FPM group Engineering and Environmental Science

FPM Group, Ltd.
FPM Engineering Group, P.C.
formerly Fanning, Phillips and Molnar

CORPORATE HEADQUARTERS
909 Marconi Avenue
Ronkonkoma, NY 11779
631/737-6200
Fax 631/737-2410

VIA EMAIL

May 21, 2018

Mr. Brian Jankauskas
Remedial Bureau A, Section C
New York State Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, NY 12233-7015

Re: **PFAS and 1,4-Dioxane Monitoring Report**
I.W. Industries, Inc. Site, NYSDEC Registry # 152102
35 Melville Park Road, Melville, NY
FPM File No. 1245g-17-03

Dear Brian:

Monitoring for emerging contaminants 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS) has been conducted at the above-referenced Site in accordance with our December 21, 2017 work plan, which was approved by the New York State Department of Environmental Conservation (NYSDEC) on January 10, 2018. This report documents the monitoring procedures and results. As discussed below, the monitoring results support our recommendations that no further 1,4-dioxane or PFAS monitoring be required and that that Site's monitoring wells be abandoned. NYSDEC concurrence with these recommendations is requested.

Emerging Contaminants Sampling Procedures and Results

Groundwater monitoring for 1,4-dioxane and PFAS was conducted at three Site wells, including one well in the former source area (MW-1), one downgradient well (MW-3), and one upgradient well (MW-6). The attached site plan shows the well locations.

Sampling Procedures

FPM environmental professionals purged the three selected monitoring wells in accordance with the procedures in the NYSDEC-approved Site Management Plan for the Site, as modified by the laboratory-recommended procedures for these analytes. At each well to be sampled, the depth to the static water level and the depth of the well were measured using a decontaminated interface probe prior to purging. No free-phase product was detected in any of the monitored wells. The well purging equipment included a Waterra Hydrolift II inertial pump fitted with dedicated high-density polyethylene (HDPE) tubing and a stainless-steel foot valve. This equipment was used to purge a minimum of three casing volumes of water from each well to be sampled. Field parameters, including pH, turbidity, specific conductivity, and temperature, were monitored during purging.

Following the completion of purging, the samples for PFAS testing were obtained, containerized, labeled, and managed under chain of custody procedures and in accordance with laboratory recommendations. Following the completion of PFAS sampling, and after those samples were properly secured, each well was sampled for 1,4-dioxane. These samples were also obtained,

containerized, labeled and managed under chain of custody procedures and in accordance with laboratory recommendations. All groundwater monitoring procedures were recorded on well sampling data logs, copies of which are included in Attachment 1.

Appropriate quality assurance/quality control (QA/QC) samples, including a field blank, a field duplicate, and matrix spike/matrix spike duplicate (MS/MSD) samples, were collected and analyzed in accordance with the Site-specific Quality Assurance Project Plan (QAPP).

The samples were submitted to TestAmerica, which is ELAP-certified for Methods 537 and 8270. The PFAS samples were analyzed for the NYSDEC's full PFAS Target Analyte List using Method 537(M) with SIM-isotope dilution. The 1,4-dioxane samples were analyzed by Method 8270D-SIM-isotope dilution. The laboratory reports were provided with Category B deliverables (copies included in Attachment 2) and the data are in the process of being uploaded to the NYSDEC's electronic information system.

A data usability summary report (DUSR) was prepared for each laboratory data package. The DUSRs are included in Attachment 3 and indicate that the data are of acceptable quality for their intended purpose. We note that low estimated concentrations of perfluorobutanoic acid (PFBA), perfluorohexanoic acid (PFHxA), perfluorodecanoic acid (PFDA), perfluorobutanesulfonic acid (PFBS), and perfluorohexanesulfonic acid (PFHxS) were detected in the PFAS field blank sample and three of these compounds were also detected at low estimated levels in the laboratory method blank, suggesting possible low-level field or lab contamination by these compounds. Comparable levels of these PFAS compounds in the samples may result from field and/or laboratory contamination.

Sampling Results

The data for PFAS and 1,4-dioxane are summarized in Table 1 (attached). As there are currently no established NYSDEC Standards for these contaminants, the data were compared to available United States Environmental Protection Agency (USEPA) screening criteria. The USEPA has issued a lifetime health advisory for prolonged exposure of 70 parts per trillion (or nanograms per liter, ng/l) for perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), and their sum. A screening level of 0.35 ug/l (350 ng/l) at a $1 * 10^{-6}$ excess cancer risk level has been calculated by the USEPA for 1,4-dioxane in drinking water. These values were used to assess the emerging contaminant data.

1,4-dioxane was not detected in any of the wells sampled. Based on these results, 1,4-dioxane does not present any concern at this Site.

Several PFAS were detected in the sampled wells, with many of the detections at low estimated concentrations, some of which are B-qualified and may result from lab or field contamination. PFOA and PFOS were detected in each of the sampled wells, with the maximum PFOA level at 24.3 ng/l in well MW-1 and the maximum PFOS level at 6.21 J ng/l in well MW-1. We note that the levels detected and their sum are below the USEPA lifetime health advisory for prolonged exposure of 70 ng/l.

PFAS detections were noted in the upgradient well (MW-6), the well in the former source area (MW-1), and the downgradient well (MW-3). There does not appear to be any clear relationship between the detection locations, the number of PFAS compounds detected at each location, the PFAS levels, and the location of the former source area. These data indicate that PFAs and 1,4-dioxane do not appear to be present at levels of concern or to be associated with the former source area at this Site.

Summary and Conclusions

Multiple rounds of groundwater monitoring at this Site have demonstrated that as of 2013 the only remaining Site-related impacts included several semivolatile organic compounds (SVOCs) at very low concentrations in two wells, a low concentration of lead in one well, and iron and manganese in two wells. Based on the results of the groundwater monitoring program, it was determined that no significant Site-related groundwater impacts remained present and it was recommended that groundwater monitoring be terminated. The NYSDEC concurred in 2013 and groundwater monitoring was discontinued.

Product monitoring, which was conducted at the Site for many years and completed in 2017, documented that no evidence of free-phase product has been noted at the Site since March 2005. The condition for discontinuing product monitoring at this Site, as stated in the SMP, was been reached in 2017 and FPM recommended that the product monitoring program be discontinued and the monitoring wells abandoned.

As requested by the NYSDEC in late 2017, monitoring for emerging contaminants 1,4-dioxane and PFAS has been conducted at this Site in accordance with the NYSDEC-approved protocols. The monitoring results show no detections of 1,4-dioxane in any of the wells sampled and we conclude that 1,4-dioxane does not present any concern at this Site.

Several PFAS were detected in the sampled wells; many of the detections were at low estimated concentrations and may result from lab or field contamination. PFOA and PFOS were detected in each of the sampled wells; the detections of PFAS, PFOS, and their sum are all below the USEPA lifetime health advisory of 70 ng/l. There does not appear to be any clear relationship between the detection locations, the numbers of PFAS compounds at each location, the PFAS levels, and the location of the former source area. We conclude that PFAS do not appear to be present at levels of concern or to be associated with the SVOC, metals, or former product impacts in groundwater at this Site.

We recommend that no further 1,4-dioxane or PFAS monitoring be required for this Site and that that Site's monitoring wells be abandoned. NYSDEC concurrence with these recommendations is requested.

Should you have any questions, please do not hesitate to call me at (631) 737-6200, ext. 228.

Sincerely,

Stephanie O. Davis, PG
Senior Project Manager
Vice President

SOD:sod
Attachments

cc: Mr. John OConnor

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ATTACHMENT 1

WELL SAMPLING DATA FORMS

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WELL SAMPLING DATA FORM

Project: IW

Location: Melville

Well No.: MW-1 Well Diameter: 4"

Date: 4/26/18 Start Time: _____

Weather: Rain 50°F Finish Time: _____

Sampled By: DB

Depth to Bottom of Well: 52.5 Feet.

Depth to Water: 48.06 Feet.

Height of Water Column: 4.44 Feet.

Water Volume in Casing: 2.84 Gallons.

Water Volume to be Purged: 8.5 Gallons.

Water Volume Actually Purged: 9 Gallons.

Purge Method: Watera hydrolift w/ SS foot valve and HDPE tubing

Physical Appearance/Comments: _____

FIELD MEASUREMENTS:

Time	Gallons	pH	Cond. (uS)	Temp. (°F)	Turbidity (NTU)
	4	5.76	261	15.4	71
	5	5.99	221	15.0	90
	9	5.85	225	14.9	59

Sampling and Analytical Methods: PFAS/dioxane

Laboratory Name and Location: Alpha

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WELL SAMPLING DATA FORM

Project: IW

Location: Melville

Well No.: MW-3 Well Diameter: 4"

Date: 4/26/18 Start Time: _____

Weather: Rain 50°F Finish Time: _____

Sampled By: JBS

Depth to Bottom of Well: 48.5 Feet.

Depth to Water: 47.08 Feet.

Height of Water Column: 1.42 Feet.

Water Volume in Casing: 0.923 Gallons.

Water Volume to be Purged: 2.77 Gallons.

Water Volume Actually Purged: 3.5 Gallons.

Purge Method: Waterra hydrolift w/ SS foot valve and hdpe tubing

Physical Appearance/Comments: _____

FIELD MEASUREMENTS:

Time	Gallons	pH	Cond. (uS)	Temp. (°F)C	Turbidity (NTU)
~~1.5~~	~~1.5~~ 6.17	6.17	291	15.5	264
~~2.5~~	~~2.5~~ 6.01	6.01	299	15.1	54
~~3.5~~	~~3.5~~ ~~6.05~~	6.05	305	15.0	110

Sampling and Analytical Methods: PFAS / dioxane

Laboratory Name and Location: Alpha

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WELL SAMPLING DATA FORM

Project: IW

Location: Melville

Well No.: MW-6 Well Diameter: 4"

Date: 4/26/18 Start Time: _____

Weather: Light rain 50°F Finish Time: _____

Sampled By: JDS

Depth to Bottom of Well: 52 Feet.

Depth to Water: 45.76 Feet.

Height of Water Column: 6.24 Feet.

Water Volume in Casing: 4.05 Gallons.

Water Volume to be Purged: 12 Gallons.

Water Volume Actually Purged: 12 Gallons.

Purge Method: Watera hydrolift / SS foot valve / HDPE tubing

Physical Appearance/Comments: _____

FIELD MEASUREMENTS:

Time	Gallons	pH	Cond. (uS)	Temp. (°F)	Turbidity (NTU)
	5	6.10	193	15.5	190
	9	5.90	199	14.9	271
	12	5.88	191	15.0	95

Sampling and Analytical Methods: PFAS / Dioxane

Laboratory Name and Location: Alpha

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ATTACHMENT 2

LABORATORY REPORTS

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 200-43262-1

Job Description: IW Industries

For:
FPM Group Limited
909 Marconi Avenue
Ronkonkoma, NY 11779

Attention: Mr. John Bukoski

Approved for release.
Thomas A Chupela
Project Management Assistant I
5/16/2018 2:41 PM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
05/16/2018

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 LAO00132

Job Number: 200-43262-1

Job Description: IW Industries

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
5/16/2018 2:41 PM

Designee for
Melissa Haas

Table of Contents

Table of Contents

CASE NARRATIVE

Client: FPM Group Limited

Project: IW Industries

Report Number: 200-43262-1

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 5/1/2018 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.4º 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 MW-6 (200-43262-1), MW-1 (200-43262-2), MW-3 (200-43262-3), MW-3D (200-43262-4) and FB (200-43262-5) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with PFC. The samples were prepared on 05/07/2018 and analyzed on 05/11/2018.

The following sample and its associated MS and MSD eluted through the SPE cartridges at very different rates and there was a lot of variation in the total volume extracted for these samples. MW-6 (200-43262-1), MW-6 (200-43262-1[MS]) and MW-6 (200-43262-1[MSD])

The entire volume for the following samples was not extracted due to sediment present in the samples clogging the SPE cartridges and significantly slowing the elution process. The amounts for volume extracted and volume not extracted were calculated and recorded in the prep batch worksheet. MW-6 (200-43262-1), MW-6 (200-43262-1[MS]) and MW-6 (200-43262-1[MSD])

The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 200-129214 and analytical batch 200-129349 was outside control limits. Due to the sample matrix containing excessive particulate matter, the entire sample containers were not able to be extracted - as noted in the prep batch, approximately 120 mL of the MS could not be eluted through the solid phase cartridge, and approximately 50mL of the MSD could not be eluted. Therefore the final concentrations are considerably different. The precision is calculated between the concentration of the MS and the concentration of the MSD rather than between the percent recoveries. As seen on the forms, the percent recovery of the MS and MSD are both within limits. MW-6 (200-43262-1), MW-6 (200-43262-1[MS]) and MW-6 (200-43262-1[MSD])

Isotope Dilution Analyte (IDA) recovery for M2-6:2FTS and M2-8:2FTS is above the method recommended limit for the following samples: MW-1 (200-43262-2), MW-3 (200-43262-3) and MW-3D (200-43262-4). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: MW-6 (200-43262-1[MS]), MW-1 (200-43262-2), MW-3 (200-43262-3) and MW-3D (200-43262-4). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s). 13C4 PFBA recovery is low for samples 2, 3, 4, and 1MS. 13C2 PFDoA and 13C2-PFTeDA recovery is low for sample 1MS.

Perfluorodecanoic acid (PFDA), Perfluorohexanesulfonic acid (PFHxS), Perfluorohexanoic acid (PFHxA) and Perfluoropentanoic acid (PFPeA) were detected in method blank MB 200-129214/1-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.

Several analytes exceeded the RPD limit for the MSD of sample MW-6MSD (200-43262-1) in batch 200-129349.

Refer to the QC report for details.

The following sample was diluted due to the nature of the sample matrix: MW-1 (200-43262-2). Elevated reporting limits (RLs) are provided.

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

All other quality control parameters were within the acceptance limits.

Sample Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 200-43262-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
200-43262-1	MW-6	Water	04/26/18 13:00	05/01/18 10:20
200-43262-2	MW-1	Water	04/26/18 15:00	05/01/18 10:20
200-43262-3	MW-3	Water	04/26/18 17:30	05/01/18 10:20
200-43262-4	MW-3D	Water	04/26/18 17:35	05/01/18 10:20
200-43262-5	FB	Water	04/26/18 18:00	05/01/18 10:20

Detection Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 200-43262-1

Client Sample ID: MW-6 — Lab Sample ID: 200-43262-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	19.3		2.06	0.46	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	18.1	B	2.06	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	19.9	B	2.06	0.46	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	15.0		2.06	0.30	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	14.5		2.06	0.49	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	2.92		2.06	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.72	J B	2.06	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.47	J	2.06	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.37		2.06	0.91	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.18	J B	2.06	0.29	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.64	J	2.06	0.31	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 200-43262-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	917		9.57	2.13	ng/L	5		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.77	J	9.57	1.39	ng/L	5		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	24.3		9.57	2.25	ng/L	5		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.68	J	9.57	1.24	ng/L	5		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	3.00	J B	9.57	2.13	ng/L	5		537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	2.47	J	9.57	2.13	ng/L	5		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	49.3		9.57	4.21	ng/L	5		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.72	J B	9.57	1.34	ng/L	5		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	3.91	J	9.57	2.13	ng/L	5		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.21	J	9.57	1.44	ng/L	5		537 (modified)	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 200-43262-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	11.1		1.90	0.42	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.91	B	1.90	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.55	B	1.90	0.42	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.18		1.90	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	14.5		1.90	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	4.33		1.90	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.60	J B	1.90	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.48	J	1.90	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.10		1.90	0.84	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.40	J B	1.90	0.27	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.60	J	1.90	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.95		1.90	0.29	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-3D — Lab Sample ID: 200-43262-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	8.57		1.85	0.41	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	4.53	B	1.85	0.41	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.88	B	1.85	0.41	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.86		1.85	0.27	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-3D (Continued)

Lab Sample ID: 200-43262-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	15.4		1.85	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	4.09		1.85	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.75	J B	1.85	0.41	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.21		1.85	0.81	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.42	J B	1.85	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.05		1.85	0.28	ng/L	1		537 (modified)	Total/NA

Client Sample ID: FB

Lab Sample ID: 200-43262-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.22	J	1.89	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.52	J B	1.89	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.52	J B	1.89	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.83	J	1.89	0.83	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.53	J B	1.89	0.26	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 200-43262-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL BUR
3535	Solid-Phase Extraction (SPE)	SW846	TAL BUR

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 BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Client Sample ID: MW-6

Date Collected: 04/26/18 13:00
Date Received: 05/01/18 10:20

Lab Sample ID: 200-43262-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**19.3**		2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluoropentanoic acid (PFPeA)	**18.1**	**B**	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorohexanoic acid (PFHxA)	**19.9**	**B**	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluoroheptanoic acid (PFHpA)	**15.0**		2.06	0.30	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorooctanoic acid (PFOA)	**14.5**		2.06	0.49	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorononanoic acid (PFNA)	**2.92**		2.06	0.27	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorodecanoic acid (PFDA)	**0.72**	**J B**	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluoroundecanoic acid (PFUnA)	2.06	U	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorododecanoic acid (PFDoA)	2.06	U	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorotridecanoic Acid (PFTriA)	**0.47**	**J**	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorotetradecanoic acid (PFTeA)	2.06	U	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorobutanesulfonic acid (PFBS)	**2.37**		2.06	0.91	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorohexanesulfonic acid (PFHxS)	**1.18**	**J B**	2.06	0.29	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.06	U	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorodecanesulfonic acid (PFDS)	2.06	U	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorooctanesulfonic acid (PFOS)	**1.64**	**J**	2.06	0.31	ng/L		05/07/18 14:00	05/11/18 17:20	1
Perfluorooctane Sulfonamide (FOSA)	2.06	U	2.06	0.46	ng/L		05/07/18 14:00	05/11/18 17:20	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.06	U	2.06	0.62	ng/L		05/07/18 14:00	05/11/18 17:20	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2.06	U	2.06	0.62	ng/L		05/07/18 14:00	05/11/18 17:20	1
6:2FTS	2.06	U	2.06	0.62	ng/L		05/07/18 14:00	05/11/18 17:20	1
8:2FTS	2.06	U	2.06	0.62	ng/L		05/07/18 14:00	05/11/18 17:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*43*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C4 PFBA	*25*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C5 PFPeA	*41*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C2 PFHxA	*48*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C4-PFHpA	*60*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C4 PFOA	*56*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C5 PFNA	*61*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C2 PFDA	*55*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C2 PFUnA	*58*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C2 PFDoA	*41*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C2-PFTeDA	*37*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C3-PFBS	*59*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
18O2 PFHxS	*73*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
13C4 PFOS	*69*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
d3-NMeFOSAA	*46*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
d5-NEtFOSAA	*49*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
M2-6:2FTS	*94*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*
M2-8:2FTS	*65*		*25 - 150*	*05/07/18 14:00*	*05/11/18 17:20*	*1*

Client Sample ID: MW-1

Date Collected: 04/26/18 15:00
Date Received: 05/01/18 10:20

Lab Sample ID: 200-43262-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**917**		9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluoropentanoic acid (PFPeA)	9.57	U	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorohexanoic acid (PFHxA)	9.57	U	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluoroheptanoic acid (PFHpA)	**4.77**	**J**	9.57	1.39	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorooctanoic acid (PFOA)	**24.3**		9.57	2.25	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorononanoic acid (PFNA)	**1.68**	**J**	9.57	1.24	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorodecanoic acid (PFDA)	**3.00**	**J B**	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluoroundecanoic acid (PFUnA)	9.57	U	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorododecanoic acid (PFDoA)	9.57	U	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorotridecanoic Acid (PFTriA)	**2.47**	**J**	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorotetradecanoic acid (PFTeA)	9.57	U	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorobutanesulfonic acid (PFBS)	**49.3**		9.57	4.21	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorohexanesulfonic acid (PFHxS)	**7.72**	**J B**	9.57	1.34	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluoroheptanesulfonic Acid (PFHpS)	**3.91**	**J**	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorodecanesulfonic acid (PFDS)	9.57	U	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorooctanesulfonic acid (PFOS)	**6.21**	**J**	9.57	1.44	ng/L		05/07/18 14:00	05/11/18 23:48	5
Perfluorooctane Sulfonamide (FOSA)	9.57	U	9.57	2.13	ng/L		05/07/18 14:00	05/11/18 23:48	5
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	9.57	U	9.57	2.87	ng/L		05/07/18 14:00	05/11/18 23:48	5
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	9.57	U	9.57	2.87	ng/L		05/07/18 14:00	05/11/18 23:48	5
6:2FTS	9.57	U	9.57	2.87	ng/L		05/07/18 14:00	05/11/18 23:48	5
8:2FTS	9.57	U	9.57	2.87	ng/L		05/07/18 14:00	05/11/18 23:48	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*59*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C4 PFBA	*18*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C5 PFPeA	*25*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C2 PFHxA	*42*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C4-PFHpA	*50*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C4 PFOA	*67*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C5 PFNA	*92*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C2 PFDA	*99*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C2 PFUnA	*122*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C2 PFDoA	*95*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C2-PFTeDA	*91*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C3-PFBS	*60*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
18O2 PFHxS	*68*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
13C4 PFOS	*70*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
d3-NMeFOSAA	*90*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
d5-NEtFOSAA	*114*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
M2-6:2FTS	*200*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*
M2-8:2FTS	*233*		*25 - 150*	*05/07/18 14:00*	*05/11/18 23:48*	*5*

Client Sample ID: MW-3

Date Collected: 04/26/18 17:30
Date Received: 05/01/18 10:20

Lab Sample ID: 200-43262-3

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**11.1**		1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluoropentanoic acid (PFPeA)	**3.91**	**B**	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorohexanoic acid (PFHxA)	**4.55**	**B**	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluoroheptanoic acid (PFHpA)	**5.18**		1.90	0.28	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorooctanoic acid (PFOA)	**14.5**		1.90	0.45	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorononanoic acid (PFNA)	**4.33**		1.90	0.25	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorodecanoic acid (PFDA)	**0.60**	**J B**	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluoroundecanoic acid (PFUnA)	1.90	U	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorododecanoic acid (PFDoA)	1.90	U	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorotridecanoic Acid (PFTriA)	**0.48**	**J**	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorotetradecanoic acid (PFTeA)	1.90	U	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorobutanesulfonic acid (PFBS)	**3.10**		1.90	0.84	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorohexanesulfonic acid (PFHxS)	**1.40**	**J B**	1.90	0.27	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.60**	**J**	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorodecanesulfonic acid (PFDS)	1.90	U	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorooctanesulfonic acid (PFOS)	**3.95**		1.90	0.29	ng/L		05/07/18 14:00	05/11/18 18:25	1
Perfluorooctane Sulfonamide (FOSA)	1.90	U	1.90	0.42	ng/L		05/07/18 14:00	05/11/18 18:25	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.90	U	1.90	0.57	ng/L		05/07/18 14:00	05/11/18 18:25	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	1.90	0.57	ng/L		05/07/18 14:00	05/11/18 18:25	1
6:2FTS	1.90	U	1.90	0.57	ng/L		05/07/18 14:00	05/11/18 18:25	1
8:2FTS	1.90	U	1.90	0.57	ng/L		05/07/18 14:00	05/11/18 18:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*44*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C4 PFBA	*17*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C5 PFPeA	*34*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C2 PFHxA	*44*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C4-PFHpA	*62*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C4 PFOA	*64*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C5 PFNA	*79*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C2 PFDA	*83*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C2 PFUnA	*99*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C2 PFDoA	*87*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C2-PFTeDA	*102*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C3-PFBS	*58*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
18O2 PFHxS	*73*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
13C4 PFOS	*75*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
d3-NMeFOSAA	*78*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
d5-NEtFOSAA	*96*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
M2-6:2FTS	*195*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*
M2-8:2FTS	*190*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:25*	*1*

Client Sample ID: MW-3D

Date Collected: 04/26/18 17:35
Date Received: 05/01/18 10:20

Lab Sample ID: 200-43262-4

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**8.57**		1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluoropentanoic acid (PFPeA)	**4.53**	**B**	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorohexanoic acid (PFHxA)	**2.88**	**B**	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluoroheptanoic acid (PFHpA)	**4.86**		1.85	0.27	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorooctanoic acid (PFOA)	**15.4**		1.85	0.43	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorononanoic acid (PFNA)	**4.09**		1.85	0.24	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorodecanoic acid (PFDA)	**0.75**	**J B**	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluoroundecanoic acid (PFUnA)	1.85	U	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorododecanoic acid (PFDoA)	1.85	U	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorotridecanoic Acid (PFTriA)	1.85	U	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorotetradecanoic acid (PFTeA)	1.85	U	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorobutanesulfonic acid (PFBS)	**3.21**		1.85	0.81	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorohexanesulfonic acid (PFHxS)	**1.42**	**J B**	1.85	0.26	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.85	U	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorodecanesulfonic acid (PFDS)	1.85	U	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorooctanesulfonic acid (PFOS)	**4.05**		1.85	0.28	ng/L		05/07/18 14:00	05/11/18 18:41	1
Perfluorooctane Sulfonamide (FOSA)	1.85	U	1.85	0.41	ng/L		05/07/18 14:00	05/11/18 18:41	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.85	U	1.85	0.55	ng/L		05/07/18 14:00	05/11/18 18:41	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.85	U	1.85	0.55	ng/L		05/07/18 14:00	05/11/18 18:41	1
6:2FTS	1.85	U	1.85	0.55	ng/L		05/07/18 14:00	05/11/18 18:41	1
8:2FTS	1.85	U	1.85	0.55	ng/L		05/07/18 14:00	05/11/18 18:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*39*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C4 PFBA	*22*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C5 PFPeA	*38*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C2 PFHxA	*43*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C4-PFHpA	*61*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C4 PFOA	*61*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C5 PFNA	*76*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C2 PFDA	*72*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C2 PFUnA	*83*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C2 PFDoA	*77*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C2-PFTeDA	*89*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C3-PFBS	*51*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
18O2 PFHxS	*72*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
13C4 PFOS	*69*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
d3-NMeFOSAA	*60*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
d5-NEtFOSAA	*77*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
M2-6:2FTS	*175*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*
M2-8:2FTS	*160*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:41*	*1*

Client Sample ID: FB

Date Collected: 04/26/18 18:00
Date Received: 05/01/18 10:20

Lab Sample ID: 200-43262-5

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.22**	**J**	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluoropentanoic acid (PFPeA)	1.89	U	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorohexanoic acid (PFHxA)	**0.52**	**J B**	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluoroheptanoic acid (PFHpA)	1.89	U	1.89	0.27	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorooctanoic acid (PFOA)	1.89	U	1.89	0.44	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorononanoic acid (PFNA)	1.89	U	1.89	0.25	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorodecanoic acid (PFDA)	**0.52**	**J B**	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluoroundecanoic acid (PFUnA)	1.89	U	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorododecanoic acid (PFDoA)	1.89	U	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorotridecanoic Acid (PFTriA)	1.89	U	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorotetradecanoic acid (PFTeA)	1.89	U	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorobutanesulfonic acid (PFBS)	**0.83**	**J**	1.89	0.83	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorohexanesulfonic acid (PFHxS)	**0.53**	**J B**	1.89	0.26	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.89	U	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorodecanesulfonic acid (PFDS)	1.89	U	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorooctanesulfonic acid (PFOS)	1.89	U	1.89	0.28	ng/L		05/07/18 14:00	05/11/18 18:57	1
Perfluorooctane Sulfonamide (FOSA)	1.89	U	1.89	0.42	ng/L		05/07/18 14:00	05/11/18 18:57	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.89	U	1.89	0.57	ng/L		05/07/18 14:00	05/11/18 18:57	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.89	U	1.89	0.57	ng/L		05/07/18 14:00	05/11/18 18:57	1
6:2FTS	1.89	U	1.89	0.57	ng/L		05/07/18 14:00	05/11/18 18:57	1
8:2FTS	1.89	U	1.89	0.57	ng/L		05/07/18 14:00	05/11/18 18:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*47*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C4 PFBA	*65*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C5 PFPeA	*80*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C2 PFHxA	*80*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C4-PFHpA	*82*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C4 PFOA	*73*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C5 PFNA	*72*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C2 PFDA	*66*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C2 PFUnA	*71*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C2 PFDoA	*54*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C2-PFTeDA	*53*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C3-PFBS	*79*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
18O2 PFHxS	*75*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
13C4 PFOS	*72*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
d3-NMeFOSAA	*54*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
d5-NEtFOSAA	*56*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
M2-6:2FTS	*82*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*
M2-8:2FTS	*76*		*25 - 150*	*05/07/18 14:00*	*05/11/18 18:57*	*1*

Isotope Dilution Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 200-43262-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFOSA (25-150)	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)
200-43262-1	MW-6	43	25	41	48	60	56	61	55
200-43262-1 MS	MW-6	22	17	27	29	38	32	34	31
200-43262-1 MSD	MW-6	36	28	42	43	55	51	50	46
200-43262-2	MW-1	59	18	25	42	50	67	92	99
200-43262-3	MW-3	44	17	34	44	62	64	79	83
200-43262-4	MW-3D	39	22	38	43	61	61	76	72
200-43262-5	FB	47	65	80	80	82	73	72	66
LCS 200-129214/2-A	Lab Control Sample	47	66	80	74	72	71	69	62
MB 200-129214/1-A	Method Blank	45	61	75	72	75	70	63	64

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	-NMeFOSA (25-150)	-NEtFOSA (25-150)
200-43262-1	MW-6	58	41	37	59	73	69	46	49
200-43262-1 MS	MW-6	31	22	22	42	46	42	25	25
200-43262-1 MSD	MW-6	44	36	31	59	65	60	39	37
200-43262-2	MW-1	122	95	91	60	68	70	90	114
200-43262-3	MW-3	99	87	102	58	73	75	78	96
200-43262-4	MW-3D	83	77	89	51	72	69	60	77
200-43262-5	FB	71	54	53	79	75	72	54	56
LCS 200-129214/2-A	Lab Control Sample	65	57	46	77	78	77	59	56
MB 200-129214/1-A	Method Blank	62	48	46	74	73	69	52	55

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
200-43262-1	MW-6	94	65
200-43262-1 MS	MW-6	51	33
200-43262-1 MSD	MW-6	77	50
200-43262-2	MW-1	200	233
200-43262-3	MW-3	195	190
200-43262-4	MW-3D	175	160
200-43262-5	FB	82	76
LCS 200-129214/2-A	Lab Control Sample	85	69
MB 200-129214/1-A	Method Blank	83	66

Surrogate Legend

PFOSA = 13C8 FOSA
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

Isotope Dilution Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 200-43262-1

d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 200-129214/1-A
Matrix: Water
Analysis Batch: 129349

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 129214

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluoropentanoic acid (PFPeA)	0.639	J	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorohexanoic acid (PFHxA)	0.616	J	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.29	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.47	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.26	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorodecanoic acid (PFDA)	0.564	J	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorotridecanoic Acid (PFTriA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorotetradecanoic acid (PFTeA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.88	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorohexanesulfonic acid (PFHxS)	0.704	J	2.00	0.28	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.30	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorooctane Sulfonamide (FOSA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.00	U	2.00	0.60	ng/L		05/07/18 14:00	05/11/18 16:48	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2.00	U	2.00	0.60	ng/L		05/07/18 14:00	05/11/18 16:48	1
6:2FTS	2.00	U	2.00	0.60	ng/L		05/07/18 14:00	05/11/18 16:48	1
8:2FTS	2.00	U	2.00	0.60	ng/L		05/07/18 14:00	05/11/18 16:48	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*45*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C4 PFBA	*61*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C5 PFPeA	*75*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2 PFHxA	*72*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C4-PFHpA	*75*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C4 PFOA	*70*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C5 PFNA	*63*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2 PFDA	*64*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2 PFUnA	*62*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2 PFDoA	*48*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2-PFTeDA	*46*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C3-PFBS	*74*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
18O2 PFHxS	*73*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C4 PFOS	*69*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
d3-NMeFOSAA	*52*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
d5-NEtFOSAA	*55*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
M2-6:2FTS	*83*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
M2-8:2FTS	*66*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*

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

Lab Sample ID: LCS 200-129214/2-A
Matrix: Water
Analysis Batch: 129349

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 129214

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	37.83		ng/L		95	50 - 150
Perfluoropentanoic acid (PFPeA)	40.0	32.71		ng/L		82	50 - 150
Perfluorohexanoic acid (PFHxA)	40.0	42.14		ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	40.0	39.70		ng/L		99	50 - 150
Perfluorooctanoic acid (PFOA)	40.0	39.49		ng/L		99	50 - 150
Perfluorononanoic acid (PFNA)	40.0	39.27		ng/L		98	50 - 150
Perfluorodecanoic acid (PFDA)	40.0	43.04		ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	40.0	41.04		ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	40.0	36.55		ng/L		91	50 - 150
Perfluorotridecanoic Acid (PFTriA)	40.0	31.53		ng/L		79	50 - 150
Perfluorotetradecanoic acid (PFTeA)	40.0	38.19		ng/L		95	50 - 150
Perfluorobutanesulfonic acid (PFBS)	35.4	30.69		ng/L		87	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	36.4	30.98		ng/L		85	50 - 150
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	35.23		ng/L		93	50 - 150
Perfluorodecanesulfonic acid (PFDS)	38.6	30.61		ng/L		79	50 - 150
Perfluorooctanesulfonic acid (PFOS)	37.1	35.16		ng/L		95	50 - 150
Perfluorooctane Sulfonamide (FOSA)	40.0	38.68		ng/L		97	50 - 150
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	36.84		ng/L		92	50 - 150
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	40.91		ng/L		102	50 - 150
6:2FTS	37.9	37.72		ng/L		99	50 - 150
8:2FTS	38.3	41.21		ng/L		108	50 - 150

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C8 FOSA	*47*		*25 - 150*
13C4 PFBA	*66*		*25 - 150*
13C5 PFPeA	*80*		*25 - 150*
13C2 PFHxA	*74*		*25 - 150*
13C4-PFHpA	*72*		*25 - 150*
13C4 PFOA	*71*		*25 - 150*
13C5 PFNA	*69*		*25 - 150*
13C2 PFDA	*62*		*25 - 150*
13C2 PFUnA	*65*		*25 - 150*
13C2 PFDoA	*57*		*25 - 150*
13C2-PFTeDA	*46*		*25 - 150*
13C3-PFBS	*77*		*25 - 150*
18O2 PFHxS	*78*		*25 - 150*
13C4 PFOS	*77*		*25 - 150*

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

Lab Sample ID: LCS 200-129214/2-A
Matrix: Water
Analysis Batch: 129349

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 129214

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
d3-NMeFOSAA	59		25 - 150
d5-NEtFOSAA	56		25 - 150
M2-6:2FTS	85		25 - 150
M2-8:2FTS	69		25 - 150

Lab Sample ID: 200-43262-1 MS
Matrix: Water
Analysis Batch: 129349

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 129214

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	19.3		68.1	94.66		ng/L		111	40 - 160
Perfluoropentanoic acid (PFPeA)	18.1	B	68.1	90.34		ng/L		106	40 - 160
Perfluorohexanoic acid (PFHxA)	19.9	B	68.1	106.5		ng/L		127	40 - 160
Perfluoroheptanoic acid (PFHpA)	15.0		68.1	88.62		ng/L		108	40 - 160
Perfluorooctanoic acid (PFOA)	14.5		68.1	94.03		ng/L		117	40 - 160
Perfluorononanoic acid (PFNA)	2.92		68.1	74.98		ng/L		106	40 - 160
Perfluorodecanoic acid (PFDA)	0.72	J B	68.1	63.38		ng/L		92	40 - 160
Perfluoroundecanoic acid (PFUnA)	2.06	U	68.1	62.26		ng/L		91	40 - 160
Perfluorododecanoic acid (PFDoA)	2.06	U	68.1	70.81		ng/L		104	40 - 160
Perfluorotridecanoic Acid (PFTriA)	0.47	J	68.1	59.64		ng/L		87	40 - 160
Perfluorotetradecanoic acid (PFTeA)	2.06	U	68.1	63.00		ng/L		92	40 - 160
Perfluorobutanesulfonic acid (PFBS)	2.37		60.2	56.79		ng/L		90	40 - 160
Perfluorohexanesulfonic acid (PFHxS)	1.18	J B	62.0	51.42		ng/L		81	40 - 160
Perfluoroheptanesulfonic Acid (PFHpS)	2.06	U	64.9	58.42		ng/L		90	40 - 160
Perfluorodecanesulfonic acid (PFDS)	2.06	U	65.7	37.93		ng/L		58	40 - 160
Perfluorooctanesulfonic acid (PFOS)	1.64	J	63.2	61.56		ng/L		95	40 - 160
Perfluorooctane Sulfonamide (FOSA)	2.06	U	68.1	69.24		ng/L		102	40 - 160
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.06	U	68.1	64.01		ng/L		94	40 - 160
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2.06	U	68.1	68.85		ng/L		101	40 - 160
6:2FTS	2.06	U	64.6	66.30		ng/L		103	40 - 160
8:2FTS	2.06	U	65.3	83.07		ng/L		127	40 - 160

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C8 FOSA	22		25 - 150
13C4 PFBA	17		25 - 150
13C5 PFPeA	27		25 - 150
13C2 PFHxA	29		25 - 150
13C4-PFHpA	38		25 - 150

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

Lab Sample ID: 200-43262-1 MS
Matrix: Water
Analysis Batch: 129349

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 129214

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFOA	32		25 - 150
13C5 PFNA	34		25 - 150
13C2 PFDA	31		25 - 150
13C2 PFUnA	31		25 - 150
13C2 PFDoA	22		25 - 150
13C2-PFTeDA	22		25 - 150
13C3-PFBS	42		25 - 150
18O2 PFHxS	46		25 - 150
13C4 PFOS	42		25 - 150
d3-NMeFOSAA	25		25 - 150
d5-NEtFOSAA	25		25 - 150
M2-6:2FTS	51		25 - 150
M2-8:2FTS	33		25 - 150

Lab Sample ID: 200-43262-1 MSD
Matrix: Water
Analysis Batch: 129349

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 129214

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	19.3		47.3	63.24	*	ng/L		93	40 - 160	40	30
Perfluoropentanoic acid (PFPeA)	18.1	B	47.3	61.01	*	ng/L		91	40 - 160	39	30
Perfluorohexanoic acid (PFHxA)	19.9	B	47.3	75.41	*	ng/L		117	40 - 160	34	30
Perfluoroheptanoic acid (PFHpA)	15.0		47.3	66.18		ng/L		108	40 - 160	29	30
Perfluorooctanoic acid (PFOA)	14.5		47.3	62.07	*	ng/L		101	40 - 160	41	30
Perfluorononanoic acid (PFNA)	2.92		47.3	52.64	*	ng/L		105	40 - 160	35	30
Perfluorodecanoic acid (PFDA)	0.72	J B	47.3	47.88		ng/L		100	40 - 160	28	30
Perfluoroundecanoic acid (PFUnA)	2.06	U	47.3	45.81		ng/L		97	40 - 160	30	30
Perfluorododecanoic acid (PFDoA)	2.06	U	47.3	45.73	*	ng/L		97	40 - 160	43	30
Perfluorotridecanoic Acid (PFTriA)	0.47	J	47.3	38.21	*	ng/L		80	40 - 160	44	30
Perfluorotetradecanoic acid (PFTeA)	2.06	U	47.3	40.43	*	ng/L		86	40 - 160	44	30
Perfluorobutanesulfonic acid (PFBS)	2.37		41.8	41.91		ng/L		95	40 - 160	30	30
Perfluorohexanesulfonic acid (PFHxS)	1.18	J B	43.0	37.81	*	ng/L		85	40 - 160	31	30
Perfluoroheptanesulfonic Acid (PFHpS)	2.06	U	45.0	44.12		ng/L		98	40 - 160	28	30
Perfluorodecanesulfonic acid (PFDS)	2.06	U	45.6	31.40		ng/L		69	40 - 160	19	30
Perfluorooctanesulfonic acid (PFOS)	1.64	J	43.9	45.51		ng/L		100	40 - 160	30	30
Perfluorooctane Sulfonamide (FOSA)	2.06	U	47.3	47.17	*	ng/L		100	40 - 160	38	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.06	U	47.3	46.23	*	ng/L		98	40 - 160	32	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2.06	U	47.3	42.00	*	ng/L		89	40 - 160	48	30

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

Lab Sample ID: 200-43262-1 MSD
Matrix: Water
Analysis Batch: 129349

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 129214

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
6:2FTS	2.06	U	44.8	44.09	*	ng/L		98	40 - 160	40	30
8:2FTS	2.06	U	45.3	51.36	*	ng/L		113	40 - 160	47	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C8 FOSA	*36*		*25 - 150*
13C4 PFBA	*28*		*25 - 150*
13C5 PFPeA	*42*		*25 - 150*
13C2 PFHxA	*43*		*25 - 150*
13C4-PFHpA	*55*		*25 - 150*
13C4 PFOA	*51*		*25 - 150*
13C5 PFNA	*50*		*25 - 150*
13C2 PFDA	*46*		*25 - 150*
13C2 PFUnA	*44*		*25 - 150*
13C2 PFDoA	*36*		*25 - 150*
13C2-PFTeDA	*31*		*25 - 150*
13C3-PFBS	*59*		*25 - 150*
18O2 PFHxS	*65*		*25 - 150*
13C4 PFOS	*60*		*25 - 150*
d3-NMeFOSAA	*39*		*25 - 150*
d5-NEtFOSAA	*37*		*25 - 150*
M2-6:2FTS	*77*		*25 - 150*
M2-8:2FTS	*50*		*25 - 150*

Qualifiers

LCMS

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	The analyte was found in an associated blank, as well as in the sample.
J	Indicates an estimated value.
*	Duplicate RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

LCMS

Prep Batch: 129214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-43262-1	MW-6	Total/NA	Water	3535	
200-43262-2	MW-1	Total/NA	Water	3535	
200-43262-3	MW-3	Total/NA	Water	3535	
200-43262-4	MW-3D	Total/NA	Water	3535	
200-43262-5	FB	Total/NA	Water	3535	
MB 200-129214/1-A	Method Blank	Total/NA	Water	3535	
LCS 200-129214/2-A	Lab Control Sample	Total/NA	Water	3535	
200-43262-1 MS	MW-6	Total/NA	Water	3535	
200-43262-1 MSD	MW-6	Total/NA	Water	3535	

Analysis Batch: 129349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-43262-1	MW-6	Total/NA	Water	537 (modified)	129214
200-43262-2	MW-1	Total/NA	Water	537 (modified)	129214
200-43262-3	MW-3	Total/NA	Water	537 (modified)	129214
200-43262-4	MW-3D	Total/NA	Water	537 (modified)	129214
200-43262-5	FB	Total/NA	Water	537 (modified)	129214
MB 200-129214/1-A	Method Blank	Total/NA	Water	537 (modified)	129214
LCS 200-129214/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	129214
200-43262-1 MS	MW-6	Total/NA	Water	537 (modified)	129214
200-43262-1 MSD	MW-6	Total/NA	Water	537 (modified)	129214

Lab Chronicle

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 200-43262-1

Client Sample ID: MW-6
Lab Sample ID: 200-43262-1
Date Collected: 04/26/18 13:00
Matrix: Water
Date Received: 05/01/18 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			129214	05/07/18 14:00	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	129349	05/11/18 17:20	BHOK	TAL BUR

Client Sample ID: MW-1
Lab Sample ID: 200-43262-2
Date Collected: 04/26/18 15:00
Matrix: Water
Date Received: 05/01/18 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			129214	05/07/18 14:00	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		5	129349	05/11/18 23:48	BHOK	TAL BUR

Client Sample ID: MW-3
Lab Sample ID: 200-43262-3
Date Collected: 04/26/18 17:30
Matrix: Water
Date Received: 05/01/18 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			129214	05/07/18 14:00	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	129349	05/11/18 18:25	BHOK	TAL BUR

Client Sample ID: MW-3D
Lab Sample ID: 200-43262-4
Date Collected: 04/26/18 17:35
Matrix: Water
Date Received: 05/01/18 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			129214	05/07/18 14:00	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	129349	05/11/18 18:41	BHOK	TAL BUR

