Area: 1036210
Amount: 0.894585
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 1006345
Amount: 0.868802
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 09-Oct-2018 11:13:16

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_005.d

Injection Date: 06-Oct-2018 18:13:02

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

23

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

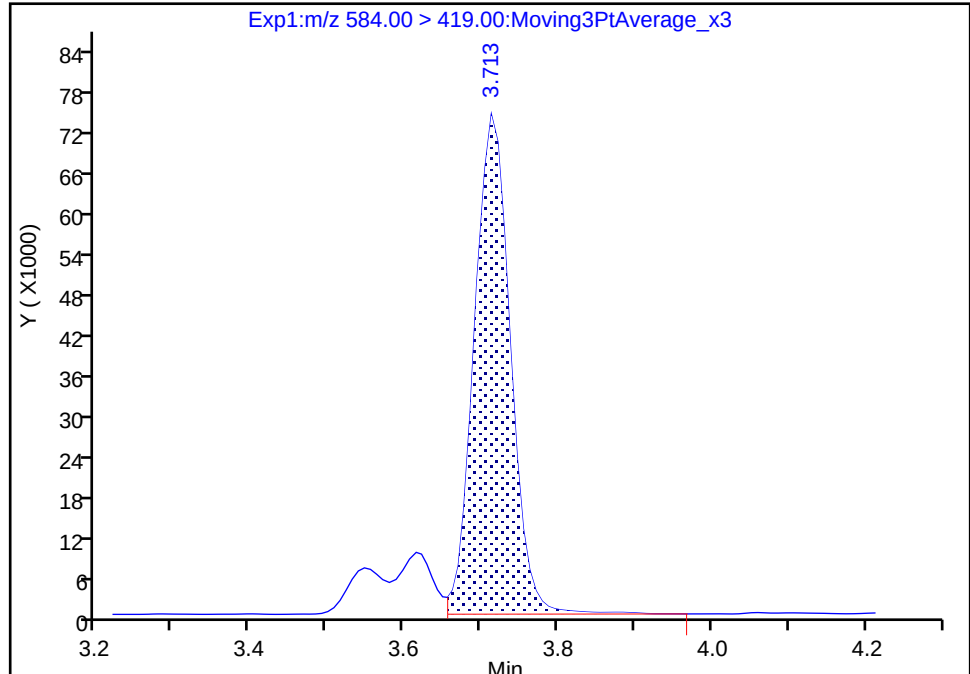
Detector EXP1

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

Signal: 1

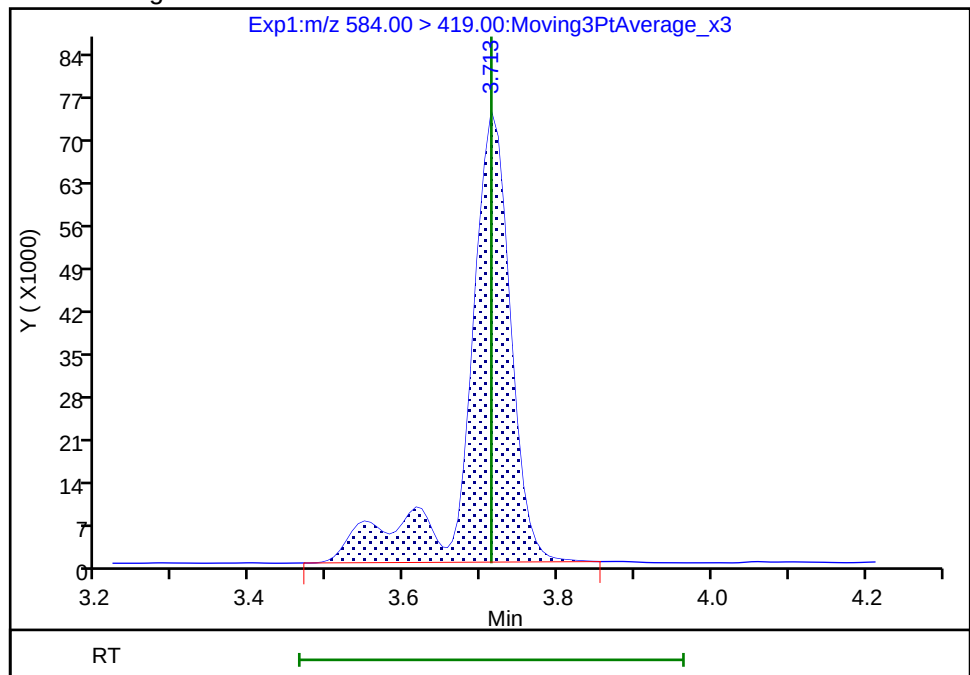
RT: 3.71
Area: 241921
Amount: 0.826614
Amount Units: ng/ml

Processing Integration Results



RT: 3.71
Area: 288359
Amount: 0.985287
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 09-Oct-2018 11:13:28

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: CCV 320-250091/14 Calibration Date: 10/06/2018 19:34

Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22

Lab File ID: 2018.10.06LLAAA_016.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9496	0.9422		2.48	2.50	-0.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.110	1.095		2.47	2.50	-1.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.74	84.57		2.40	2.21	8.8	50.0
4:2 FTS	AveID	12.97	17.32		3.12	2.34	33.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9850	0.9584		2.43	2.50	-2.7	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.02	73.76		2.58	2.35	10.1	50.0
HFPO-DA (GenX)	AveID	2.878	3.310		2.88	2.50	15.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.121	1.114		2.49	2.50	-0.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.102	1.046		2.16	2.28	-5.1	40.0
DONA	AveID	3.887	4.230		2.56	2.36	8.8	50.0
6:2 FTS	AveID	1.702	1.455		2.03	2.37	-14.5	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.178	1.032		2.19	2.50	-12.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.252	1.328		2.53	2.38	6.1	50.0
Perfluorononanoic acid (PFNA)	AveID	1.077	1.015		2.36	2.50	-5.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.142	1.150		2.34	2.32	0.7	40.0
F-53B Major	AveID	1.889	2.033		2.51	2.33	7.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9624	0.9787		2.54	2.50	1.7	40.0
8:2 FTS	AveID	1.208	1.261		2.50	2.40	4.3	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8206	0.8146		2.38	2.40	-0.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.004	0.9565		2.38	2.50	-4.7	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.9691	0.9374		2.42	2.50	-3.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6415	0.6669		2.51	2.41	4.0	50.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.8705	0.8325		2.39	2.50	-4.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8768	0.8880		2.53	2.50	1.3	40.0
F-53B Minor	AveID	2.852	2.923		2.41	2.36	2.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.096	1.242		2.83	2.50	13.3	40.0
10:2 FTS	AveID	0.8575	0.9727		2.73	2.41	13.4	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2912	0.3026		2.52	2.42	3.9	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.062	1.247		2.94	2.50	17.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2457	0.2499		2.54	2.50	1.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8941		2.54	2.50	1.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: CCV 320-250091/14 Calibration Date: 10/06/2018 19:34
 Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22
 Lab File ID: 2018.10.06LLAAA_016.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.052	1.097		2.61	2.50	4.3	50.0
13C4 PFBA	Ave	1.512	1.562		2.58	2.50	3.3	50.0
13C5 PFPeA	Ave	1.015	1.033		2.55	2.50	1.8	50.0
13C3 PFBS	Ave	0.0216	0.0199		2.14	2.33	-7.9	50.0
M2-4:2 FTS	Ave	0.1194	0.1484		2.90	2.34	24.3	50.0
13C2 PFHxA	Ave	1.115	1.154		2.59	2.50	3.5	50.0
13C3 HFPO-DA	Ave	0.0809	0.0738		2.28	2.50	-8.8	50.0
13C4 PFHpA	Ave	1.001	1.041		2.60	2.50	4.0	50.0
18O2 PFHxS	Ave	1.251	1.283		2.43	2.37	2.6	50.0
M2-6:2 FTS	Ave	0.1686	0.2306		3.25	2.38	36.8	40.0
13C8 PFOA	Ave	1.623	1.757		2.65	2.45	8.3	50.0
13C4 PFOA	Ave	0.9722	1.016		2.61	2.50	4.5	50.0
13C5 PFNA	Ave	0.8175	0.8905		2.72	2.50	8.9	50.0
13C8 PFOS	Ave	0.4286	0.4411		2.46	2.39	2.9	50.0
13C4 PFOS	Ave	0.8098	0.8227		2.43	2.39	1.6	50.0
13C8 FOSA	Ave	1.127	1.187		2.63	2.50	5.4	50.0
M2-8:2 FTS	Ave	0.1786	0.2259		3.03	2.40	26.5	40.0
13C2 PFDA	Ave	0.7231	0.7736		2.68	2.50	7.0	50.0
d3-NMeFOSAA	Ave	0.2938	0.3716		3.16	2.50	26.5	50.0
d5-NEtFOSAA	Ave	0.3162	0.3970		3.14	2.50	25.6	50.0
13C2 PFUnA	Ave	0.5524	0.5846		2.65	2.50	5.8	50.0
13C2 PFDoA	Ave	0.5820	0.5791		2.49	2.50	-0.5	50.0
13C2 PFTeDA	Ave	0.6996	0.8492		3.04	2.50	21.4	50.0
13C2 PFHxDA	Ave	1.263	1.551		3.07	2.50	22.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_016.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 06-Oct-2018 19:34:51 ALS Bottle#: 24 Worklist Smp#: 14
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:21:03 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: ruangyotsakuld

Date: 10-Oct-2018 15:21:03

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	1.421	1.423	-0.002	0.539	3561387	2.58		103	7559	
2 Perfluorobutyric acid										
212.90 > 169.00	1.421	1.426	-0.005	1.000	3355644	2.48		99.2	507	
D 3 13C5-PFPeA										
267.90 > 223.00	1.686	1.684	0.002	0.640	2356075	2.55		102	8587	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.686	1.694	-0.008	1.000	2580407	2.47		98.7	264	
D 47 13C3-PFBS										
301.90 > 83.00	1.718	1.716	0.002	0.652	42259	2.14		92.1	394	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.718	1.727	-0.009	1.000	3397076	2.40		109	173	
298.90 > 99.00	1.718	1.727	-0.009	1.000	1432418		2.37(1.25-3.74)		175	
D 60 M2-4:2FTS										
329.00 > 81.00	1.922	1.918	0.004	0.730	316051	2.90		124	470	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.922	1.933	-0.011	1.119	735065	3.12		133	8187	
D 7 13C2 PFHxA										
315.00 > 270.00	1.954	1.960	-0.006	0.742	2630192	2.59		104	9481	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.964	1.965	-0.001	1.005	2520815	2.43		97.3	553	
313.00 > 119.00	1.964	1.965	-0.001	1.005	239516		10.52(5.03-15.10)		567	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.985	1.986	-0.001	1.155	3144034	2.58		110	6832	
349.00 > 99.00	1.985	1.986	-0.001	1.155	1133359		2.77(1.36-4.07)		3396	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.058	2.054	0.004	0.781	168310	2.28		91.2	1141	

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	2.058	2.069	-0.011	1.000	557105	2.88		115	885	
D 9 13C4-PFHpA										
367.00 > 322.00	2.288	2.281	0.007	0.868	2373563	2.60		104	6136	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.288	2.299	-0.011	1.000	2644472	2.48		99.4	572	
363.00 > 169.00	2.288	2.299	-0.011	1.000	1052097		2.51(1.13-3.40)		777	
D 11 18O2 PFHxS										
403.00 > 84.00	2.299	2.303	-0.004	0.873	2768038	2.43		103	4510	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.299	2.310	-0.011	1.000	2784452	2.16		94.9	1260	
399.00 > 99.00	2.299	2.310	-0.011	1.000	896790		3.10(1.50-4.49)		1054	M
77 DONA										
377.00 > 251.00	2.332	2.344	-0.012	0.774	7474692	2.56		109	7895	
377.00 > 85.00	2.332	2.344	-0.012	0.774	4453014		1.68(0.85-2.54)		7299	
D 12 M2-6:2FTS										
429.00 > 81.00	2.612	2.609	0.003	0.991	499490	3.25		137	2637	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.612	2.620	-0.008	1.000	725143	2.03		85.5	1458	
D 73 13C8 PFOA										
421.00 > 376.00	2.627	2.632	-0.005	0.997	3921052	2.65		108	7136	
D 14 13C4 PFOA										
417.00 > 372.00	2.635	2.640	-0.005	1.000	2316893	2.61		105	7993	
* 62 13C2-PFOA										
415.00 > 370.00	2.635	2.651	-0.016		2279805	2.50			4018	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.643	2.651	-0.008	1.003	2393503	2.19		87.6	279	
413.00 > 169.00	2.635	2.651	-0.016	1.000	1281745		1.87(0.84-2.52)		1470	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.651	2.658	-0.007	0.879	2370986	2.52		106	5047	
449.00 > 99.00	2.651	2.658	-0.007	0.879	627460		3.78(1.94-5.82)		2789	
D 19 13C5 PFNA										
468.00 > 423.00	3.007	3.006	0.001	1.141	2030186	2.72		109	6783	
D 72 13C8 PFOS										
507.00 > 99.00	3.007	3.006	0.001	1.141	961440	2.46		103	5792	
D 18 13C4 PFOS										
503.00 > 80.00	3.014	3.014	0.0	1.144	1793141	2.43		102	5014	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.014	3.016	-0.002	1.000	2001872	2.34		101	1290	
499.00 > 99.00	3.014	3.016	-0.002	1.000	415823		4.81(2.31-6.93)		994	
20 Perfluorononanoic acid										
463.00 > 419.00	3.014	3.024	-0.010	1.003	2060026	2.36		94.2	693	
463.00 > 169.00	3.014	3.024	-0.010	1.003	531381		3.88(1.90-5.69)		3143	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.226	3.236	-0.010	1.070	3554709	2.51		108	5947	
D 26 M2-8:2FTS										
529.00 > 81.00	3.362	3.362	0.0	1.276	493410	3.03		126	2936	

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	3.355	3.362	-0.007	1.273	2706534	2.63		105	5288	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.355	3.365	-0.010	1.000	2648935	2.54		102	4420	
D 23 13C2 PFDA										
515.00 > 470.00	3.369	3.369	0.0	1.279	1763738	2.67		107	5429	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.362	3.373	-0.011	1.115	1466866	2.38		99.3	4732	
549.00 > 99.00	3.362	3.373	-0.011	1.115	503119		2.92(1.33-3.97)		2418	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.362	3.373	-0.011	1.000	621969	2.50		104	3542	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.377	3.380	-0.003	1.002	1687069	2.38		95.3	1486	
513.00 > 169.00	3.369	3.380	-0.011	1.000	328768		5.13(2.36-7.09)		453	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.529	3.529	0.0	1.339	847092	3.16		126	1520	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.537	3.540	-0.003	1.002	794059	2.42		96.7	612	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.699	3.699	0.0	1.404	904966	3.14		126	1003	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.690	3.705	-0.015	1.224	1205760	2.51		104	5796	
599.00 > 99.00	3.690	3.705	-0.015	1.224	410754		2.94(1.39-4.16)		3145	
D 30 13C2 PFUnA										
565.00 > 520.00	3.707	3.707	0.0	1.407	1332859	2.65		106	4300	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.707	3.713	-0.006	1.000	1183512	2.53		101	1134	
563.00 > 169.00	3.707	3.713	-0.006	1.000	295797		4.00(2.12-6.36)		2559	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.707	3.713	-0.006	1.002	753359	2.39		95.6	1430	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.868	3.875	-0.007	1.283	5164063	2.41		102	7949	
35 MeFOSA										
512.00 > 169.00	3.868	3.875	-0.007		788703	NC			659	
D 36 13C2 PFDaA										
615.00 > 570.00	4.004	4.003	0.001	1.520	1320115	2.49		99.5	3187	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.004	4.010	-0.006	1.000	1639423	2.83		113	1249	
613.00 > 169.00	4.004	4.010	-0.006	1.000	403254		4.07(2.13-6.40)		1518	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.012	4.010	0.002	1.193	482940	2.73		113	3592	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.244	4.252	-0.008	1.408	549364	2.51		104	3902	
699.00 > 99.00	4.244	4.252	-0.008	1.408	812420		0.68(0.00-0.00)		5182	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.273	4.280	-0.007	1.067	1646010	2.94		117	1366	
663.00 > 169.00	4.273	4.280	-0.007	1.067	546138		3.01(1.25-3.76)		3224	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.515	4.504	0.011	1.713	1935973	3.03		121	4832	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.515	4.522	-0.007	1.000	483843	2.54		102	2281	
713.00 > 219.00	4.505	4.522	-0.017	0.998	362043		1.34(0.71-2.13)		1682	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.927	4.927	0.0	1.870	3535861	3.07		123	5528	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.935	4.943	-0.008	1.002	3161309	2.54		101	584	
813.00 > 169.00	4.927	4.943	-0.016	1.000	577075		5.48(2.86-8.58)		3158	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.287	5.293	-0.006	1.073	3879746	2.61		104	619	
913.00 > 169.00	5.280	5.293	-0.013	1.072	495299		7.83(3.83-11.48)		2582	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_016.d

Injection Date: 06-Oct-2018 19:34:51

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 24

Worklist Smp#: 14

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

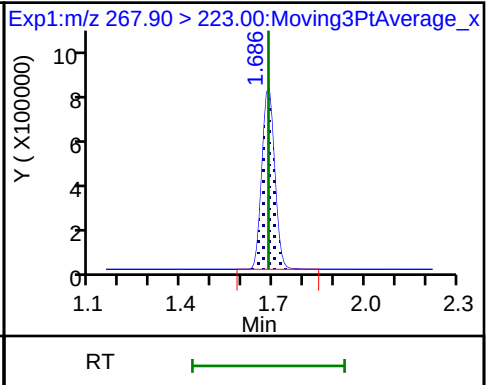
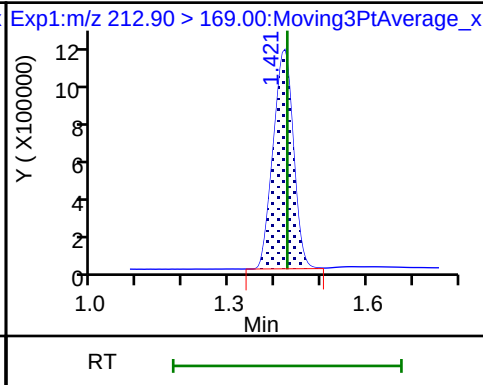
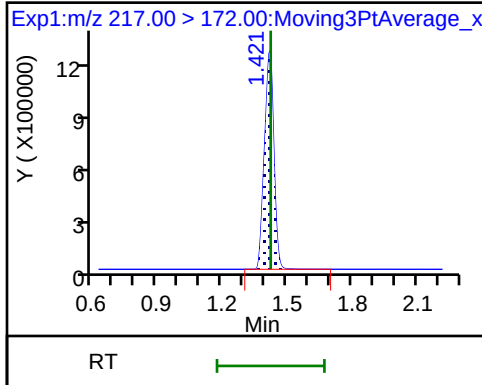
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

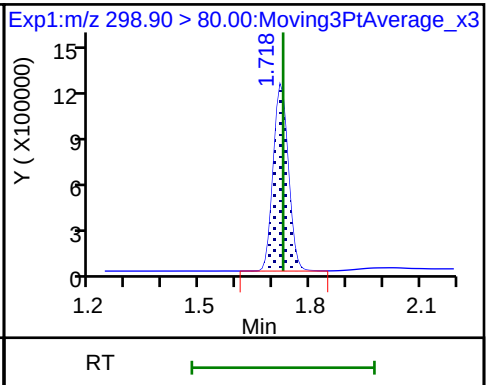
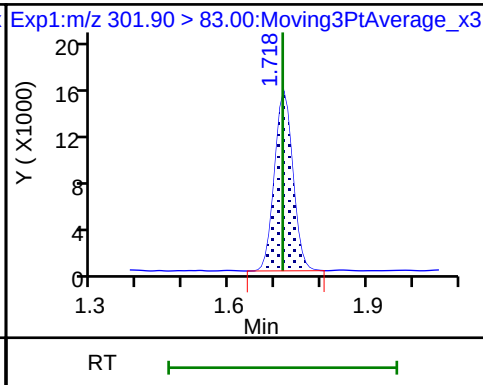
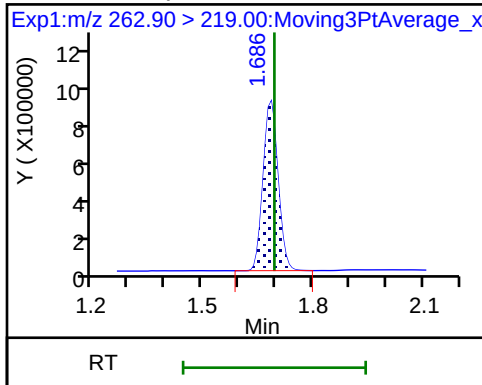
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

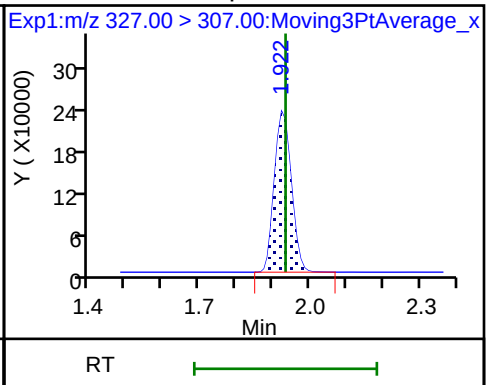
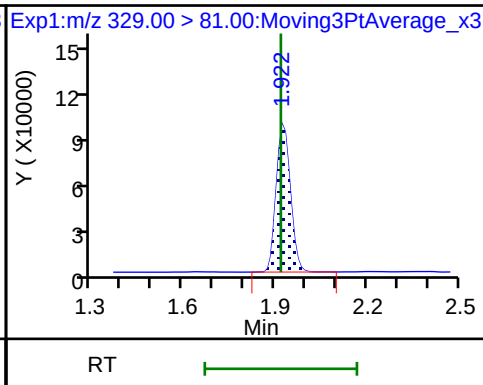
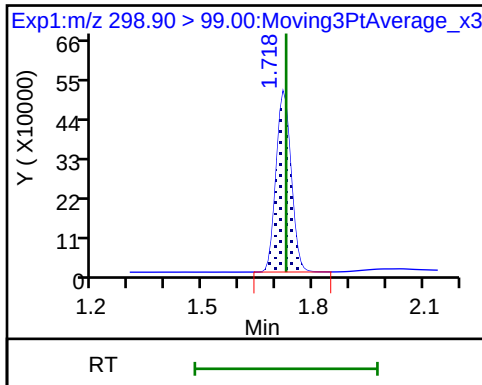
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

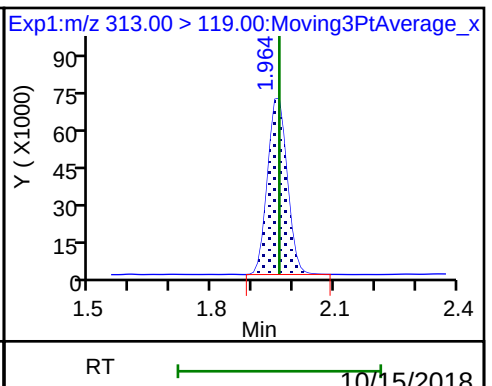
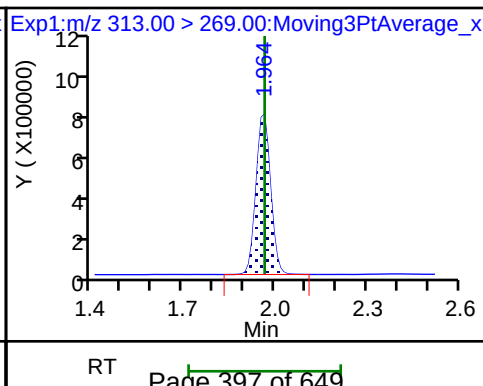
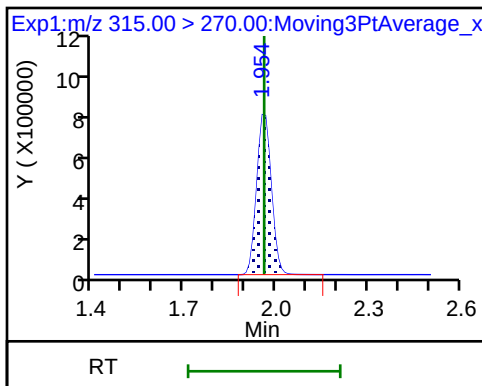
61 1H,1H,2H,2H-perfluorohexanesulfoni

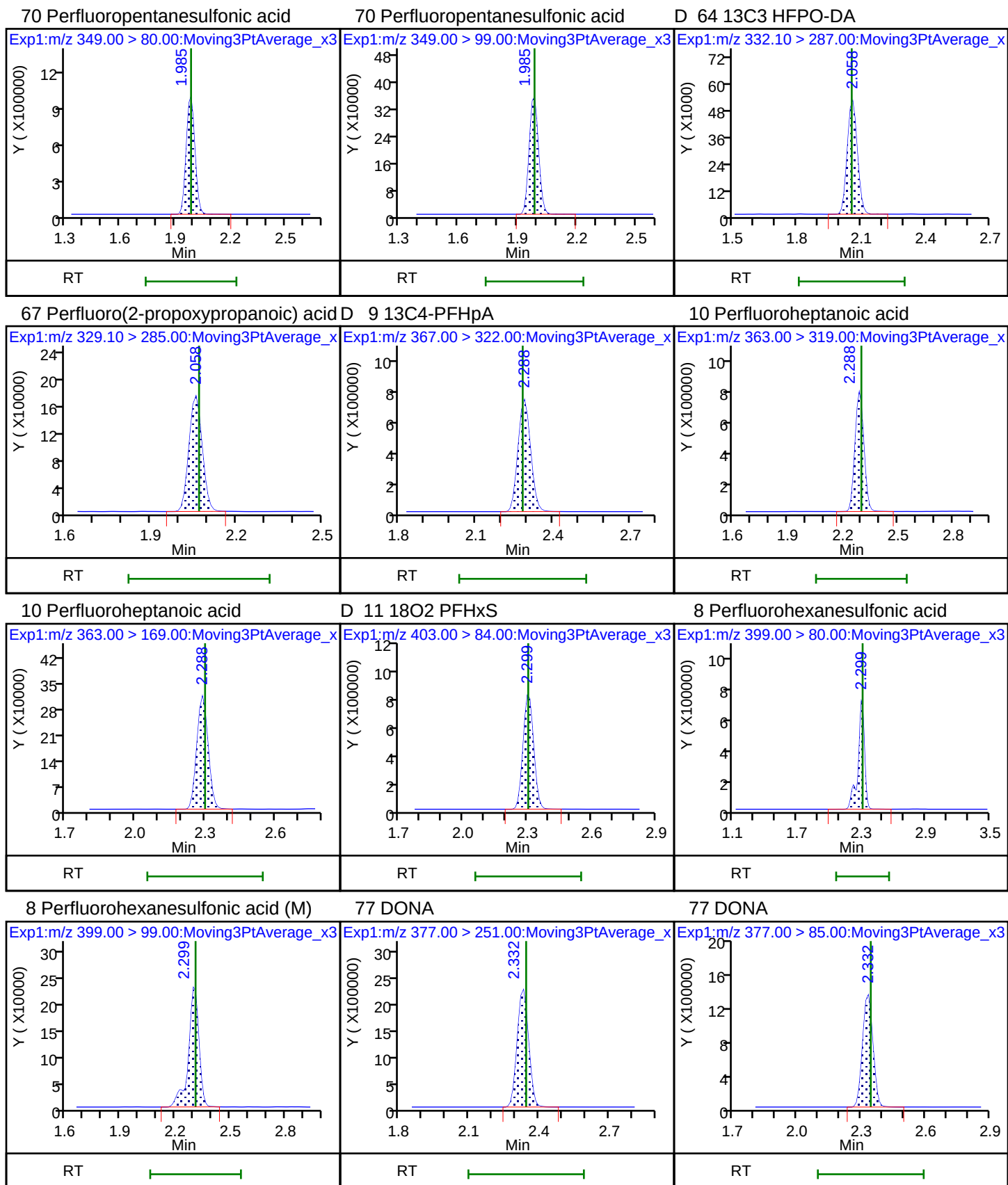


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

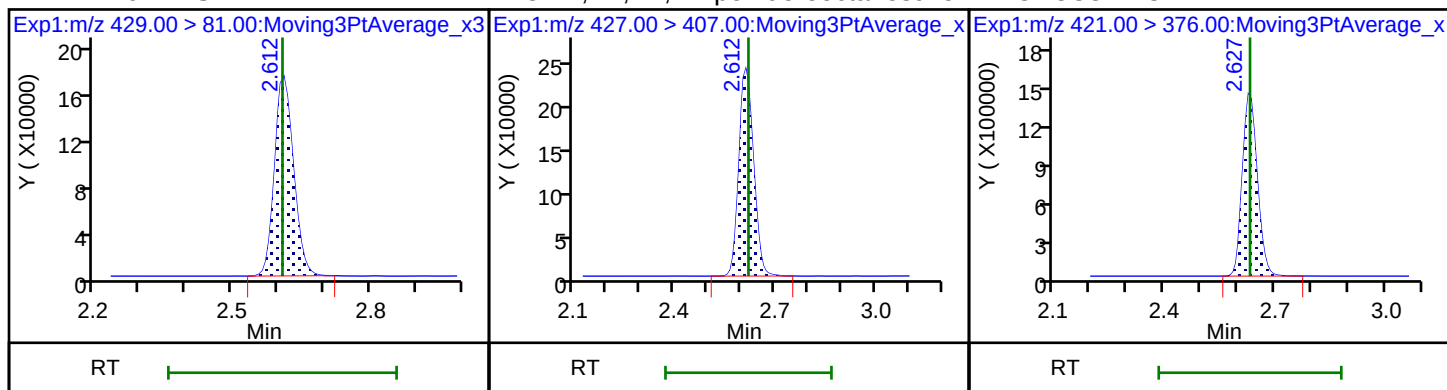
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

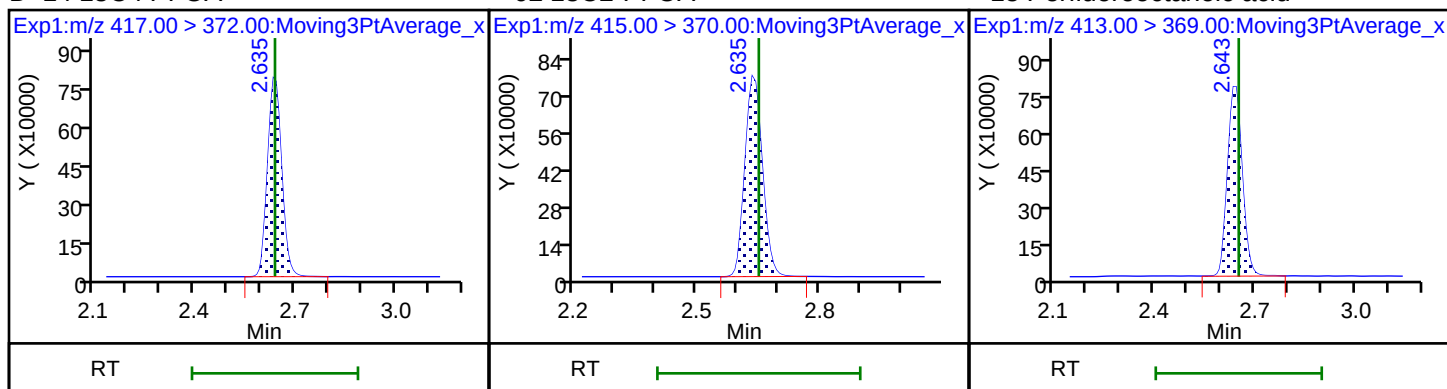
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

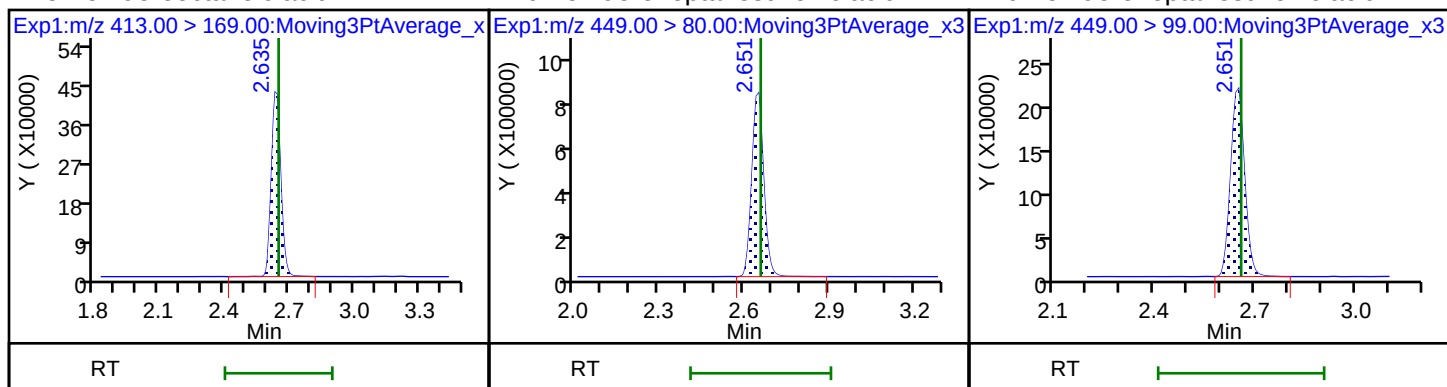
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

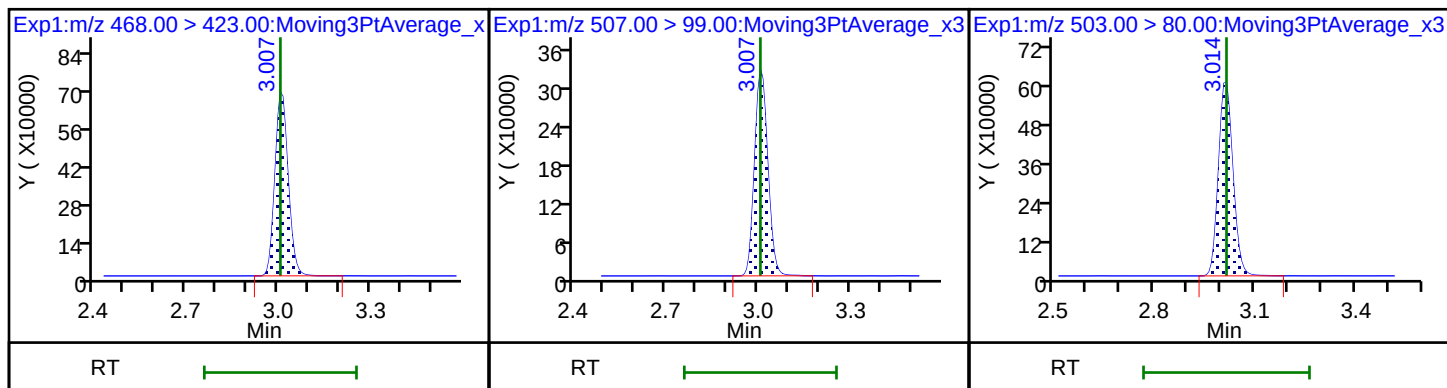
16 Perfluoroheptanesulfonic acid

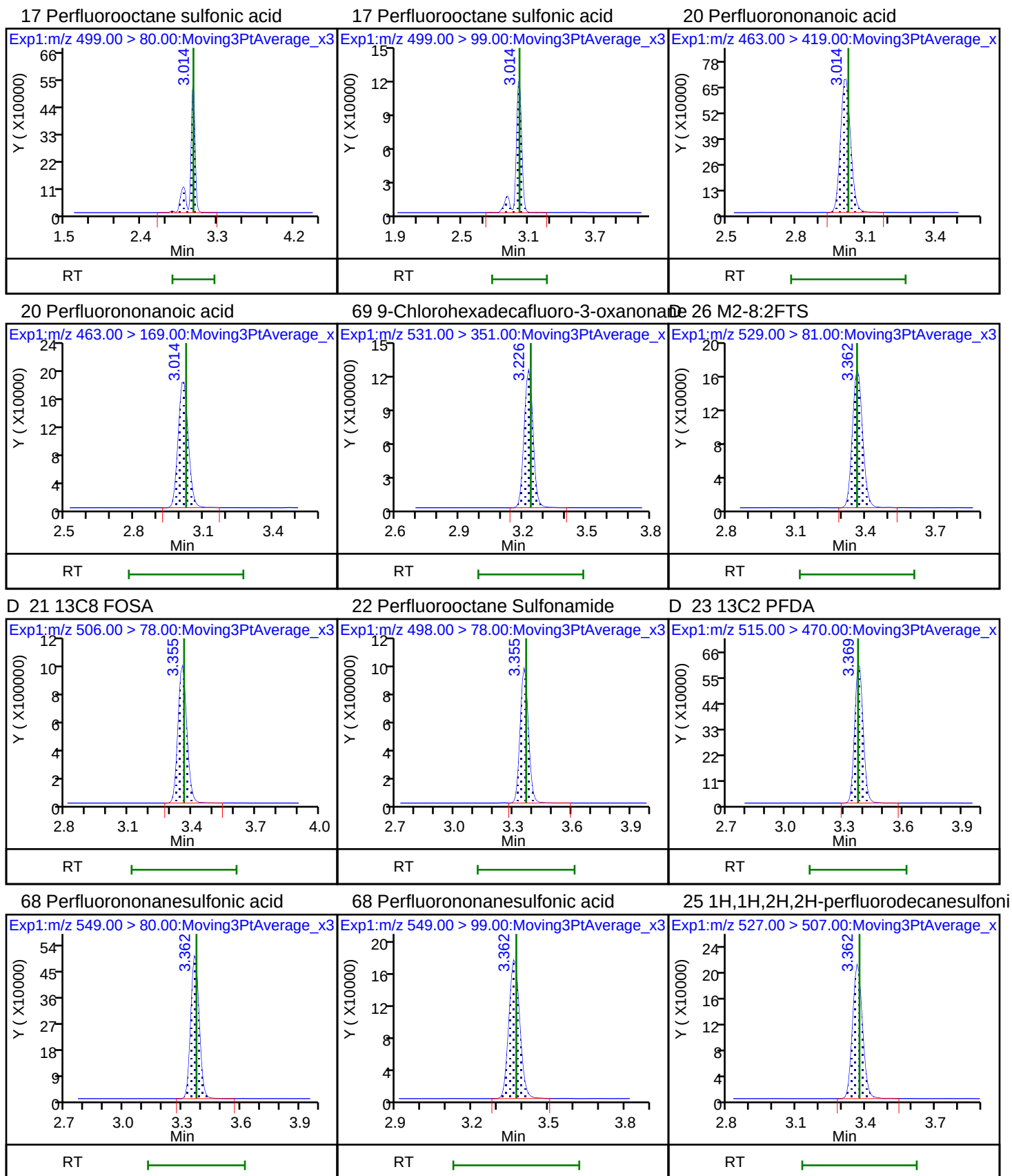


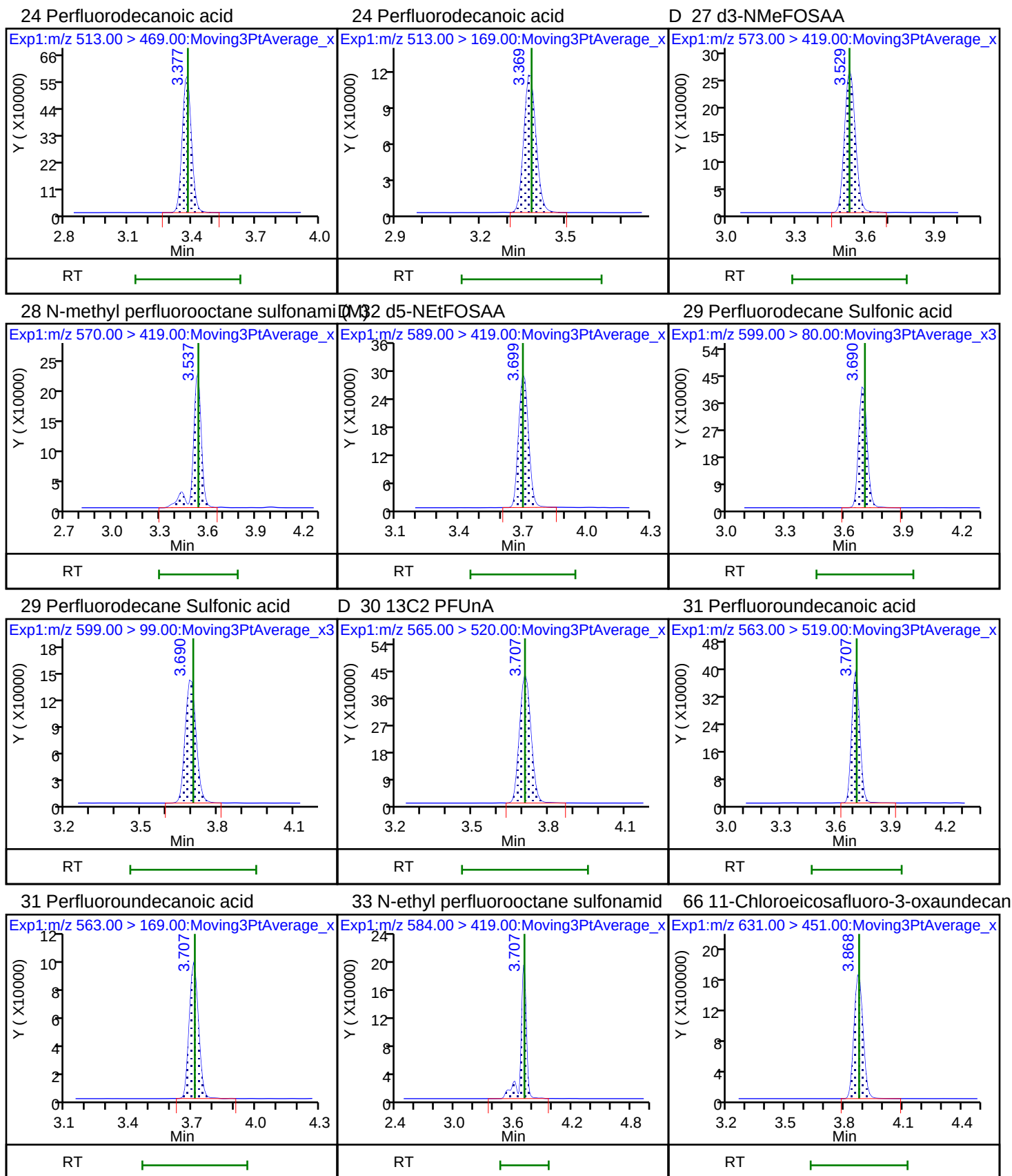
D 19 13C5 PFNA

D 72 13C8 PFOS

D 18 13C4 PFOS



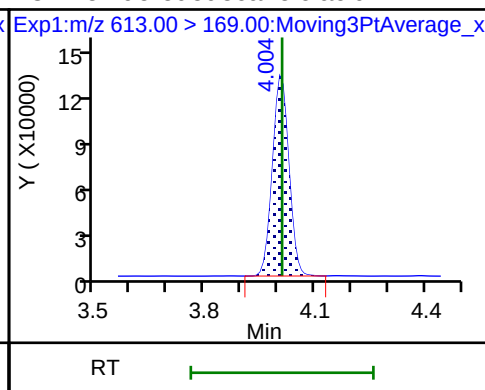
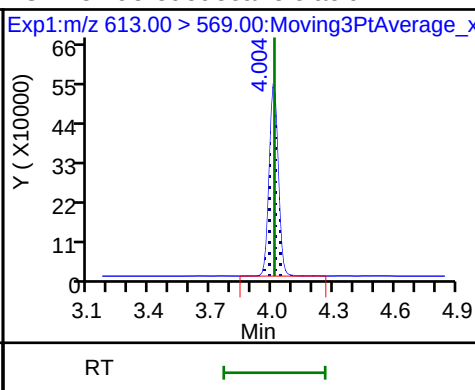
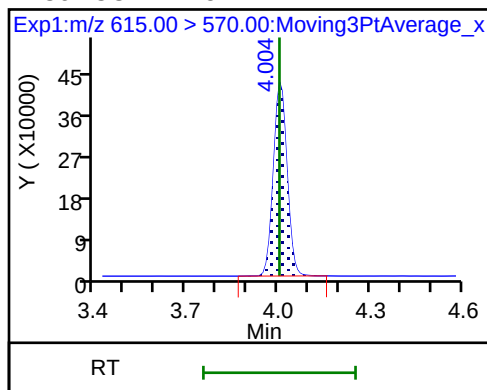




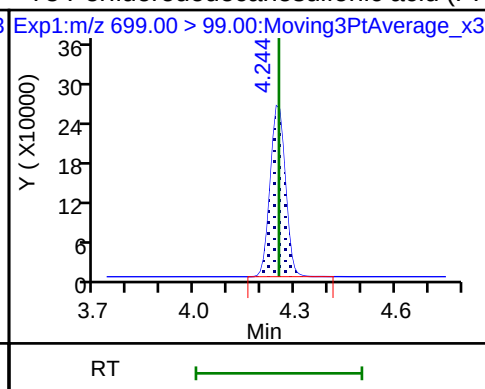
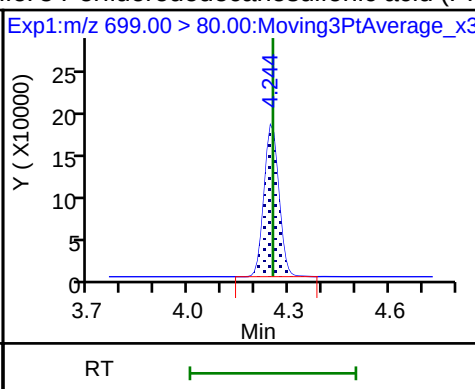
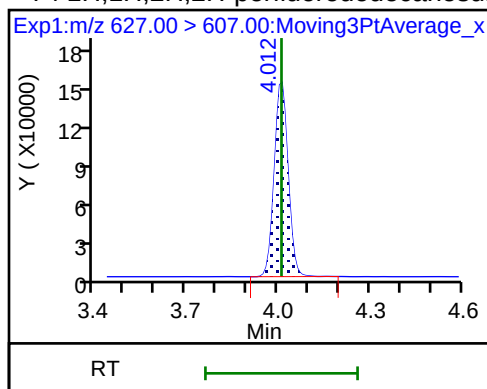
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



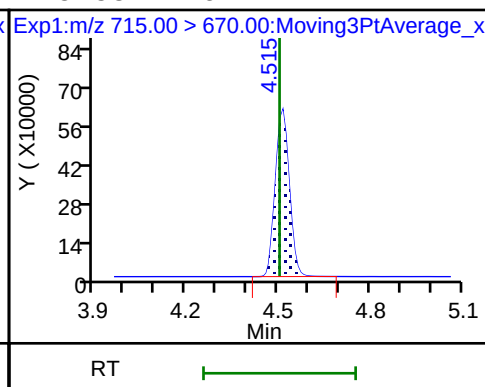
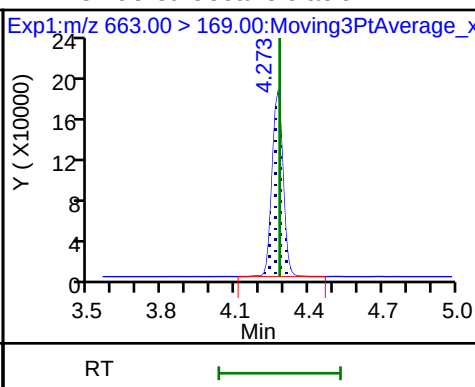
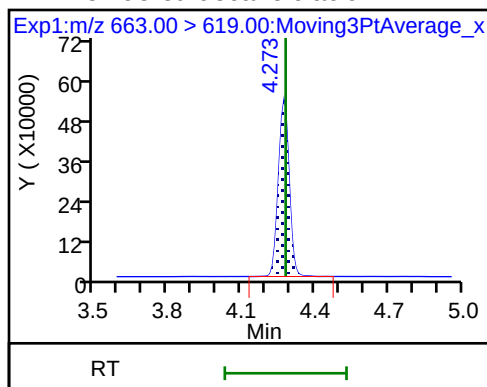
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

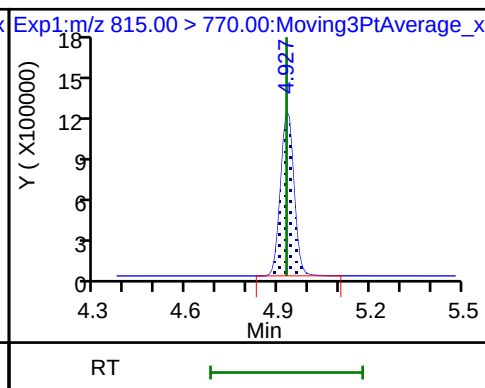
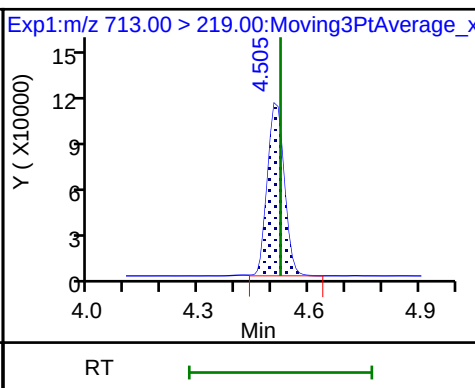
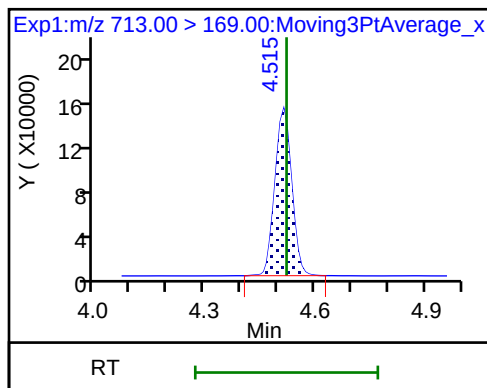
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

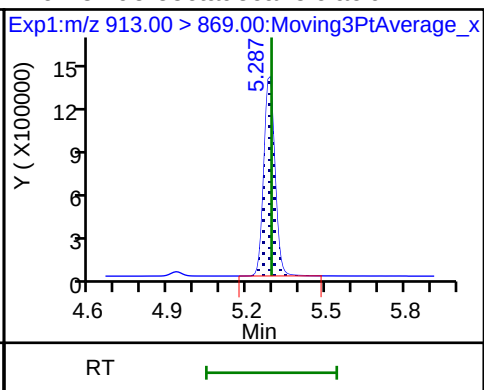
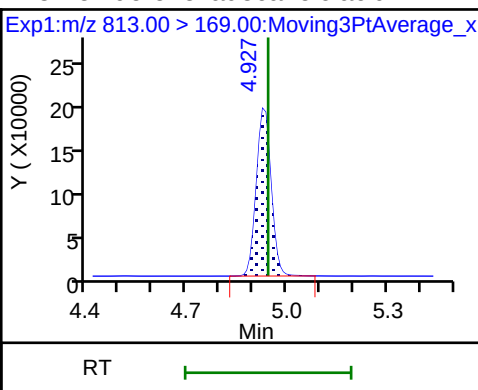
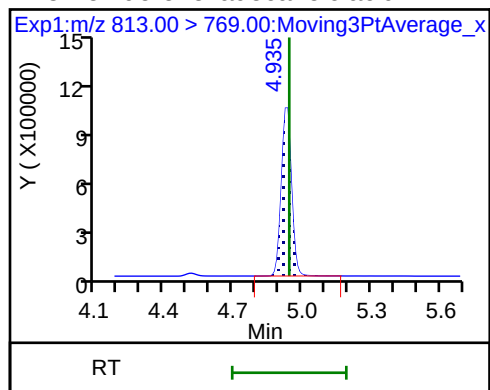
D 44 13C2-PFHxDA



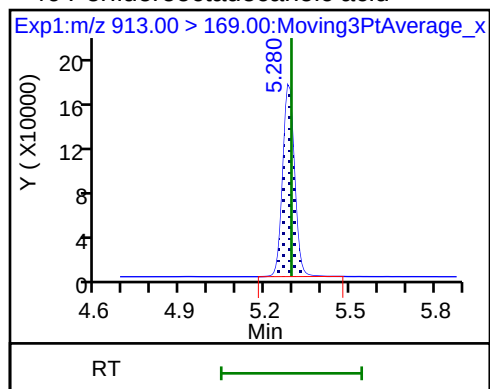
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

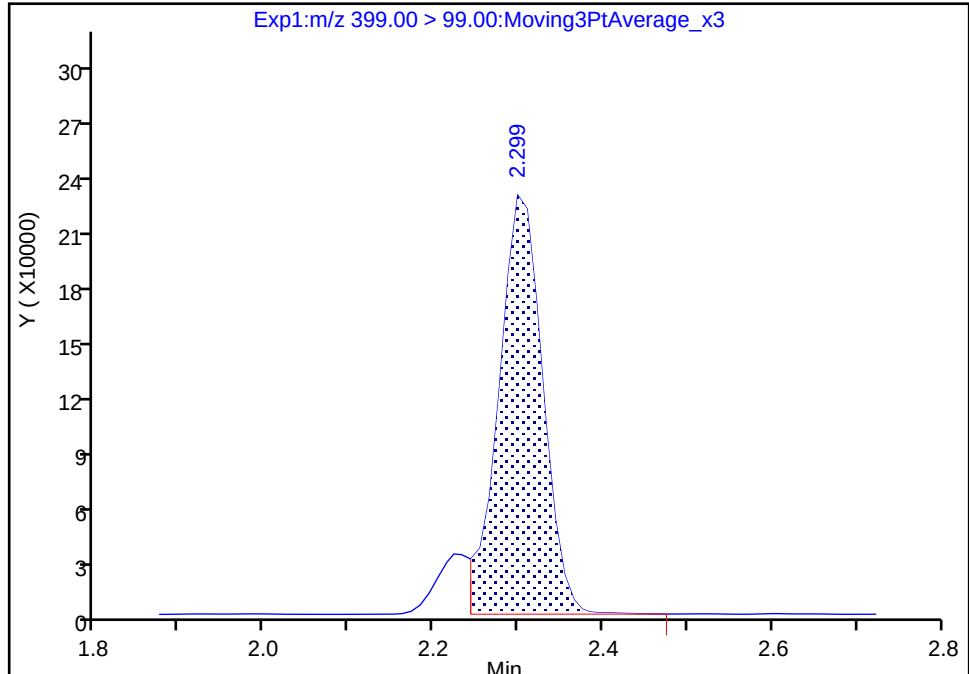
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Injection Date: 06-Oct-2018 19:34:51 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 24 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

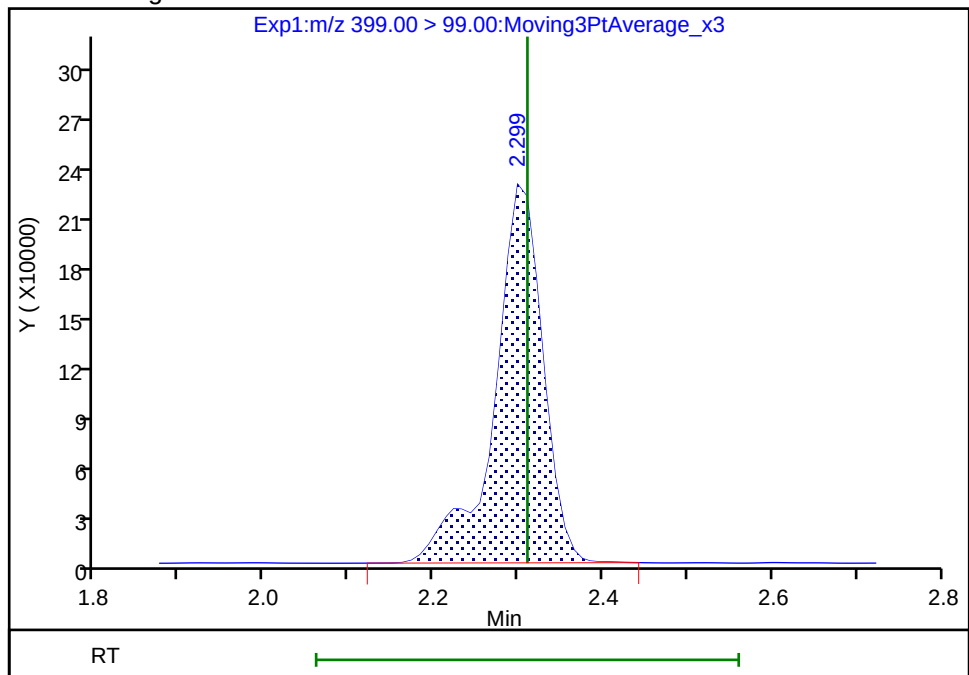
RT: 2.30
Area: 813102
Amount: 2.158989
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 896790
Amount: 2.158989
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 10-Oct-2018 15:20:04

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

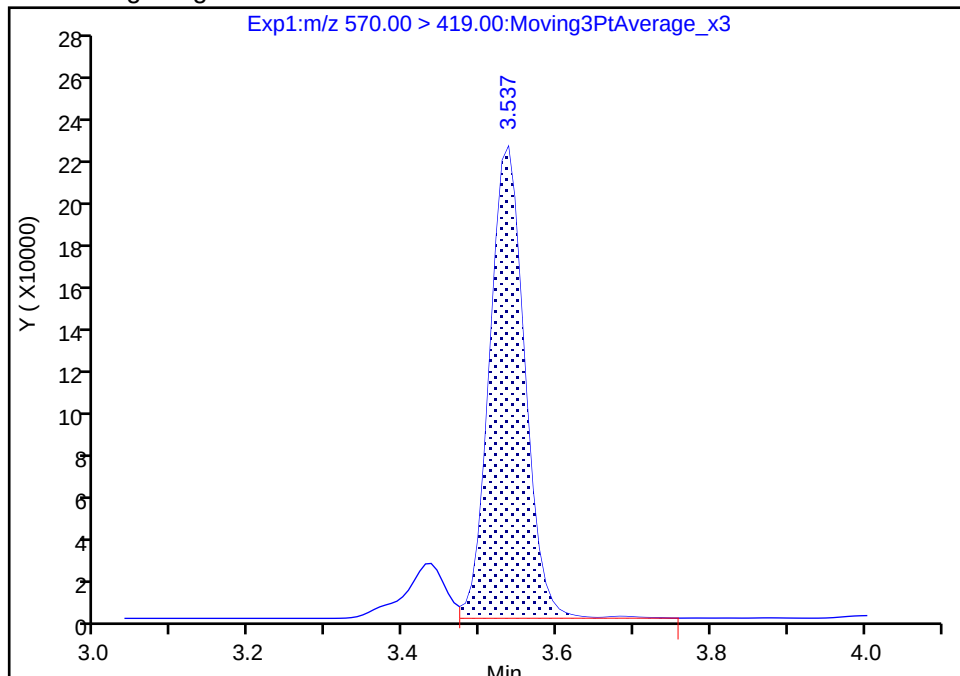
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Injection Date: 06-Oct-2018 19:34:51 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 24 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

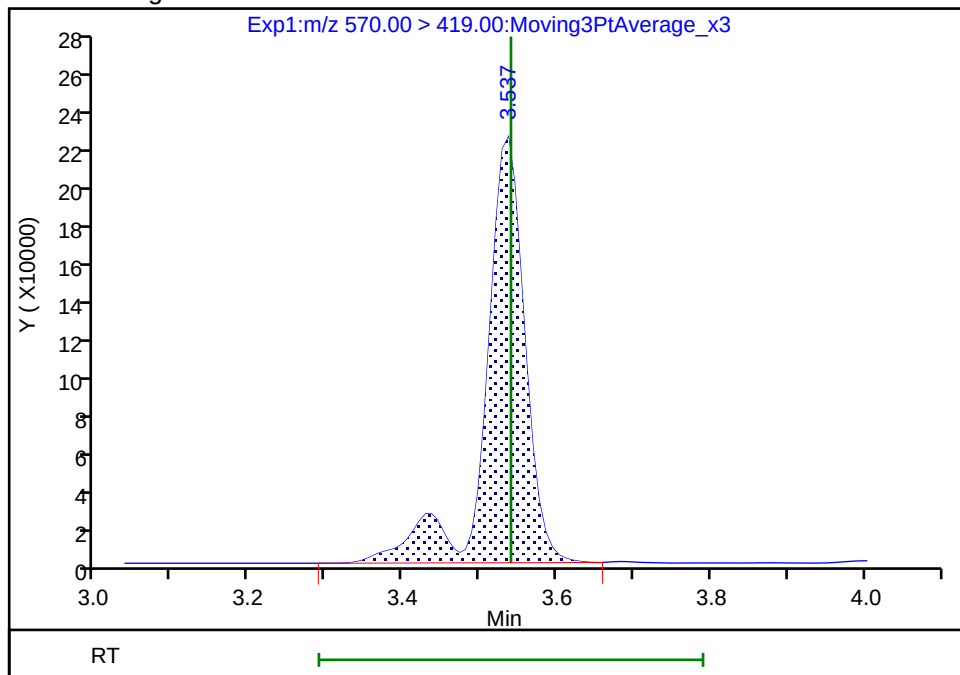
RT: 3.54
Area: 704613
Amount: 2.145820
Amount Units: ng/ml

Processing Integration Results



RT: 3.54
Area: 794059
Amount: 2.418217
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 10-Oct-2018 15:20:25

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: CCV 320-250091/25 Calibration Date: 10/06/2018 20:56

Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22

Lab File ID: 2018.10.06LLAAA_027.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9496	0.9434		0.993	1.00	-0.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.110	1.088		0.980	1.00	-2.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.74	78.76		0.896	0.884	1.3	50.0
4:2 FTS	AveID	12.97	16.31		1.17	0.934	25.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9850	1.030		1.05	1.00	4.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.02	67.16		0.940	0.938	0.2	50.0
HFPO-DA (GenX)	AveID	2.878	3.272		1.14	1.00	13.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.121	1.035		0.923	1.00	-7.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.102	0.9901		0.818	0.910	-10.1	40.0
DONA	AveID	3.887	4.199		1.02	0.942	8.0	50.0
6:2 FTS	AveID	1.702	1.572		0.876	0.948	-7.6	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.178	1.120		0.951	1.00	-4.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.252	1.279		0.973	0.952	2.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.077	1.077		1.00	1.00	0.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.142	1.106		0.899	0.928	-3.1	40.0
F-53B Major	AveID	1.889	1.909		0.942	0.932	1.0	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9624	0.9427		0.980	1.00	-2.0	40.0
8:2 FTS	AveID	1.208	1.129		0.895	0.958	-6.5	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8206	0.7968		0.932	0.960	-2.9	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.004	1.046		1.04	1.00	4.2	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9691	0.9846		1.02	1.00	1.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6415	0.6376		0.958	0.964	-0.6	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8705	0.8663		0.995	1.00	-0.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8768	0.8352		0.953	1.00	-4.7	40.0
F-53B Minor	AveID	2.852	2.876		0.950	0.942	0.9	50.0
10:2 FTS	AveID	0.8575	0.8418		0.946	0.964	-1.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.096	1.080		0.985	1.00	-1.5	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2912	0.2868		0.953	0.968	-1.5	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.062	1.073		1.01	1.00	1.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2457	0.2530		1.03	1.00	3.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8989		1.00	1.00	0.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: CCV 320-250091/25 Calibration Date: 10/06/2018 20:56
 Instrument ID: A8_N Calib Start Date: 10/04/2018 04:37
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/04/2018 05:22
 Lab File ID: 2018.10.06LLAAA_027.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.052	1.134		1.08	1.00	7.8	50.0
13C4 PFBA	Ave	1.512	1.509		2.49	2.50	-0.2	50.0
13C5 PFPeA	Ave	1.015	1.012		2.49	2.50	-0.3	50.0
13C3 PFBS	Ave	0.0216	0.0211		2.27	2.33	-2.4	50.0
M2-4:2 FTS	Ave	0.1194	0.1572		3.08	2.34	31.7	50.0
13C2 PFHxA	Ave	1.115	1.078		2.42	2.50	-3.3	50.0
13C3 HFPO-DA	Ave	0.0809	0.0680		2.10	2.50	-16.0	50.0
13C4 PFHpA	Ave	1.001	1.070		2.67	2.50	6.8	50.0
18O2 PFHxS	Ave	1.251	1.297		2.45	2.37	3.7	50.0
M2-6:2 FTS	Ave	0.1686	0.2045		2.88	2.38	21.3	40.0
13C8 PFOA	Ave	1.623	1.645		2.48	2.45	1.4	50.0
13C4 PFOA	Ave	0.9722	0.9790		2.52	2.50	0.7	50.0
13C8 PFOS	Ave	0.4286	0.4312		2.40	2.39	0.6	50.0
13C4 PFOS	Ave	0.8098	0.8081		2.39	2.39	-0.2	50.0
13C5 PFNA	Ave	0.8175	0.7909		2.42	2.50	-3.2	50.0
13C8 FOSA	Ave	1.127	1.196		2.65	2.50	6.2	50.0
M2-8:2 FTS	Ave	0.1786	0.2336		3.13	2.40	30.8	40.0
13C2 PFDA	Ave	0.7231	0.7131		2.47	2.50	-1.4	50.0
d3-NMeFOSAA	Ave	0.2938	0.3722		3.17	2.50	26.7	50.0
d5-NEtFOSAA	Ave	0.3162	0.3704		2.93	2.50	17.2	50.0
13C2 PFUnA	Ave	0.5524	0.5722		2.59	2.50	3.6	50.0
13C2 PFDoA	Ave	0.5820	0.5967		2.56	2.50	2.5	50.0
13C2 PFTeDA	Ave	0.6996	0.7848		2.80	2.50	12.2	50.0
13C2 PFHxDA	Ave	1.263	1.425		2.82	2.50	12.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_027.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 06-Oct-2018 20:56:46 ALS Bottle#: 23 Worklist Smp#: 25
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:22:03 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: ruangyotsakuld

Date: 10-Oct-2018 15:22:03

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 1.426 1.423 0.003 0.538 3381917 2.49 99.8 8751

2 Perfluorobutyric acid

212.90 > 169.00 1.426 1.426 0.0 1.000 1276138 0.99 99.3 179

D 3 13C5-PFPeA

267.90 > 223.00 1.694 1.684 0.010 0.639 2267222 2.49 99.7 7092

4 Perfluoropentanoic acid

262.90 > 219.00 1.694 1.694 0.0 1.000 986276 0.9799 98.0 93.2

D 47 13C3-PFBS

301.90 > 83.00 1.726 1.716 0.010 0.651 44018 2.27 97.6 285

5 Perfluorobutanesulfonic acid

298.90 > 80.00 1.726 1.726 0.0 1.000 1318125 0.8956 101 72.1

298.90 > 99.00 1.726 1.726 0.0 1.000 560558 2.35(1.25-3.74) 69.5

D 60 M2-4:2FTS

329.00 > 81.00 1.933 1.918 0.015 0.729 329174 3.08 132 375

61 1H,1H,2H,2H-perfluorohexanesulfoni

327.00 > 307.00 1.933 1.933 0.0 1.120 288400 1.17 126 4336

D 7 13C2 PFHxA

315.00 > 270.00 1.964 1.960 0.004 0.741 2416816 2.42 96.7 7826

6 Perfluorohexanoic acid

313.00 > 269.00 1.964 1.964 0.0 1.000 995589 1.05 105 239

313.00 > 119.00 1.964 1.964 0.0 1.000 85068 11.70(5.03-15.10) 196

70 Perfluoropentanesulfonic acid

349.00 > 80.00 1.996 1.996 0.0 1.156 1192723 0.9400 100 2191

349.00 > 99.00 1.996 1.996 0.0 1.156 438098 2.72(1.36-4.07) 1377

D 64 13C3 HFPO-DA

332.10 > 287.00 2.069 2.054 0.015 0.780 152325 2.10 84.0 658

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	2.069	2.069	0.0	1.000	199392	1.14		114	301	
D 9 13C4-PFHpA										
367.00 > 322.00	2.299	2.281	0.018	0.867	2397775	2.67		107	5069	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.299	0.0	1.000	992244	0.9230		92.3	211	
363.00 > 169.00	2.299	2.299	0.0	1.000	393958		2.52(1.13-3.40)		346	
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.303	0.007	0.871	2750464	2.45		104	6687	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.310	2.310	0.0	1.000	1047848	0.8177		89.9	489	M
399.00 > 99.00	2.310	2.310	0.0	1.000	350374		2.99(1.50-4.49)		457	M
77 DONA										
377.00 > 251.00	2.344	2.344	0.0	0.775	2866052	1.02		108	5377	
377.00 > 85.00	2.344	2.344	0.0	0.775	1603345		1.79(0.85-2.54)		4024	
D 12 M2-6:2FTS										
429.00 > 81.00	2.620	2.609	0.011	0.988	435468	2.88		121	2314	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.620	2.620	0.0	1.000	273240	0.8756		92.4	716	
D 73 13C8 PFOA										
421.00 > 376.00	2.643	2.632	0.011	0.997	3609753	2.48		101	8454	
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.640	0.011	1.000	2194351	2.52		101	7291	
* 62 13C2-PFOA										
415.00 > 370.00	2.651	2.651	0.0		2241436	2.50			5980	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.651	2.651	0.0	1.000	983791	0.9515		95.1	111	
413.00 > 169.00	2.651	2.651	0.0	1.000	530629		1.85(0.84-2.52)		724	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.658	2.658	0.0	0.879	882121	0.9728		102	2727	
449.00 > 99.00	2.658	2.658	0.0	0.879	234185		3.77(1.94-5.82)		1068	
D 19 13C5 PFNA										
468.00 > 423.00	3.024	3.006	0.018	1.141	1772829	2.42		96.8	4957	
D 72 13C8 PFOS										
507.00 > 99.00	3.016	3.006	0.010	1.138	923927	2.40		101	3149	
D 18 13C4 PFOS										
503.00 > 80.00	3.024	3.014	0.010	1.141	1731583	2.38		99.8	6130	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.024	3.024	0.0	1.000	743812	0.8988		96.9	532	
499.00 > 99.00	3.024	3.024	0.0	1.000	169784		4.38(2.31-6.93)		687	
20 Perfluorononanoic acid										
463.00 > 419.00	3.024	3.024	0.0	1.000	763990	1.00		100	259	
463.00 > 169.00	3.024	3.024	0.0	1.000	192527		3.97(1.90-5.69)		913	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.236	3.236	0.0	1.070	1288974	0.9416		101	3935	
D 26 M2-8:2FTS										
529.00 > 81.00	3.372	3.362	0.010	1.272	501574	3.13		131	2669	

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	3.364	3.362	0.002	1.269	2680838	2.65		106	3940	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.364	3.364	0.0	1.000	1010914	0.9796		98.0	2541	
D 23 13C2 PFDA										
515.00 > 470.00	3.379	3.369	0.010	1.275	1598363	2.47		98.6	5425	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.372	3.372	0.0	1.115	554162	0.9321		97.1	1893	
549.00 > 99.00	3.372	3.372	0.0	1.115	206722		2.68(1.33-3.97)		1131	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.372	3.372	0.0	1.000	226596	0.8954		93.5	1341	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.379	3.379	0.0	1.000	668467	1.04		104	579	
513.00 > 169.00	3.387	3.379	0.008	1.002	123283		5.42(2.36-7.09)		307	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.539	3.529	0.010	1.335	834286	3.17		127	1517	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.539	3.539	0.0	1.000	328589	1.02		102	548	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.711	3.699	0.012	1.400	830181	2.93		117	1344	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.702	3.702	0.0	1.224	445341	0.9582		99.4	2420	
599.00 > 99.00	3.702	3.702	0.0	1.224	145551		3.06(1.39-4.16)		1019	
D 30 13C2 PFUnA										
565.00 > 520.00	3.719	3.707	0.012	1.403	1282432	2.59		104	4530	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.719	3.719	0.0	1.000	428410	0.9525		95.3	425	
563.00 > 169.00	3.719	3.719	0.0	1.000	106169		4.04(2.12-6.36)		508	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.719	3.719	0.0	1.002	287669	1.00		99.5	816	M
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.883	3.883	0.0	1.284	1963085	0.9502		101	4806	
35 MeFOSA										
512.00 > 169.00	3.883	3.883	0.0		323347	NC			622	
D 36 13C2 PFDaA										
615.00 > 570.00	4.016	4.003	0.013	1.515	1337399	2.56		103	4869	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.016	4.016	0.0	1.000	577697	0.9854		98.5	410	
613.00 > 169.00	4.016	4.016	0.0	1.000	146661		3.94(2.13-6.40)		1286	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.016	4.016	0.0	1.191	169946	0.9464		98.2	1281	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.259	4.259	0.0	1.408	201123	0.9534		98.5	1198	
699.00 > 99.00	4.259	4.259	0.0	1.408	318891		0.63(0.00-0.00)		2078	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.278	4.278	0.0	1.065	574046	1.01		101	412	
663.00 > 169.00	4.278	4.278	0.0	1.065	208557		2.75(1.25-3.76)		1354	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.520	4.504	0.016	1.705	1759023	2.80		112	3903	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.520	4.520	0.0	1.000	177980	1.03		103	1507	
713.00 > 219.00	4.520	4.520	0.0	1.000	132805		1.34(0.71-2.13)		1457	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.935	4.927	0.008	1.862	3193954	2.82		113	6440	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.943	4.943	0.0	1.002	1148444	1.00		100	222	
813.00 > 169.00	4.943	4.943	0.0	1.002	220623		5.21(2.86-8.58)		1704	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.293	5.293	0.0	1.073	1448605	1.08		108	261	
913.00 > 169.00	5.293	5.293	0.0	1.073	193381		7.49(3.83-11.48)		1618	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_027.d

Injection Date: 06-Oct-2018 20:56:46

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 23

Worklist Smp#: 25

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

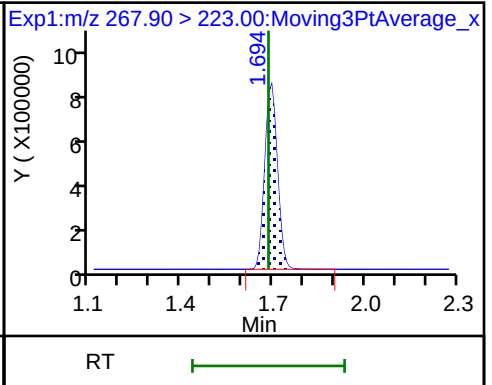
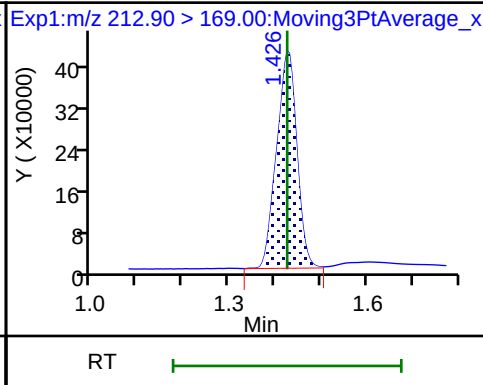
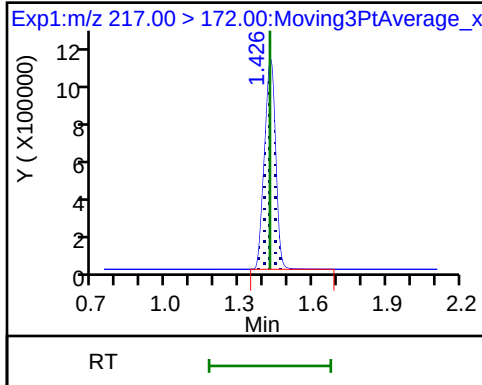
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

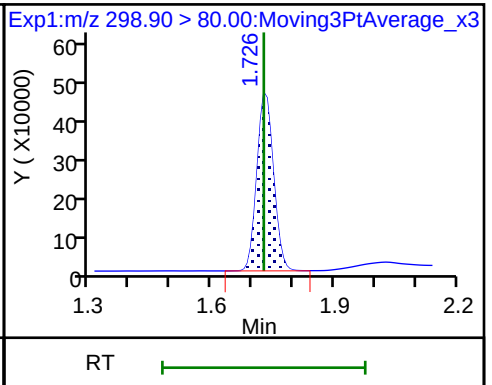
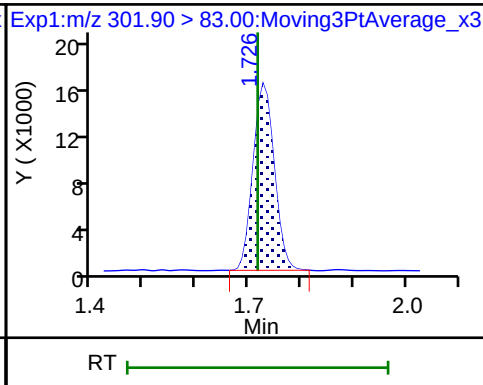
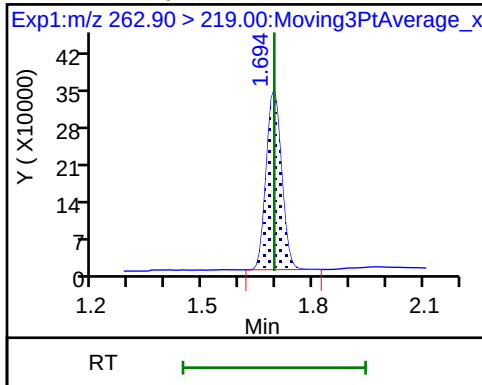
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

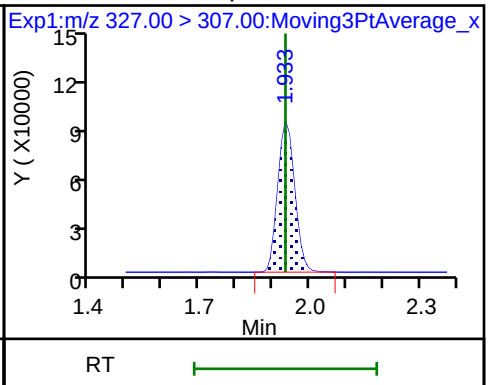
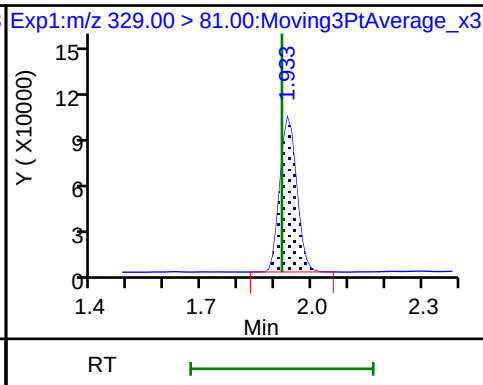
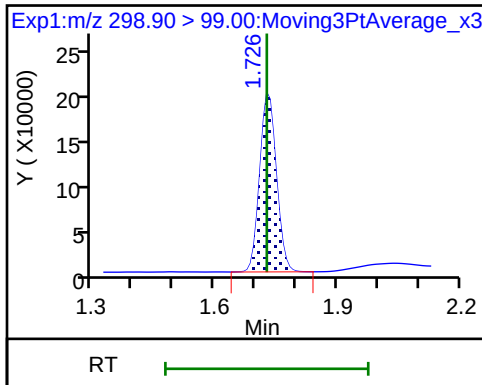
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

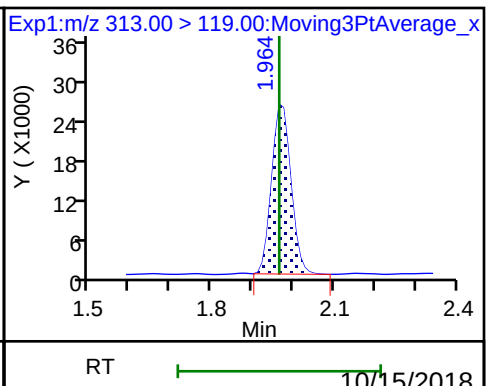
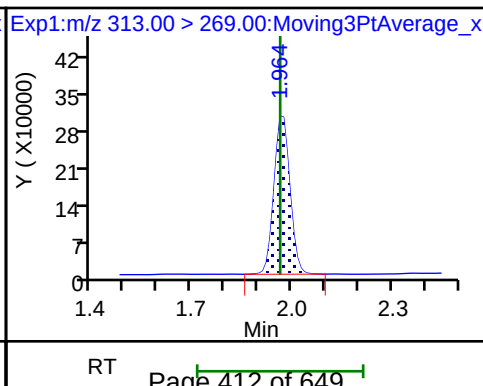
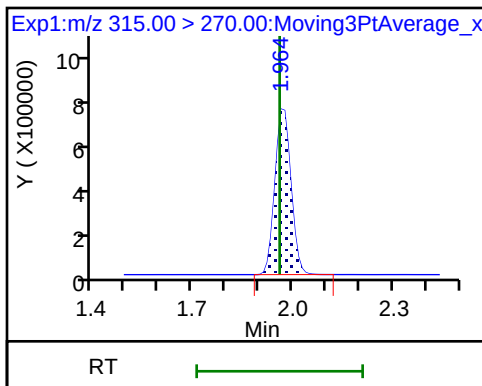
61 1H,1H,2H,2H-perfluorohexanesulfoni

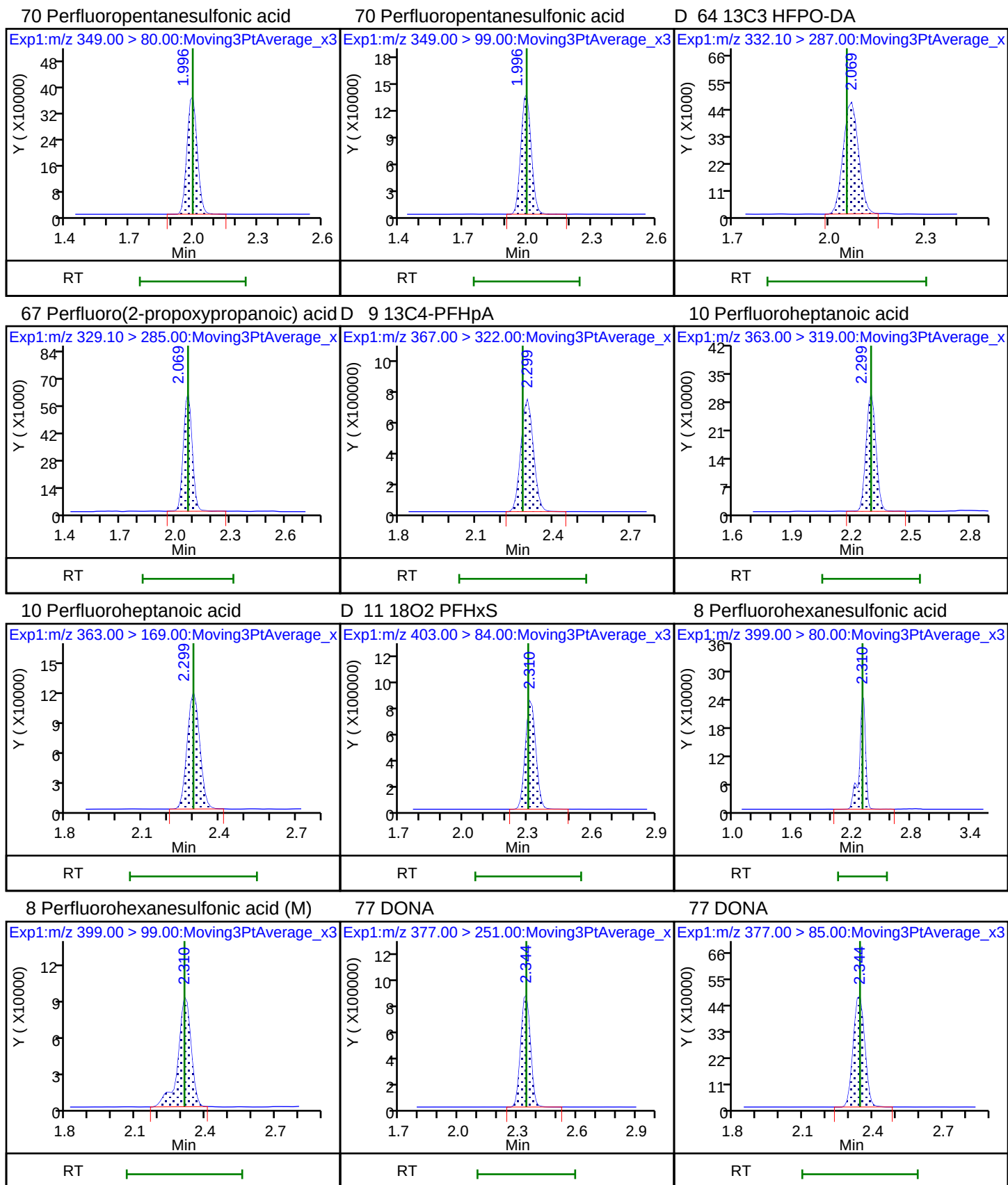


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

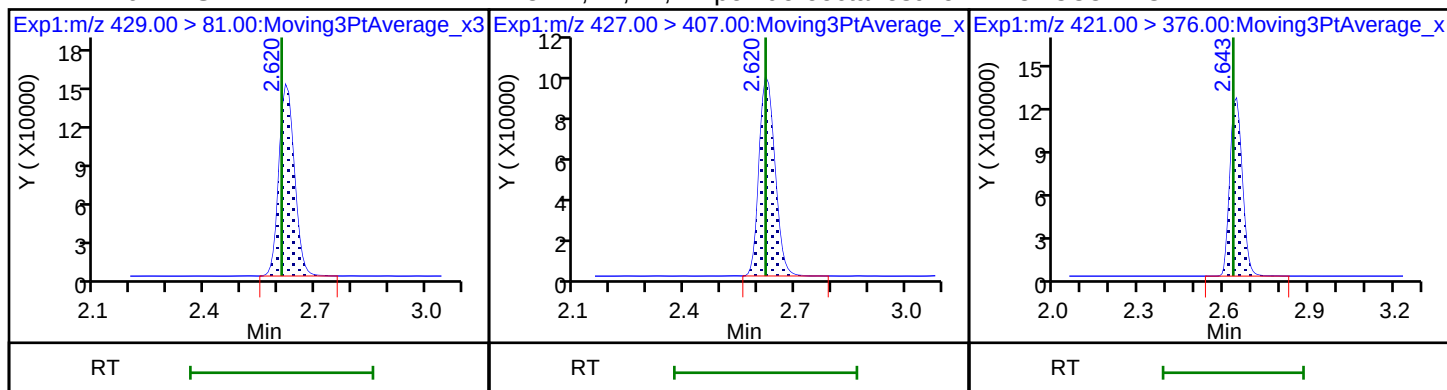
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

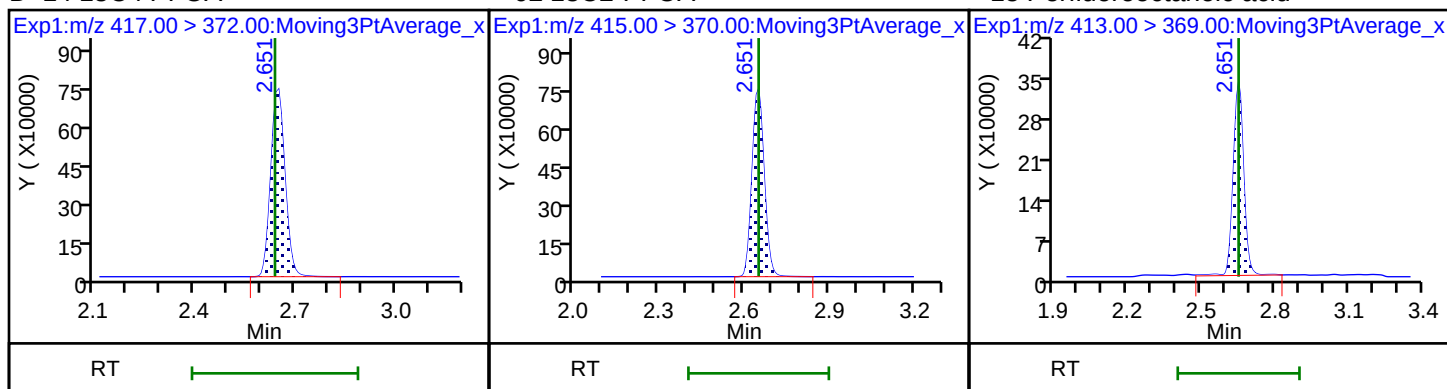
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D 14 13C4 PFOA

* 62 13C2-PFOA

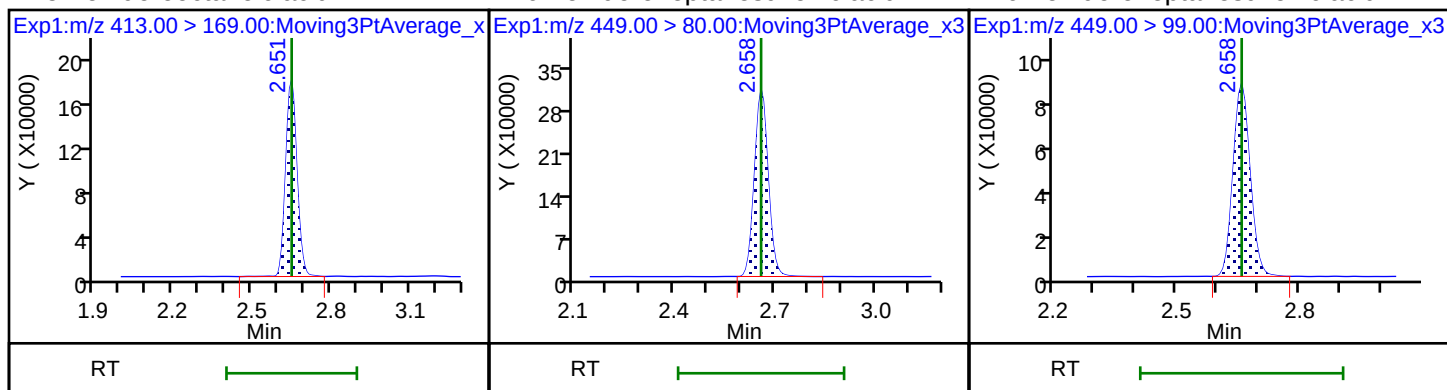
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

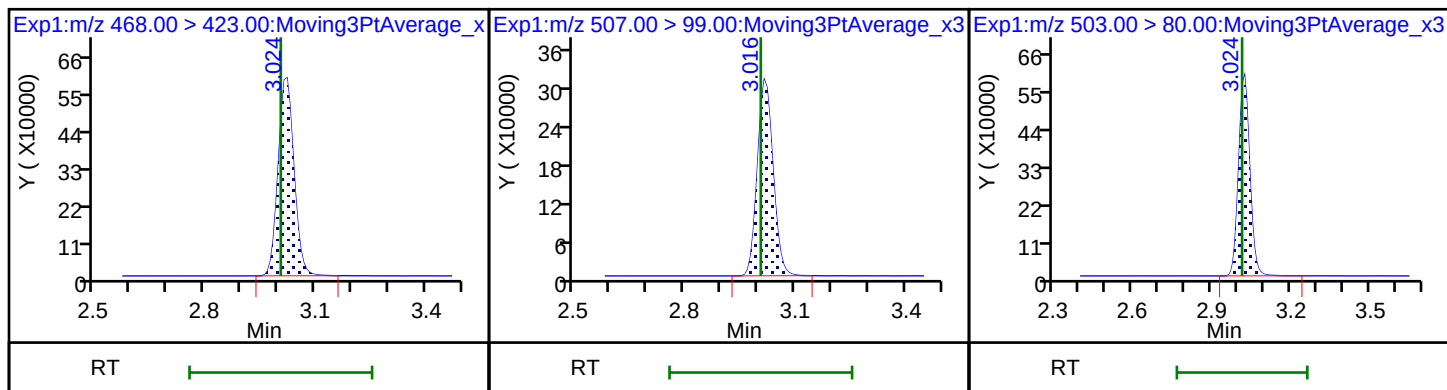
16 Perfluoroheptanesulfonic acid

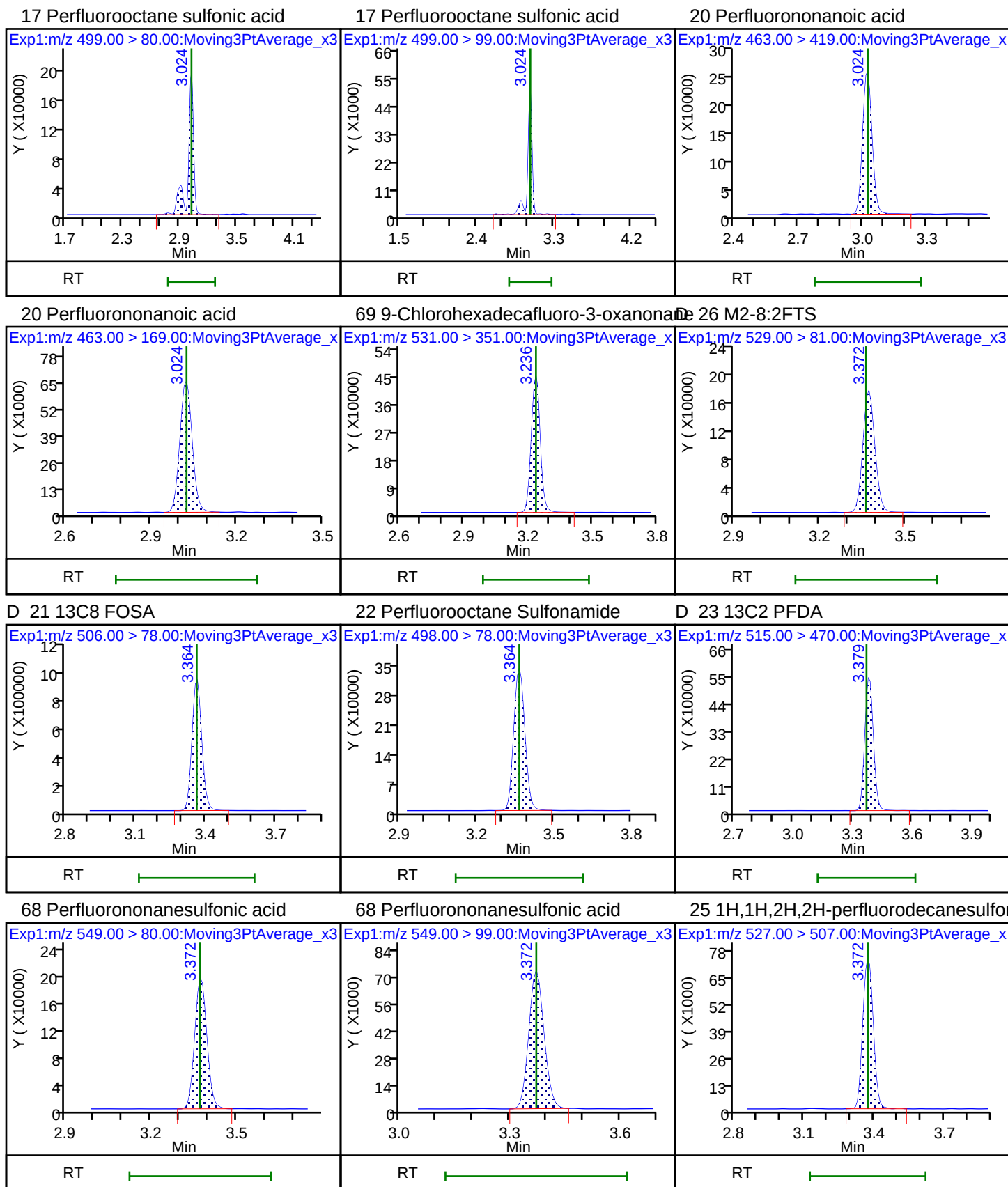


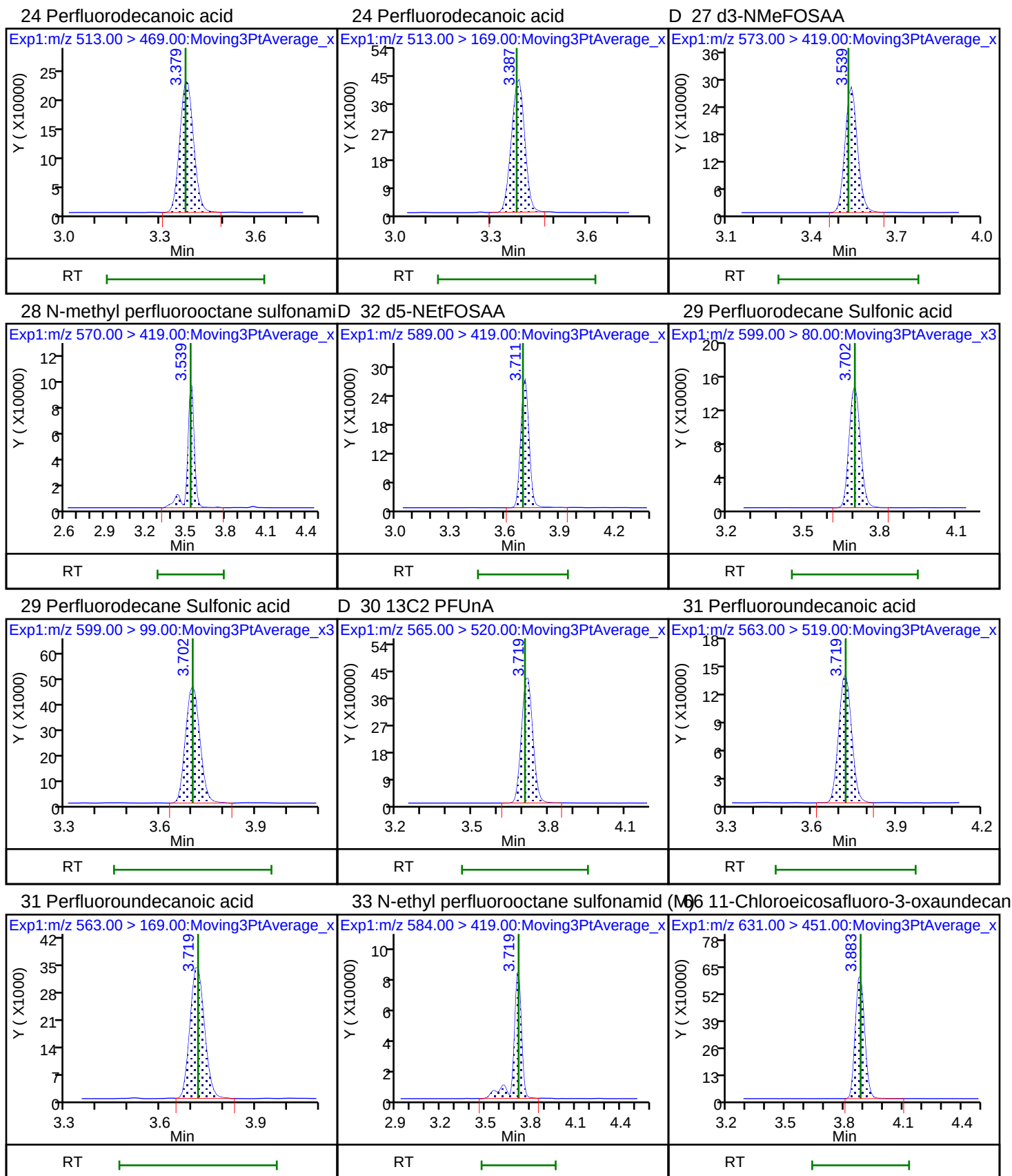
D 19 13C5 PFNA

D 72 13C8 PFOS

D 18 13C4 PFOS



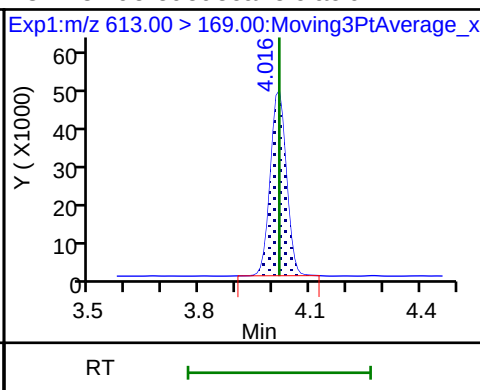
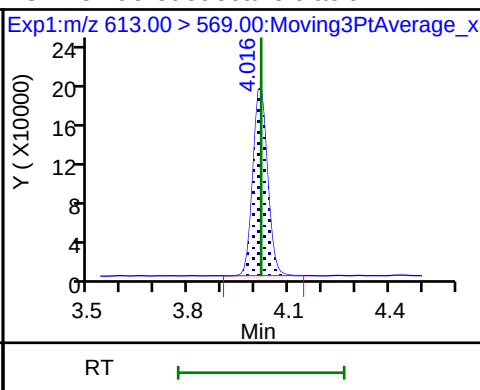
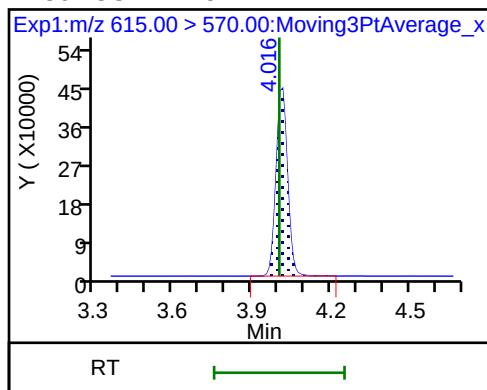




D 36 13C2 PFDaA

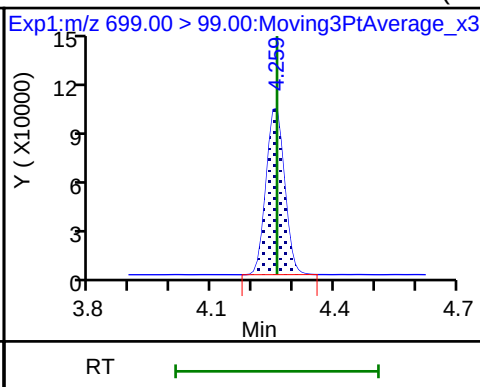
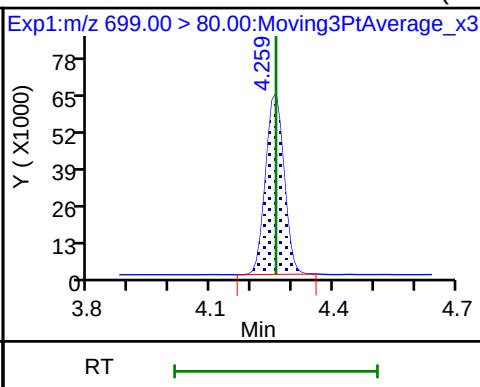
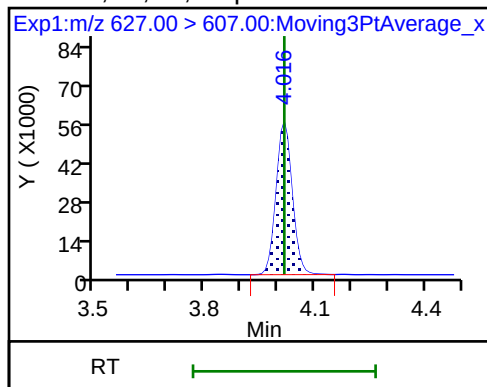
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

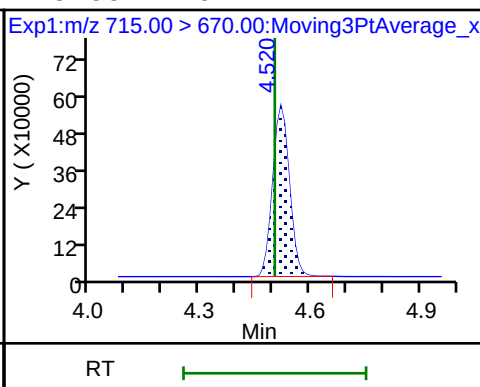
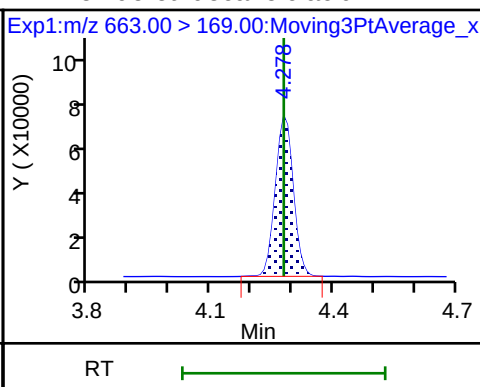
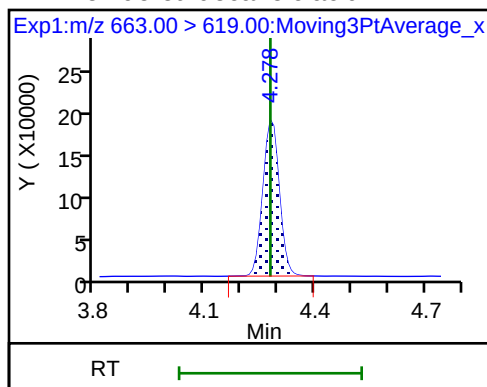
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

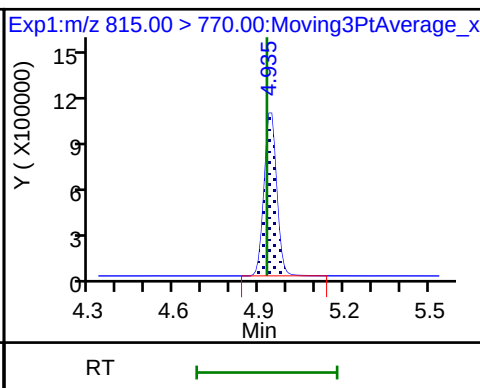
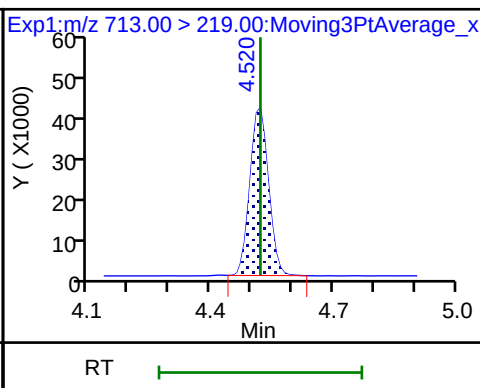
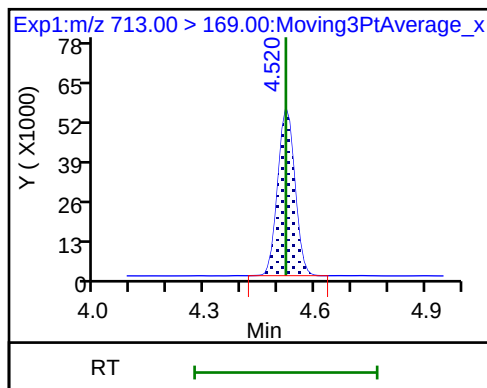
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

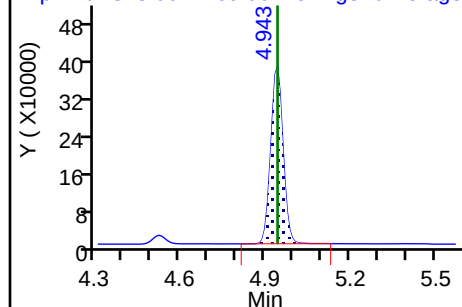


45 Perfluorohexadecanoic acid

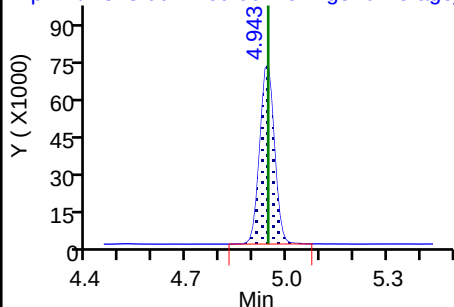
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

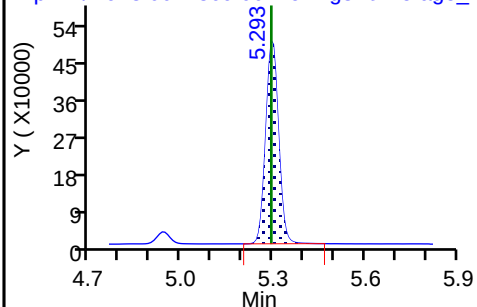
Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

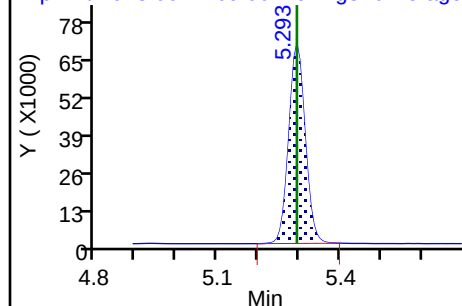


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

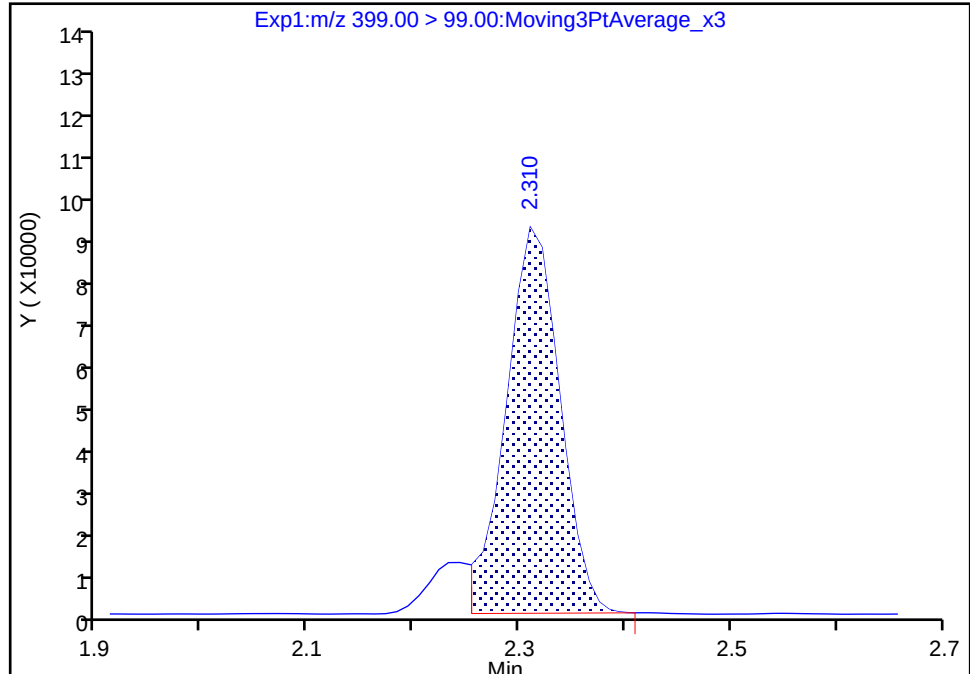
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_027.d
Injection Date: 06-Oct-2018 20:56:46 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 25
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

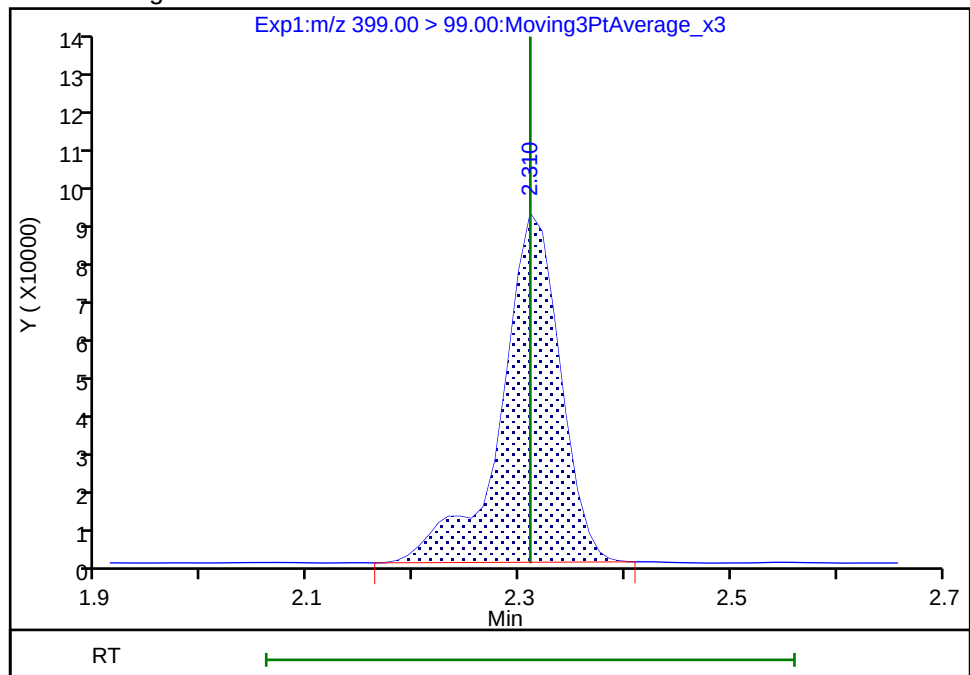
RT: 2.31
Area: 317945
Amount: 0.817665
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 350374
Amount: 0.817665
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 10-Oct-2018 15:21:38

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

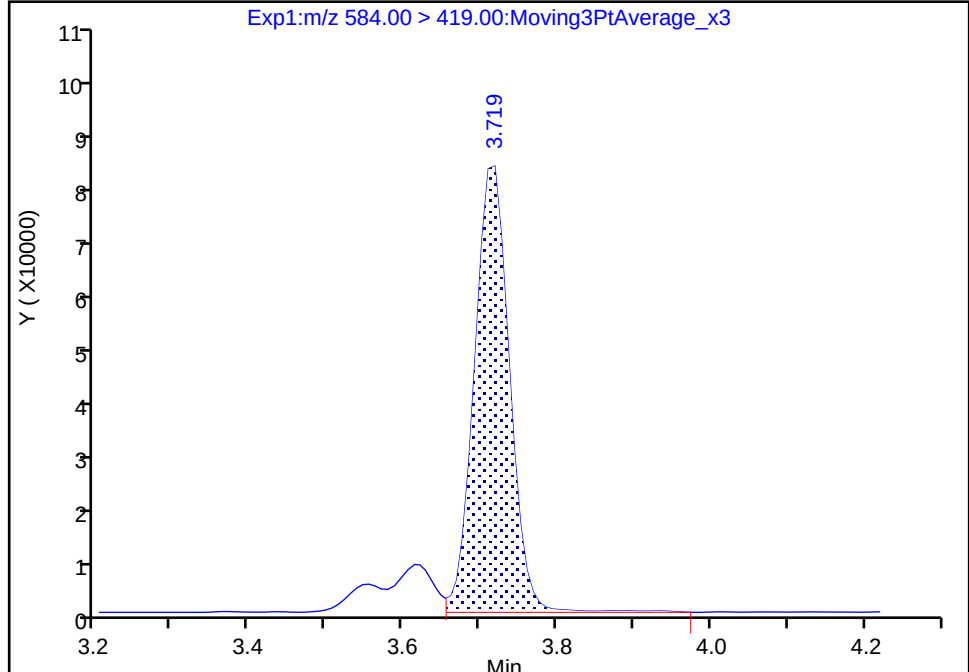
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_027.d
Injection Date: 06-Oct-2018 20:56:46 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 25
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

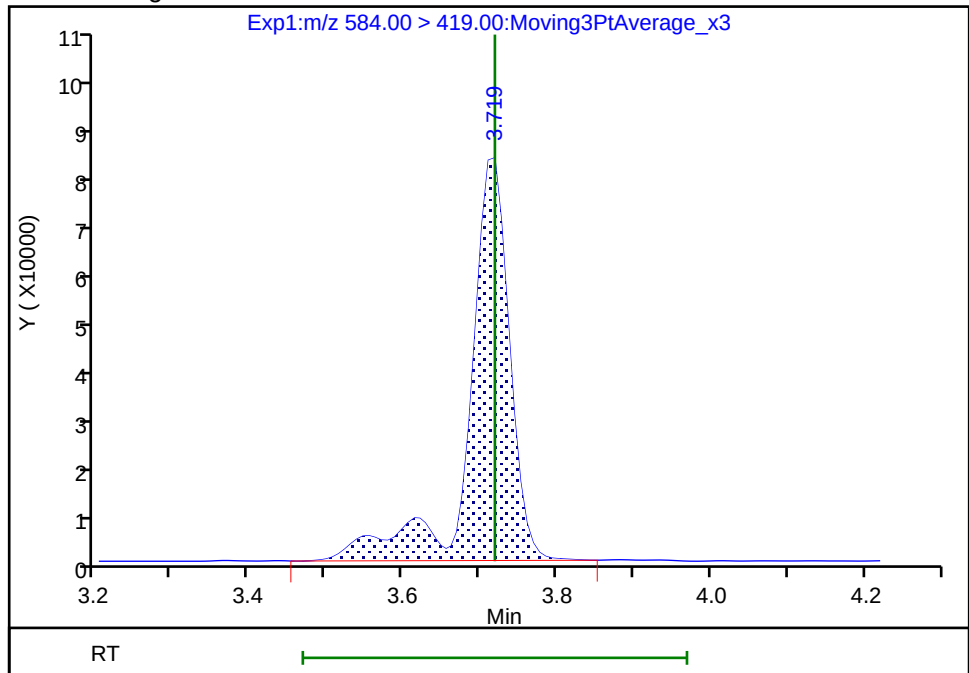
RT: 3.72
Area: 248644
Amount: 0.860137
Amount Units: ng/ml

Processing Integration Results



RT: 3.72
Area: 287669
Amount: 0.995137
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 10-Oct-2018 15:21:51

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: ICV 320-247100/13 Calibration Date: 09/21/2018 16:49

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.09.21LLBICAL_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	0.9167	0.9564		2.61	2.50	4.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.041		2.61	2.50	4.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	110.1		2.36	2.21	6.5	50.0
4:2 FTS	AveID	22.60	21.89		2.26	2.34	-3.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.8636		2.40	2.50	-4.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	53.32		2.59	2.35	10.2	50.0
HFPO-DA (GenX)	AveID	1.870	1.991		2.66	2.50	6.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.116		2.63	2.50	5.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.092		1.98	2.28	-13.2	40.0
DONA	AveID	2.645	2.645		2.36	2.36	0.0	50.0
6:2 FTS	AveID	2.182	2.145		2.34	2.38	-1.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.006		2.33	2.38	-1.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.087		2.59	2.50	3.6	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	0.9774		2.49	2.50	-0.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.093		2.39	2.31	3.2	40.0
F-53B Major	AveID	1.117	1.166		2.43	2.33	4.4	50.0
8:2 FTS	AveID	14.70	15.19		2.48	2.40	3.3	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6675		2.41	2.40	0.3	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.403		2.89	2.50	15.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.055		2.41	2.50	-3.8	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	1.088		2.83	2.50	13.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.9058		2.55	2.41	5.9	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	1.039		2.78	2.50	11.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.9178		2.54	2.50	1.8	40.0
F-53B Minor	AveID	1.316	1.301		2.33	2.36	-1.1	50.0
10:2 FTS	AveID	10.00	9.825		2.37	2.41	-1.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.015		2.53	2.50	1.3	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0910		2.30	2.42	-5.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.7474		2.38	2.50	-4.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1511		2.30	2.50	-8.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9467		2.69	2.50	7.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: ICV 320-247100/13 Calibration Date: 09/21/2018 16:49
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.09.21LLBICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6480	0.6786		2.62	2.50	4.7	50.0
13C4 PFBA	Ave	0.9210	0.8951		2.43	2.50	-2.8	50.0
13C5 PFPeA	Ave	0.8374	0.8295		2.48	2.50	-0.9	50.0
13C3 PFBS	Ave	0.0114	0.0108		2.21	2.33	-5.0	50.0
M2-4:2 FTS	Ave	0.1043	0.0971		2.17	2.34	-6.9	50.0
13C2 PFHxA	Ave	0.8875	0.8955		2.52	2.50	0.9	50.0
13C3 HFPO-DA	Ave	0.0924	0.0901		2.44	2.50	-2.4	50.0
13C4 PFHpA	Ave	1.057	1.086		2.57	2.50	2.7	50.0
18O2 PFHxS	Ave	0.6816	0.6896		2.39	2.37	1.2	50.0
M2-6:2 FTS	Ave	0.1097	0.1008		2.18	2.38	-8.1	40.0
13C8 PFOA	Ave	3075368	2981909		2.37	2.45	-3.0	50.0
13C4 PFOA	Ave	1.001	0.9657		2.41	2.50	-3.5	50.0
13C4 PFOS	Ave	0.7065	0.7066		2.39	2.39	0.0	50.0
13C5 PFNA	Ave	0.9108	0.9172		2.52	2.50	0.7	50.0
13C8 PFOS	Ave	540497	524990		2.32	2.39	-2.9	50.0
13C8 FOSA	Ave	0.3770	0.3503		2.32	2.50	-7.1	50.0
M2-8:2 FTS	Ave	0.0139	0.0133		2.28	2.40	-4.7	40.0
13C2 PFDA	Ave	0.9435	0.9500		2.52	2.50	0.7	50.0
d3-NMeFOSAA	Ave	0.4182	0.3992		2.39	2.50	-4.5	50.0
13C2 PFUnA	Ave	0.8011	0.7754		2.42	2.50	-3.2	50.0
d5-NEtFOSAA	Ave	0.3276	0.3234		2.47	2.50	-1.3	50.0
13C2 PFDoA	Ave	0.9529	0.9854		2.59	2.50	3.4	50.0
13C2 PFTeDA	Ave	0.7508	0.7772		2.59	2.50	3.5	50.0
13C2 PFHxDA	Ave	0.7497	0.7862		2.62	2.50	4.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_013.d
 Lims ID: ICV Full
 Client ID:
 Sample Type: ICV
 Inject. Date: 21-Sep-2018 16:49:16 ALS Bottle#: 17 Worklist Smp#: 13
 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\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 21-Sep-2018 17:02:09 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK005

First Level Reviewer: roycea

Date: 21-Sep-2018 17:01:06

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	1.494	0.0	0.540	7523646	2.43		97.2	9049	
2 Perfluorobutyric acid										
212.90 > 169.00	1.494	1.494	0.0	1.000	7195633	2.61			481	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.772	0.0	0.641	6972196	2.48		99.1	7197	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.000	7256020	2.61			608	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.814	0.0	0.656	84647	2.21		95.0	520	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.814	0.0	1.000	8865196	2.36			3884	
298.90 > 99.00	1.814	1.814	0.0	1.000	3016337		2.94(1.35-4.05)		2257	
D 60 M2-4:2FTS										
329.00 > 81.00	2.027	2.027	0.0	0.733	762179	2.17		93.1	1014	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	1862961	2.26			2984	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.068	0.0	0.748	7526596	2.52		101	16520	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.068	0.0	1.000	6500028	2.40			1466	
313.00 > 119.00	2.068	2.068	0.0	1.000	485053		13.40(6.96-20.87)		954	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.089	0.0	1.152	4561949	2.59			5074	
349.00 > 99.00	2.089	2.089	0.0	1.152	2071029		2.20(1.15-3.45)		3381	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	1508128	2.66			664	

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	2.160	2.160	0.0	0.781	757618	2.44		97.6	1528	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.400	2.400	0.0	1.000	10183550	2.63			1474	
363.00 > 169.00	2.400	2.400	0.0	1.000	2217663		4.59(2.17-6.52)		4415	
D 9 13C4-PFHpA										
367.00 > 322.00	2.400	2.400	0.0	0.867	9124655	2.57		103	7553	
D 11 18O2 PFHxS										
403.00 > 84.00	2.413	2.413	0.0	0.872	5483221	2.39		101	6598	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.413	2.413	0.0	1.000	5774067	1.98			2959	
399.00 > 99.00	2.413	2.413	0.0	1.000	1717208		3.36(1.90-5.70)		2316	
76 DONA										
377.00 > 251.00	2.439	2.439	0.0	0.778	14799002	2.36			21924	
377.00 > 85.00	2.439	2.439	0.0	0.778	7006125		2.11(1.13-3.39)		2679	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.734	0.0	1.000	1727203	2.34			2982	
D 12 M2-6:2FTS										
429.00 > 81.00	2.734	2.734	0.0	0.988	805108	2.18		91.9	1190	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.750	0.0		7298222	2.37		97.0	5725	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.766	0.0	1.000	8117085	2.41		96.5	8243	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.766	0.0	1.000	8823928	2.59			461	
413.00 > 169.00	2.766	2.766	0.0	1.000	3082976		2.86(1.36-4.08)		2763	
* 62 13C2-PFOA										
415.00 > 370.00	2.766	2.766	0.0		8405327	2.50			7770	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.766	2.766	0.0	0.882	5673436	2.33			4268	
449.00 > 99.00	2.766	2.766	0.0	0.882	1399236		4.05(1.84-5.53)		2727	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		1254725	2.32		97.1	2196	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.135	0.0	1.133	7709534	2.52		101	9548	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.135	3.135	0.0	1.000	6007865	2.39			4695	
499.00 > 99.00	3.135	3.135	0.0	1.000	1355865		4.43(2.04-6.12)		1856	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.135	0.0	1.133	5678061	2.39		100	3952	
20 Perfluorononanoic acid										
463.00 > 419.00	3.135	3.135	0.0	1.000	7535042	2.49			762	
463.00 > 169.00	3.135	3.135	0.0	1.000	1364915		5.52(2.68-8.03)		1840	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.069	6456316	2.43			3518	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.465	0.0	1.253	2944269	2.32		92.9	3775	

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	3.480	3.480	0.0	1.004	10019918	2.88		7698	
D 26 M2-8:2FTS	529.00 > 81.00	3.480	3.480	0.0	1.258	106677	2.28	95.3	576	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.480	3.480	0.0	1.000	1623687	2.48		2664	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.480	3.480	0.0	1.110	3805862	2.41		3127	
	549.00 > 99.00	3.480	3.480	0.0	1.110	606926	6.27(3.02-9.05)		2350	
D 23 13C2 PFDA	515.00 > 470.00	3.496	3.496	0.0	1.264	7984701	2.52	101	6921	
24 Perfluorodecanoic acid	513.00 > 469.00	3.496	3.496	0.0	1.000	8421577	2.41		1257	
	513.00 > 169.00	3.496	3.496	0.0	1.000	590590	14.26(7.12-21.35)		1107	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.641	3.641	0.0	1.316	3355466	2.39	95.5	3757	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.655	3.655	0.0	1.004	3649724	2.83		1298	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.807	3.807	0.0	1.215	5191611	2.55		3880	
	599.00 > 99.00	3.807	3.807	0.0	1.215	1158211	4.48(2.14-6.43)		3227	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.823	3.823	0.0	1.382	2718252	2.47	98.7	2698	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.823	3.823	0.0	1.000	2824650	2.78		3559	
D 30 13C2 PFUnA	565.00 > 520.00	3.823	3.823	0.0	1.382	6517464	2.42	96.8	9694	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.823	3.823	0.0	1.000	5981913	2.54		1097	
	563.00 > 169.00	3.823	3.823	0.0	1.000	551780	10.84(5.24-15.72)		1800	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.976	3.976	0.0	1.268	7277826	2.33		8267	
D 36 13C2 PFDoA	615.00 > 570.00	4.122	4.122	0.0	1.490	8282464	2.59	103	7055	
37 Perfluorododecanoic acid	613.00 > 569.00	4.122	4.122	0.0	1.000	8402623	2.53		1666	
	613.00 > 169.00	4.122	4.122	0.0	1.000	944289	8.90(4.68-14.05)		2108	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.122	4.122	0.0	1.184	1054681	2.37		1923	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.357	4.357	0.0	1.390	523083	2.30		883	
	699.00 > 99.00	4.357	4.357	0.0	1.390	951253	0.55(0.28-0.83)		2546	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.388	4.388	0.0	1.064	6190673	2.38		1991	
	663.00 > 169.00	4.388	4.388	0.0	1.064	1043313	5.93(3.09-9.27)		2229	
D 43 13C2-PFTeDA	715.00 > 670.00	4.627	4.627	0.0	1.673	6532802	2.59	104	6866	

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	4.627	4.627	0.0	1.000	987111	2.30			2734	
713.00 > 219.00	4.627	4.627	0.0	1.000	693421		1.42(0.70-2.09)		2338	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.041	5.041	0.0	1.822	6608456	2.62		105	13631	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.041	5.041	0.0	1.000	6256203	2.69			1280	
813.00 > 169.00	5.041	5.041	0.0	1.000	1136176		5.51(2.77-8.32)		2657	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.406	5.406	0.0	1.072	4484686	2.62			1271	
913.00 > 169.00	5.406	5.406	0.0	1.072	834796		5.37(2.55-7.64)		2596	

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_013.d

Injection Date: 21-Sep-2018 16:49:16

Instrument ID: A9

Lims ID: ICV Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 17

Worklist Smp#: 13

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

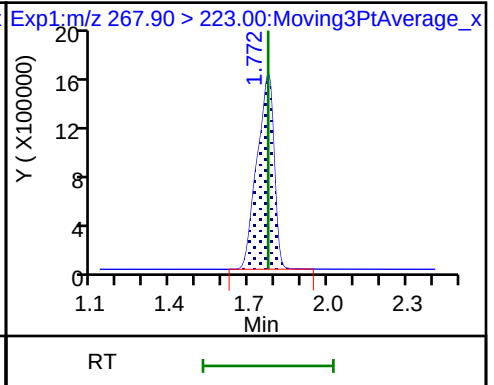
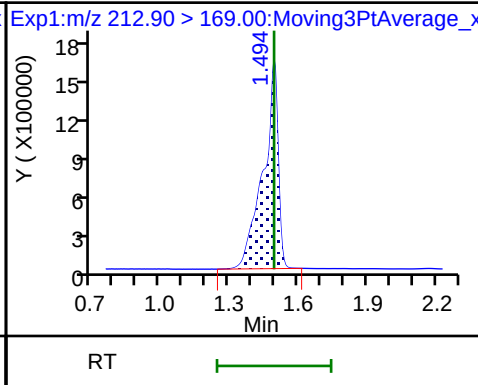
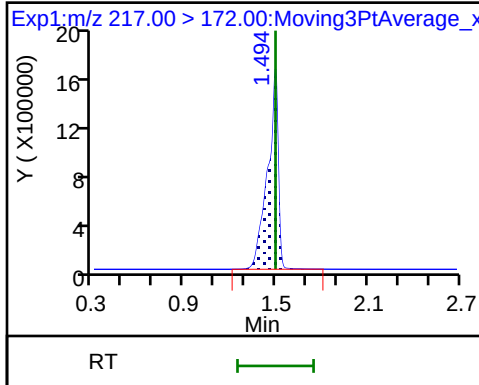
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

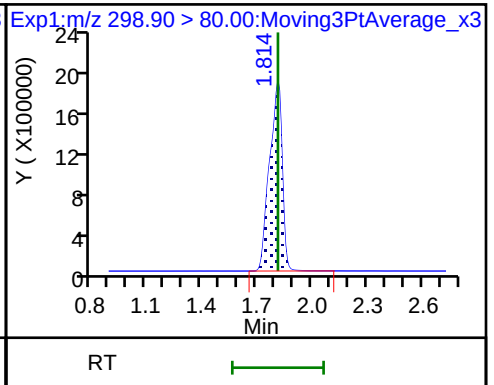
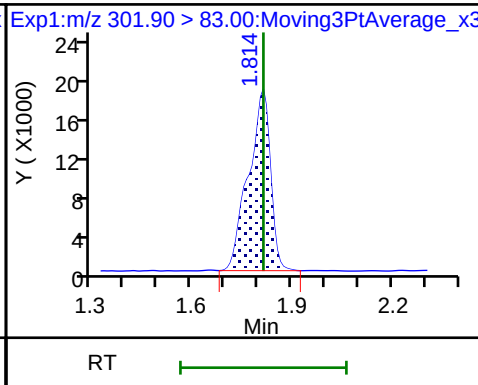
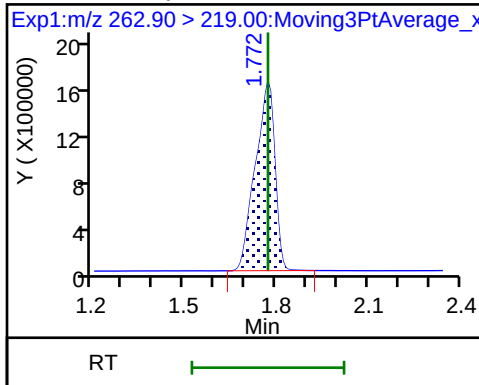
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

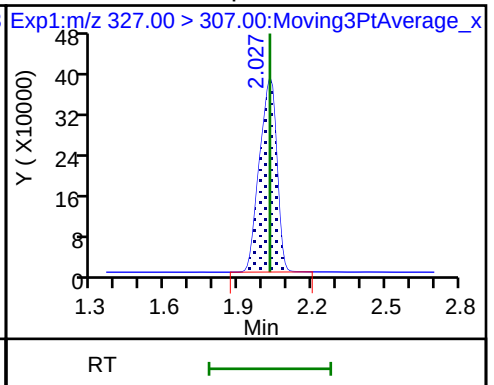
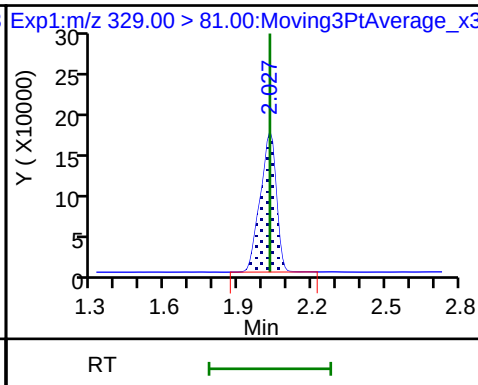
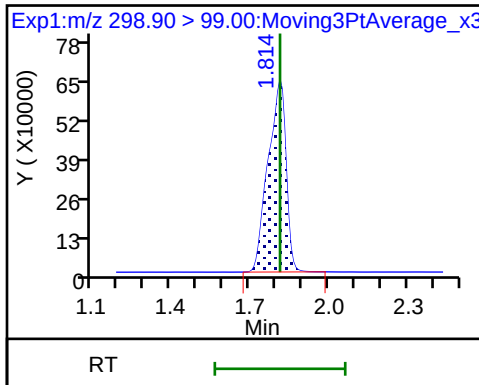
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

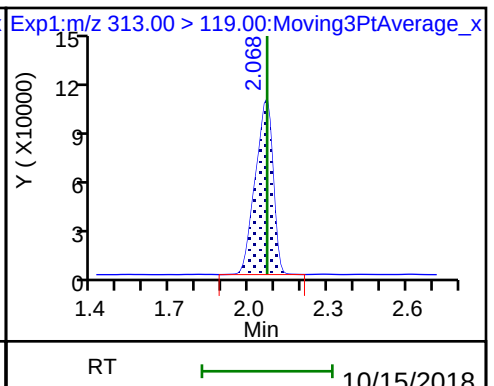
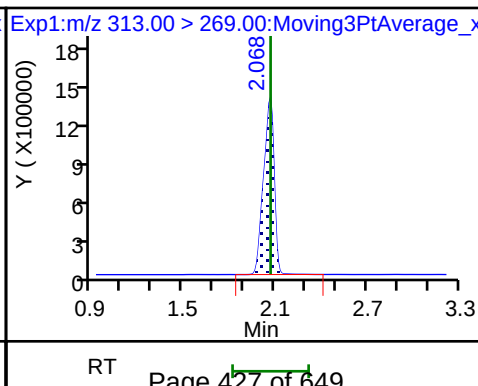
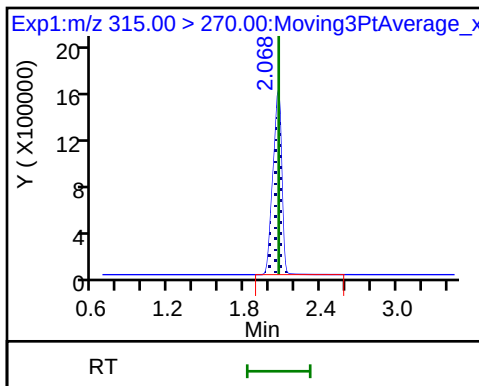
61 1H,1H,2H,2H-perfluorohexanesulfoni

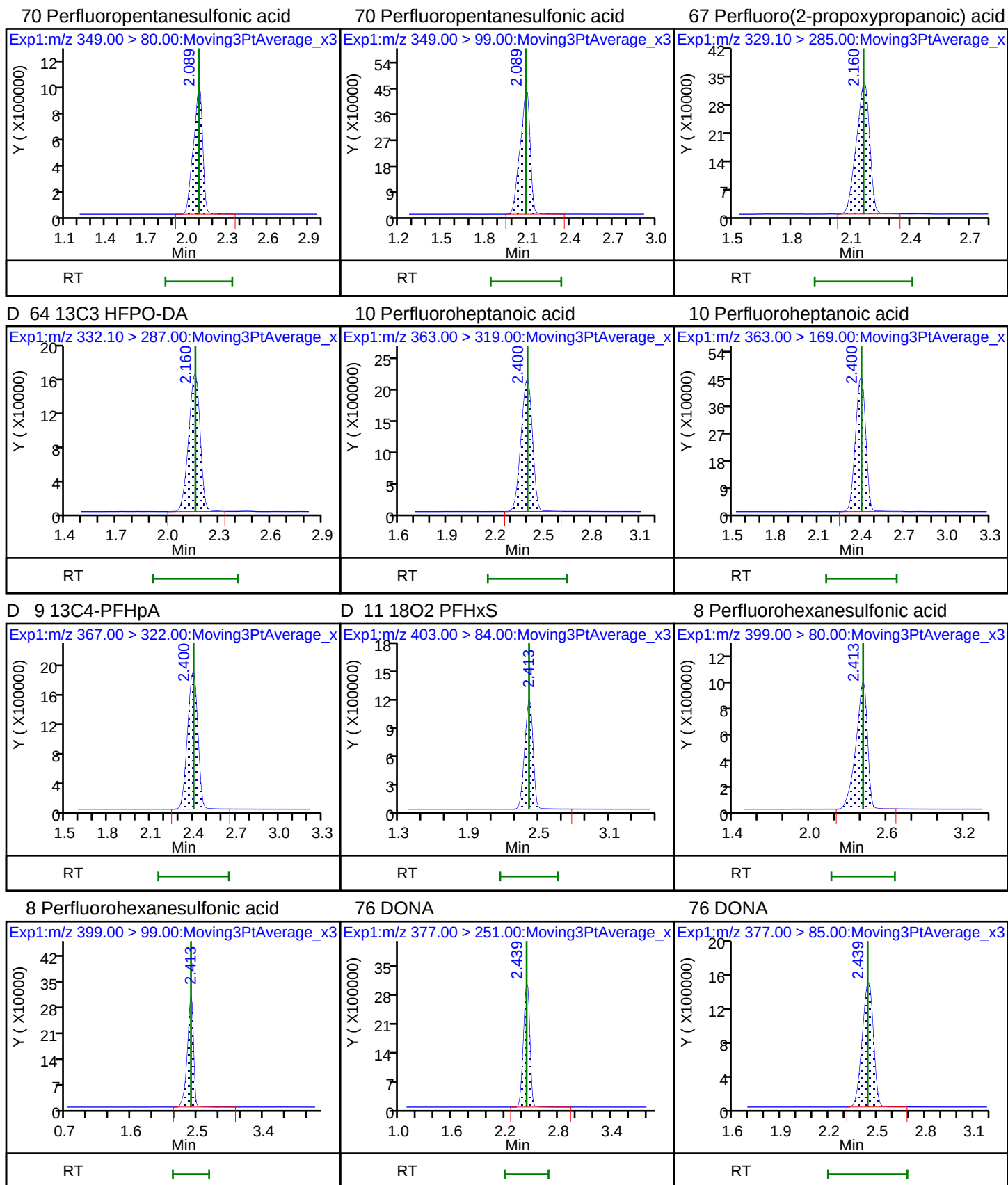


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

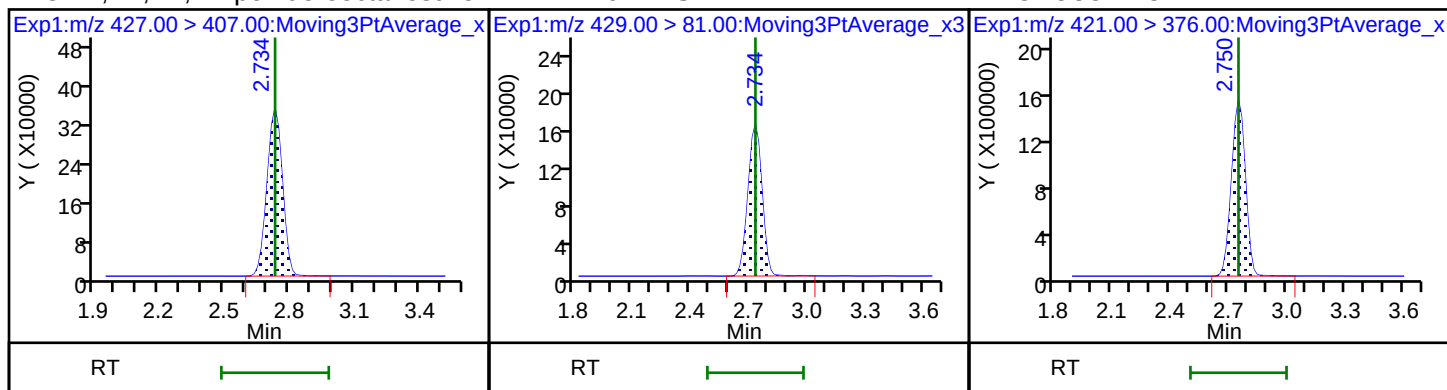
6 Perfluorohexanoic acid





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

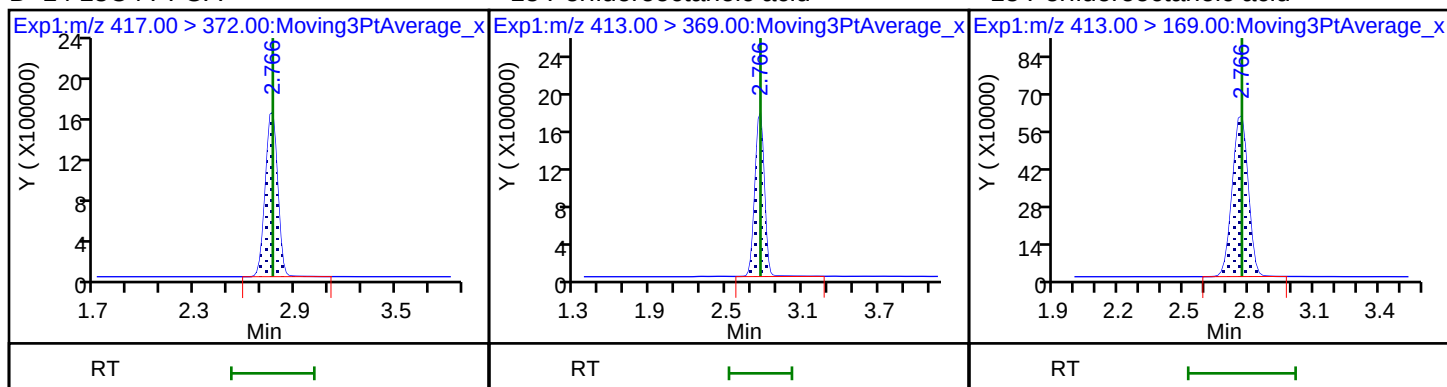
D 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

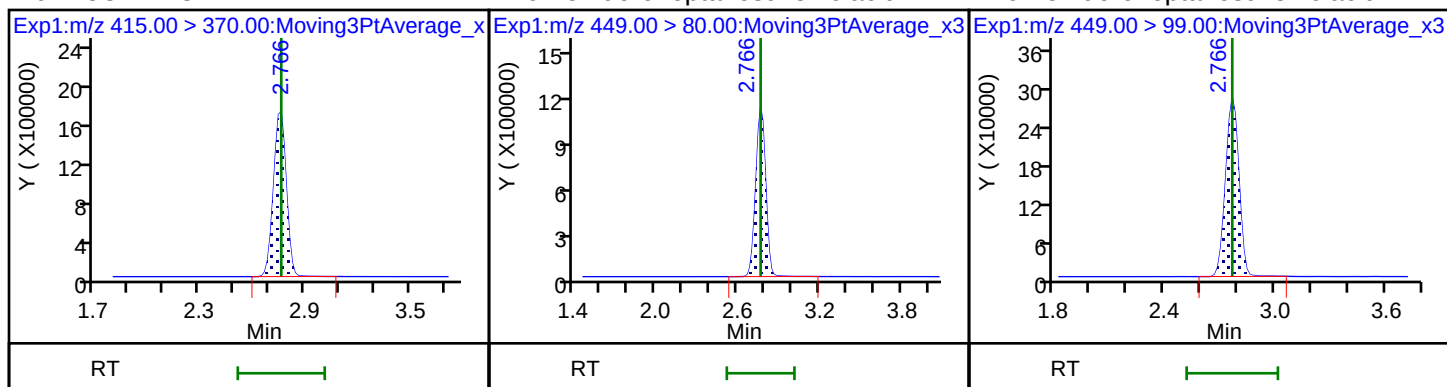
15 Perfluorooctanoic acid



* 62 13C2-PFOA

16 Perfluoroheptanesulfonic acid

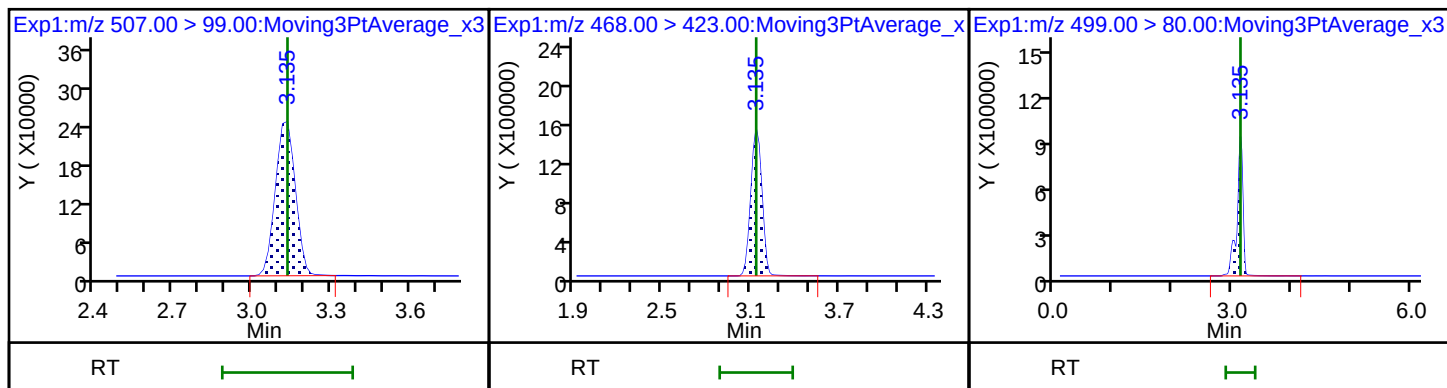
16 Perfluoroheptanesulfonic acid

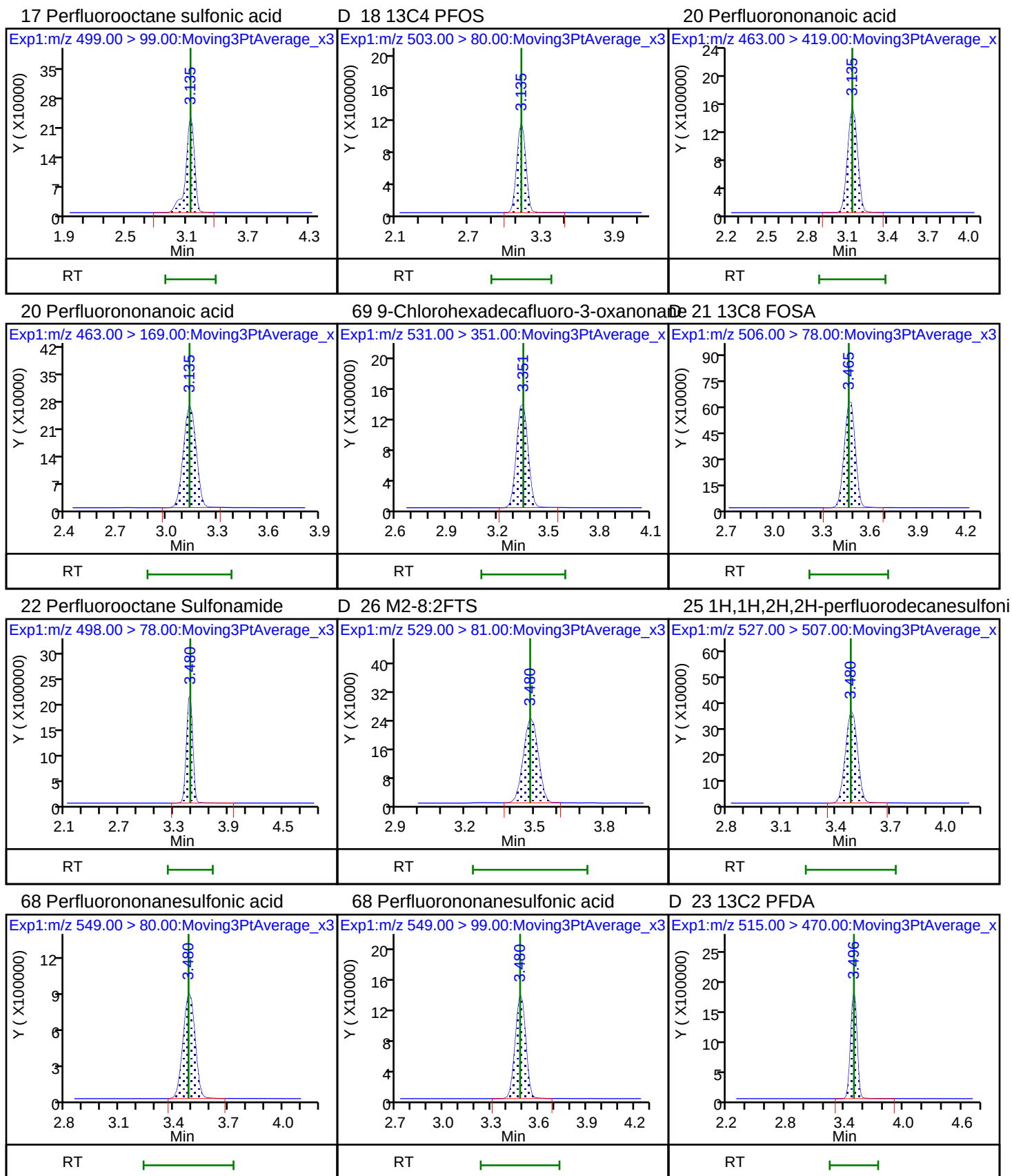


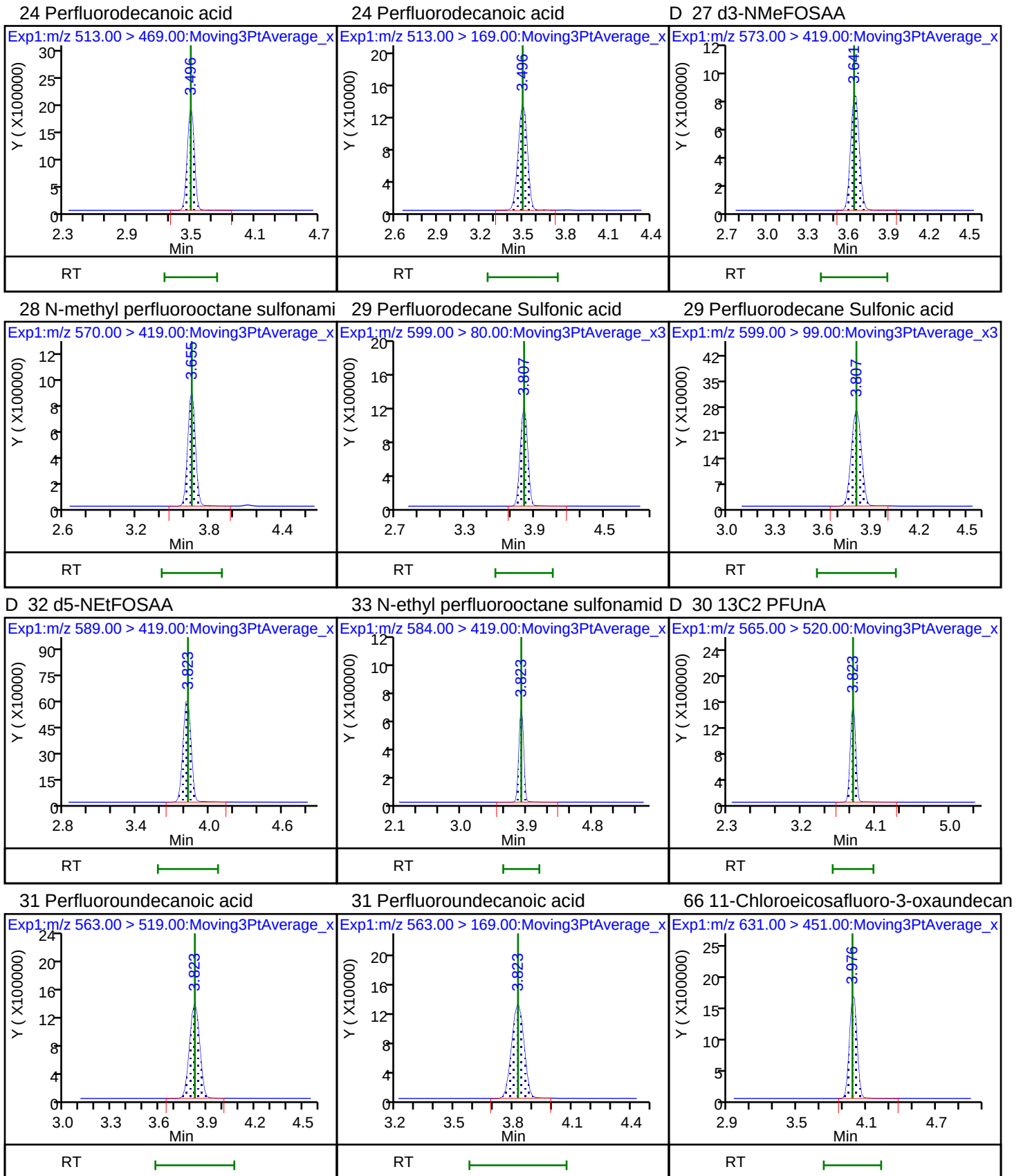
D 72 13C8 PFOS

D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid



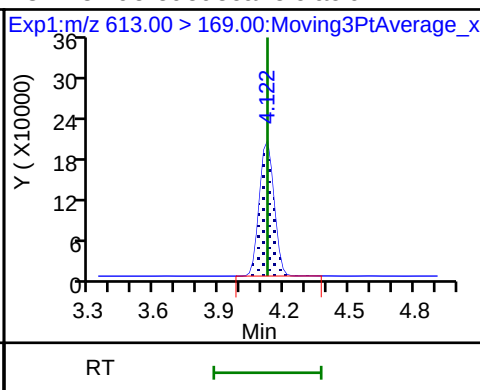
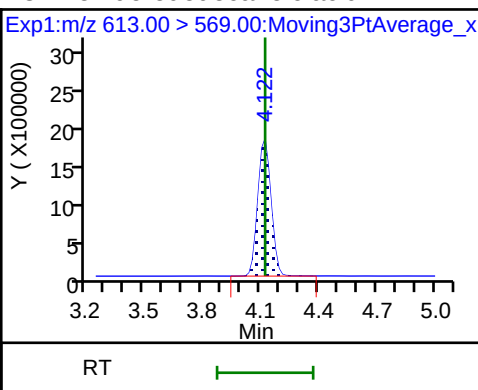
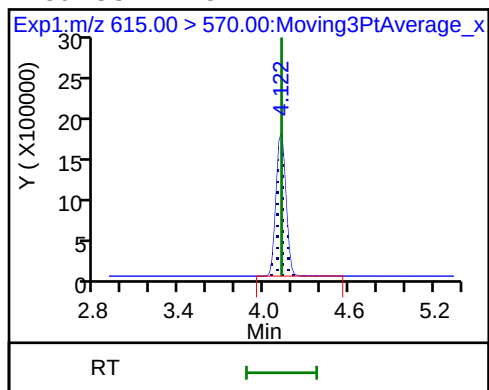




D 36 13C2 PFDaA

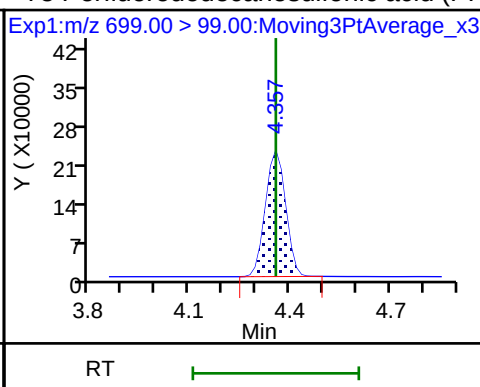
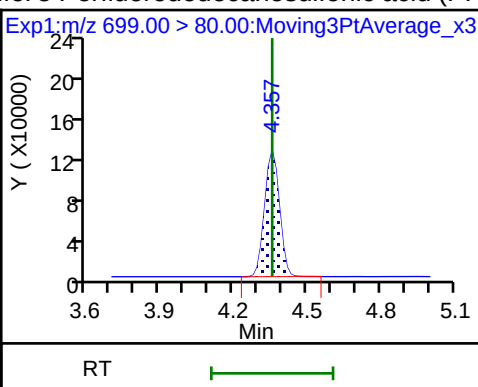
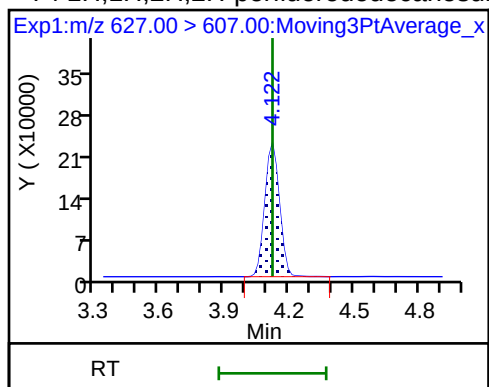
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

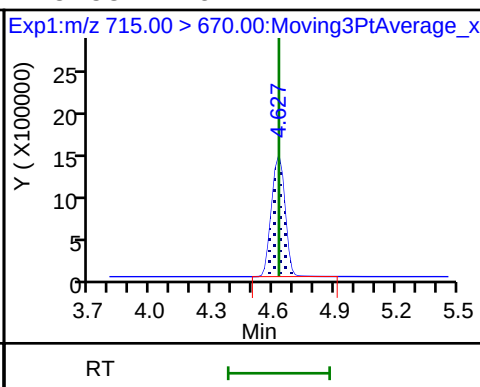
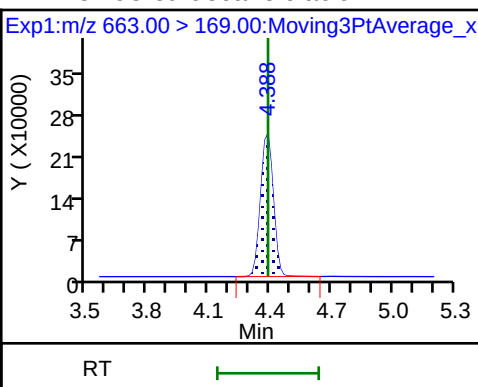
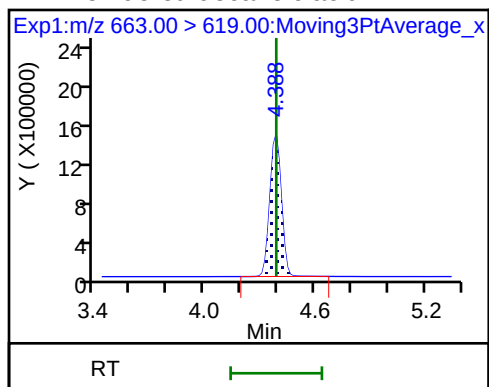
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