Client Sample ID: FB
Lab Sample ID: 200-43262-5
Date Collected: 04/26/18 18:00
Matrix: Water
Date Received: 05/01/18 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			129214	05/07/18 14:00	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	129349	05/11/18 18:57	BHOK	TAL BUR

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 200-43262-1

Laboratory: TestAmerica Burlington

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	10391	04-01-19

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	6:2FTS
537 (modified)	3535	Water	8:2FTS
537 (modified)	3535	Water	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)
537 (modified)	3535	Water	N-methyl perfluorooctane sulfonamidoacetic 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 (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctane Sulfonamide (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 Burlington Job No.: 200-43262-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): C-18 ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
MW-6	200-43262-1	25	41	59	48	60	73	94	56
MW-1	200-43262-2	18	25	60	42	50	68	200	67
MW-3	200-43262-3	17	34	58	44	62	73	195	64
MW-3D	200-43262-4	22	38	51	43	61	72	175	61
FB	200-43262-5	65	80	79	80	82	75	82	73
	MB 200-129214/1-A	61	75	74	72	75	73	83	70
	LCS 200-129214/2-A	66	80	77	74	72	78	85	71
MW-6 MS	200-43262-1 MS	17	27	42	29	38	46	51	32
MW-6 MSD	200-43262-1 MSD	28	42	59	43	55	65	77	51

	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 = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): C-18 ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFOSA #
MW-6	200-43262-1	61	69	65	55	46	49	58	43
MW-1	200-43262-2	92	70	233	99	90	114	122	59
MW-3	200-43262-3	79	75	190	83	78	96	99	44
MW-3D	200-43262-4	76	69	160	72	60	77	83	39
FB	200-43262-5	72	72	76	66	54	56	71	47
	MB 200-129214/1-A	63	69	66	64	52	55	62	45
	LCS 200-129214/2-A	69	77	69	62	59	56	65	47
MW-6 MS	200-43262-1 MS	34	42	33	31	25	25	31	22
MW-6 MSD	200-43262-1 MSD	50	60	50	46	39	37	44	36

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

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): C-18 ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
MW-6	200-43262-1	41	37
MW-1	200-43262-2	95	91
MW-3	200-43262-3	87	102
MW-3D	200-43262-4	77	89
FB	200-43262-5	54	53
	MB 200-129214/1-A	48	46
	LCS 200-129214/2-A	57	46
MW-6 MS	200-43262-1 MS	22	22
MW-6 MSD	200-43262-1 MSD	36	31

	QC LIMITS
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 Burlington Job No.: 200-43262-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PF051018A35.d

Lab ID: LCS 200-129214/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	37.83	95	50-150	
Perfluoropentanoic acid (PFPeA)	40.0	32.71	82	50-150	
Perfluorohexanoic acid (PFHxA)	40.0	42.14	105	50-150	
Perfluoroheptanoic acid (PFHpA)	40.0	39.70	99	50-150	
Perfluorooctanoic acid (PFOA)	40.0	39.49	99	50-150	
Perfluorononanoic acid (PFNA)	40.0	39.27	98	50-150	
Perfluorodecanoic acid (PFDA)	40.0	43.04	108	50-150	
Perfluoroundecanoic acid (PFUnA)	40.0	41.04	103	50-150	
Perfluorododecanoic acid (PFDoA)	40.0	36.55	91	50-150	
Perfluorotridecanoic Acid (PFTriA)	40.0	31.53	79	50-150	
Perfluorotetradecanoic acid (PFTeA)	40.0	38.19	95	50-150	
Perfluorobutanesulfonic acid (PFBS)	35.4	30.69	87	50-150	
Perfluorohexanesulfonic acid (PFHxS)	36.4	30.98	85	50-150	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	35.23	93	50-150	
Perfluorodecanesulfonic acid (PFDS)	38.6	30.61	79	50-150	
Perfluorooctanesulfonic acid (PFOS)	37.1	35.16	95	50-150	
Perfluorooctane Sulfonamide (FOSA)	40.0	38.68	97	50-150	
13C8 FOSA	100	46.50	47	25-150	
13C4 PFBA	100	65.92	66	25-150	
13C5 PFPeA	100	80.43	80	25-150	
13C2 PFHxA	100	73.92	74	25-150	
13C4-PFHpA	100	72.41	72	25-150	
13C4 PFOA	100	70.76	71	25-150	
13C5 PFNA	100	68.74	69	25-150	
13C2 PFDA	100	62.20	62	25-150	
13C2 PFUnA	100	65.36	65	25-150	
13C2 PFDoA	100	57.13	57	25-150	
13C2-PFTeDA	100	45.96	46	25-150	
13C3-PFBS	93.0	71.18	77	25-150	
18O2 PFHxS	94.6	73.57	78	25-150	
13C4 PFOS	95.6	73.54	77	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 Burlington Job No.: 200-43262-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PF051018A35.d

Lab ID: LCS 200-129214/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	36.84	92	50-150	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	40.91	102	50-150	
d3-NMeFOSAA	100	58.96	59	25-150	
d5-NEtFOSAA	100	55.96	56	25-150	
6:2FTS	37.9	37.72	99	50-150	
8:2FTS	38.3	41.21	108	50-150	
M2-6:2FTS	95.0	80.48	85	25-150	
M2-8:2FTS	95.8	66.39	69	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 Burlington Job No.: 200-43262-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PF051018A37.d

Lab ID: 200-43262-1 MS Client ID: MW-6 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	68.1	19.3	94.66	111	40-160	
Perfluoropentanoic acid (PFPeA)	68.1	18.1	90.34	106	40-160	
Perfluorohexanoic acid (PFHxA)	68.1	19.9	106.5	127	40-160	
Perfluoroheptanoic acid (PFHpA)	68.1	15.0	88.62	108	40-160	
Perfluorooctanoic acid (PFOA)	68.1	14.5	94.03	117	40-160	
Perfluorononanoic acid (PFNA)	68.1	2.92	74.98	106	40-160	
Perfluorodecanoic acid (PFDA)	68.1	0.72 J	63.38	92	40-160	
Perfluoroundecanoic acid (PFUnA)	68.1	2.06 U	62.26	91	40-160	
Perfluorododecanoic acid (PFDoA)	68.1	2.06 U	70.81	104	40-160	
Perfluorotridecanoic Acid (PFTriA)	68.1	0.47 J	59.64	87	40-160	
Perfluorotetradecanoic acid (PFTeA)	68.1	2.06 U	63.00	92	40-160	
Perfluorobutanesulfonic acid (PFBS)	60.2	2.37	56.79	90	40-160	
Perfluorohexanesulfonic acid (PFHxS)	62.0	1.18 J	51.42	81	40-160	
Perfluoroheptanesulfonic Acid (PFHpS)	64.9	2.06 U	58.42	90	40-160	
Perfluorodecanesulfonic acid (PFDS)	65.7	2.06 U	37.93	58	40-160	
Perfluorooctanesulfonic acid (PFOS)	63.2	1.64 J	61.56	95	40-160	
Perfluorooctane Sulfonamide (FOSA)	68.1	2.06 U	69.24	102	40-160	
13C8 FOSA	170	44.1	36.61	22	25-150	
13C4 PFBA	170	26.1	28.40	17	25-150	
13C5 PFPeA	170	42.2	45.55	27	25-150	
13C2 PFHxA	170	49.5	50.19	29	25-150	
13C4-PFHpA	170	62.0	63.98	38	25-150	
13C4 PFOA	170	58.2	54.68	32	25-150	
13C5 PFNA	170	62.6	57.47	34	25-150	
13C2 PFDA	170	57.1	52.04	31	25-150	
13C2 PFUnA	170	59.4	52.81	31	25-150	
13C2 PFDoA	170	42.4	36.86	22	25-150	
13C2-PFTeDA	170	37.7	37.59	22	25-150	
13C3-PFBS	158	57.1	66.24	42	25-150	
18O2 PFHxS	161	71.4	73.76	46	25-150	
13C4 PFOS	163	68.2	68.34	42	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 Burlington Job No.: 200-43262-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PF051018A37.d

Lab ID: 200-43262-1 MS Client ID: MW-6 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	68.1	2.06 U	64.01	94	40-160	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	68.1	2.06 U	68.85	101	40-160	
d3-NMeFOSAA	170	47.0	42.48	25	25-150	
d5-NEtFOSAA	170	50.1	41.95	25	25-150	
6:2FTS	64.6	2.06 U	66.30	103	40-160	
8:2FTS	65.3	2.06 U	83.07	127	40-160	
M2-6:2FTS	162	92.0	82.17	51	25-150	
M2-8:2FTS	163	64.3	53.66	33	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 Burlington Job No.: 200-43262-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PF051018A38.d

Lab ID: 200-43262-1 MSD Client ID: MW-6 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	47.3	63.24	93	40	30	40-160	*
Perfluoropentanoic acid (PFPeA)	47.3	61.01	91	39	30	40-160	*
Perfluorohexanoic acid (PFHxA)	47.3	75.41	117	34	30	40-160	*
Perfluoroheptanoic acid (PFHpA)	47.3	66.18	108	29	30	40-160	
Perfluorooctanoic acid (PFOA)	47.3	62.07	101	41	30	40-160	*
Perfluorononanoic acid (PFNA)	47.3	52.64	105	35	30	40-160	*
Perfluorodecanoic acid (PFDA)	47.3	47.88	100	28	30	40-160	
Perfluoroundecanoic acid (PFUnA)	47.3	45.81	97	30	30	40-160	
Perfluorododecanoic acid (PFDoA)	47.3	45.73	97	43	30	40-160	*
Perfluorotridecanoic Acid (PFTriA)	47.3	38.21	80	44	30	40-160	*
Perfluorotetradecanoic acid (PFTeA)	47.3	40.43	86	44	30	40-160	*
Perfluorobutanesulfonic acid (PFBS)	41.8	41.91	95	30	30	40-160	
Perfluorohexanesulfonic acid (PFHxS)	43.0	37.81	85	31	30	40-160	*
Perfluoroheptanesulfonic Acid (PFHpS)	45.0	44.12	98	28	30	40-160	
Perfluorodecanesulfonic acid (PFDS)	45.6	31.40	69	19	30	40-160	
Perfluorooctanesulfonic acid (PFOS)	43.9	45.51	100	30	30	40-160	
Perfluorooctane Sulfonamide (FOSA)	47.3	47.17	100	38	30	40-160	*
13C8 FOSA	118	42.93	36			25-150	
13C4 PFBA	118	32.96	28			25-150	
13C5 PFPeA	118	49.97	42			25-150	
13C2 PFHxA	118	51.00	43			25-150	
13C4-PFHpA	118	64.56	55			25-150	
13C4 PFOA	118	59.94	51			25-150	
13C5 PFNA	118	59.48	50			25-150	
13C2 PFDA	118	54.19	46			25-150	
13C2 PFUnA	118	52.53	44			25-150	
13C2 PFDoA	118	42.25	36			25-150	
13C2-PFTeDA	118	37.10	31			25-150	
13C3-PFBS	110	64.32	59			25-150	
18O2 PFHxS	112	72.90	65			25-150	
13C4 PFOS	113	67.69	60			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 Burlington Job No.: 200-43262-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PF051018A38.d

Lab ID: 200-43262-1 MSD Client ID: MW-6 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	47.3	46.23	98	32	30	40-160	*
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	47.3	42.00	89	48	30	40-160	*
d3-NMeFOSAA	118	46.13	39			25-150	
d5-NEtFOSAA	118	44.31	37			25-150	
6:2FTS	44.8	44.09	98	40	30	40-160	*
8:2FTS	45.3	51.36	113	47	30	40-160	*
M2-6:2FTS	112	86.89	77			25-150	
M2-8:2FTS	113	56.57	50			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 Burlington Job No.: 200-43262-1

SDG No.:

Lab File ID: PF051018A34.d Lab Sample ID: MB 200-129214/1-A

Matrix: Water Date Extracted: 05/07/2018 14:00

Instrument ID: LC410 Date Analyzed: 05/11/2018 16:48

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 200-129214/2-A	PF051018A35.d	05/11/2018 17:04
MW-6	200-43262-1	PF051018A36.d	05/11/2018 17:20
MW-6 MS	200-43262-1 MS	PF051018A37.d	05/11/2018 17:36
MW-6 MSD	200-43262-1 MSD	PF051018A38.d	05/11/2018 17:53
MW-3	200-43262-3	PF051018A40.d	05/11/2018 18:25
MW-3D	200-43262-4	PF051018A41.d	05/11/2018 18:41
FB	200-43262-5	PF051018A42.d	05/11/2018 18:57
MW-1	200-43262-2	PF051018A60.d	05/11/2018 23:48

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-6 | Lab Sample ID: 200-43262-1

Matrix: Water | Lab File ID: PF051018A36.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 13:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 242.2(mL) | Date Analyzed: 05/11/2018 17:20

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	19.3		2.06	0.46
2706-90-3	Perfluoropentanoic acid (PFPeA)	18.1	B	2.06	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	19.9	B	2.06	0.46
375-85-9	Perfluoroheptanoic acid (PFHpA)	15.0		2.06	0.30
335-67-1	Perfluorooctanoic acid (PFOA)	14.5		2.06	0.49
375-95-1	Perfluorononanoic acid (PFNA)	2.92		2.06	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.72	J B	2.06	0.46
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.06	U	2.06	0.46
307-55-1	Perfluorododecanoic acid (PFDoA)	2.06	U	2.06	0.46
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.47	J	2.06	0.46
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.06	U	2.06	0.46
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.37		2.06	0.91
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.18	J B	2.06	0.29
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.06	U	2.06	0.46
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.06	U	2.06	0.46
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.64	J	2.06	0.31
754-91-6	Perfluorooctane Sulfonamide (FOSA)	2.06	U	2.06	0.46
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.06	U	2.06	0.62
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2.06	U	2.06	0.62
27619-97-2	6:2FTS	2.06	U	2.06	0.62
39108-34-4	8:2FTS	2.06	U	2.06	0.62

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-6 | Lab Sample ID: 200-43262-1

Matrix: Water | Lab File ID: PF051018A36.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 13:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 242.2(mL) | Date Analyzed: 05/11/2018 17:20

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	43		25-150
STL00992	13C4 PFBA	25		25-150
STL01893	13C5 PFPeA	41		25-150
STL00993	13C2 PFHxA	48		25-150
STL01892	13C4-PFHpA	60		25-150
STL00990	13C4 PFOA	56		25-150
STL00995	13C5 PFNA	61		25-150
STL00996	13C2 PFDA	55		25-150
STL00997	13C2 PFUnA	58		25-150
STL00998	13C2 PFDoA	41		25-150
STL02116	13C2-PFTeDA	37		25-150
STL02337	13C3-PFBS	59		25-150
STL00994	18O2 PFHxS	73		25-150
STL00991	13C4 PFOS	69		25-150
STL02118	d3-NMeFOSAA	46		25-150
STL02117	d5-NEtFOSAA	49		25-150
STL02279	M2-6:2FTS	94		25-150
STL02280	M2-8:2FTS	65		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d
Lims ID: 200-43262-A-1-A
Client ID: MW-6
Sample Type: Client
Inject. Date: 11-May-2018 17:20:43 ALS Bottle#: 0 Worklist Smp#: 36
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-036 62-1
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:17 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 17:56:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										M
216.9 > 171.5	2.318	2.328	-0.010	1.000	157364	12.6		25.3	66.3	M
1 Perfluorobutyric acid										M
212.9 > 168.9	2.318	2.334	-0.016	1.000	27709	9.34			23.2	M
4 Perfluoropentanoic acid										
262.9 > 218.8	2.739	2.751	-0.012	1.000	73241	8.77			118	
D 3 13C5-PFPeA										
267.7 > 222.6	2.739	2.753	-0.014	1.000	194334	20.4		40.9	904	
6 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.801	2.818	-0.017	1.000	7928	1.15			11.8	M
D 5 13C3-PFBS										
302.0 > 79.8	2.801	2.820	-0.019	1.000	274148	27.6		59.4	578	
D 7 13C2 PFHxA										
314.8 > 269.6	3.152	3.170	-0.018	1.000	332695	24.0		48.0	1147	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.152	3.172	-0.020	1.000	63075	9.64			210	
D 10 13C4-PFHpA										
366.9 > 321.8	3.670	3.696	-0.026	1.000	704209	30.0		60.0	957	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.670	3.698	-0.028	1.000	107191	7.28			219	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.726	3.739	-0.013	1.003	4013	0.5711			17.2	
D 13 18O2 PFHxS										
402.9 > 83.8	3.715	3.742	-0.027	1.000	380579	34.6		73.1	1386	
15 Sodium 1H,1H,2H,2H-perfluorooctane										M
426.6 > 406.6	4.278	4.319	-0.041	0.997	407	0.1947			3.1	M
D 14 M2-6:2FTS										
428.6 > 408.6	4.291	4.321	-0.030	1.000	96444	44.5		93.8	1055	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.330	4.363	-0.033	1.000	646398	28.2		56.4	994	
* 49 13C2-PFOA										
414.9 > 369.8	4.342	4.363	-0.021		1321105	50.0			2106	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.342	4.368	-0.026	1.003	95603	7.03			68.1	
D 21 13C5 PFNA										
467.8 > 422.8	5.099	5.127	-0.028	1.000	825173	30.3		60.6	911	
19 Perfluorononanoic acid										
462.8 > 418.8	5.113	5.136	-0.023	1.003	21505	1.42			76.4	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.113	5.152	-0.039	0.997	4967	0.7942			22.7	M
D 22 13C4 PFOS										
502.8 > 79.8	5.127	5.154	-0.027	1.000	326622	33.0		69.1	1047	
24 Sodium 1H,1H,2H,2H-perfluorodecane										M
526.8 > 506.5	5.843	5.880	-0.037	0.997	408	0.1407			2.0	M
D 23 M2-8:2FTS										
528.8 > 508.8	5.863	5.882	-0.019	1.000	180931	31.2		65.1	1134	
D 25 13C2 PFDA										
514.9 > 469.5	5.882	5.910	-0.028	1.000	912187	27.7		55.3	2599	
26 Perfluorodecanoic acid										M
512.9 > 468.5	5.902	5.914	-0.012	1.003	1761	0.3474			6.0	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.223	6.271	-0.048	1.000	159710	22.8		45.6	818	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.598	6.640	-0.042	1.000	147866	24.3		48.6	965	
D 33 13C2 PFUnA										
564.8 > 519.8	6.634	6.676	-0.042	1.000	889923	28.8		57.5	2492	
32 Perfluoroundecanoic acid										M
562.8 > 518.6	6.670	6.676	-0.006	1.005	766	0.0253			3.5	M
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	379575	21.4		42.7	1719	
D 36 13C2 PFDoA										
614.8 > 569.6	7.294	7.358	-0.064	1.000	667735	20.5		41.0	2085	
40 Perfluorotridecanoic acid										M
662.8 > 618.6	8.004	7.974	0.030	1.097	336	0.2274			3.5	M
D 43 13C2-PFTeDA										
714.8 > 669.6	8.469	8.514	-0.045	1.000	548919	18.3		36.6	679	
44 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.453	8.519	-0.066	0.998	593	0.0135			3.2	M
712.8 > 168.8	8.519	8.519	0.0	0.000	0		0.00(0.00-0.00)			
712.8 > 218.8	8.519	8.519	0.0	0.000	0		0.00(0.00-0.00)			

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 14-May-2018 12:12:36 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d

Injection Date: 11-May-2018 17:20:43 Instrument ID: LC410

Lims ID: 200-43262-A-1-A Lab Sample ID: 200-43262-1

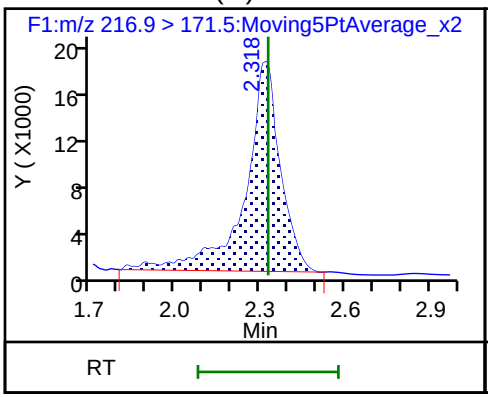
Client ID: MW-6

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 36

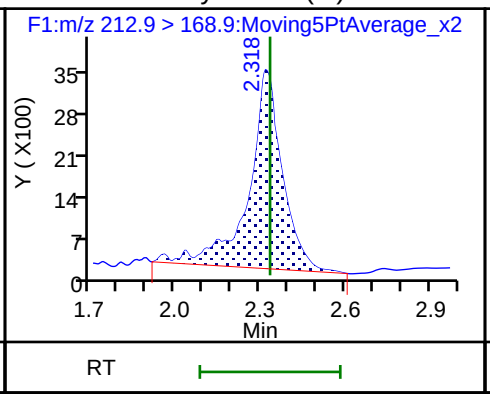
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

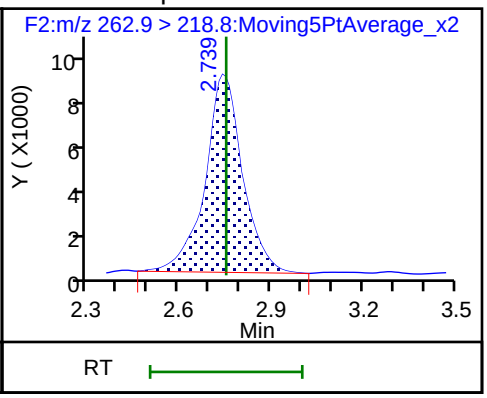
D 2 13C4 PFBA (M)



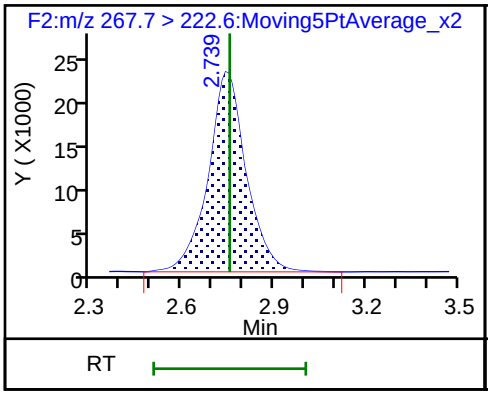
1 Perfluorobutyric acid (M)



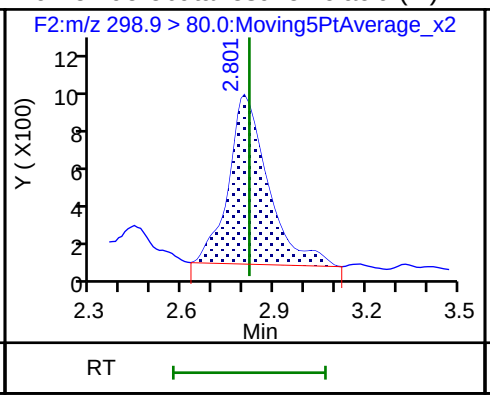
4 Perfluoropentanoic acid



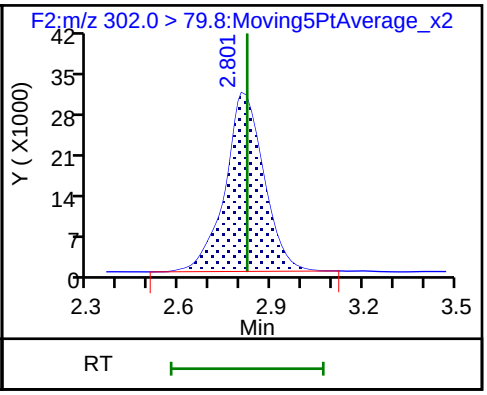
D 3 13C5-PFPeA



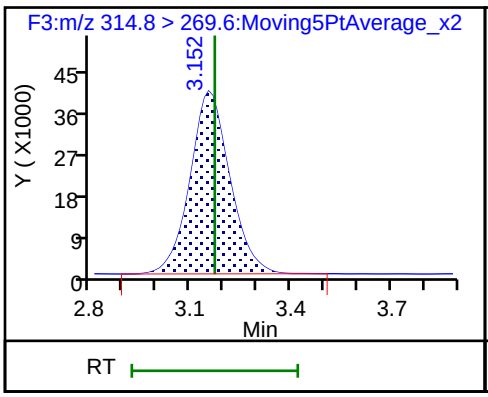
6 Perfluorobutanesulfonic acid (M)



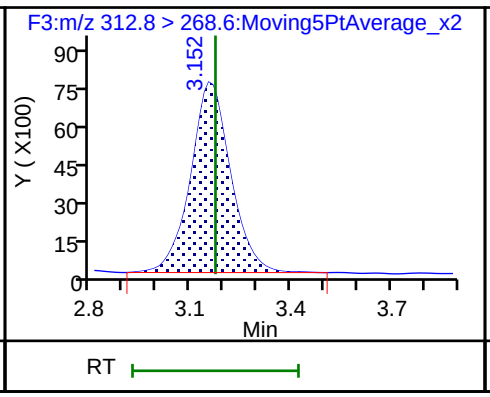
D 5 13C3-PFBS



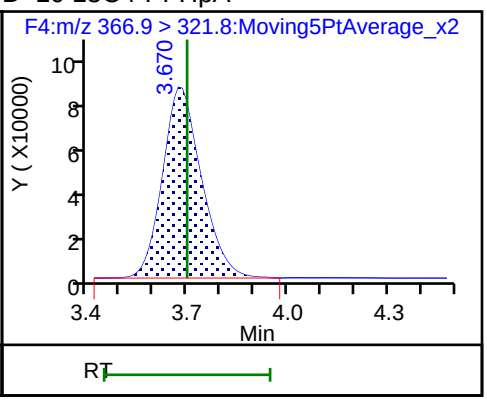
D 7 13C2 PFHxA



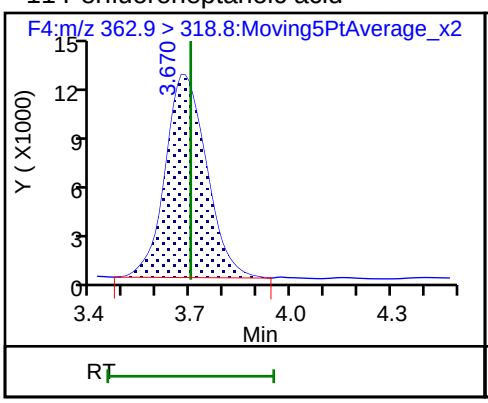
8 Perfluorohexanoic acid



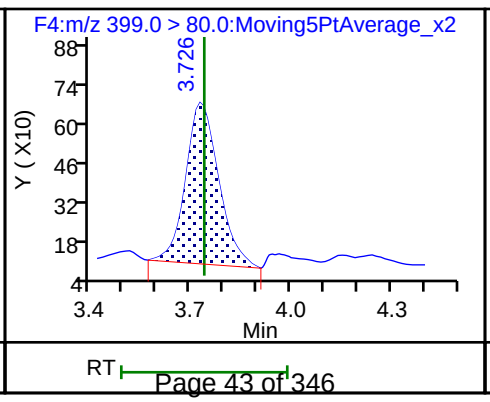
D 10 13C4-PFHpA



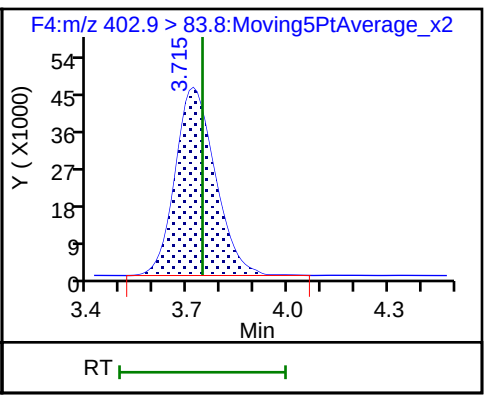
11 Perfluoroheptanoic acid



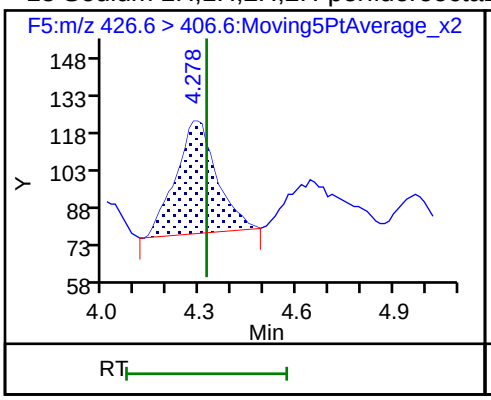
12 Perfluorohexanesulfonic acid



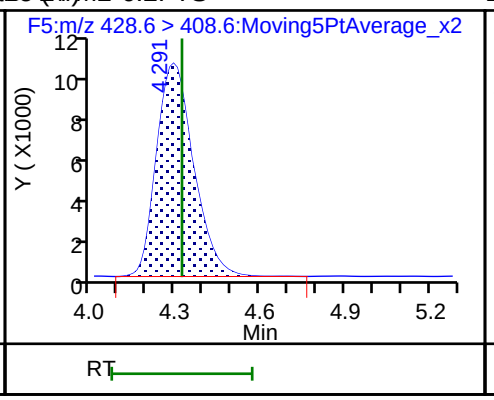
D 13 18O2 PFHxS



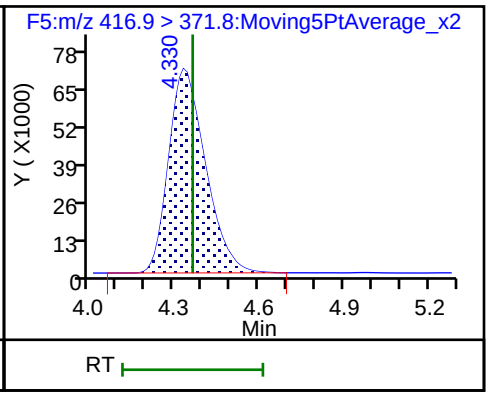
15 Sodium 1H,1H,2H,2H-perfluorooctane (M)



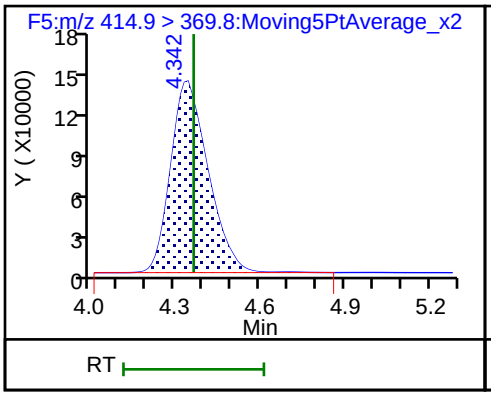
D 14 M2-6:2FTS



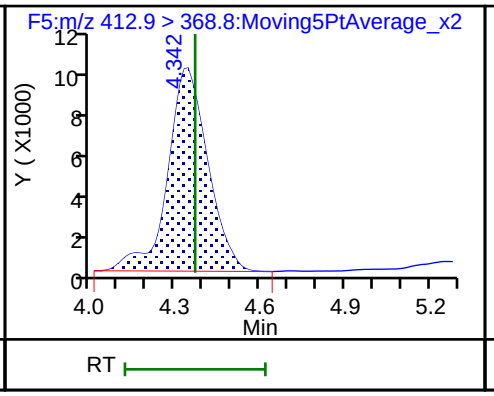
D 17 13C4 PFOA



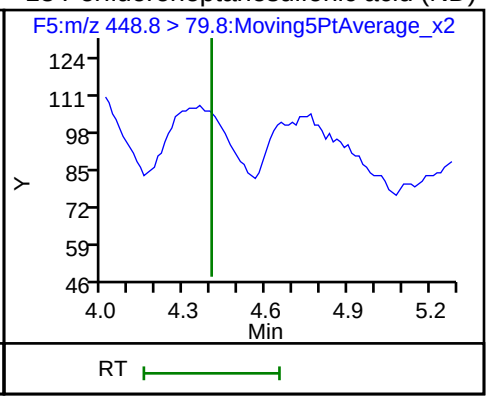
* 49 13C2-PFOA



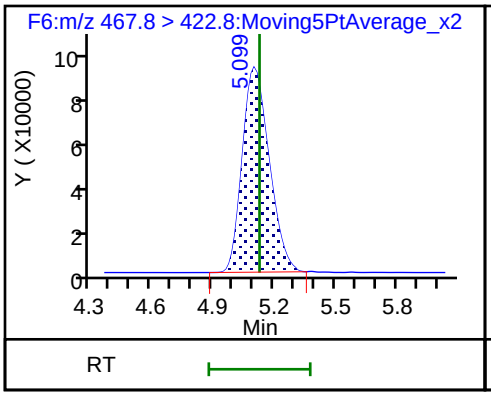
16 Perfluorooctanoic acid



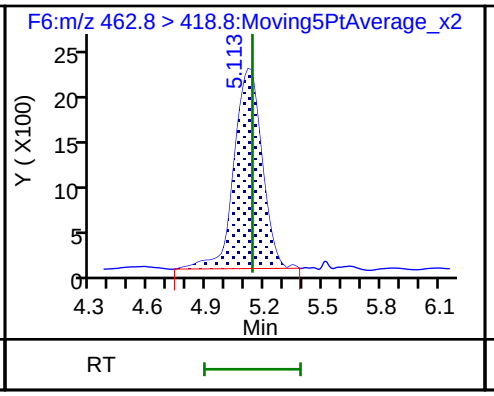
18 Perfluoroheptanesulfonic acid (ND)



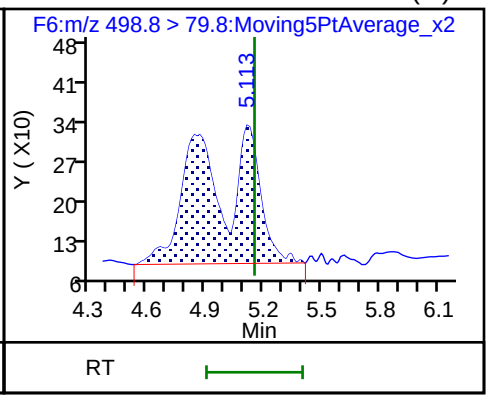
D 21 13C5 PFNA



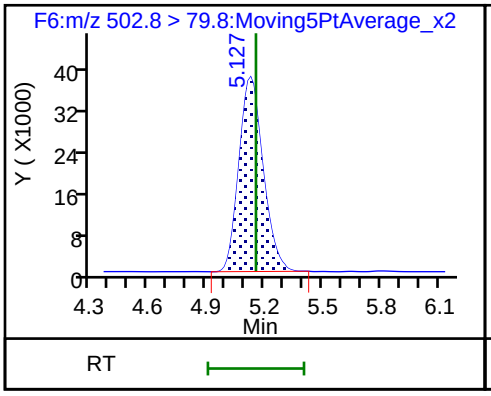
19 Perfluorononanoic acid



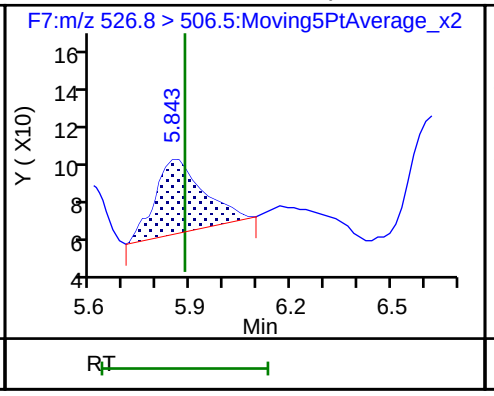
20 Perfluorooctane sulfonic acid (M)



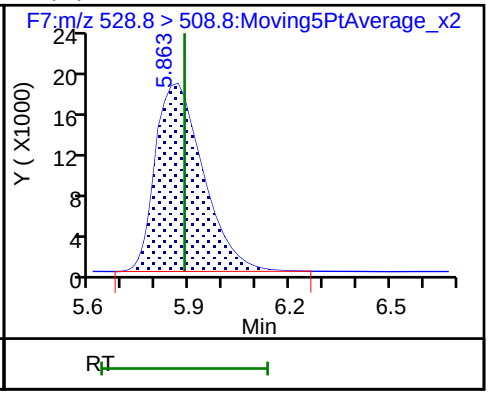
D 22 13C4 PFOS



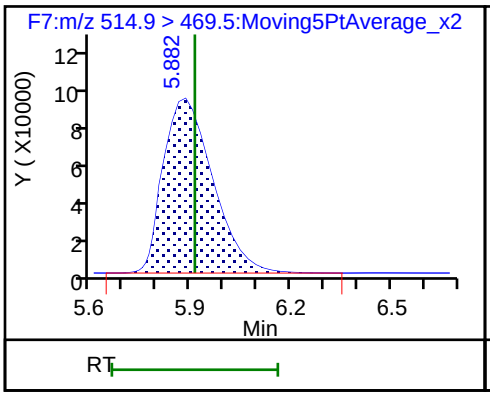
24 Sodium 1H,1H,2H,2H-perfluorodecane (M)



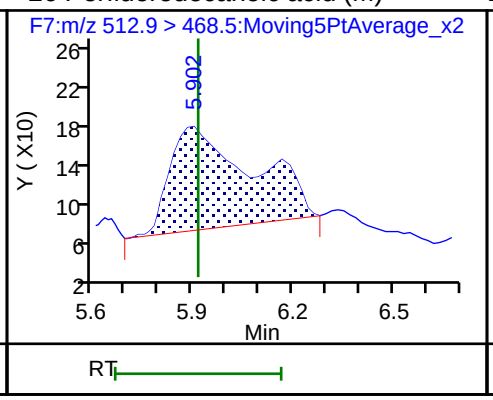
D 23 M2-8:2FTS



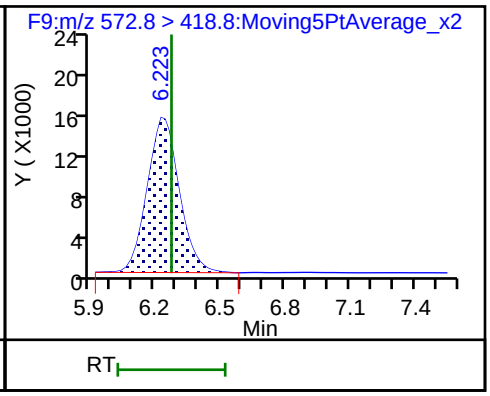
D 25 13C2 PFDA



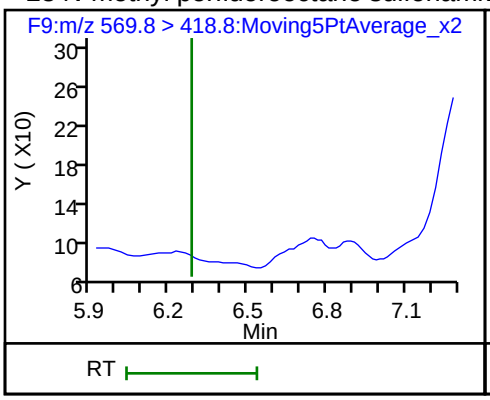
26 Perfluorodecanoic acid (M)



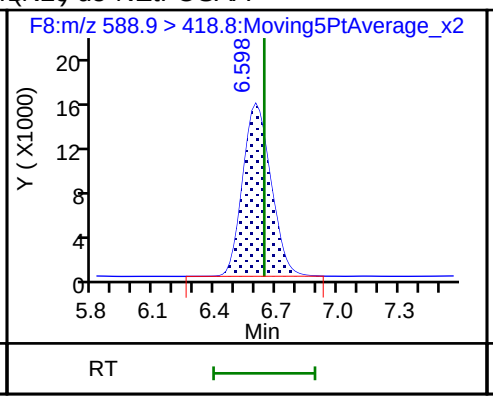
D 27 d3-NMeFOSAA



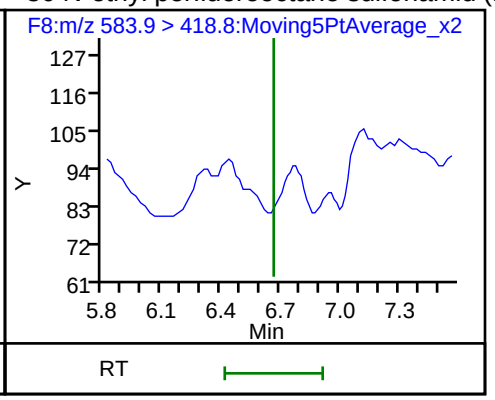
28 N-methyl perfluorooctane sulfonamid (ND)



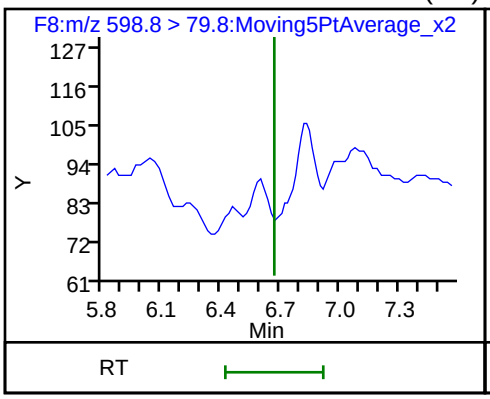
D 29 d5-NEtFOSAA



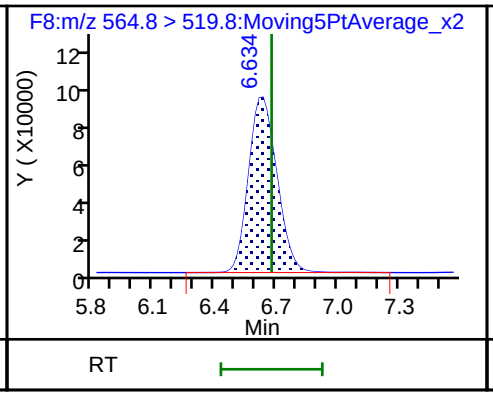
30 N-ethyl perfluorooctane sulfonamid (ND)



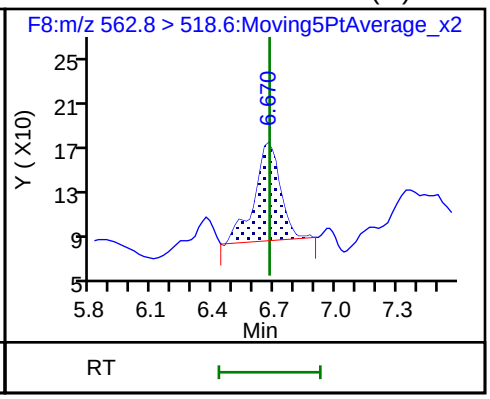
31 Perfluorodecane Sulfonic acid (ND)



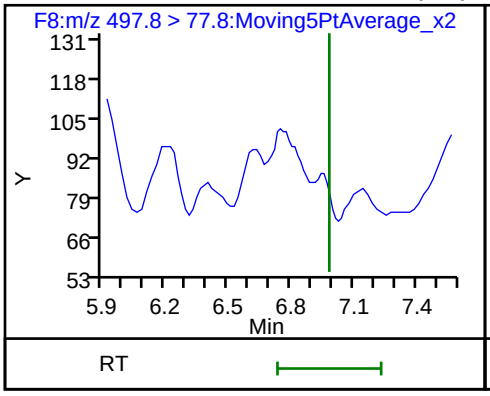
D 33 13C2 PFUnA



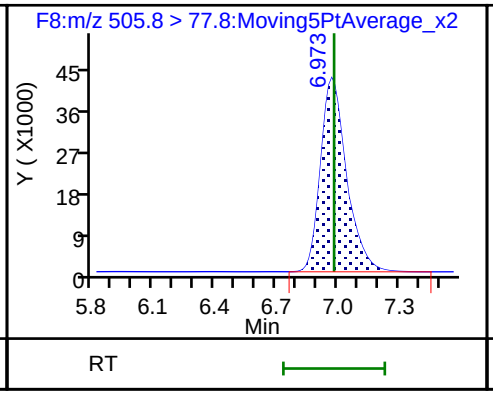
32 Perfluoroundecanoic acid (M)



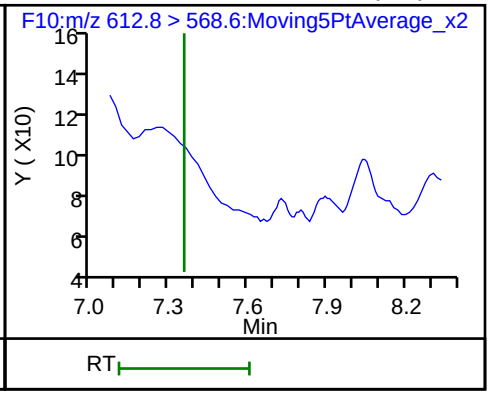
34 Perfluorooctane Sulfonamide (ND)



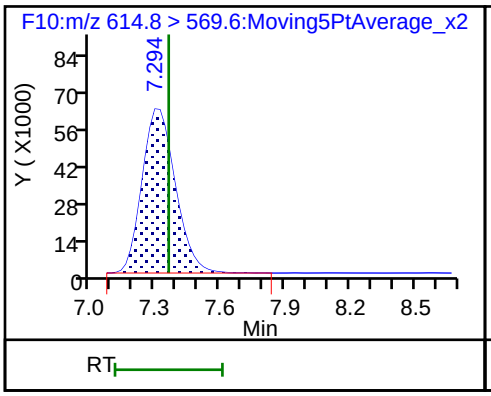
D 35 13C8 FOSA



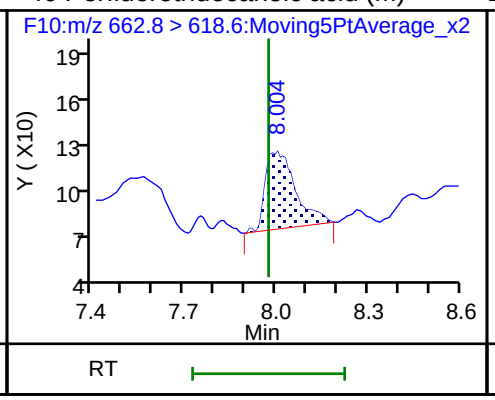
37 Perfluorododecanoic acid (ND)



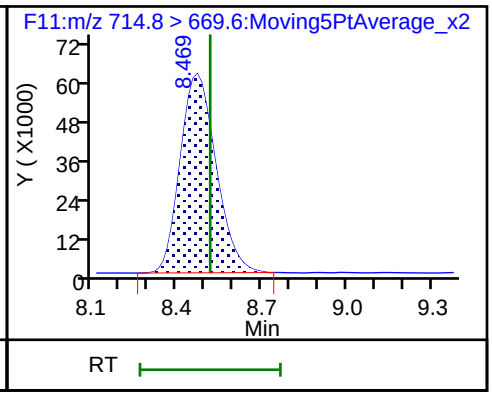
D 36 13C2 PFDoA



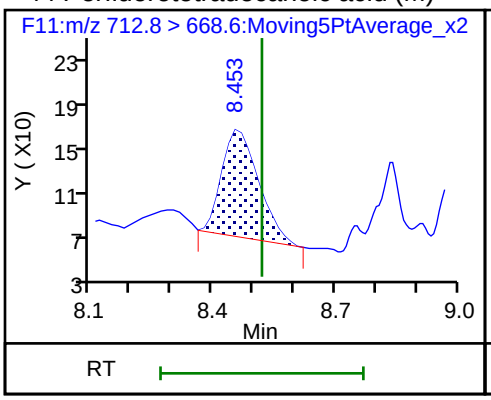
40 Perfluorotridecanoic acid (M)



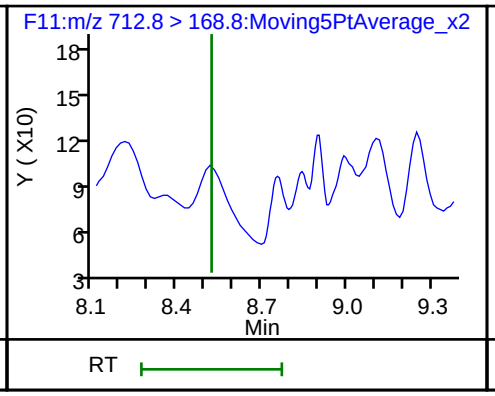
D 43 13C2-PFTeDA



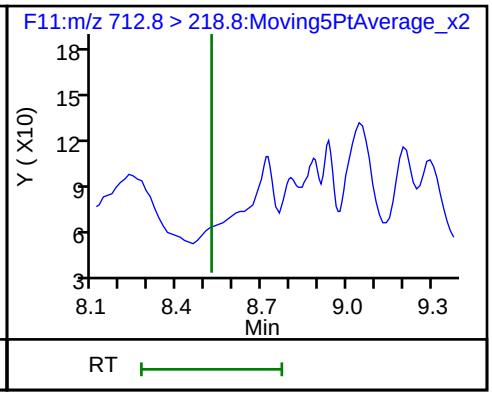
44 Perfluorotetradecanoic acid (M)



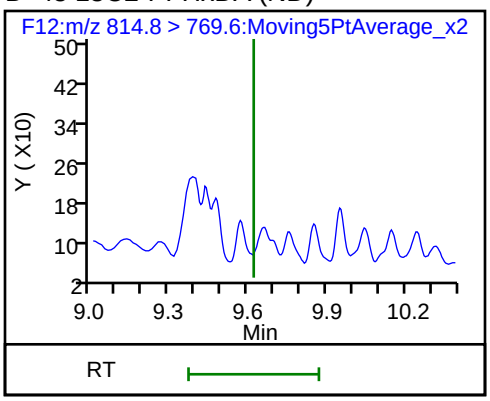
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



D 45 13C2-PFHxDA (ND)



Manual Integration/User Assign Peak Report

TestAmerica Burlington

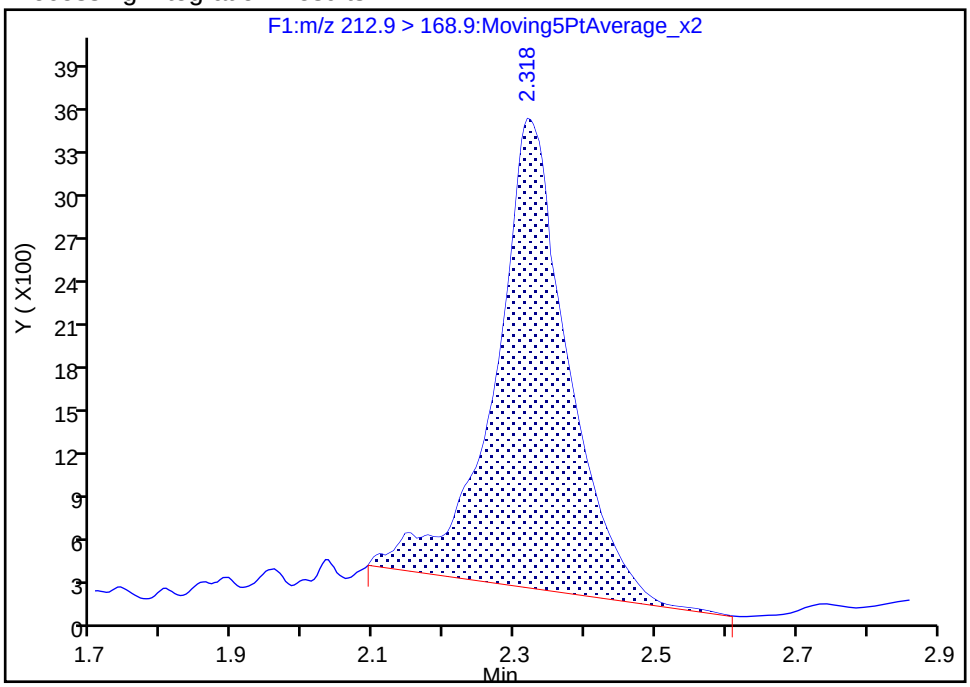
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F1:MRM		

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

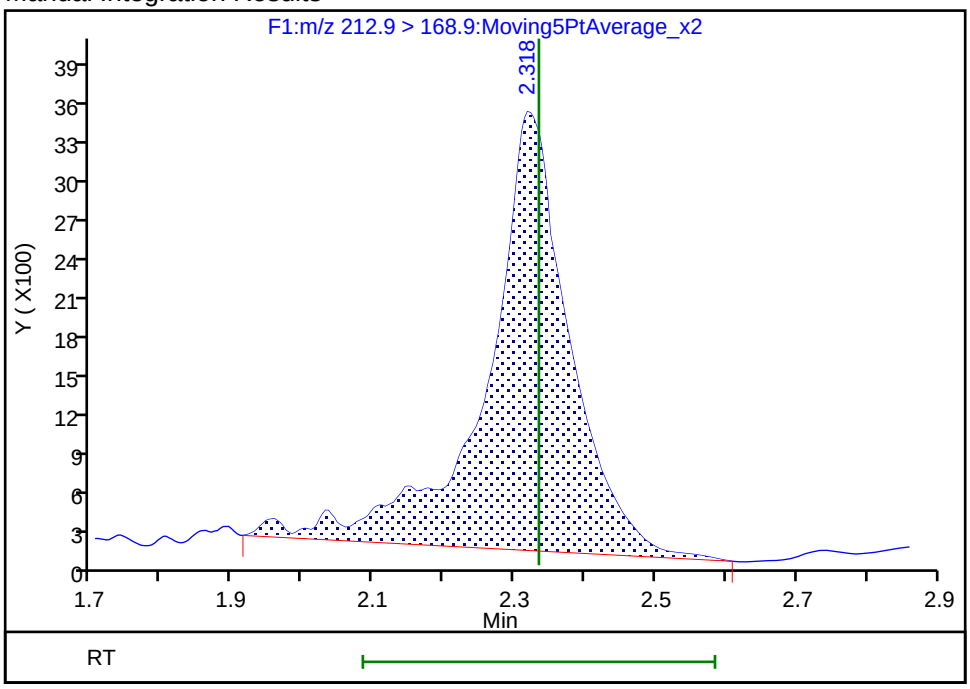
Processing Integration Results

RT: 2.32
Area: 23517
Amount: 7.895773
Amount Units: ng/ml



Manual Integration Results

RT: 2.32
Area: 27709
Amount: 9.343311
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:55:09

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

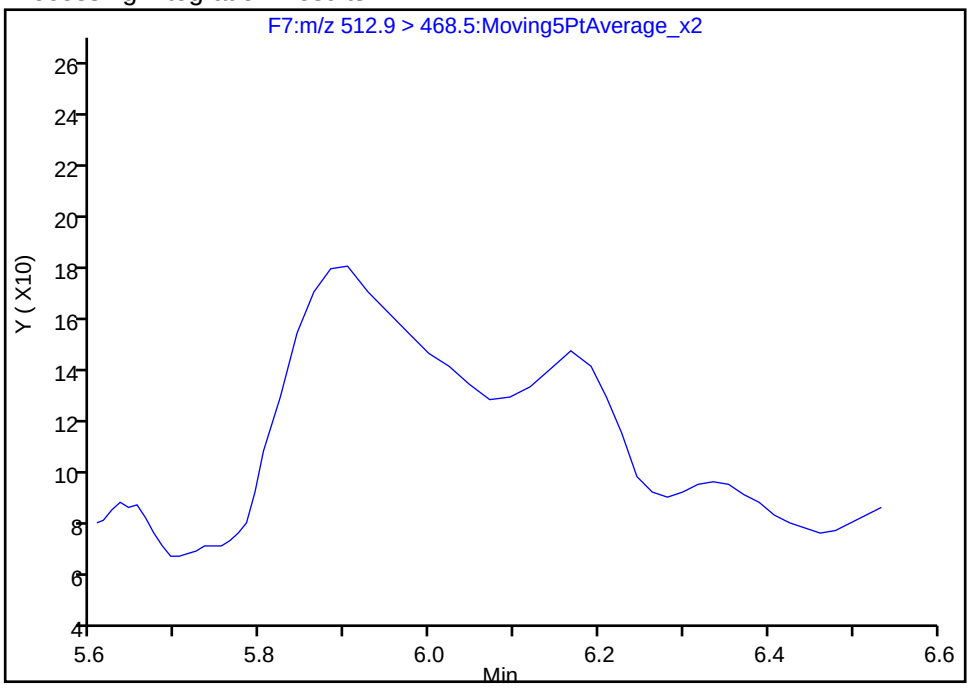
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F7:MRM		

26 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

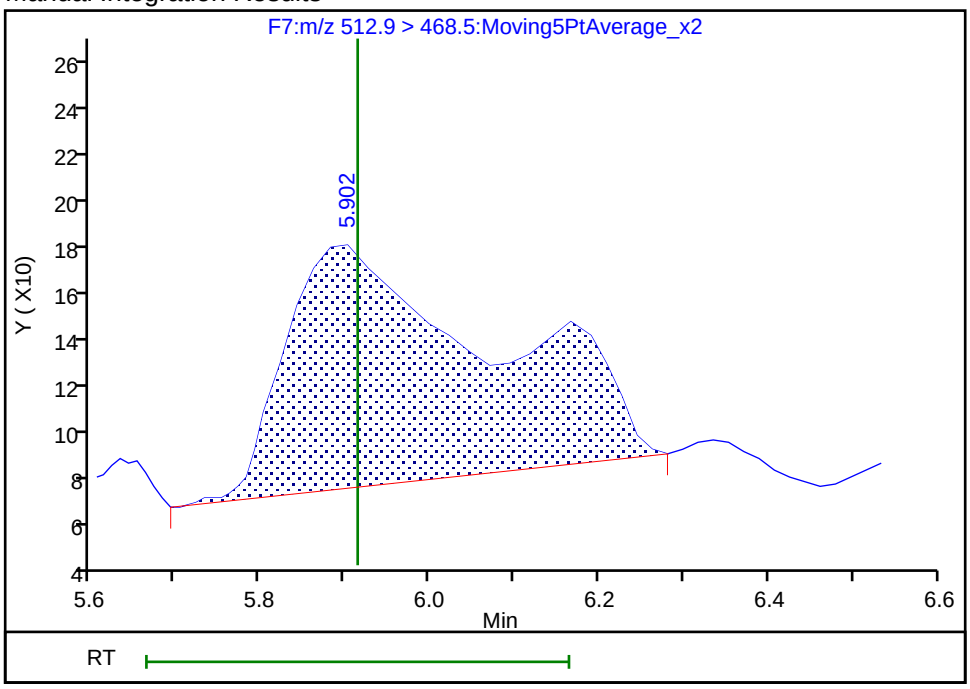
Not Detected
Expected RT: 5.91

Processing Integration Results



Manual Integration Results

RT: 5.90
Area: 1761
Amount: 0.347369
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 11:58:12
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

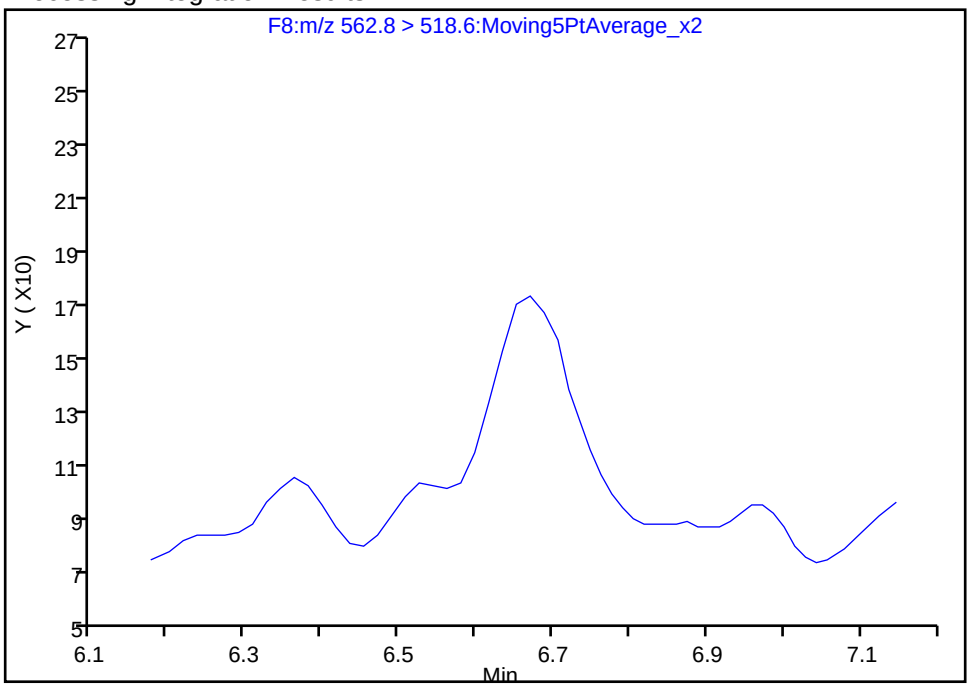
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F8:MRM		

32 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

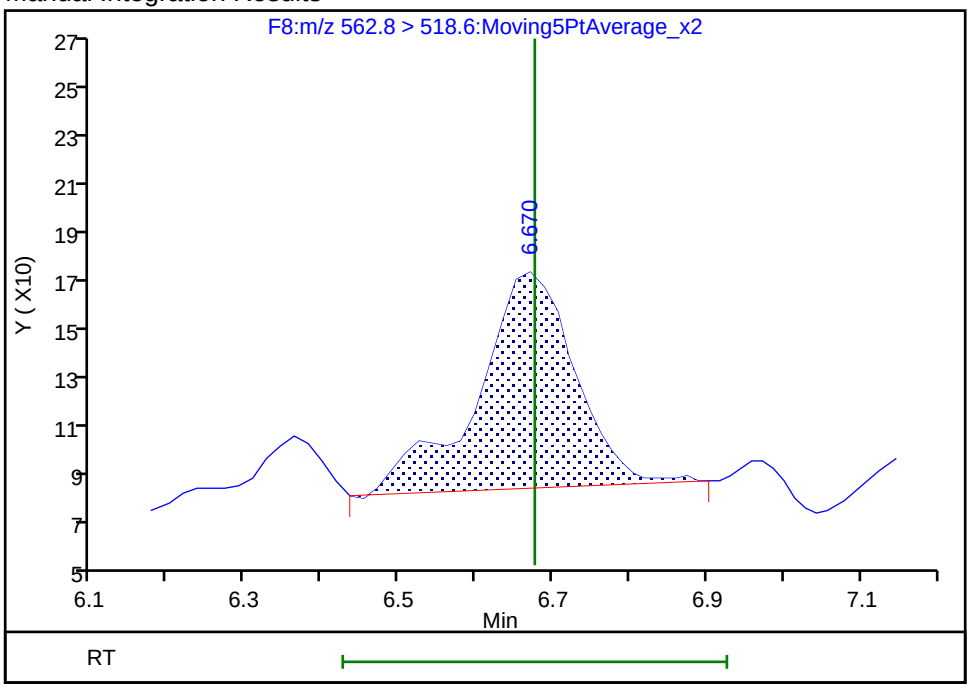
Not Detected
Expected RT: 6.68

Processing Integration Results



Manual Integration Results

RT: 6.67
Area: 766
Amount: 0.025304
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 11:58:21
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

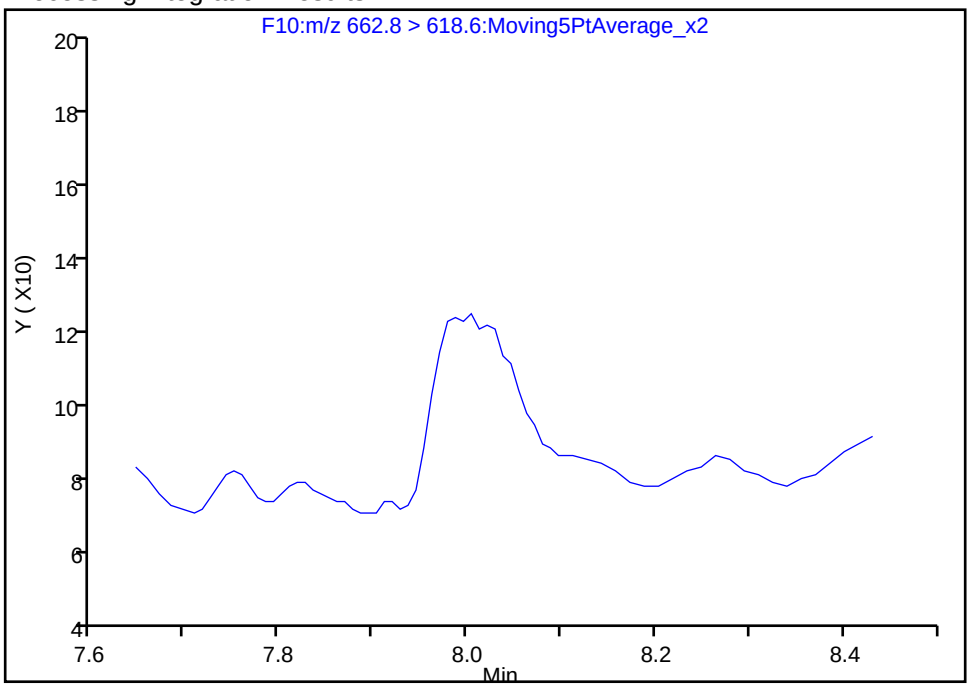
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F10:MRM		

40 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

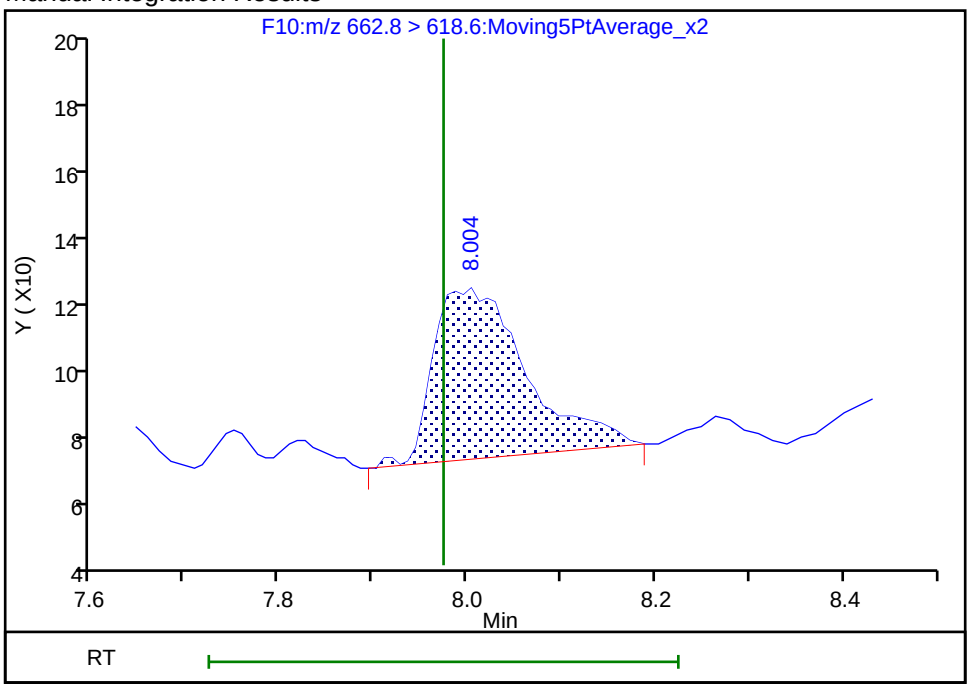
Not Detected
Expected RT: 7.97

Processing Integration Results



Manual Integration Results

RT: 8.00
Area: 336
Amount: 0.227404
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:56:11
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Burlington

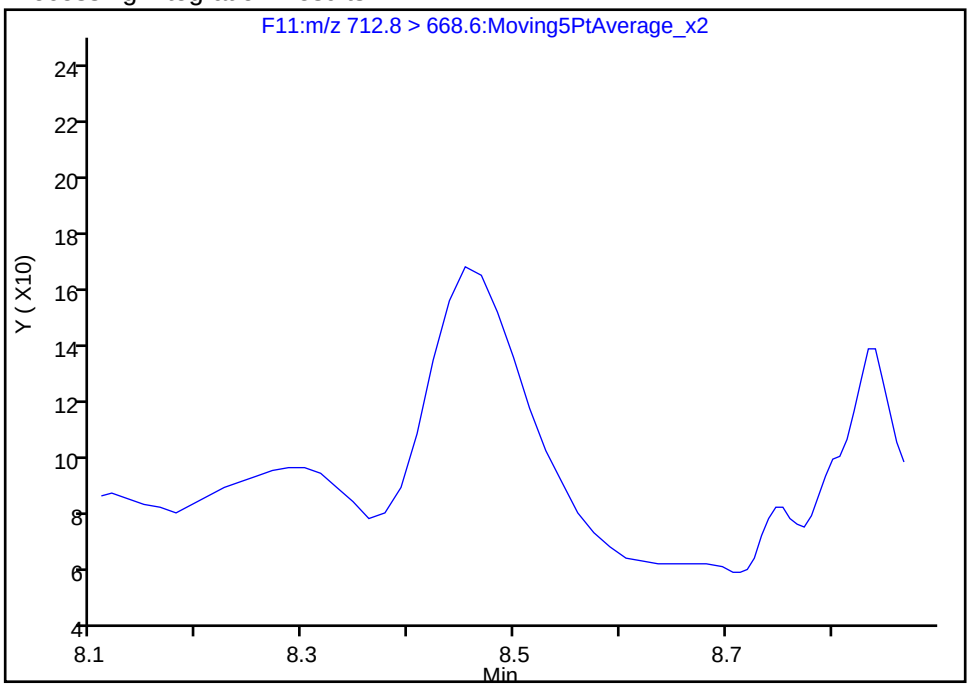
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F11:MRM		

44 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

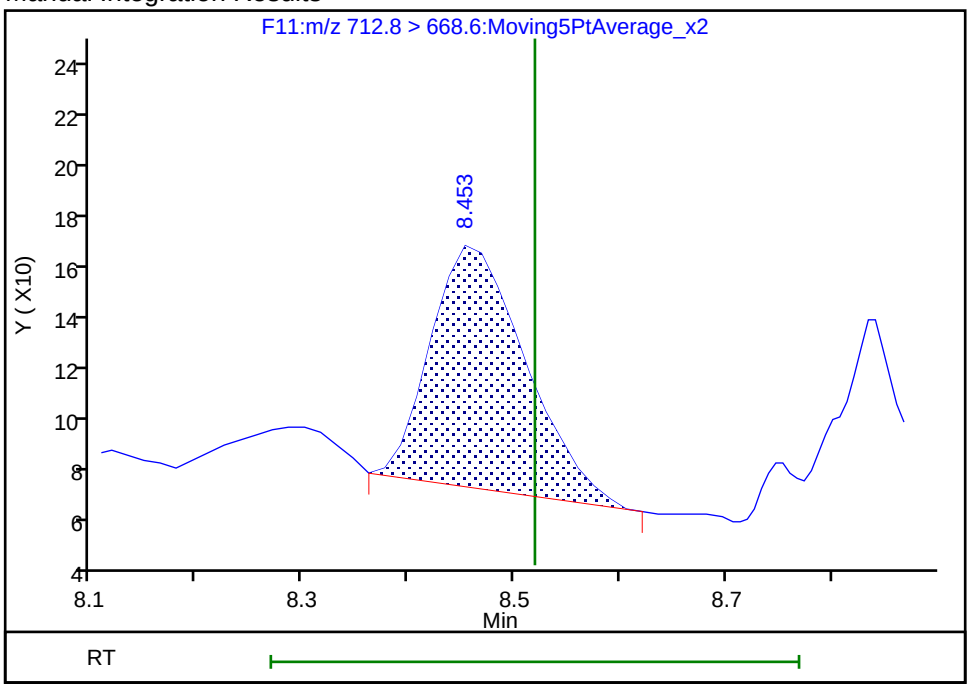
Not Detected
Expected RT: 8.52

Processing Integration Results



Manual Integration Results

RT: 8.45
Area: 593
Amount: 0.013469
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:56:16
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

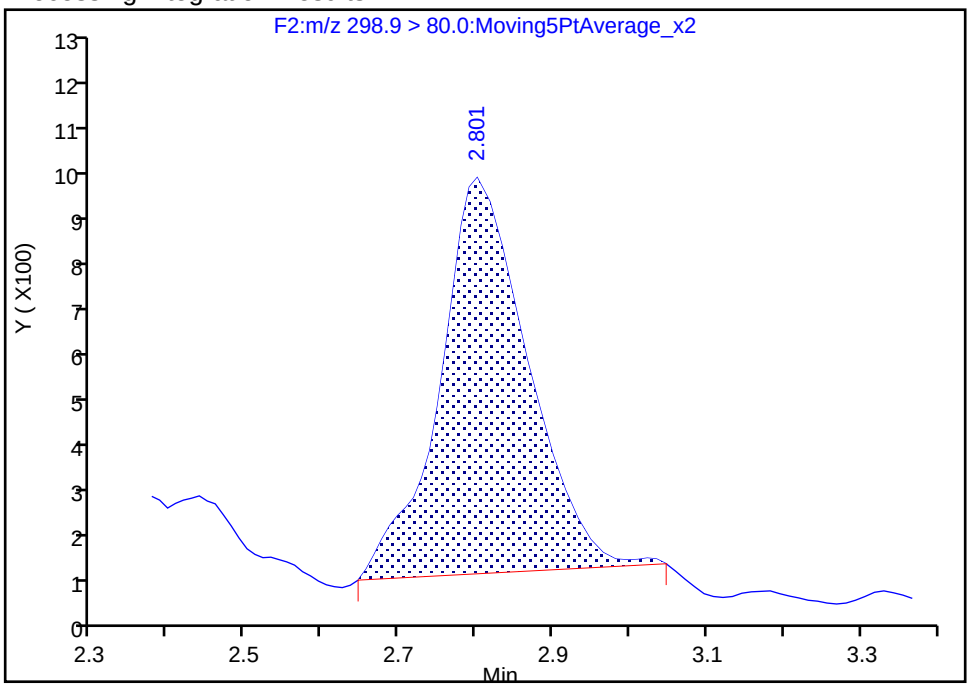
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F2:MRM		

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

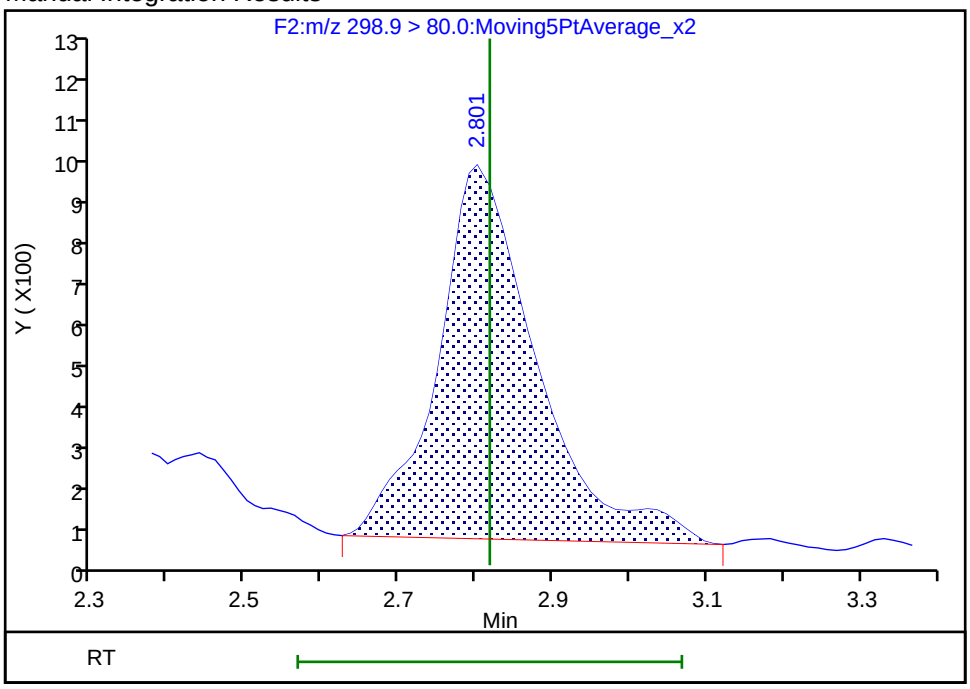
Processing Integration Results

RT: 2.80
Area: 6773
Amount: 1.012440
Amount Units: ng/ml



Manual Integration Results

RT: 2.80
Area: 7928
Amount: 1.147400
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:55:15

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

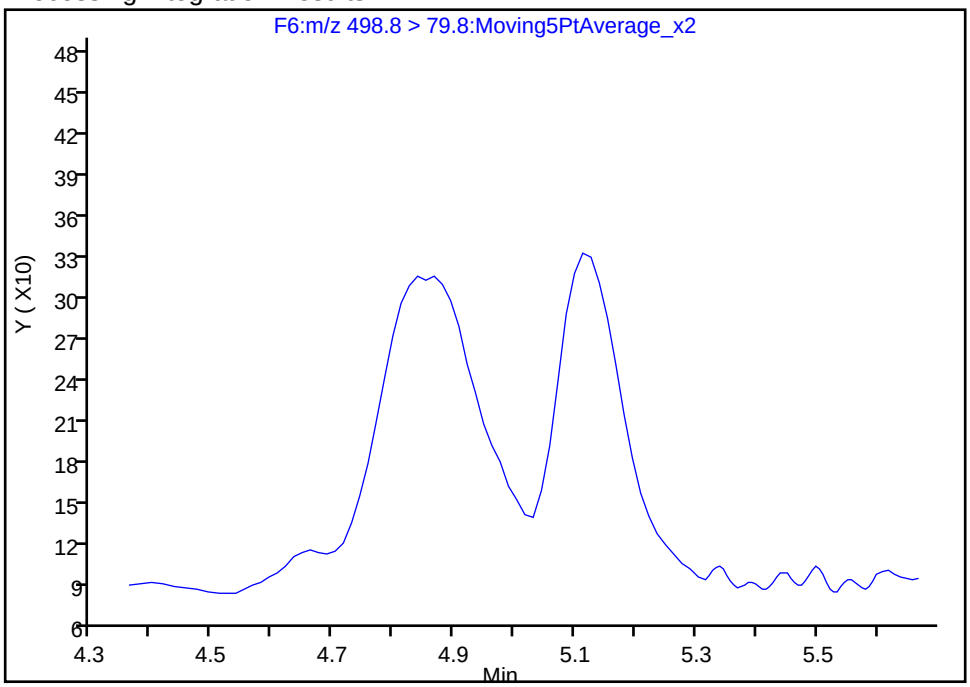
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F6:MRM		

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

Signal: 1

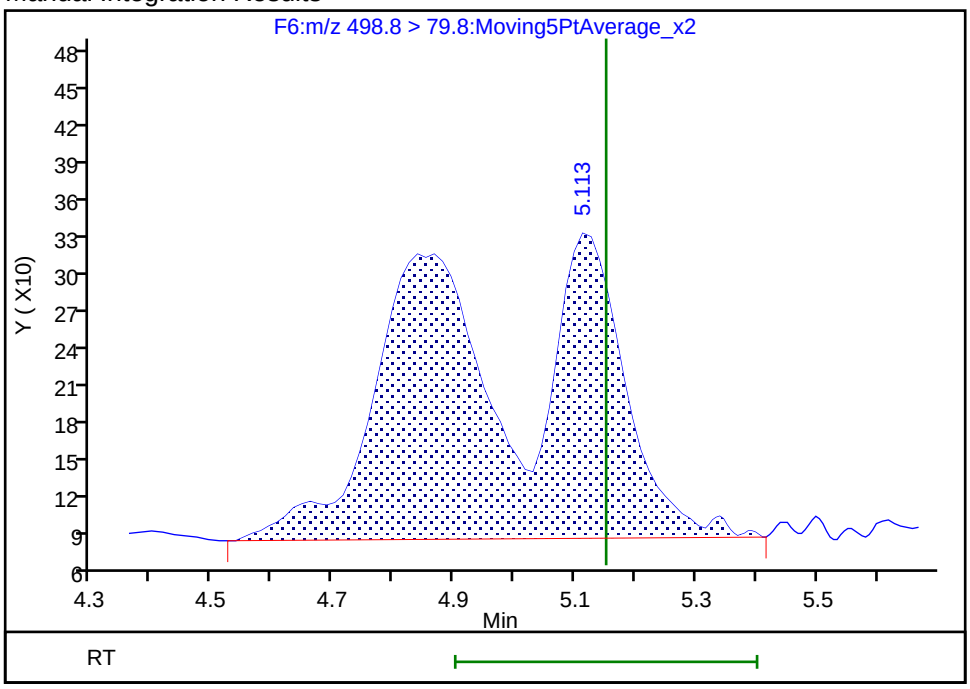
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 5.11
Area: 4967
Amount: 0.794203
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:55:43
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Burlington

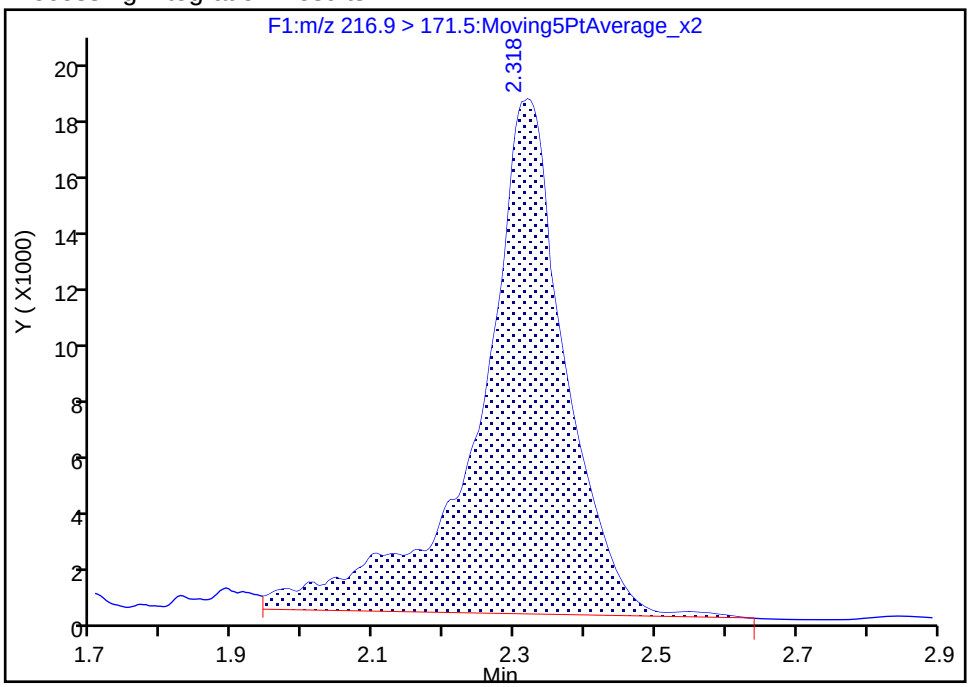
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F1:MRM		

D 2 13C4 PFBA, CAS: STL00992

Signal: 1

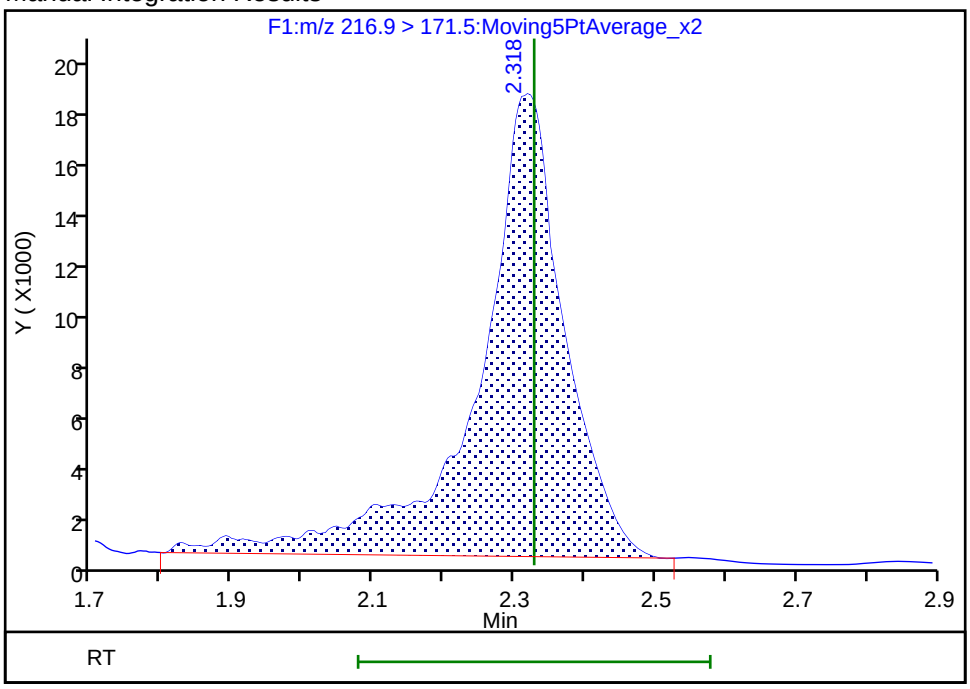
Processing Integration Results

RT: 2.32
Area: 158252
Amount: 12.702253
Amount Units: ng/ml



Manual Integration Results

RT: 2.32
Area: 157364
Amount: 12.630977
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:55:04
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

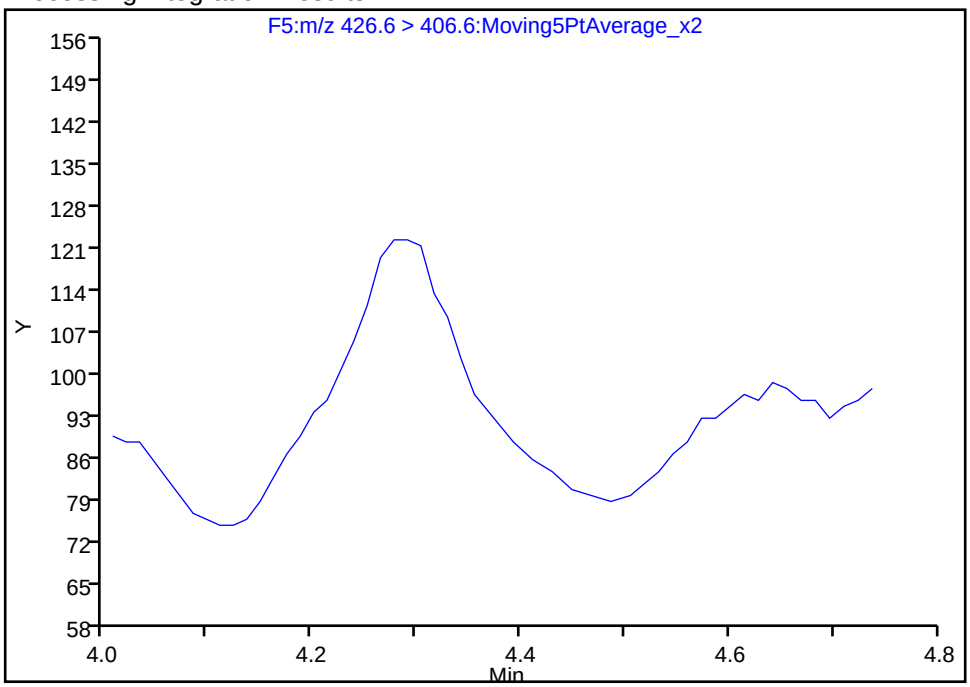
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F5:MRM		