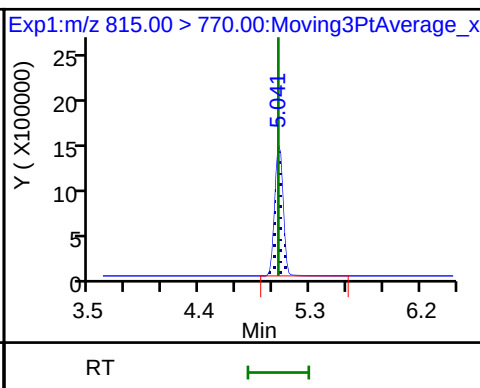
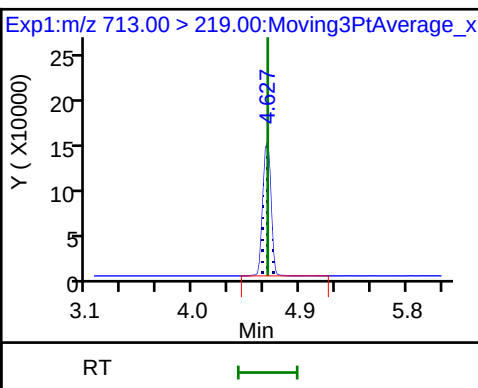
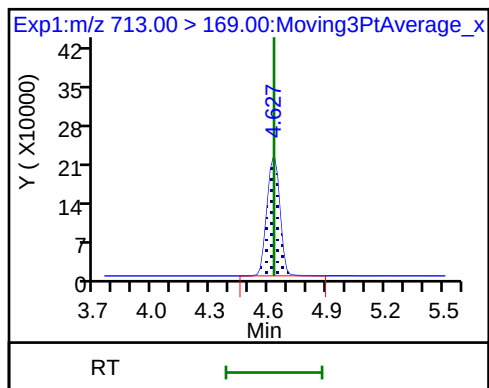
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

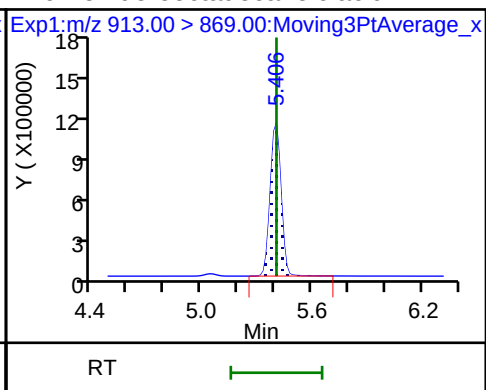
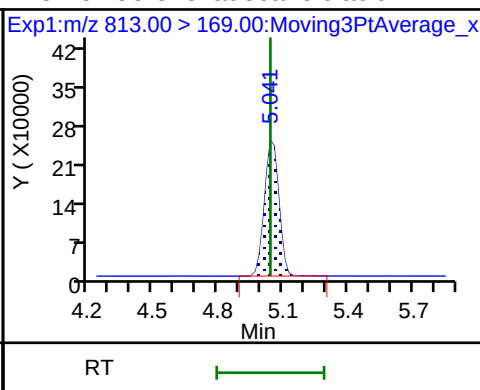
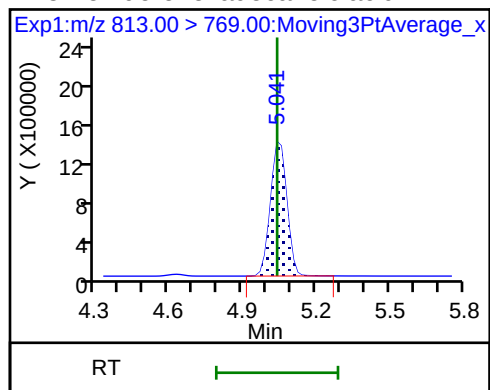
D 44 13C2-PFHxDA



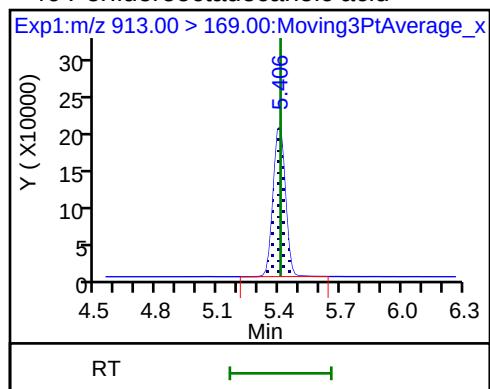
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: CCVL 320-249188/2 Calibration Date: 10/02/2018 15:24

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.10.02LLA_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	0.9167	0.9010		0.0491	0.0500	-1.7	50.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.049		0.0527	0.0500	5.3	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	111.7		0.0478	0.0442	8.2	50.0
4:2 FTS	AveID	22.60	15.24		0.500	0.0467	-32.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.9174		0.0510	0.0500	2.0	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	52.26		0.0506	0.0469	8.0	50.0
HFPO-DA (GenX)	AveID	1.870	1.648		0.0441	0.0500	-11.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.125		0.0530	0.0500	6.0	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.254		0.0453	0.0455	-0.4	50.0
DONA	AveID	2.645	2.830		0.0504	0.0471	7.0	50.0
6:2 FTS	AveID	2.182	2.205		0.500	0.0474	1.1	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.093		0.0508	0.0476	6.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.115		0.0532	0.0501	6.3	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	1.060		0.0540	0.0500	7.9	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.041		0.0456	0.0464	-1.7	50.0
F-53B Major	AveID	1.117	1.254		0.0523	0.0466	12.3	50.0
8:2 FTS	AveID	14.70	12.66		0.500	0.0479	-13.9	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.168		0.0533	0.0500	6.6	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6115		0.0441	0.0480	-8.1	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.371		0.0572	0.0500	14.3	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	1.033		0.500	0.0500	7.6	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.8540		0.0481	0.0482	-0.2	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9188		0.0492	0.0500	-1.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.9770		0.0542	0.0500	8.3	50.0
F-53B Minor	AveID	1.316	1.403		0.0502	0.0471	6.7	50.0
10:2 FTS	AveID	10.00	13.39		0.0646	0.0482	34.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.075		0.0537	0.0500	7.4	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0753		0.0380	0.0484	-21.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.8813		0.0562	0.0500	12.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1612		0.0491	0.0500	-1.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.416		0.0536	0.0500	7.3	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-249188/2 Calibration Date: 10/02/2018 15:24
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.10.02LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6480	0.5938		0.0458	0.0500	-8.4	50.0
13C4 PFBA	Ave	0.9210	0.8496		2.31	2.50	-7.8	50.0
13C5 PFPeA	Ave	0.8374	0.8106		2.42	2.50	-3.2	50.0
13C3 PFBS	Ave	0.0114	0.0103		2.09	2.33	-10.0	50.0
M2-4:2 FTS	Ave	0.1043	0.0671		1.50	2.34	-35.7	50.0
13C2 PFHxA	Ave	0.8875	0.8477		2.39	2.50	-4.5	50.0
13C3 HFPO-DA	Ave	0.0924	0.1079		2.92	2.50	16.8	50.0
13C4 PFHpA	Ave	1.057	1.007		2.38	2.50	-4.7	50.0
18O2 PFHxS	Ave	0.6816	0.6378		2.21	2.37	-6.4	50.0
M2-6:2 FTS	Ave	0.1097	0.0822		1.78	2.38	-25.0	50.0
13C8 PFOA	Ave	3075368	2746230		2.19	2.45	-10.7	50.0
13C4 PFOA	Ave	1.001	0.9658		2.41	2.50	-3.5	50.0
13C4 PFOS	Ave	0.7065	0.6417		2.17	2.39	-9.2	50.0
13C5 PFNA	Ave	0.9108	0.8692		2.39	2.50	-4.6	50.0
13C8 PFOS	Ave	540497	464830		2.06	2.39	-14.0	50.0
13C2 PFDA	Ave	0.9435	0.9091		2.41	2.50	-3.6	50.0
13C8 FOSA	Ave	0.3770	0.3289		2.18	2.50	-12.8	50.0
M2-8:2 FTS	Ave	0.0139	0.0106		1.82	2.40	-23.9	50.0
d3-NMeFOSAA	Ave	0.4182	0.3108		1.86	2.50	-25.7	50.0
13C2 PFUnA	Ave	0.8011	0.7223		2.25	2.50	-9.8	50.0
d5-NEtFOSAA	Ave	0.3276	0.2699		2.06	2.50	-17.6	50.0
13C2 PFDoA	Ave	0.9529	0.9041		2.37	2.50	-5.1	50.0
13C2 PFTeDA	Ave	0.7508	0.7440		2.48	2.50	-0.9	50.0
13C2 PFHxDA	Ave	0.7497	0.7318		2.44	2.50	-2.4	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65131.b\2018.10.02LLA_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 02-Oct-2018 15:24:07 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\20181002-65131.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 14:26:49 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: mongkols

Date: 03-Oct-2018 14:26:49

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	1.483	0.006	0.544	6959462	2.31		92.2	1599	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.489	1.489	0.0	1.000	125413	0.0491		98.3	7.1	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.764	0.0	0.645	6639563	2.42		96.8	10537	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.764	0.0	1.000	139277	0.0527		105	11.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.806	1.805	0.001	0.660	78138	2.09		90.0	458	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.806	1.805	0.001	1.000	165999	0.0478		108	155	
298.90 > 99.00	1.806	1.805	0.001	1.000	60013		2.77(1.35-4.05)		35.4	
D 60 M2-4:2FTS										
329.00 > 81.00	2.017	2.017	0.0	0.738	512974	1.50		64.3	522	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.017	2.017	0.0	1.117	23916	0.0315		67.4	180	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.048	0.001	0.749	6943556	2.39		95.5	8375	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	127394	0.0510		102	17.0	
313.00 > 119.00	2.048	2.048	0.0	1.000	10019		12.72(6.96-20.87)		20.2	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.079	2.078	0.001	1.151	82365	0.0506		108	211	
349.00 > 99.00	2.079	2.078	0.001	1.151	36215		2.27(1.15-3.45)		37.7	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.786	883626	2.92		117	1724	

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	2.140	2.150	-0.010	0.995	29132	0.0441		88.2	18.0	
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	8252474	2.38		95.3	8368	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.373	2.373	0.0	1.000	185725	0.0530		106	32.9	
363.00 > 169.00	2.373	2.373	0.0	1.000	38584		4.81(2.17-6.52)		60.6	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.386	0.014	1.000	119228	0.0453		99.6	201	
399.00 > 99.00	2.400	2.386	0.014	1.000	34474		3.46(1.90-5.70)		38.1	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.399	0.001	0.878	4942551	2.21		93.6	5635	
76 DONA										
377.00 > 251.00	2.426	2.413	0.013	0.783	280237	0.0504		107	731	
377.00 > 85.00	2.413	2.413	0.0	0.779	112308		2.50(1.13-3.39)		62.7	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	639763	1.78		75.0	1490	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.001	1.000	28154	0.0479		101	18.3	
D 73 13C8 PFOA										
421.00 > 376.00	2.719	2.718	0.001		6721398	2.19		89.3	8904	
D 14 13C4 PFOA										
417.00 > 372.00	2.735	2.734	0.001	1.000	7911060	2.41		96.5	9987	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.735	2.734	0.001	1.000	176572	0.0532		106	13.6	
413.00 > 169.00	2.735	2.734	0.001	1.000	64474		2.74(1.36-4.08)		77.8	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.735	2.734	0.001	0.883	109424	0.0508		107	240	
449.00 > 99.00	2.735	2.734	0.001	0.883	29161		3.75(1.84-5.53)		89.9	
* 62 13C2-PFOA										
415.00 > 370.00	2.735	2.734	0.001		8191472	2.50			7940	
D 19 13C5 PFNA										
468.00 > 423.00	3.099	3.098	0.001	1.133	7119581	2.39		95.4	5891	
D 72 13C8 PFOS										
507.00 > 99.00	3.099	3.098	0.001		1110943	2.06		86.0	3540	
D 18 13C4 PFOS										
503.00 > 80.00	3.099	3.098	0.001	1.133	5025298	2.17		90.8	3696	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.099	3.098	0.001	1.000	101554	0.0456		98.3	83.5	
499.00 > 99.00	3.099	3.098	0.001	1.000	24661		4.12(2.04-6.12)		72.9	
20 Perfluorononanoic acid										
463.00 > 419.00	3.099	3.098	0.001	1.000	150969	0.0540		108	19.4	
463.00 > 169.00	3.099	3.098	0.001	1.000	29058		5.20(2.68-8.03)		75.9	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.303	3.303	0.0	1.066	122864	0.0523		112	197	
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	83000	1.82		76.1	334	

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	3.449	3.448	0.001	1.261	7446698	2.41		96.4	10482	
D 21 13C8 FOSA										
506.00 > 78.00	3.449	3.448	0.001	1.261	2693968	2.18		87.2	3127	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.449	3.448	0.001	1.000	21008	0.0412		86.1	119	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.449	3.448	0.001	1.113	61720	0.0441		91.9	305	
549.00 > 99.00	3.449	3.448	0.001	1.113	12330		5.01(3.02-9.05)		81.3	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.449	3.465	-0.016	1.000	174005	0.0533		107	35.9	
513.00 > 169.00	3.449	3.465	-0.016	1.000	10230		17.01(7.12-21.35)		21.4	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.005	181639	0.0572		114	236	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.599	0.014	1.321	2545866	1.86		74.3	4233	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.000	52598	0.0538		108	16.9	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.760	3.760	0.0	1.213	86554	0.0481		99.8	119	
599.00 > 99.00	3.760	3.760	0.0	1.213	17184		5.04(2.14-6.43)		116	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.776	0.0	1.381	2210487	2.06		82.4	2301	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.776	0.0	1.381	5916497	2.25		90.2	7058	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.776	3.776	0.0	1.000	115612	0.0542		108	33.5	
563.00 > 169.00	3.776	3.776	0.0	1.000	7709		15.00(5.24-15.72)		47.8	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	40619	0.0492		98.3	76.7	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.944	0.0	1.273	138984	0.0502		107	454	
35 MeFOSA										
512.00 > 169.00	3.944	3.944	0.0		29781	NC			113	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.073	0.0	1.489	7405920	2.37		94.9	8366	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.073	0.0	1.000	159285	0.0537		107	51.6	
613.00 > 169.00	4.073	4.073	0.0	1.000	16504		9.65(4.68-14.05)		41.7	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.073	4.073	0.0	1.181	22368	0.0646		134	73.0	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.139	0.0		36548	NC			136	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.311	4.311	0.0	1.391	7660	0.0380		78.6	22.7	
699.00 > 99.00	4.311	4.311	0.0	1.391	17639		0.43(0.28-0.83)		68.2	

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	4.342	4.326	0.016	1.066	130536	0.0562		112	74.4	
663.00 > 169.00	4.342	4.326	0.016	1.066	21108		6.18(3.09-9.27)		52.8	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.573	0.0	1.672	6094199	2.48		99.1	5121	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.573	4.573	0.0	1.000	19653	0.0491		98.2	102	
713.00 > 219.00	4.573	4.573	0.0	1.000	12835		1.53(0.70-2.09)		63.7	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.989	0.001	1.825	5994633	2.44		97.6	8350	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	169785	0.0536		107	122	
813.00 > 169.00	4.990	4.989	0.001	1.000	26718		6.35(2.77-8.32)		85.8	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.335	5.319	0.016	1.069	71187	0.0458		91.6	31.8	
913.00 > 169.00	5.335	5.319	0.016	1.069	13383		5.32(2.55-7.64)		107	

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\20181002-65131.b\2018.10.02LLA_005.d

Injection Date: 02-Oct-2018 15:24:07

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

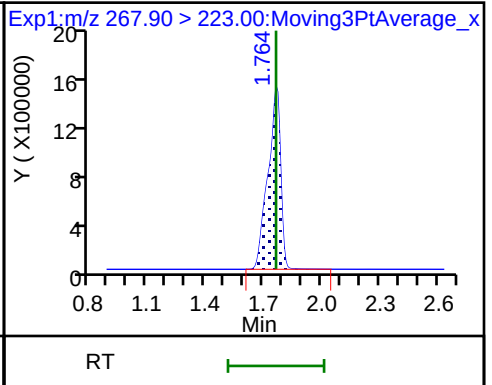
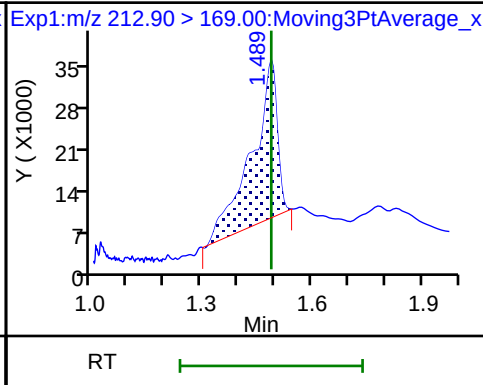
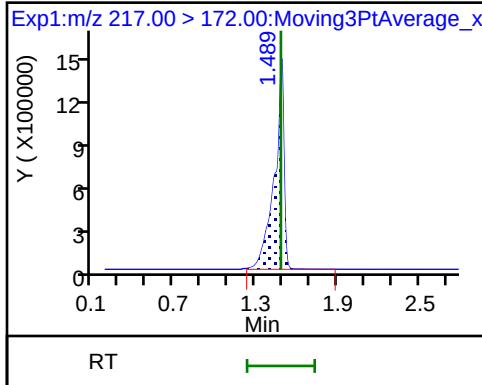
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

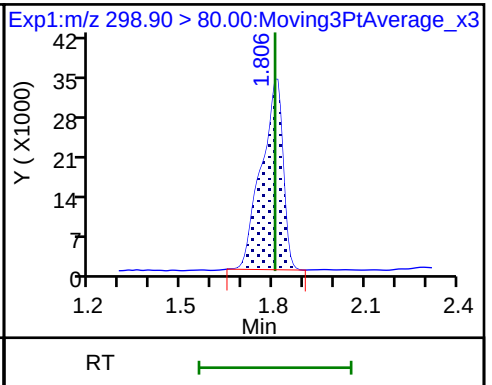
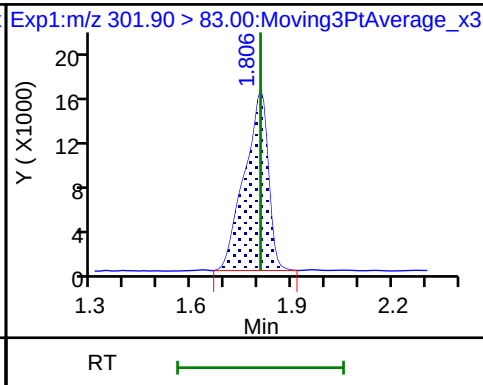
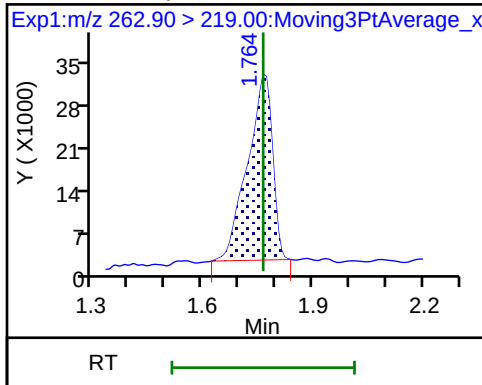
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

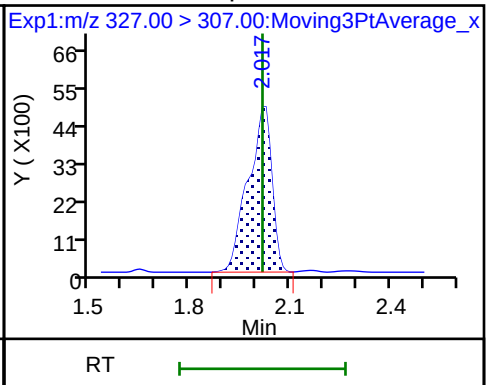
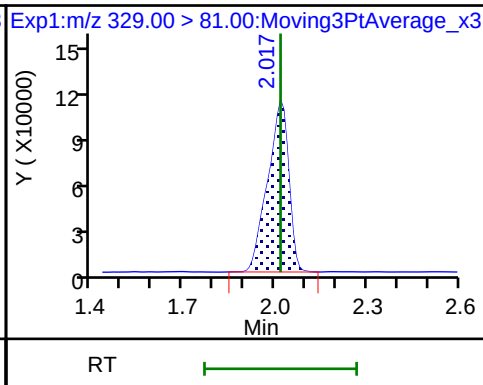
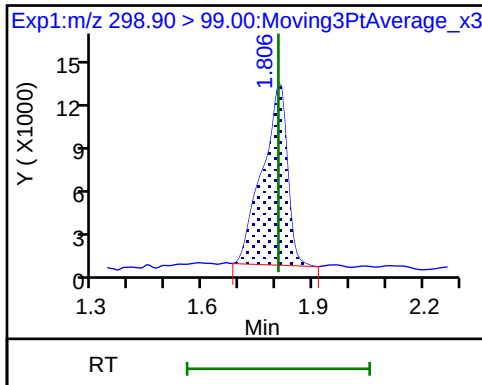
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

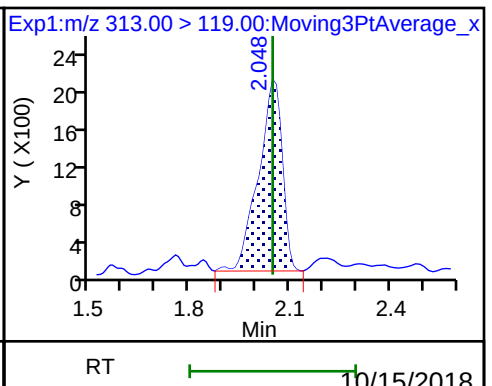
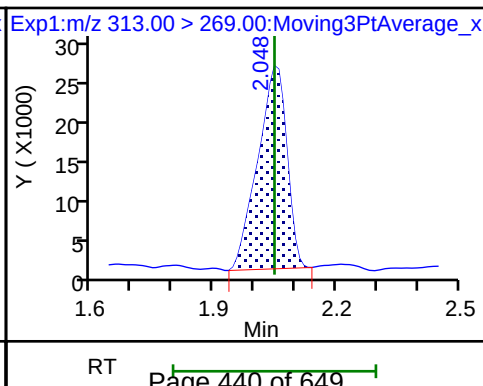
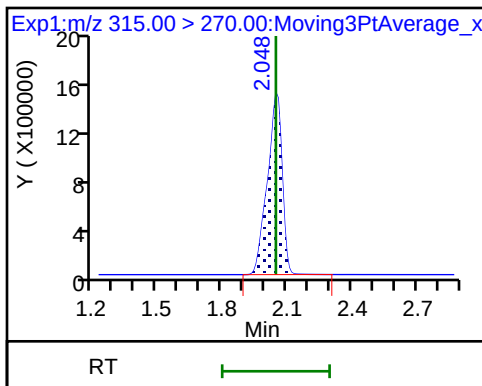
61 1H,1H,2H,2H-perfluorohexanesulfoni

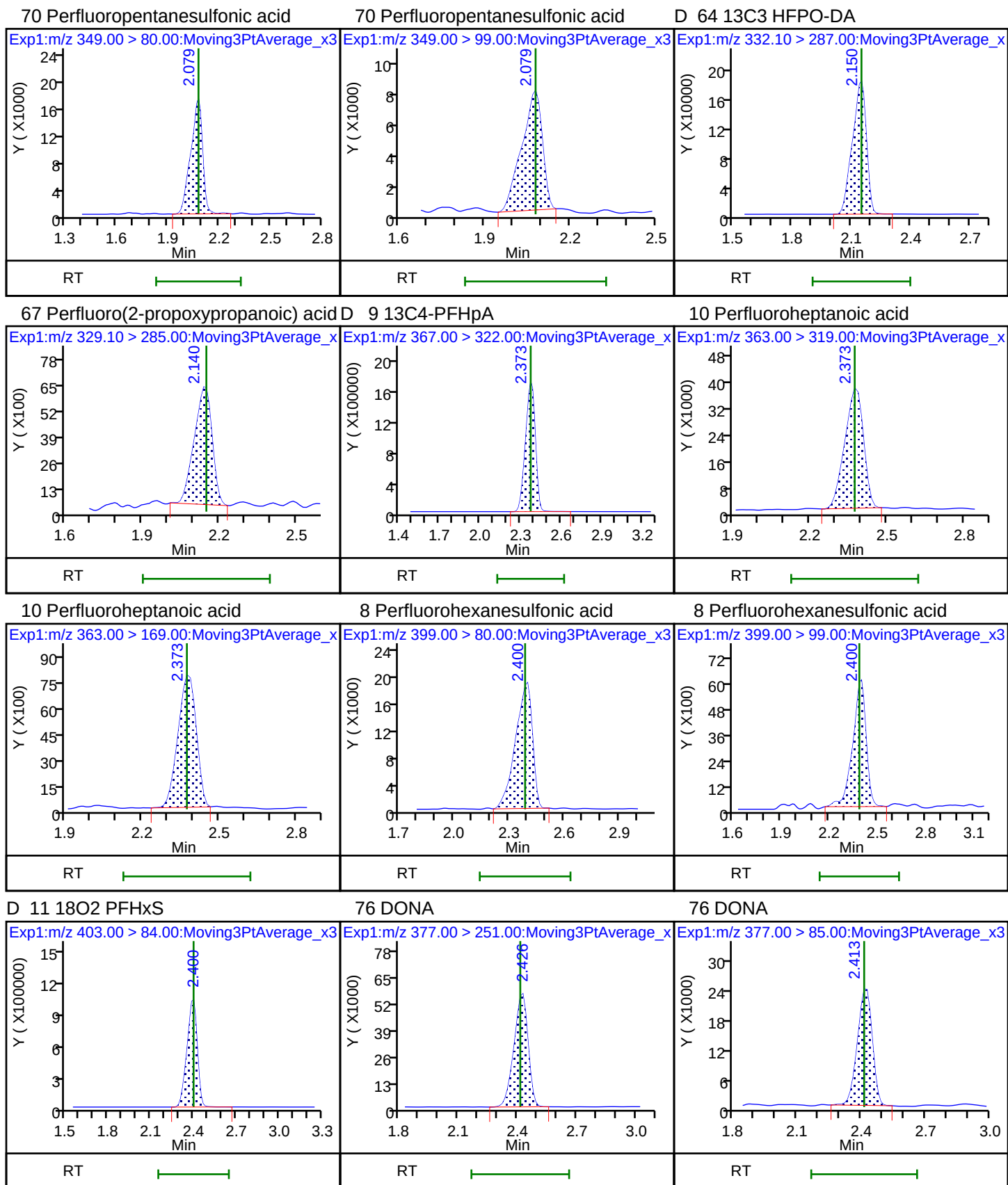


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

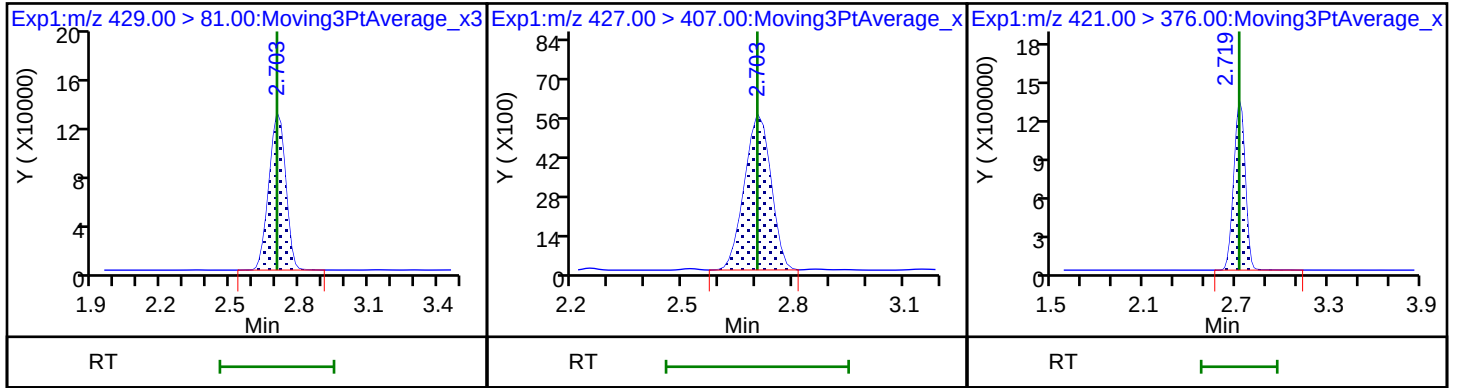
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

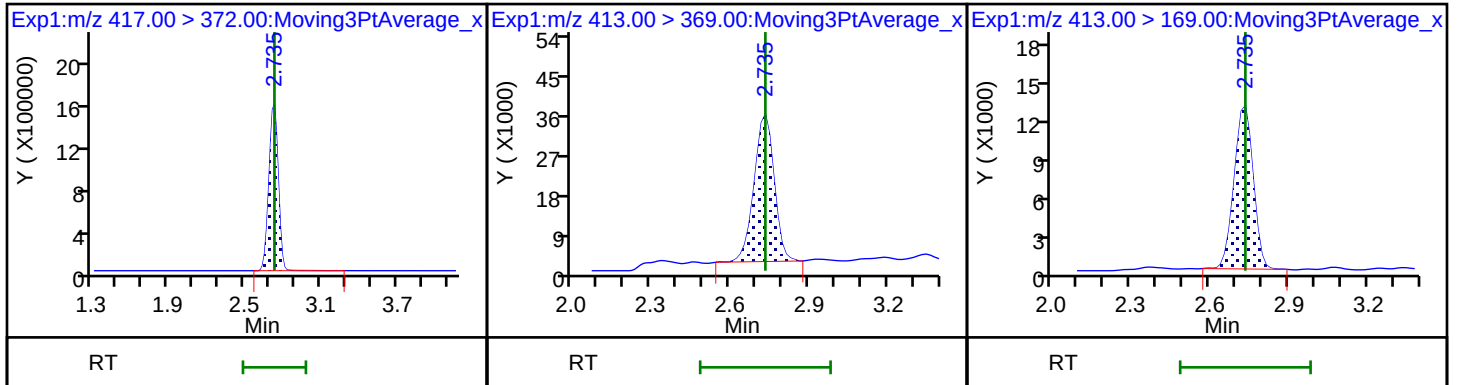
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

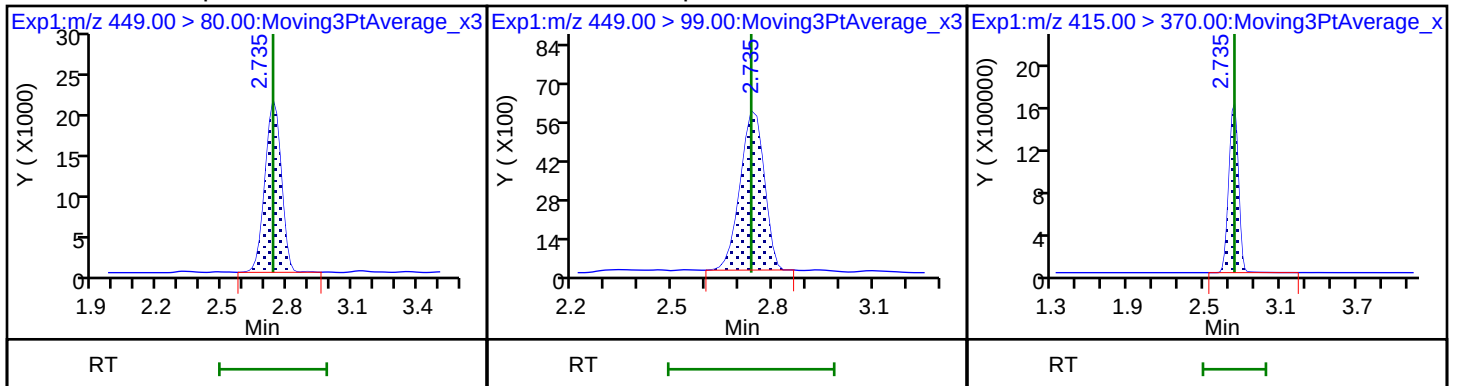
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

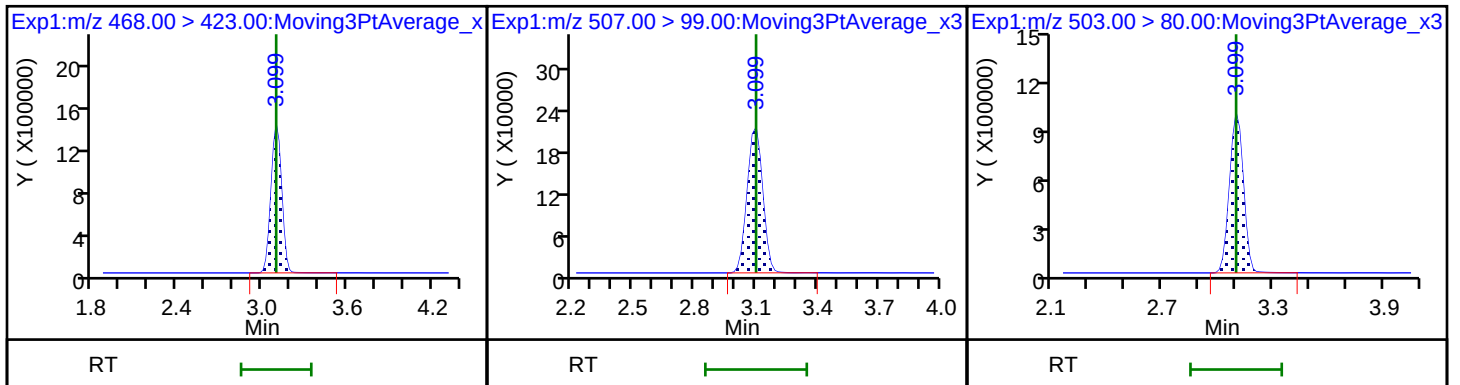
* 62 13C2-PFOA

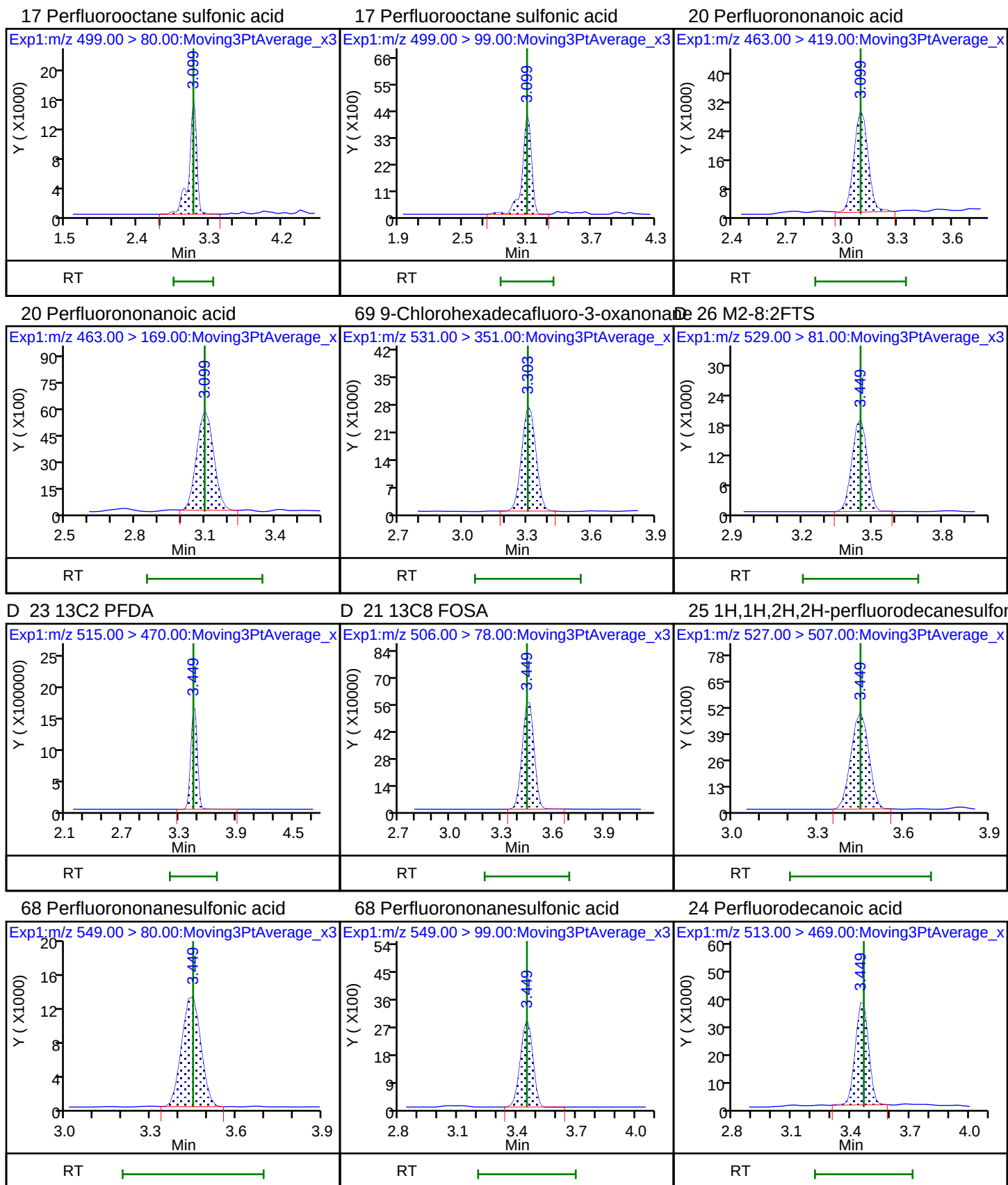


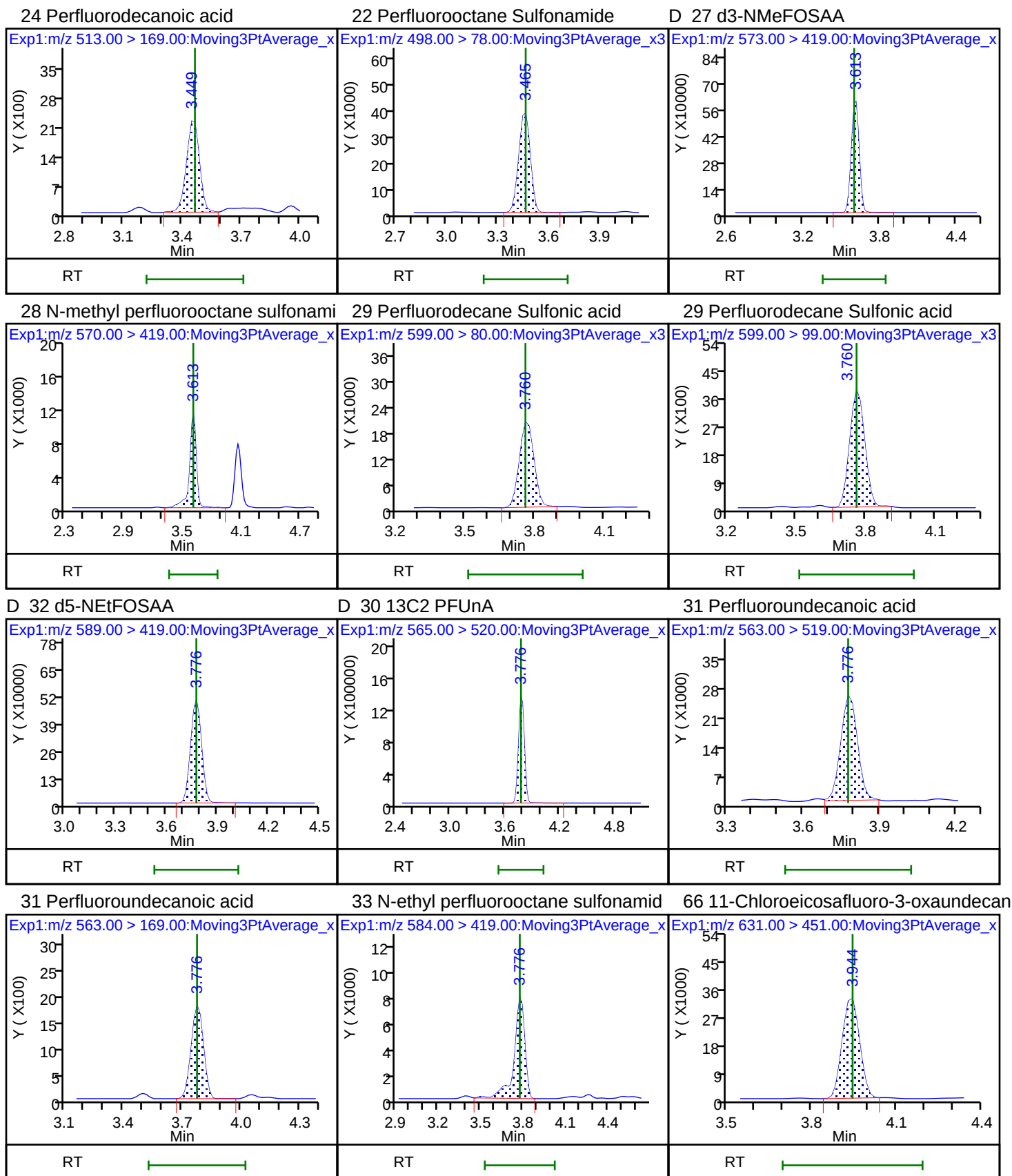
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D 72 13C8 PFOS

D 18 13C4 PFOS



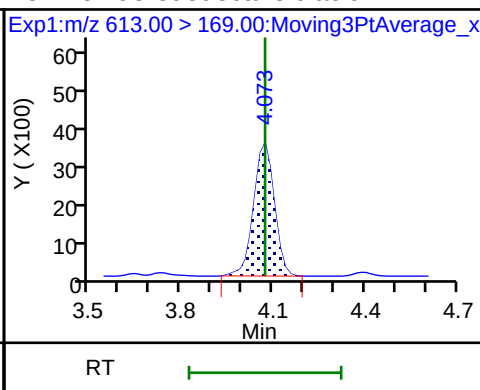
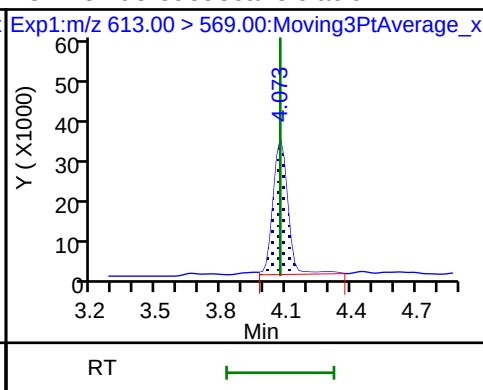
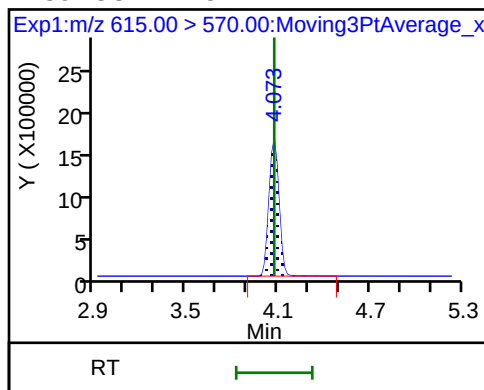




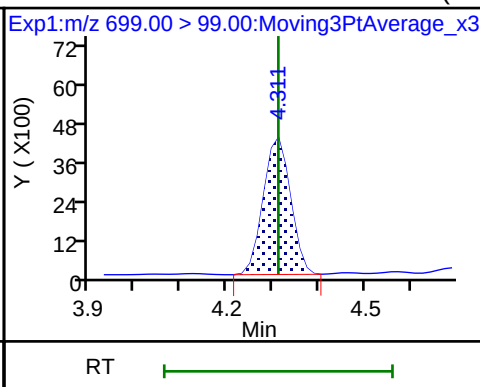
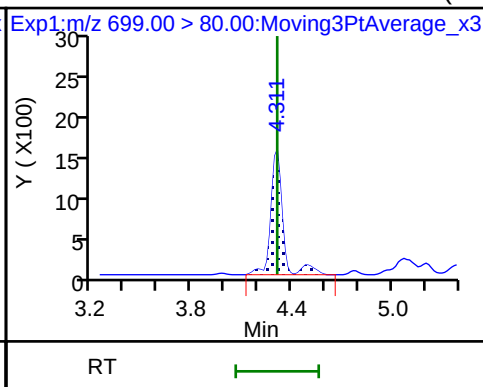
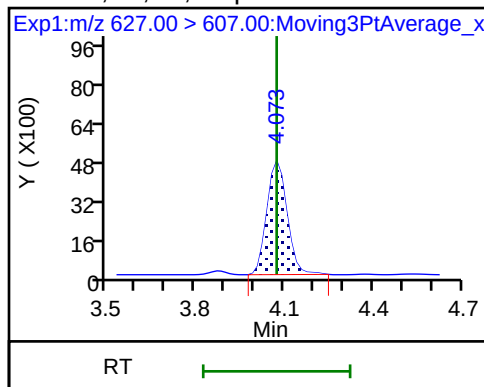
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



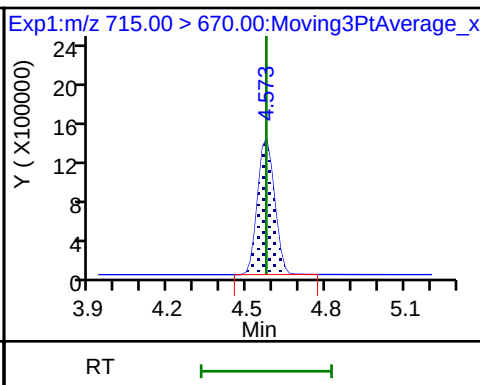
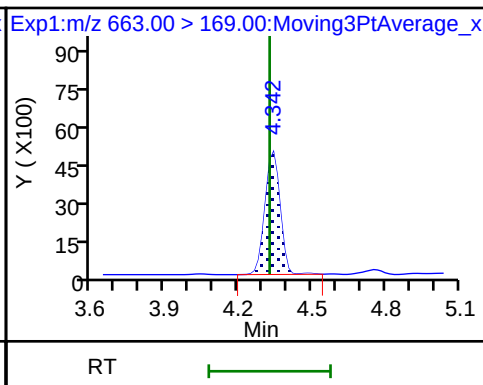
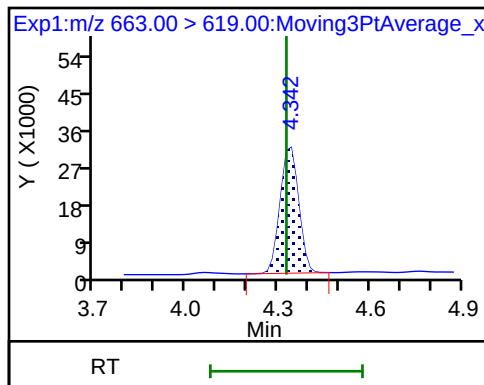
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

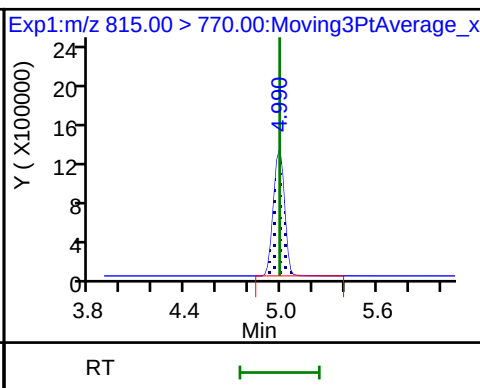
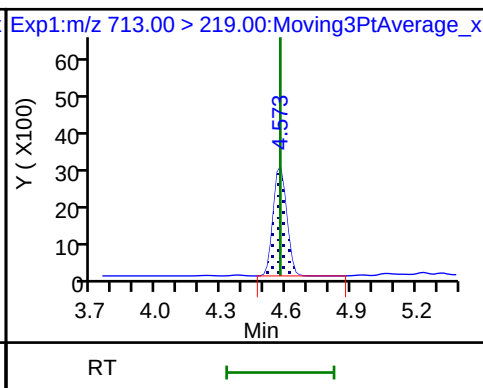
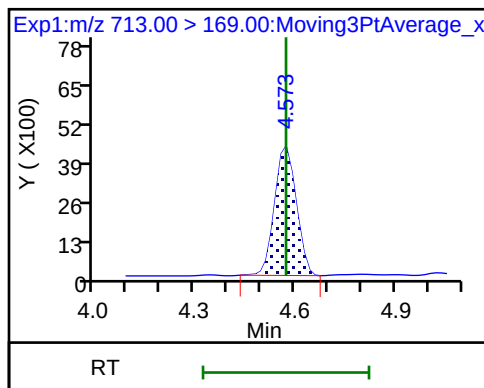
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

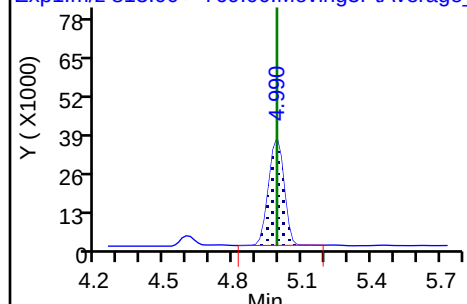


45 Perfluorohexadecanoic acid

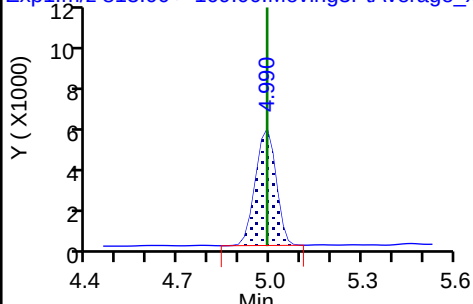
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

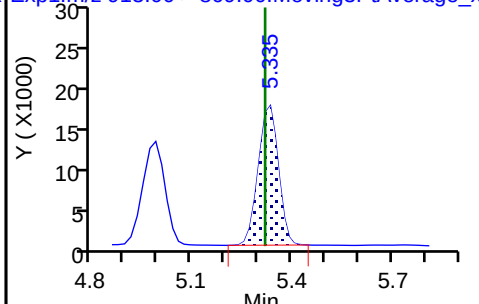
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Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

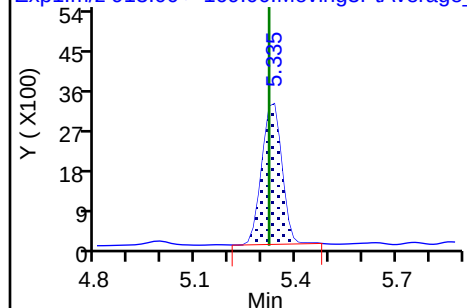


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

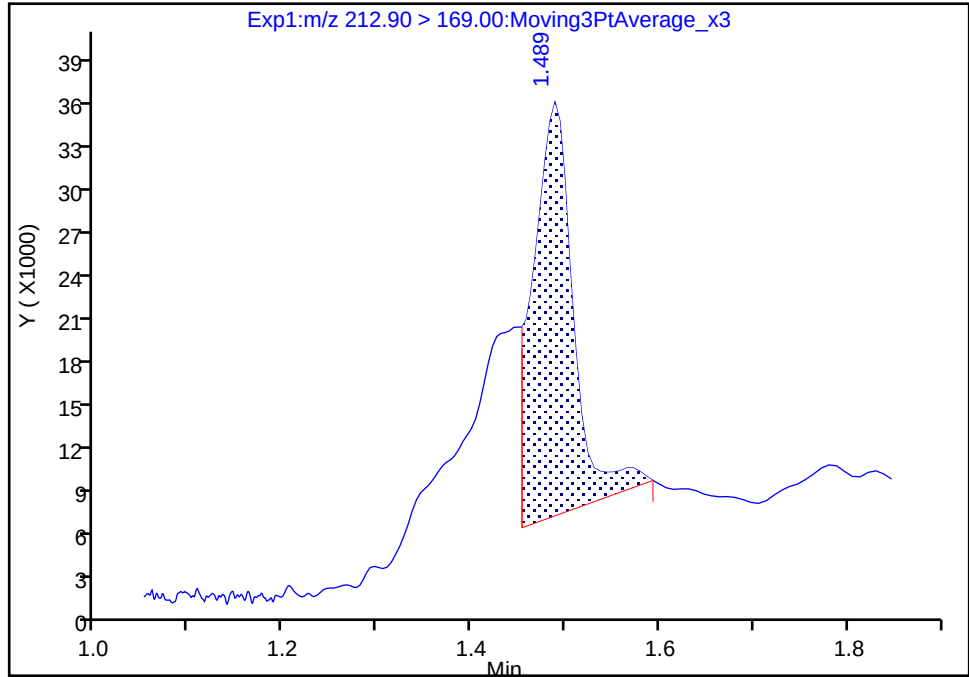
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Injection Date: 02-Oct-2018 15:24:07 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

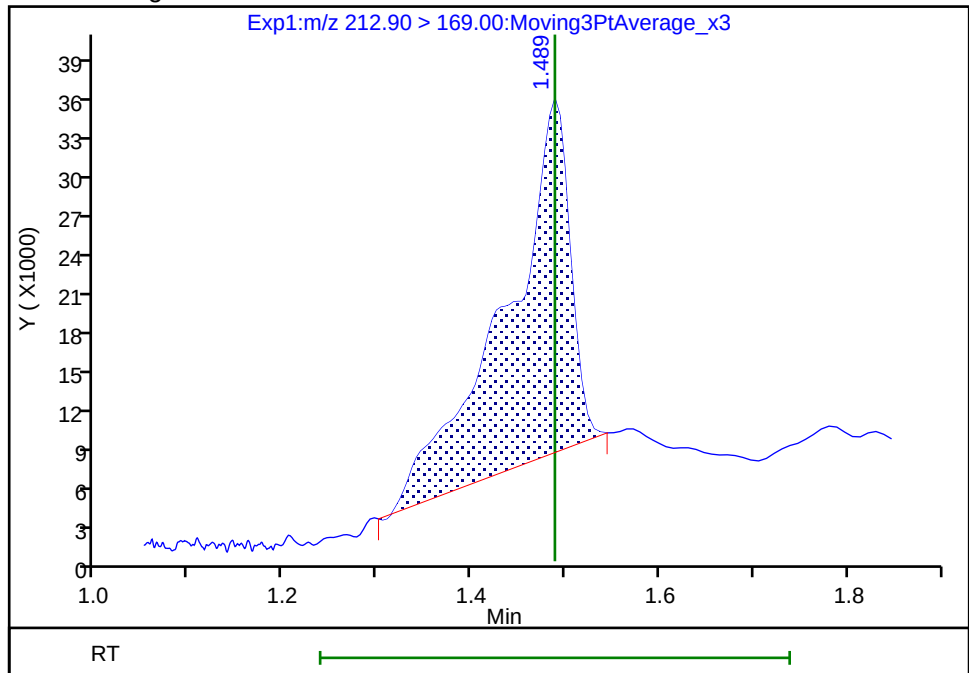
RT: 1.49
Area: 81587
Amount: 0.031971
Amount Units: ng/ml

Processing Integration Results



RT: 1.49
Area: 125413
Amount: 0.049145
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 03-Oct-2018 14:25:44

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: CCV 320-249188/3 Calibration Date: 10/02/2018 16:01

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.10.02LLA_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9167	0.9355		2.55	2.50	2.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.002		2.52	2.50	0.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	103.2		2.21	2.21	-0.0	50.0
4:2 FTS	AveID	22.60	16.65		1.72	2.34	-26.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.8902		2.48	2.50	-1.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	49.01		2.38	2.35	1.3	50.0
HFPO-DA (GenX)	AveID	1.870	1.528		2.04	2.50	-18.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.039		2.45	2.50	-2.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.209		2.19	2.28	-4.0	40.0
DONA	AveID	2.645	3.139		2.80	2.36	18.7	50.0
6:2 FTS	AveID	2.182	2.271		2.47	2.37	4.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.205		2.80	2.38	17.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.066		2.54	2.50	1.7	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	1.049		2.67	2.50	6.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.141		2.50	2.32	7.7	40.0
F-53B Major	AveID	1.117	1.346		2.81	2.33	20.6	50.0
8:2 FTS	AveID	14.70	15.20		2.48	2.40	3.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.7326		2.64	2.40	10.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.054		2.40	2.50	-3.8	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.207		2.72	2.50	8.8	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	1.070		2.79	2.50	11.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.9942		2.80	2.41	16.2	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9236		2.47	2.50	-1.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.9638		2.67	2.50	6.9	40.0
F-53B Minor	AveID	1.316	1.613		2.89	2.36	22.6	50.0
10:2 FTS	AveID	10.00	11.28		2.72	2.41	12.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.016		2.54	2.50	1.4	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0958		2.42	2.42	0.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.8326		2.66	2.50	6.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1571		2.39	2.50	-4.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9546		2.61	2.50	4.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: CCV 320-249188/3 Calibration Date: 10/02/2018 16:01
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.10.02LLA_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6480	0.6860		2.65	2.50	5.9	50.0
13C4 PFBA	Ave	0.9210	0.8855		2.40	2.50	-3.9	50.0
13C5 PFPeA	Ave	0.8374	0.8373		2.50	2.50	0.0	50.0
13C3 PFBS	Ave	0.0114	0.0112		2.29	2.33	-1.7	50.0
M2-4:2 FTS	Ave	0.1043	0.0714		1.60	2.34	-31.5	50.0
13C2 PFHxA	Ave	0.8875	0.9077		2.56	2.50	2.3	50.0
13C3 HFPO-DA	Ave	0.0924	0.1259		3.41	2.50	36.3	50.0
13C4 PFHpA	Ave	1.057	1.065		2.52	2.50	0.8	50.0
18O2 PFHxS	Ave	0.6816	0.6376		2.21	2.37	-6.5	50.0
M2-6:2 FTS	Ave	0.1097	0.0791		1.71	2.38	-27.9	40.0
13C8 PFOA	Ave	3075368	2744444		2.18	2.45	-10.8	50.0
13C4 PFOA	Ave	1.001	0.9592		2.40	2.50	-4.2	50.0
13C4 PFOS	Ave	0.7065	0.6136		2.08	2.39	-13.2	50.0
13C5 PFNA	Ave	0.9108	0.8634		2.37	2.50	-5.2	50.0
13C8 PFOS	Ave	540497	448926		1.99	2.39	-16.9	50.0
13C2 PFDA	Ave	0.9435	0.9228		2.45	2.50	-2.2	50.0
M2-8:2 FTS	Ave	0.0139	0.0104		1.78	2.40	-25.5	40.0
13C8 FOSA	Ave	0.3770	0.3433		2.28	2.50	-8.9	50.0
d3-NMeFOSAA	Ave	0.4182	0.3386		2.02	2.50	-19.0	50.0
13C2 PFUnA	Ave	0.8011	0.7227		2.26	2.50	-9.8	50.0
d5-NEtFOSAA	Ave	0.3276	0.2753		2.10	2.50	-16.0	50.0
13C2 PFDoA	Ave	0.9529	0.8601		2.26	2.50	-9.7	50.0
13C2 PFTeDA	Ave	0.7508	0.7852		2.61	2.50	4.6	50.0
13C2 PFHxDA	Ave	0.7497	0.7228		2.41	2.50	-3.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65131.b\2018.10.02LLA_010.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 02-Oct-2018 16:01:41 ALS Bottle#: 14 Worklist Smp#: 3
 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\20181002-65131.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 14:27:25 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK008

First Level Reviewer: mongkols

Date: 03-Oct-2018 14:27:25

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	1.483	0.0	0.543	6918702	2.40		96.1	12169	
2 Perfluorobutyric acid										
212.90 > 169.00	1.489	1.489	0.0	1.004	6472471	2.55		102	375	
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.764	0.0	0.645	6542670	2.50		100	6176	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.764	0.0	1.000	6554785	2.52		101	520	
D 47 13C3-PFBS										
301.90 > 83.00	1.805	1.805	0.0	0.660	81459	2.29		98.3	496	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.805	1.805	0.0	1.000	7992855	2.21		99.9	4880	
298.90 > 99.00	1.805	1.805	0.0	1.000	2720916		2.94(1.35-4.05)		1526	
D 60 M2-4:2FTS										
329.00 > 81.00	2.017	2.017	0.0	0.738	521126	1.60		68.5	619	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.017	2.017	0.0	1.117	1361887	1.72		73.7	4837	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.048	0.001	0.749	7092703	2.56		102	8876	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	6314160	2.47		99.0	794	
313.00 > 119.00	2.048	2.048	0.0	1.000	454900		13.88(6.96-20.87)		766	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.078	2.078	0.0	1.151	4026792	2.37		101	4784	
349.00 > 99.00	2.078	2.078	0.0	1.151	1884003		2.14(1.15-3.45)		1701	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.786	983847	3.41		136	1966	

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	2.150	2.150	0.0	1.000	1503533	2.04		81.7	822	
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	8320025	2.52		101	7638	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.373	2.373	0.0	1.000	8645878	2.45		97.9	1315	
363.00 > 169.00	2.373	2.373	0.0	1.000	2014970		4.29(2.17-6.52)		2318	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.386	2.386	0.0	1.000	5481162	2.18		96.0	3484	
399.00 > 99.00	2.386	2.386	0.0	1.000	1490226		3.68(1.90-5.70)		1152	
D 11 18O2 PFHxS										
403.00 > 84.00	2.386	2.399	-0.013	0.873	4713047	2.21		93.5	5270	
76 DONA										
377.00 > 251.00	2.413	2.413	0.0	0.779	14177310	2.80		119	14745	
377.00 > 85.00	2.413	2.413	0.0	0.779	6190343		2.29(1.13-3.39)		2763	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.0	0.988	587376	1.71		72.1	867	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	1330892	2.47		104	826	
D 73 13C8 PFOA										
421.00 > 376.00	2.718	2.718	0.0		6717026	2.18		89.2	6625	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.734	0.0	1.000	7495130	2.40		95.8	7073	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	7999639	2.54		102	600	
413.00 > 169.00	2.734	2.734	0.0	1.000	2965764		2.70(1.36-4.08)		2006	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.734	2.734	0.0	0.883	5500432	2.80		118	3464	
449.00 > 99.00	2.734	2.734	0.0	0.883	1367231		4.02(1.84-5.53)		2479	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		7813799	2.50			5723	
D 19 13C5 PFNA										
468.00 > 423.00	3.098	3.098	0.0	1.133	6746346	2.37		94.8	4641	
D 72 13C8 PFOS										
507.00 > 99.00	3.098	3.098	0.0		1072933	1.99		83.1	2485	
D 18 13C4 PFOS										
503.00 > 80.00	3.098	3.098	0.0	1.133	4583565	2.08		86.8	3621	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.098	3.098	0.0	1.000	5077299	2.50		108	2280	
499.00 > 99.00	3.098	3.098	0.0	1.000	1136369		4.47(2.04-6.12)		1555	
20 Perfluorononanoic acid										
463.00 > 419.00	3.098	3.098	0.0	1.000	7076234	2.67		107	771	
463.00 > 169.00	3.098	3.098	0.0	1.000	1253445		5.65(2.68-8.03)		2041	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.303	3.303	0.0	1.066	6016803	2.81		121	3947	
D 26 M2-8:2FTS										
529.00 > 81.00	3.448	3.448	0.0	1.261	77491	1.78		74.5	367	

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	3.448	3.448	0.0	1.261	7210205	2.45		97.8	4345	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.448	0.017	1.267	2682458	2.28		91.1	3137	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.448	3.448	0.0	1.000	1177963	2.48		103	3261	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.448	3.448	0.0	1.113	3371732	2.64		110	3443	
549.00 > 99.00	3.448	3.448	0.0	1.113	551779		6.11(3.02-9.05)		2073	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.465	0.0	1.005	7598446	2.40		96.2	1087	
513.00 > 169.00	3.465	3.465	0.0	1.005	519262		14.63(7.12-21.35)		448	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	8603584	2.72		109	4263	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.599	0.014	1.321	2645814	2.02		81.0	4875	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.000	2830277	2.79		111	1055	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.760	3.760	0.0	1.213	4595316	2.80		116	3035	
599.00 > 99.00	3.760	3.760	0.0	1.213	992881		4.63(2.14-6.43)		2338	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.776	0.0	1.381	2150842	2.10		84.0	1893	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.776	0.0	1.381	5646866	2.26		90.2	6011	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.776	3.776	0.0	1.000	5442650	2.67		107	1124	
563.00 > 169.00	3.776	3.776	0.0	1.000	493785		11.02(5.24-15.72)		1912	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	1986519	2.47		98.9	5956	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.944	0.0	1.273	7285344	2.89		123	4995	
35 MeFOSA										
512.00 > 169.00	3.944	3.944	0.0		1615893	NC			1137	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.073	0.0	1.489	6720224	2.26		90.3	4695	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.073	0.0	1.000	6824688	2.54		101	1814	
613.00 > 169.00	4.073	4.073	0.0	1.000	790430		8.63(4.68-14.05)		1321	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.073	4.073	0.0	1.181	879709	2.72		113	2070	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.139	0.0		1731409	NC			672	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.311	4.311	0.0	1.391	444585	2.42		100	1089	
699.00 > 99.00	4.311	4.311	0.0	1.391	837614		0.53(0.28-0.83)		2811	

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	4.326	4.326	0.0	1.062	5595323	2.66		106	2052	
663.00 > 169.00	4.326	4.326	0.0	1.062	934913		5.98(3.09-9.27)		1758	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.573	0.0	1.672	6135155	2.61		105	5595	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.573	4.573	0.0	1.000	963778	2.39		95.6	2479	
713.00 > 219.00	4.573	4.573	0.0	1.000	640950		1.50(0.70-2.09)		2551	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.989	4.989	0.0	1.825	5647698	2.41		96.4	9585	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.989	4.989	0.0	1.000	5391203	2.61		104	2577	E
813.00 > 169.00	4.989	4.989	0.0	1.000	915122		5.89(2.77-8.32)		1990	E
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.319	5.319	0.0	1.066	3874388	2.65		106	1162	
913.00 > 169.00	5.319	5.319	0.0	1.066	682051		5.68(2.55-7.64)		2023	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65131.b\2018.10.02LLA_010.d

Injection Date: 02-Oct-2018 16:01:41

Instrument ID: A9

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

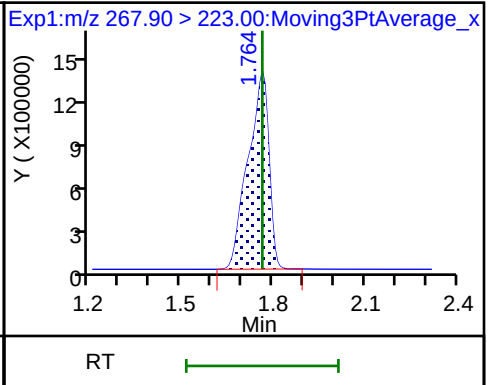
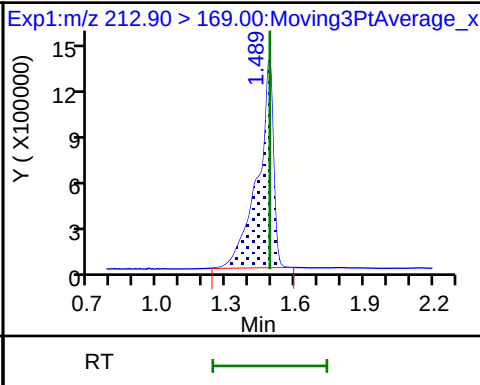
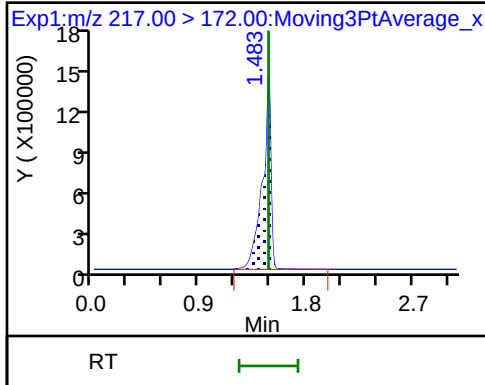
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

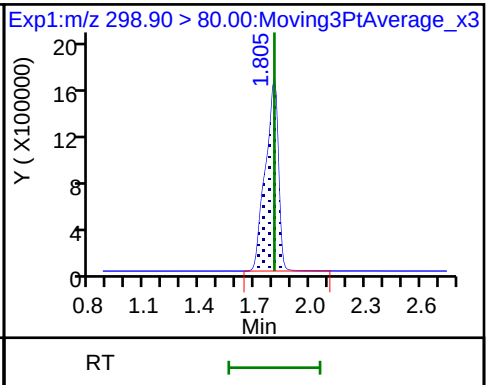
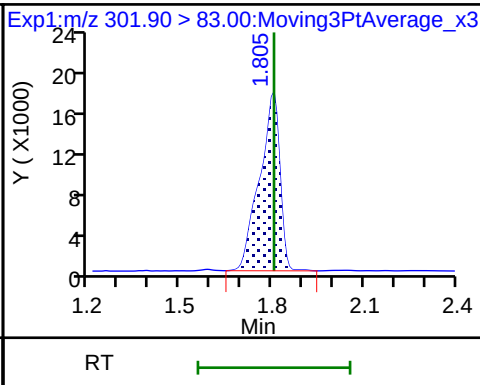
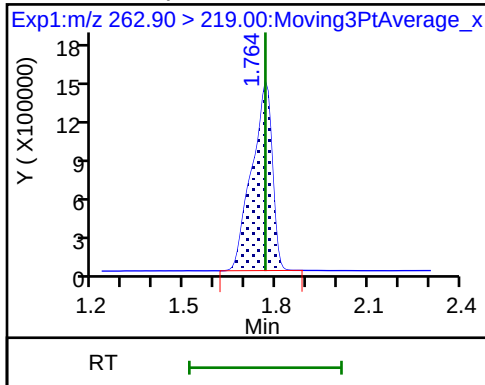
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

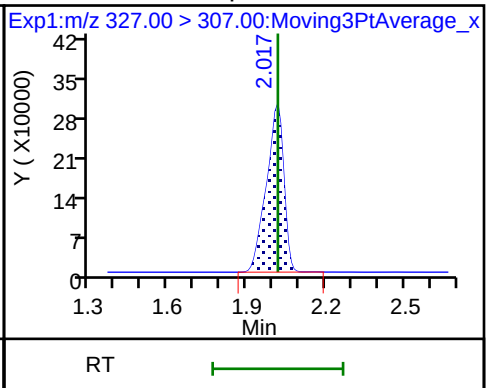
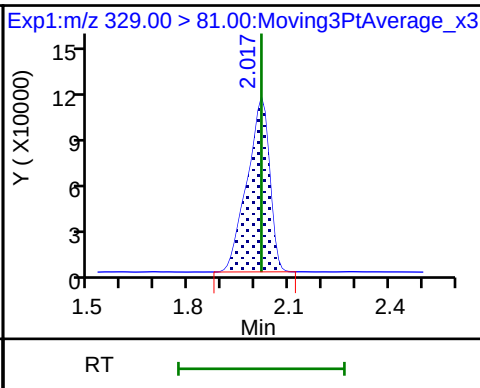
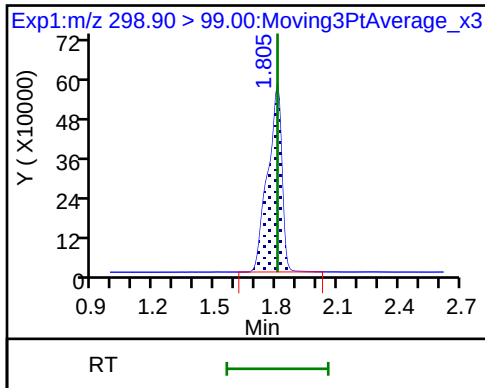
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

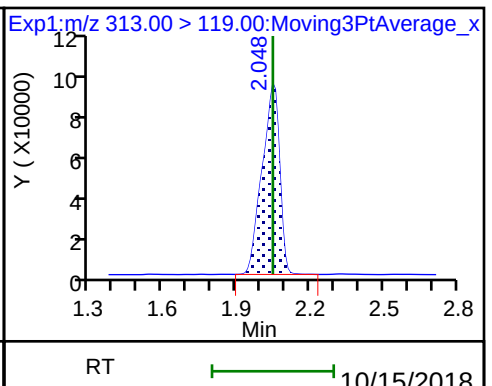
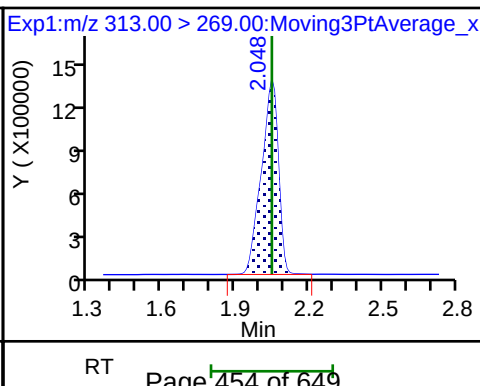
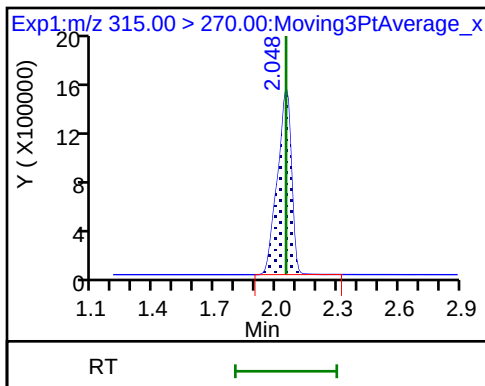
61 1H,1H,2H,2H-perfluorohexanesulfoni

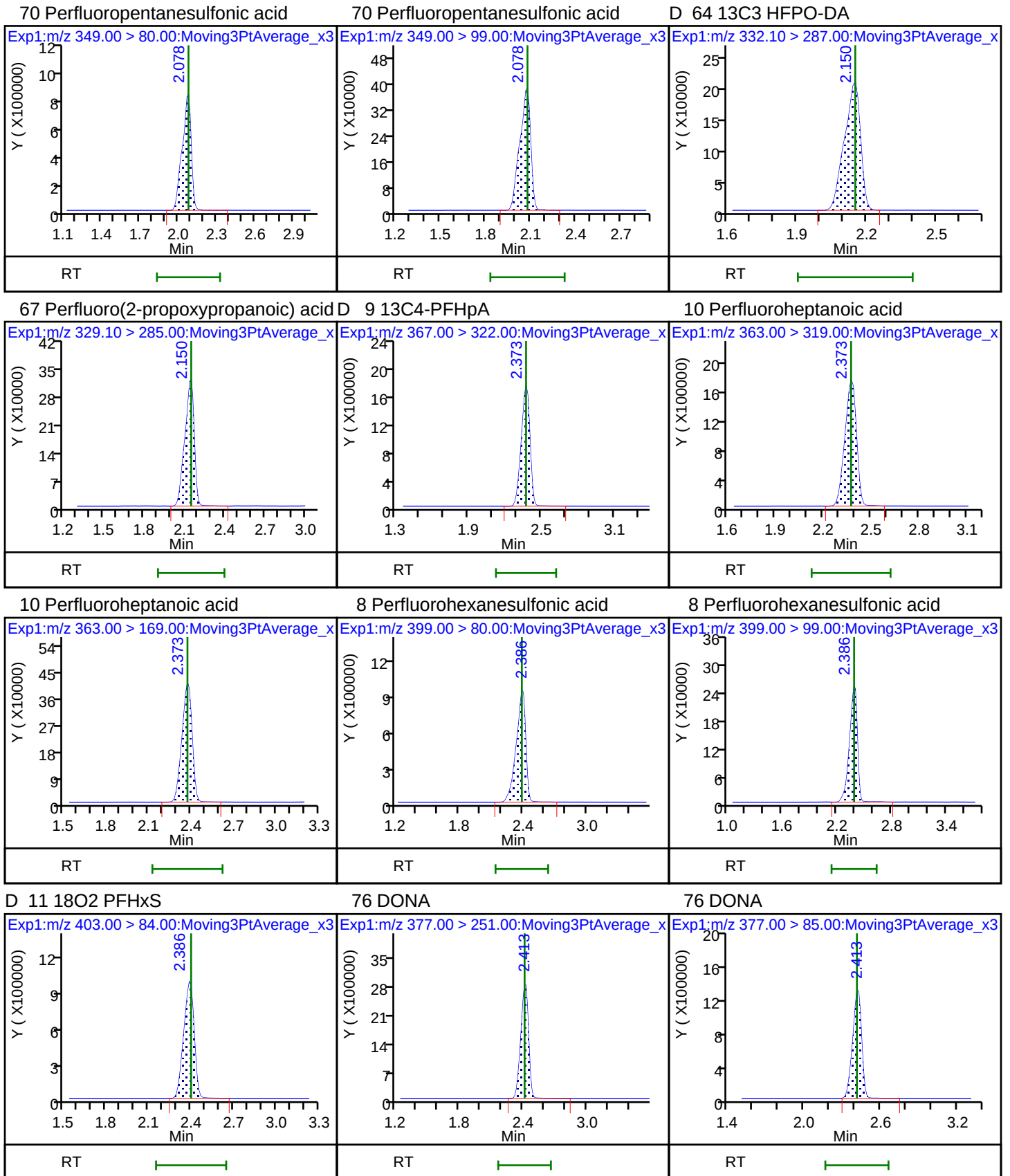


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

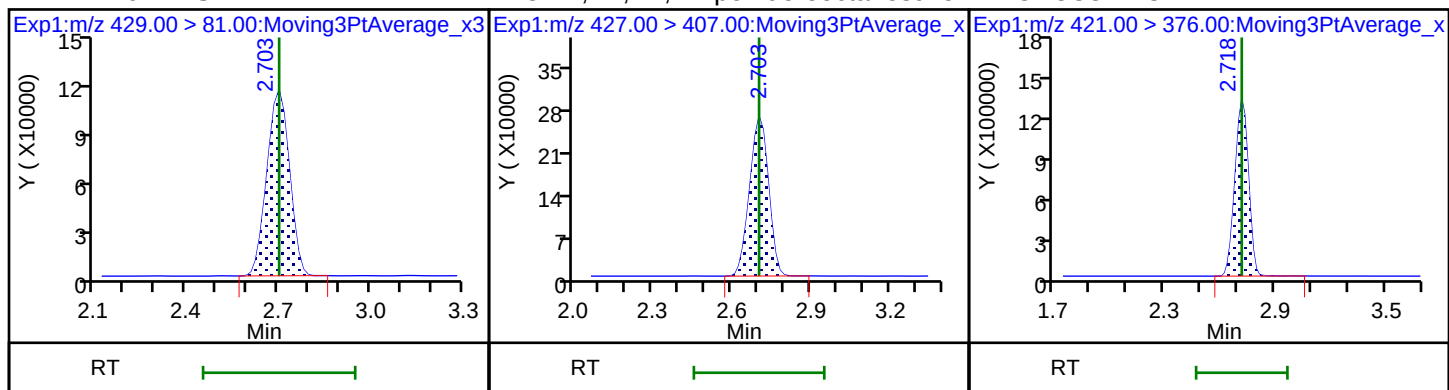
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

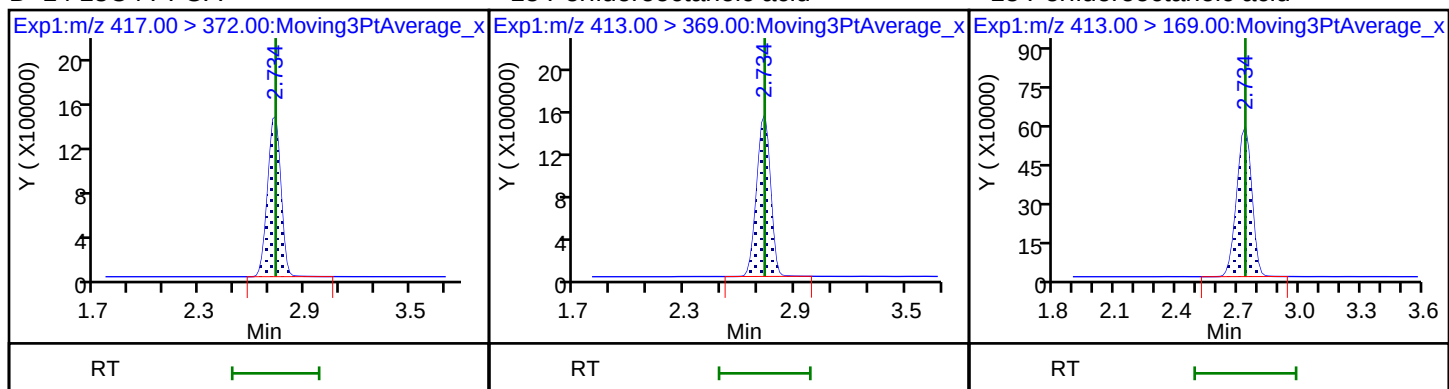
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

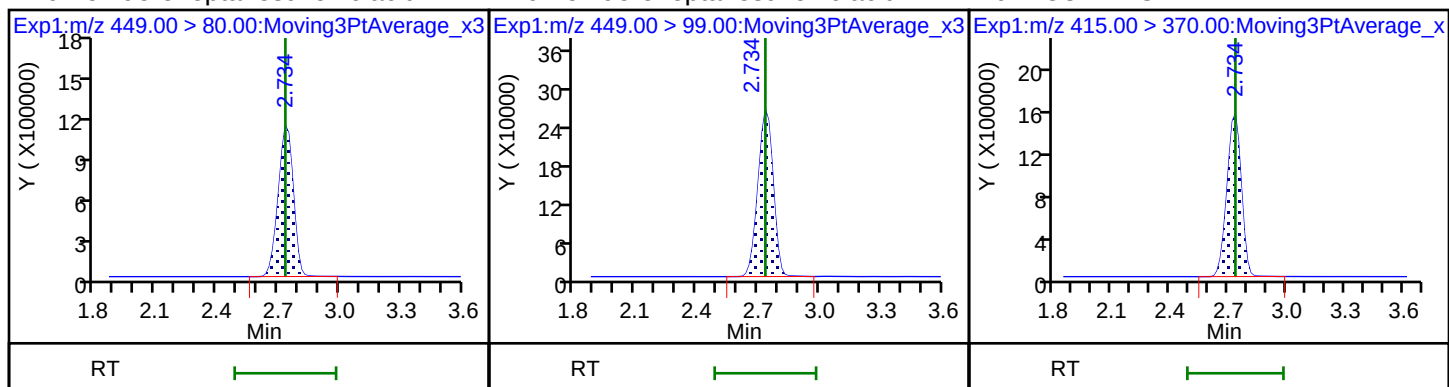
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

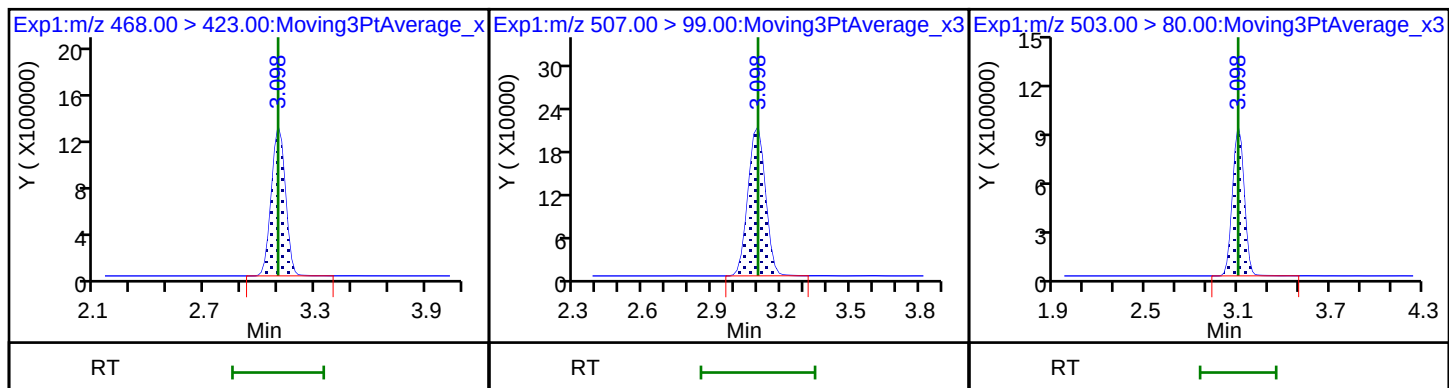
* 62 13C2-PFOA

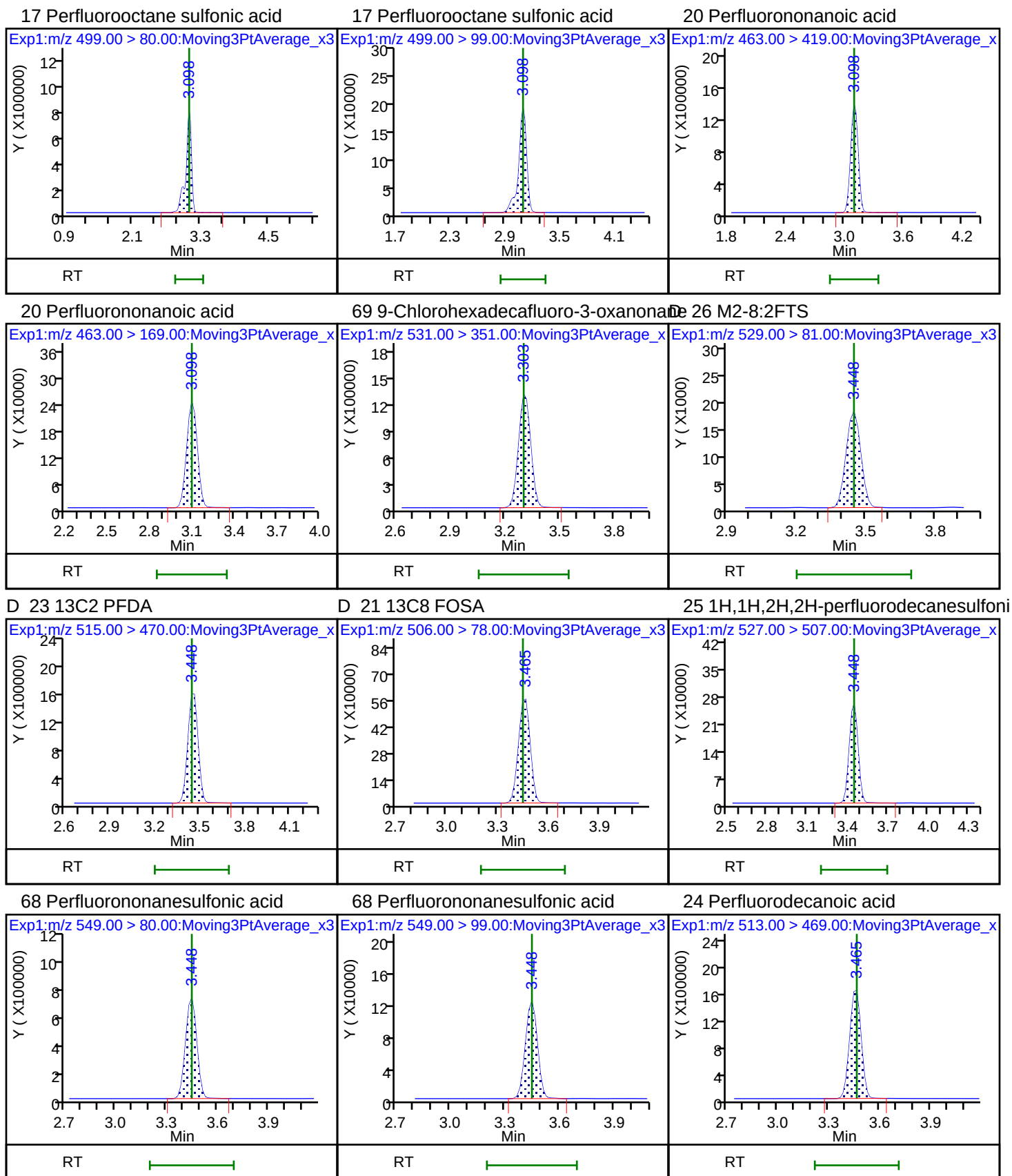


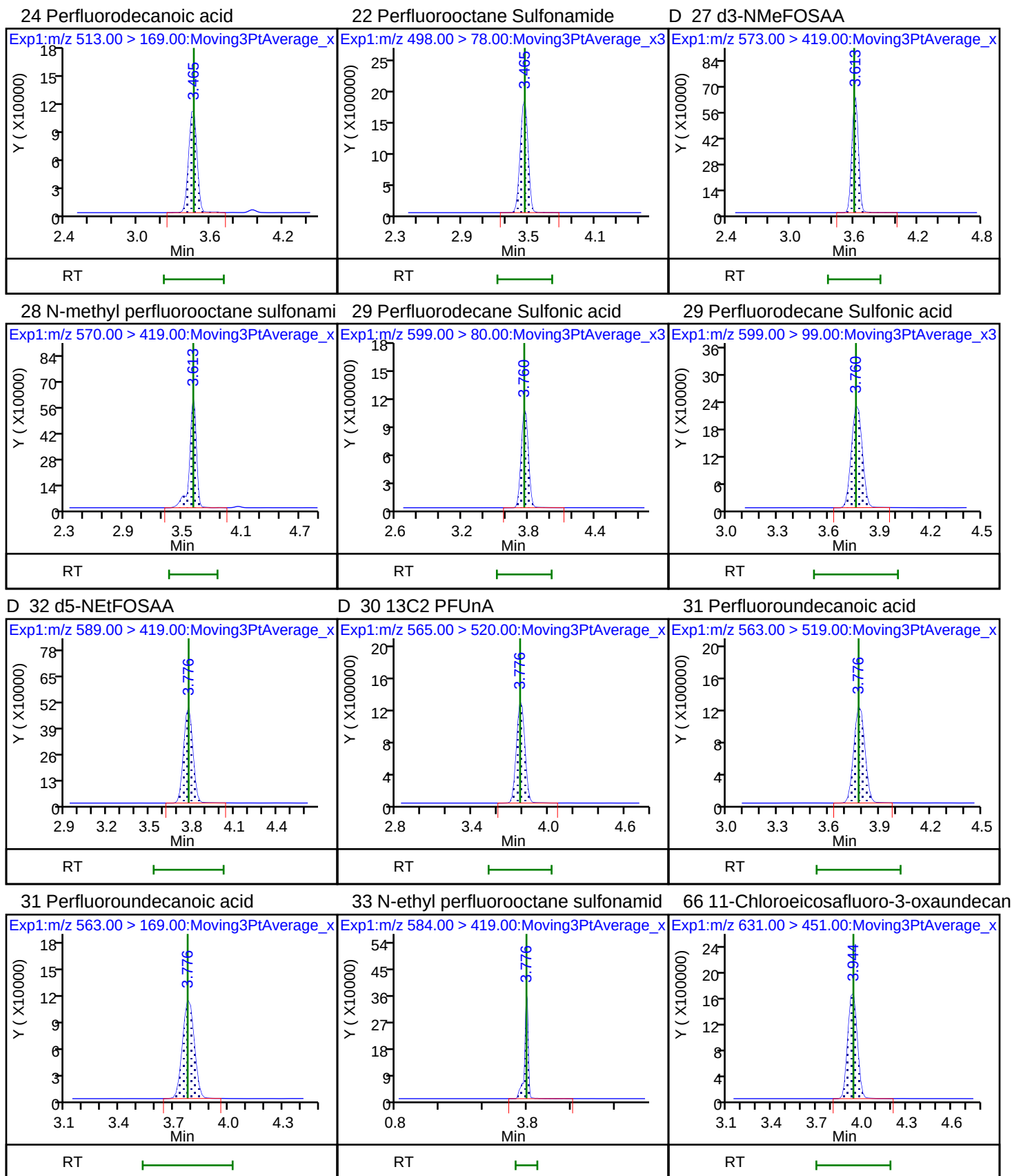
D 19 13C5 PFNA

D 72 13C8 PFOS

D 18 13C4 PFOS



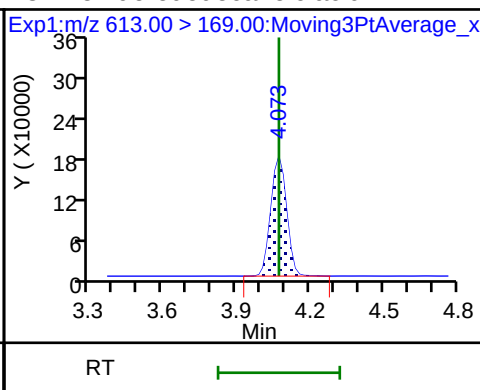
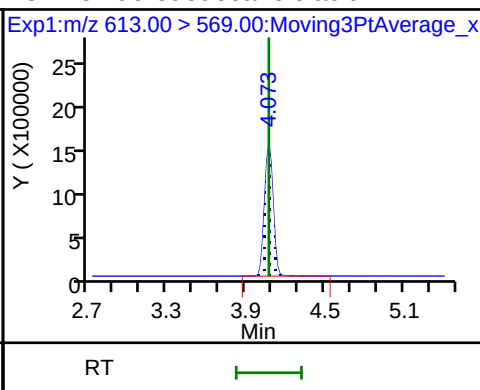
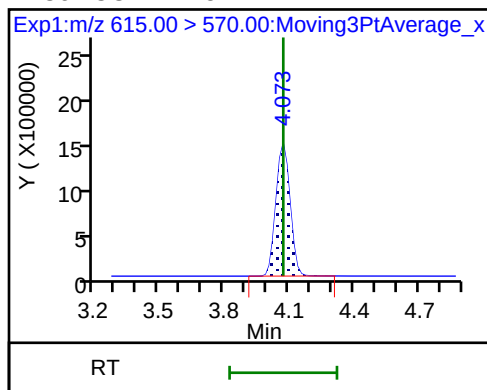




D 36 13C2 PFDaA

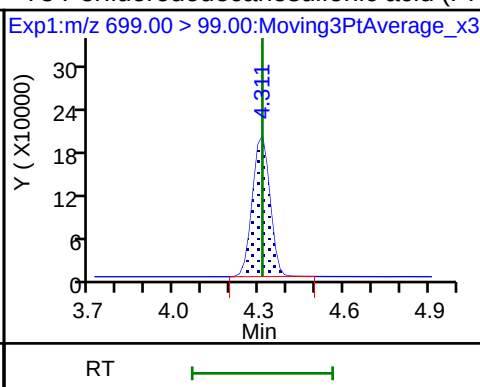
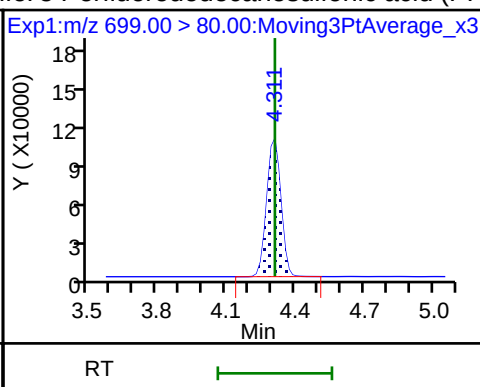
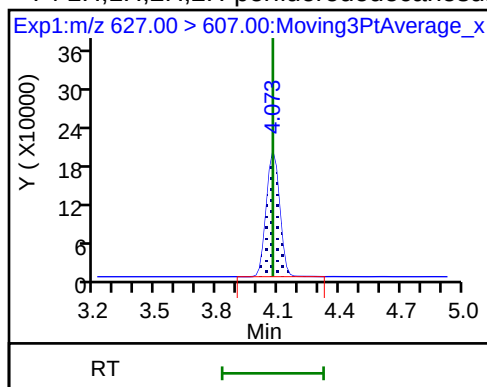
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

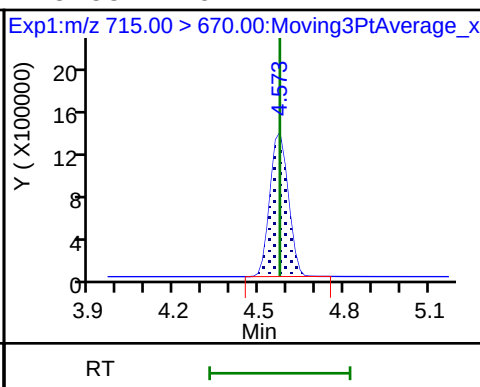
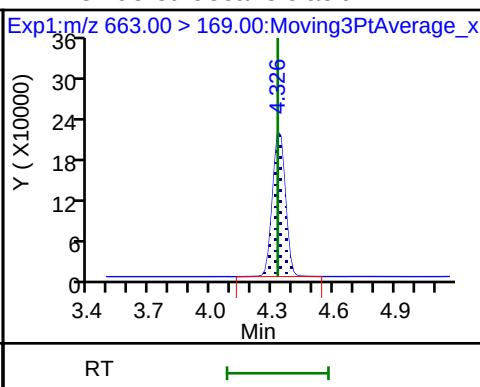
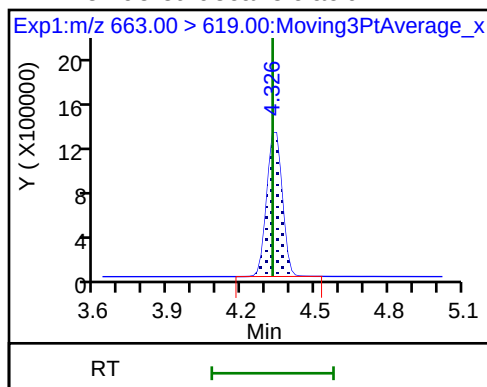
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

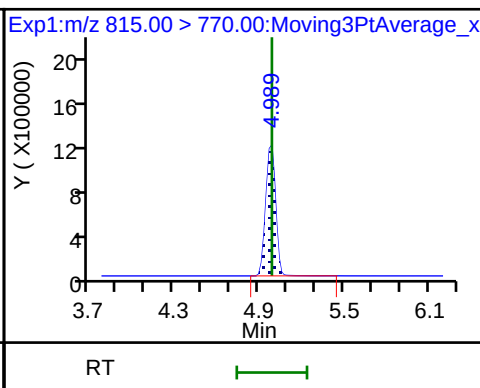
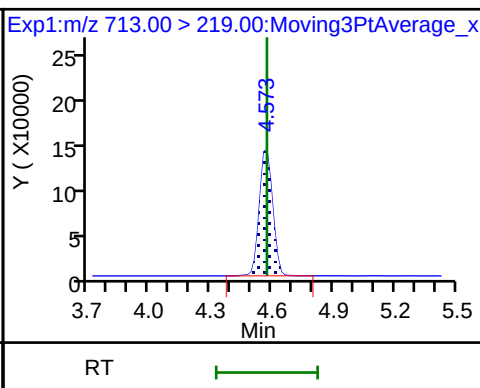
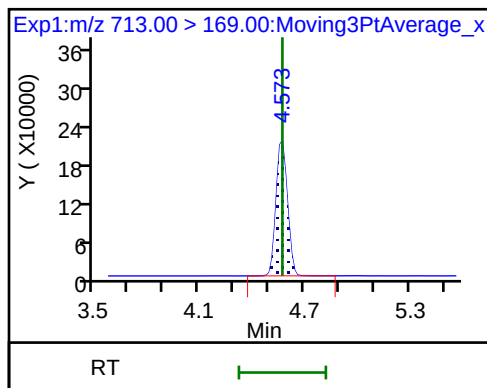
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

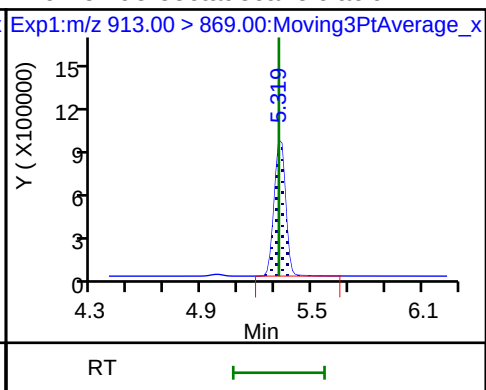
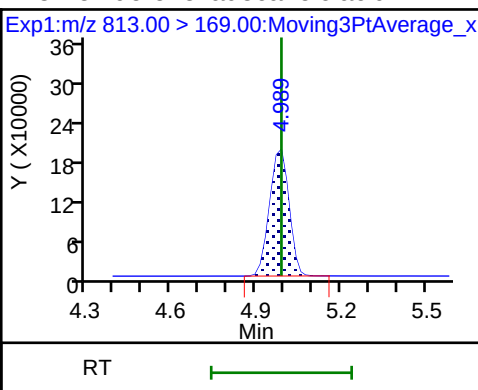
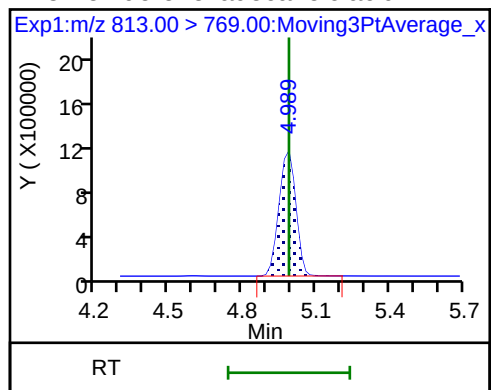
D 44 13C2-PFHxDA



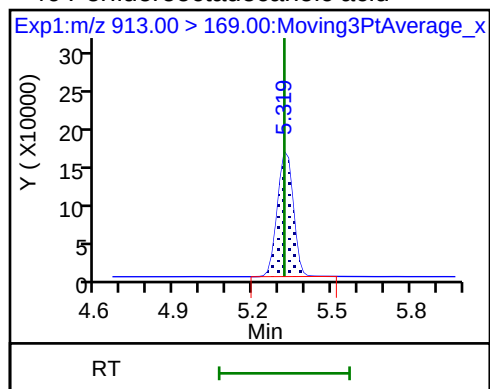
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: CCV 320-249235/1 Calibration Date: 10/02/2018 22:17

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.10.02LLAA_040.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9167	0.9475		2.58	2.50	3.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	0.9894		2.48	2.50	-0.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	111.4		2.38	2.21	7.8	50.0
4:2 FTS	AveID	22.60	17.20		1.78	2.34	-23.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.8953		2.49	2.50	-0.4	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	49.95		2.42	2.35	3.2	50.0
HFPO-DA (GenX)	AveID	1.870	1.577		2.11	2.50	-15.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.067		2.51	2.50	0.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.152		2.08	2.28	-8.5	40.0
DONA	AveID	2.645	2.931		2.61	2.36	10.8	50.0
6:2 FTS	AveID	2.182	2.116		2.30	2.37	-3.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.148		2.67	2.38	12.2	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.036		2.47	2.50	-1.3	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	0.9866		2.51	2.50	0.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.179		2.58	2.32	11.3	40.0
F-53B Major	AveID	1.117	1.375		2.87	2.33	23.1	50.0
8:2 FTS	AveID	14.70	16.18		2.64	2.40	10.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.173		2.68	2.50	7.0	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6956		2.51	2.40	4.5	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.295		2.79	2.50	11.7	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	1.035		2.70	2.50	7.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.9586		2.70	2.41	12.0	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9216		2.47	2.50	-1.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.8697		2.41	2.50	-3.6	40.0
F-53B Minor	AveID	1.316	1.600		2.87	2.36	21.7	50.0
10:2 FTS	AveID	10.00	12.32		2.97	2.41	23.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.050		2.62	2.50	4.9	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.1035		2.61	2.42	8.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.8163		2.60	2.50	4.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1637		2.49	2.50	-0.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9634		2.63	2.50	5.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: CCV 320-249235/1 Calibration Date: 10/02/2018 22:17
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.10.02LLAA_040.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6480	0.6764		2.61	2.50	4.4	50.0
13C4 PFBA	Ave	0.9210	0.9217		2.50	2.50	0.0	50.0
13C5 PFPeA	Ave	0.8374	0.8812		2.63	2.50	5.2	50.0
13C3 PFBS	Ave	0.0114	0.0114		2.32	2.33	-0.1	50.0
M2-4:2 FTS	Ave	0.1043	0.0736		1.65	2.34	-29.5	50.0
13C2 PFHxA	Ave	0.8875	0.8964		2.53	2.50	1.0	50.0
13C3 HFPO-DA	Ave	0.0924	0.1282		3.47	2.50	38.7	50.0
13C4 PFHpA	Ave	1.057	1.071		2.54	2.50	1.4	50.0
18O2 PFHxS	Ave	0.6816	0.6872		2.39	2.37	0.8	50.0
M2-6:2 FTS	Ave	0.1097	0.0854		1.85	2.38	-22.1	40.0
13C4 PFOA	Ave	1.001	1.038		2.59	2.50	3.7	50.0
13C8 PFOA	Ave	3075368	2635805		2.10	2.45	-14.3	50.0
13C4 PFOS	Ave	0.7065	0.6596		2.23	2.39	-6.6	50.0
13C5 PFNA	Ave	0.9108	0.9135		2.51	2.50	0.3	50.0
13C8 PFOS	Ave	540497	433554		1.92	2.39	-19.8	50.0
13C2 PFDA	Ave	0.9435	0.9208		2.44	2.50	-2.4	50.0
13C8 FOSA	Ave	0.3770	0.3533		2.34	2.50	-6.3	50.0
M2-8:2 FTS	Ave	0.0139	0.0099		1.71	2.40	-28.6	40.0
d3-NMeFOSAA	Ave	0.4182	0.3360		2.01	2.50	-19.7	50.0
13C2 PFUnA	Ave	0.8011	0.8056		2.51	2.50	0.6	50.0
d5-NEtFOSAA	Ave	0.3276	0.2866		2.19	2.50	-12.5	50.0
13C2 PFDoA	Ave	0.9529	0.9136		2.40	2.50	-4.1	50.0
13C2 PFTeDA	Ave	0.7508	0.7501		2.50	2.50	-0.1	50.0
13C2 PFHxDA	Ave	0.7497	0.7484		2.50	2.50	-0.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_040.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 02-Oct-2018 22:17:06 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\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 10:23:23 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: barnettj

Date: 04-Oct-2018 18:09:49

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	1.483	0.001	0.543	7110408	2.50		100	9627	
2 Perfluorobutyric acid										
212.90 > 169.00	1.484	1.484	0.0	1.000	6737082	2.58		103	236	
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.763	0.001	0.645	6798073	2.63		105	11424	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.764	0.0	1.000	6726027	2.48		99.4	563	
D 47 13C3-PFBS										
301.90 > 83.00	1.797	1.805	-0.008	0.657	81721	2.32		99.9	429	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.806	1.806	0.0	1.005	8650069	2.38		108	6327	
298.90 > 99.00	1.806	1.806	0.0	1.005	2993668		2.89(1.35-4.05)		1481	
D 60 M2-4:2FTS										
329.00 > 81.00	2.017	2.017	0.0	0.738	529925	1.65		70.5	540	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.017	2.017	0.0	1.122	1411425	1.78		76.1	3740	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.047	0.001	0.749	6915398	2.53		101	11080	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	6191410	2.49		99.6	804	
313.00 > 119.00	2.048	2.048	0.0	1.000	445175		13.91(6.96-20.87)		935	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.068	2.068	0.0	1.151	4116991	2.42		103	4135	
349.00 > 99.00	2.068	2.068	0.0	1.151	1819754		2.26(1.15-3.45)		1622	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.786	988831	3.47		139	2939	

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	2.140	2.140	0.0	0.995	1559054	2.11		84.3	879	
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	8265508	2.53		101	8363	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.373	2.373	0.0	1.000	8817674	2.51		100	1291	
363.00 > 169.00	2.373	2.373	0.0	1.000	1951512		4.52(2.17-6.52)		1958	
D 11 18O2 PFHxS										
403.00 > 84.00	2.386	2.399	-0.013	0.873	5015151	2.38		101	7422	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.386	2.386	0.0	1.000	5559608	2.08		91.5	3440	
399.00 > 99.00	2.386	2.386	0.0	1.000	1602601		3.47(1.90-5.70)		1192	
76 DONA										
377.00 > 251.00	2.413	2.413	0.0	0.779	14046855	2.61		111	17451	
377.00 > 85.00	2.413	2.413	0.0	0.779	6505813		2.16(1.13-3.39)		3453	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	626006	1.85		77.9	1080	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	1321857	2.30		97.0	933	
D 73 13C8 PFOA										
421.00 > 376.00	2.719	2.718	0.001		6451132	2.10		85.7	8452	
D 14 13C4 PFOA										
417.00 > 372.00	2.719	2.734	-0.015	0.994	8009203	2.59		104	6393	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		7714494	2.50			5005	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.006	8302108	2.47		98.7	642	
413.00 > 169.00	2.734	2.734	0.0	1.006	2958335		2.81(1.36-4.08)		2085	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.734	2.734	0.0	0.883	5562401	2.67		112	3586	
449.00 > 99.00	2.734	2.734	0.0	0.883	1355439		4.10(1.84-5.53)		3099	
D 18 13C4 PFOS										
503.00 > 80.00	3.098	3.098	0.0	1.133	4864243	2.23		93.4	4418	
D 19 13C5 PFNA										
468.00 > 423.00	3.098	3.098	0.0	1.133	7047160	2.51		100	4116	
D 72 13C8 PFOS										
507.00 > 99.00	3.098	3.098	0.0		1036194	1.92		80.2	1968	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.098	3.098	0.0	1.000	5565837	2.58		111	3058	
499.00 > 99.00	3.098	3.098	0.0	1.000	1243872		4.47(2.04-6.12)		2812	
20 Perfluorononanoic acid										
463.00 > 419.00	3.098	3.098	0.0	1.000	6952884	2.51		100	758	
463.00 > 169.00	3.098	3.098	0.0	1.000	1262361		5.51(2.68-8.03)		1656	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.303	3.303	0.0	1.066	6519921	2.87		123	4025	
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	73377	1.71		71.4	298	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.449	3.449	0.0	1.113	3397483	2.51		104	3444	
549.00 > 99.00	3.449	3.449	0.0	1.113	578013		5.88(3.02-9.05)		1463	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.449	3.449	0.0	1.000	1187552	2.64		110	3797	
D 21 13C8 FOSA										
506.00 > 78.00	3.449	3.464	-0.015	1.261	2725775	2.34		93.7	3612	
D 23 13C2 PFDA										
515.00 > 470.00	3.449	3.464	-0.015	1.261	7103395	2.44		97.6	4181	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.449	3.449	0.0	1.000	8333463	2.68		107	1290	
513.00 > 169.00	3.449	3.449	0.0	1.000	554933		15.02(7.12-21.35)		461	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.005	8980242	2.79		112	3036	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.599	3.612	-0.013	1.316	2592093	2.01		80.3	2974	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.004	2681846	2.69		108	868	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.760	3.760	0.0	1.213	4701680	2.70		112	3089	
599.00 > 99.00	3.760	3.760	0.0	1.213	911843		5.16(2.14-6.43)		1930	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.775	0.001	1.381	6214764	2.51		101	6943	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	2211002	2.19		87.5	2253	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	2037604	2.47		98.6	2764	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.776	3.776	0.0	1.000	5405030	2.41		96.4	1116	
563.00 > 169.00	3.776	3.776	0.0	1.000	515915		10.48(5.24-15.72)		1860	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.944	0.0	1.273	7670501	2.86		122	8132	
35 MeFOSA										
512.00 > 169.00	3.944	3.944	0.0		1610871	NC			954	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.072	0.001	1.489	7048148	2.40		95.9	6246	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.073	4.073	0.0	1.181	909347	2.97		123	1830	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.073	0.0	1.000	7402002	2.62		105	1977	
613.00 > 169.00	4.073	4.073	0.0	1.000	778126		9.51(4.68-14.05)		1800	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.139	0.0		1725750	NC			834	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.311	4.311	0.0	1.391	509546	2.61		108	1325	
699.00 > 99.00	4.311	4.311	0.0	1.391	927470		0.55(0.28-0.83)		3288	

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_040.d

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	4.326	4.326	0.0	1.062	5753587	2.60		104	2461	
663.00 > 169.00	4.326	4.326	0.0	1.062	894130		6.43(3.09-9.27)		2007	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.572	0.001	1.672	5786247	2.50		99.9	8834	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.573	4.573	0.0	1.000	946955	2.49		99.6	2606	
713.00 > 219.00	4.573	4.573	0.0	1.000	642163		1.47(0.70-2.09)		1893	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.989	4.989	0.0	1.825	5773789	2.50		99.8	6964	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.989	4.989	0.0	1.000	5562680	2.63		105	2799	E
813.00 > 169.00	4.989	4.989	0.0	1.000	946772		5.88(2.77-8.32)		1931	E
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.319	5.319	0.0	1.066	3905646	2.61		104	1184	
913.00 > 169.00	5.319	5.319	0.0	1.066	697722		5.60(2.55-7.64)		2418	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_040.d

Injection Date: 02-Oct-2018 22:17:06

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

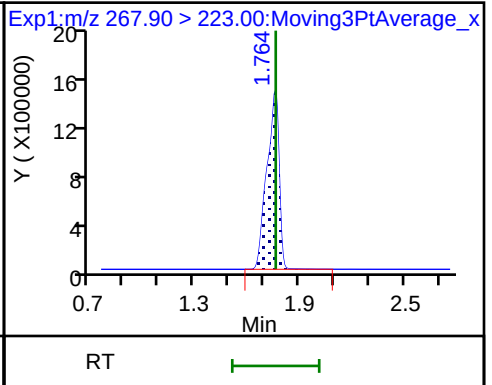
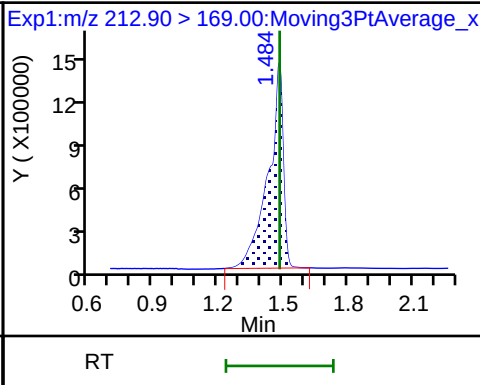
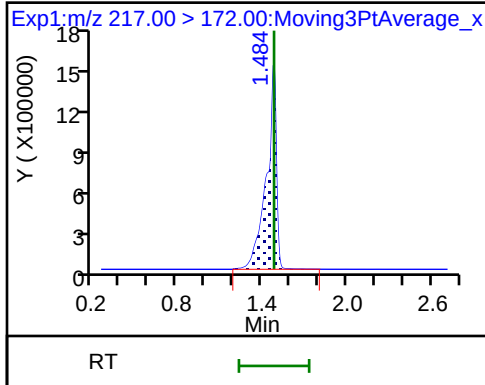
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

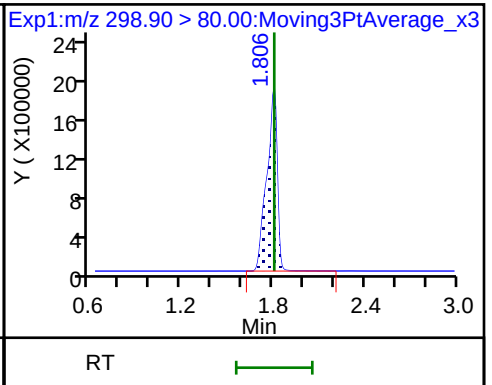
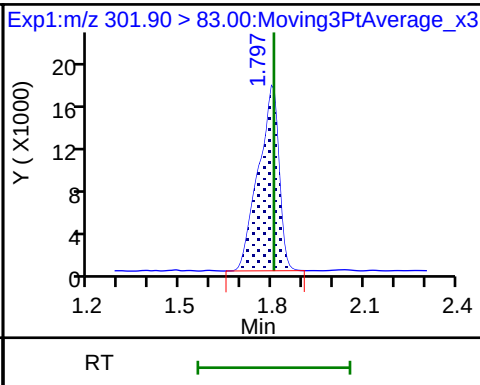
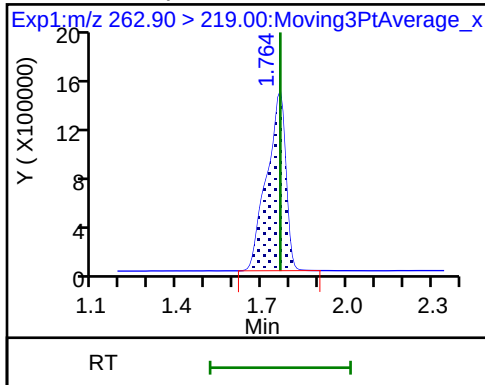
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

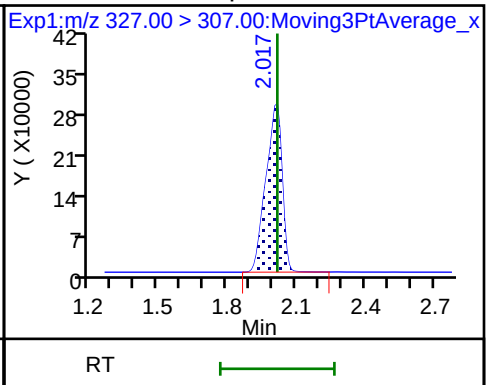
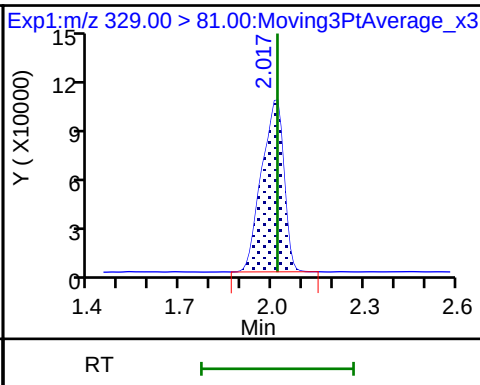
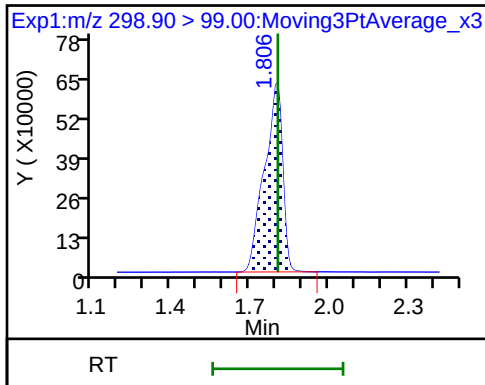
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

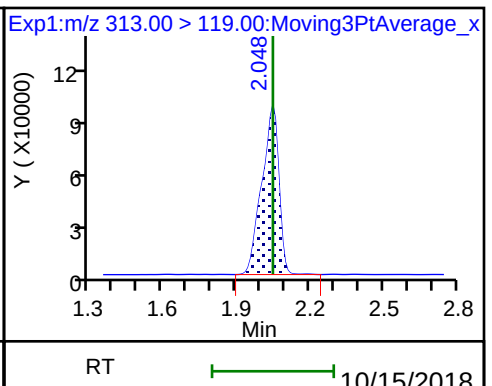
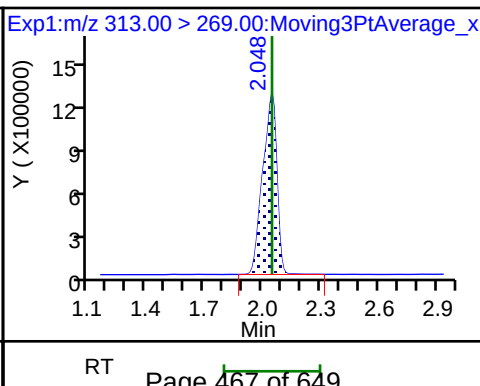
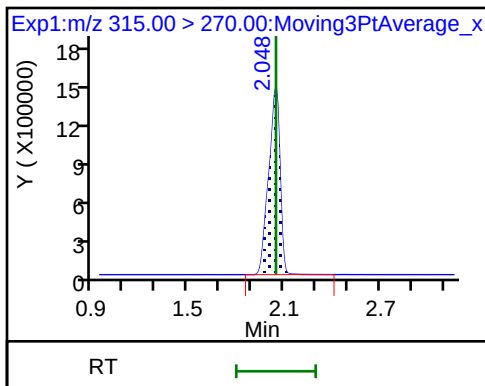
61 1H,1H,2H,2H-perfluorohexanesulfoni

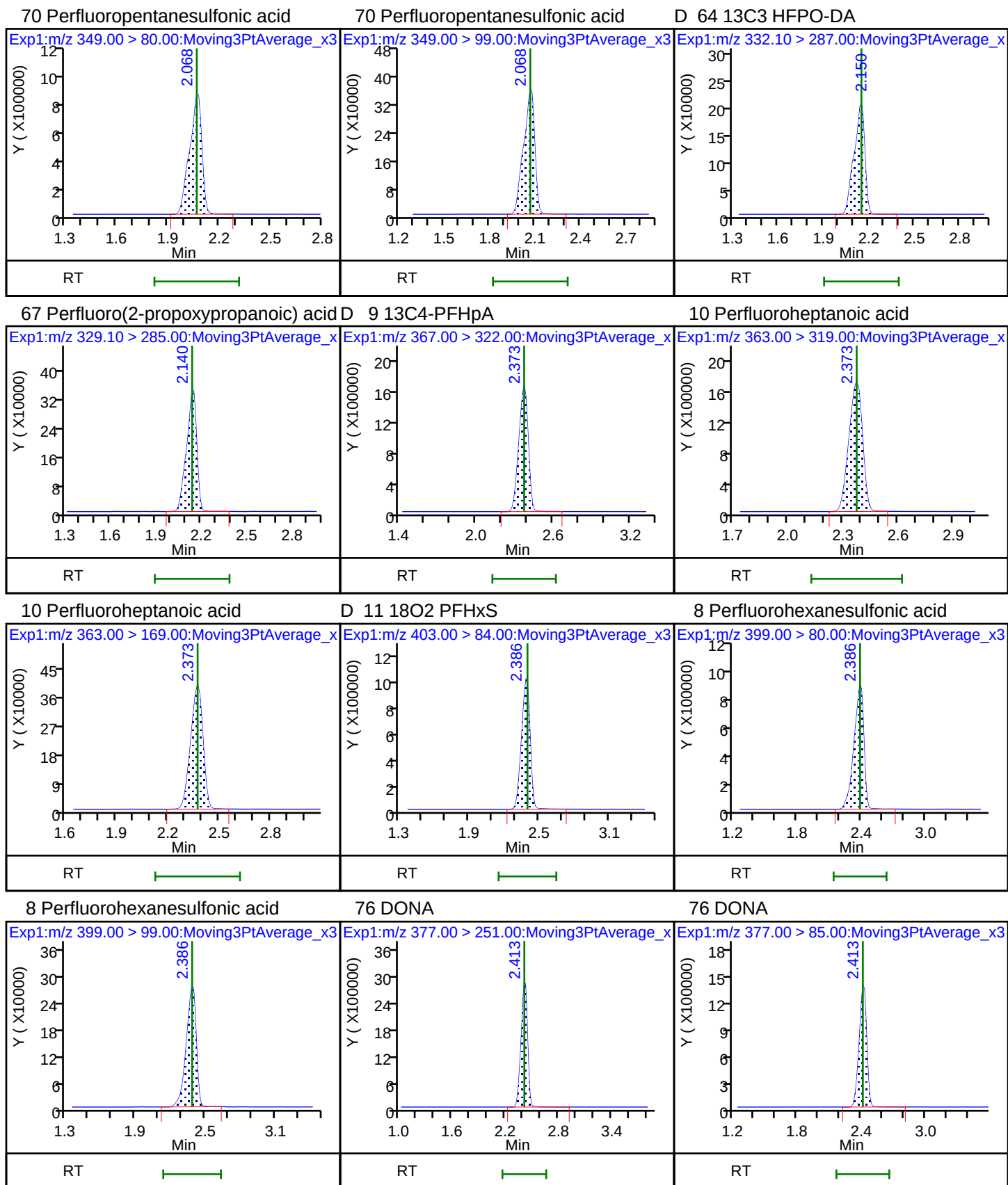


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

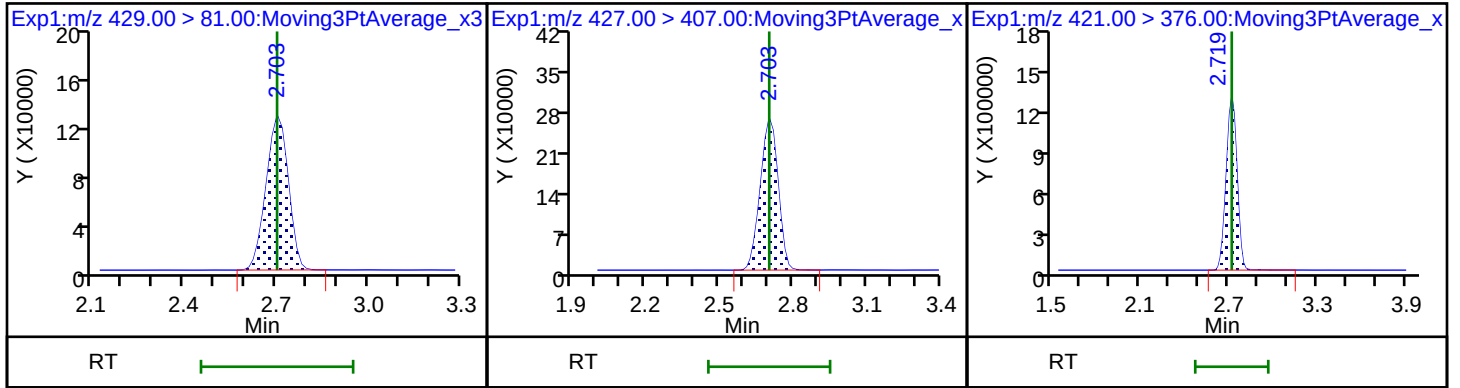
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

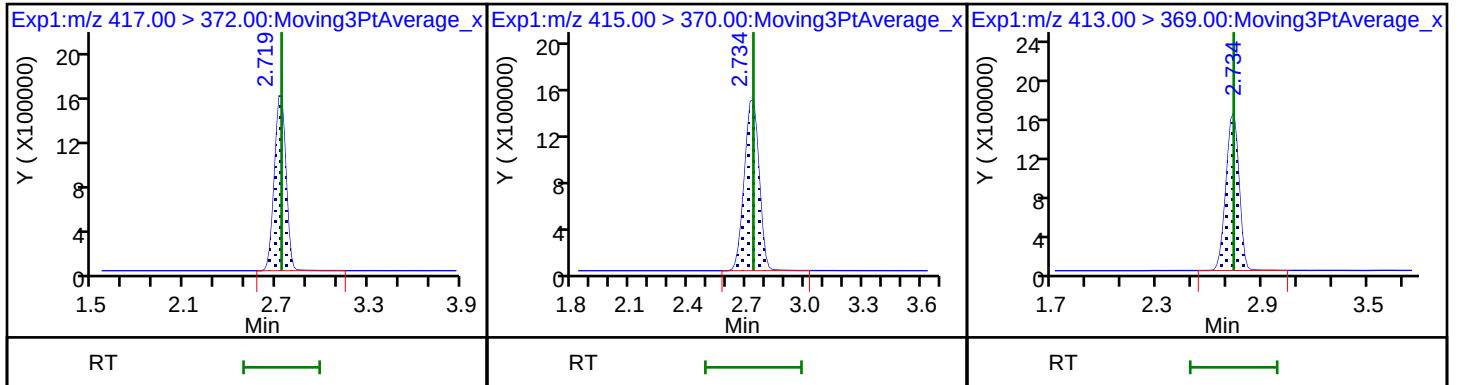
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

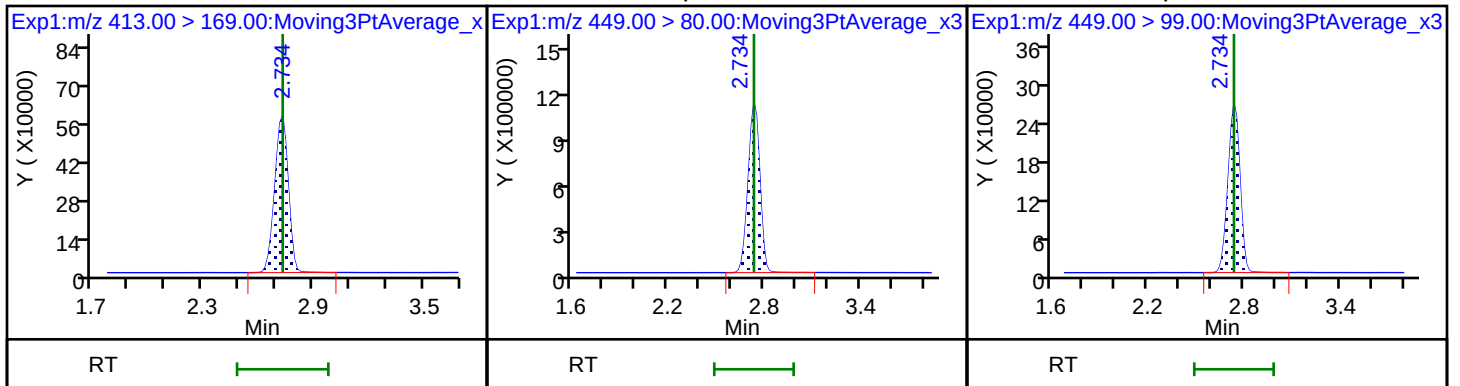
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

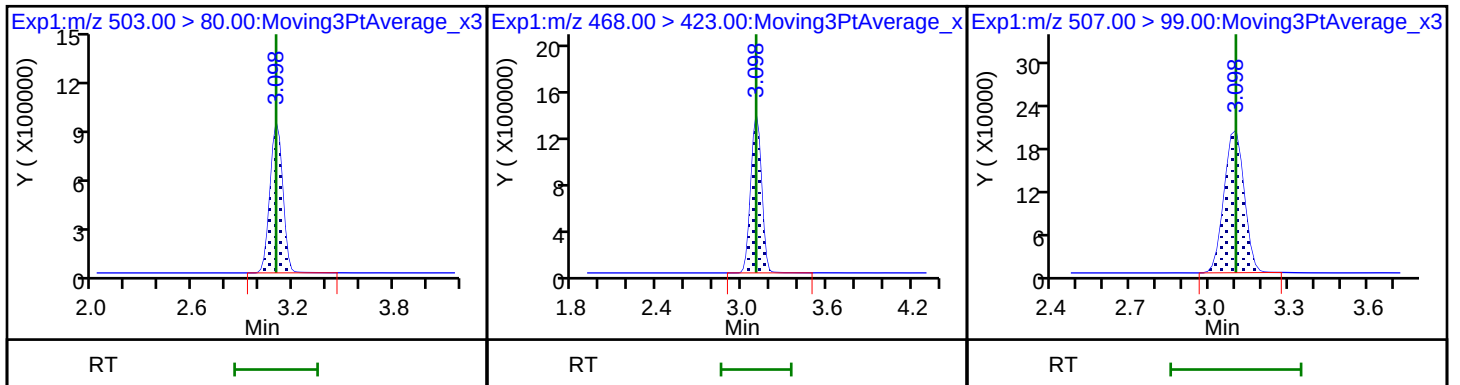
16 Perfluoroheptanesulfonic acid

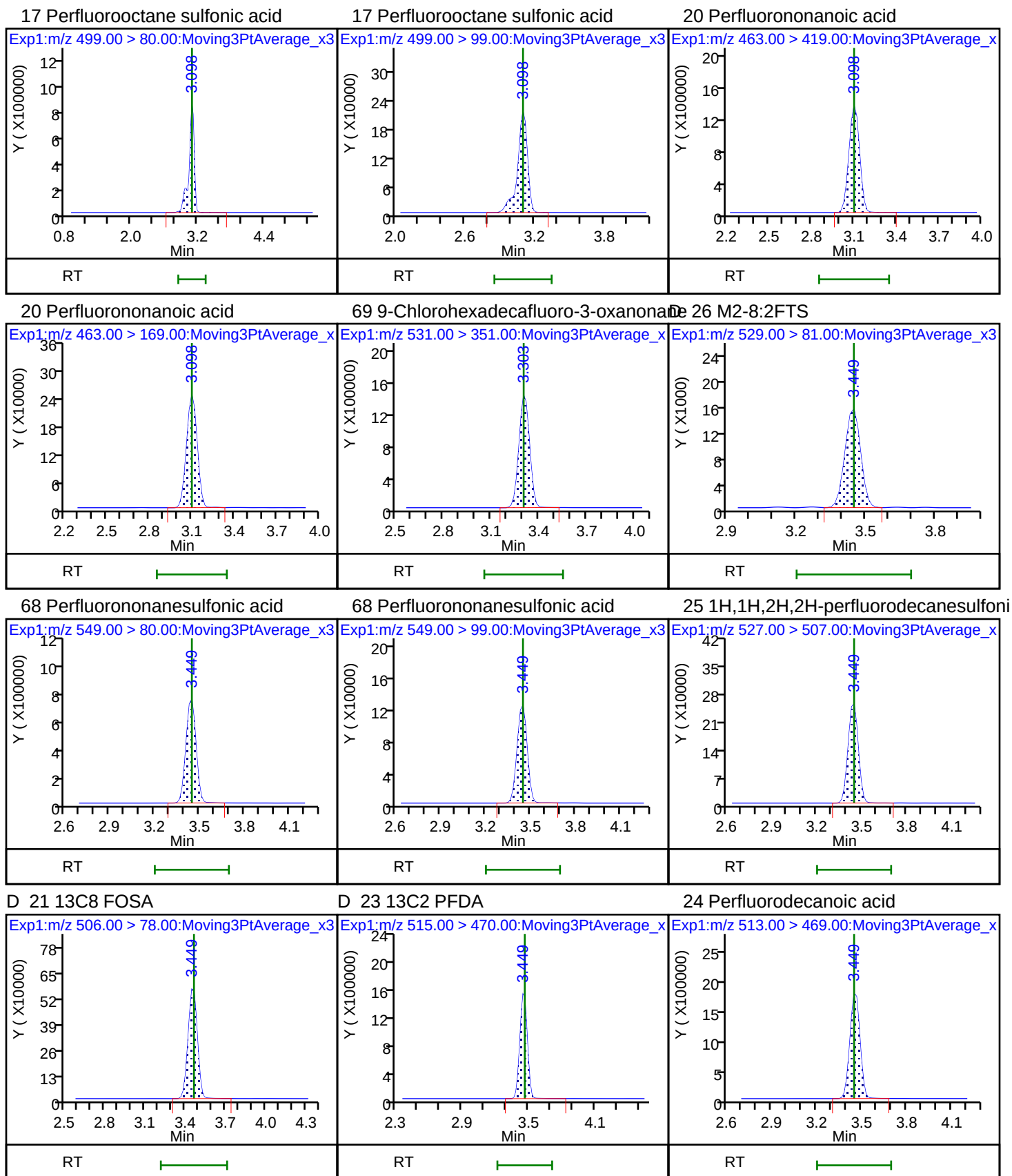


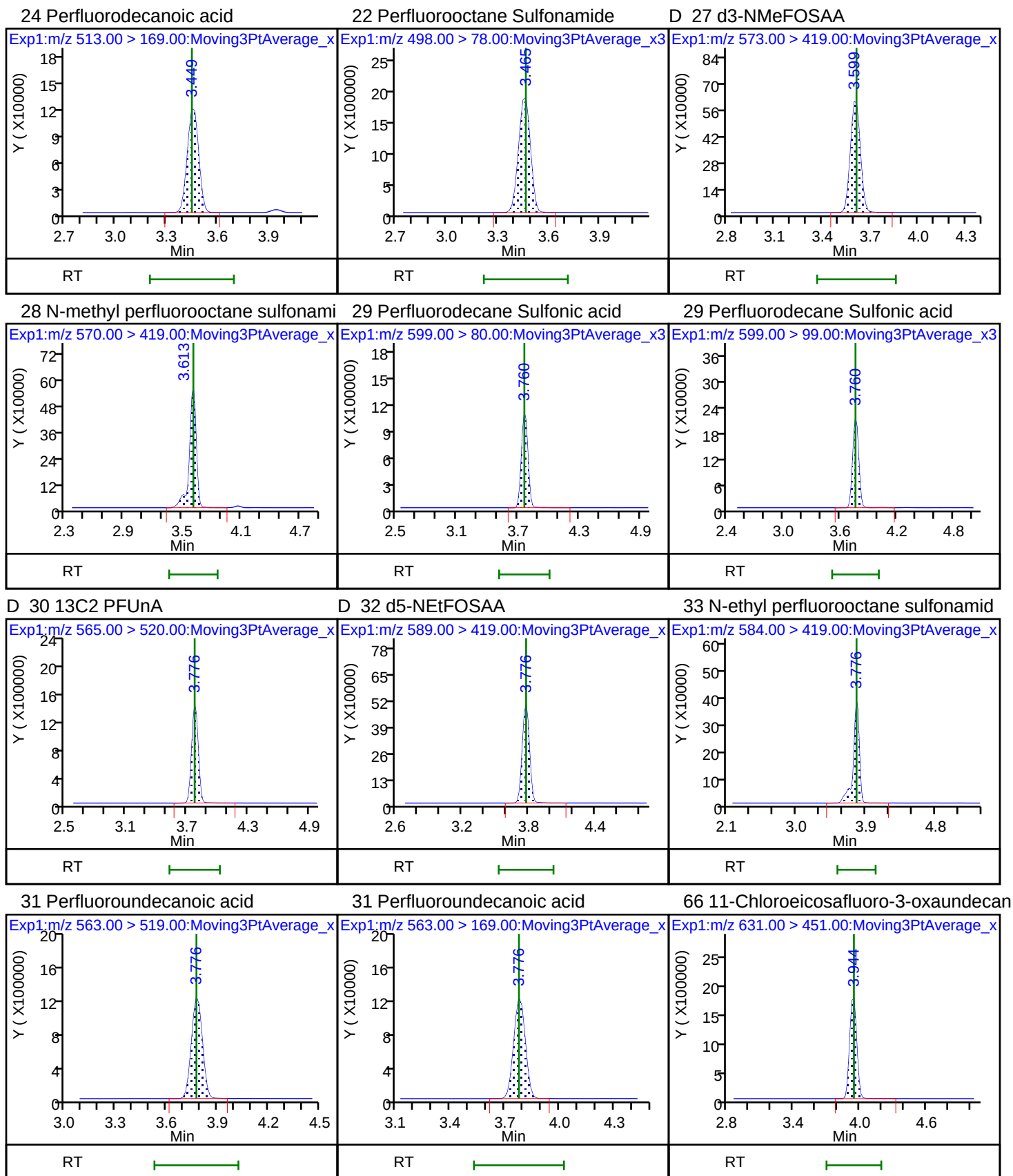
D 18 13C4 PFOS

D 19 13C5 PFNA

D 72 13C8 PFOS

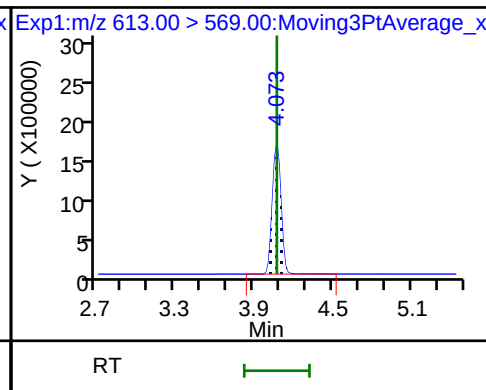
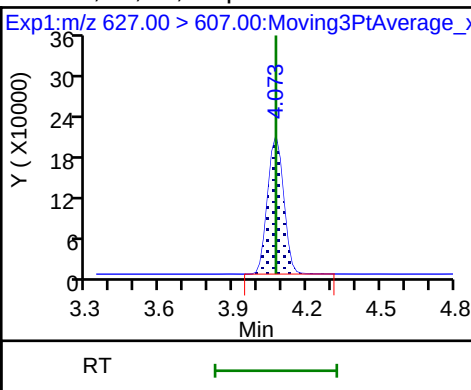
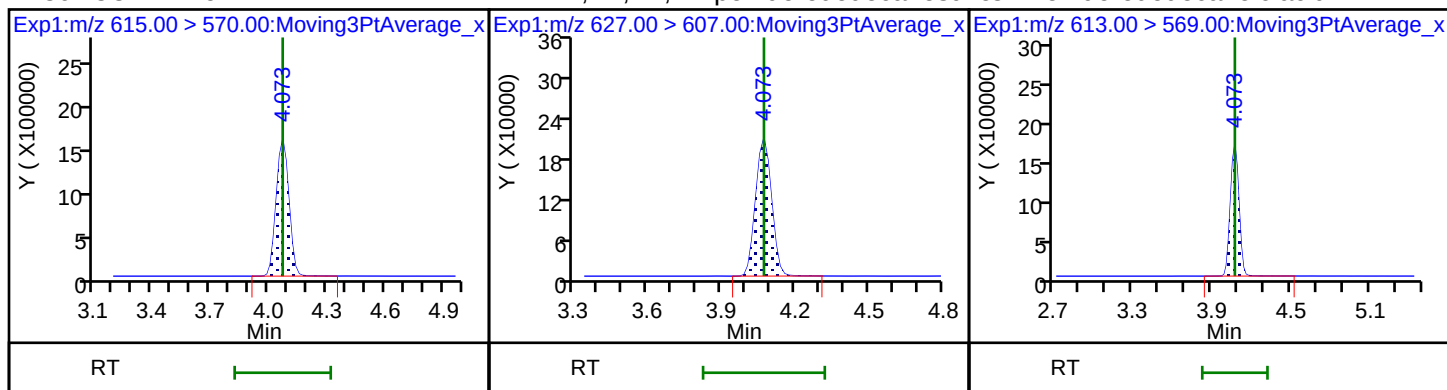






D 36 13C2 PFDaA

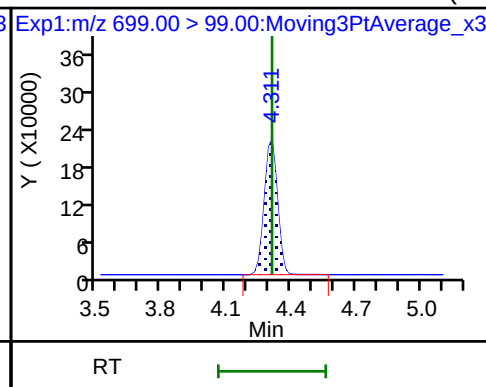
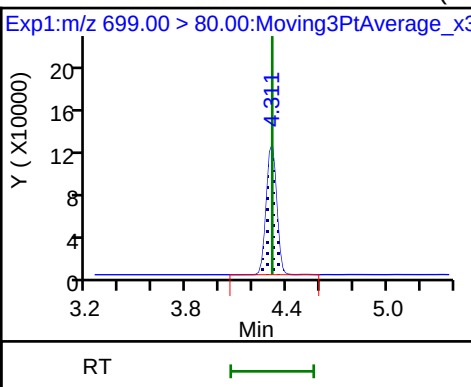
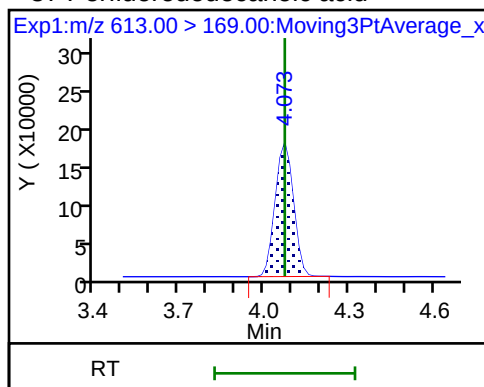
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

75 Perfluorododecanesulfonic acid (PF

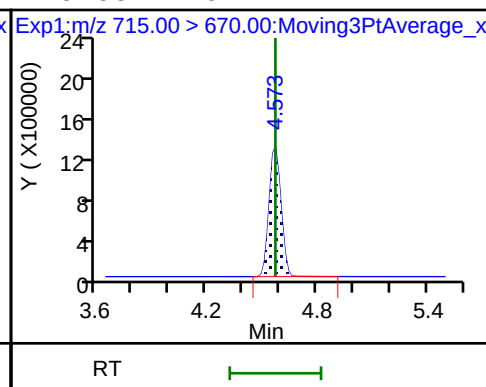
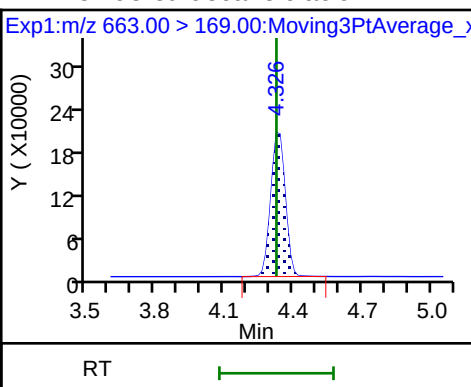
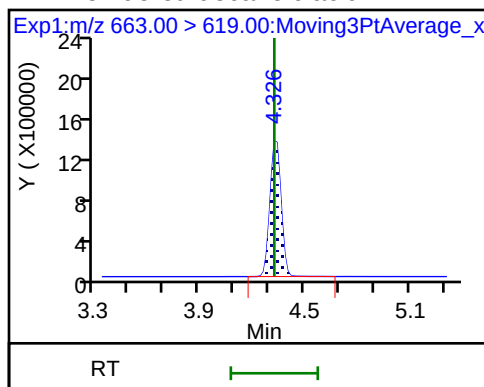
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

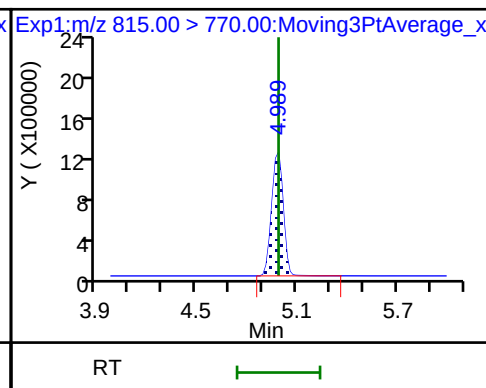
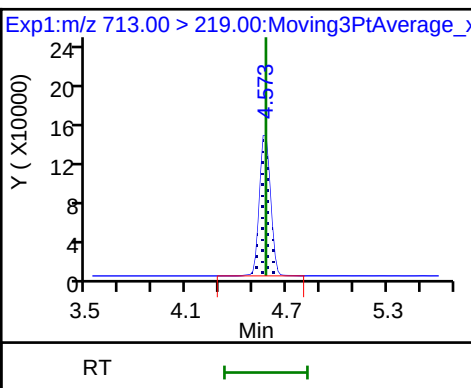
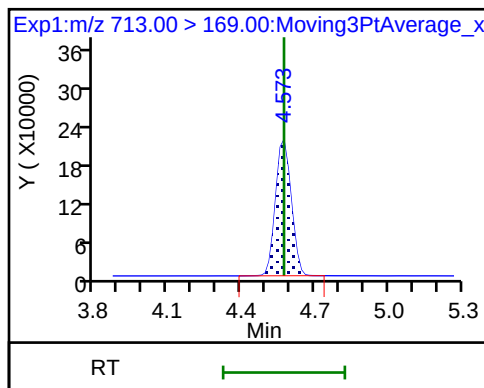
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

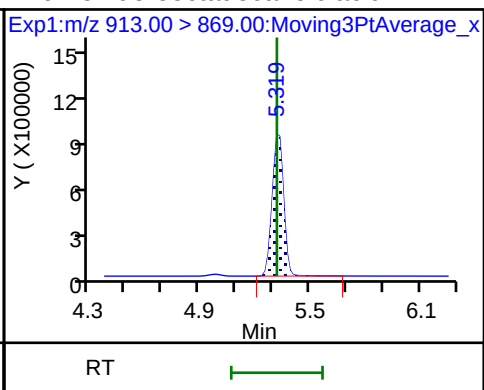
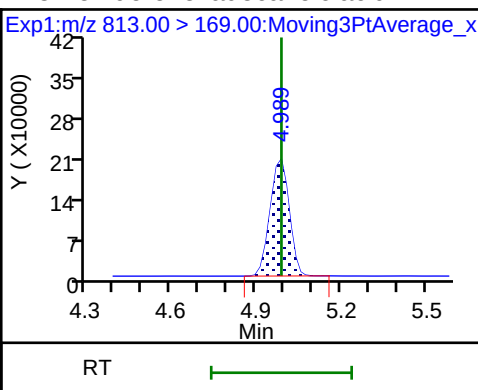
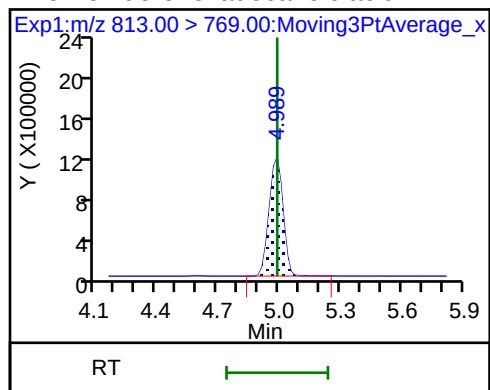
D 44 13C2-PFHxDA



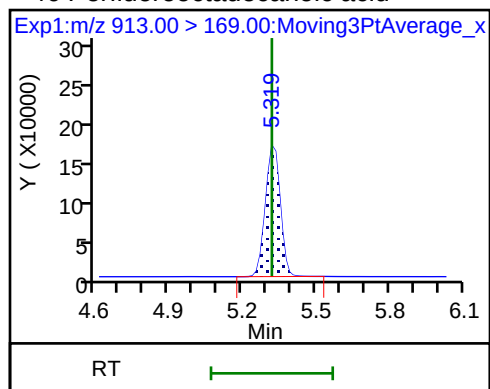
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: CCV 320-249235/12 Calibration Date: 10/02/2018 23:39

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.10.02LLAA_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9167	0.9293		1.01	1.00	1.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	0.996		1.00	1.00	0.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	114.3		0.978	0.884	10.6	50.0
4:2 FTS	AveID	22.60	18.82		0.778	0.934	-16.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.8933		0.993	1.00	-0.7	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	50.92		0.987	0.938	5.2	50.0
HFPO-DA (GenX)	AveID	1.870	1.349		0.721	1.00	-27.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.083		1.02	1.00	1.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.210		0.874	0.910	-3.9	40.0
DONA	AveID	2.645	2.974		1.06	0.942	12.4	50.0
6:2 FTS	AveID	2.182	2.977		1.29	0.948	36.5	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.063		0.988	0.952	3.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.124		1.07	1.00	7.2	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	1.050		1.07	1.00	6.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.064		0.933	0.928	0.5	40.0
F-53B Major	AveID	1.117	1.253		1.05	0.932	12.2	50.0
8:2 FTS	AveID	14.70	16.13		1.05	0.958	9.7	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6597		0.951	0.960	-0.9	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.068		0.974	1.00	-2.6	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.357		1.14	1.00	13.8	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	1.075		1.12	1.00	12.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.8735		0.984	0.964	2.1	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9285		0.994	1.00	-0.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.9019		1.00	1.00	0.0	40.0
F-53B Minor	AveID	1.316	1.509		1.08	0.942	14.7	50.0
10:2 FTS	AveID	10.00	12.31		1.19	0.964	23.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	0.9940		0.993	1.00	-0.7	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.1067		1.08	0.968	11.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.8141		1.04	1.00	3.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1729		1.05	1.00	5.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9857		1.06	1.00	6.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: CCV 320-249235/12 Calibration Date: 10/02/2018 23:39
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.10.02LLAA_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6480	0.6695		1.03	1.00	3.3	50.0
13C4 PFBA	Ave	0.9210	0.8646		2.35	2.50	-6.1	50.0
13C5 PFPeA	Ave	0.8374	0.8007		2.39	2.50	-4.4	50.0
13C3 PFBS	Ave	0.0114	0.0103		2.09	2.33	-10.0	50.0
M2-4:2 FTS	Ave	0.1043	0.0733		1.64	2.34	-29.7	50.0
13C2 PFHxA	Ave	0.8875	0.8654		2.44	2.50	-2.5	50.0
13C3 HFPO-DA	Ave	0.0924	0.1401		3.79	2.50	51.6*	50.0
13C4 PFHpA	Ave	1.057	1.082		2.56	2.50	2.4	50.0
18O2 PFHxS	Ave	0.6816	0.6461		2.24	2.37	-5.2	50.0
M2-6:2 FTS	Ave	0.1097	0.0824		1.79	2.38	-24.9	40.0
13C8 PFOA	Ave	3075368	3012261		2.40	2.45	-2.1	50.0
13C4 PFOA	Ave	1.001	0.9499		2.37	2.50	-5.1	50.0
13C4 PFOS	Ave	0.7065	0.6673		2.26	2.39	-5.6	50.0
13C5 PFNA	Ave	0.9108	0.8732		2.40	2.50	-4.1	50.0
13C8 PFOS	Ave	540497	481200		2.13	2.39	-11.0	50.0
M2-8:2 FTS	Ave	0.0139	0.0102		1.76	2.40	-26.7	40.0
13C2 PFDA	Ave	0.9435	0.9471		2.51	2.50	0.4	50.0
13C8 FOSA	Ave	0.3770	0.3312		2.20	2.50	-12.1	50.0
d3-NMeFOSAA	Ave	0.4182	0.3286		1.96	2.50	-21.4	50.0
13C2 PFUnA	Ave	0.8011	0.7821		2.44	2.50	-2.4	50.0
d5-NEtFOSAA	Ave	0.3276	0.2894		2.21	2.50	-11.7	50.0
13C2 PFDoA	Ave	0.9529	0.9488		2.49	2.50	-0.4	50.0
13C2 PFTeDA	Ave	0.7508	0.7224		2.41	2.50	-3.8	50.0
13C2 PFHxDA	Ave	0.7497	0.7323		2.44	2.50	-2.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_051.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 02-Oct-2018 23:39:37 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\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 10:23:56 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: barnettj

Date: 04-Oct-2018 18:08:52

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	1.483	0.006	0.544	7285863	2.35		93.9	9342	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.489	1.489	0.0	1.000	2708397	1.01		101	78.7	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.763	0.001	0.645	6747352	2.39		95.6	7170	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.764	0.0	1.000	2689423	1.00		100	202	
D 47 13C3-PFBS										
301.90 > 83.00	1.805	1.805	0.0	0.660	80397	2.09		90.0	361	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.805	1.805	0.0	1.000	3492938	0.9776		111	2693	
298.90 > 99.00	1.805	1.805	0.0	1.000	1227707		2.85(1.35-4.05)		726	
D 60 M2-4:2FTS										
329.00 > 81.00	2.017	2.017	0.0	0.738	576626	1.64		70.3	566	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.017	2.017	0.0	1.117	607812	0.7778		83.3	2145	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.047	0.001	0.749	7293361	2.44		97.5	6885	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	2606068	0.99		99.3	281	
313.00 > 119.00	2.048	2.048	0.0	1.000	191786		13.59(6.96-20.87)		329	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.078	2.078	0.0	1.151	1651609	0.9868		105	2559	
349.00 > 99.00	2.078	2.078	0.0	1.151	817586		2.02(1.15-3.45)		723	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.150	2.150	0.0	1.000	636952	0.7214		72.1	438	

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	0.786	1180509	3.79		152	2910	
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	9121547	2.56		102	8921	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.373	2.373	0.0	1.000	3949632	1.02		102	590	
363.00 > 169.00	2.373	2.373	0.0	1.000	866225		4.56(2.17-6.52)		978	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	2397222	0.8744		96.1	2158	
399.00 > 99.00	2.386	2.400	-0.014	0.995	644410		3.72(1.90-5.70)		529	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.399	0.001	0.878	5150707	2.24		94.8	5790	
76 DONA										
377.00 > 251.00	2.426	2.426	0.0	0.783	6301075	1.06		112	10679	
377.00 > 85.00	2.426	2.426	0.0	0.783	2589939		2.43(1.13-3.39)		1048	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	659786	1.78		75.1	1238	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	784107	1.29		136	400	
D 73 13C8 PFOA										
421.00 > 376.00	2.718	2.718	0.0		7372510	2.40		97.9	6673	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.734	0.0	1.000	8004847	2.37		94.9	5547	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		8427299	2.50			7424	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	3603172	1.07		107	300	
413.00 > 169.00	2.734	2.734	0.0	1.000	1255911		2.87(1.36-4.08)		891	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.734	2.734	0.0	0.883	2275180	0.9882		104	2524	
449.00 > 99.00	2.734	2.734	0.0	0.883	562583		4.04(1.84-5.53)		1288	
D 18 13C4 PFOS										
503.00 > 80.00	3.098	3.098	0.0	1.133	5375842	2.26		94.4	3814	
D 19 13C5 PFNA										
468.00 > 423.00	3.098	3.098	0.0	1.133	7358793	2.40		95.9	5714	
D 72 13C8 PFOS										
507.00 > 99.00	3.098	3.098	0.0		1150067	2.13		89.0	2992	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.098	3.098	0.0	1.000	2221866	0.9325		100	1524	
499.00 > 99.00	3.098	3.098	0.0	1.000	486398		4.57(2.04-6.12)		967	
20 Perfluorononanoic acid										
463.00 > 419.00	3.098	3.098	0.0	1.000	3090287	1.07		107	370	
463.00 > 169.00	3.098	3.098	0.0	1.000	529644		5.83(2.68-8.03)		1352	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.303	3.303	0.0	1.066	2627199	1.05		112	2102	
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	82243	1.76		73.3	529	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.449	3.449	0.0	1.113	1424568	0.9515		99.1	119	
549.00 > 99.00	3.449	3.449	0.0	1.113	234116		6.08(3.02-9.05)		1181	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.449	3.449	0.0	1.000	530602	1.05		110	1306	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.465	0.0	1.000	3409426	0.9744		97.4	652	
513.00 > 169.00	3.465	3.465	0.0	1.000	217265		15.69(7.12-21.35)		251	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.464	0.001	1.267	2791426	2.20		87.9	5359	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.464	0.001	1.267	7981450	2.51		100	5410	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	3748087	1.14		114	3878	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.612	0.001	1.321	2768968	1.96		78.6	2599	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.000	1190492	1.12		112	404	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.760	3.760	0.0	1.213	1893926	0.9842		102	591	
599.00 > 99.00	3.760	3.760	0.0	1.213	400352		4.73(2.14-6.43)		1517	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.775	0.001	1.381	6590668	2.44		97.6	6118	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	2438439	2.21		88.3	3086	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	905609	0.99		99.4	1868	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.776	3.776	0.0	1.000	2377668	1.00		100	632	
563.00 > 169.00	3.776	3.776	0.0	1.000	225797		10.53(5.24-15.72)		634	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.944	0.0	1.273	3196290	1.08		115	4579	
35 MeFOSA										
512.00 > 169.00	3.960	3.960	0.0		673899	NC			851	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.072	0.001	1.489	7995702	2.49		99.6	9282	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.073	4.073	0.0	1.181	407535	1.19		123	1364	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.073	0.0	1.000	3178981	0.99		99.3	1109	
613.00 > 169.00	4.073	4.073	0.0	1.000	331248		9.60(4.68-14.05)		526	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.139	0.0		687027	NC			553	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.311	4.311	0.0	1.391	232355	1.08		111	517	
699.00 > 99.00	4.311	4.311	0.0	1.391	409018		0.57(0.28-0.83)		1214	

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	4.342	4.342	0.0	1.066	2603793	1.04		104	1365	
663.00 > 169.00	4.342	4.342	0.0	1.066	444554		5.86(3.09-9.27)		855	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.572	0.001	1.672	6087703	2.41		96.2	6289	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.573	4.573	0.0	1.000	421103	1.05		105	1558	
713.00 > 219.00	4.573	4.573	0.0	1.000	294878		1.43(0.70-2.09)		1352	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.989	4.989	0.0	1.825	6171548	2.44		97.7	7174	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.989	4.989	0.0	1.000	2433259	1.06		106	1381	
813.00 > 169.00	4.989	4.989	0.0	1.000	436000		5.58(2.77-8.32)		1108	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.334	5.334	0.0	1.069	1652668	1.03		103	688	
913.00 > 169.00	5.334	5.334	0.0	1.069	298813		5.53(2.55-7.64)		1450	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_051.d

Injection Date: 02-Oct-2018 23:39:37

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

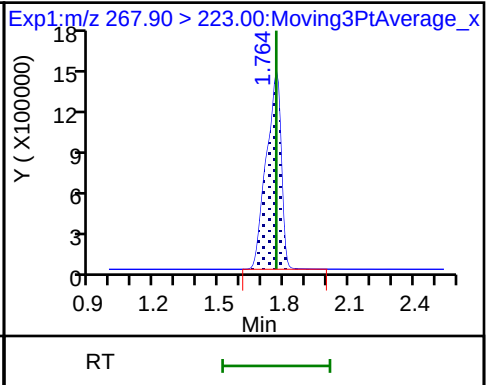
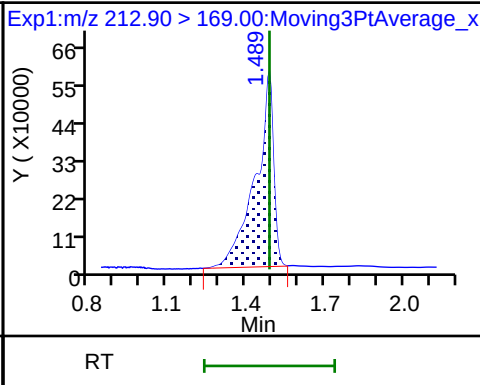
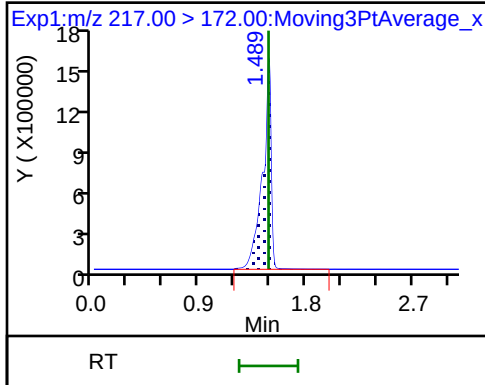
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

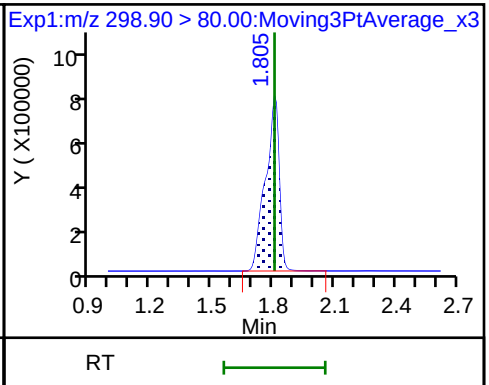
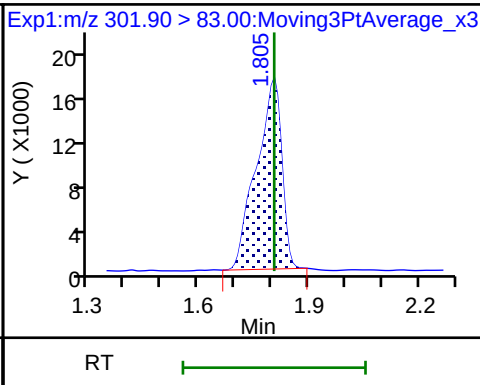
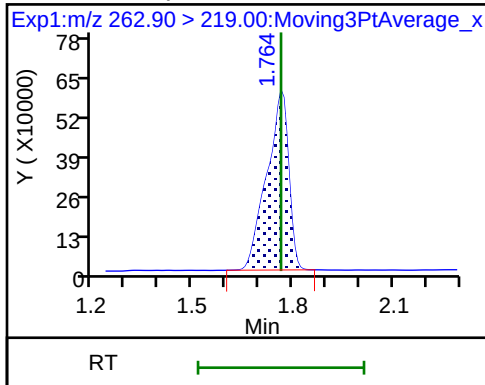
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

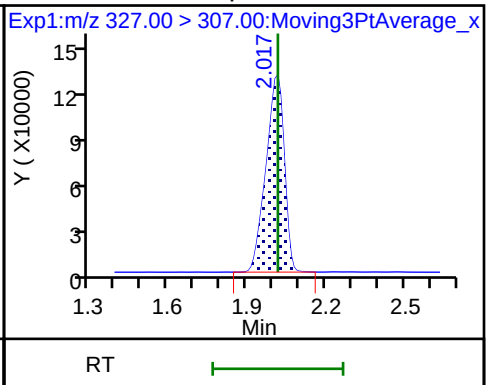
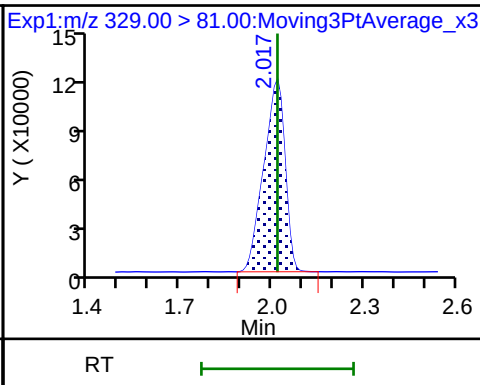
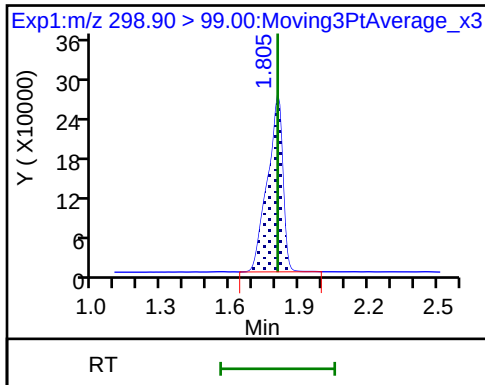
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

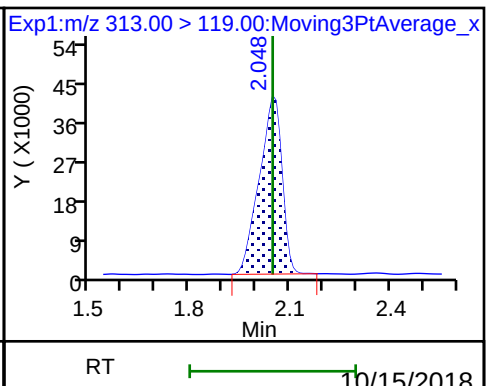
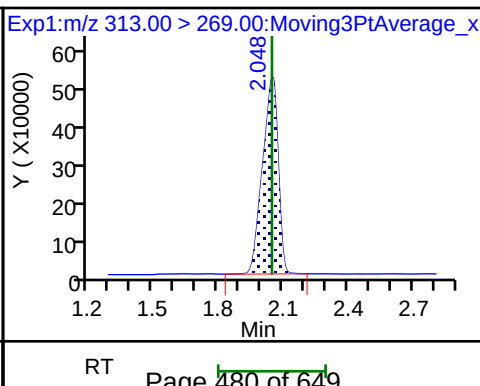
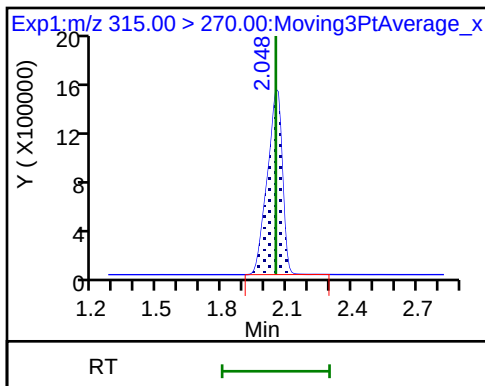
61 1H,1H,2H,2H-perfluorohexanesulfoni

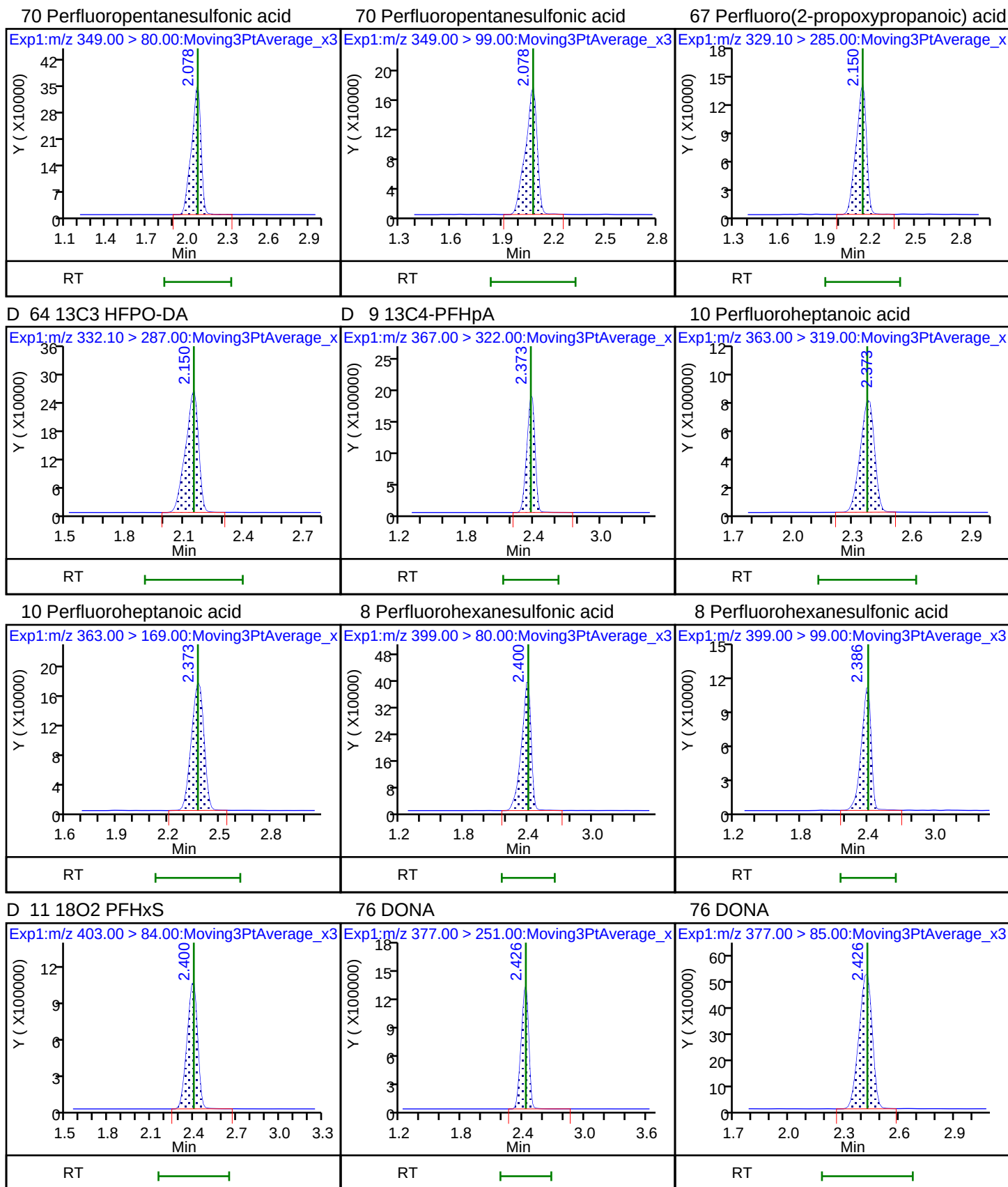


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

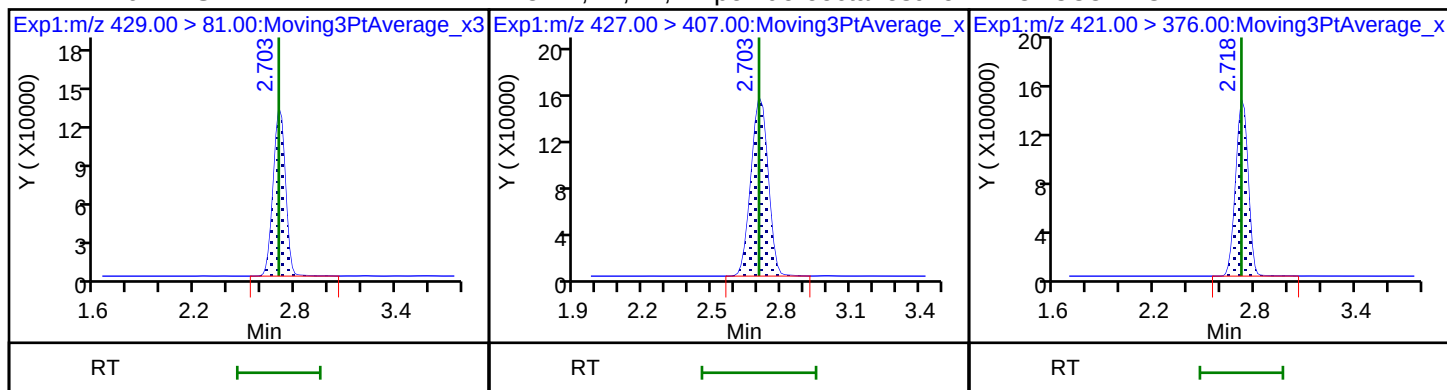
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

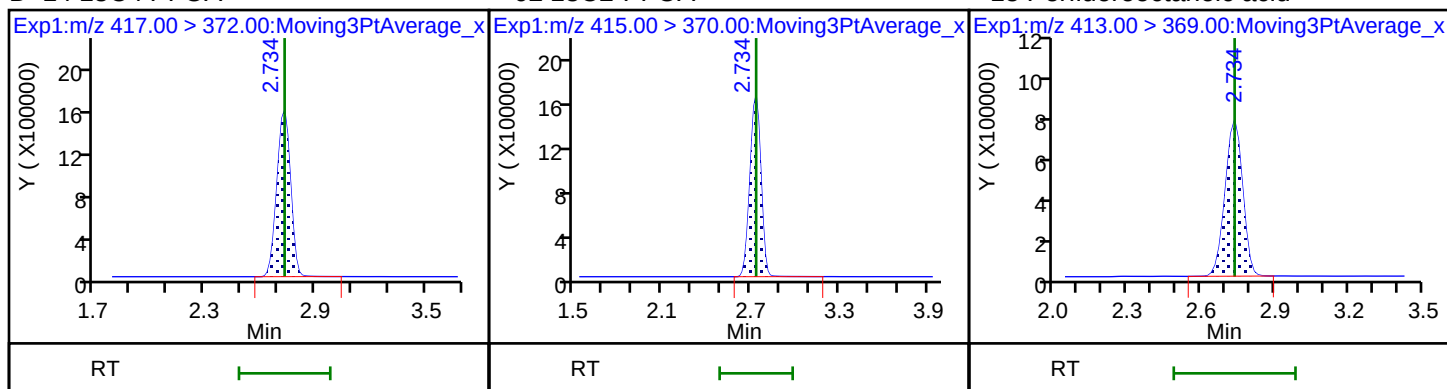
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

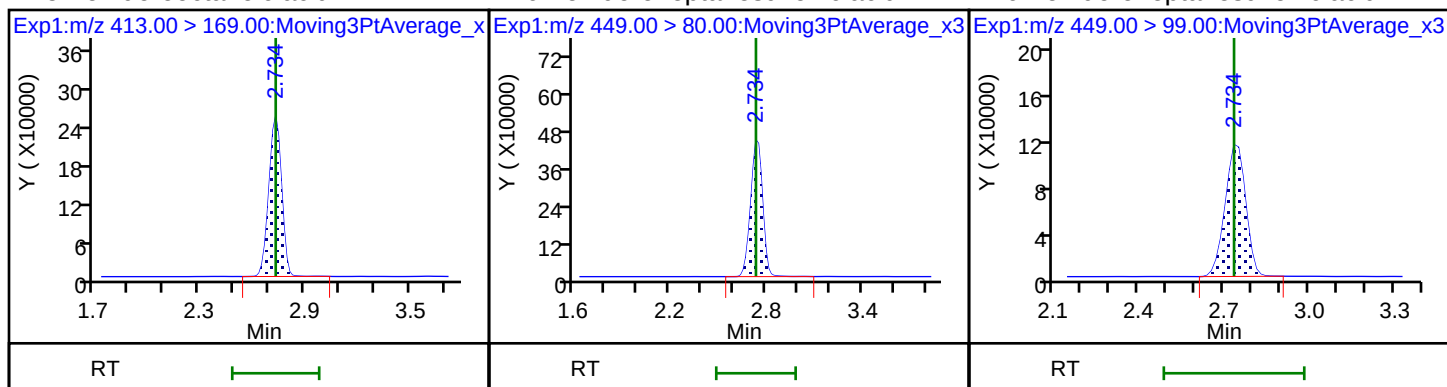
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

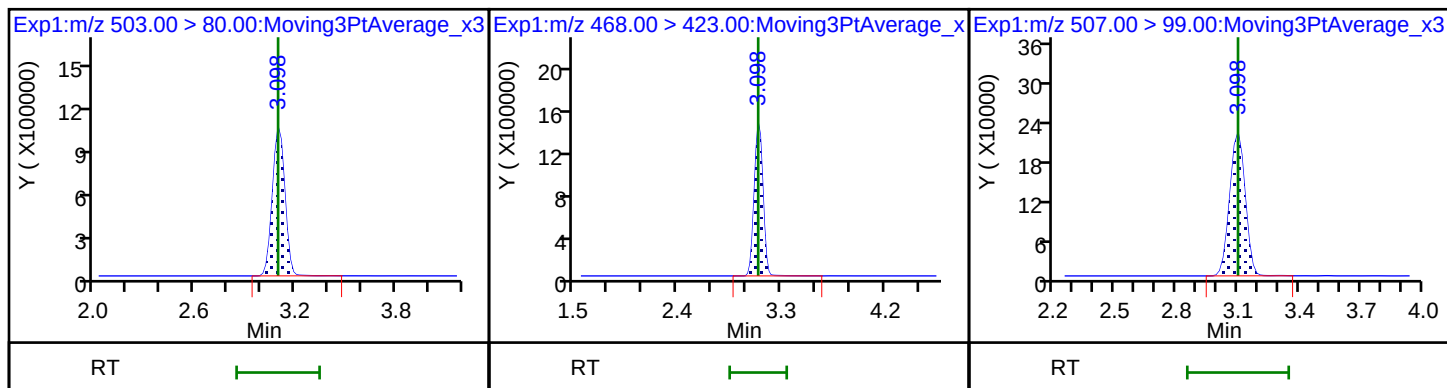
16 Perfluoroheptanesulfonic acid

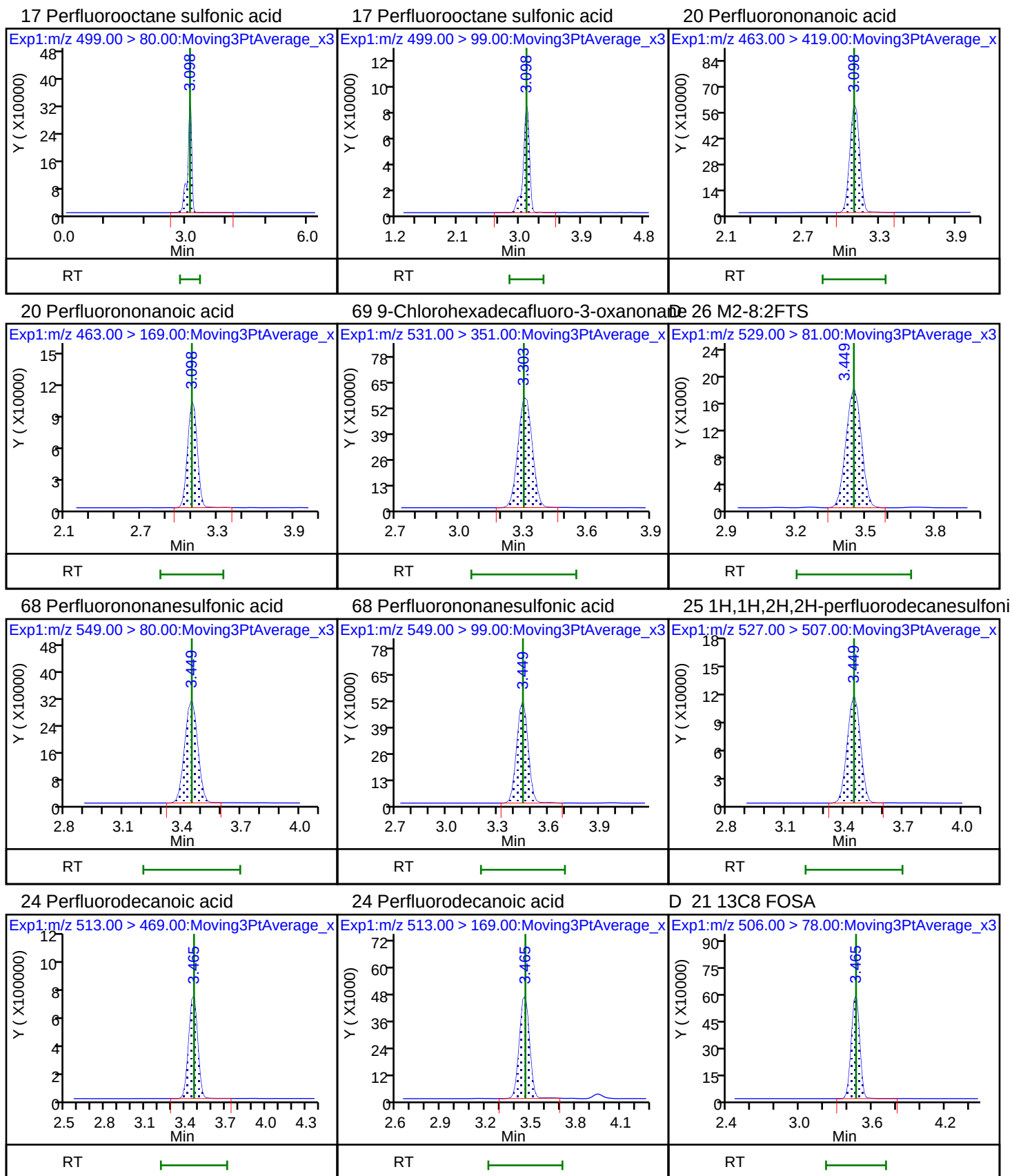


D 18 13C4 PFOS

D 19 13C5 PFNA

D 72 13C8 PFOS

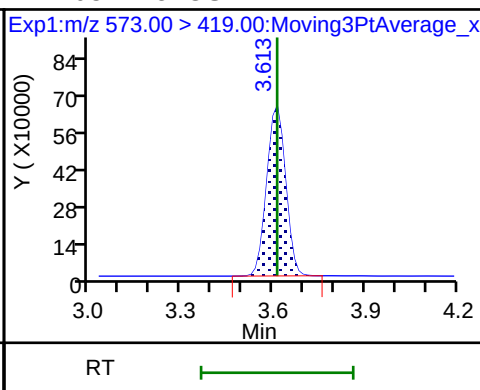
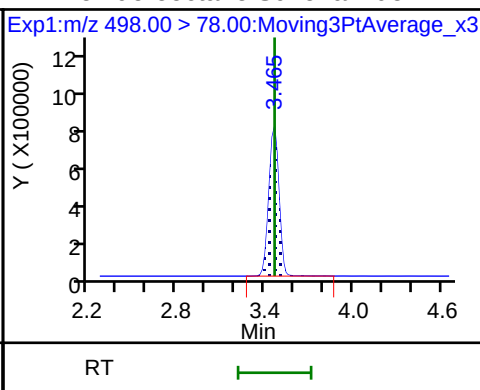
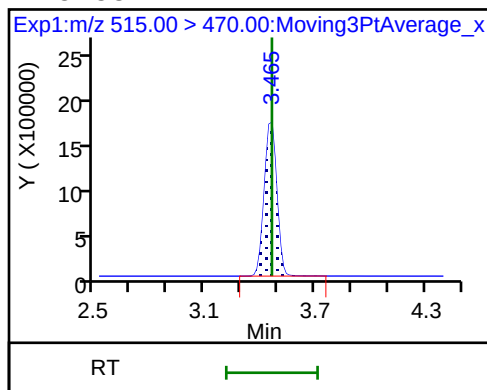




D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

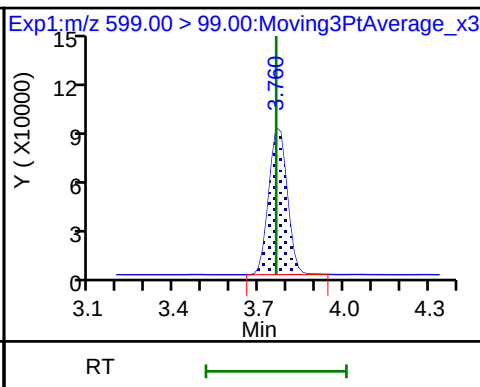
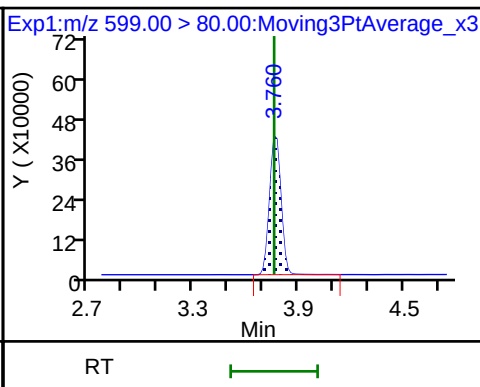
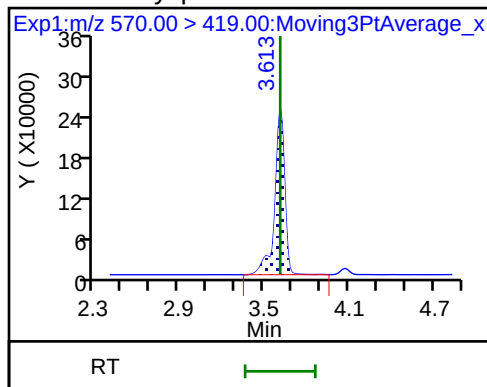
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

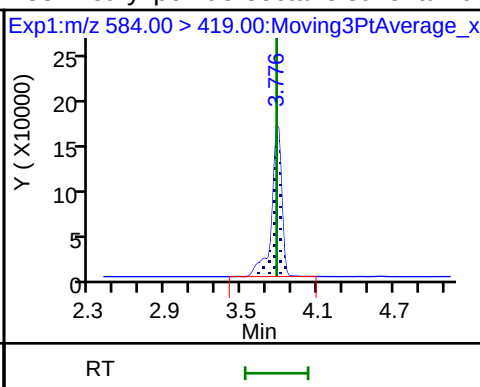
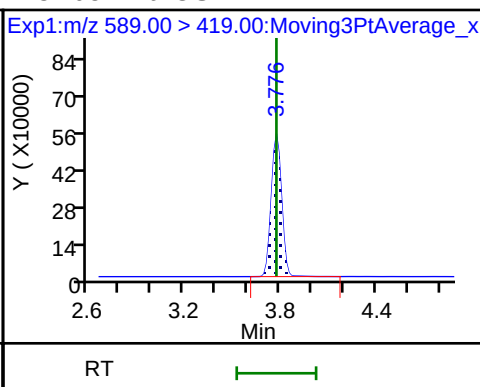
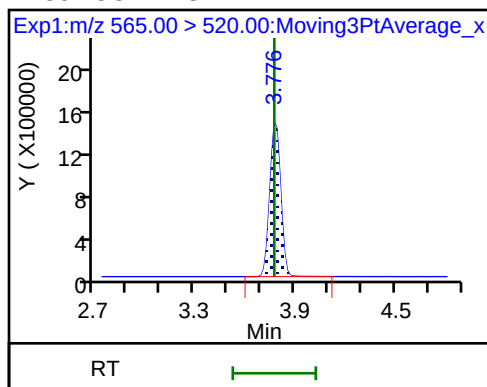
29 Perfluorodecane Sulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

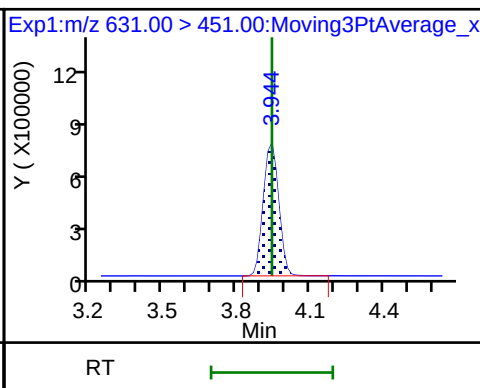
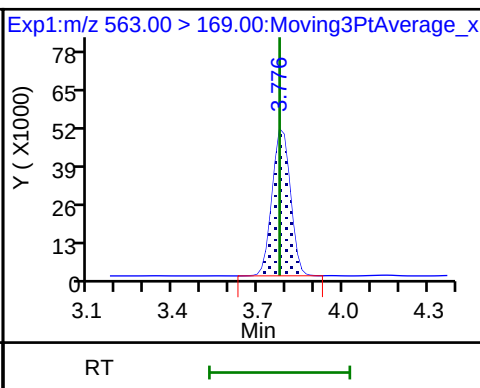
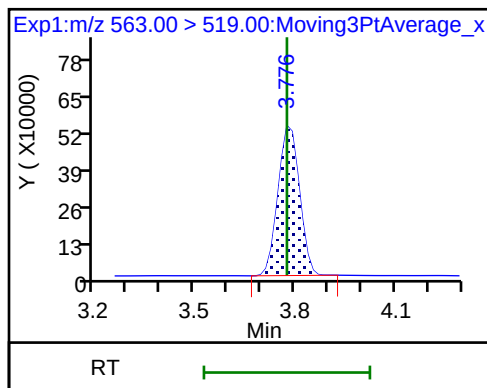
33 N-ethyl perfluorooctane sulfonamid



31 Perfluoroundecanoic acid

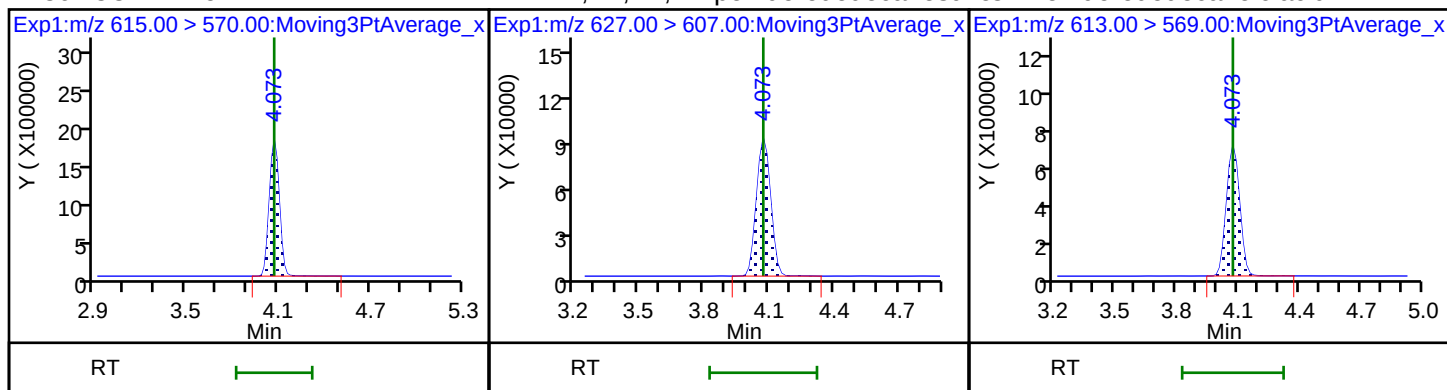
31 Perfluoroundecanoic acid

66 11-Chloroeicosafluoro-3-oxaundecan



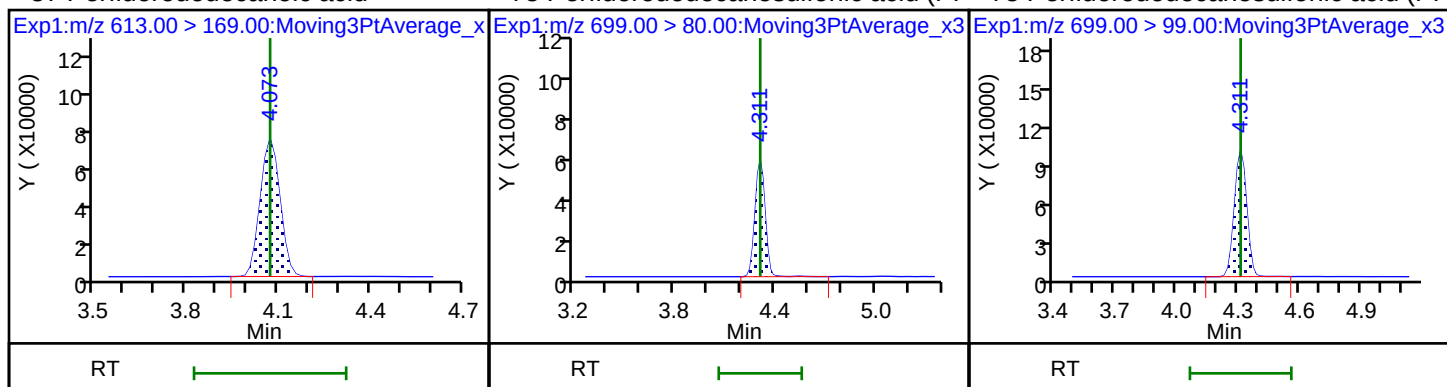
D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

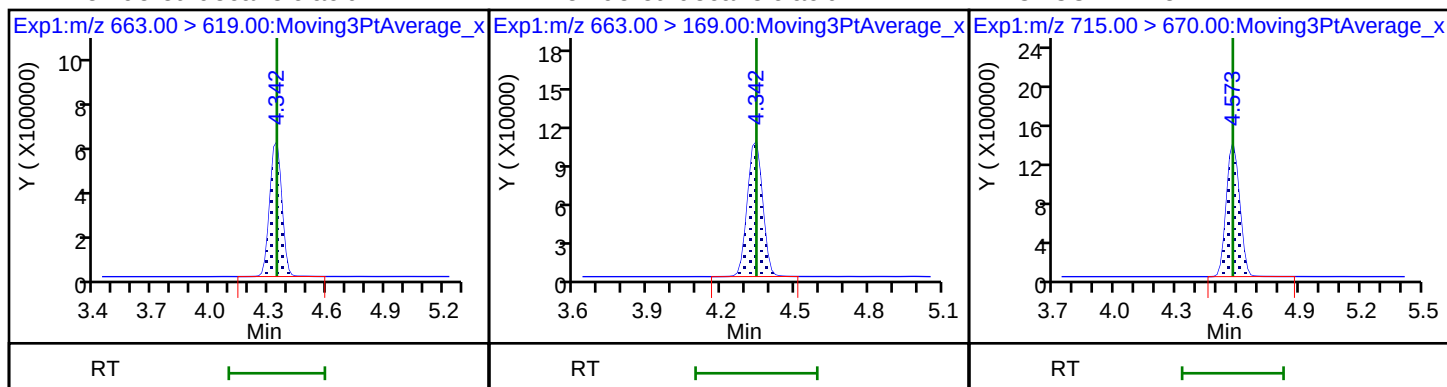
75 Perfluorododecanesulfonic acid (PF) 75 Perfluorododecanesulfonic acid (PF)



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

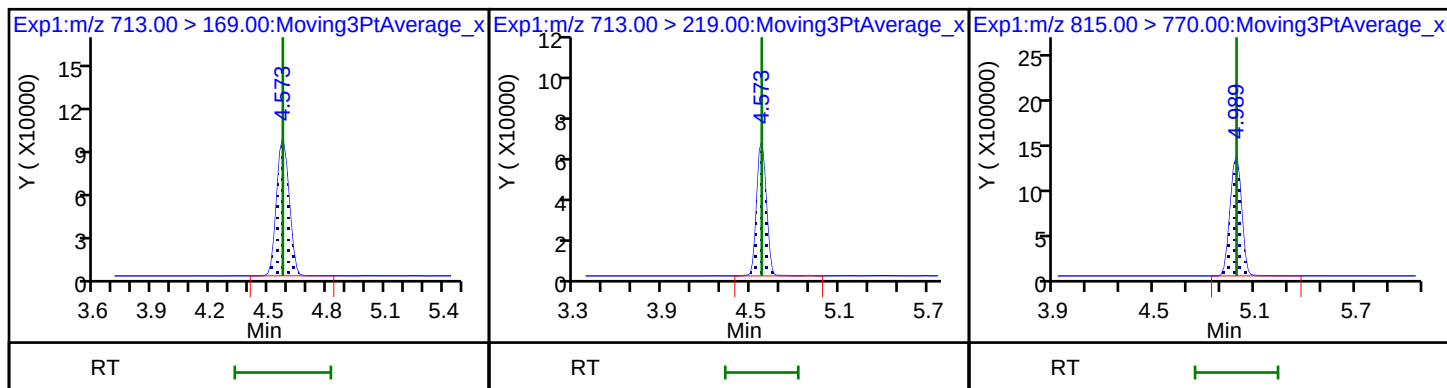
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

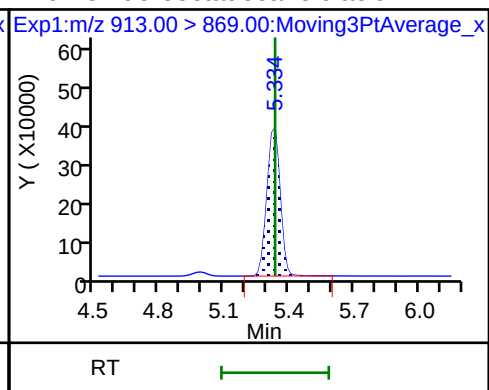
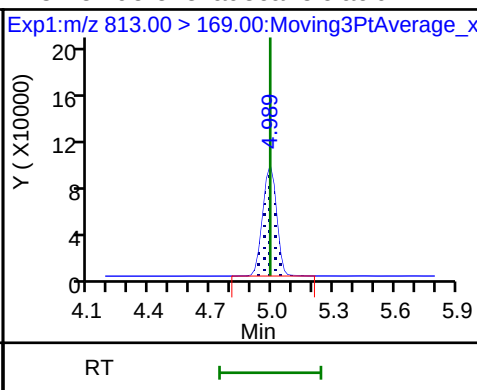
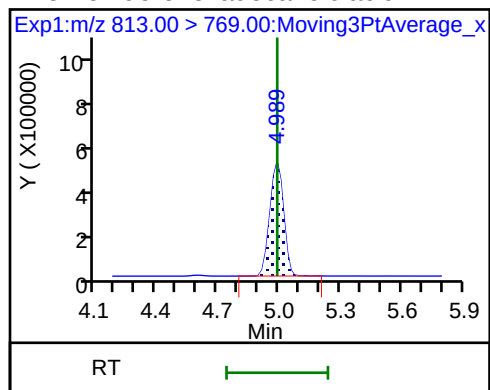
D 44 13C2-PFHxDA



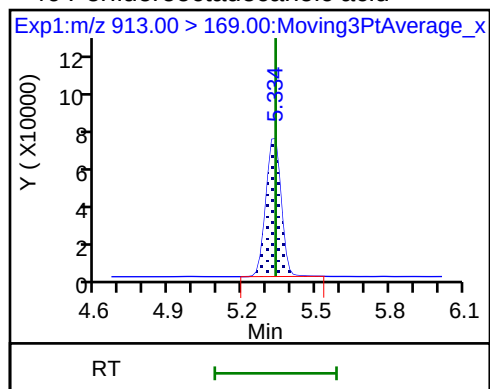
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

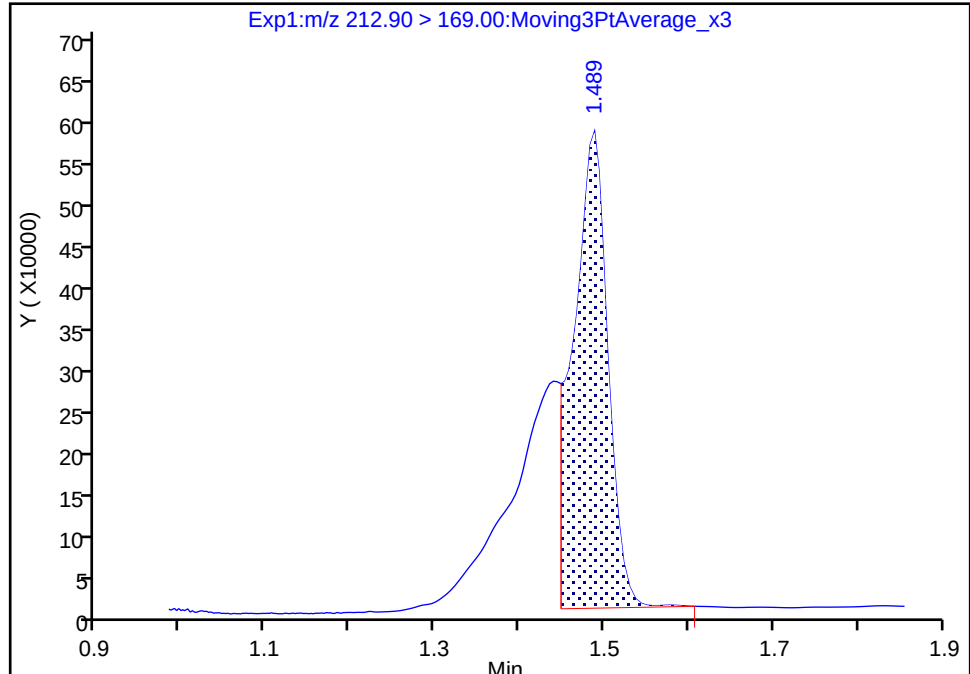
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_051.d
Injection Date: 02-Oct-2018 23:39:37 Instrument ID: A9
Lims ID: CCV L4
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 13 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

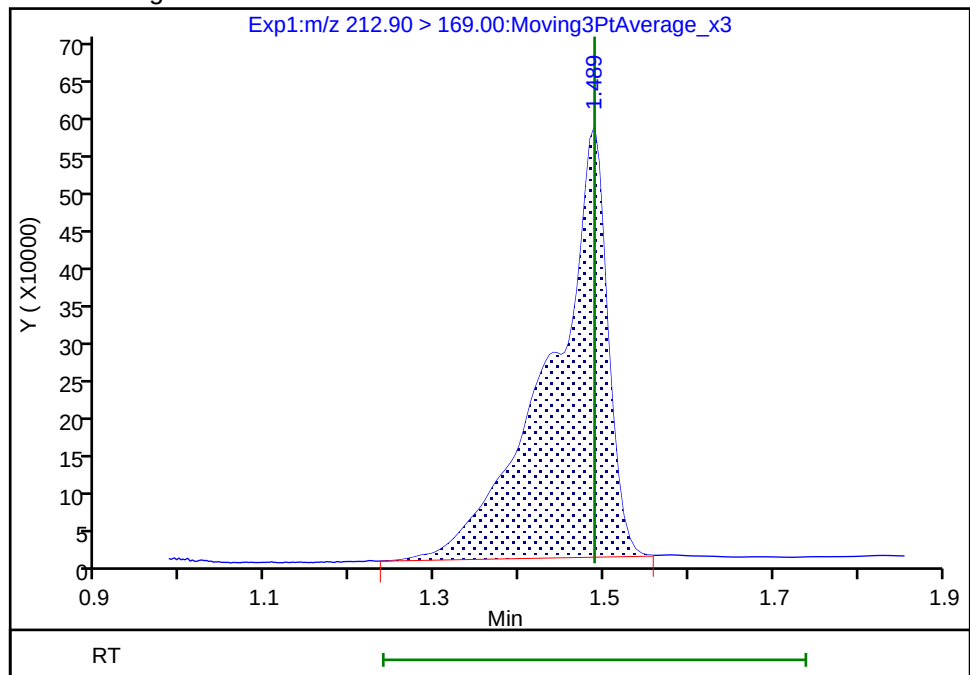
RT: 1.49
Area: 1594006
Amount: 0.596657
Amount Units: ng/ml

Processing Integration Results



RT: 1.49
Area: 2708397
Amount: 1.013789
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 04-Oct-2018 18:08:10
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 487 of 649

10/15/2018

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Lab Sample ID: CCV 320-249235/25 Calibration Date: 10/03/2018 01:17

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.10.02LLAA_064.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9167	0.9405		2.57	2.50	2.6	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.030		2.59	2.50	3.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	118.6		2.54	2.21	14.8	50.0
4:2 FTS	AveID	22.60	21.23		2.19	2.34	-6.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.8610		2.39	2.50	-4.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	54.57		2.64	2.35	12.7	50.0
HFPO-DA (GenX)	AveID	1.870	1.468		1.96	2.50	-21.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.048		2.47	2.50	-1.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.198		2.17	2.28	-4.8	40.0
DONA	AveID	2.645	2.803		2.50	2.36	6.0	50.0
6:2 FTS	AveID	2.182	2.126		2.31	2.37	-2.6	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.040		2.48	2.50	-0.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.182		2.75	2.38	15.5	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	1.049		2.67	2.50	6.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.116		2.44	2.32	5.4	40.0
F-53B Major	AveID	1.117	1.240		2.59	2.33	11.0	50.0
8:2 FTS	AveID	14.70	15.29		2.49	2.40	4.0	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.7016		2.53	2.40	5.4	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.112		2.54	2.50	1.5	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.113		2.64	2.50	5.5	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	1.046		2.73	2.50	9.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.8651		2.44	2.41	1.1	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9154		2.45	2.50	-2.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.8403		2.33	2.50	-6.8	40.0
F-53B Minor	AveID	1.316	1.444		2.59	2.36	9.8	50.0
10:2 FTS	AveID	10.00	9.375		2.26	2.41	-6.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.000		2.50	2.50	-0.1	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0911		2.30	2.42	-4.9	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.7553		2.41	2.50	-3.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1516		2.31	2.50	-7.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9409		2.57	2.50	2.9	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1
 SDG No.: _____
 Lab Sample ID: CCV 320-249235/25 Calibration Date: 10/03/2018 01:17
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.10.02LLAA_064.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6480	0.6908		2.67	2.50	6.6	50.0
13C4 PFBA	Ave	0.9210	0.8470		2.30	2.50	-8.0	50.0
13C5 PFPeA	Ave	0.8374	0.7788		2.33	2.50	-7.0	50.0
13C3 PFBS	Ave	0.0114	0.0100		2.05	2.33	-11.9	50.0
M2-4:2 FTS	Ave	0.1043	0.0752		1.68	2.34	-27.9	50.0
13C2 PFHxA	Ave	0.8875	0.8949		2.52	2.50	0.8	50.0
13C3 HFPO-DA	Ave	0.0924	0.1244		3.37	2.50	34.6	50.0
13C4 PFHpA	Ave	1.057	0.998		2.36	2.50	-5.5	50.0
18O2 PFHxS	Ave	0.6816	0.6337		2.20	2.37	-7.0	50.0
M2-6:2 FTS	Ave	0.1097	0.0851		1.84	2.38	-22.4	40.0
13C8 PFOA	Ave	3075368	2797120		2.23	2.45	-9.0	50.0
13C4 PFOA	Ave	1.001	0.9755		2.44	2.50	-2.5	50.0
13C4 PFOS	Ave	0.7065	0.6472		2.19	2.39	-8.4	50.0
13C5 PFNA	Ave	0.9108	0.8014		2.20	2.50	-12.0	50.0
13C8 PFOS	Ave	540497	449021		1.99	2.39	-16.9	50.0
M2-8:2 FTS	Ave	0.0139	0.0107		1.84	2.40	-23.2	40.0
13C2 PFDA	Ave	0.9435	0.8696		2.30	2.50	-7.8	50.0
13C8 FOSA	Ave	0.3770	0.3472		2.30	2.50	-7.9	50.0
d3-NMeFOSAA	Ave	0.4182	0.3293		1.97	2.50	-21.3	50.0
d5-NEtFOSAA	Ave	0.3276	0.2953		2.25	2.50	-9.9	50.0
13C2 PFUnA	Ave	0.8011	0.7723		2.41	2.50	-3.6	50.0
13C2 PFDoA	Ave	0.9529	0.9169		2.41	2.50	-3.8	50.0
13C2 PFTeDA	Ave	0.7508	0.7491		2.49	2.50	-0.2	50.0
13C2 PFHxDA	Ave	0.7497	0.6730		2.24	2.50	-10.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_064.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 03-Oct-2018 01:17:14 ALS Bottle#: 14 Worklist Smp#: 25
 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\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 13:16:00 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: barnettj

Date: 04-Oct-2018 18:05:46

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	1.483	0.006	0.544	7198783	2.30		92.0	6074	
2 Perfluorobutyric acid										
212.90 > 169.00	1.489	1.489	0.0	1.000	6770525	2.56		103	226	
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.763	0.001	0.645	6619046	2.33		93.0	5819	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.005	6819462	2.59		103	279	
D 47 13C3-PFBS										
301.90 > 83.00	1.806	1.805	0.001	0.660	79392	2.05		88.1	374	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.806	1.806	0.0	1.000	8952512	2.54		115	3613	
298.90 > 99.00	1.806	1.806	0.0	1.000	3076508		2.91(1.35-4.05)		1421	
D 60 M2-4:2FTS										
329.00 > 81.00	2.017	2.017	0.0	0.738	596903	1.68		72.1	521	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.017	2.017	0.0	1.117	1692540	2.19		93.9	5375	
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.047	0.011	0.753	7605499	2.52		101	7963	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.058	2.058	0.0	1.000	6548125	2.39		95.7	500	
313.00 > 119.00	2.058	2.058	0.0	1.000	484294		13.52(6.96-20.87)		609	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.079	2.079	0.0	1.151	4369477	2.64		113	4388	
349.00 > 99.00	2.079	2.079	0.0	1.151	2006674		2.18(1.15-3.45)		1465	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.786	1056884	3.36		135	2507	

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	2.150	2.150	0.0	1.000	1551342	1.96		78.5	710	
D 9 13C4-PFHpA										
367.00 > 322.00	2.387	2.373	0.014	0.873	8485285	2.36		94.5	8207	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.387	0.0	1.000	8889561	2.47		98.7	950	
363.00 > 169.00	2.387	2.387	0.0	1.000	2069805		4.29(2.17-6.52)		2131	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.400	0.0	1.000	5873853	2.17		95.2	4202	
399.00 > 99.00	2.400	2.400	0.0	1.000	1637451		3.59(1.90-5.70)		1221	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.399	0.001	0.877	5094964	2.20		93.0	8727	
76 DONA										
377.00 > 251.00	2.426	2.426	0.0	0.783	14521579	2.50		106	10303	
377.00 > 85.00	2.426	2.426	0.0	0.783	6732460		2.16(1.13-3.39)		2473	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	687428	1.84		77.6	1064	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	1458204	2.31		97.4	892	
D 73 13C8 PFOA										
421.00 > 376.00	2.719	2.718	0.001		6845950	2.23		91.0	7807	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.735	2.735	0.0	1.000	8630880	2.48		99.2	637	
413.00 > 169.00	2.735	2.735	0.0	1.000	3167362		2.72(1.36-4.08)		1818	
* 62 13C2-PFOA										
415.00 > 370.00	2.735	2.735	0.0		8498743	2.50			10566	
D 14 13C4 PFOA										
417.00 > 372.00	2.735	2.734	0.001	1.000	8290349	2.44		97.5	8348	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.751	2.751	0.0	0.888	6188247	2.75		115	4491	
449.00 > 99.00	2.735	2.751	-0.016	0.883	1395771		4.43(1.84-5.53)		2175	
D 18 13C4 PFOS										
503.00 > 80.00	3.099	3.098	0.001	1.133	5258117	2.19		91.6	3806	
D 19 13C5 PFNA										
468.00 > 423.00	3.099	3.098	0.001	1.133	6810848	2.20		88.0	5346	
D 72 13C8 PFOS										
507.00 > 99.00	3.099	3.098	0.001		1073161	1.99		83.1	1722	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.099	3.099	0.0	1.000	5696680	2.44		105	2174	
499.00 > 99.00	3.099	3.099	0.0	1.000	1337240		4.26(2.04-6.12)		1620	
20 Perfluorononanoic acid										
463.00 > 419.00	3.099	3.099	0.0	1.000	7145987	2.67		107	730	
463.00 > 169.00	3.099	3.099	0.0	1.000	1335108		5.35(2.68-8.03)		2405	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.318	3.318	0.0	1.071	6354123	2.59		111	3316	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.449	3.449	0.0	1.113	3704706	2.53		105	4081	
549.00 > 99.00	3.449	3.449	0.0	1.113	608892		6.08(3.02-9.05)		2913	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	86921	1.84		76.8	538	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.449	3.449	0.0	1.000	1328996	2.49		104	2754	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.465	0.0	1.000	8220844	2.54		101	1223	
513.00 > 169.00	3.465	3.465	0.0	1.000	543996		15.11(7.12-21.35)		375	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.464	0.001	1.267	2951080	2.30		92.1	3369	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.464	0.001	1.267	7390759	2.30		92.2	5616	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	9185566	2.64		106	4312	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.612	0.001	1.321	2798314	1.97		78.7	4692	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.000	2927432	2.72		109	848	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.776	3.776	0.0	1.219	4586707	2.44		101	2955	
599.00 > 99.00	3.776	3.776	0.0	1.219	953674		4.81(2.14-6.43)		2309	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	2509746	2.25		90.1	2291	
D 30 13C2 PFUnA										
565.00 > 520.00	3.792	3.775	0.017	1.387	6563583	2.41		96.4	6273	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.792	3.792	0.0	1.004	2297428	2.45		98.0	2856	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.792	3.792	0.0	1.000	5515560	2.33		93.2	1093	
563.00 > 169.00	3.792	3.792	0.0	1.000	533185		10.34(5.24-15.72)		1317	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.944	0.0	1.273	7483733	2.59		110	6629	
35 MeFOSA										
512.00 > 169.00	3.960	3.960	0.0		1682267	NC			990	
D 36 13C2 PFDoA										
615.00 > 570.00	4.073	4.072	0.001	1.489	7792149	2.41		96.2	6345	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.073	4.073	0.0	1.181	819980	2.26		93.8	1833	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.073	0.0	1.000	7789496	2.50		99.9	2169	
613.00 > 169.00	4.073	4.073	0.0	1.000	876955		8.88(4.68-14.05)		1581	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.139	0.0		1763839	NC			719	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.311	4.311	0.0	1.391	485078	2.30		95.1	1097	
699.00 > 99.00	4.311	4.311	0.0	1.391	868046		0.56(0.28-0.83)		2646	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.342	4.342	0.0	1.066	5885018	2.41		96.4	2779	
663.00 > 169.00	4.342	4.342	0.0	1.066	970087		6.07(3.09-9.27)		1591	

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	4.573	4.573	0.0	1.000	965100	2.31		92.3	3460	
713.00 > 219.00	4.573	4.573	0.0	1.000	661107		1.46(0.70-2.09)		2773	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.572	0.001	1.672	6366142	2.49		99.8	12046	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.990	0.0	1.000	5381257	2.57		103	2400	E
813.00 > 169.00	4.990	4.990	0.0	1.000	989068		5.44(2.77-8.32)		2191	E
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.989	0.001	1.825	5719465	2.24		89.8	4694	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.335	5.335	0.0	1.069	3950966	2.67		107	1349	
913.00 > 169.00	5.335	5.335	0.0	1.069	720263		5.49(2.55-7.64)		3123	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_064.d

Injection Date: 03-Oct-2018 01:17:14

Instrument ID: A9

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 25

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

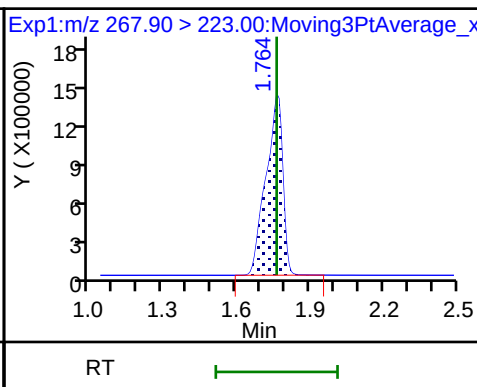
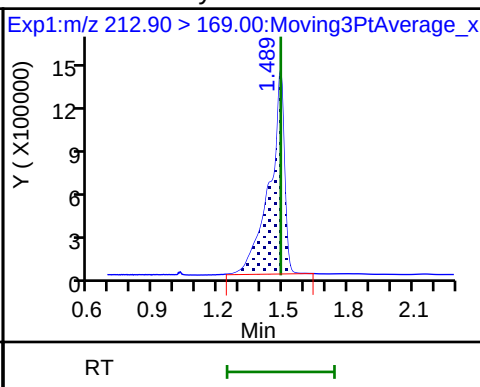
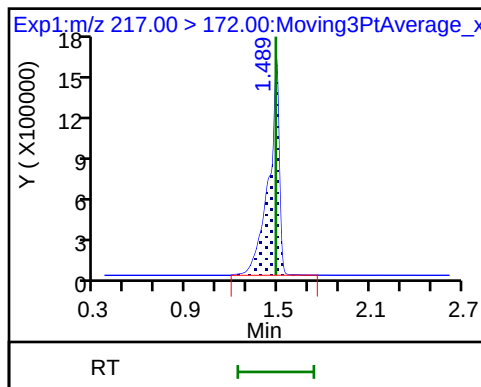
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

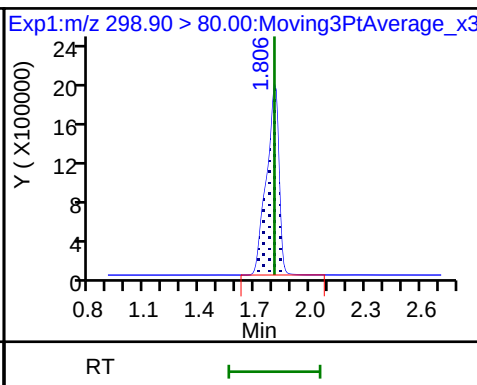
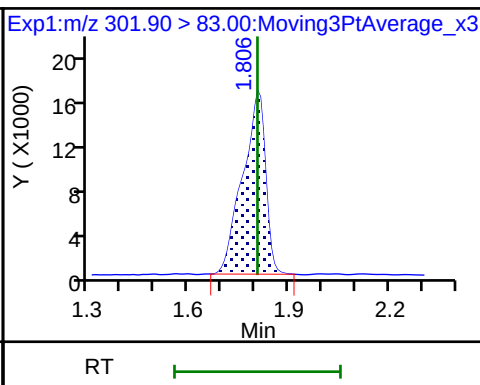
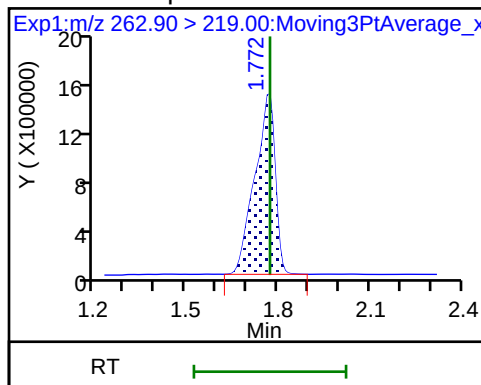
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

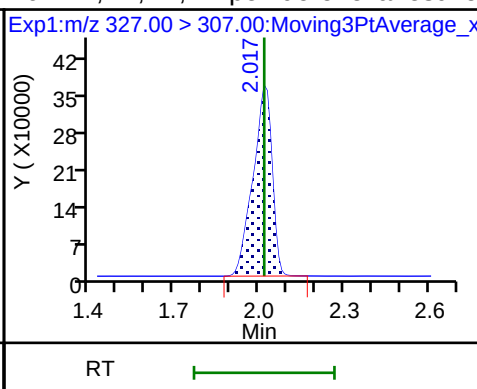
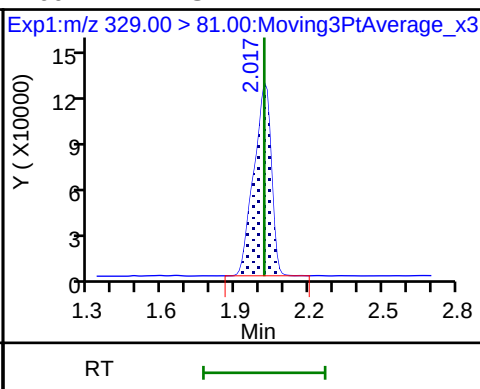
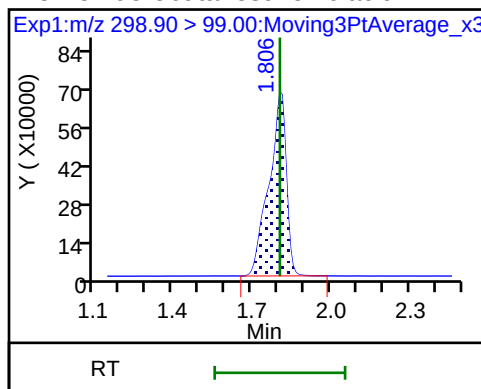
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

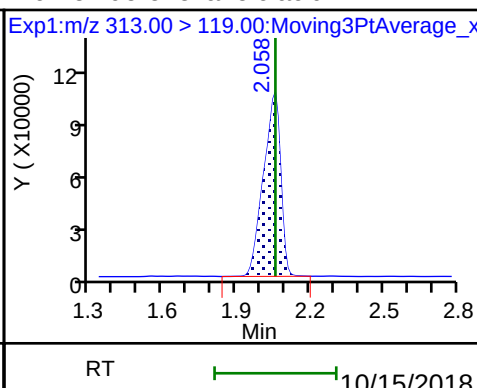
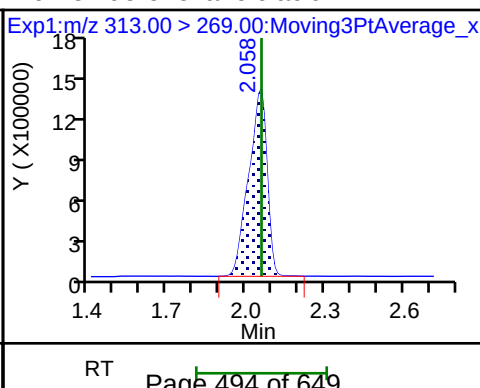
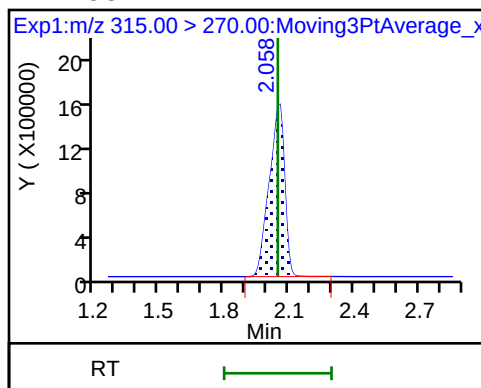
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

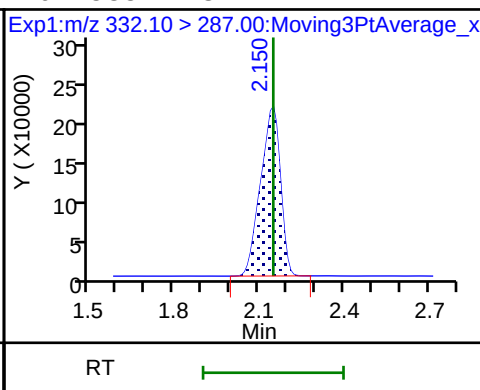
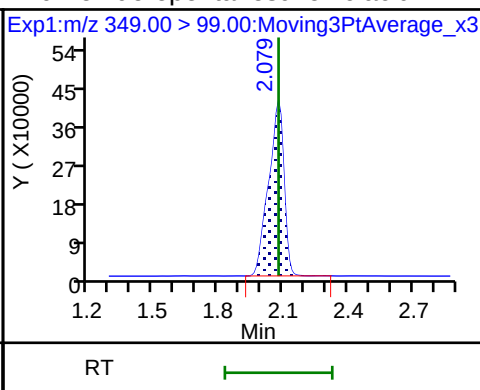
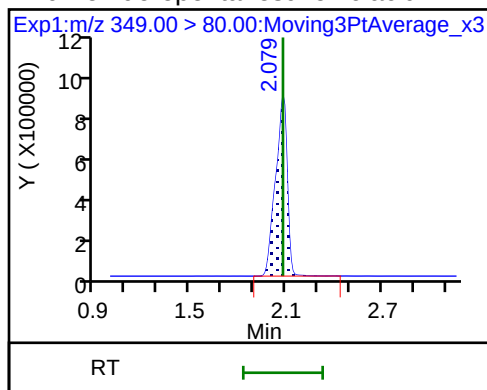
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

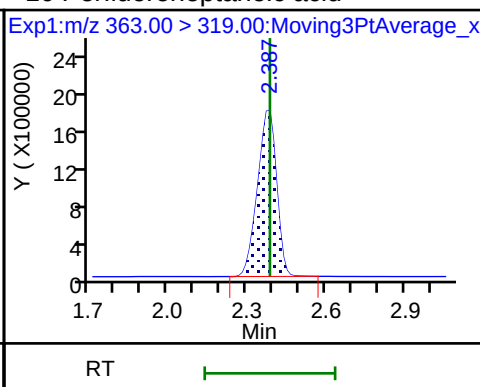
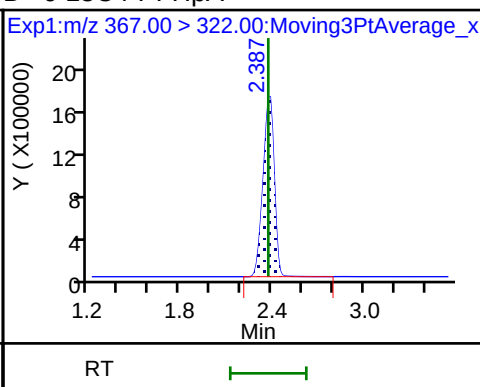
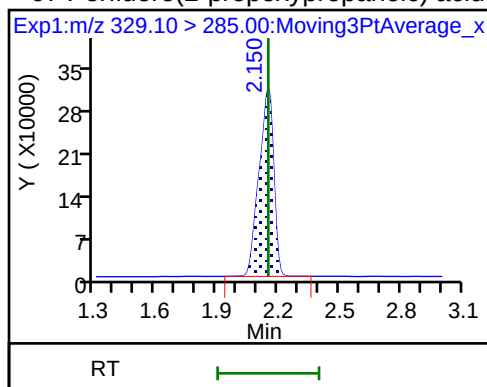
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



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

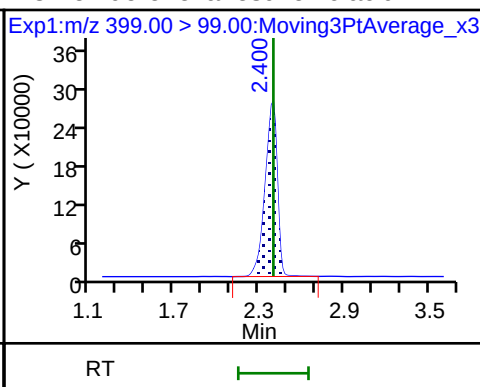
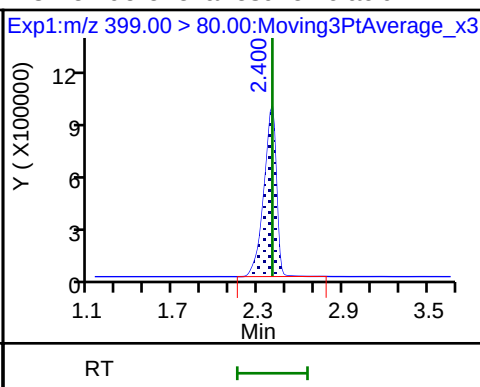
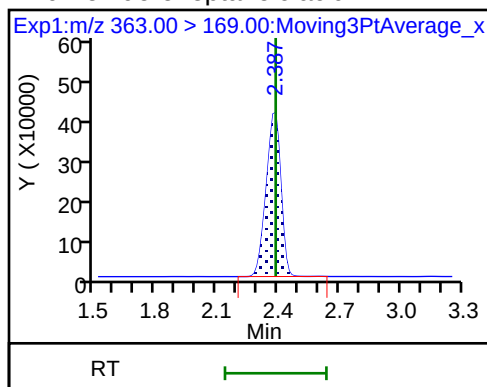
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

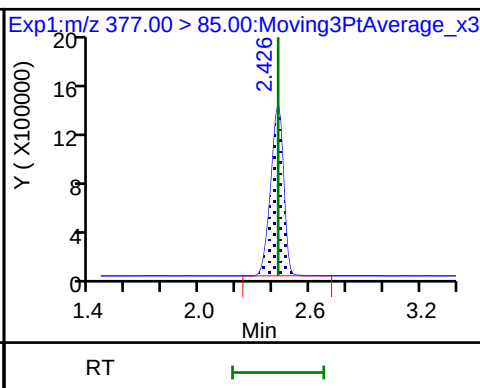
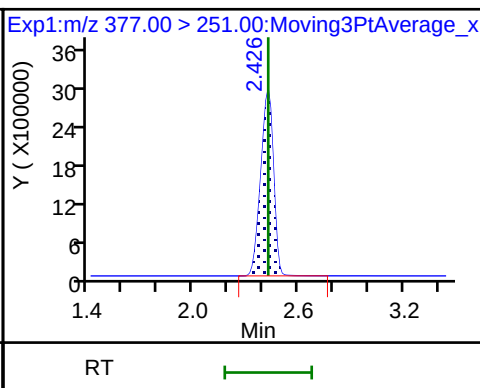
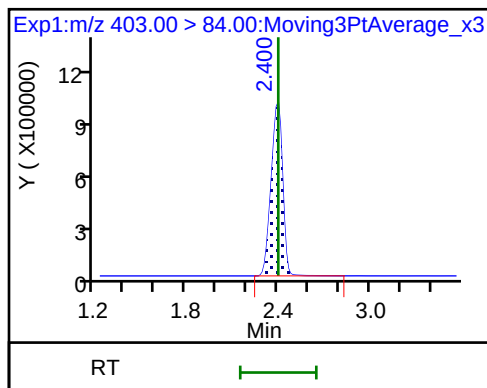
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

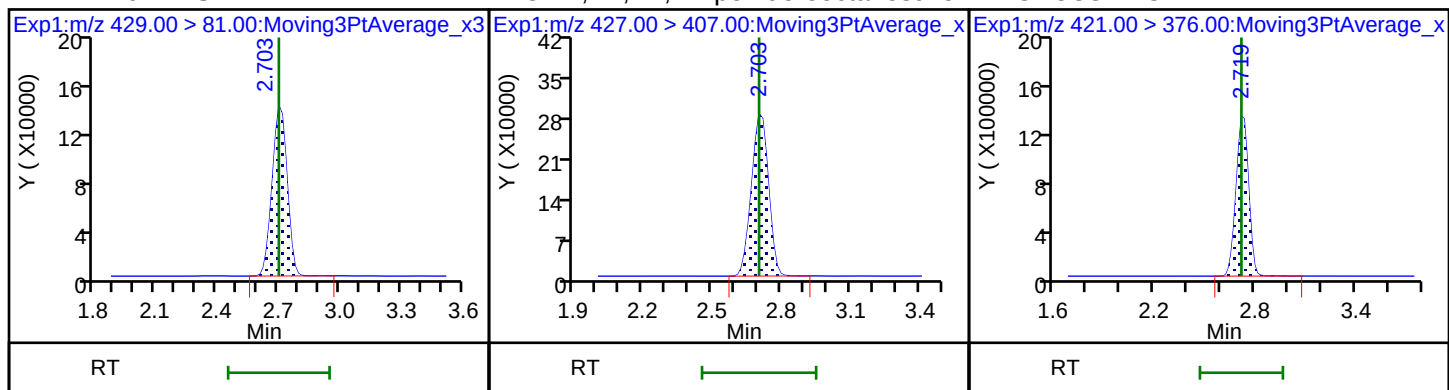
76 DONA

76 DONA



D 12 M2-6:2FTS

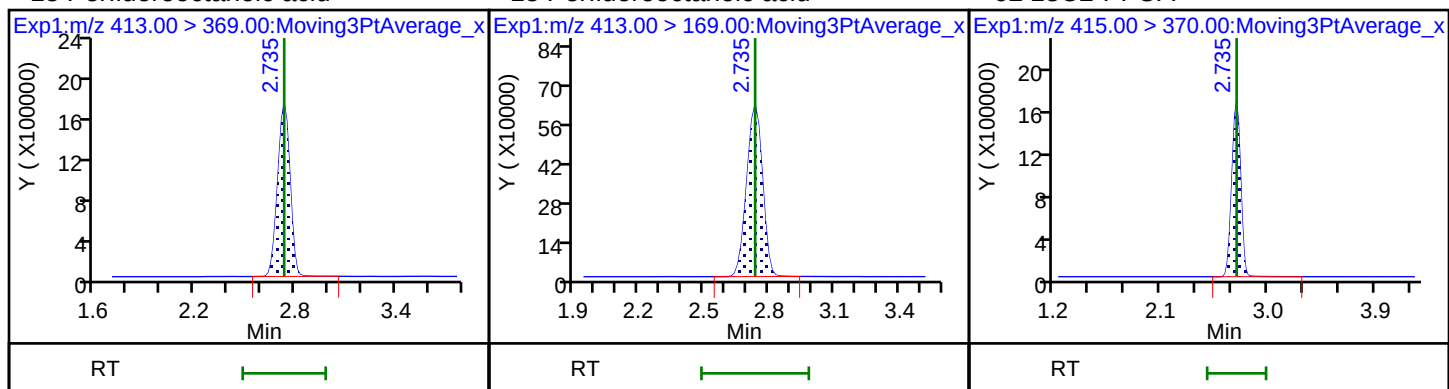
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

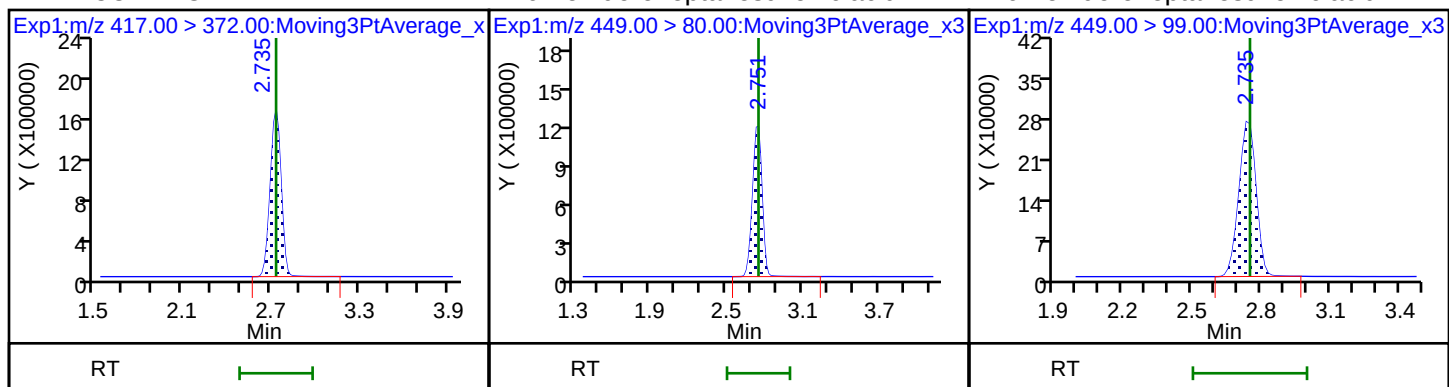
* 62 13C2-PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

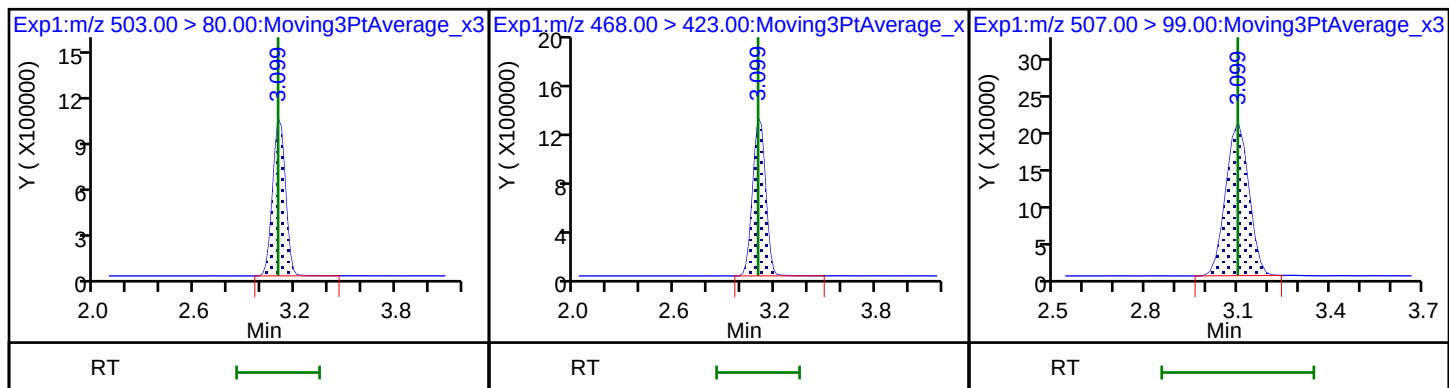
16 Perfluoroheptanesulfonic acid

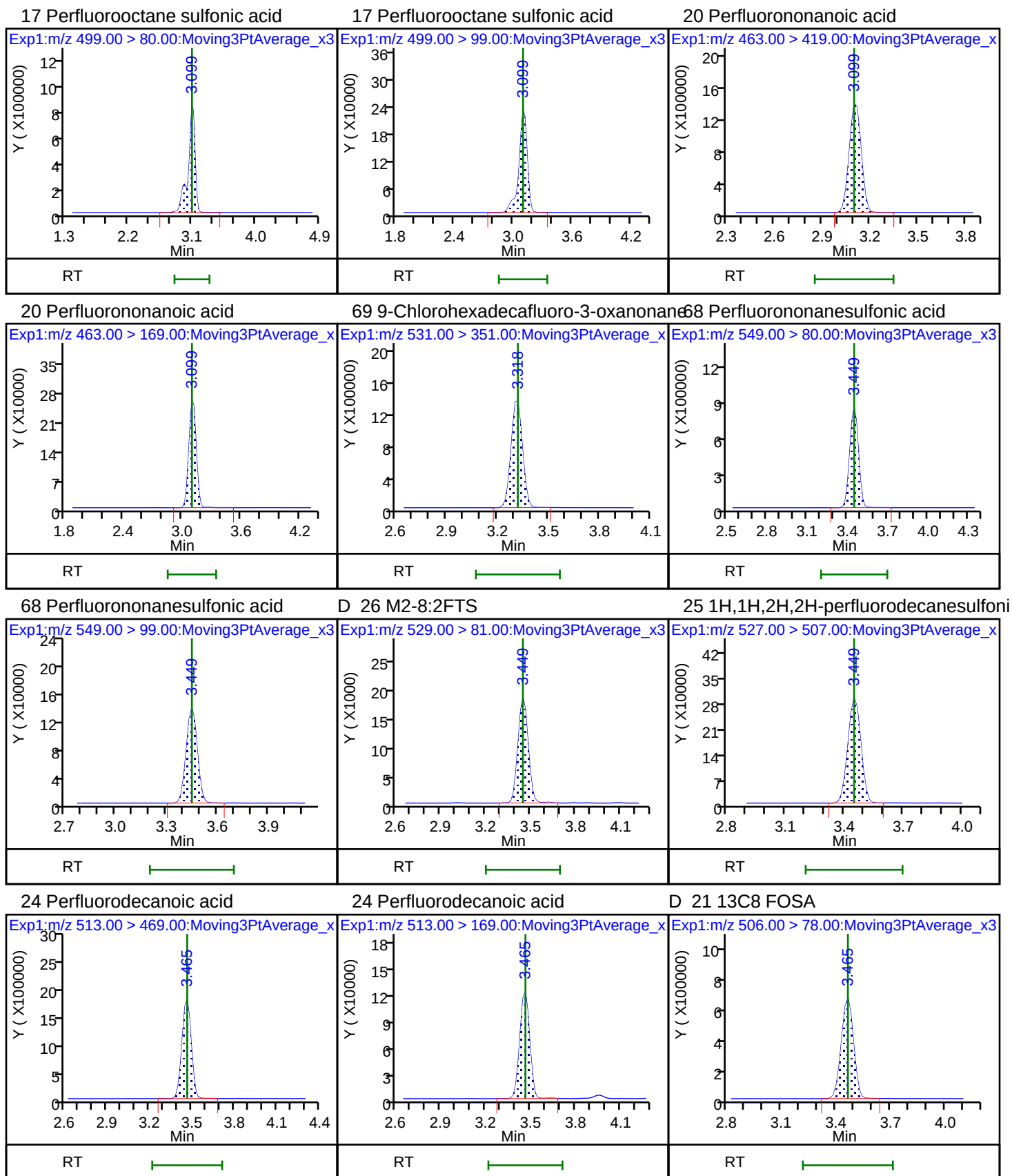


D 18 13C4 PFOS

D 19 13C5 PFNA

D 72 13C8 PFOS

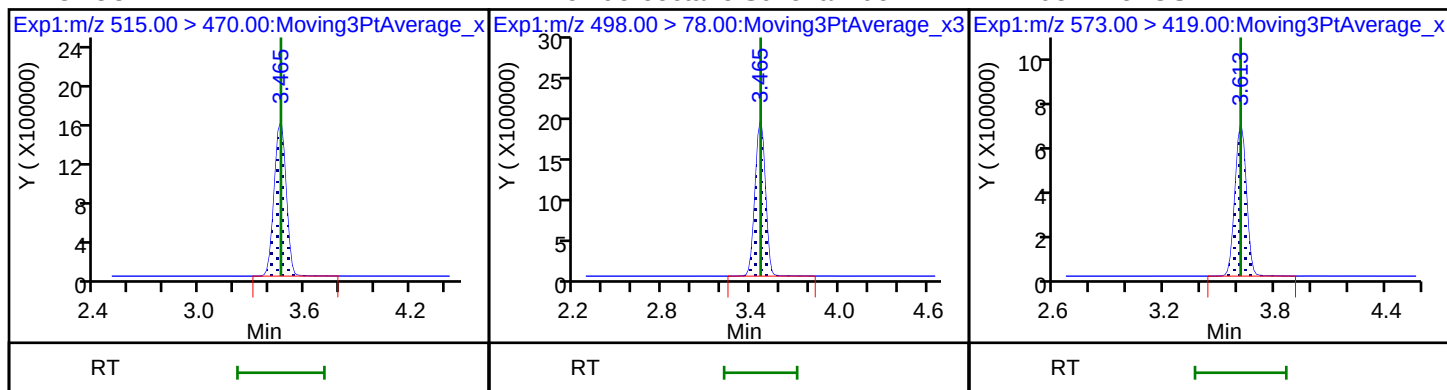




D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

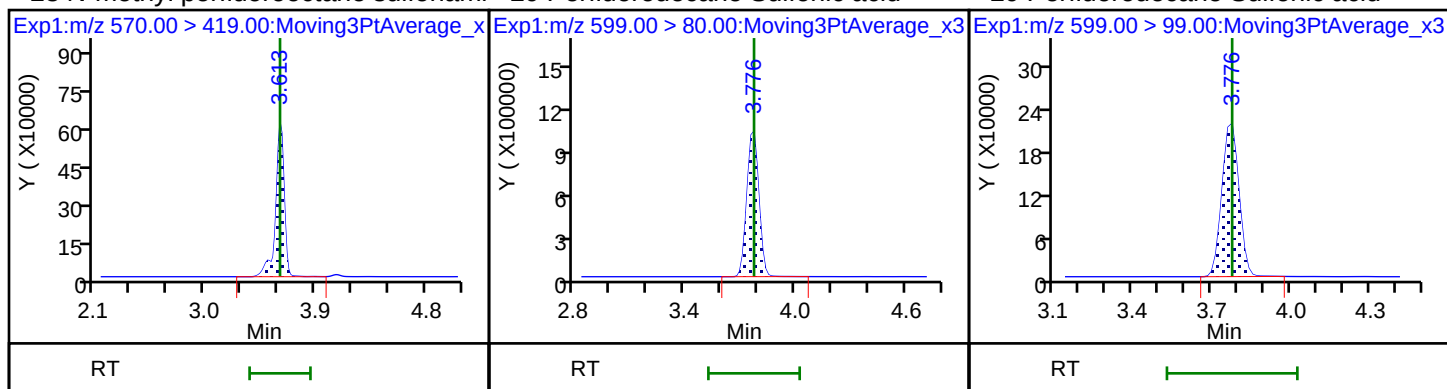
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

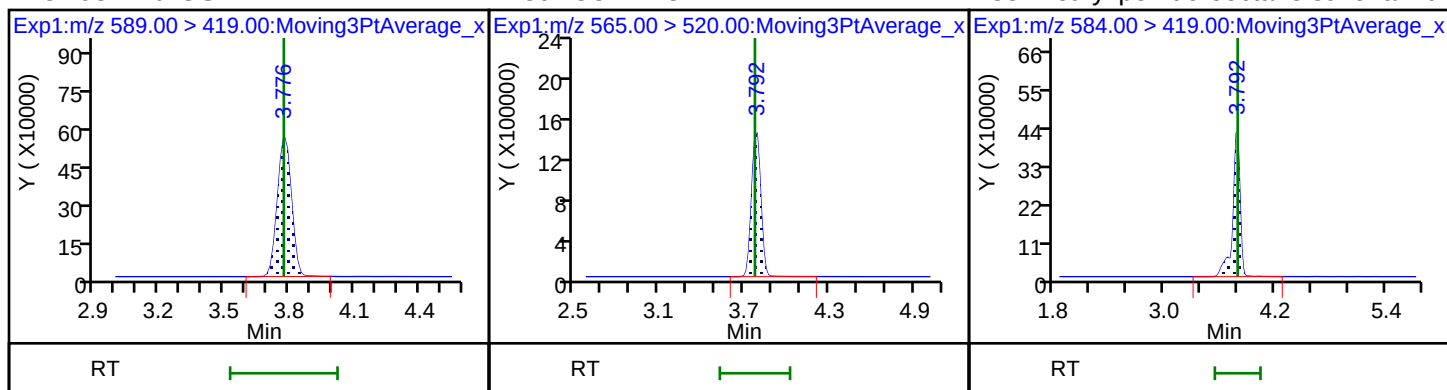
29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

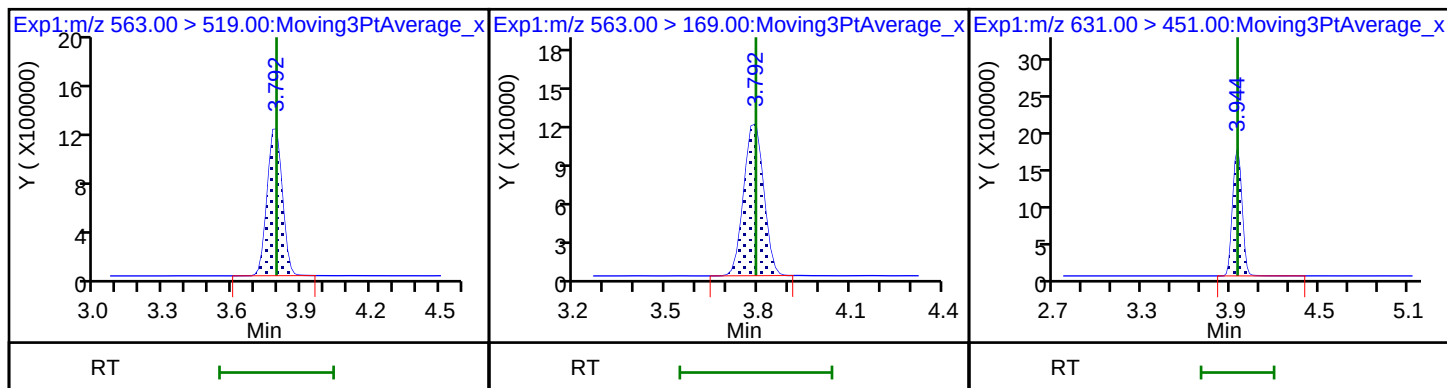
33 N-ethyl perfluorooctane sulfonamid



31 Perfluoroundecanoic acid

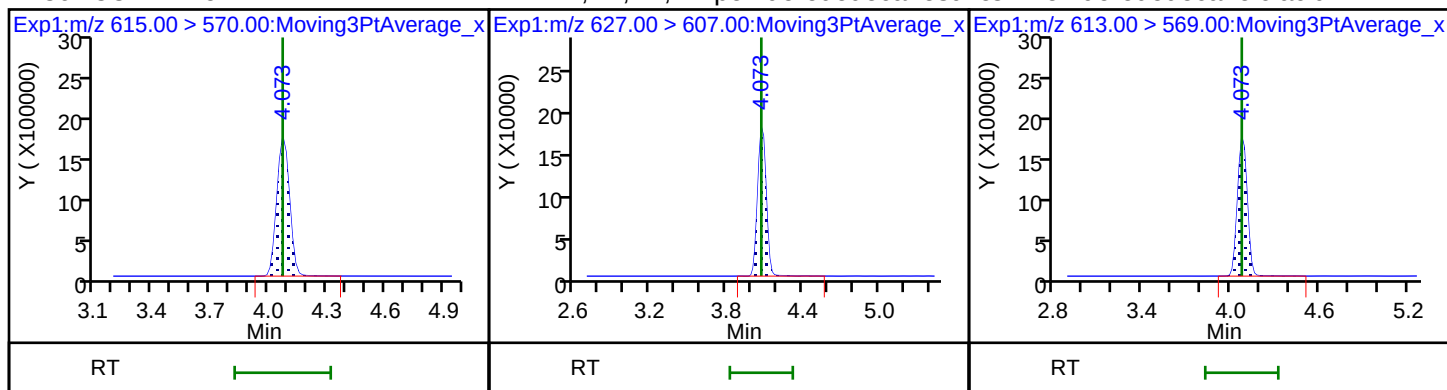
31 Perfluoroundecanoic acid

66 11-Chloroeicosafuoro-3-oxaundecan



D 36 13C2 PFDaA

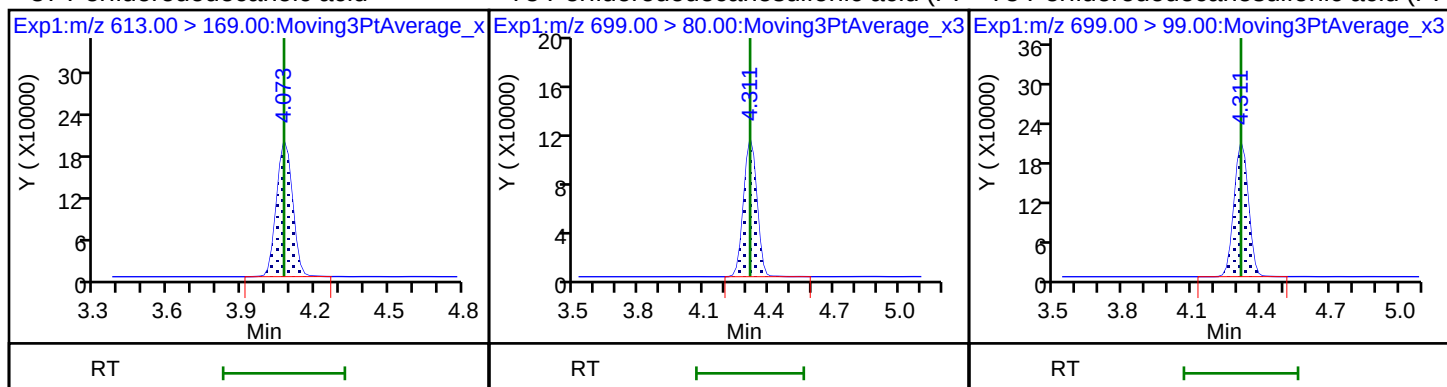
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

75 Perfluorododecanesulfonic acid (PF

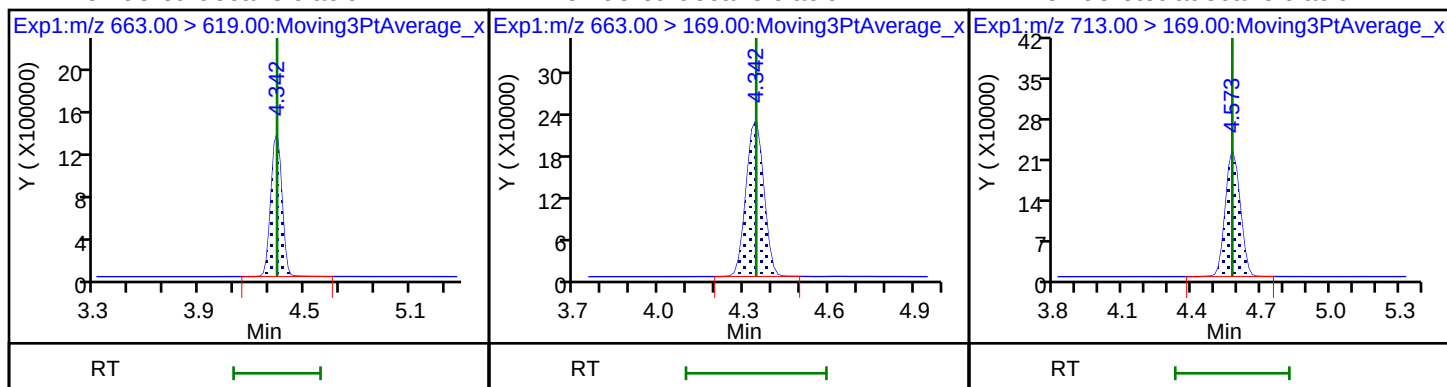
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

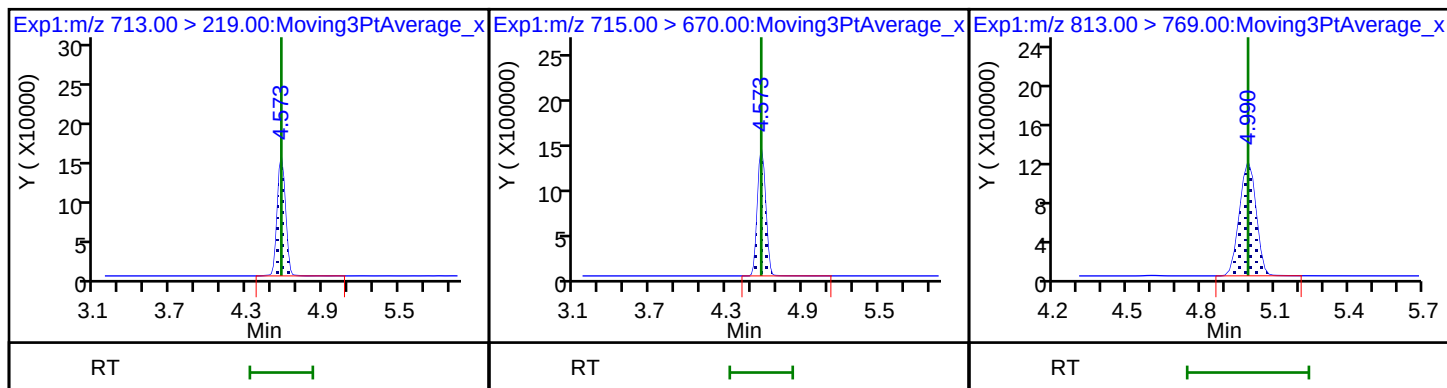
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

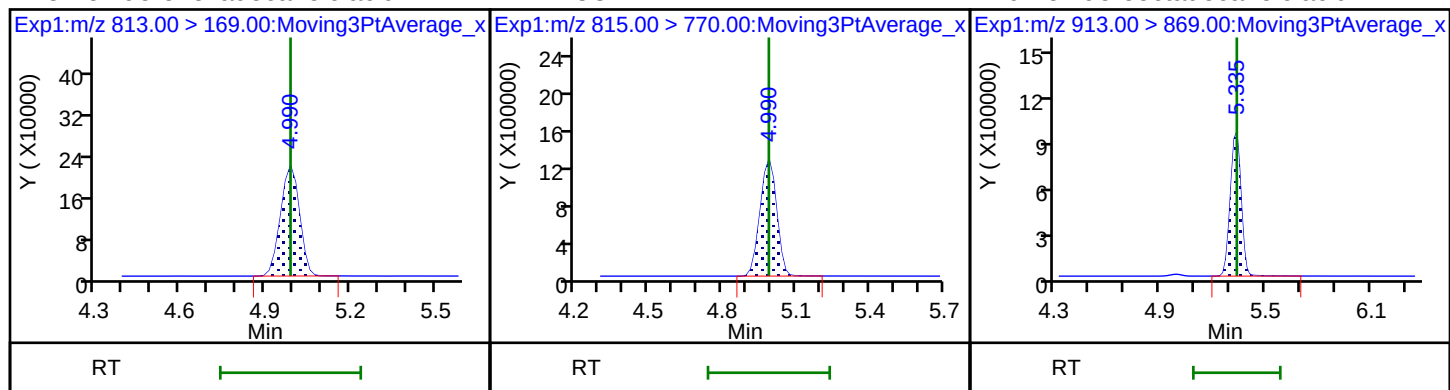
45 Perfluorohexadecanoic acid



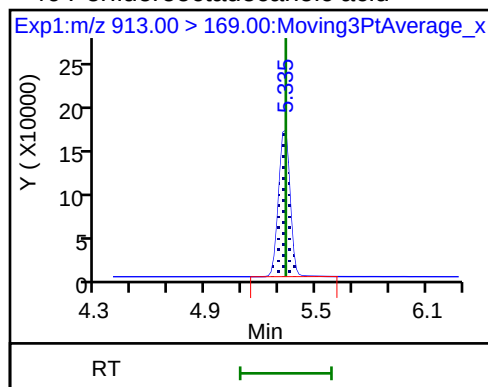
45 Perfluorohexadecanoic acid

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>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-248703/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_006.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/06/2018 18:20</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.494	J	2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.00	U	2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	2.00	U	2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.00	U	2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.00	U	2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.00	U	2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.290	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.00	U	2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.00	U	2.00	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20.0	U	20.0	3.10
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20.0	U	20.0	1.90
27619-97-2	6:2 FTS	2.268	J	20.0	2.00
39108-34-4	8:2 FTS	20.0	U	20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-248703/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_006.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/06/2018 18:20</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	99		25-150
STL01893	13C5 PFPeA	95		25-150
STL00993	13C2 PFHxA	102		25-150
STL01892	13C4 PFHpA	101		25-150
STL00990	13C4 PFOA	102		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	96		25-150
STL00997	13C2 PFUnA	99		25-150
STL00998	13C2 PFDoA	101		25-150
STL02116	13C2 PFTeDA	106		25-150
STL02337	13C3 PFBS	97		25-150
STL00994	18O2 PFHxS	94		25-150
STL00991	13C4 PFOS	96		25-150
STL01056	13C8 FOSA	98		25-150
STL02118	d3-NMeFOSAA	112		25-150
STL02117	d5-NEtFOSAA	116		25-150
STL02279	M2-6:2 FTS	120		25-150
STL02280	M2-8:2 FTS	112		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_006.d
 Lims ID: MB 320-248703/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 06-Oct-2018 18:20:27 ALS Bottle#: 1 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-248703/1-a
 Misc. Info.: Plate: 1 Rack: 6
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:26:37 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK015

First Level Reviewer: ruangyotsakuld

Date: 10-Oct-2018 15:26:37

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	1.419	1.423	-0.004	0.537	3549665	2.48		99.0	10115	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.419	1.431	-0.012	1.000	16668	0.0124			2.6	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.684	1.684	0.0	0.638	2294679	2.38		95.4	9226	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.692	1.694	-0.002	1.005	5952	0.005843			0.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.716	1.716	0.0	0.650	46303	2.26		97.1	380	
D 7 13C2 PFHxA										
315.00 > 270.00	1.960	1.960	0.0	0.742	2704523	2.56		102	8585	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.064	2.054	0.010	0.782	155426	2.03		81.0	701	
D 9 13C4-PFHpA										
367.00 > 322.00	2.292	2.281	0.011	0.868	2403540	2.53		101	6986	
D 11 18O2 PFHxS										
403.00 > 84.00	2.303	2.303	0.0	0.872	2644825	2.23		94.3	6558	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.303	2.321	-0.018	1.000	8946	0.007260			6.3	M
399.00 > 99.00	2.303	2.321	-0.018	1.000	4893		1.83(1.50-4.49)		6.5	M
77 DONA										
377.00 > 251.00	2.336	2.343	-0.007	0.775	1862	0.000647			4.7	
377.00 > 85.00	2.325	2.343	-0.018	0.772	1240		1.50(0.85-2.54)		5.7	
D 12 M2-6:2FTS										
429.00 > 81.00	2.616	2.609	0.007	0.991	456057	2.85		120	2761	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.616	2.627	-0.011	1.000	18528	0.0567			41.4	

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	2.640	2.640	0.0	1.000	2340033	2.54		102	9548	
* 62 13C2-PFOA										
415.00 > 370.00	2.640	2.651	-0.011		2369951	2.50			8615	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.647	2.651	-0.004	1.003	3820	0.003465			0.4	M
413.00 > 169.00	2.632	2.651	-0.019	0.997	3497		1.09(0.84-2.52)		5.2	M
D 19 13C5 PFNA										
468.00 > 423.00	3.013	3.006	0.007	1.141	1908151	2.46		98.5	5122	
D 18 13C4 PFOS										
503.00 > 80.00	3.013	3.014	-0.001	1.141	1770587	2.31		96.5	6426	
D 26 M2-8:2FTS										
529.00 > 81.00	3.360	3.362	-0.002	1.273	455668	2.69		112	3138	
D 21 13C8 FOSA										
506.00 > 78.00	3.352	3.362	-0.010	1.270	2625686	2.46		98.3	5918	
D 23 13C2 PFDA										
515.00 > 470.00	3.374	3.369	0.005	1.278	1648700	2.41		96.2	7321	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.526	3.529	-0.003	1.336	779008	2.80		112	1200	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.698	3.699	-0.001	1.401	869366	2.90		116	1031	
D 30 13C2 PFUnA										
565.00 > 520.00	3.706	3.707	-0.001	1.404	1301001	2.48		99.4	5795	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.877	3.881	-0.005	1.287	922	0.000436			3.9	
D 36 13C2 PFDaA										
615.00 > 570.00	4.004	4.003	0.001	1.517	1391092	2.52		101	4667	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.513	4.504	0.009	1.710	1759177	2.65		106	4720	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.926	4.927	-0.001	1.866	3140650	2.62		105	5639	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.926	4.945	-0.019	1.000	30220	0.001625			6.3	
813.00 > 169.00	4.926	4.945	-0.019	1.000	5400		5.60(2.86-8.58)		59.0	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_006.d

Injection Date: 06-Oct-2018 18:20:27

Instrument ID: A8_N

Lims ID: MB 320-248703/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

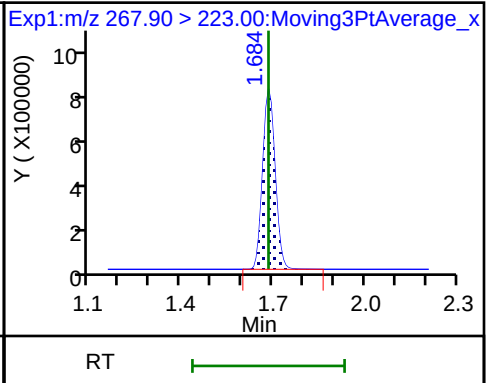
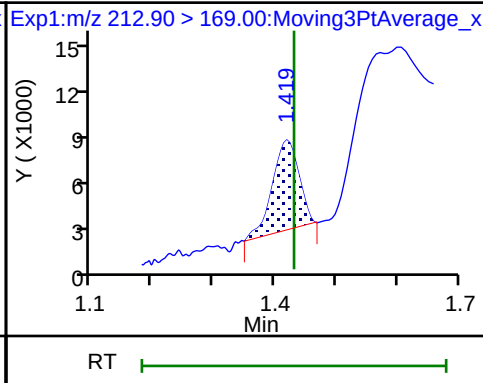
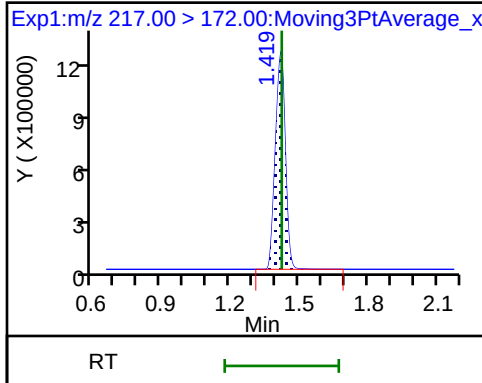
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

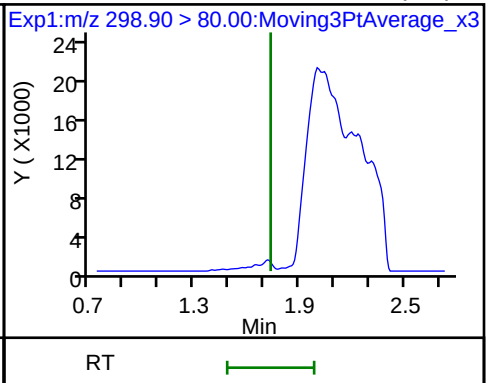
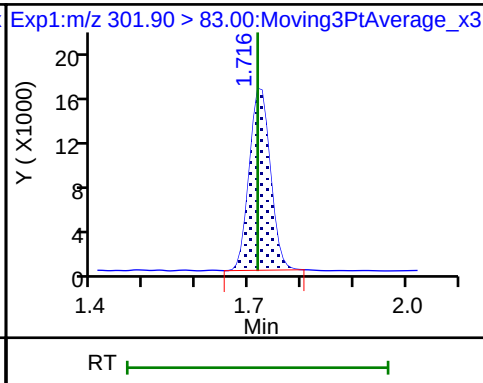
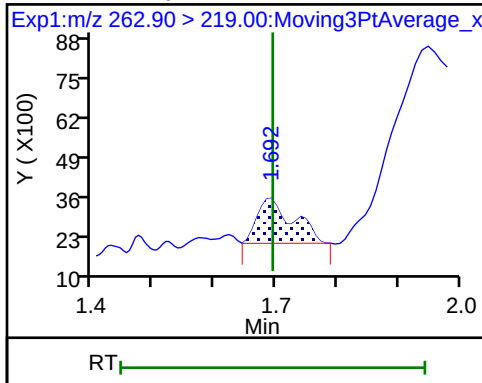
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

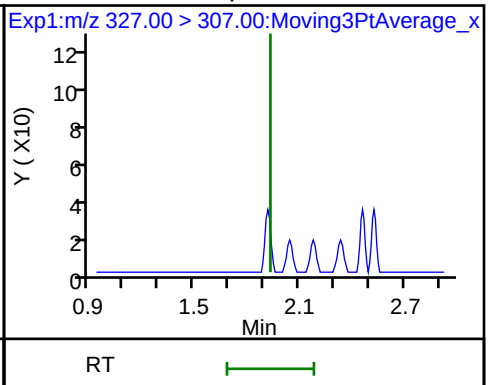
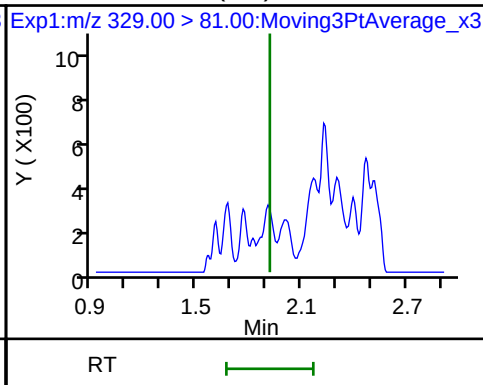
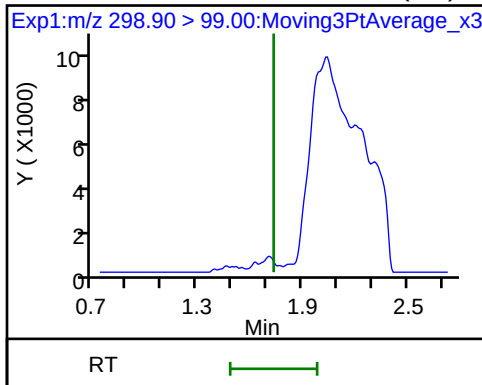
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 60 M2-4:2FTS (ND)

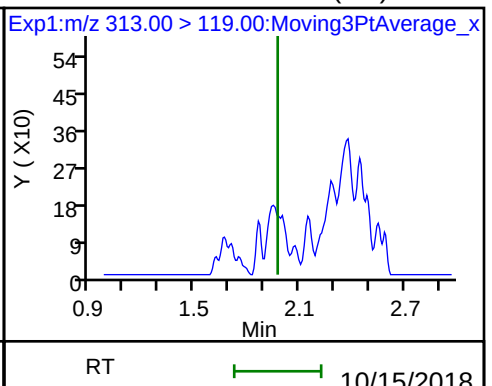
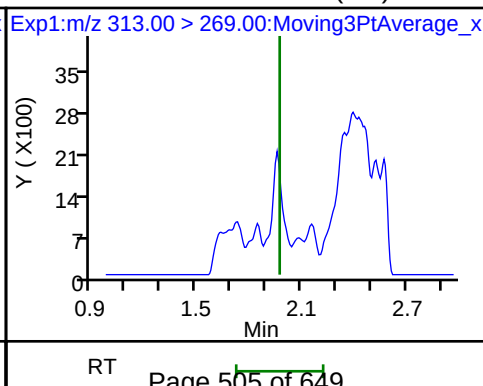
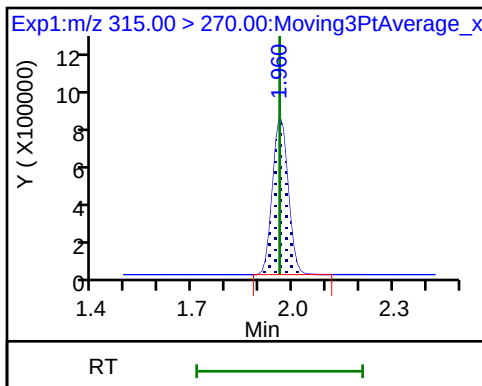
61 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



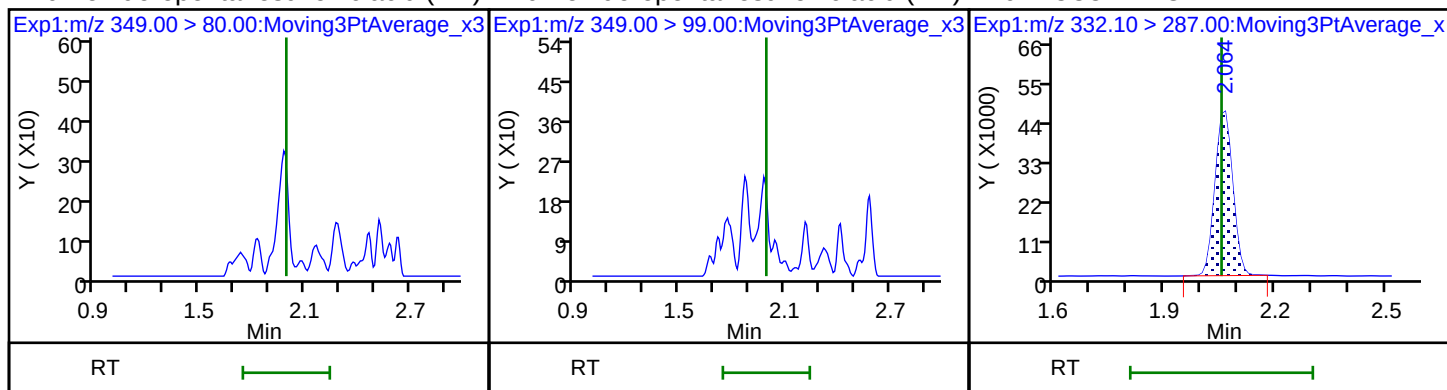
D 7 13C2 PFHxA

6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)

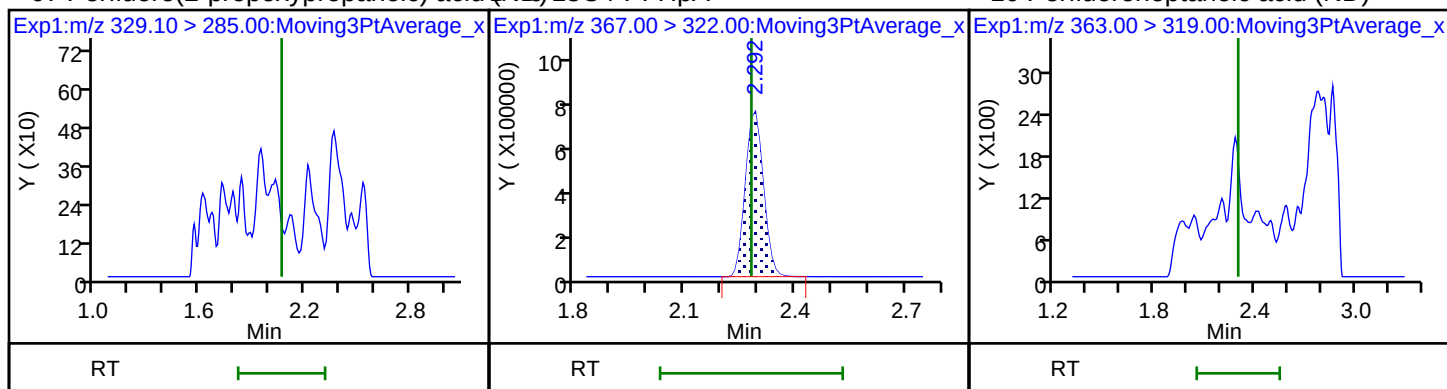


70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid (ND) 13C4-PFHpA

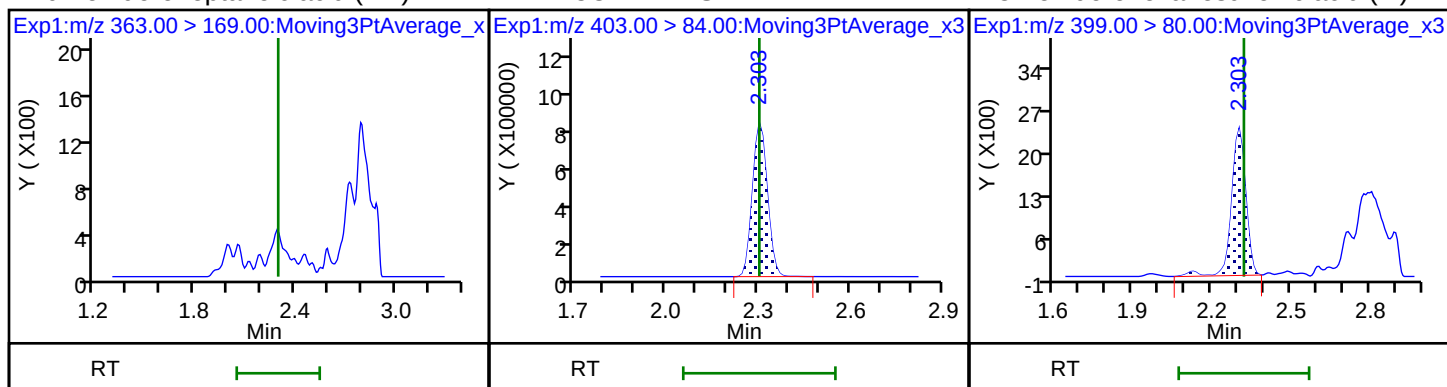
10 Perfluoroheptanoic acid (ND)



10 Perfluoroheptanoic acid (ND)

D 11 18O2 PFHxS

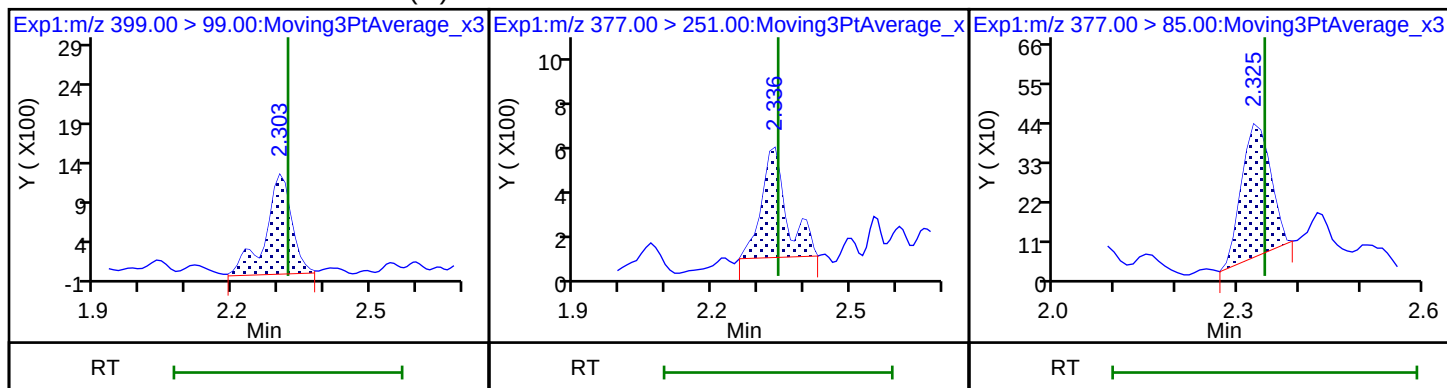
8 Perfluorohexanesulfonic acid (M)



8 Perfluorohexanesulfonic acid (M)

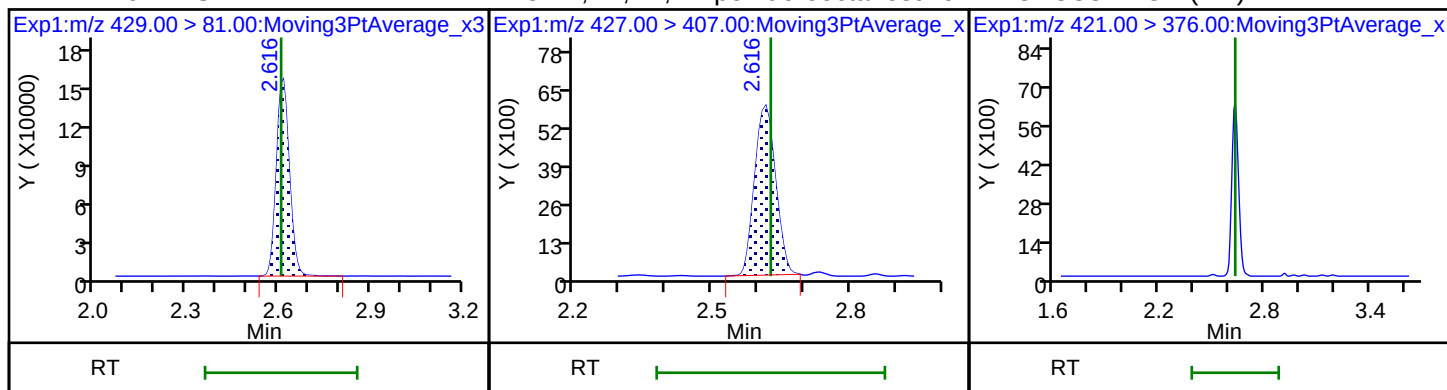
77 DONA

77 DONA



D 12 M2-6:2FTS

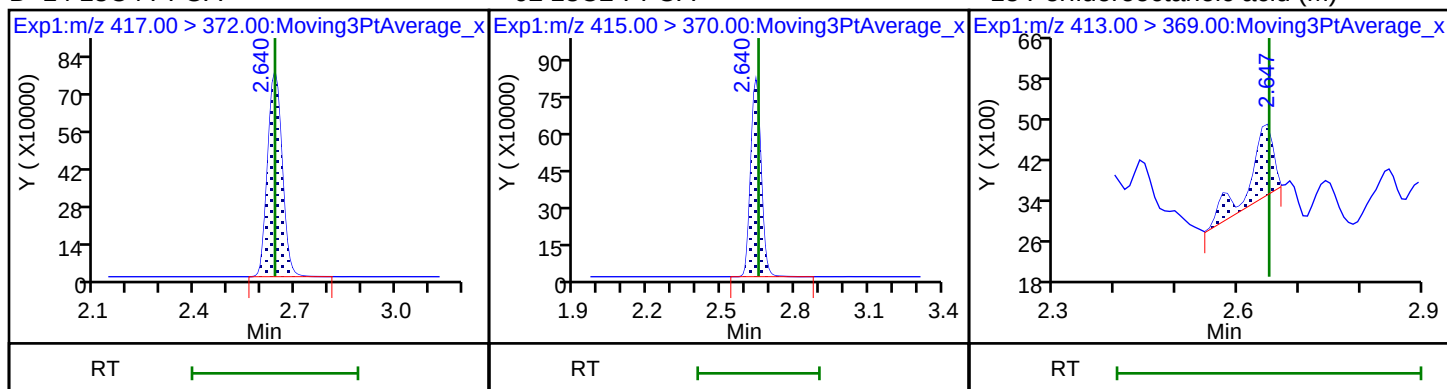
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA (ND)



D 14 13C4 PFOA

* 62 13C2-PFOA

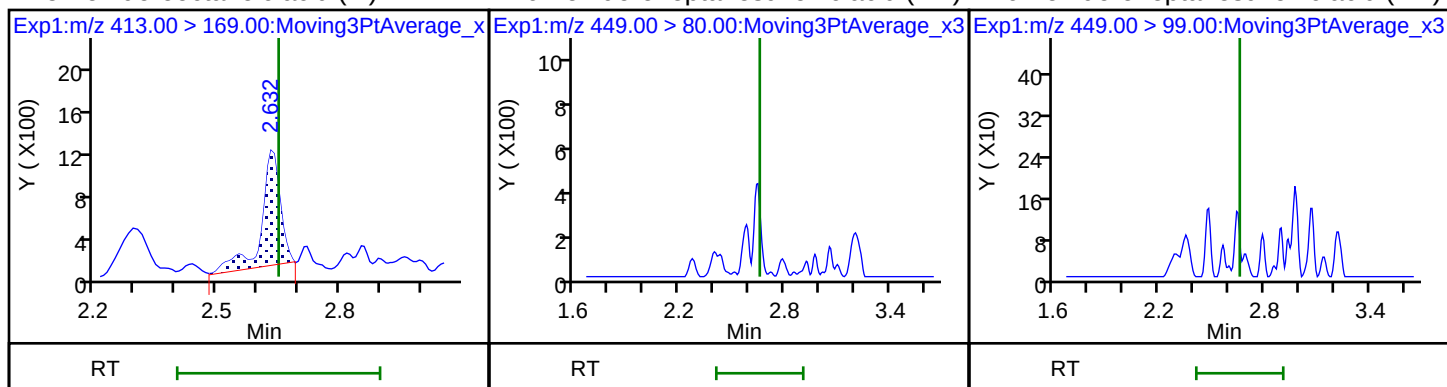
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid (M)

16 Perfluoroheptanesulfonic acid (ND)

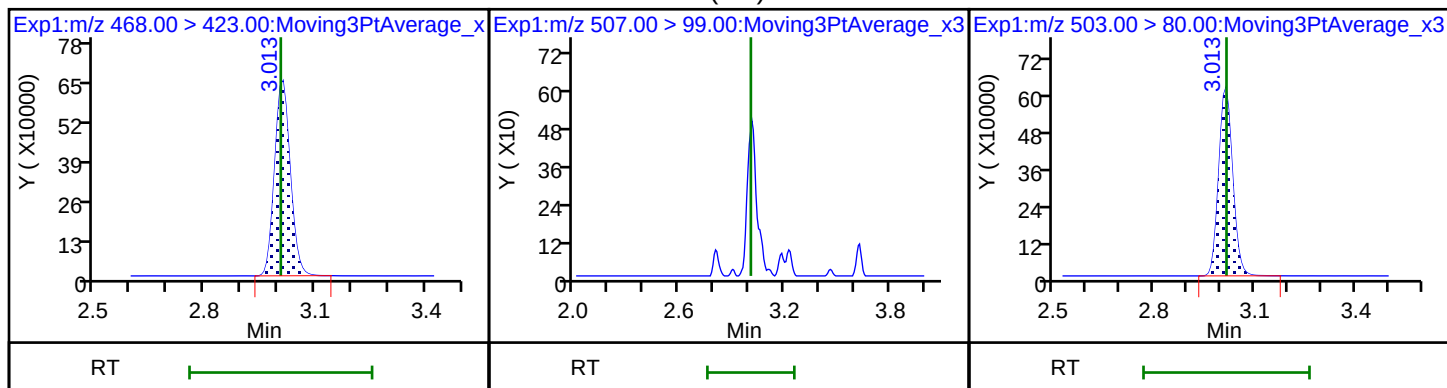
16 Perfluoroheptanesulfonic acid (ND)



D 19 13C5 PFNA

D 72 13C8 PFOS (ND)

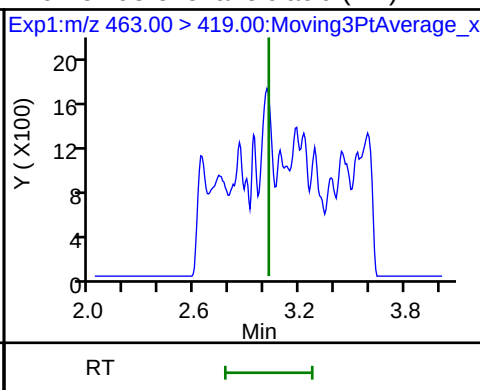
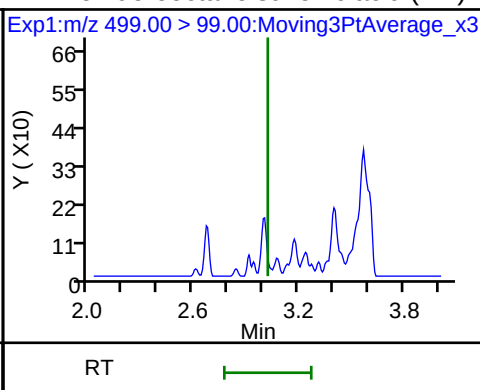
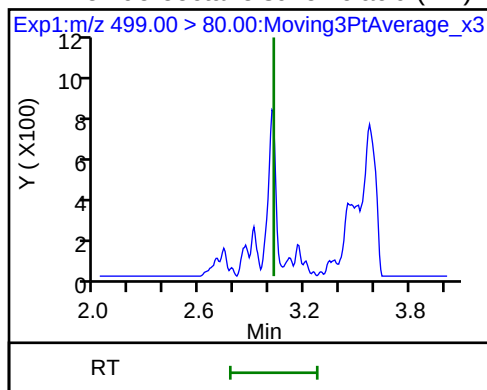
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid (ND)

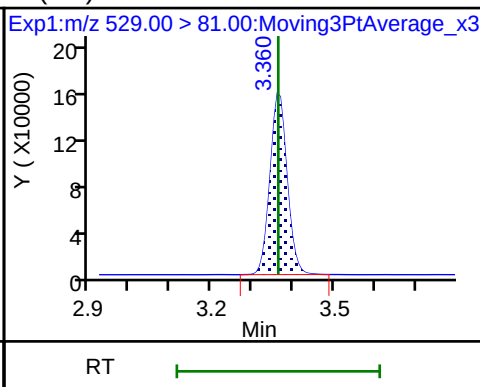
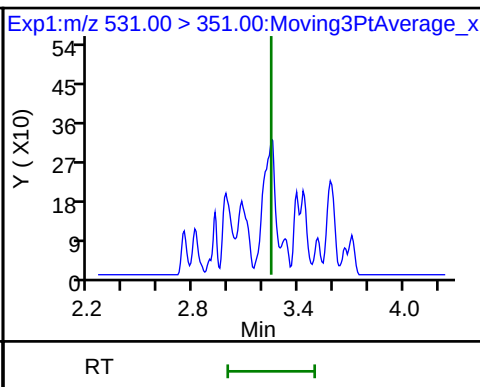
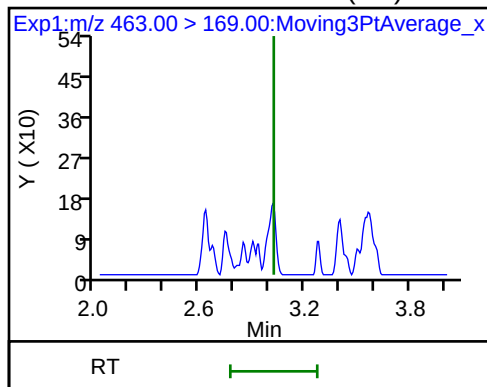
17 Perfluorooctane sulfonic acid (ND)

20 Perfluorononanoic acid (ND)



20 Perfluorononanoic acid (ND)

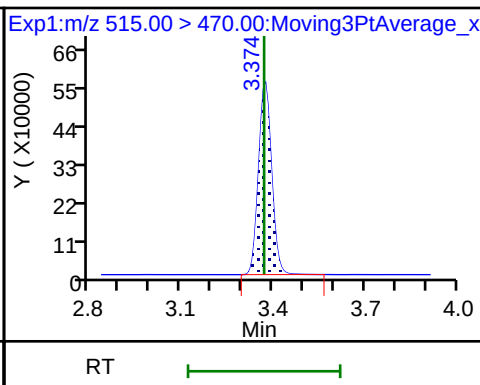
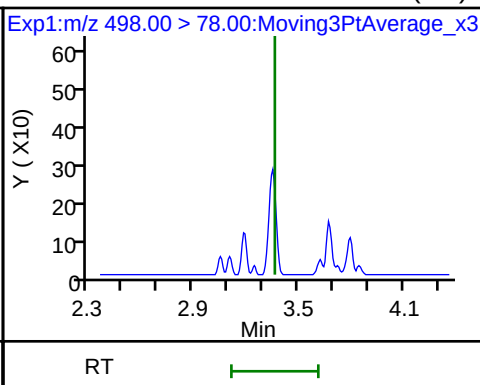
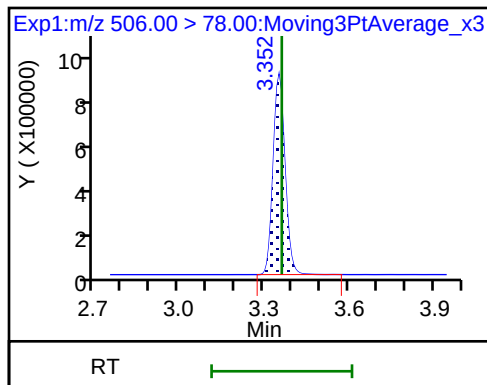
69 9-Chlorohexadecafluoro-3-oxanonane-2,8:2FTS



D 21 13C8 FOSA

22 Perfluorooctane Sulfonamide (ND)

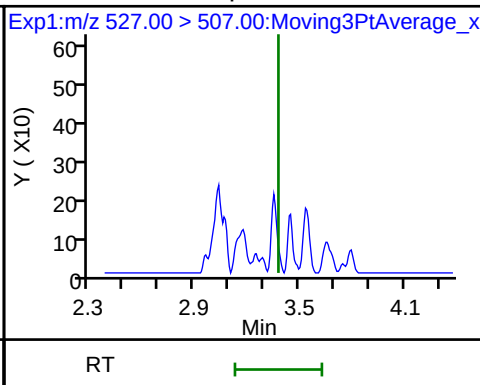
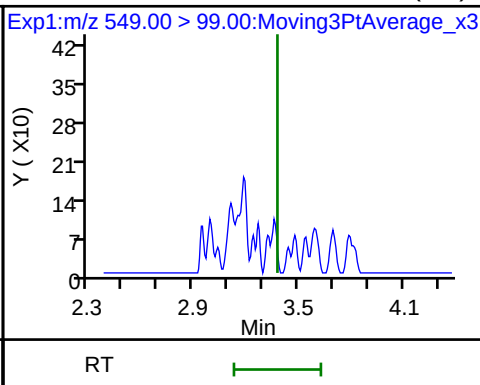
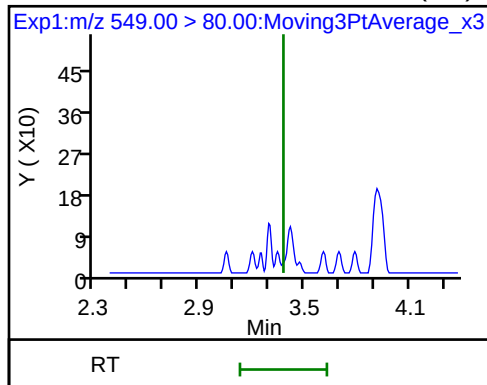
D 23 13C2 PFDA

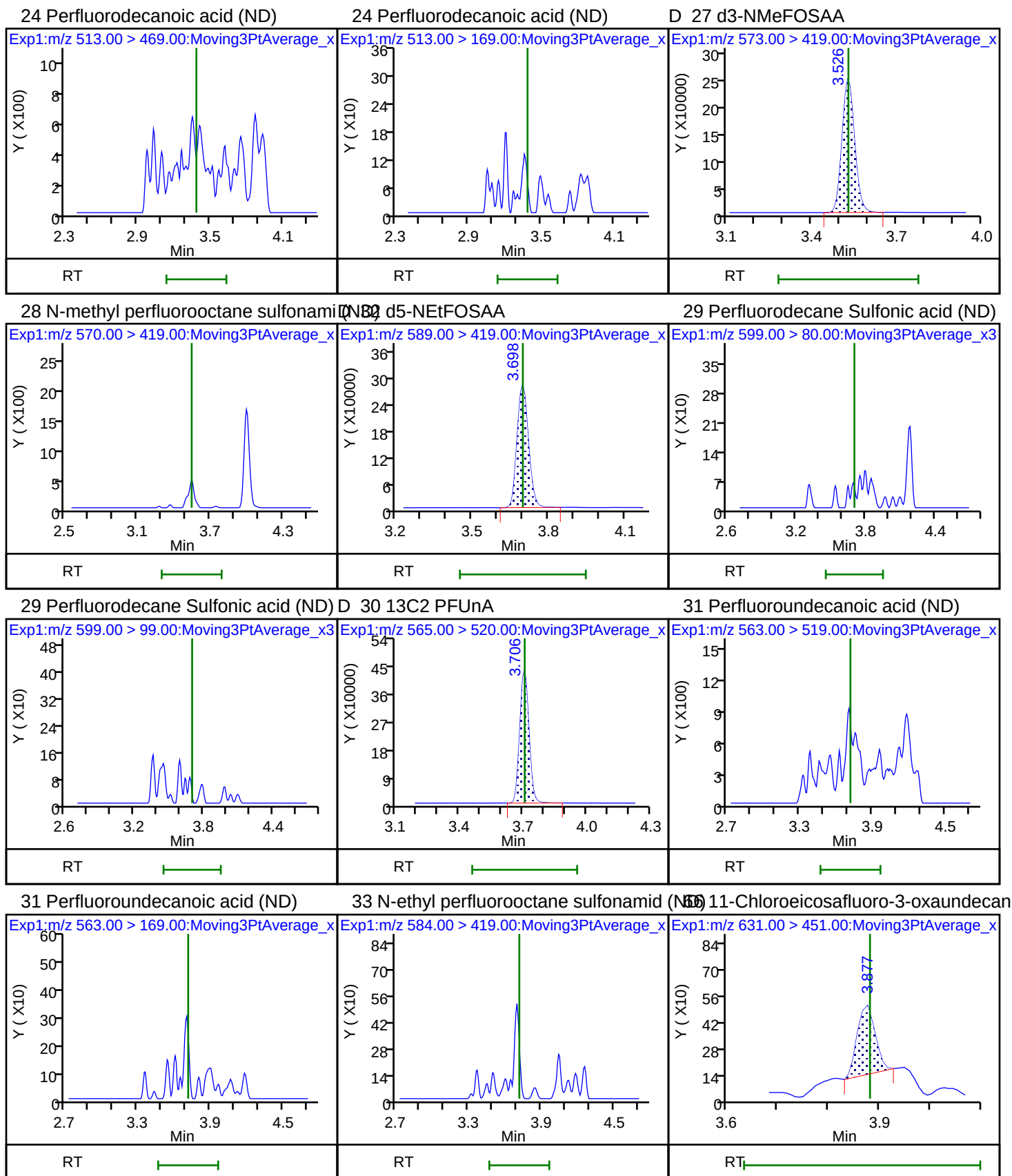


68 Perfluorononanesulfonic acid (ND)

68 Perfluorononanesulfonic acid (ND)

25 1H,1H,2H,2H-perfluorodecanesulfoni (ND)

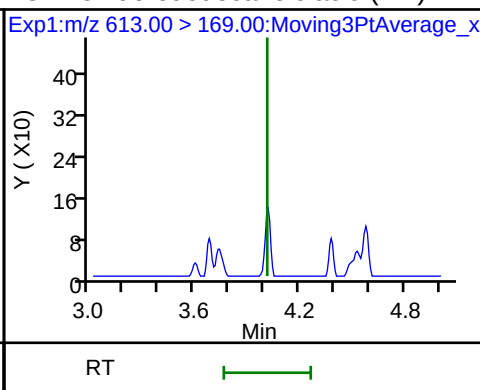
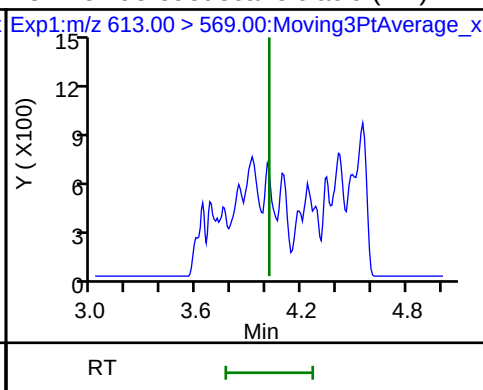
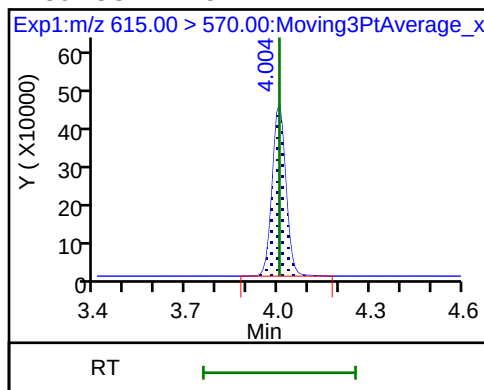




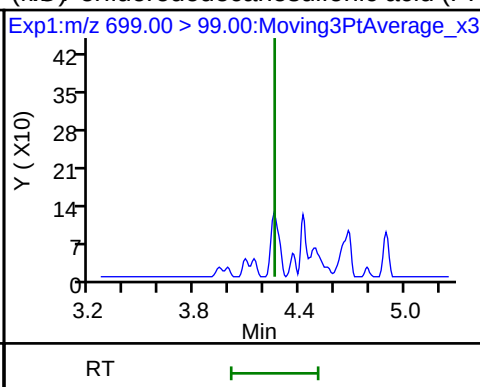
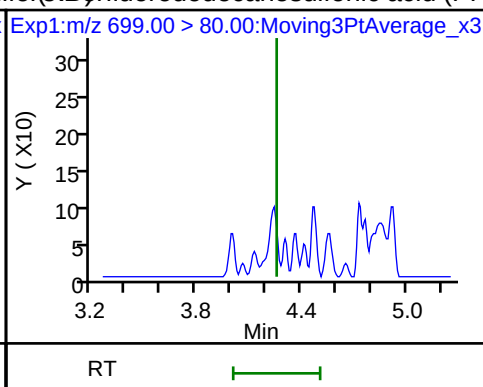
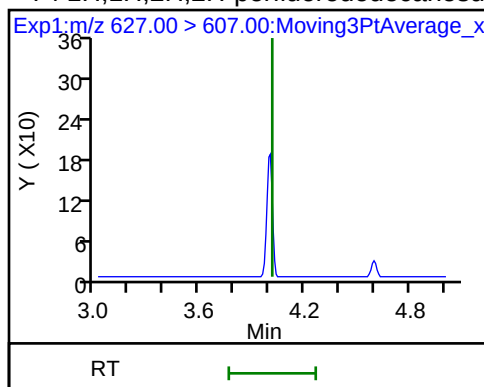
D 36 13C2 PFDaA

37 Perfluorododecanoic acid (ND)

37 Perfluorododecanoic acid (ND)



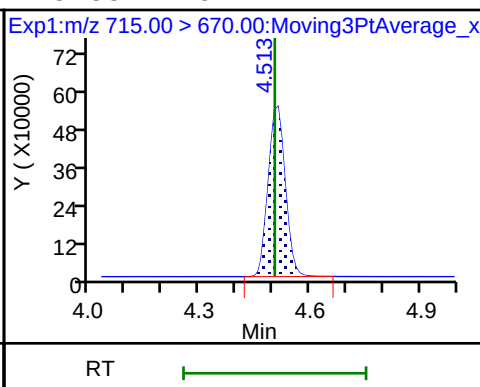
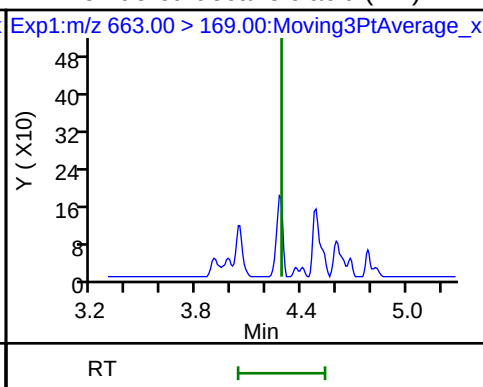
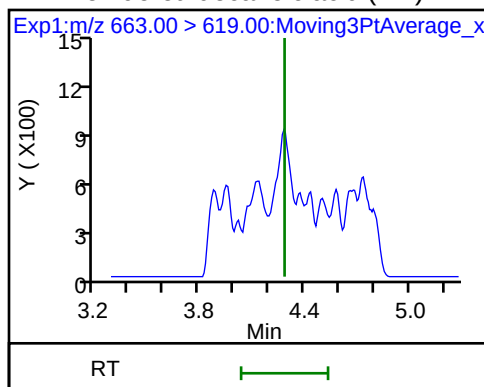
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) 75 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) 76 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

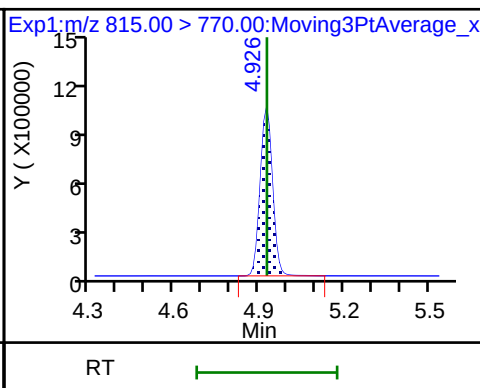
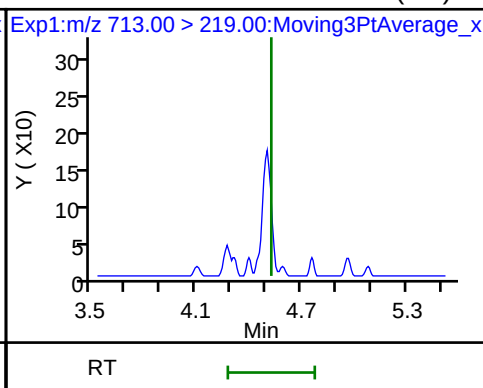
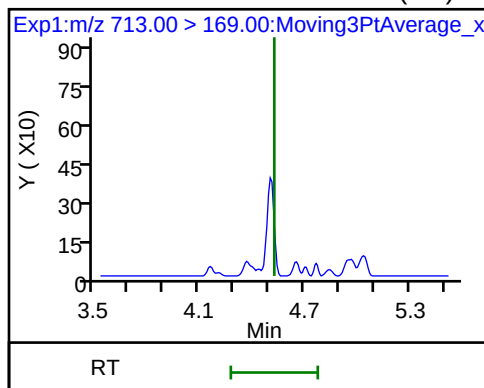
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)

42 Perfluorotetradecanoic acid (ND)

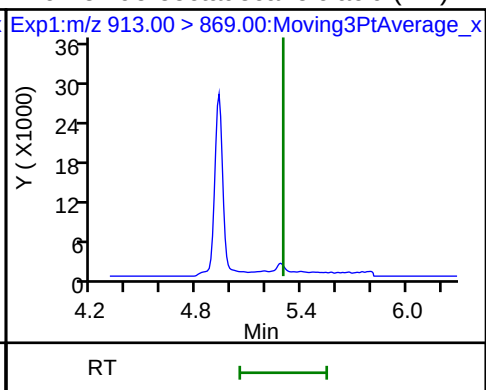
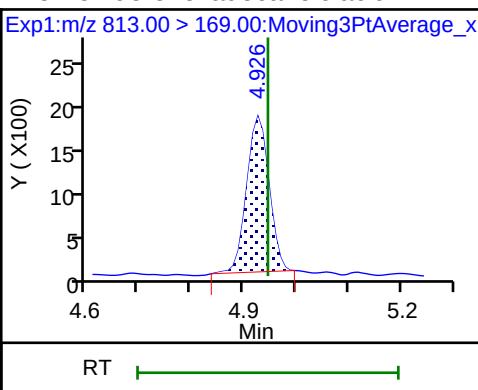
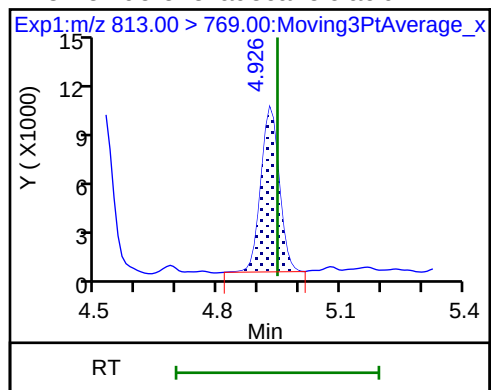
D 44 13C2-PFHxDA



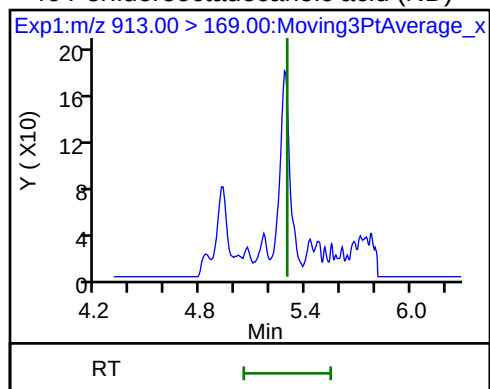
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



TestAmerica Sacramento

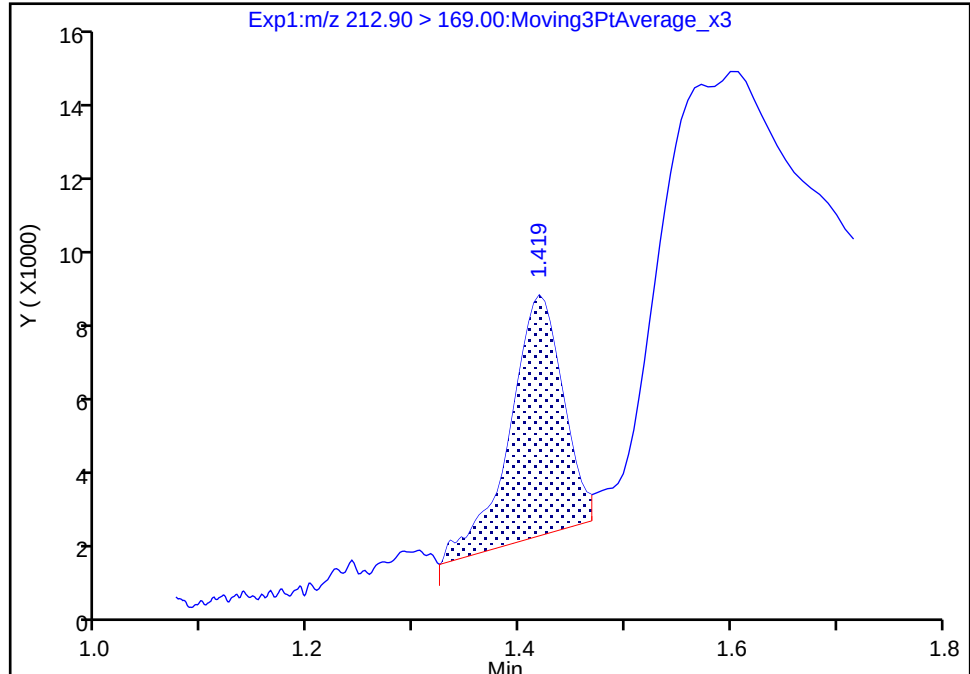
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_006.d
Injection Date: 06-Oct-2018 18:20:27 Instrument ID: A8_N
Lims ID: MB 320-248703/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

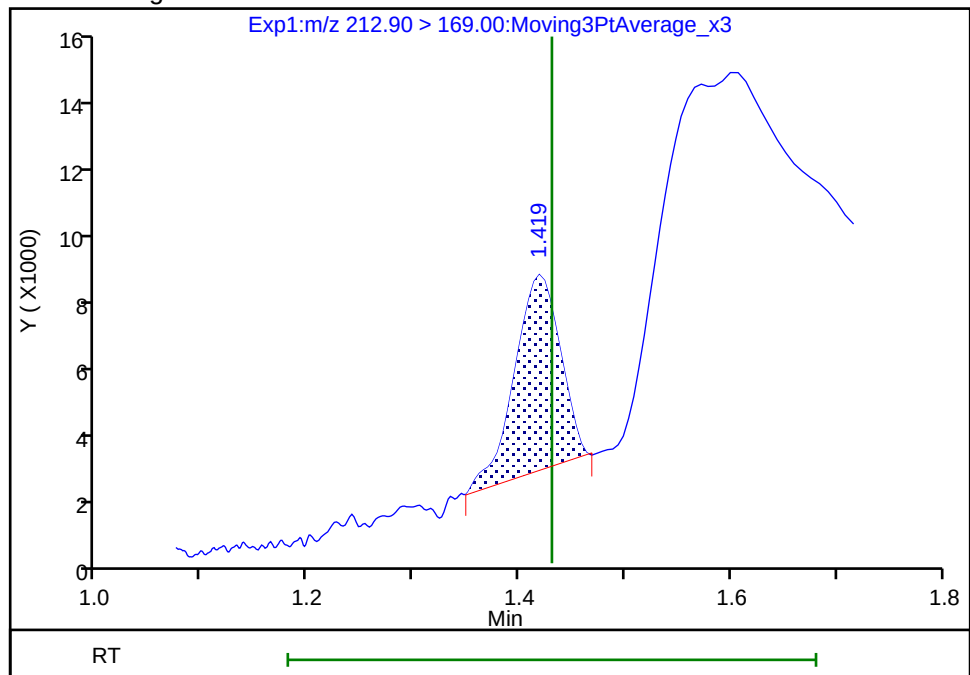
RT: 1.42
Area: 21514
Amount: 0.015956
Amount Units: ng/ml

Processing Integration Results



RT: 1.42
Area: 16668
Amount: 0.012362
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 10-Oct-2018 15:25:11

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_006.d

Injection Date: 06-Oct-2018 18:20:27

Instrument ID: A8_N

Lims ID: MB 320-248703/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1 Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

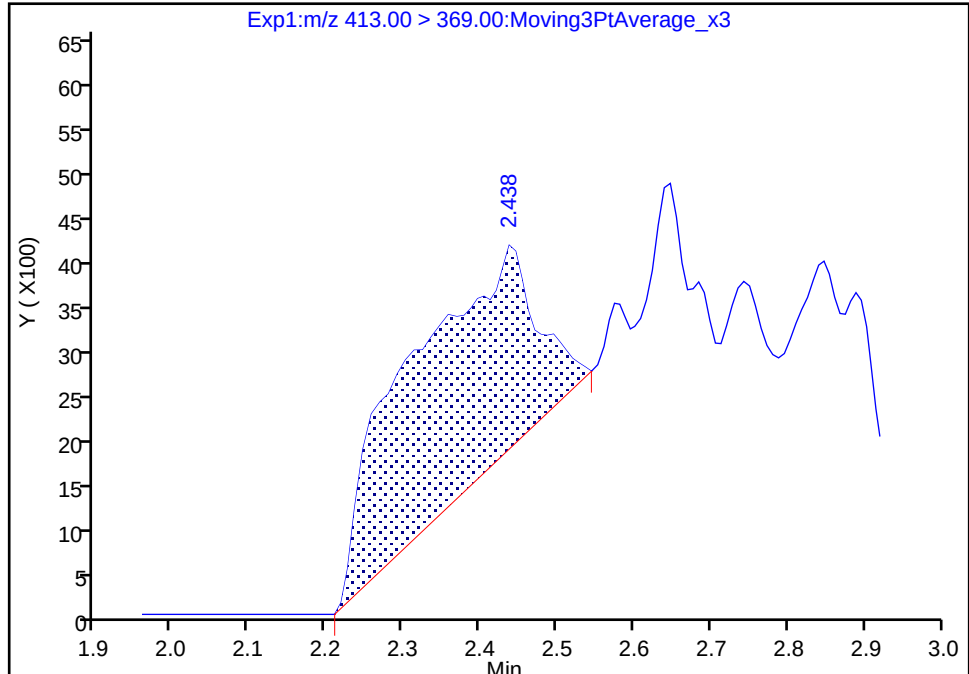
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

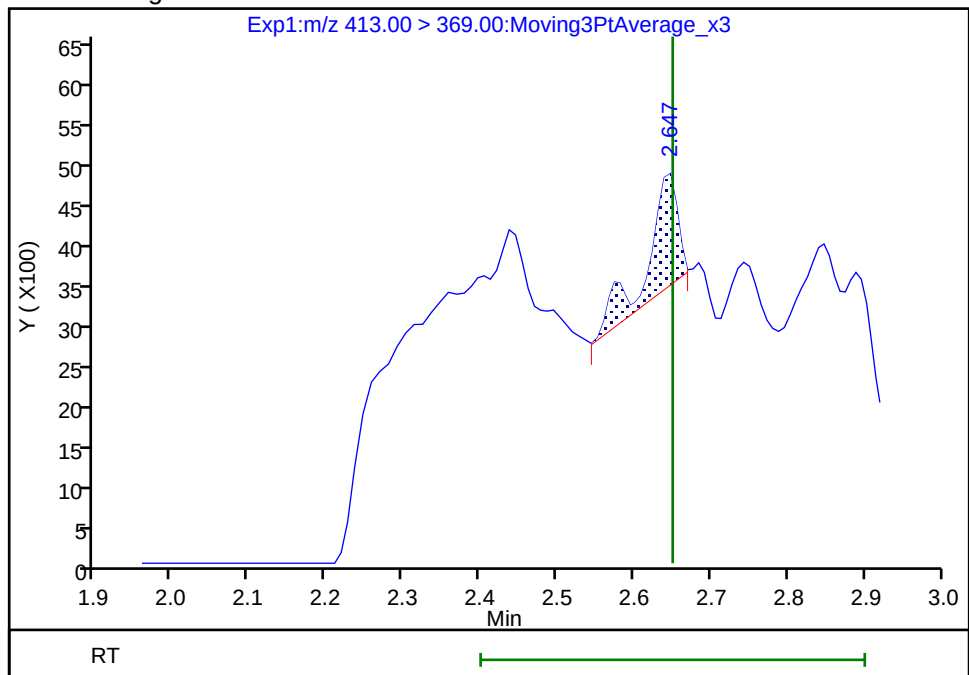
RT: 2.44
Area: 30381
Amount: 0.027554
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 3820
Amount: 0.003465
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakuld, 10-Oct-2018 15:26:12

Audit Action: Manually Integrated

Audit Reason: Wrong peak

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_006.d

Injection Date: 06-Oct-2018 18:20:27

Instrument ID: A8_N

Lims ID: MB 320-248703/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

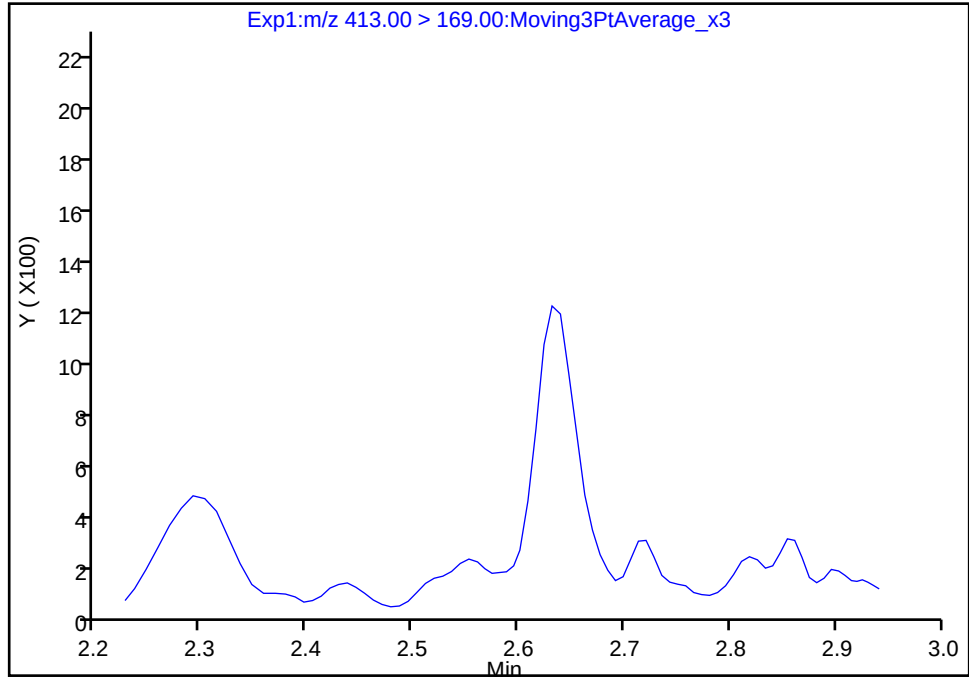
Detector: EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

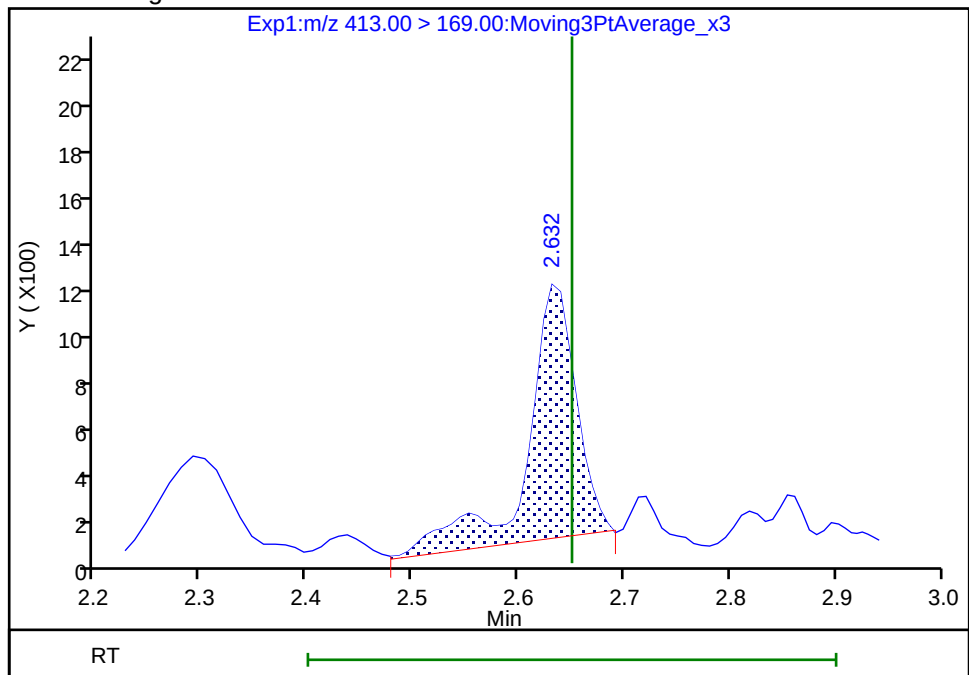
RT: 2.65
Area: 0
Amount: 0.027554
Amount Units: ng/ml

Processing Integration Results



RT: 2.63
Area: 3497
Amount: 0.003465
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 10-Oct-2018 15:26:20

Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_006.d

Injection Date: 06-Oct-2018 18:20:27

Instrument ID: A8_N

Lims ID: MB 320-248703/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1 Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

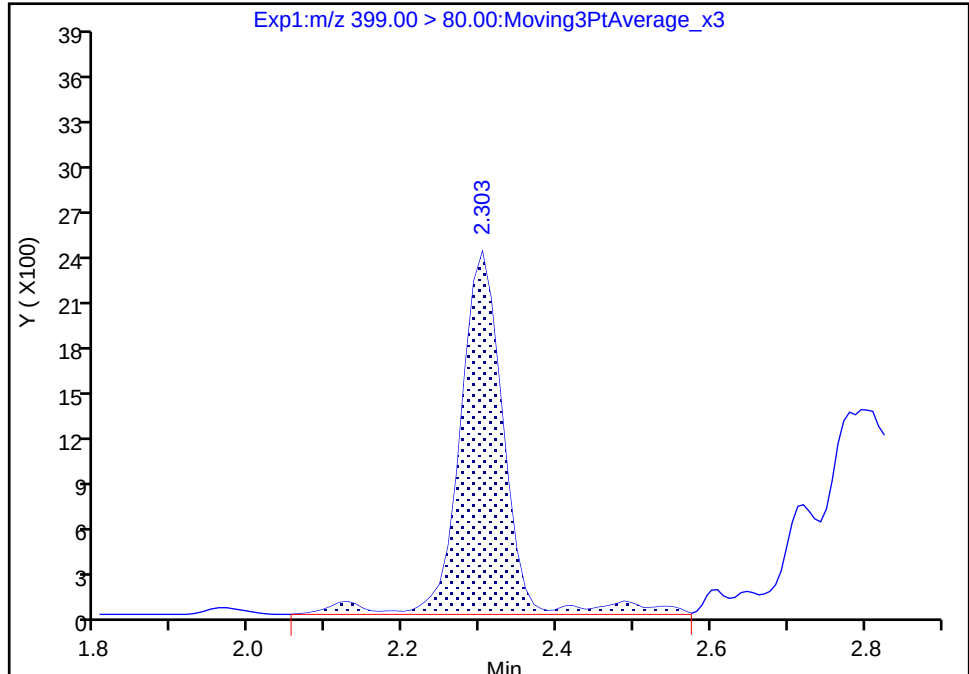
Detector: EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