15 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate, CAS: 27619-97-2

Signal: 1

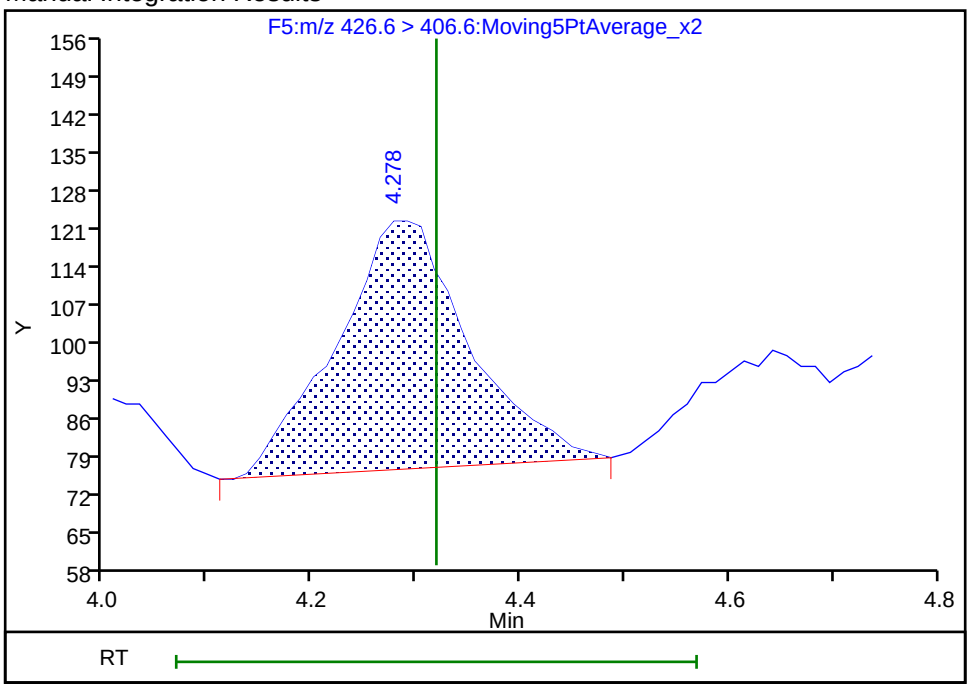
Not Detected
Expected RT: 4.32

Processing Integration Results



Manual Integration Results

RT: 4.28
Area: 407
Amount: 0.194683
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:55:29
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

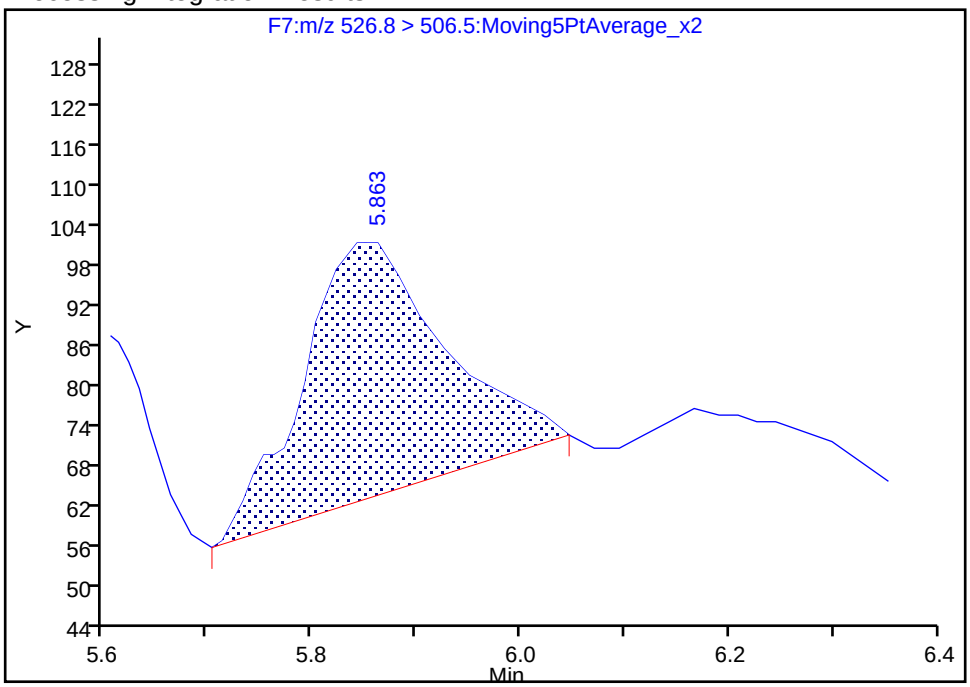
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A36.d				
Injection Date:	11-May-2018 17:20:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-1-A	Lab Sample ID:	200-43262-1		
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F7:MRM		

24 Sodium 1H,1H,2H,2H-perfluorodecane sulfonate, CAS: 39108-34-4

Signal: 1

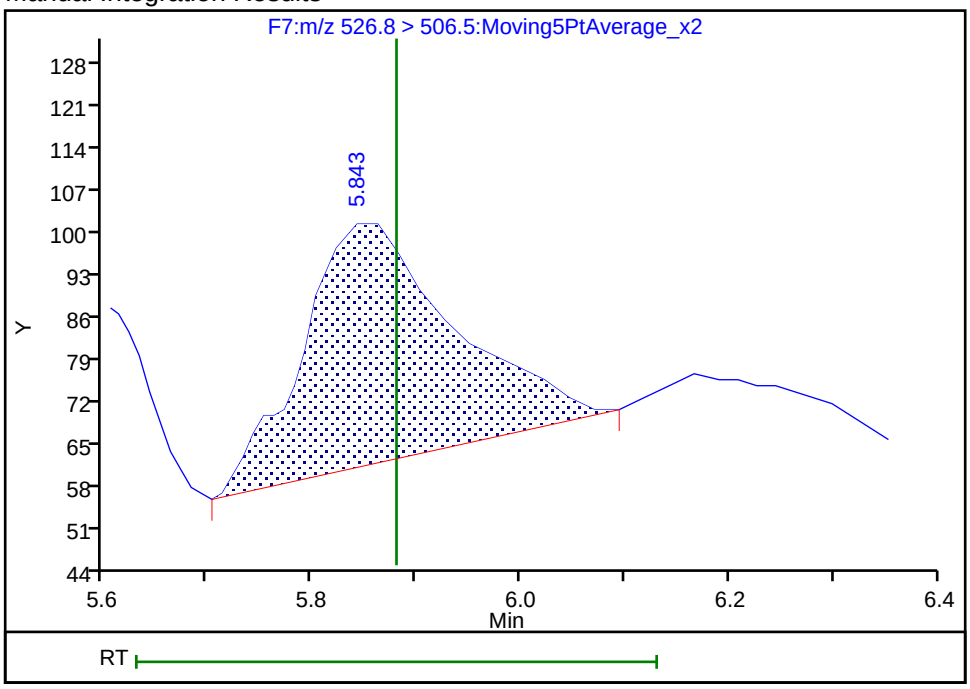
Processing Integration Results

RT: 5.86
Area: 364
Amount: 0.125511
Amount Units: ng/ml



Manual Integration Results

RT: 5.84
Area: 408
Amount: 0.140683
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 11:57:40

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-1 | Lab Sample ID: 200-43262-2

Matrix: Water | Lab File ID: PF051018A60.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 15:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 261.1(mL) | Date Analyzed: 05/11/2018 23:48

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 5

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	917		9.57	2.13
2706-90-3	Perfluoropentanoic acid (PFPeA)	9.57	U	9.57	2.13
307-24-4	Perfluorohexanoic acid (PFHxA)	9.57	U	9.57	2.13
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.77	J	9.57	1.39
335-67-1	Perfluorooctanoic acid (PFOA)	24.3		9.57	2.25
375-95-1	Perfluorononanoic acid (PFNA)	1.68	J	9.57	1.24
335-76-2	Perfluorodecanoic acid (PFDA)	3.00	J B	9.57	2.13
2058-94-8	Perfluoroundecanoic acid (PFUnA)	9.57	U	9.57	2.13
307-55-1	Perfluorododecanoic acid (PFDoA)	9.57	U	9.57	2.13
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	2.47	J	9.57	2.13
376-06-7	Perfluorotetradecanoic acid (PFTeA)	9.57	U	9.57	2.13
375-73-5	Perfluorobutanesulfonic acid (PFBS)	49.3		9.57	4.21
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	7.72	J B	9.57	1.34
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	3.91	J	9.57	2.13
335-77-3	Perfluorodecanesulfonic acid (PFDS)	9.57	U	9.57	2.13
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	6.21	J	9.57	1.44
754-91-6	Perfluorooctane Sulfonamide (FOSA)	9.57	U	9.57	2.13
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	9.57	U	9.57	2.87
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	9.57	U	9.57	2.87
27619-97-2	6:2FTS	9.57	U	9.57	2.87
39108-34-4	8:2FTS	9.57	U	9.57	2.87

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-1 | Lab Sample ID: 200-43262-2

Matrix: Water | Lab File ID: PF051018A60.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 15:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 261.1(mL) | Date Analyzed: 05/11/2018 23:48

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 5

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	59		25-150
STL00992	13C4 PFBA	18		25-150
STL01893	13C5 PFPeA	25		25-150
STL00993	13C2 PFHxA	42		25-150
STL01892	13C4-PFHpA	50		25-150
STL00990	13C4 PFOA	67		25-150
STL00995	13C5 PFNA	92		25-150
STL00996	13C2 PFDA	99		25-150
STL00997	13C2 PFUnA	122		25-150
STL00998	13C2 PFDoA	95		25-150
STL02116	13C2-PFTeDA	91		25-150
STL02337	13C3-PFBS	60		25-150
STL00994	18O2 PFHxS	68		25-150
STL00991	13C4 PFOS	70		25-150
STL02118	d3-NMeFOSAA	90		25-150
STL02117	d5-NEtFOSAA	114		25-150
STL02279	M2-6:2FTS	200		25-150
STL02280	M2-8:2FTS	233		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d
Lims ID: 200-43262-A-2-A
Client ID: MW-1
Sample Type: Client
Inject. Date: 11-May-2018 23:48:27 ALS Bottle#: 0 Worklist Smp#: 60
Injection Vol: 20.0 ul Dil. Factor: 5.0000
Sample Info: 200-0030469-060 62-2 1
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 13:08:06 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: murrayjw Date: 14-May-2018 09:17:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										M
216.9 > 171.5	2.270	2.328	-0.058	1.000	12558	1.79		17.9	51.5	M
1 Perfluorobutyric acid										
212.9 > 168.9	2.413	2.334	0.079	1.063	110947	95.8			17.8	
D 3 13C5-PFPeA										
267.7 > 222.6	2.708	2.753	-0.045	1.000	13533	2.52		25.2	5.0	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.781	2.818	-0.037	1.011	23870	5.15			3.5	
D 5 13C3-PFBS										
302.0 > 79.8	2.750	2.820	-0.070	1.000	31042	5.55		59.7	27.9	
D 7 13C2 PFHxA										
314.8 > 269.6	3.078	3.170	-0.092	1.000	32872	4.20		42.0	59.2	
D 10 13C4-PFHpA										
366.9 > 321.8	3.581	3.696	-0.115	1.000	66745	5.04		50.4	236	
11 Perfluoroheptanoic acid										M
362.9 > 318.8	3.570	3.698	-0.128	0.997	3805	0.4983			3.8	M
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.648	3.739	-0.091	1.009	3410	0.8068			4.9	M
D 13 18O2 PFHxS										
402.9 > 83.8	3.614	3.742	-0.128	1.000	40006	6.44		68.1	332	
15 Sodium 1H,1H,2H,2H-perfluorooctane										M
426.6 > 406.6	4.265	4.319	-0.054	1.015	237	0.0942			3.5	M
D 14 M2-6:2FTS										
428.6 > 408.6	4.201	4.321	-0.120	1.000	23203	19.0		200	112	
D 17 13C4 PFOA										
416.9 > 371.8	4.252	4.363	-0.111	1.000	86178	6.67		66.7	385	
* 49 13C2-PFOA										
414.9 > 369.8	4.252	4.363	-0.111		149059	10.0			519	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.252	4.368	-0.116	1.000	23757	2.54			12.9	M
18 Perfluoroheptanesulfonic acid										M
448.8 > 79.8	4.355	4.399	-0.044	0.863	841	0.4082			2.3	M
D 21 13C5 PFNA										
467.8 > 422.8	5.017	5.127	-0.110	1.000	141525	9.22		92.2	489	
19 Perfluorononanoic acid										
462.8 > 418.8	5.003	5.136	-0.133	0.997	2038	0.1752			5.0	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	4.771	5.152	-0.381	0.946	2211	0.6489			4.6	M
D 22 13C4 PFOS										
502.8 > 79.8	5.044	5.154	-0.110	1.000	37393	6.70		70.1	125	
24 Sodium 1H,1H,2H,2H-perfluorodecane										M
526.8 > 506.5	5.673	5.880	-0.207	0.981	466	0.0794			1.9	M
D 23 M2-8:2FTS										
528.8 > 508.8	5.783	5.882	-0.099	1.000	73261	22.4		233	444	
D 25 13C2 PFDA										
514.9 > 469.5	5.803	5.910	-0.107	1.000	184504	9.92		99.2	1016	
26 Perfluorodecanoic acid										M
512.9 > 468.5	5.763	5.914	-0.151	0.993	1166	0.3130			4.4	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.180	6.271	-0.091	1.000	35707	9.03		90.3	133	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.562	6.640	-0.078	1.000	39331	11.4		114	242	
D 33 13C2 PFUnA										
564.8 > 519.8	6.598	6.676	-0.078	1.000	213650	12.2		122	777	
32 Perfluoroundecanoic acid										M
562.8 > 518.6	6.580	6.676	-0.096	0.997	789	0.0190			2.6	M
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	59320	5.92		59.2	430	
37 Perfluorododecanoic acid										M
612.8 > 568.6	7.249	7.354	-0.105	0.997	1348	0.2099			4.6	M
D 36 13C2 PFDoA										
614.8 > 569.6	7.271	7.358	-0.087	1.000	173589	9.46		94.6	420	
40 Perfluorotridecanoic acid										M
662.8 > 618.6	7.869	7.974	-0.105	1.082	919	0.2580			3.9	M
D 43 13C2-PFTeDA										
714.8 > 669.6	8.438	8.514	-0.076	1.000	153833	9.08		90.8	358	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 14-May-2018 13:08:09 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d

Injection Date: 11-May-2018 23:48:27 Instrument ID: LC410

Lims ID: 200-43262-A-2-A Lab Sample ID: 200-43262-2

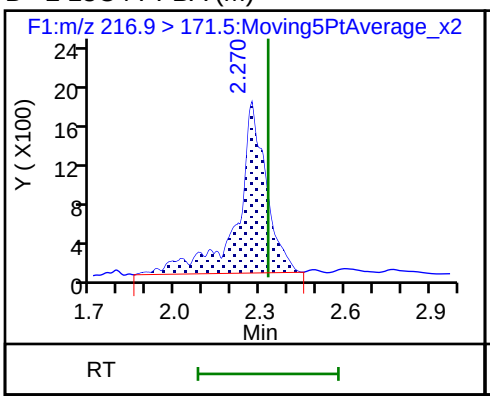
Client ID: MW-1

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 60

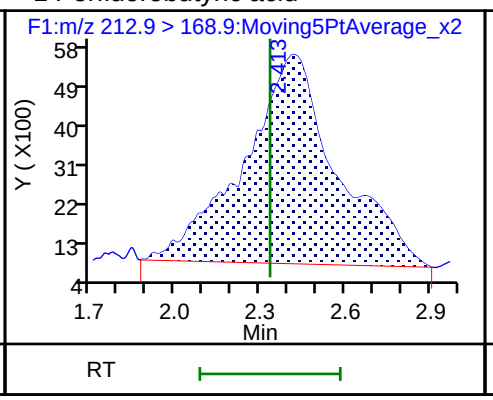
Injection Vol: 20.0 ul Dil. Factor: 5.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

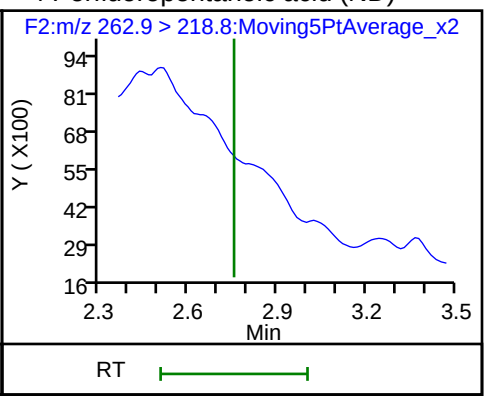
D 2 13C4 PFBA (M)



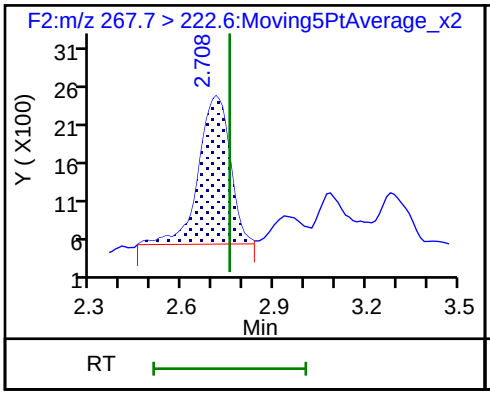
1 Perfluorobutyric acid



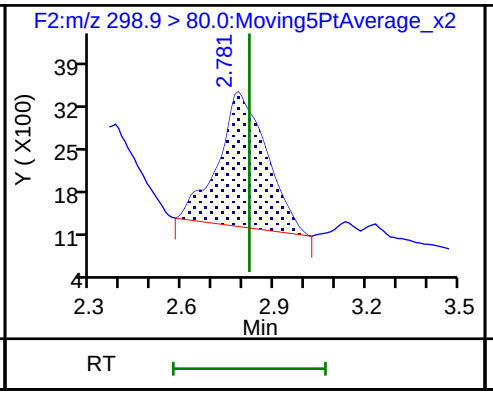
4 Perfluoropentanoic acid (ND)



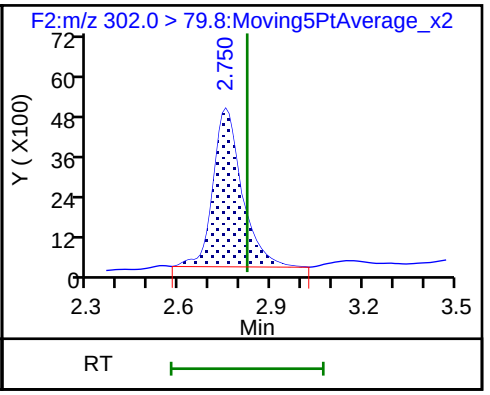
D 3 13C5-PFPeA



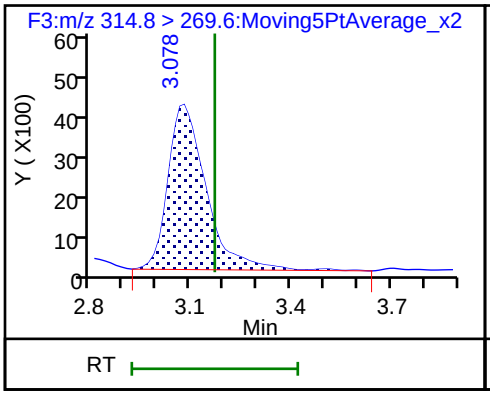
6 Perfluorobutanesulfonic acid



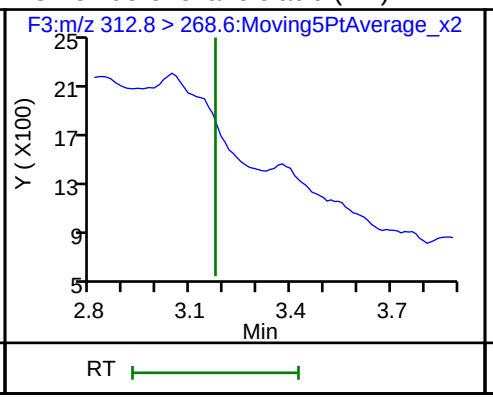
D 5 13C3-PFBS



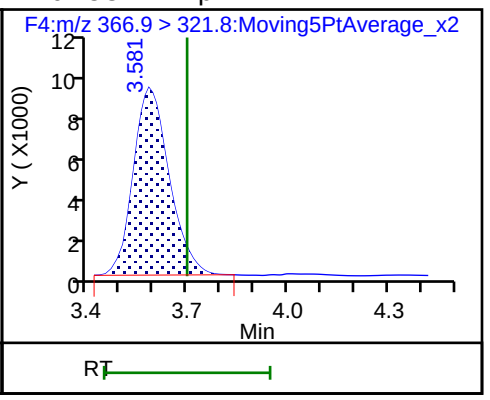
D 7 13C2 PFHxA



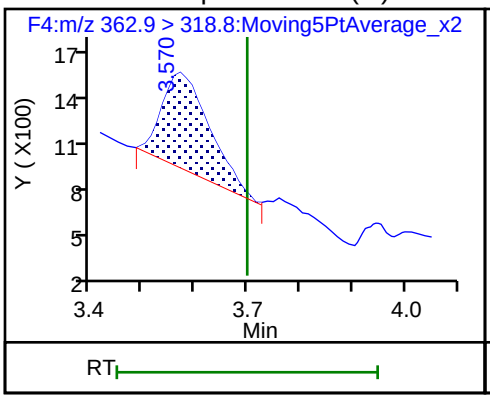
8 Perfluorohexanoic acid (ND)



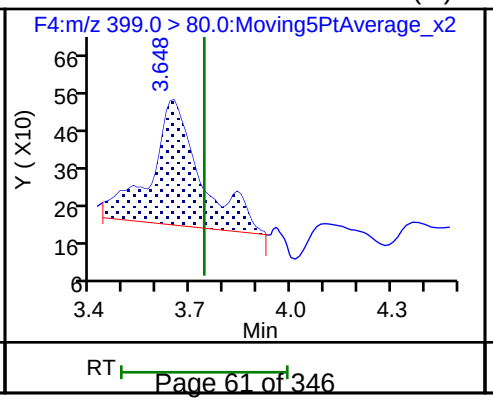
D 10 13C4-PFHpA



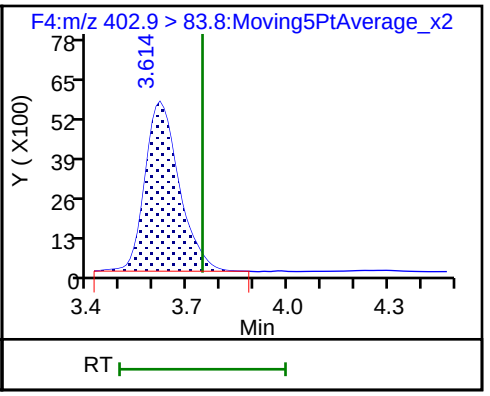
11 Perfluoroheptanoic acid (M)



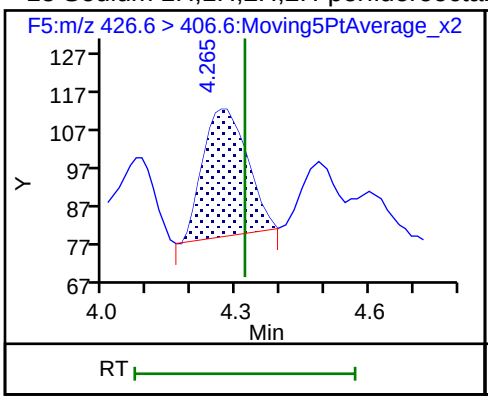
12 Perfluorohexanesulfonic acid (M)



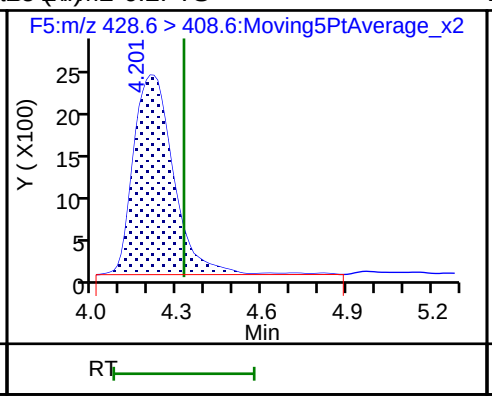
D 13 18O2 PFHxS



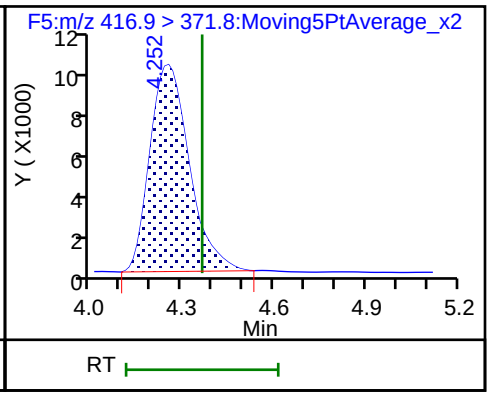
15 Sodium 1H,1H,2H,2H-perfluorooctane (M)



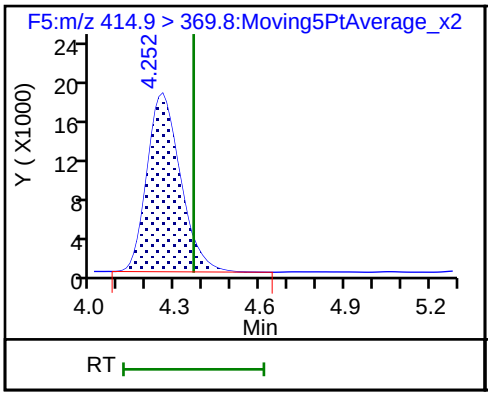
D 13 M2-6:2FTS



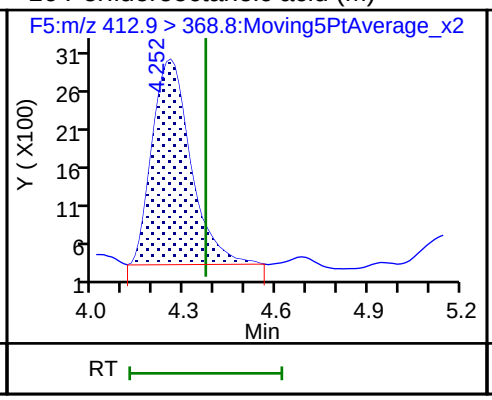
D 17 13C4 PFOA



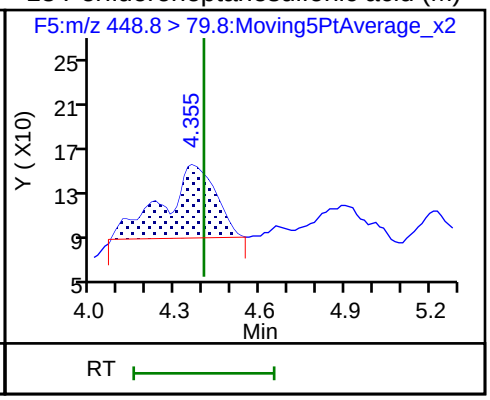
* 49 13C2-PFOA



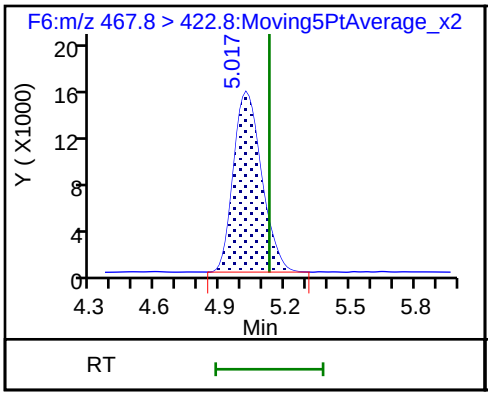
16 Perfluorooctanoic acid (M)



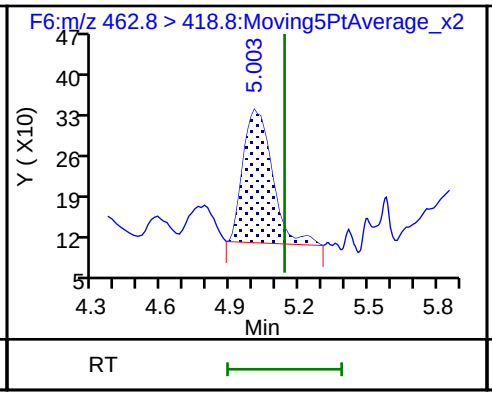
18 Perfluoroheptanesulfonic acid (M)



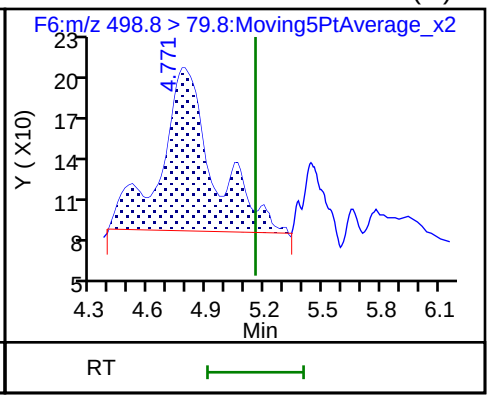
D 21 13C5 PFNA



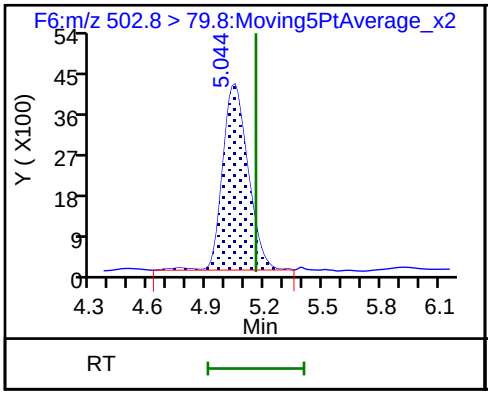
19 Perfluorononanoic acid



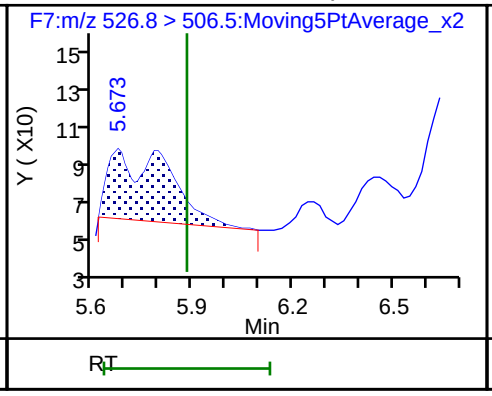
20 Perfluorooctane sulfonic acid (M)



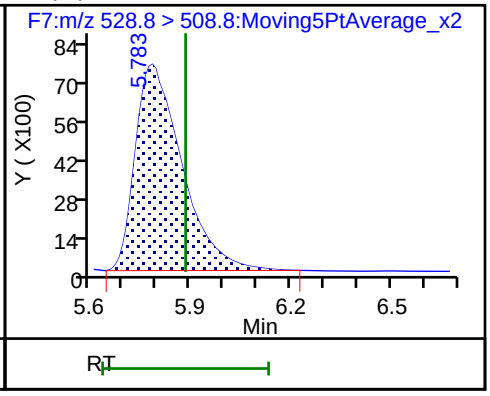
D 22 13C4 PFOS



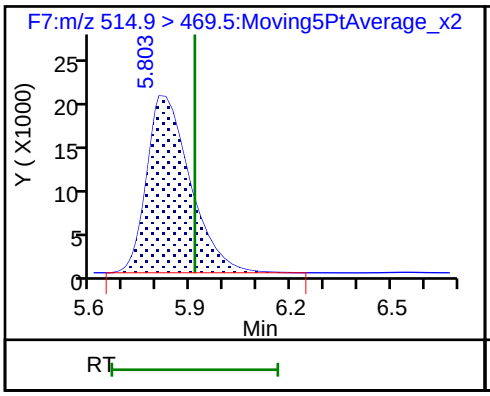
24 Sodium 1H,1H,2H,2H-perfluorodecane (M)



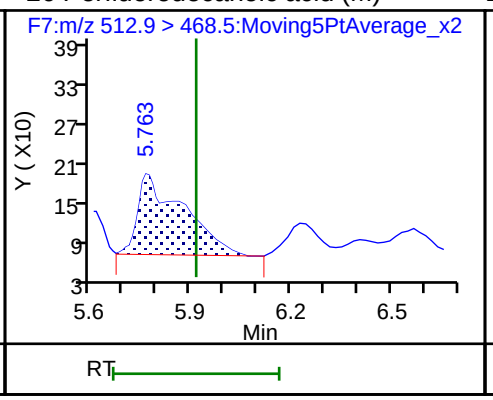
D 23 M2-8:2FTS



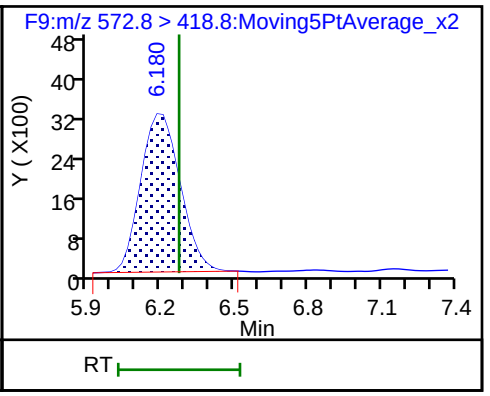
D 25 13C2 PFDA



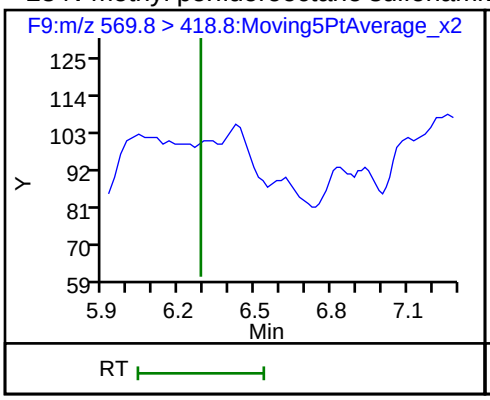
26 Perfluorodecanoic acid (M)



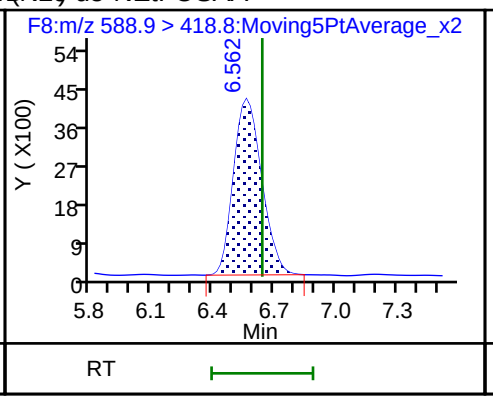
D 27 d3-NMeFOSAA



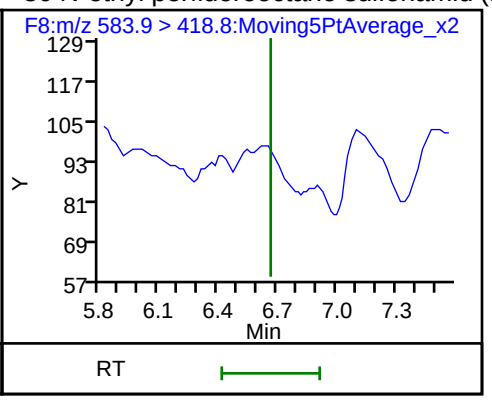
28 N-methyl perfluorooctane sulfonamid (ND)



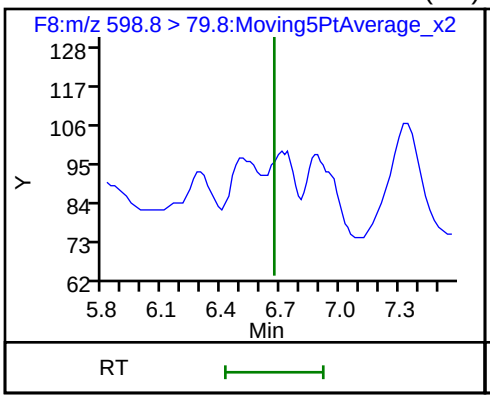
D 29 d5-NEtFOSAA



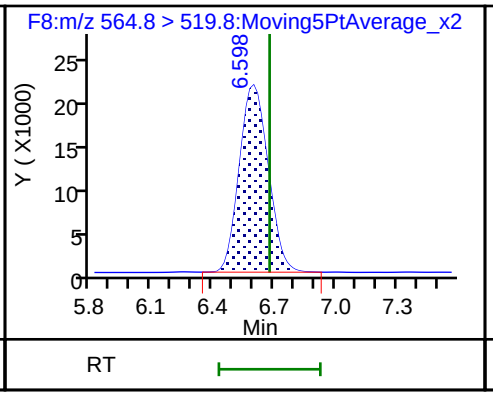
30 N-ethyl perfluorooctane sulfonamid (ND)



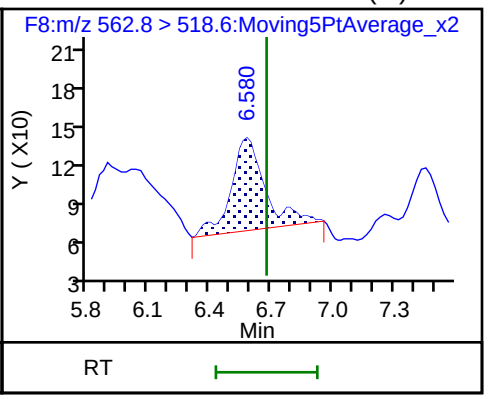
31 Perfluorodecane Sulfonic acid (ND)



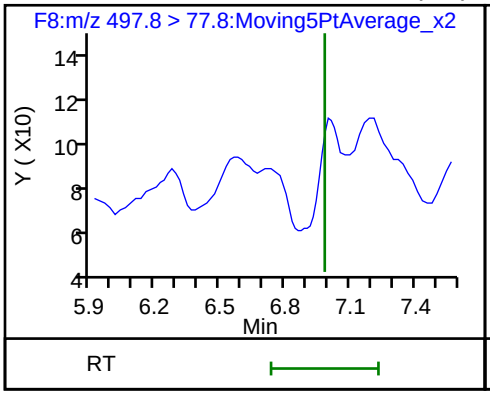
D 33 13C2 PFUnA



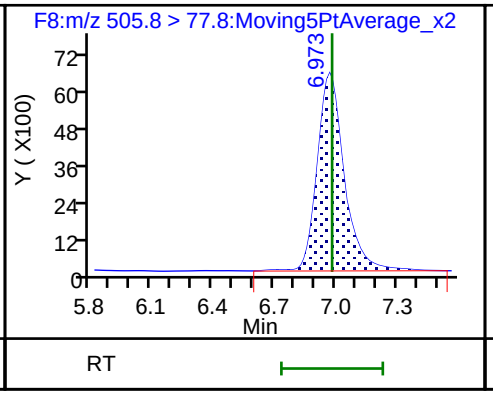
32 Perfluoroundecanoic acid (M)



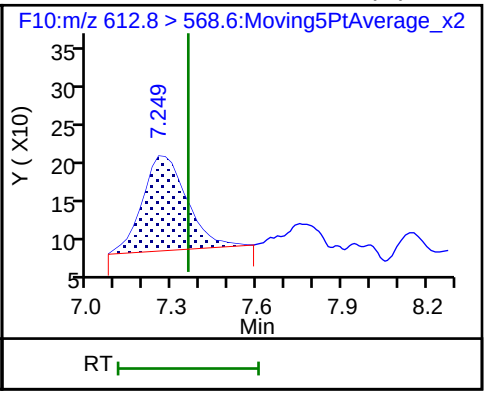
34 Perfluorooctane Sulfonamide (ND)



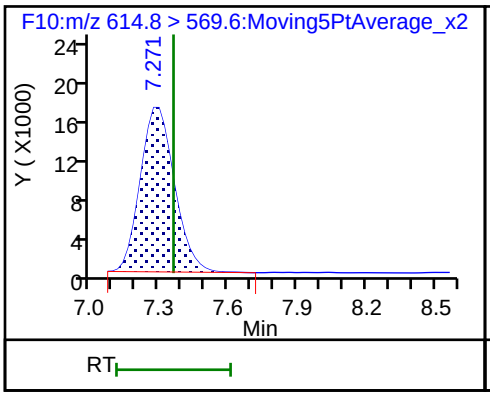
D 35 13C8 FOSA



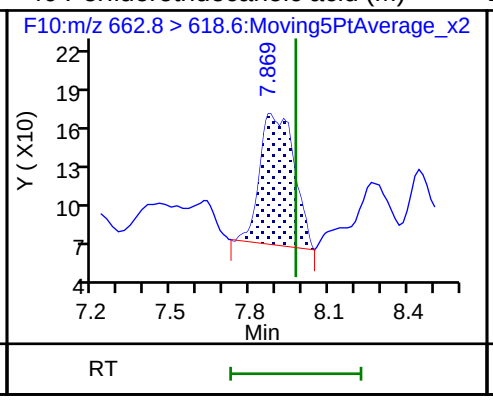
37 Perfluorododecanoic acid (M)



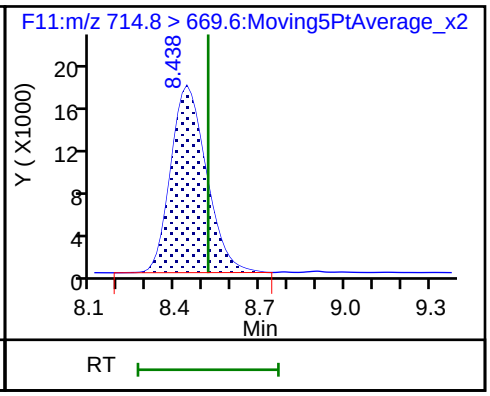
D 36 13C2 PFDoA



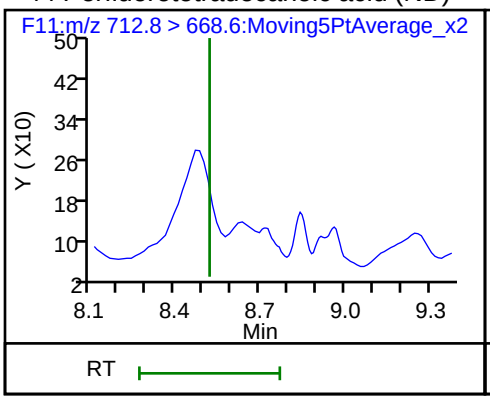
40 Perfluorotridecanoic acid (M)



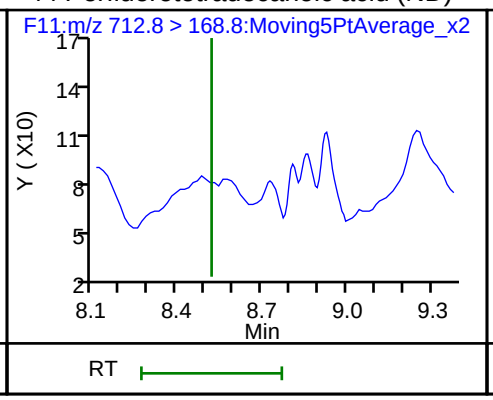
D 43 13C2-PFTeDA



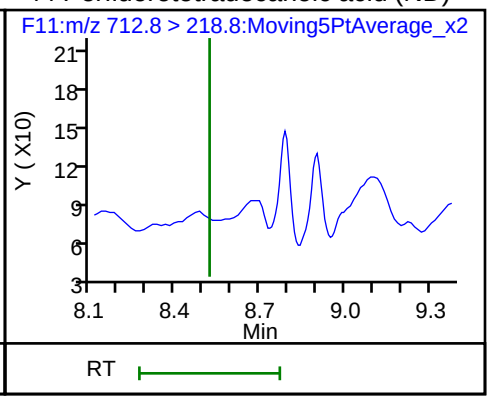
44 Perfluorotetradecanoic acid (ND)



44 Perfluorotetradecanoic acid (ND)



44 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Burlington

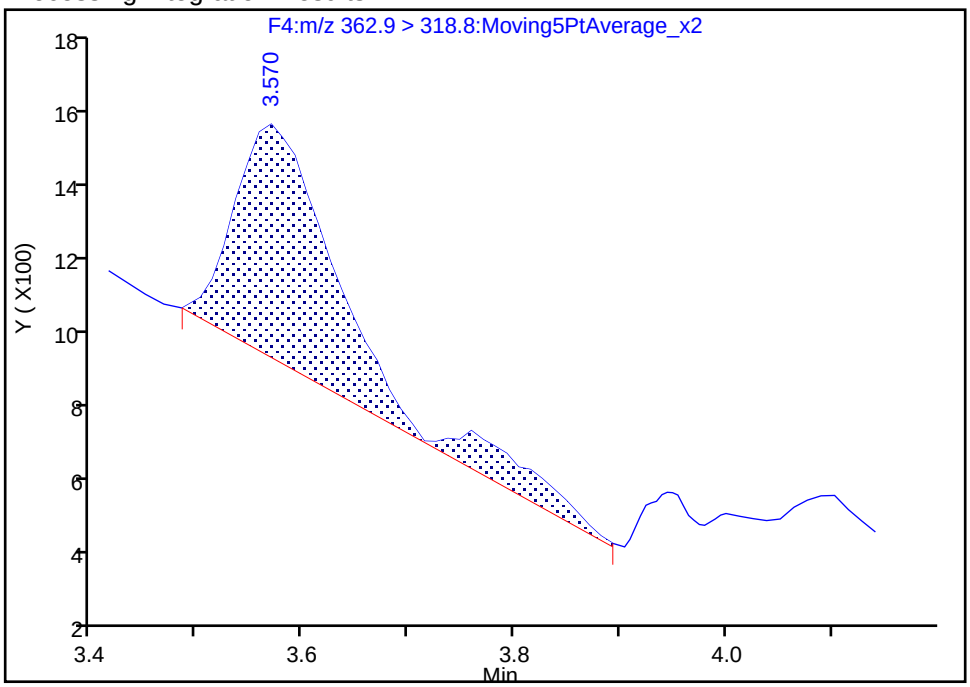
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d
Injection Date: 11-May-2018 23:48:27 Instrument ID: LC410
Lims ID: 200-43262-A-2-A Lab Sample ID: 200-43262-2
Client ID: MW-1
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 60
Injection Vol: 20.0 ul Dil. Factor: 5.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

11 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

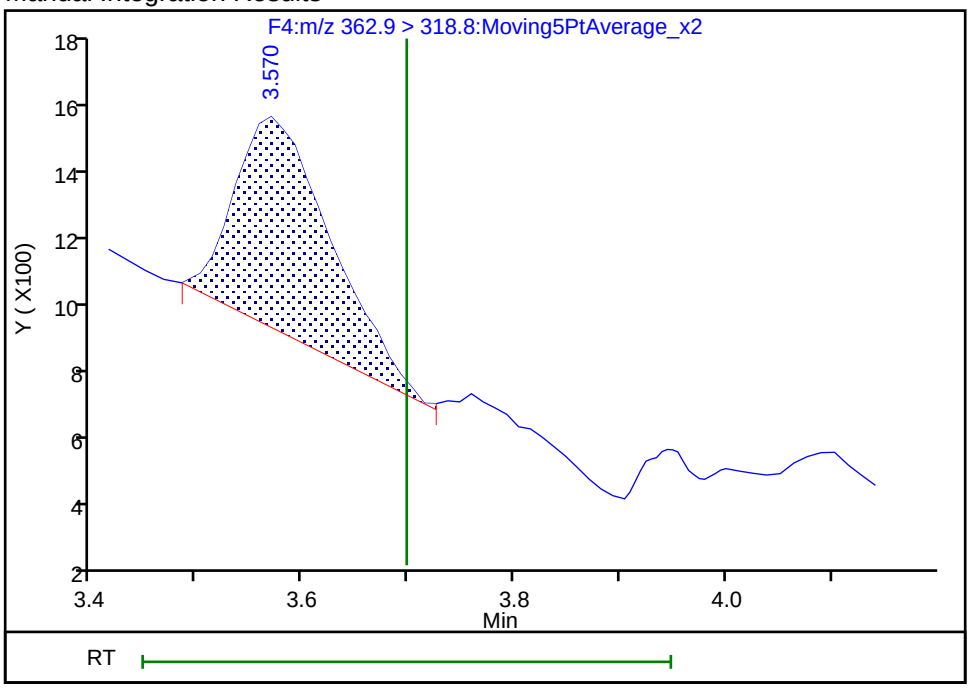
Processing Integration Results

RT: 3.57
Area: 4387
Amount: 0.582359
Amount Units: ng/ml



Manual Integration Results

RT: 3.57
Area: 3805
Amount: 0.498337
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 13:06:02
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

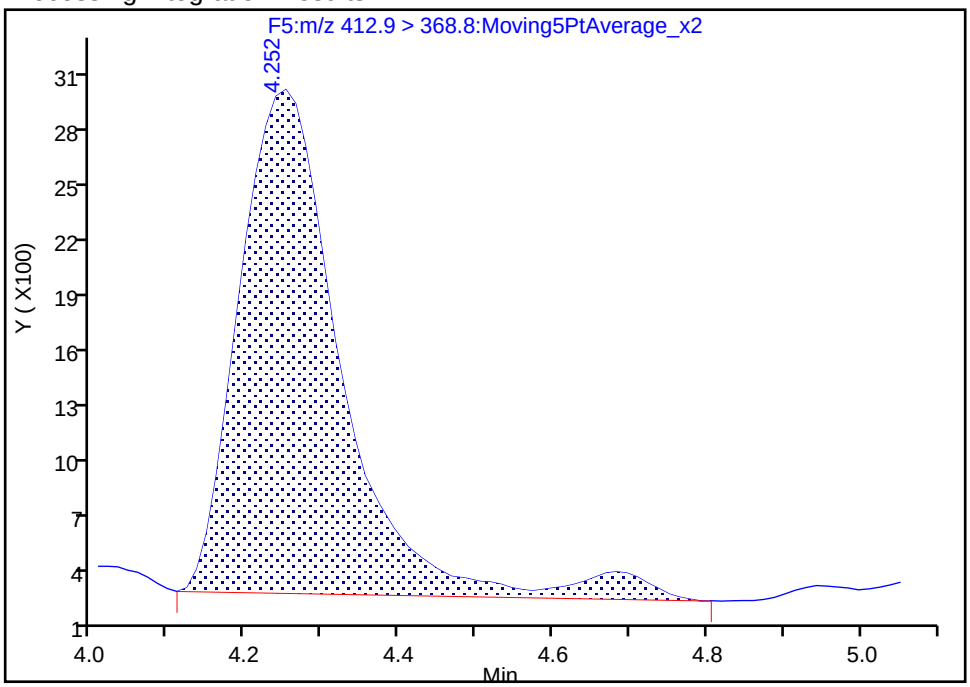
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d				
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410		
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2		
Client ID:	MW-1				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F5:MRM		

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

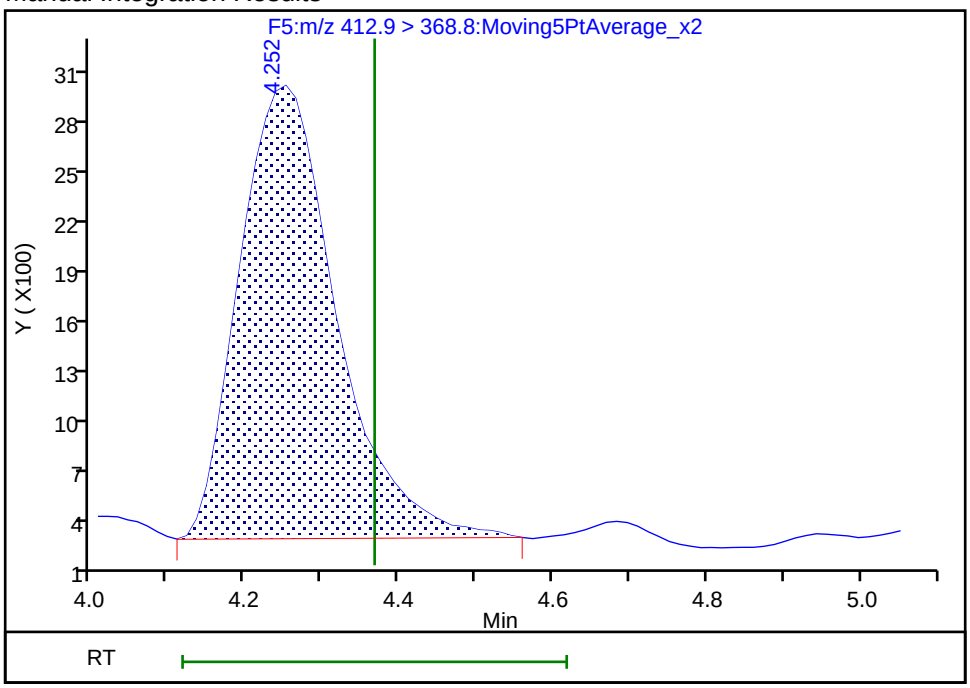
Processing Integration Results

RT: 4.25
Area: 25390
Amount: 2.722786
Amount Units: ng/ml



Manual Integration Results

RT: 4.25
Area: 23757
Amount: 2.539406
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:16:25

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

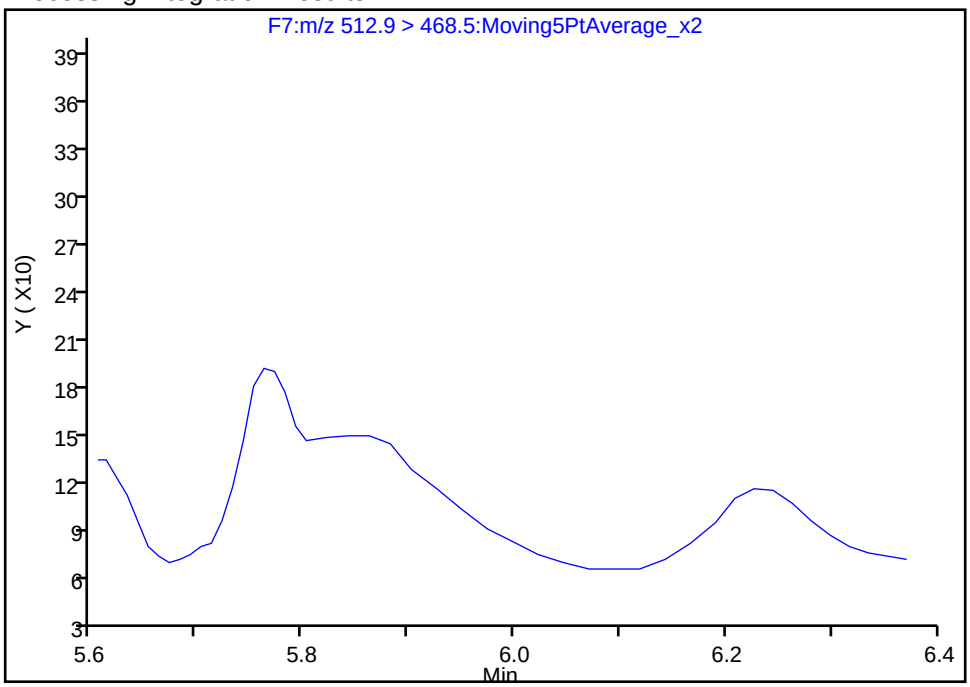
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d				
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410		
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2		
Client ID:	MW-1				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F7:MRM		

26 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

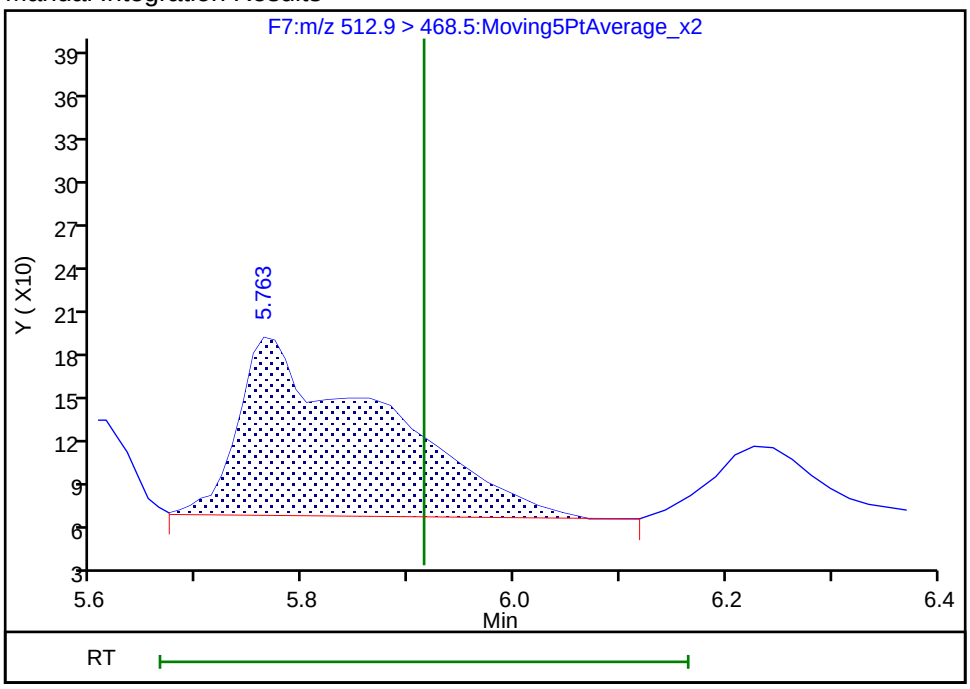
Not Detected
Expected RT: 5.91

Processing Integration Results



Manual Integration Results

RT: 5.76
Area: 1166
Amount: 0.312975
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:16:44
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

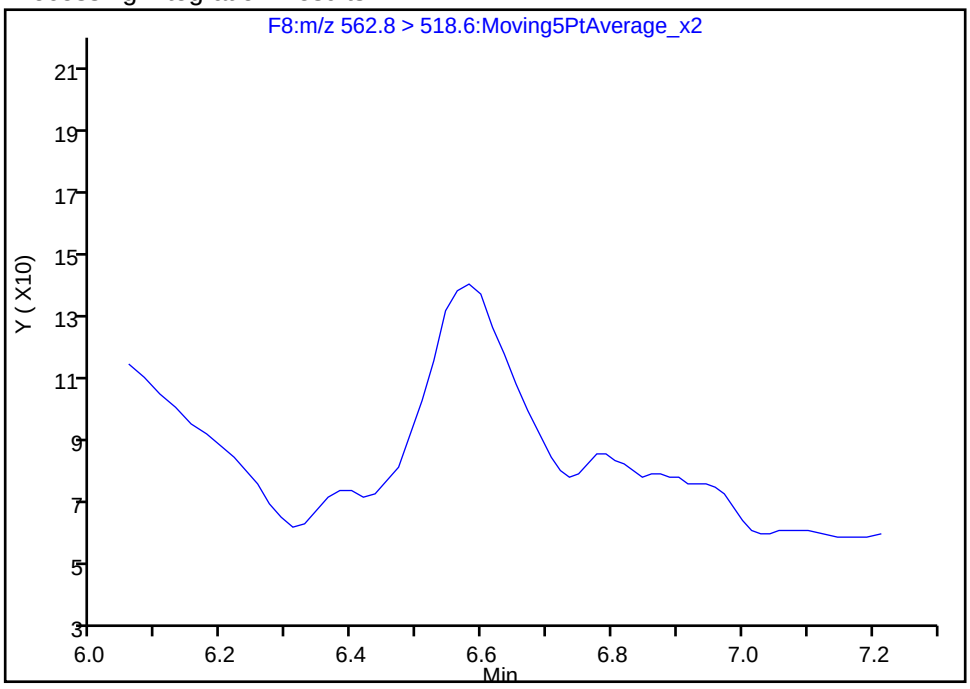
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d				
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410		
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2		
Client ID:	MW-1				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F8:MRM		

32 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

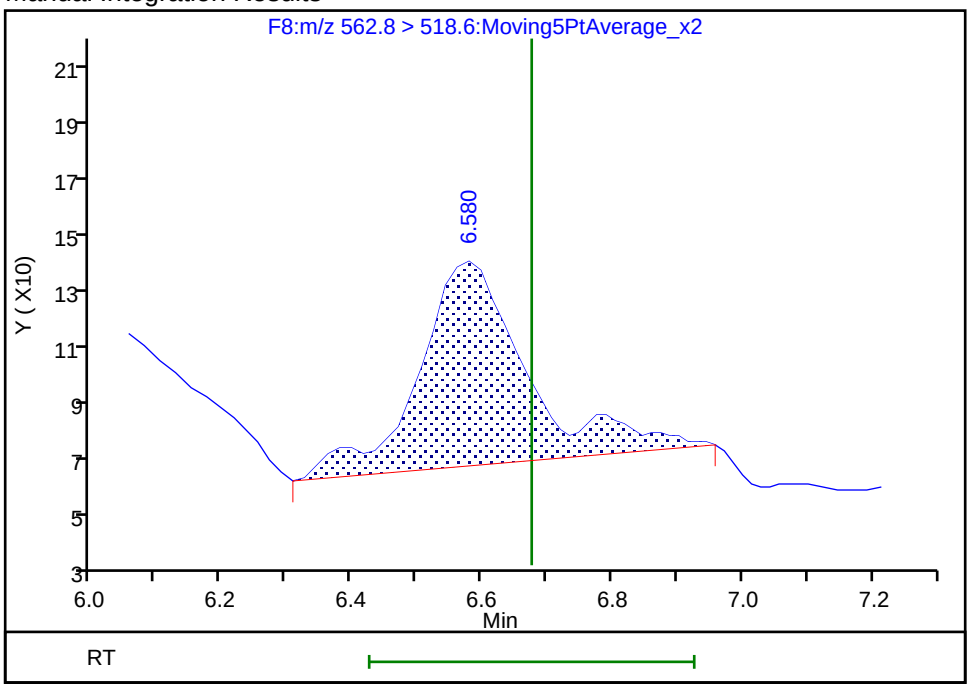
Not Detected
Expected RT: 6.68

Processing Integration Results



Manual Integration Results

RT: 6.58
Area: 789
Amount: 0.018984
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 13:07:10
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

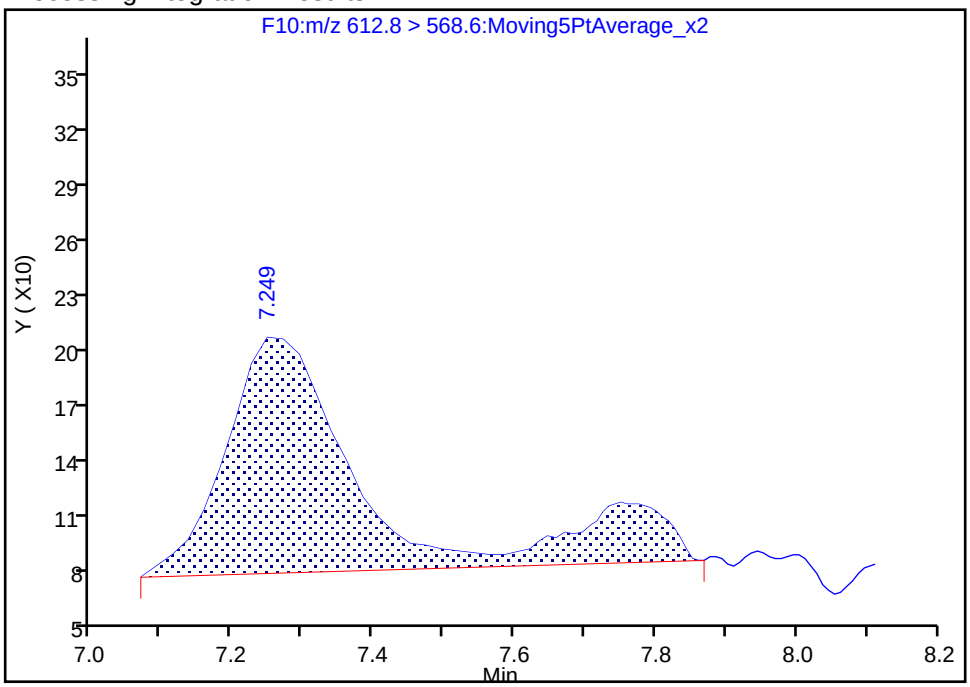
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d				
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410		
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2		
Client ID:	MW-1				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F10:MRM		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

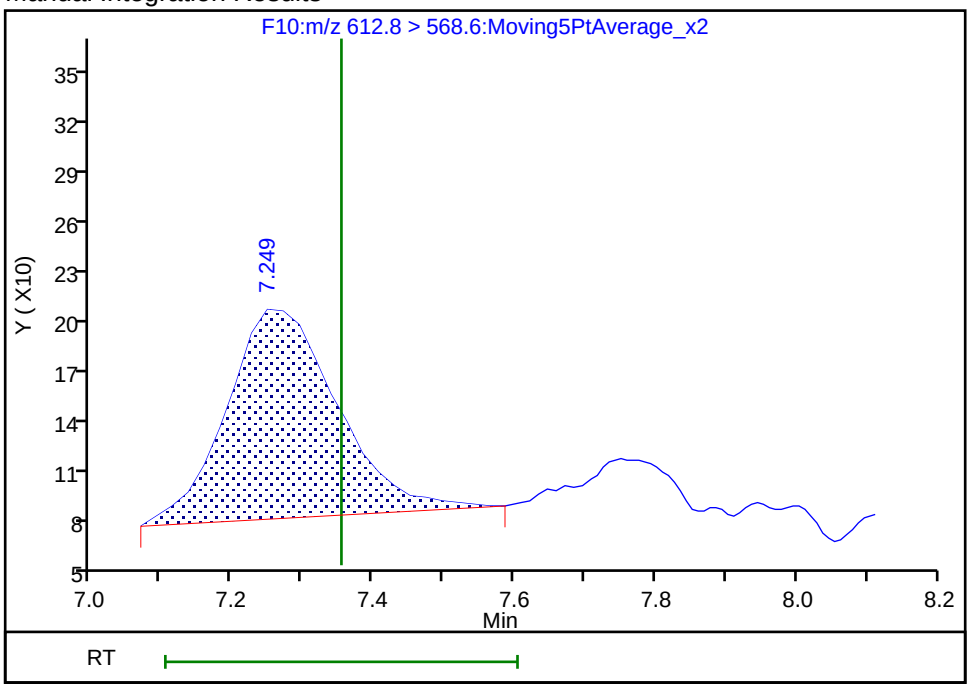
Processing Integration Results

RT: 7.25
Area: 1751
Amount: 0.236192
Amount Units: ng/ml



Manual Integration Results

RT: 7.25
Area: 1348
Amount: 0.209935
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:17:04

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

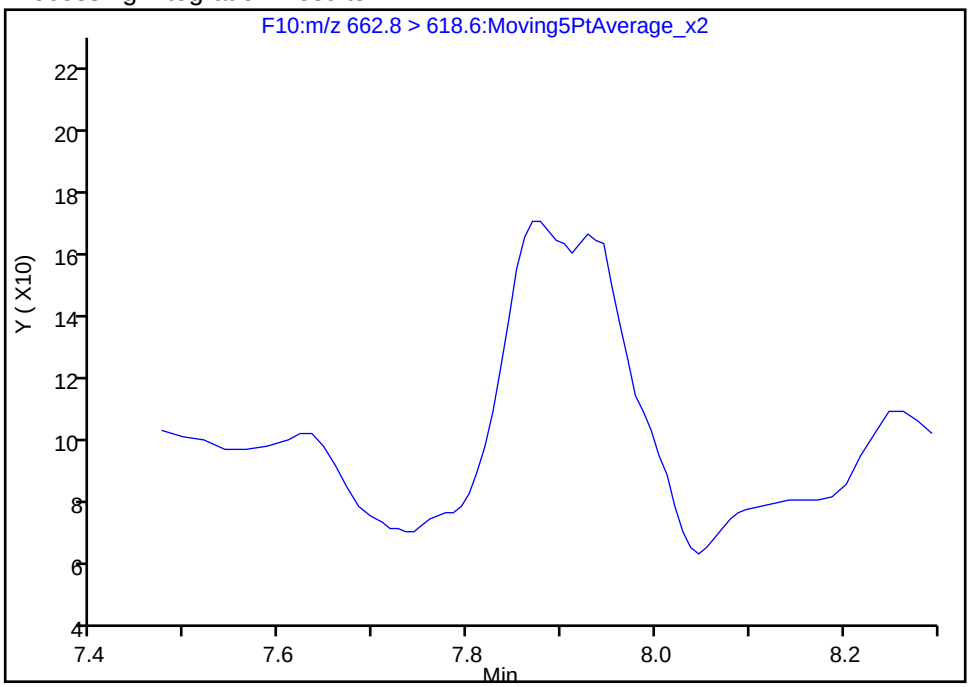
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d				
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410		
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2		
Client ID:	MW-1				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F10:MRM		

40 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

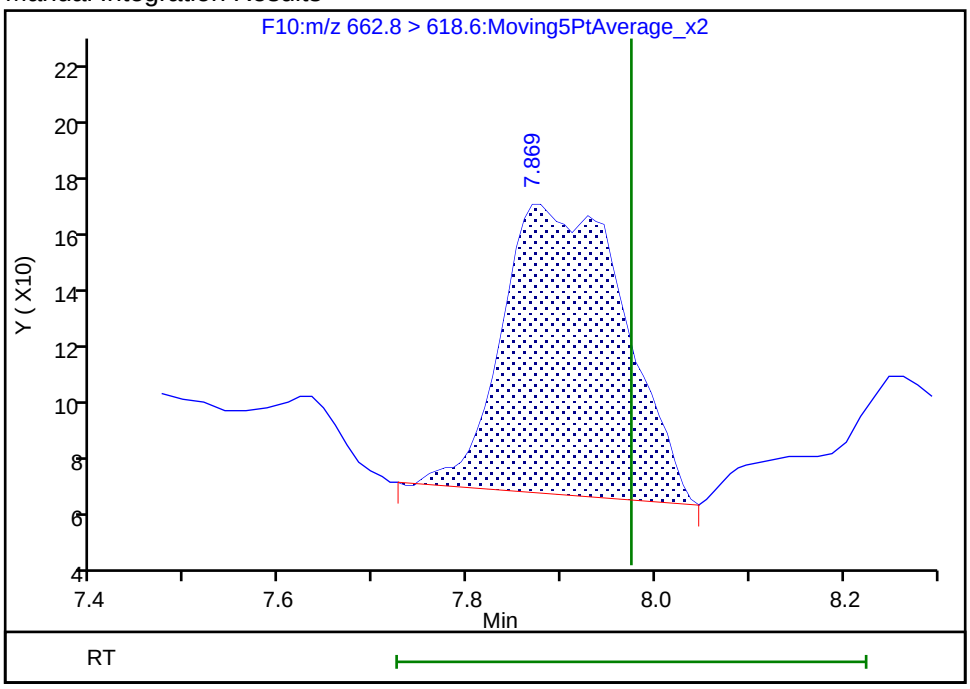
Not Detected
Expected RT: 7.97

Processing Integration Results



Manual Integration Results

RT: 7.87
Area: 919
Amount: 0.257980
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:17:16
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

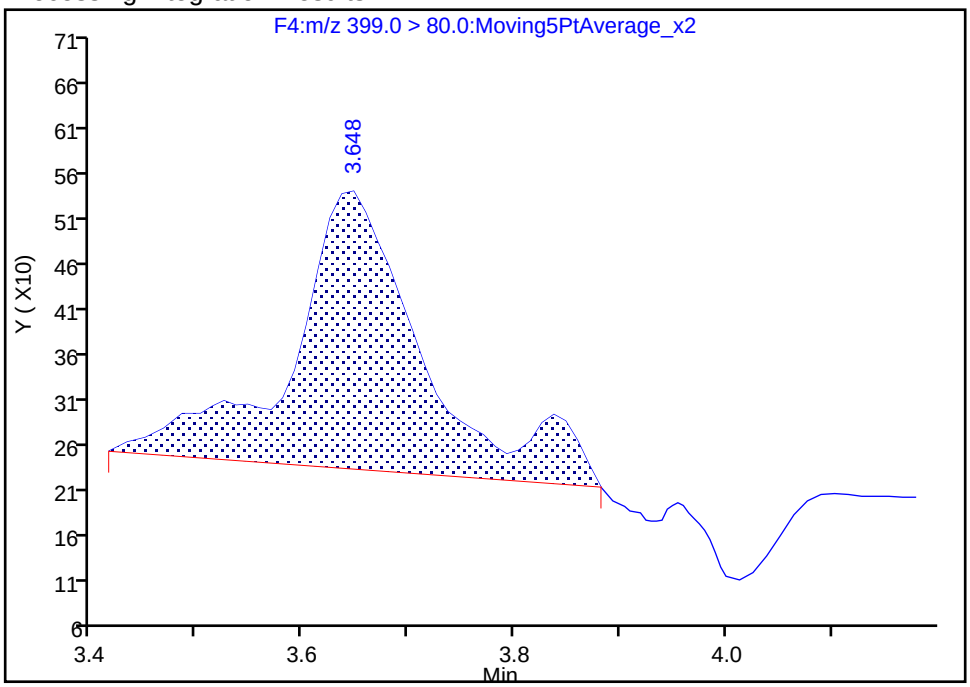
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d				
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410		
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2		
Client ID:	MW-1				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F4:MRM		

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

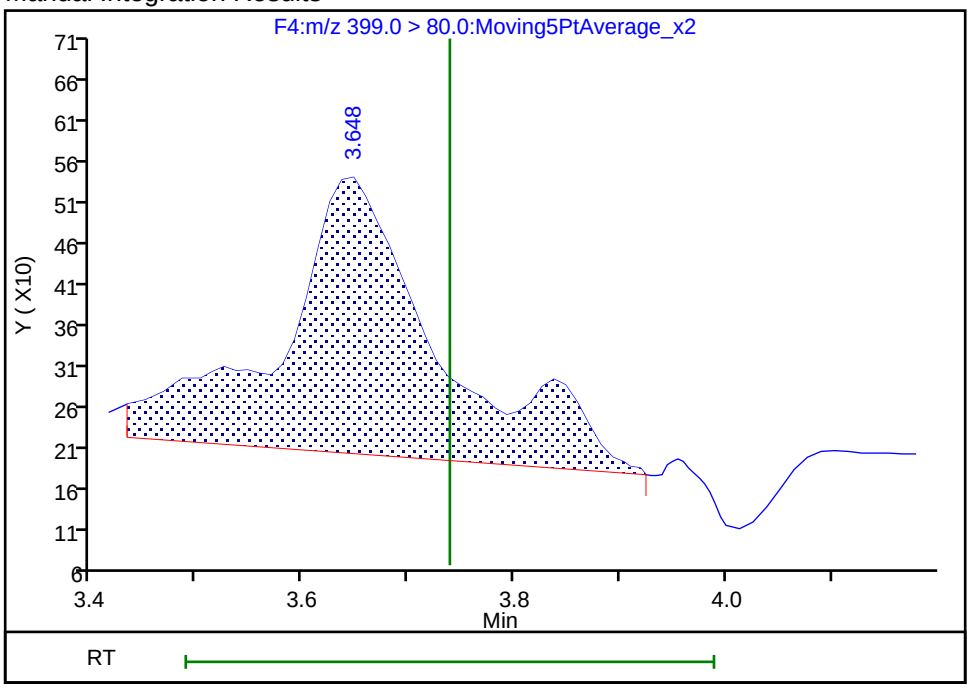
Processing Integration Results

RT: 3.65
Area: 2650
Amount: 0.669082
Amount Units: ng/ml



Manual Integration Results

RT: 3.65
Area: 3410
Amount: 0.806790
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:15:28

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

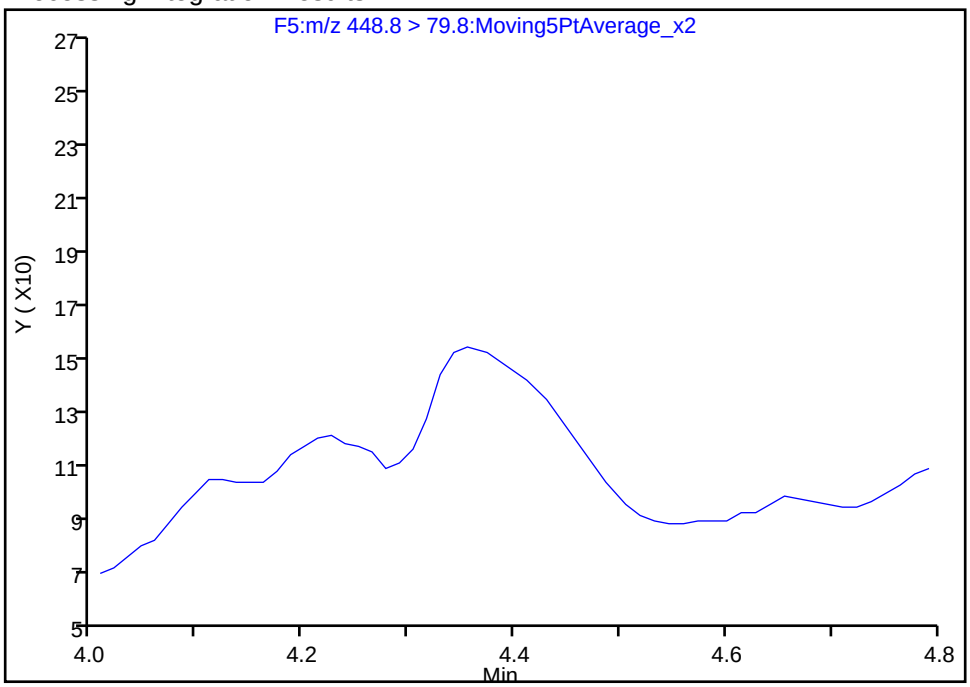
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d
Injection Date: 11-May-2018 23:48:27 Instrument ID: LC410
Lims ID: 200-43262-A-2-A Lab Sample ID: 200-43262-2
Client ID: MW-1
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 60
Injection Vol: 20.0 ul Dil. Factor: 5.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

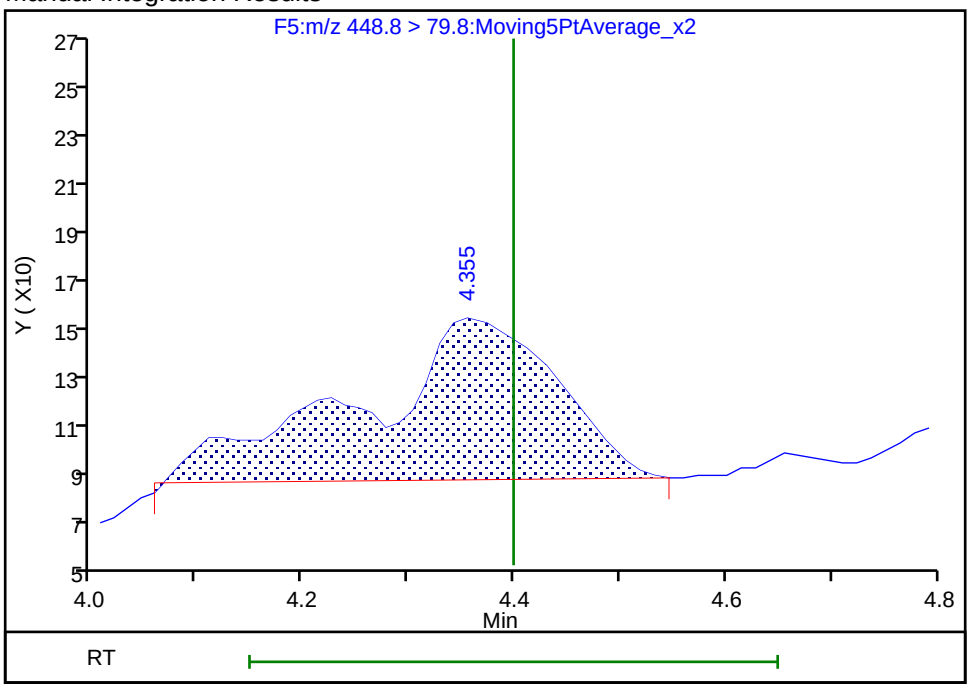
Not Detected
Expected RT: 4.40

Processing Integration Results



Manual Integration Results

RT: 4.36
Area: 841
Amount: 0.408236
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 13:06:28
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

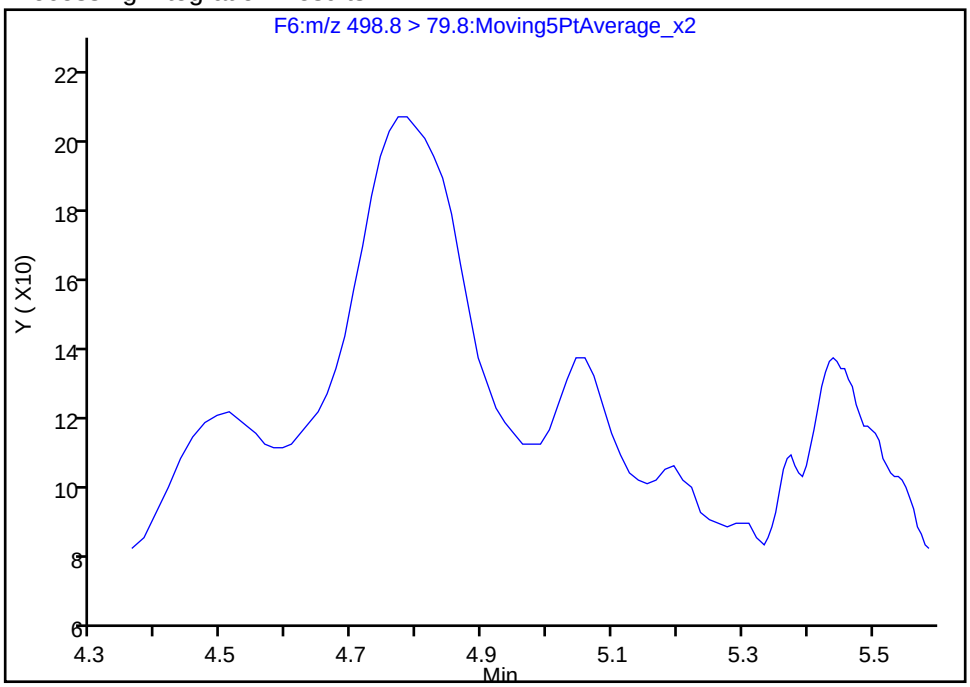
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d				
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410		
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2		
Client ID:	MW-1				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F6:MRM		

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

Signal: 1

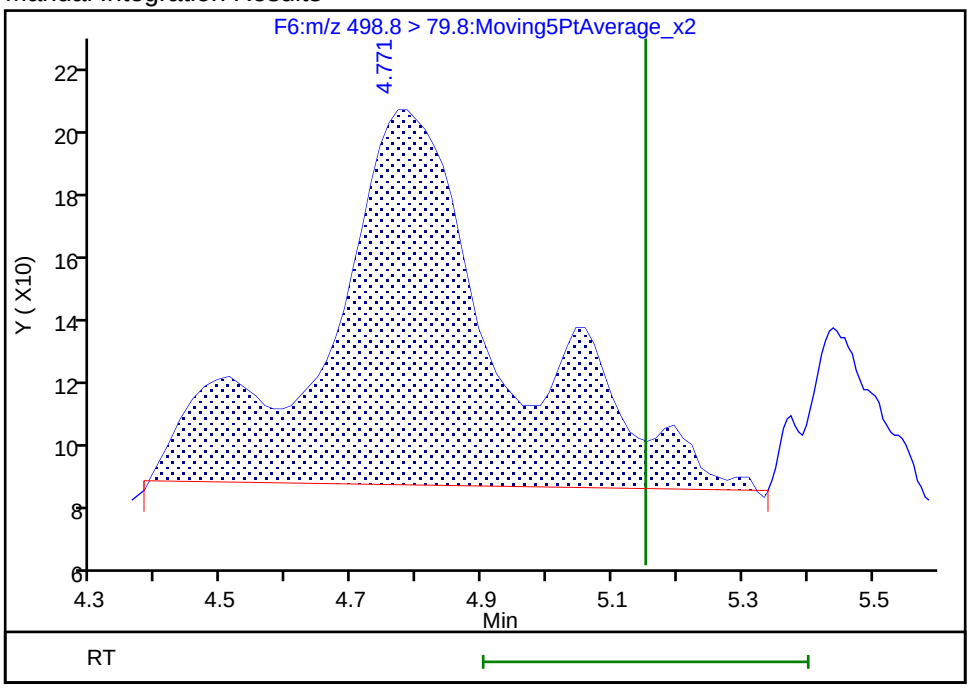
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 4.77
Area: 2211
Amount: 0.648897
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 13:06:43
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d

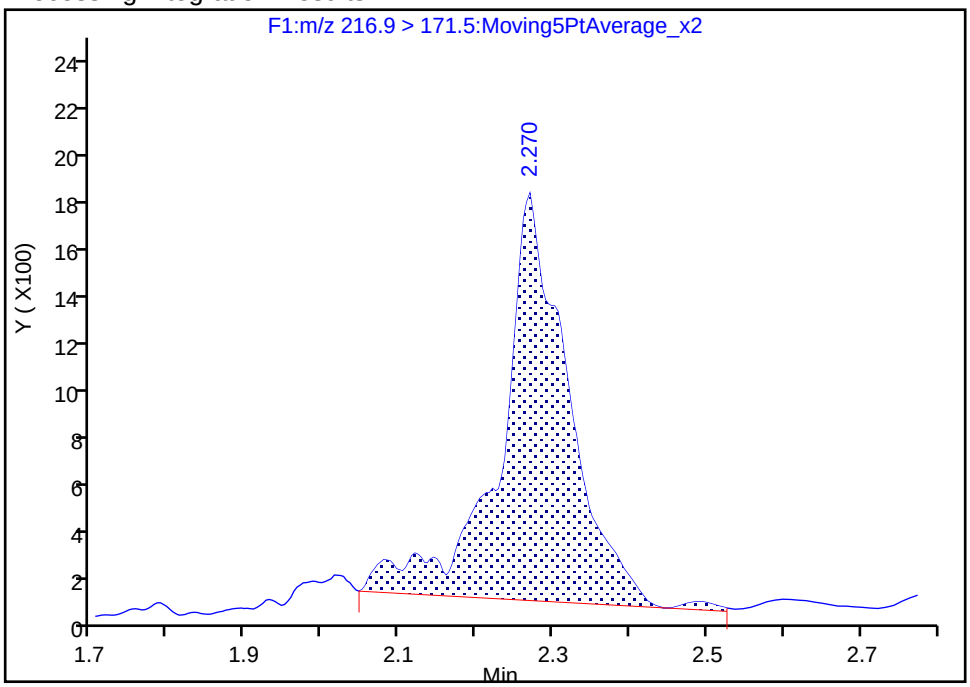
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2
Client ID:	MW-1		
Operator ID:	BC	ALS Bottle#:	0 Worklist Smp#: 60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL
Column:		Detector	F1:MRM

D 2 13C4 PFBA, CAS: STL00992

Signal: 1

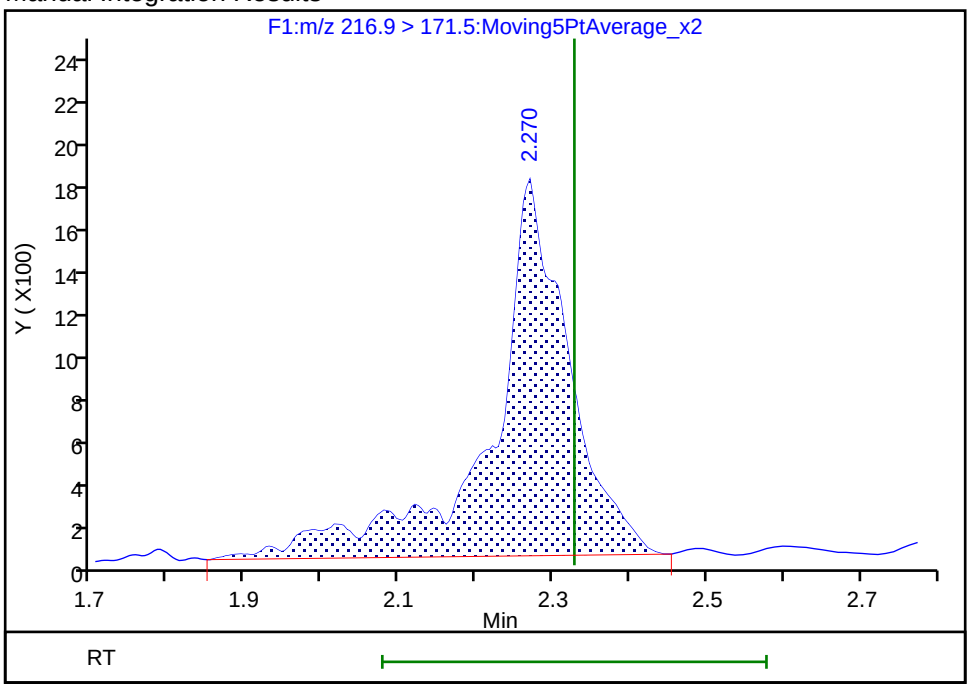
Processing Integration Results

RT: 2.27
Area: 10734
Amount: 1.527222
Amount Units: ng/ml



Manual Integration Results

RT: 2.27
Area: 12558
Amount: 1.786739
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:13:27