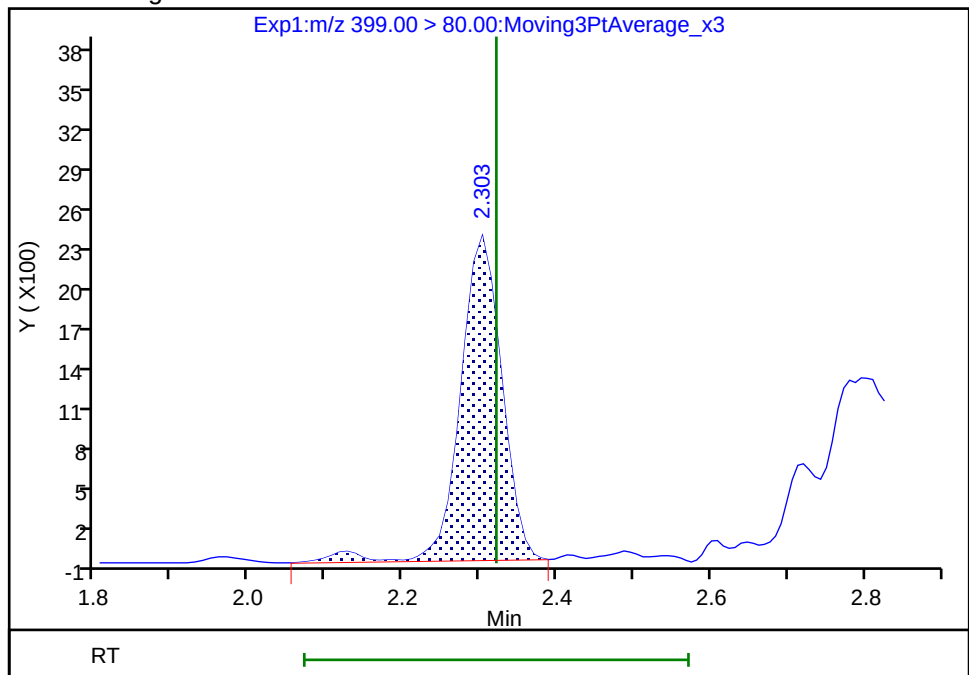
RT: 2.30
Area: 9691
Amount: 0.007864
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 8946
Amount: 0.007260
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakuld, 10-Oct-2018 15:25:31

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_006.d

Injection Date: 06-Oct-2018 18:20:27

Instrument ID: A8_N

Lims ID: MB 320-248703/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

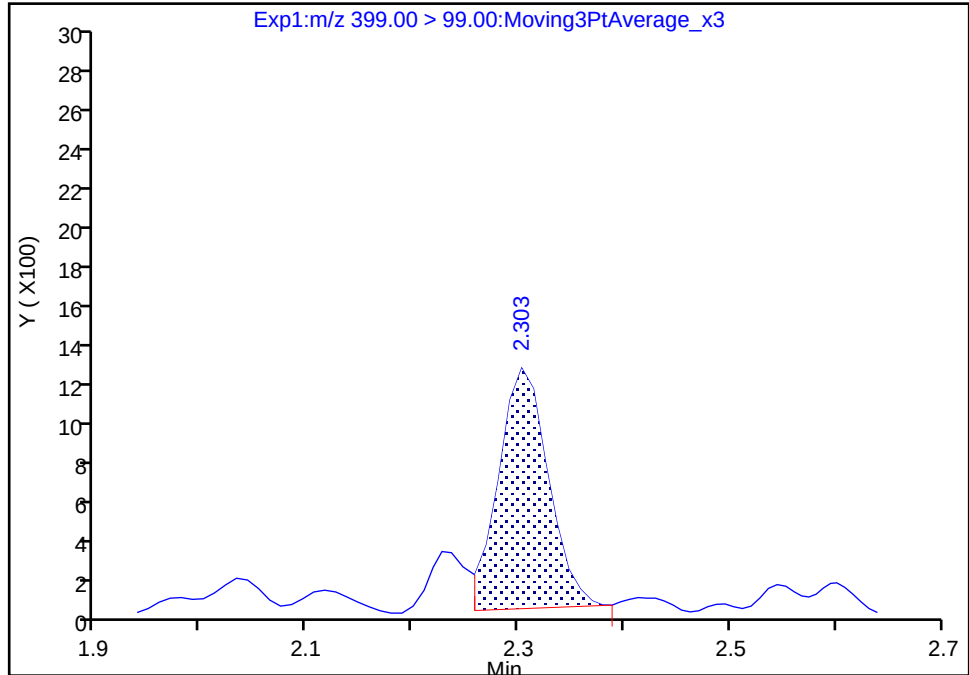
Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

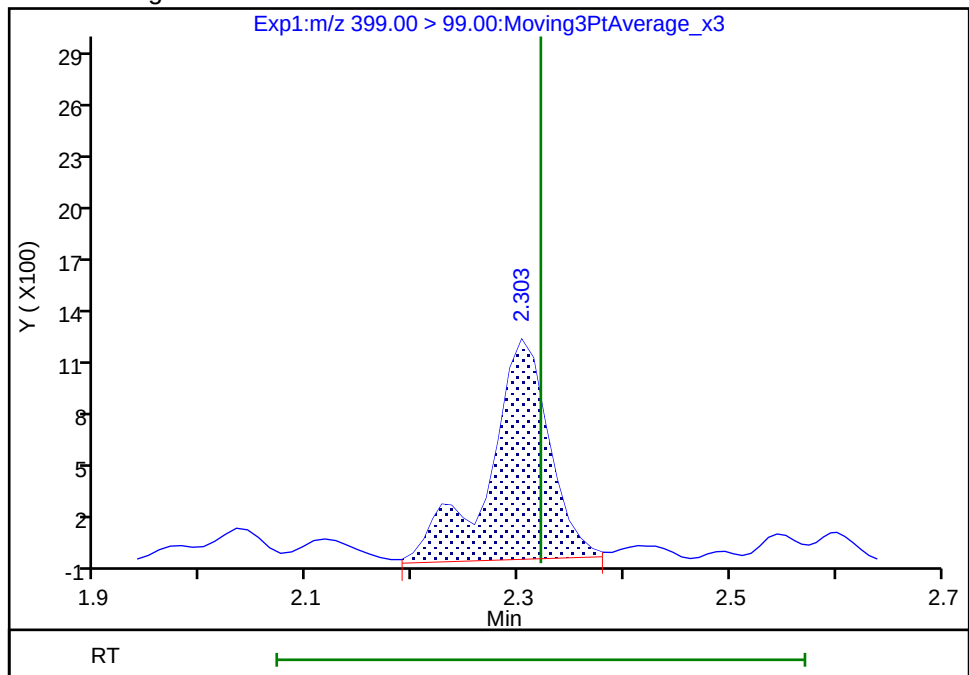
RT: 2.30
Area: 3923
Amount: 0.007864
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 4893
Amount: 0.007260
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 10-Oct-2018 15:25:40

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-248967/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_041.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/02/2018 22:24</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.00	U	2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.00	U	2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	2.00	U	2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.00	U	2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.00	U	2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.00	U	2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.433	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.00	U	2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.00	U	2.00	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20.0	U	20.0	3.10
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20.0	U	20.0	1.90
27619-97-2	6:2 FTS	20.0	U	20.0	2.00
39108-34-4	8:2 FTS	20.0	U	20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-248967/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_041.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/02/2018 22:24</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	98		25-150
STL01893	13C5 PFPeA	104		25-150
STL00993	13C2 PFHxA	104		25-150
STL01892	13C4 PFHpA	103		25-150
STL00990	13C4 PFOA	107		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	99		25-150
STL00997	13C2 PFUnA	103		25-150
STL00998	13C2 PFDoA	94		25-150
STL02116	13C2 PFTeDA	99		25-150
STL02337	13C3 PFBS	97		25-150
STL00994	18O2 PFHxS	94		25-150
STL00991	13C4 PFOS	101		25-150
STL01056	13C8 FOSA	89		25-150
STL02118	d3-NMeFOSAA	83		25-150
STL02117	d5-NEtFOSAA	102		25-150
STL02279	M2-6:2 FTS	75		25-150
STL02280	M2-8:2 FTS	76		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_041.d
 Lims ID: MB 320-248967/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 02-Oct-2018 22:24:37 ALS Bottle#: 19 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-248967/1-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 10:23:23 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 05-Oct-2018 09:52:40

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	1.483	0.0	0.542	7338150	2.46		98.3	6195	
2 Perfluorobutyric acid										
212.90 > 169.00	1.483	1.484	-0.001	1.000	1610	0.000598			0.2	
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.763	0.001	0.645	7070176	2.60		104	9428	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.764	0.0	1.000	12568	0.004464			1.2	
D 47 13C3-PFBS										
301.90 > 83.00	1.805	1.805	0.0	0.660	83166	2.25		96.7	477	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.805	1.806	-0.001	1.000	1169	0.000316			2.3	
298.90 > 99.00	1.797	1.806	-0.009	0.995	763		1.53(1.35-4.05)		0.8	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.047	0.001	0.749	7470376	2.59		104	9542	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.786	1119834	3.74		149	3265	
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	8799732	2.57		103	8802	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.386	2.386	0.0	0.995	28396	0.0108			50.3	
399.00 > 99.00	2.386	2.386	0.0	0.995	7027		4.04(1.90-5.70)		8.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.399	2.399	0.0	0.877	4925157	2.23		94.2	7583	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	636779	1.79		75.4	1224	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	2470	0.004222			1.5	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 73 13C8 PFOA										
421.00 > 376.00	2.734	2.718	0.016		5476	0.001781		0.0	49.6	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.734	0.0	1.000	8659904	2.67		107	8440	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		8108947	2.50			7858	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	19292	0.005310			1.9	
413.00 > 169.00	2.734	2.734	0.0	1.000	8248		2.34(1.36-4.08)		9.6	
D 18 13C4 PFOS										
503.00 > 80.00	3.098	3.098	0.0	1.133	5554837	2.42		101	4092	
D 19 13C5 PFNA										
468.00 > 423.00	3.098	3.098	0.0	1.133	7550191	2.56		102	7296	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.098	3.098	0.0	1.000	8465	0.003438			3.1	
499.00 > 99.00	3.080	3.098	-0.018	0.994	2080		4.07(2.04-6.12)		5.5	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.318	3.303	0.015	1.071	2957	0.001139			5.5	
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.0	1.261	82313	1.83		76.2	472	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.464	0.001	1.267	2715634	2.22		88.8	5925	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.464	0.001	1.267	7591696	2.48		99.2	5251	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.449	3.465	-0.017	0.995	3996	0.001247			6.1	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.612	0.001	1.321	2815547	2.08		83.0	4166	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.627	3.613	0.014	1.004	6605	0.006110			1.6	
D 30 13C2 PFUnA										
565.00 > 520.00	3.792	3.775	0.017	1.387	6709926	2.58		103	6016	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	2707819	2.55		102	3073	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	4544	0.004491			9.4	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.944	0.0	1.273	1712	0.000560			6.4	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.072	0.001	1.489	7235612	2.34		93.6	6597	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.566	4.572	-0.006	1.670	6001419	2.46		98.6	8870	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.584	4.573	0.011	1.004	1532	0.003885			7.6	
713.00 > 219.00	4.566	4.573	-0.007	1.000	1232		1.24(0.70-2.09)		6.1	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.985	4.989	-0.004	1.823	5999931	2.47		98.7	7581	

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	4.985	4.989	-0.004	1.000	57735	0.002027			29.7	
813.00 > 169.00	4.985	4.989	-0.004	1.000	9339		6.18(2.77-8.32)		27.9	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.319	0.010	1.069	7492	0.004817			3.4	
913.00 > 169.00	5.329	5.319	0.010	1.069	1432		5.23(2.55-7.64)		9.4	

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_041.d

Injection Date: 02-Oct-2018 22:24:37

Instrument ID: A9

Lims ID: MB 320-248967/1-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 19

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

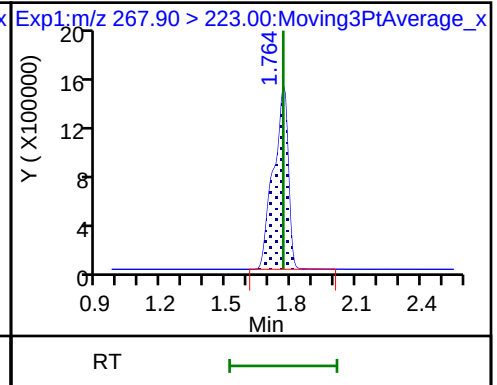
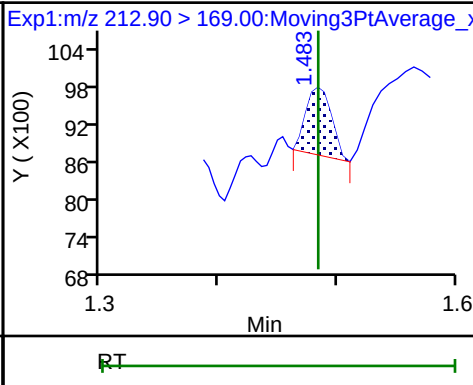
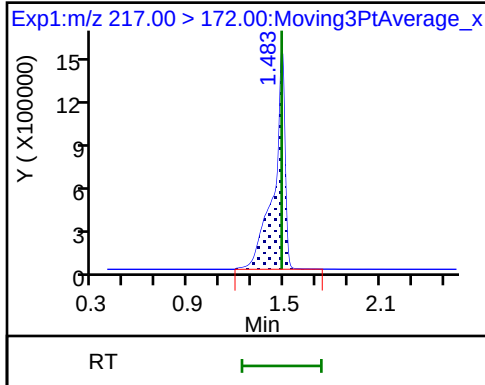
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

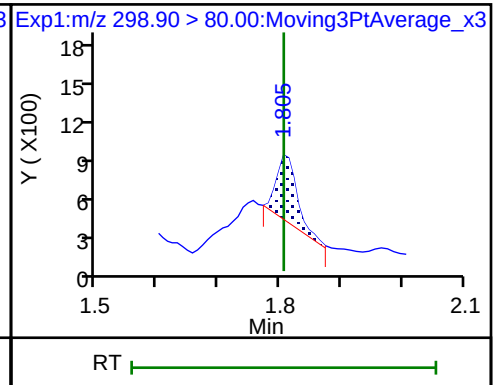
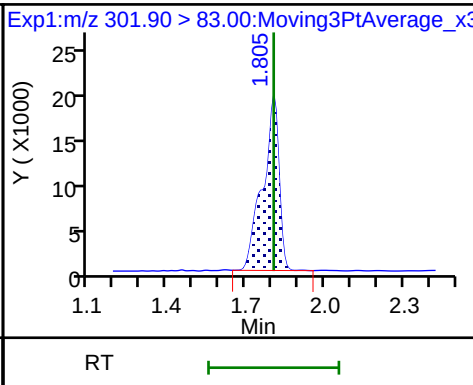
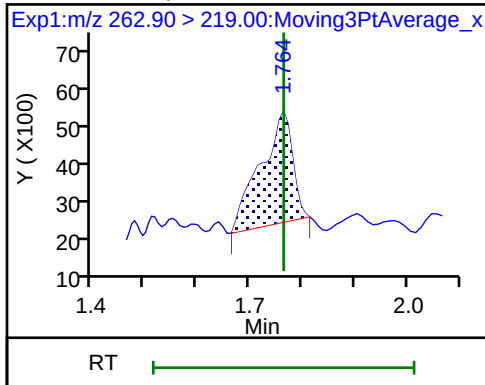
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

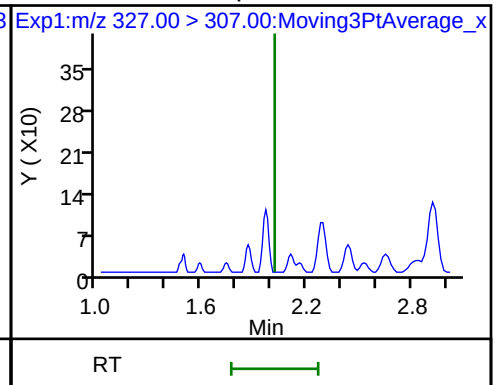
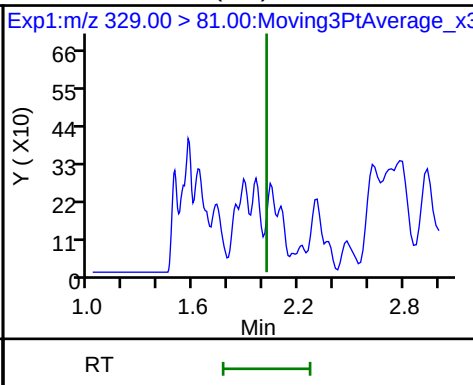
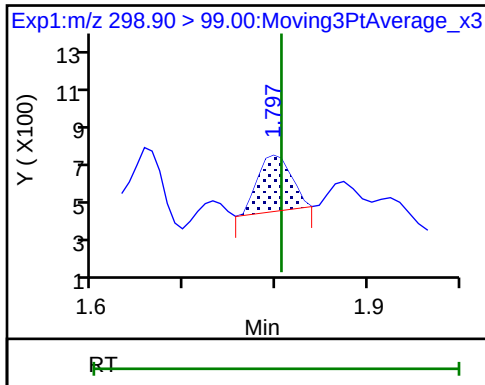
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS (ND)

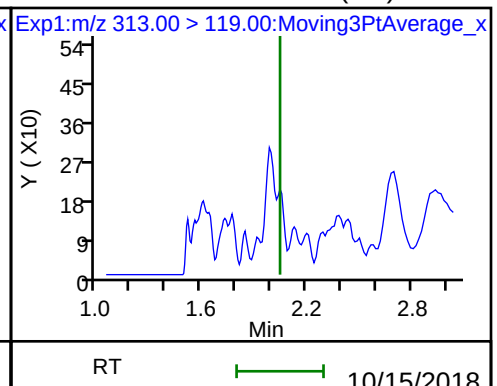
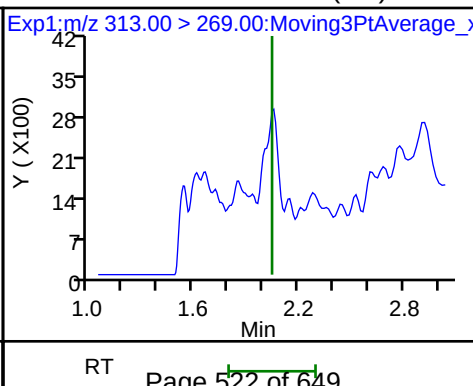
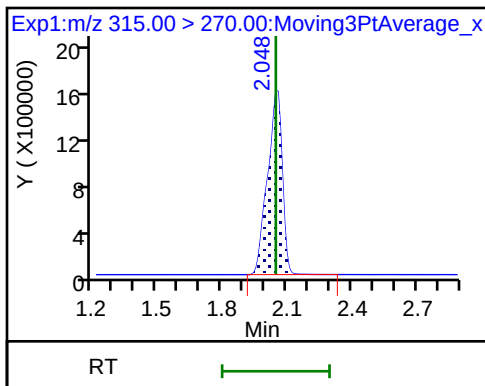
61 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



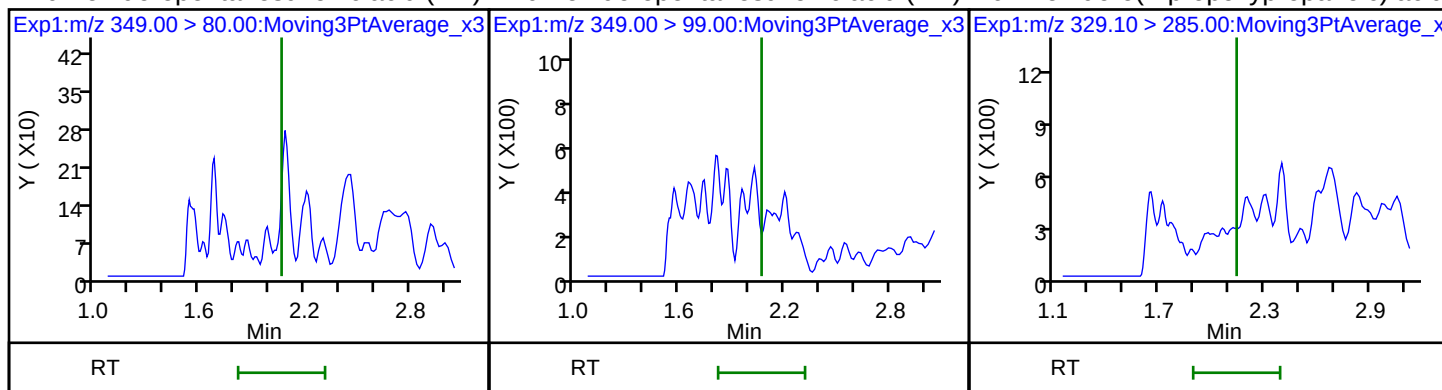
D 7 13C2 PFHxA

6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)



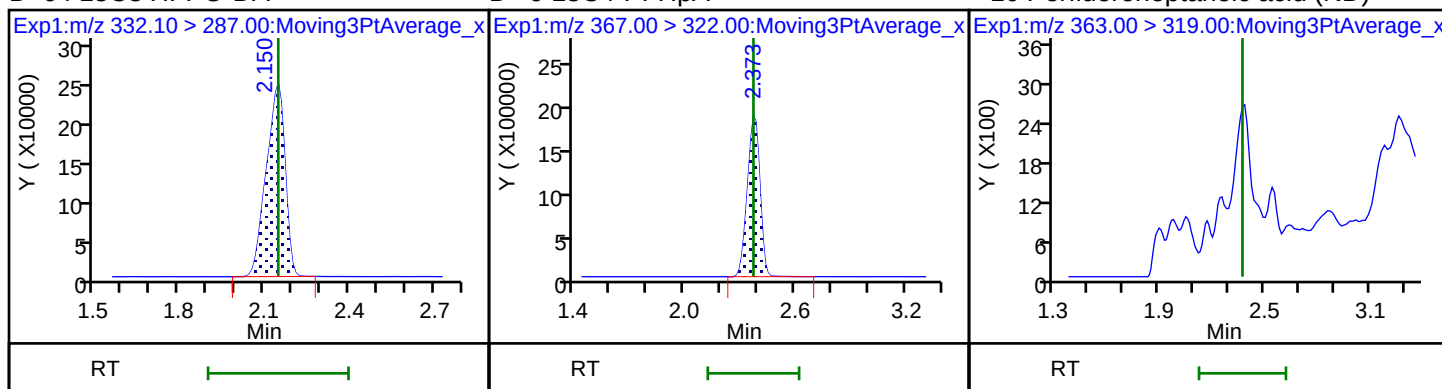
70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) 67 Perfluoro(2-propoxypropanoic) acid (ND)



D 64 13C3 HFPO-DA

D 9 13C4-PFHpA

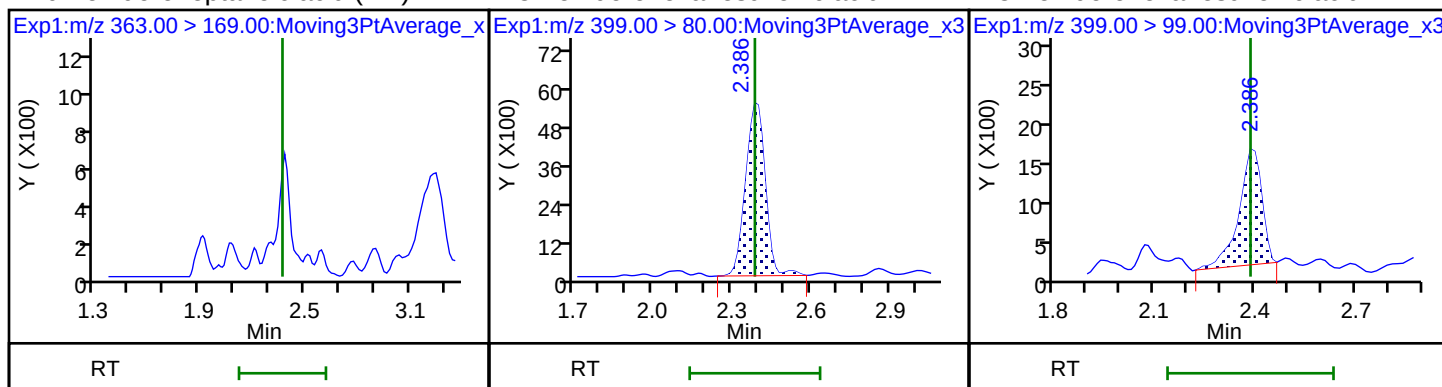
10 Perfluoroheptanoic acid (ND)



10 Perfluoroheptanoic acid (ND)

8 Perfluorohexanesulfonic acid

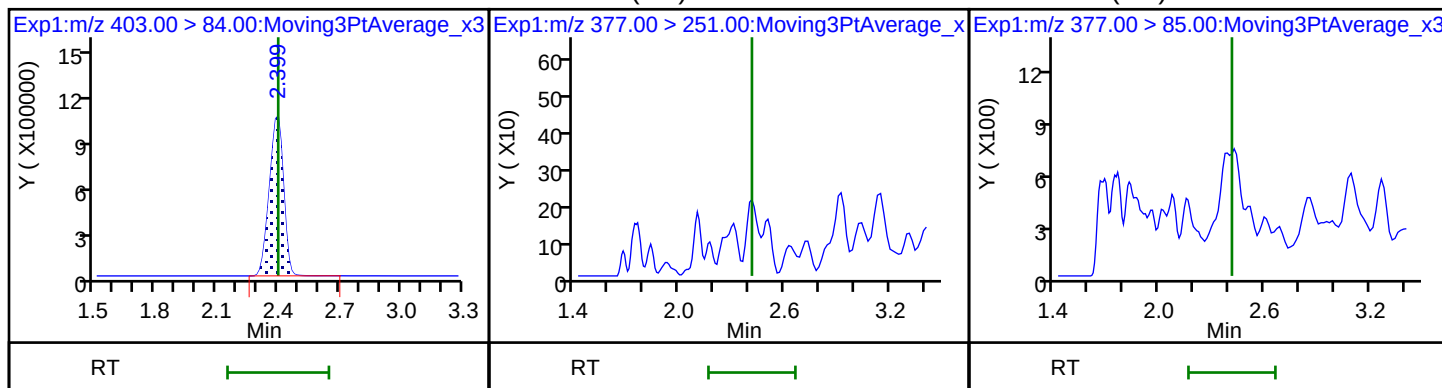
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

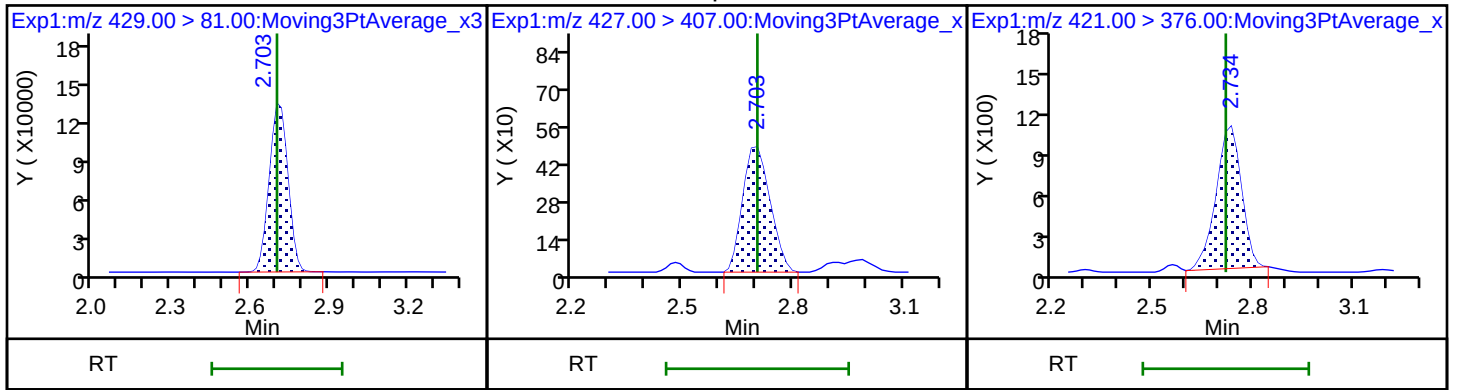
76 DONA (ND)

76 DONA (ND)



D 12 M2-6:2FTS

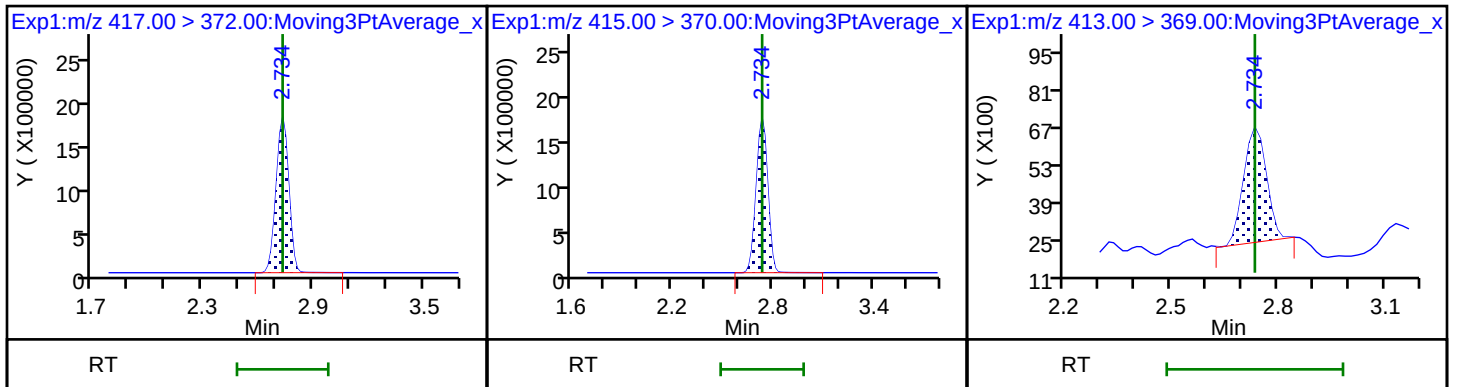
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

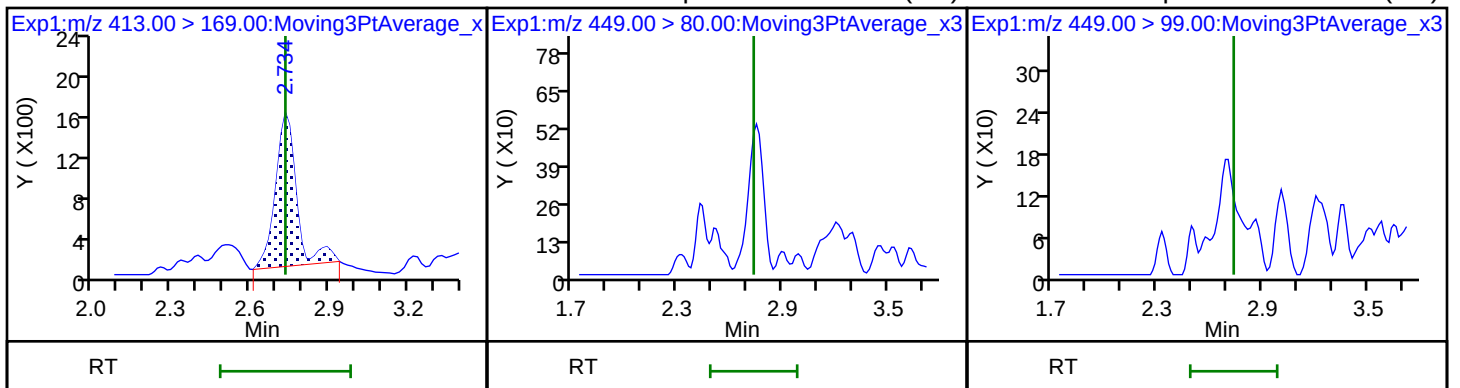
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid (ND)

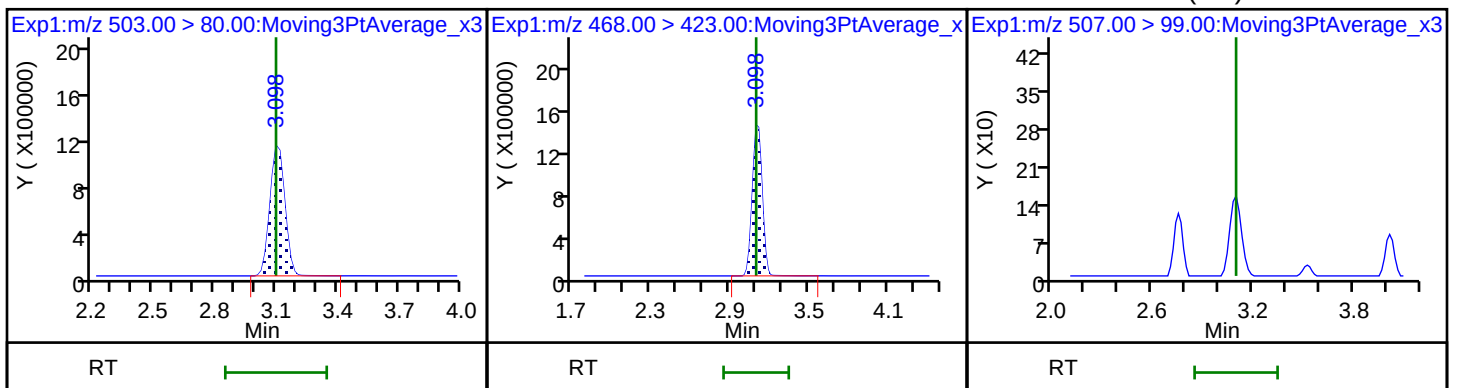
16 Perfluoroheptanesulfonic acid (ND)

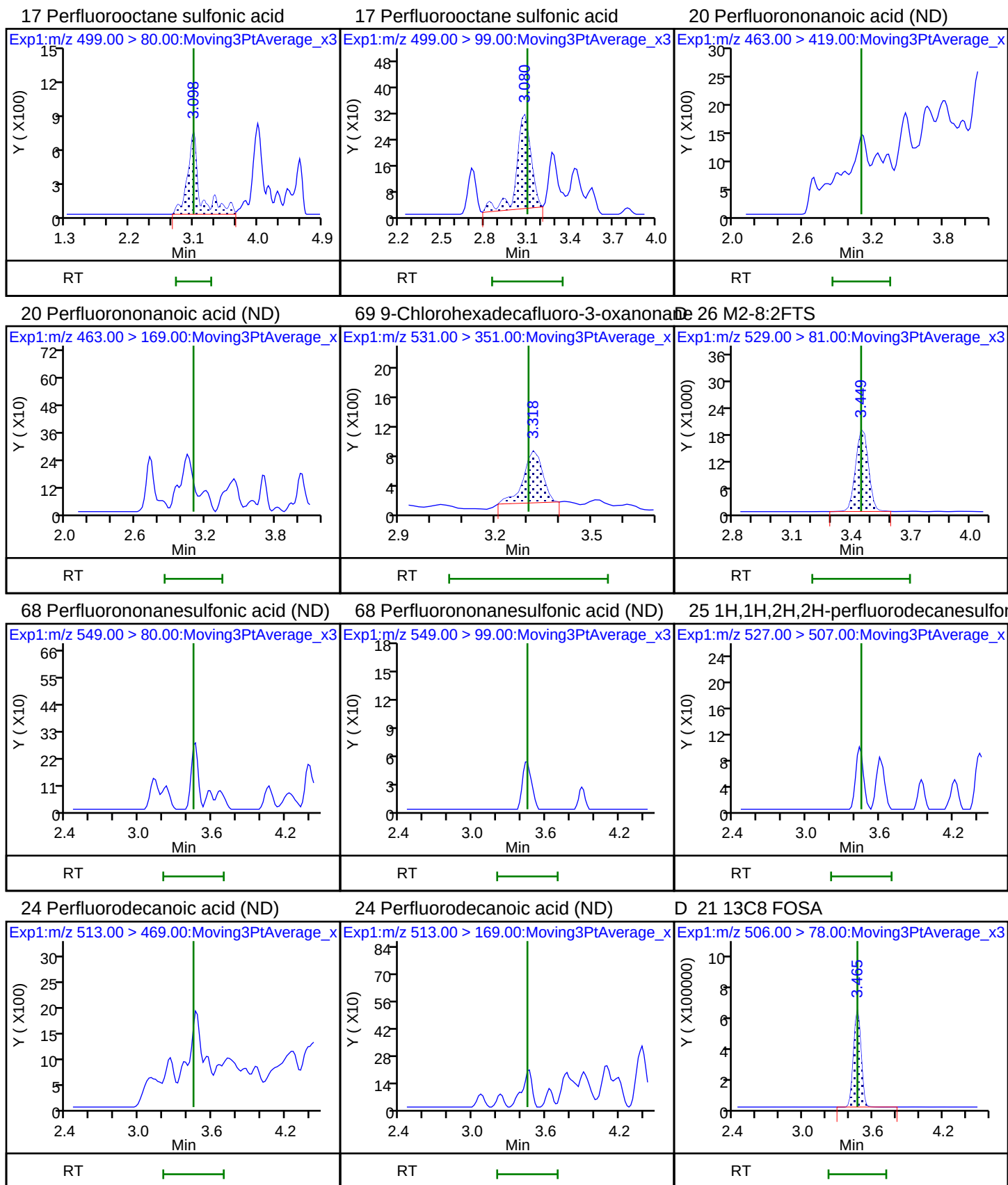


D 18 13C4 PFOS

D 19 13C5 PFNA

D 72 13C8 PFOS (ND)

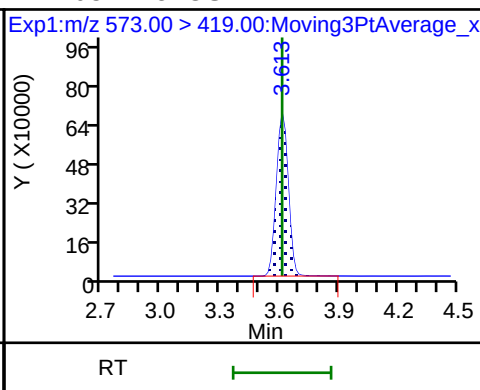
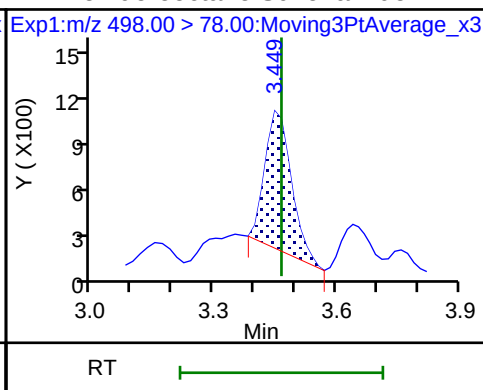
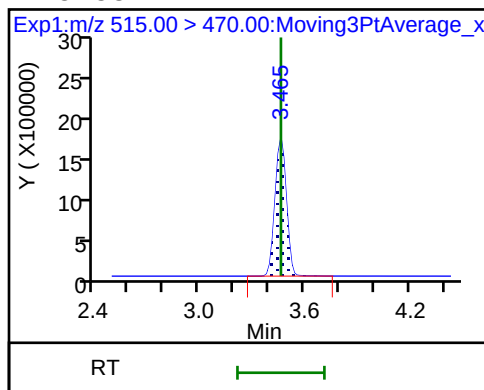




D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

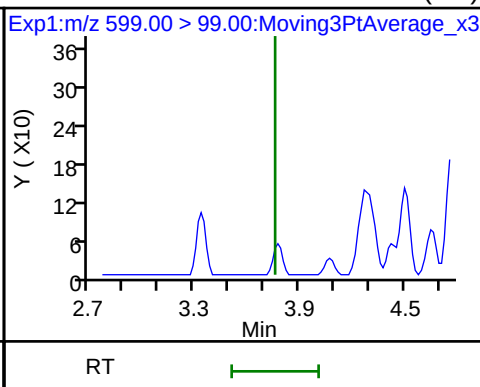
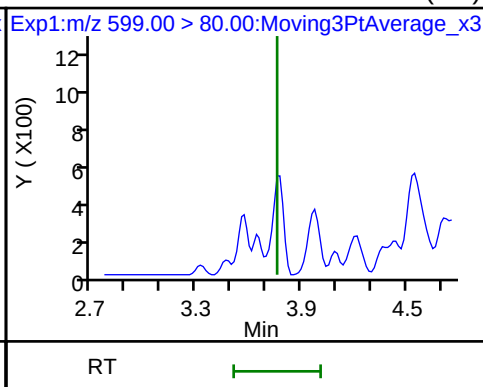
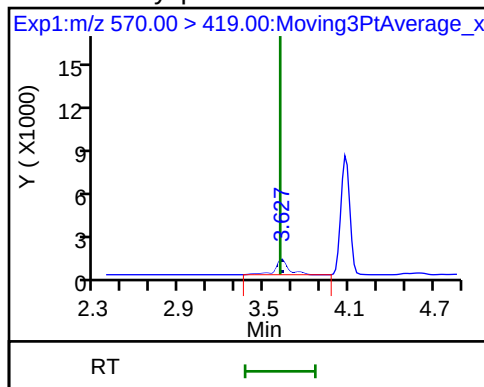
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid (ND)

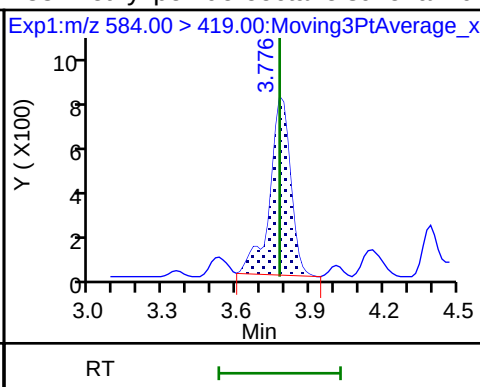
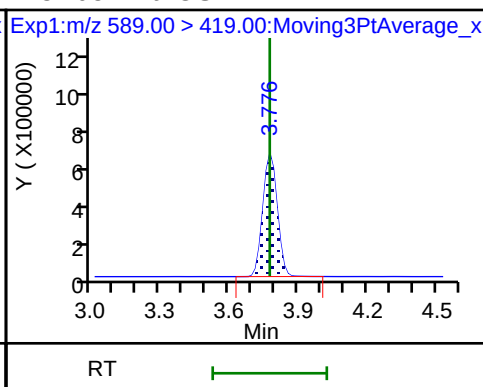
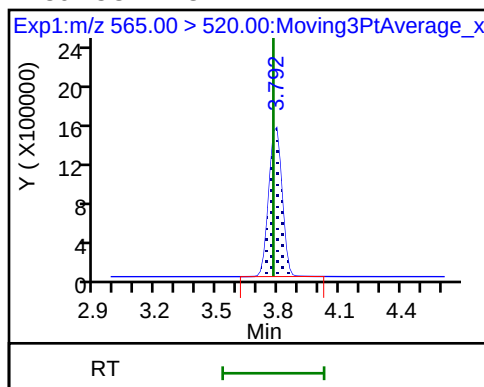
29 Perfluorodecane Sulfonic acid (ND)



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

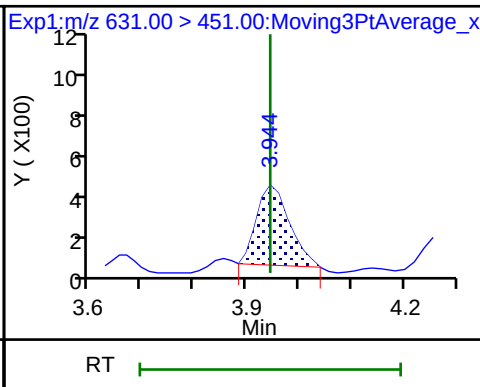
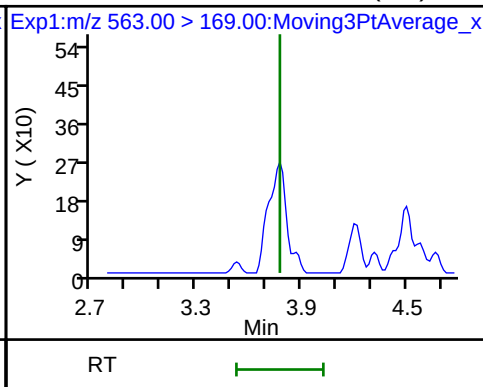
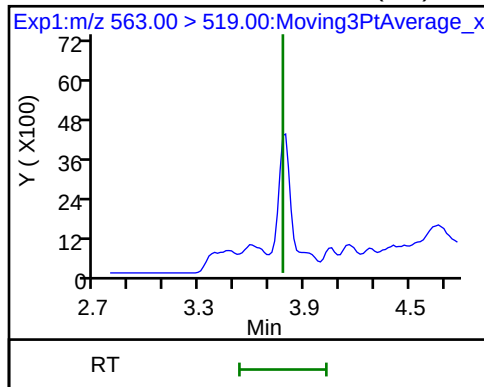
33 N-ethyl perfluorooctane sulfonamid



31 Perfluoroundecanoic acid (ND)

31 Perfluoroundecanoic acid (ND)

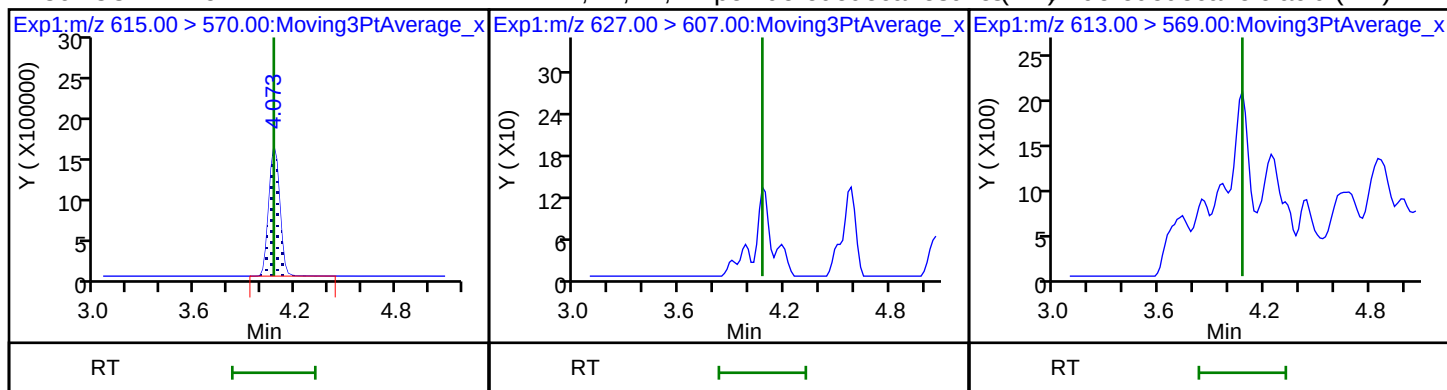
66 11-Chloroeicosafluoro-3-oxaundecan



D 36 13C2 PFDaA

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

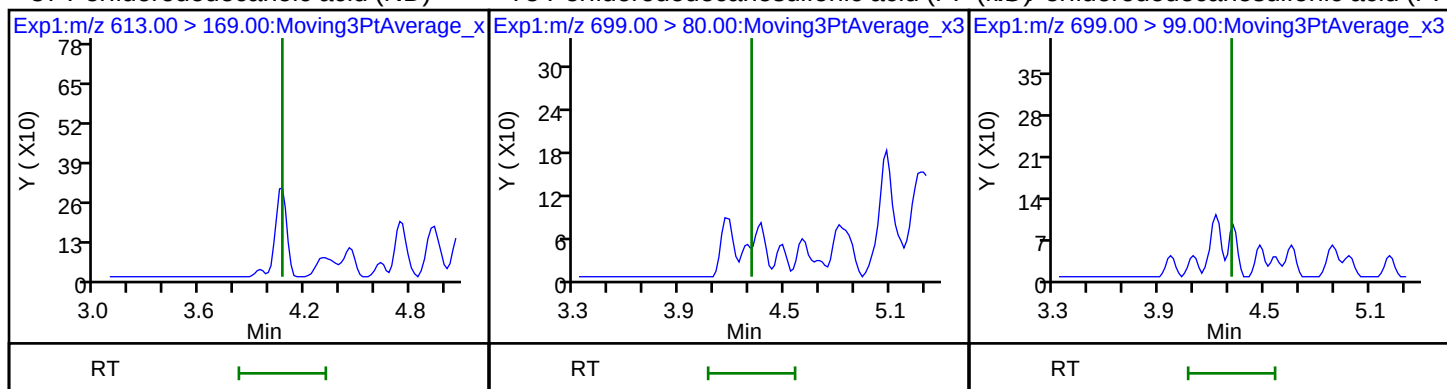
75 Perfluorododecanesulfonic acid (ND)



37 Perfluorododecanoic acid (ND)

75 Perfluorododecanesulfonic acid (PF (ND))

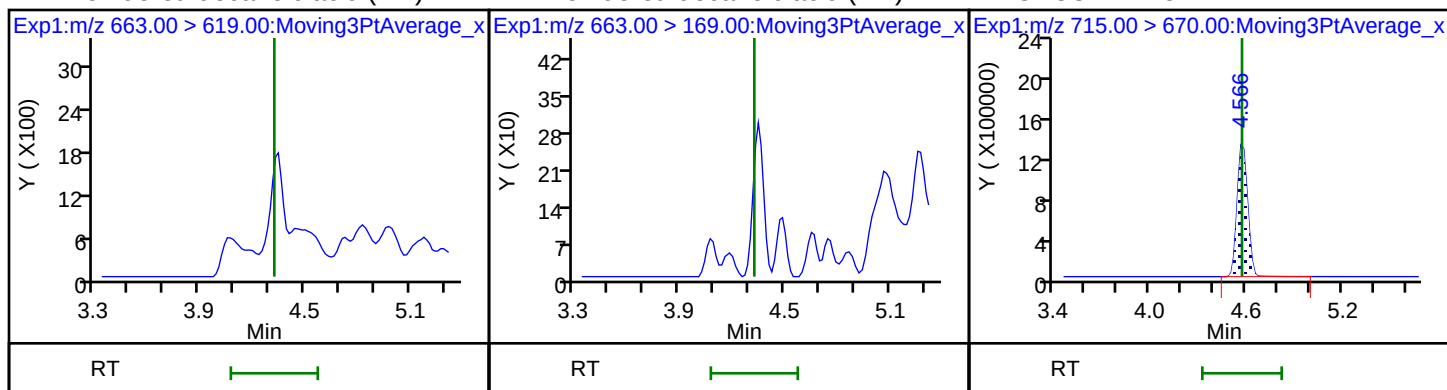
75 Perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

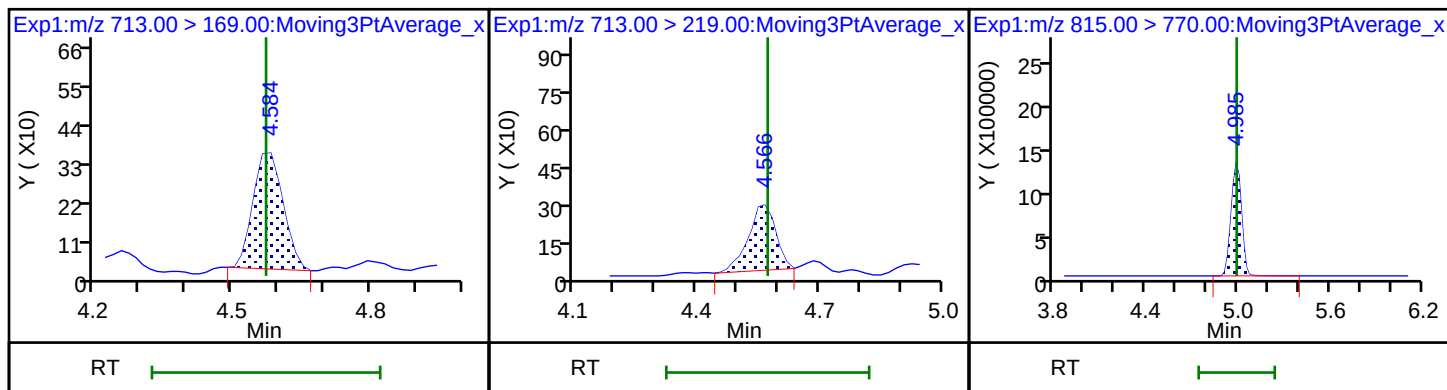
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid

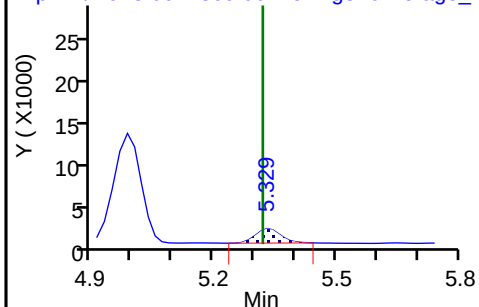
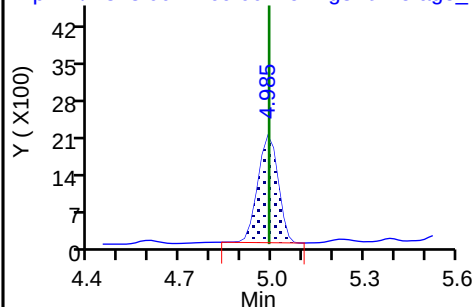
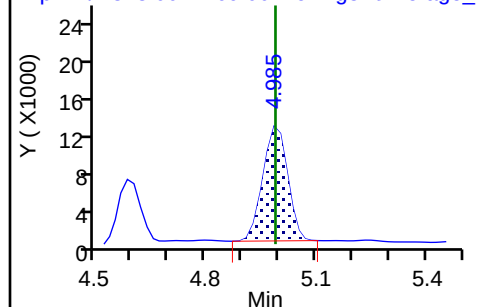
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

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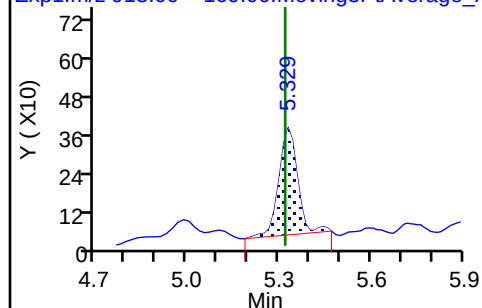
Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-248703/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_007.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/06/2018 18:27</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	36.79		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	37.25		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	38.88		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	39.07		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	35.78		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	37.38		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	39.17		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	36.91		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	35.22		2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	40.72		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	40.40		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	33.71		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	33.59		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	37.76		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	35.30		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	38.35		2.00	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	38.26		2.00	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	38.50		20.0	3.10
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	38.54		20.0	1.90
27619-97-2	6:2 FTS	33.16		20.0	2.00
39108-34-4	8:2 FTS	38.78		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-248703/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_007.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/06/2018 18:27</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	103		25-150
STL01893	13C5 PFPeA	101		25-150
STL00993	13C2 PFHxA	102		25-150
STL01892	13C4 PFHpA	102		25-150
STL00990	13C4 PFOA	106		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	96		25-150
STL00997	13C2 PFUnA	102		25-150
STL00998	13C2 PFDoA	107		25-150
STL02116	13C2 PFTeDA	117		25-150
STL02337	13C3 PFBS	96		25-150
STL00994	18O2 PFHxS	96		25-150
STL00991	13C4 PFOS	99		25-150
STL01056	13C8 FOSA	100		25-150
STL02118	d3-NMeFOSAA	114		25-150
STL02117	d5-NEtFOSAA	117		25-150
STL02279	M2-6:2 FTS	125		25-150
STL02280	M2-8:2 FTS	117		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_007.d
 Lims ID: LCS 320-248703/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 06-Oct-2018 18:27:56 ALS Bottle#: 2 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-248703/2-a
 Misc. Info.: Plate: 1 Rack: 6
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:27:55 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK015

First Level Reviewer: ruangyotsakuld

Date: 10-Oct-2018 15:27:55

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 1.425 1.423 0.002 0.539 4177611 2.58 103 12246

2 Perfluorobutyric acid

212.90 > 169.00 1.425 1.431 -0.006 1.000 1459477 0.9197 92.0 251

D 3 13C5-PFPeA

267.90 > 223.00 1.686 1.684 0.002 0.638 2752618 2.53 101 9928

4 Perfluoropentanoic acid

262.90 > 219.00 1.694 1.694 0.0 1.005 1138025 0.9313 93.1 115

D 47 13C3-PFBS

301.90 > 83.00 1.726 1.716 0.010 0.653 51877 2.24 96.2 386

5 Perfluorobutanesulfonic acid

298.90 > 80.00 1.726 1.734 -0.008 1.000 1461633 0.8426 95.3 80.2

298.90 > 99.00 1.726 1.734 -0.008 1.000 618096 2.36(1.25-3.74) 75.6

61 1H,1H,2H,2H-perfluorohexanesulfoni

327.00 > 307.00 1.933 1.933 0.0 1.120 325334 1.12 120 4077

D 7 13C2 PFHxA

315.00 > 270.00 1.964 1.960 0.004 0.743 3041129 2.55 102 8739

6 Perfluorohexanoic acid

313.00 > 269.00 1.964 1.975 -0.011 1.000 1164678 0.9720 97.2 312

313.00 > 119.00 1.964 1.975 -0.011 1.000 99481 11.71(5.03-15.10) 267

70 Perfluoropentanesulfonic acid

349.00 > 80.00 1.985 1.995 -0.010 1.150 1387810 0.9281 98.9 3869

349.00 > 99.00 1.985 1.995 -0.010 1.150 526781 2.63(1.36-4.07) 2379

D 64 13C3 HFPO-DA

332.10 > 287.00 2.058 2.054 0.004 0.779 222222 2.56 102 744

67 Perfluoro(2-propoxypropanoic) acid

329.10 > 285.00 2.058 2.069 -0.011 1.000 245831 0.9611 96.1 402

D 9 13C4-PFHpA

367.00 > 322.00 2.288 2.281 0.007 0.866 2732984 2.55 102 8234

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	2.299	2.299	0.0	1.005	1196907	0.9768		97.7	259	
363.00 > 169.00	2.288	2.299	-0.011	1.000	456502		2.62(1.13-3.40)		435	
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.303	0.007	0.874	3044154	2.27		96.0	11413	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.310	2.321	-0.011	1.000	1191186	0.8398		92.3	677	M
399.00 > 99.00	2.310	2.321	-0.011	1.000	389435		3.06(1.50-4.49)		454	M
77 DONA										
377.00 > 251.00	2.332	2.343	-0.011	0.773	3162897	0.9470		101	6478	
377.00 > 85.00	2.332	2.343	-0.011	0.773	1868101		1.69(0.85-2.54)		5265	
D 12 M2-6:2FTS										
429.00 > 81.00	2.612	2.609	0.003	0.988	536540	2.97		125	2938	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.619	2.627	-0.008	1.003	318791	0.8291		87.5	790	
D 14 13C4 PFOA										
417.00 > 372.00	2.643	2.640	0.002	1.000	2759102	2.65		106	9293	
* 62 13C2-PFOA										
415.00 > 370.00	2.643	2.651	-0.009		2679419	2.50			8877	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.643	2.651	-0.009	1.000	1162790	0.8944		89.4	129	
413.00 > 169.00	2.643	2.651	-0.009	1.000	631646		1.84(0.84-2.52)		859	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.650	2.658	-0.008	0.879	1015131	0.9440		99.2	3427	
449.00 > 99.00	2.650	2.658	-0.008	0.879	277085		3.66(1.94-5.82)		1217	
D 19 13C5 PFNA										
468.00 > 423.00	3.015	3.006	0.009	1.141	2231635	2.55		102	6778	
D 18 13C4 PFOS										
503.00 > 80.00	3.015	3.014	0.001	1.141	2053362	2.37		99.0	5314	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.015	3.023	-0.008	1.000	866087	0.8826		95.1	798	
499.00 > 99.00	3.015	3.023	-0.008	1.000	176467		4.91(2.31-6.93)		745	
20 Perfluorononanoic acid										
463.00 > 419.00	3.015	3.023	-0.008	1.000	898501	0.9345		93.5	305	
463.00 > 169.00	3.015	3.023	-0.008	1.000	219356		4.10(1.90-5.69)		1151	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.227	3.243	-0.016	1.070	1480985	0.9124		97.9	4149	
D 26 M2-8:2FTS										
529.00 > 81.00	3.364	3.362	0.002	1.273	534480	2.79		117	3224	
D 21 13C8 FOSA										
506.00 > 78.00	3.356	3.362	-0.006	1.270	3030309	2.51		100	7278	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.356	3.364	-0.008	1.000	1115816	0.9565		95.7	2784	
D 23 13C2 PFDA										
515.00 > 470.00	3.378	3.369	0.009	1.279	1862348	2.40		96.1	7861	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.371	3.379	-0.008	1.118	662040	0.9391		97.8	2671	
549.00 > 99.00	3.364	3.379	-0.015	1.116	225616		2.93(1.33-3.97)		1073	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.364	3.379	-0.015	1.000	261421	0.9694	101	1255	
24 Perfluorodecanoic acid	513.00 > 469.00	3.378	3.386	-0.008	1.000	732153	0.9792	97.9	632	
	513.00 > 169.00	3.378	3.386	-0.008	1.000	129557	5.65(2.36-7.09)		709	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.531	3.529	0.002	1.336	900465	2.86	114	1838	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.539	3.547	-0.009	1.002	335998	0.9626	96.3	442	M
D 32 d5-NEtFOSAA	589.00 > 419.00	3.701	3.699	0.001	1.400	990012	2.92	117	997	M
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.692	3.701	-0.009	1.224	528387	0.9587	99.5	2278	
	599.00 > 99.00	3.692	3.701	-0.009	1.224	185337	2.85(1.39-4.16)		899	
D 30 13C2 PFUnA	565.00 > 520.00	3.709	3.707	0.002	1.404	1504633	2.54	102	2649	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.709	3.718	-0.009	1.000	486914	0.9227	92.3	424	
	563.00 > 169.00	3.709	3.718	-0.009	1.000	116353	4.18(2.12-6.36)		795	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.709	3.718	-0.009	1.002	332122	0.9634	96.3	1262	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.871	3.881	-0.010	1.284	2373581	0.9688	103	5693	
D 36 13C2 PFDaA	615.00 > 570.00	4.006	4.003	0.003	1.516	1663245	2.67	107	6464	
37 Perfluorododecanoic acid	613.00 > 569.00	4.006	4.015	-0.009	1.000	642036	0.8806	88.1	495	
	613.00 > 169.00	4.006	4.015	-0.009	1.000	169937	3.78(2.13-6.40)		1718	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.014	4.015	-0.001	1.193	185216	0.9679	100	817	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.248	4.257	-0.009	1.409	240235	0.9604	99.2	1614	
	699.00 > 99.00	4.248	4.257	-0.009	1.409	376143	0.64(0.00-0.00)		2244	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.276	4.285	-0.009	1.067	718941	1.02	102	572	
	663.00 > 169.00	4.276	4.285	-0.009	1.067	254447	2.83(1.25-3.76)		1464	
D 43 13C2-PFTeDA	715.00 > 670.00	4.517	4.504	0.013	1.710	2187852	2.92	117	5049	
42 Perfluorotetradecanoic acid	713.00 > 169.00	4.517	4.526	-0.009	1.000	217167	1.01	101	1670	
	713.00 > 219.00	4.508	4.526	-0.018	0.998	155419	1.40(0.71-2.13)		1389	
D 44 13C2-PFHxDA	815.00 > 770.00	4.929	4.927	0.002	1.865	3891329	2.87	115	6420	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.938	4.945	-0.007	1.002	1405784	1.01	101	259	
	813.00 > 169.00	4.929	4.945	-0.016	1.000	261933	5.37(2.86-8.58)		1774	

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	5.289	5.295	-0.006	1.073	1811939	1.11		111	276	
913.00 > 169.00	5.282	5.295	-0.013	1.072	233725		7.75(3.83-11.48)		1734	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_007.d

Injection Date: 06-Oct-2018 18:27:56

Instrument ID: A8_N

Lims ID: LCS 320-248703/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

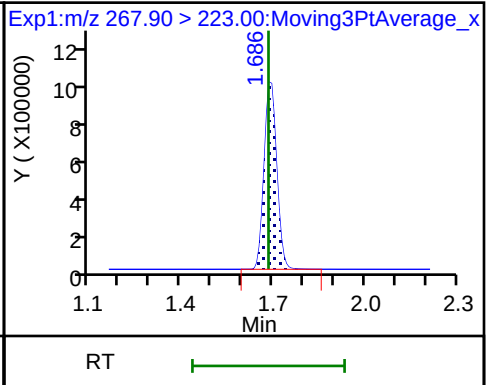
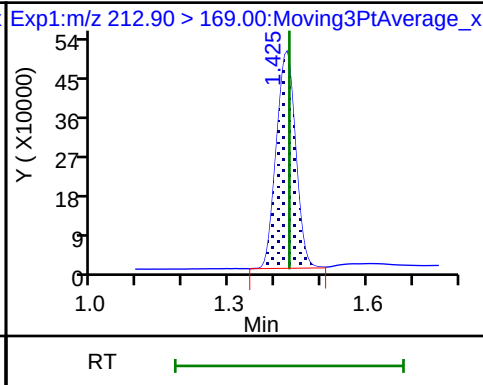
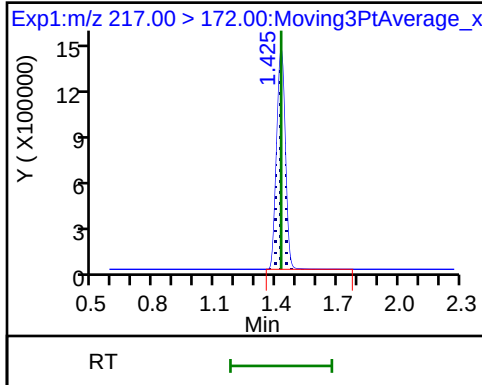
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

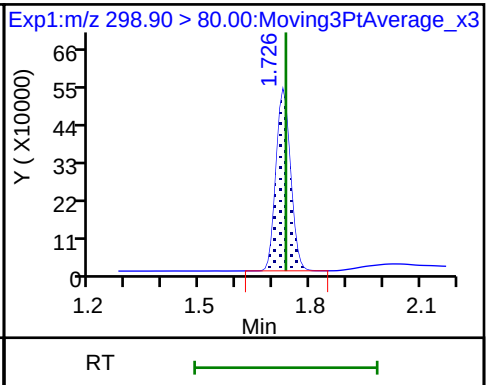
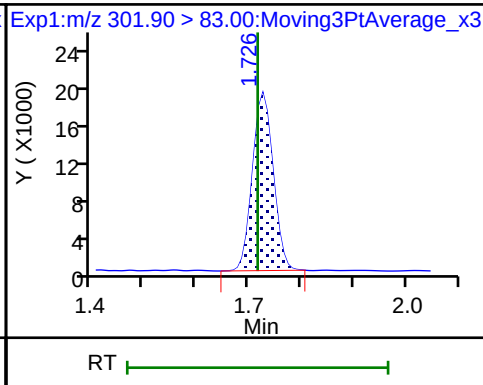
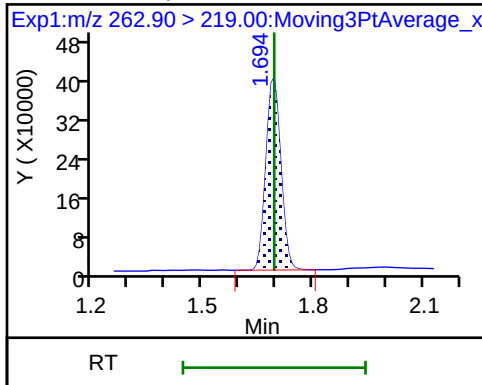
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

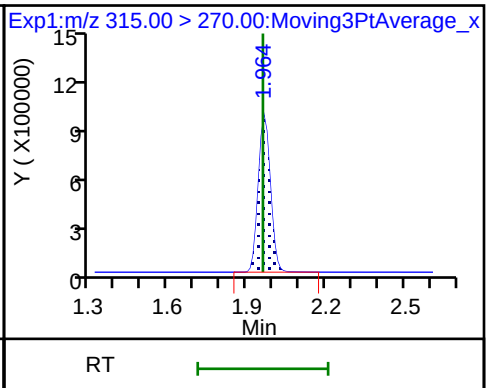
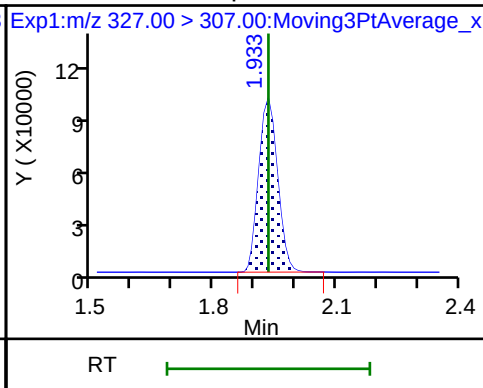
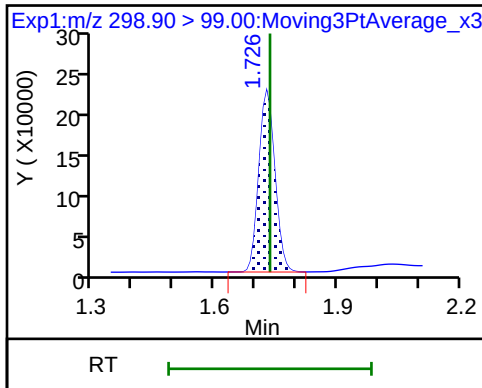
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

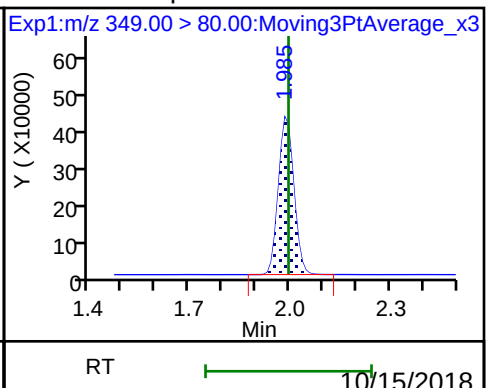
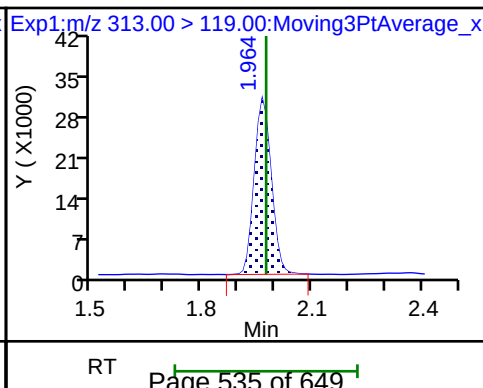
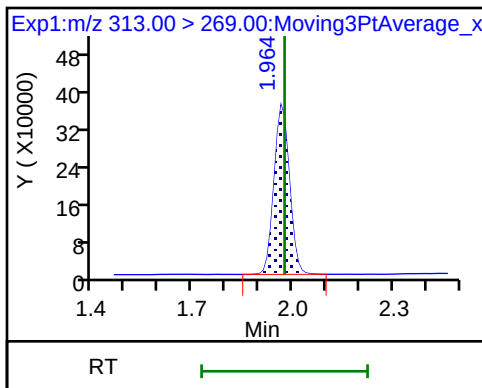
D 7 13C2 PFHxA



6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

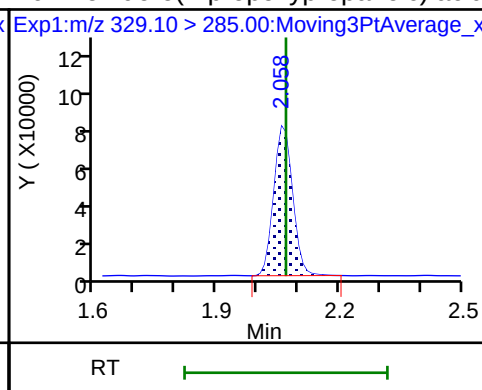
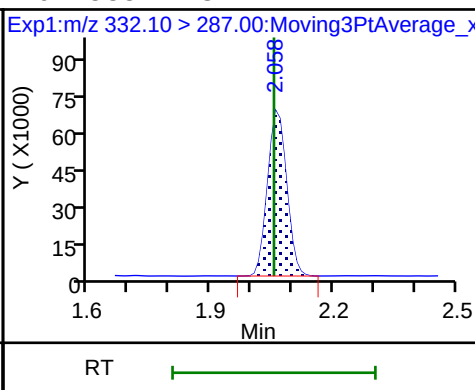
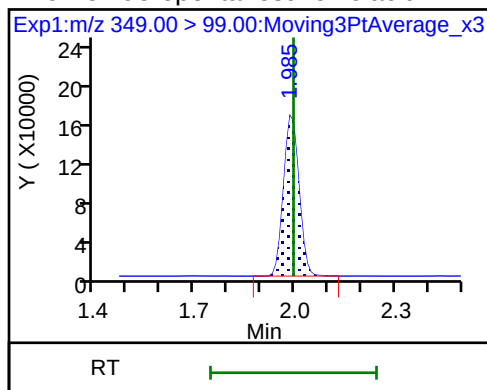
70 Perfluoropentanesulfonic acid



70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA

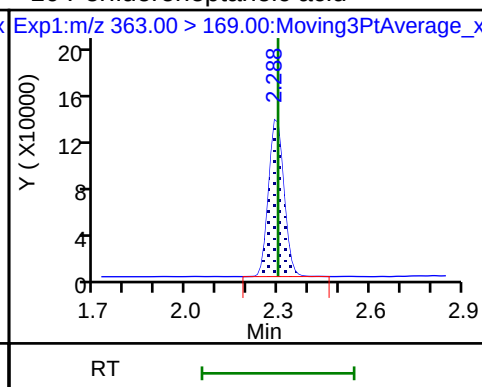
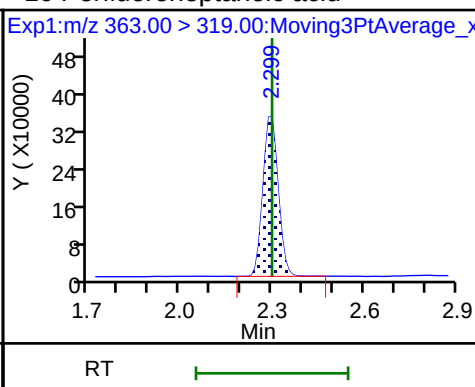
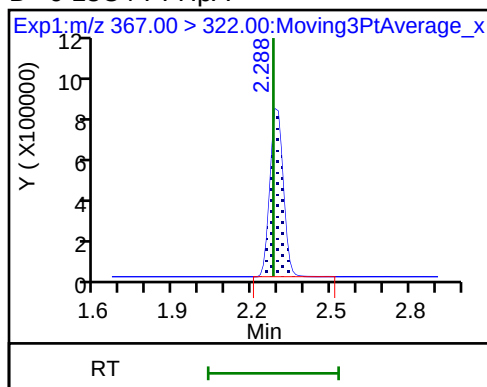
67 Perfluoro(2-propoxypropanoic) acid



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

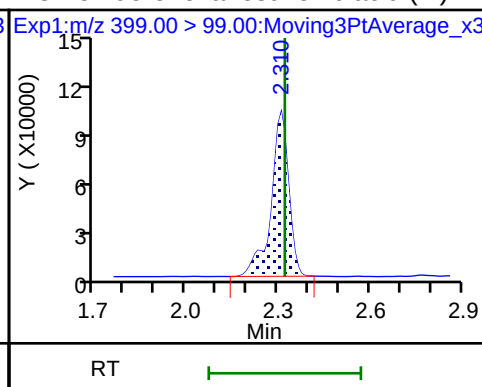
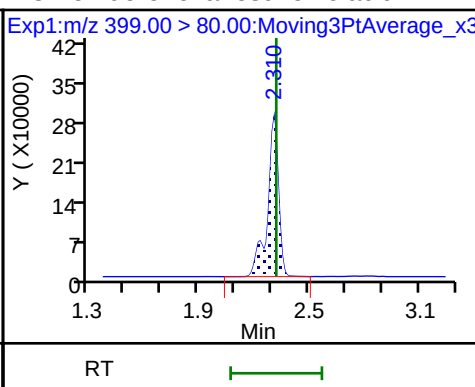
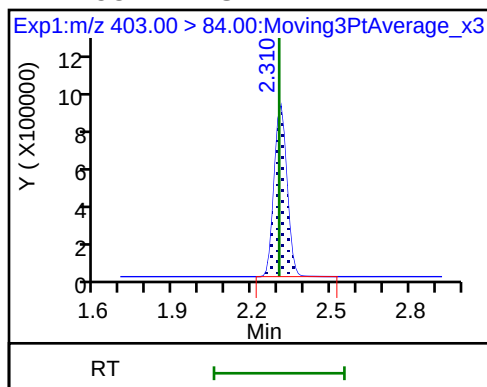
10 Perfluoroheptanoic acid



D 11 18O2 PFHxS

8 Perfluorohexanesulfonic acid

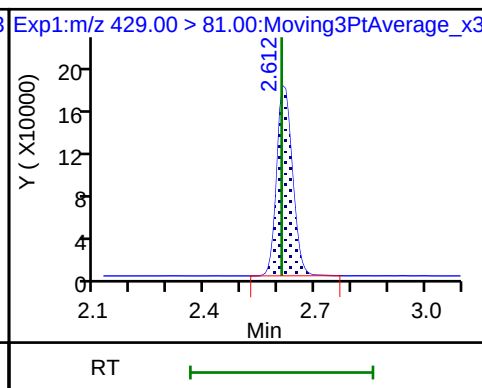
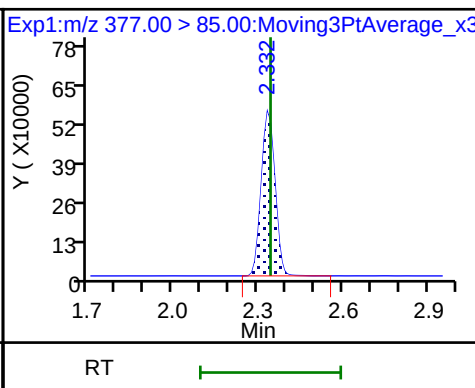
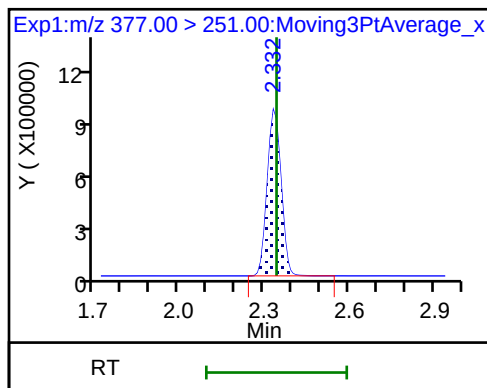
8 Perfluorohexanesulfonic acid (M)



77 DONA

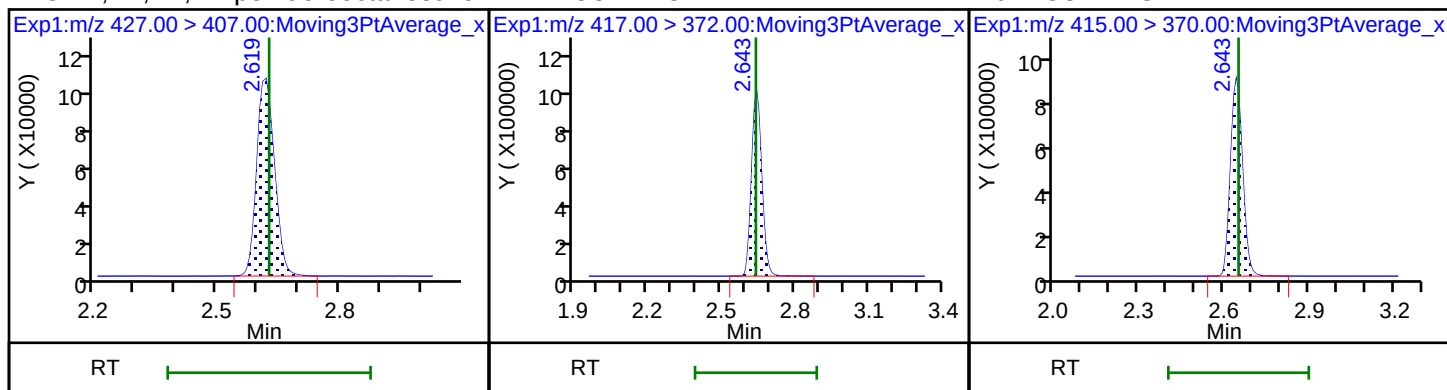
77 DONA

D 12 M2-6:2FTS



13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA

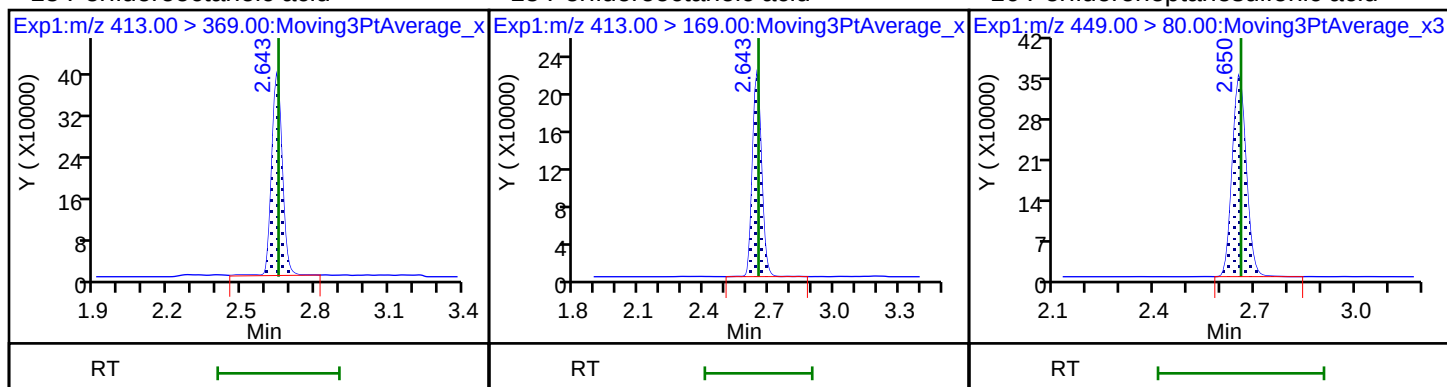
* 62 13C2-PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

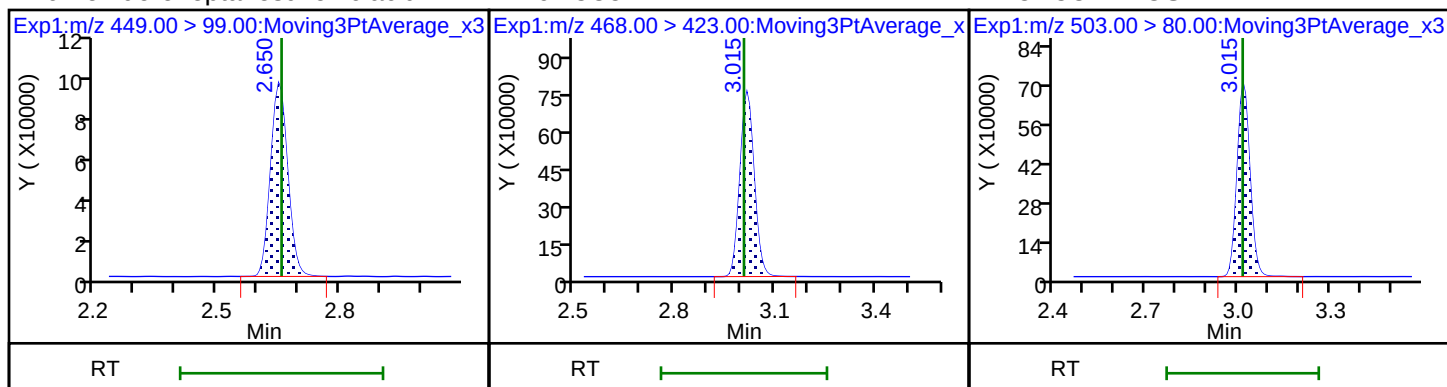
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

D 19 13C5 PFNA

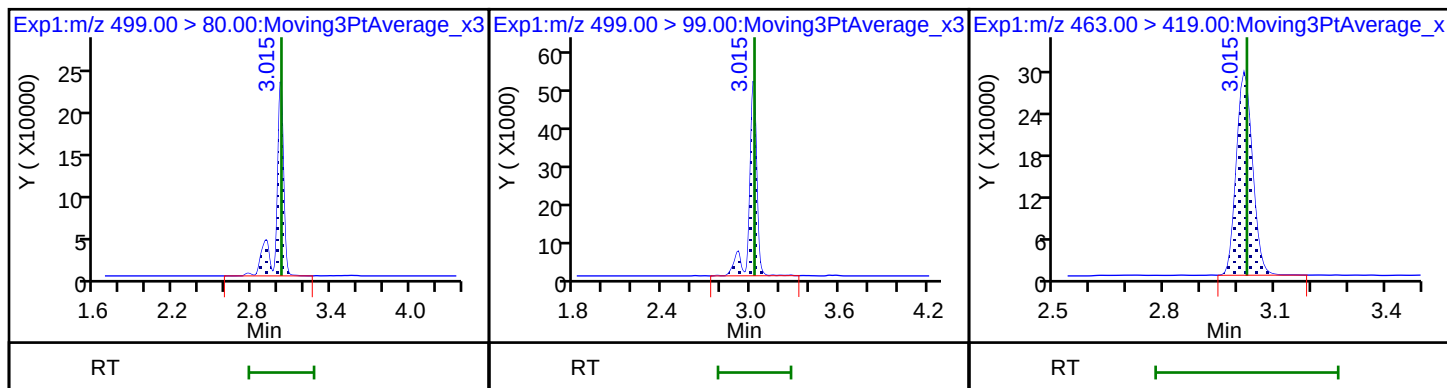
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

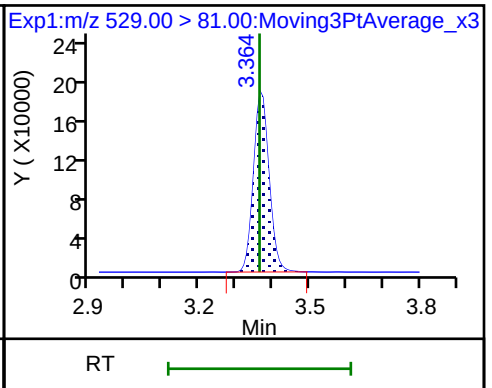
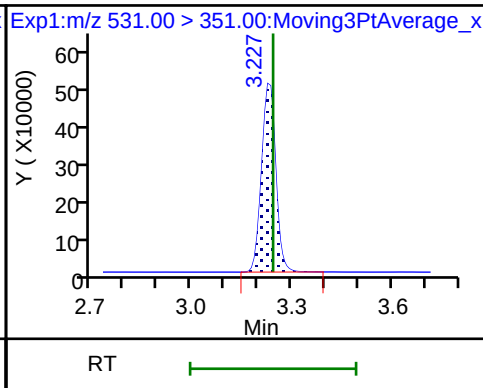
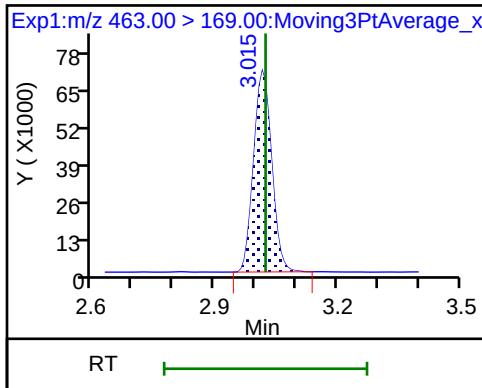
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

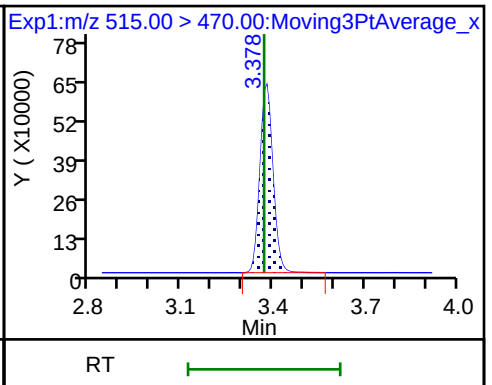
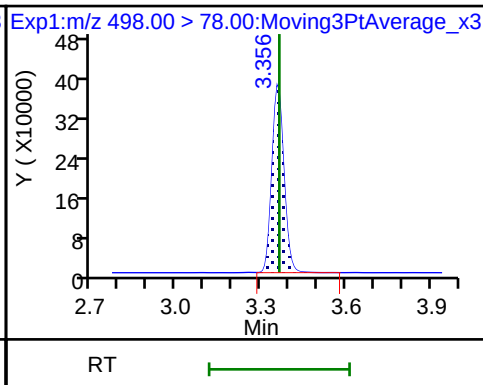
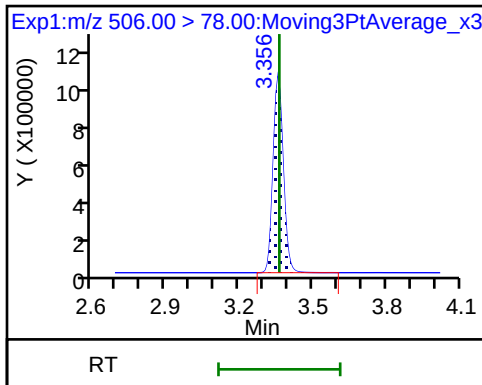
D 26 M2-8:2FTS



D 21 13C8 FOSA

22 Perfluorooctane Sulfonamide

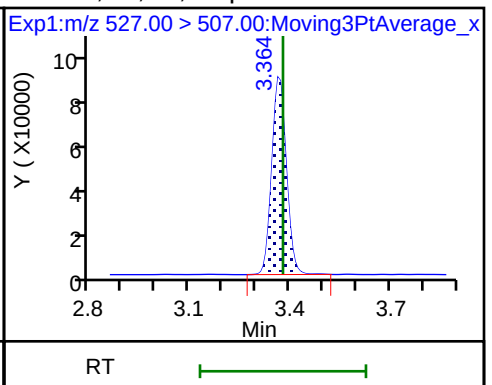
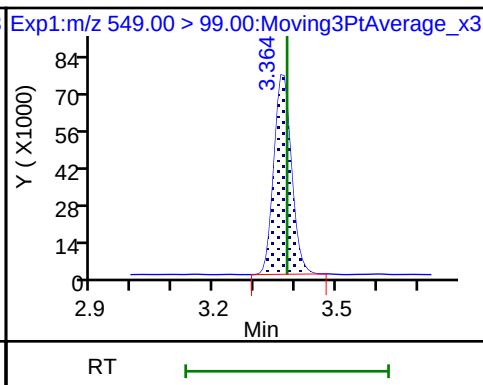
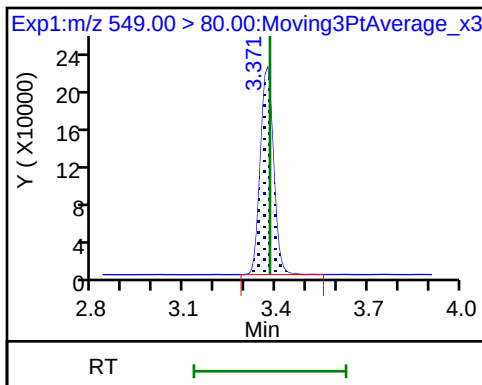
D 23 13C2 PFDA



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

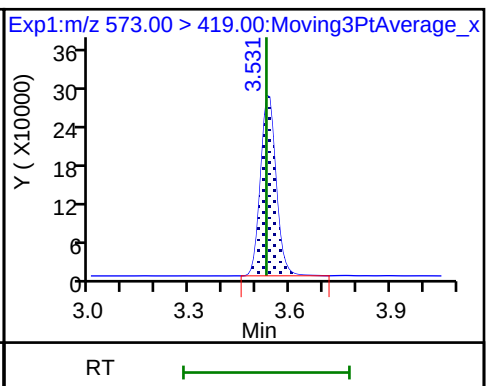
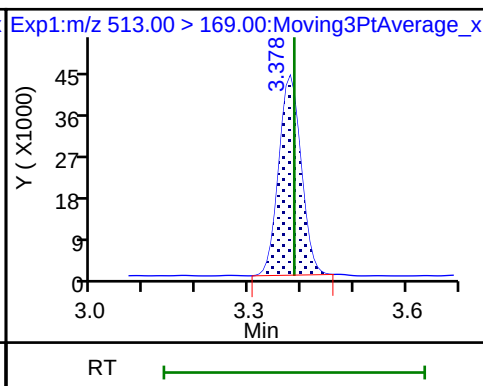
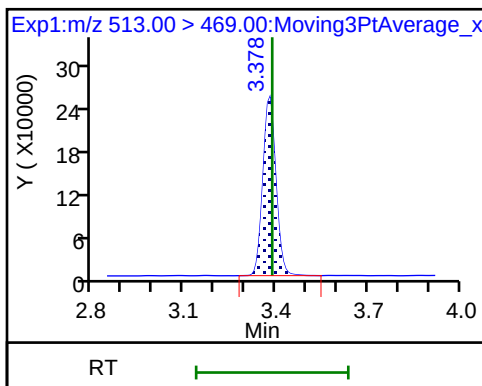
25 1H,1H,2H,2H-perfluorodecanesulfoni



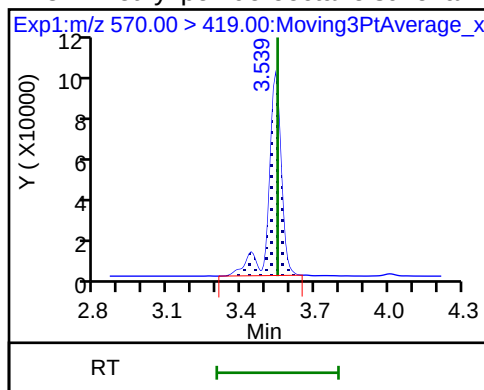
24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

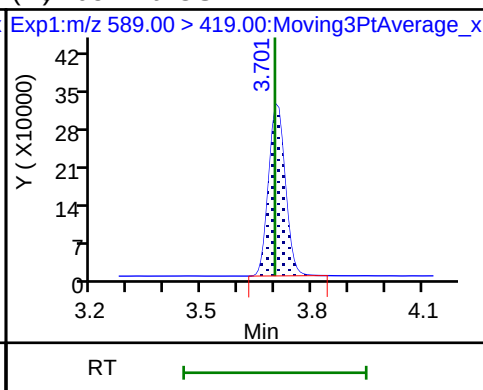
D 27 d3-NMeFOSAA



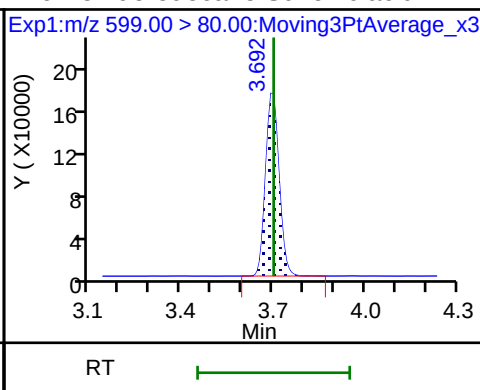
28 N-methyl perfluorooctane sulfonamide



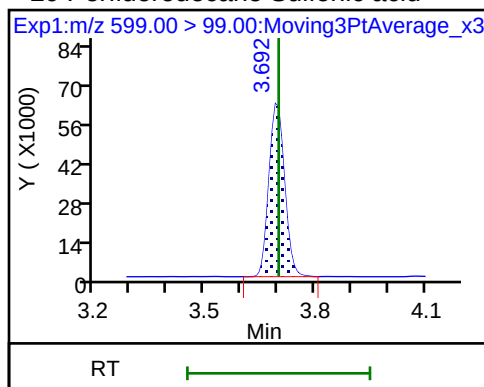
32 d5-NEtFOSAA



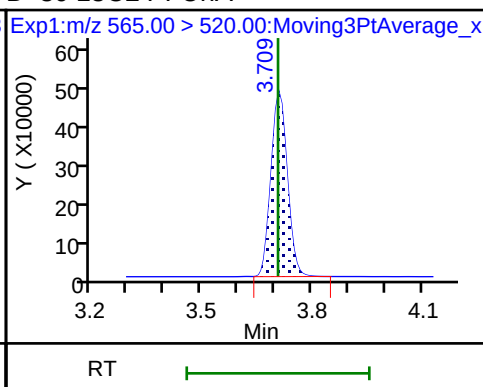
29 Perfluorodecane Sulfonic acid



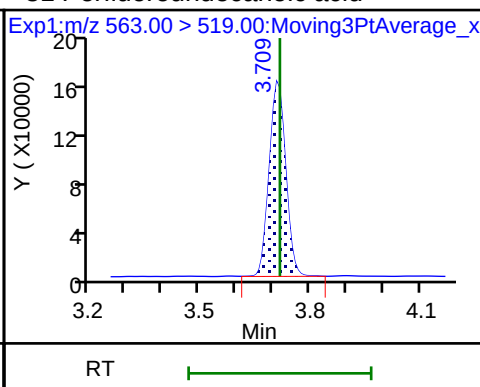
29 Perfluorodecane Sulfonic acid



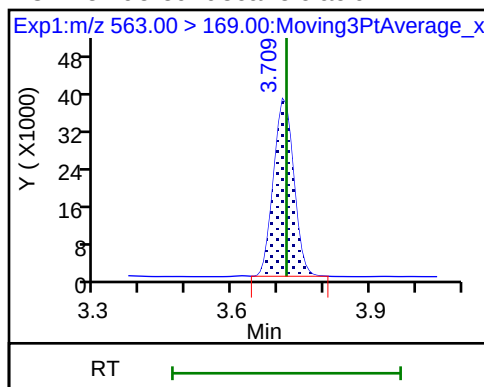
D 30 13C2 PFUnA



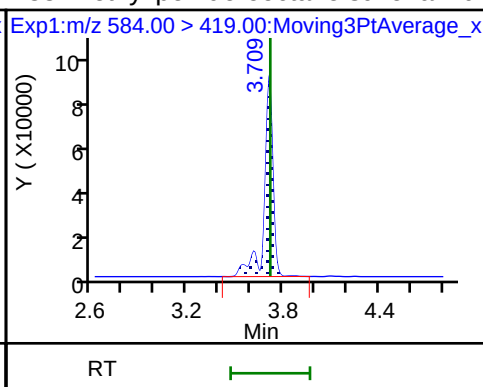
31 Perfluoroundecanoic acid



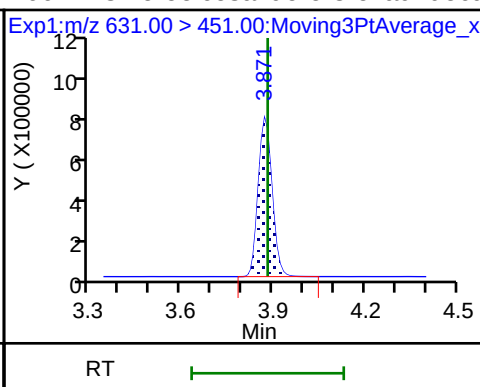
31 Perfluoroundecanoic acid



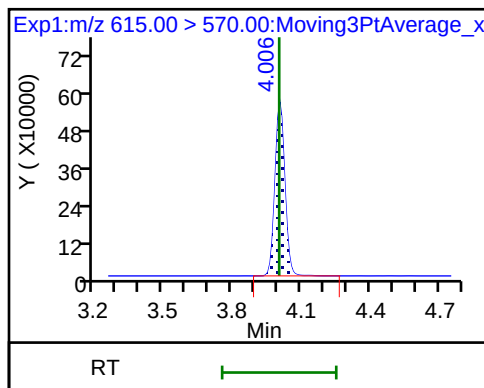
33 N-ethyl perfluorooctane sulfonamid



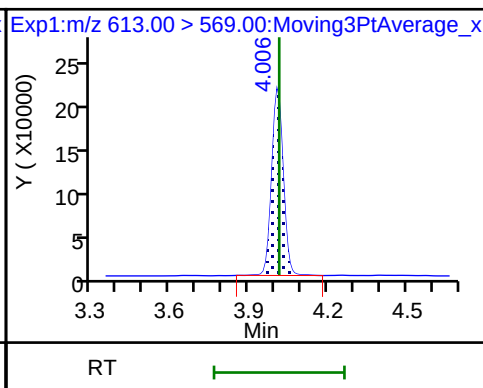
66 11-Chloroeicosafluoro-3-oxaundecan



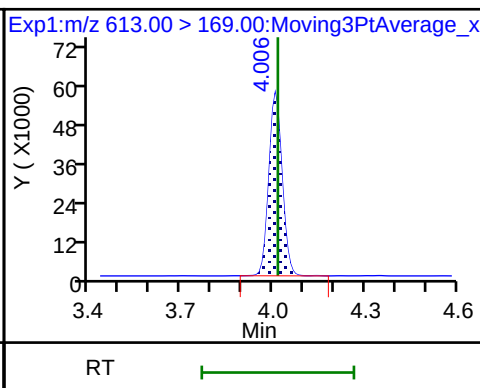
D 36 13C2 PFDaA



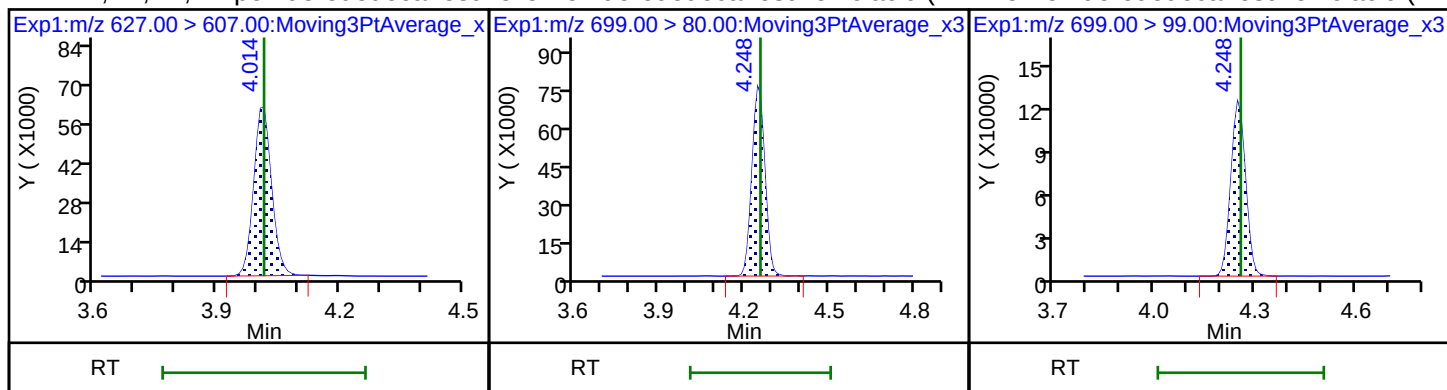
37 Perfluorododecanoic acid



37 Perfluorododecanoic acid



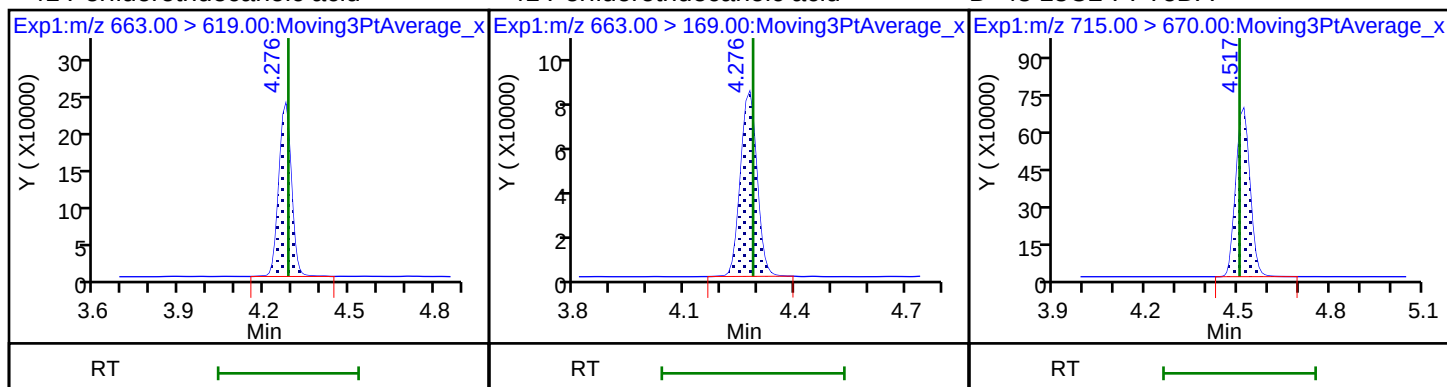
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

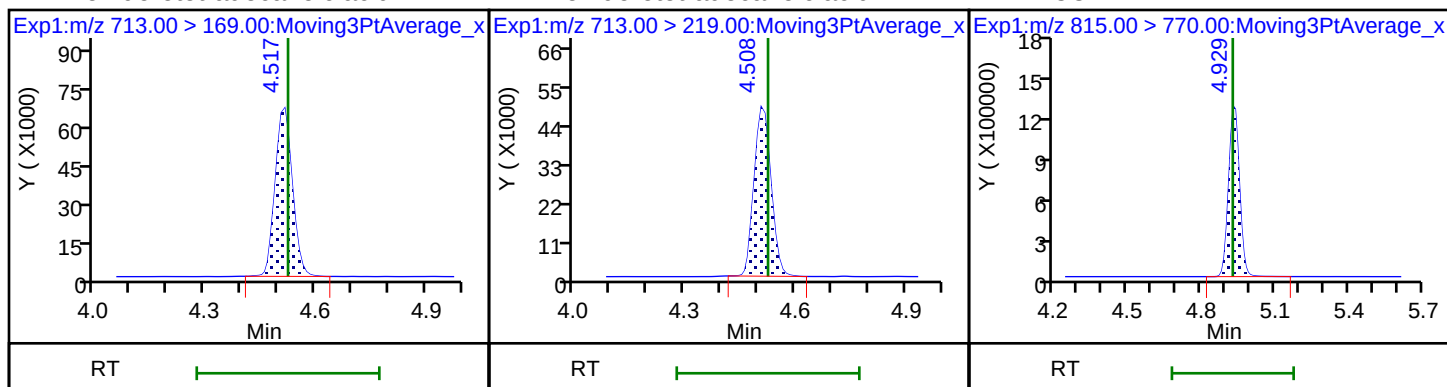
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

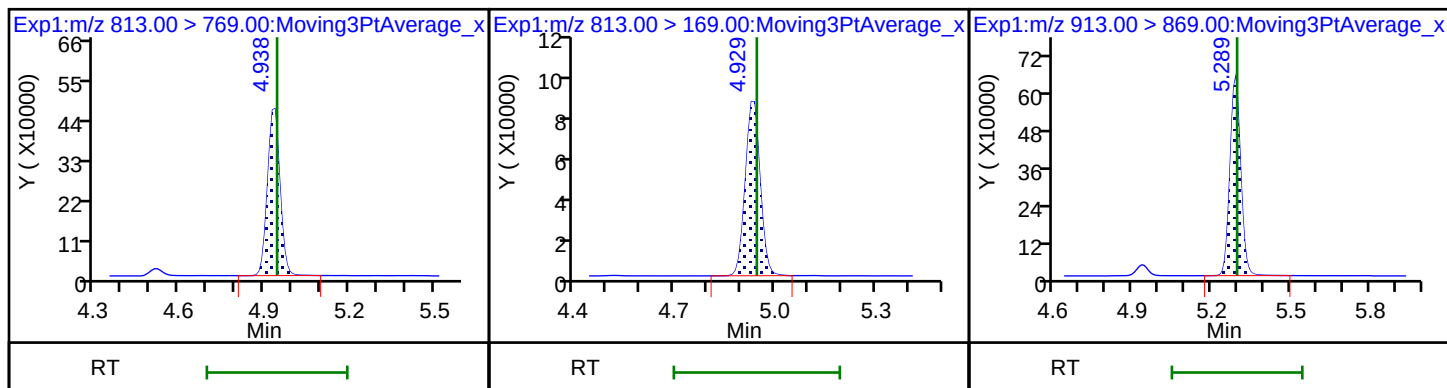
D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid

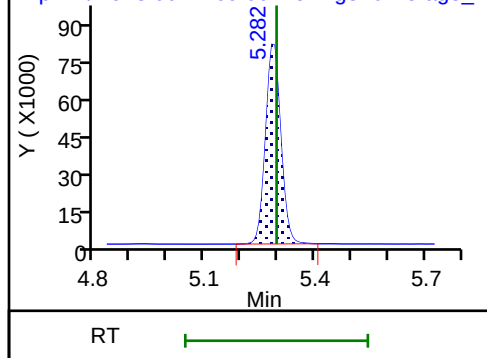
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

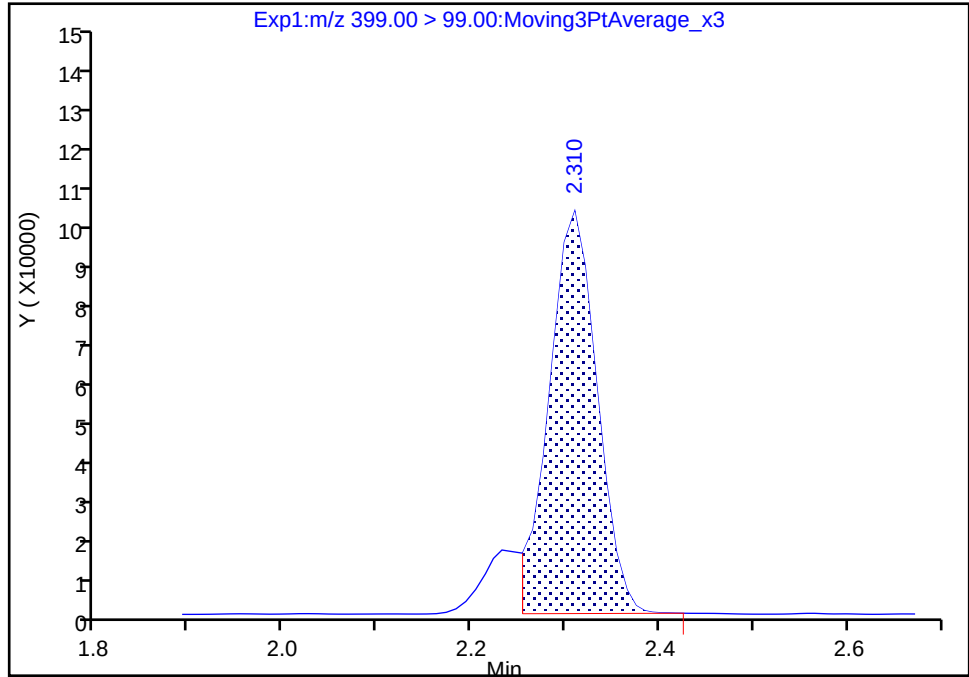
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_007.d
Injection Date: 06-Oct-2018 18:27:56 Instrument ID: A8_N
Lims ID: LCS 320-248703/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

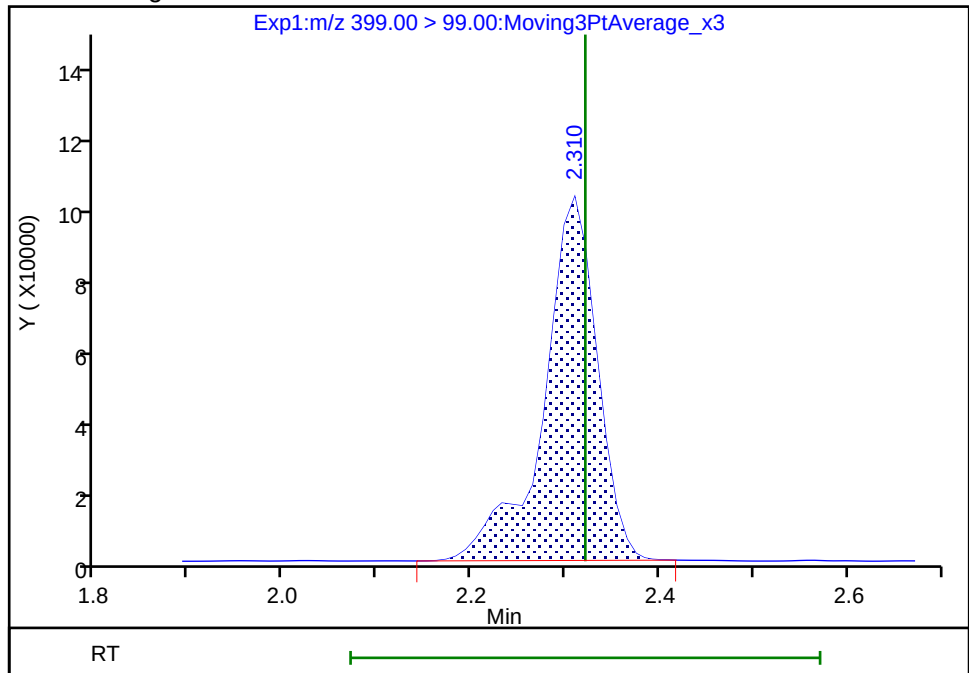
RT: 2.31
Area: 346153
Amount: 0.839839
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 389435
Amount: 0.839839
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 10-Oct-2018 15:27:36

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_007.d

Injection Date: 06-Oct-2018 18:27:56

Instrument ID: A8_N

Lims ID: LCS 320-248703/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

2

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

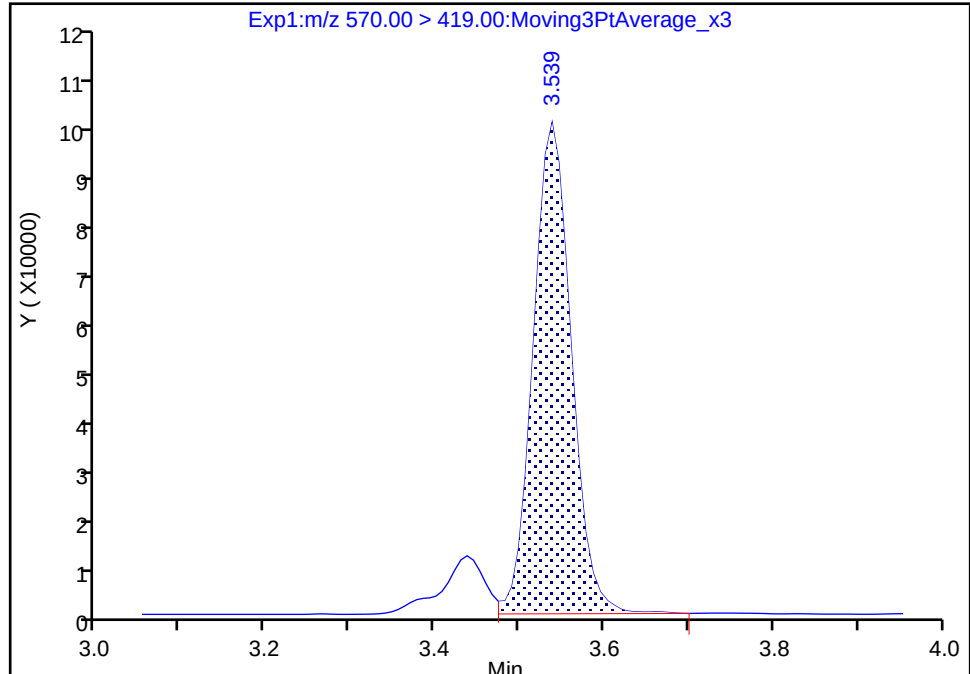
Detector: EXP1

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

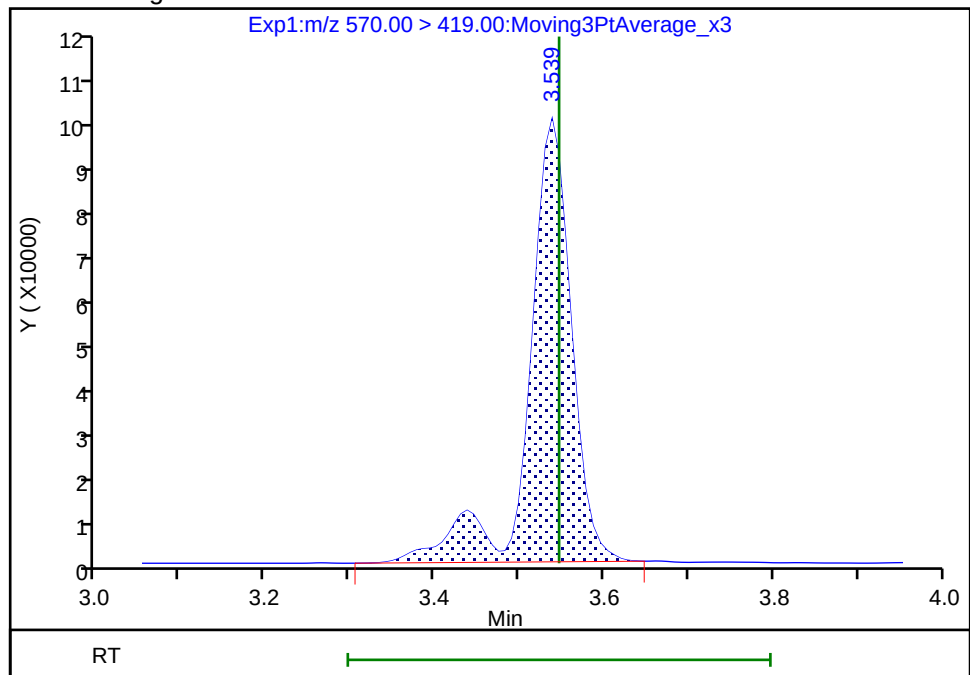
RT: 3.54
Area: 299660
Amount: 0.858490
Amount Units: ng/ml

Processing Integration Results



RT: 3.54
Area: 335998
Amount: 0.962594
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 10-Oct-2018 15:27:47

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-248967/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_042.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/02/2018 22:32</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	39.74		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	39.69		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	38.63		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	41.60		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	41.08		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	42.35		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	41.42		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	40.18		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	42.20		2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	47.75		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	36.95		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34.81		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	33.60		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	37.25		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	35.83		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	37.44		2.00	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	42.57		2.00	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.51		20.0	3.10
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	39.07		20.0	1.90
27619-97-2	6:2 FTS	34.47		20.0	2.00
39108-34-4	8:2 FTS	40.74		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-248967/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_042.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/02/2018 22:32</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	100		25-150
STL01893	13C5 PFPeA	106		25-150
STL00993	13C2 PFHxA	109		25-150
STL01892	13C4 PFHpA	104		25-150
STL00990	13C4 PFOA	105		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	100		25-150
STL00997	13C2 PFUnA	102		25-150
STL00998	13C2 PFDoA	96		25-150
STL02116	13C2 PFTeDA	115		25-150
STL02337	13C3 PFBS	104		25-150
STL00994	18O2 PFHxS	103		25-150
STL00991	13C4 PFOS	102		25-150
STL01056	13C8 FOSA	96		25-150
STL02118	d3-NMeFOSAA	82		25-150
STL02117	d5-NEtFOSAA	90		25-150
STL02279	M2-6:2 FTS	82		25-150
STL02280	M2-8:2 FTS	80		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_042.d
 Lims ID: LCS 320-248967/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 02-Oct-2018 22:32:07 ALS Bottle#: 20 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-248967/2-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 10:23:23 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 05-Oct-2018 09:53:25

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	1.483	0.0	0.542	7454507	2.49		99.7	11679	
2 Perfluorobutyric acid										
212.90 > 169.00	1.483	1.484	-0.001	1.000	2715783	0.99		99.4	96.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.763	0.001	0.645	7195383	2.65		106	8846	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.764	0.0	1.000	2843658	0.99		99.2	236	
D 47 13C3-PFBS										
301.90 > 83.00	1.805	1.805	0.0	0.660	89559	2.42		104	496	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.805	1.806	-0.001	1.000	3463562	0.8703		98.4	3040	
298.90 > 99.00	1.805	1.806	-0.001	1.000	1189442		2.91(1.35-4.05)		768	M
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.017	2.017	0.0	1.117	609635	0.7003		75.0	2345	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.047	0.001	0.749	7838368	2.72		109	9426	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	2723250	0.9658		96.6	377	
313.00 > 119.00	2.048	2.048	0.0	1.000	194915		13.97(6.96-20.87)		406	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.078	2.068	0.010	1.151	1700375	0.9120		97.2	2813	
349.00 > 99.00	2.078	2.068	0.010	1.151	798637		2.13(1.15-3.45)		748	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.150	2.140	0.010	1.000	630221	0.7543		75.4	387	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.786	1117115	3.72		149	3044	
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	8934078	2.60		104	11620	

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	2.373	2.373	0.0	1.000	3947154	1.04		104	672	
363.00 > 169.00	2.373	2.373	0.0	1.000	808339		4.88(2.17-6.52)		972	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.386	2.386	0.0	1.000	2417007	0.8400		92.3	1994	
399.00 > 99.00	2.386	2.386	0.0	1.000	674936		3.58(1.90-5.70)		650	
D 11 18O2 PFHxS										
403.00 > 84.00	2.386	2.399	-0.013	0.873	5405731	2.44		103	7918	
76 DONA										
377.00 > 251.00	2.426	2.413	0.013	0.783	6493417	1.05		111	9155	
377.00 > 85.00	2.426	2.413	0.013	0.783	2769936		2.34(1.13-3.39)		1701	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	693186	1.95		82.0	1720	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	548696	0.8616		90.9	349	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.734	0.0	1.000	8536951	2.63		105	10821	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		8115082	2.50			6548	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	3677800	1.03		103	320	
413.00 > 169.00	2.734	2.734	0.0	1.000	1231220		2.99(1.36-4.08)		1199	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.734	2.734	0.0	0.883	2229714	0.9312		97.8	2382	
449.00 > 99.00	2.734	2.734	0.0	0.883	537921		4.15(1.84-5.53)		1552	
D 18 13C4 PFOS										
503.00 > 80.00	3.098	3.098	0.0	1.133	5590413	2.44		102	4289	
D 19 13C5 PFNA										
468.00 > 423.00	3.098	3.098	0.0	1.133	7556705	2.56		102	5762	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.098	3.098	0.0	1.000	2219284	0.8957		96.5	984	
499.00 > 99.00	3.098	3.098	0.0	1.000	526641		4.21(2.04-6.12)		1688	
20 Perfluorononanoic acid										
463.00 > 419.00	3.098	3.098	0.0	1.000	3143516	1.06		106	350	
463.00 > 169.00	3.098	3.098	0.0	1.000	529601		5.94(2.68-8.03)		999	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.303	3.303	0.0	1.066	2630127	1.01		108	2527	
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	86430	1.92		80.0	613	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.449	3.449	0.0	1.113	1378509	0.8854		92.2	1868	
549.00 > 99.00	3.449	3.449	0.0	1.113	234069		5.89(3.02-9.05)		1455	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.449	3.449	0.0	1.000	540291	1.02		106	2315	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.449	0.016	1.000	3468408	1.04		104	646	
513.00 > 169.00	3.465	3.449	0.016	1.000	226070		15.34(7.12-21.35)		391	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.464	0.001	1.267	292572	2.39		95.5	3800	

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	3.465	3.464	0.001	1.267	7640897	2.49		99.8	7911	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	3669583	1.06		106	3235	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.612	0.001	1.321	2782965	2.05		82.0	3305	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.000	1082080	1.01		101	341	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.760	3.760	0.0	1.213	1873269	0.9361		97.1	1472	
599.00 > 99.00	3.760	3.760	0.0	1.213	425279		4.40(2.14-6.43)		1392	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.775	0.001	1.381	6661057	2.56		102	8804	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	2406100	2.26		90.5	2398	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	878242	0.9768		97.7	1293	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.776	3.776	0.0	1.000	2413431	1.00		100	571	
563.00 > 169.00	3.776	3.776	0.0	1.000	220267		10.96(5.24-15.72)		680	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.944	0.0	1.273	3210662	1.04		111	3882	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.072	0.001	1.489	7437142	2.40		96.2	7795	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.073	4.073	0.0	1.181	358607	0.99		103	1156	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.073	0.0	1.000	3142393	1.06		106	824	
613.00 > 169.00	4.073	4.073	0.0	1.000	308083		10.20(4.68-14.05)		601	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.311	4.311	0.0	1.391	206331	0.9210		95.1	567	
699.00 > 99.00	4.311	4.311	0.0	1.391	364273		0.57(0.28-0.83)		999	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.342	4.326	0.016	1.066	2783634	1.19		119	1201	
663.00 > 169.00	4.342	4.326	0.016	1.066	402251		6.92(3.09-9.27)		784	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.572	0.001	1.672	7035755	2.89		115	10089	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.573	4.573	0.0	1.000	427009	0.9237		92.4	1597	
713.00 > 219.00	4.573	4.573	0.0	1.000	317173		1.35(0.70-2.09)		1256	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.989	4.989	0.0	1.825	6323589	2.60		104	7354	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.989	4.989	0.0	1.000	2448665	1.04		104	1419	
813.00 > 169.00	4.989	4.989	0.0	1.000	415710		5.89(2.77-8.32)		759	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.334	5.319	0.015	1.069	1822362	1.11		111	599	
913.00 > 169.00	5.319	5.319	0.0	1.066	334011		5.46(2.55-7.64)		1557	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_042.d

Injection Date: 02-Oct-2018 22:32:07

Instrument ID: A9

Lims ID: LCS 320-248967/2-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 20

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

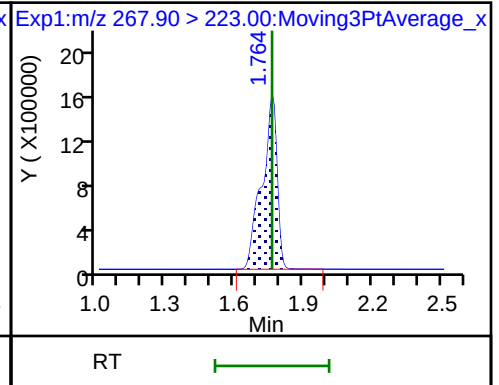
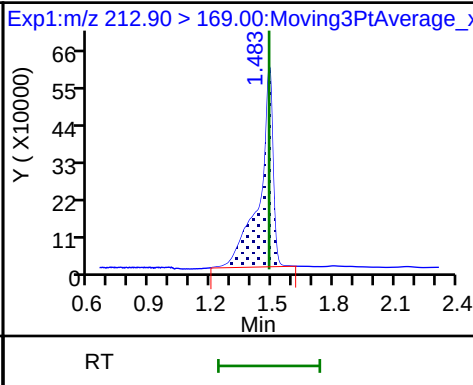
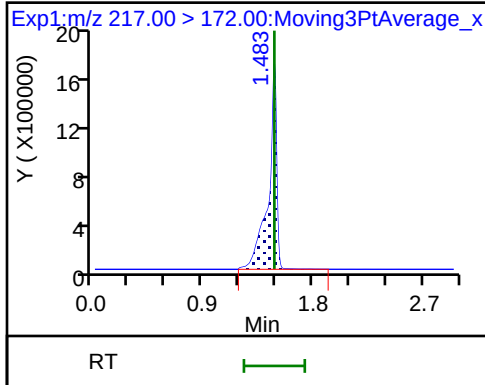
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

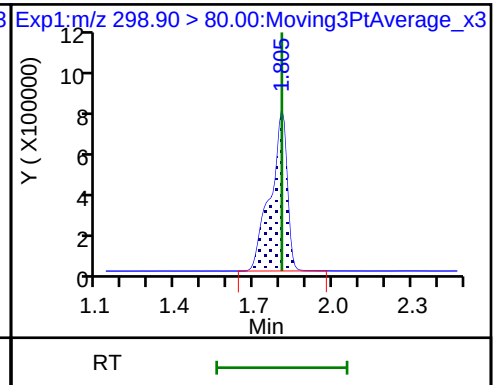
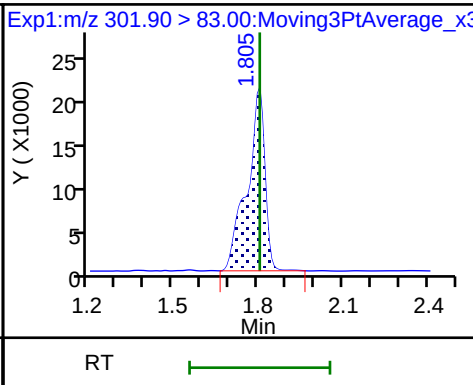
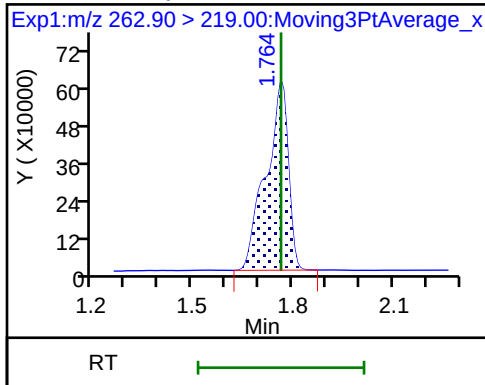
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

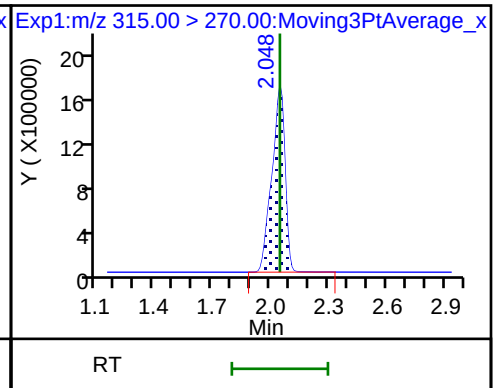
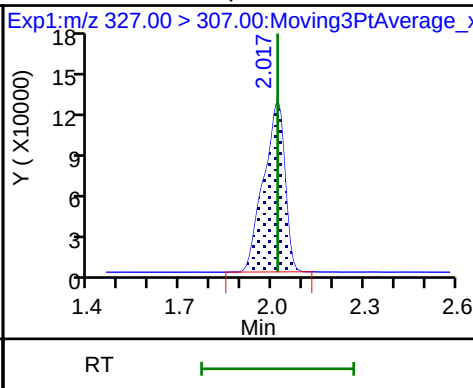
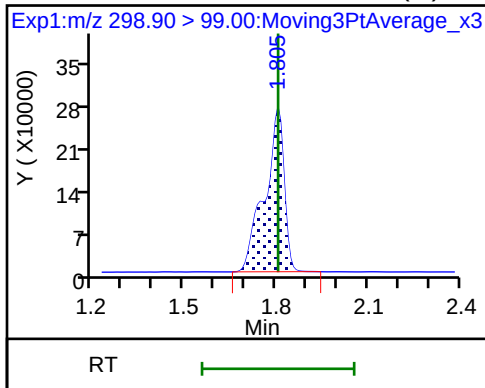
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid (M)

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

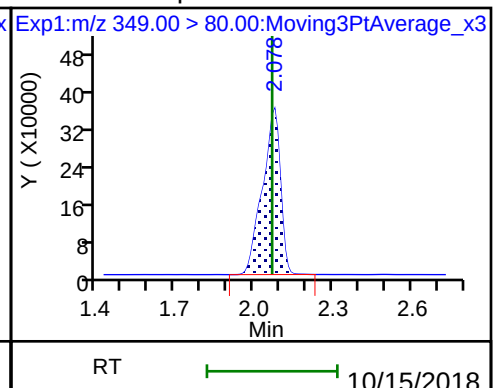
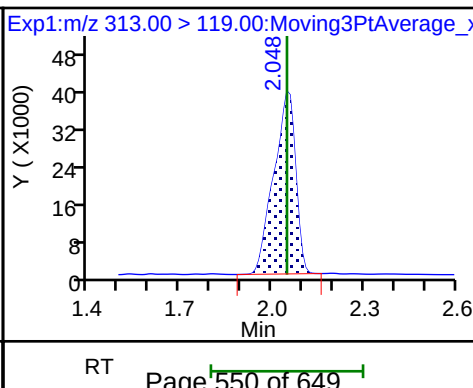
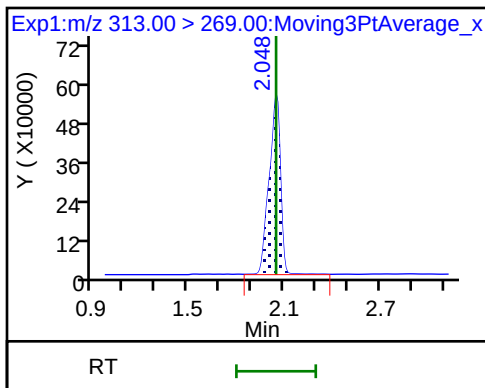
D 7 13C2 PFHxA



6 Perfluorohexanoic acid

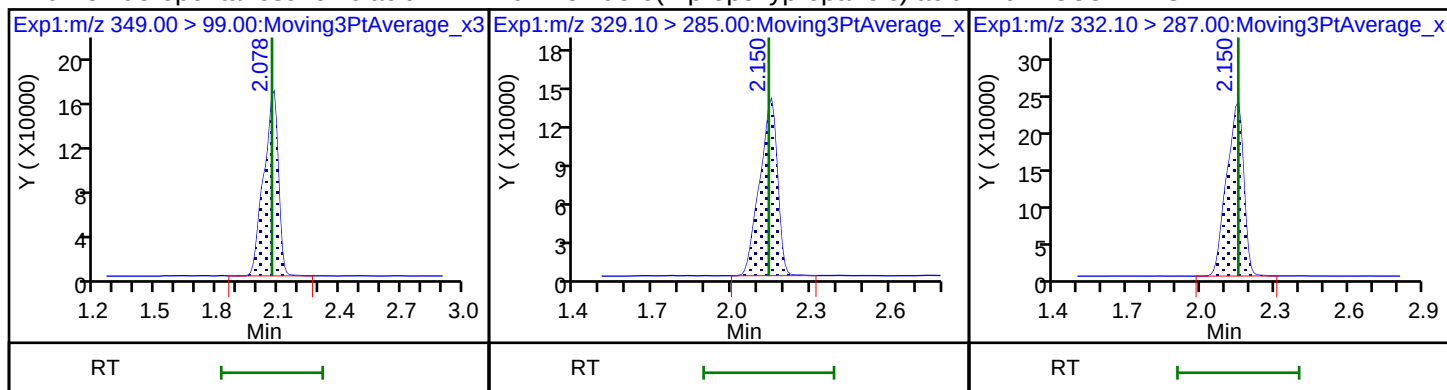
6 Perfluorohexanoic acid

70 Perfluoropentanesulfonic acid



70 Perfluoropentanesulfonic acid

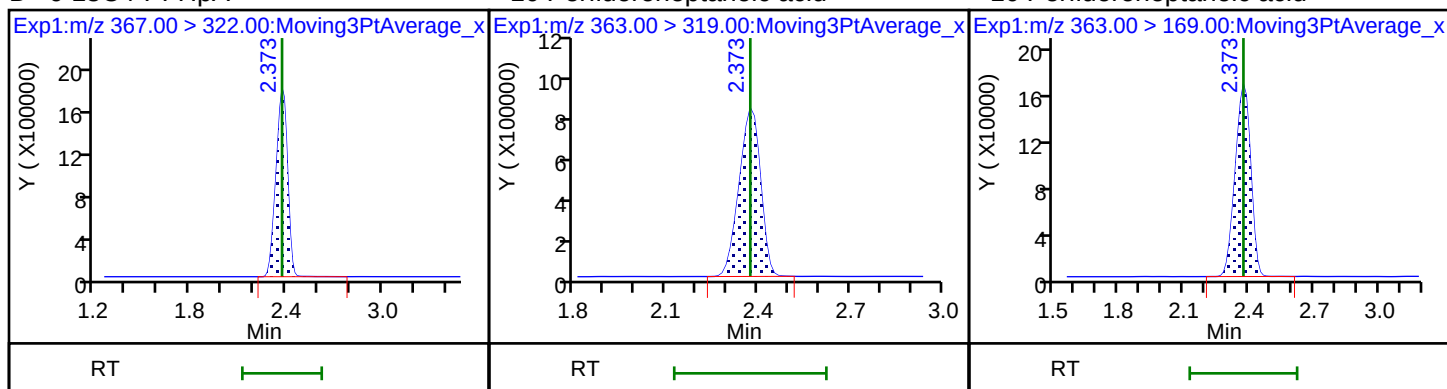
67 Perfluoro(2-propoxypropanoic) acid D 64 13C3 HFPO-DA



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

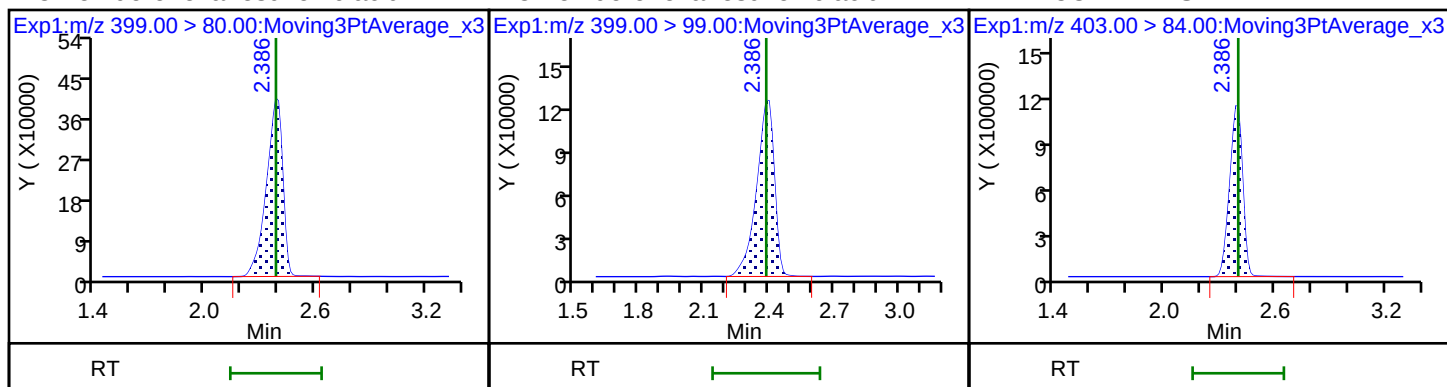
10 Perfluoroheptanoic acid



8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid

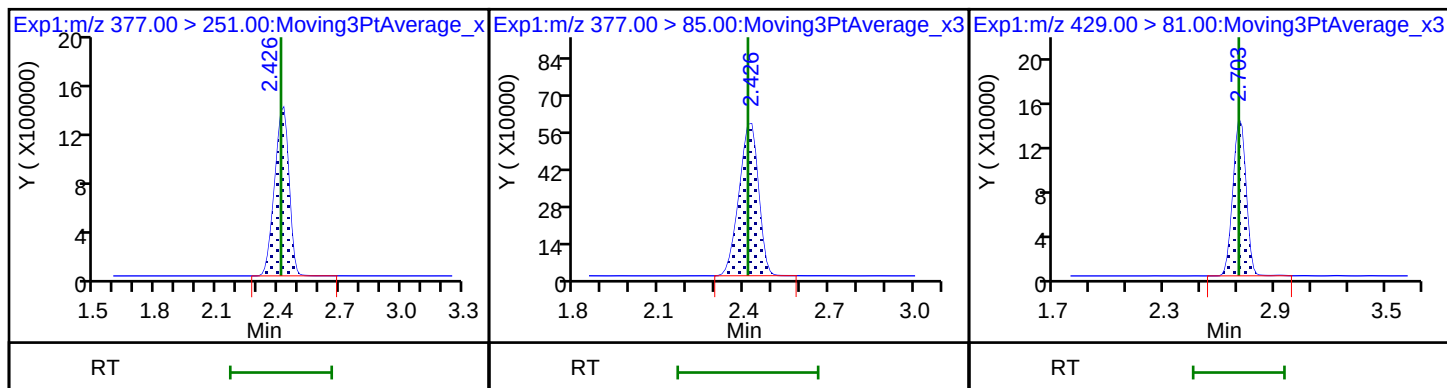
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76 DONA

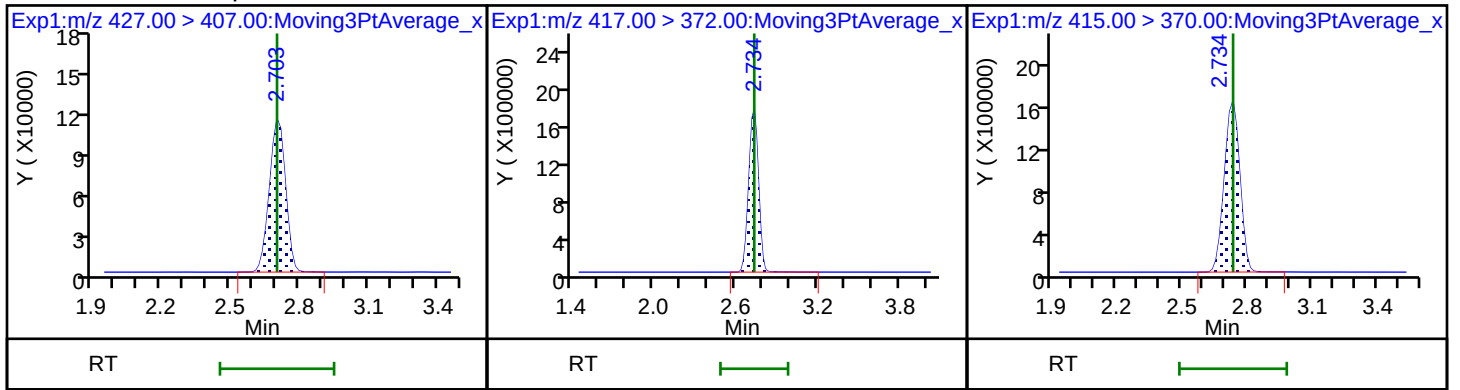
76 DONA

D 12 M2-6:2FTS



13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA

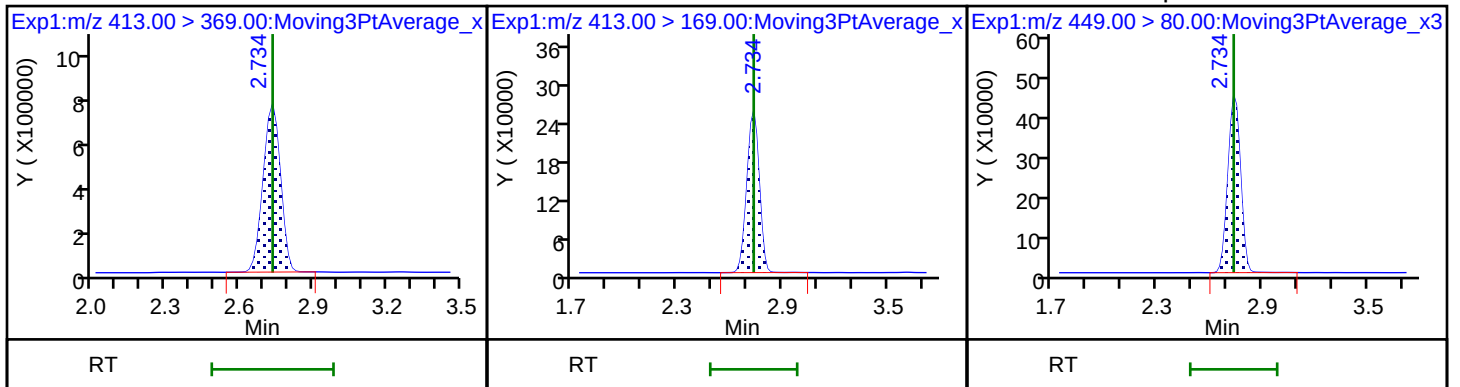
* 62 13C2-PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

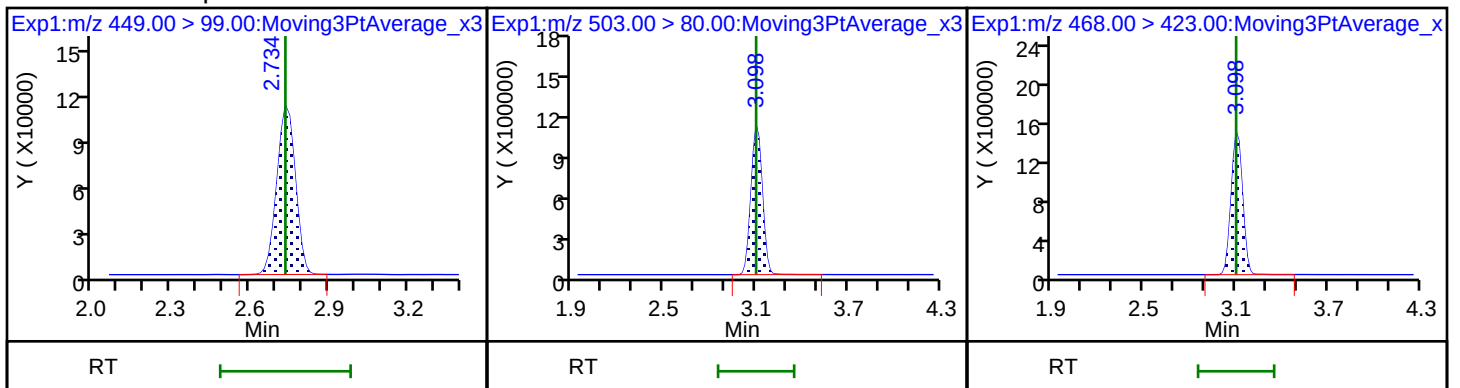
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

D 18 13C4 PFOS

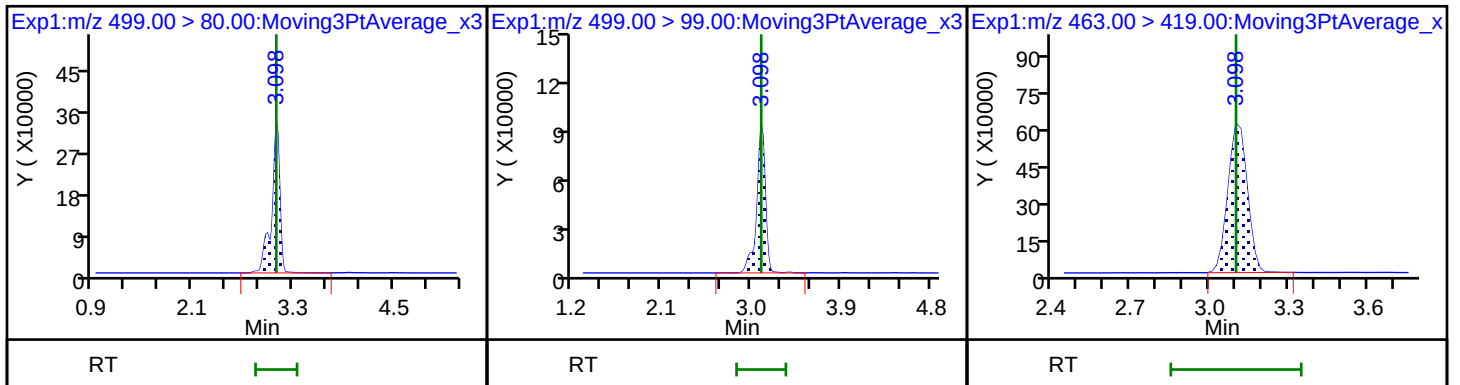
D 19 13C5 PFNA



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

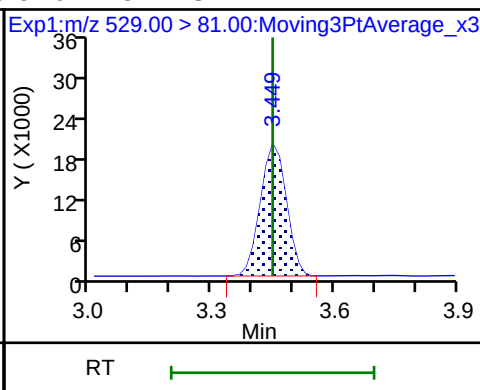
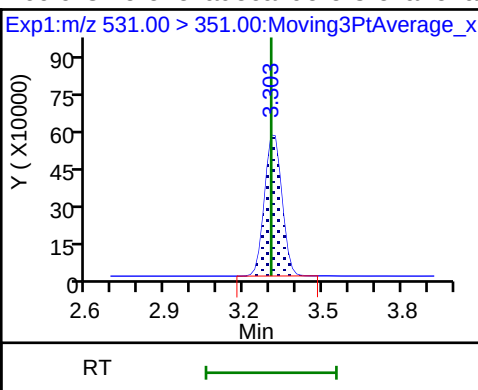
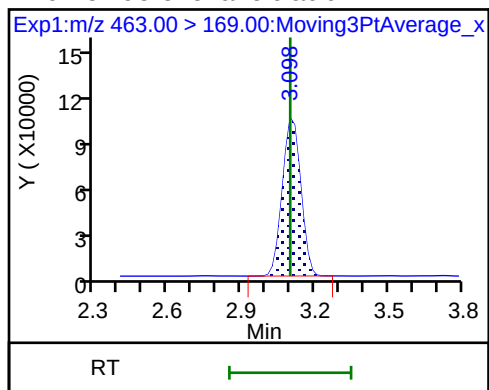
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

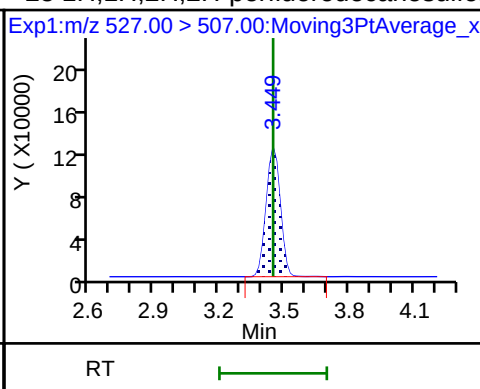
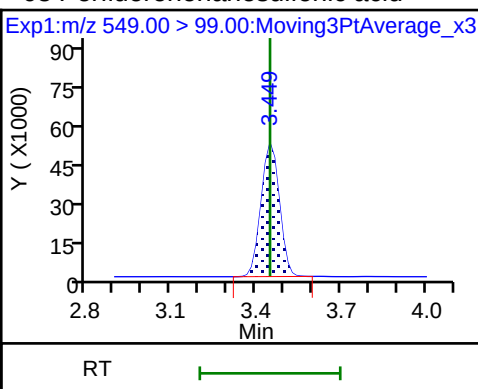
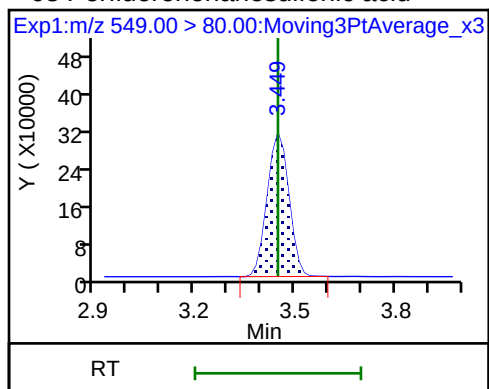
De 26 M2-8:2FTS



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

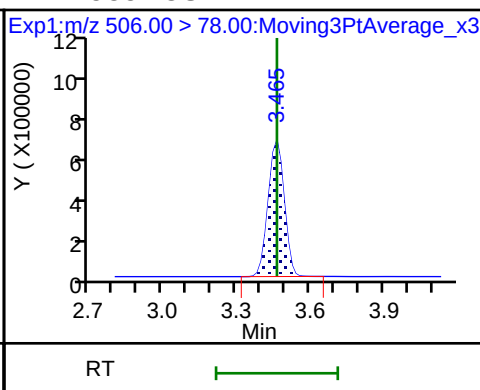
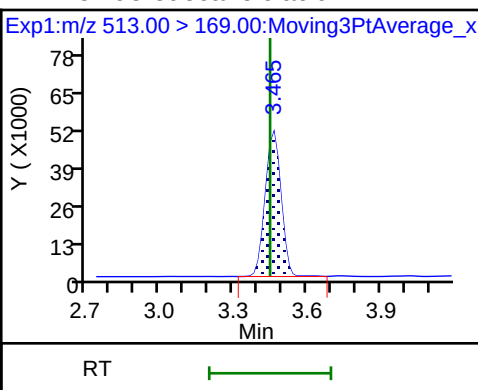
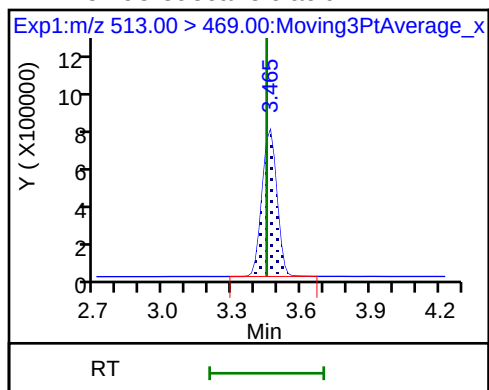
25 1H,1H,2H,2H-perfluorodecanesulfoni



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

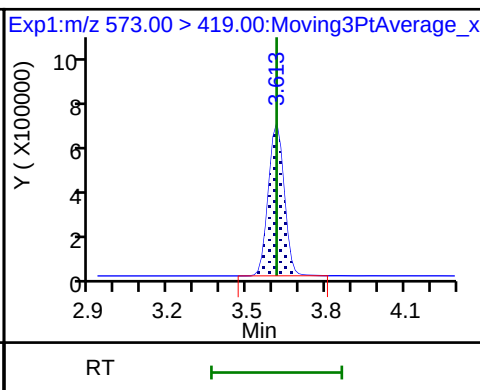
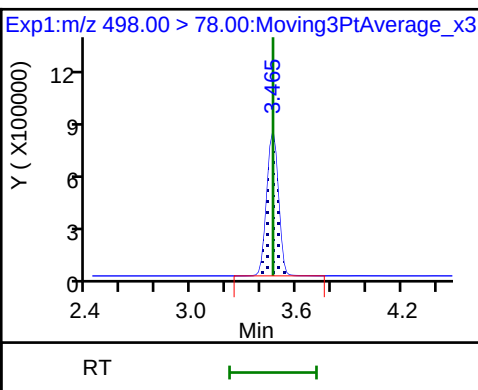
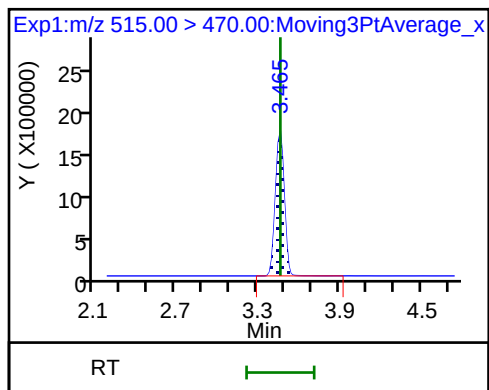
D 21 13C8 FOSA



D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

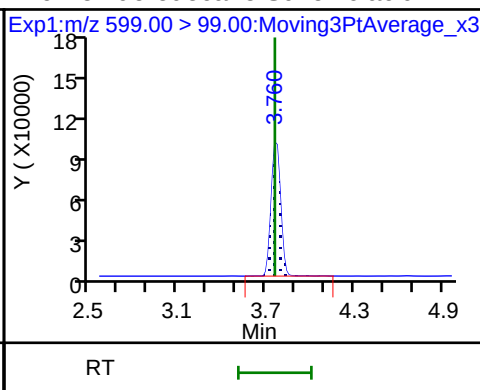
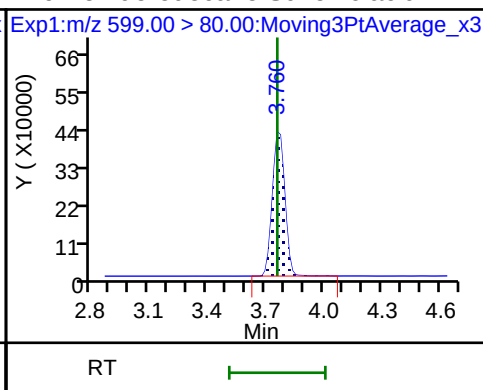
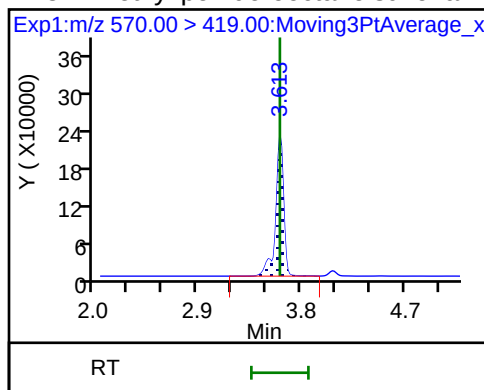
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

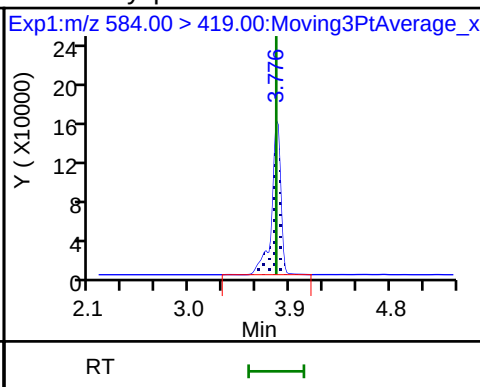
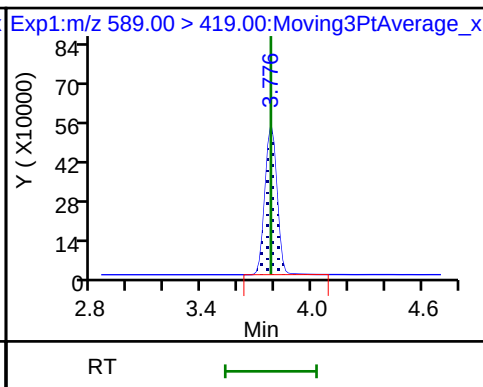
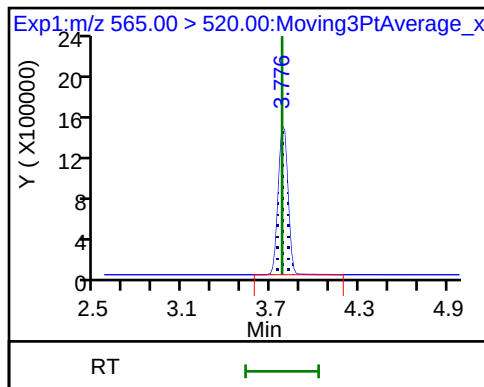
29 Perfluorodecane Sulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

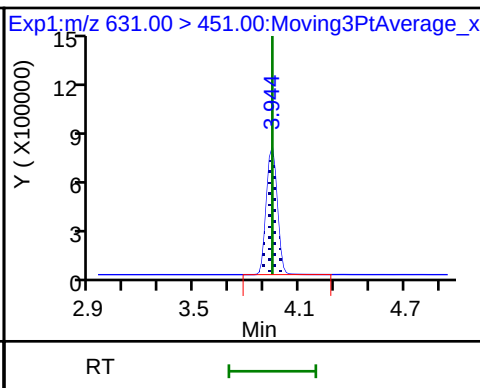
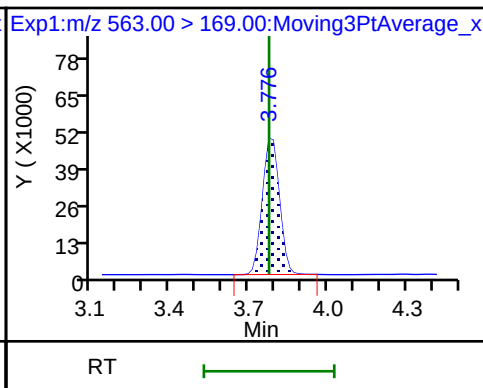
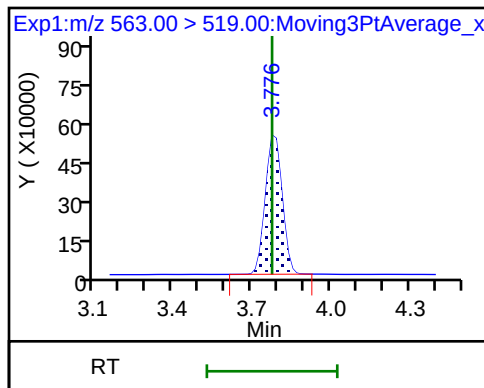
33 N-ethyl perfluorooctane sulfonamid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