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

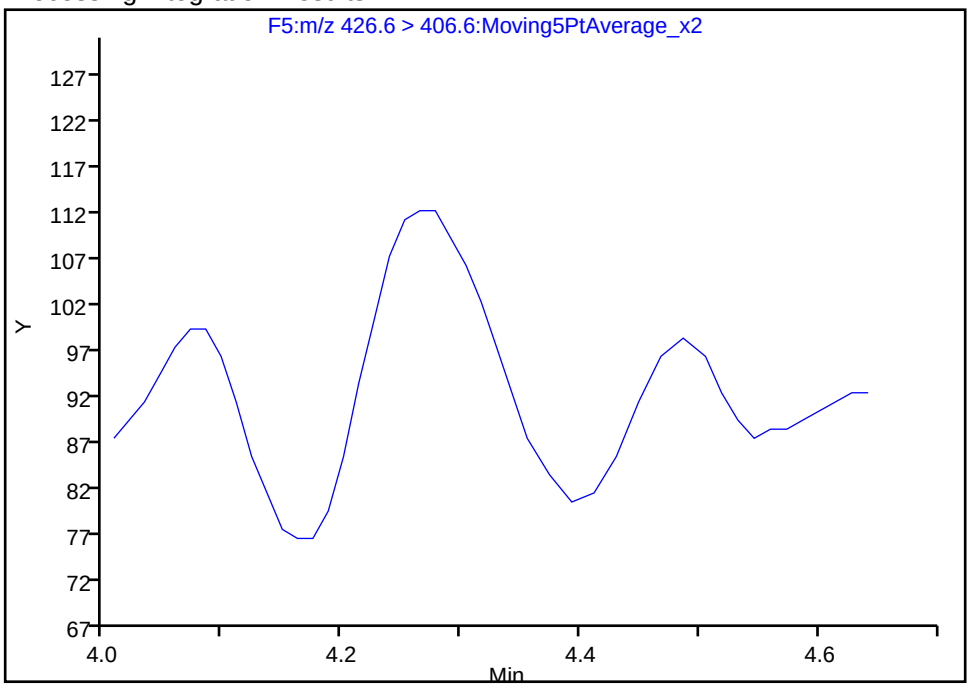
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d				
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410		
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2		
Client ID:	MW-1				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F5:MRM		

15 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate, CAS: 27619-97-2

Signal: 1

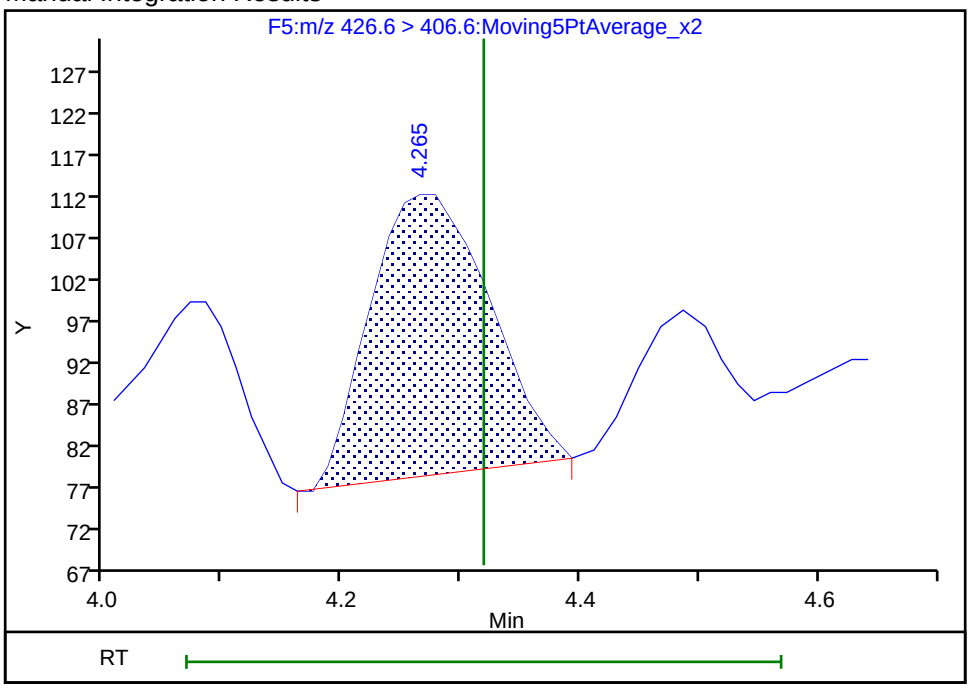
Not Detected
Expected RT: 4.32

Processing Integration Results



Manual Integration Results

RT: 4.27
Area: 237
Amount: 0.094242
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:15:44
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

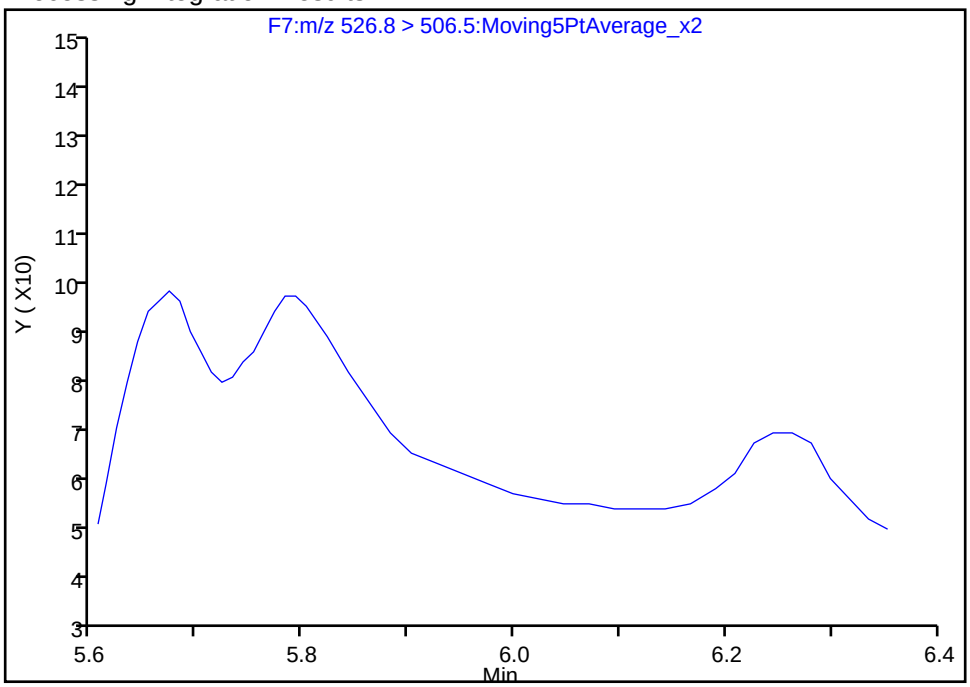
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A60.d				
Injection Date:	11-May-2018 23:48:27	Instrument ID:	LC410		
Lims ID:	200-43262-A-2-A	Lab Sample ID:	200-43262-2		
Client ID:	MW-1				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	60
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F7:MRM		

24 Sodium 1H,1H,2H,2H-perfluorodecane sulfonate, CAS: 39108-34-4

Signal: 1

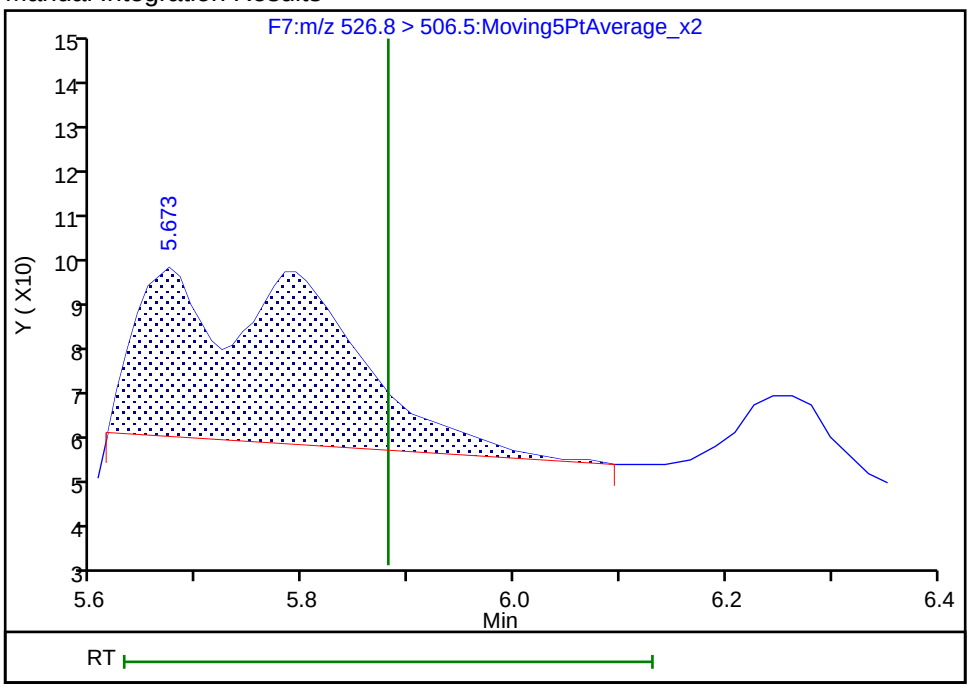
Not Detected
Expected RT: 5.88

Processing Integration Results



Manual Integration Results

RT: 5.67
Area: 466
Amount: 0.079366
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 13:06:58
Audit Action: Manually Integrated Audit Reason: Assign Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-3 | Lab Sample ID: 200-43262-3

Matrix: Water | Lab File ID: PF051018A40.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 17:30

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 262.7(mL) | Date Analyzed: 05/11/2018 18:25

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	11.1		1.90	0.42
2706-90-3	Perfluoropentanoic acid (PFPeA)	3.91	B	1.90	0.42
307-24-4	Perfluorohexanoic acid (PFHxA)	4.55	B	1.90	0.42
375-85-9	Perfluoroheptanoic acid (PFHpA)	5.18		1.90	0.28
335-67-1	Perfluorooctanoic acid (PFOA)	14.5		1.90	0.45
375-95-1	Perfluorononanoic acid (PFNA)	4.33		1.90	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	0.60	J B	1.90	0.42
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.90	U	1.90	0.42
307-55-1	Perfluorododecanoic acid (PFDoA)	1.90	U	1.90	0.42
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.48	J	1.90	0.42
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.90	U	1.90	0.42
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.10		1.90	0.84
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.40	J B	1.90	0.27
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.60	J	1.90	0.42
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.90	U	1.90	0.42
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.95		1.90	0.29
754-91-6	Perfluorooctane Sulfonamide (FOSA)	1.90	U	1.90	0.42
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.90	U	1.90	0.57
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	1.90	0.57
27619-97-2	6:2FTS	1.90	U	1.90	0.57
39108-34-4	8:2FTS	1.90	U	1.90	0.57

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-3 | Lab Sample ID: 200-43262-3

Matrix: Water | Lab File ID: PF051018A40.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 17:30

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 262.7(mL) | Date Analyzed: 05/11/2018 18:25

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	44		25-150
STL00992	13C4 PFBA	17		25-150
STL01893	13C5 PFPeA	34		25-150
STL00993	13C2 PFHxA	44		25-150
STL01892	13C4-PFHpA	62		25-150
STL00990	13C4 PFOA	64		25-150
STL00995	13C5 PFNA	79		25-150
STL00996	13C2 PFDA	83		25-150
STL00997	13C2 PFUnA	99		25-150
STL00998	13C2 PFDoA	87		25-150
STL02116	13C2-PFTeDA	102		25-150
STL02337	13C3-PFBS	58		25-150
STL00994	18O2 PFHxS	73		25-150
STL00991	13C4 PFOS	75		25-150
STL02118	d3-NMeFOSAA	78		25-150
STL02117	d5-NEtFOSAA	96		25-150
STL02279	M2-6:2FTS	195		25-150
STL02280	M2-8:2FTS	190		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A40.d
Lims ID: 200-43262-A-3-A
Client ID: MW-3
Sample Type: Client
Inject. Date: 11-May-2018 18:25:23 ALS Bottle#: 0 Worklist Smp#: 40
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-040 3
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:17 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: murrayjw Date: 14-May-2018 09:20:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.298	2.328	-0.030	1.000	94654	8.70		17.4	20.8	
1 Perfluorobutyric acid										
212.9 > 168.9	2.330	2.334	-0.004	1.014	10541	5.83			4.6	
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.729	2.751	-0.022	1.000	11890	2.05			3.8	M
D 3 13C5-PFPeA										
267.7 > 222.6	2.729	2.753	-0.024	1.000	139246	16.8		33.6	150	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.791	2.818	-0.027	1.000	10208	1.63			7.5	
D 5 13C3-PFBS										
302.0 > 79.8	2.791	2.820	-0.029	1.000	232719	26.9		57.8	362	
D 7 13C2 PFHxA										
314.8 > 269.6	3.140	3.170	-0.030	1.000	268522	22.2		44.3	470	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.127	3.172	-0.045	0.996	11739	2.39			12.5	
D 10 13C4-PFHpA										
366.9 > 321.8	3.648	3.696	-0.048	1.000	632186	30.9		61.7	1600	
11 Perfluoroheptanoic acid										M
362.9 > 318.8	3.648	3.698	-0.050	1.000	36395	2.72			54.1	M
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.692	3.739	-0.047	1.003	5005	0.7349			15.5	
D 13 18O2 PFHxS										
402.9 > 83.8	3.681	3.742	-0.061	1.000	332235	34.6		73.1	698	
D 14 M2-6:2FTS										
428.6 > 408.6	4.239	4.321	-0.082	1.000	175062	92.6		195	1255	
D 17 13C4 PFOA										
416.9 > 371.8	4.304	4.363	-0.059	1.000	636105	31.8		63.6	714	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 49 13C2-PFOA										
414.9 > 369.8	4.291	4.363	-0.072		1153190	50.0			1396	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.304	4.368	-0.064	1.000	101541	7.60			43.4	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.342	4.399	-0.057	0.856	824	0.3170			5.5	
D 21 13C5 PFNA										
467.8 > 422.8	5.058	5.127	-0.069	1.000	943432	39.7		79.4	1664	
19 Perfluorononanoic acid										
462.8 > 418.8	5.058	5.136	-0.078	1.000	39776	2.28			66.6	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	4.812	5.152	-0.340	0.949	13948	2.08			48.3	M
D 22 13C4 PFOS										
502.8 > 79.8	5.072	5.154	-0.082	1.000	309545	35.9		75.0	924	
D 23 M2-8:2FTS										
528.8 > 508.8	5.793	5.882	-0.089	1.000	460827	90.9		190	2848	
D 25 13C2 PFDA										
514.9 > 469.5	5.823	5.910	-0.087	1.000	1200519	41.7		83.4	1903	
26 Perfluorodecanoic acid										M
512.9 > 468.5	5.843	5.914	-0.071	1.003	1553	0.3145			2.4	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.180	6.271	-0.091	1.000	238867	39.0		78.1	991	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.544	6.640	-0.096	1.000	254783	47.9		95.9	1279	
D 33 13C2 PFUnA										
564.8 > 519.8	6.580	6.676	-0.096	1.000	1334176	49.4		98.8	2674	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.580	6.676	-0.096	1.000	3511	0.1169			4.9	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	340292	21.9		43.9	1447	
37 Perfluorododecanoic acid										M
612.8 > 568.6	7.249	7.354	-0.105	1.000	659	0.1523			2.7	M
D 36 13C2 PFDoA										
614.8 > 569.6	7.249	7.358	-0.109	1.000	1234430	43.5		86.9	3500	
40 Perfluorotridecanoic acid										M
662.8 > 618.6	7.903	7.974	-0.071	1.090	1128	0.2500			7.1	M
D 43 13C2-PFTeDA										
714.8 > 669.6	8.423	8.514	-0.091	1.000	1340375	51.1		102	2433	
44 Perfluorotetradecanoic acid										Ma
712.8 > 668.6	8.408	8.519	-0.111	0.998	908	-0.008542			3.9	M
712.8 > 168.8	8.519	8.519	0.0	0.000	0		0.00(0.00-0.00)			
712.8 > 218.8	8.519	8.519	0.0	0.000	0		0.00(0.00-0.00)			

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 14-May-2018 12:12:29 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A40.d

Injection Date: 11-May-2018 18:25:23 Instrument ID: LC410

Lims ID: 200-43262-A-3-A Lab Sample ID: 200-43262-3

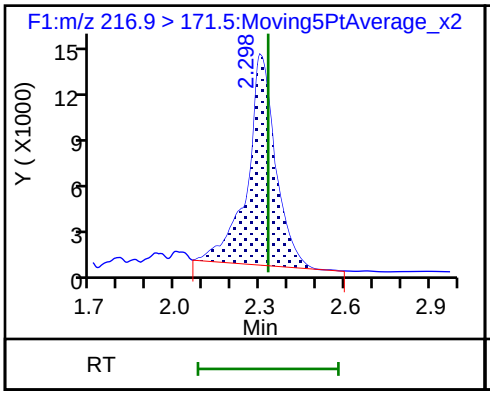
Client ID: MW-3

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 40

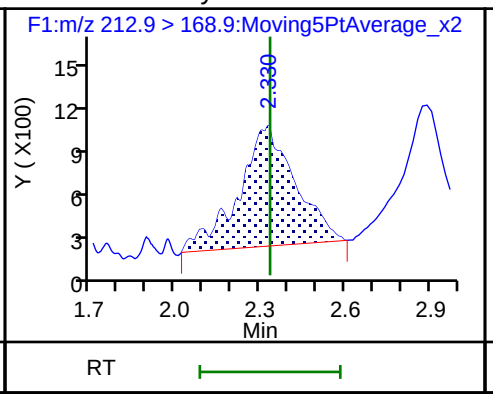
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

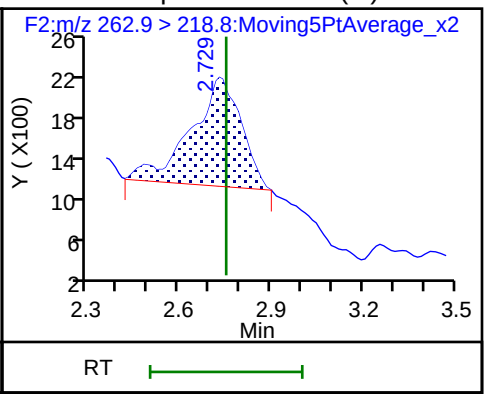
D 2 13C4 PFBA



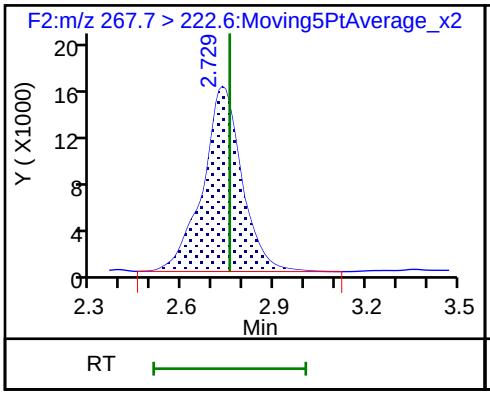
1 Perfluorobutyric acid



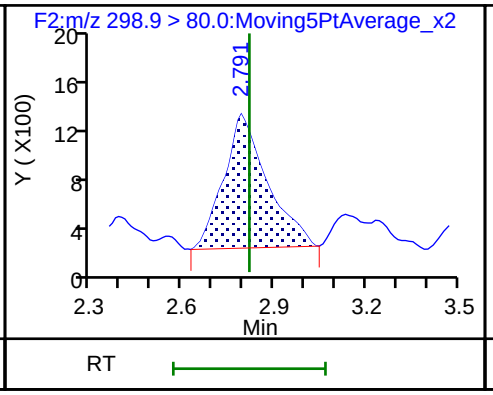
4 Perfluoropentanoic acid (M)



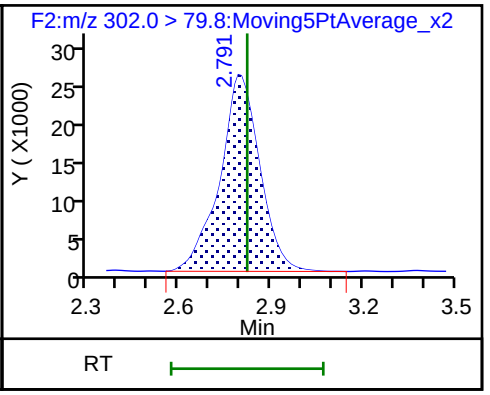
D 3 13C5-PFPeA



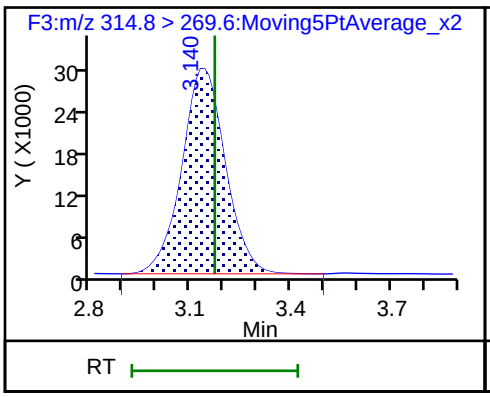
6 Perfluorobutanesulfonic acid



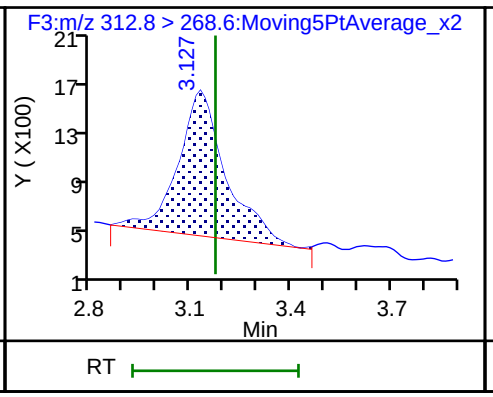
D 5 13C3-PFBS



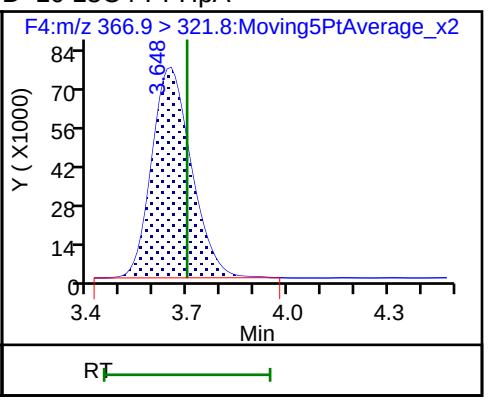
D 7 13C2 PFHxA



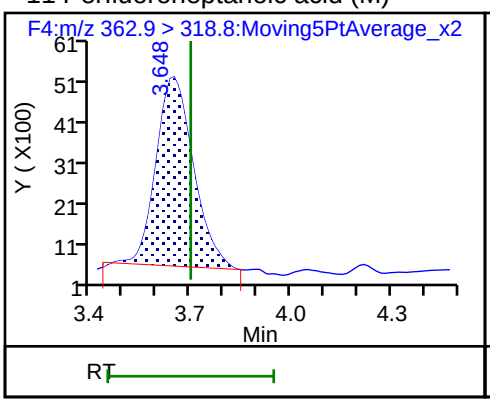
8 Perfluorohexanoic acid



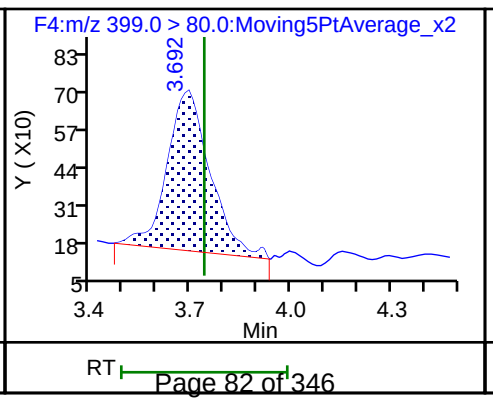
D 10 13C4-PFHpA



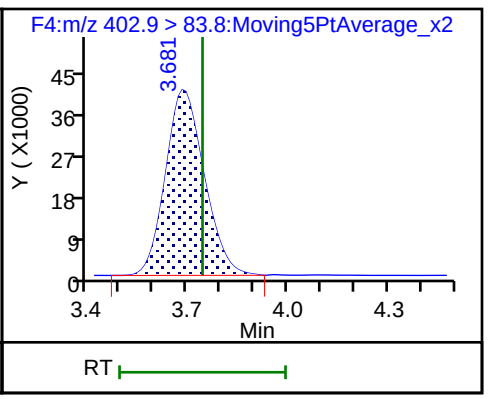
11 Perfluoroheptanoic acid (M)



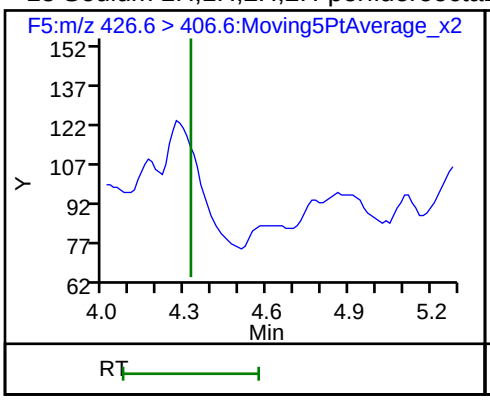
12 Perfluorohexanesulfonic acid



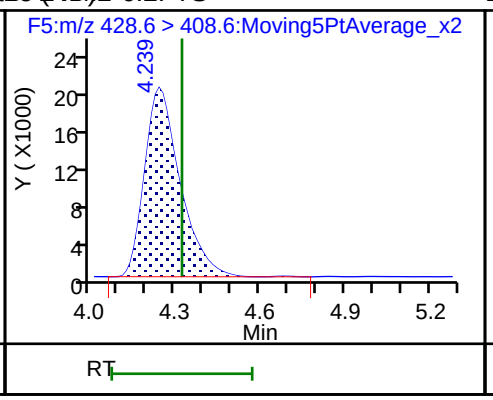
D 13 18O2 PFHxS



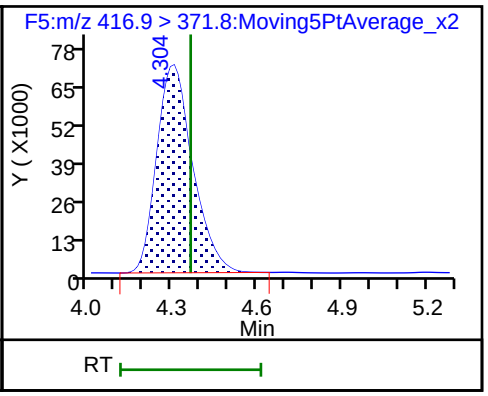
15 Sodium 1H,1H,2H,2H-perfluorooctane (M)



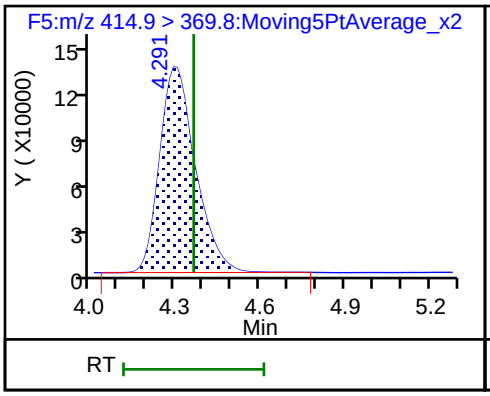
D 14 M2-6:2FTS



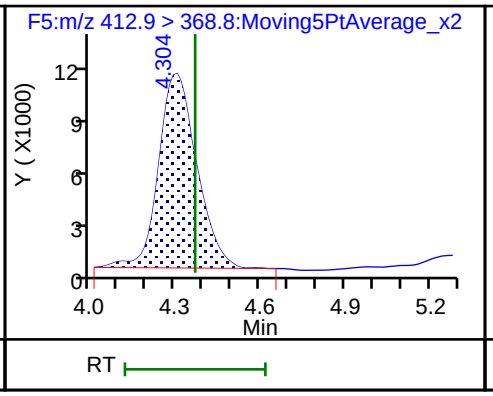
D 17 13C4 PFOA



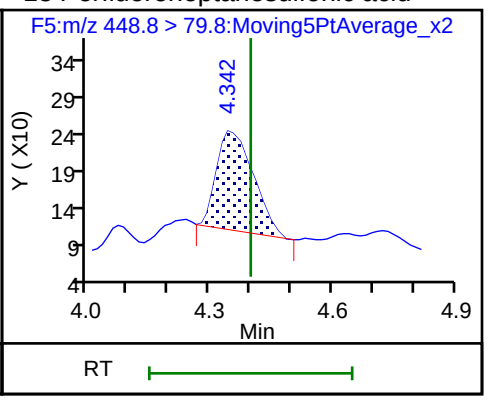
* 49 13C2-PFOA



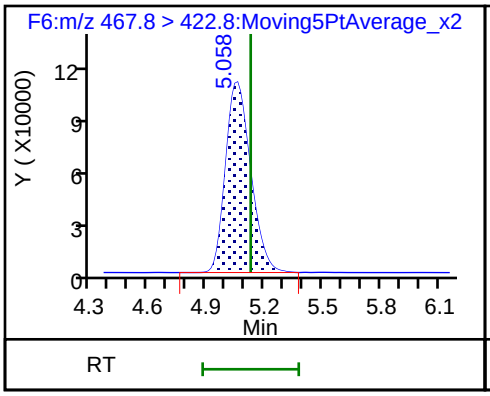
16 Perfluorooctanoic acid



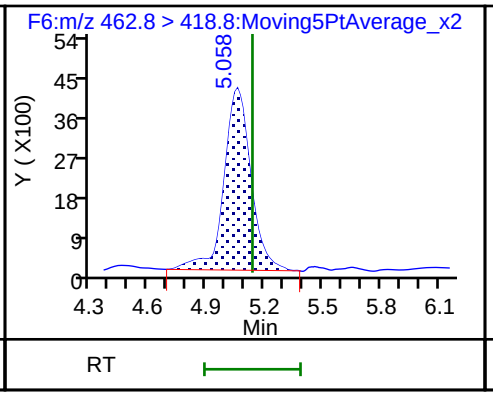
18 Perfluoroheptanesulfonic acid



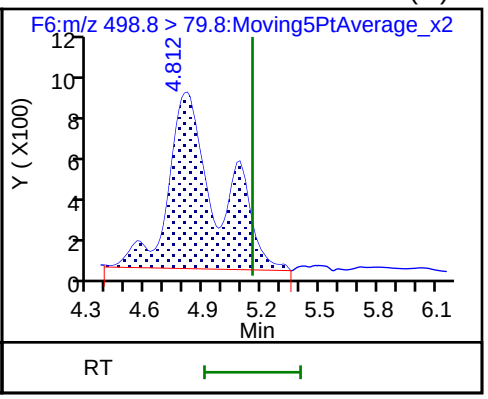
D 21 13C5 PFNA



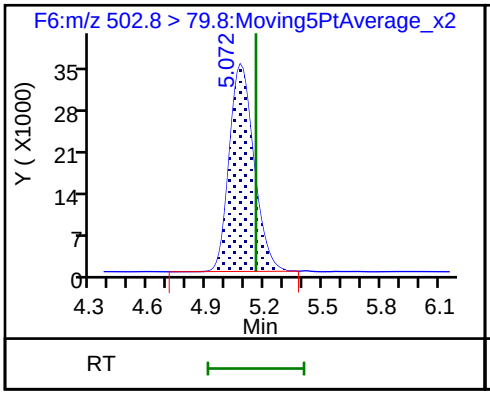
19 Perfluorononanoic acid



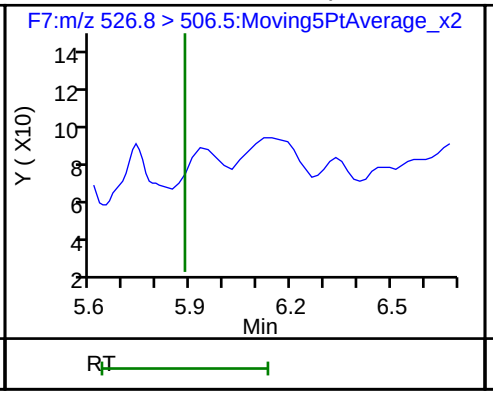
20 Perfluorooctane sulfonic acid (M)



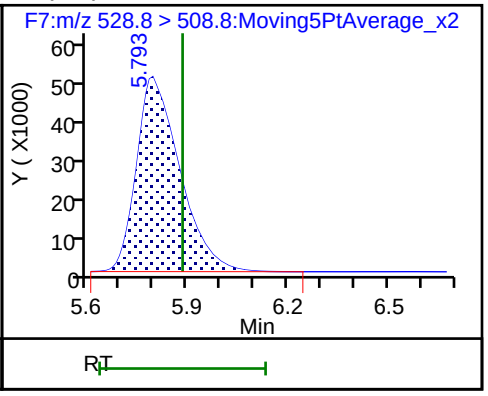
D 22 13C4 PFOS



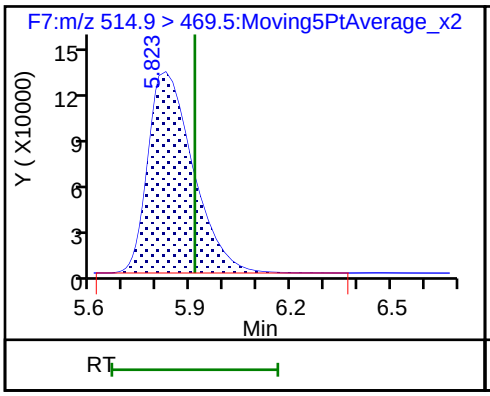
24 Sodium 1H,1H,2H,2H-perfluorodecane (M)



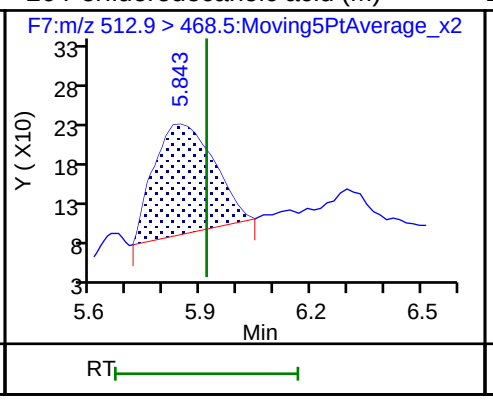
D 23 M2-8:2FTS



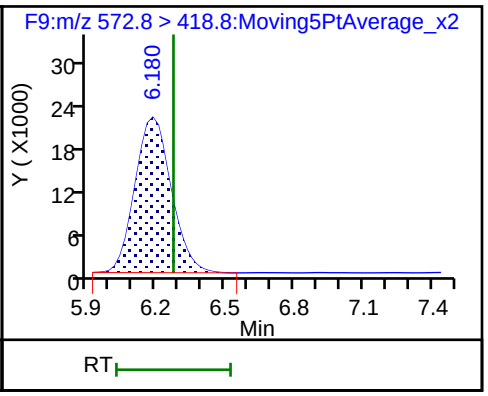
D 25 13C2 PFDA



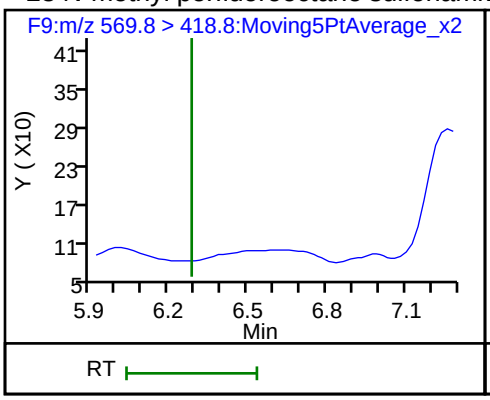
26 Perfluorodecanoic acid (M)



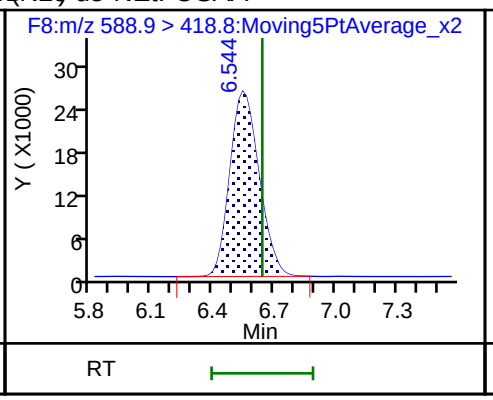
D 27 d3-NMeFOSAA



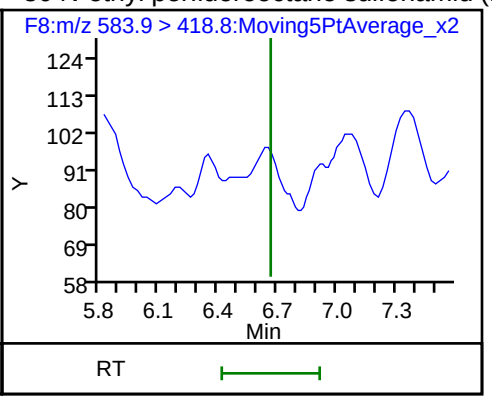
28 N-methyl perfluorooctane sulfonamid (ND)



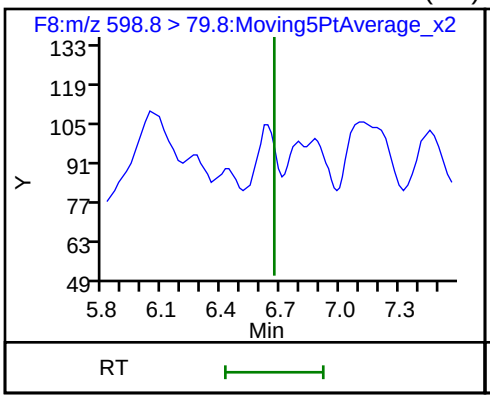
D 29 d5-NEtFOSAA



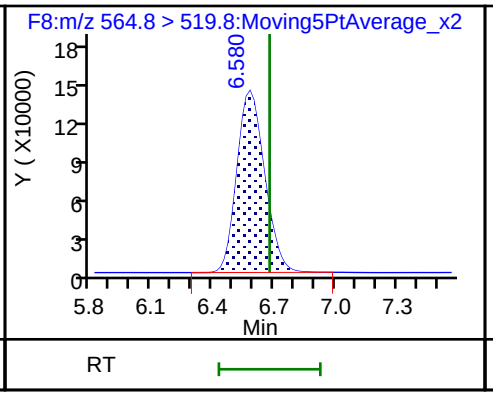
30 N-ethyl perfluorooctane sulfonamid (ND)



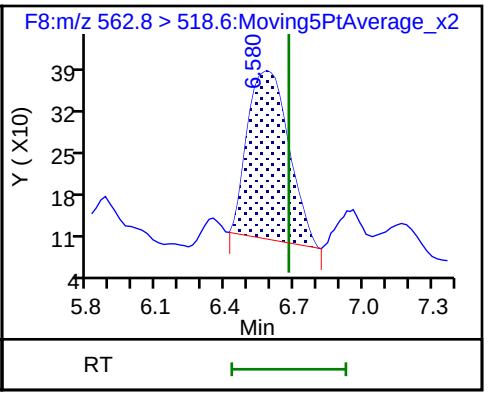
31 Perfluorodecane Sulfonic acid (ND)



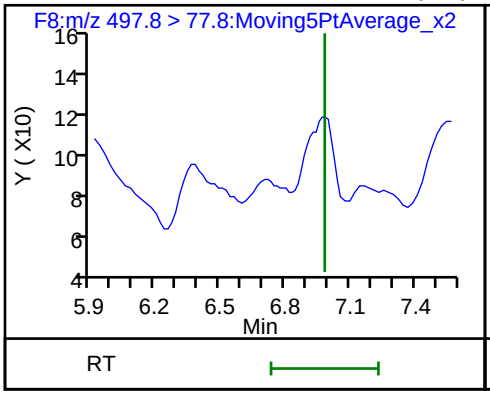
D 33 13C2 PFUnA



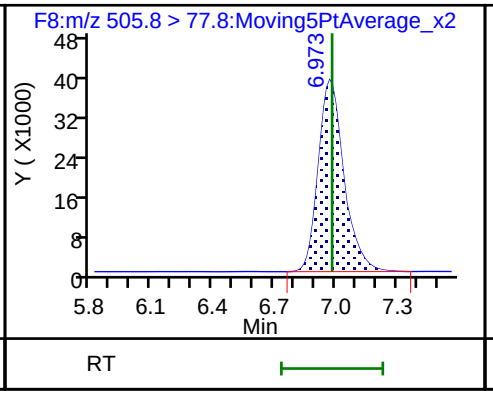
32 Perfluoroundecanoic acid



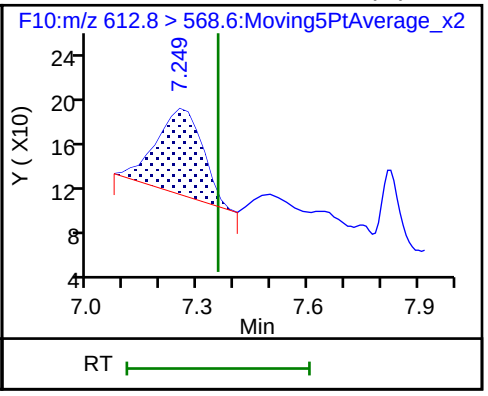
34 Perfluorooctane Sulfonamide (ND)



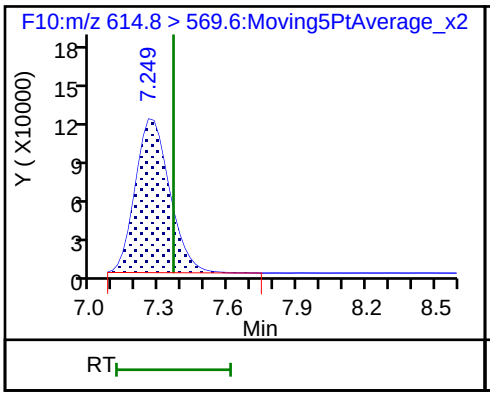
D 35 13C8 FOSA



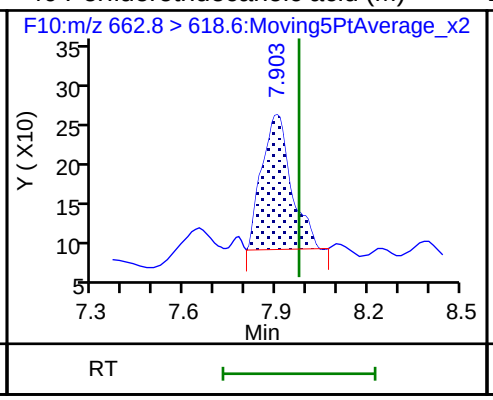
37 Perfluorododecanoic acid (M)



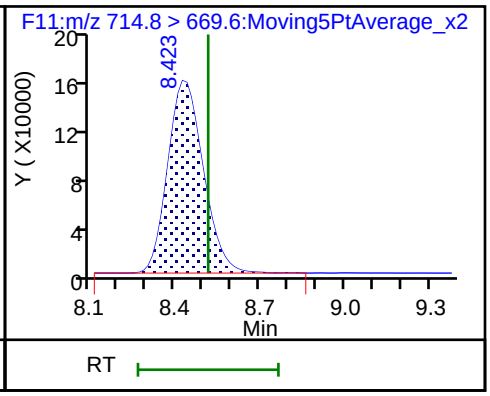
D 36 13C2 PFDoA



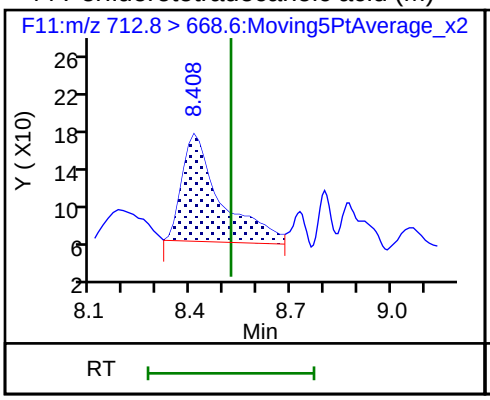
40 Perfluorotridecanoic acid (M)