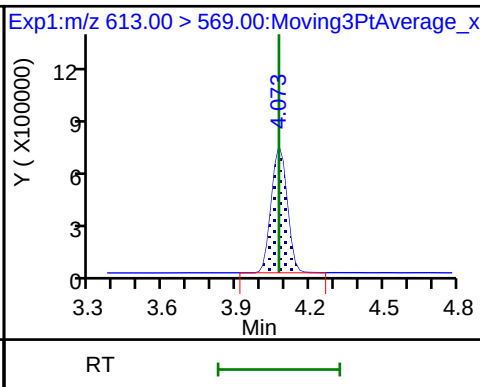
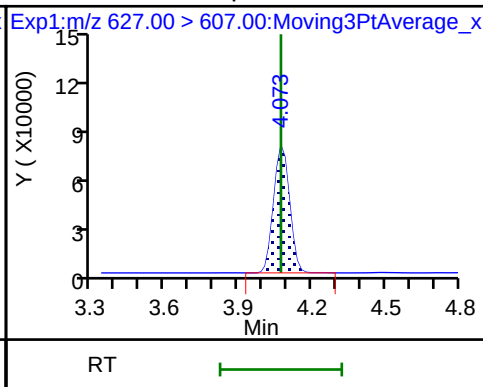
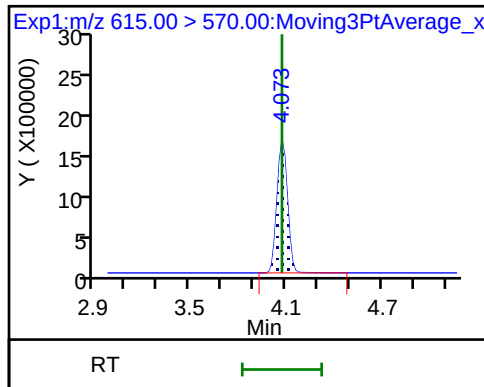
66 11-Chloroeicosafluoro-3-oxaundecan



D 36 13C2 PFDaA

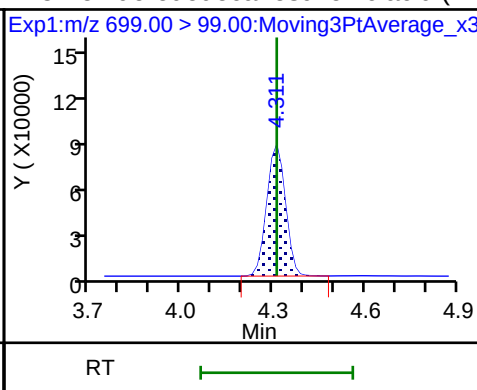
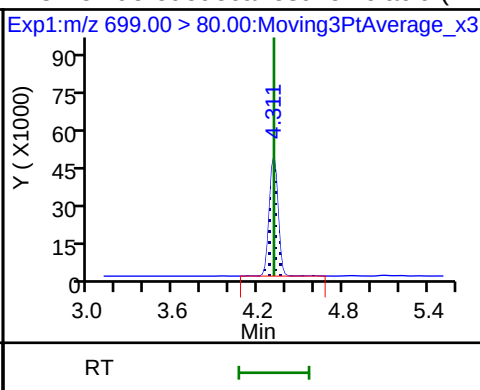
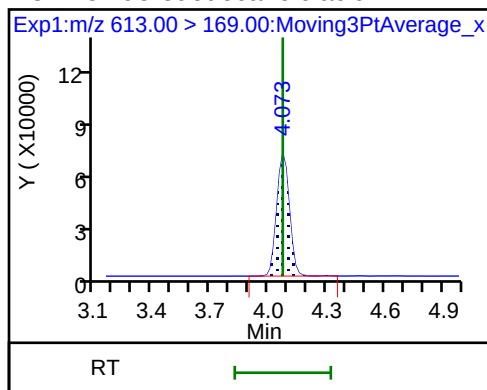
74 1H,1H,2H,2H-perfluorododecanesulfo

37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

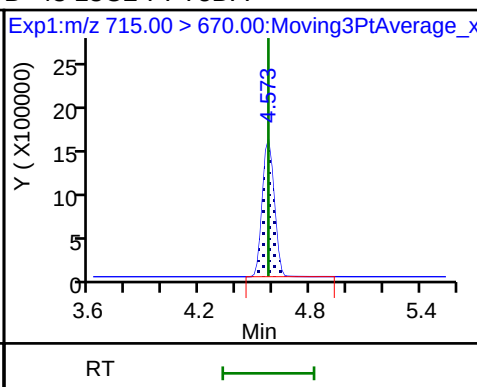
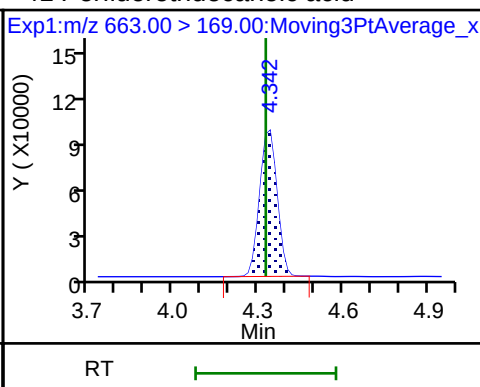
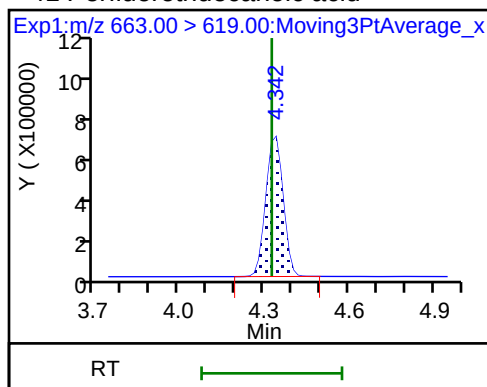
75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

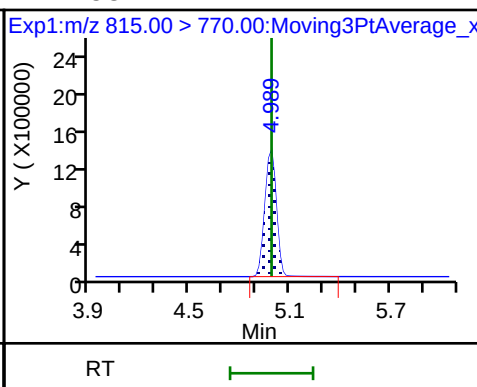
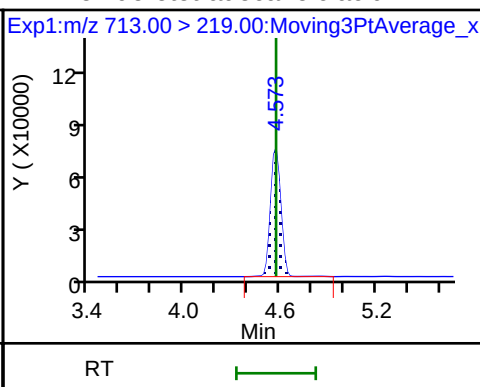
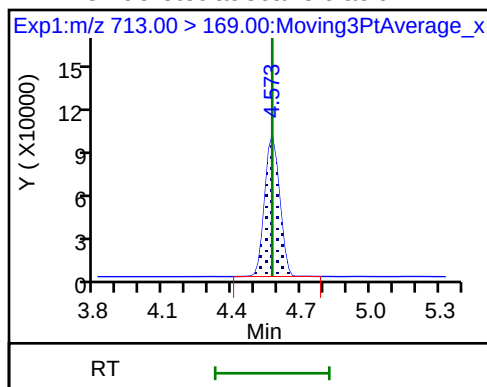
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42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

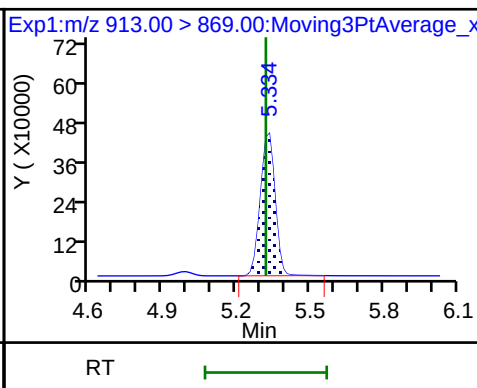
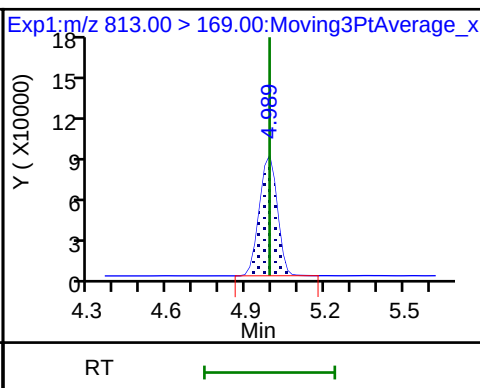
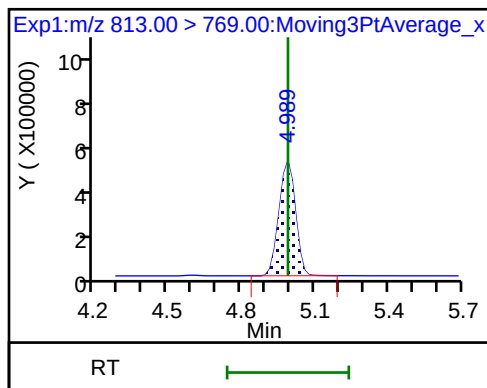
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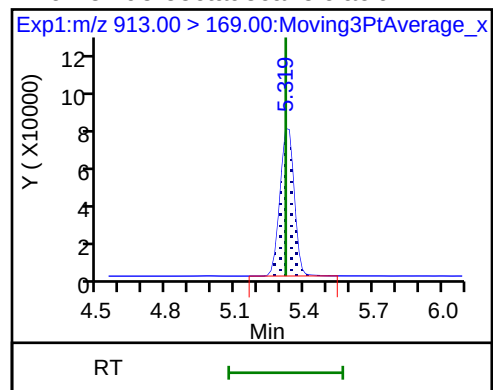
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

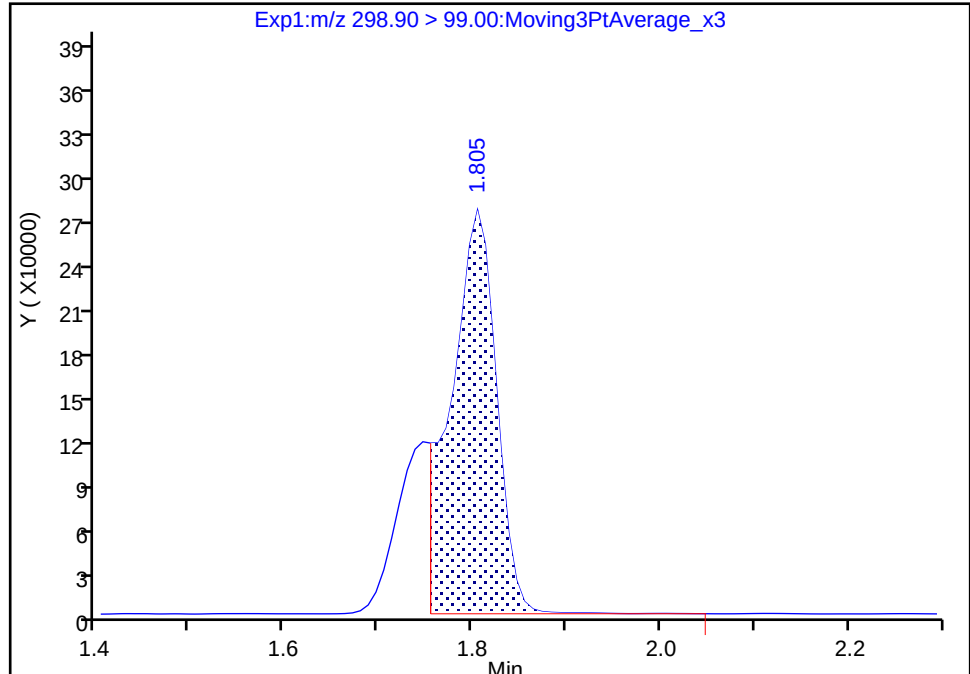
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Lims ID: LCS 320-248967/2-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 20 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

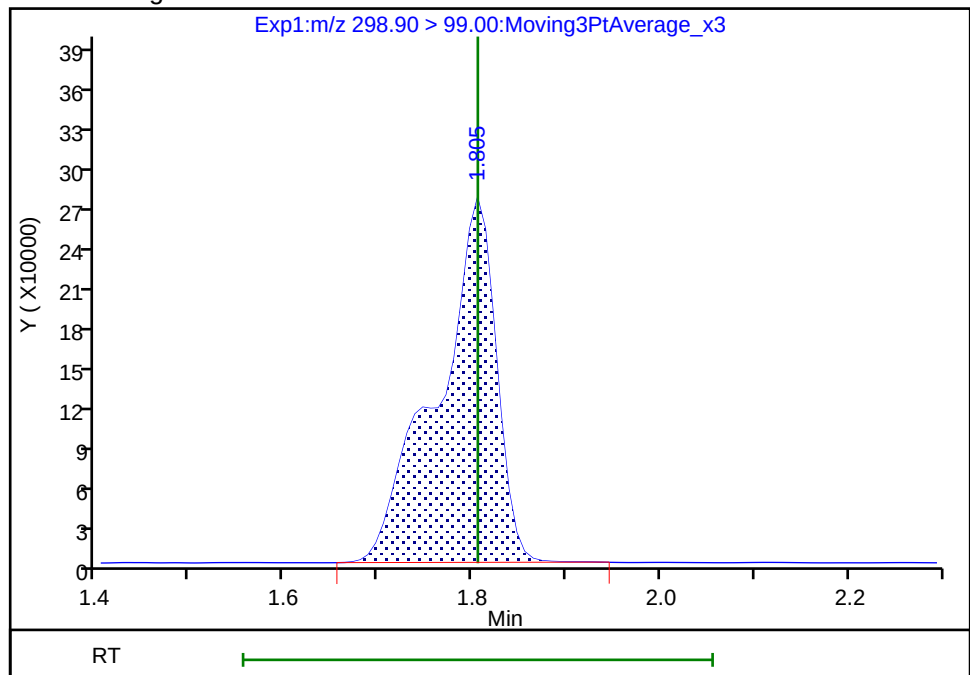
RT: 1.81
Area: 913136
Amount: 0.870250
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 1189442
Amount: 0.870250
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 09:53:06
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 557 of 649

10/15/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCSD 320-248967/3-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_043.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/02/2018 22:39</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	40.66		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	41.92		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	41.34		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	43.71		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	43.51		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	44.15		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	40.83		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	42.23		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	38.44		2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	42.69		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	38.85		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	37.17		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	37.10		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	36.76		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	35.49		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	39.01		2.00	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	42.33		2.00	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	37.40		20.0	3.10
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	37.99		20.0	1.90
27619-97-2	6:2 FTS	38.98		20.0	2.00
39108-34-4	8:2 FTS	37.35		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCSD 320-248967/3-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.02LLAA_043.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/02/2018 04:35</u>
Sample wt/vol: <u>250 (mL)</u>	Date Analyzed: <u>10/02/2018 22:39</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>249235</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	95		25-150
STL01893	13C5 PFPeA	98		25-150
STL00993	13C2 PFHxA	100		25-150
STL01892	13C4 PFHpA	96		25-150
STL00990	13C4 PFOA	96		25-150
STL00995	13C5 PFNA	99		25-150
STL00996	13C2 PFDA	97		25-150
STL00997	13C2 PFUnA	96		25-150
STL00998	13C2 PFDoA	96		25-150
STL02116	13C2 PFTeDA	106		25-150
STL02337	13C3 PFBS	93		25-150
STL00994	18O2 PFHxS	90		25-150
STL00991	13C4 PFOS	98		25-150
STL01056	13C8 FOSA	92		25-150
STL02118	d3-NMeFOSAA	87		25-150
STL02117	d5-NEtFOSAA	90		25-150
STL02279	M2-6:2 FTS	74		25-150
STL02280	M2-8:2 FTS	81		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_043.d
 Lims ID: LCSD 320-248967/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 02-Oct-2018 22:39:38 ALS Bottle#: 21 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd 320-248967/3-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 05-Oct-2018 10:23:23 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 05-Oct-2018 09:54:14

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	1.478	1.483	-0.005	0.541	7469328	2.38		95.0	7937	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.483	1.484	-0.001	1.004	2784241	1.02		102	107	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.764	1.763	0.001	0.645	6989255	2.45		97.8	10207	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.764	0.0	1.000	2917088	1.05		105	235	
D 47 13C3-PFBS										M
301.90 > 83.00	1.797	1.805	-0.008	0.657	83690	2.15		92.5	459	M
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.805	1.806	-0.001	1.005	3456333	0.9293		105	2826	
298.90 > 99.00	1.797	1.806	-0.009	1.000	1164958		2.97(1.35-4.05)		639	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.017	2.017	0.0	1.122	639142	0.7857		84.1	2942	
D 7 13C2 PFHxA										
315.00 > 270.00	2.048	2.047	0.001	0.749	7562121	2.50		99.9	13562	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.048	2.048	0.0	1.000	2811143	1.03		103	424	
313.00 > 119.00	2.048	2.048	0.0	1.000	192997		14.57(6.96-20.87)		335	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.068	2.068	0.0	1.151	1827342	1.05		112	2451	
349.00 > 99.00	2.068	2.068	0.0	1.151	846319		2.16(1.15-3.45)		928	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.140	2.140	0.0	1.000	638562	0.7794		77.9	380	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.140	2.150	-0.010	0.783	1095426	3.47		139	3967	
D 9 13C4-PFHpA										
367.00 > 322.00	2.373	2.373	0.0	0.868	8698492	2.41		96.5	10932	

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	2.373	2.373	0.0	1.000	4037770	1.09		109	710	
363.00 > 169.00	2.373	2.373	0.0	1.000	896173		4.51(2.17-6.52)		1017	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.386	2.386	0.0	1.000	2445778	0.9276		102	1992	
399.00 > 99.00	2.386	2.386	0.0	1.000	678137		3.61(1.90-5.70)		626	
D 11 18O2 PFHxS										
403.00 > 84.00	2.386	2.399	-0.013	0.873	4953965	2.13		90.1	5751	
76 DONA										
377.00 > 251.00	2.413	2.413	0.0	0.779	6560369	1.05		112	11255	
377.00 > 85.00	2.413	2.413	0.0	0.779	2622030		2.50(1.13-3.39)		1427	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.702	0.001	0.988	660938	1.77		74.3	1279	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.703	2.703	0.0	1.000	591713	0.9745		103	475	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.734	0.0	1.000	8192590	2.40		95.9	8070	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		8532179	2.50			10391	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	3738557	1.09		109	323	
413.00 > 169.00	2.734	2.734	0.0	1.000	1299826		2.88(1.36-4.08)		1229	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.734	2.734	0.0	0.883	2212454	0.9190		96.5	2224	
449.00 > 99.00	2.734	2.734	0.0	0.883	542784		4.08(1.84-5.53)		1639	
D 18 13C4 PFOS										
503.00 > 80.00	3.098	3.098	0.0	1.133	5621328	2.33		97.5	3694	
D 19 13C5 PFNA										
468.00 > 423.00	3.098	3.098	0.0	1.133	7722580	2.48		99.4	5661	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.098	3.098	0.0	1.000	2210621	0.8873		95.6	1137	
499.00 > 99.00	3.098	3.098	0.0	1.000	518516		4.26(2.04-6.12)		1256	
20 Perfluorononanoic acid										
463.00 > 419.00	3.098	3.098	0.0	1.000	3348868	1.10		110	395	
463.00 > 169.00	3.098	3.098	0.0	1.000	616116		5.44(2.68-8.03)		1526	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.303	3.303	0.0	1.066	2652393	1.01		108	2838	
D 26 M2-8:2FTS										
529.00 > 81.00	3.449	3.448	0.001	1.261	91657	1.93		80.7	568	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.449	3.449	0.0	1.113	1455015	0.9294		96.8	1955	
549.00 > 99.00	3.449	3.449	0.0	1.113	263951		5.51(3.02-9.05)		1348	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.449	3.449	0.0	1.000	525285	0.9336		97.5	2210	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.449	0.016	1.000	3510923	1.02		102	670	
513.00 > 169.00	3.465	3.449	0.016	1.000	244245		14.37(7.12-21.35)		467	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.464	0.001	1.267	2964756	2.30		92.2	4560	

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	3.465	3.464	0.001	1.267	7846490	2.44		97.5	5403	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	3701169	1.06		106	2565	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.612	0.001	1.321	3098076	2.17		86.8	3336	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.613	0.0	1.000	1112117	0.9350		93.5	397	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.760	3.760	0.0	1.213	1962554	0.9753		101	1317	
599.00 > 99.00	3.760	3.760	0.0	1.213	464329		4.23(2.14-6.43)		1504	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.775	0.001	1.381	6541025	2.39		95.7	3733	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.776	3.775	0.001	1.381	2527930	2.26		90.4	2637	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.776	0.0	1.000	897172	0.9498		95.0	1540	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.776	3.776	0.0	1.000	2490919	1.06		106	612	
563.00 > 169.00	3.776	3.776	0.0	1.000	215794		11.54(5.24-15.72)		851	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.944	0.0	1.273	3232486	1.04		111	4699	
D 36 13C2 PFDaA										
615.00 > 570.00	4.073	4.072	0.001	1.489	7799057	2.40		95.9	6796	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.073	4.073	0.0	1.181	370283	0.9679		100	1008	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.073	0.0	1.000	3000988	0.9609		96.1	848	
613.00 > 169.00	4.073	4.073	0.0	1.000	354665		8.46(4.68-14.05)		663	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.311	4.311	0.0	1.391	194393	0.8630		89.1	528	
699.00 > 99.00	4.311	4.311	0.0	1.391	371513		0.52(0.28-0.83)		1248	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.326	4.326	0.0	1.062	2610006	1.07		107	1239	
663.00 > 169.00	4.326	4.326	0.0	1.062	449377		5.81(3.09-9.27)		853	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.573	4.572	0.001	1.672	6791989	2.65		106	11725	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.573	4.573	0.0	1.000	433400	0.9712		97.1	1587	
713.00 > 219.00	4.558	4.573	-0.015	0.997	299032		1.45(0.70-2.09)		1114	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.989	4.989	0.0	1.825	5780838	2.26		90.4	8013	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.989	4.989	0.0	1.000	2523346	1.18		118	1484	
813.00 > 169.00	4.989	4.989	0.0	1.000	403777		6.25(2.77-8.32)		949	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.319	5.319	0.0	1.066	1862707	1.24		124	661	
913.00 > 169.00	5.319	5.319	0.0	1.066	328334		5.67(2.55-7.64)		1381	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_043.d

Injection Date: 02-Oct-2018 22:39:38

Instrument ID: A9

Lims ID: LCSD 320-248967/3-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 21

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

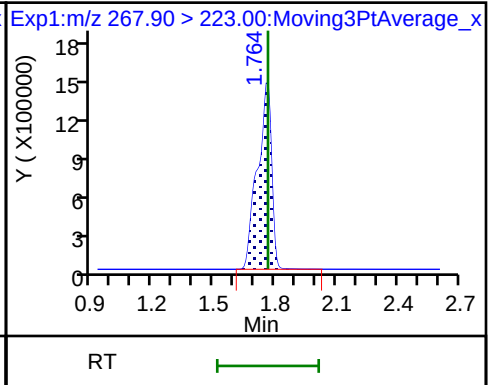
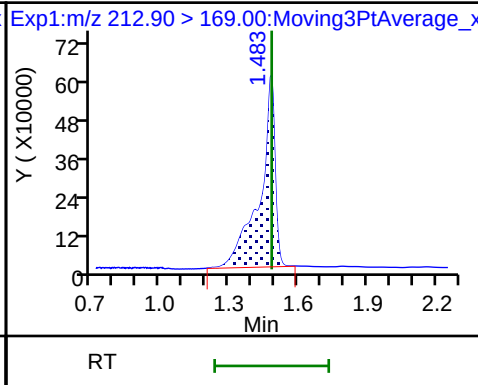
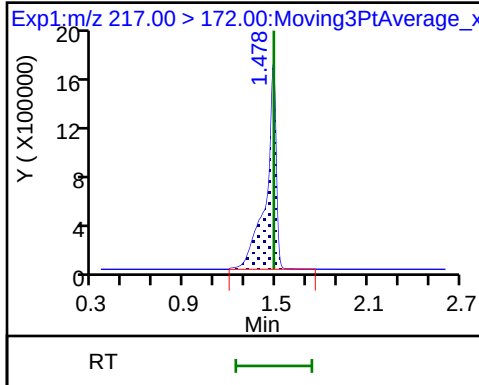
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

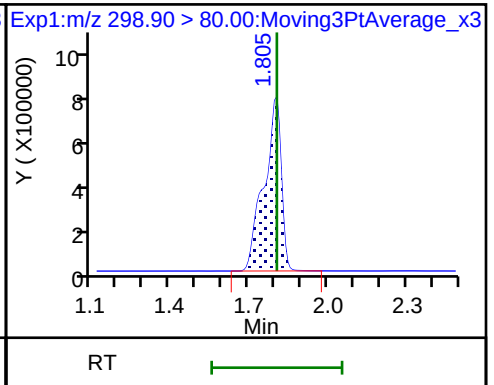
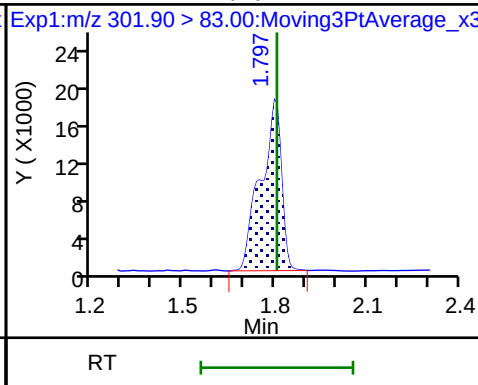
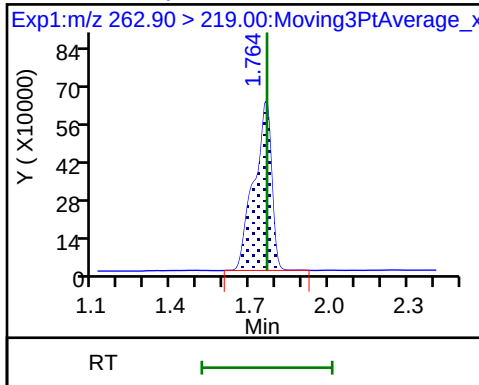
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS (M)

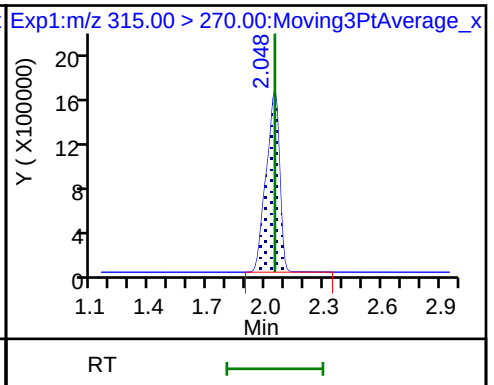
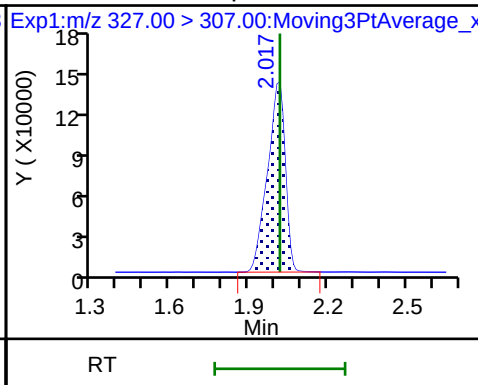
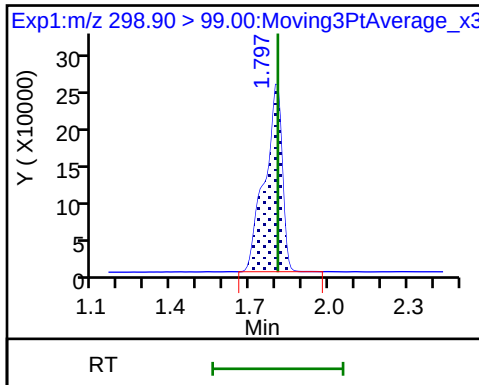
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

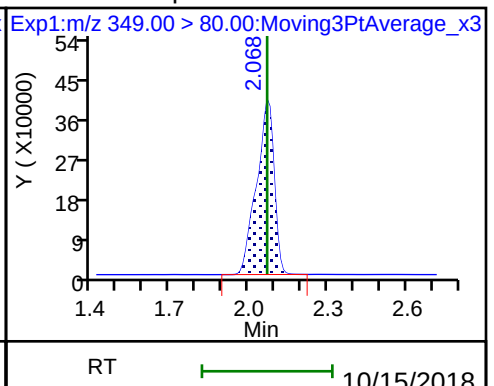
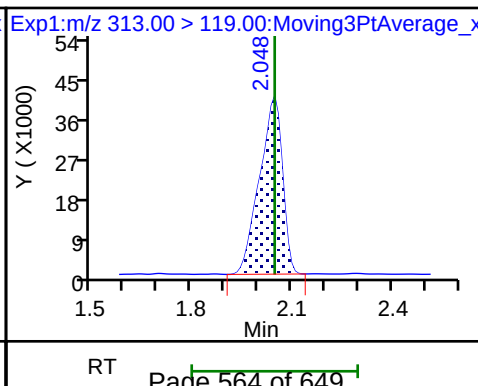
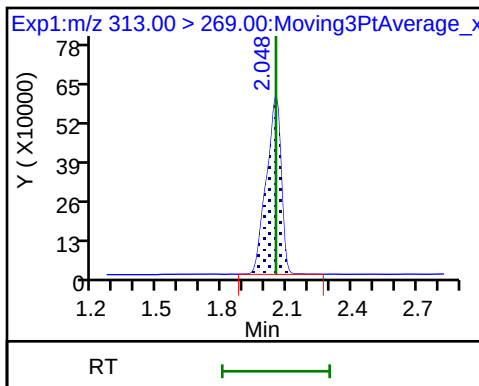
D 7 13C2 PFHxA



6 Perfluorohexanoic acid

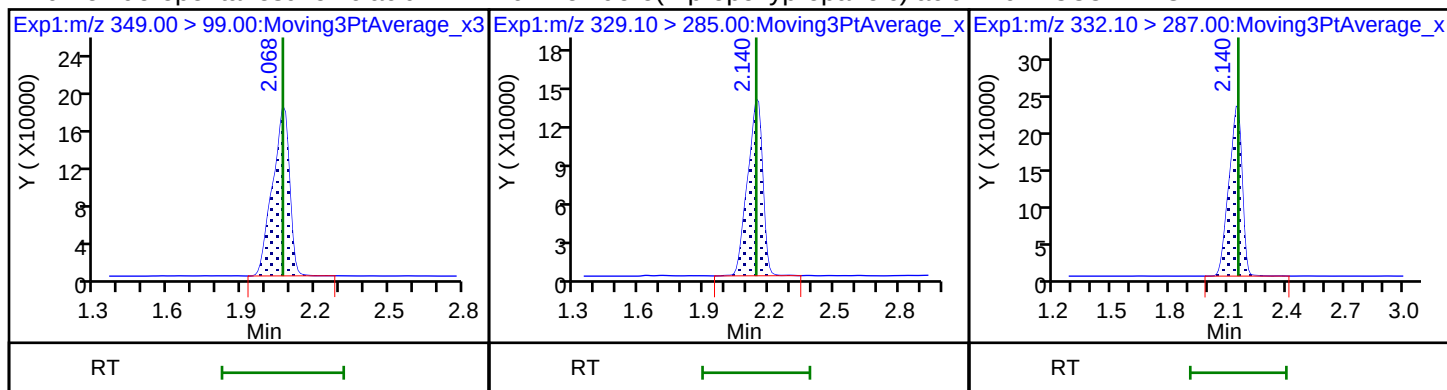
6 Perfluorohexanoic acid

70 Perfluoropentanesulfonic acid



70 Perfluoropentanesulfonic acid

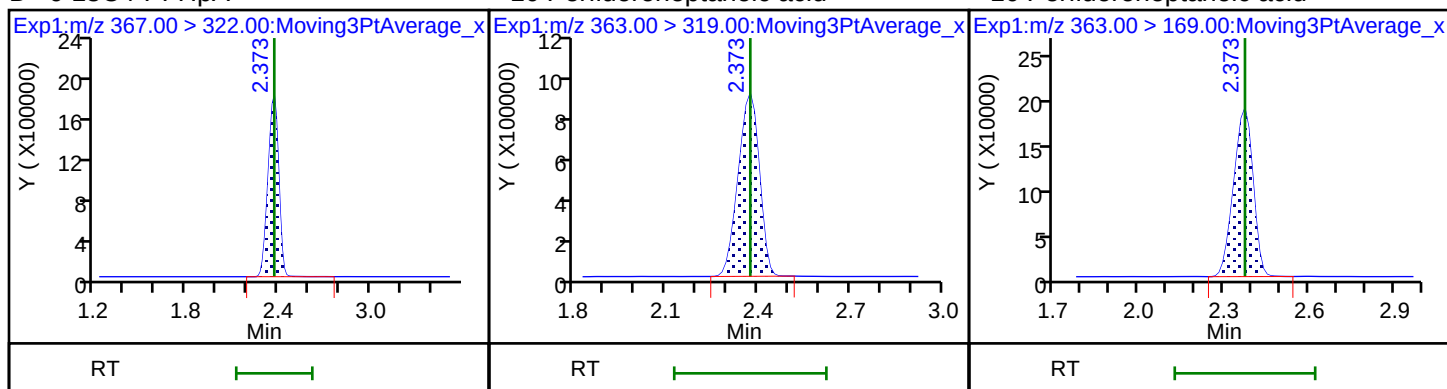
67 Perfluoro(2-propoxypropanoic) acid D 64 13C3 HFPO-DA



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

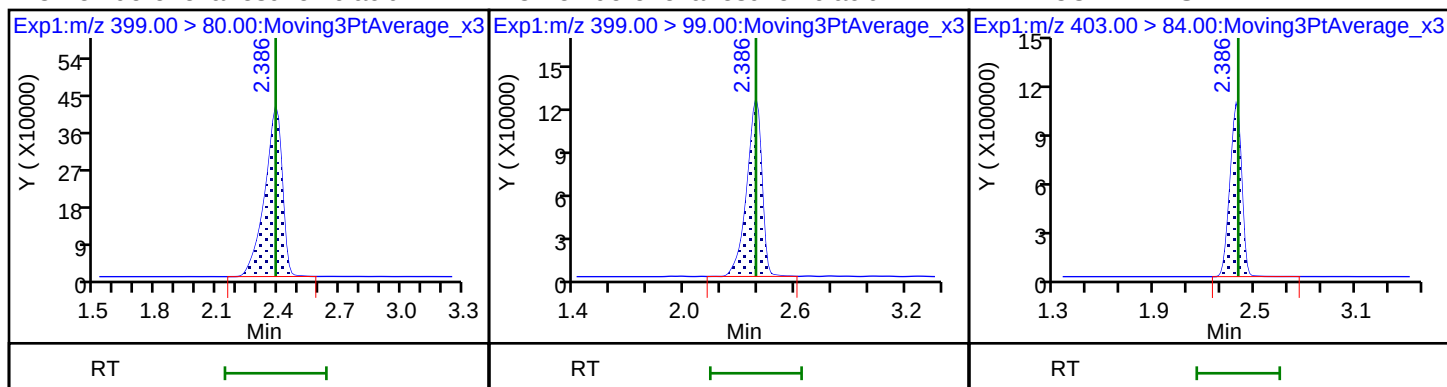
10 Perfluoroheptanoic acid



8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid

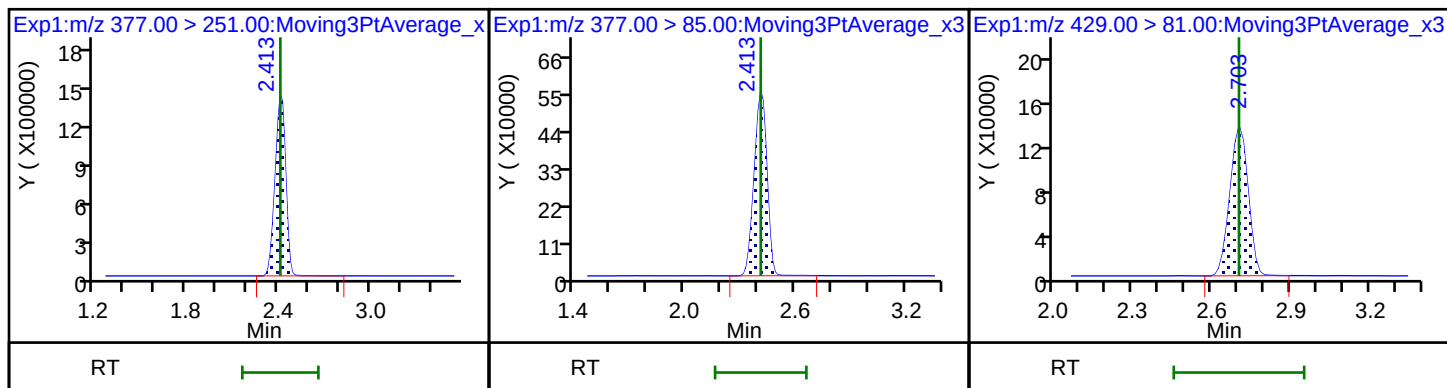
D 11 18O2 PFHxS



76 DONA

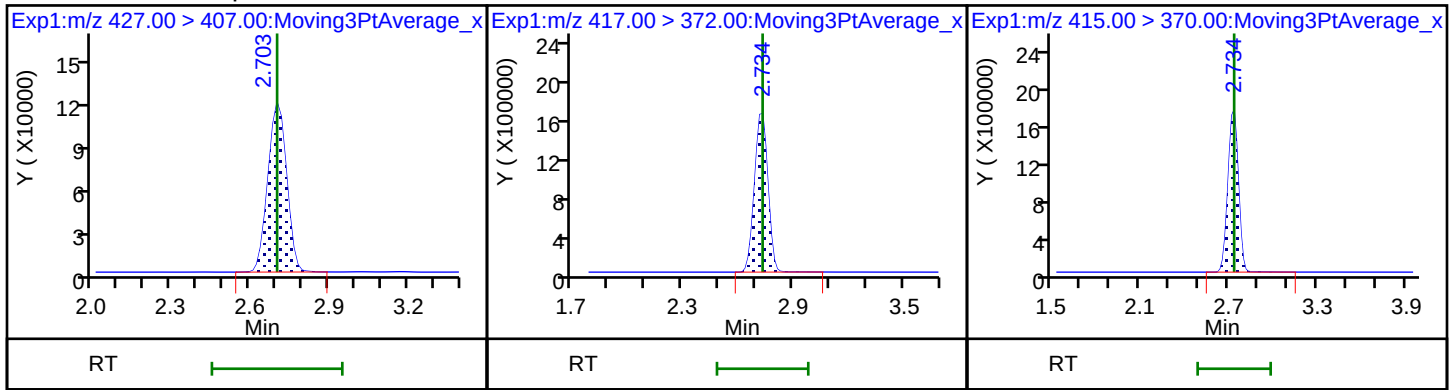
76 DONA

D 12 M2-6:2FTS



13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA

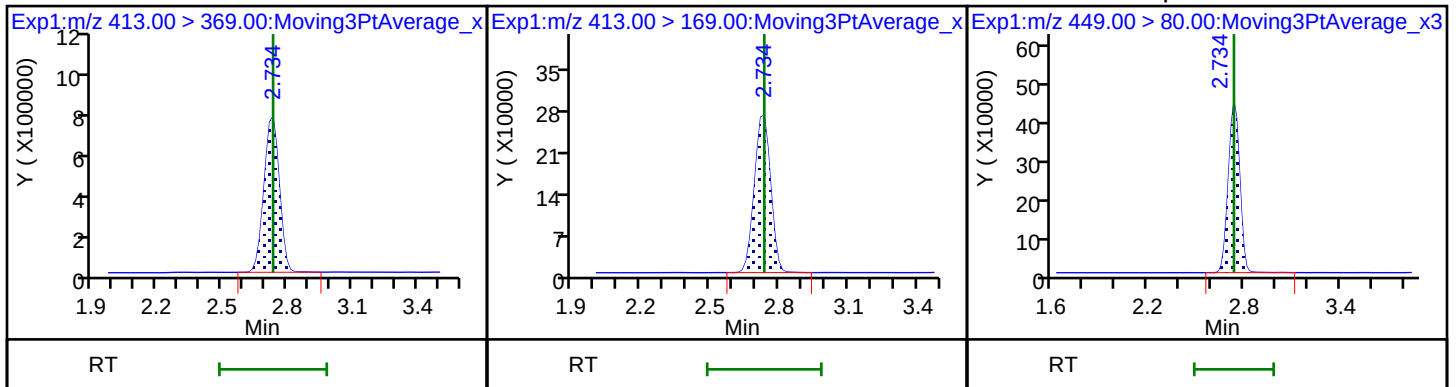
* 62 13C2-PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

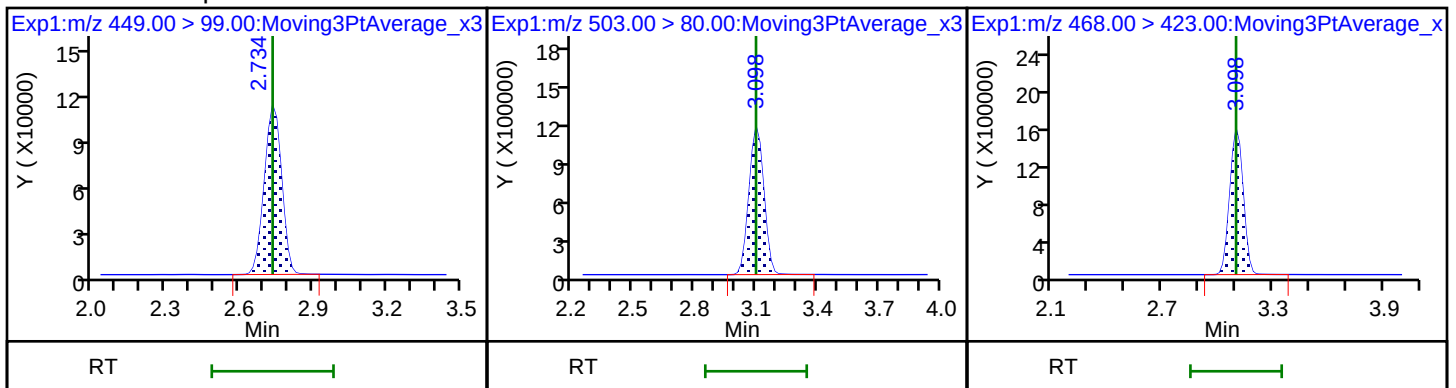
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

D 18 13C4 PFOS

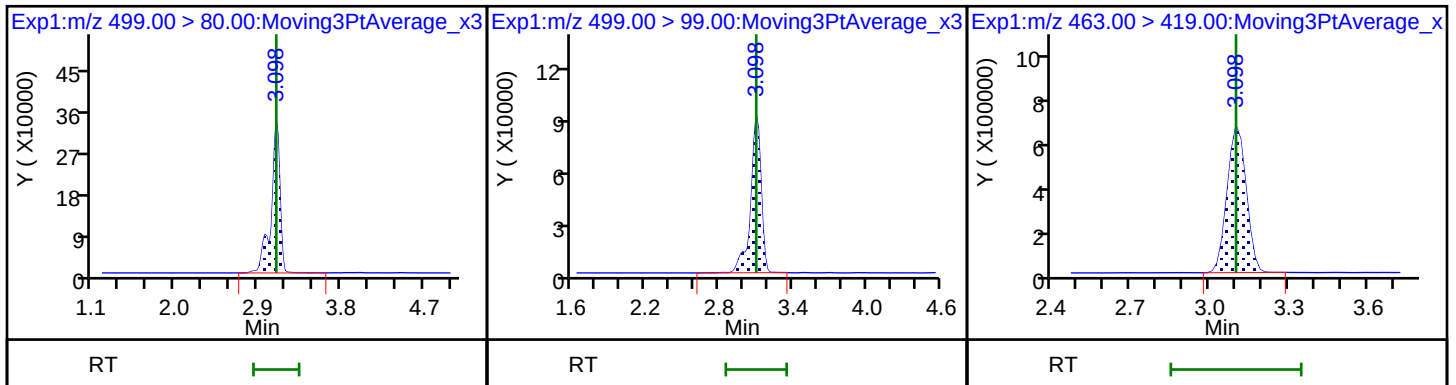
D 19 13C5 PFNA



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

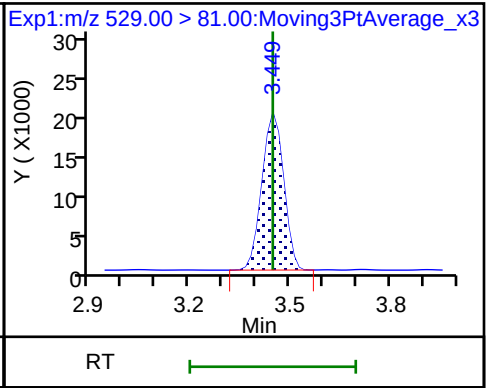
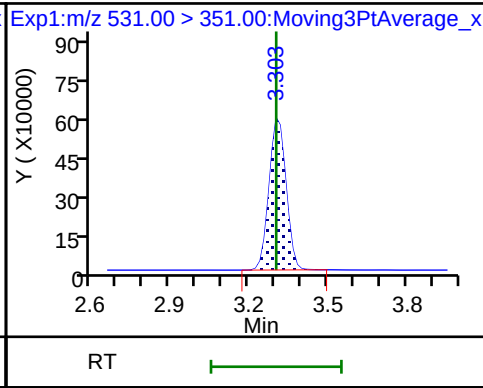
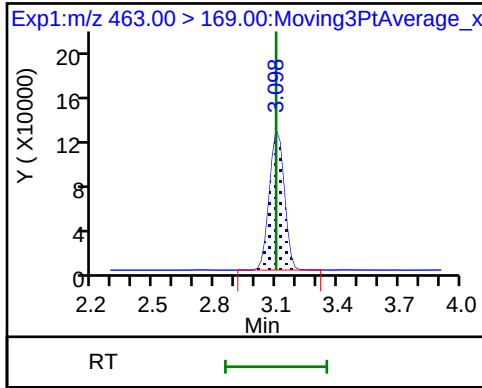
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonadecanoic acid

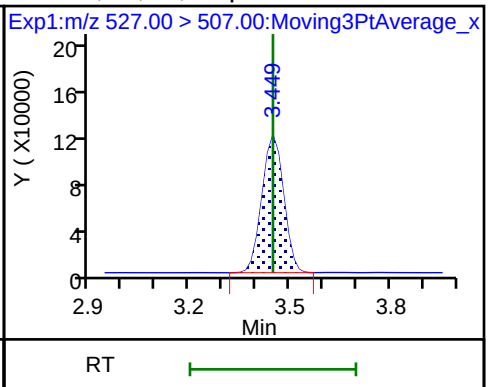
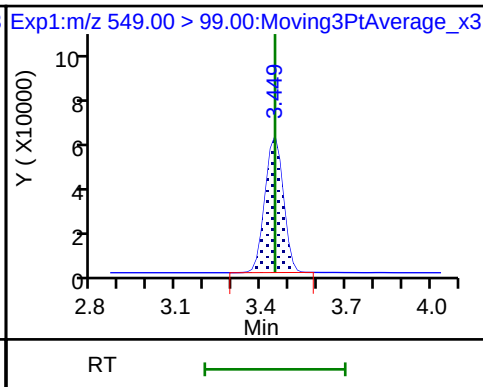
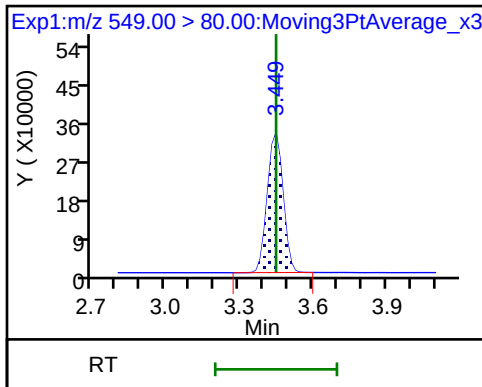
De 26 M2-8:2FTS



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

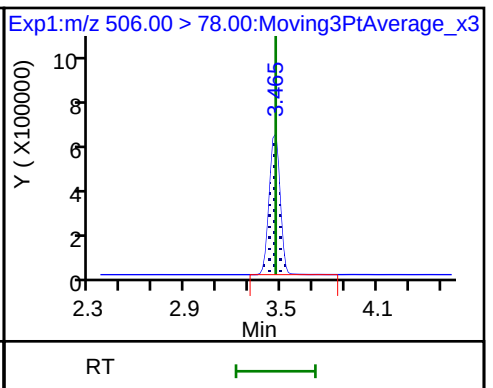
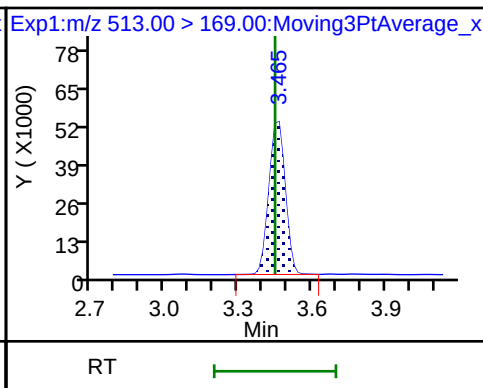
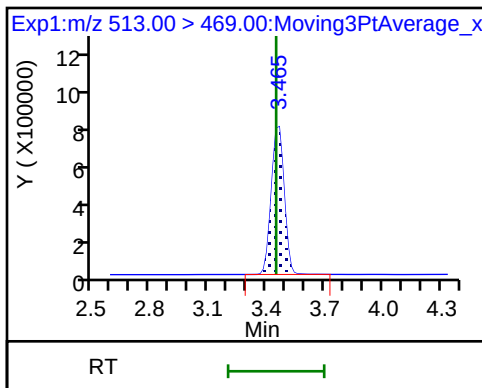
25 1H,1H,2H,2H-perfluorodecanesulfoni



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

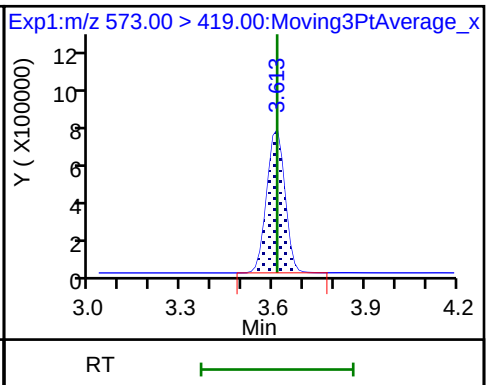
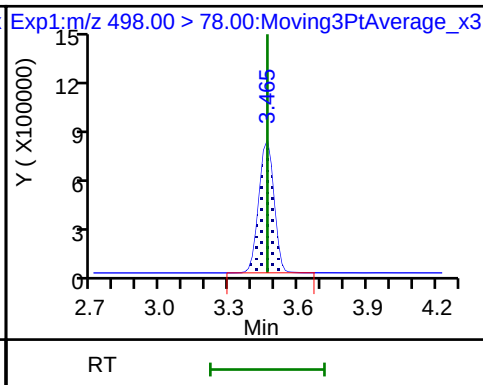
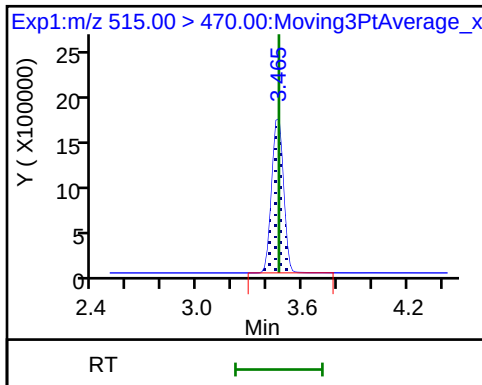
D 21 13C8 FOSA



D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

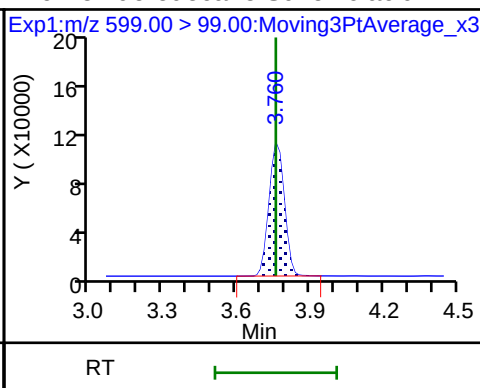
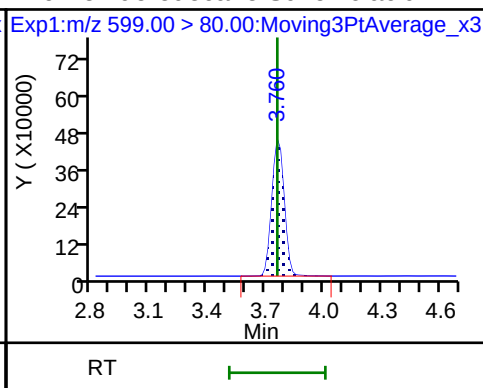
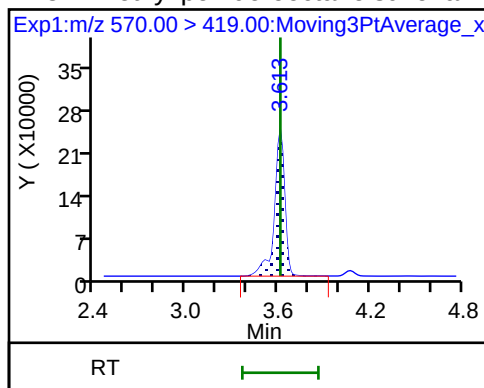
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

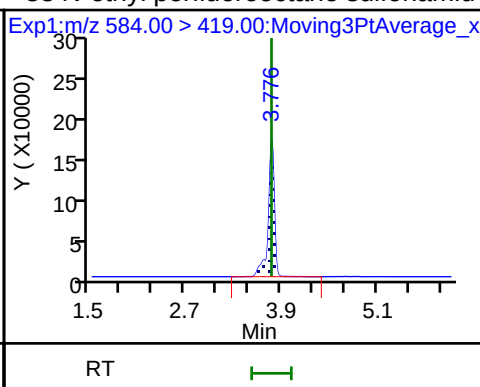
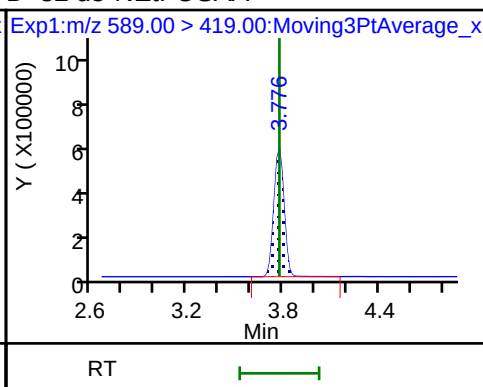
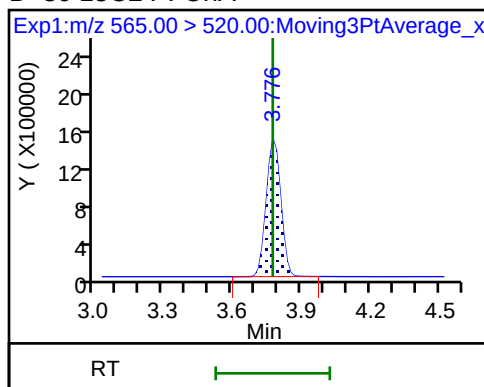
29 Perfluorodecane Sulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

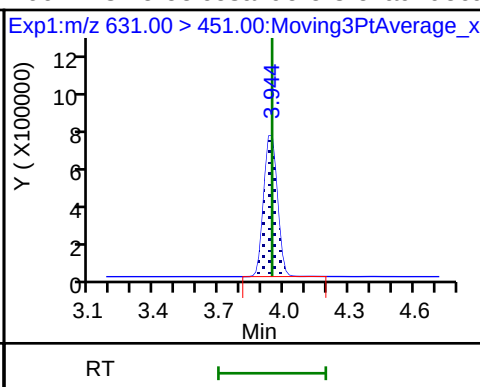
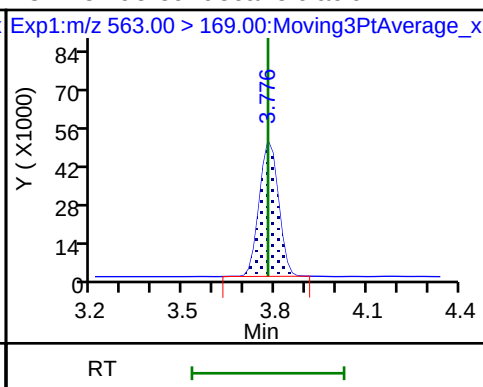
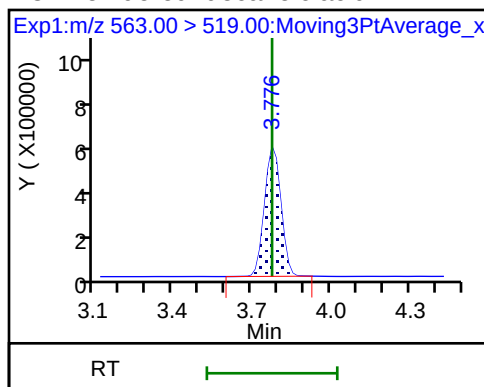
33 N-ethyl perfluorooctane sulfonamid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

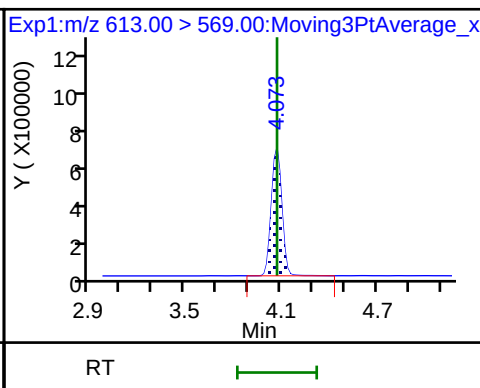
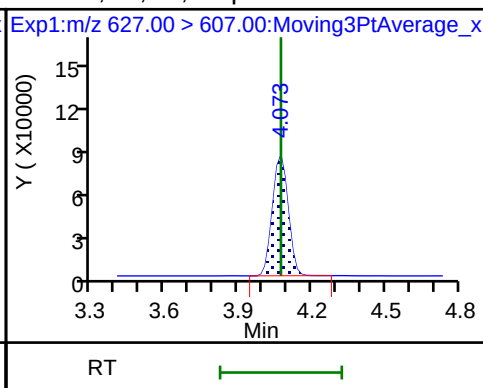
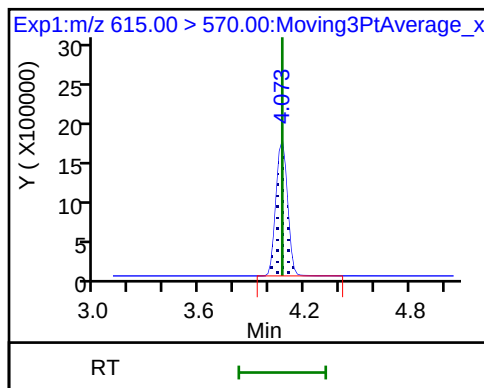
66 11-Chloroeicosafluoro-3-oxaundecan



D 36 13C2 PFDaA

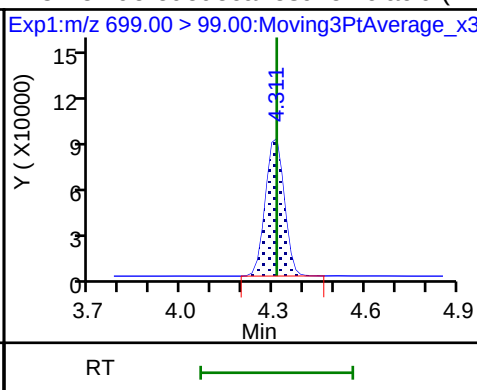
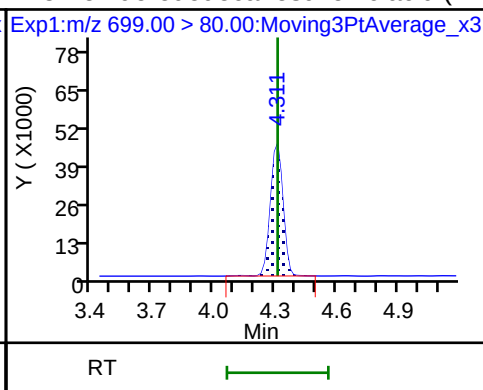
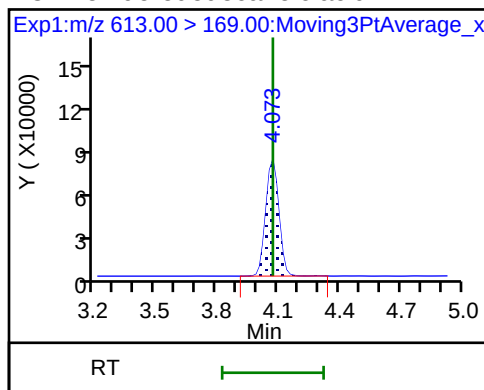
74 1H,1H,2H,2H-perfluorododecanesulfo

37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

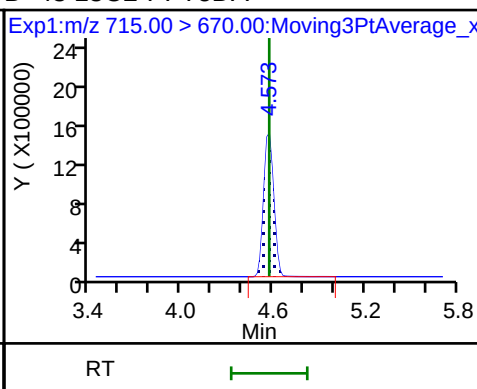
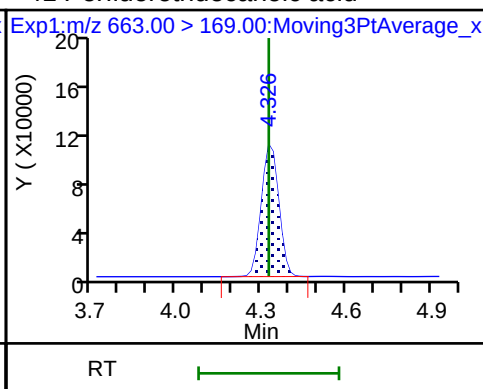
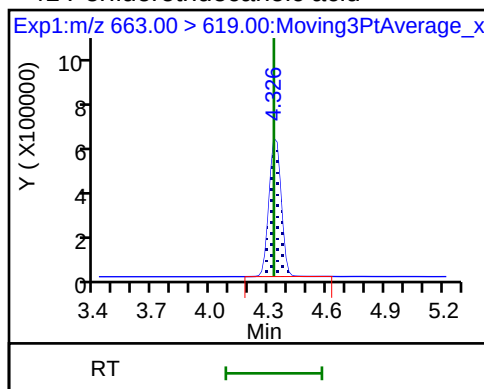
75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

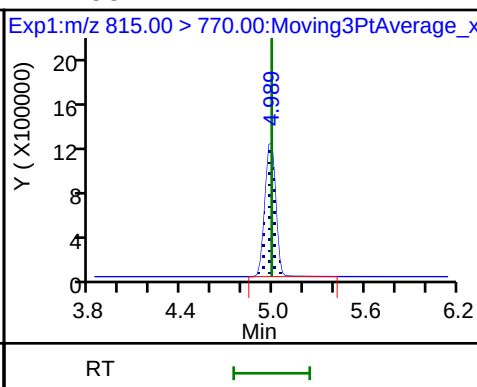
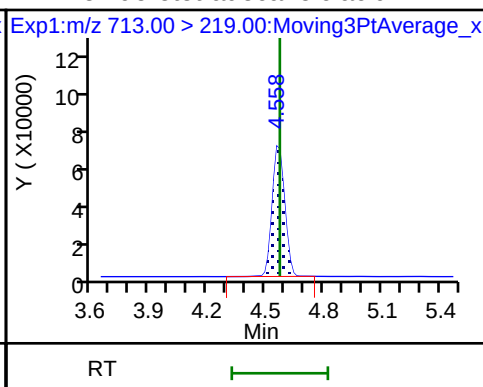
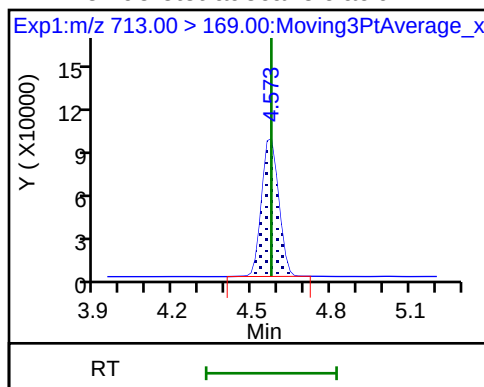
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

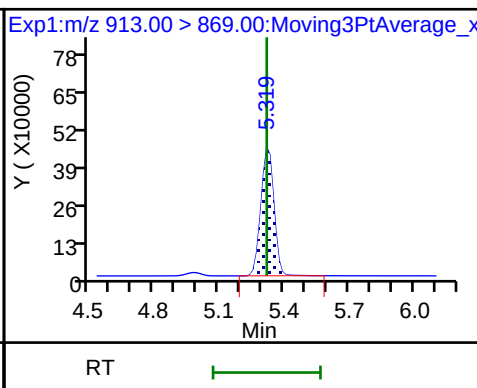
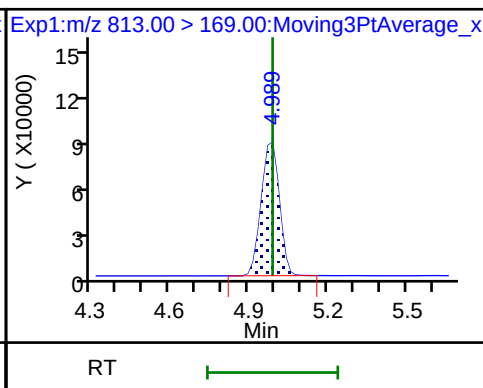
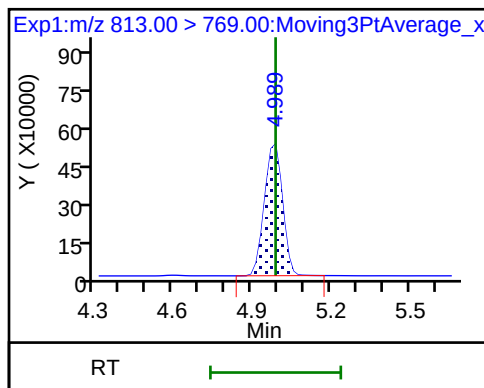
D 44 13C2-PFHxDA



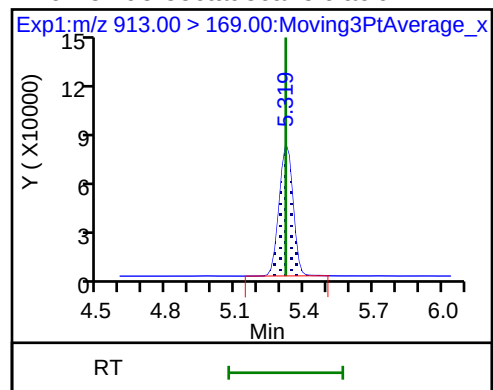
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

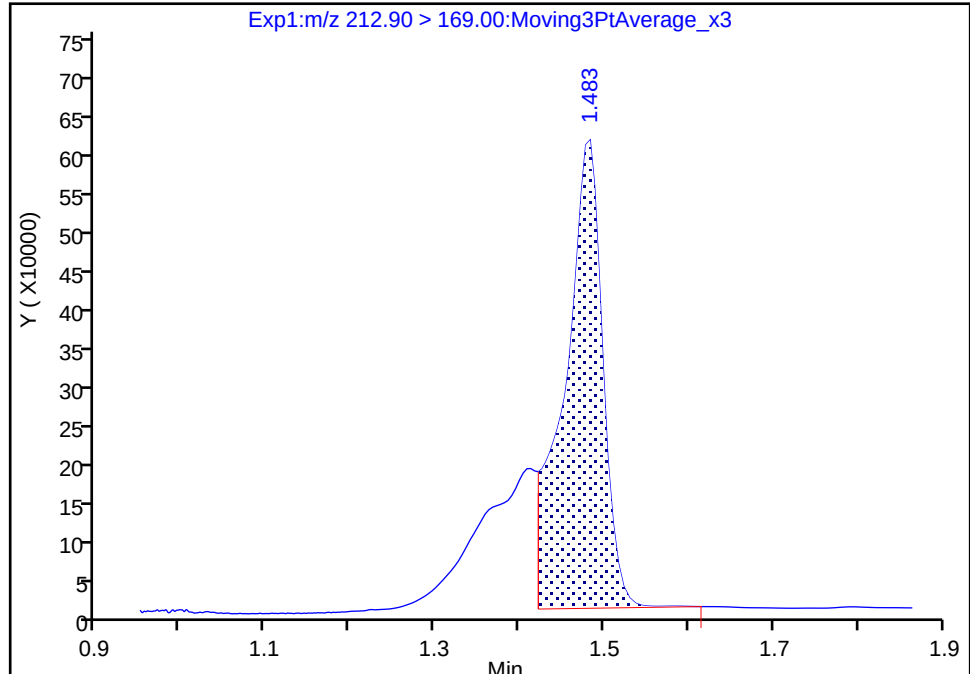
Data File: \\ChromNA\Sacramento\ChromData\A9\20181002-65142.b\2018.10.02LLAA_043.d
Injection Date: 02-Oct-2018 22:39:38 Instrument ID: A9
Lims ID: LCSD 320-248967/3-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

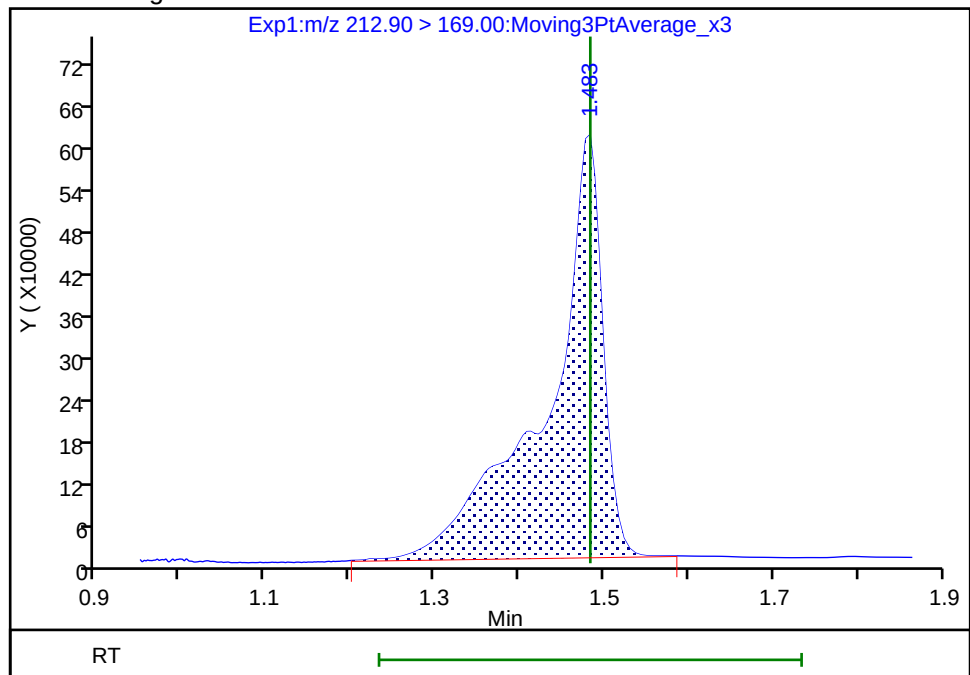
RT: 1.48
Area: 1895354
Amount: 0.692030
Amount Units: ng/ml

Processing Integration Results



RT: 1.48
Area: 2784241
Amount: 1.016580
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 09:54:00
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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10/15/2018

TestAmerica Sacramento

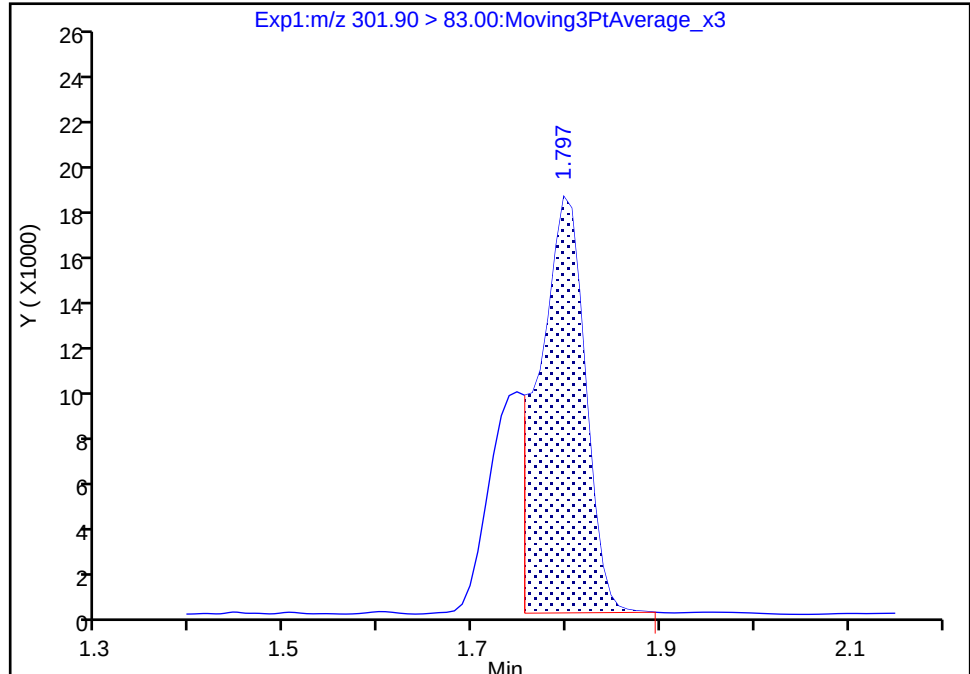
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Injection Date: 02-Oct-2018 22:39:38 Instrument ID: A9
Lims ID: LCSD 320-248967/3-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

D 47 13C3-PFBS, CAS: STL02337

Signal: 1

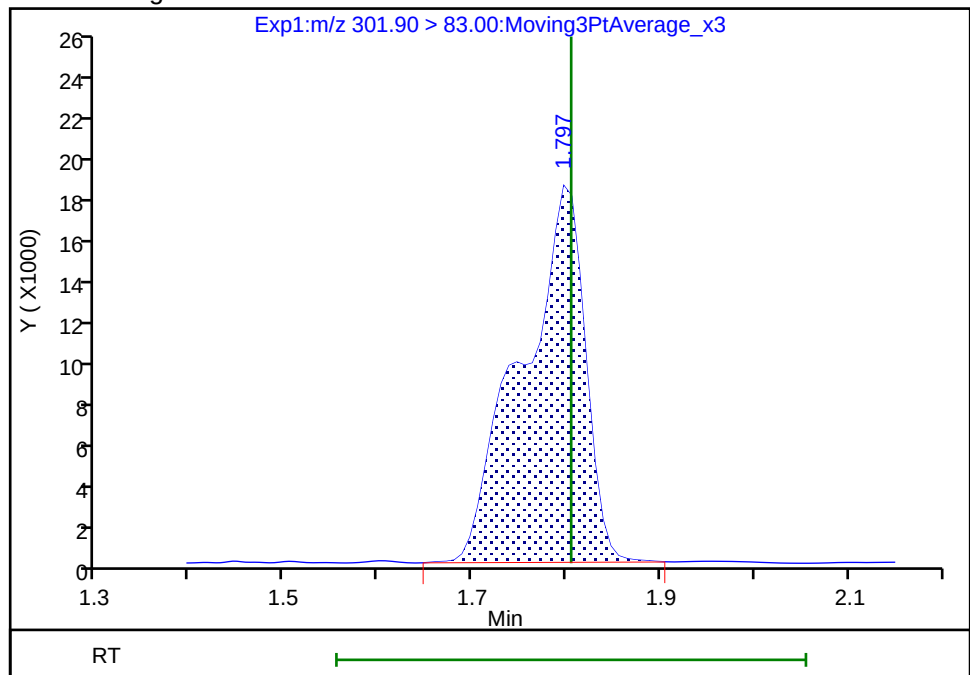
RT: 1.80
Area: 59448
Amount: 1.527715
Amount Units: ng/ml

Processing Integration Results



RT: 1.80
Area: 83690
Amount: 2.150694
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 05-Oct-2018 09:53:46
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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10/15/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>480-141919-Y-2-B MS</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_020.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/18/2018 14:30</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>266.4 (mL)</u>	Date Analyzed: <u>10/06/2018 20:04</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
2706-90-3	Perfluoropentanoic acid (PFPeA)	87.50		1.88	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	171.4		1.88	0.54
375-85-9	Perfluoroheptanoic acid (PFHpA)	79.88		1.88	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	147.0		1.88	0.80
375-95-1	Perfluorononanoic acid (PFNA)	34.86		1.88	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	36.42		1.88	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	39.22		1.88	1.03
307-55-1	Perfluorododecanoic acid (PFDoA)	36.07		1.88	0.52
72629-94-8	Perfluorotridecanoic acid (PFTriA)	38.31		1.88	1.22
376-06-7	Perfluorotetradecanoic acid (PFTeA)	41.11		1.88	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	41.93		1.88	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	47.10		1.88	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	36.30		1.88	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	100.8		1.88	0.51
335-77-3	Perfluorodecanesulfonic acid (PFDS)	33.32		1.88	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	39.32		1.88	0.33

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01893	13C5 PFPeA	54		25-150
STL00993	13C2 PFHxA	74		25-150
STL01892	13C4 PFHpA	87		25-150
STL00990	13C4 PFOA	102		25-150
STL00995	13C5 PFNA	119		25-150
STL00996	13C2 PFDA	131		25-150
STL00997	13C2 PFUnA	130		25-150
STL00998	13C2 PFDoA	120		25-150
STL02116	13C2 PFTeDA	112		25-150
STL02337	13C3 PFBS	96		25-150
STL00994	18O2 PFHxS	100		25-150
STL00991	13C4 PFOS	116		25-150
STL01056	13C8 FOSA	108		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_020.d
 Lims ID: 480-141919-Y-2-B MS
 Client ID: CRL-2I
 Sample Type: MS
 Inject. Date: 06-Oct-2018 20:04:38 ALS Bottle#: 14 Worklist Smp#: 18
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-141919-y-2-b ms
 Misc. Info.: Plate: 1 Rack: 6
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:45:27 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK010

First Level Reviewer: ruangyotsakuld

Date: 11-Oct-2018 10:45:27

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	1.421	1.423	-0.002	0.537	772208	0.4967		19.9	1238	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.421	1.431	-0.010	1.000	2089704	7.12		712	42.7	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.686	1.684	0.002	0.638	1407472	1.35		53.9	416	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.686	1.694	-0.008	1.000	1456448	2.33		233	5.2	M
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.716	0.011	0.653	49673	2.23		96.0	16.6	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.727	1.734	-0.007	1.000	1855335	1.12		126	6.8	M
298.90 > 99.00	1.727	1.734	-0.007	1.000	819860		2.26(1.25-3.74)		19.4	M
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.933	1.933	0.0	1.120	678481	2.45		262	330	
D 7 13C2 PFHxA										
315.00 > 270.00	1.965	1.960	0.005	0.743	2131507	1.86		74.4	3450	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.965	1.975	-0.010	1.000	3835235	4.57		457	36.7	M
313.00 > 119.00	1.965	1.975	-0.010	1.000	344234		11.14(5.03-15.10)		75.7	
70 Perfluoropentanesulfonic acid										M
349.00 > 80.00	1.985	1.995	-0.010	1.150	1632093	1.14		122	17.8	M
349.00 > 99.00	1.985	1.995	-0.010	1.150	569524		2.87(1.36-4.07)		27.3	M
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.059	2.054	0.005	0.779	107972	1.30		51.9	54.8	
67 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	2.059	2.069	-0.010	1.000	139969	1.13		113	5.8	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.288	2.281	0.007	0.866	2235090	2.17		86.8	6526	

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	2.299	2.299	0.0	1.005	2132555	2.13		213	22.4	
363.00 > 169.00	2.288	2.299	-0.011	1.000	767987		2.78(1.13-3.40)		22.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.303	0.007	0.874	3038765	2.36		99.9	4003	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.310	2.321	-0.011	1.000	1776652	1.25		138	23.6	M
399.00 > 99.00	2.310	2.321	-0.011	1.000	663304		2.68(1.50-4.49)		35.4	M
77 DONA										
377.00 > 251.00	2.333	2.343	-0.010	0.772	2682796	0.7168		76.1	2086	
377.00 > 85.00	2.333	2.343	-0.010	0.772	1615710		1.66(0.85-2.54)		231	
D 12 M2-6:2FTS										
429.00 > 81.00	2.619	2.609	0.010	0.991	1582007	9.13		384	206	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.619	2.627	-0.008	1.000	998232	0.8805		92.9	969	
D 14 13C4 PFOA										
417.00 > 372.00	2.644	2.640	0.004	1.000	2539877	2.54		102	6519	
* 62 13C2-PFOA										
415.00 > 370.00	2.644	2.651	-0.007		2570408	2.50			5476	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.644	2.651	-0.007	1.000	4687913	3.92		391	223	
413.00 > 169.00	2.644	2.651	-0.007	1.000	2782132		1.69(0.84-2.52)		1063	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.652	2.658	-0.006	0.877	1165396	0.9670		102	94.4	
449.00 > 99.00	2.652	2.658	-0.006	0.877	286796		4.06(1.94-5.82)		66.2	
D 19 13C5 PFNA										
468.00 > 423.00	3.023	3.006	0.017	1.144	2502608	2.98		119	7738	
D 18 13C4 PFOS										
503.00 > 80.00	3.023	3.014	0.009	1.144	2301221	2.76		116	548	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.023	3.023	0.0	1.000	2953892	2.69		289	284	M
499.00 > 99.00	3.023	3.023	0.0	1.000	567397		5.21(2.31-6.93)		40.9	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.023	3.023	0.0	1.000	1001178	0.9286		92.9	86.7	
463.00 > 169.00	3.023	3.023	0.0	1.000	278251		3.60(1.90-5.69)		61.3	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.235	3.243	-0.008	1.070	1675642	0.9211		98.8	3022	
D 26 M2-8:2FTS										
529.00 > 81.00	3.371	3.362	0.009	1.275	1558053	8.48		354	892	
D 21 13C8 FOSA										
506.00 > 78.00	3.364	3.362	0.002	1.272	3135131	2.71		108	6804	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.364	3.364	0.0	1.000	1264025	1.05		105	862	
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.369	0.017	1.281	2437576	3.28		131	10715	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.371	3.379	-0.008	1.115	709003	0.8974		93.5	322	
549.00 > 99.00	3.371	3.379	-0.008	1.115	257832		2.75(1.33-3.97)		307	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.371	3.379	-0.008	1.000	754650	0.9600	100	5691	
24 Perfluorodecanoic acid	513.00 > 469.00	3.386	3.386	0.0	1.000	949495	0.9702	97.0	314	
	513.00 > 169.00	3.386	3.386	0.0	1.000	183300	5.18(2.36-7.09)		308	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.539	3.529	0.010	1.339	1080727	3.58	143	3067	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.539	3.547	-0.008	1.000	435677	1.04	104	520	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.701	3.699	0.002	1.400	1404245	4.32	173	3218	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.692	3.701	-0.009	1.221	548209	0.8876	92.1	445	
	599.00 > 99.00	3.692	3.701	-0.009	1.221	172634	3.18(1.39-4.16)		975	
D 30 13C2 PFUnA	565.00 > 520.00	3.709	3.707	0.002	1.403	1841680	3.24	130	4430	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.709	3.718	-0.009	1.000	674863	1.04	104	343	
	563.00 > 169.00	3.709	3.718	-0.009	1.000	155945	4.33(2.12-6.36)		162	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.709	3.718	-0.009	1.002	786167	1.61	161	1110	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.859	3.881	-0.022	1.277	2200801	0.8016	85.1	6785	
D 36 13C2 PFDaA	615.00 > 570.00	3.996	4.003	-0.007	1.512	1788691	2.99	120	8401	
37 Perfluorododecanoic acid	613.00 > 569.00	3.996	4.015	-0.019	1.000	753452	0.9609	96.1	549	
	613.00 > 169.00	3.996	4.015	-0.019	1.000	189868	3.97(2.13-6.40)		1042	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.005	4.015	-0.010	1.188	357657	0.6412	66.5	2329	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.236	4.257	-0.021	1.401	203669	0.7265	75.1	969	
	699.00 > 99.00	4.236	4.257	-0.021	1.401	324656	0.63(0.00-0.00)		2354	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.256	4.285	-0.029	1.065	775194	1.02	102	623	
	663.00 > 169.00	4.256	4.285	-0.029	1.065	250152	3.10(1.25-3.76)		2215	
D 43 13C2-PFTeDA	715.00 > 670.00	4.496	4.504	-0.008	1.700	2019556	2.81	112	6655	
42 Perfluorotetradecanoic acid	713.00 > 169.00	4.496	4.526	-0.030	1.000	217381	1.10	110	3077	
	713.00 > 219.00	4.496	4.526	-0.030	1.000	140619	1.55(0.71-2.13)		1178	
D 44 13C2-PFHxDA	815.00 > 770.00	4.918	4.927	-0.009	1.860	2500732	1.93	77.0	2666	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.927	4.945	-0.018	1.002	929074	1.04	104	209	
	813.00 > 169.00	4.918	4.945	-0.027	1.000	175844	5.28(2.86-8.58)		1033	

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	5.280	5.295	-0.015	1.074	717356	0.6818		68.2	156	
913.00 > 169.00	5.273	5.295	-0.022	1.072	91490		7.84(3.83-11.48)		641	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_020.d

Injection Date: 06-Oct-2018 20:04:38

Instrument ID: A8_N

Lims ID: 480-141919-Y-2-B MS

Client ID: CRL-2I

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 18

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

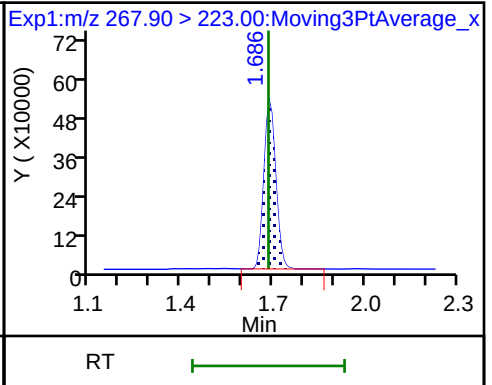
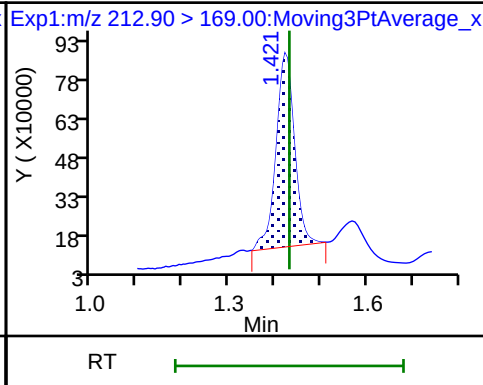
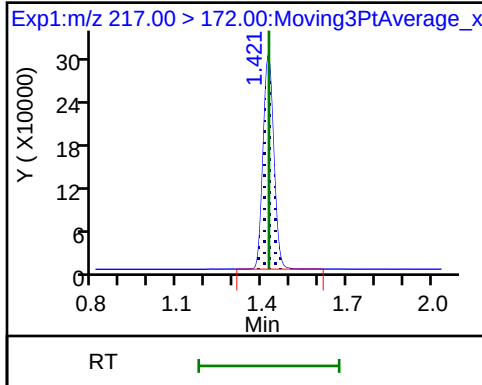
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

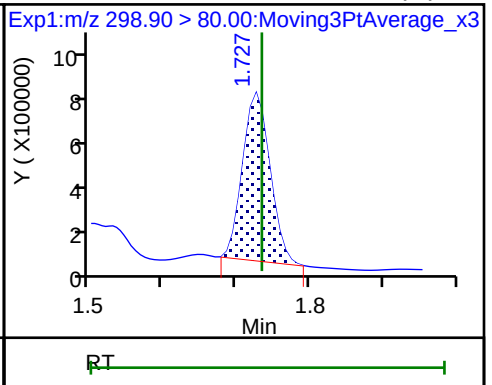
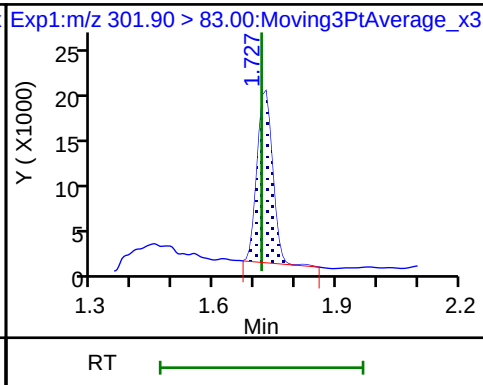
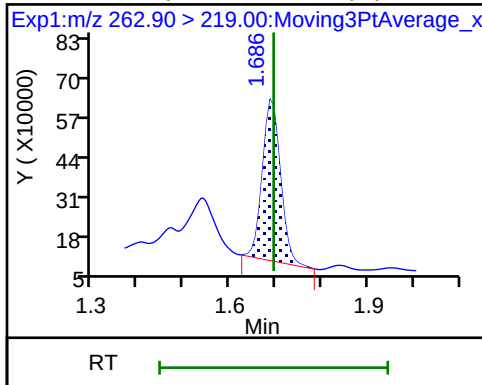
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3-PFBS

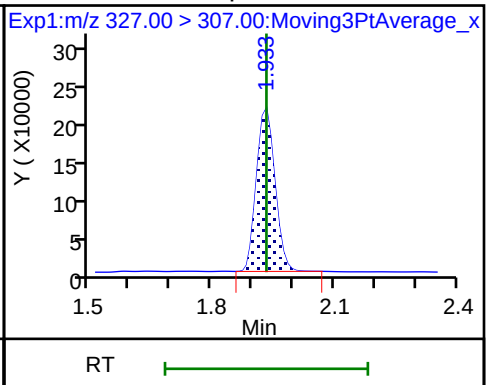
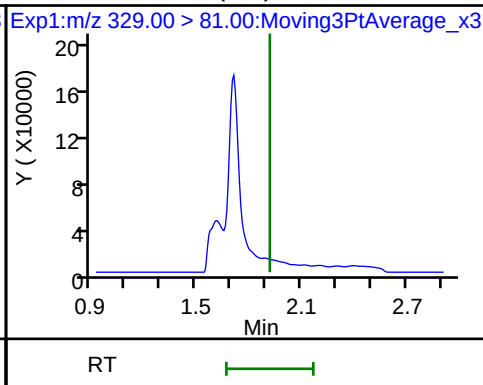
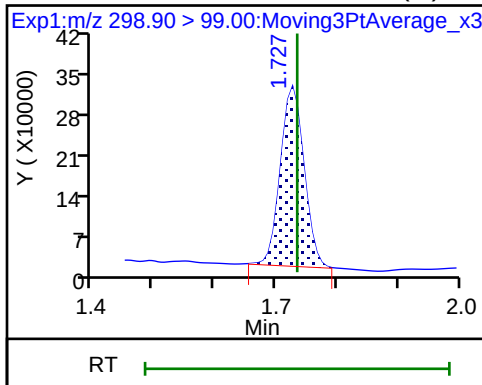
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid (M)

D 60 M2-4:2FTS (ND)

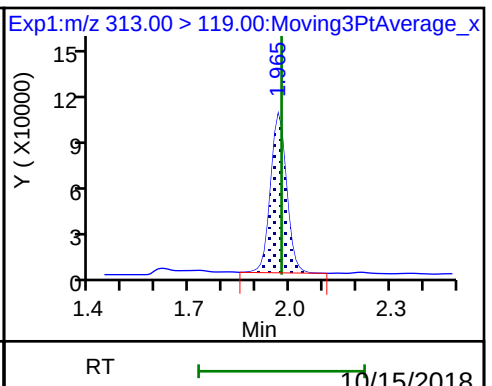
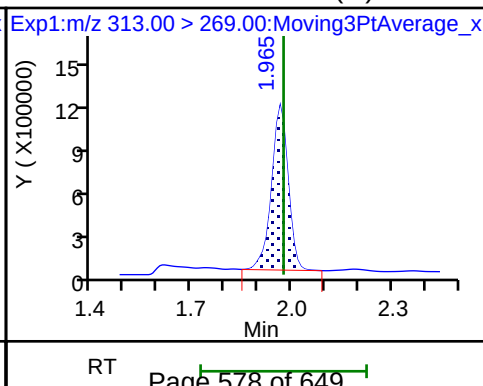
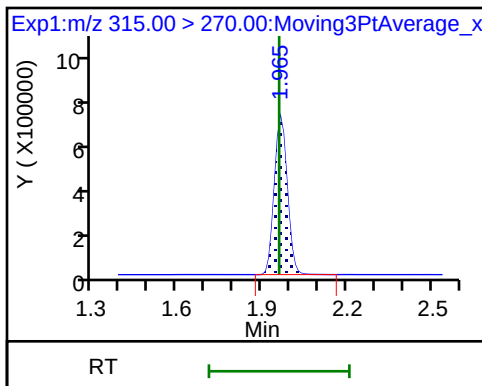
61 1H,1H,2H,2H-perfluorohexanesulfoni



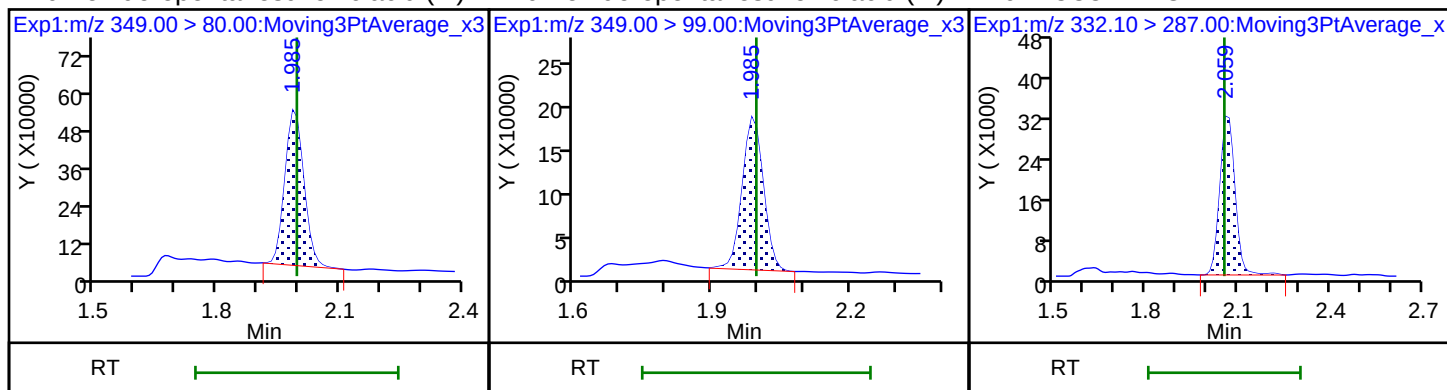
D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

6 Perfluorohexanoic acid

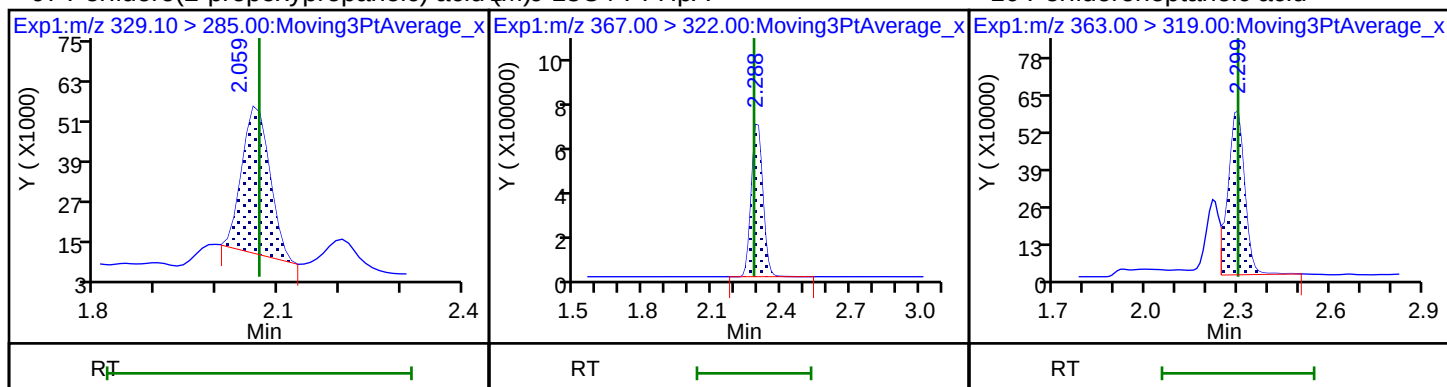


70 Perfluoropentanesulfonic acid (M) 70 Perfluoropentanesulfonic acid (M) D 64 13C3 HFPO-DA



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

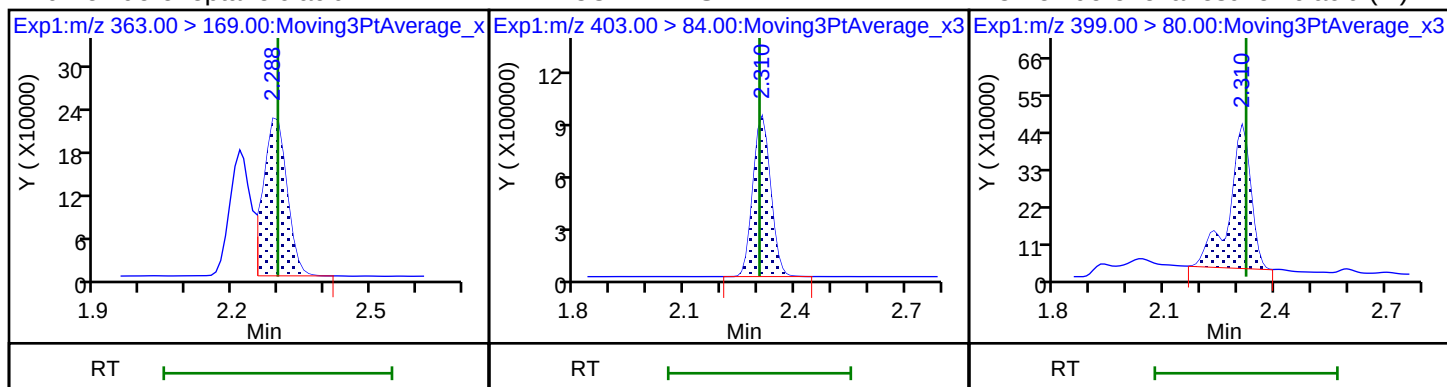
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

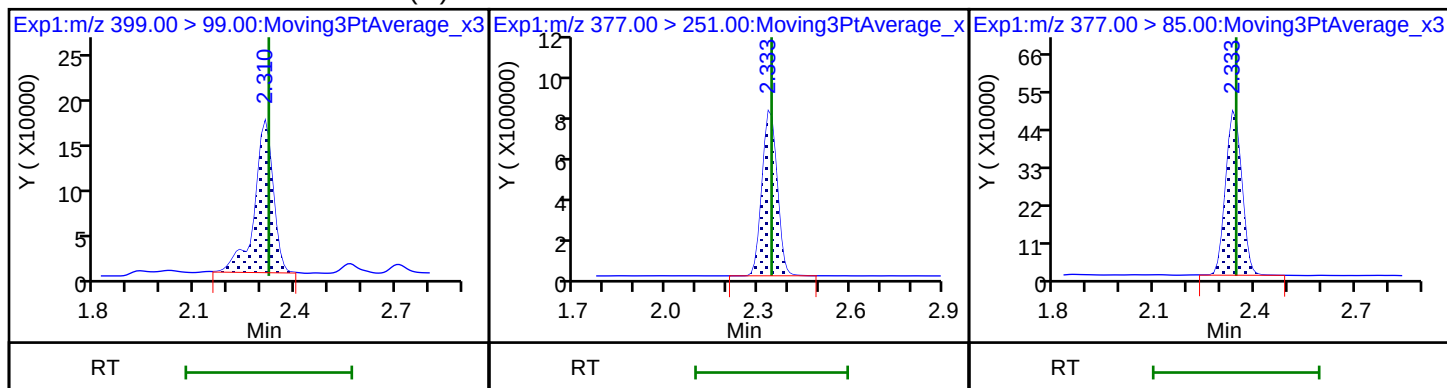
8 Perfluorohexanesulfonic acid (M)



8 Perfluorohexanesulfonic acid (M)

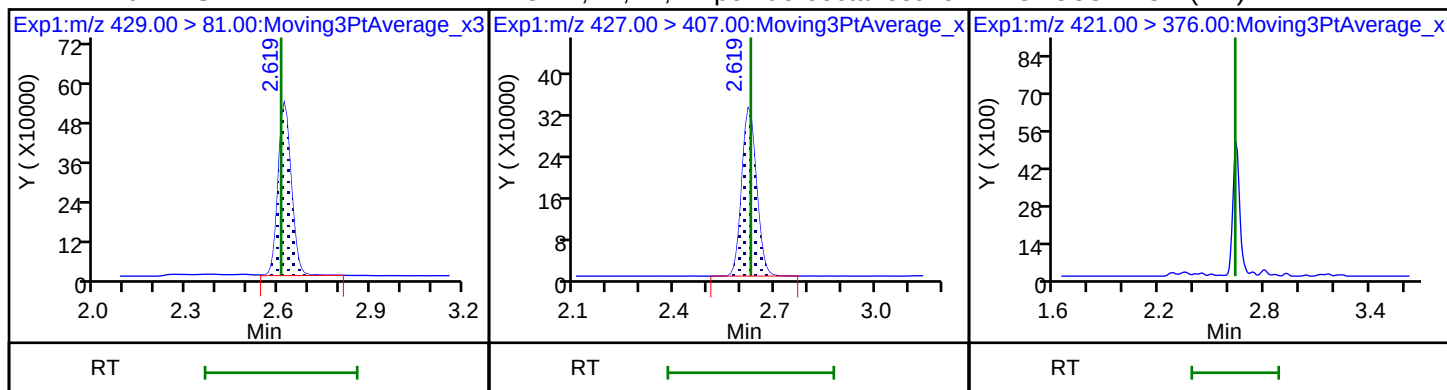
77 DONA

77 DONA



D 12 M2-6:2FTS

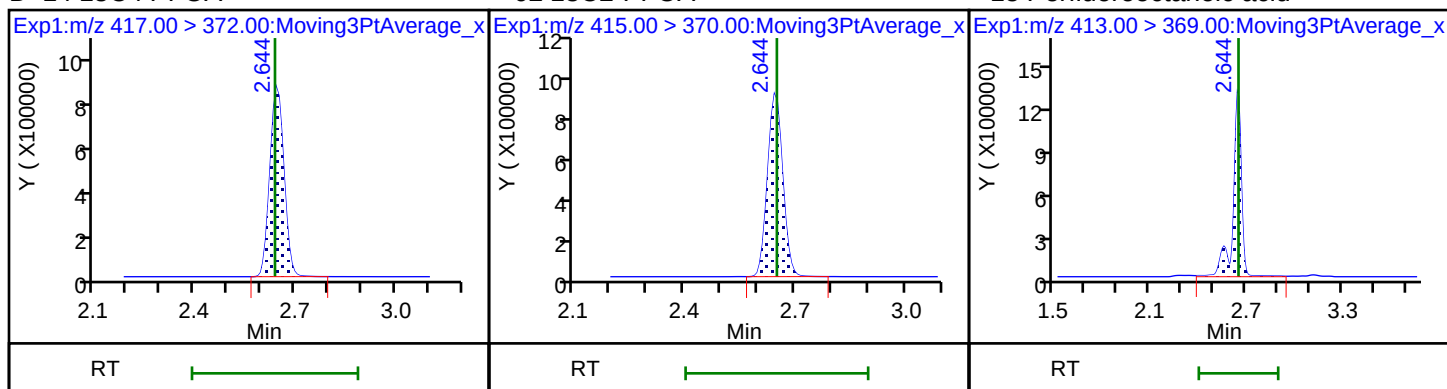
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA (ND)



D 14 13C4 PFOA

* 62 13C2-PFOA

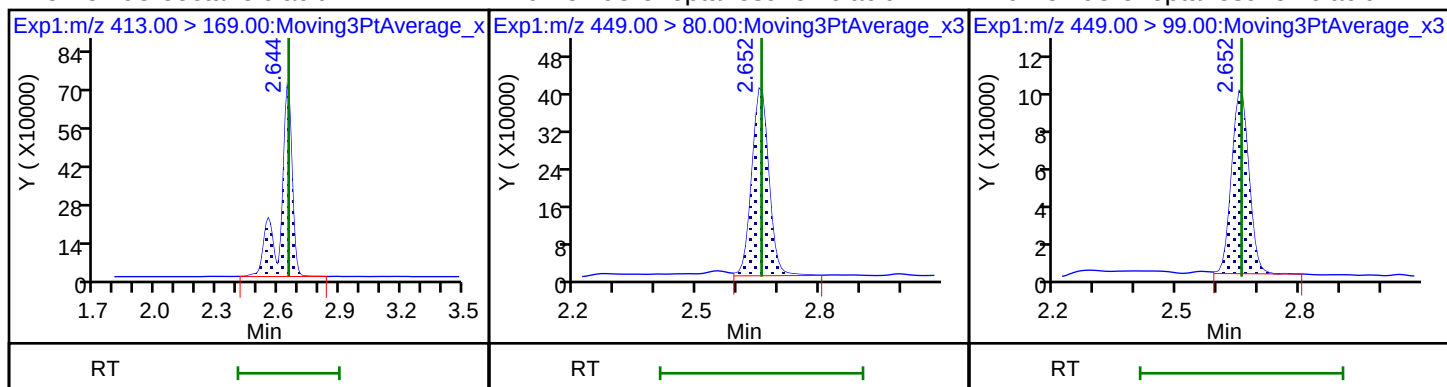
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

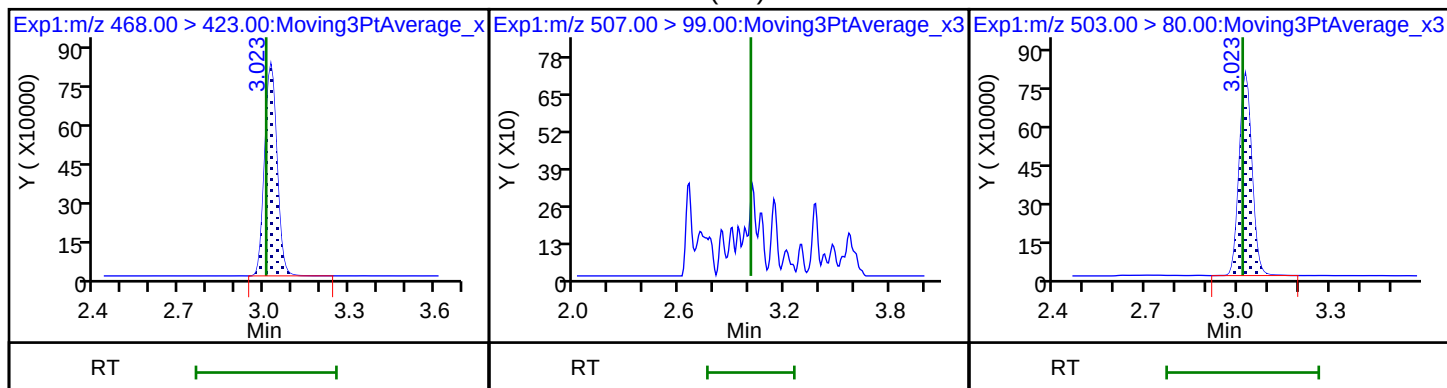
16 Perfluoroheptanesulfonic acid

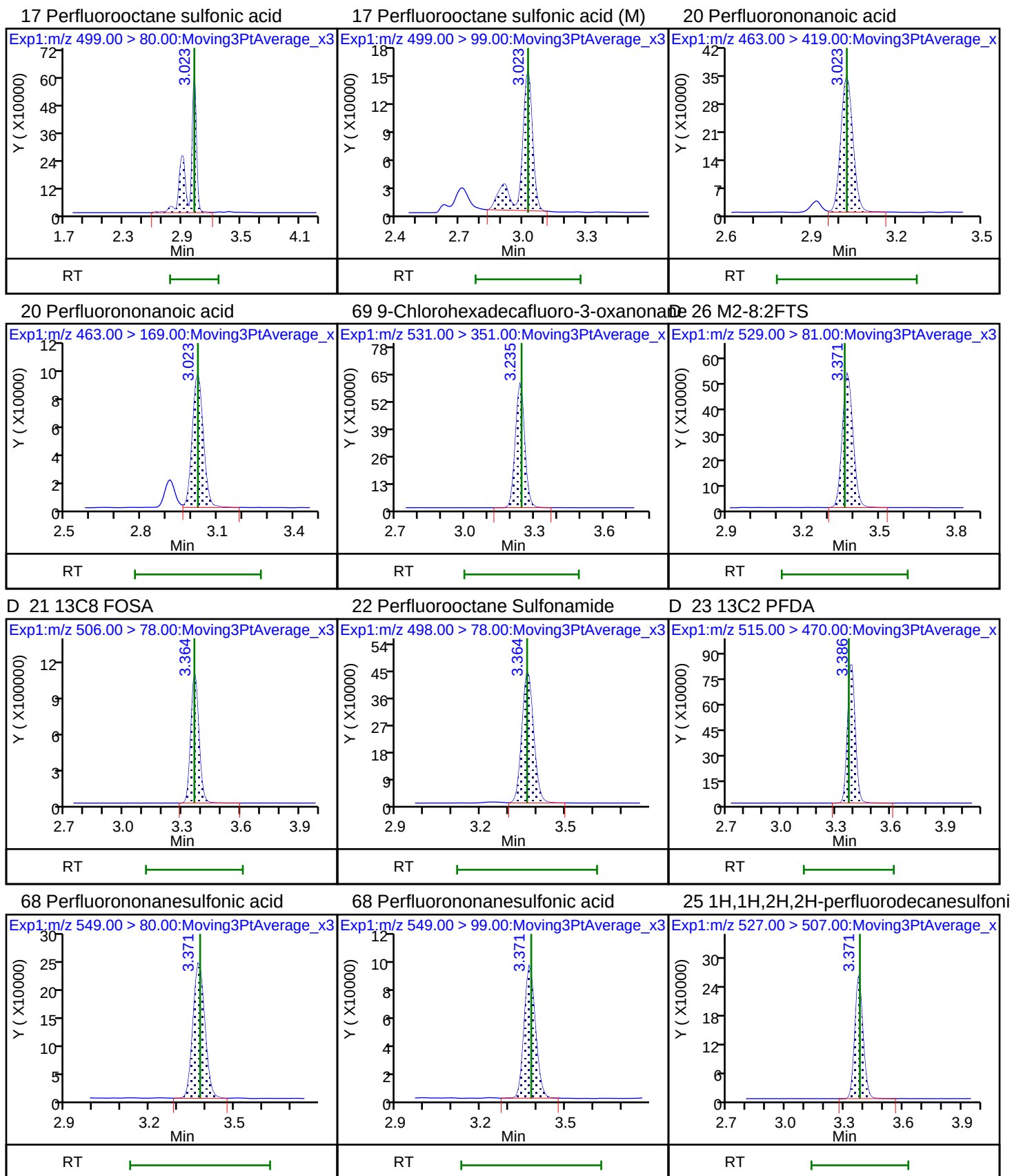


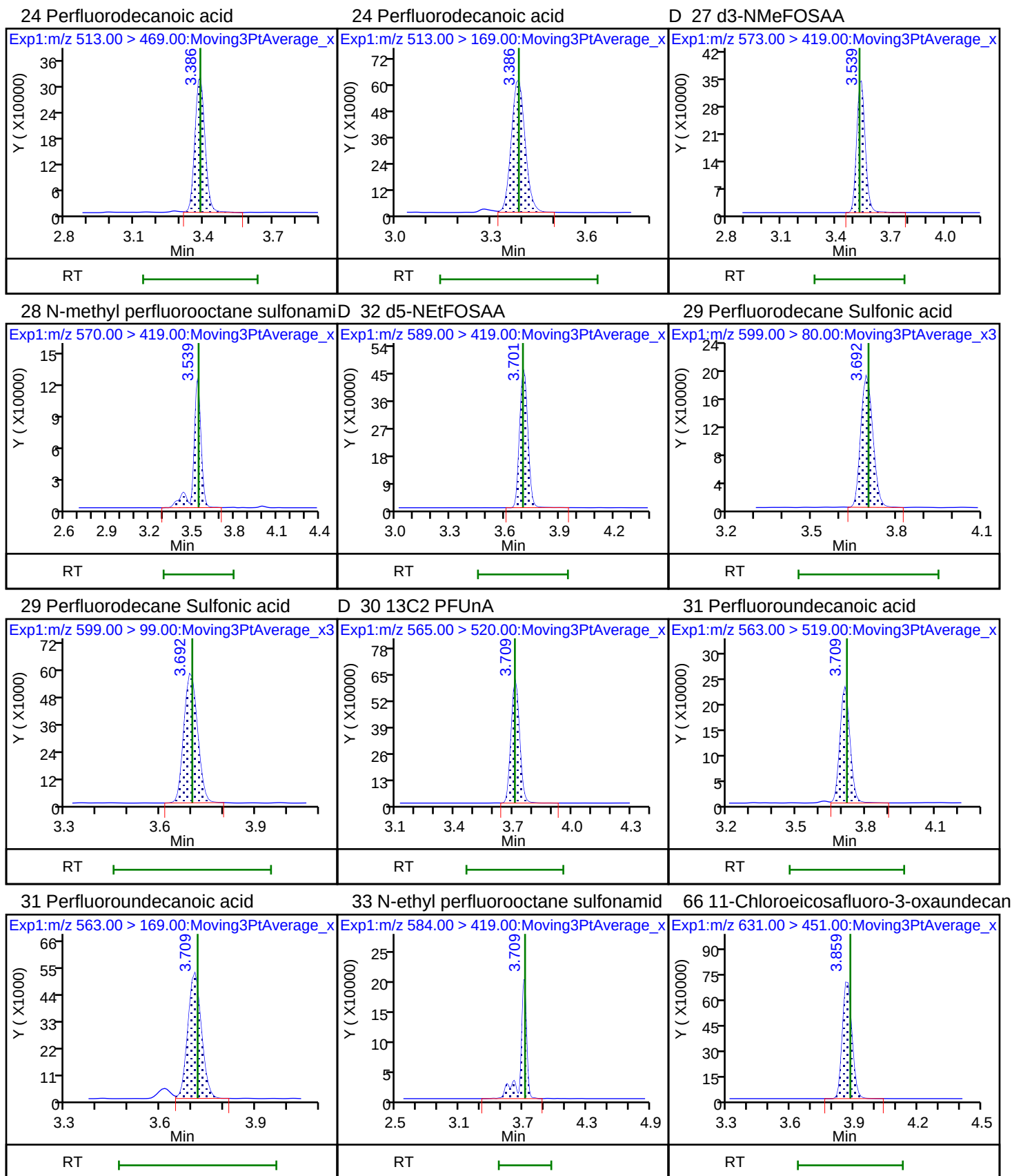
D 19 13C5 PFNA

D 72 13C8 PFOS (ND)

D 18 13C4 PFOS



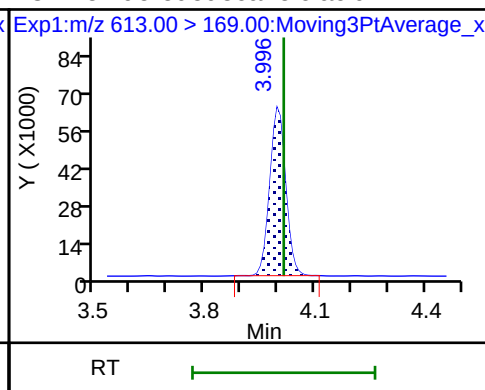
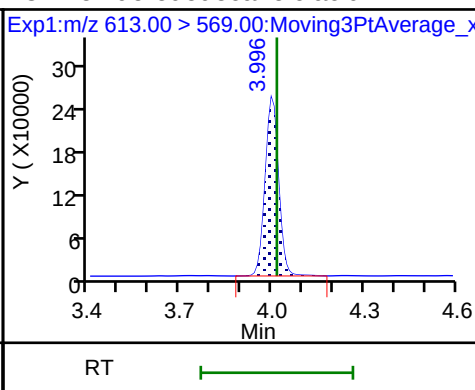
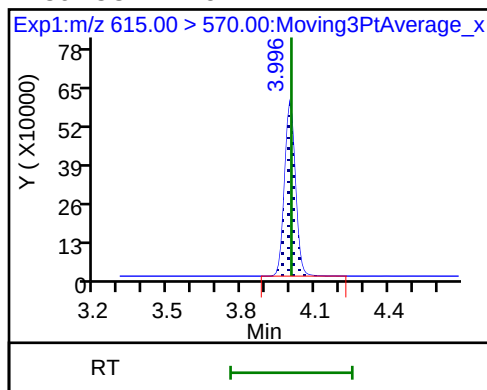




D 36 13C2 PFDaA

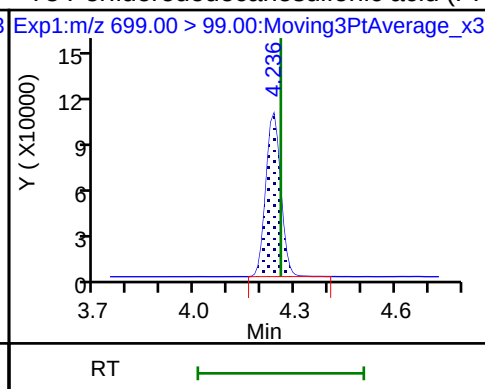
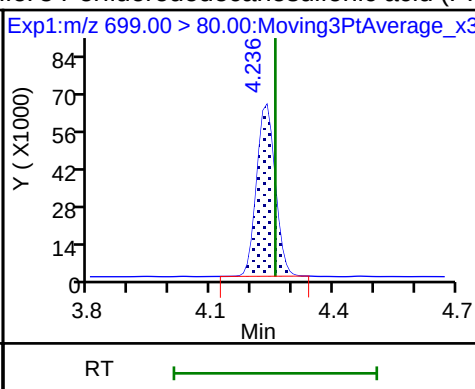
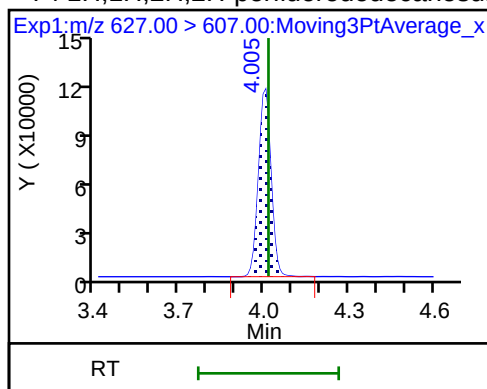
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

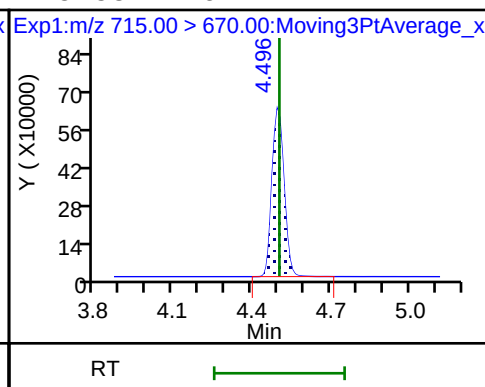
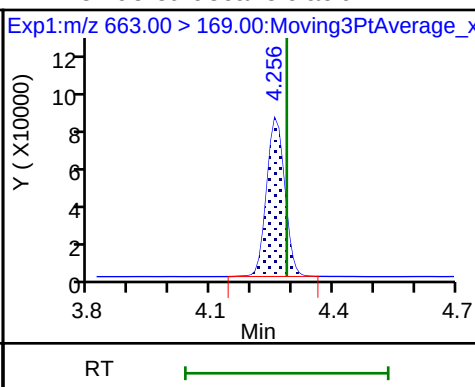
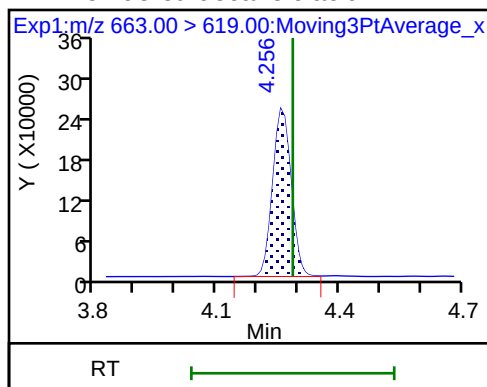
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

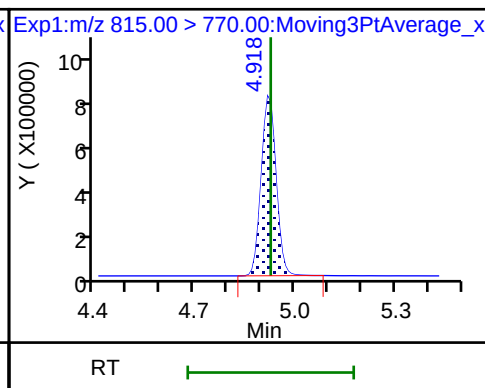
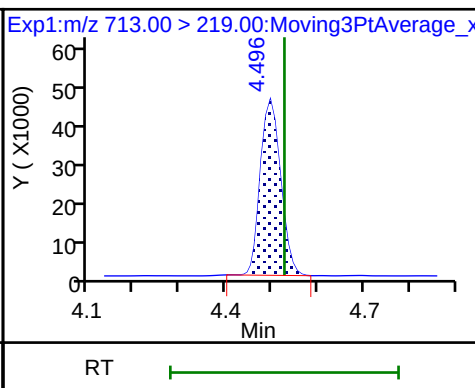
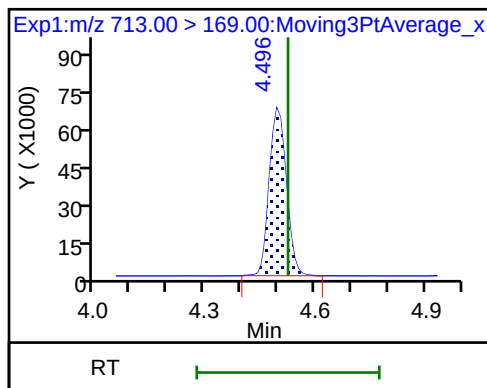
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

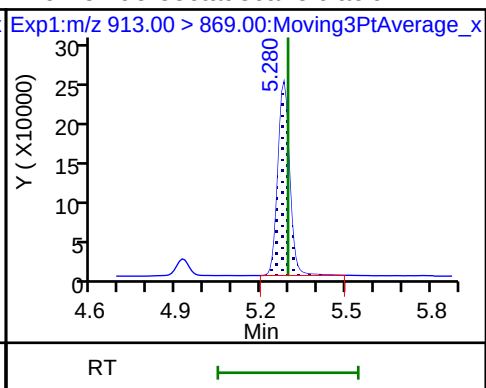
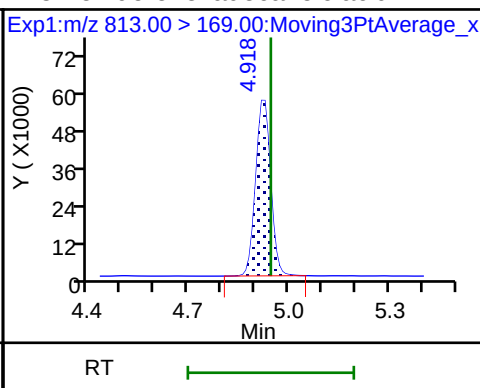
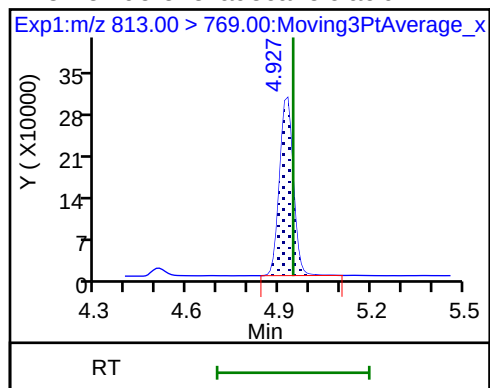
D 44 13C2-PFHxDA



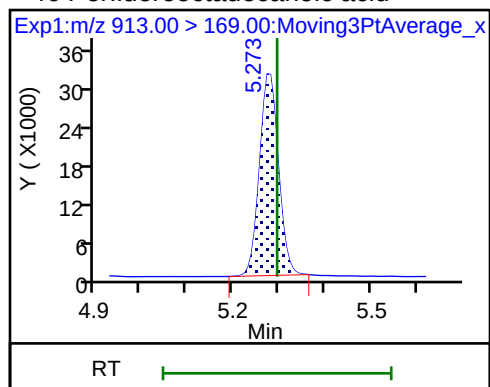
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



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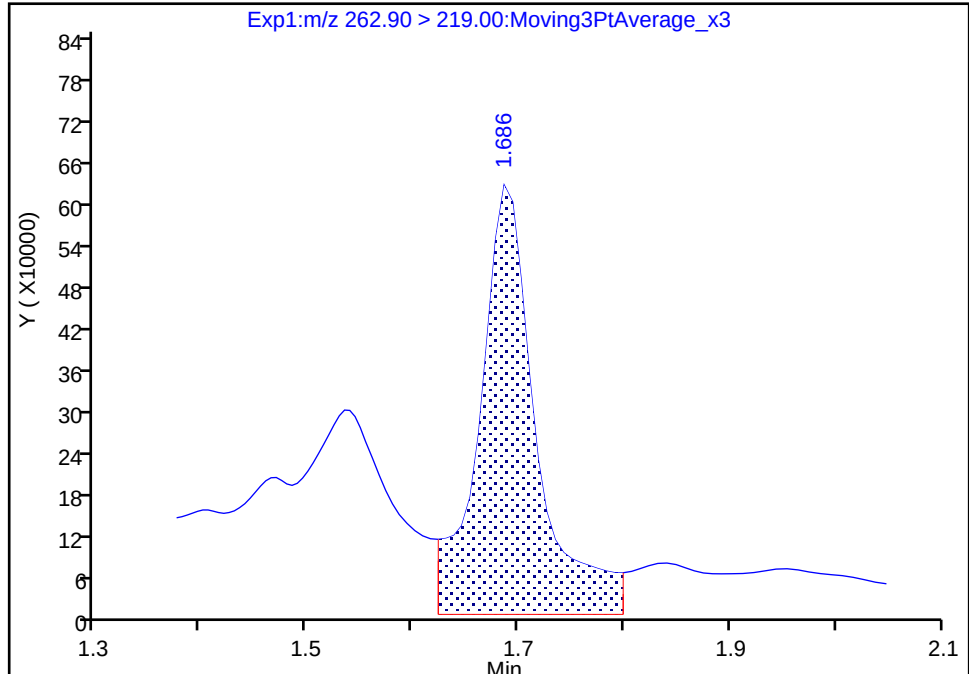
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Injection Date: 06-Oct-2018 20:04:38 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-B MS
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

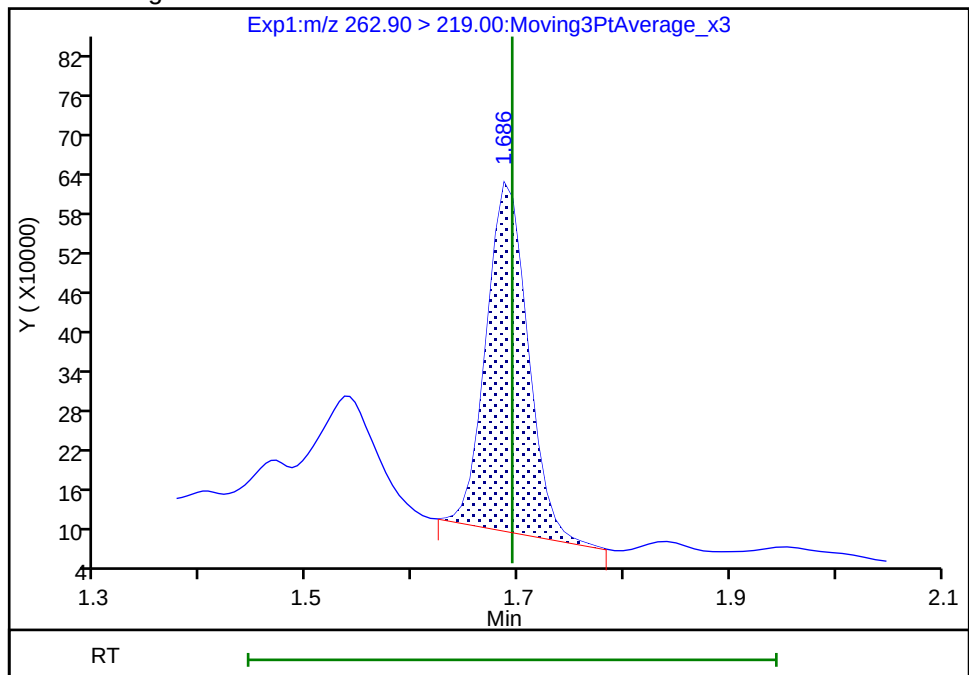
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Area: 2324544
Amount: 3.720153
Amount Units: ng/ml

Processing Integration Results



RT: 1.69
Area: 1456448
Amount: 2.330870
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:43:49

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

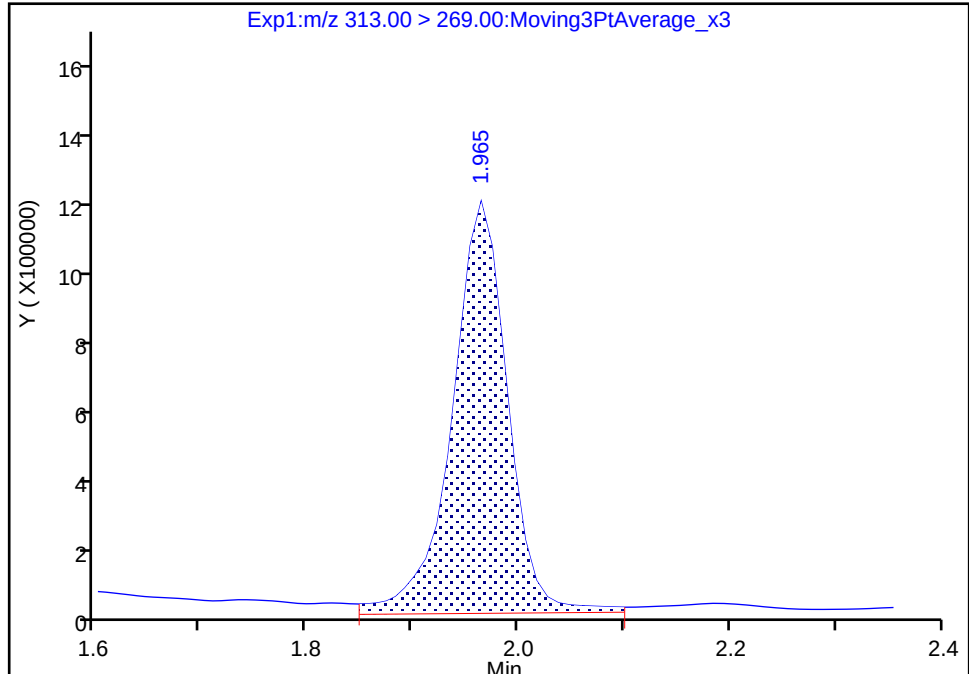
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Lims ID: 480-141919-Y-2-B MS
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

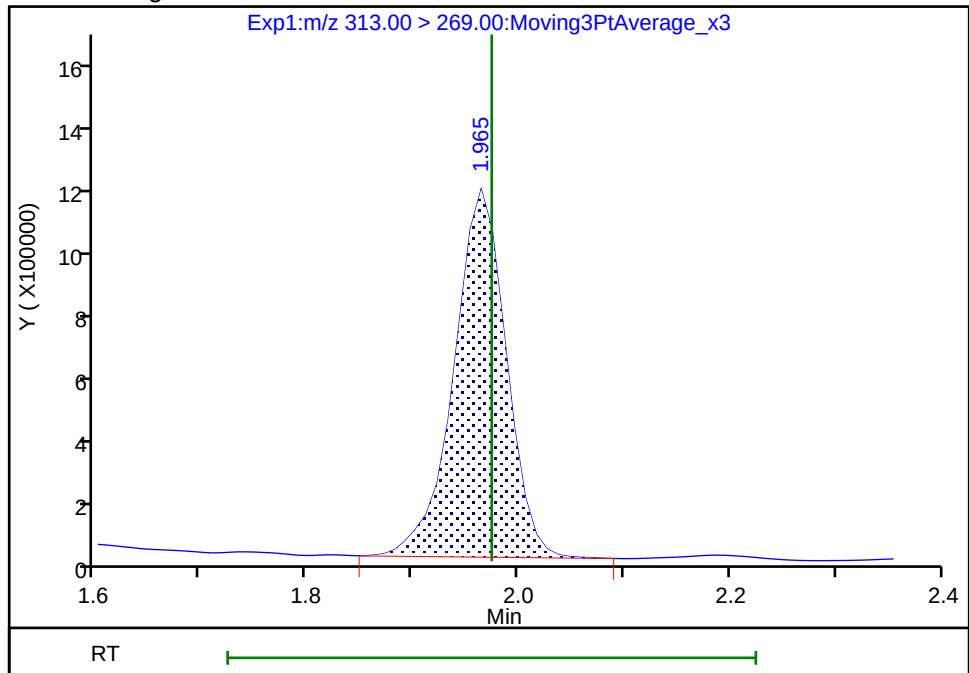
RT: 1.96
Area: 4151142
Amount: 4.942734
Amount Units: ng/ml

Processing Integration Results



RT: 1.96
Area: 3835235
Amount: 4.566586
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:44:11

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

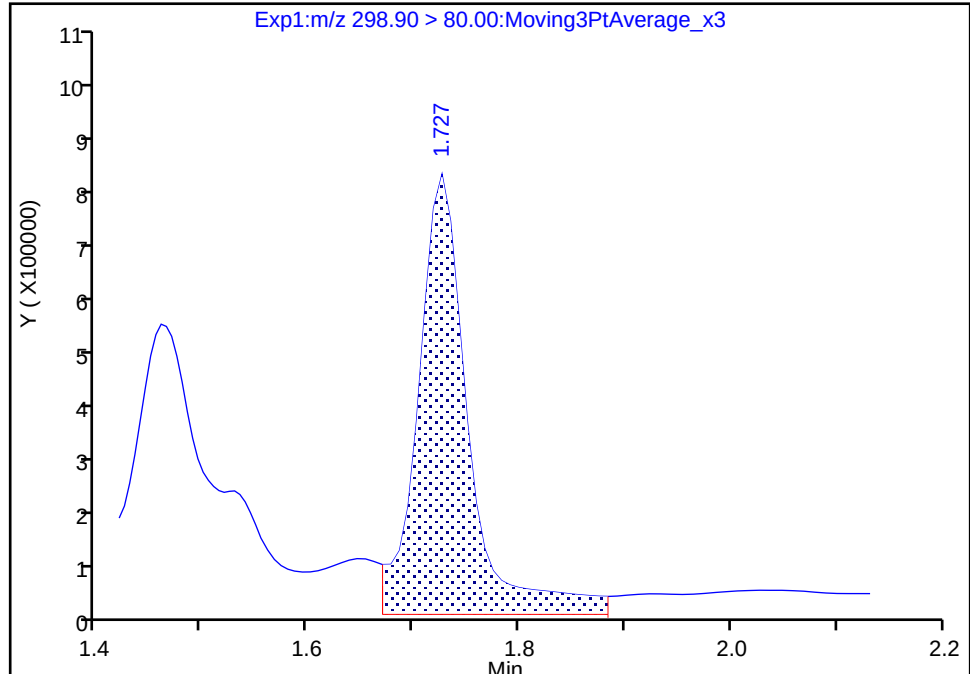
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Lims ID: 480-141919-Y-2-B MS
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

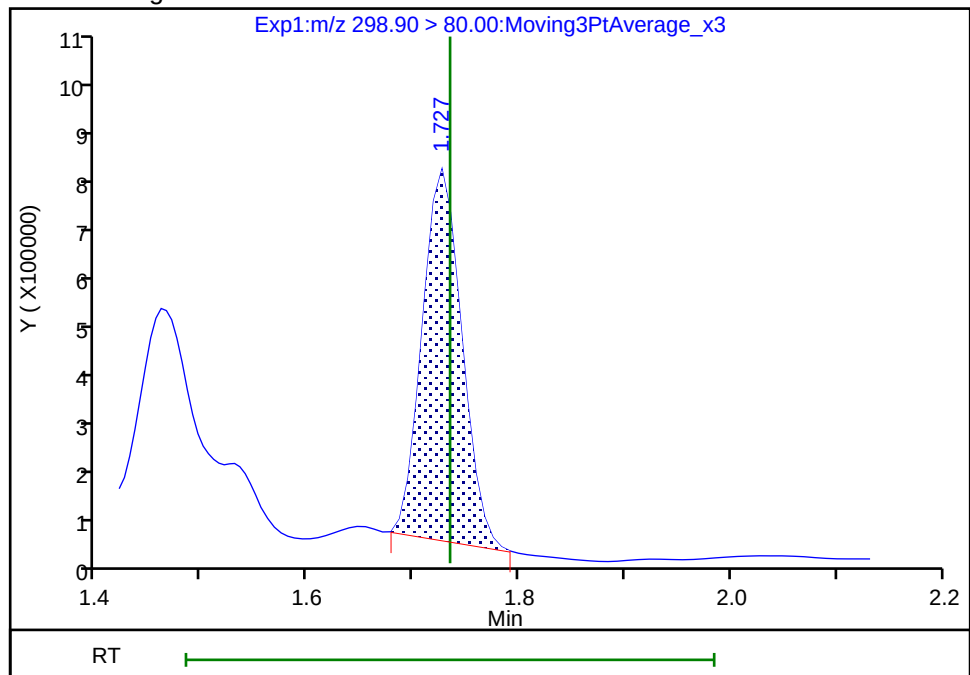
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Area: 2585330
Amount: 1.556590
Amount Units: ng/ml

Processing Integration Results



RT: 1.73
Area: 1855335
Amount: 1.117070
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:43:57

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

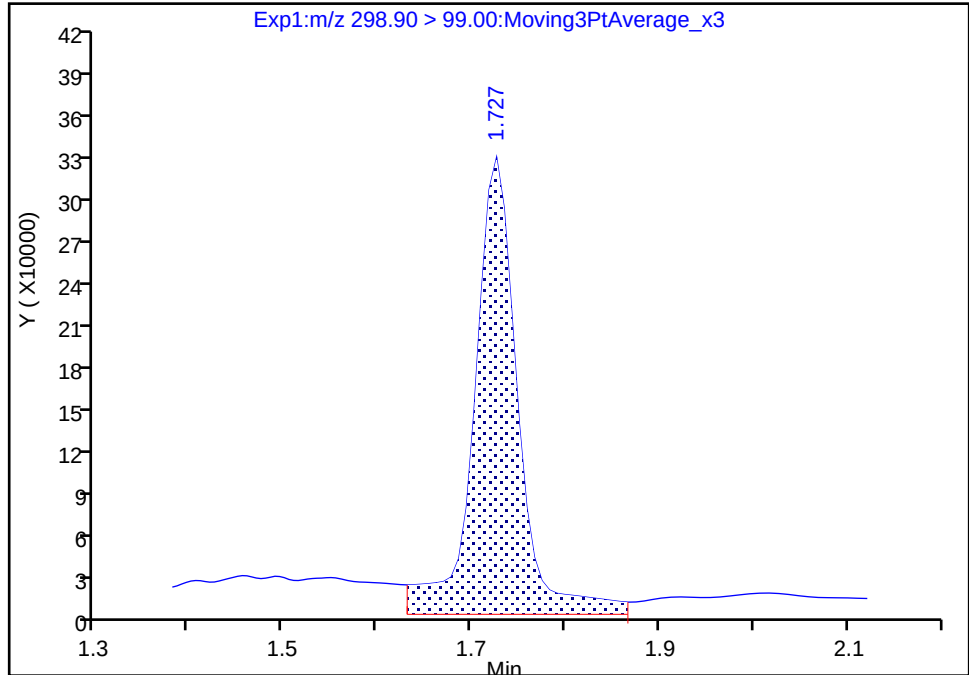
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Lims ID: 480-141919-Y-2-B MS
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

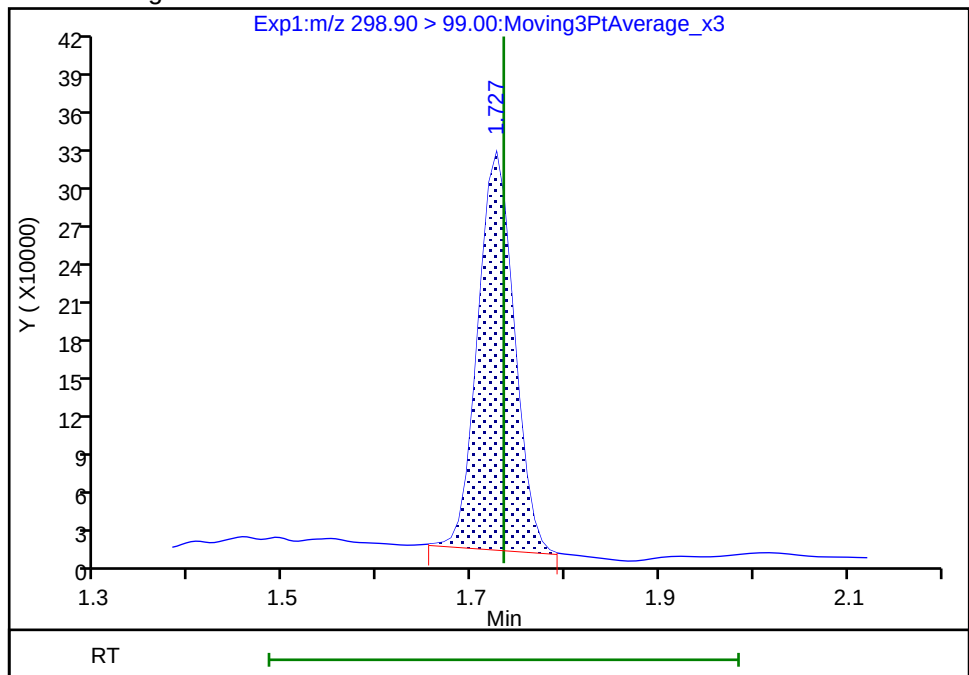
RT: 1.73
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Amount: 1.556590
Amount Units: ng/ml

Processing Integration Results



RT: 1.73
Area: 819860
Amount: 1.117070
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:44:02

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

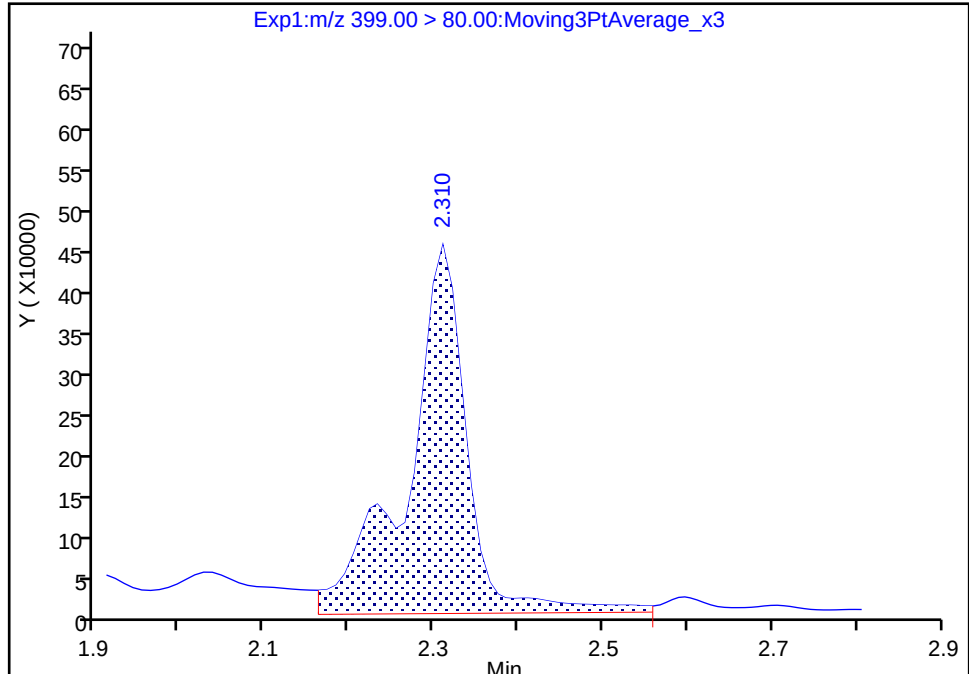
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Lims ID: 480-141919-Y-2-B MS
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

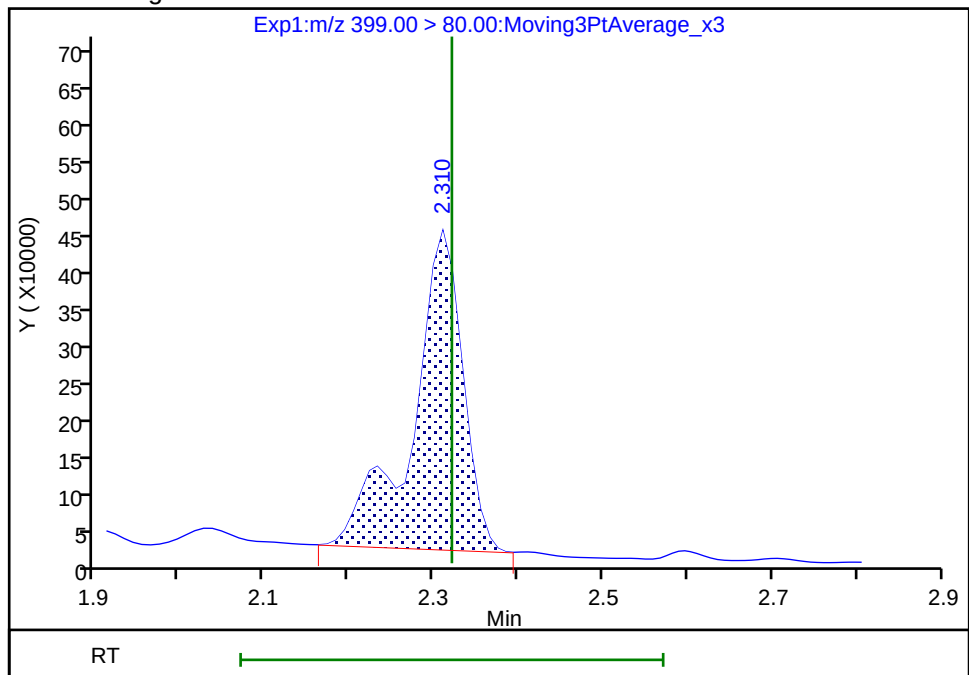
RT: 2.31
Area: 2208764
Amount: 1.560037
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 1776652
Amount: 1.254839
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakuld, 11-Oct-2018 10:44:46

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

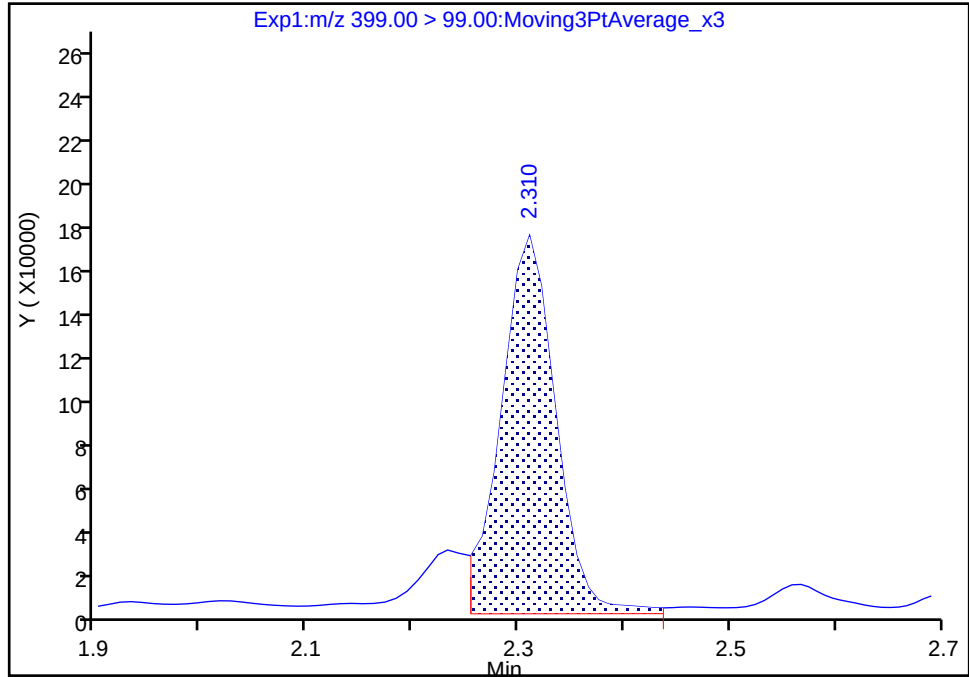
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Injection Date: 06-Oct-2018 20:04:38 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-B MS
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

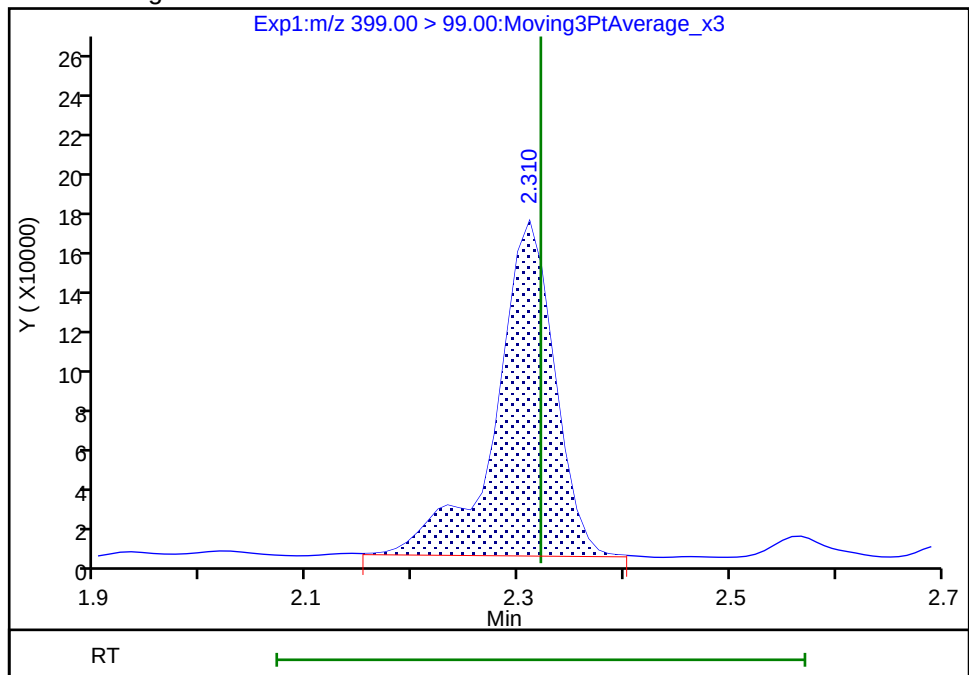
RT: 2.31
Area: 622771
Amount: 1.560037
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 663304
Amount: 1.254839
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:44:53

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

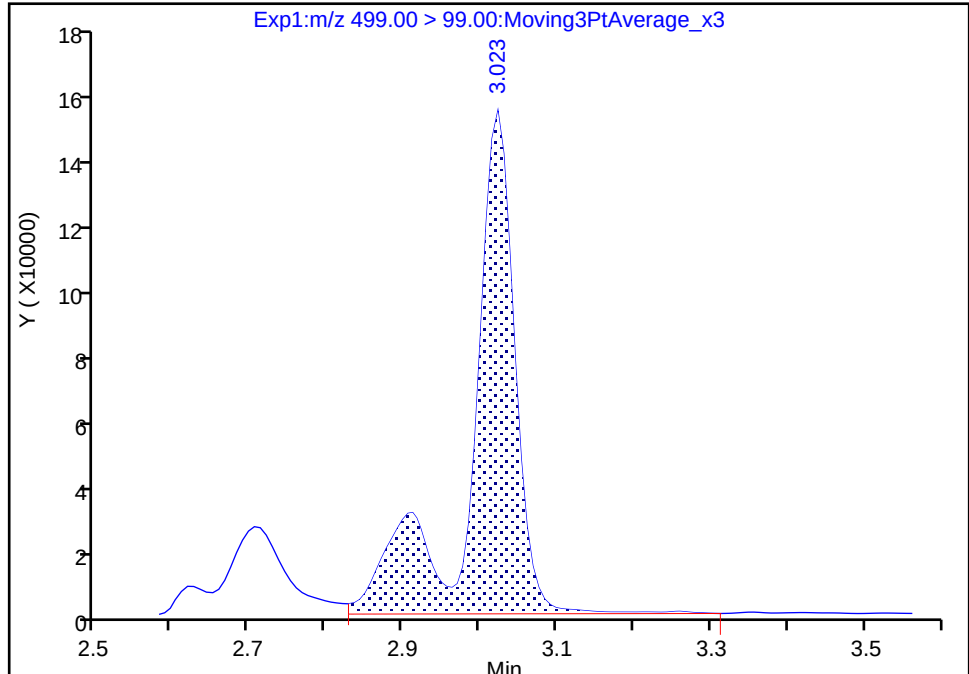
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Injection Date: 06-Oct-2018 20:04:38 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-B MS
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

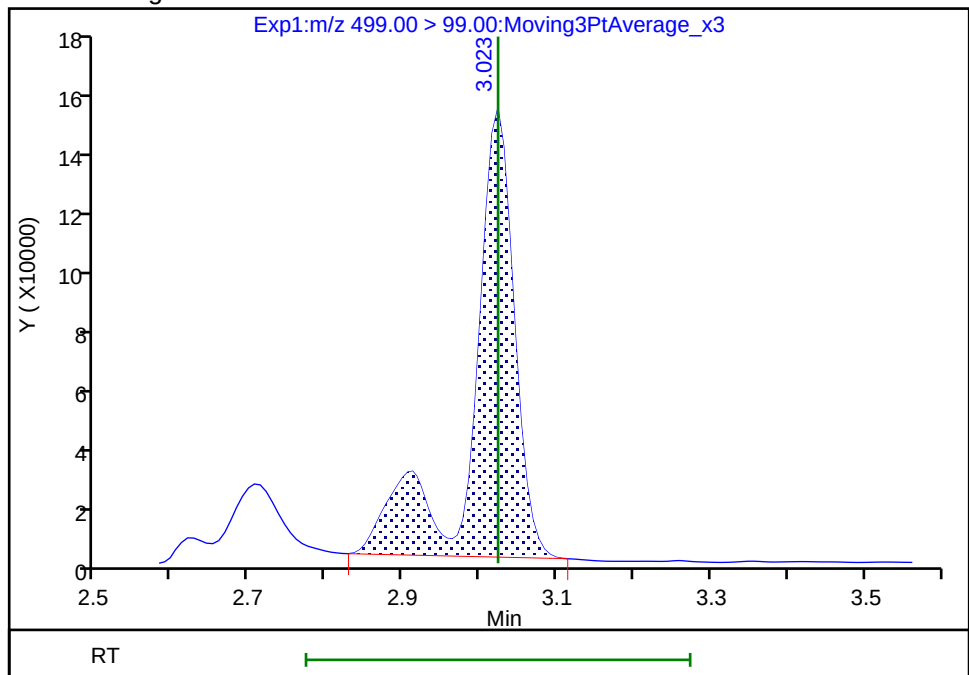
RT: 3.02
Area: 611379
Amount: 2.685899
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 567397
Amount: 2.685899
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakuld, 11-Oct-2018 10:45:24

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>480-141919-Y-2-B MS DL</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_019.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/18/2018 14:30</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>266.4 (mL)</u>	Date Analyzed: <u>10/06/2018 19:57</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>10</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	255.1		18.8	3.28
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	38.48	J	188	29.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	55.68	J	188	17.8
27619-97-2	6:2 FTS	88.08	J	188	18.8
39108-34-4	8:2 FTS	39.57	J	188	18.8

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	65		25-150
STL02118	d3-NMeFOSAA	122		25-150
STL02117	d5-NEtFOSAA	123		25-150
STL02279	M2-6:2 FTS	234	*	25-150
STL02280	M2-8:2 FTS	123		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_019.d
 Lims ID: 480-141919-Y-2-B MS
 Client ID: CRL-2I
 Sample Type: MS
 Inject. Date: 06-Oct-2018 19:57:10 ALS Bottle#: 13 Worklist Smp#: 17
 Injection Vol: 2.0 ul Dil. Factor: 10.0000
 Sample Info: 480-141919-y-2-b ms 10X
 Misc. Info.: Plate: 1 Rack: 6
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:42:23 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK010

First Level Reviewer: ruangyotsakuld

Date: 11-Oct-2018 10:42:23

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	1.421	1.423	-0.002	0.538	317750	0.1615		64.6	705	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.421	1.431	-0.010	1.000	820117	0.6795		679	40.4	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.686	1.684	0.002	0.638	265109	0.2008		80.3	236	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.686	1.694	-0.008	1.000	277257	0.2356		236	3.5	M
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.716	0.010	0.653	5344	0.1898		81.6	7.4	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.726	1.734	-0.008	1.000	258761	0.1448		164	4.5	M
298.90 > 99.00	1.726	1.734	-0.008	1.000	120424		2.15(1.25-3.74)		7.0	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.933	1.933	0.0	1.120	72291	0.2424		260	179	
D 7 13C2 PFHxA										
315.00 > 270.00	1.964	1.960	0.004	0.743	312610	0.2156		86.2	1243	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.964	1.975	-0.011	1.000	597418	0.4850		485	25.1	
313.00 > 119.00	1.964	1.975	-0.011	1.000	58451		10.22(5.03-15.10)		43.9	
70 Perfluoropentanesulfonic acid										M
349.00 > 80.00	1.985	1.995	-0.010	1.150	188430	0.1223		130	20.5	M
349.00 > 99.00	1.985	1.995	-0.010	1.150	65271		2.89(1.36-4.07)		15.0	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.069	2.054	0.015	0.783	16746	0.1590		63.6	38.4	
67 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	2.058	2.069	-0.011	0.995	18141	0.0941		94.1	3.4	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.288	2.281	0.007	0.866	325592	0.2499		100.0	2821	

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	2.299	2.299	0.0	1.005	275463	0.1887		189	17.3	
363.00 > 169.00	2.288	2.299	-0.011	1.000	109612		2.51(1.13-3.40)		21.5	
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.303	0.007	0.874	326725	0.2007		84.9	1635	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.310	2.321	-0.011	1.000	205387	0.1349		148	23.8	M
399.00 > 99.00	2.310	2.321	-0.011	1.000	76221		2.69(1.50-4.49)		26.2	M
77 DONA										
377.00 > 251.00	2.332	2.343	-0.011	0.772	349863	0.0957		102	968	
377.00 > 85.00	2.332	2.343	-0.011	0.772	198579		1.76(0.85-2.54)		124	
D 12 M2-6:2FTS										
429.00 > 81.00	2.612	2.609	0.003	0.988	121769	0.5551		234	136	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.620	2.627	-0.007	1.003	204756	0.2346		248	295	
D 14 13C4 PFOA										
417.00 > 372.00	2.643	2.640	0.003	1.000	321838	0.2544		102	2325	
* 62 13C2-PFOA										
415.00 > 370.00	2.643	2.651	-0.008		325269	0.2500			2142	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.643	2.651	-0.008	1.000	494373	0.3260		326	54.5	M
413.00 > 169.00	2.651	2.651	0.0	1.003	337070		1.47(0.84-2.52)		237	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.658	2.658	0.0	0.879	126667	0.1077		113	113	
449.00 > 99.00	2.658	2.658	0.0	0.879	32827		3.86(1.94-5.82)		40.3	
D 19 13C5 PFNA										
468.00 > 423.00	3.023	3.006	0.017	1.144	252832	0.2377		95.1	1765	
D 18 13C4 PFOS										
503.00 > 80.00	3.023	3.014	0.009	1.144	224669	0.2132		89.2	435	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.023	3.023	0.0	1.000	295670	0.2754		297	89.7	M
499.00 > 99.00	3.023	3.023	0.0	1.000	65469		4.52(2.31-6.93)		12.3	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.023	3.023	0.0	1.000	102275	0.0939		93.9	26.6	
463.00 > 169.00	3.023	3.023	0.0	1.000	24407		4.19(1.90-5.69)		41.6	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.235	3.243	-0.008	1.070	168632	0.0949		102	672	
D 26 M2-8:2FTS										
529.00 > 81.00	3.371	3.362	0.009	1.276	68715	0.2957		123	249	
D 21 13C8 FOSA										
506.00 > 78.00	3.364	3.362	0.002	1.273	305975	0.2087		83.5	1572	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.364	3.364	0.0	1.000	123040	0.1045		104	490	
D 23 13C2 PFDA										
515.00 > 470.00	3.378	3.369	0.009	1.278	218027	0.2317		92.7	1823	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.371	3.379	-0.008	1.115	66536	0.0863		89.9	181	
549.00 > 99.00	3.371	3.379	-0.008	1.115	24005		2.77(1.33-3.97)		146	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.371	3.379	-0.008	1.000	36550	0.1054	110	374	
24 Perfluorodecanoic acid	513.00 > 469.00	3.386	3.386	0.0	1.002	84720	0.0968	96.8	67.2	
	513.00 > 169.00	3.378	3.386	-0.008	1.000	15925	5.32(2.36-7.09)		116	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.538	3.529	0.009	1.339	117028	0.3062	122	767	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.546	3.547	-0.001	1.002	46503	0.1025	103	207	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.708	3.699	0.009	1.403	126468	0.3075	123	326	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.700	3.701	-0.001	1.224	57602	0.0955	99.1	208	
	599.00 > 99.00	3.700	3.701	-0.001	1.224	17527	3.29(1.39-4.16)		168	
D 30 13C2 PFUnA	565.00 > 520.00	3.717	3.707	0.010	1.406	164020	0.2282	91.3	1173	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.717	3.718	-0.001	1.000	51511	0.0895	89.5	45.7	
	563.00 > 169.00	3.717	3.718	-0.001	1.000	13637	3.78(2.12-6.36)		78.7	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.717	3.718	-0.001	1.002	65326	0.1483	148	219	M
										M
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.879	3.881	-0.002	1.283	232663	0.0868	92.1	878	
D 36 13C2 PFDaA	615.00 > 570.00	4.012	4.003	0.009	1.518	171706	0.2268	90.7	954	
37 Perfluorododecanoic acid	613.00 > 569.00	4.012	4.015	-0.003	1.000	68155	0.0905	90.5	60.1	
	613.00 > 169.00	4.012	4.015	-0.003	1.000	17818	3.83(2.13-6.40)		224	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.021	4.015	0.006	1.193	20965	0.0852	88.4	238	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.254	4.257	-0.003	1.407	22887	0.0836	86.4	189	
	699.00 > 99.00	4.254	4.257	-0.003	1.407	31621	0.72(0.00-0.00)		303	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.282	4.285	-0.003	1.067	75308	0.1033	103	74.6	
	663.00 > 169.00	4.282	4.285	-0.003	1.067	23894	3.15(1.25-3.76)		244	
D 43 13C2-PFTeDA	715.00 > 670.00	4.523	4.504	0.019	1.711	191559	0.2105	84.2	1020	
42 Perfluorotetradecanoic acid	713.00 > 169.00	4.523	4.526	-0.003	1.000	19742	0.1049	105	241	
	713.00 > 219.00	4.523	4.526	-0.003	1.000	13017	1.52(0.71-2.13)		196	
D 44 13C2-PFHxDA	815.00 > 770.00	4.935	4.927	0.008	1.867	260996	0.1588	63.5	1202	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.944	4.945	-0.001	1.002	97975	0.0816	81.6	42.3	
	813.00 > 169.00	4.935	4.945	-0.010	1.000	18074	5.42(2.86-8.58)		307	

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_019.d

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	5.294	5.295	-0.001	1.073	82243	0.0749		74.9	43.8	
913.00 > 169.00	5.294	5.295	-0.001	1.073	10135		8.11(3.83-11.48)		151	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_019.d

Injection Date: 06-Oct-2018 19:57:10

Instrument ID: A8_N

Lims ID: 480-141919-Y-2-B MS

Client ID: CRL-2I

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 17

Injection Vol: 2.0 ul

Dil. Factor: 10.0000

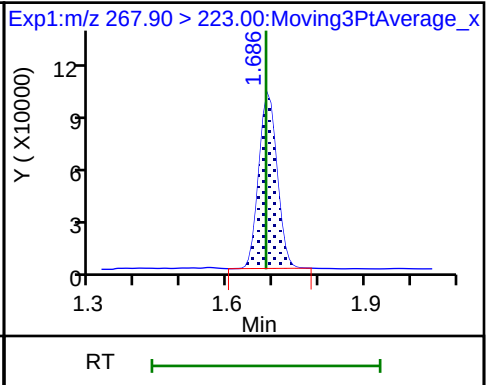
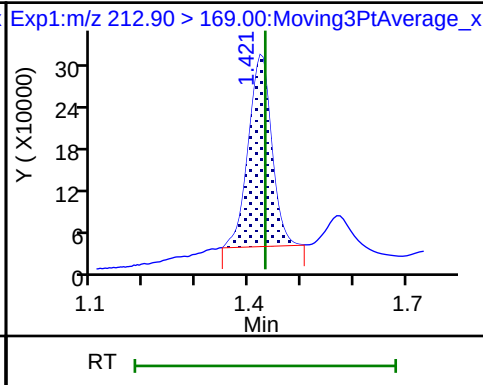
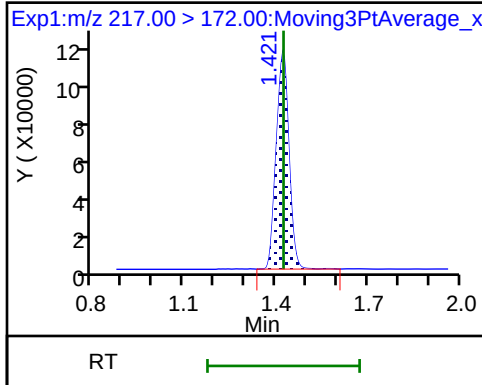
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

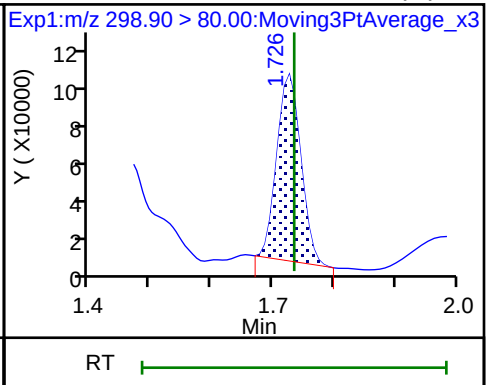
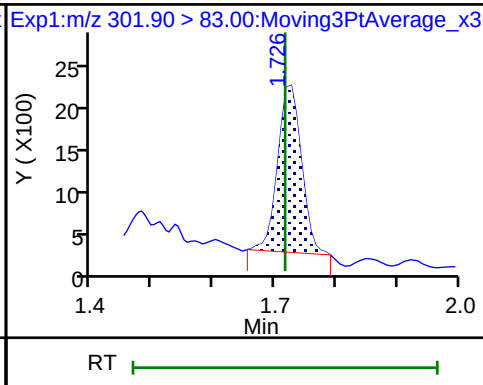
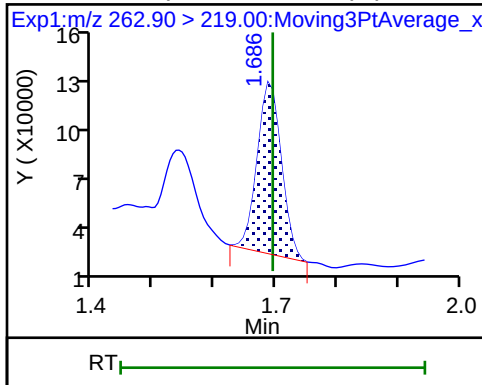
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3-PFBS

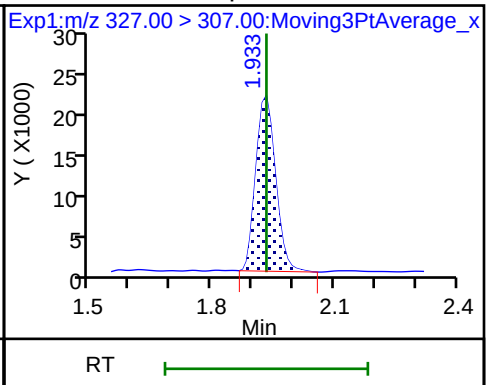
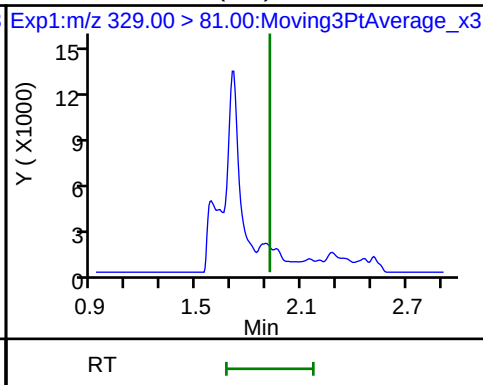
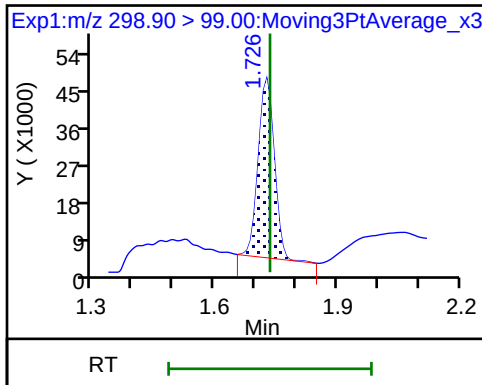
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS (ND)

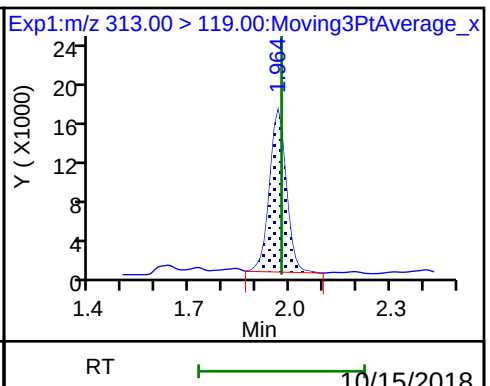
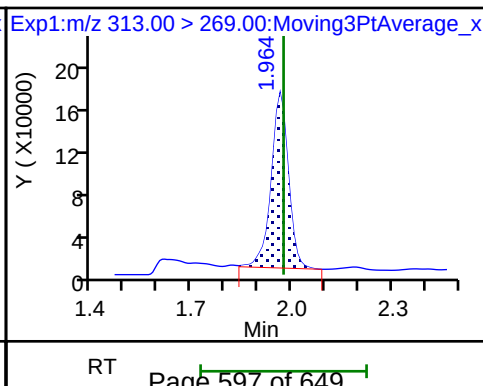
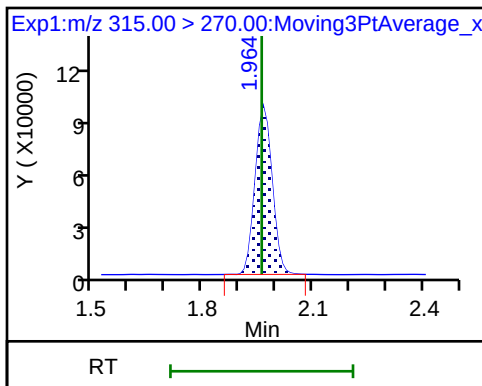
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

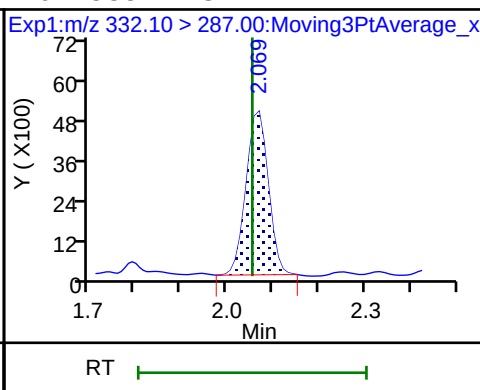
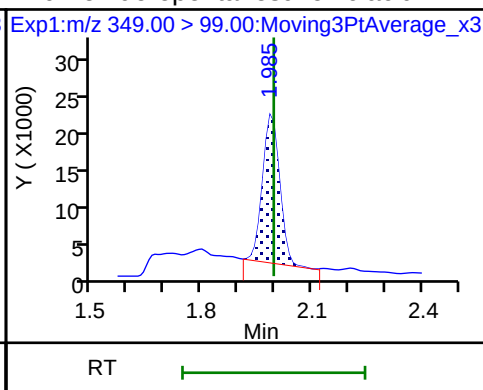
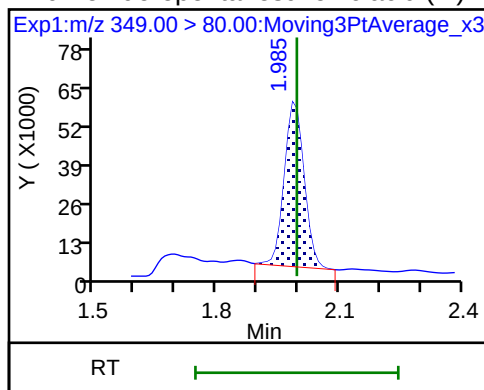
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid (M)

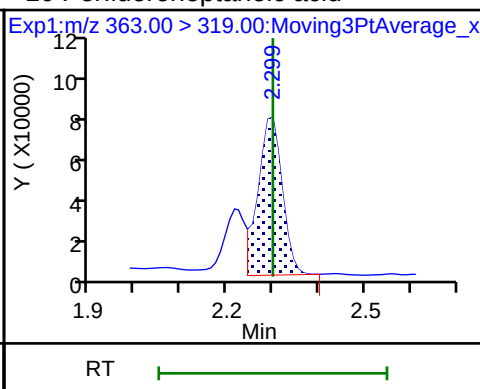
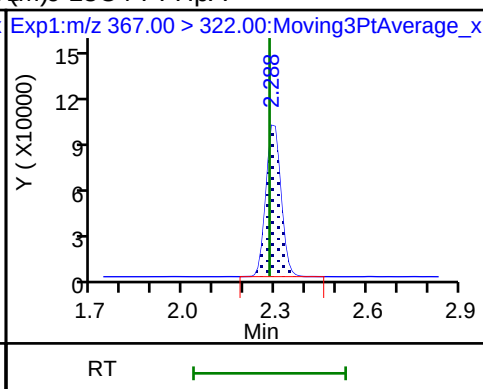
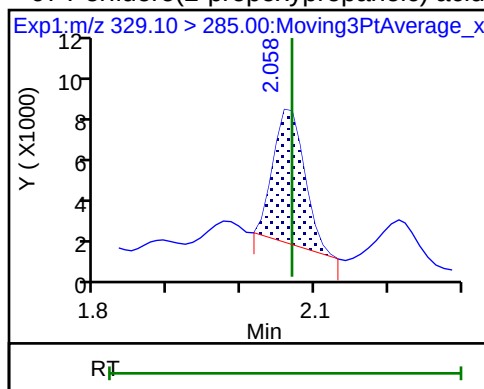
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



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

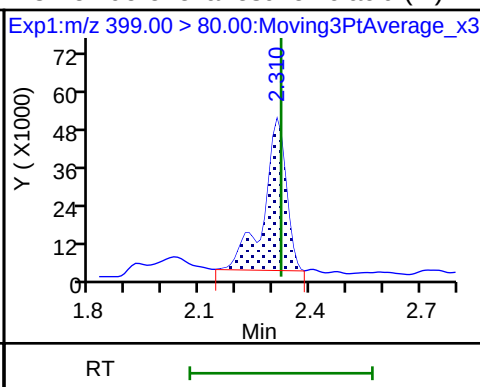
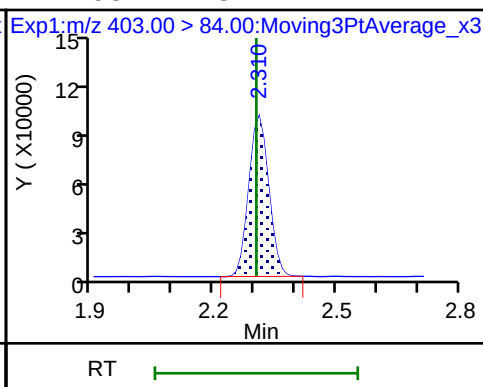
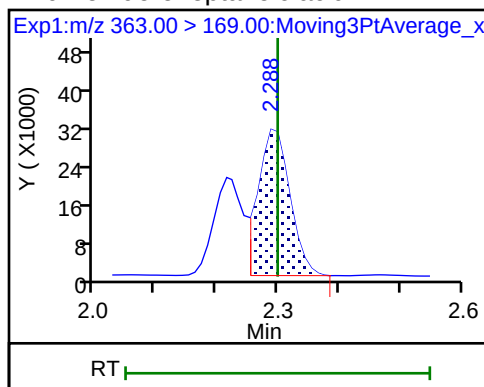
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

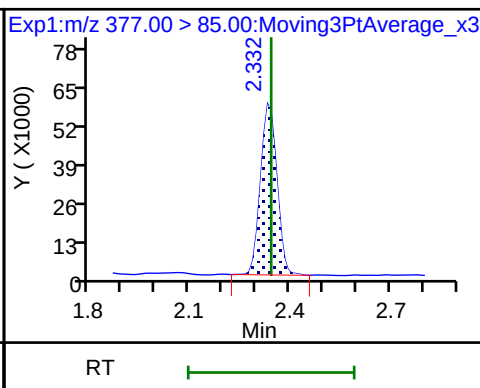
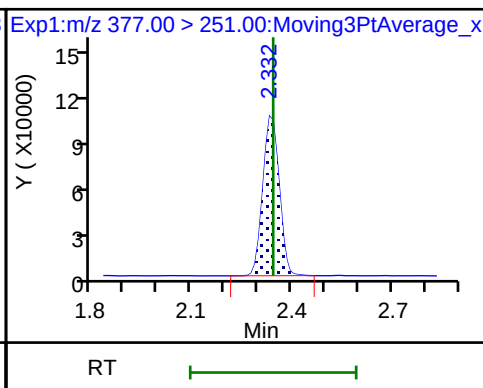
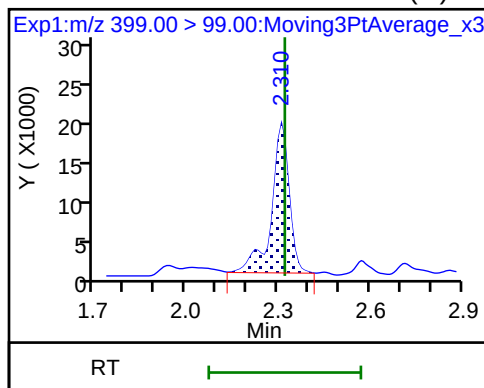
8 Perfluorohexanesulfonic acid (M)



8 Perfluorohexanesulfonic acid (M)

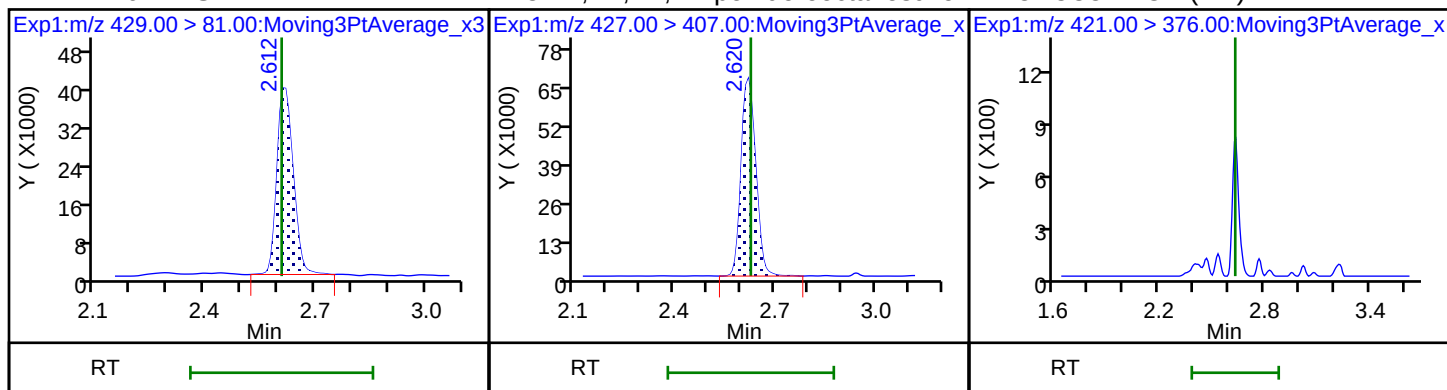
77 DONA

77 DONA



D 12 M2-6:2FTS

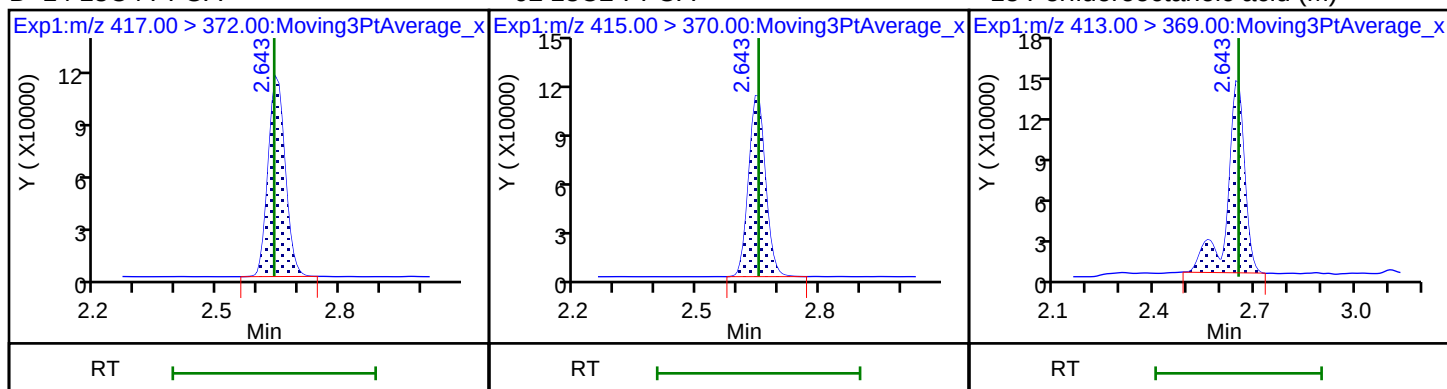
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA (ND)



D 14 13C4 PFOA

* 62 13C2-PFOA

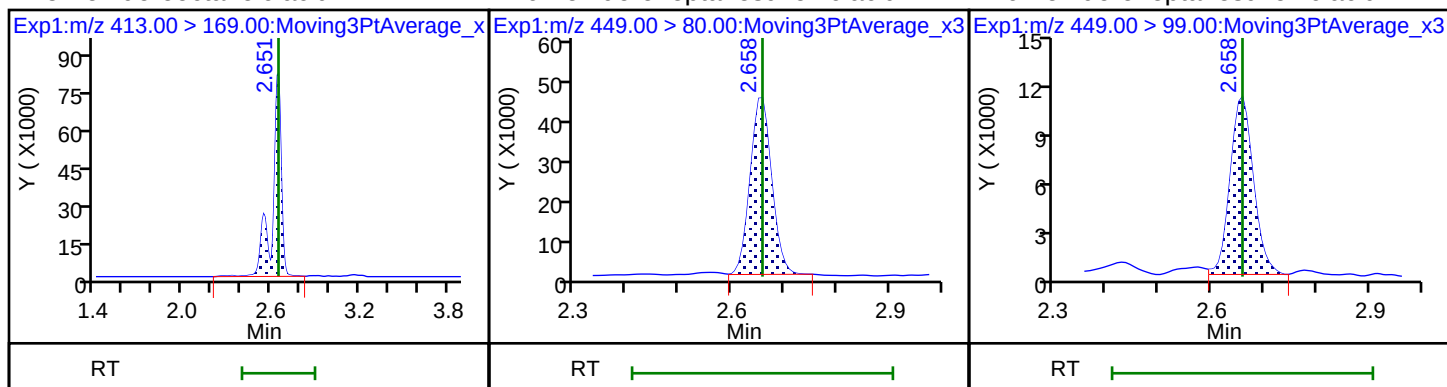
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

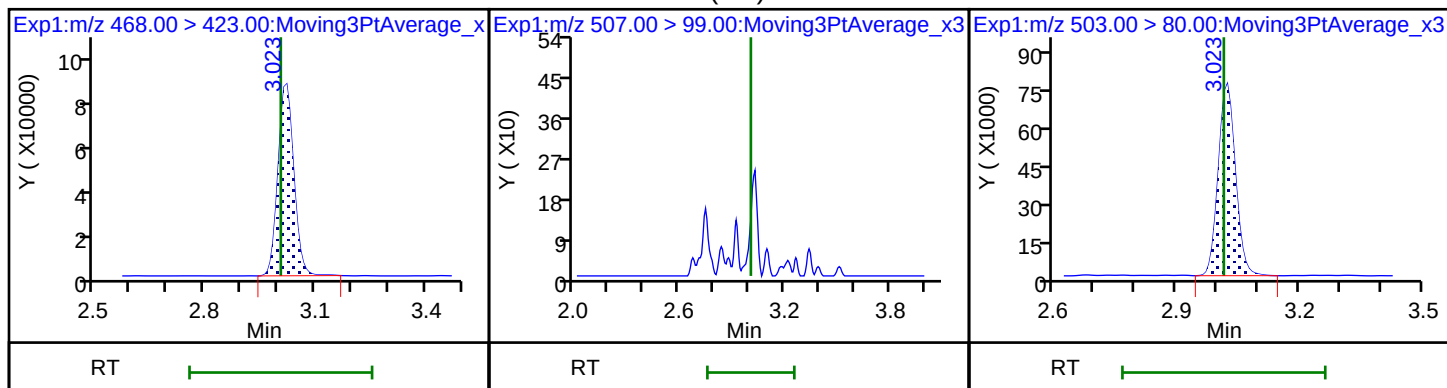
16 Perfluoroheptanesulfonic acid

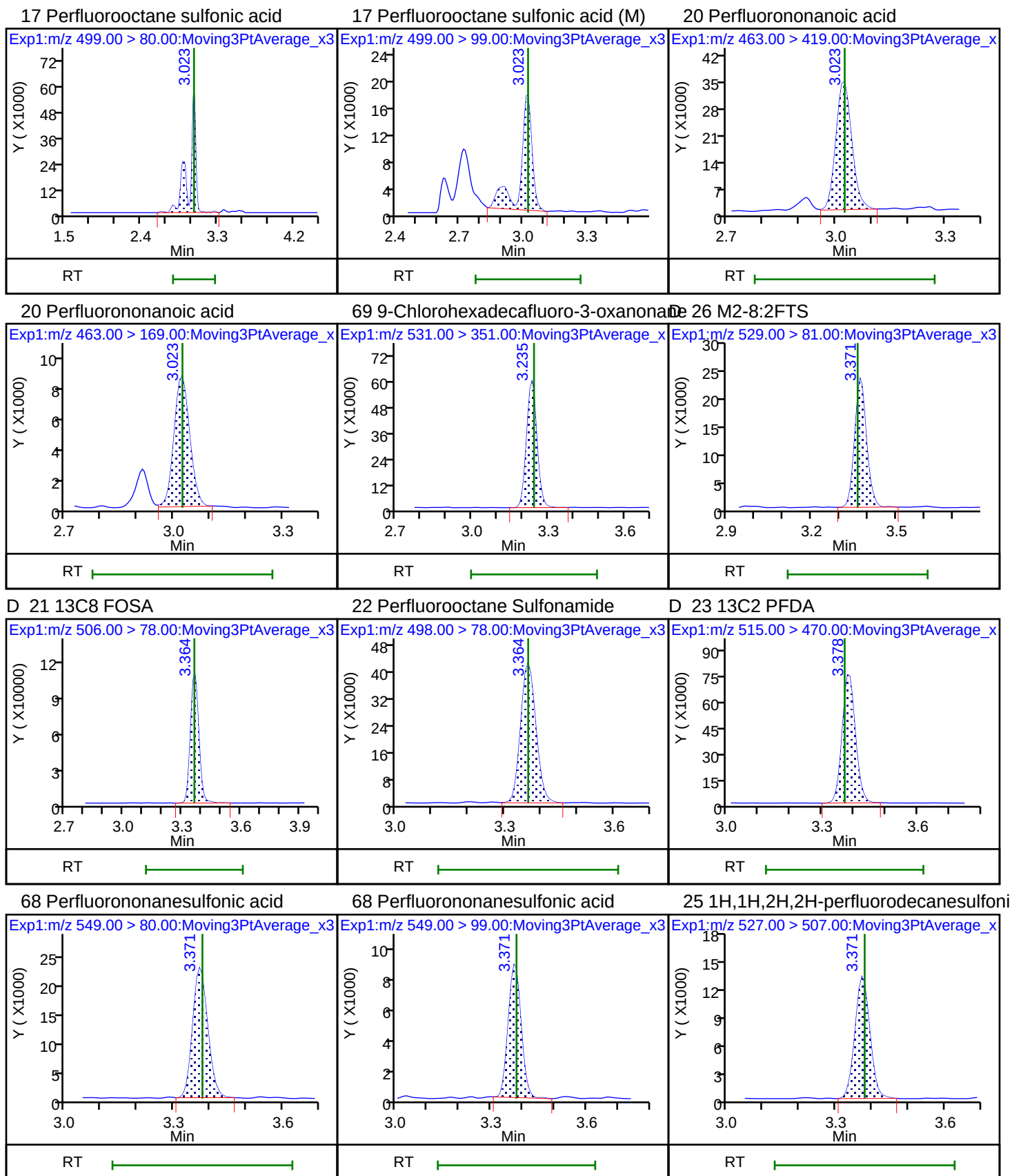


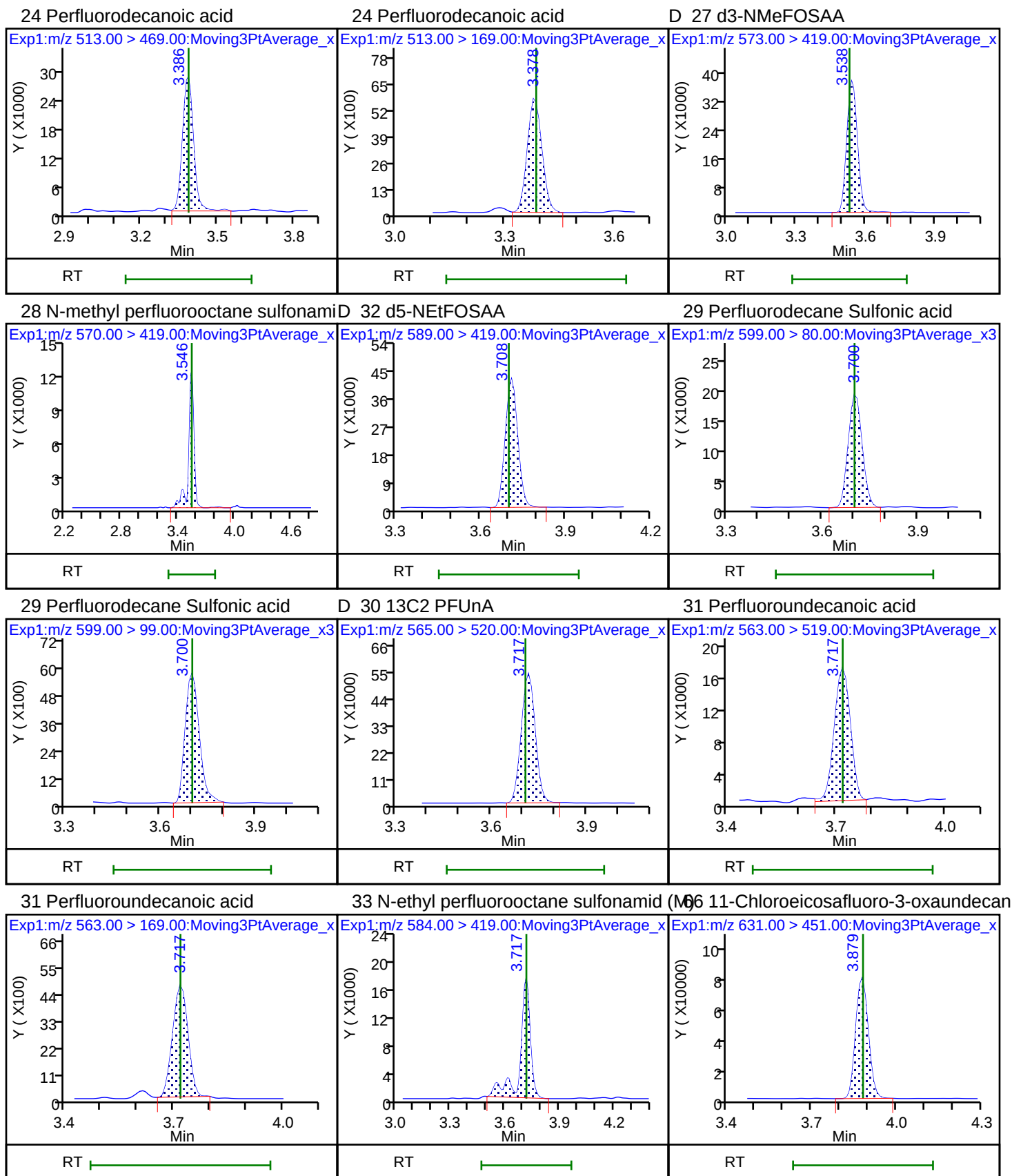
D 19 13C5 PFNA

D 72 13C8 PFOS (ND)

D 18 13C4 PFOS



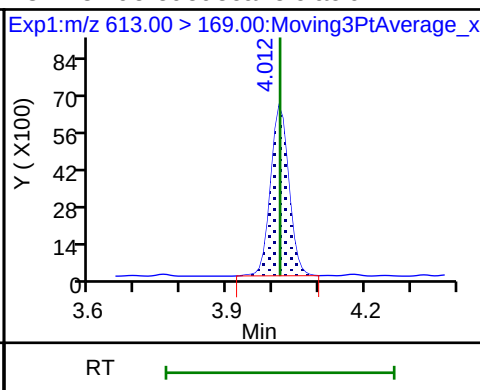
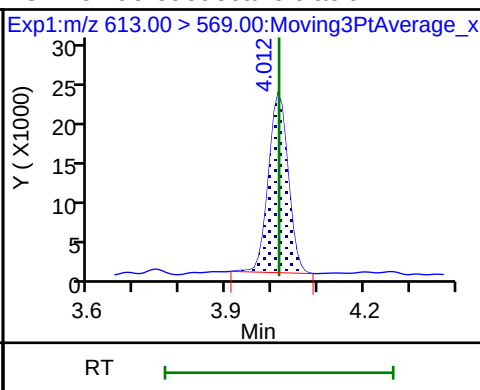
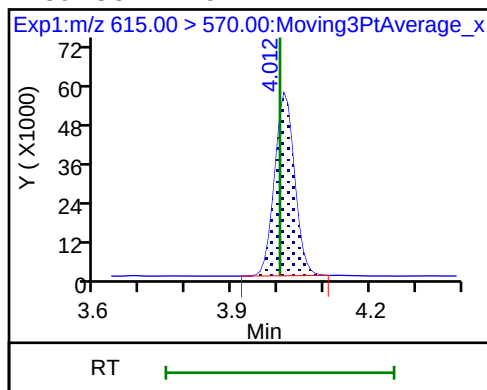




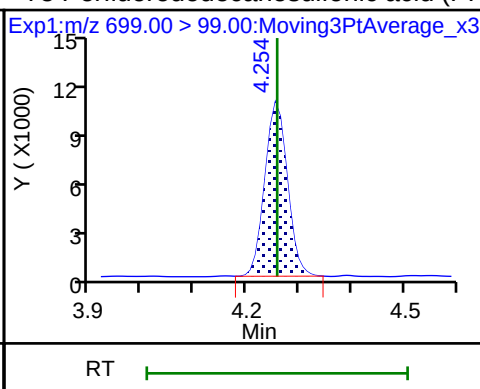
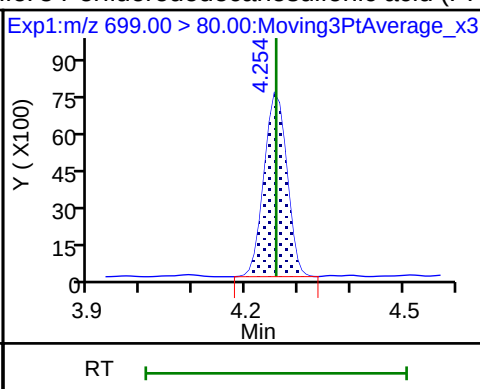
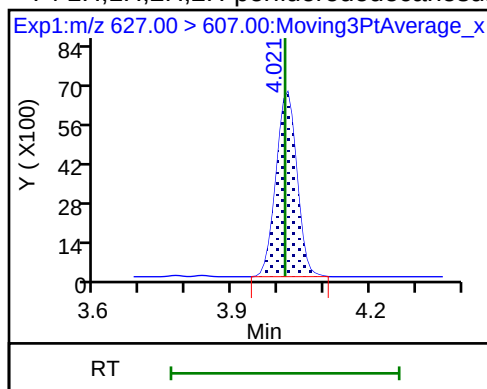
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



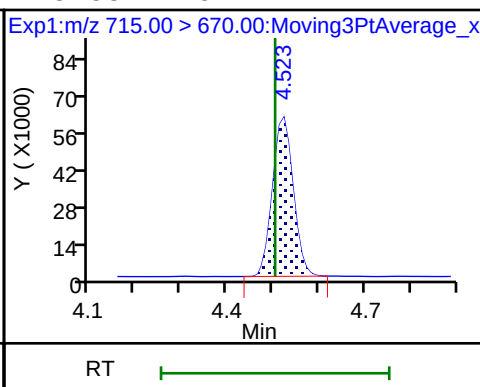
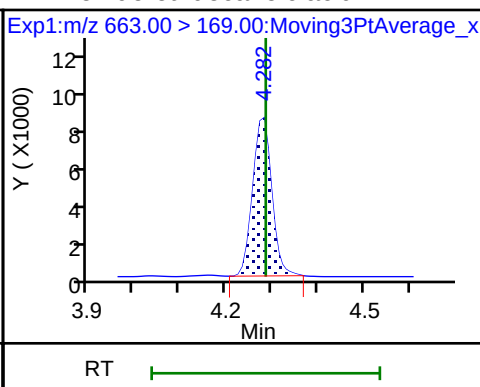
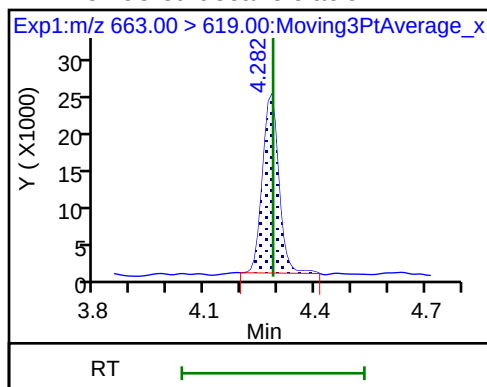
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

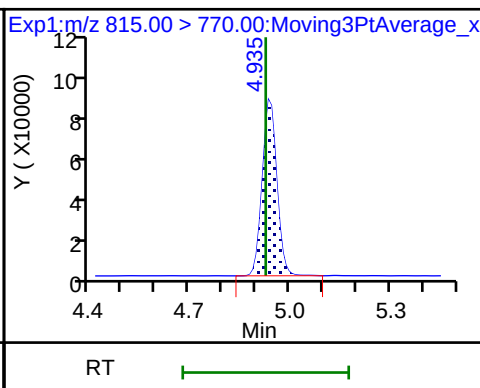
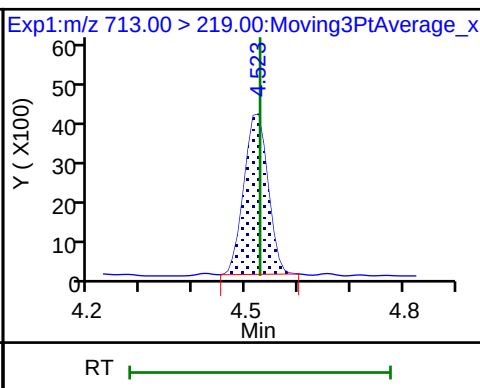
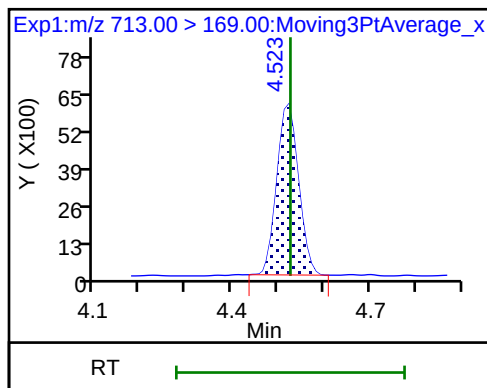
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

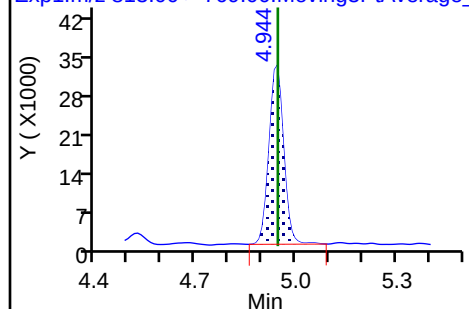


45 Perfluorohexadecanoic acid

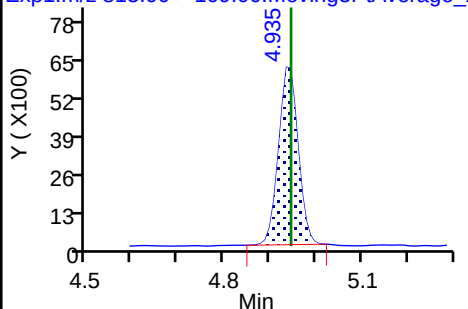
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

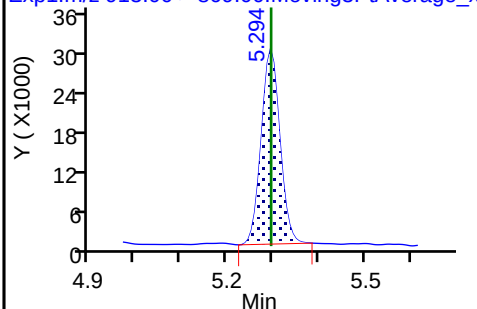
Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

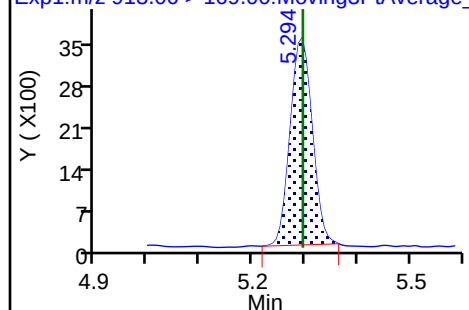


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

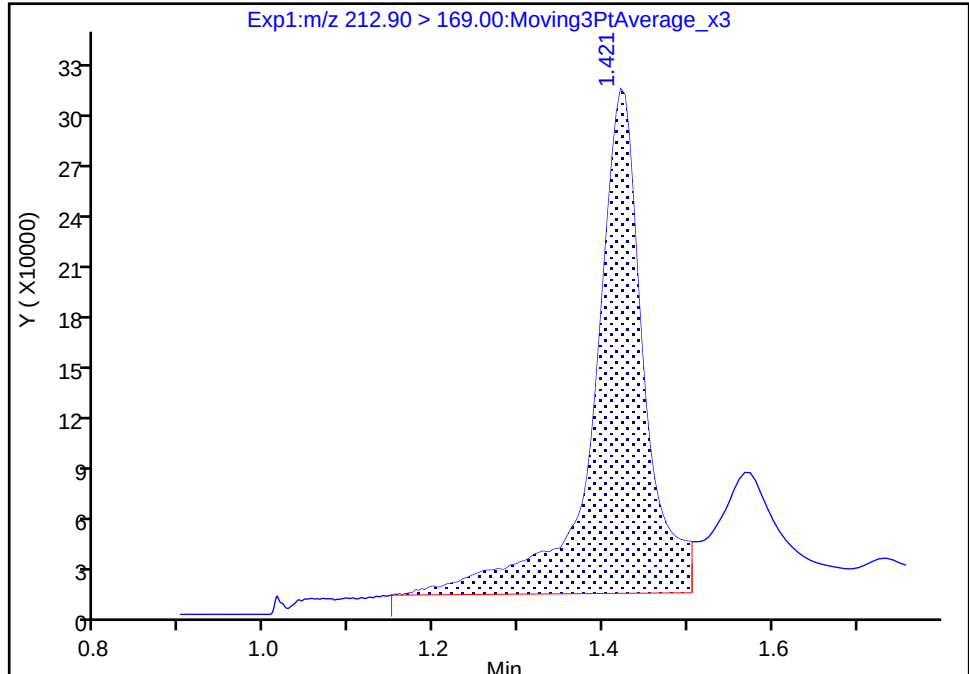
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_019.d
Injection Date: 06-Oct-2018 19:57:10 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-B MS
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

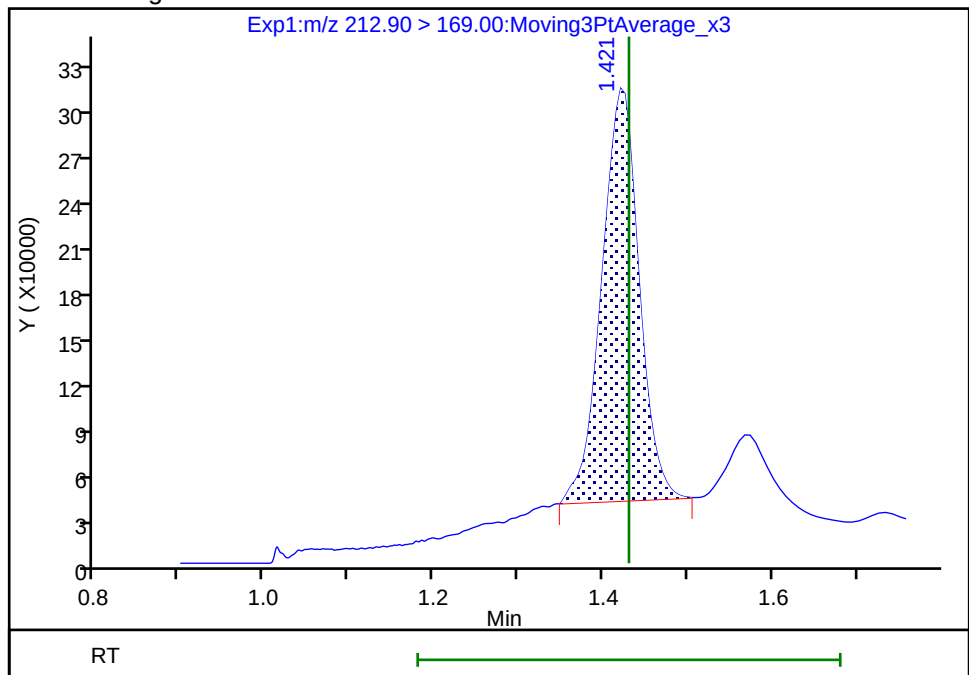
RT: 1.42
Area: 1223742
Amount: 1.013868
Amount Units: ng/ml

Processing Integration Results



RT: 1.42
Area: 820117
Amount: 0.679465
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakuld, 11-Oct-2018 10:40:25

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

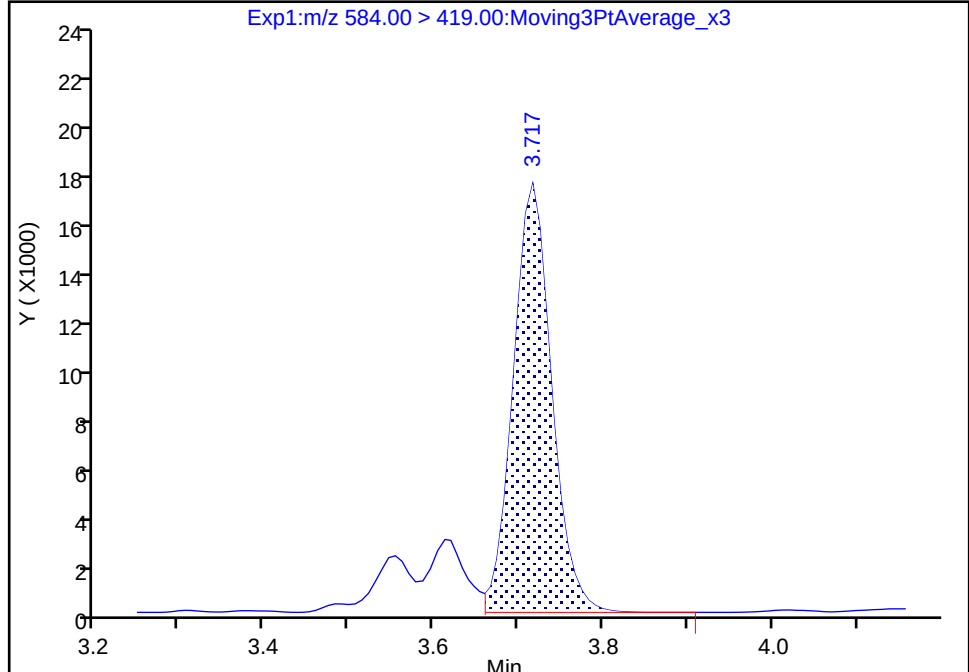
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_019.d
Injection Date: 06-Oct-2018 19:57:10 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-B MS
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

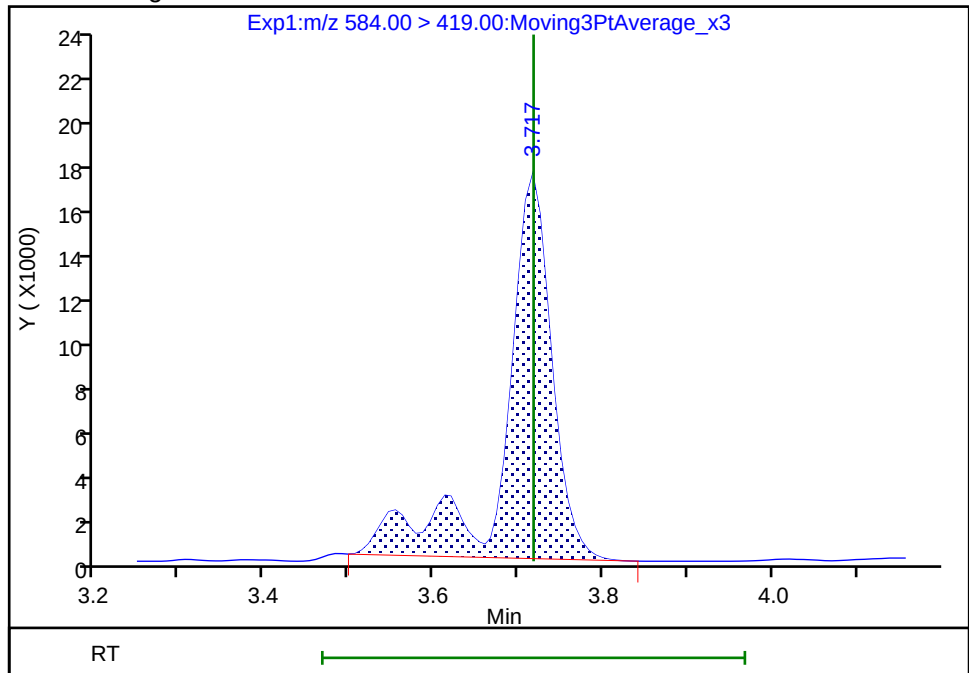
RT: 3.72
Area: 53463
Amount: 0.121405
Amount Units: ng/ml

Processing Integration Results



RT: 3.72
Area: 65326
Amount: 0.148343
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:42:11
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 605 of 649

10/15/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>480-141919-Y-2-C MSD</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_022.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/18/2018 14:30</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>281.3 (mL)</u>	Date Analyzed: <u>10/06/2018 20:19</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
2706-90-3	Perfluoropentanoic acid (PFPeA)	84.89		1.78	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	180.9		1.78	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	72.92		1.78	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	145.1		1.78	0.76
375-95-1	Perfluorononanoic acid (PFNA)	34.88		1.78	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	34.53		1.78	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	36.88		1.78	0.98
307-55-1	Perfluorododecanoic acid (PFDoA)	33.23		1.78	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	34.33		1.78	1.16
376-06-7	Perfluorotetradecanoic acid (PFTeA)	39.49		1.78	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	42.47		1.78	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	47.61		1.78	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	39.14		1.78	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	110.0		1.78	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	33.78		1.78	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	36.94		1.78	0.31

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01893	13C5 PFPeA	55		25-150
STL00993	13C2 PFHxA	70		25-150
STL01892	13C4 PFHpA	87		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	115		25-150
STL00996	13C2 PFDA	124		25-150
STL00997	13C2 PFUnA	127		25-150
STL00998	13C2 PFDoA	119		25-150
STL02116	13C2 PFTeA	109		25-150
STL02337	13C3 PFBS	97		25-150
STL00994	18O2 PFHxS	101		25-150
STL00991	13C4 PFOS	106		25-150
STL01056	13C8 FOSA	109		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_022.d
 Lims ID: 480-141919-Y-2-C MSD
 Client ID: CRL-2I
 Sample Type: MSD
 Inject. Date: 06-Oct-2018 20:19:31 ALS Bottle#: 16 Worklist Smp#: 20
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-141919-y-2-c msd
 Misc. Info.: Plate: 1 Rack: 6
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:51:29 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK010

First Level Reviewer: ruangyotsakuld

Date: 11-Oct-2018 10:51:29

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	1.419	1.423	-0.004	0.538	757060	0.5004		20.0	1266	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.419	1.431	-0.012	1.000	2192101	7.62		762	43.5	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.684	1.684	0.0	0.639	1397772	1.38		55.1	411	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.684	1.694	-0.010	1.000	1481834	2.39		239	5.5	M
D 47 13C3-PFBS										
301.90 > 83.00	1.716	1.716	0.0	0.651	49070	2.27		97.5	15.6	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.724	1.734	-0.010	1.005	1960034	1.19		135	6.9	M
298.90 > 99.00	1.724	1.734	-0.010	1.005	807017		2.43(1.25-3.74)		18.8	M
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.928	1.933	-0.005	1.124	661145	2.41		259	325	
D 7 13C2 PFHxA										
315.00 > 270.00	1.960	1.960	0.0	0.743	1947617	1.75		69.9	2894	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.960	1.975	-0.015	1.000	3904728	5.09		509	38.0	
313.00 > 119.00	1.960	1.975	-0.015	1.000	331788		11.77(5.03-15.10)		74.0	
70 Perfluoropentanesulfonic acid										M
349.00 > 80.00	1.981	1.995	-0.015	1.154	1593722	1.13		120	17.9	M
349.00 > 99.00	1.981	1.995	-0.015	1.154	593933		2.68(1.36-4.07)		29.9	M
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.054	2.054	0.0	0.779	92173	1.14		45.5	45.8	
67 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	2.054	2.069	-0.015	1.000	154898	1.46		146	6.7	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.280	2.281	-0.001	0.865	2174063	2.17		86.8	4302	

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	2.280	2.299	-0.019	1.000	1999593	2.05		205	22.4	
363.00 > 169.00	2.280	2.299	-0.019	1.000	828530		2.41(1.13-3.40)		22.5	
D 11 18O2 PFHxS										
403.00 > 84.00	2.303	2.303	0.0	0.874	2991563	2.39		101	4582	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.303	2.321	-0.018	1.000	1866896	1.34		147	25.5	M
399.00 > 99.00	2.303	2.321	-0.018	1.000	650120		2.87(1.50-4.49)		37.0	M
77 DONA										
377.00 > 251.00	2.325	2.343	-0.018	0.773	2661874	0.7961		84.5	2327	
377.00 > 85.00	2.325	2.343	-0.018	0.773	1640193		1.62(0.85-2.54)		259	
D 12 M2-6:2FTS										
429.00 > 81.00	2.612	2.609	0.003	0.991	1605739	9.52		401	224	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.612	2.627	-0.015	1.000	1112364	0.9666		102	985	
D 14 13C4 PFOA										
417.00 > 372.00	2.636	2.640	-0.004	1.000	2526607	2.60		104	4435	
* 62 13C2-PFOA										
415.00 > 370.00	2.636	2.651	-0.015		2500922	2.50			6455	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.636	2.651	-0.015	1.000	4859719	4.08		408	250	
413.00 > 169.00	2.636	2.651	-0.015	1.000	2906002		1.67(0.84-2.52)		1212	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.645	2.658	-0.013	0.879	1185249	1.10		116	98.1	
449.00 > 99.00	2.645	2.658	-0.013	0.879	297223		3.99(1.94-5.82)		77.7	
D 19 13C5 PFNA										
468.00 > 423.00	3.008	3.006	0.002	1.141	2342978	2.87		115	4681	
D 18 13C4 PFOS										
503.00 > 80.00	3.008	3.014	-0.006	1.141	2055842	2.54		106	465	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.008	3.023	-0.015	1.000	3041010	3.10		334	297	M
499.00 > 99.00	3.008	3.023	-0.015	1.000	580022		5.24(2.31-6.93)		46.7	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.008	3.023	-0.015	1.000	990414	0.9812		98.1	91.0	
463.00 > 169.00	3.008	3.023	-0.015	1.000	259777		3.81(1.90-5.69)		62.3	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.219	3.243	-0.024	1.070	1500330	0.9232		99.1	2373	
D 26 M2-8:2FTS										
529.00 > 81.00	3.356	3.362	-0.006	1.273	1467493	8.21		343	933	
D 21 13C8 FOSA										
506.00 > 78.00	3.349	3.362	-0.013	1.270	3084170	2.74		109	7539	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.349	3.364	-0.015	1.000	1233641	1.04		104	995	
D 23 13C2 PFDA										
515.00 > 470.00	3.363	3.369	-0.006	1.276	2249172	3.11		124	5768	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.356	3.379	-0.023	1.116	674010	0.9549		99.5	308	
549.00 > 99.00	3.356	3.379	-0.023	1.116	245219		2.75(1.33-3.97)		381	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.356	3.379	-0.023	1.000	722090	0.9753	102	3967	
24 Perfluorodecanoic acid	513.00 > 469.00	3.363	3.386	-0.023	1.000	877002	0.9712	97.1	298	
	513.00 > 169.00	3.363	3.386	-0.023	1.000	178628	4.91(2.36-7.09)		298	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.522	3.529	-0.007	1.336	1120786	3.81	153	3863	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.522	3.547	-0.025	1.000	415070	0.9554	95.5	447	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.691	3.699	-0.008	1.400	1368095	4.33	173	3174	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.683	3.701	-0.018	1.224	524278	0.9501	98.6	422	
	599.00 > 99.00	3.683	3.701	-0.018	1.224	179915	2.91(1.39-4.16)		1003	
D 30 13C2 PFUnA	565.00 > 520.00	3.700	3.707	-0.007	1.403	1750768	3.17	127	7375	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.700	3.718	-0.018	1.000	636925	1.04	104	393	
	563.00 > 169.00	3.700	3.718	-0.018	1.000	149950	4.25(2.12-6.36)		92.5	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.700	3.718	-0.018	1.002	787731	1.65	165	1891	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.859	3.881	-0.022	1.283	2049577	0.8356	88.7	5904	
D 36 13C2 PFDaA	615.00 > 570.00	4.004	4.003	0.001	1.519	1734549	2.98	119	6891	
37 Perfluorododecanoic acid	613.00 > 569.00	4.004	4.015	-0.011	1.000	710840	0.9349	93.5	514	
	613.00 > 169.00	4.004	4.015	-0.011	1.000	177484	4.01(2.13-6.40)		924	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.004	4.015	-0.011	1.193	350598	0.6673	69.2	1855	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.244	4.257	-0.013	1.411	219692	0.8772	90.6	900	
	699.00 > 99.00	4.244	4.257	-0.013	1.411	317651	0.69(0.00-0.00)		3578	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.273	4.285	-0.012	1.067	711251	0.9656	96.6	498	
	663.00 > 169.00	4.273	4.285	-0.012	1.067	265381	2.68(1.25-3.76)		1723	
D 43 13C2-PFTeDA	715.00 > 670.00	4.513	4.504	0.009	1.712	1915216	2.74	109	5283	
42 Perfluorotetradecanoic acid	713.00 > 169.00	4.513	4.526	-0.013	1.000	209094	1.11	111	1983	
	713.00 > 219.00	4.513	4.526	-0.013	1.000	149834	1.40(0.71-2.13)		1267	
D 44 13C2-PFHxDA	815.00 > 770.00	4.935	4.927	0.008	1.872	3117310	2.47	98.7	4811	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.935	4.945	-0.010	1.000	1147631	1.03	103	241	
	813.00 > 169.00	4.935	4.945	-0.010	1.000	210381	5.46(2.86-8.58)		1435	

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_022.d

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	5.287	5.295	-0.008	1.071	1286270	0.9807		98.1	220	
913.00 > 169.00	5.287	5.295	-0.008	1.071	162308		7.92(3.83-11.48)		847	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_022.d

Injection Date: 06-Oct-2018 20:19:31

Instrument ID: A8_N

Lims ID: 480-141919-Y-2-C MSD

Client ID: CRL-2I

Operator ID: SACINSTLCMS01

ALS Bottle#: 16

Worklist Smp#: 20

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

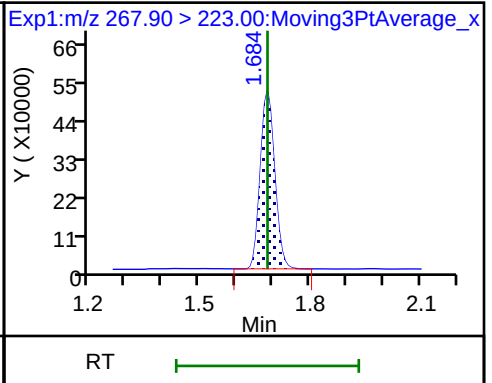
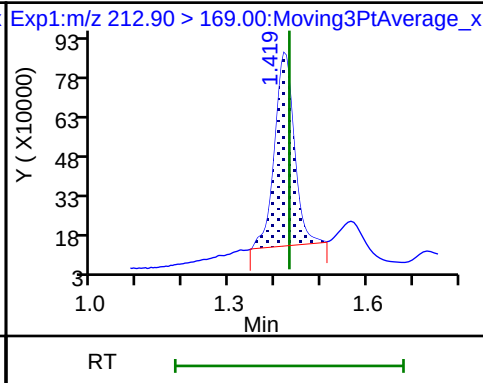
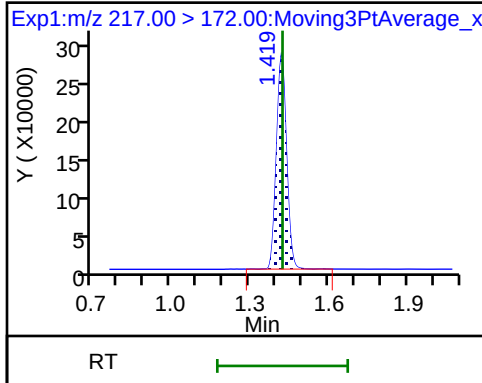
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

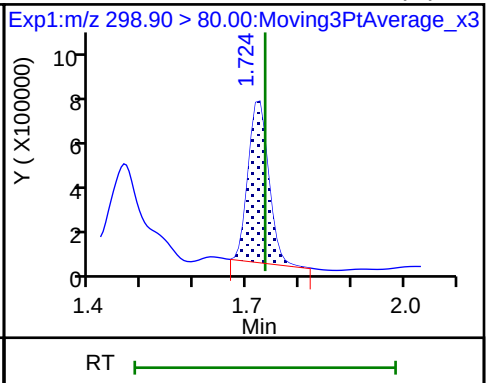
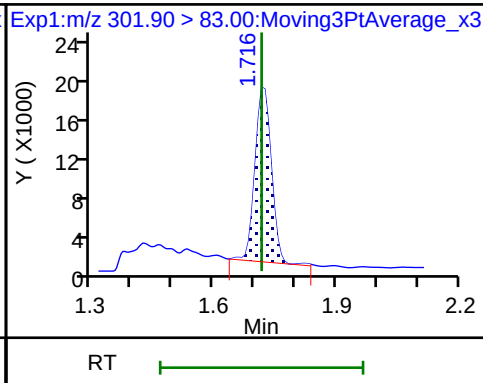
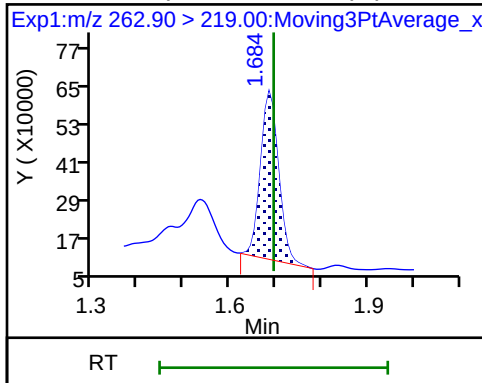
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3-PFBS

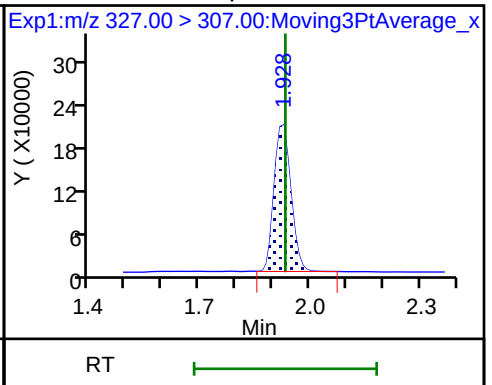
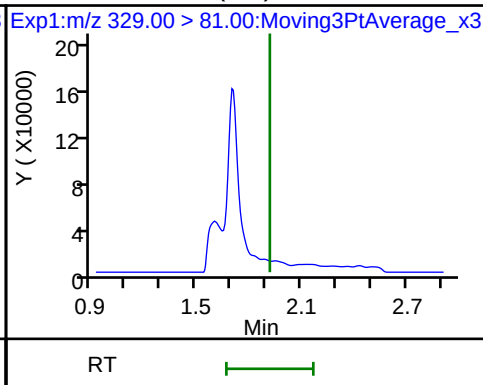
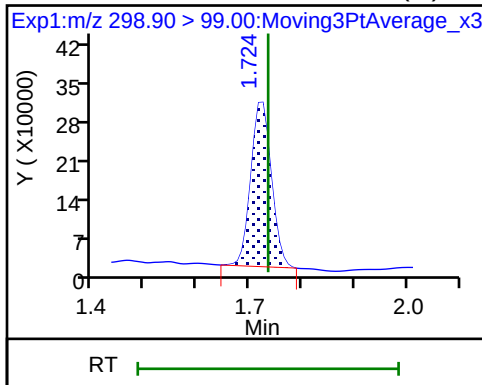
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid (M)

D 60 M2-4:2FTS (ND)

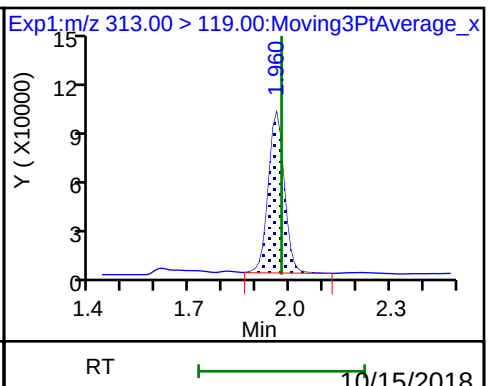
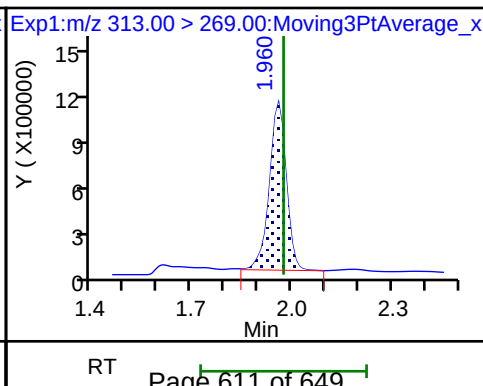
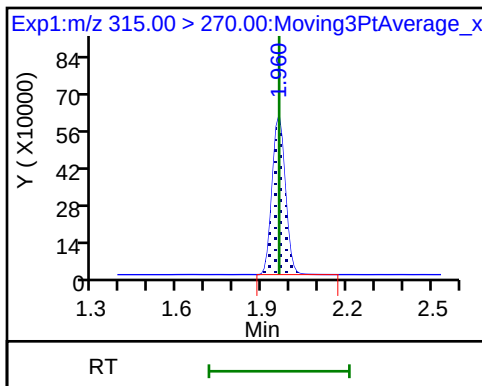
61 1H,1H,2H,2H-perfluorohexanesulfoni



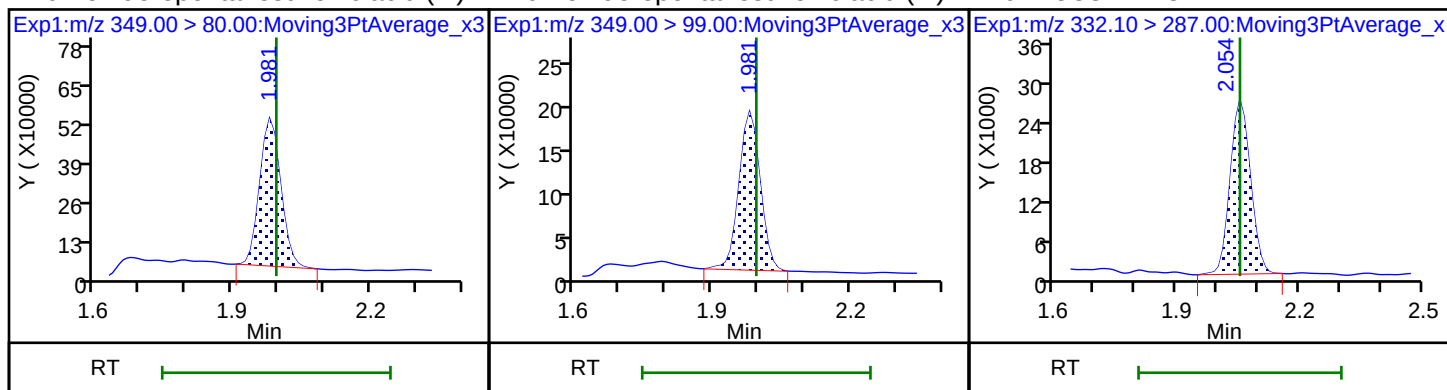
D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

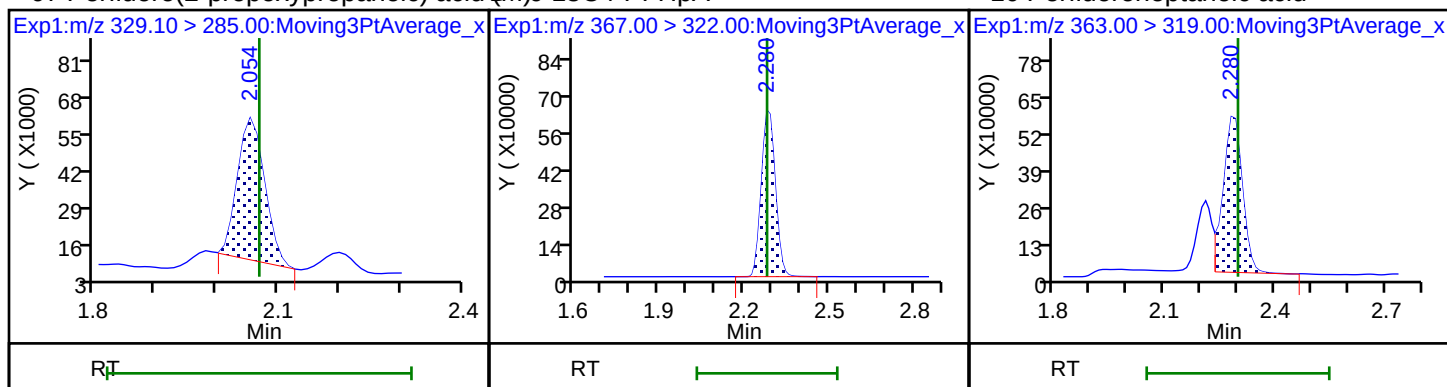


70 Perfluoropentanesulfonic acid (M) 70 Perfluoropentanesulfonic acid (M) D 64 13C3 HFPO-DA



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

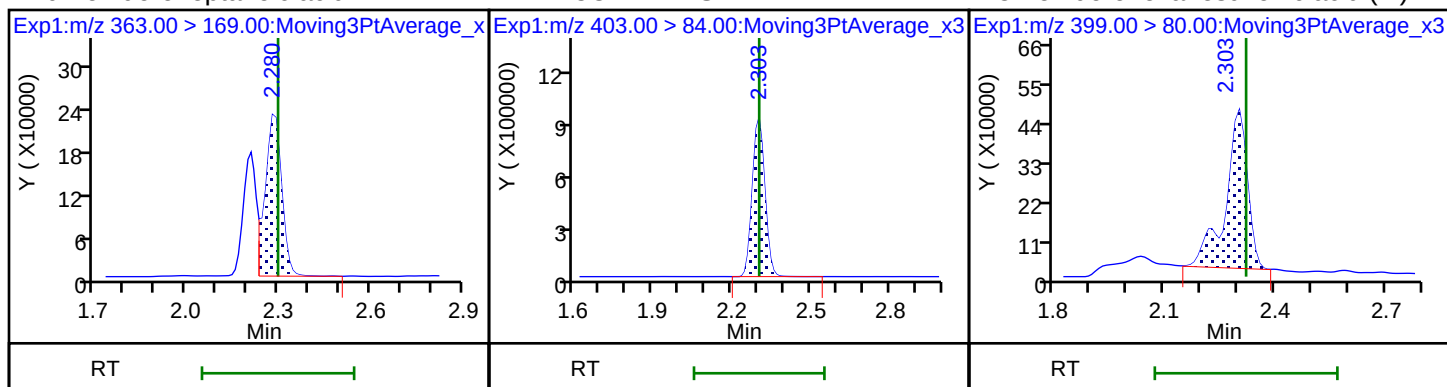
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

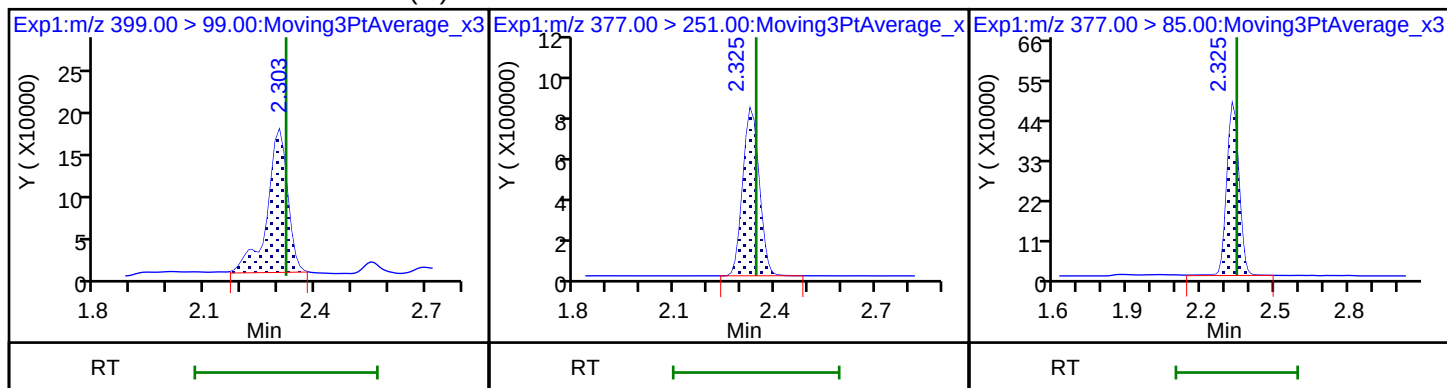
8 Perfluorohexanesulfonic acid (M)



8 Perfluorohexanesulfonic acid (M)

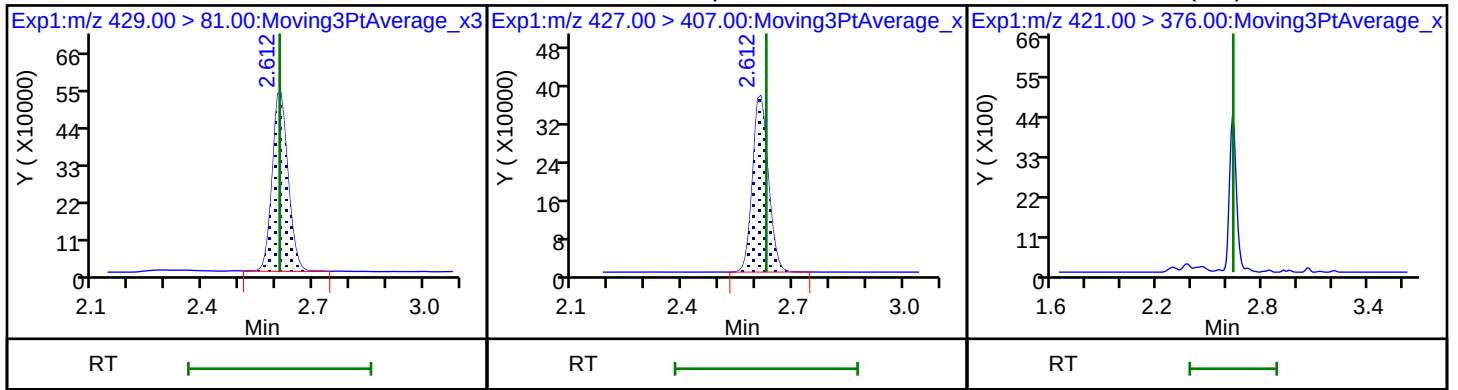
77 DONA

77 DONA



D 12 M2-6:2FTS

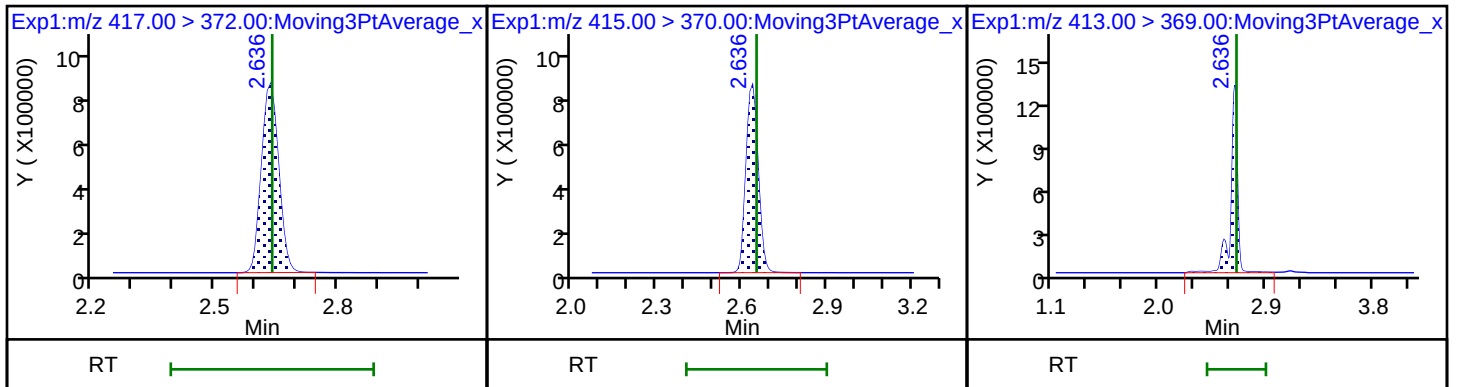
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA (ND)



D 14 13C4 PFOA

* 62 13C2-PFOA

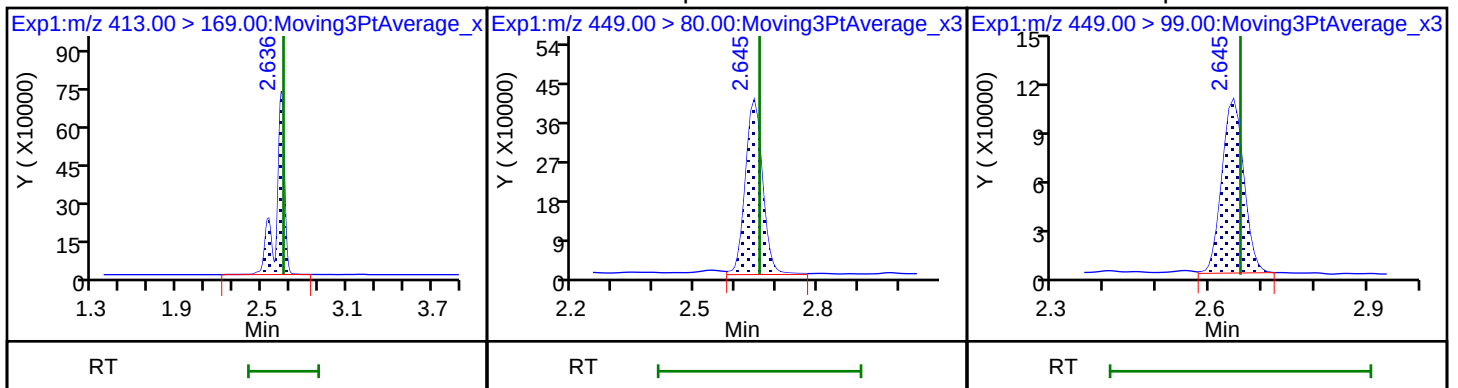
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

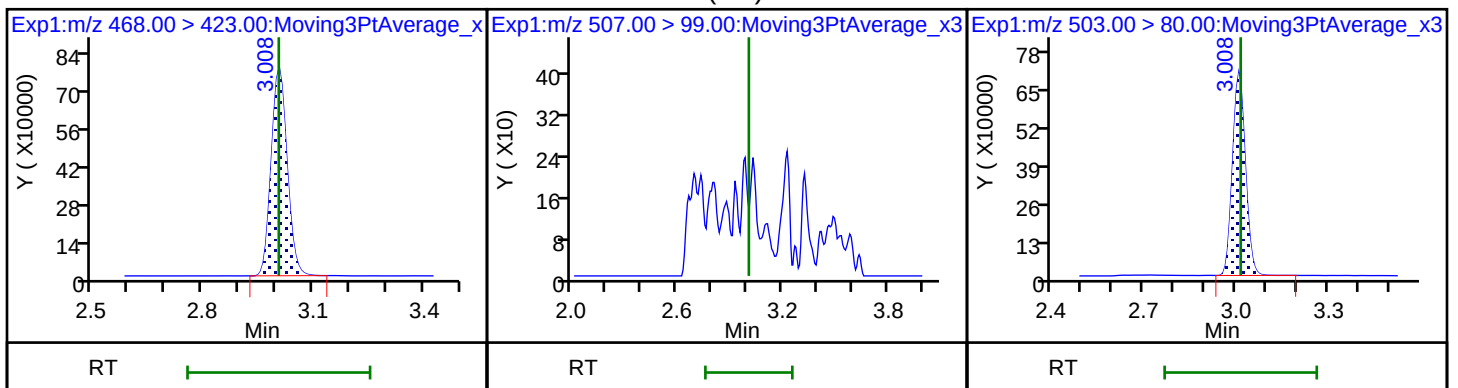
16 Perfluoroheptanesulfonic acid



D 19 13C5 PFNA

D 72 13C8 PFOS (ND)

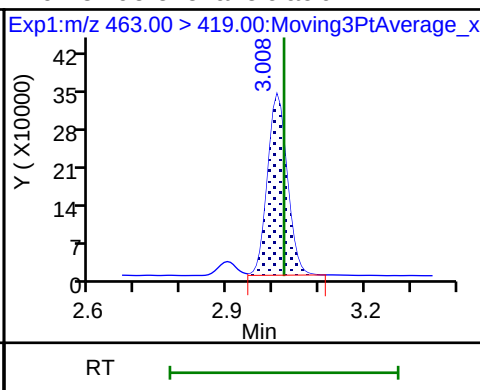
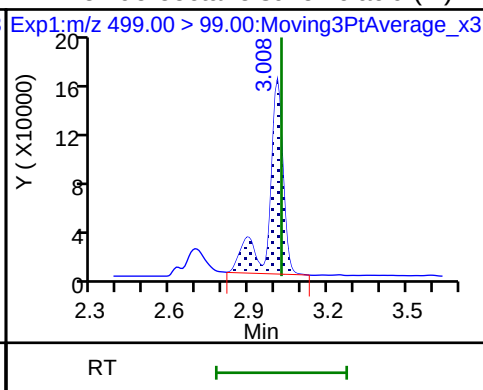
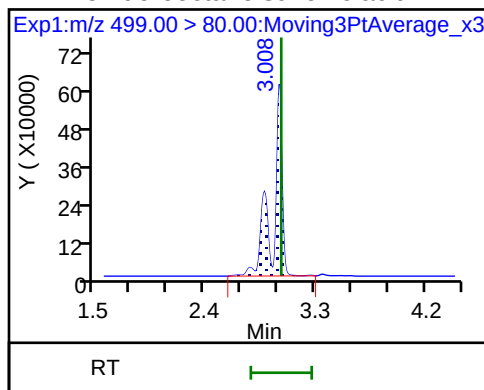
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid (M)

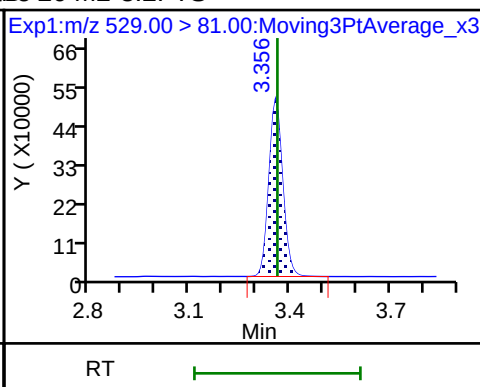
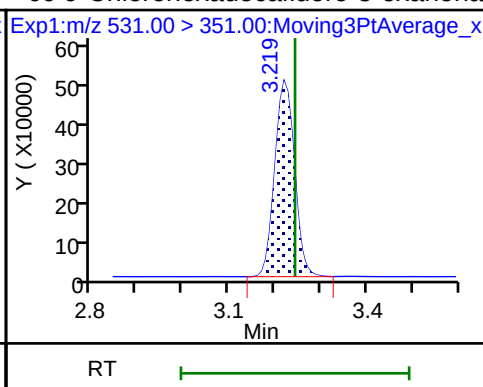
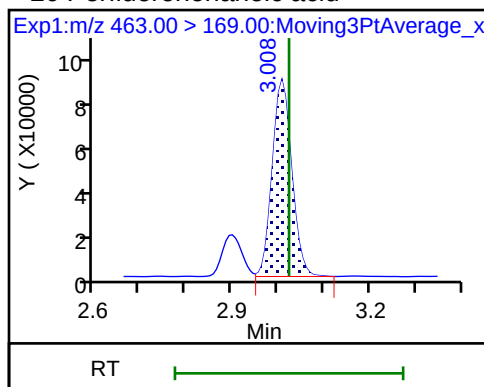
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonane

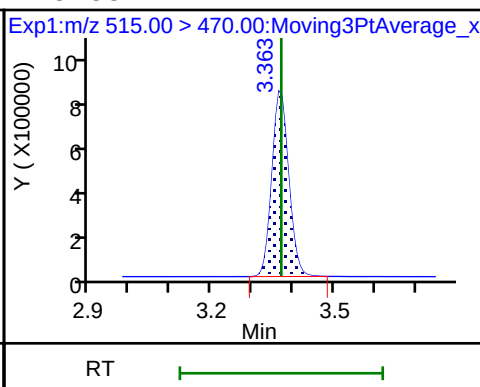
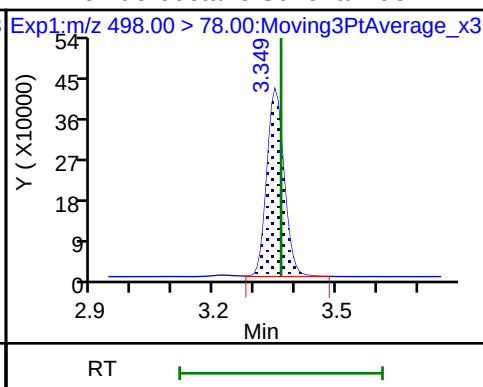
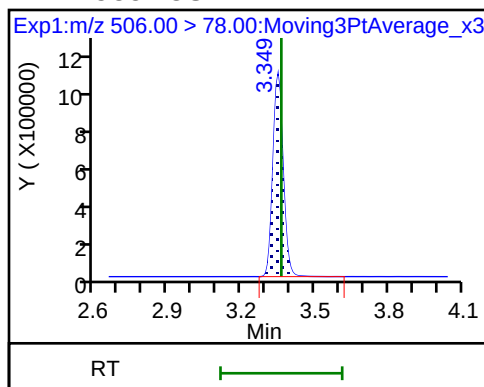
De 26 M2-8:2FTS



D 21 13C8 FOSA

22 Perfluorooctane Sulfonamide

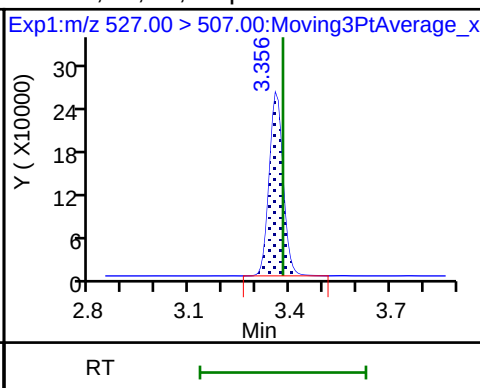
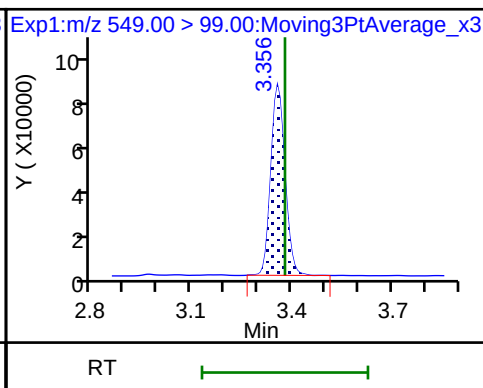
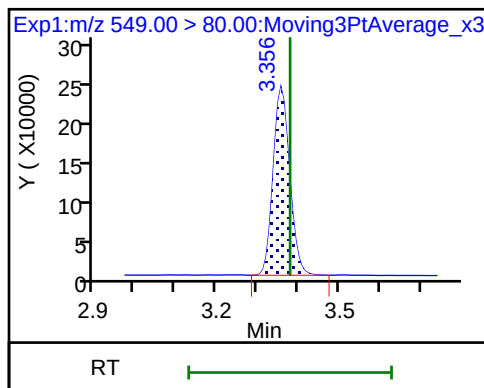
D 23 13C2 PFDA

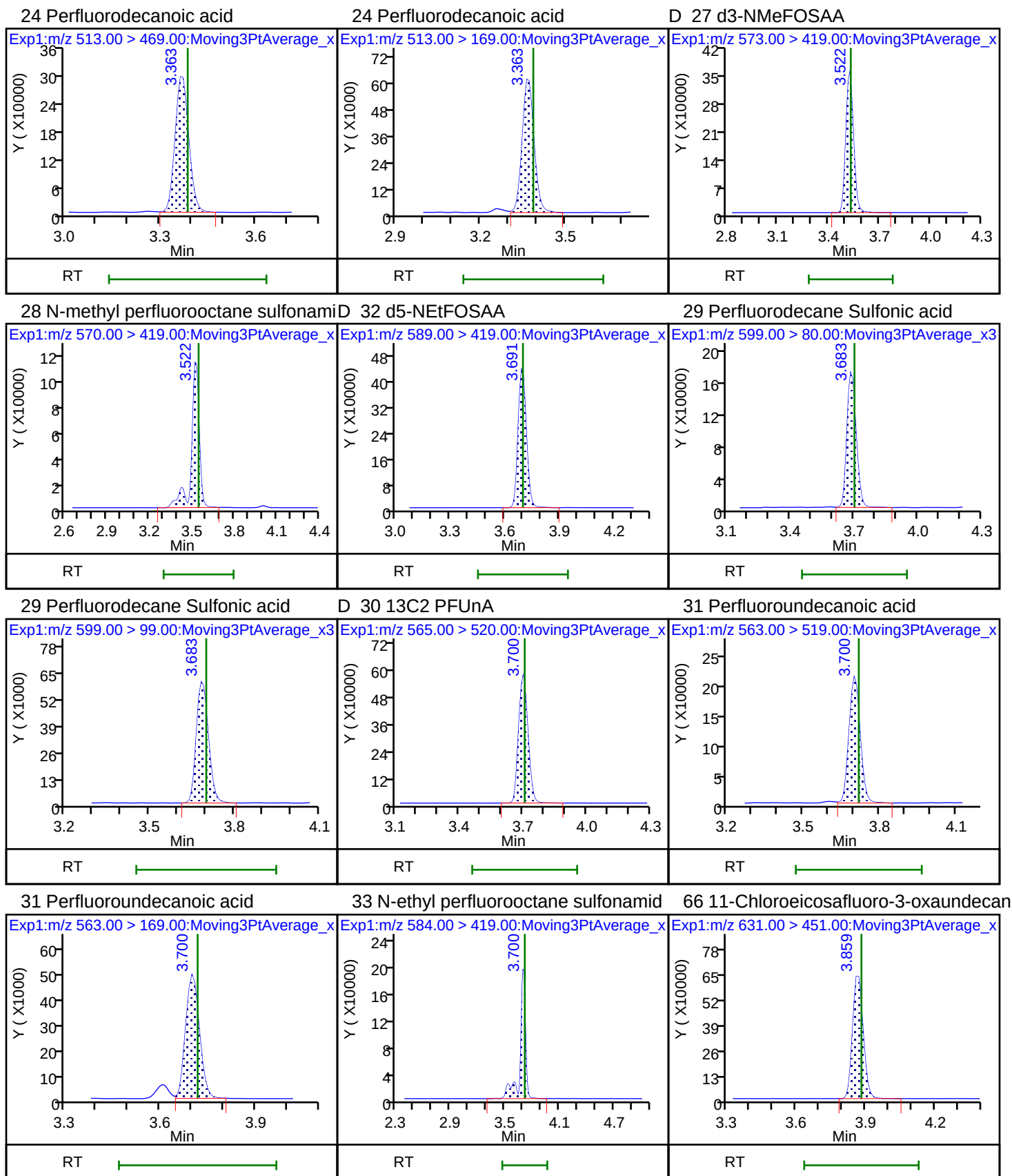


68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

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

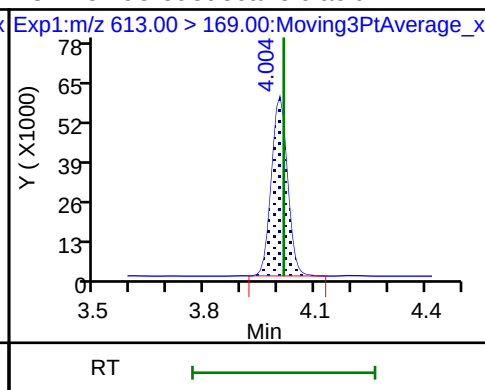
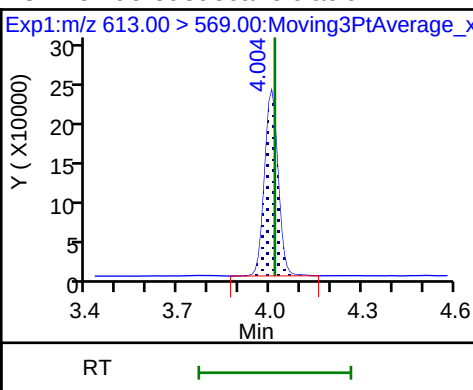
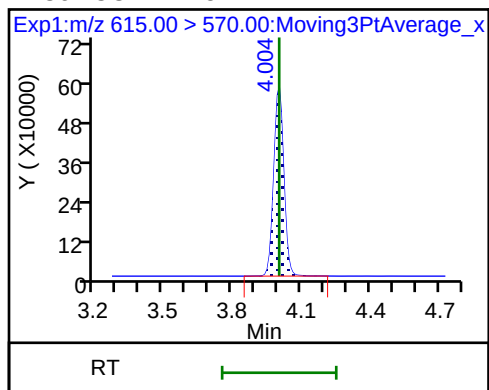




D 36 13C2 PFDaA

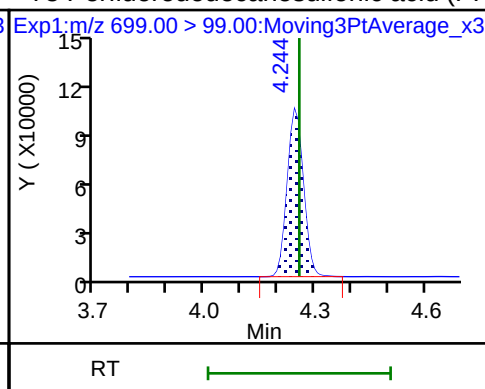
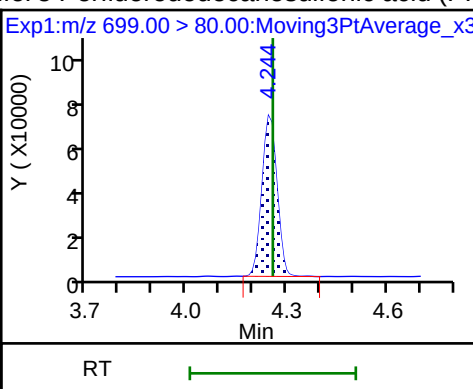
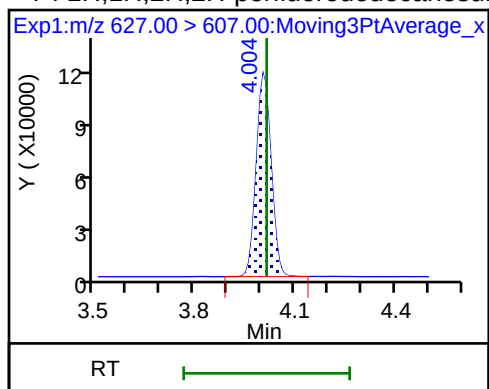
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

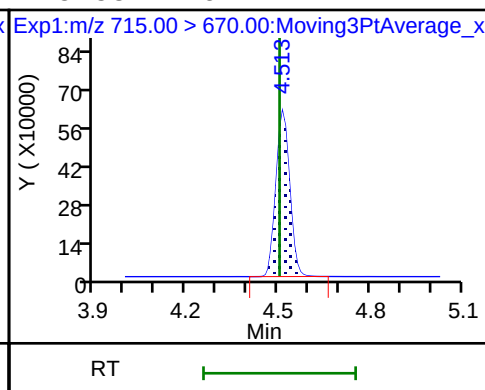
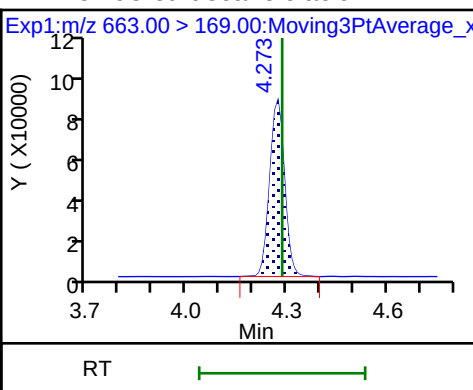
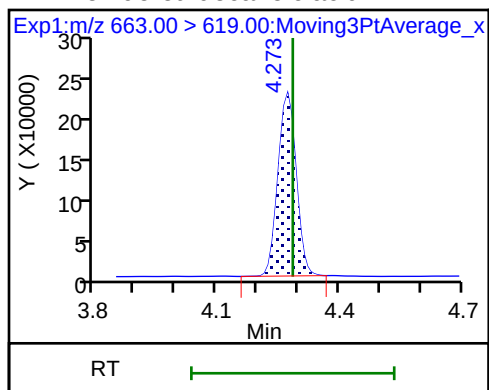
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

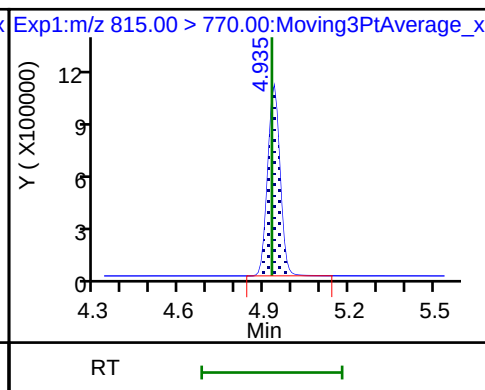
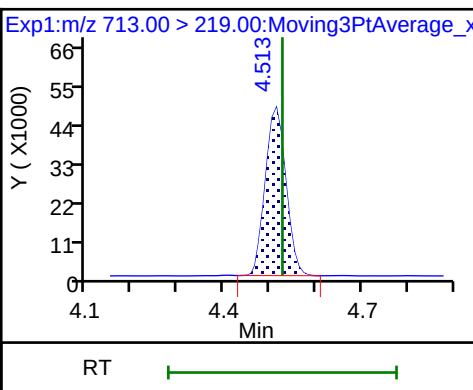
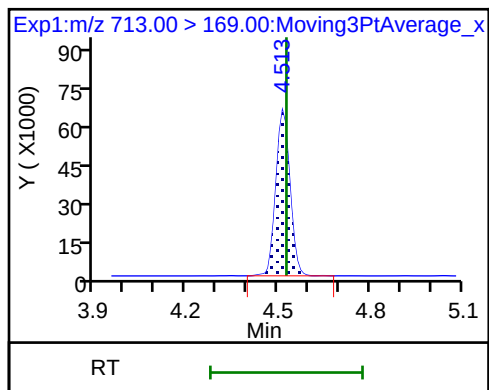
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

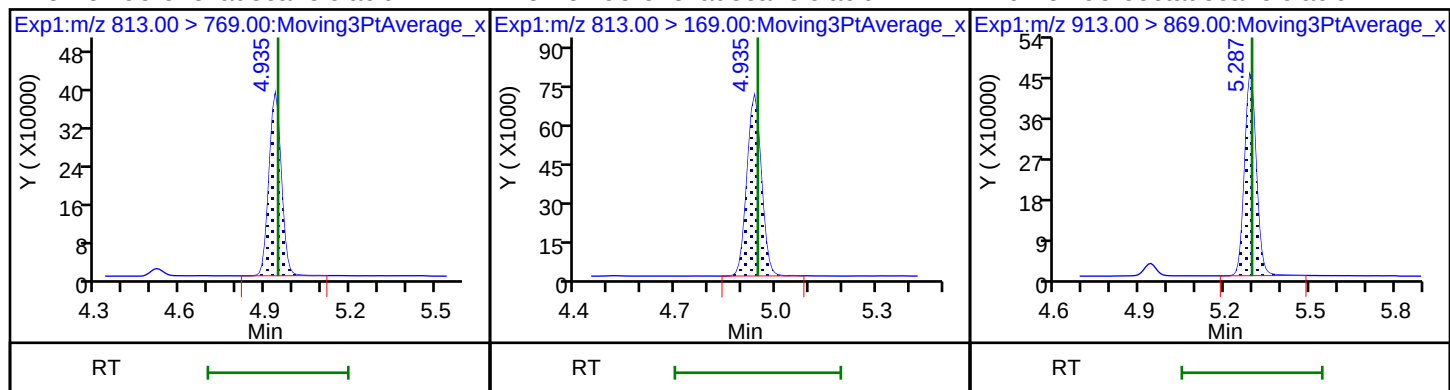
D 44 13C2-PFHxDA



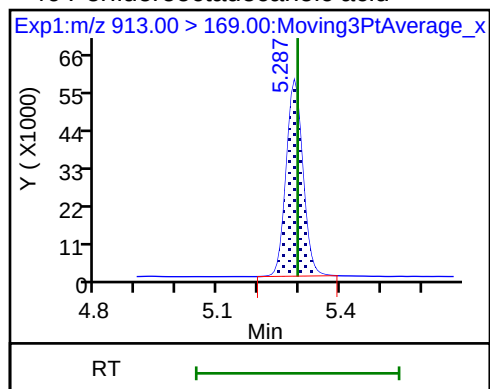
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



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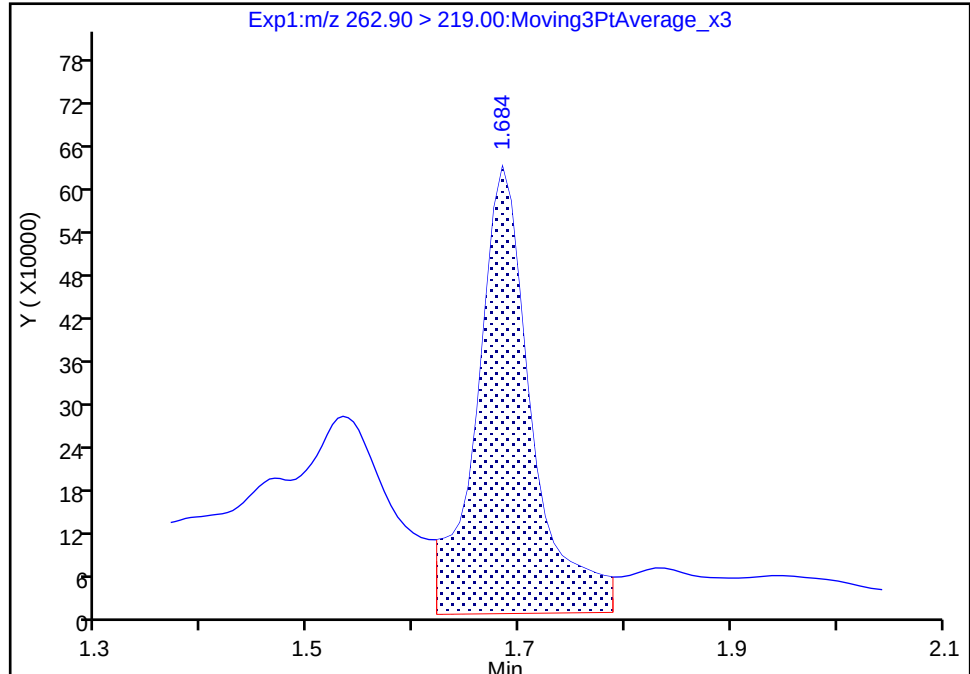
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Injection Date: 06-Oct-2018 20:19:31 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-C MSD
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

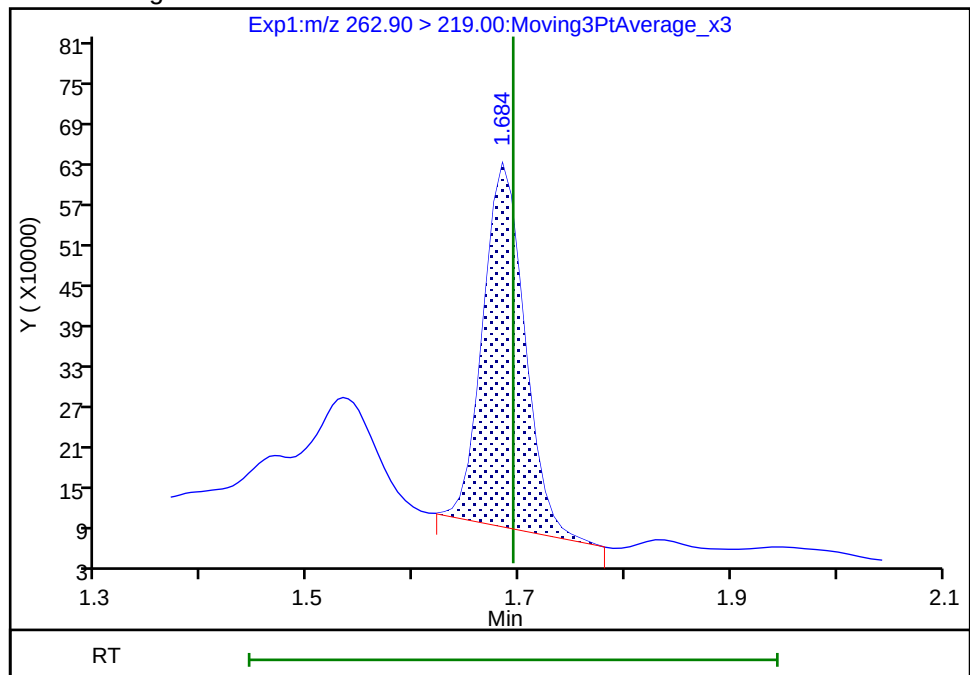
RT: 1.68
Area: 2245648
Amount: 3.618830
Amount Units: ng/ml

Processing Integration Results



RT: 1.68
Area: 1481834
Amount: 2.387954
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:49:47

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

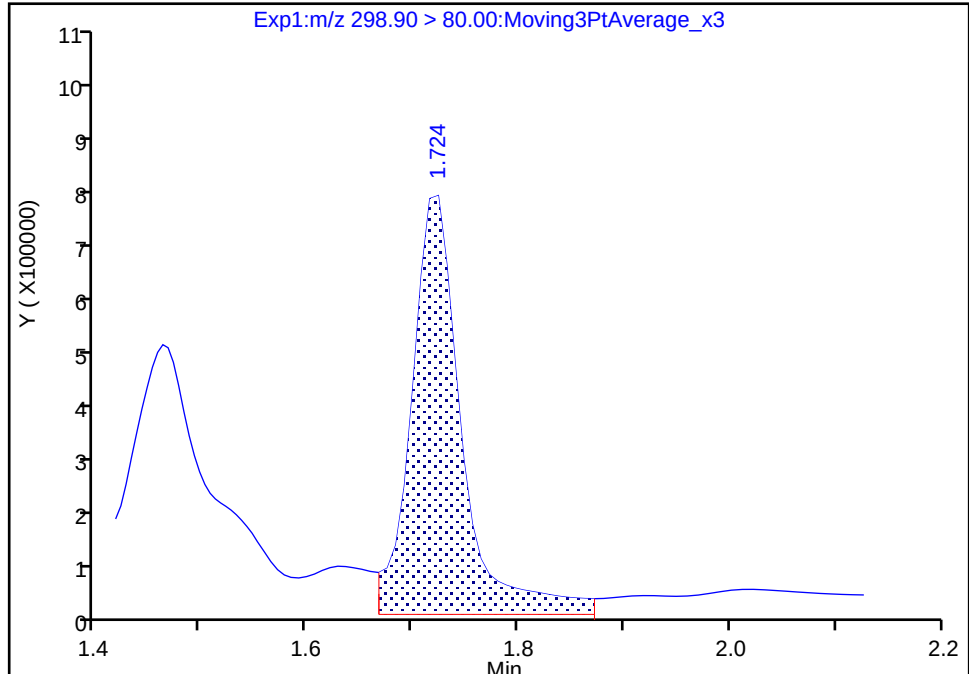
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Injection Date: 06-Oct-2018 20:19:31 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-C MSD
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

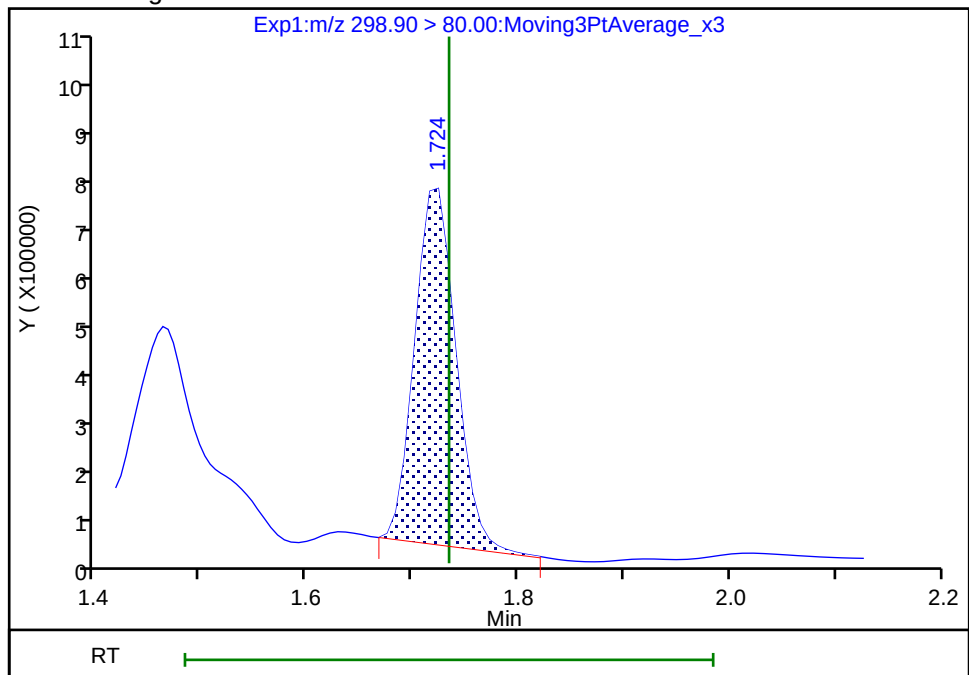
RT: 1.72
Area: 2594161
Amount: 1.581100
Amount Units: ng/ml

Processing Integration Results



RT: 1.72
Area: 1960034
Amount: 1.194610
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:49:55

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

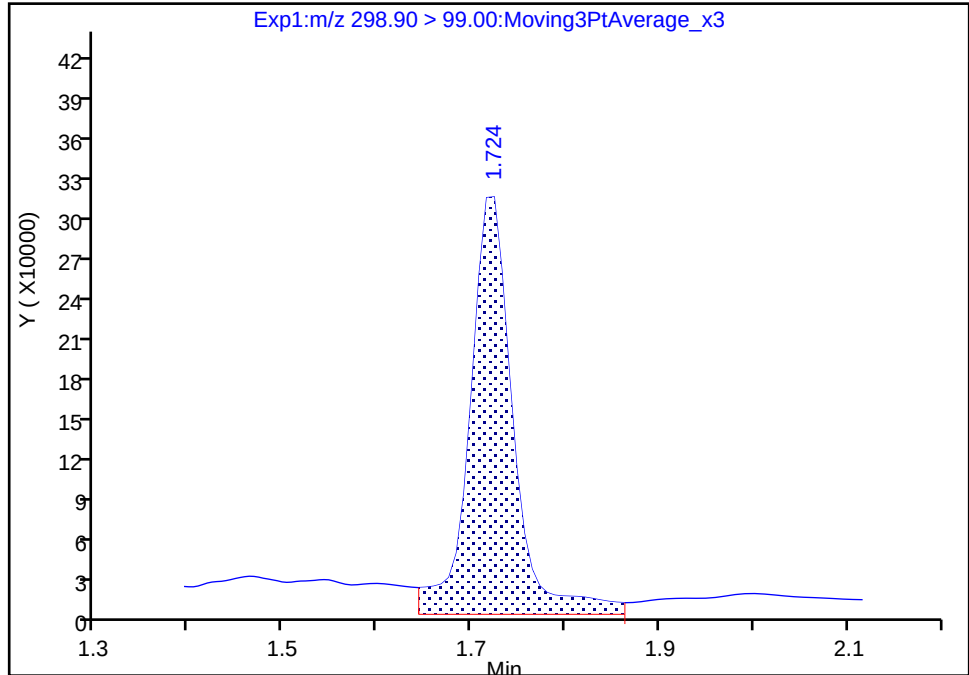
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Injection Date: 06-Oct-2018 20:19:31 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-C MSD
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

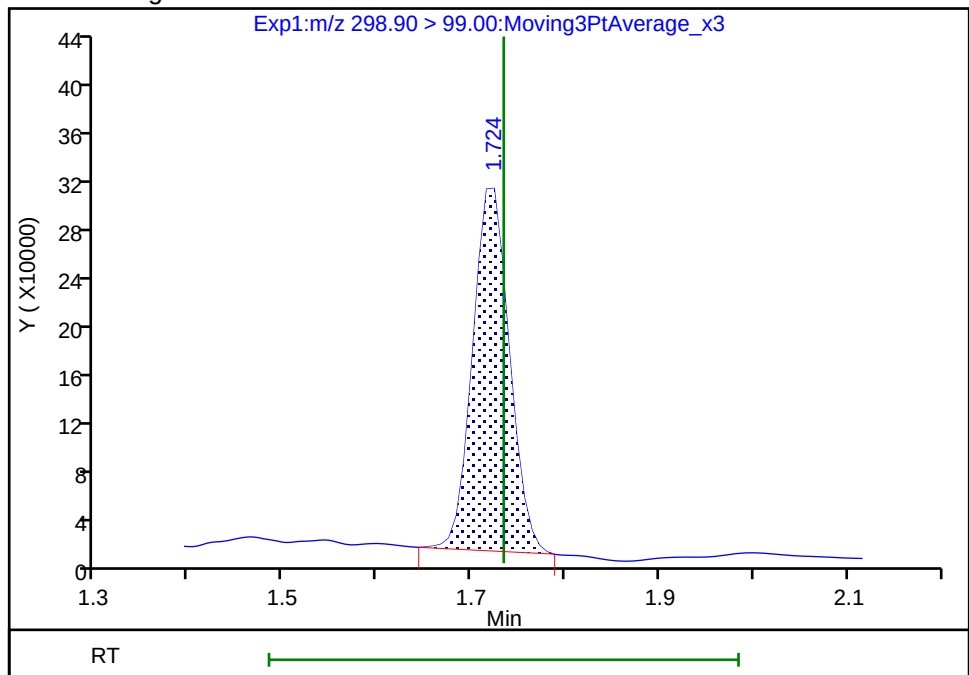
RT: 1.72
Area: 1010503
Amount: 1.581100
Amount Units: ng/ml

Processing Integration Results



RT: 1.72
Area: 807017
Amount: 1.194610
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:49:59

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

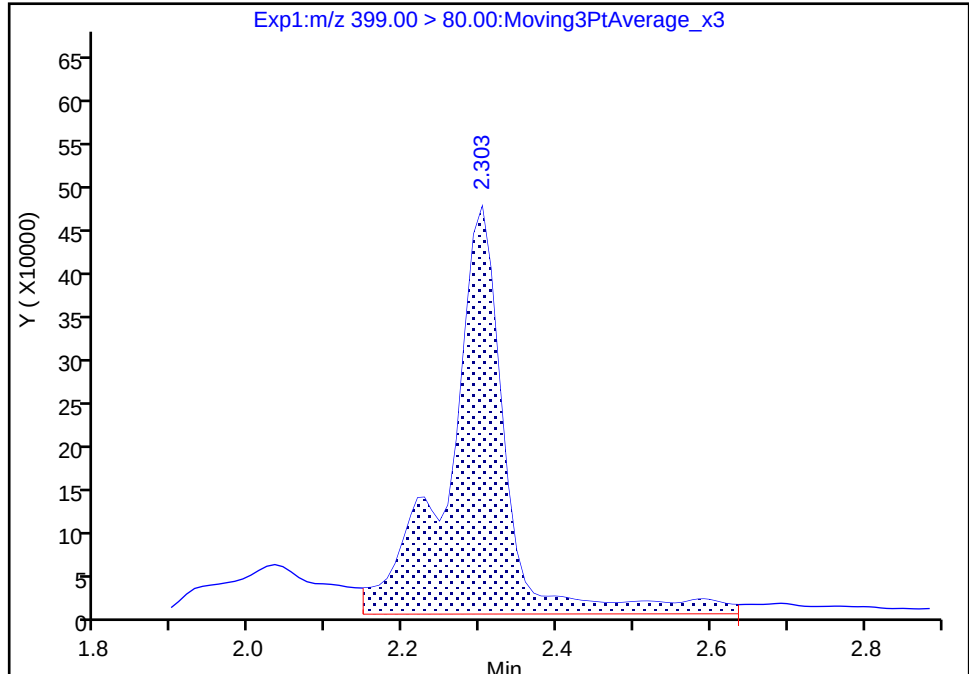
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Injection Date: 06-Oct-2018 20:19:31 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-C MSD
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

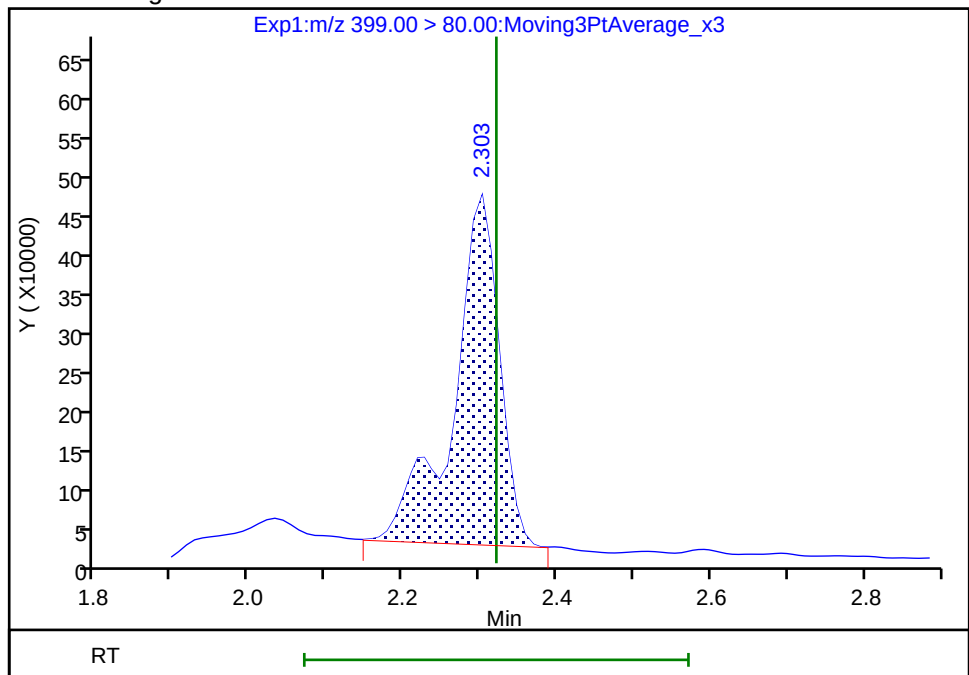
RT: 2.30
Area: 2438411
Amount: 1.749410
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 1866896
Amount: 1.339383
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:50:57

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

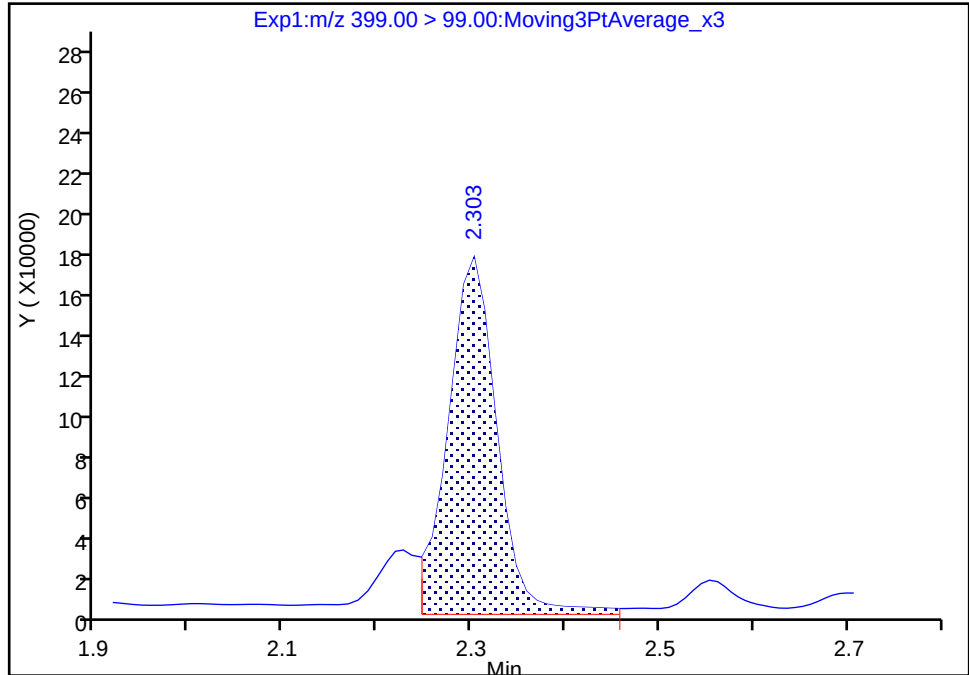
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Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

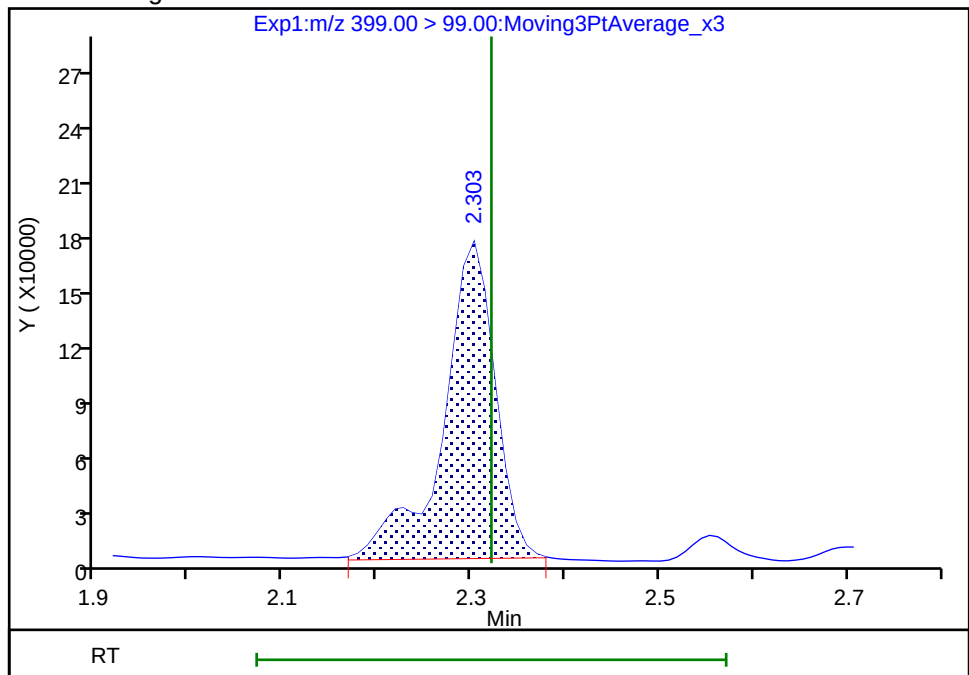
RT: 2.30
Area: 620122
Amount: 1.749410
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 650120
Amount: 1.339383
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:51:03

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

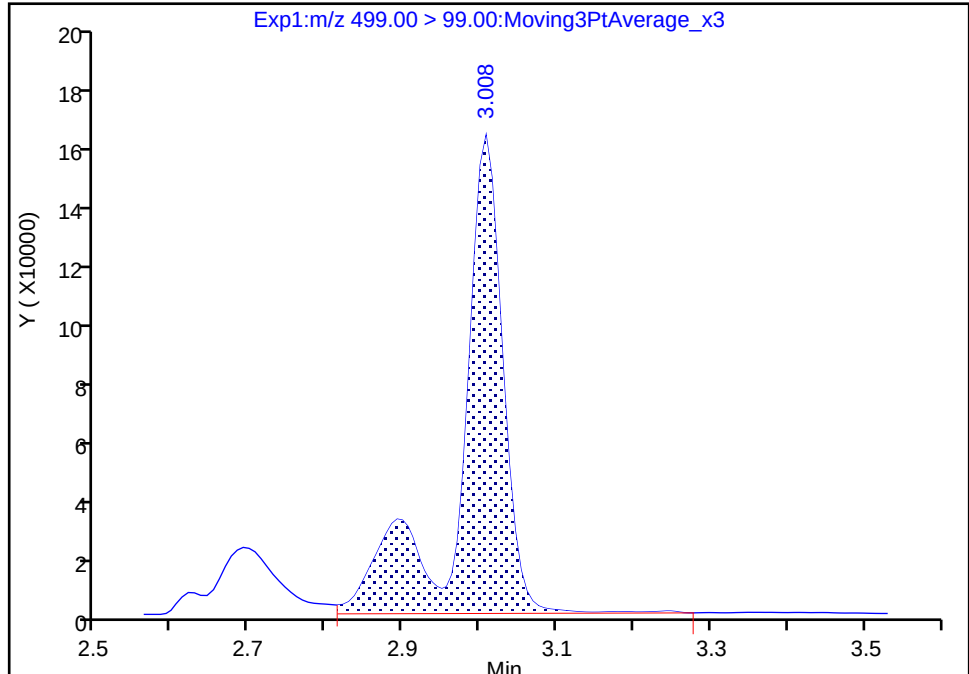
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_022.d
Injection Date: 06-Oct-2018 20:19:31 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-C MSD
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 2

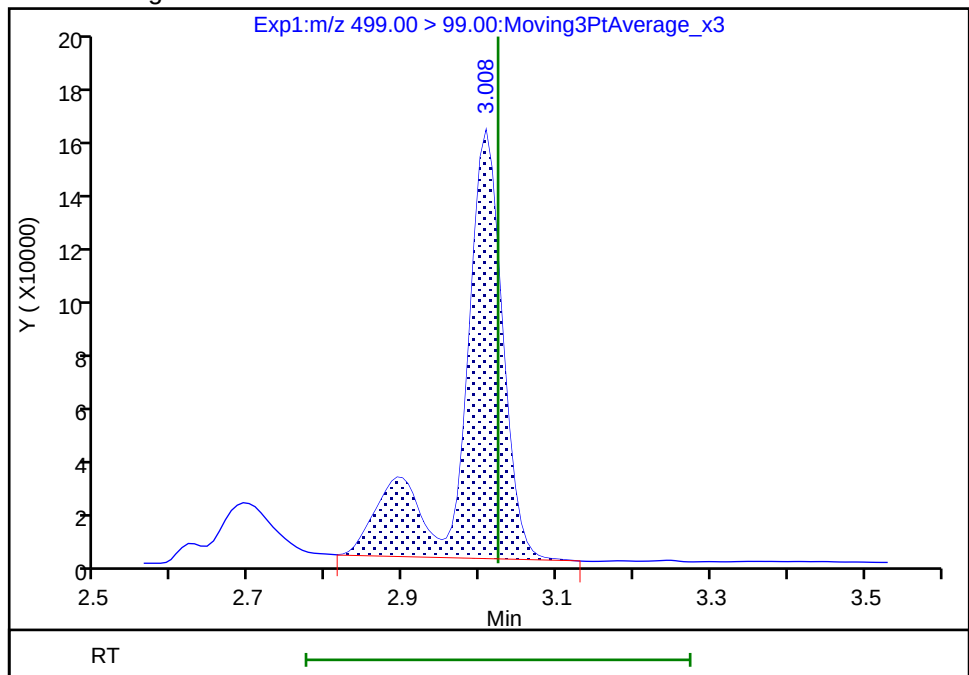
RT: 3.01
Area: 614619
Amount: 3.095149
Amount Units: ng/ml

Processing Integration Results



RT: 3.01
Area: 580022
Amount: 3.095149
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:51:18

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43466-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>480-141919-Y-2-C MSD DL</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.06LLAAA_021.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/18/2018 14:30</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/01/2018 05:03</u>
Sample wt/vol: <u>281.3 (mL)</u>	Date Analyzed: <u>10/06/2018 20:12</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>10</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>250091</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	260.4		17.8	3.11
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	32.13	J	178	27.6
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	59.93	J	178	16.9
27619-97-2	6:2 FTS	84.15	J	178	17.8
39108-34-4	8:2 FTS	32.03	J	178	17.8

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	70		25-150
STL02118	d3-NMeFOSAA	144		25-150
STL02117	d5-NEtFOSAA	115		25-150
STL02279	M2-6:2 FTS	247	*	25-150
STL02280	M2-8:2 FTS	139		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_021.d
 Lims ID: 480-141919-Y-2-C MSD
 Client ID: CRL-2I
 Sample Type: MSD
 Inject. Date: 06-Oct-2018 20:12:06 ALS Bottle#: 15 Worklist Smp#: 19
 Injection Vol: 2.0 ul Dil. Factor: 10.0000
 Sample Info: 480-141919-y-2-c msd 10X
 Misc. Info.: Plate: 1 Rack: 6
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:48:23 Calib Date: 04-Oct-2018 05:22:04
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181004-65218.b\2018.10.03LLICALAAA_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK010

First Level Reviewer: ruangyotsakuld

Date: 11-Oct-2018 10:48:23

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	1.426	1.423	0.003	0.539	283687	0.1762		70.5	648	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.421	1.431	-0.010	0.997	789434	0.7326		733	40.7	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.688	1.684	0.004	0.638	231067	0.2138		85.5	207	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.688	1.694	-0.006	1.000	241900	0.2358		236	3.0	M
D 47 13C3-PFBS										
301.90 > 83.00	1.720	1.716	0.004	0.650	5332	0.2314		99.5	6.5	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.728	1.734	-0.006	1.005	239931	0.1346		152	4.5	M
298.90 > 99.00	1.728	1.734	-0.006	1.005	109945		2.18(1.25-3.74)		6.2	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.934	1.933	0.001	1.125	71355	0.2398		257	176	
D 7 13C2 PFHxA										
315.00 > 270.00	1.966	1.960	0.006	0.743	265662	0.2238		89.5	895	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.966	1.975	-0.009	1.000	549573	0.5250		525	23.2	
313.00 > 119.00	1.966	1.975	-0.009	1.000	47364		11.60(5.03-15.10)		37.2	
70 Perfluoropentanesulfonic acid										M
349.00 > 80.00	1.987	1.995	-0.008	1.155	179267	0.1166		124	22.4	M
349.00 > 99.00	1.987	1.995	-0.008	1.155	52958		3.39(1.36-4.07)		13.3	M
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.060	2.054	0.006	0.779	19271	0.2236		89.4	37.9	
67 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	2.060	2.069	-0.009	1.000	18343	0.0827		82.7	3.9	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.289	2.281	0.008	0.866	251388	0.2358		94.3	976	

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	2.289	2.299	-0.010	1.000	233847	0.2075		207	15.2	
363.00 > 169.00	2.289	2.299	-0.010	1.000	83279		2.81(1.13-3.40)		15.4	
D 11 18O2 PFHxS										
403.00 > 84.00	2.312	2.303	0.009	0.874	293120	0.2200		93.0	2187	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.312	2.321	-0.009	1.000	189869	0.1390		153	24.3	M
399.00 > 99.00	2.312	2.321	-0.009	1.000	75441		2.52(1.50-4.49)		26.8	M
77 DONA										
377.00 > 251.00	2.334	2.343	-0.009	0.773	276852	0.0866		91.9	649	
377.00 > 85.00	2.334	2.343	-0.009	0.773	168837		1.64(0.85-2.54)		121	
D 12 M2-6:2FTS										
429.00 > 81.00	2.614	2.609	0.005	0.988	105253	0.5863		247	154	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.614	2.627	-0.013	1.000	178560	0.2367		250	374	
D 14 13C4 PFOA										
417.00 > 372.00	2.644	2.640	0.004	1.000	279698	0.2702		108	2164	
* 62 13C2-PFOA										
415.00 > 370.00	2.644	2.651	-0.007		266192	0.2500			1276	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.644	2.651	-0.007	1.000	485592	0.3685		368	49.7	M
413.00 > 169.00	2.644	2.651	-0.007	1.000	304232		1.60(0.84-2.52)		224	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.652	2.658	-0.006	0.879	111144	0.1079		113	110	
449.00 > 99.00	2.652	2.658	-0.006	0.879	32431		3.43(1.94-5.82)		49.0	
D 19 13C5 PFNA										
468.00 > 423.00	3.017	3.006	0.011	1.141	224108	0.2575		103	2193	
D 18 13C4 PFOS										
503.00 > 80.00	3.017	3.014	0.003	1.141	196613	0.2280		95.4	351	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.017	3.023	-0.006	1.000	282633	0.3008		324	124	M
499.00 > 99.00	3.017	3.023	-0.006	1.000	54803		5.16(2.31-6.93)		13.6	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.017	3.023	-0.006	1.000	90456	0.0937		93.7	22.3	
463.00 > 169.00	3.017	3.023	-0.006	1.000	23532		3.84(1.90-5.69)		30.8	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.237	3.243	-0.006	1.073	148767	0.0957		103	627	
D 26 M2-8:2FTS										
529.00 > 81.00	3.373	3.362	0.011	1.276	63112	0.3319		139	248	
D 21 13C8 FOSA										
506.00 > 78.00	3.358	3.362	-0.004	1.270	271108	0.2260		90.4	1809	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.358	3.364	-0.006	1.000	101518	0.0973		97.3	445	
D 23 13C2 PFDA										
515.00 > 470.00	3.381	3.369	0.012	1.279	183319	0.2381		95.2	1507	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.373	3.379	-0.006	1.118	58845	0.0872		90.8	156	
549.00 > 99.00	3.373	3.379	-0.006	1.118	20498		2.87(1.33-3.97)		102	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.373	3.379	-0.006	1.000	28688	0.0901	94.0	368	
24 Perfluorodecanoic acid	513.00 > 469.00	3.381	3.386	-0.005	1.000	81980	0.1114	111	61.4	
	513.00 > 169.00	3.381	3.386	-0.005	1.000	13712	5.98(2.36-7.09)		78.6	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.541	3.529	0.012	1.339	112327	0.3591	144	899	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.541	3.547	-0.006	1.000	39351	0.0904	90.4	335	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.705	3.699	0.006	1.401	96910	0.2879	115	236	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.705	3.701	0.004	1.228	49034	0.0929	96.4	177	
	599.00 > 99.00	3.705	3.701	0.004	1.228	16308	3.01(1.39-4.16)		175	
D 30 13C2 PFUnA	565.00 > 520.00	3.713	3.707	0.006	1.404	152424	0.2591	104	1325	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.713	3.718	-0.005	1.000	50805	0.0950	95.0	45.8	
	563.00 > 169.00	3.713	3.718	-0.005	1.000	11219	4.53(2.12-6.36)		58.6	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.713	3.718	-0.005	1.002	56886	0.1686	169	336	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.875	3.881	-0.006	1.284	203664	0.0868	92.2	765	
D 36 13C2 PFDaA	615.00 > 570.00	4.010	4.003	0.007	1.517	149527	0.2413	96.5	883	
37 Perfluorododecanoic acid	613.00 > 569.00	4.010	4.015	-0.005	1.000	62116	0.0948	94.8	47.0	
	613.00 > 169.00	4.019	4.015	0.004	1.002	14269	4.35(2.13-6.40)		123	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.019	4.015	0.004	1.191	18808	0.0832	86.3	427	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.261	4.257	0.004	1.412	18283	0.0763	78.9	154	
	699.00 > 99.00	4.252	4.257	-0.005	1.409	29080	0.63(0.00-0.00)		302	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.280	4.285	-0.005	1.067	55712	0.0877	87.7	47.7	
	663.00 > 169.00	4.280	4.285	-0.005	1.067	20263	2.75(1.25-3.76)		161	
D 43 13C2-PFTeDA	715.00 > 670.00	4.522	4.504	0.018	1.710	175444	0.2355	94.2	981	
42 Perfluorotetradecanoic acid	713.00 > 169.00	4.522	4.526	-0.004	1.000	17204	0.0998	99.8	172	
	713.00 > 219.00	4.522	4.526	-0.004	1.000	12695	1.36(0.71-2.13)		217	
D 44 13C2-PFHxDA	815.00 > 770.00	4.943	4.927	0.016	1.869	270922	0.2014	80.6	1263	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.943	4.945	-0.002	1.000	99176	0.0789	78.9	42.3	
	813.00 > 169.00	4.943	4.945	-0.002	1.000	18068	5.49(2.86-8.58)		273	

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	5.293	5.295	-0.002	1.071	115776	0.1016		102	62.0	
913.00 > 169.00	5.293	5.295	-0.002	1.071	14606		7.93(3.83-11.48)		222	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_021.d

Injection Date: 06-Oct-2018 20:12:06

Instrument ID: A8_N

Lims ID: 480-141919-Y-2-C MSD

Client ID: CRL-2I

Operator ID: SACINSTLCMS01

ALS Bottle#: 15

Worklist Smp#: 19

Injection Vol: 2.0 ul

Dil. Factor: 10.0000

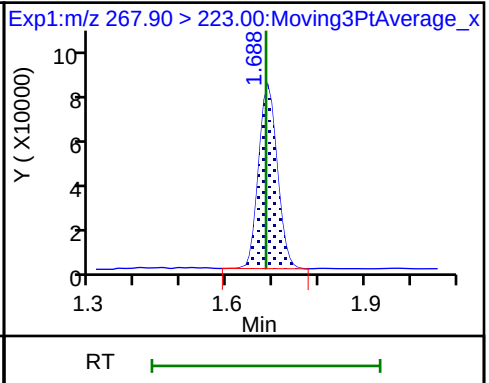
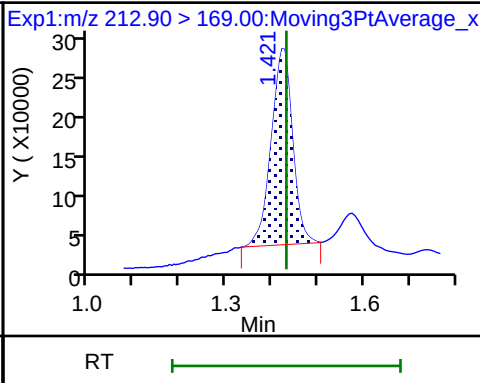
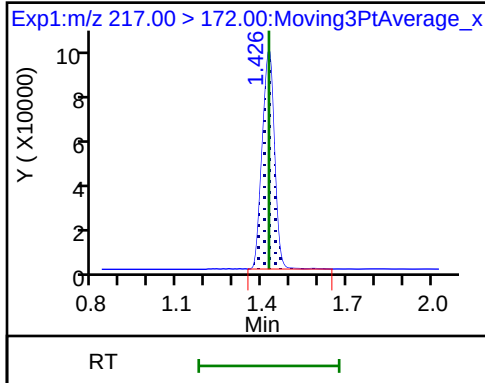
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

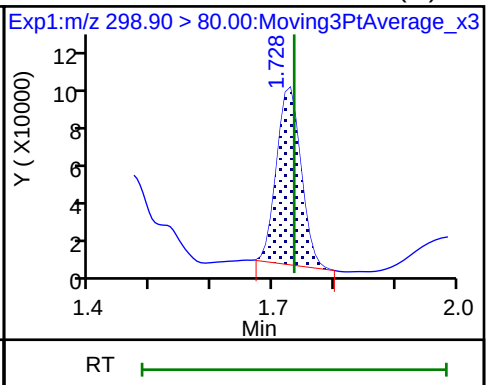
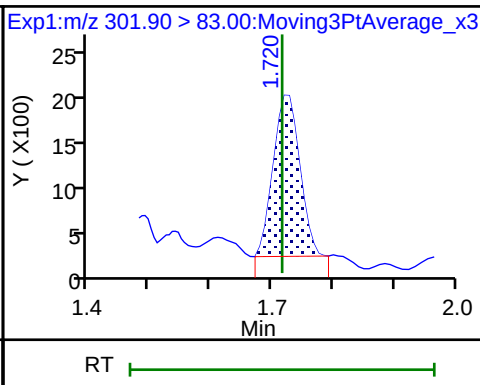
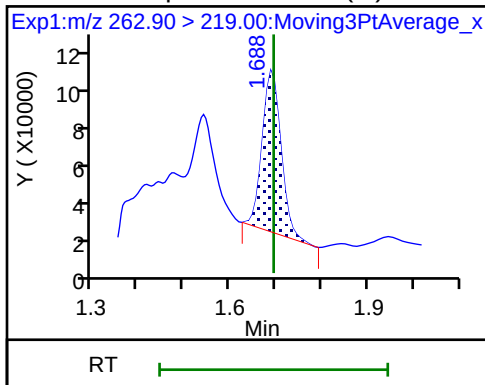
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3-PFBS

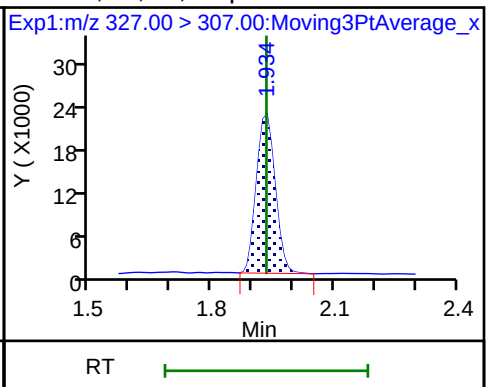
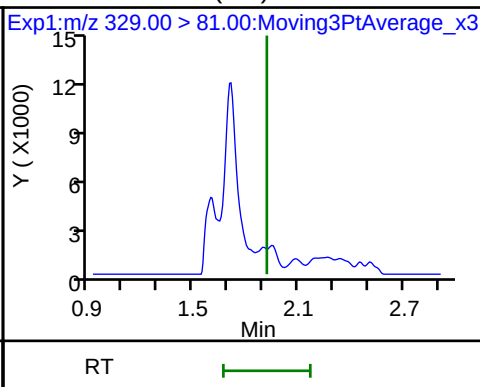
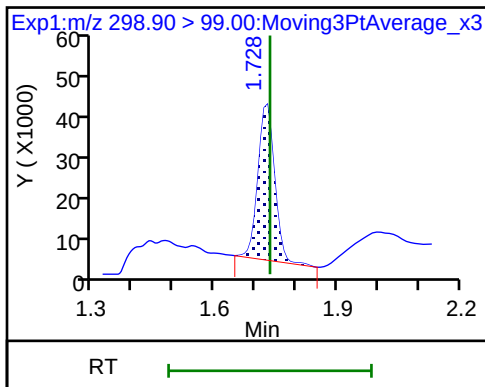
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS (ND)

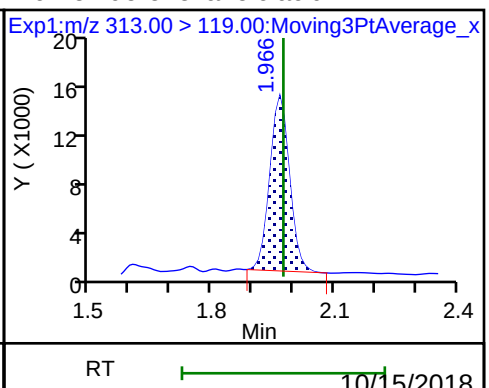
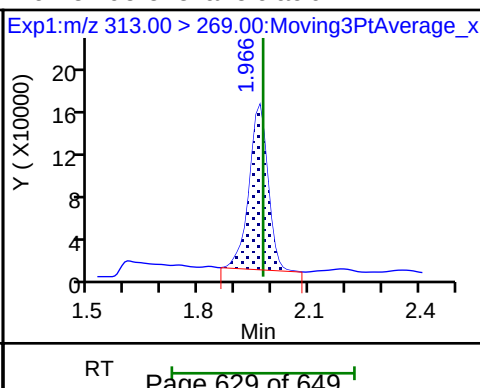
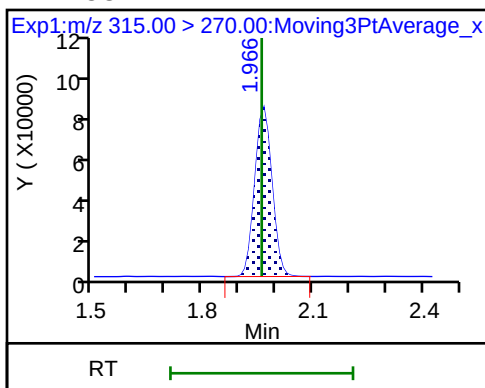
61 1H,1H,2H,2H-perfluorohexanesulfoni



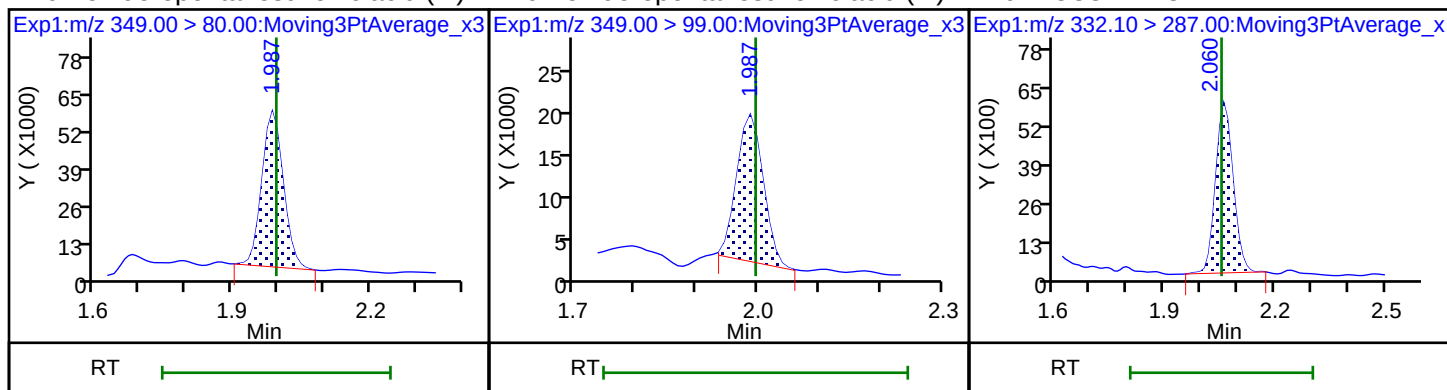
D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

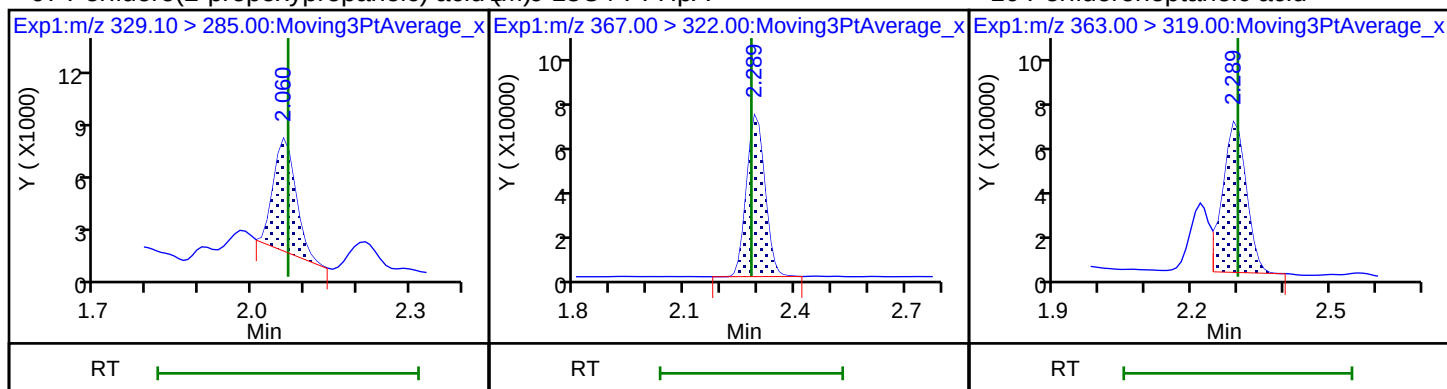


70 Perfluoropentanesulfonic acid (M) 70 Perfluoropentanesulfonic acid (M) D 64 13C3 HFPO-DA



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

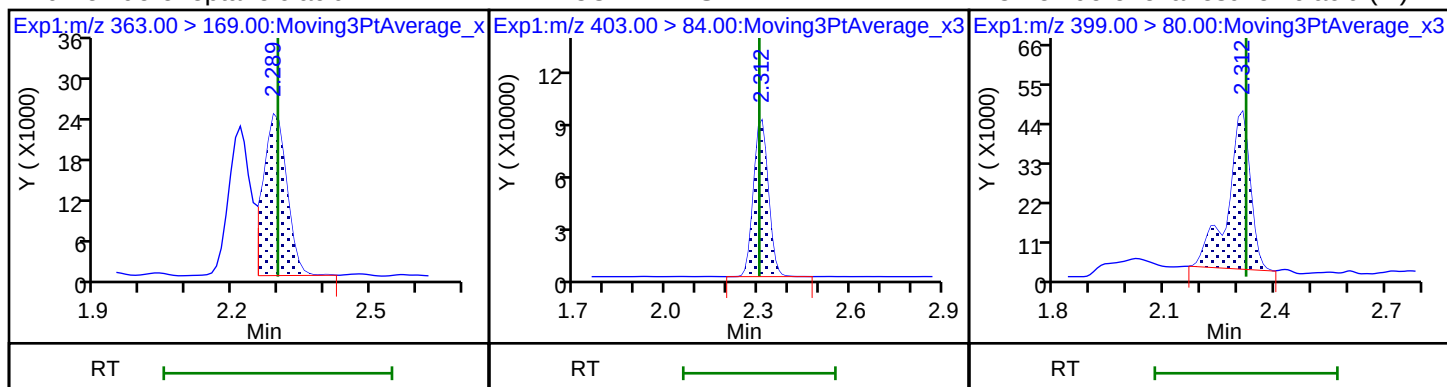
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

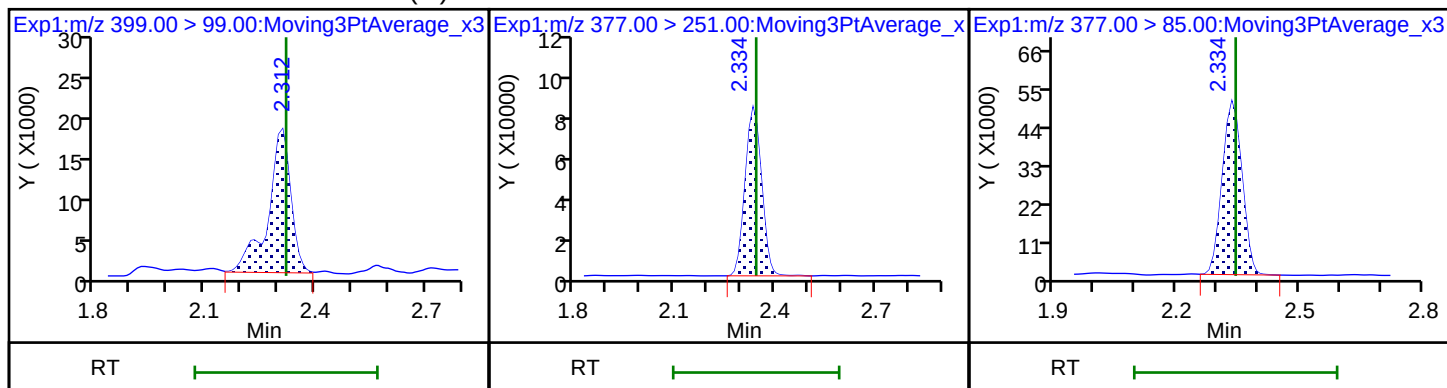
8 Perfluorohexanesulfonic acid (M)



8 Perfluorohexanesulfonic acid (M)

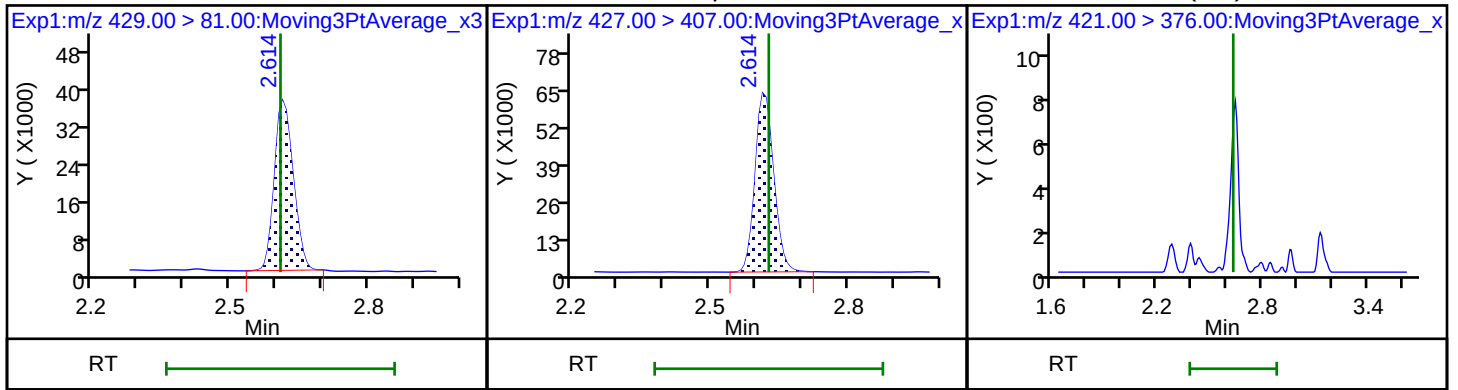
77 DONA

77 DONA



D 12 M2-6:2FTS

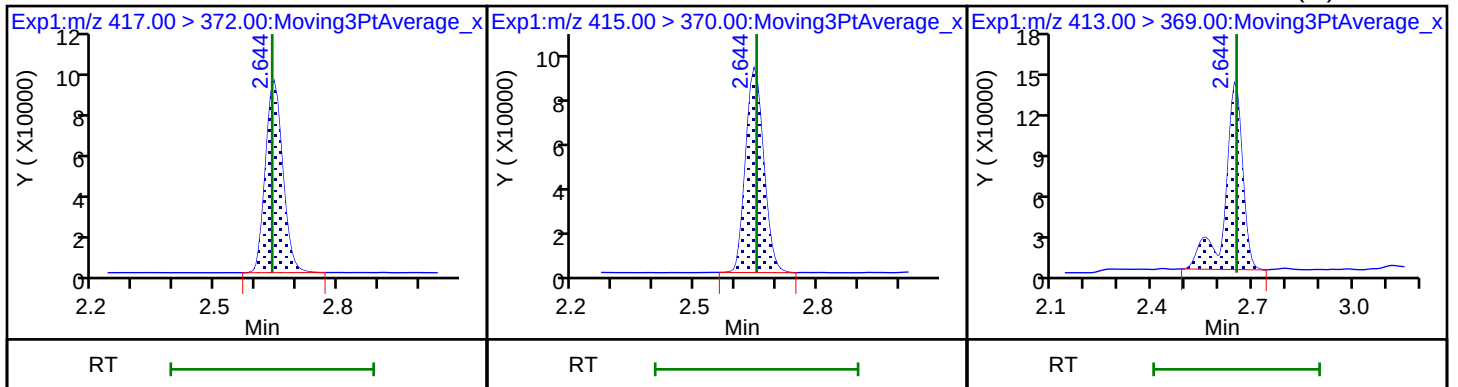
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA (ND)