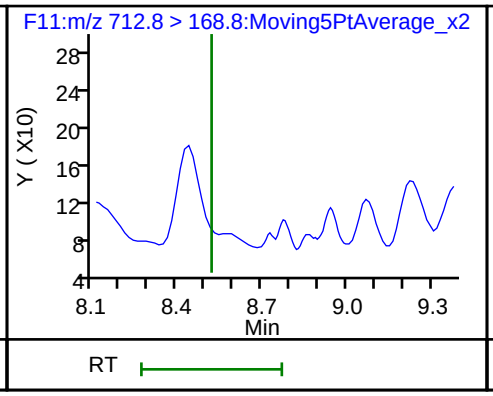
D 43 13C2-PFTeDA



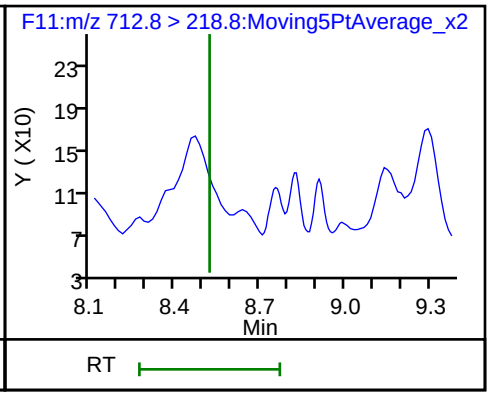
44 Perfluorotetradecanoic acid (M)



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



TestAmerica Burlington

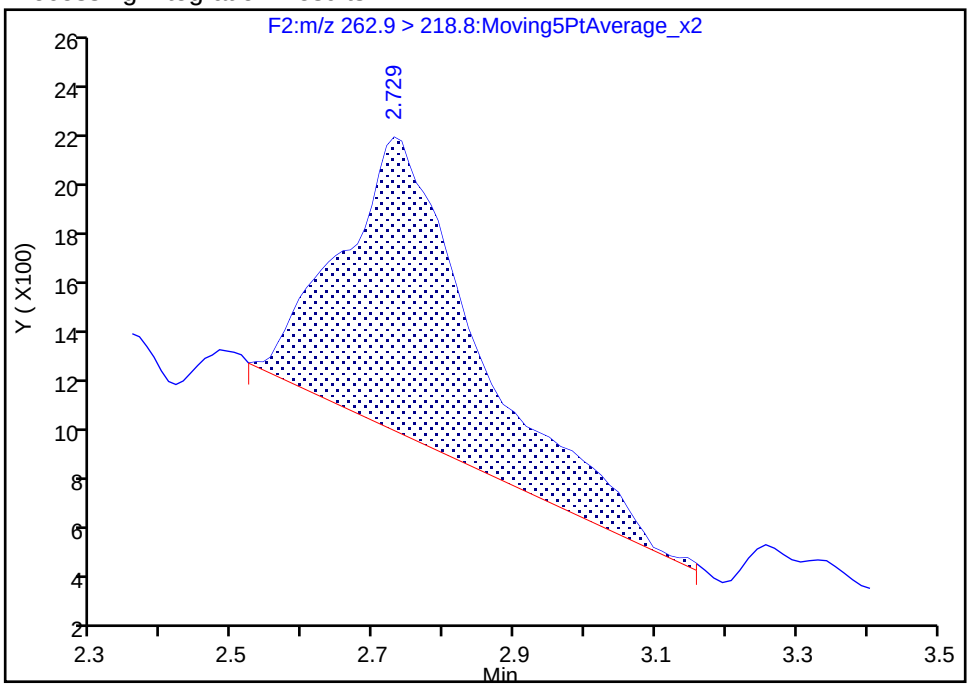
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A40.d				
Injection Date:	11-May-2018 18:25:23	Instrument ID:	LC410		
Lims ID:	200-43262-A-3-A	Lab Sample ID:	200-43262-3		
Client ID:	MW-3				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	40
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F2:MRM		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

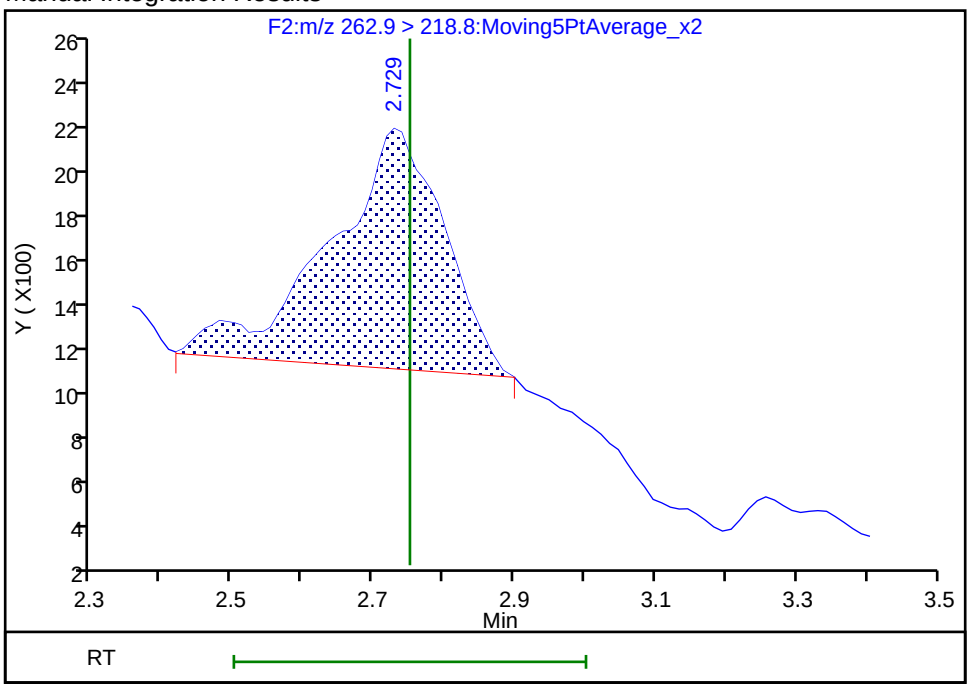
Processing Integration Results

RT: 2.73
Area: 15619
Amount: 2.668907
Amount Units: ng/ml



Manual Integration Results

RT: 2.73
Area: 11890
Amount: 2.051894
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:00:46
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

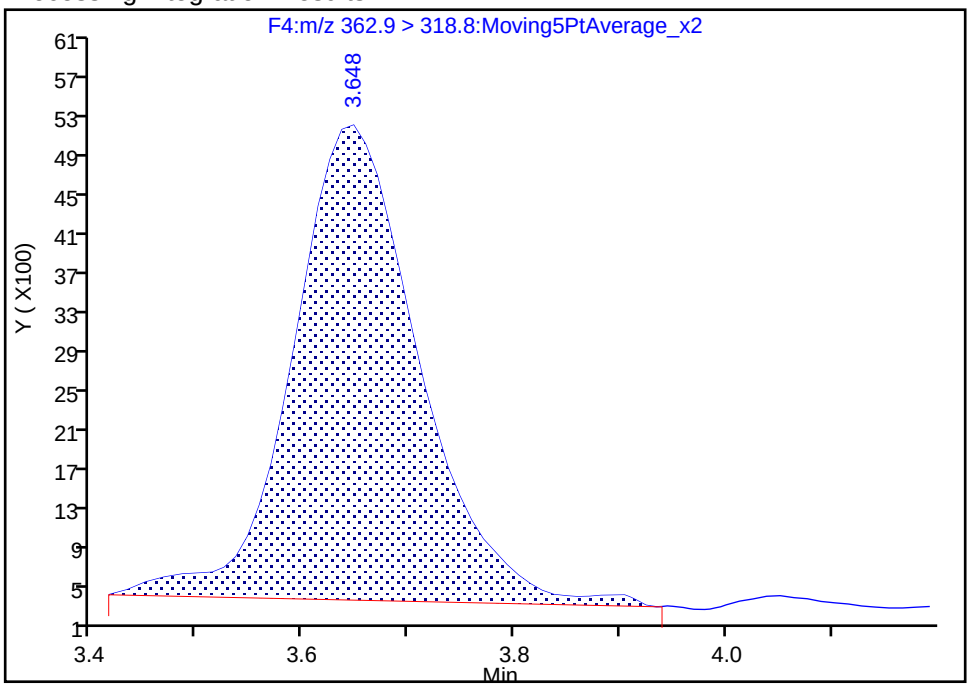
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A40.d				
Injection Date:	11-May-2018 18:25:23	Instrument ID:	LC410		
Lims ID:	200-43262-A-3-A	Lab Sample ID:	200-43262-3		
Client ID:	MW-3				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	40
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F4:MRM		

11 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

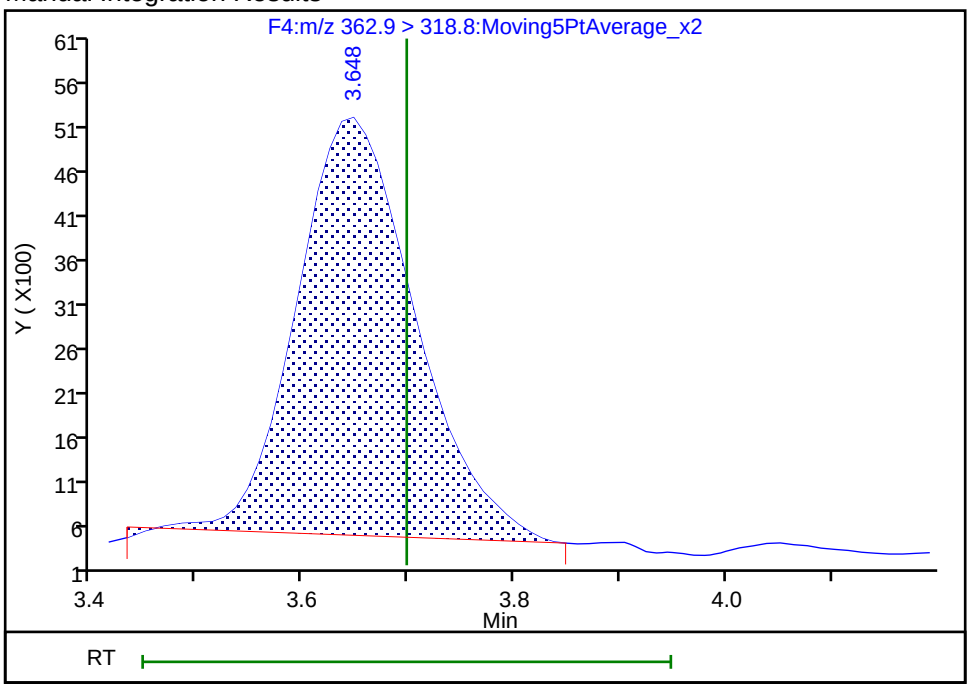
Processing Integration Results

RT: 3.65
Area: 39891
Amount: 2.989109
Amount Units: ng/ml



Manual Integration Results

RT: 3.65
Area: 36395
Amount: 2.722680
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:00:58

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

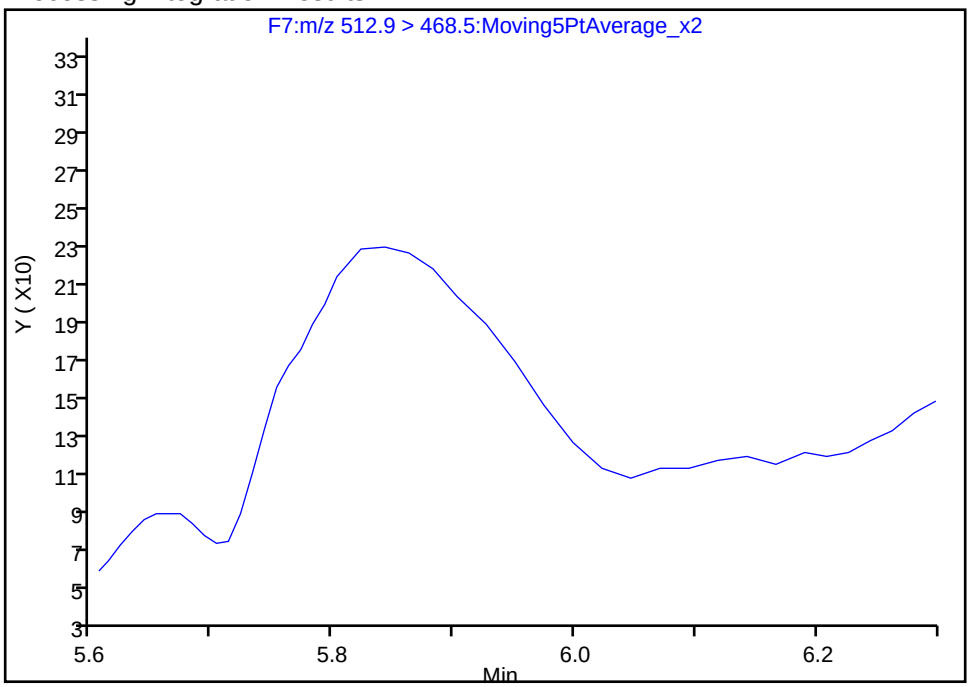
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A40.d
Injection Date: 11-May-2018 18:25:23 Instrument ID: LC410
Lims ID: 200-43262-A-3-A Lab Sample ID: 200-43262-3
Client ID: MW-3
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 40
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

26 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

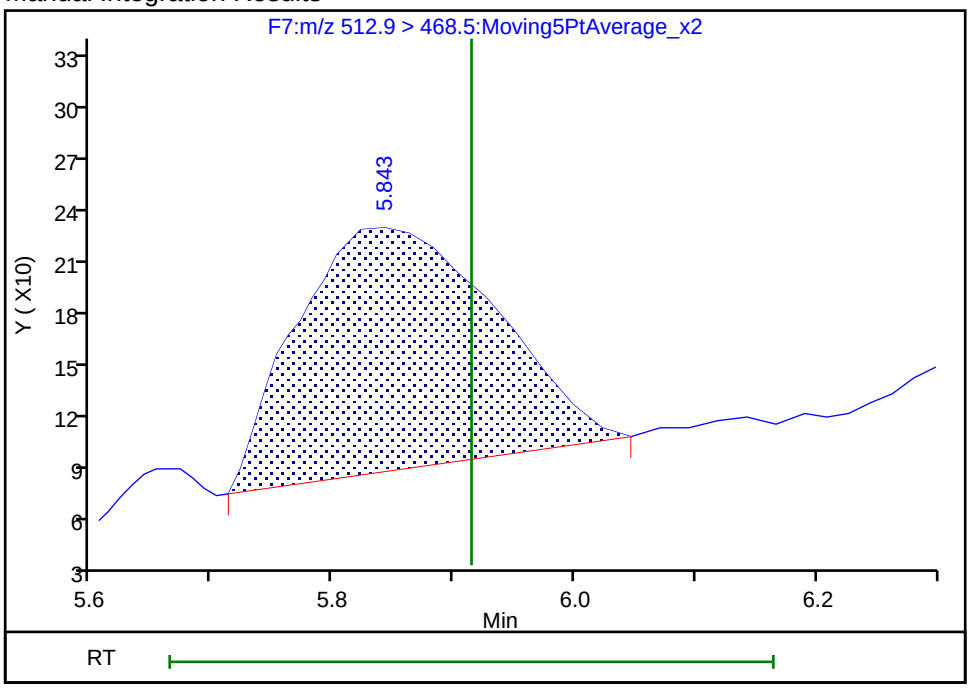
Not Detected
Expected RT: 5.91

Processing Integration Results



Manual Integration Results

RT: 5.84
Area: 1553
Amount: 0.314506
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:01:23
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

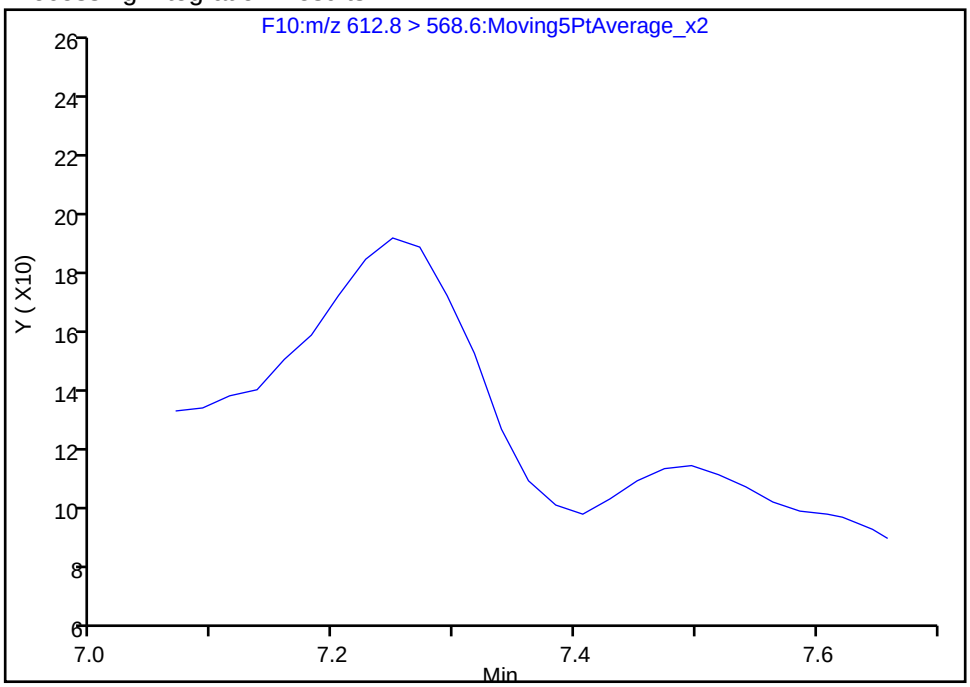
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A40.d				
Injection Date:	11-May-2018 18:25:23	Instrument ID:	LC410		
Lims ID:	200-43262-A-3-A	Lab Sample ID:	200-43262-3		
Client ID:	MW-3				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	40
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F10:MRM		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

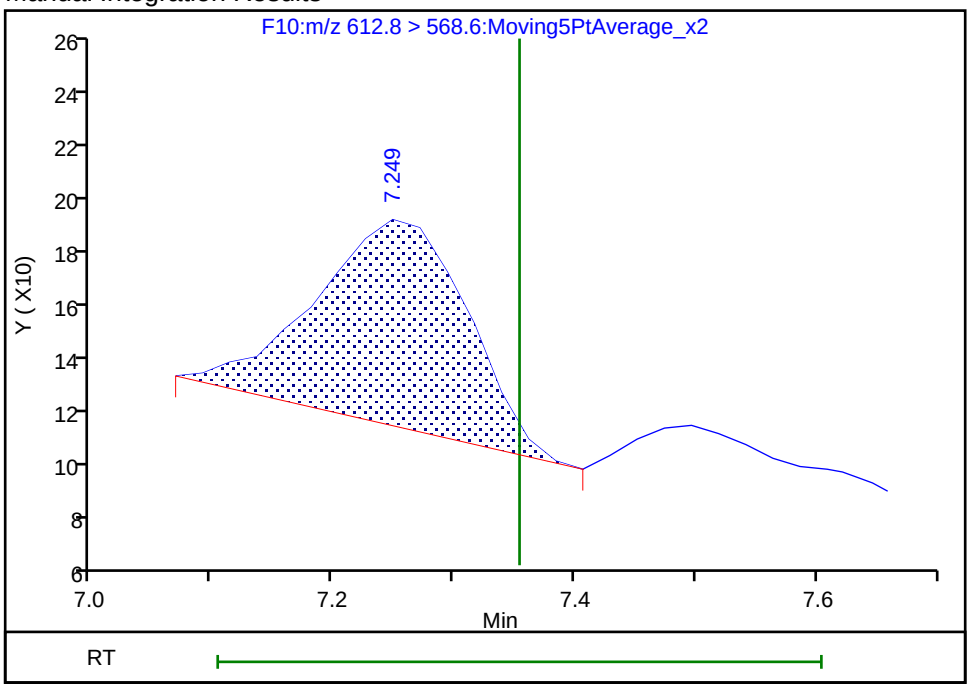
Not Detected
Expected RT: 7.35

Processing Integration Results



Manual Integration Results

RT: 7.25
Area: 659
Amount: 0.152298
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:01:39
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

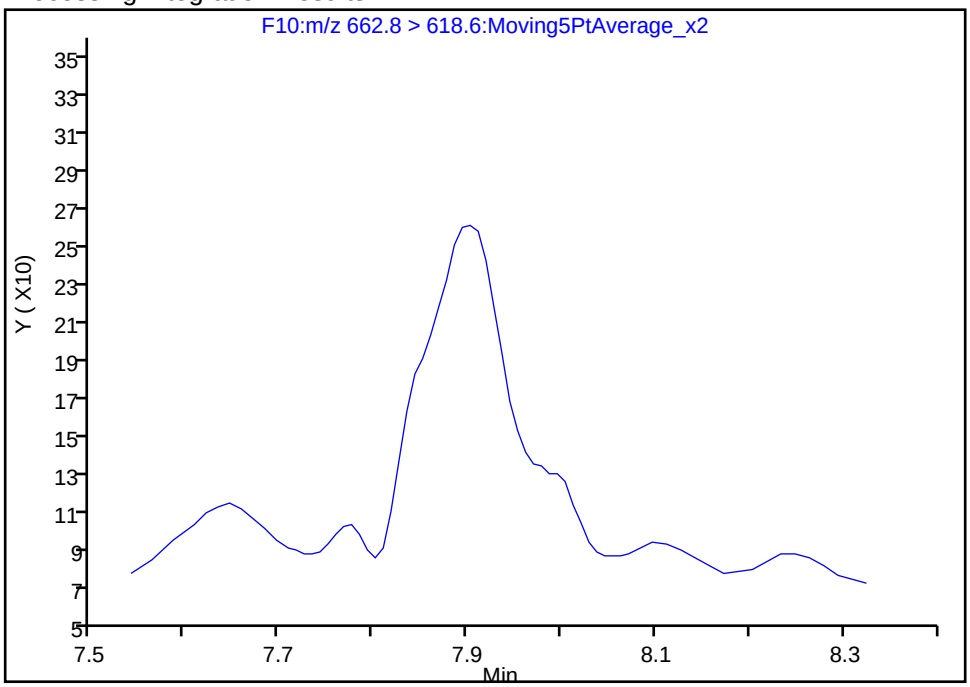
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A40.d				
Injection Date:	11-May-2018 18:25:23	Instrument ID:	LC410		
Lims ID:	200-43262-A-3-A	Lab Sample ID:	200-43262-3		
Client ID:	MW-3				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	40
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F10:MRM		

40 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

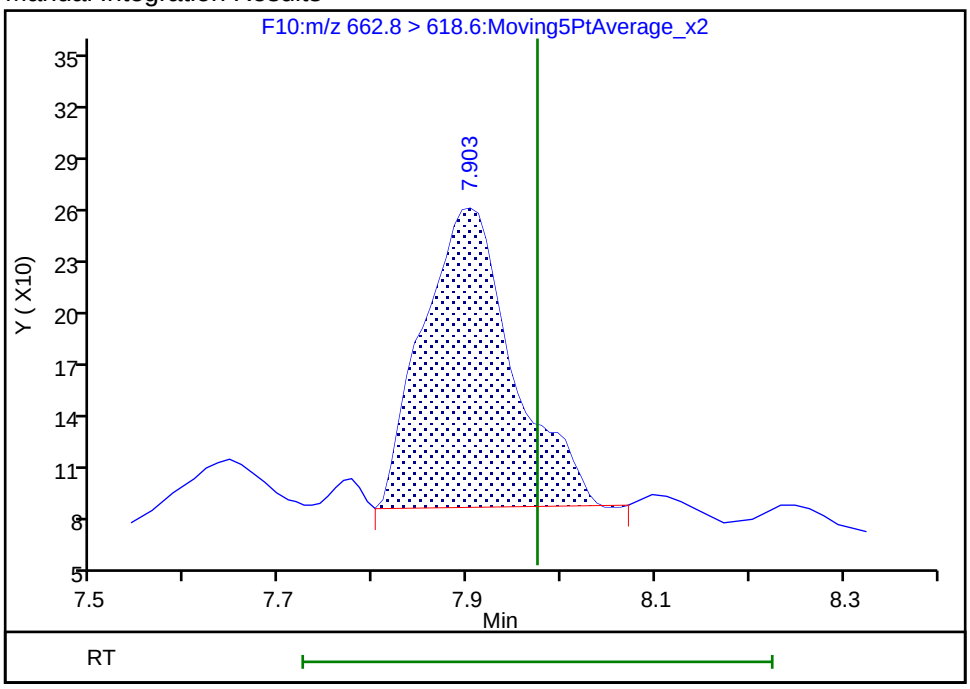
Not Detected
Expected RT: 7.97

Processing Integration Results



Manual Integration Results

RT: 7.90
Area: 1128
Amount: 0.249999
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:01:46
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

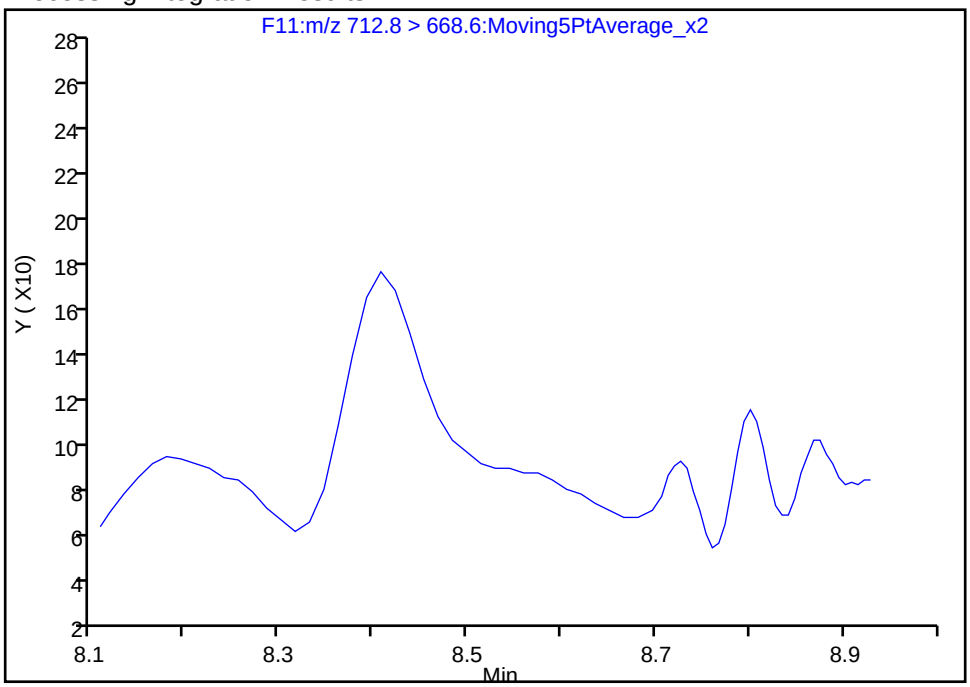
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A40.d				
Injection Date:	11-May-2018 18:25:23	Instrument ID:	LC410		
Lims ID:	200-43262-A-3-A	Lab Sample ID:	200-43262-3		
Client ID:	MW-3				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	40
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F11:MRM		

44 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

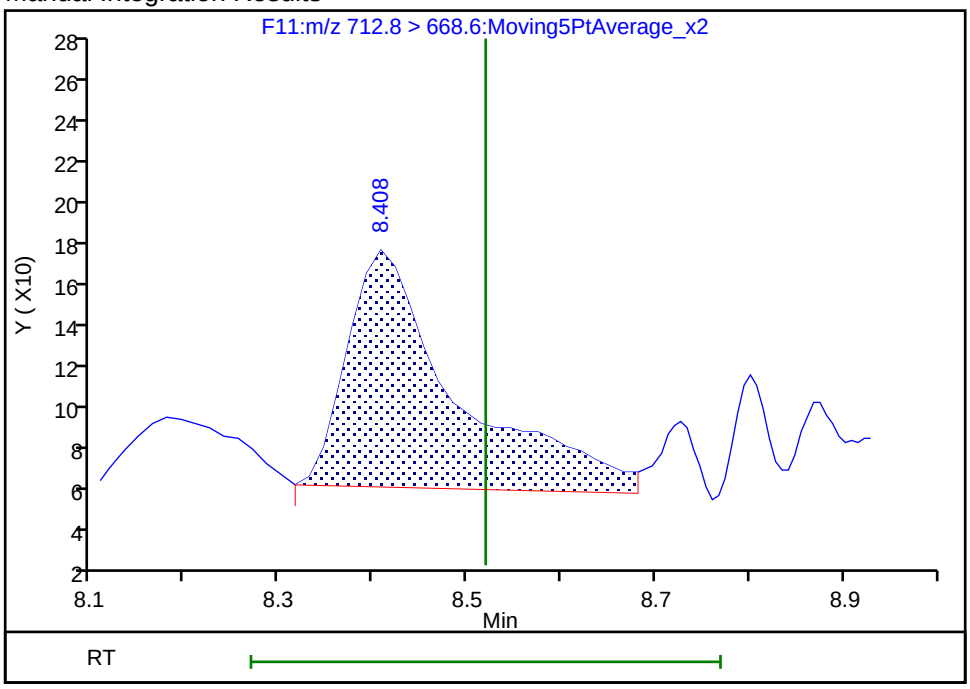
Not Detected
Expected RT: 8.52

Processing Integration Results



Manual Integration Results

RT: 8.41
Area: 908
Amount: -0.008542
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:02:07
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A40.d

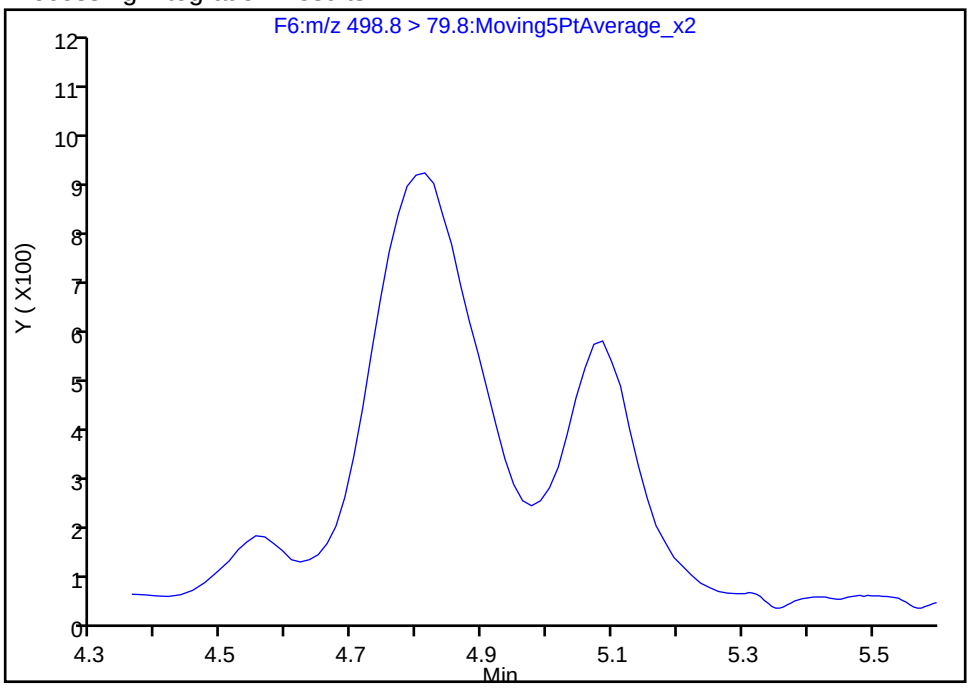
Injection Date:	11-May-2018 18:25:23	Instrument ID:	LC410		
Lims ID:	200-43262-A-3-A	Lab Sample ID:	200-43262-3		
Client ID:	MW-3				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	40
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F6:MRM		

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

Signal: 1

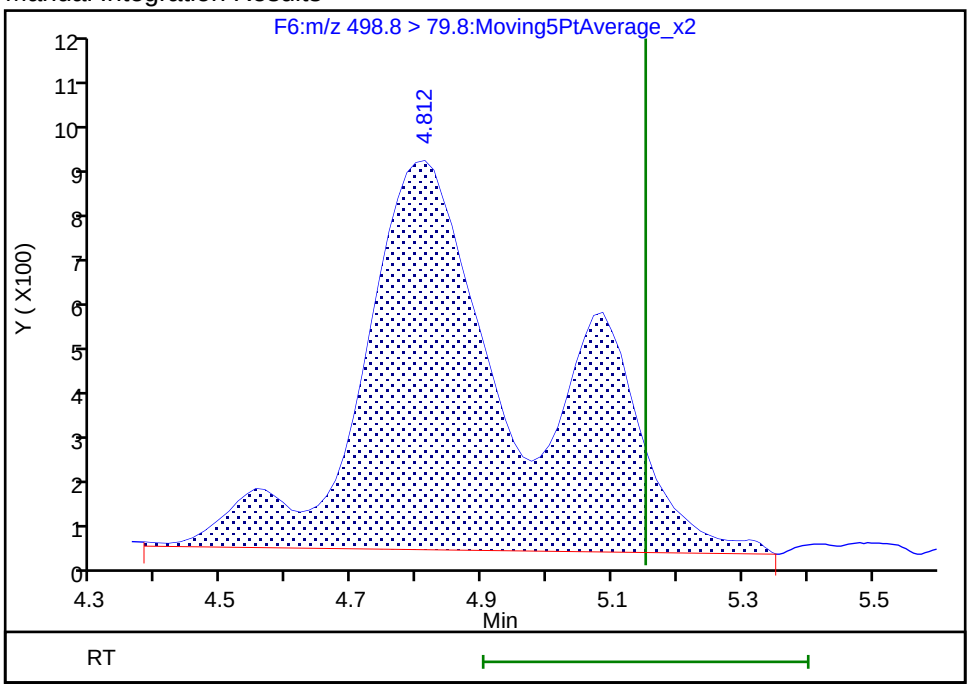
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 4.81
Area: 13948
Amount: 2.077017
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:20:08
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-3D | Lab Sample ID: 200-43262-4

Matrix: Water | Lab File ID: PF051018A41.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 17:35

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 270.8(mL) | Date Analyzed: 05/11/2018 18:41

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	8.57		1.85	0.41
2706-90-3	Perfluoropentanoic acid (PFPeA)	4.53	B	1.85	0.41
307-24-4	Perfluorohexanoic acid (PFHxA)	2.88	B	1.85	0.41
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.86		1.85	0.27
335-67-1	Perfluorooctanoic acid (PFOA)	15.4		1.85	0.43
375-95-1	Perfluorononanoic acid (PFNA)	4.09		1.85	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	0.75	J B	1.85	0.41
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.85	U	1.85	0.41
307-55-1	Perfluorododecanoic acid (PFDoA)	1.85	U	1.85	0.41
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.85	U	1.85	0.41
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.85	U	1.85	0.41
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.21		1.85	0.81
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.42	J B	1.85	0.26
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.85	U	1.85	0.41
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.85	U	1.85	0.41
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	4.05		1.85	0.28
754-91-6	Perfluorooctane Sulfonamide (FOSA)	1.85	U	1.85	0.41
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.85	U	1.85	0.55
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.85	U	1.85	0.55
27619-97-2	6:2FTS	1.85	U	1.85	0.55
39108-34-4	8:2FTS	1.85	U	1.85	0.55

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-3D | Lab Sample ID: 200-43262-4

Matrix: Water | Lab File ID: PF051018A41.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 17:35

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 270.8(mL) | Date Analyzed: 05/11/2018 18:41

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	39		25-150
STL00992	13C4 PFBA	22		25-150
STL01893	13C5 PFPeA	38		25-150
STL00993	13C2 PFHxA	43		25-150
STL01892	13C4-PFHpA	61		25-150
STL00990	13C4 PFOA	61		25-150
STL00995	13C5 PFNA	76		25-150
STL00996	13C2 PFDA	72		25-150
STL00997	13C2 PFUnA	83		25-150
STL00998	13C2 PFDoA	77		25-150
STL02116	13C2-PFTeDA	89		25-150
STL02337	13C3-PFBS	51		25-150
STL00994	18O2 PFHxS	72		25-150
STL00991	13C4 PFOS	69		25-150
STL02118	d3-NMeFOSAA	60		25-150
STL02117	d5-NEtFOSAA	77		25-150
STL02279	M2-6:2FTS	175		25-150
STL02280	M2-8:2FTS	160		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d
Lims ID: 200-43262-A-4-A
Client ID: MW-3D
Sample Type: Client
Inject. Date: 11-May-2018 18:41:29 ALS Bottle#: 0 Worklist Smp#: 41
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-041 4
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:17 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: murrayjw Date: 14-May-2018 09:27:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										M
216.9 > 171.5	2.302	2.328	-0.026	1.000	115430	10.9		21.9	35.3	M
1 Perfluorobutyric acid										M
212.9 > 168.9	2.330	2.334	-0.004	1.012	10343	4.64			4.1	M
4 Perfluoropentanoic acid										
262.9 > 218.8	2.729	2.751	-0.022	1.000	15738	2.45			3.2	
D 3 13C5-PFPeA										
267.7 > 222.6	2.729	2.753	-0.024	1.000	153084	19.0		38.0	247	
6 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.801	2.818	-0.017	1.000	9387	1.74			7.5	M
D 5 13C3-PFBS										
302.0 > 79.8	2.801	2.820	-0.019	1.000	197908	23.5		50.6	613	
D 7 13C2 PFHxA										
314.8 > 269.6	3.140	3.170	-0.030	1.000	255764	21.7		43.5	892	
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.140	3.172	-0.032	1.000	6911	1.56			5.9	M
D 10 13C4-PFHpA										
366.9 > 321.8	3.659	3.696	-0.037	1.000	611268	30.7		61.5	963	
11 Perfluoroheptanoic acid										M
362.9 > 318.8	3.659	3.698	-0.039	1.000	34043	2.63			28.5	M
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.692	3.739	-0.047	0.997	5045	0.7679			16.2	M
D 13 18O2 PFHxS										
402.9 > 83.8	3.703	3.742	-0.039	1.000	315835	33.8		71.5	583	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.317	4.319	-0.002	1.012	524	0.1581			2.9	
D 14 M2-6:2FTS										
428.6 > 408.6	4.265	4.321	-0.056	1.000	152930	83.3		175	1010	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.317	4.363	-0.046	1.000	590202	30.4		60.8	1904	
* 49 13C2-PFOA										
414.9 > 369.8	4.317	4.363	-0.046		1120126	50.0			1643	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.317	4.368	-0.051	1.000	103606	8.37			40.1	
D 21 13C5 PFNA										
467.8 > 422.8	5.072	5.127	-0.055	1.000	876218	38.0		75.9	934	
19 Perfluorononanoic acid										M
462.8 > 418.8	5.072	5.136	-0.064	1.000	35924	2.21			63.8	M
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	4.826	5.152	-0.326	0.946	13283	2.20			35.3	M
D 22 13C4 PFOS										
502.8 > 79.8	5.099	5.154	-0.055	1.000	277787	33.1		69.3	1105	
D 23 M2-8:2FTS										
528.8 > 508.8	5.823	5.882	-0.059	1.000	376954	76.6		160	1793	
D 25 13C2 PFDA										
514.9 > 469.5	5.843	5.910	-0.067	1.000	999757	35.8		71.5	3544	
26 Perfluorodecanoic acid										M
512.9 > 468.5	5.862	5.914	-0.052	1.003	3069	0.4061			7.9	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.205	6.271	-0.066	1.000	178305	30.0		60.0	356	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.562	6.640	-0.078	1.000	197640	38.3		76.6	941	
D 33 13C2 PFUnA										
564.8 > 519.8	6.598	6.676	-0.078	1.000	1091531	41.6		83.2	1739	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.598	6.676	-0.078	1.000	2500	0.0993			16.3	
D 35 13C8 FOSA										
505.8 > 77.8	6.987	6.984	0.003	1.000	292710	19.4		38.9	1168	
37 Perfluorododecanoic acid										M
612.8 > 568.6	7.294	7.354	-0.060	1.000	1149	0.1831			5.7	M
D 36 13C2 PFDoA										
614.8 > 569.6	7.294	7.358	-0.064	1.000	1064759	38.6		77.2	1469	
D 43 13C2-PFTeDA										
714.8 > 669.6	8.453	8.514	-0.061	1.000	1137417	44.7		89.3	1689	
44 Perfluorotetradecanoic acid										a
712.8 > 668.6	8.453	8.519	-0.066	1.000	2554	0.0771			8.9	
712.8 > 168.8	8.519	8.519	0.0	0.000	0		0.00(0.00-0.00)			
712.8 > 218.8	8.519	8.519	0.0	0.000	0		0.00(0.00-0.00)			

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 14-May-2018 12:12:27 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d

Injection Date: 11-May-2018 18:41:29 Instrument ID: LC410

Lims ID: 200-43262-A-4-A Lab Sample ID: 200-43262-4

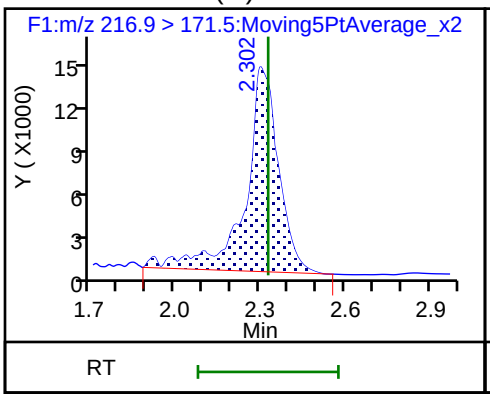
Client ID: MW-3D

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 41

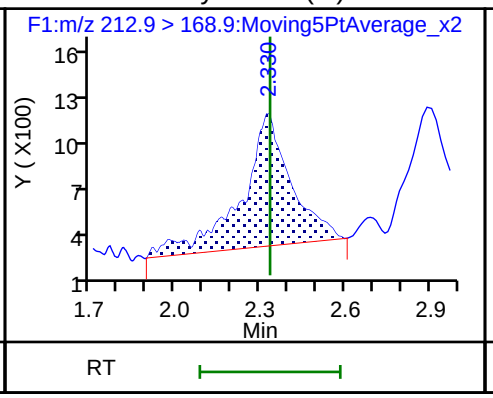
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

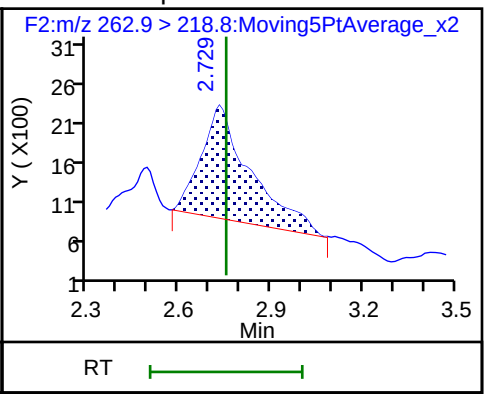
D 2 13C4 PFBA (M)



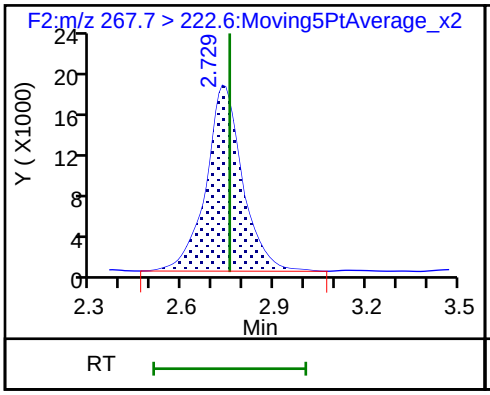
1 Perfluorobutyric acid (M)