D 14 13C4 PFOA

* 62 13C2-PFOA

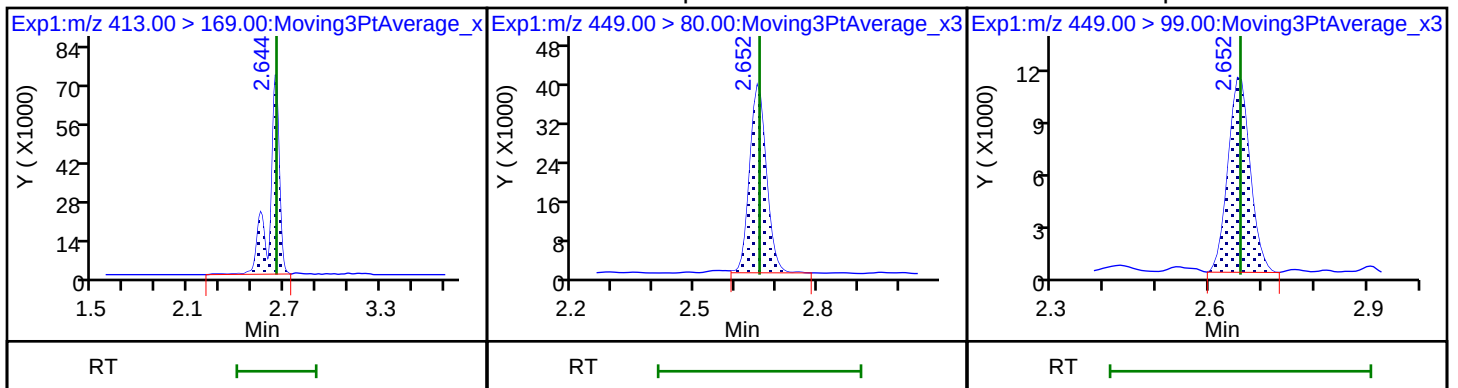
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

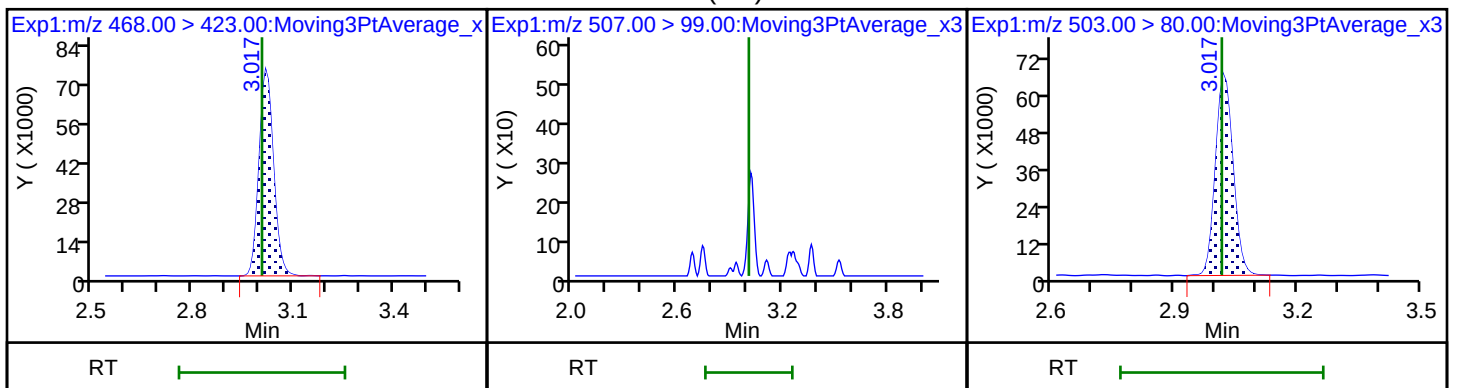
16 Perfluoroheptanesulfonic acid

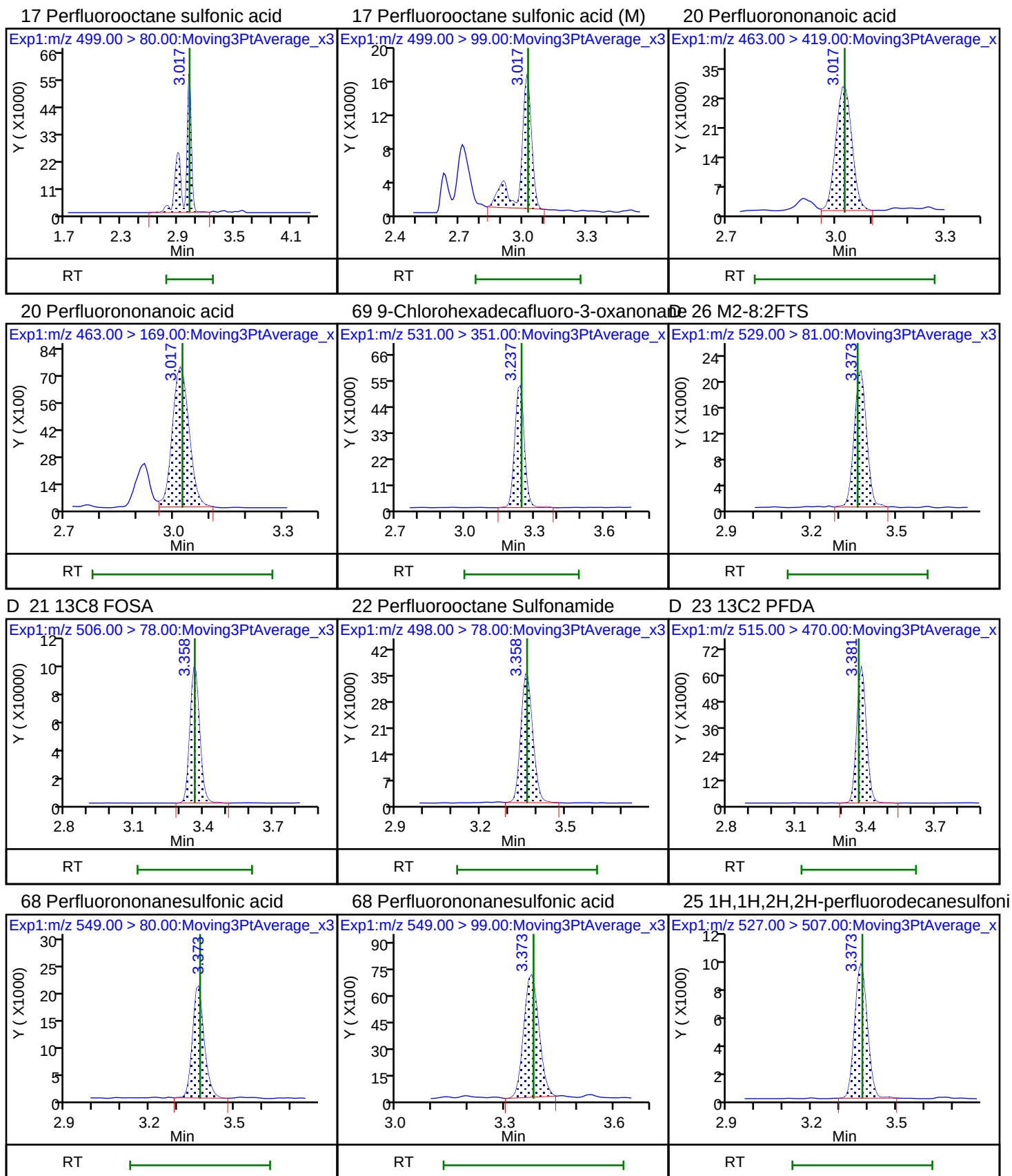


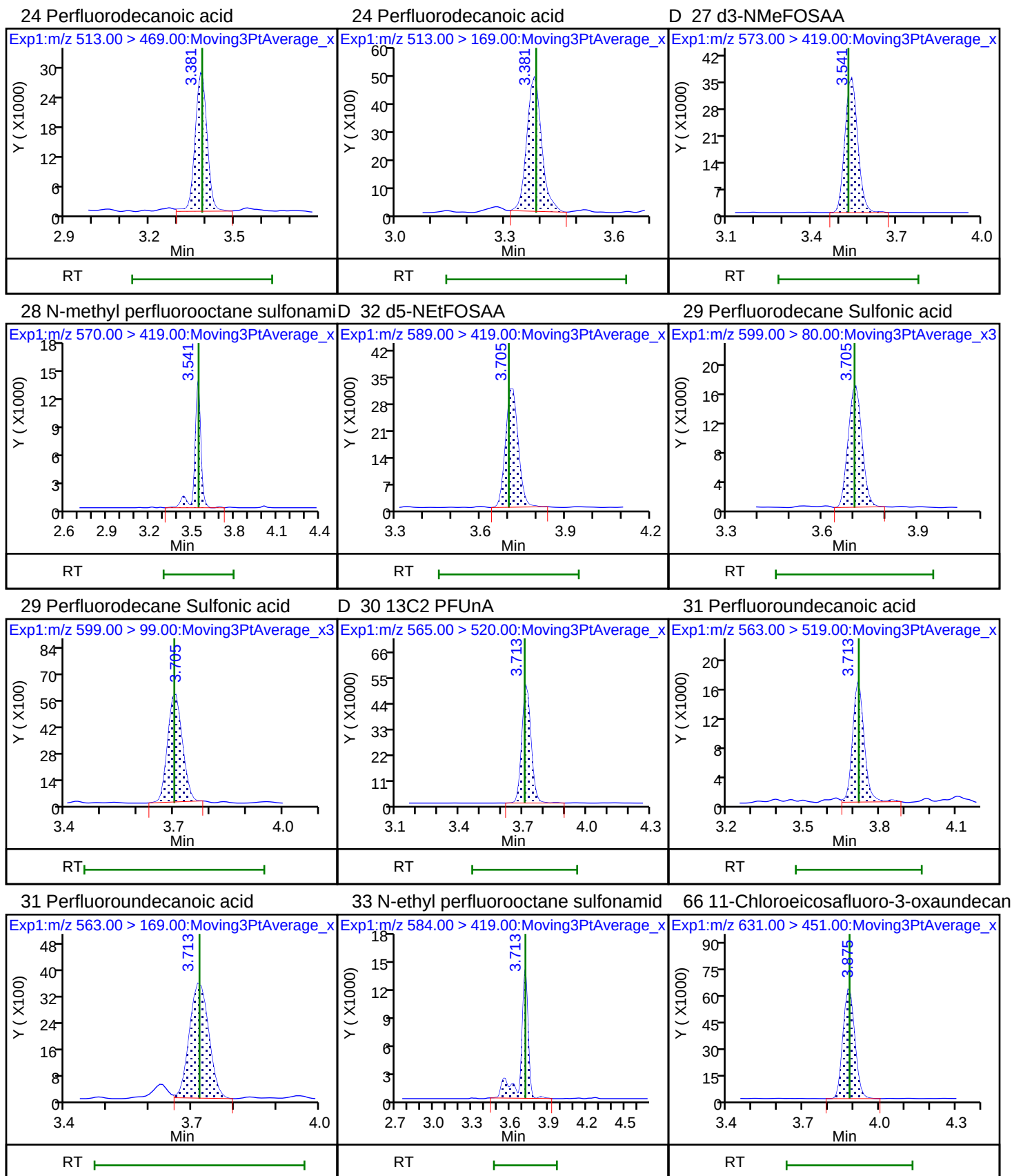
D 19 13C5 PFNA

D 72 13C8 PFOS (ND)

D 18 13C4 PFOS



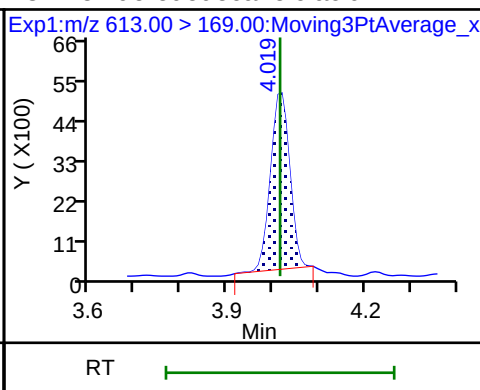
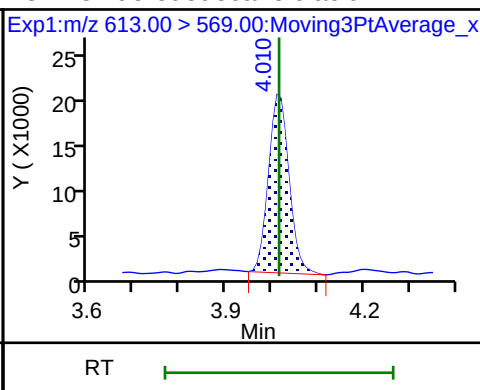
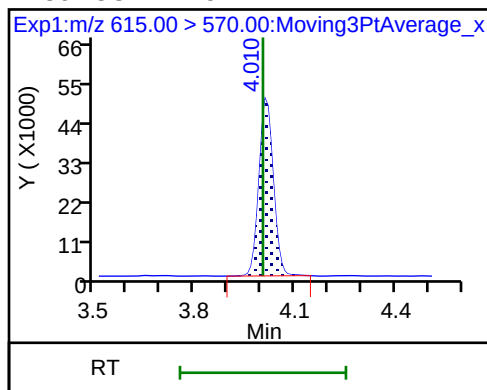




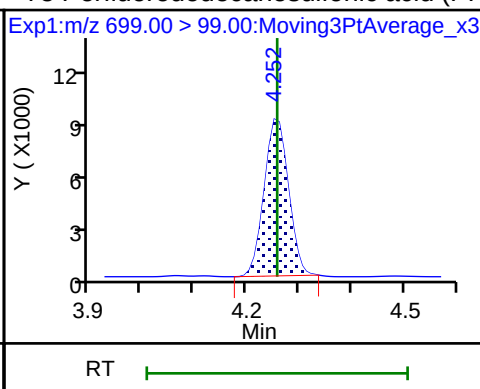
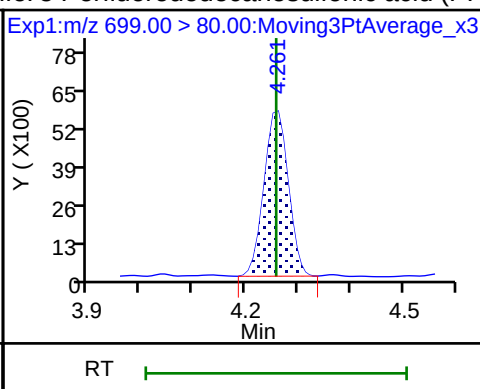
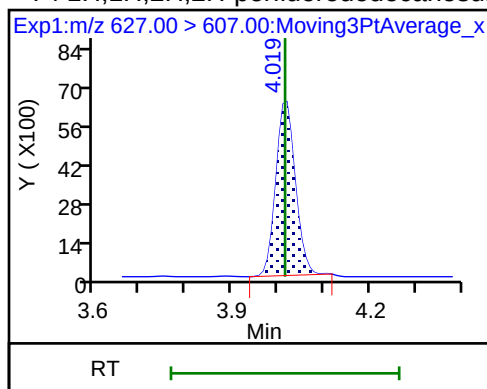
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



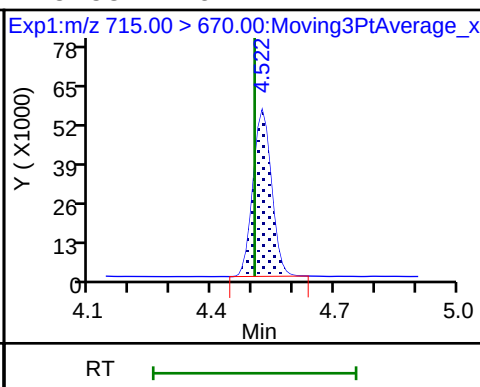
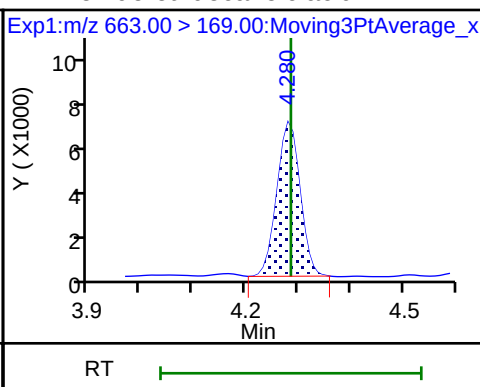
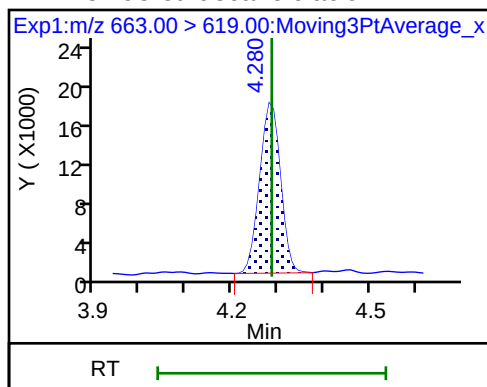
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

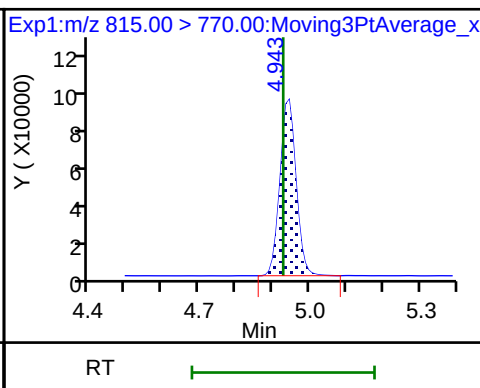
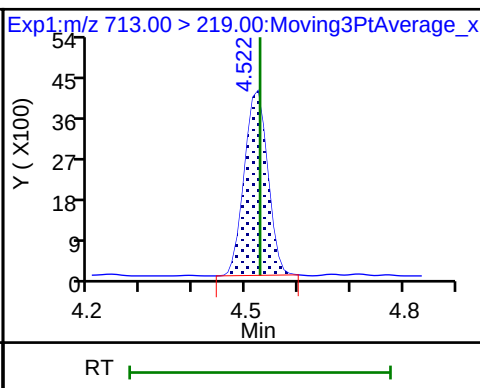
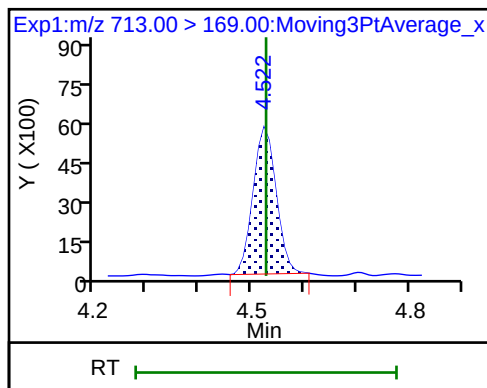
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

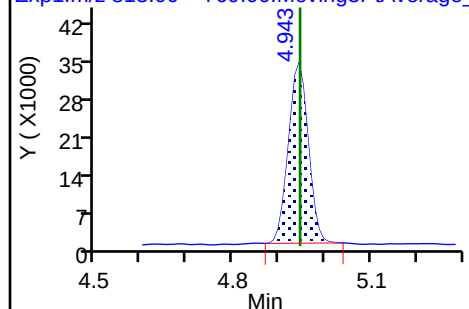


45 Perfluorohexadecanoic acid

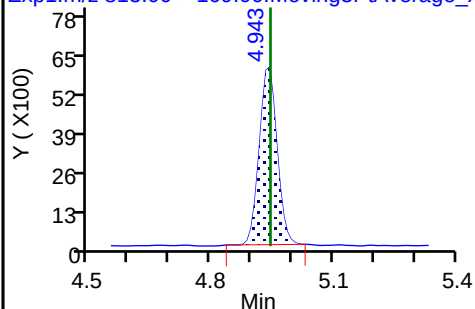
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

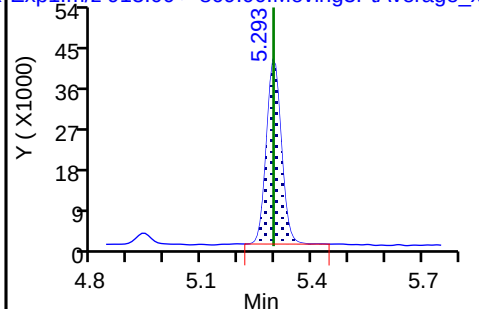
Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

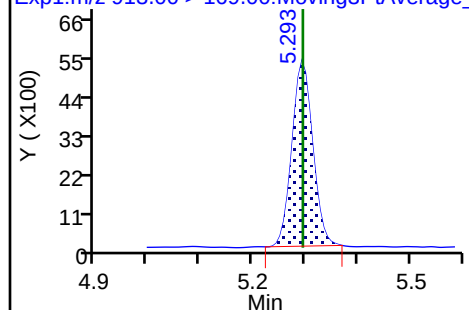


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

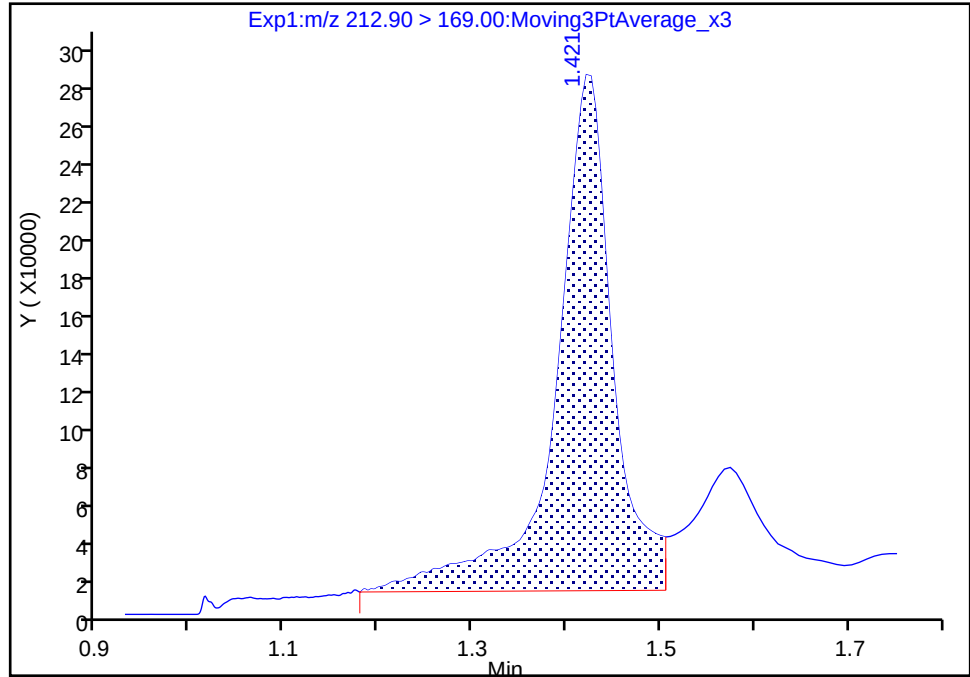
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181005-65344.b\2018.10.06LLAAA_021.d
Injection Date: 06-Oct-2018 20:12:06 Instrument ID: A8_N
Lims ID: 480-141919-Y-2-C MSD
Client ID: CRL-2I
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

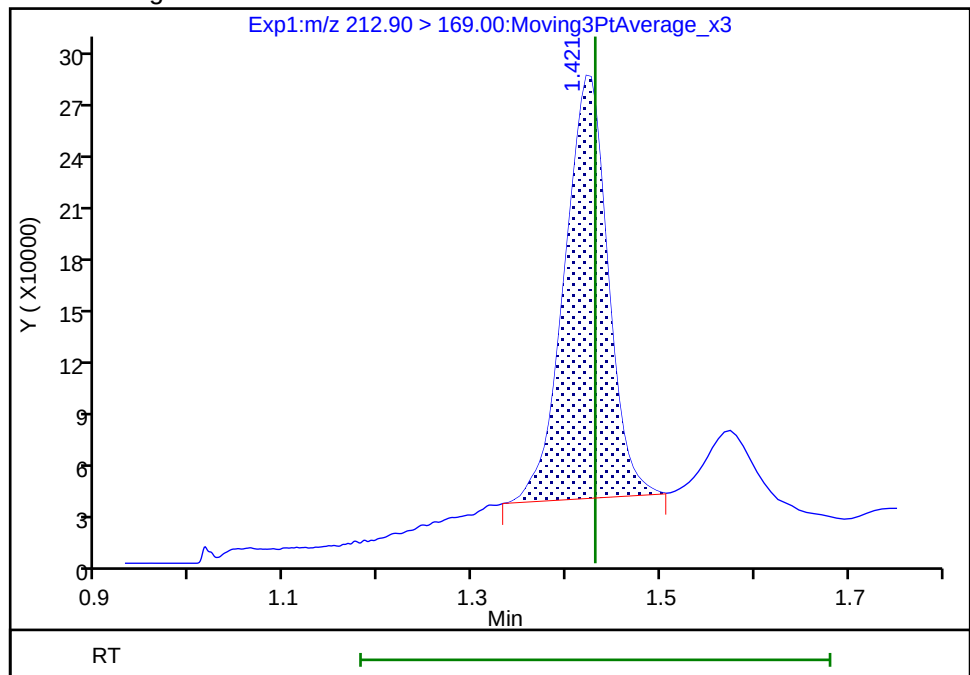
RT: 1.42
Area: 1150578
Amount: 1.067711
Amount Units: ng/ml

Processing Integration Results



RT: 1.42
Area: 789434
Amount: 0.732577
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 11-Oct-2018 10:46:50

Audit Action: Manually Integrated

Audit Reason: Baseline

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-43466-1

SDG No.: _____

Instrument ID: A8_NStart Date: 10/04/2018 04:37Analysis Batch Number: 249554End Date: 10/04/2018 05:36

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-249554/2		10/04/2018 04:37	1	2018.10.03LLICA LAAA 002.d	GeminiC18 3x100 3(mm)
IC 320-249554/3		10/04/2018 04:45	1	2018.10.03LLICA LAAA 003.d	GeminiC18 3x100 3(mm)
IC 320-249554/4		10/04/2018 04:52	1	2018.10.03LLICA LAAA 004.d	GeminiC18 3x100 3(mm)
IC 320-249554/5 ICIS		10/04/2018 04:59	1	2018.10.03LLICA LAAA 005.d	GeminiC18 3x100 3(mm)
IC 320-249554/6		10/04/2018 05:07	1	2018.10.03LLICA LAAA 006.d	GeminiC18 3x100 3(mm)
IC 320-249554/7		10/04/2018 05:14	1	2018.10.03LLICA LAAA 007.d	GeminiC18 3x100 3(mm)
IC 320-249554/8		10/04/2018 05:22	1	2018.10.03LLICA LAAA 008.d	GeminiC18 3x100 3(mm)
ICB 320-249554/9		10/04/2018 05:29	1	2018.10.03LLICA LAAA 009.d	GeminiC18 3x100 3(mm)
ICV 320-249554/10		10/04/2018 05:36	1	2018.10.03LLICA LAAA 010.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-43466-1

SDG No.: _____

Instrument ID: A8_NStart Date: 10/06/2018 17:58Analysis Batch Number: 250091End Date: 10/06/2018 22:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-250091/1		10/06/2018 17:58	1	2018.10.06LLAA 003.d	GeminiC18 3x100 3(mm)
CCVL 320-250091/2		10/06/2018 18:05	1	2018.10.06LLAA 004.d	GeminiC18 3x100 3(mm)
CCV 320-250091/3 CCVIS		10/06/2018 18:13	1	2018.10.06LLAA 005.d	GeminiC18 3x100 3(mm)
MB 320-248703/1-A		10/06/2018 18:20	1	2018.10.06LLAA 006.d	GeminiC18 3x100 3(mm)
LCS 320-248703/2-A		10/06/2018 18:27	1	2018.10.06LLAA 007.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 18:35	10		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 18:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 18:50	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 18:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 19:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 19:12	1		GeminiC18 3x100 3(mm)
320-43466-4		10/06/2018 19:20	1	2018.10.06LLAA 014.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 19:27	1		GeminiC18 3x100 3(mm)
CCV 320-250091/14		10/06/2018 19:34	1	2018.10.06LLAA 016.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 19:42	10		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 19:49	1		GeminiC18 3x100 3(mm)
480-141919-Y-2-B MS DL		10/06/2018 19:57	10	2018.10.06LLAA 019.d	GeminiC18 3x100 3(mm)
480-141919-Y-2-B MS		10/06/2018 20:04	1	2018.10.06LLAA 020.d	GeminiC18 3x100 3(mm)
480-141919-Y-2-C MSD DL		10/06/2018 20:12	10	2018.10.06LLAA 021.d	GeminiC18 3x100 3(mm)
480-141919-Y-2-C MSD		10/06/2018 20:19	1	2018.10.06LLAA 022.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 20:26	50		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 20:34	10		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 20:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 20:49	100		GeminiC18 3x100 3(mm)
CCV 320-250091/25		10/06/2018 20:56	1	2018.10.06LLAA 027.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 21:04	10		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 21:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 21:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 21:26	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 21:33	100		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 21:41	10		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 21:48	100		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 21:56	10		GeminiC18 3x100 3(mm)
CCV 320-250091/34		10/06/2018 22:03	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 22:11	100		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 22:18	10		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 22:25	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 22:33	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 22:40	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/06/2018 22:48	100		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Instrument ID: A8_N Start Date: 10/06/2018 17:58Analysis Batch Number: 250091 End Date: 10/06/2018 22:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-250091/41		10/06/2018 22:55	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Instrument ID: A9 Start Date: 09/21/2018 13:35Analysis Batch Number: 247100 End Date: 09/21/2018 16:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-247100/2		09/21/2018 13:35	1	2018.09.21LLAIC AL 005.d	Acquity 2.1 (mm)
IC 320-247100/4		09/21/2018 13:51	1	2018.09.21LLAIC AL 007.d	Acquity 2.1 (mm)
IC 320-247100/5 ICIS		09/21/2018 13:58	1	2018.09.21LLAIC AL 008.d	Acquity 2.1 (mm)
IC 320-247100/6		09/21/2018 14:06	1	2018.09.21LLAIC AL 009.d	Acquity 2.1 (mm)
IC 320-247100/7		09/21/2018 14:13	1	2018.09.21LLAIC AL 010.d	Acquity 2.1 (mm)
IC 320-247100/8		09/21/2018 14:21	1	2018.09.21LLAIC AL 011.d	Acquity 2.1 (mm)
IC 320-247100/11		09/21/2018 15:36	1	2018.09.21LLBIC AL 006.d	Acquity 2.1 (mm)
ICB 320-247100/12		09/21/2018 16:41	1	2018.09.21LLBIC AL 012.d	Acquity 2.1 (mm)
ICV 320-247100/13		09/21/2018 16:49	1	2018.09.21LLBIC AL 013.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Instrument ID: A9 Start Date: 10/02/2018 15:16Analysis Batch Number: 249188 End Date: 10/02/2018 16:01

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-249188/1		10/02/2018 15:16	1	2018.10.02LLA_0 04.d	Acquity 2.1 (mm)
CCVL 320-249188/2		10/02/2018 15:24	1	2018.10.02LLA_0 05.d	Acquity 2.1 (mm)
CCV 320-249188/3 CCVIS		10/02/2018 16:01	1	2018.10.02LLA_0 10.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-43466-1

SDG No.: _____

Instrument ID: A9Start Date: 10/02/2018 22:17Analysis Batch Number: 249235End Date: 10/03/2018 01:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-249235/1		10/02/2018 22:17	1	2018.10.02LLAA_ 040.d	Acquity 2.1 (mm)
MB 320-248967/1-A		10/02/2018 22:24	1	2018.10.02LLAA_ 041.d	Acquity 2.1 (mm)
LCS 320-248967/2-A		10/02/2018 22:32	1	2018.10.02LLAA_ 042.d	Acquity 2.1 (mm)
LCSD 320-248967/3-A		10/02/2018 22:39	1	2018.10.02LLAA_ 043.d	Acquity 2.1 (mm)
ZZZZZ		10/02/2018 22:47	1		Acquity 2.1 (mm)
ZZZZZ		10/02/2018 22:54	1		Acquity 2.1 (mm)
ZZZZZ		10/02/2018 23:02	1		Acquity 2.1 (mm)
ZZZZZ		10/02/2018 23:09	1		Acquity 2.1 (mm)
ZZZZZ		10/02/2018 23:17	1		Acquity 2.1 (mm)
ZZZZZ		10/02/2018 23:24	1		Acquity 2.1 (mm)
ZZZZZ		10/02/2018 23:32	1		Acquity 2.1 (mm)
CCV 320-249235/12		10/02/2018 23:39	1	2018.10.02LLAA_ 051.d	Acquity 2.1 (mm)
320-43466-1		10/02/2018 23:47	1	2018.10.02LLAA_ 052.d	Acquity 2.1 (mm)
320-43466-2		10/02/2018 23:54	1	2018.10.02LLAA_ 053.d	Acquity 2.1 (mm)
320-43466-3		10/03/2018 00:02	1	2018.10.02LLAA_ 054.d	Acquity 2.1 (mm)
320-43466-5		10/03/2018 00:09	1	2018.10.02LLAA_ 055.d	Acquity 2.1 (mm)
ZZZZZ		10/03/2018 00:32	1		Acquity 2.1 (mm)
ZZZZZ		10/03/2018 00:39	1		Acquity 2.1 (mm)
ZZZZZ		10/03/2018 00:47	1		Acquity 2.1 (mm)
ZZZZZ		10/03/2018 00:54	1		Acquity 2.1 (mm)
ZZZZZ		10/03/2018 01:02	1		Acquity 2.1 (mm)
ZZZZZ		10/03/2018 01:09	1		Acquity 2.1 (mm)
CCV 320-249235/25		10/03/2018 01:17	1	2018.10.02LLAA_ 064.d	Acquity 2.1 (mm)
ZZZZZ		10/03/2018 01:24	1		Acquity 2.1 (mm)
ZZZZZ		10/03/2018 01:32	1		Acquity 2.1 (mm)
ZZZZZ		10/03/2018 01:39	1		Acquity 2.1 (mm)
CCV 320-249235/29		10/03/2018 01:47	1		Acquity 2.1 (mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Batch Number: 248703 Batch Start Date: 10/01/18 05:03 Batch Analyst: Arauz, Horacio JBatch Method: 3535 Batch End Date: 10/01/18 11:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC ALL_SU 00115	LCPFC-IS 00090
MB 320-248703/1		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCS 320-248703/2		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
320-43466-A-4	Feild Duplicate	3535, 537 (modified)	T	291.72 g	28.38 g	263.3 mL	10.00 mL	500 uL	500 uL
480-141919-Y-2 MS		3535, 537 (modified)	T	296.12 g	29.74 g	266.4 mL	10.00 mL	500 uL	500 uL
480-141919-Y-2 MSD		3535, 537 (modified)	T	309.89 g	28.64 g	281.3 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00188	AnalysisComment				
MB 320-248703/1		3535, 537 (modified)							
LCS 320-248703/2		3535, 537 (modified)		500 uL					
320-43466-A-4	Feild Duplicate	3535, 537 (modified)	T						
480-141919-Y-2 MS		3535, 537 (modified)	T	500 uL	Yellow color				
480-141919-Y-2 MSD		3535, 537 (modified)	T	500 uL	Yellow color				

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)

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LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Batch Number: 248703 Batch Start Date: 10/01/18 05:03 Batch Analyst: Arauz, Horacio JBatch Method: 3535 Batch End Date: 10/01/18 11:40

Batch Notes	
Analyst ID - Aliquot Step	HJA
Balance ID	QA-078
Batch Comment	Client labels match TA labels, HJA 10-01-18
Analyst ID - Final Volume Step	HJA
H2O ID	09/28/18
Hexane ID	1353801
Internal Standard ID#	1366936
Manifold ID	R, I
Methanol ID	1378810
Sodium Hydroxide ID	1370360
Pipette ID	I46162G
Analyst ID - Reagent Drop	HJA
Analyst ID - IS Reagent Drop	HJA
Analyst ID - IS Reagent Drop Witness	KJP
Analyst ID - SU Reagent Drop	HJA
Analyst ID - SU Reagent Drop Witness	MNV
Solvent Lot #	1370564
Solvent Name	0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 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.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Batch Number: 248967 Batch Start Date: 10/02/18 04:35 Batch Analyst: Arauz, Horacio JBatch Method: 3535 Batch End Date: 10/02/18 12:08

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC ALL_SU 00115	LCPFC-IS 00090
MB 320-248967/1		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCS 320-248967/2		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCSD 320-248967/3		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
320-43466-A-1	MW019	3535, 537 (modified)	T	307.07 g	27.19 g	279.9 mL	10.00 mL	500 uL	500 uL
320-43466-A-2	MW023	3535, 537 (modified)	T	297.81 g	27.50 g	270.3 mL	10.00 mL	500 uL	500 uL
320-43466-A-3	MW020	3535, 537 (modified)	T	292.16 g	29.68 g	262.5 mL	10.00 mL	500 uL	500 uL
320-43466-A-5	Equipment Blank	3535, 537 (modified)	T	297.66 g	28.57 g	269.1 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00188	AnalysisComment				
MB 320-248967/1		3535, 537 (modified)							
LCS 320-248967/2		3535, 537 (modified)		500 uL					
LCSD 320-248967/3		3535, 537 (modified)		500 uL					
320-43466-A-1	MW019	3535, 537 (modified)	T		Cloudy				
320-43466-A-2	MW023	3535, 537 (modified)	T						
320-43466-A-3	MW020	3535, 537 (modified)	T						
320-43466-A-5	Equipment Blank	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.: 320-43466-1

SDG No.: _____

Batch Number: 248967 Batch Start Date: 10/02/18 04:35 Batch Analyst: Arauz, Horacio JBatch Method: 3535 Batch End Date: 10/02/18 12:08

Batch Notes	
Analyst ID - Aliquot Step	HJA
Balance ID	QA-078
Batch Comment	Client labels match TA labels, HJA 10-02-18
Analyst ID - Final Volume Step	HJA
H2O ID	10-01-18
Hexane ID	1353801
Internal Standard ID#	1366936
Manifold ID	J,H
Methanol ID	1378813
Sodium Hydroxide ID	1370360
Pipette ID	I46162G
Analyst ID - Reagent Drop	HJA
Analyst ID - IS Reagent Drop	HJA
Analyst ID - IS Reagent Drop Witness	KJP
Analyst ID - SU Reagent Drop	HJA
Analyst ID - SU Reagent Drop Witness	MNV
Solvent Lot #	1370566
Solvent Name	0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 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.

Shipping and Receiving Documents

BILL TO: EAP

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

[illegible]

Water Metals Filtered (Yes/No)?

Special Instructions

Relinquished by	Company	Date / Time	Received by	Company
<i>[Signature]</i>	SP	1730 19 Sep 18	1) <i>[Signature]</i>	SP
<i>[Signature]</i>	SP	9:20-18 11/20	Received by <i>[Signature]</i>	Company <i>[Signature]</i>
<i>[Signature]</i>	SP	9:20-18 11/20	Received by <i>[Signature]</i>	Company <i>[Signature]</i>
<i>[Signature]</i>	SP	9/10/18 15:30	Received by <i>[Signature]</i>	Company <i>[Signature]</i>

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200) Rhode Island (132).

Laboratory Certifications: New Jersey (12028), New
Massachusetts (M-NJ312), North Carolina (No. 578)

TAL-0016 (0715)

2
Secund. g. 11/11/18 0.80
25411 11/11/18 0.80

Don't look like

Login Sample Receipt Checklist

Client: Environmental Assessment & Remediations

Job Number: 320-43466-1

Login Number: 43466

List Source: TestAmerica Sacramento

List Number: 1

Creator: Williams, Chris B

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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 460-165184-1

Job Description: DEC-MONTAUK-Camp Hero

For:

Environmental Assessment & Remediations
dba Env Assessment & Remediation
225 Atlantic Avenue
Patchogue, NY 11772
Attention: Mr. Ian Hofmann



Approved for release.
Thomas A Chupela
Project Management Assistant I
9/26/2018 2:00 PM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
09/26/2018

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LA000132

TestAmerica Laboratories, Inc.

TestAmerica Edison 777 New Durham Road, Edison, NJ 08817
Tel (732) 549-3900 Fax (732) 549-3679 www.testamericainc.com



Job Number: 460-165184-1

Job Description: DEC-MONTAUK-Camp Hero

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Approved for release.
Thomas A. Chupela
Project Management Assistant I
9/26/2018 2:00 PM

Designee for
Melissa Haas

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CASE NARRATIVE

Client: Environmental Assessment & Remediations

Project: DEC-MONTAUK-Camp Hero

Report Number: 460-165184-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

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

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

RECEIPT

The samples were received on 9/20/2018 7:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

1,4 DIOXANE BY 8270D SIM, ISOTOPE DILUTION

Samples MW019 (460-165184-1), MW023 (460-165184-2), MW020 (460-165184-3), FIELD DUPLICATE (460-165184-4) and EQUIPMENT BLANK (460-165184-5) were analyzed for 1,4 Dioxane by 8270D SIM, Isotope Dilution in accordance with EPA SW-846 Method 8270D SIM. The samples were prepared on 09/23/2018 and analyzed on 09/24/2018.

No difficulties were encountered during the 1,4 Dioxane analysis.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-165184-1	MW019	Water	09/18/18 10:15	09/20/18 19:20
460-165184-2	MW023	Water	09/18/18 12:15	09/20/18 19:20
460-165184-3	MW020	Water	09/18/18 14:00	09/20/18 19:20
460-165184-4	FIELD DUPLICATE	Water	09/18/18 00:00	09/20/18 19:20
460-165184-5	EQUIPMENT BLANK	Water	09/18/18 09:45	09/20/18 19:20

Detection Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

Client Sample ID: MW019

Lab Sample ID: 460-165184-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.40		0.20	0.016	ug/L	1		8270D SIM ID	Total/NA

Client Sample ID: MW023

Lab Sample ID: 460-165184-2

No Detections.

Client Sample ID: MW020

Lab Sample ID: 460-165184-3

No Detections.

Client Sample ID: FIELD DUPLICATE

Lab Sample ID: 460-165184-4

No Detections.

Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 460-165184-5

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Edison

Method Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL EDI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL EDI

Protocol References:

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

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Client Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

Client Sample ID: MW019

Date Collected: 09/18/18 10:15

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-1

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	0.40		0.20	0.016	ug/L	—	09/23/18 15:08	09/24/18 16:12	1
Isotope Dilution		%Recovery	Qualifier	Limits					
1,4-Dioxane-d8		36		10 - 150					
							Prepared	Analyzed	Dil Fac
							09/23/18 15:08	09/24/18 16:12	1

Client Sample ID: MW023

Date Collected: 09/18/18 12:15

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-2

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	0.20	U	0.20	0.016	ug/L	—	09/23/18 15:08	09/24/18 16:29	1
Isotope Dilution		%Recovery	Qualifier	Limits					
1,4-Dioxane-d8		37		10 - 150					
							Prepared	Analyzed	Dil Fac
							09/23/18 15:08	09/24/18 16:29	1

Client Sample ID: MW020

Date Collected: 09/18/18 14:00

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-3

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	0.20	U	0.20	0.016	ug/L	—	09/23/18 15:08	09/24/18 16:46	1
Isotope Dilution		%Recovery	Qualifier	Limits					
1,4-Dioxane-d8		38		10 - 150					
							Prepared	Analyzed	Dil Fac
							09/23/18 15:08	09/24/18 16:46	1

Client Sample ID: FIELD DUPLICATE

Date Collected: 09/18/18 00:00

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-4

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	0.20	U	0.20	0.016	ug/L	—	09/23/18 15:08	09/24/18 17:04	1
Isotope Dilution		%Recovery	Qualifier	Limits					
1,4-Dioxane-d8		39		10 - 150					
							Prepared	Analyzed	Dil Fac
							09/23/18 15:08	09/24/18 17:04	1

Client Sample ID: EQUIPMENT BLANK

Date Collected: 09/18/18 09:45

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-5

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	0.20	U	0.20	0.016	ug/L	—	09/23/18 15:08	09/24/18 17:21	1
Isotope Dilution		%Recovery	Qualifier	Limits					
1,4-Dioxane-d8		40		10 - 150					
							Prepared	Analyzed	Dil Fac
							09/23/18 15:08	09/24/18 17:21	1

Isotope Dilution Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

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 (10-150)
460-165184-1	MW019	36
460-165184-2	MW023	37
460-165184-3	MW020	38
460-165184-4	FIELD DUPLICATE	39
460-165184-5	EQUIPMENT BLANK	40
MB 460-554464/1-A	Method Blank	49

Surrogate Legend

DXE = 1,4-Dioxane-d8

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 (10-200)
LCS 460-554464/2-A	Lab Control Sample	48
LCSD 460-554464/3-A	Lab Control Sample Dup	47

Surrogate Legend

DXE = 1,4-Dioxane-d8

QC Sample Results

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

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

Lab Sample ID: MB 460-554464/1-A

Matrix: Water

Analysis Batch: 553661

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 554464

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.20	0.016	ug/L	—	09/23/18 15:08	09/24/18 09:15	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	49		10 - 150				09/23/18 15:08	09/24/18 09:15	1

Lab Sample ID: LCS 460-554464/2-A

Matrix: Water

Analysis Batch: 553661

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 554464

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane			1.60	1.56		ug/L	—	98	10 - 200
Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits						
1,4-Dioxane-d8	48		10 - 200						

Lab Sample ID: LCSD 460-554464/3-A

Matrix: Water

Analysis Batch: 553661

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 554464

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
1,4-Dioxane			1.60	1.64		ug/L	—	103	10 - 200	5	50
Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits								
1,4-Dioxane-d8	47		10 - 200								

Definitions/Glossary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.

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)

QC Association Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

GC/MS Semi VOA

Analysis Batch: 553661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-165184-1	MW019	Total/NA	Water	8270D SIM ID	554464
460-165184-2	MW023	Total/NA	Water	8270D SIM ID	554464
460-165184-3	MW020	Total/NA	Water	8270D SIM ID	554464
460-165184-4	FIELD DUPLICATE	Total/NA	Water	8270D SIM ID	554464
460-165184-5	EQUIPMENT BLANK	Total/NA	Water	8270D SIM ID	554464
MB 460-554464/1-A	Method Blank	Total/NA	Water	8270D SIM ID	554464
LCS 460-554464/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	554464
LCSD 460-554464/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM ID	554464

Prep Batch: 554464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-165184-1	MW019	Total/NA	Water	3510C	
460-165184-2	MW023	Total/NA	Water	3510C	
460-165184-3	MW020	Total/NA	Water	3510C	
460-165184-4	FIELD DUPLICATE	Total/NA	Water	3510C	
460-165184-5	EQUIPMENT BLANK	Total/NA	Water	3510C	
MB 460-554464/1-A	Method Blank	Total/NA	Water	3510C	
LCS 460-554464/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 460-554464/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Lab Chronicle

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

Client Sample ID: MW019

Date Collected: 09/18/18 10:15

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			554464	09/23/18 15:08	SXG	TAL EDI
Total/NA	Analysis	8270D SIM ID		1	553661	09/24/18 16:12	CAZ	TAL EDI

Client Sample ID: MW023

Date Collected: 09/18/18 12:15

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			554464	09/23/18 15:08	SXG	TAL EDI
Total/NA	Analysis	8270D SIM ID		1	553661	09/24/18 16:29	CAZ	TAL EDI

Client Sample ID: MW020

Date Collected: 09/18/18 14:00

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			554464	09/23/18 15:08	SXG	TAL EDI
Total/NA	Analysis	8270D SIM ID		1	553661	09/24/18 16:46	CAZ	TAL EDI

Client Sample ID: FIELD DUPLICATE

Date Collected: 09/18/18 00:00

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			554464	09/23/18 15:08	SXG	TAL EDI
Total/NA	Analysis	8270D SIM ID		1	553661	09/24/18 17:04	CAZ	TAL EDI

Client Sample ID: EQUIPMENT BLANK

Date Collected: 09/18/18 09:45

Date Received: 09/20/18 19:20

Lab Sample ID: 460-165184-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			554464	09/23/18 15:08	SXG	TAL EDI
Total/NA	Analysis	8270D SIM ID		1	553661	09/24/18 17:21	CAZ	TAL EDI

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: Environmental Assessment & Remediations
Project/Site: DEC-MONTAUK-Camp Hero

TestAmerica Job ID: 460-165184-1

Laboratory: TestAmerica Edison

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11452	04-01-19

8270D_SIM_MS_ID

Semivolatile Organic Compounds
(GC/MS SIM / Isotope Dilution)

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Edison

Job No.: 460-165184-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): Rtxi-5Sil M ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	DXE #
MW019	460-165184-1	36
MW023	460-165184-2	37
MW020	460-165184-3	38
FIELD DUPLICATE	460-165184-4	39
EQUIPMENT BLANK	460-165184-5	40
	MB 460-554464/1-A	49

DXE = 1,4-Dioxane-d8

QC LIMITS
10-150

Column to be used to flag recovery values

FORM II 8270D SIM ID

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Edison

Job No.: 460-165184-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): Rtxi-5Sil M ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	DXE #
	LCS 460-554464/2-A	48
	LCSD 460-554464/3-A	47

DXE = 1,4-Dioxane-d8

QC LIMITS
10-200

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 Edison Job No.: 460-165184-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: C31781.D
Lab ID: LCS 460-554464/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	1.60	1.56	98	10-200	
1,4-Dioxane-d8	32.0	15.3	48	10-200	

Column to be used to flag recovery and RPD values

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-165184-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: C31782.D
 Lab ID: LCSD 460-554464/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,4-Dioxane	1.60	1.64	103	5	50	10-200	
1,4-Dioxane-d8	32.0	15.1	47			10-200	

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 Edison Job No.: 460-165184-1
SDG No.: _____
Lab File ID: C31780.D Lab Sample ID: MB 460-554464/1-A
Matrix: Water Date Extracted: 09/23/2018 15:08
Instrument ID: CBNAMS13 Date Analyzed: 09/24/2018 09:15
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 460-554464/2-A	C31781.D	09/24/2018 09:33
	LCSD 460-554464/3-A	C31782.D	09/24/2018 09:50
MW019	460-165184-1	C31804.D	09/24/2018 16:12
MW023	460-165184-2	C31805.D	09/24/2018 16:29
MW020	460-165184-3	C31806.D	09/24/2018 16:46
FIELD DUPLICATE	460-165184-4	C31807.D	09/24/2018 17:04
EQUIPMENT BLANK	460-165184-5	C31808.D	09/24/2018 17:21

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

Lab Name: TestAmerica Edison Job No.: 460-165184-1
SDG No.: _____
Lab File ID: C28985.D DFTPP Injection Date: 05/11/2018
Instrument ID: CBNAMS13 DFTPP Injection Time: 12:33
Analysis Batch No.: 518314

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0 % of mass 198	42.1
68	Less than 2.0 % of mass 69	0.7 (1.8) 1
69	Mass 69 relative abundance	40.1
70	Less than 2.0 % of mass 69	0.2 (0.4) 1
127	40.0 - 60.0 % of mass 198	47.0
197	Less than 1.0 % of mass 198	0.0
198	Base Peak, 100 % relative abundance	100.0
199	5.0- 9.0 % of mass 198	6.7
275	10.0 - 30.0 % of mass 198	26.5
365	Greater than 1.0 % of mass 198	3.4
441	Present but less than mass 443	15.2 (79.7) 3
442	Greater than 40.0 % of mass 198	94.8
443	17.0 - 23.0 % of mass 442	19.1 (20.1) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

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
	ICIS 460-518314/2	C28986.D	05/11/2018	12:48
	STD8 460-518314/3	C28987.D	05/11/2018	13:08
	STD7 460-518314/4	C28988.D	05/11/2018	13:27
	STD6 460-518314/5	C28989.D	05/11/2018	14:16
	STD4 460-518314/6	C28990.D	05/11/2018	14:35
	STD3 460-518314/7	C28991.D	05/11/2018	15:44
	STD2 460-518314/8	C28992.D	05/11/2018	16:02
	STD1 460-518314/9	C28993.D	05/11/2018	17:20

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

Lab Name: TestAmerica Edison Job No.: 460-165184-1
SDG No.: _____
Lab File ID: C31778.D DFTPP Injection Date: 09/24/2018
Instrument ID: CBNAMS13 DFTPP Injection Time: 08:39
Analysis Batch No.: 553661

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0 % of mass 198	36.7
68	Less than 2.0 % of mass 69	0.6 (1.6) 1
69	Mass 69 relative abundance	36.2
70	Less than 2.0 % of mass 69	0.2 (0.4) 1
127	40.0 - 60.0 % of mass 198	47.4
197	Less than 1.0 % of mass 198	0.4
198	Base Peak, 100 % relative abundance	100.0
199	5.0- 9.0 % of mass 198	6.8
275	10.0 - 30.0 % of mass 198	24.9
365	Greater than 1.0 % of mass 198	3.1
441	Present but less than mass 443	12.9 (76.7) 3
442	Greater than 40.0 % of mass 198	85.2
443	17.0 - 23.0 % of mass 442	16.8 (19.7) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

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 460-553661/2	C31779.D	09/24/2018	08:54
	MB 460-554464/1-A	C31780.D	09/24/2018	09:15
	LCS 460-554464/2-A	C31781.D	09/24/2018	09:33
	LCSD 460-554464/3-A	C31782.D	09/24/2018	09:50
MW019	460-165184-1	C31804.D	09/24/2018	16:12
MW023	460-165184-2	C31805.D	09/24/2018	16:29
MW020	460-165184-3	C31806.D	09/24/2018	16:46
FIELD DUPLICATE	460-165184-4	C31807.D	09/24/2018	17:04
EQUIPMENT BLANK	460-165184-5	C31808.D	09/24/2018	17:21

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

Lab Name: TestAmerica Edison Job No.: 460-165184-1
 SDG No.: _____
 Sample No.: CCVIS 460-553661/2 Date Analyzed: 09/24/2018 08:54
 Instrument ID: CBNAMS13 GC Column: Rtxi-5Sil MS ID: 0.25 (mm)
 Lab File ID (Standard): C31779.D Heated Purge: (Y/N) N
 Calibration ID: 68479

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		548257	5.70				
UPPER LIMIT							
LOWER LIMIT							
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 460-554464/1-A		477739	5.70				
LCS 460-554464/2-A		470704	5.71				
LCSD 460-554464/3-A		488760	5.70				
460-165184-1	MW019	447303	5.71				
460-165184-2	MW023	445998	5.70				
460-165184-3	MW020	469450	5.71				
460-165184-4	FIELD DUPLICATE	462968	5.70				
460-165184-5	EQUIPMENT BLANK	451622	5.70				

Column used to flag values outside QC limits

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-165184-1
SDG No.: _____
Client Sample ID: MW019 Lab Sample ID: 460-165184-1
Matrix: Water Lab File ID: C31804.D
Analysis Method: 8270D SIM ID Date Collected: 09/18/2018 10:15
Extract. Method: 3510C Date Extracted: 09/23/2018 15:08
Sample wt/vol: 250 (mL) Date Analyzed: 09/24/2018 16:12
Con. Extract Vol.: 2 (mL) Dilution Factor: 1
Injection Volume: 5 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 553661 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.40		0.20	0.016

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	36		10-150

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31804.D
 Lims ID: 460-165184-B-1-A
 Client ID: MW019
 Sample Type: Client
 Inject. Date: 24-Sep-2018 16:12:30 ALS Bottle#: 27 Worklist Smp#: 27
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0078959-027
 Operator ID: bes Instrument ID: CBNAMS13
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 25-Sep-2018 10:25:45 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: khlungprakhons

Date: 25-Sep-2018 13:54:32

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.973	2.984	-0.013	0	1283721	1.45	36.3	
2 1,4-Dioxane	88	3.009	3.014	-0.005	84	20698	0.0498		
* 4 1,4-Dichlorobenzene-d4	152	5.706	5.704	0.002	98	447303	0.2000		

Reagents:

SM_iso_d4istd_00003 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31804.D

Injection Date: 24-Sep-2018 16:12:30

Instrument ID: CBNAMS13

Operator ID: bes

Lims ID: 460-165184-B-1-A

Lab Sample ID: 460-165184-1

Worklist Smp#: 27

Client ID: MW019

Injection Vol: 5.0 ul

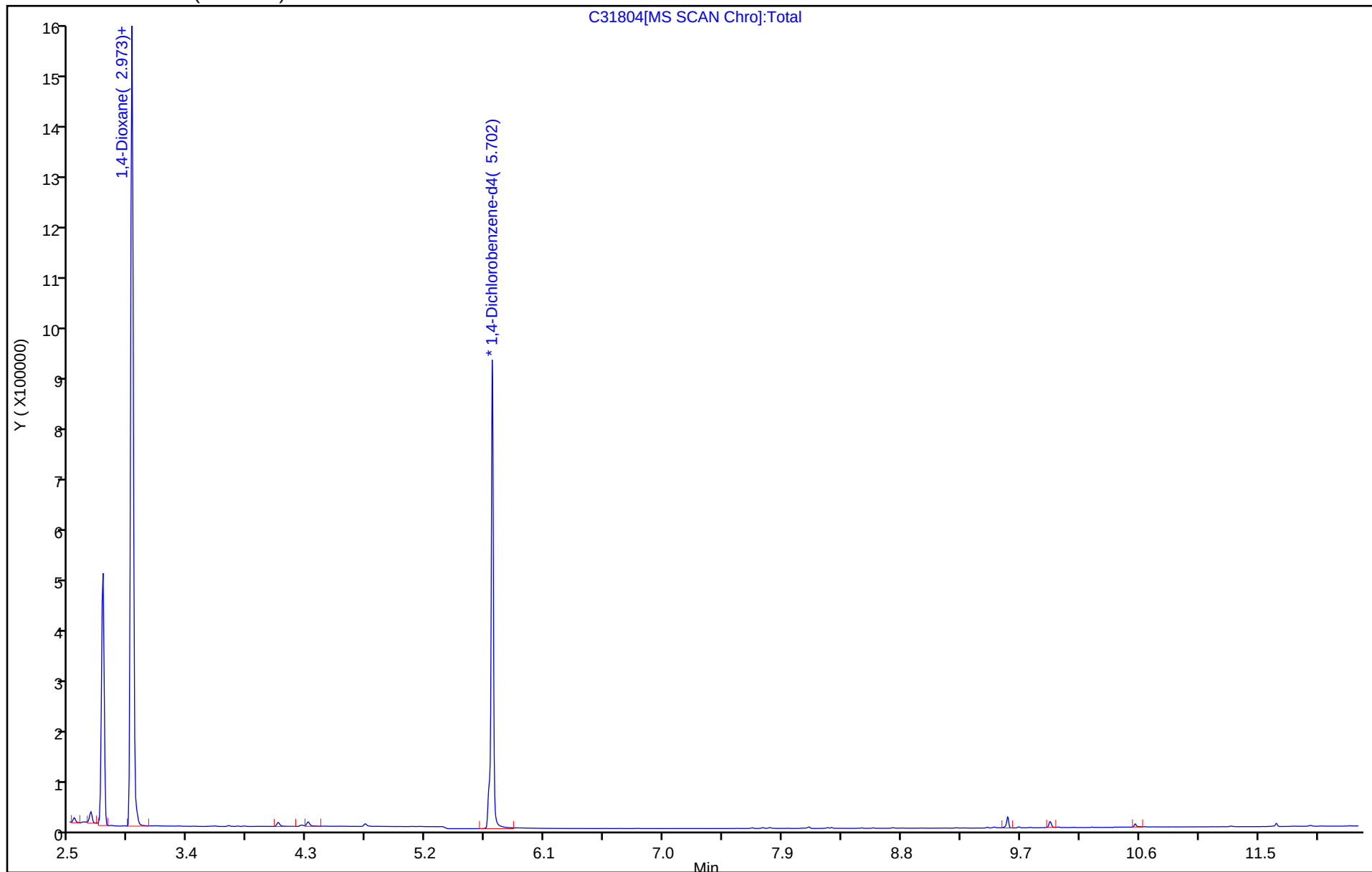
Dil. Factor: 1.0000

ALS Bottle#: 27

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31804.D

Injection Date: 24-Sep-2018 16:12:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-B-1-A

Lab Sample ID: 460-165184-1

Client ID: MW019

Operator ID: bes

ALS Bottle#: 27 Worklist Smp#: 27

Injection Vol: 5.0 ul

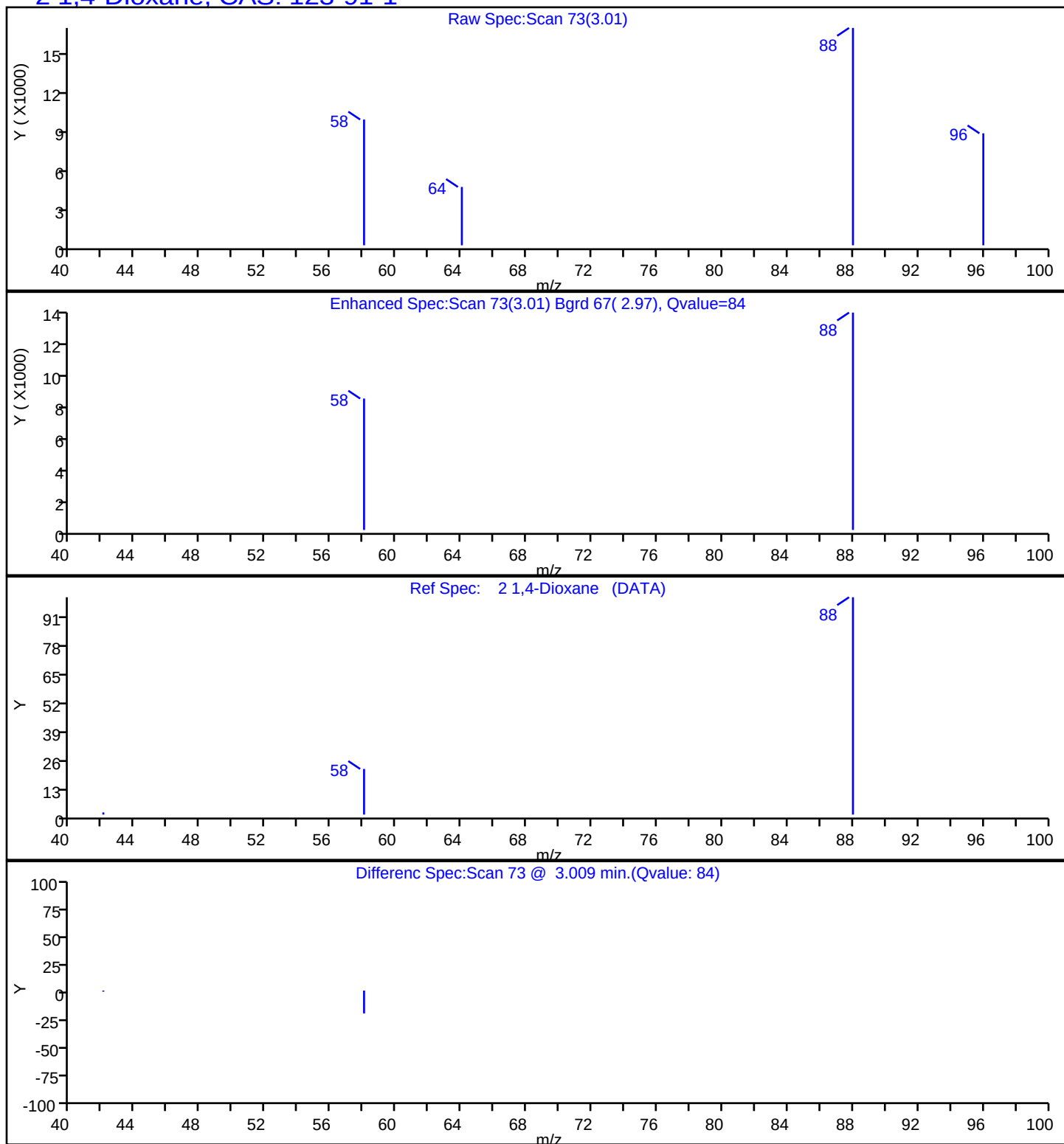
Dil. Factor: 1.0000

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

Detector: MS SCAN

2 1,4-Dioxane, CAS: 123-91-1

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31804.D

Injection Date: 24-Sep-2018 16:12:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-B-1-A

Lab Sample ID: 460-165184-1

Client ID: MW019

Operator ID: bes

ALS Bottle#: 27 Worklist Smp#: 27

Injection Vol: 5.0 ul

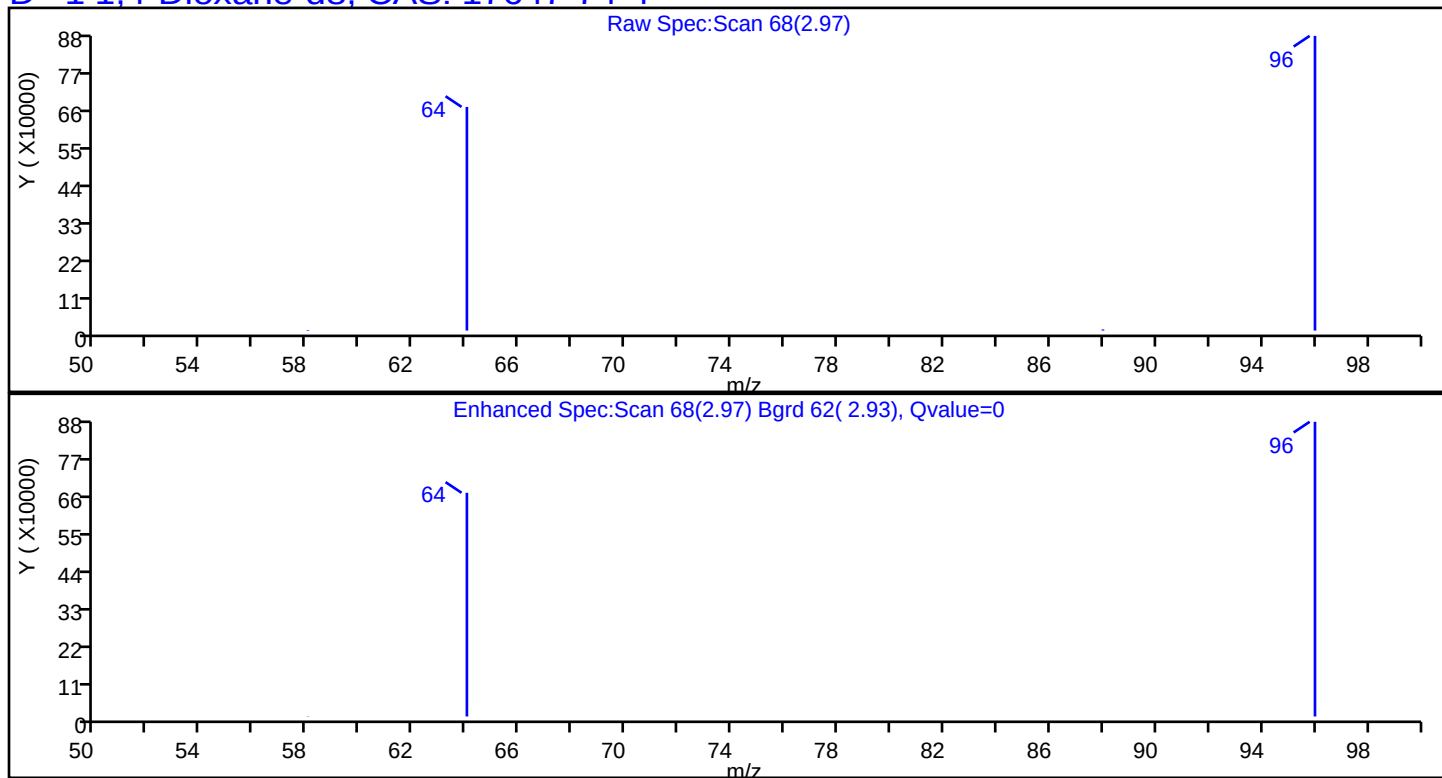
Dil. Factor: 1.0000

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

Detector MS SCAN

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

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-165184-1
 SDG No.: _____
 Client Sample ID: MW023 Lab Sample ID: 460-165184-2
 Matrix: Water Lab File ID: C31805.D
 Analysis Method: 8270D SIM ID Date Collected: 09/18/2018 12:15
 Extract. Method: 3510C Date Extracted: 09/23/2018 15:08
 Sample wt/vol: 250 (mL) Date Analyzed: 09/24/2018 16:29
 Con. Extract Vol.: 2 (mL) Dilution Factor: 1
 Injection Volume: 5 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 553661 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.20	U	0.20	0.016

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	37		10-150

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31805.D
 Lims ID: 460-165184-A-2-A
 Client ID: MW023
 Sample Type: Client
 Inject. Date: 24-Sep-2018 16:29:30 ALS Bottle#: 28 Worklist Smp#: 28
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0078959-028
 Operator ID: bes Instrument ID: CBNAMS13
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 25-Sep-2018 10:25:45 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: khlungprakhons

Date: 25-Sep-2018 13:54:52

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	%Rec	Flags

D 1	1,4-Dioxane-d8	96	3.001	2.984	0.015	0	1311990	1.49	37.2
* 4	1,4-Dichlorobenzene-d4	152	5.702	5.704	-0.002	97	445998	0.2000	

Reagents:

SM_iso_d4istd_00003 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Edison

Data File: \\ChromNA\\Edison\\ChromData\\CBNAMS13\\20180920-78959.b\\C31805.D

Injection Date: 24-Sep-2018 16:29:30

Instrument ID: CBNAMS13

Operator ID: bes

Lims ID: 460-165184-A-2-A

Lab Sample ID: 460-165184-2

Worklist Smp#: 28

Client ID: MW023

Injection Vol: 5.0 ul

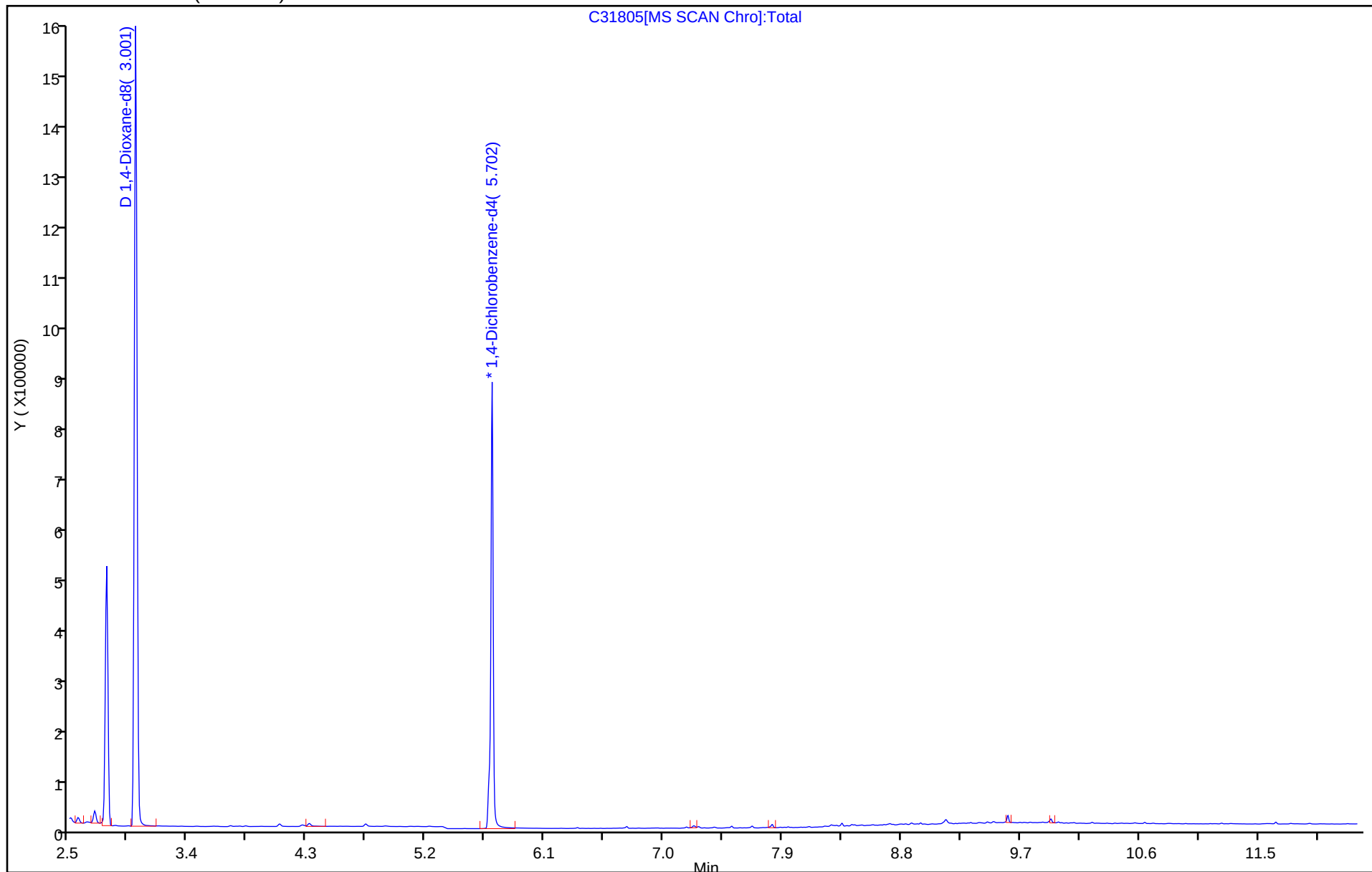
Dil. Factor: 1.0000

ALS Bottle#: 28

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31805.D

Injection Date: 24-Sep-2018 16:29:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-A-2-A

Lab Sample ID: 460-165184-2

Client ID: MW023

Operator ID: bes

ALS Bottle#: 28 Worklist Smp#: 28

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

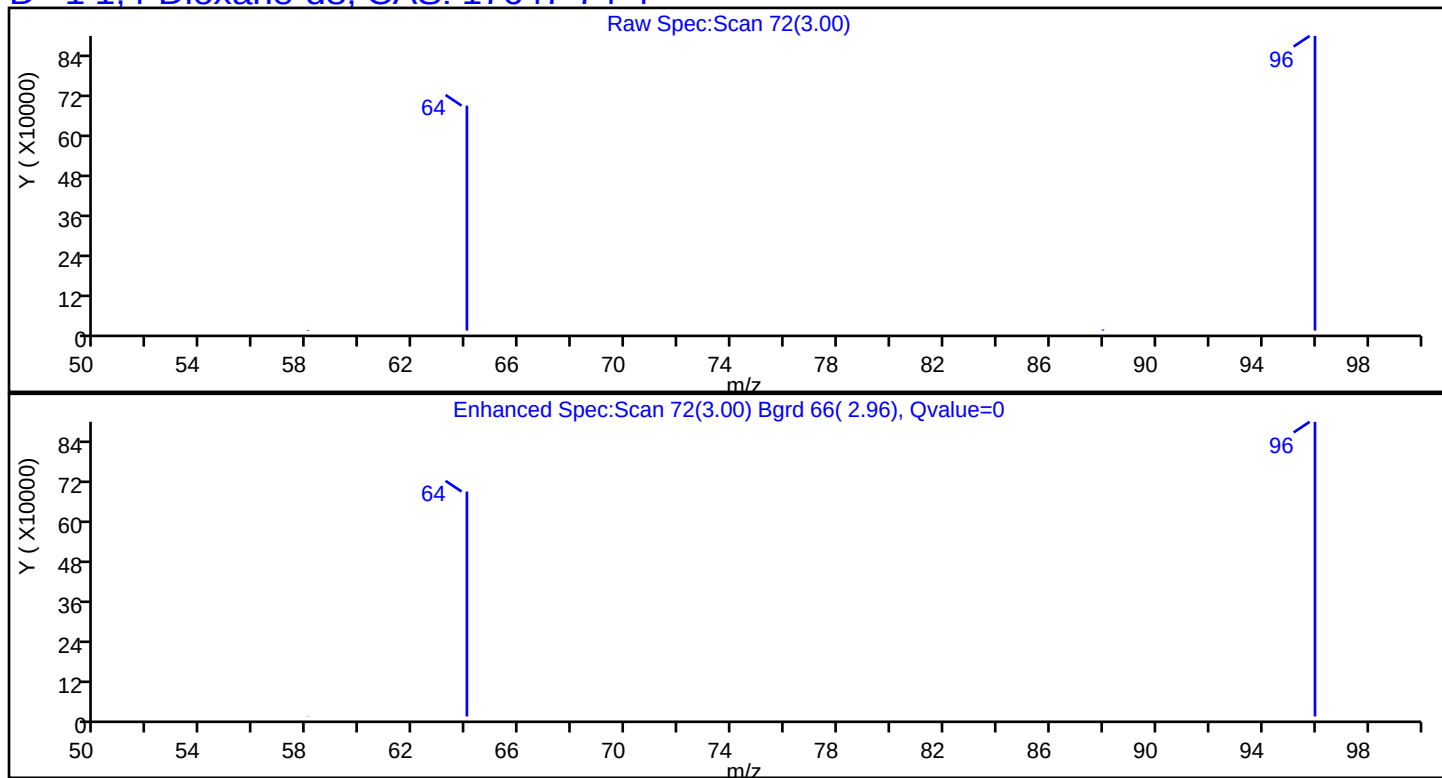
Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

Detector MS SCAN

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



TestAmerica Edison

Data File: \\ChromNA\\Edison\\ChromData\\CBNAMS13\\20180920-78959.b\\C31805.D

Injection Date: 24-Sep-2018 16:29:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-A-2-A

Lab Sample ID: 460-165184-2

Client ID: MW023

Operator ID: bes

ALS Bottle#:

28

Worklist Smp#: 28

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

Method: 8270_Isotope

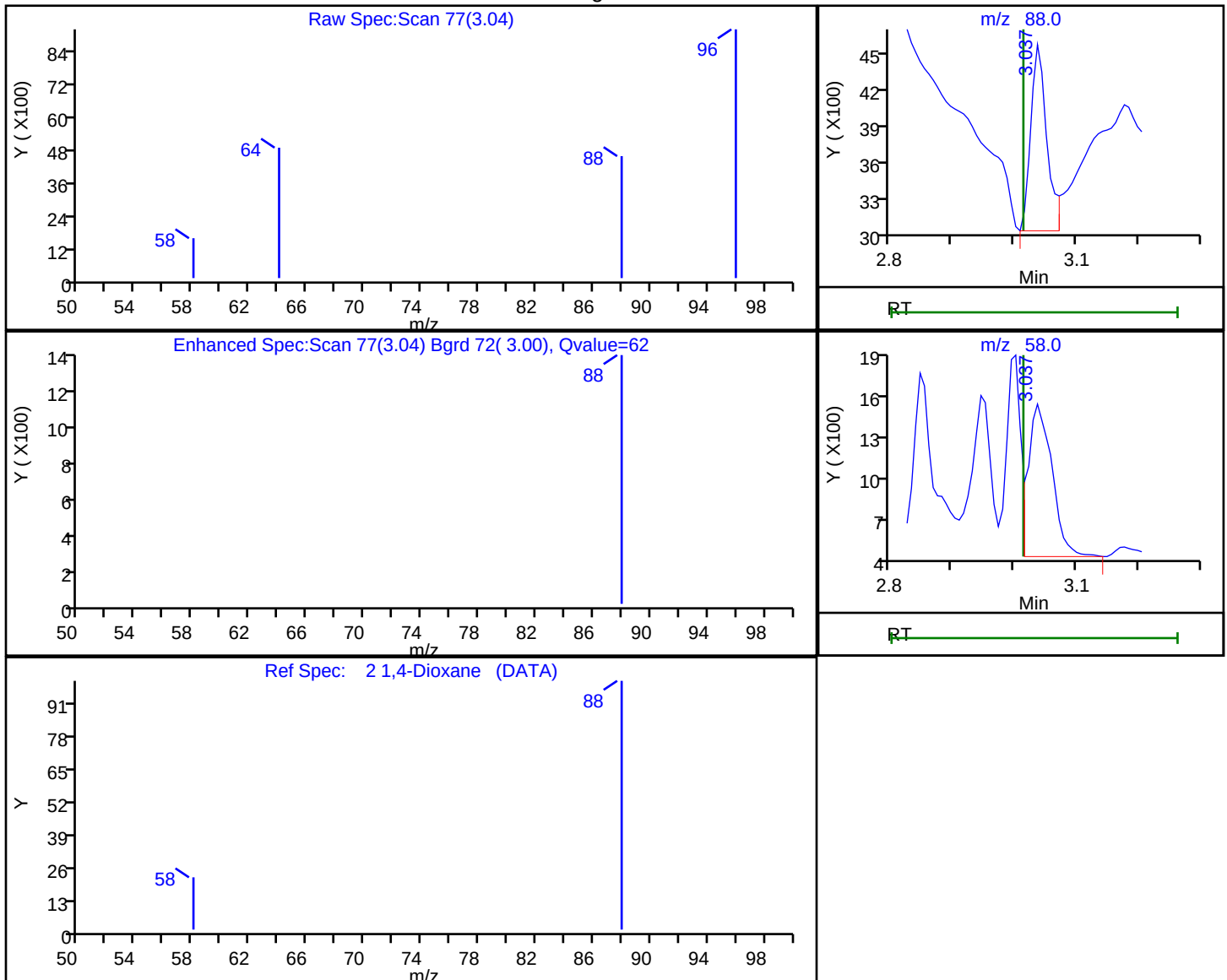
Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

Detector: MS SCAN

2 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
3.04	88.00	2554	0.006014
3.04	58.00	2836	

Reviewer: khlungprakhons, 25-Sep-2018 13:59:06

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-165184-1
 SDG No.: _____
 Client Sample ID: MW020 Lab Sample ID: 460-165184-3
 Matrix: Water Lab File ID: C31806.D
 Analysis Method: 8270D SIM ID Date Collected: 09/18/2018 14:00
 Extract. Method: 3510C Date Extracted: 09/23/2018 15:08
 Sample wt/vol: 250 (mL) Date Analyzed: 09/24/2018 16:46
 Con. Extract Vol.: 2 (mL) Dilution Factor: 1
 Injection Volume: 5 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 553661 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.20	U	0.20	0.016

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	38		10-150

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31806.D
 Lims ID: 460-165184-A-3-A
 Client ID: MW020
 Sample Type: Client
 Inject. Date: 24-Sep-2018 16:46:30 ALS Bottle#: 29 Worklist Smp#: 29
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0078959-029
 Operator ID: bes Instrument ID: CBNAMS13
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 25-Sep-2018 10:25:45 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: khlungprakhons

Date: 25-Sep-2018 13:55:09

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	%Rec	Flags
D 1 1,4-Dioxane-d8	96	3.001	2.984	0.015	0	1394653	1.50	37.6	
* 4 1,4-Dichlorobenzene-d4	152	5.706	5.704	0.002	99	469450	0.2000		

Reagents:

SM_iso_d4istd_00003 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31806.D

Injection Date: 24-Sep-2018 16:46:30

Instrument ID: CBNAMS13

Operator ID: bes

Lims ID: 460-165184-A-3-A

Lab Sample ID: 460-165184-3

Worklist Smp#: 29

Client ID: MW020

Injection Vol: 5.0 ul

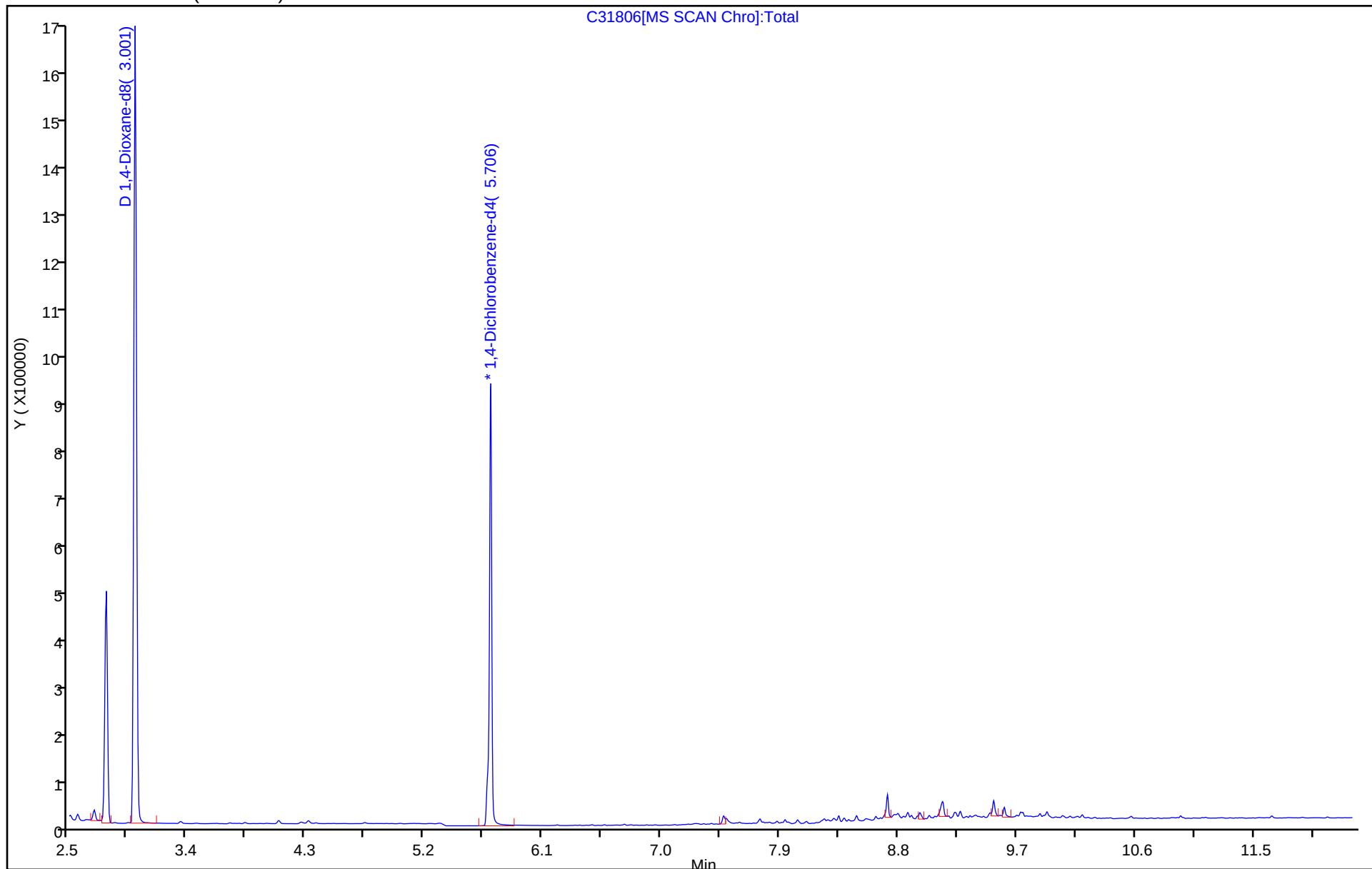
Dil. Factor: 1.0000

ALS Bottle#: 29

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison

Data File: \\ChromNA\\Edison\\ChromData\\CBNAMS13\\20180920-78959.b\\C31806.D

Injection Date: 24-Sep-2018 16:46:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-A-3-A

Lab Sample ID: 460-165184-3

Client ID: MW020

Operator ID: bes

ALS Bottle#: 29

Worklist Smp#: 29

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

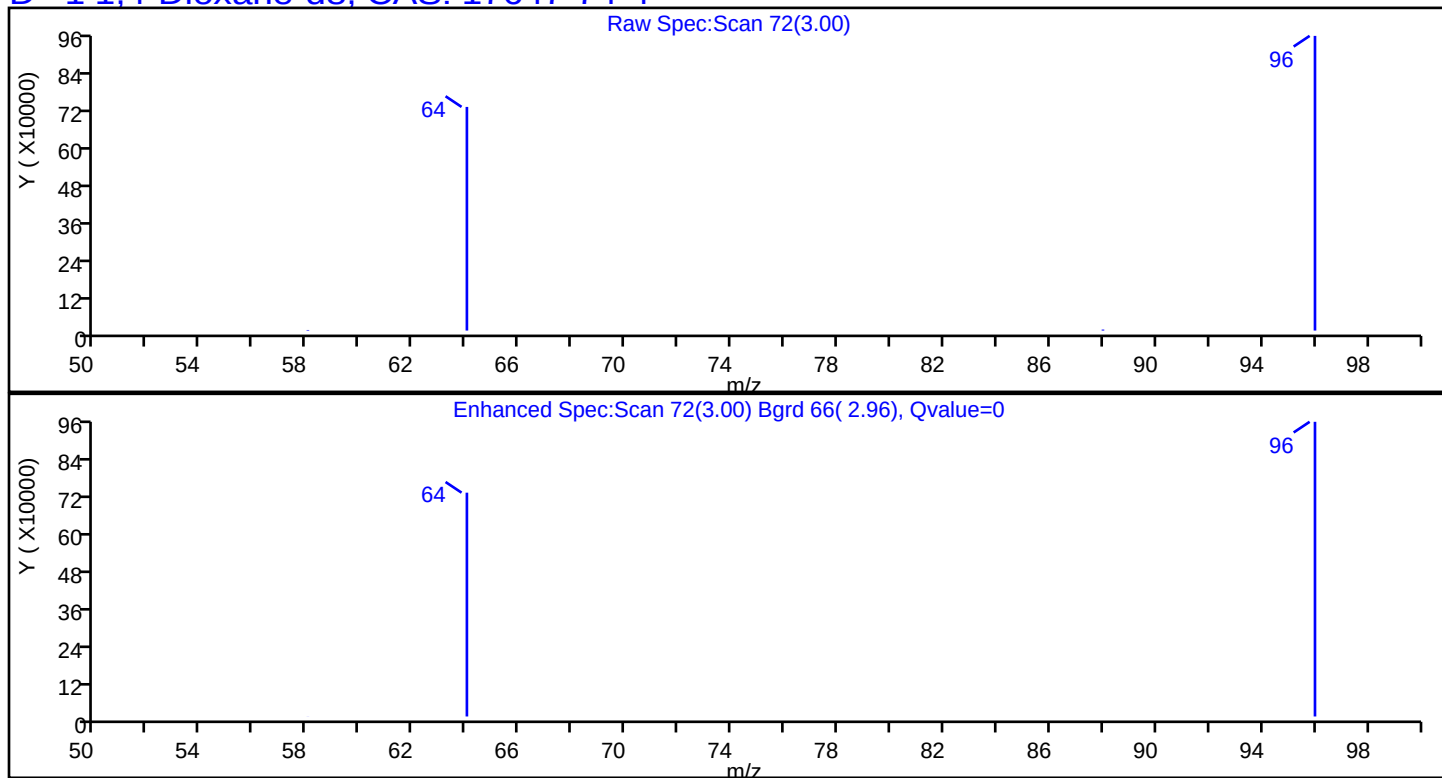
Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

Detector MS SCAN

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



TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31806.D

Injection Date: 24-Sep-2018 16:46:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-A-3-A

Lab Sample ID: 460-165184-3

Client ID: MW020

Operator ID: bes

ALS Bottle#:

29

Worklist Smp#: 29

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

Method: 8270_Isotope

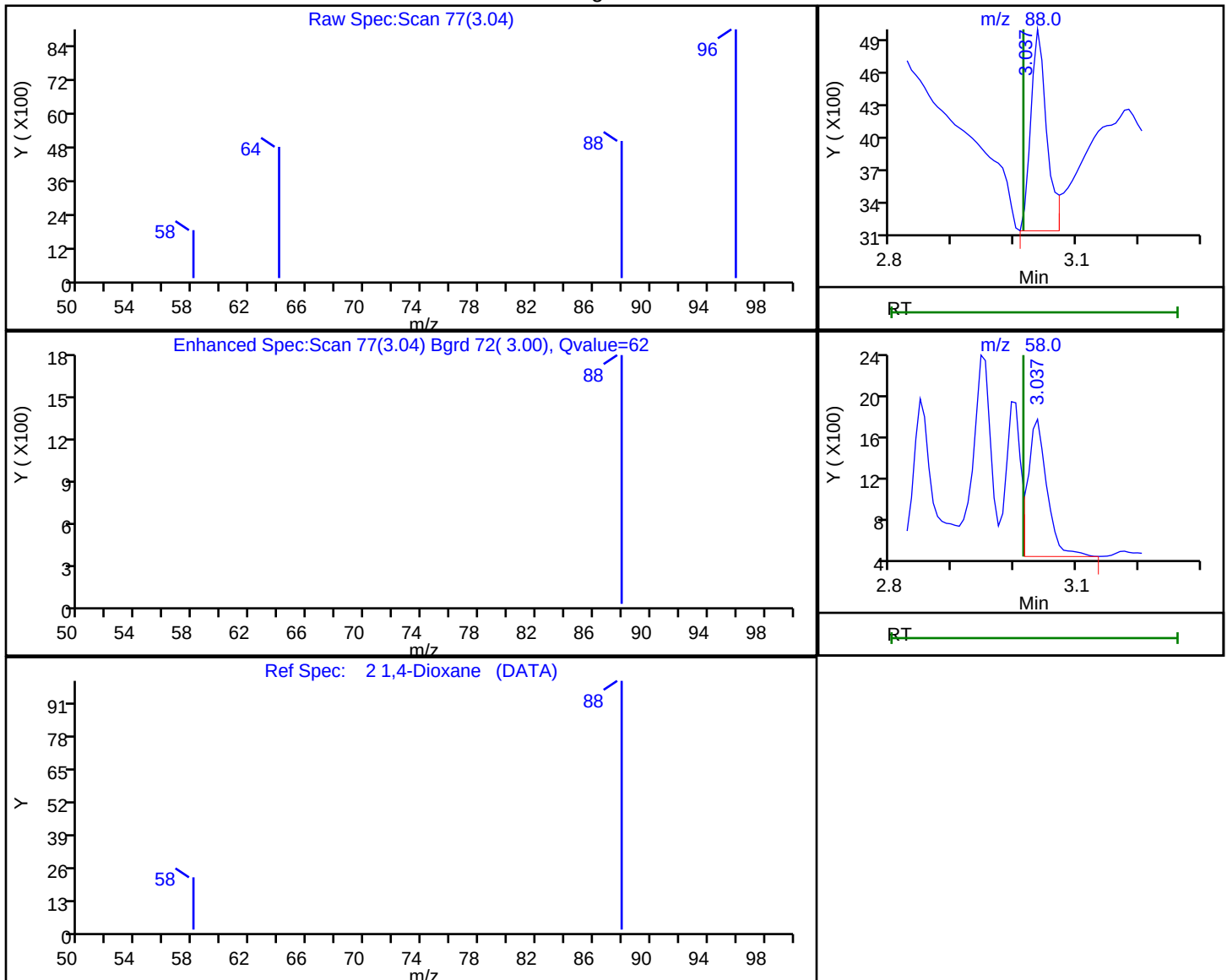
Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

Detector MS SCAN

2 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
3.04	88.00	3237	0.007171
3.04	58.00	2796	

Reviewer: khlungprakhons, 25-Sep-2018 13:59:12

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-165184-1
SDG No.: _____
Client Sample ID: FIELD DUPLICATE Lab Sample ID: 460-165184-4
Matrix: Water Lab File ID: C31807.D
Analysis Method: 8270D SIM ID Date Collected: 09/18/2018 00:00
Extract. Method: 3510C Date Extracted: 09/23/2018 15:08
Sample wt/vol: 250 (mL) Date Analyzed: 09/24/2018 17:04
Con. Extract Vol.: 2 (mL) Dilution Factor: 1
Injection Volume: 5 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 553661 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.20	U	0.20	0.016

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	39		10-150

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31807.D
 Lims ID: 460-165184-A-4-A
 Client ID: FIELD DUPLICATE
 Sample Type: Client
 Inject. Date: 24-Sep-2018 17:04:30 ALS Bottle#: 30 Worklist Smp#: 30
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0078959-030
 Operator ID: bes Instrument ID: CBNAMS13
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 25-Sep-2018 10:25:45 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: khlungprakhons

Date: 25-Sep-2018 13:55:29

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	%Rec	Flags

D 1	1,4-Dioxane-d8	96	3.001	2.984	0.015	0	1441047	1.57	39.4
* 4	1,4-Dichlorobenzene-d4	152	5.702	5.704	-0.002	96	462968	0.2000	

Reagents:

SM_iso_d4istd_00003 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31807.D

Injection Date: 24-Sep-2018 17:04:30

Instrument ID: CBNAMS13

Operator ID: bes

Lims ID: 460-165184-A-4-A

Lab Sample ID: 460-165184-4

Worklist Smp#: 30

Client ID: FIELD DUPLICATE

Injection Vol: 5.0 ul

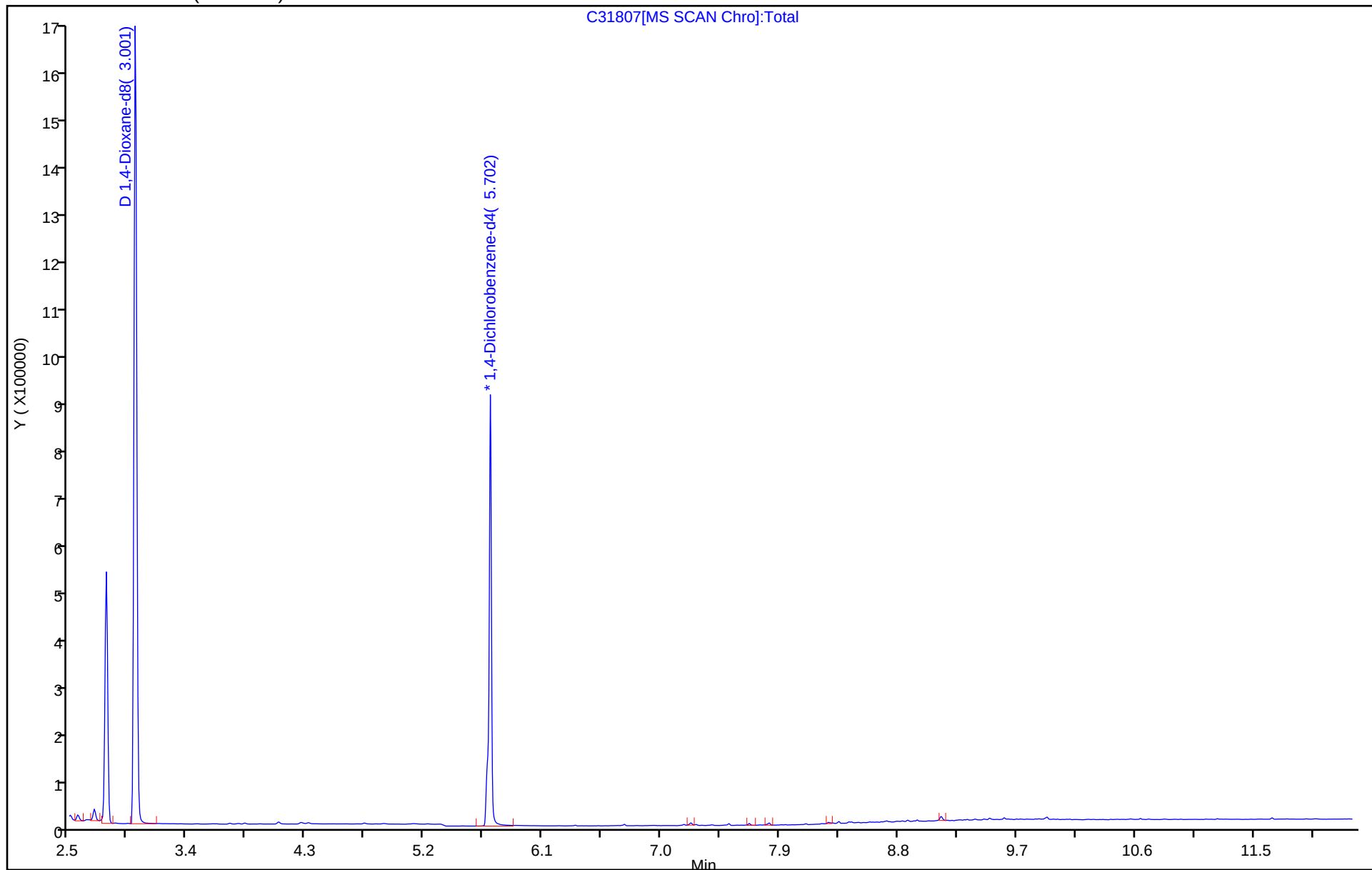
Dil. Factor: 1.0000

ALS Bottle#: 30

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison

Data File: \\ChromNA\\Edison\\ChromData\\CBNAMS13\\20180920-78959.b\\C31807.D

Injection Date: 24-Sep-2018 17:04:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-A-4-A

Lab Sample ID: 460-165184-4

Client ID: FIELD DUPLICATE

Operator ID: bes

ALS Bottle#: 30

Worklist Smp#: 30

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

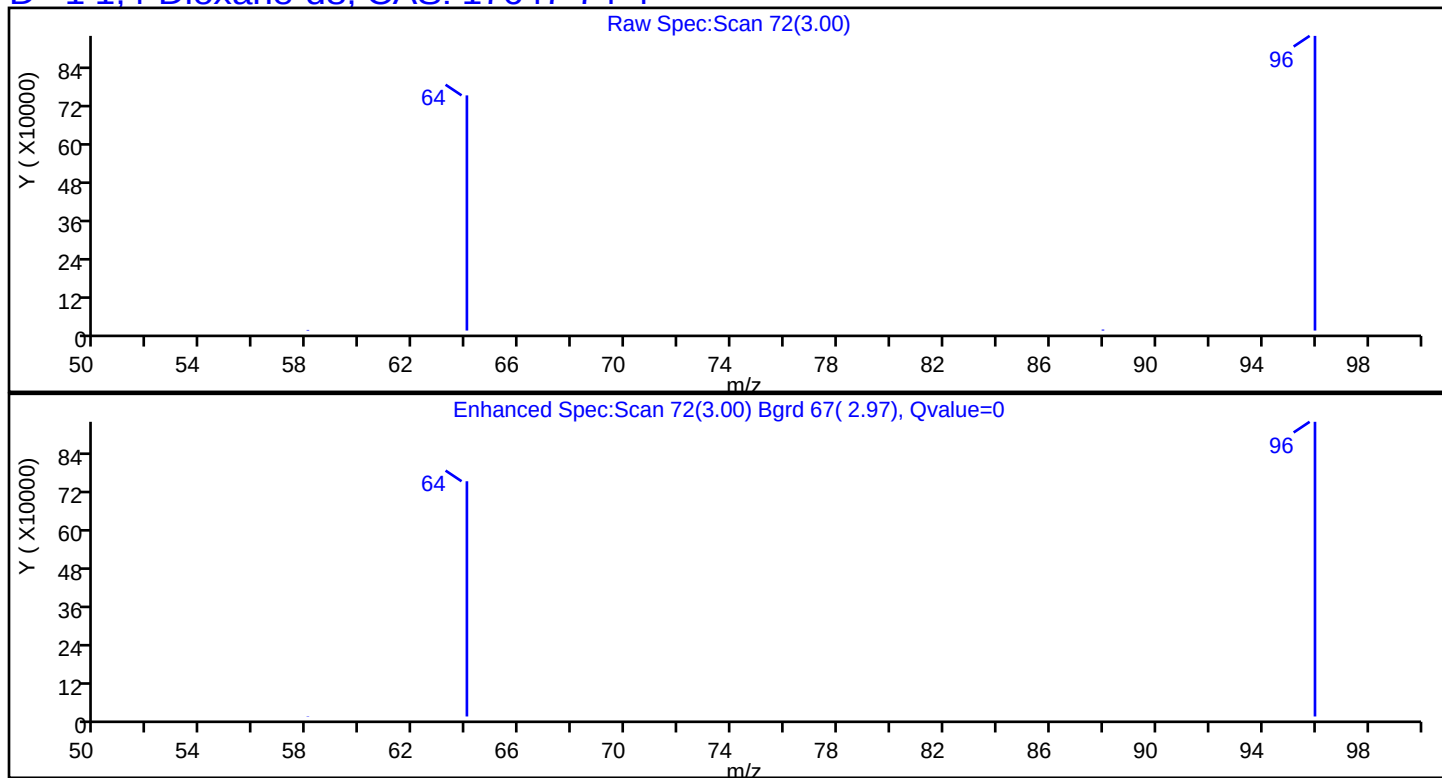
Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

Detector MS SCAN

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



TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31807.D

Injection Date: 24-Sep-2018 17:04:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-A-4-A

Lab Sample ID: 460-165184-4

Client ID: FIELD DUPLICATE

Operator ID: bes

ALS Bottle#:

30

Worklist Smp#: 30

Injection Vol: 5.0 ul

Dil. Factor:

1.0000

Method: 8270_Isotope

Limit Group:

MSS 8270 Isotope Dilution IS

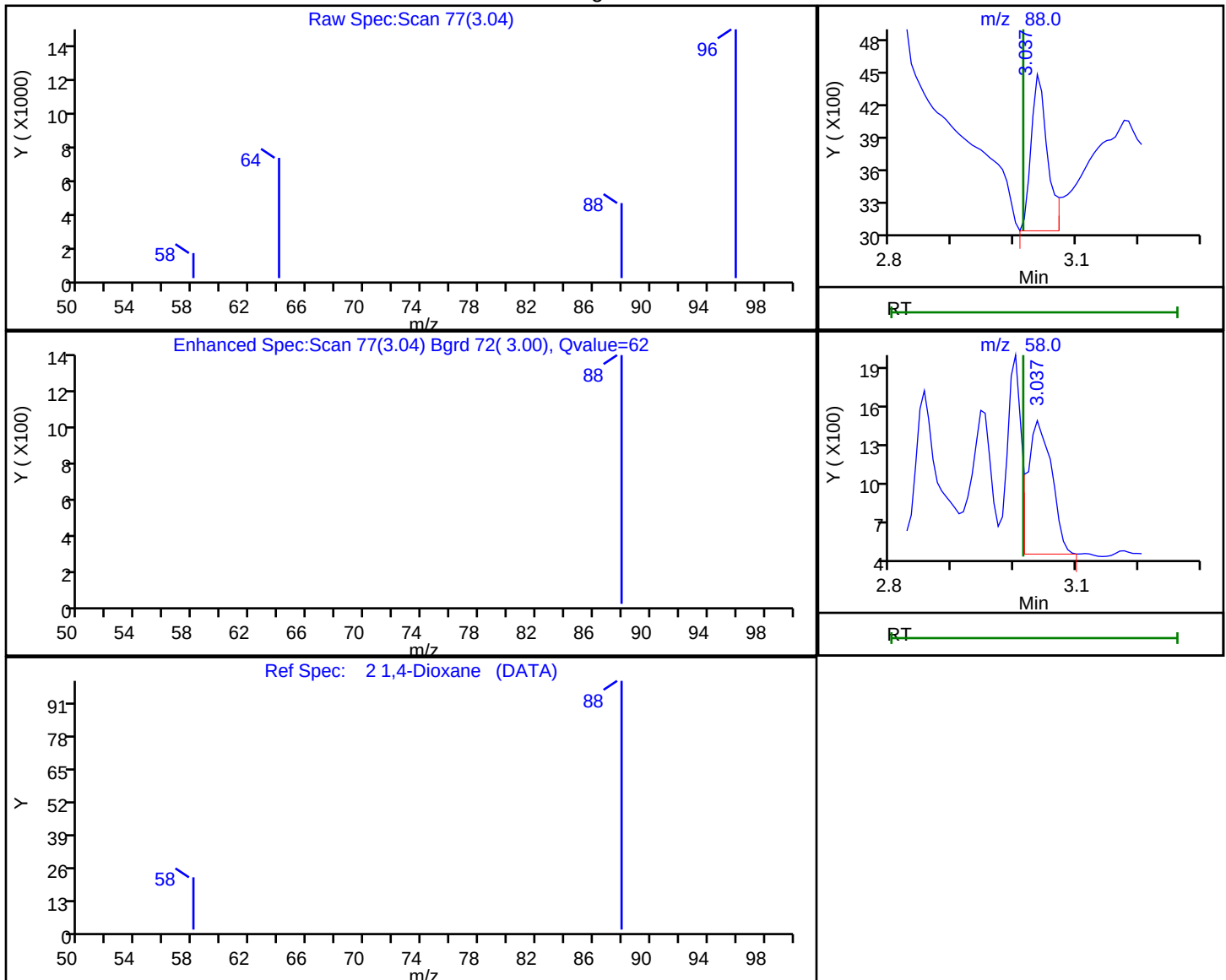
Column: Rtxi-5Sil MS (0.25 mm)

Detector

MS SCAN

2 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
3.04	88.00	2624	0.005625
3.04	58.00	2763	

Reviewer: khlungprakhons, 25-Sep-2018 13:59:18

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-165184-1
SDG No.: _____
Client Sample ID: EQUIPMENT BLANK Lab Sample ID: 460-165184-5
Matrix: Water Lab File ID: C31808.D
Analysis Method: 8270D SIM ID Date Collected: 09/18/2018 09:45
Extract. Method: 3510C Date Extracted: 09/23/2018 15:08
Sample wt/vol: 250 (mL) Date Analyzed: 09/24/2018 17:21
Con. Extract Vol.: 2 (mL) Dilution Factor: 1
Injection Volume: 5 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 553661 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.20	U	0.20	0.016

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	40		10-150

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31808.D
 Lims ID: 460-165184-A-5-A
 Client ID: EQUIPMENT BLANK
 Sample Type: Client
 Inject. Date: 24-Sep-2018 17:21:30 ALS Bottle#: 31 Worklist Smp#: 31
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0078959-031
 Operator ID: bes Instrument ID: CBNAMS13
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 25-Sep-2018 10:25:45 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: khlungprakhons

Date: 25-Sep-2018 12:56:05

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	%Rec	Flags

D 1	1,4-Dioxane-d8	96	3.009	2.984	0.023	0	1429522	1.60	40.0
* 4	1,4-Dichlorobenzene-d4	152	5.702	5.704	-0.002	96	451622	0.2000	

Reagents:

SM_iso_d4istd_00003 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31808.D

Injection Date: 24-Sep-2018 17:21:30

Instrument ID: CBNAMS13

Operator ID: bes

Lims ID: 460-165184-A-5-A

Lab Sample ID: Client 460-553661/31-A

Worklist Smp#: 31

Client ID: EQUIPMENT BLANK

Injection Vol: 5.0 ul

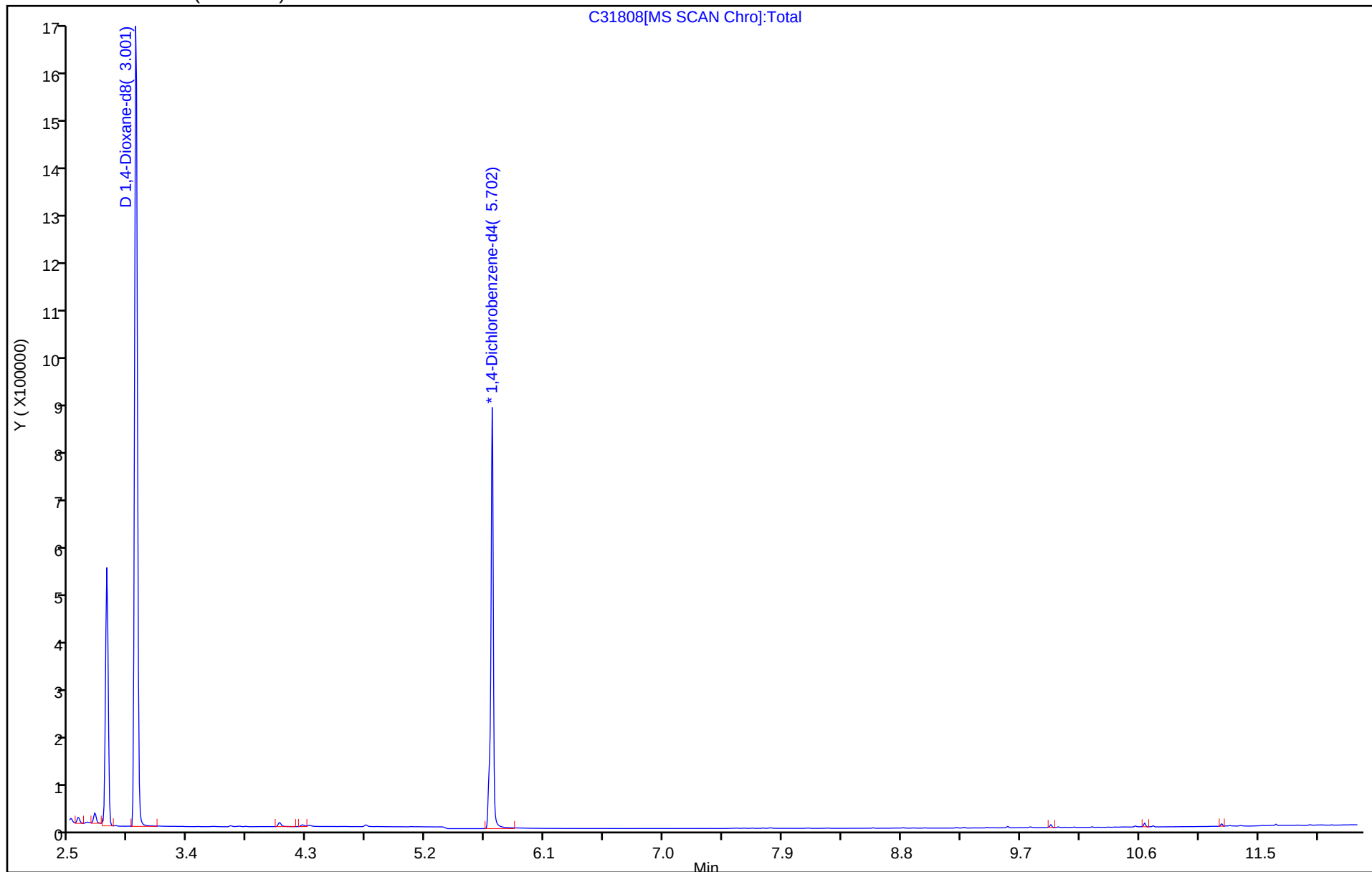
Dil. Factor: 1.0000

ALS Bottle#: 31

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31808.D

Injection Date: 24-Sep-2018 17:21:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-A-5-A

Lab Sample ID: Client 460-553661/31-A

Client ID: EQUIPMENT BLANK

Operator ID: bes

ALS Bottle#: 31 Worklist Smp#: 31

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

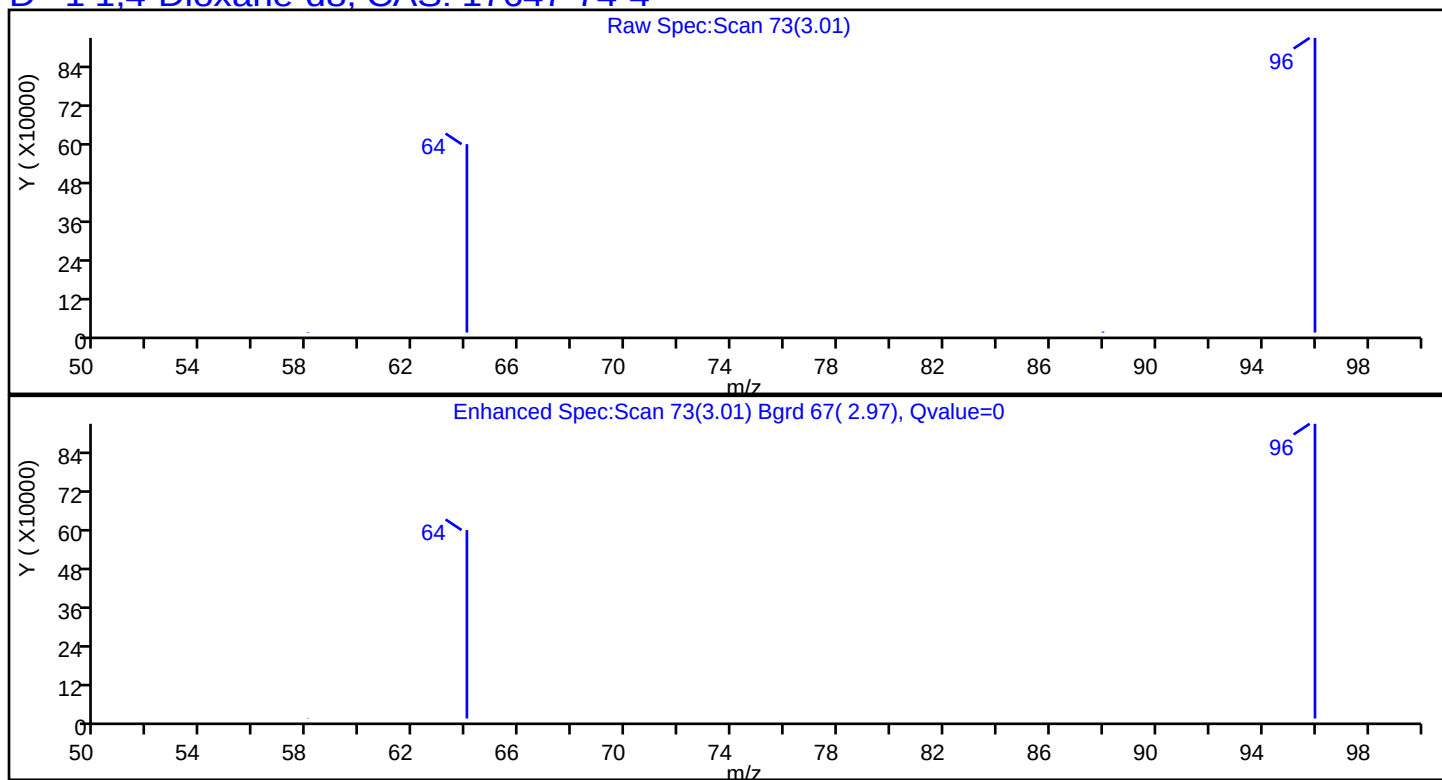
Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

Detector: MS SCAN

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



TestAmerica Edison

Data File: \\ChromNA\\Edison\\ChromData\\CBNAMS13\\20180920-78959.b\\C31808.D

Injection Date: 24-Sep-2018 17:21:30

Instrument ID: CBNAMS13

Lims ID: 460-165184-A-5-A

Lab Sample ID: Client 460-553661/31-A

Client ID: EQUIPMENT BLANK

Operator ID: bes

ALS Bottle#:

31

Worklist Smp#: 31

Injection Vol: 5.0 ul

Dil. Factor:

1.0000

Method: 8270_Isotope

Limit Group:

MSS 8270 Isotope Dilution IS

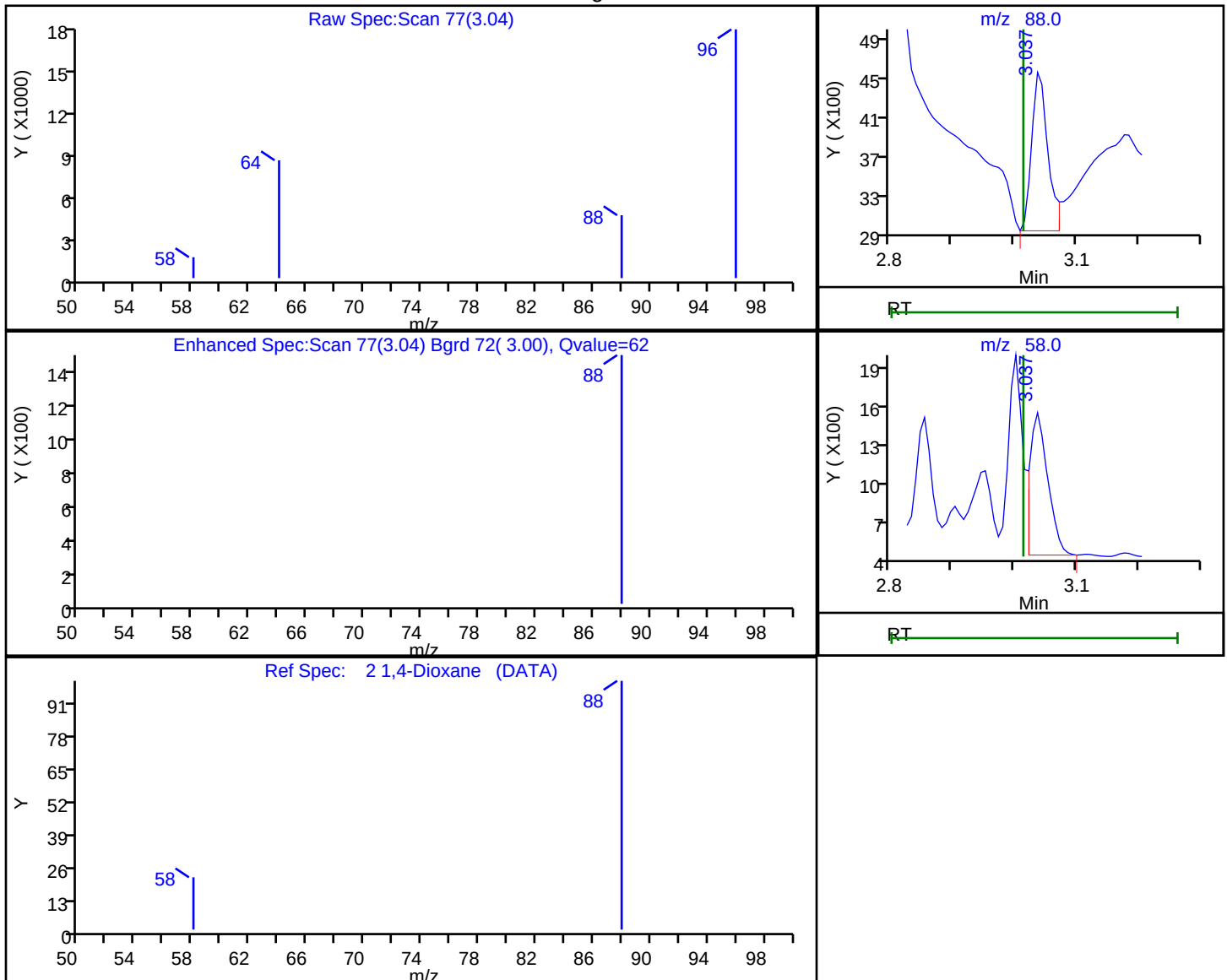
Column: Rtxi-5Sil MS (0.25 mm)

Detector

MS SCAN

2 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
3.04	88.00	2834	0.006125
3.04	58.00	2156	

Reviewer: khlungprakhons, 25-Sep-2018 13:59:26

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 Edison Job No.: 460-165184-1 Analy Batch No.: 518314

SDG No.: _____

Instrument ID: CBNAMS13 GC Column: Rtxi-5Sil M ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2018 12:48 Calibration End Date: 05/11/2018 17:20 Calibration ID: 68479

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 460-518314/9	C28993.D
Level 2	STD2 460-518314/8	C28992.D
Level 3	STD3 460-518314/7	C28991.D
Level 4	ICIS 460-518314/2	C28986.D
Level 5	STD8 460-518314/3	C28987.D
Level 6	STD7 460-518314/4	C28988.D
Level 7	STD6 460-518314/5	C28989.D
Level 8	STD4 460-518314/6	C28990.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 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
1,4-Dioxane	1.4707 1.1835	1.4974 1.2114	1.3755 1.3268	1.2864	1.0062	AveID		1.2947				12.5		50.0			
1,4-Dioxane-d8	0.4001 0.3970	0.3939 0.3945	0.3865 0.3964	0.3977	0.3963	Ave		0.3953				1.0		50.0			

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 Edison Job No.: 460-165184-1 Analy Batch No.: 518314

SDG No.: _____

Instrument ID: CBNAMS13 GC Column: Rtxi-5Sil M ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2018 12:48 Calibration End Date: 05/11/2018 17:20 Calibration ID: 68479

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 460-518314/9	C28993.D
Level 2	STD2 460-518314/8	C28992.D
Level 3	STD3 460-518314/7	C28991.D
Level 4	ICIS 460-518314/2	C28986.D
Level 5	STD8 460-518314/3	C28987.D
Level 6	STD7 460-518314/4	C28988.D
Level 7	STD6 460-518314/5	C28989.D
Level 8	STD4 460-518314/6	C28990.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
1,4-Dioxane		AveID	19118 1516533	40300 779650	88487 176553	413818	6531196	0.0200 2.00	0.0400 1.00	0.100 0.200	0.500	10.0
1,4-Dioxane-d8	DCBd 4	Ave	2599863 2562721	2691312 2574395	2573218 2661308	2573458	2596349	4.00 4.00	4.00 4.00	4.00 4.00	4.00	4.00

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28986.D
 Lims ID: icis
 Client ID:
 Sample Type: ICIS Calib Level: 5
 Inject. Date: 11-May-2018 12:48:30 ALS Bottle#: 9 Worklist Smp#: 2
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0071845-002
 Operator ID: Instrument ID: CBNAMS13
 Sublist: chrom-8270_Isotope*sub1
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 14-May-2018 12:12:25 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: johnstonm1

Date: 11-May-2018 13:27:37

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.400	3.400	0.000	0	2573458	4.00	4.02	a
2 1,4-Dioxane	88	3.428	3.428	0.000	79	413818	0.5000	0.4968	
* 4 1,4-Dichlorobenzene-d4	152	5.952	5.952	0.000	98	323558	0.2000	0.2000	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

SM_ISOTOPL5_00001

Amount Added: 1.00

Units: mL

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28986.D

Injection Date: 11-May-2018 12:48:30

Instrument ID: CBNAMS13

Operator ID:

Lims ID: icis

Worklist Smp#: 2

Client ID:

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

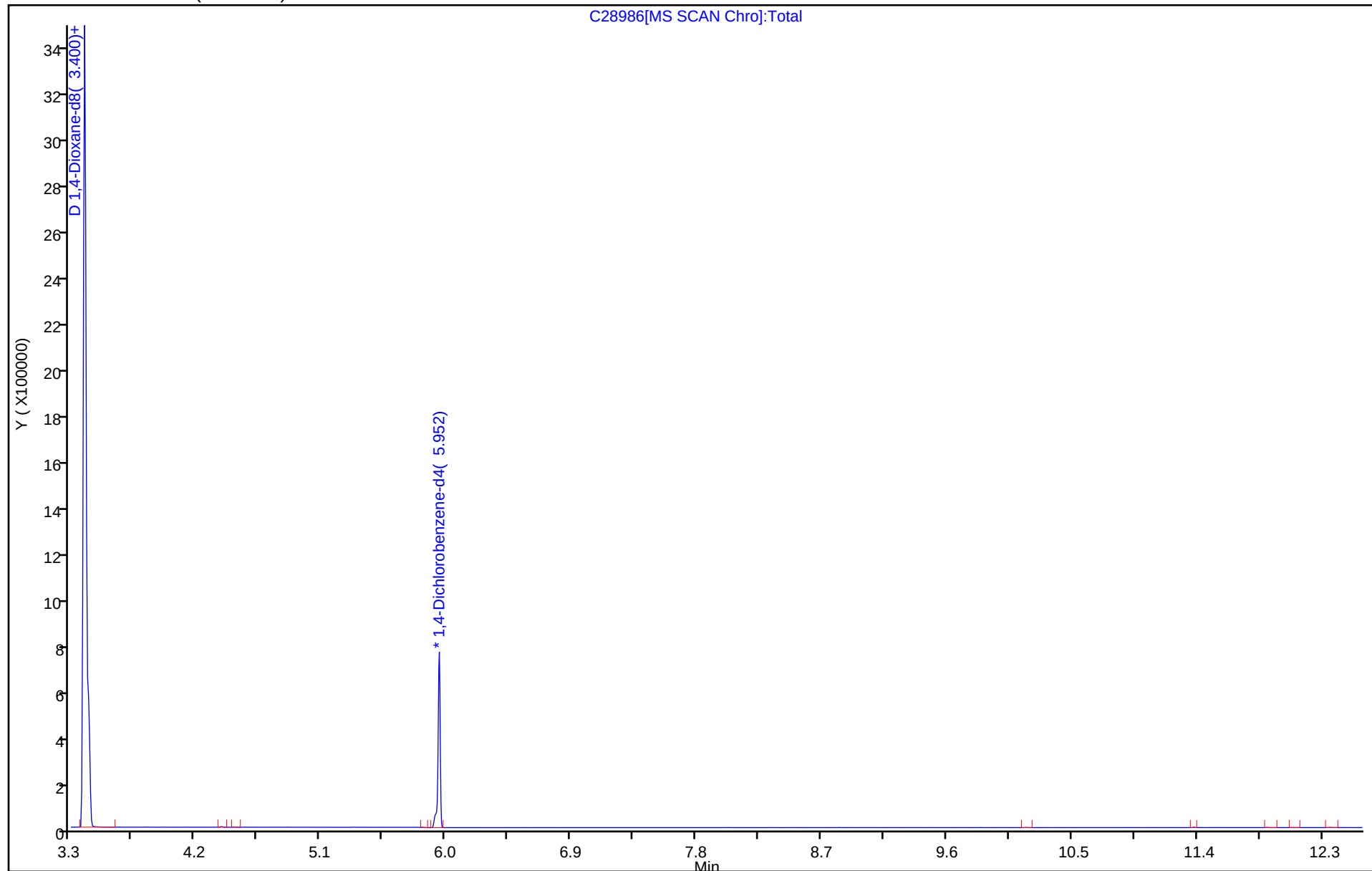
ALS Bottle#: 9

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

C28986[MS SCAN Chro]:Total



TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28986.D

Injection Date: 11-May-2018 12:48:30

Instrument ID: CBNAMS13

Lims ID: icis

Client ID:

Operator ID:

ALS Bottle#:

9

Worklist Smp#:

2

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

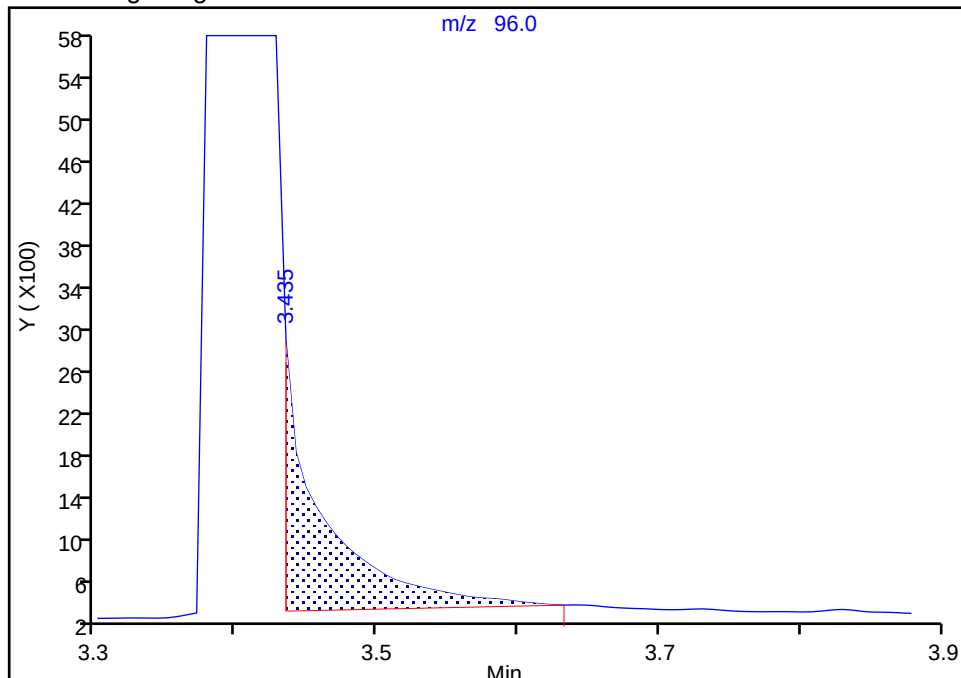
Detector: MS SCAN

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

Signal: 1

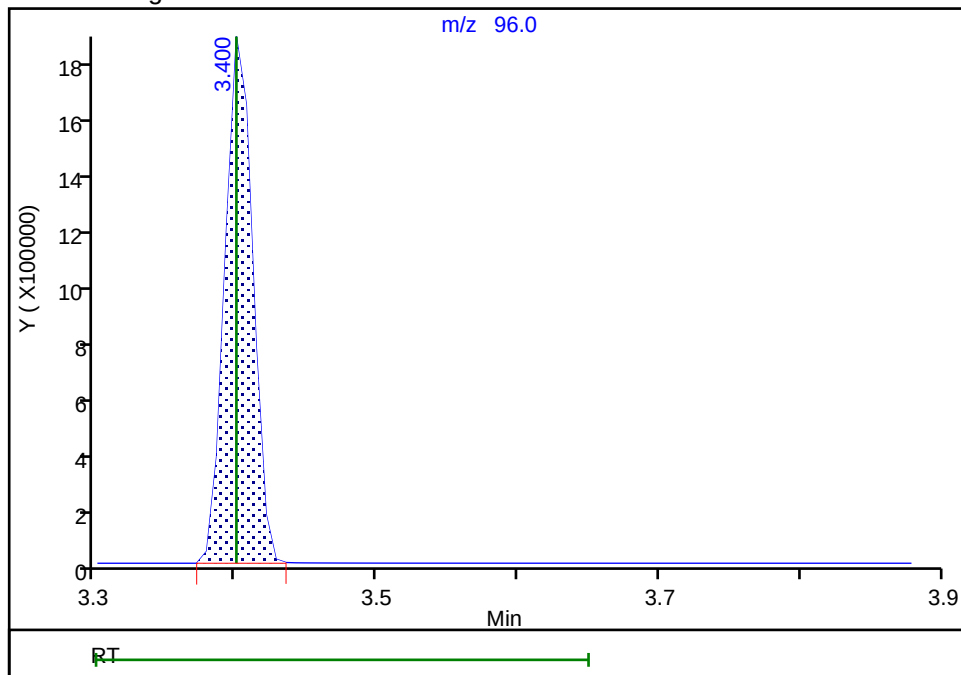
RT: 3.43
Area: 5015
Amount: 4.029831
Amount Units: ug/ml

Processing Integration Results



RT: 3.40
Area: 2573458
Amount: 4.024073
Amount Units: ug/ml

Manual Integration Results



Reviewer: johnstonm1, 11-May-2018 13:27:27

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28987.D
 Lims ID: STD8
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 11-May-2018 13:08:30 ALS Bottle#: 10 Worklist Smp#: 3
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0071845-003
 Operator ID: Instrument ID: CBNAMS13
 Sublist: chrom-8270_Isotope*sub1
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 14-May-2018 12:12:25 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: johnstonm1

Date: 11-May-2018 13:28:03

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.392	3.400	-0.008	0	2596349	4.00	4.01	a
2 1,4-Dioxane	88	3.421	3.428	-0.007	78	6531196	10.0	7.77	
* 4 1,4-Dichlorobenzene-d4	152	5.944	5.952	-0.008	97	327569	0.2000	0.2000	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

SM_ISOTOPL8_00001

Amount Added: 1.00

Units: mL

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28987.D

Injection Date: 11-May-2018 13:08:30

Instrument ID: CBNAMS13

Operator ID:

Lims ID: STD8

Worklist Smp#: 3

Client ID:

Injection Vol: 5.0 ul

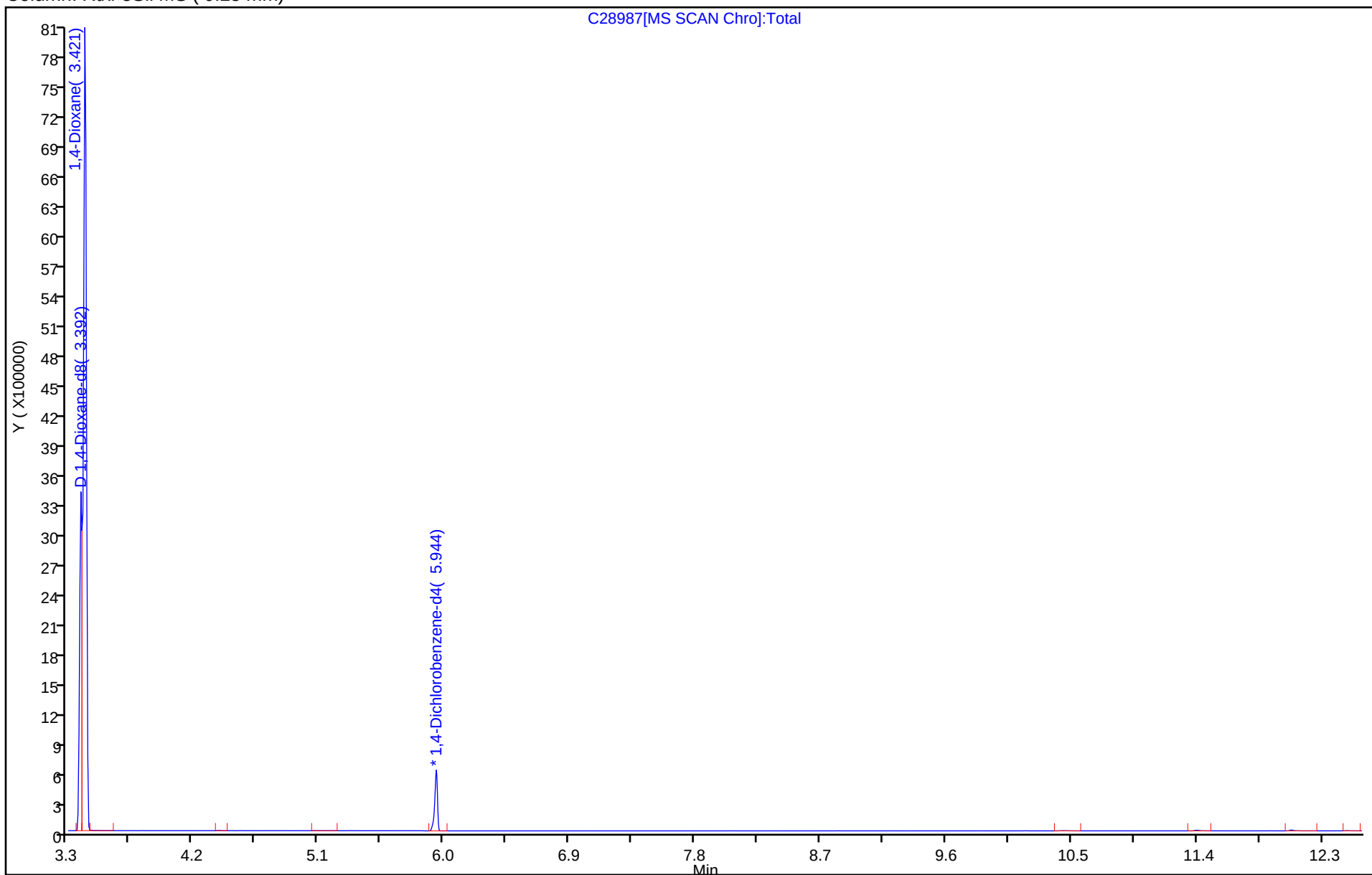
Dil. Factor: 1.0000

ALS Bottle#: 10

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28987.D

Injection Date: 11-May-2018 13:08:30

Instrument ID: CBNAMS13

Lims ID: STD8

Client ID:

Operator ID:

ALS Bottle#: 10 Worklist Smp#: 3

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

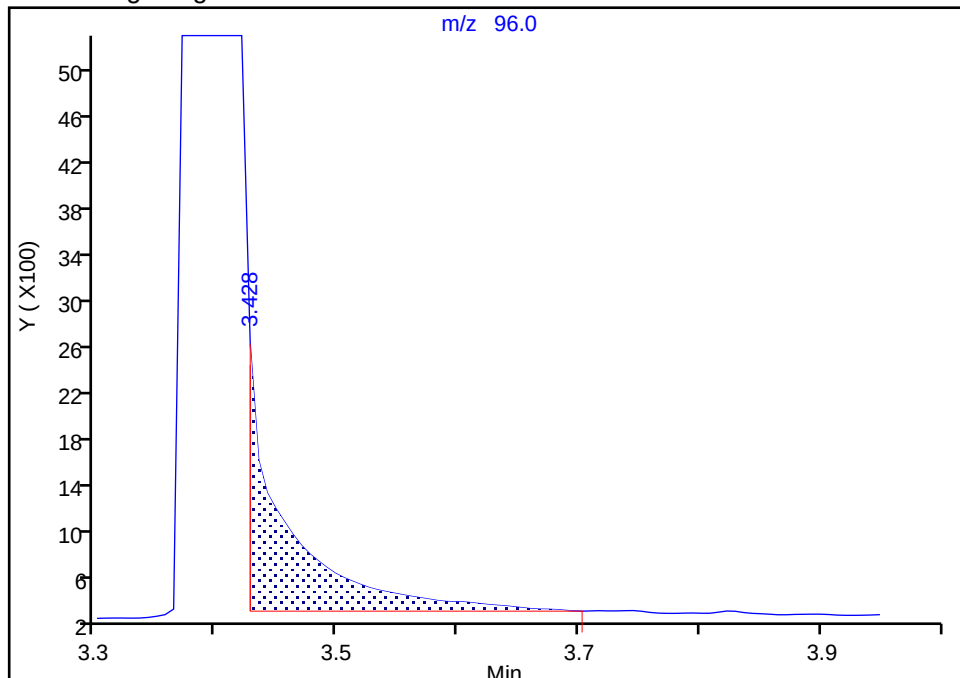
Detector: MS SCAN

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

Signal: 1

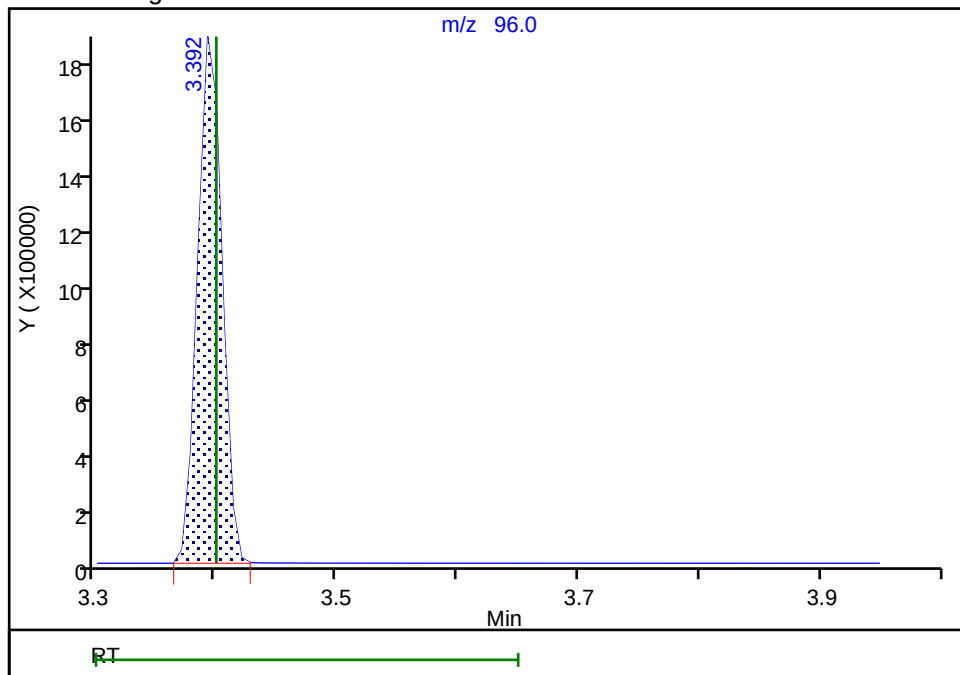
RT: 3.43
Area: 5002
Amount: 0.015330
Amount Units: ug/ml

Processing Integration Results



RT: 3.39
Area: 2596349
Amount: 4.010155
Amount Units: ug/ml

Manual Integration Results



Reviewer: johnstonm1, 11-May-2018 13:27:45

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28988.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 11-May-2018 13:27:30 ALS Bottle#: 11 Worklist Smp#: 4
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0071845-004
 Operator ID: Instrument ID: CBNAMS13
 Sublist: chrom-8270_Isotope*sub1
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 14-May-2018 12:12:26 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: johnstonm1

Date: 14-May-2018 08:54:21

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.400	3.400	0.000	0	2562721	4.00	4.02	
2 1,4-Dioxane	88	3.428	3.428	0.000	79	1516533	2.00	1.83	
* 4 1,4-Dichlorobenzene-d4	152	5.948	5.952	-0.004	99	322762	0.2000	0.2000	

Reagents:

SM_ISOTOPL7_00001

Amount Added: 1.00

Units: mL

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28988.D

Injection Date: 11-May-2018 13:27:30

Instrument ID: CBNAMS13

Operator ID:

Lims ID: STD7

Worklist Smp#: 4

Client ID:

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

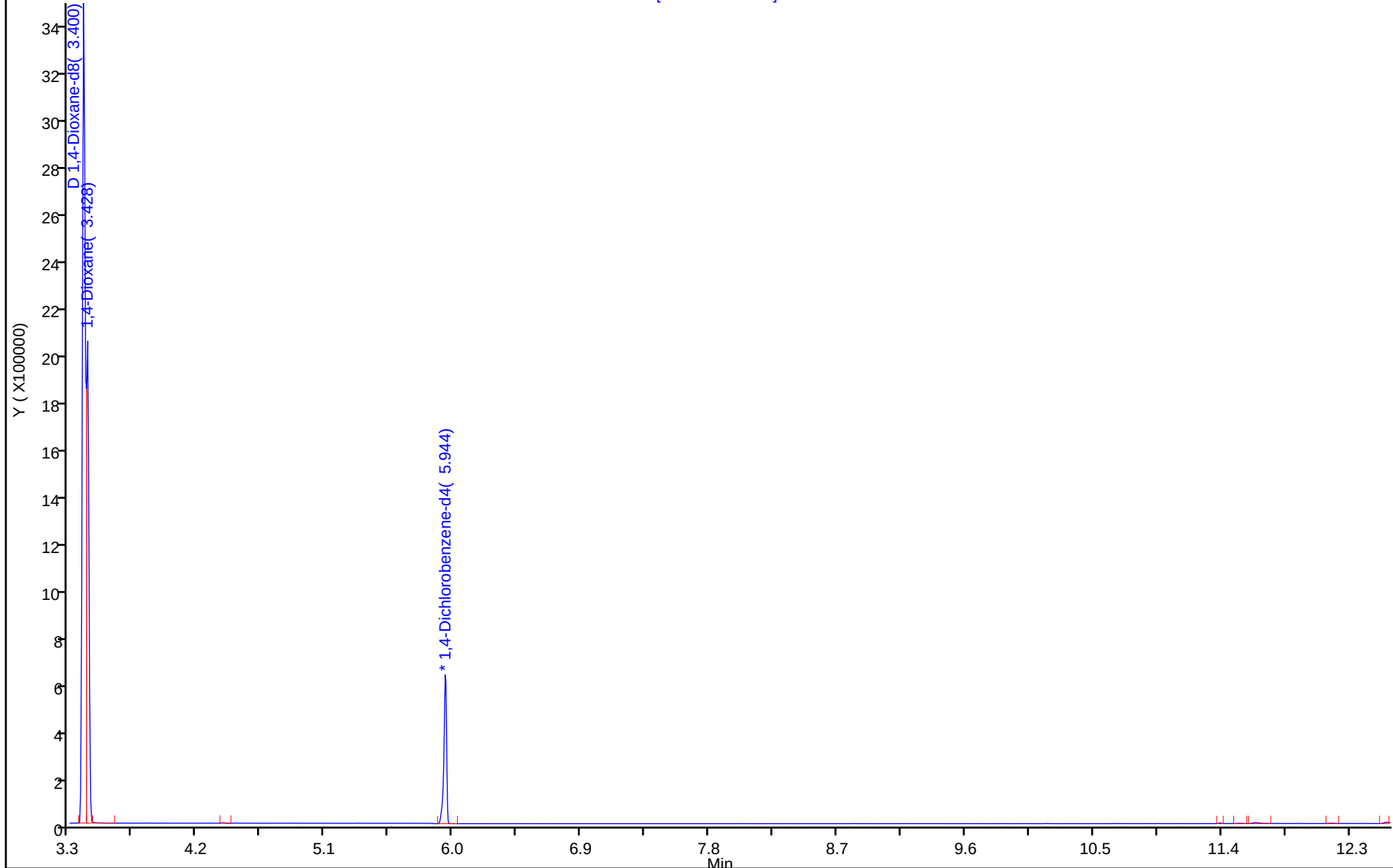
ALS Bottle#: 11

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

C28988[MS SCAN Chro]:Total



TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28989.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 11-May-2018 14:16:30 ALS Bottle#: 12 Worklist Smp#: 5
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0071845-005
 Operator ID: Instrument ID: CBNAMS13
 Sublist: chrom-8270_Isotope*sub1
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 14-May-2018 12:12:27 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: johnstonm1

Date: 14-May-2018 08:54:26

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.400	3.400	0.000	0	2574395	4.00	3.99	
2 1,4-Dioxane	88	3.428	3.428	0.000	82	779650	1.00	0.9356	
* 4 1,4-Dichlorobenzene-d4	152	5.948	5.952	-0.004	97	326300	0.2000	0.2000	

Reagents:

SM_ISOTOPL6_00001

Amount Added: 1.00

Units: mL

Report Date: 14-May-2018 12:12:27

Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28989.D

Injection Date: 11-May-2018 14:16:30

Instrument ID: CBNAMS13

Operator ID:

Lims ID: STD6

Worklist Smp#: 5

Client ID:

Injection Vol: 5.0 ul

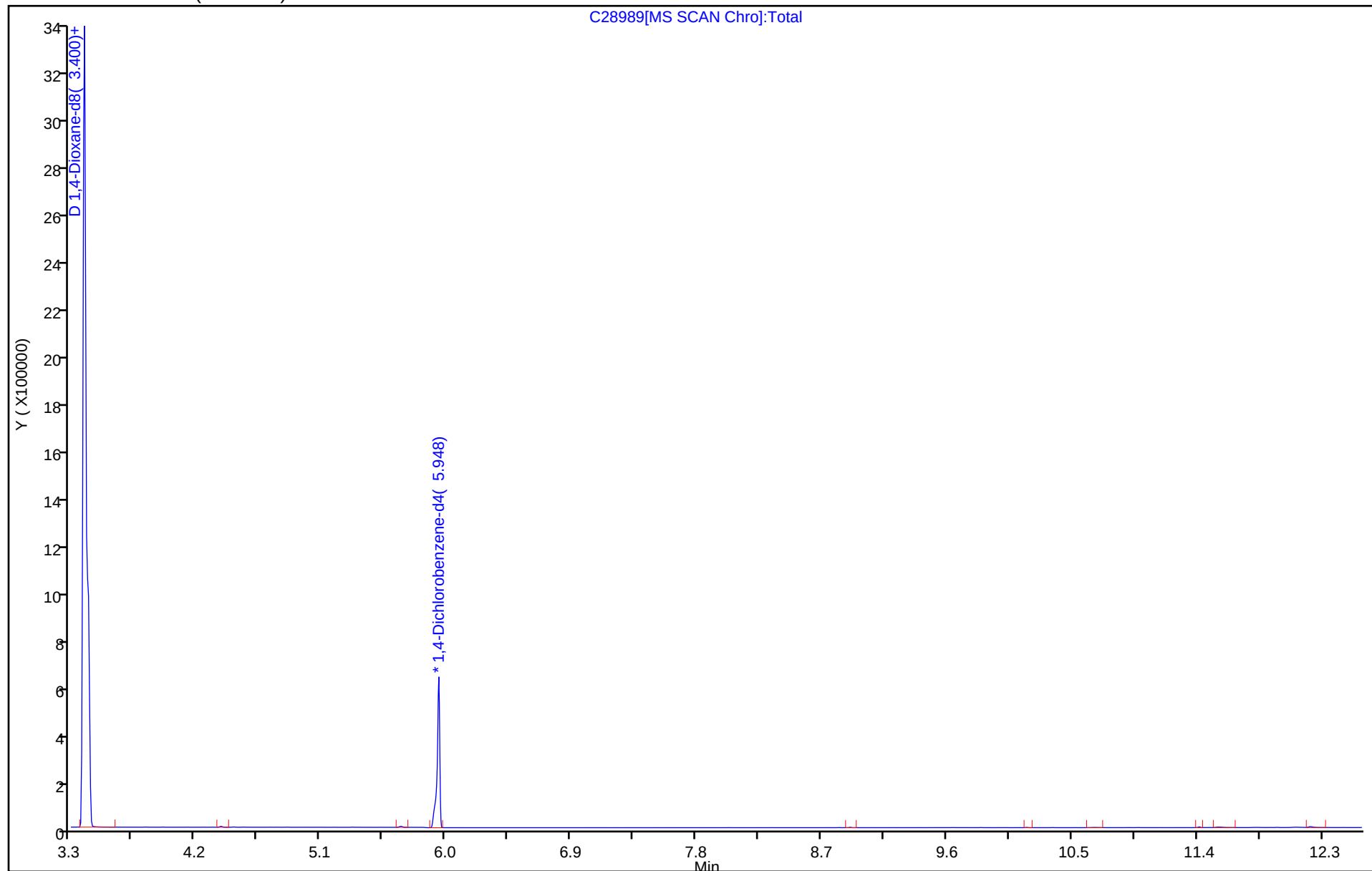
Dil. Factor: 1.0000

ALS Bottle#: 12

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28990.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 11-May-2018 14:35:30 ALS Bottle#: 13 Worklist Smp#: 6
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0071845-006
 Operator ID: Instrument ID: CBNAMS13
 Sublist: chrom-8270_Isotope*sub1
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 14-May-2018 12:12:28 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: johnstonm1

Date: 14-May-2018 08:54:33

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.399	3.400	-0.001	0	2661308	4.00	4.01	
2 1,4-Dioxane	88	3.428	3.428	0.000	79	176553	0.2000	0.2050	
* 4 1,4-Dichlorobenzene-d4	152	5.944	5.952	-0.008	96	335668	0.2000	0.2000	

Reagents:

SM_ISOTOPL4_00001

Amount Added: 1.00

Units: mL

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28990.D

Injection Date: 11-May-2018 14:35:30

Instrument ID: CBNAMS13

Operator ID:

Lims ID: STD4

Worklist Smp#: 6

Client ID:

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

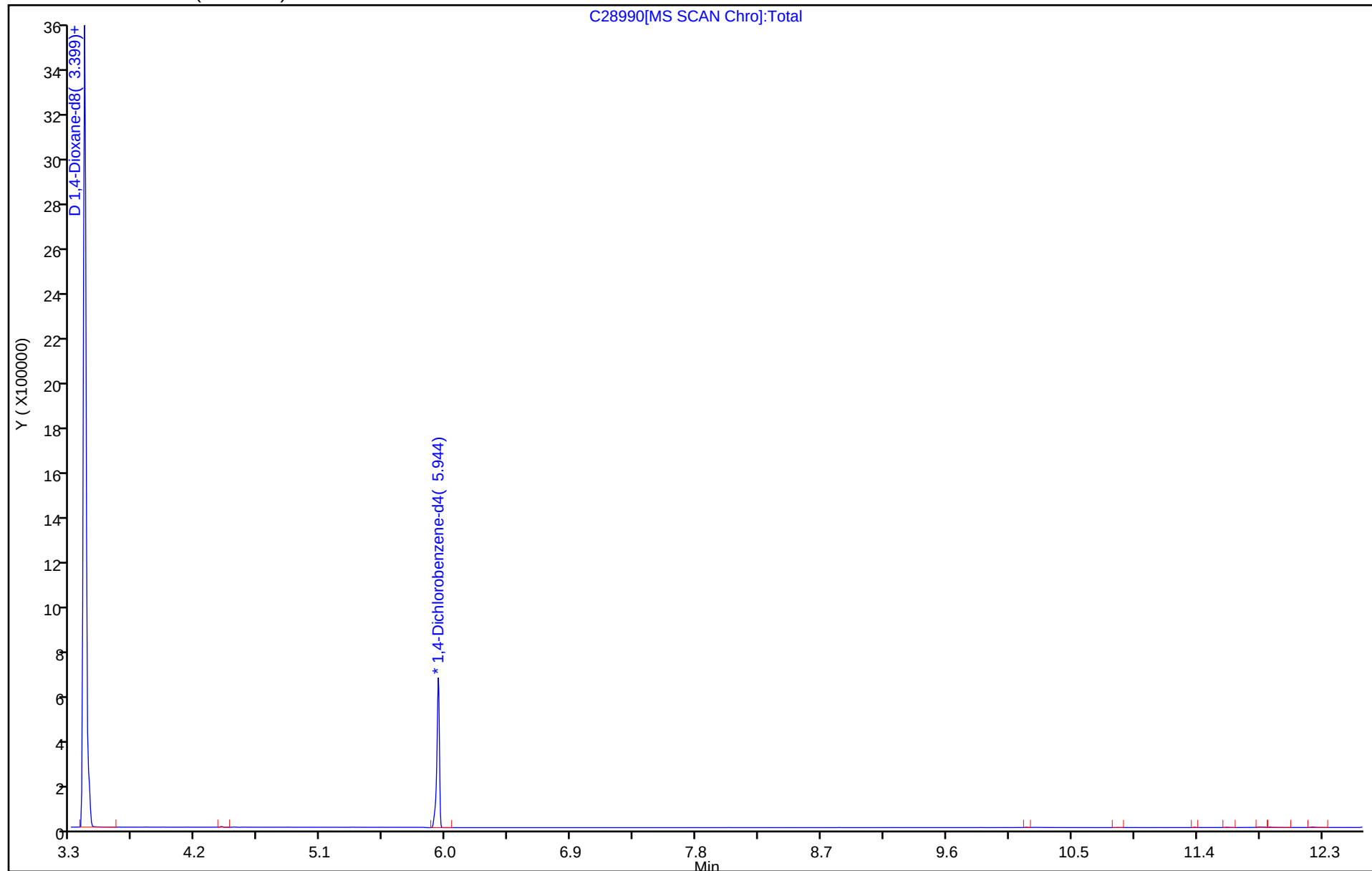
ALS Bottle#: 13

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

C28990[MS SCAN Chro]:Total



TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28991.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 11-May-2018 15:44:30 ALS Bottle#: 14 Worklist Smp#: 7
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0071845-007
 Operator ID: Instrument ID: CBNAMS13
 Sublist: chrom-8270_Isotope*sub1
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 14-May-2018 12:12:28 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: johnstonm1

Date: 14-May-2018 08:54:37

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.400	3.400	0.000	0	2573218	4.00	3.91	
2 1,4-Dioxane	88	3.428	3.428	0.000	81	88487	0.1000	0.1062	
* 4 1,4-Dichlorobenzene-d4	152	5.948	5.948	0.000	97	332866	0.2000	0.2000	

Reagents:

SM_ISOTOPL3_00001

Amount Added: 1.00

Units: mL

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28991.D

Injection Date: 11-May-2018 15:44:30

Instrument ID: CBNAMS13

Operator ID:

Lims ID: STD3

Worklist Smp#: 7

Client ID:

Injection Vol: 5.0 ul

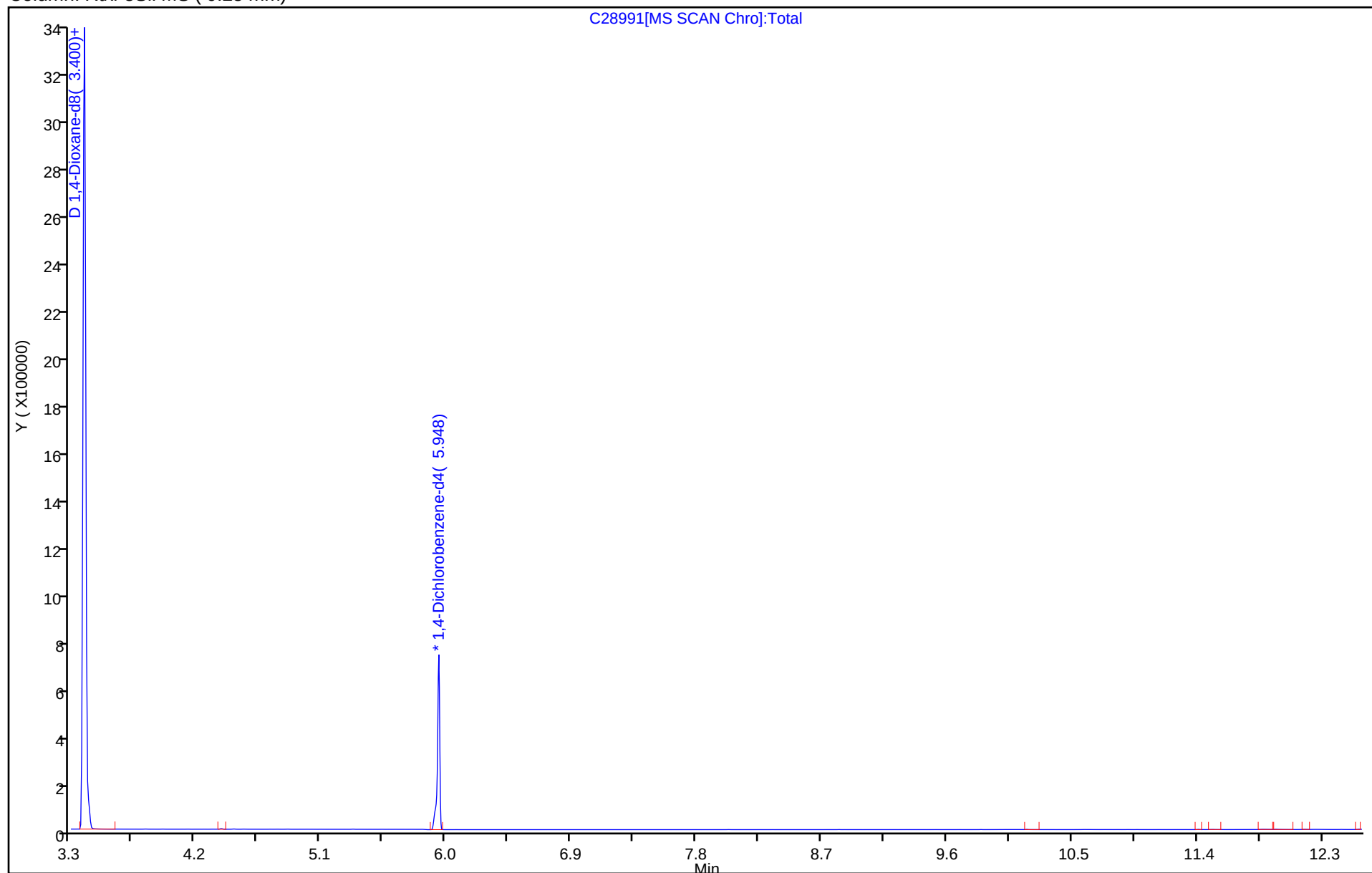
Dil. Factor: 1.0000

ALS Bottle#: 14

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28992.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 11-May-2018 16:02:30 ALS Bottle#: 15 Worklist Smp#: 8
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0071845-008
 Operator ID: Instrument ID: CBNAMS13
 Sublist: chrom-8270_Isotope*sub1
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 14-May-2018 12:12:29 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: johnstonm1

Date: 14-May-2018 08:54:44

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.400	3.400	0.000	0	2691312	4.00	3.99	
2 1,4-Dioxane	88	3.435	3.428	0.007	85	40300	0.0400	0.0463	
* 4 1,4-Dichlorobenzene-d4	152	5.948	5.948	0.000	97	341640	0.2000	0.2000	

Reagents:

SM_ISOTOPL2_00001

Amount Added: 1.00

Units: mL

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28992.D

Injection Date: 11-May-2018 16:02:30

Instrument ID: CBNAMS13

Operator ID:

Lims ID: STD2

Worklist Smp#: 8

Client ID:

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

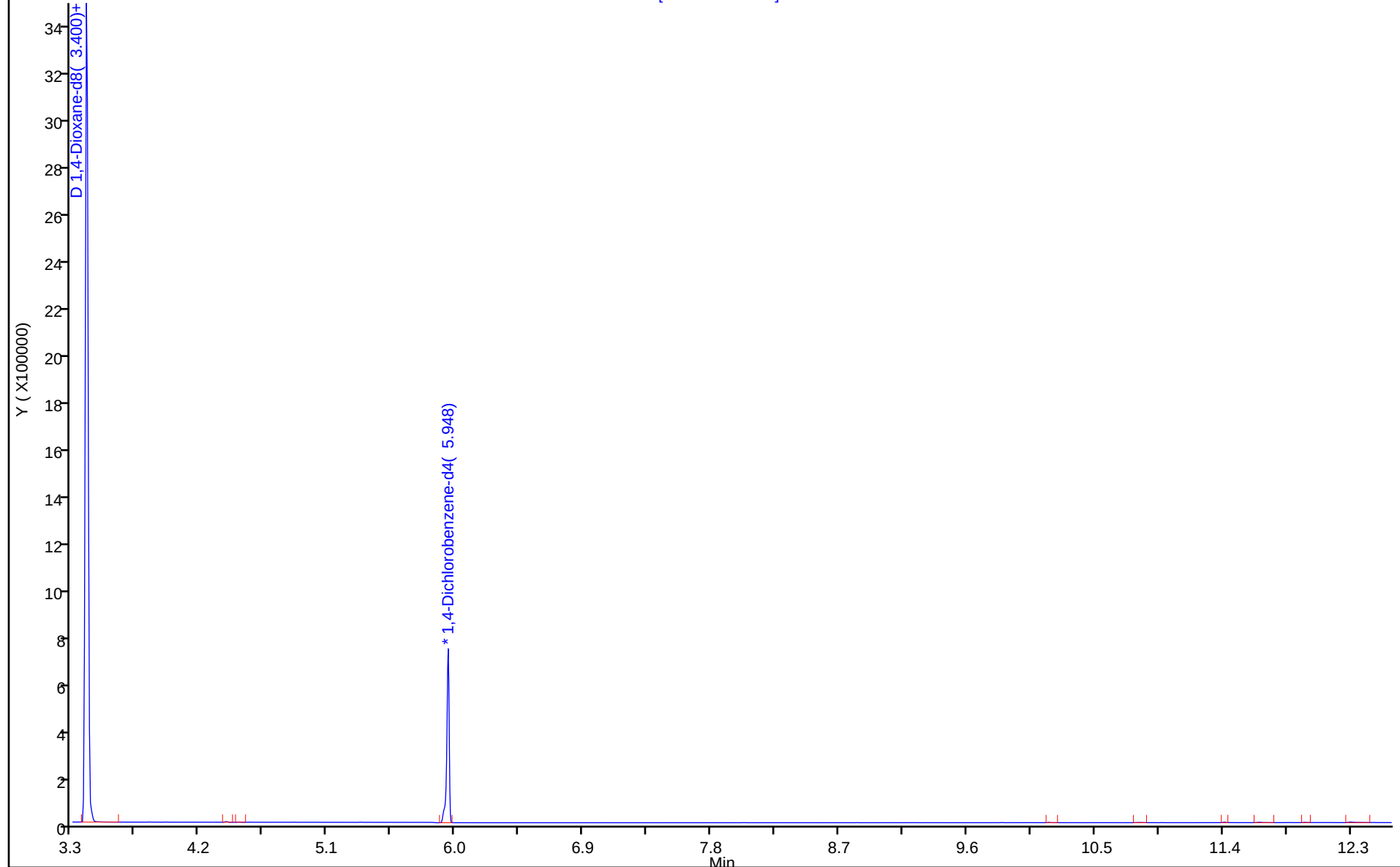
ALS Bottle#: 15

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

C28992[MS SCAN Chro]:Total



TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Lims ID: STD1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 11-May-2018 17:20:30 ALS Bottle#: 16 Worklist Smp#: 9
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0071845-009
 Operator ID: Instrument ID: CBNAMS13
 Sublist: chrom-8270_Isotope*sub1
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 14-May-2018 12:12:30 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK013

First Level Reviewer: johnstonm1

Date: 14-May-2018 08:54:50

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.400	3.400	0.000	0	2599863	4.00	4.05	
2 1,4-Dioxane	88	3.428	3.428	0.000	87	19118	0.0200	0.0227	
* 4 1,4-Dichlorobenzene-d4	152	5.948	5.948	0.000	98	324883	0.2000	0.2000	

Reagents:

SM_ISOTOPL1_00001

Amount Added: 1.00

Units: mL

Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Edison

Data File: \\ChromNA\\Edison\\ChromData\\CBNAMS13\\20180511-71845.b\\C28993.D

Injection Date: 11-May-2018 17:20:30

Instrument ID: CBNAMS13

Operator ID:

Lims ID: STD1

Worklist Smp#: 9

Client ID:

Injection Vol: 5.0 ul

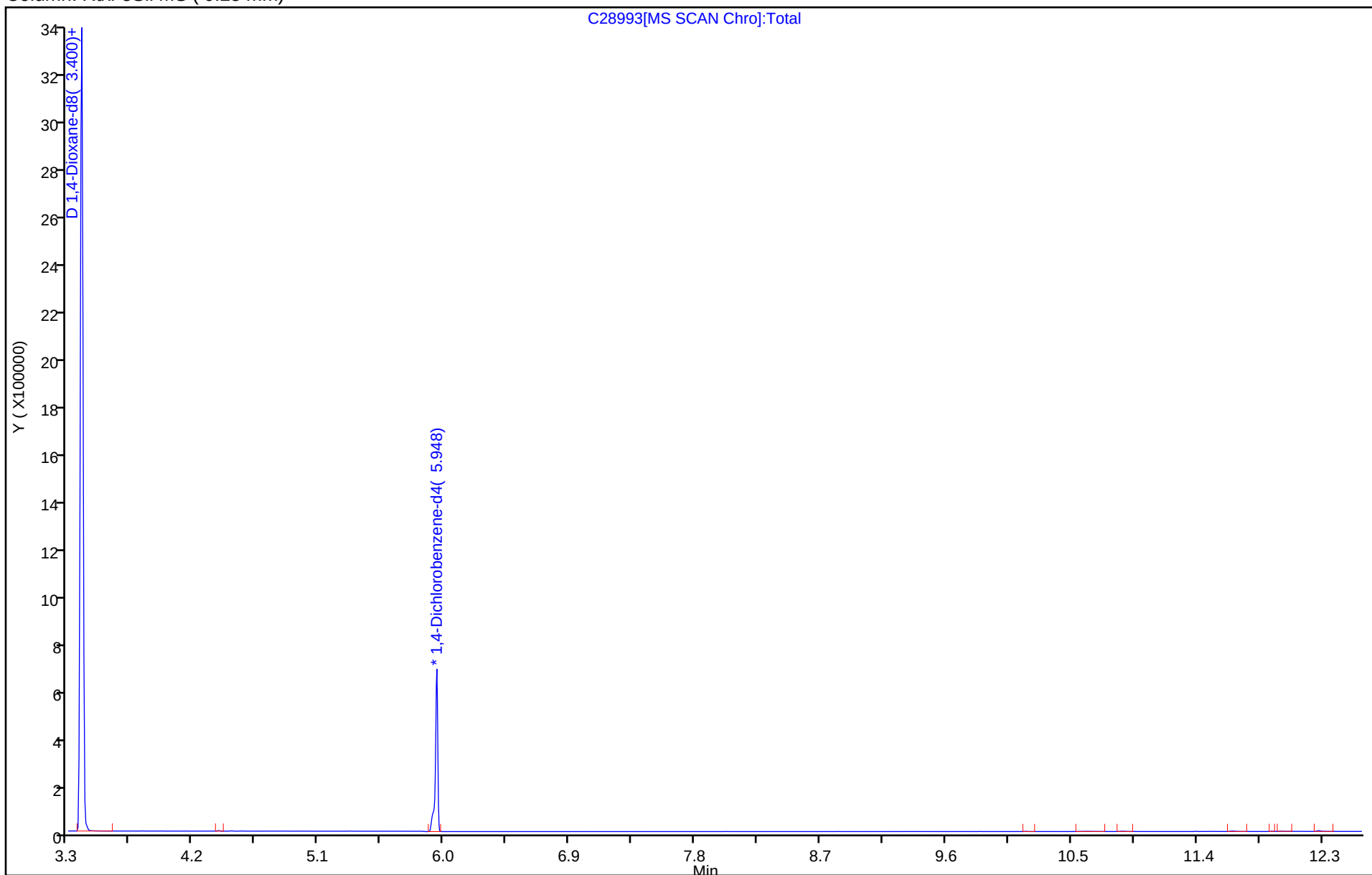
Dil. Factor: 1.0000

ALS Bottle#: 16

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Edison Job No.: 460-165184-1
SDG No.: _____
Lab Sample ID: CCVIS 460-553661/2 Calibration Date: 09/24/2018 08:54
Instrument ID: CBNAMS13 Calib Start Date: 05/11/2018 12:48
GC Column: Rtxi-5Sil MS ID: 0.25 (mm) Calib End Date: 05/11/2018 17:20
Lab File ID: C31779.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	AveID	1.295	1.298		501	500	0.3	
1,4-Dioxane-d8	Ave	0.3953	0.3882		3930	4000	-1.8	50.0

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31779.D
 Lims ID: ccvis
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 24-Sep-2018 08:54:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0078959-002
 Operator ID: bes Instrument ID: CBNAMS13
 Sublist: chrom-8270_Isotope*sub1
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 25-Sep-2018 10:25:45 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: zhaoc

Date: 24-Sep-2018 09:08:51

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	2.986	2.984	0.000	0	4256697	4.00	3.93	a
2 1,4-Dioxane	88	3.014	3.014	0.000	78	690722	0.5000	0.5013	
* 4 1,4-Dichlorobenzene-d4	152	5.704	5.704	0.000	99	548257	0.2000	0.2000	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

SM_ISOTOPL5_00002

Amount Added: 1.00

Units: mL

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31779.D

Injection Date: 24-Sep-2018 08:54:30

Instrument ID: CBNAMS13

Operator ID: bes

Lims ID: ccvis

Worklist Smp#: 2

Client ID:

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

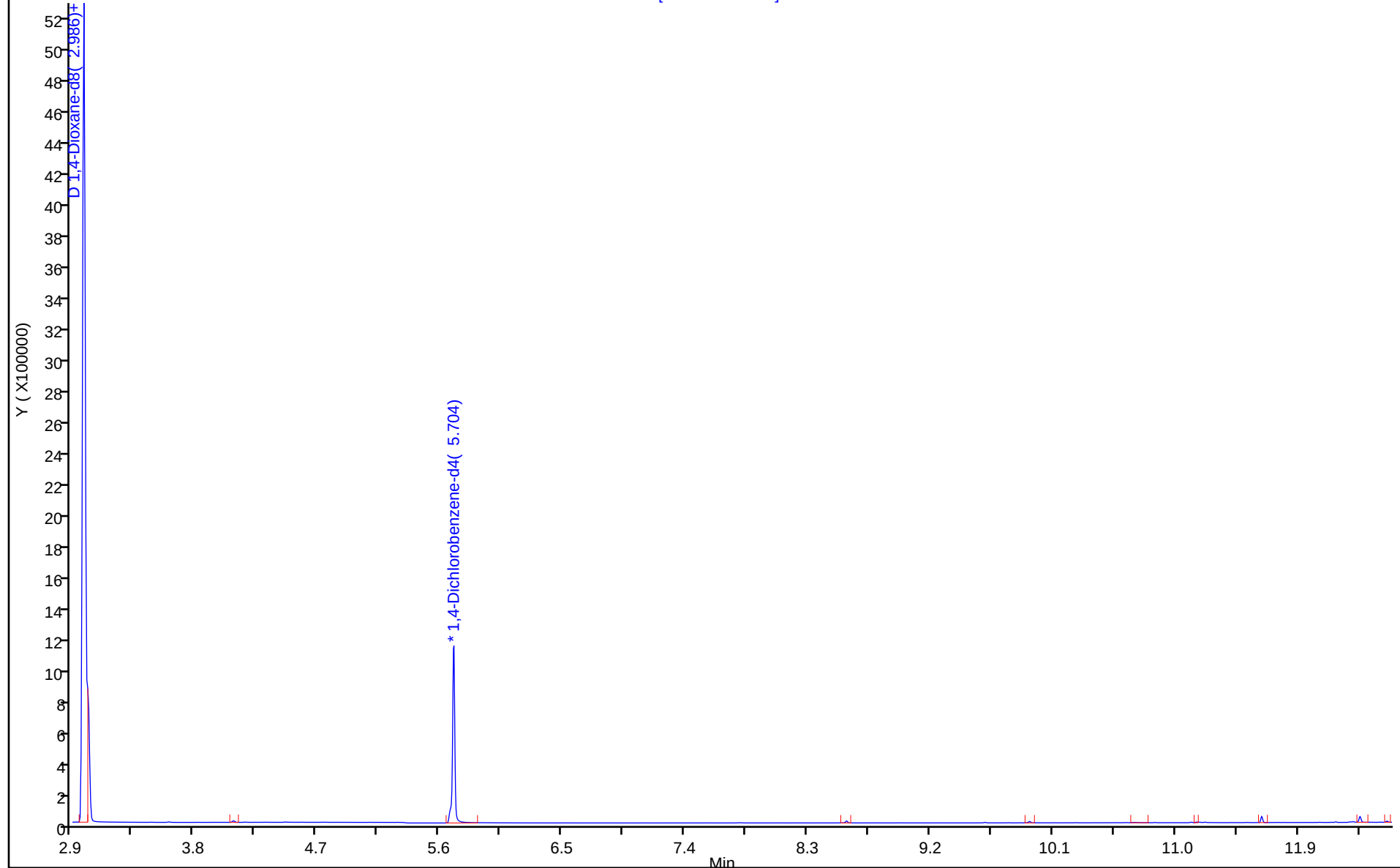
ALS Bottle#: 2

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

C31779[MS SCAN Chro]:Total



TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31779.D

Injection Date: 24-Sep-2018 08:54:30

Instrument ID: CBNAMS13

Lims ID: ccvis

Client ID:

Operator ID: bes

ALS Bottle#:

2

Worklist Smp#: 2

Injection Vol: 5.0 ul

Dil. Factor: 1.0000

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

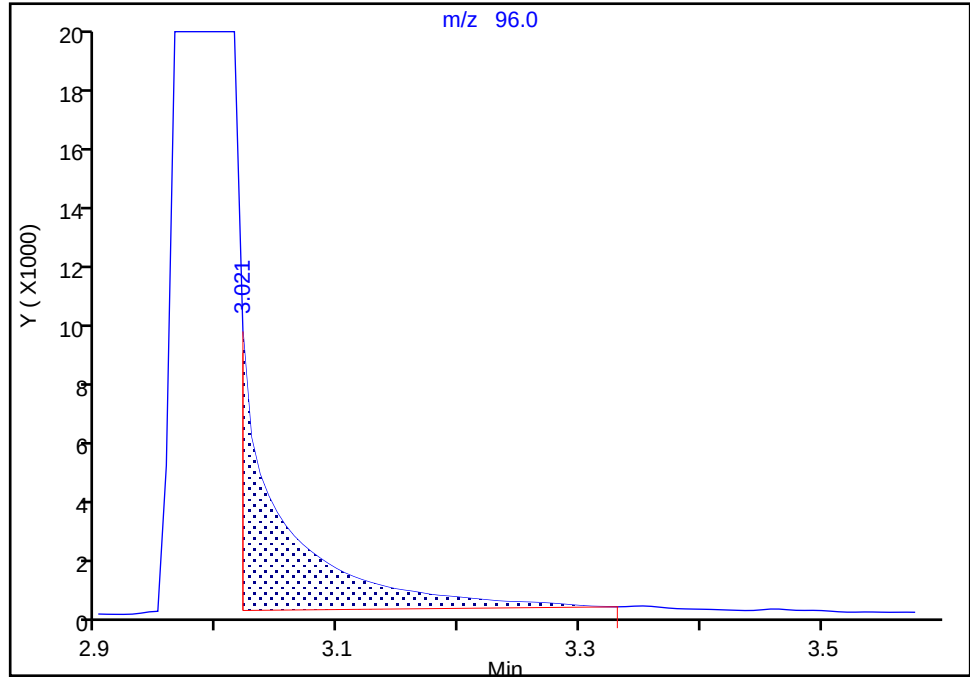
Detector: MS SCAN

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

Signal: 1

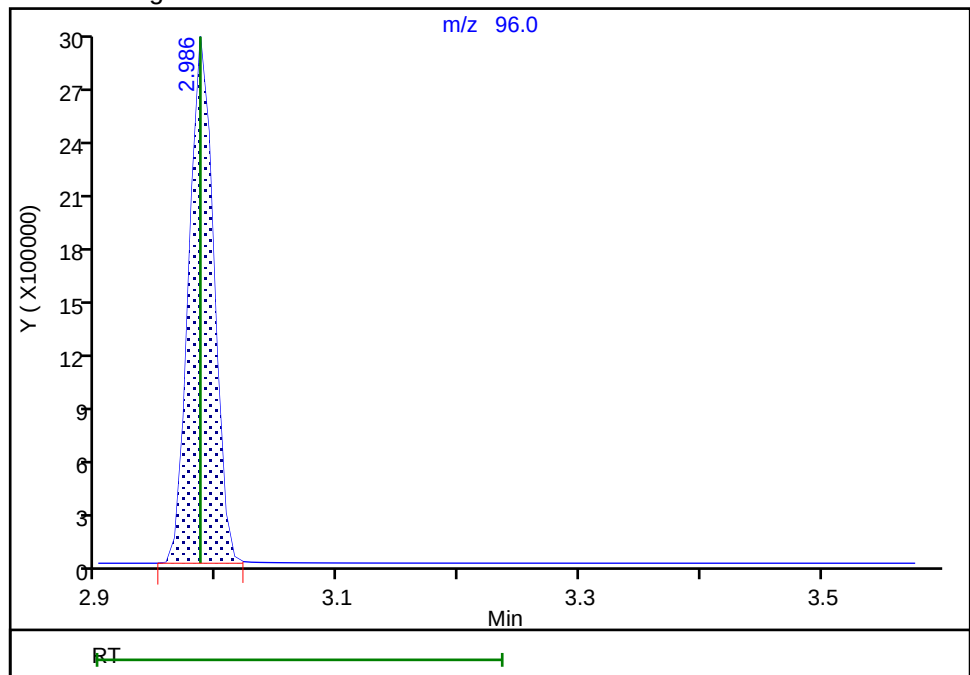
RT: 3.02
Area: 22598
Amount: 0.020854
Amount Units: ug/ml

Processing Integration Results



RT: 2.99
Area: 4256697
Amount: 3.928162
Amount Units: ug/ml

Manual Integration Results



Reviewer: zhaoc, 24-Sep-2018 09:08:36

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28985.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 11-May-2018 12:33:30 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071845-001
Operator ID: Instrument ID: CBNAMS13
Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\8270_Isotope.m
Limit Group: MSS 8270 Isotope Dilution IS
Last Update: 14-May-2018 12:12:23 Calib Date: 11-May-2018 17:20:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK013

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags

3 DFTPP

Reagents:

SMDFTP_CH_00024

Amount Added: 1.00

Units: mL

TestAmerica Edison

Data File: \\ChromNA\\Edison\\ChromData\\CBNAMS13\\20180511-71845.b\\C28985.D

Injection Date: 11-May-2018 12:33:30

Instrument ID: CBNAMS13

Lims ID: DFTPP

Client ID:

Operator ID:

ALS Bottle#: 1 Worklist Smp#: 1

Injection Vol: 5.0 ul

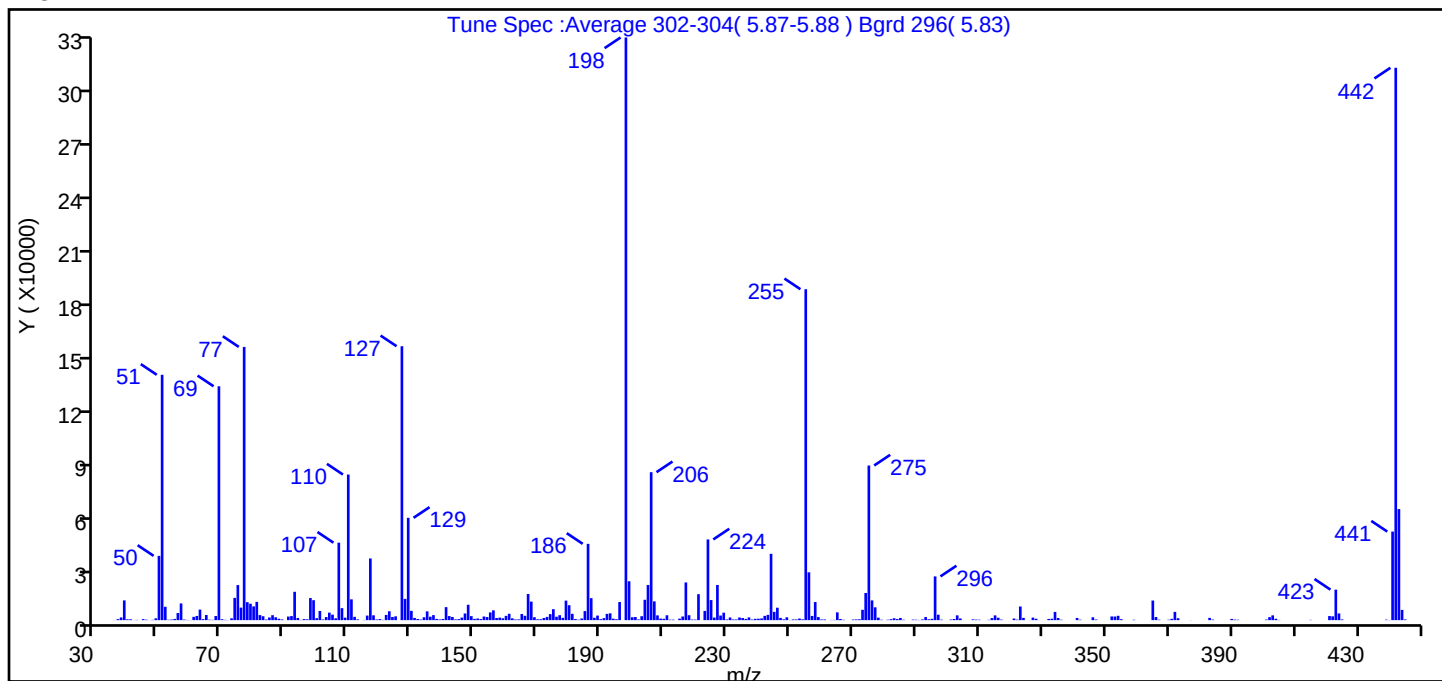
Dil. Factor: 1.0000

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Tune Method: DFTPP Method 8270

3 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	42.1
68	<2% of mass 69	0.7 (1.8)
69	Present	40.1
70	<2% of mass 69	0.2 (0.4)
127	40-60% of mass 198	47.0
197	<1% of mass 198	0.0
199	5-9% of mass 198	6.7
275	10-30% of mass 198	26.5
365	>1% of mass 198	3.4
441	Present but less than mass 443	15.2 (79.7)
442	>40% of mass 198	94.8
443	17-23% of mass 442	19.1 (20.1)

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28985.D\8270_Isotope.rsl\spectra.d
Injection Date: 11-May-2018 12:33:30
Spectrum: Tune Spec :Average 302-304(5.87-5.88) Bgrd 296(5.83)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 315

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	49	118.00	2662	199.00	21424	284.00	629
37.00	560	119.00	356	200.00	1603	285.00	1209
38.00	1472	120.00	579	201.00	1724	286.00	232
39.00	10876	121.00	155	202.00	387	289.00	295
40.00	455	122.00	2863	203.00	2164	290.00	241
41.00	481	123.00	4900	204.00	11226	291.00	106
42.00	39	124.00	1725	205.00	19392	292.00	398
43.00	136	125.00	2104	206.00	81552	293.00	1687
45.00	569	127.00	150976	207.00	10345	294.00	477
46.00	256	128.00	11721	208.00	2633	295.00	726
47.00	48	129.00	56400	209.00	858	296.00	24112
48.00	154	130.00	5115	210.00	754	297.00	2986
49.00	996	131.00	1239	211.00	2693	298.00	280
50.00	35424	132.00	659	212.00	261	301.00	344
51.00	135232	133.00	329	213.00	275	302.00	633
52.00	7359	134.00	1590	215.00	837	303.00	2643
53.00	210	135.00	4840	216.00	2019	304.00	933
54.00	335	136.00	1900	217.00	20784	308.00	434
55.00	677	137.00	2771	218.00	2720	309.00	311
56.00	3922	138.00	678	219.00	327	310.00	233
57.00	9214	139.00	389	220.00	311	313.00	174
58.00	331	140.00	654	221.00	14315	314.00	1138
59.00	120	141.00	7166	223.00	5085	315.00	2625
60.00	90	142.00	2254	224.00	44488	316.00	1335
61.00	1811	143.00	1719	225.00	11061	317.00	300
62.00	2317	144.00	426	226.00	1424	321.00	894
63.00	5816	145.00	563	227.00	19384	322.00	294
64.00	555	146.00	1400	228.00	2545	323.00	7522
65.00	2842	147.00	3667	229.00	4119	324.00	1244
66.00	251	148.00	8479	230.00	384	326.00	59
67.00	178	149.00	2193	231.00	1459	327.00	1399
68.00	2257	150.00	689	232.00	385	328.00	759
69.00	128904	151.00	917	233.00	373	329.00	56

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28985.D\8270_Isotope.rslt\spectra.d

Injection Date: 11-May-2018 12:33:30

Spectrum: Tune Spec :Average 302-304(5.87-5.88) Bgrd 296(5.83)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 315

m/z	Y	m/z	Y	m/z	Y	m/z	Y
70.00	507	152.00	605	234.00	1468	332.00	652
71.00	162	153.00	1996	235.00	1159	333.00	788
72.00	53	154.00	1704	236.00	695	334.00	4537
73.00	1010	155.00	4248	237.00	1514	335.00	1179
74.00	12272	156.00	5394	238.00	342	336.00	228
75.00	19344	157.00	1184	239.00	721	341.00	1210
76.00	6896	158.00	1388	240.00	795	342.00	233
77.00	150592	159.00	1030	241.00	946	346.00	1584
78.00	9919	160.00	2360	242.00	2348	347.00	356
79.00	9058	161.00	3502	243.00	2909	352.00	2034
80.00	7582	162.00	993	244.00	36560	353.00	1993
81.00	10071	163.00	375	245.00	4562	354.00	2402
82.00	2783	164.00	408	246.00	6853	355.00	538
83.00	2157	165.00	3389	247.00	1236	359.00	225
84.00	351	166.00	2398	248.00	451	365.00	10809
85.00	1479	167.00	14423	249.00	1549	366.00	1720
86.00	2732	168.00	10214	250.00	103	367.00	253
87.00	1579	169.00	1613	251.00	388	370.00	225
88.00	770	170.00	482	252.00	391	371.00	728
89.00	398	171.00	499	253.00	887	372.00	4559
91.00	1966	172.00	1186	254.00	465	373.00	1064
92.00	2232	173.00	1788	255.00	182400	377.00	50
93.00	15636	174.00	3316	256.00	26352	383.00	1257
94.00	1209	175.00	6051	257.00	2312	384.00	308
95.00	145	176.00	1886	258.00	9992	390.00	678
96.00	595	177.00	2731	259.00	1687	391.00	307
97.00	457	178.00	1265	260.00	360	392.00	218
98.00	12185	179.00	10767	261.00	375	401.00	324
99.00	10997	180.00	8233	263.00	112	402.00	1656
100.00	1090	181.00	3487	264.00	144	403.00	2639
101.00	5050	182.00	613	265.00	4290	404.00	756
102.00	377	183.00	260	266.00	632	405.00	123
103.00	1699	184.00	916	267.00	207	415.00	151
104.00	4132	185.00	4991	270.00	335	421.00	2267

Report Date: 14-May-2018 12:12:24

Chrom Revision: 2.2 11-May-2018 08:54:46

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28985.D\8270_Isotope.rslt\spectra.d

Injection Date: 11-May-2018 12:33:30

Spectrum: Tune Spec :Average 302-304(5.87-5.88) Bgrd 296(5.83)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 315

m/z	Y	m/z	Y	m/z	Y	m/z	Y
105.00	3036	186.00	42056	271.00	409	422.00	2101
106.00	1022	187.00	12106	272.00	486	423.00	16800
107.00	42696	188.00	1318	273.00	5701	424.00	3696
108.00	6612	189.00	2517	274.00	14971	425.00	385
109.00	1360	190.00	518	275.00	85240	439.00	278
110.00	80256	191.00	1108	276.00	10891	440.00	84
111.00	11459	192.00	3454	277.00	7084	441.00	48816
112.00	1823	193.00	3761	278.00	1373	442.00	304448
113.00	420	194.00	809	279.00	229	443.00	61224
115.00	100	195.00	507	281.00	211	444.00	5633
116.00	2517	196.00	9992	282.00	541	445.00	392
117.00	33992	198.00	321152	283.00	1038		

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31778.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 24-Sep-2018 08:39:30 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0078959-001
Misc. Info.: DFTPP
Operator ID: bes Instrument ID: CBNAMS13
Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
Limit Group: MSS 8270 Isotope Dilution IS
Last Update: 25-Sep-2018 10:25:44 Calib Date: 11-May-2018 17:20:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK010

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags

3 DFTPP

Reagents:

SMDFTP_CH_00025

Amount Added: 1.00

Units: mL

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31778.D

Injection Date: 24-Sep-2018 08:39:30

Instrument ID: CBNAMS13

Lims ID: DFTPP

Client ID:

Operator ID: bes

ALS Bottle#: 1 Worklist Smp#: 1

Injection Vol: 5.0 ul

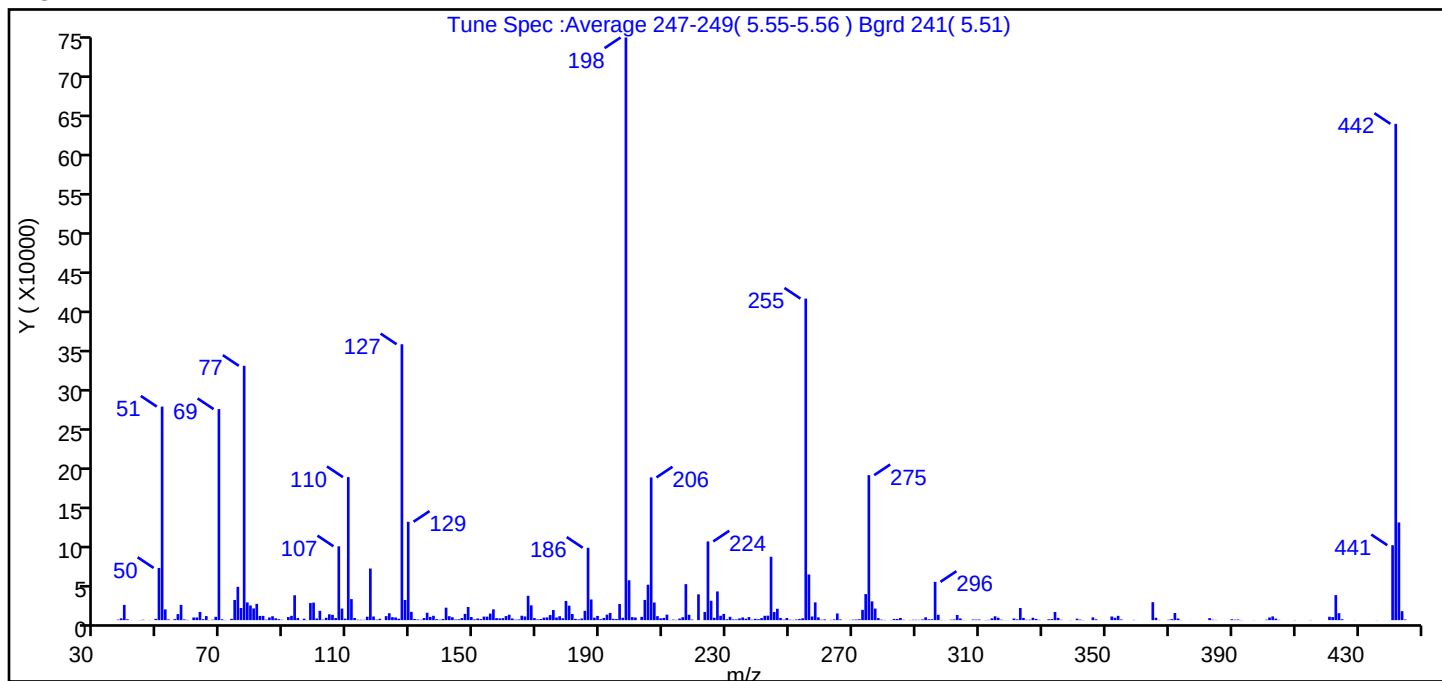
Dil. Factor: 1.0000

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Tune Method: DFTPP Method 8270

3 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	36.7
68	<2% of mass 69	0.6 (1.6)
69	Present	36.2
70	<2% of mass 69	0.2 (0.4)
127	40-60% of mass 198	47.4
197	<1% of mass 198	0.4
199	5-9% of mass 198	6.8
275	10-30% of mass 198	24.9
365	>1% of mass 198	3.1
441	Present but less than mass 443	12.9 (76.7)
442	>40% of mass 198	85.2
443	17-23% of mass 442	16.8 (19.7)

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31778.D\8270_Isotope.rslt\spectra.d
Injection Date: 24-Sep-2018 08:39:30
Spectrum: Tune Spec :Average 247-249(5.55-5.56) Bgrd 241(5.51)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 334

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	596	125.00	3432	210.00	2837	302.00	914
38.00	2285	126.00	1790	211.00	7014	303.00	6567
39.00	19376	127.00	351232	212.00	305	304.00	2170
40.00	1101	128.00	25648	213.00	678	305.00	231
41.00	32	129.00	125240	214.00	321	306.00	57
43.00	5	130.00	10509	215.00	1964	307.00	69
44.00	216	131.00	1507	216.00	3760	308.00	790
45.00	523	132.00	805	217.00	45856	309.00	729
47.00	167	133.00	519	218.00	6824	310.00	795
48.00	60	134.00	2681	219.00	744	312.00	258
49.00	1603	135.00	9401	221.00	32856	313.00	390
50.00	66456	136.00	4127	223.00	10397	314.00	2239
51.00	271872	137.00	5537	224.00	100200	315.00	4894
52.00	13700	138.00	1252	225.00	24656	316.00	3074
53.00	937	139.00	572	226.00	3038	317.00	584
54.00	73	140.00	1470	227.00	36544	318.00	149
55.00	1295	141.00	15866	228.00	5603	319.00	136
56.00	7686	142.00	5020	229.00	7927	320.00	51
57.00	19432	143.00	3625	230.00	1189	321.00	2070
58.00	944	144.00	846	231.00	4257	322.00	974
59.00	422	145.00	1051	232.00	963	323.00	15446
61.00	3354	146.00	2647	233.00	881	324.00	2853
62.00	3470	147.00	7978	234.00	2173	325.00	448
63.00	10479	148.00	16752	235.00	3438	326.00	612
64.00	1271	149.00	3980	236.00	1857	327.00	3075
65.00	5179	150.00	1036	237.00	3875	328.00	1523
66.00	186	151.00	2126	238.00	614	329.00	401
67.00	555	152.00	1320	239.00	1714	332.00	1089
68.00	4247	153.00	4551	240.00	1188	333.00	1395
69.00	268672	154.00	4472	241.00	2566	334.00	10378
70.00	1139	155.00	8356	242.00	5570	335.00	2923
71.00	256	156.00	13782	243.00	5702	336.00	415
72.00	62	157.00	2539	244.00	80688	339.00	216

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31778.D\8270_Isotope.rslt\spectra.d

Injection Date: 24-Sep-2018 08:39:30

Spectrum: Tune Spec :Average 247-249(5.55-5.56) Bgrd 241(5.51)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 334

m/z	Y	m/z	Y	m/z	Y	m/z	Y
73.00	1679	158.00	2217	245.00	10325	341.00	1832
74.00	25648	159.00	2549	246.00	14482	342.00	635
75.00	42448	160.00	5187	247.00	2820	343.00	200
76.00	15444	161.00	6885	248.00	639	346.00	3516
77.00	323776	162.00	2131	249.00	2744	347.00	1140
78.00	22552	163.00	633	250.00	598	352.00	4636
79.00	18696	164.00	864	251.00	352	353.00	3040
80.00	14896	165.00	5608	252.00	816	354.00	5482
81.00	20728	166.00	4723	253.00	1377	355.00	858
82.00	5368	167.00	30984	254.00	2387	359.00	336
83.00	5456	168.00	18824	255.00	409344	365.00	22888
84.00	702	169.00	2628	256.00	58112	366.00	3076
85.00	3404	170.00	981	257.00	4673	367.00	272
86.00	4952	171.00	1435	258.00	22616	370.00	538
87.00	2361	172.00	3244	259.00	3530	371.00	1283
88.00	1258	173.00	3508	260.00	539	372.00	9110
89.00	451	174.00	6480	261.00	949	373.00	2134
91.00	3990	175.00	12896	263.00	384	374.00	181
92.00	5457	176.00	3342	264.00	888	377.00	50
93.00	31680	177.00	4968	265.00	8470	383.00	2549
94.00	2770	178.00	2383	266.00	911	384.00	492
95.00	255	179.00	24496	269.00	246	385.00	231
96.00	1786	180.00	18400	270.00	659	390.00	1091
97.00	308	181.00	7863	271.00	791	391.00	617
98.00	21776	182.00	1594	272.00	1176	392.00	833
99.00	22320	183.00	1005	273.00	13084	393.00	224
100.00	2061	184.00	2083	274.00	33200	397.00	125
101.00	11888	185.00	11856	275.00	184576	401.00	626
102.00	660	186.00	92168	276.00	23912	402.00	3396
103.00	3027	187.00	26296	277.00	14719	403.00	4734
104.00	7446	188.00	3145	278.00	2568	404.00	1938
105.00	6722	189.00	5382	279.00	608	405.00	362
106.00	2675	190.00	1143	280.00	287	410.00	234
107.00	94016	191.00	2800	282.00	299	415.00	229

Report Date: 25-Sep-2018 10:25:45

Chrom Revision: 2.3 19-Jul-2018 15:14:50

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31778.D\8270_Isotope.rslt\spectra.d

Injection Date: 24-Sep-2018 08:39:30

Spectrum: Tune Spec :Average 247-249(5.55-5.56) Bgrd 241(5.51)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 334

m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	14711	192.00	6940	283.00	1547	421.00	4307
109.00	1882	193.00	9200	284.00	1490	422.00	3896
110.00	182080	194.00	1672	285.00	2805	423.00	31872
111.00	26784	195.00	1404	286.00	404	424.00	8863
112.00	2822	196.00	20552	288.00	203	425.00	1164
113.00	615	197.00	3026	289.00	465	429.00	108
114.00	481	198.00	741760	290.00	459	436.00	141
115.00	425	199.00	50768	291.00	380	438.00	60
116.00	4371	200.00	3888	292.00	891	439.00	51
117.00	65712	201.00	3358	293.00	3591	440.00	103
118.00	4653	203.00	4174	294.00	1080	441.00	95416
119.00	700	204.00	25696	295.00	1137	442.00	631808
120.00	1728	205.00	45112	296.00	48736	443.00	124352
121.00	49	206.00	181696	297.00	6825	444.00	11411
122.00	5058	207.00	22464	298.00	313	445.00	799
123.00	8758	208.00	5100	299.00	125		
124.00	3787	209.00	2337	301.00	580		

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-165184-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 460-554464/1-A
 Matrix: Water Lab File ID: C31780.D
 Analysis Method: 8270D SIM ID Date Collected: _____
 Extract. Method: 3510C Date Extracted: 09/23/2018 15:08
 Sample wt/vol: 250 (mL) Date Analyzed: 09/24/2018 09:15
 Con. Extract Vol.: 2 (mL) Dilution Factor: 1
 Injection Volume: 5 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 553661 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.20	U	0.20	0.016

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	49		10-150

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31780.D
 Lims ID: MB 460-554464/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 24-Sep-2018 09:15:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0078959-003
 Operator ID: bes Instrument ID: CBNAMS13
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 25-Sep-2018 10:25:45 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: nimerd

Date: 24-Sep-2018 09:37:36

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.007	2.984	0.021	0	1861684	4.00	1.97	
* 4 1,4-Dichlorobenzene-d4	152	5.704	5.704	0.000	96	477739	0.2000	0.2000	

Reagents:

SM_iso_d4istd_00003 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31780.D

Injection Date: 24-Sep-2018 09:15:30

Instrument ID: CBNAMS13

Operator ID: bes

Lims ID: MB 460-554464/1-A

Worklist Smp#: 3

Client ID:

Injection Vol: 5.0 ul

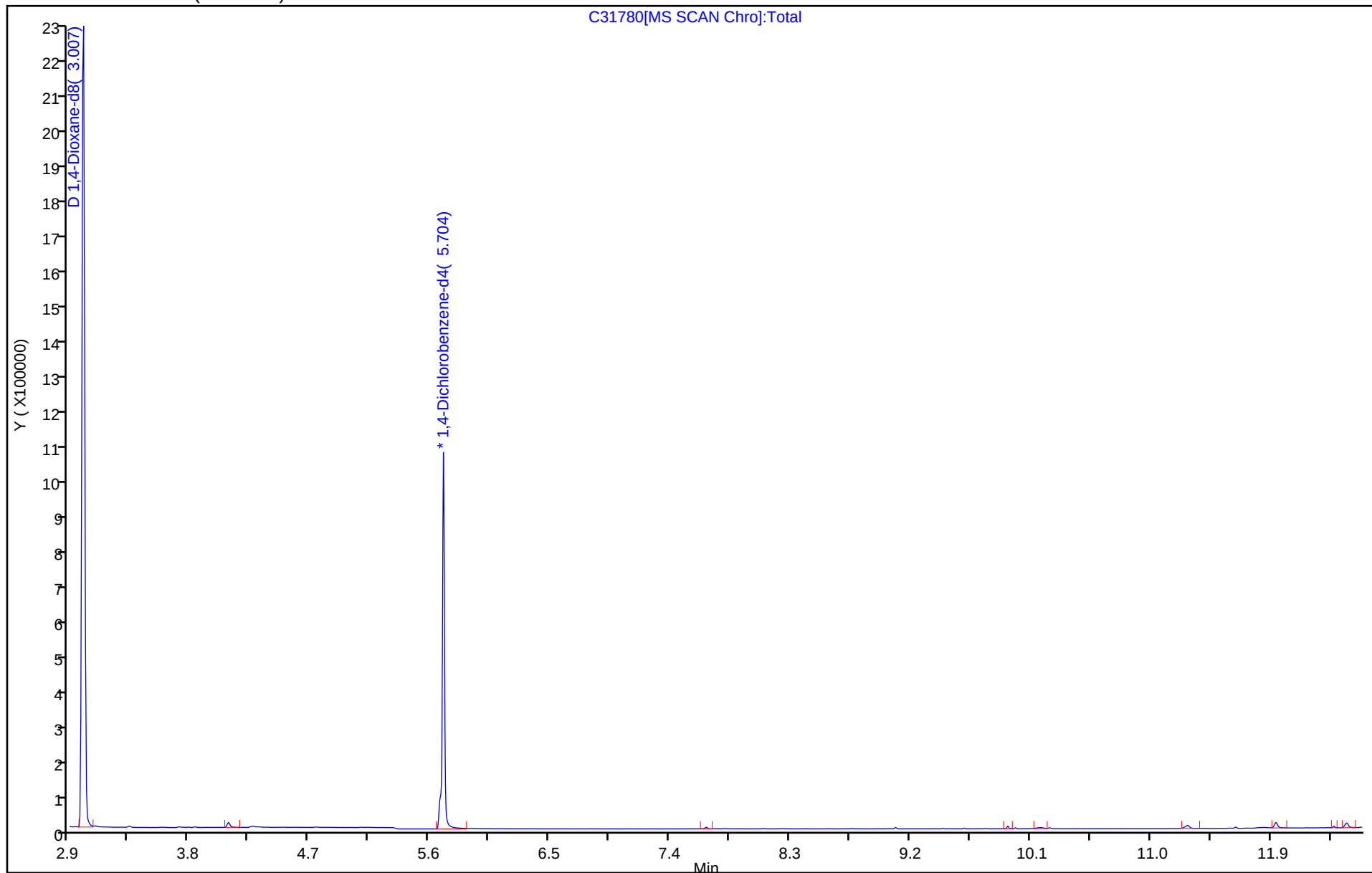
Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31780.D

Injection Date: 24-Sep-2018 09:15:30

Instrument ID: CBNAMS13

Lims ID: MB 460-554464/1-A

Client ID:

Operator ID: bes

ALS Bottle#: 3

Worklist Smp#: 3

Injection Vol: 5.0 ul

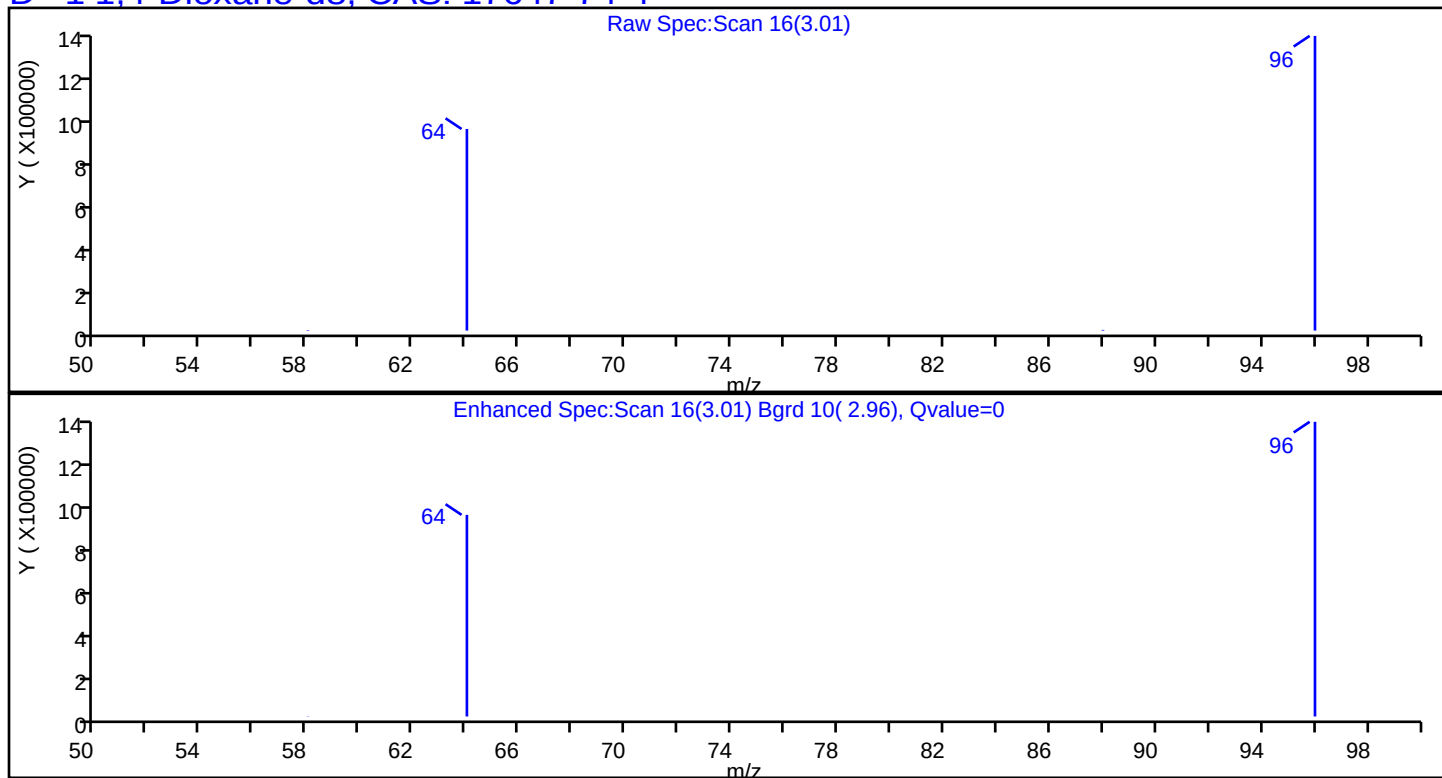
Dil. Factor: 1.0000

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)

Detector MS SCAN

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

TestAmerica Edison

Data File: \\ChromNA\\Edison\\ChromData\\CBNAMS13\\20180920-78959.b\\C31780.D

Injection Date: 24-Sep-2018 09:15:30

Instrument ID: CBNAMS13

Lims ID: MB 460-554464/1-A

Client ID:

Operator ID: bes

ALS Bottle#:

3

Worklist Smp#: 3

Injection Vol: 5.0 ul

Dil. Factor:

1.0000

Method: 8270_Isotope

Limit Group:

MSS 8270 Isotope Dilution IS

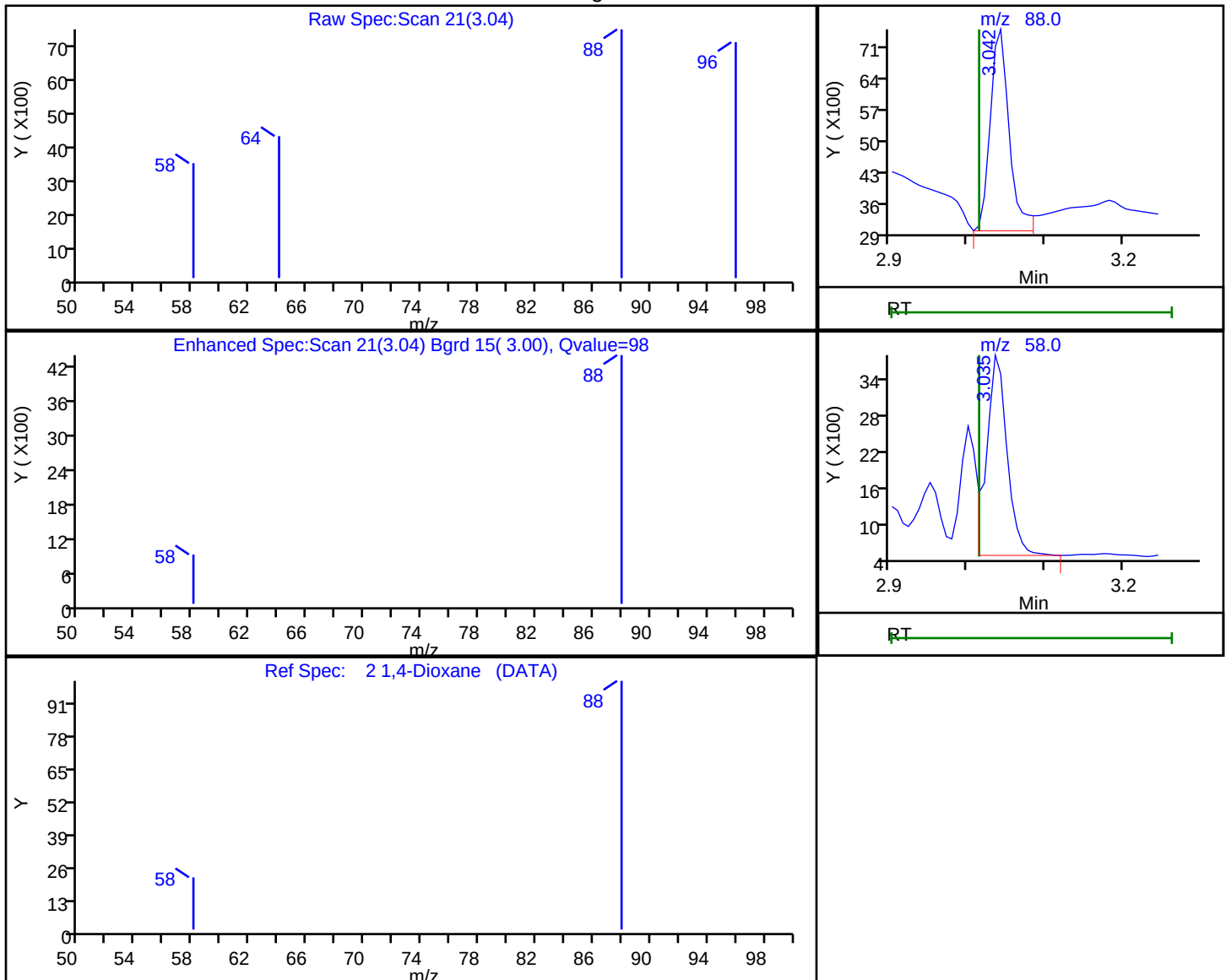
Column: Rtxi-5Sil MS (0.25 mm)

Detector

MS SCAN

2 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
3.04	88.00	7632	0.012665
3.03	58.00	6139	

Reviewer: zhaoc, 25-Sep-2018 09:15:51

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-165184-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCS 460-554464/2-A
Matrix: Water Lab File ID: C31781.D
Analysis Method: 8270D SIM ID Date Collected: _____
Extract. Method: 3510C Date Extracted: 09/23/2018 15:08
Sample wt/vol: 250 (mL) Date Analyzed: 09/24/2018 09:33
Con. Extract Vol.: 2 (mL) Dilution Factor: 1
Injection Volume: 5 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 553661 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.56		0.20	0.016

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	48		10-200

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31781.D
 Lims ID: LCS 460-554464/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 24-Sep-2018 09:33:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0078959-004
 Operator ID: bes Instrument ID: CBNAMS13
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 25-Sep-2018 10:25:45 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: nimerd

Date: 24-Sep-2018 09:57:52

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.001	2.984	0.015	0	1773724	4.00	1.91	
2 1,4-Dioxane	88	3.037	3.014	0.023	83	112052	0.2000	0.1952	
* 4 1,4-Dichlorobenzene-d4	152	5.705	5.704	0.001	99	470704	0.2000	0.2000	

Reagents:

SM_iso_d4istd_00003 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31781.D

Injection Date: 24-Sep-2018 09:33:30

Instrument ID: CBNAMS13

Operator ID: bes

Lims ID: LCS 460-554464/2-A

Worklist Smp#: 4

Client ID:

Injection Vol: 5.0 ul

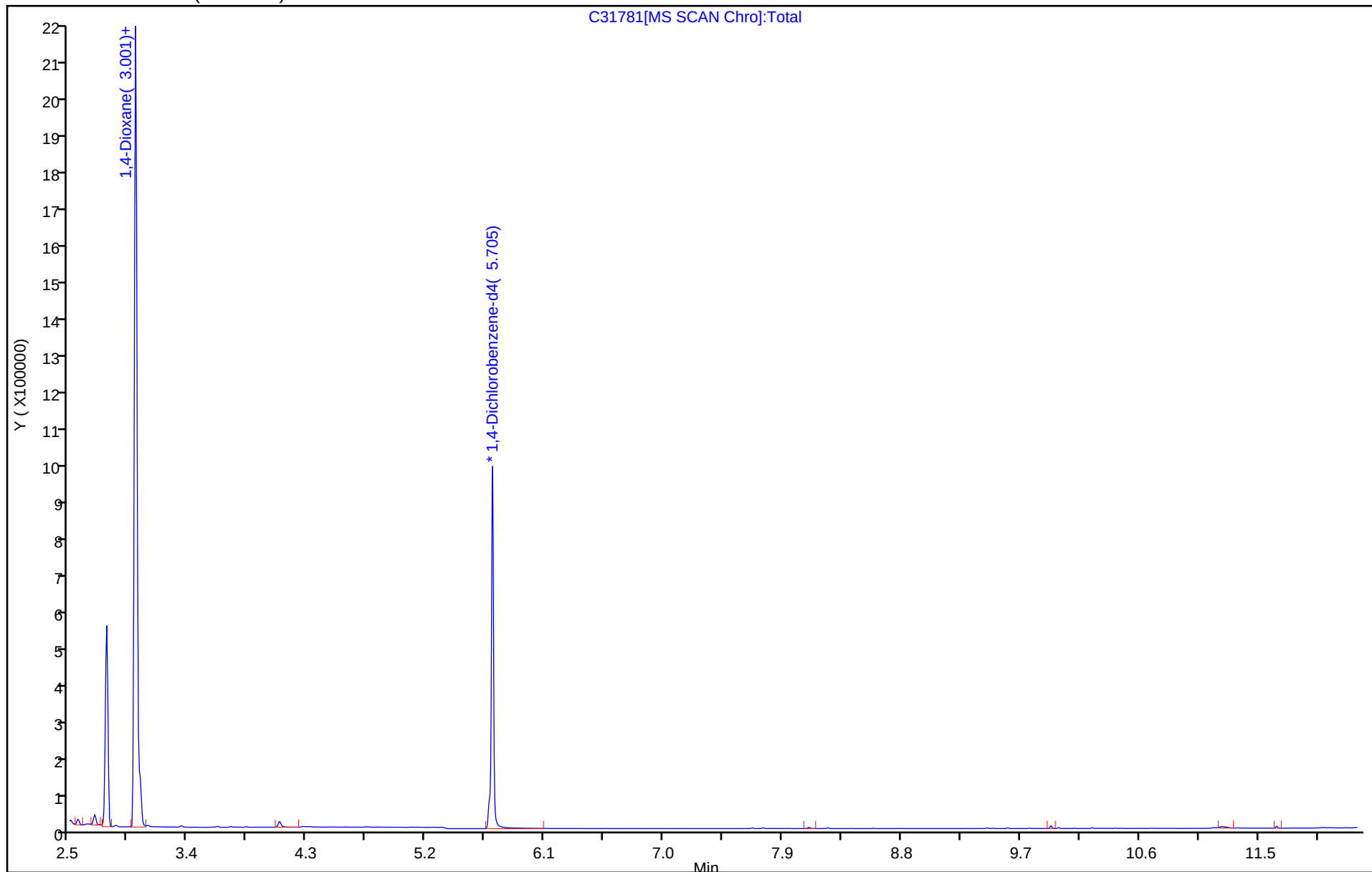
Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-165184-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCSD 460-554464/3-A
Matrix: Water Lab File ID: C31782.D
Analysis Method: 8270D SIM ID Date Collected: _____
Extract. Method: 3510C Date Extracted: 09/23/2018 15:08
Sample wt/vol: 250 (mL) Date Analyzed: 09/24/2018 09:50
Con. Extract Vol.: 2 (mL) Dilution Factor: 1
Injection Volume: 5 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 553661 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.64		0.20	0.016

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	47		10-200

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\C31782.D
 Lims ID: LCSD 460-554464/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 24-Sep-2018 09:50:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 5.0 ul Dil. Factor: 1.0000
 Sample Info: 460-0078959-005
 Operator ID: bes Instrument ID: CBNAMS13
 Method: \\ChromNA\Edison\ChromData\CBNAMS13\20180920-78959.b\8270_Isotope.m
 Limit Group: MSS 8270 Isotope Dilution IS
 Last Update: 25-Sep-2018 10:25:45 Calib Date: 11-May-2018 17:20:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS13\20180511-71845.b\C28993.D
 Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: khlungprakhons

Date: 25-Sep-2018 13:46:39

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
D 1 1,4-Dioxane-d8	96	3.008	2.984	0.022	0	1820900	4.00	1.88	
2 1,4-Dioxane	88	3.037	3.014	0.023	80	121169	0.2000	0.2056	
* 4 1,4-Dichlorobenzene-d4	152	5.702	5.704	-0.002	97	488760	0.2000	0.2000	

Reagents:

SM_iso_d4istd_00003 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Edison

Data File: \\ChromNA\\Edison\\ChromData\\CBNAMS13\\20180920-78959.b\\C31782.D

Injection Date: 24-Sep-2018 09:50:30

Instrument ID: CBNAMS13

Operator ID: bes

Lims ID: LCSD 460-554464/3-A

Worklist Smp#: 5

Client ID:

Injection Vol: 5.0 ul

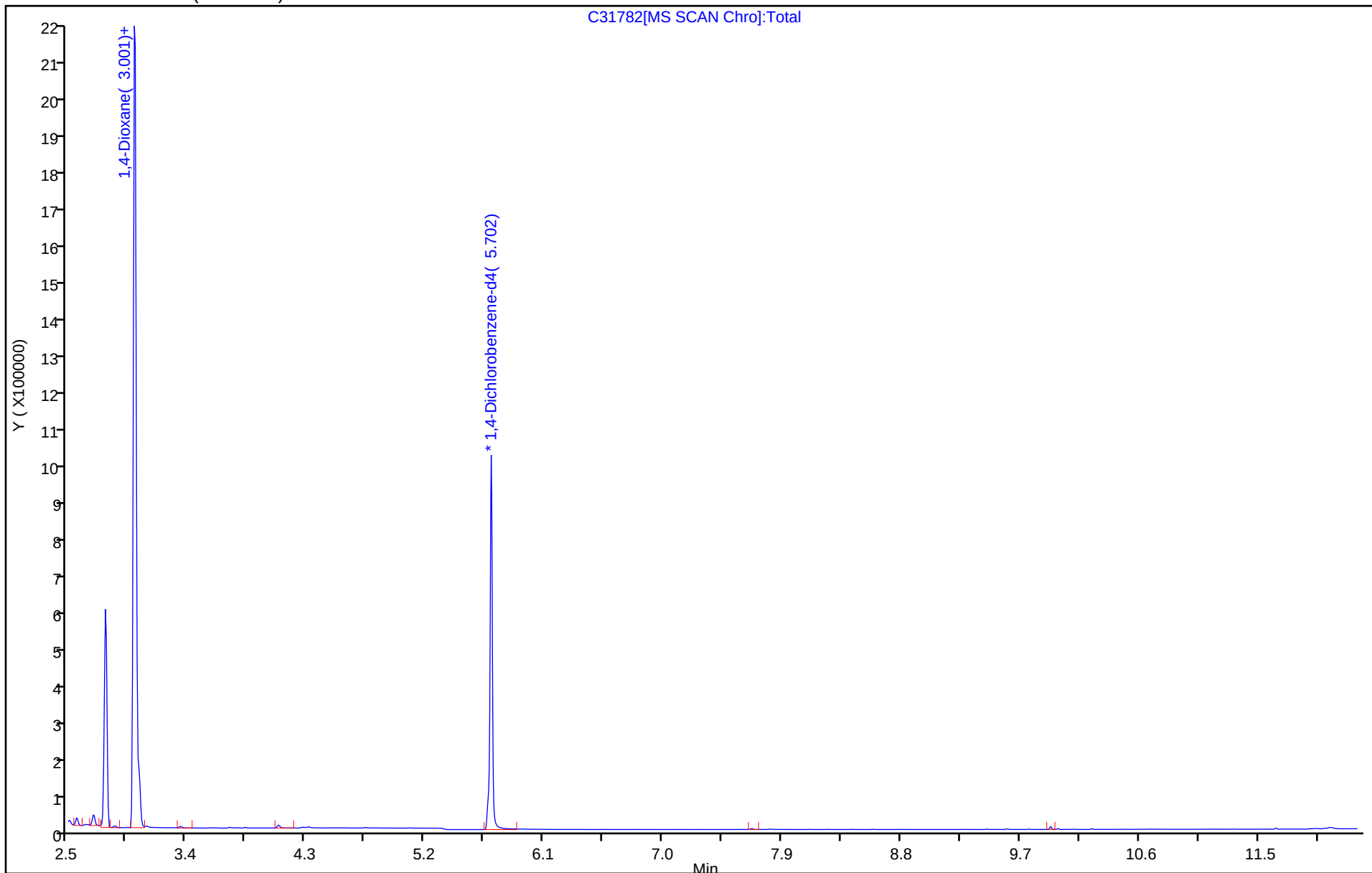
Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 8270_Isotope

Limit Group: MSS 8270 Isotope Dilution IS

Column: Rtxi-5Sil MS (0.25 mm)



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Edison Job No.: 460-165184-1

SDG No.: _____

Instrument ID: CBNAMS13 Start Date: 05/11/2018 12:33Analysis Batch Number: 518314 End Date: 05/11/2018 17:43

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 460-518314/1		05/11/2018 12:33	1	C28985.D	Rtxi-5Sil MS 0.25 (mm)
ICIS 460-518314/2		05/11/2018 12:48	1	C28986.D	Rtxi-5Sil MS 0.25 (mm)
STD8 460-518314/3 IC		05/11/2018 13:08	1	C28987.D	Rtxi-5Sil MS 0.25 (mm)
STD7 460-518314/4 IC		05/11/2018 13:27	1	C28988.D	Rtxi-5Sil MS 0.25 (mm)
STD6 460-518314/5 IC		05/11/2018 14:16	1	C28989.D	Rtxi-5Sil MS 0.25 (mm)
STD4 460-518314/6 IC		05/11/2018 14:35	1	C28990.D	Rtxi-5Sil MS 0.25 (mm)
STD3 460-518314/7 IC		05/11/2018 15:44	1	C28991.D	Rtxi-5Sil MS 0.25 (mm)
STD2 460-518314/8 IC		05/11/2018 16:02	1	C28992.D	Rtxi-5Sil MS 0.25 (mm)
STD1 460-518314/9 IC		05/11/2018 17:20	1	C28993.D	Rtxi-5Sil MS 0.25 (mm)
ICV 460-518314/10		05/11/2018 17:43	1		Rtxi-5Sil MS 0.25 (mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica EdisonJob No.: 460-165184-1

SDG No.: _____

Instrument ID: CBNAMS13Start Date: 09/24/2018 08:39Analysis Batch Number: 553661End Date: 09/24/2018 17:21

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 460-553661/1		09/24/2018 08:39	1	C31778.D	Rtxi-5Sil MS 0.25 (mm)
CCVIS 460-553661/2		09/24/2018 08:54	1	C31779.D	Rtxi-5Sil MS 0.25 (mm)
MB 460-554464/1-A		09/24/2018 09:15	1	C31780.D	Rtxi-5Sil MS 0.25 (mm)
LCS 460-554464/2-A		09/24/2018 09:33	1	C31781.D	Rtxi-5Sil MS 0.25 (mm)
LCSD 460-554464/3-A		09/24/2018 09:50	1	C31782.D	Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 10:07	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 10:25	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 10:42	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 10:59	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 11:17	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 11:34	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 11:51	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 12:09	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 12:26	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 12:43	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 13:00	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 13:18	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 13:35	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 13:53	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 14:10	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 14:28	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 14:45	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 15:02	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 15:20	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 15:37	1		Rtxi-5Sil MS 0.25 (mm)
ZZZZZ		09/24/2018 15:54	1		Rtxi-5Sil MS 0.25 (mm)
460-165184-1		09/24/2018 16:12	1	C31804.D	Rtxi-5Sil MS 0.25 (mm)
460-165184-2		09/24/2018 16:29	1	C31805.D	Rtxi-5Sil MS 0.25 (mm)
460-165184-3		09/24/2018 16:46	1	C31806.D	Rtxi-5Sil MS 0.25 (mm)
460-165184-4		09/24/2018 17:04	1	C31807.D	Rtxi-5Sil MS 0.25 (mm)
460-165184-5		09/24/2018 17:21	1	C31808.D	Rtxi-5Sil MS 0.25 (mm)

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 460-165184-1

SDG No.: _____

Batch Number: 554464 Batch Start Date: 09/23/18 15:07 Batch Analyst: Guha, Sumedha XBatch Method: 3510C Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	OP_1,4-DX_SP 00003	OP_14-DX_surr 00004
MB 460-554464/1		3510C, 8270D SIM ID		250 mL	2 mL	7 SU	<2 SU		20 uL
LCS 460-554464/2		3510C, 8270D SIM ID		250 mL	2 mL	7 SU	<2 SU	200 uL	20 uL
LCS 460-554464/3		3510C, 8270D SIM ID		250 mL	2 mL	7 SU	<2 SU	200 uL	20 uL
460-165184-B-1	MW019	3510C, 8270D SIM ID	T	250 mL	2 mL	7 SU	<2 SU		20 uL
460-165184-A-2	MW023	3510C, 8270D SIM ID	T	250 mL	2 mL	7 SU	<2 SU		20 uL
460-165184-A-3	MW020	3510C, 8270D SIM ID	T	250 mL	2 mL	7 SU	<2 SU		20 uL
460-165184-A-4	FIELD DUPLICATE	3510C, 8270D SIM ID	T	250 mL	2 mL	7 SU	<2 SU		20 uL
460-165184-A-5	EQUIPMENT BLANK	3510C, 8270D SIM ID	T	250 mL	2 mL	7 SU	<2 SU		20 uL

Batch Notes	
Acid Used for pH Adjustment ID	186983
Batch Comment	3510C_LVI 8270D_SIM_MS_ID
Analyst ID - Extraction	sg
Method/Fraction	BNA WATER, isotope
Prep Solvent ID	MeCL2 208142
Prep Solvent Volume Used	120 mL
Analyst ID - Spike Analyst	sg
Analyst ID - Spike Witness Analyst	KH
Sufficient Volume for Batch QC	Yes

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

Shipping and Receiving Documents

TestAmerica

Bill To: EAR

NY New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679
460501

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

Name (for report and invoice) ITAU HOTMANN		Samplers Name (Printed) EARL-MT		Site/Project Identification DEL-MONTAIGNE-camp hero	
Company EARL		P.O. # DEL-MONTAIGNE-camp hero		Regulatory Program: NYSD&E	
Address 225 Atlantic Avenue		Analysis Turnaround Time Standard ☐ Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☒ 30 DAY		LAB USE ONLY Project No:	
City Paterson NJ		State 11732		Job No: 165184	
Phone 631-442-6400		Fax		Sample Numbers	
Sample Identification		Date	Time	Matrix	No. of Cont.
MW019		9/18/19	1015	WQ	2
MW023		9/18/19	1215	AQ	2
MW020		9/18/19	1400	AQ	2
FIELD BOTTLE DISCATE		9/18/19	X	AQ	2
EQUIPMENT BLANK		9/18/19	0945	AQ	2
					
Preservation Used: 1 = ICE, 2 = HCl, 3 = I					
6 = Other 7 = Other					

Special Instructions **NYSD&E ASP CAT 'B' DELIVERABLES**

Water Metals Filtered (Yes/No)?

Relinquished by [Signature]	Company EARL	Date / Time 1730 / 9 SEP 18	Received by 1) SAMPUR BEETAL	Company EARL
Relinquished by EARL PATRICK	Company EARL	Date / Time 9-20-18 / 11:20	Received by WILLIAM A. VIOLETTA	Company EARL
Relinquished by WILLIAM A. VIOLETTA	Company EARL	Date / Time 9-20-18 / 11:20	Received by [Signature]	Company EARL
Relinquished by [Signature]	Company EARL	Date / Time 9/20/18 / 11:20	Received by [Signature]	Company EARL

Laboratory Certifications: New Jersey (17028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132) 0
Massachusetts (M-NJ312), North Carolina (No. 578)

TAL-0016 (07/15)
09/20/18
1920

165184

[illegible]

Date:

Login Sample Receipt Checklist

Client: Environmental Assessment & Remediations

Job Number: 460-165184-1

Login Number: 165184
List Number: 1
Creator: Rivera, Kenneth

List Source: TestAmerica Edison

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.	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 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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 460-165187-1

Job Description: DEC-MONTAUK-Camp Hero; Spill# 1805382

For:
New York State D.E.C.
625 Broadway
12th Floor
Albany, NY 12233-7017
Attention: John B Swartwout



Approved for release.
Thomas A Chupela
Project Management Assistant I
9/28/2018 12:35 PM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
09/28/2018

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LA000132

Job Number: 460-165187-1

Job Description: DEC-MONTAUK-Camp Hero; Spill# 1805382

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Approved for release.
Thomas A. Chupela
Project Management Assistant I
9/28/2018 12:35 PM

Designee for
Melissa Haas

CASE NARRATIVE

Client: New York State D.E.C.

Project: DEC-MONTAUK-Camp Hero; Spill# 1805382

Report Number: 460-165187-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

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

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

RECEIPT

The sample was received on 9/20/2018 7:20 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample MONTAUK_WASTE (460-165187-1) was analyzed for Volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 09/27/2018.

The continuing calibration verification (CCV) analyzed in batch 460-555351 was outside the method criteria for Bromomethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Refer to the QC report for details.

No other difficulties were encountered during the volatiles analysis.

All other quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Sample MONTAUK_WASTE (460-165187-1) was analyzed for semivolatile organic compounds (GC/MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 09/22/2018 and analyzed on 09/23/2018.

The continuing calibration verification (CCV) associated with batch 460-554448 recovered above the upper control limit for 2,3,4,6-Tetrachlorophenol, 2,4-Dinitrophenol, 2-Nitrophenol, 4,6-Dinitro-2-methylphenol, Butyl benzyl phthalate and Di-n-octyl phthalate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCVIS 460-554448/2).

The surrogate recovery for the blank associated with preparation batch 460-554350 and analytical batch 460-554448 was outside the upper control limits.

The continuing calibration verification (CCV) analyzed in batch 460-554448 was outside the method criteria for the following analyte(s): Hexachlorocyclopentadiene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 460-554350 and analytical batch 460-554448 recovered outside control limits for the following analyte: Atrazine.

The continuing calibration verification (CCV) associated with batch 460-554550 recovered above the upper control limit for 4-Nitrophenol,

2,3,4,6-Tetrachlorophenol, 2,4-Dinitrophenol, 2-Nitrophenol, 4,6-Dinitro-2-methylphenol and Butyl benzyl phthalate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 460-554350 and analytical batch 460-554550 recovered outside control limits for the following analytes: 2,3,4,6-Tetrachlorophenol, 2,4-Dinitrophenol, 2-Nitrophenol, 4,6-Dinitro-2-methylphenol, 4-Nitrophenol, Butyl benzyl phthalate, Hexachlorocyclopentadiene and Phenol. These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

Refer to the QC report for details.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

TCLP METALS

Sample MONTAUK_WASTE (460-165187-1) was analyzed for TCLP metals in accordance with 6010D. The samples were leached on 09/22/2018, and prepared and analyzed on 09/25/2018.

No difficulties were encountered during the TCLP metals analysis.

All quality control parameters were within the acceptance limits.

TCLP MERCURY

Sample MONTAUK_WASTE (460-165187-1) was analyzed for TCLP mercury in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 09/22/2018, and prepared and analyzed on 09/27/2018.

No difficulties were encountered during the TCLP Hg analysis.

All quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: New York State D.E.C.

Job Number: 460-165187-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-165187-1 cis-1,2-Dichloroethene	MONTAUK_WASTE	0.35	J	1.0	ug/L	8260C
<i>TCLP</i> Barium		39.9	J	1000	ug/L	6010D

METHOD SUMMARY

Client: New York State D.E.C.

Job Number: 460-165187-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Purge and Trap	TAL EDI		SW846 5030C
Semivolatile Organic Compounds (GC/MS)	TAL EDI	SW846 8270D	
Liquid-Liquid Extraction (Separatory Funnel)	TAL EDI		SW846 3510C
Metals (ICP)	TAL EDI	SW846 6010D	
TCLP Extraction	TAL EDI		SW846 1311
Preparation, Total Metals	TAL EDI		SW846 3010A
Mercury (CVAA)	TAL EDI	SW846 7470A	
TCLP Extraction	TAL EDI		SW846 1311
Preparation, Mercury	TAL EDI		SW846 7470A

Lab References:

TAL EDI = TestAmerica Edison

Method References:

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

METHOD / ANALYST SUMMARY

Client: New York State D.E.C.

Job Number: 460-165187-1

Method	Analyst	Analyst ID
SW846 8260C	Parekh, Vyomesh B	VBP
SW846 8270D	Eisa, Mustafa M	MME
SW846 6010D	Chang, Churn Der	CDC
SW846 7470A	Sheikh, Razia B	RBS

SAMPLE SUMMARY

Client: New York State D.E.C.

Job Number: 460-165187-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-165187-1	MONTAUK_WASTE	Water	09/19/2018 1430	09/20/2018 1920

SAMPLE RESULTS

Analytical Data

Client: New York State D.E.C.

Job Number: 460-165187-1

Client Sample ID: MONTAUK_WASTE

Lab Sample ID: 460-165187-1

Date Sampled: 09/19/2018 1430

Client Matrix: Water

Date Received: 09/20/2018 1920

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 460-555351

Instrument ID: CVOAMS8

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: J75402.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/27/2018 0244

Final Weight/Volume: 5 mL

Prep Date: 09/27/2018 0244

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.24	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.37	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.31	1.0
1,1,2-Trichloroethane	1.0	U	0.43	1.0
1,1-Dichloroethane	1.0	U	0.26	1.0
1,1-Dichloroethene	1.0	U	0.12	1.0
1,2,3-Trichlorobenzene	1.0	U	0.36	1.0
1,2,4-Trichlorobenzene	1.0	U	0.37	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.38	1.0
1,2-Dichlorobenzene	1.0	U	0.43	1.0
1,2-Dichloroethane	1.0	U	0.43	1.0
1,2-Dichloropropane	1.0	U	0.35	1.0
1,3-Dichlorobenzene	1.0	U	0.34	1.0
1,4-Dichlorobenzene	1.0	U	0.76	1.0
1,4-Dioxane	50	U	28	50
2-Butanone (MEK)	5.0	U	1.9	5.0
2-Hexanone	5.0	U	2.9	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	1.0	U	0.43	1.0
Bromoform	1.0	U	0.54	1.0
Bromomethane	1.0	U	1.0	1.0
Carbon disulfide	1.0	U	0.16	1.0
Carbon tetrachloride	1.0	U	0.21	1.0
Chlorobenzene	1.0	U	0.38	1.0
Chlorobromomethane	1.0	U	0.41	1.0
Chlorodibromomethane	1.0	U	0.28	1.0
Chloroethane	1.0	U	0.32	1.0
Chloroform	1.0	U	0.33	1.0
Chloromethane	1.0	U	0.14	1.0
cis-1,2-Dichloroethene	0.35	J	0.22	1.0
cis-1,3-Dichloropropene	1.0	U	0.46	1.0
Cyclohexane	1.0	U	0.32	1.0
Dichlorobromomethane	1.0	U	0.34	1.0
Dichlorodifluoromethane	1.0	U	0.12	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.50	1.0
Isopropylbenzene	1.0	U	0.34	1.0
Methyl acetate	5.0	U	0.31	5.0
Methyl tert-butyl ether	1.0	U	0.47	1.0
Methylcyclohexane	1.0	U	0.26	1.0
Methylene Chloride	1.0	U	0.32	1.0
m-Xylene & p-Xylene	1.0	U	0.30	1.0
o-Xylene	1.0	U	0.36	1.0
Styrene	1.0	U	0.42	1.0
Tetrachloroethene	1.0	U	0.25	1.0

Analytical Data

Client: New York State D.E.C.

Job Number: 460-165187-1

Client Sample ID: MONTAUK_WASTE

Lab Sample ID: 460-165187-1

Client Matrix: Water

Date Sampled: 09/19/2018 1430

Date Received: 09/20/2018 1920

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-555351	Instrument ID:	CVOAMS8
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J75402.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/27/2018 0244			Final Weight/Volume:	5 mL
Prep Date:	09/27/2018 0244				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Toluene	1.0	U	0.38	1.0
trans-1,2-Dichloroethene	1.0	U	0.24	1.0
trans-1,3-Dichloropropene	1.0	U	0.49	1.0
Trichloroethene	1.0	U	0.31	1.0
Trichlorofluoromethane	1.0	U	0.14	1.0
Vinyl chloride	1.0	U	0.17	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		74 - 132
4-Bromofluorobenzene	95		77 - 124
Dibromofluoromethane (Surr)	111		72 - 131
Toluene-d8 (Surr)	100		80 - 120

Analytical Data

Client: New York State D.E.C.

Job Number: 460-165187-1

Client Sample ID: MONTAUK_WASTE

Lab Sample ID: 460-165187-1

Date Sampled: 09/19/2018 1430

Client Matrix: Water

Date Received: 09/20/2018 1920

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 460-554448

Instrument ID: CBNAMS17

Prep Method: 3510C

Prep Batch: 460-554350

Lab File ID: M05654.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 09/23/2018 2115

Final Weight/Volume: 2 mL

Prep Date: 09/22/2018 1618

Injection Volume: 5 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1'-Biphenyl	10	U	1.2	10
1,2,4,5-Tetrachlorobenzene	10	U	1.2	10
2,2'-oxybis[1-chloropropane]	10	U	0.63	10
2,3,4,6-Tetrachlorophenol	10	U *	0.75	10
2,4,5-Trichlorophenol	10	U	0.28	10
2,4,6-Trichlorophenol	10	U	0.30	10
2,4-Dichlorophenol	10	U	0.42	10
2,4-Dimethylphenol	10	U	0.24	10
2,4-Dinitrophenol	20	U *	14	20
2,4-Dinitrotoluene	2.0	U	1.0	2.0
2,6-Dinitrotoluene	2.0	U	0.39	2.0
2-Chloronaphthalene	10	U	1.2	10
2-Chlorophenol	10	U	0.38	10
2-Methylnaphthalene	10	U	1.1	10
2-Methylphenol	10	U	0.26	10
2-Nitroaniline	10	U	0.47	10
2-Nitrophenol	10	U *	0.75	10
3,3'-Dichlorobenzidine	10	U	1.4	10
3-Nitroaniline	10	U	0.96	10
4,6-Dinitro-2-methylphenol	20	U *	13	20
4-Bromophenyl phenyl ether	10	U	0.75	10
4-Chloro-3-methylphenol	10	U	0.58	10
4-Chloroaniline	10	U	1.9	10
4-Chlorophenyl phenyl ether	10	U	1.3	10
4-Methylphenol	10	U	0.24	10
4-Nitroaniline	10	U	0.54	10
4-Nitrophenol	20	U *	0.69	20
Acenaphthene	10	U	1.1	10
Acenaphthylene	10	U	0.82	10
Acetophenone	10	U	0.79	10
Anthracene	10	U	0.63	10
Atrazine	2.0	U *	1.3	2.0
Benzaldehyde	10	U	0.59	10
Benzo[a]anthracene	1.0	U	0.59	1.0
Benzo[a]pyrene	1.0	U	0.41	1.0
Benzo[b]fluoranthene	2.0	U	1.1	2.0
Benzo[g,h,i]perylene	10	U	1.4	10
Benzo[k]fluoranthene	1.0	U	0.67	1.0
Bis(2-chloroethoxy)methane	10	U	0.24	10
Bis(2-chloroethyl)ether	1.0	U	0.30	1.0
Bis(2-ethylhexyl) phthalate	2.0	U	1.7	2.0
Butyl benzyl phthalate	10	U *	0.85	10
Caprolactam	10	U	0.68	10
Carbazole	10	U	0.68	10
Chrysene	2.0	U	0.91	2.0
Dibenz(a,h)anthracene	1.0	U	0.72	1.0

Analytical Data

Client: New York State D.E.C.

Job Number: 460-165187-1

Client Sample ID: MONTAUK_WASTE

Lab Sample ID: 460-165187-1

Date Sampled: 09/19/2018 1430

Client Matrix: Water

Date Received: 09/20/2018 1920

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D	Analysis Batch: 460-554448	Instrument ID: CBNAMS17
Prep Method: 3510C	Prep Batch: 460-554350	Lab File ID: M05654.D
Dilution: 1.0		Initial Weight/Volume: 250 mL
Analysis Date: 09/23/2018 2115		Final Weight/Volume: 2 mL
Prep Date: 09/22/2018 1618		Injection Volume: 5 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dibenzofuran	10	U	1.1	10
Diethyl phthalate	10	U	0.98	10
Dimethyl phthalate	10	U	0.77	10
Di-n-butyl phthalate	10	U	0.84	10
Di-n-octyl phthalate	10	U	4.8	10
Fluoranthene	10	U	0.84	10
Fluorene	10	U	0.91	10
Hexachlorobenzene	1.0	U	0.40	1.0
Hexachlorobutadiene	1.0	U	0.78	1.0
Hexachlorocyclopentadiene	10	U *	1.7	10
Hexachloroethane	2.0	U	1.2	2.0
Indeno[1,2,3-cd]pyrene	2.0	U	1.3	2.0
Isophorone	10	U	0.80	10
Naphthalene	10	U	1.1	10
Nitrobenzene	1.0	U *	0.57	1.0
N-Nitrosodi-n-propylamine	1.0	U	0.43	1.0
N-Nitrosodiphenylamine	10	U	0.89	10
Pentachlorophenol	20	U	1.4	20
Phenanthrene	10	U	0.58	10
Phenol	10	U *	0.29	10
Pyrene	10	U	1.6	10
Surrogate	%Rec	Qualifier	Acceptance Limits	
2,4,6-Tribromophenol (Surr)	108		26 - 139	
2-Fluorobiphenyl	79		45 - 107	
2-Fluorophenol (Surr)	44		25 - 58	
Nitrobenzene-d5 (Surr)	88		51 - 108	
Phenol-d5 (Surr)	30		14 - 39	
Terphenyl-d14 (Surr)	79		40 - 148	

Analytical Data

Client: New York State D.E.C.

Job Number: 460-165187-1

Client Sample ID: MONTAUK_WASTE

Lab Sample ID: 460-165187-1

Client Matrix: Water

Date Sampled: 09/19/2018 1430

Date Received: 09/20/2018 1920

6010D Metals (ICP)-TCLP

Analysis Method:	6010D	Analysis Batch:	460-554983	Instrument ID:	ICP4
Prep Method:	3010A	Prep Batch:	460-554931	Lab File ID:	554929D1.asc
Dilution:	5.0	Leach Batch:	460-554303	Initial Weight/Volume:	50 mL
Analysis Date:	09/25/2018 2009			Final Weight/Volume:	50 mL
Prep Date:	09/25/2018 0916				
Leach Date:	09/22/2018 900				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	75.0	U	13.3	75.0
Barium	39.9	J	38.4	1000
Cadmium	20.0	U	1.1	20.0
Chromium	50.0	U	6.3	50.0
Lead	50.0	U	12.3	50.0
Selenium	100	U	33.0	100
Silver	50.0	U	5.4	50.0

7470A Mercury (CVAA)-TCLP

Analysis Method:	7470A	Analysis Batch:	460-555600	Instrument ID:	LEEMAN6
Prep Method:	7470A	Prep Batch:	460-555542	Lab File ID:	555540hg1.CSV
Dilution:	1.0	Leach Batch:	460-554303	Initial Weight/Volume:	30 mL
Analysis Date:	09/27/2018 1451			Final Weight/Volume:	30 mL
Prep Date:	09/27/2018 1150				
Leach Date:	09/22/2018 900				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.20	U	0.12	0.20

DATA REPORTING QUALIFIERS

Client: New York State D.E.C.

Job Number: 460-165187-1

Lab Section	Qualifier	Description
GC/MS VOA	U	Analyzed for but not detected.
	J	Indicates an estimated value.
GC/MS Semi VOA	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	LCS or LCSD is outside acceptance limits.
	*	RPD of the LCS and LCSD exceeds the control limits
	*	Surrogate is outside acceptance limits.
Metals	U	Indicates analyzed for but not detected.
	J	Sample result is greater than the MDL but below the CRDL

QUALITY CONTROL RESULTS

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:460-555351					
LCS 460-555351/4	Lab Control Sample	T	Water	8260C	
LCSD 460-555351/5	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-555351/8	Method Blank	T	Water	8260C	
460-165187-1	MONTAUK_WASTE	T	Water	8260C	

Report Basis

T = Total

GC/MS Semi VOA

Prep Batch: 460-554350					
LCS 460-554350/2-A	Lab Control Sample	T	Water	3510C	
LCS 460-554350/4-A	Lab Control Sample	T	Water	3510C	
LCSD 460-554350/3-A	Lab Control Sample Duplicate	T	Water	3510C	
LCSD 460-554350/5-A	Lab Control Sample Duplicate	T	Water	3510C	
MB 460-554350/1-A	Method Blank	T	Water	3510C	
460-165187-1	MONTAUK_WASTE	T	Water	3510C	
Analysis Batch:460-554448					
LCS 460-554350/4-A	Lab Control Sample	T	Water	8270D	460-554350
LCSD 460-554350/5-A	Lab Control Sample Duplicate	T	Water	8270D	460-554350
MB 460-554350/1-A	Method Blank	T	Water	8270D	460-554350
460-165187-1	MONTAUK_WASTE	T	Water	8270D	460-554350
Analysis Batch:460-554550					
LCS 460-554350/2-A	Lab Control Sample	T	Water	8270D	460-554350
LCSD 460-554350/3-A	Lab Control Sample Duplicate	T	Water	8270D	460-554350

Report Basis

T = Total

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-554060					
LB 460-554060/1-F	TCLP SPLPE Leachate Blank	P	Water	1311	
460-165048-A-1-H DU	Duplicate	P	Water	1311	
460-165048-A-1-I MS	Matrix Spike	P	Water	1311	
Prep Batch: 460-554303					
LB 460-554303/1-E ^5	TCLP SPLPE Leachate Blank	P	Water	1311	
LB 460-554303/1-F	TCLP SPLPE Leachate Blank	P	Water	1311	
460-165187-1	MONTAUK_WASTE	P	Water	1311	
Prep Batch: 460-554312					
LB 460-554312/1-E ^5	TCLP SPLPE Leachate Blank	P	Water	1311	
460-165151-A-1-C DU ^5	Duplicate	P	Water	1311	
460-165151-A-1-D MS ^5	Matrix Spike	P	Water	1311	
Prep Batch: 460-554679					
MB 460-554679/1-A	Method Blank	T	Water	7470A	
LB 460-554060/1-F	TCLP SPLPE Leachate Blank	P	Water	7470A	460-554060
Analysis Batch:460-554710					
MB 460-554679/1-A	Method Blank	T	Water	7470A	460-554679
LB 460-554060/1-F	TCLP SPLPE Leachate Blank	P	Water	7470A	460-554679
Prep Batch: 460-554931					
LCS 460-554931/2-A ^2	Lab Control Sample	T	Water	3010A	
MB 460-554931/1-A	Method Blank	T	Water	3010A	
LB 460-554303/1-E ^5	TCLP SPLPE Leachate Blank	P	Water	3010A	460-554303
LB 460-554312/1-E ^5	TCLP SPLPE Leachate Blank	P	Water	3010A	460-554312
460-165151-A-1-C DU ^5	Duplicate	P	Water	3010A	460-554312
460-165151-A-1-D MS ^5	Matrix Spike	P	Water	3010A	460-554312
460-165187-1	MONTAUK_WASTE	P	Water	3010A	460-554303
Analysis Batch:460-554983					
LCS 460-554931/2-A ^2	Lab Control Sample	T	Water	6010D	460-554931
MB 460-554931/1-A	Method Blank	T	Water	6010D	460-554931
LB 460-554303/1-E ^5	TCLP SPLPE Leachate Blank	P	Water	6010D	460-554931
LB 460-554312/1-E ^5	TCLP SPLPE Leachate Blank	P	Water	6010D	460-554931
460-165151-A-1-C DU ^5	Duplicate	P	Water	6010D	460-554931
460-165151-A-1-D MS ^5	Matrix Spike	P	Water	6010D	460-554931
460-165187-1	MONTAUK_WASTE	P	Water	6010D	460-554931

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-555542					
LCS 460-555542/2-A	Lab Control Sample	T	Water	7470A	
MB 460-555542/1-A	Method Blank	T	Water	7470A	
LB 460-554303/1-F	TCLP SPLPE Leachate Blank	P	Water	7470A	460-554303
460-165048-A-1-H DU	Duplicate	P	Water	7470A	460-554060
460-165048-A-1-I MS	Matrix Spike	P	Water	7470A	460-554060
460-165187-1	MONTAUK_WASTE	P	Water	7470A	460-554303
Analysis Batch:460-555600					
LCS 460-555542/2-A	Lab Control Sample	T	Water	7470A	460-555542
MB 460-555542/1-A	Method Blank	T	Water	7470A	460-555542
LB 460-554303/1-F	TCLP SPLPE Leachate Blank	P	Water	7470A	460-555542
460-165048-A-1-H DU	Duplicate	P	Water	7470A	460-555542
460-165048-A-1-I MS	Matrix Spike	P	Water	7470A	460-555542
460-165187-1	MONTAUK_WASTE	P	Water	7470A	460-555542

Report Basis

P = TCLP

T = Total

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Surrogate Recovery Report

8260C Volatile Organic Compounds by GC/MS

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
460-165187-1	MONTAUK_WASTE	107	95	111	100
MB 460-555351/8		99	99	105	99
LCS 460-555351/4		97	105	103	100
LCSD 460-555351/5		94	105	100	99

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	74-132
BFB = 4-Bromofluorobenzene	77-124
DBFM = Dibromofluoromethane (Surr)	72-131
TOL = Toluene-d8 (Surr)	80-120

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	TBP %Rec	FBP %Rec	2FP %Rec	NBZ %Rec	PHL %Rec	TPHL %Rec
460-165187-1	MONTAUK_WASTE	108	79	44	88	30	79
MB 460-554350/1-A		109	92	57	103	40*	121
LCS 460-554350/2-A		105	78	46	85	33	90
LCS 460-554350/4-A		112	89	52	101	35	116
LCSD 460-554350/3-A		103	77	46	83	32	89
LCSD 460-554350/5-A		107	85	54	96	38	118

Surrogate	Acceptance Limits
TBP = 2,4,6-Tribromophenol (Surr)	26-139
FBP = 2-Fluorobiphenyl	45-107
2FP = 2-Fluorophenol (Surr)	25-58
NBZ = Nitrobenzene-d5 (Surr)	51-108
PHL = Phenol-d5 (Surr)	14-39
TPHL = Terphenyl-d14 (Surr)	40-148

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Method Blank - Batch: 460-555351

Method: 8260C

Preparation: 5030C

Lab Sample ID: MB 460-555351/8
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/27/2018 0002
Prep Date: 09/27/2018 0002
Leach Date: N/A

Analysis Batch: 460-555351
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS8
Lab File ID: J75396.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.24	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.37	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.31	1.0
1,1,2-Trichloroethane	1.0	U	0.43	1.0
1,1-Dichloroethane	1.0	U	0.26	1.0
1,1-Dichloroethene	1.0	U	0.12	1.0
1,2,3-Trichlorobenzene	1.0	U	0.36	1.0
1,2,4-Trichlorobenzene	1.0	U	0.37	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.38	1.0
1,2-Dichlorobenzene	1.0	U	0.43	1.0
1,2-Dichloroethane	1.0	U	0.43	1.0
1,2-Dichloropropane	1.0	U	0.35	1.0
1,3-Dichlorobenzene	1.0	U	0.34	1.0
1,4-Dichlorobenzene	1.0	U	0.76	1.0
1,4-Dioxane	50	U	28	50
2-Butanone (MEK)	5.0	U	1.9	5.0
2-Hexanone	5.0	U	2.9	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	1.0	U	0.43	1.0
Bromoform	1.0	U	0.54	1.0
Bromomethane	1.0	U	1.0	1.0
Carbon disulfide	1.0	U	0.16	1.0
Carbon tetrachloride	1.0	U	0.21	1.0
Chlorobenzene	1.0	U	0.38	1.0
Chlorobromomethane	1.0	U	0.41	1.0
Chlorodibromomethane	1.0	U	0.28	1.0
Chloroethane	1.0	U	0.32	1.0
Chloroform	1.0	U	0.33	1.0
Chloromethane	1.0	U	0.14	1.0
cis-1,2-Dichloroethene	1.0	U	0.22	1.0
cis-1,3-Dichloropropene	1.0	U	0.46	1.0
Cyclohexane	1.0	U	0.32	1.0
Dichlorobromomethane	1.0	U	0.34	1.0
Dichlorodifluoromethane	1.0	U	0.12	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.50	1.0
Isopropylbenzene	1.0	U	0.34	1.0
Methyl acetate	5.0	U	0.31	5.0
Methyl tert-butyl ether	1.0	U	0.47	1.0
Methylcyclohexane	1.0	U	0.26	1.0
Methylene Chloride	1.0	U	0.32	1.0
m-Xylene & p-Xylene	1.0	U	0.30	1.0
o-Xylene	1.0	U	0.36	1.0
Styrene	1.0	U	0.42	1.0

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Method Blank - Batch: 460-555351

Method: 8260C

Preparation: 5030C

Lab Sample ID: MB 460-555351/8
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/27/2018 0002
Prep Date: 09/27/2018 0002
Leach Date: N/A

Analysis Batch: 460-555351
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS8
Lab File ID: J75396.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Tetrachloroethene	1.0	U	0.25	1.0
Toluene	1.0	U	0.38	1.0
trans-1,2-Dichloroethene	1.0	U	0.24	1.0
trans-1,3-Dichloropropene	1.0	U	0.49	1.0
Trichloroethene	1.0	U	0.31	1.0
Trichlorofluoromethane	1.0	U	0.14	1.0
Vinyl chloride	1.0	U	0.17	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99	74 - 132
4-Bromofluorobenzene	99	77 - 124
Dibromofluoromethane (Surr)	105	72 - 131
Toluene-d8 (Surr)	99	80 - 120

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-555351

Method: 8260C

Preparation: 5030C

LCS Lab Sample ID: LCS 460-555351/4	Analysis Batch: 460-555351	Instrument ID: CVOAMS8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J75392.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/26/2018 2215	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 09/26/2018 2215		5 mL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 460-555351/5	Analysis Batch: 460-555351	Instrument ID: CVOAMS8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J75393.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/26/2018 2242	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 09/26/2018 2242		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
1,1,1-Trichloroethane	95	100	75 - 125	5	30		
1,1,2,2-Tetrachloroethane	92	95	74 - 120	3	30		
1,1,2-Trichloro-1,2,2-trifluoroethane	93	96	59 - 150	3	30		
1,1,2-Trichloroethane	96	99	78 - 120	3	30		
1,1-Dichloroethane	95	96	77 - 123	2	30		
1,1-Dichloroethene	97	94	74 - 123	3	30		
1,2,3-Trichlorobenzene	102	107	78 - 131	5	30		
1,2,4-Trichlorobenzene	100	100	80 - 124	0	30		
1,2-Dibromo-3-Chloropropane	103	102	55 - 134	1	30		
1,2-Dichlorobenzene	106	105	80 - 120	0	30		
1,2-Dichloroethane	98	97	76 - 121	1	30		
1,2-Dichloropropane	96	96	77 - 123	1	30		
1,3-Dichlorobenzene	102	103	80 - 120	1	30		
1,4-Dichlorobenzene	98	98	80 - 120	0	30		
1,4-Dioxane	102	99	10 - 150	3	30		
2-Butanone (MEK)	101	97	64 - 120	3	30		
2-Hexanone	101	101	71 - 125	0	30		
4-Methyl-2-pentanone (MIBK)	99	98	78 - 124	1	30		
Acetone	106	100	39 - 150	5	30		
Benzene	97	100	77 - 121	3	30		
Bromoform	100	105	53 - 120	4	30		
Bromomethane	33	40	10 - 150	19	30		
Carbon disulfide	97	101	69 - 133	3	30		
Carbon tetrachloride	94	96	70 - 132	2	30		
Chlorobenzene	100	101	80 - 120	1	30		
Chlorobromomethane	104	104	77 - 127	0	30		
Chlorodibromomethane	101	102	73 - 120	1	30		
Chloroethane	90	90	52 - 150	1	30		
Chloroform	101	101	80 - 120	0	30		
Chloromethane	78	79	56 - 131	0	30		
cis-1,2-Dichloroethene	101	100	80 - 120	1	30		
cis-1,3-Dichloropropene	99	100	77 - 120	0	30		
Cyclohexane	92	96	56 - 150	3	30		
Dichlorobromomethane	101	102	76 - 120	1	30		
Dichlorodifluoromethane	87	87	50 - 131	0	30		

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-555351

Method: 8260C

Preparation: 5030C

LCS Lab Sample ID: LCS 460-555351/4	Analysis Batch: 460-555351	Instrument ID: CVOAMS8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J75392.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/26/2018 2215	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 09/26/2018 2215		5 mL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 460-555351/5	Analysis Batch: 460-555351	Instrument ID: CVOAMS8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J75393.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 09/26/2018 2242	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 09/26/2018 2242		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ethylbenzene	95	98	80 - 120	3	30		
Ethylene Dibromide	99	101	80 - 120	2	30		
Isopropylbenzene	95	98	80 - 123	3	30		
Methyl acetate	93	94	66 - 144	1	30		
Methyl tert-butyl ether	99	97	79 - 122	2	30		
Methylcyclohexane	86	90	61 - 145	5	30		
Methylene Chloride	103	105	77 - 123	2	30		
m-Xylene & p-Xylene	95	96	80 - 120	1	30		
o-Xylene	94	94	80 - 120	0	30		
Styrene	102	101	80 - 120	1	30		
Tetrachloroethene	97	102	78 - 122	4	30		
Toluene	94	95	80 - 120	1	30		
trans-1,2-Dichloroethene	98	100	79 - 120	2	30		
trans-1,3-Dichloropropene	93	93	76 - 120	0	30		
Trichloroethene	95	98	77 - 120	3	30		
Trichlorofluoromethane	95	97	71 - 143	2	30		
Vinyl chloride	84	86	62 - 138	2	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97	94	74 - 132
4-Bromofluorobenzene	105	105	77 - 124
Dibromofluoromethane (Surr)	103	100	72 - 131
Toluene-d8 (Surr)	100	99	80 - 120

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Method Blank - Batch: 460-554350

Method: 8270D

Preparation: 3510C

Lab Sample ID: MB 460-554350/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/23/2018 1622
Prep Date: 09/22/2018 1618
Leach Date: N/A

Analysis Batch: 460-554448
Prep Batch: 460-554350
Leach Batch: N/A
Units: ug/L

Instrument ID: CBNAMS17
Lab File ID: M05640.D
Initial Weight/Volume: 250 mL
Final Weight/Volume: 2 mL
Injection Volume: 5 uL

Analyte	Result	Qual	MDL	RL
1,1'-Biphenyl	10	U	1.2	10
1,2,4,5-Tetrachlorobenzene	10	U	1.2	10
2,2'-oxybis[1-chloropropane]	10	U	0.63	10
2,3,4,6-Tetrachlorophenol	10	U	0.75	10
2,4,5-Trichlorophenol	10	U	0.28	10
2,4,6-Trichlorophenol	10	U	0.30	10
2,4-Dichlorophenol	10	U	0.42	10
2,4-Dimethylphenol	10	U	0.24	10
2,4-Dinitrophenol	20	U	14	20
2,4-Dinitrotoluene	2.0	U	1.0	2.0
2,6-Dinitrotoluene	2.0	U	0.39	2.0
2-Chloronaphthalene	10	U	1.2	10
2-Chlorophenol	10	U	0.38	10
2-Methylnaphthalene	10	U	1.1	10
2-Methylphenol	10	U	0.26	10
2-Nitroaniline	10	U	0.47	10
2-Nitrophenol	10	U	0.75	10
3,3'-Dichlorobenzidine	10	U	1.4	10
3-Nitroaniline	10	U	0.96	10
4,6-Dinitro-2-methylphenol	20	U	13	20
4-Bromophenyl phenyl ether	10	U	0.75	10
4-Chloro-3-methylphenol	10	U	0.58	10
4-Chloroaniline	10	U	1.9	10
4-Chlorophenyl phenyl ether	10	U	1.3	10
4-Methylphenol	10	U	0.24	10
4-Nitroaniline	10	U	0.54	10
4-Nitrophenol	20	U	0.69	20
Acenaphthene	10	U	1.1	10
Acenaphthylene	10	U	0.82	10
Acetophenone	10	U	0.79	10
Anthracene	10	U	0.63	10
Atrazine	2.0	U	1.3	2.0
Benzaldehyde	10	U	0.59	10
Benzo[a]anthracene	1.0	U	0.59	1.0
Benzo[a]pyrene	1.0	U	0.41	1.0
Benzo[b]fluoranthene	2.0	U	1.1	2.0
Benzo[g,h,i]perylene	10	U	1.4	10
Benzo[k]fluoranthene	1.0	U	0.67	1.0
Bis(2-chloroethoxy)methane	10	U	0.24	10
Bis(2-chloroethyl)ether	1.0	U	0.30	1.0
Bis(2-ethylhexyl) phthalate	2.0	U	1.7	2.0
Butyl benzyl phthalate	10	U	0.85	10
Caprolactam	10	U	0.68	10
Carbazole	10	U	0.68	10
Chrysene	2.0	U	0.91	2.0

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Method Blank - Batch: 460-554350

Method: 8270D

Preparation: 3510C

Lab Sample ID: MB 460-554350/1-A
 Client Matrix: Water
 Dilution: 1.0
 Analysis Date: 09/23/2018 1622
 Prep Date: 09/22/2018 1618
 Leach Date: N/A

Analysis Batch: 460-554448
 Prep Batch: 460-554350
 Leach Batch: N/A
 Units: ug/L

Instrument ID: CBNAMS17
 Lab File ID: M05640.D
 Initial Weight/Volume: 250 mL
 Final Weight/Volume: 2 mL
 Injection Volume: 5 uL

Analyte	Result	Qual	MDL	RL
Dibenz(a,h)anthracene	1.0	U	0.72	1.0
Dibenzofuran	10	U	1.1	10
Diethyl phthalate	10	U	0.98	10
Dimethyl phthalate	10	U	0.77	10
Di-n-butyl phthalate	10	U	0.84	10
Di-n-octyl phthalate	10	U	4.8	10
Fluoranthene	10	U	0.84	10
Fluorene	10	U	0.91	10
Hexachlorobenzene	1.0	U	0.40	1.0
Hexachlorobutadiene	1.0	U	0.78	1.0
Hexachlorocyclopentadiene	10	U	1.7	10
Hexachloroethane	2.0	U	1.2	2.0
Indeno[1,2,3-cd]pyrene	2.0	U	1.3	2.0
Isophorone	10	U	0.80	10
Naphthalene	10	U	1.1	10
Nitrobenzene	1.0	U	0.57	1.0
N-Nitrosodi-n-propylamine	1.0	U	0.43	1.0
N-Nitrosodiphenylamine	10	U	0.89	10
Pentachlorophenol	20	U	1.4	20
Phenanthrene	10	U	0.58	10
Phenol	10	U	0.29	10
Pyrene	10	U	1.6	10

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol (Surr)	109	26 - 139
2-Fluorobiphenyl	92	45 - 107
2-Fluorophenol (Surr)	57	25 - 58
Nitrobenzene-d5 (Surr)	103	51 - 108
Phenol-d5 (Surr)	40	14 - 39
Terphenyl-d14 (Surr)	121	40 - 148

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-554350

Method: 8270D

Preparation: 3510C

LCS Lab Sample ID: LCS 460-554350/4-A	Analysis Batch: 460-554448	Instrument ID: CBNAMS17
Client Matrix: Water	Prep Batch: 460-554350	Lab File ID: M05643.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 09/23/2018 1725	Units: ug/L	Final Weight/Volume: 2 mL
Prep Date: 09/22/2018 1618		Injection Volume: 5 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 460-554350/5-A	Analysis Batch: 460-554448	Instrument ID: CBNAMS17
Client Matrix: Water	Prep Batch: 460-554350	Lab File ID: M05644.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 09/23/2018 1746	Units: ug/L	Final Weight/Volume: 2 mL
Prep Date: 09/22/2018 1618		Injection Volume: 5 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Atrazine	88	61	38 - 146	37	30		*
Benzaldehyde	51	49	46 - 111	5	30	J	J
Caprolactam	25	21	10 - 43	15	30	J	J
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
2,4,6-Tribromophenol (Surr)	112		107		26 - 139		
2-Fluorobiphenyl	89		85		45 - 107		
2-Fluorophenol (Surr)	52		54		25 - 58		
Nitrobenzene-d5 (Surr)	101		96		51 - 108		
Phenol-d5 (Surr)	35		38		14 - 39		
Terphenyl-d14 (Surr)	116		118		40 - 148		

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-554350

Method: 8270D

Preparation: 3510C

LCS Lab Sample ID: LCS 460-554350/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/24/2018 0835
Prep Date: 09/22/2018 1618
Leach Date: N/A

Analysis Batch: 460-554550
Prep Batch: 460-554350
Leach Batch: N/A
Units: ug/L

Instrument ID: CBNAMS17
Lab File ID: M05678.D
Initial Weight/Volume: 250 mL
Final Weight/Volume: 2 mL
Injection Volume: 5 uL

LCSD Lab Sample ID: LCSD 460-554350/3-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/24/2018 0856
Prep Date: 09/22/2018 1618
Leach Date: N/A

Analysis Batch: 460-554550
Prep Batch: 460-554350
Leach Batch: N/A
Units: ug/L

Instrument ID: CBNAMS17
Lab File ID: M05679.D
Initial Weight/Volume: 250 mL
Final Weight/Volume: 2 mL
Injection Volume: 5 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
1,1'-Biphenyl	89	87	54 - 108	2	30		
1,2,4,5-Tetrachlorobenzene	85	83	46 - 105	2	30		
2,2'-oxybis[1-chloropropane]	91	87	50 - 108	4	30		
2,3,4,6-Tetrachlorophenol	129	125	57 - 122	3	30	*	*
2,4,5-Trichlorophenol	104	103	59 - 117	1	30		
2,4,6-Trichlorophenol	110	108	62 - 120	2	30		
2,4-Dichlorophenol	102	100	62 - 102	1	30		
2,4-Dimethylphenol	93	91	61 - 95	2	30		
2,4-Dinitrophenol	197	195	45 - 125	1	30	*	*
2,4-Dinitrotoluene	116	115	70 - 123	1	30		
2,6-Dinitrotoluene	117	115	68 - 121	2	30		
2-Chloronaphthalene	89	89	54 - 105	0	30		
2-Chlorophenol	88	86	54 - 92	2	30		
2-Methylnaphthalene	91	89	47 - 104	2	30		
2-Methylphenol	76	75	43 - 80	2	30		
2-Nitroaniline	88	86	46 - 124	3	30		
2-Nitrophenol	129	127	58 - 109	2	30	*	*
3,3'-Dichlorobenzidine	100	105	68 - 123	5	30		
3-Nitroaniline	104	105	60 - 117	2	30		
4,6-Dinitro-2-methylphenol	169	166	59 - 132	2	30	*	*
4-Bromophenyl phenyl ether	94	93	57 - 126	1	30		
4-Chloro-3-methylphenol	97	96	58 - 98	1	30		
4-Chloroaniline	84	92	51 - 108	9	30		
4-Chlorophenyl phenyl ether	101	100	60 - 114	0	30		
4-Methylphenol	66	65	34 - 78	2	30		
4-Nitroaniline	112	114	48 - 135	1	30		
4-Nitrophenol	54	56	11 - 47	3	30	*	*
Acenaphthene	94	94	58 - 107	1	30		
Acenaphthylene	104	102	61 - 106	2	30		
Acetophenone	96	94	54 - 115	2	30		
Anthracene	101	100	70 - 118	2	30		
Benzo[a]anthracene	108	107	73 - 119	1	30		
Benzo[a]pyrene	114	113	76 - 125	1	30		
Benzo[b]fluoranthene	121	116	78 - 123	5	30		
Benzo[g,h,i]perylene	94	93	63 - 133	1	30		

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-554350

Method: 8270D

Preparation: 3510C

LCS Lab Sample ID: LCS 460-554350/2-A	Analysis Batch: 460-554550	Instrument ID: CBNAMS17
Client Matrix: Water	Prep Batch: 460-554350	Lab File ID: M05678.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 09/24/2018 0835	Units: ug/L	Final Weight/Volume: 2 mL
Prep Date: 09/22/2018 1618		Injection Volume: 5 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 460-554350/3-A	Analysis Batch: 460-554550	Instrument ID: CBNAMS17
Client Matrix: Water	Prep Batch: 460-554350	Lab File ID: M05679.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 09/24/2018 0856	Units: ug/L	Final Weight/Volume: 2 mL
Prep Date: 09/22/2018 1618		Injection Volume: 5 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzo[k]fluoranthene	109	107	71 - 126	2	30		
Bis(2-chloroethoxy)methane	100	97	67 - 104	3	30		
Bis(2-chloroethyl)ether	93	90	63 - 106	3	30		
Bis(2-ethylhexyl) phthalate	125	123	63 - 135	1	30		
Butyl benzyl phthalate	131	130	66 - 129	1	30	*	*
Carbazole	104	103	68 - 121	1	30		
Chrysene	106	105	73 - 121	1	30		
Dibenz(a,h)anthracene	94	93	59 - 136	1	30		
Dibenzofuran	97	95	67 - 108	2	30		
Diethyl phthalate	110	109	61 - 129	1	30		
Dimethyl phthalate	104	102	65 - 121	2	30		
Di-n-butyl phthalate	118	117	64 - 130	1	30		
Di-n-octyl phthalate	125	123	64 - 131	2	30		
Fluoranthene	110	109	66 - 123	1	30		
Fluorene	101	99	67 - 112	2	30		
Hexachlorobenzene	95	93	63 - 125	2	30		
Hexachlorobutadiene	71	69	34 - 99	3	30		
Hexachlorocyclopentadiene	104	101	18 - 99	3	30	*	*
Hexachloroethane	71	69	39 - 92	3	30		
Indeno[1,2,3-cd]pyrene	101	98	57 - 142	3	30		
Isophorone	102	100	55 - 105	2	30		
Naphthalene	86	84	51 - 98	3	30		
Nitrobenzene	108	105	56 - 106	3	30	*	
N-Nitrosodi-n-propylamine	96	94	48 - 118	2	30		
N-Nitrosodiphenylamine	97	94	69 - 118	3	30		
Pentachlorophenol	108	108	54 - 120	1	30		
Phenanthrene	99	96	70 - 117	3	30		
Phenol	43	44	16 - 43	4	30		*
Pyrene	113	112	63 - 129	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
2,4,6-Tribromophenol (Surr)	105	103	26 - 139
2-Fluorobiphenyl	78	77	45 - 107
2-Fluorophenol (Surr)	46	46	25 - 58
Nitrobenzene-d5 (Surr)	85	83	51 - 108
Phenol-d5 (Surr)	33	32	14 - 39

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Terphenyl-d14 (Surr)	90	89	40 - 148

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Method Blank - Batch: 460-554931

Method: 6010D
Preparation: 3010A

Lab Sample ID:	MB 460-554931/1-A	Analysis Batch:	460-554983	Instrument ID:	ICP4
Client Matrix:	Water	Prep Batch:	460-554931	Lab File ID:	554929D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	09/25/2018 1713	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	09/25/2018 0819				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Arsenic	15.0	U	2.7	15.0
Barium	200	U	7.7	200
Cadmium	4.0	U	0.22	4.0
Chromium	10.0	U	1.3	10.0
Lead	10.0	U	2.5	10.0
Selenium	20.0	U	6.6	20.0
Silver	10.0	U	1.1	10.0

TCLP SPLPE Leachate Blank - Batch: 460-554931

Method: 6010D
Preparation: 3010A
TCLP

Lab Sample ID:	LB 460-554312/1-E ^5	Analysis Batch:	460-554983	Instrument ID:	ICP4
Client Matrix:	Water	Prep Batch:	460-554931	Lab File ID:	554929D1.asc
Dilution:	5.0	Leach Batch:	460-554312	Initial Weight/Volume:	50 mL
Analysis Date:	09/25/2018 1812	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	09/25/2018 0916				
Leach Date:	09/22/2018 1500				

Analyte	Result	Qual	MDL	RL
Arsenic	75.0	U	13.3	75.0
Barium	1000	U	38.4	1000
Cadmium	20.0	U	1.1	20.0
Chromium	50.0	U	6.3	50.0
Lead	50.0	U	12.3	50.0
Selenium	100	U	33.0	100
Silver	50.0	U	5.4	50.0

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

TCLP SPLPE Leachate Blank - Batch: 460-554931

Method: 6010D
Preparation: 3010A
TCLP

Lab Sample ID:	LB 460-554303/1-E ^5	Analysis Batch:	460-554983	Instrument ID:	ICP4
Client Matrix:	Water	Prep Batch:	460-554931	Lab File ID:	554929D1.asc
Dilution:	5.0	Leach Batch:	460-554303	Initial Weight/Volume:	50 mL
Analysis Date:	09/25/2018 2017	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	09/25/2018 0916				
Leach Date:	09/22/2018 0900				

Analyte	Result	Qual	MDL	RL
Arsenic	75.0	U	13.3	75.0
Barium	1000	U	38.4	1000
Cadmium	20.0	U	1.1	20.0
Chromium	50.0	U	6.3	50.0
Lead	50.0	U	12.3	50.0
Selenium	100	U	33.0	100
Silver	50.0	U	5.4	50.0

Lab Control Sample - Batch: 460-554931

Method: 6010D
Preparation: 3010A

Lab Sample ID:	LCS 460-554931/2-A ^2	Analysis Batch:	460-554983	Instrument ID:	ICP4
Client Matrix:	Water	Prep Batch:	460-554931	Lab File ID:	554929D1.asc
Dilution:	2.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	09/25/2018 1656	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	09/25/2018 0819				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	5000	4644	93	80 - 120	
Barium	10000	10340	103	80 - 120	
Cadmium	1000	997.8	100	80 - 120	
Chromium	5000	4806	96	80 - 120	
Lead	5000	5368	107	80 - 120	
Selenium	1000	977.6	98	80 - 120	
Silver	500	459.4	92	80 - 120	

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Matrix Spike - Batch: 460-554931

Method: 6010D
Preparation: 3010A
TCLP

Lab Sample ID:	460-165151-A-1-D MS ^5	Analysis Batch:	460-554983	Instrument ID:	ICP4
Client Matrix:	Water	Prep Batch:	460-554931	Lab File ID:	554929D1.asc
Dilution:	5.0	Leach Batch:	460-554312	Initial Weight/Volume:	50 mL
Analysis Date:	09/25/2018 1636	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	09/25/2018 0819				
Leach Date:	09/22/2018 1500				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	15.0	J	5000	4718	94	75 - 125	
Barium	1580		10000	11700	101	75 - 125	
Cadmium	6.6	J	1000	996.0	99	75 - 125	
Chromium	50.0	U	5000	4832	97	75 - 125	
Lead	4930		5000	10150	104	75 - 125	
Selenium	100	U	1000	1000	100	75 - 125	
Silver	50.0	U	500	462.9	93	75 - 125	

Duplicate - Batch: 460-554931

Method: 6010D
Preparation: 3010A
TCLP

Lab Sample ID:	460-165151-A-1-C DU ^5	Analysis Batch:	460-554983	Instrument ID:	ICP4
Client Matrix:	Water	Prep Batch:	460-554931	Lab File ID:	554929D1.asc
Dilution:	5.0	Leach Batch:	460-554312	Initial Weight/Volume:	50 mL
Analysis Date:	09/25/2018 1640	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	09/25/2018 0819				
Leach Date:	09/22/2018 1500				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Arsenic	15.0	J	75.0	NC	20	U
Barium	1580		1581	0.3	20	
Cadmium	6.6	J	6.81	3	20	J
Chromium	50.0	U	50.0	NC	20	U
Lead	4930		4946	0.3	20	
Selenium	100	U	100	NC	20	U
Silver	50.0	U	50.0	NC	20	U

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Method Blank - Batch: 460-554679

Method: 7470A
Preparation: 7470A

Lab Sample ID: MB 460-554679/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/24/2018 1525
Prep Date: 09/24/2018 1315
Leach Date: N/A

Analysis Batch: 460-554710
Prep Batch: 460-554679
Leach Batch: N/A
Units: ug/L

Instrument ID: LEEMAN6
Lab File ID: 554678hg1.CSV
Initial Weight/Volume: 30 mL
Final Weight/Volume: 30 mL

Analyte	Result	Qual	MDL	RL
Mercury	0.20	U	0.12	0.20

TCLP SPLPE Leachate Blank - Batch: 460-554679

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID: LB 460-554060/1-F
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/24/2018 1645
Prep Date: 09/24/2018 1315
Leach Date: 09/21/2018 1430

Analysis Batch: 460-554710
Prep Batch: 460-554679
Leach Batch: 460-554060
Units: ug/L

Instrument ID: LEEMAN6
Lab File ID: 554678hg1.CSV
Initial Weight/Volume: 30 mL
Final Weight/Volume: 30 mL

Analyte	Result	Qual	MDL	RL
Mercury	0.20	U	0.12	0.20

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Method Blank - Batch: 460-555542

Method: 7470A
Preparation: 7470A

Lab Sample ID:	MB 460-555542/1-A	Analysis Batch:	460-555600	Instrument ID:	LEEMAN6
Client Matrix:	Water	Prep Batch:	460-555542	Lab File ID:	555540hg1.CSV
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	09/27/2018 1414	Units:	ug/L	Final Weight/Volume:	30 mL
Prep Date:	09/27/2018 1150				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.20	U	0.12	0.20

TCLP SPLPE Leachate Blank - Batch: 460-555542

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	LB 460-554303/1-F	Analysis Batch:	460-555600	Instrument ID:	LEEMAN6
Client Matrix:	Water	Prep Batch:	460-555542	Lab File ID:	555540hg1.CSV
Dilution:	1.0	Leach Batch:	460-554303	Initial Weight/Volume:	30 mL
Analysis Date:	09/27/2018 1513	Units:	ug/L	Final Weight/Volume:	30 mL
Prep Date:	09/27/2018 1150				
Leach Date:	09/22/2018 0900				

Analyte	Result	Qual	MDL	RL
Mercury	0.20	U	0.12	0.20

Lab Control Sample - Batch: 460-555542

Method: 7470A
Preparation: 7470A

Lab Sample ID:	LCS 460-555542/2-A	Analysis Batch:	460-555600	Instrument ID:	LEEMAN6
Client Matrix:	Water	Prep Batch:	460-555542	Lab File ID:	555540hg1.CSV
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	09/27/2018 1416	Units:	ug/L	Final Weight/Volume:	30 mL
Prep Date:	09/27/2018 1150				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	5.00	4.97	99	80 - 120	

Quality Control Results

Client: New York State D.E.C.

Job Number: 460-165187-1

Matrix Spike - Batch: 460-555542

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID: 460-165048-A-1-I MS
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/27/2018 1421
Prep Date: 09/27/2018 1150
Leach Date: 09/21/2018 1430

Analysis Batch: 460-555600
Prep Batch: 460-555542
Leach Batch: 460-554060
Units: ug/L

Instrument ID: LEEMAN6
Lab File ID: 555540hg1.CSV
Initial Weight/Volume: 30 mL
Final Weight/Volume: 30 mL

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.20	U	5.00	5.08	102	75 - 125	

Duplicate - Batch: 460-555542

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID: 460-165048-A-1-H DU
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/27/2018 1419
Prep Date: 09/27/2018 1150
Leach Date: 09/21/2018 1430

Analysis Batch: 460-555600
Prep Batch: 460-555542
Leach Batch: 460-554060
Units: ug/L

Instrument ID: LEEMAN6
Lab File ID: 555540hg1.CSV
Initial Weight/Volume: 30 mL
Final Weight/Volume: 30 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.20	U	0.20	NC	20	U

Bill TD: MYSDED

NYSC

Page 1 of 1

Other:

DKQF

LAB USE ONLY

Project No:

1111

Job No.:

...

8100

Sample

Numbers

[illegible]

[illegible]

1000

10

[illegible][illegible]

[illegible]

ed (Yes/No)? _____

[illegible]

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TAI - note (D)

5/9/20

pg 2

2

3. r 1 3. Page 38 of 40 2/20/9

165187

IR Gun #

7

Cooler Temperatures

CORRECTED		RAW		CORRECTED		RAW	
Cooler #1	35.5 °C	Cooler #4	1.0 °C	Cooler #7	2.0 °C	Cooler #10	2.0 °C
Cooler #2	1.0 °C	Cooler #5	1.0 °C	Cooler #8	1.0 °C	Cooler #11	1.0 °C
Cooler #3	1.0 °C	Cooler #6	1.0 °C	Cooler #9	1.0 °C	Cooler #12	1.0 °C

[illegible]

Sample No(s). adjusted:

Preservative Name/Conc.:

Volume of Preservative used (ml):

Lot # of Preservative(s):

Expiration Date:

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials:

Date:

EDS-WI-038, Rev 4, 06/09/2014

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 460-165187-1

Login Number: 165187
List Number: 1
Creator: Rivera, Kenneth

List Source: TestAmerica Edison

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.	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 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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Appendix C: Data Usability Summary Reports



To: Ian Hofmann
Environmental Assessment &
Remediations
225 Atlantic Avenue
Patchogue, NY 11772

From: Tracey Evans

Date: 10/25/2018

Subject: NYSDEC Site ID No. 1805382 Camp Hero State Park, Montauk Highway,
Montauk, NY- Data Usability Summary Report

The Following Items Are Being Transmitted:
Data Package:

Originals	Description of Materials	Electronic/ Hard Copy
1	320-43466-1 Ny_CatB_Package_Mini_Final Report.pdf	Electronic
1	320-43466-1_EquNysdec.xls	Electronic

Signature:

Tracey Evans
Chemist
evans@enviro-asmnt.com
Environmental Assessment & Remediations
225 Atlantic Avenue
Patchogue, New York 11772
631-447-6400 ext.146



Camp Hero State Park Data Usability Summary Report for September 19, 2018 Water Sample

Client: Environmental Assessment & Remediations, Patchogue, New York

Laboratory: TestAmerica- Sacramento, (NYDOH lab id 11452)

Site: Camp Hero State Park (Site ID 1805382)

Lab Job ID: <u>320-43466-1</u>				
Method Evaluation				
Lab ID	Field ID	Collection Date	Matrix	Modified 537
320-43466-1	MW019	9/19/2018	water	x
320-43466-2	MW023	9/19/2018	water	x
320-43466-3	MW020	9/19/2018	water	x
320-43466-4	Field Duplicate	9/19/2018	water	x
320-43466-5	Equipment Blank	9/19/2018	water	x

Samples were analyzed under (depends on testing):

- USEPA Contract Laboratory Program National Functional Guidance for Super Organic Methods Data Review, EPA 540-R-2017-002 (January 2017)

It should be noted that this method, 537 Modified has not been yet defined by the EPA for a standard operational procedure to guide the evaluation of data which can be referred to for isotope dilution and liquid chromatography QA/QC.

Criteria for Data Usability Summary Report

Completeness:

A complete data package is one that has all relevant and related material packaged for distribution to its client in accordance to the Analytical Service Protocol (ASP) Category B Deliverables guidelines.

Compliant:

A compliant data package is one that is determined to have all work that pertains to the production of the laboratory data in a manner that is consistent with the Quality Assurance Program Plan.



Overall Usability Issues:

Data validation was completed in accordance to the New York State Department of Environmental Conservation Analytical Service Protocol (NYSDEC ASP) Category B Data Deliverable requirements and reviewer's professional judgment.

This analytical report complies to the following points:

1. Holding Time and Analysis Time
2. Sample Analysis and Quality Control.

- There was no rejection of data.

In conclusion, the data reviewed in this report is usable and valid as it passes all stated criterion for compliance for method 537 Modified.

Data Completeness

- A complete Category B data package under the NYSDEC ASP has been reported.



Data Validation Acronyms

AA	Atomic Absorption, Flame Technique
BHC	Hexachlorocyclohexane
BFB	Bromofluorobenzene (Tune check analyte)
CCC	Continuing Calibration Check
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
CVAA	Atomic Absorption, Cold Vapor
DCAA	2,4-Dichlorophenylacetic acid
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenyl phosphine (Tune check analyte)
DL	Detection Limit
ECD	Electron Capture Detector
FAA	Atomic Absorption, Furnace Technique
FID	Flame Ionization Detector
FNP	1-Fluoronaphthalene
GC	Gas Chromatography
GC/MS	Gas Chromatography/ Mass Spectrometry
GPC	Gel Permeation Chromatography
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma – Atomic Emission Spectrometer
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ICAL	Initial Calibration Curve
IS	Internal Standard
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LCS/LCSD	Laboratory Control Sample/ Laboratory Control Sample Duplicate
MB	Method Blank
MS	Matrix Spike
BNAMS11	Method of Standard Additions
MSD	Matrix Spike Duplicate
MS/MSD	Matrix Spike/ Matrix Spike Duplicate



Data Validation Acronyms

ND	Non-detected or Not Detected
PID	Photo Ionization Detector
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
PQL	Practical Quantitation Limit
QA	Quality Assurance
QA/QC	Quality Assurance/ Quality Control
QC	Quality Control
RF	Response Factor
RPD	Relative Percent Difference
RL	Reporting Limit
RRF	Relative Response Factor
RT	Retention Time
RRT	Relative Retention Time
SDG	Sample Delivery Group
SMC	System Monitoring Compounds/ Surrogates
SPCC	Sample Performance Check Compound
TCX	Tetrachloro-m-xylene
%D	Percent Drift
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation



Data Validation Qualifiers

U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS)
X	This qualifier applies to results when GC/MS analysis was attempted but unsuccessful

Note:

1. These qualifiers are used for data validation purposes. The data validation qualifiers may differ from the qualifiers that the laboratory assigns to the data. Refer to the laboratory analytical report for the definitions of the laboratory qualifiers.
2. The EDDs are assigned these data validation qualifiers and refer to the valid value list supplied by the specific agency or informational data system.

Client: Environmental Assessment & Remediations, Patchogue, New York
Laboratory: TESTAMERICA-Sacramento, (NYDOH lab id 11452)
Site: Camp Hero State Park (Site ID 1805382)

Method Review :537 Modified

Lab Job ID: 320-43466-1

Lab ID	Field ID	Collection Date	Matrix
320-43466-1	MW019	9/19/2018	water
320-43466-2	MW023	9/19/2018	water
320-43466-3	MW020	9/19/2018	water
320-43466-4	Field Duplicate	9/19/2018	water
320-43466-5	Equipment Blank	9/19/2018	water

Reviewer Summary :

Samples were handled and analyzed properly under EPA's National Functional Guideline for Organic Compounds. Qualification occurred due to failure within the method blanks for samples Field Duplicate (analytes PFBA and 6:2 FTS) and Equipment Blank (analyte PFHxS). These analytes were qualified as 'U' values due to detection within associated blanks. Other failures occurred in quality control which did of led to qualification as following:

Failures in the CCV associate with instrument A9 occurred on an analyte to associated with these samples. Surrogate failure within sample MW020 was associated with undetected analytes. Matrix spike sample and duplicate failure in recovery occurred in samples not associated with client samples. Blind duplicate sample Field Duplicate and parent sample MW023 were well compared except for with one isotope dilution which was associated with a non-detect. While these are no qualifiable this should lead to the lab evaluation their quality control practice more closely. All data is within category B criterion and usable.

Blind Duplicate Comparison

	Blind Duplicate	Original Sample	Relative Percent Difference
Well	FIELD DUPLICATE	MW023	
13C2-Perfluorodecanoic acid	83.7	82.2	1.81 %
13C2-Perfluorododecanoic acid	88	69.8	23.07 %
13C2-Perfluorohexanoic acid	83.8	83.5	0.36 %
13C2-Perfluorotetradecanoic acid	81.9	72.8	11.76 %
13C2-Perfluoroundecanoic acid	88.4	83.6	5.58 %
13C3-PERFLUOROBUTANE SULFONATE	73.1	73.9	1.09 %
13C4-Perfluorobutanoic acid	66.2	63.4	4.32 %
13C4-Perfluoroheptanoic acid	86.9	86.2	0.81 %
13C4-Perfluorooctanesulfonate	79.4	80.7	1.62 %
13C4-Perfluorooctanoic acid	88.8	87.9	1.02 %
13C5-Perfluorononanoic acid	85.2	84	1.42 %
13C5-Perfluoropentanoic acid	78.1	74.4	4.85 %
13C8-Perfluorooctanesulfonamide	79.7	71.3	11.13 %
18O2-Perfluorohexanesulfonic acid	78.7	80.9	2.76 %
2-(N-methyl perfluorooctanesulfonamido) acetic acid	<19	<18.5	-
Combined PFOA & PFOS	17.5	18.56	5.88 %
N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	102	80.4	23.68 %
N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	110	75	37.84 %
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	<19	<18.5	-
Perfluorobutanesulfonic Acid (PFBS)	0.7	0.61	13.74 %
Perfluorobutyric Acid (PFBA)	0.83	<1.85	76.12 %
Perfluorodecane Sulfonic Acid	<1.9	<1.85	-
Perfluorodecanoic Acid (PFDA)	<1.9	<1.85	-

Blind Duplicate Comparison

	Blind Duplicate	Original Sample	Relative Percent Difference
Perfluorododecanoic Acid (PFD _o A)	<1.9	<1.85	-
Perfluoroheptane Sulfonate (PFHpS)	0.21	<1.85	-
Perfluoroheptanoic Acid (PFHpA)	0.75	0.84	11.32 %
Perfluorohexanesulfonic Acid (PFH _x S)	8.08	8.72	7.62 %
Perfluorohexanoic Acid (PFH _x A)	1.45	1.5	3.39 %
Perfluorononanoic Acid (PFNA)	0.47	0.46	2.15 %
Perfluorooctane Sulfonamide (FOSA)	<1.9	<1.85	-
Perfluorooctanesulfonic Acid (PFOS)	15.1	16.1	6.41 %
Perfluorooctanoic Acid (PFOA)	2.4	2.46	2.47 %
Perfluoropentanoic Acid (PFPeA)	<1.9	<1.85	-
Perfluorotetradecanoic Acid (PFTeA)	<1.9	0.54	-
Perfluorotridecanoic Acid (PFTriA)	<1.9	<1.85	-
Perfluoroundecanoic Acid (PFUnA)	<1.9	<1.85	-
Sodium 1H,1H,2H,2H-perfluoro-1-[1,2- ¹³ C ₂]-decane sulfonate (8:2)	111	64	53.71 %
Sodium 1H,1H,2H,2H-perfluoro-1-[1,2- ¹³ C ₂]-octane sulfonate (6:2)	125	81.6	42.01 %
SODIUM 1H,1H,2H,2H-PERFLUORODECANE SULFONATE (8:2)	<19	<18.5	-
SODIUM 1H,1H,2H,2H-PERFLUOROOCTANE SULFONATE (6:2)	5.8	<18.5	-

Blind Duplicate Comparison

	Blind Duplicate	Original Sample	Relative Percent Difference

Reviewer comment: Comparing Duplicate pair MW023 and Filed Duplicate samples results are within acceptable quantities except for analyte Sodium 1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (6:2) which is isotope dilution M2-8:2 FTS, no compounds were detected with it so no greater implication occurred . There are no qualification which will be added to this data.

Client: Environmental Assessment & Remediations, Patchogue, New York
Laboratory: TESTAMERICA-Sacramento, (NYDOH lab id 11452)
Site: Camp Hero State Park (Site ID 1805382)
Job ID: 320-43466-1



537 PFC IDA

Criteria	Y	N	NA	Comment
A. Sample Receipt				
Were samples within technical hold time and extraction period?	x			
Cooling Temp = 4°C ± 2°C .	x			
B. Initial Calibration				
Was a 5 point calibration conducted?	x			
RSD% within acceptable criterion?	x			
Was curve fit used for evaluation? If yes did the I.C. meet the curve fit acceptability of ≥0.990 ?	x			
Was the Initial Calibration Verification (ICV) done after the I.C?	x			
C. Continuing Calibration				
Was it done every 12 hours after Initial Calibration to verify it?	x			There was a failure of one isotope dilution on the A9 instrument. It was not included in sample data use, no qualification was needed.
Were (%D) and relative respond factors (RRF) within acceptable criteria?		x		
D. Laboratory Blanks				
Was a lab blank associated with each sample of SDG?	x			Method blank associated with Field Duplicate led to qualification within sample, analytes PFBA and 6:2 FTS. Method blank associated with Equipment blank led to qualification of analyte PFHxS. Detected at estimated values 'J' within samples will be qualified as 'U' values. Please see attachments.
Was blank analyzed every 20 samples?	x			
Were contamination found, if so qualification may be necessary?	x			

Criteria	Y	N	NA	Comment
E. Field Blanks/Trip Blank				Equipment Blank
Was a field blanks associated with each sample of SDG?	x			Qualification of sample estimated value of analyte PFHxS became a "U" value due to present in method blank. Thus no qualification was needed.
Were target compounds detected in it?	x			
F. Surrogate spikes (Isotope Dilution Recovery)				
Were Surrogates percent recovery (%R) within QC limits?	x			Failure in sample MW020 of surrogates M2-8:2 FTS and M2-6:2 FTS occurred. No further qualification is needed.
If the (R%) for one or more surrogates were out of QC, was reanalysis performed to confirm %R?		x		
H. Matrix Spike/Matrix duplicate				
Were MS and MSD analyzed for SGD?	x			M2-6:2 FTS failed recovery within the Matrix spike and duplicate. Sample was not part of clients package, no further qualification is needed.
Was MS/MSD done every 20 samples?	x			
Were MS/MSD (%R) and RPD within QC?		x		
subject.: Laboratory control sample				
Was LCS analysis for this SDG?	x			
Was LCS analysis per analysis batch?	x			
Was LCS (R%) within QC Limits?	x			
I. Field Duplicate				
Were field duplicates identified in this SGD?	x			Duplicate pair MW023 and Field Duplicate samples results are within acceptable quantities except for analyte isotope dilution M2-8:2 FTS. This has no impact on results but is noted. Please see worksheet.
Were target compounds detected in it?	x			

Criteria	Y	N	NA	Comment
K. Compound quantitation				
Were correct internal standards, quantitation ions and RRF used in quantitate compounds?	x			
Were compound quantitates and RLs adjusted to reflect sample dilutions and dry weights to continuous calibration?	x			
L. Target Compound Identification				
Were relative retention times (RRTs) with in ± 0.06 units of standard?	x			
Did the spectrum meet EPA "Functional Guidelines"?	x			
Were chromatograms peaks verified and accounted?	x			
N. Overall assessment of data				
Was Overall assessment of data found to be acceptable?	x			

Comments: Qualification due to contaminate detection in associated method blanks lead to qualification within two samples. All results were within Cat. B criterion and usable.

Attachments for Method Review

Original TestAmerica Data

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 320-248703/1-A

Matrix: Water Lab File ID: 2018.10.06LLAAA_006.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: 3535 Date Extracted: 10/01/2018 05:03

Sample wt/vol: 250 (mL) Date Analyzed: 10/06/2018 18:20

Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1

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

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

Analysis Batch No.: 250091 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.494	J	2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.00	U	2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	2.00	U	2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.00	U	2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.00	U	2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.00	U	2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.290	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.00	U	2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.00	U	2.00	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20.0	U	20.0	3.10
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20.0	U	20.0	1.90
27619-97-2	6:2 FTS	2.268	J	20.0	2.00
39108-34-4	8:2 FTS	20.0	U	20.0	2.00

Reviewer comment: Analytes detected within the method blank led to qualification of sample Field Duplicate.

Original TestAmerica Data

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 320-248967/1-A

Matrix: Water Lab File ID: 2018.10.02LLAA_041.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: 3535 Date Extracted: 10/02/2018 04:35

Sample wt/vol: 250 (mL) Date Analyzed: 10/02/2018 22:24

Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Acquity ID: 2.1 (mm)

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

Analysis Batch No.: 249235 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.00	U	2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.00	U	2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	2.00	U	2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.00	U	2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.00	U	2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.00	U	2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.433	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.00	U	2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.00	U	2.00	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20.0	U	20.0	3.10
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20.0	U	20.0	1.90
27619-97-2	6:2 FTS	20.0	U	20.0	2.00
39108-34-4	8:2 FTS	20.0	U	20.0	2.00

Reviewer comment: Analyte detected within the method blank led to qualification of sample Equipment Blank.

Original TestAmerica Data

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Client Sample ID: Feild Duplicate Lab Sample ID: 320-43466-4

Matrix: Water Lab File ID: 2018.10.06LLAAA_014.d

Analysis Method: 537 (modified) Date Collected: 09/19/2018 00:00

Extraction Method: 3535 Date Extracted: 10/01/2018 05:03

Sample wt/vol: 263.3 (mL) Date Analyzed: 10/06/2018 19:20

Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1

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

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

Analysis Batch No.: 250091 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.83	~~J~~ B U	1.90	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.90	U	1.90	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.45	J	1.90	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.75	J	1.90	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	2.40		1.90	0.81
375-95-1	Perfluorononanoic acid (PFNA)	0.47	J	1.90	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.90	U	1.90	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.90	U	1.90	1.04
307-55-1	Perfluorododecanoic acid (PFDoA)	1.90	U	1.90	0.52
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.90	U	1.90	1.23
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.90	U	1.90	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.70	J	1.90	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.08	B	1.90	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.21	J	1.90	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15.1		1.90	0.51
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.90	U	1.90	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.90	U	1.90	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.0	U	19.0	2.94
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.0	U	19.0	1.80
27619-97-2	6:2 FTS	5.80	~~J~~ B U	19.0	1.90
39108-34-4	8:2 FTS	19.0	U	19.0	1.90

Reviewer comment: Due to detection within MB 320-248703/1-A analytes detected below reporting limit of PFBA and 6:2 FTS are qualified as undetected 'U' values.

Original TestAmerica Data

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-43466-1

SDG No.: _____

Client Sample ID: Equipment Blank Lab Sample ID: 320-43466-5

Matrix: Water Lab File ID: 2018.10.02LLAA_055.d

Analysis Method: 537 (modified) Date Collected: 09/19/2018 09:45

Extraction Method: 3535 Date Extracted: 10/02/2018 04:35

Sample wt/vol: 269.1 (mL) Date Analyzed: 10/03/2018 00:09

Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Acquity ID: 2.1 (mm)

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

Analysis Batch No.: 249235 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.86	U	1.86	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.86	U	1.86	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	1.86	U	1.86	0.54
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.86	U	1.86	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	1.86	U	1.86	0.79
375-95-1	Perfluorononanoic acid (PFNA)	1.86	U	1.86	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	1.86	U	1.86	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.86	U	1.86	1.02
307-55-1	Perfluorododecanoic acid (PFDoA)	1.86	U	1.86	0.51
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.86	U	1.86	1.21
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.86	U	1.86	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.86	U	1.86	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.26	~~U~~ BU	1.86	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.86	U	1.86	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.86	U	1.86	0.50
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.86	U	1.86	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.86	U	1.86	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	18.6	U	18.6	2.88
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18.6	U	18.6	1.77
27619-97-2	6:2 FTS	18.6	U	18.6	1.86
39108-34-4	8:2 FTS	18.6	U	18.6	1.86

Reviewer comment: Due to detection within MB 320-248967/1-A analyte detected below reporting limit of PFHxS are qualified as undetected 'U' values.

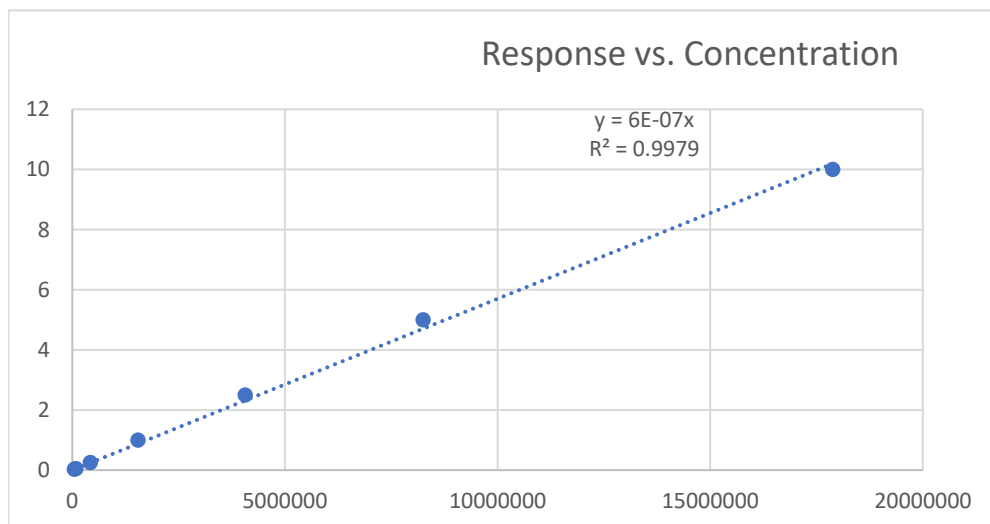
Calculation Spot Check

instrument A8_N

ICV Date 10/04/2018 5:22

Compound: PFBA

Curve Evaluation		Response vs. Concentration	
L1	0.9854	43735	0.025
L2	0.9684	83797	0.05
L3	0.9217	426669	0.25
L4	0.9411	1544807	1
L5	0.9462	4062613	2.5
L6	0.9528	8251489	5
L7	0.9318	17883956	10
average	0.949628571		
RSD	2.3		



Calculation Spot Check

instrument A9

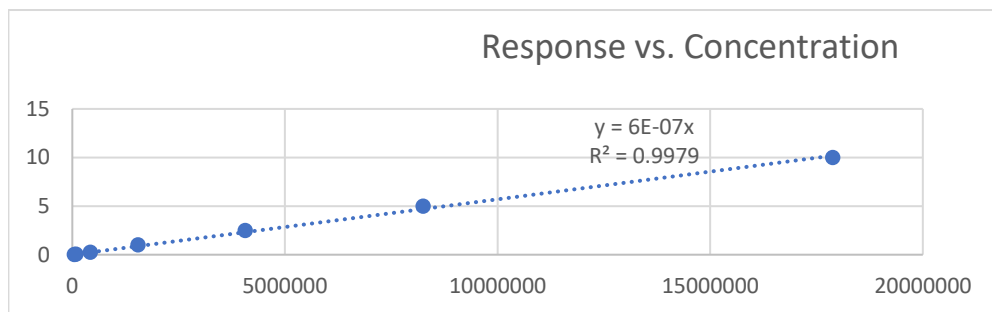
ICV Date 9/21/2018 15:36

Compound: PFBA

	Curve Evaluation	Response vs. Concentration	
L1	0.9236	77055	0.025
L2	0.9088	135508	0.05
L3	0.9488	798416	0.25
L4	0.9176	2756176	1
L5	0.9568	7252916	2.5
L6	0.9118	17281545	5
L7	0.8494	28619286	10

average 0.916685714

RSD 3.8





To: Ian Hofmann
Environmental Assessment &
Remediations
225 Atlantic Avenue
Patchogue, NY 11772

From: Tracey Evans

Data: 10/25/2018

Subject: NYSDEC Site ID No. 1805382 Camp Hero State Park, Montauk Highway,
Montauk, NY- Data Usability Summary Report

The Following Items Are Being Transmitted:
Data Package:

Originals	Description of Materials	Electronic/ Hard Copy
1	460-165184-1 Ny_CatB_Package_Mini_Final Report.pdf	Electronic
1	460-165184-1_EquNysdec.xls	Electronic

Signature:

Tracey Evans
Chemist
evans@enviro-asmnt.com
Environmental Assessment & Remediations
225 Atlantic Avenue
Patchogue, New York 11772
631-447-6400 ext.146



Camp Hero State Park Data Usability Summary Report for September 19, 2018 Water Sample

Client: Environmental Assessment & Remediations, Patchogue, New York

Laboratory: TestAmerica-Edison, (NYDOH lab id 11452)

Site: Camp Hero State Park (Site ID 1805382)

Lab Job ID: <u>400-165184-1</u>				
Method Evaluation				
Lab ID	Field ID	Collection Date	Matrix	8270D SIM
460-165184-1	MW019	9/19/2018	water	x
460-165184-2	MW023	9/19/2018	water	x
460-165184-3	MW020	9/19/2018	water	x
460-165184-4	Field Duplicate	9/19/2018	water	x
460-165184-5	Equipment Blank	9/19/2018	water	x

Samples were analyzed under (depends on testing):

- USEPA Region 2 *Semivolatile Data Validation*, SOP HW-35A, Revised 1 (September 2016)
- USEPA Contract Laboratory Program National Functional Guidance for Super Organic Methods Data Review, EPA 540-R-2017-002 (January 2)

It should be noted that method 8270D SIM, while it has a SOP for validation that was used to guide the evaluation of data the addition of isotope dilution is not covered under the QA/QC.

Criteria for Data Usability Summary Report

Completeness:

A complete data package is one that has all relevant and related material packaged for distribution to its client in accordance to the Analytical Service Protocol (ASP) Category B Deliverables guidelines.



Compliant:

A compliant data package is one that is determined to have all work that pertains to the production of the laboratory data in a manner that is consistent with the Quality Assurance Program Plan.

Overall Usability Issues

Data validation was completed in accordance to the New York State Department of Environmental Conservation Analytical Service Protocol (NYSDEC ASP) Category B Data Deliverable requirements and reviewer's professional judgment.

This analytical report complies to the following points:

1. Holding Time and Analysis Time
 2. Sample Analysis and Quality Control.
- There was no rejection of data.

In conclusion, the data reviewed in this report is usable and valid as it passes all stated criterion for compliance for method 8270D SIM.

Data Completeness

- A complete Category B data package under the NYSDEC ASP has been reported.



Data Validation Acronyms

AA	Atomic Absorption, Flame Technique
BHC	Hexachlorocyclohexane
BFB	Bromofluorobenzene (Tune check analyte)
CCC	Continuing Calibration Check
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
CVAA	Atomic Absorption, Cold Vapor
DCAA	2,4-Dichlorophenylacetic acid
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenyl phosphine (Tune check analyte)
DL	Detection Limit
ECD	Electron Capture Detector
FAA	Atomic Absorption, Furnace Technique
FID	Flame Ionization Detector
FNP	1-Fluoronaphthalene
GC	Gas Chromatography
GC/MS	Gas Chromatography/ Mass Spectrometry
GPC	Gel Permeation Chromatography
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma – Atomic Emission Spectrometer
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ICAL	Initial Calibration Curve
IS	Internal Standard
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LCS/LCSD	Laboratory Control Sample/ Laboratory Control Sample Duplicate
MB	Method Blank
MS	Matrix Spike
BNAMS11	Method of Standard Additions
MSD	Matrix Spike Duplicate
MS/MSD	Matrix Spike/ Matrix Spike Duplicate



Data Validation Acronyms

ND	Non-detected or Not Detected
PID	Photo Ionization Detector
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
PQL	Practical Quantitation Limit
QA	Quality Assurance
QA/QC	Quality Assurance/ Quality Control
QC	Quality Control
RF	Response Factor
RPD	Relative Percent Difference
RL	Reporting Limit
RRF	Relative Response Factor
RT	Retention Time
RRT	Relative Retention Time
SDG	Sample Delivery Group
SMC	System Monitoring Compounds/ Surrogates
SPCC	Sample Performance Check Compound
TCX	Tetrachloro-m-xylene
%D	Percent Drift
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation



Data Validation Qualifiers

U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
C	This qualifier applies to results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS)
X	This qualifier applies to results when GC/MS analysis was attempted but unsuccessful

Note:

1. These qualifiers are used for data validation purposes. The data validation qualifiers may differ from the qualifiers that the laboratory assigns to the data. Refer to the laboratory analytical report for the definitions of the laboratory qualifiers.
2. The EDDs are assigned these data validation qualifiers and refer to the valid value list supplied by the specific agency or informational data system.

Client: Environmental Assessment & Remediations, Patchogue, New York
Laboratory: TESTAMERICA -Edison, (NYDOH lab id 11452)
Site: Camp Hero State Park (Site ID 1805382)

Method Review: 8270D SIM, Isotope Dilution

Lab Job ID: 460-165184-1

Lab ID	Field ID	Collection Date	Matrix
460-165184-1	MW019	9/19/2018	water
460-165184-2	MW023	9/19/2018	water
460-165184-3	MW020	9/19/2018	water
460-165184-4	Field Duplicate	9/19/2018	water
460-165184-5	Equipment Blank	9/19/2018	water

Reviewer Summary :

Samples were handled and analyzed properly under EPA Region 2 protocol Standard Operating Procedure (SOP) HW-35A along with the EPA's National Functional Guideline for Organic Compounds. Blind duplicate sample Field Duplicate and parent sample MW023 are well compared. All data is within category B criterion and usable.

Blind Duplicate Comparison

	Blind Duplicate	Original Sample	Relative Percent Difference
Well	FIELD DUPLICATE	MW023	
1,4-Dioxane	<0.2	<0.2	-
1,4-Dioxane-D8	13	12	8 %

Reviewer comment: Comparing Duplicate pair MW023 and Field Duplicate samples results are within acceptable quantities. There are no qualification which will be added to this data.

Client: Environmental Assessment & Remediations, Patchogue,
New York

Laboratory: TESTAMERICA -Edison, (NYDOH lab id 11452)

Site: Camp Hero State Park (Site ID 1805382)

Job ID: 460-165184-1



8270D SIM/Isotope Dilutions

Criteria	Y	N	NA	Comment
A. Sample Receipt				
Were samples within technical hold time and extraction period?	x			
Cooling Temp = 4°C ± 2°C .	x			
B. GC/MS Instrument Performance Check				
Were DFTPP performance results within criteria?	x			
Were all samples analyzed within the 12 hour time period?	x			
C. Initial Calibration				
Was a 5 point calibration conducted?	x			
RSD% within acceptable criterion?	x			
Was curve fit used for evaluation? If yes did the I.C. meet the curve fit acceptability of ≥0.990 ?	x			
Was the Initial Calibration Verification (ICV) done after the I.C?	x			
D. Continuing Calibration				
Was it done every 12 hours after Initial Calibration to verify it?	x			
Were (%D) and relative respond factors (RRF) within acceptable criteria?	x			
E. Laboratory Blanks				
Was a lab blank associated with each sample of SDG?	x			
Was blank analyzed every 20 samples?	x			
Were contamination found, if so qualification may be necessary?	x			

Criteria	Y	N	NA	Comment
F. Field Blanks/Trip Blank				Equipment Blank
Was a field blanks associated with each sample of SDG?	x			
Were target compounds detected in it?		x		
G. Surrogate spikes (Isotope Dilution Recovery)				
Were Surrogate percent recovery (%R) within QC limits?(I,4-Dioxane-d8)	x			
If the (R%) for one or more surrogates were out of QC, was reanalysis performed to confirm %R?	x			
H. Matrix Spike/Matrix duplicate				
Were MS and MSD analyzed for SGD?			x	
Was MS/MSD done every 20 samples ?			x	
Were MS/MSD (%R) and RPD within QC?			x	
subject.: Laboratory control sample				
Was LCS analysis for this SDG?	x			
Was LCS analysis per analysis batch?	x			
Was LCS (R%) within QC Limits?	x			
I. Field Duplicate				
Were field duplicates identified in this SGD?	x			Duplicate pair MW023 and Field Duplicate samples results are within acceptable quantities. Please see worksheet.
Were target compounds detected in it?		x		
J. Internal Compounds				
Were counts within $\geq 50\%$ to $\leq 200\%$ of associated calibration standard?	x			
Were retention times within ± 30 sec of cal. standard?	x			
K. Compound quantitation				
Were correct internal standards, quantitation ions and RRF used in quantitate compounds?	x			

Criteria	Y	N	NA	Comment
Were compound quantitates and RLs adjusted to reflect sample dilutions and dry weights to continuous calibration?	x			
L. Target Compound Identification				
Were relative retention times (RRTs) within ± 0.06 units of standard?	x			
Did the spectrum meet EPA "Functional Guidelines"?	x			
Were chromatograms peaks verified and accounted?	x			
M. Overall assessment of data				
Was Overall assessment of data found to be acceptable?	x			

Comments: All results were within Cat. B criterion and usable.

Calculation Spot Check

instrument CBNAMS13

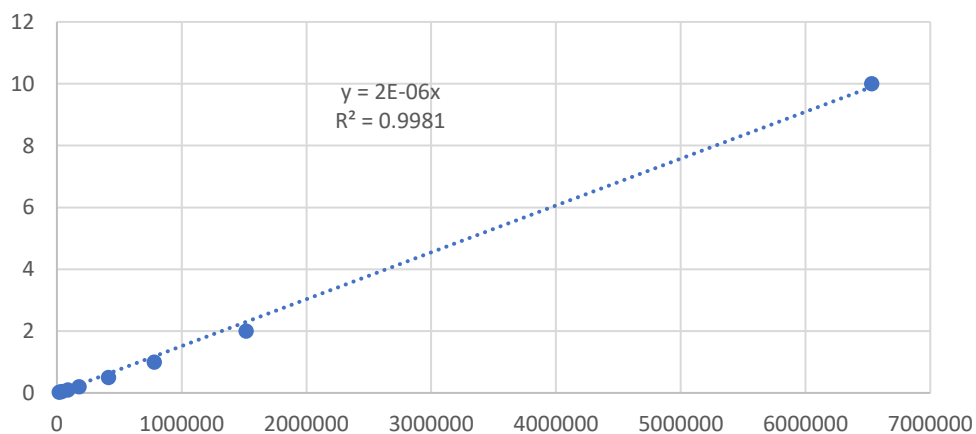
ICV Date 05/11/2018 12:48

Compound: 1,4-Dioxane

Curve Evaluation Response vs. Concentration

L1	1.4707	19118	0.02
L2	1.4974	40300	0.04
L3	1.3755	88487	0.1
L4	1.2864	413818	0.5
L5	1.0062	6531196	10
L6	1.1835	1516533	2
L7	1.2114	779650	1
L8	1.3268	176553	0.2
average	1.2947375		
RSD	12.5		

Response vs. Concentration





Appendix D: Waste Manifest

Hazardous Manifest

Manifest Doc No. 179257

Generator

Generator ID: 30957
NYSDEC MONTAUK CAMP HERO
SPILL NO1805382
NY 11954

Transporter

ABLE ENVIRONMENTAL SERVICE
6315676545
NYR000003582
1A-392

Facility

A B OIL SERVICE LTD.
1599 Ocean Avenue
Bohemia, NY 11716
631.567.6545
NYD987023371

Shipping Name and Description	NumCont	ContType	Quantity	Units	Profile ID
NON HAZARDOUS LIQUID		DM	55	G	NONHAZ L

Material Name	Quantity

Additional Descriptions for Materials Listed Above

Handling Codes Listed Above

Special Handling Instructions and Additional Information
24 Hour Emergency # (631) 567 - 6545
ERG# 128

Generator's Certification: I certify the materials described above are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed / Typed Name _____ Signature T. Evans Agent For Date 10/10/19
NYSDEC

Transporter 1 Acknowledgement of Receipt of Materials

Printed / Typed Name John M. ... Signature [Signature] Date 11/11/19

Transporter 2 Acknowledgement of Receipt of Materials

Printed / Typed Name _____ Signature _____ Date _____

Discrepancy Indication Space

Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted above.

Printed / Typed Name _____ Signature _____ Date _____

White = Original

Yellow = Transporter

Pink = TSDF

Gold = Generator Copy