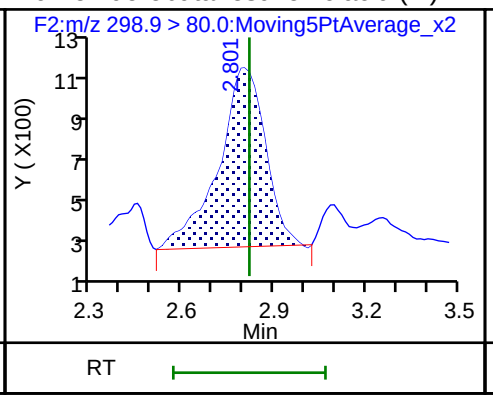
4 Perfluoropentanoic acid



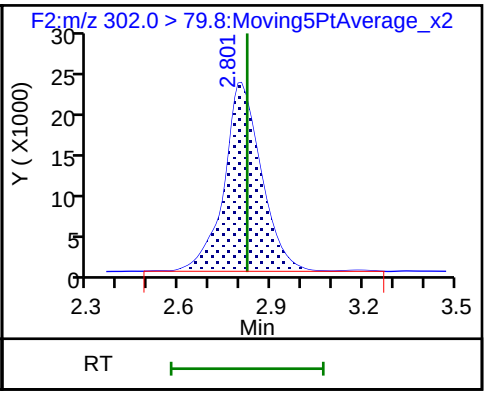
D 3 13C5-PFPeA



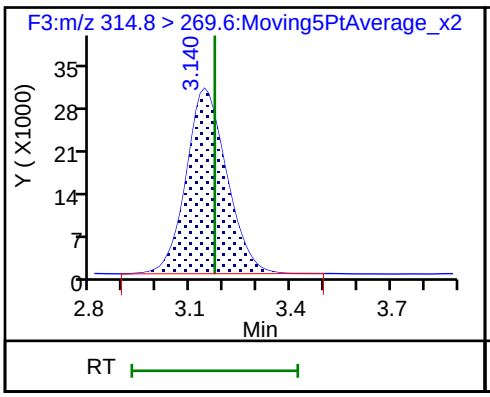
6 Perfluorobutanesulfonic acid (M)



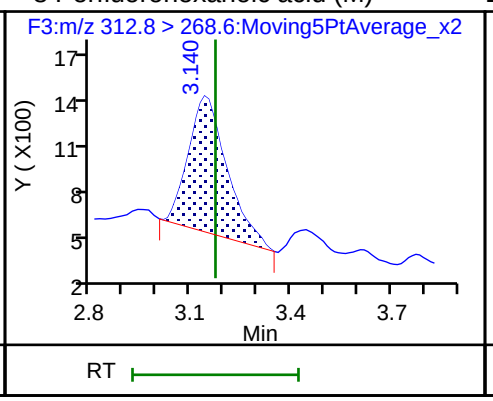
D 5 13C3-PFBS



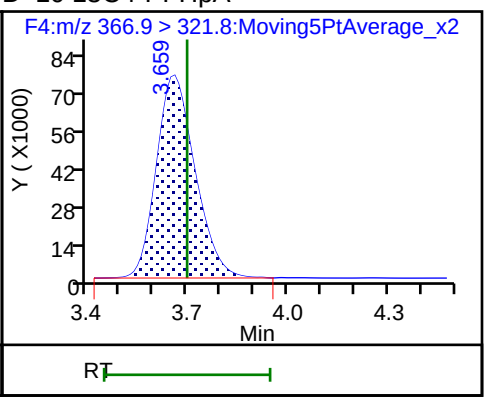
D 7 13C2 PFHxA



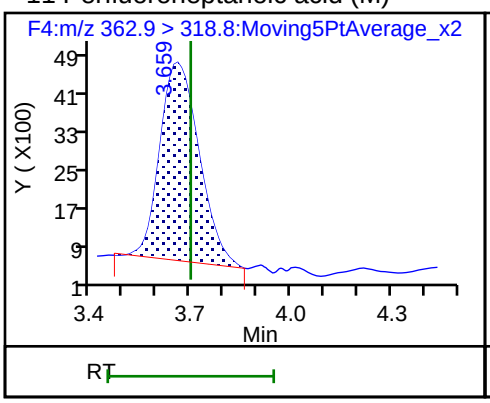
8 Perfluorohexanoic acid (M)



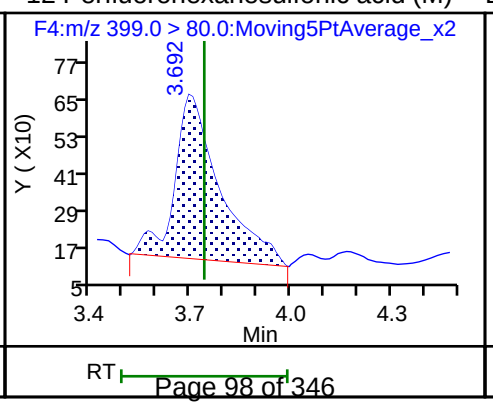
D 10 13C4-PFHpA



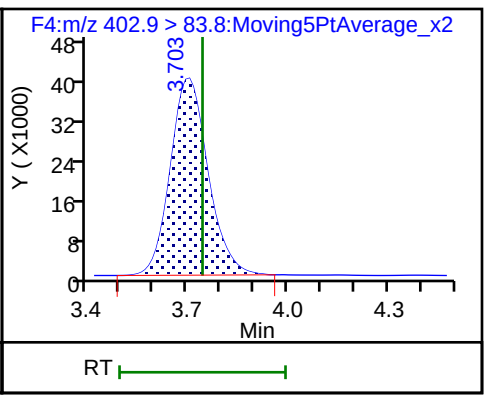
11 Perfluoroheptanoic acid (M)



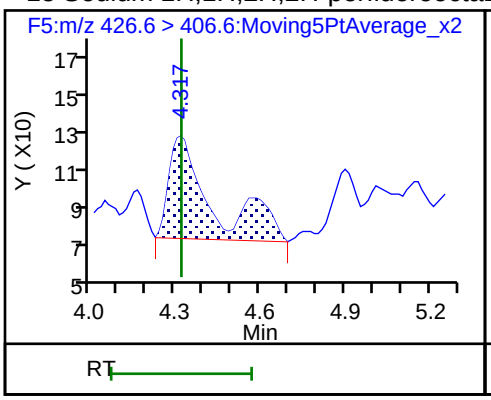
12 Perfluorohexanesulfonic acid (M)



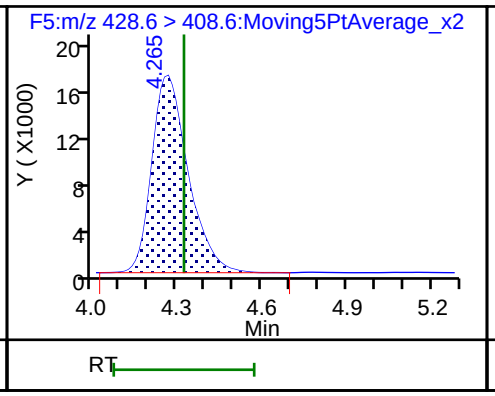
D 13 18O2 PFHxS



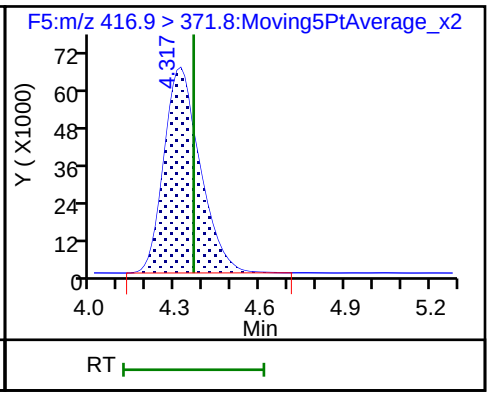
15 Sodium 1H,1H,2H,2H-perfluorooctane



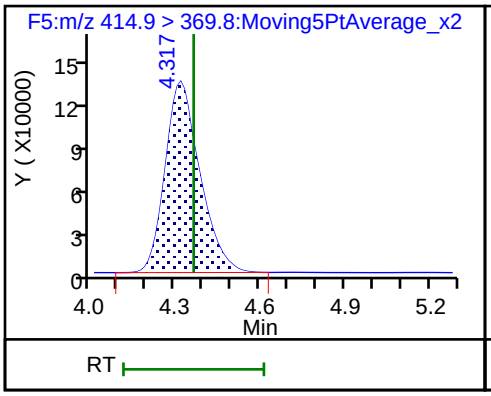
D 14 M2-6:2FTS



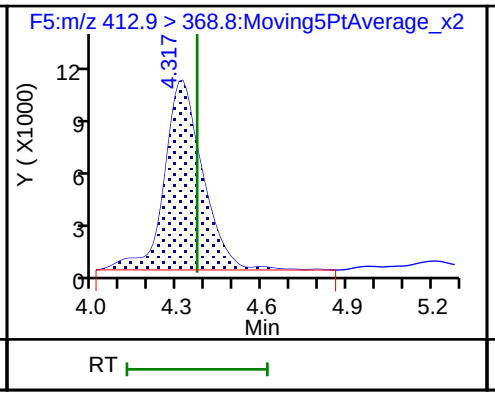
D 17 13C4 PFOA



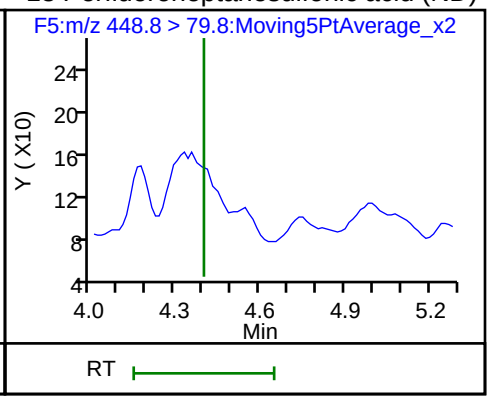
* 49 13C2-PFOA



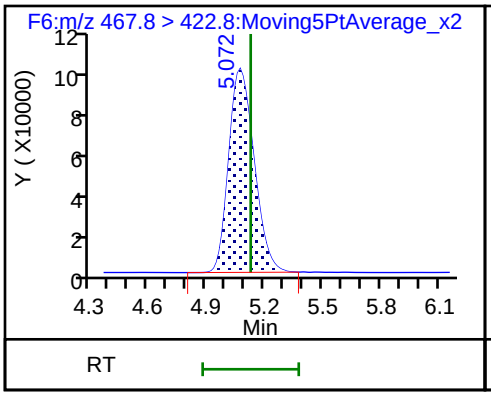
16 Perfluorooctanoic acid



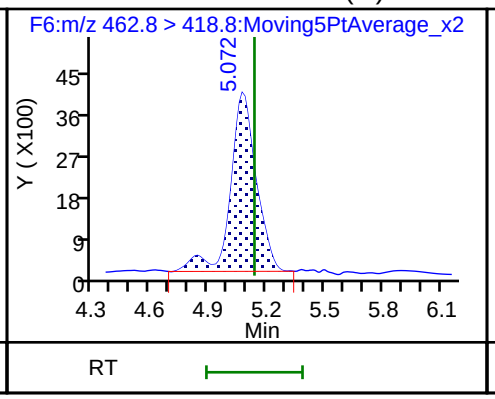
18 Perfluoroheptanesulfonic acid (ND)



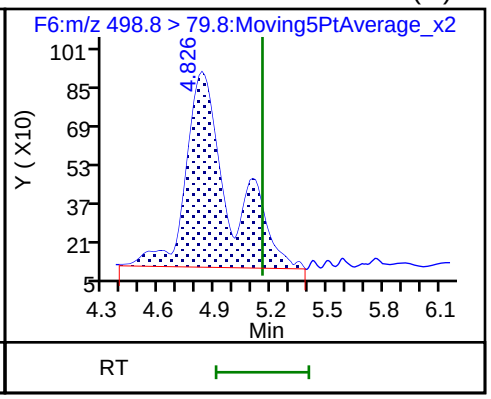
D 21 13C5 PFNA



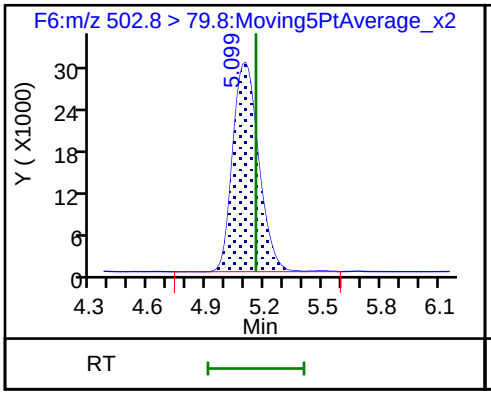
19 Perfluorononanoic acid (M)



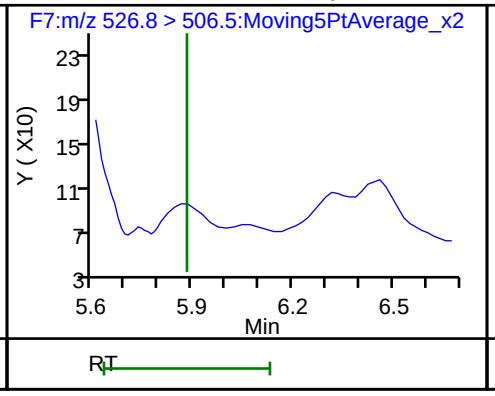
20 Perfluorooctane sulfonic acid (M)



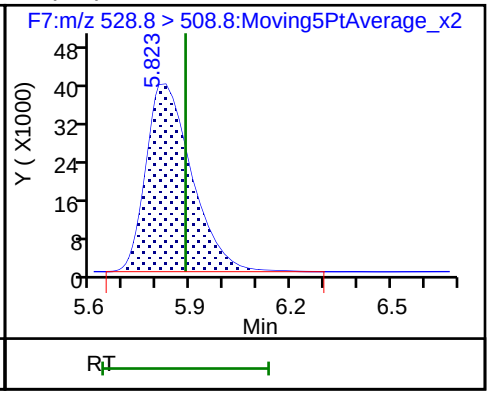
D 22 13C4 PFOS



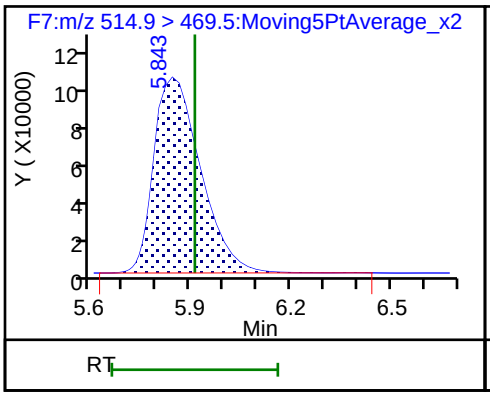
24 Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (M)



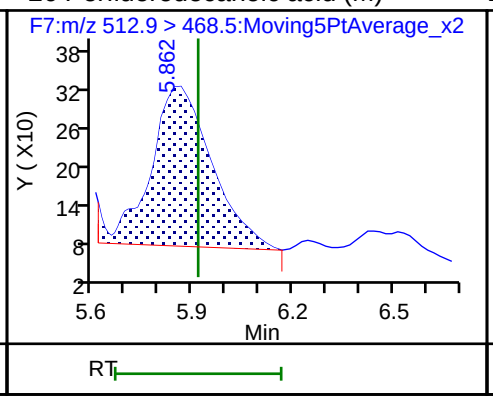
D 23 M2-8:2FTS



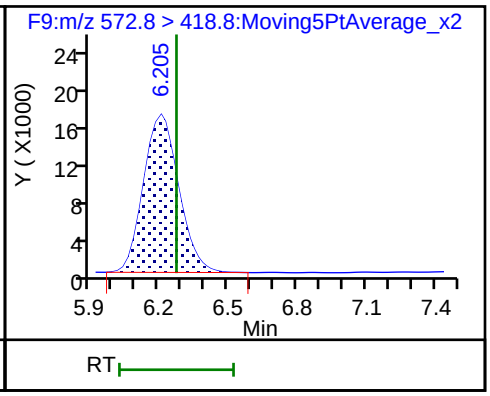
D 25 13C2 PFDA



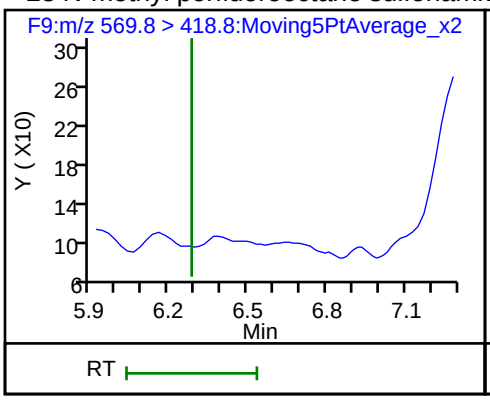
26 Perfluorodecanoic acid (M)



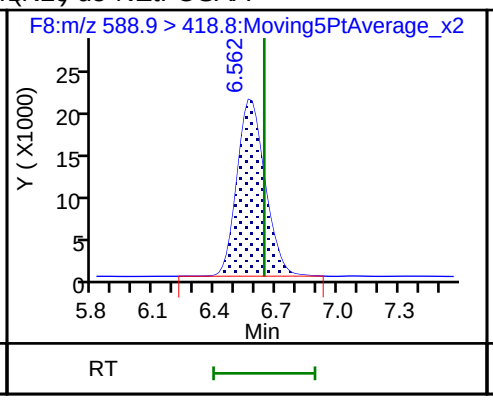
D 27 d3-NMeFOSAA



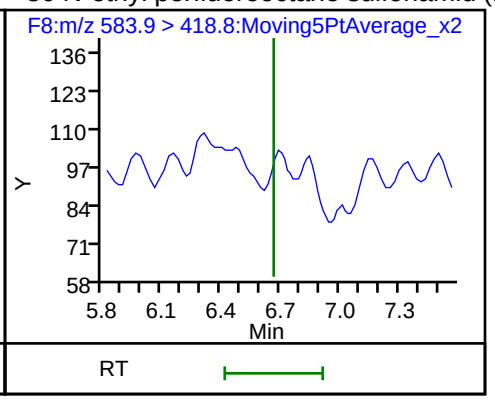
28 N-methyl perfluorooctane sulfonamid (ND)



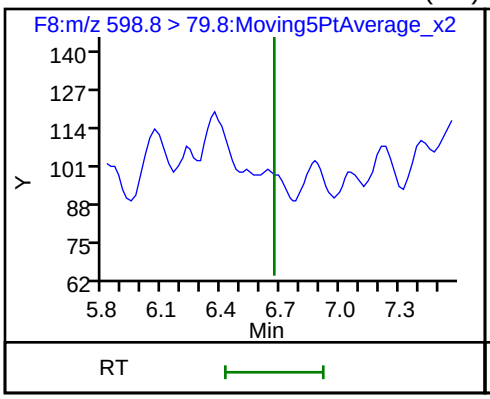
D 29 d5-NEtFOSAA



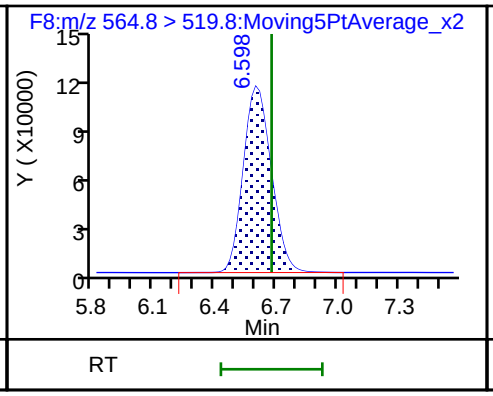
30 N-ethyl perfluorooctane sulfonamid (ND)



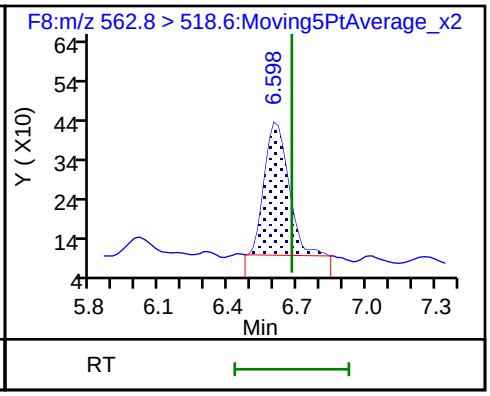
31 Perfluorodecane Sulfonic acid (ND)



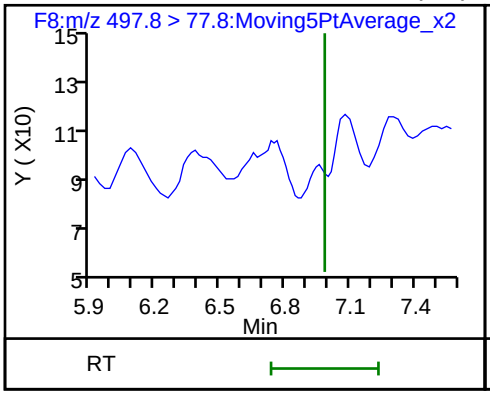
D 33 13C2 PFUnA



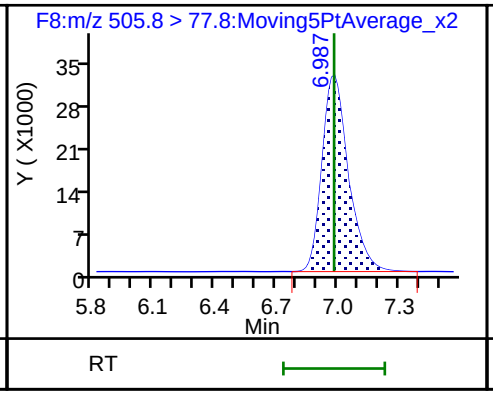
32 Perfluoroundecanoic acid



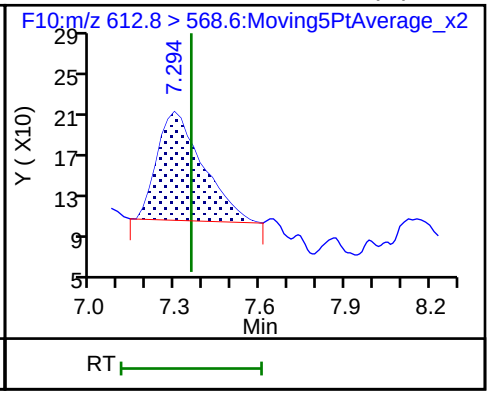
34 Perfluorooctane Sulfonamide (ND)



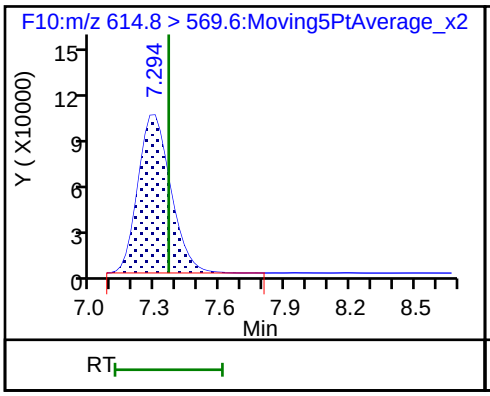
D 35 13C8 FOSA



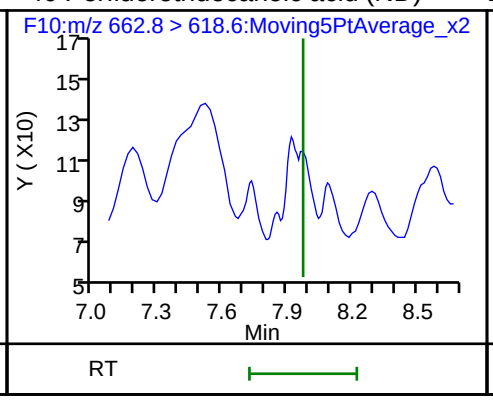
37 Perfluorododecanoic acid (M)



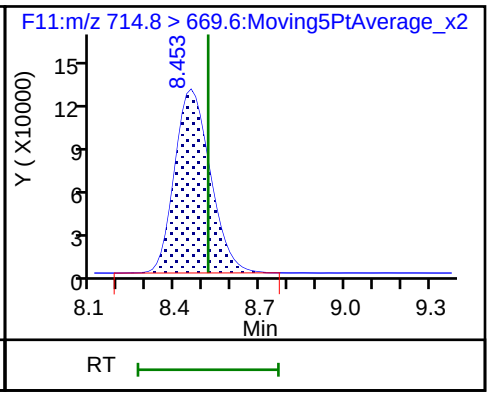
D 36 13C2 PFDoA



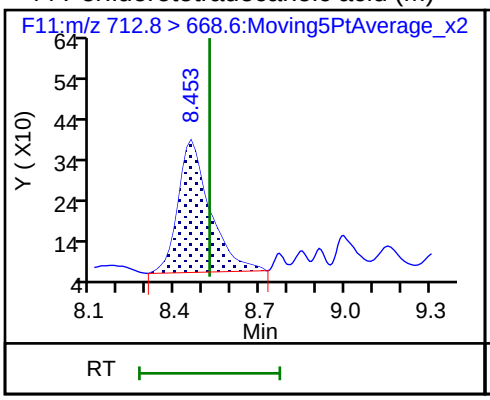
40 Perfluorotridecanoic acid (ND)



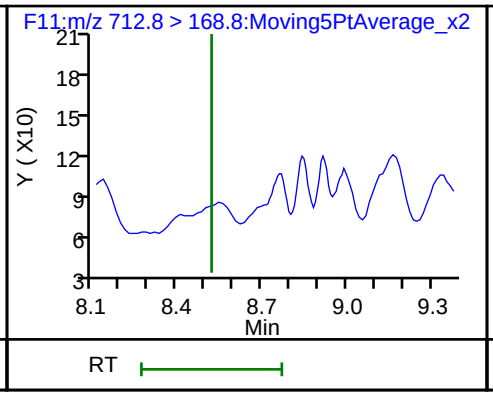
D 43 13C2-PFTeDA



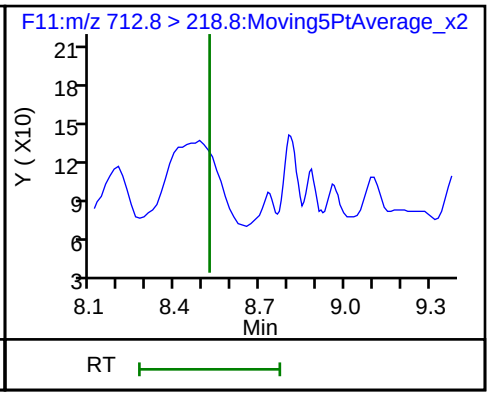
44 Perfluorotetradecanoic acid (M)



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Burlington

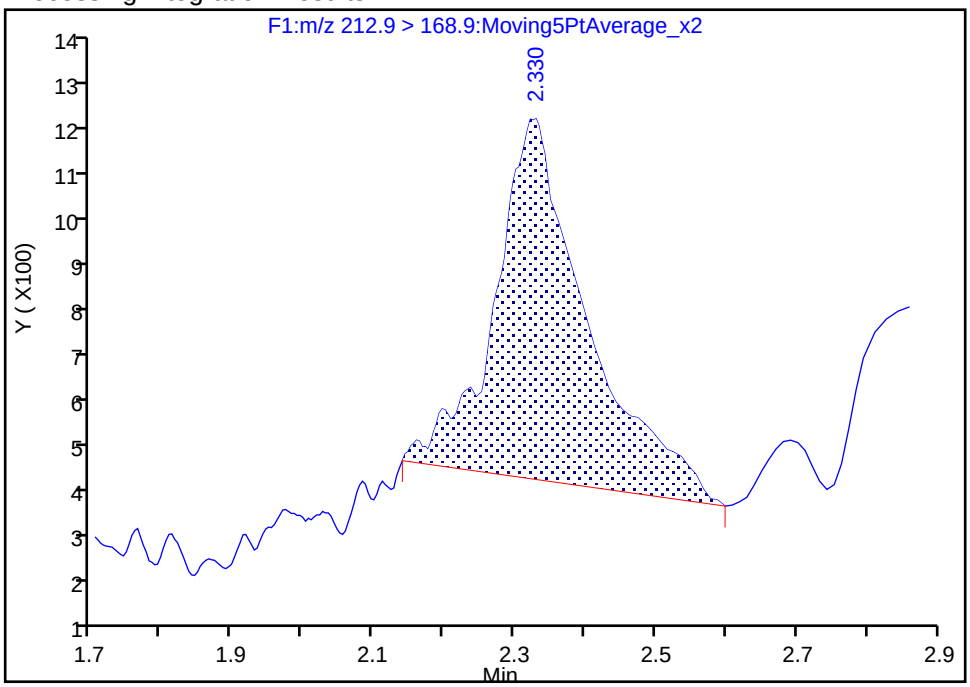
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F1:MRM		

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

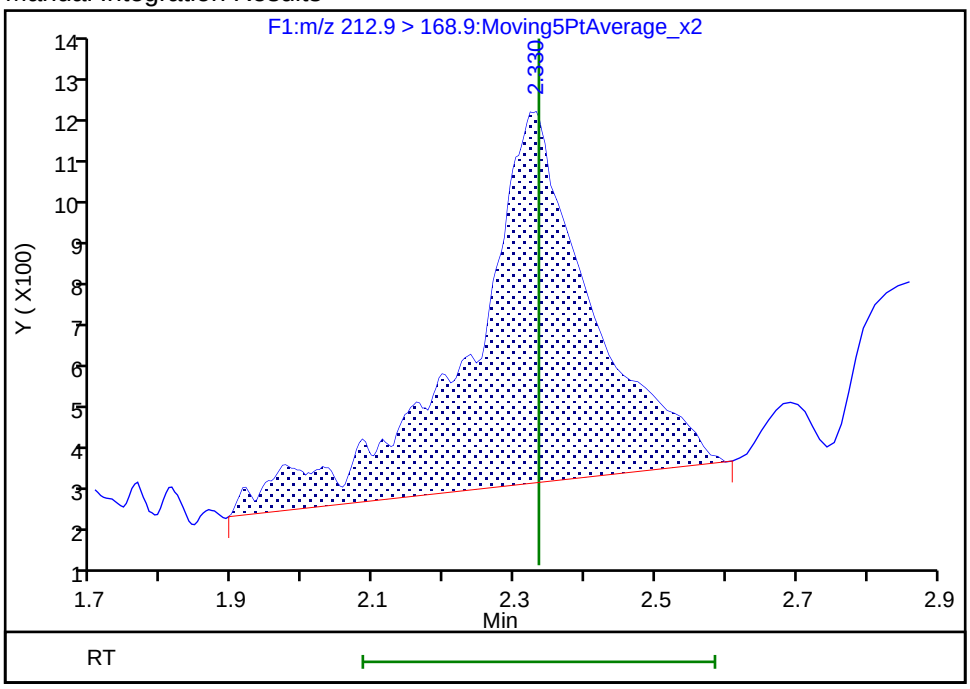
Processing Integration Results

RT: 2.33
Area: 6729
Amount: 2.942841
Amount Units: ng/ml



Manual Integration Results

RT: 2.33
Area: 10343
Amount: 4.644151
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:23:05

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

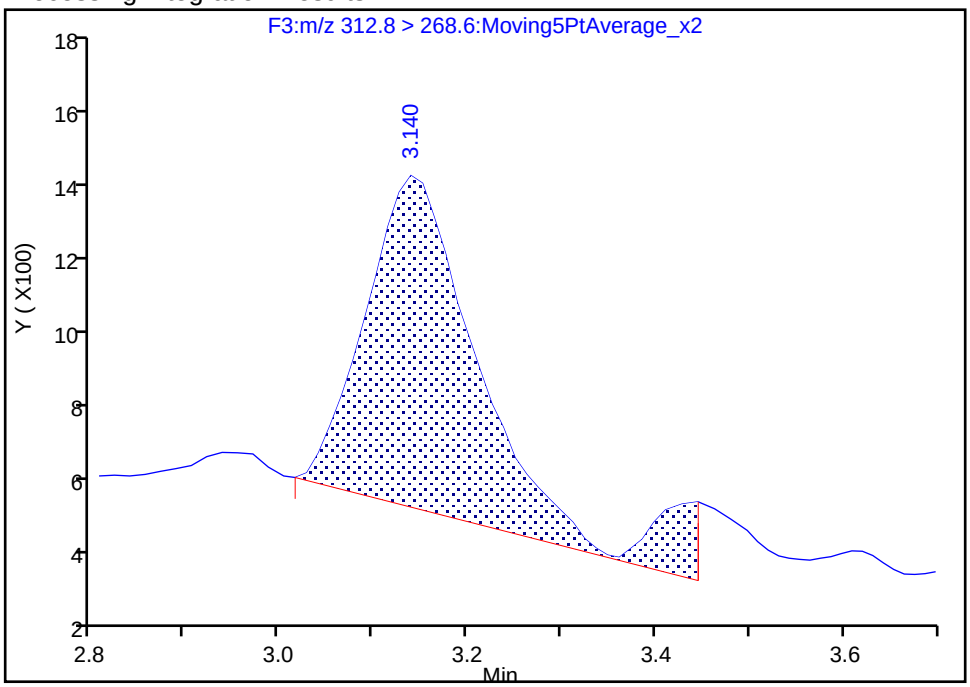
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F3:MRM		

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

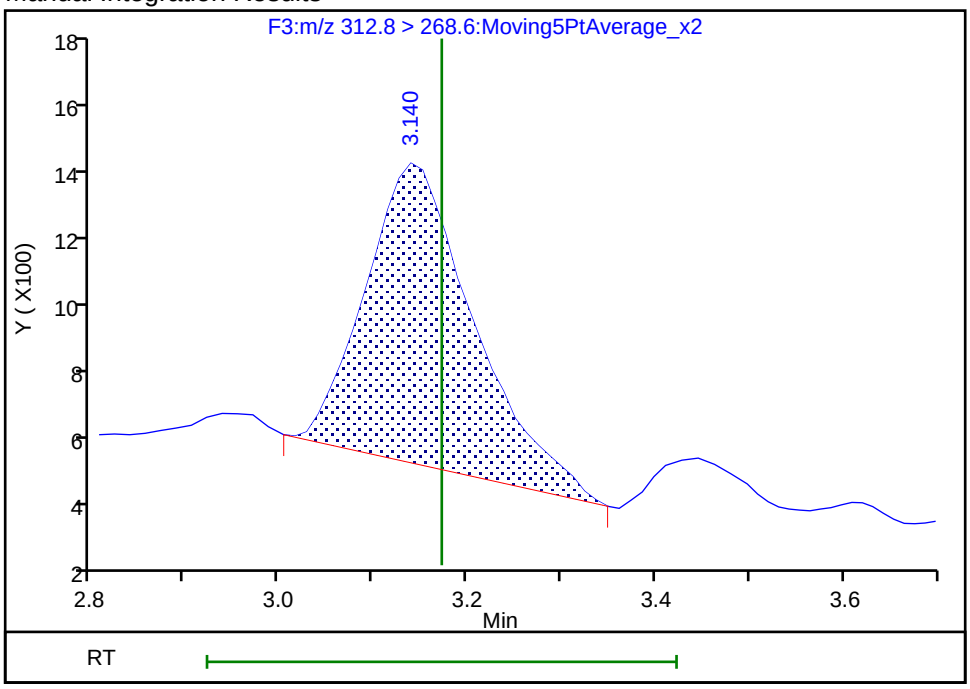
Processing Integration Results

RT: 3.14
Area: 7561
Amount: 1.686193
Amount Units: ng/ml



Manual Integration Results

RT: 3.14
Area: 6911
Amount: 1.559876
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:23:42

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

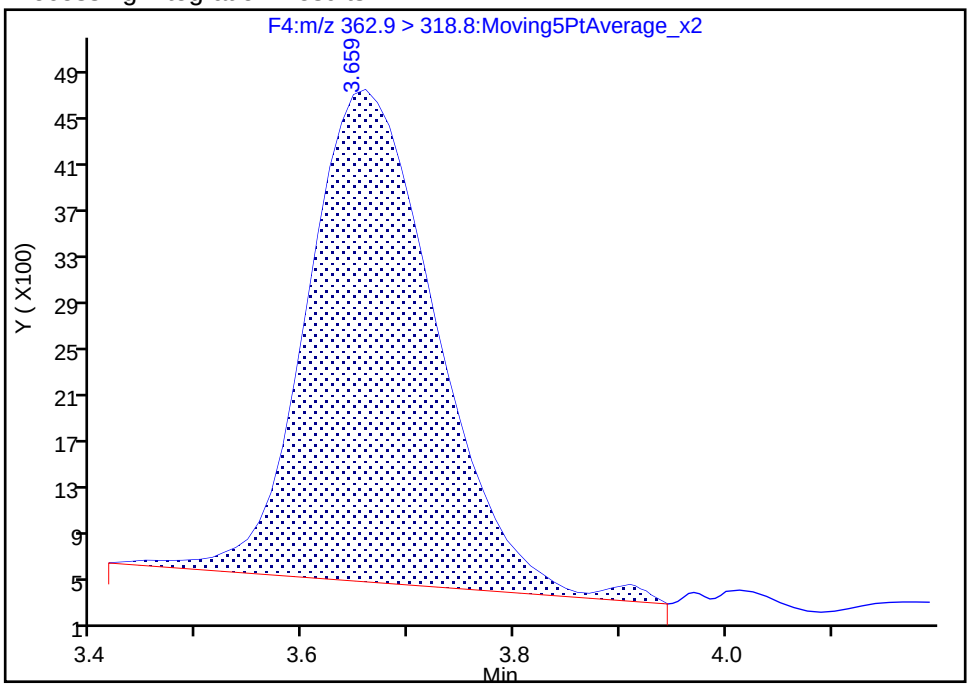
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F4:MRM		

11 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

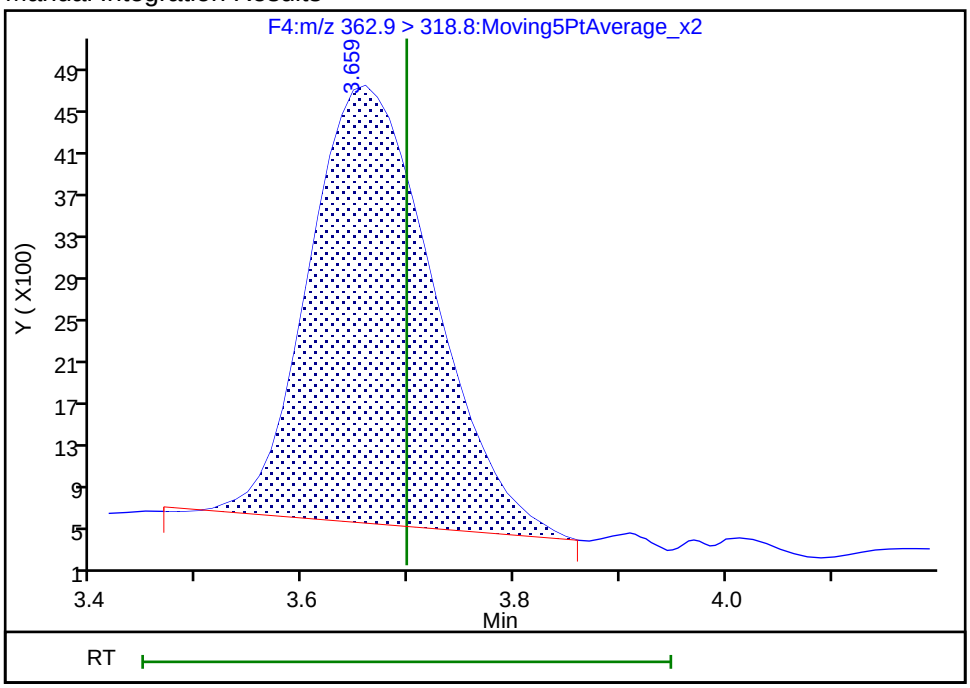
Processing Integration Results

RT: 3.66
Area: 36085
Amount: 2.793163
Amount Units: ng/ml



Manual Integration Results

RT: 3.66
Area: 34043
Amount: 2.632217
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:23:55
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

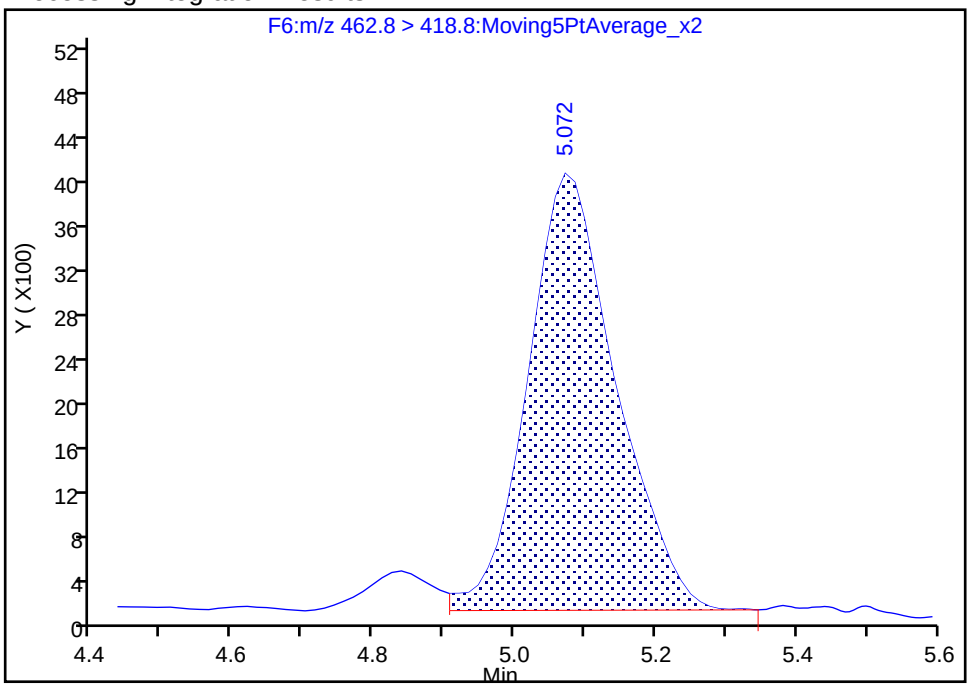
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F6:MRM		

19 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

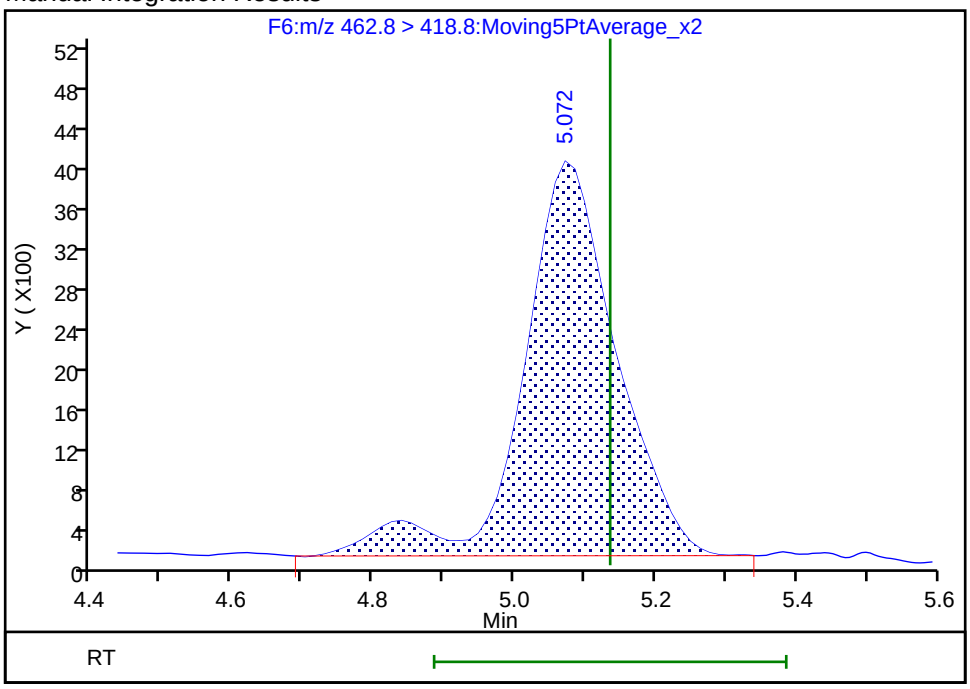
Processing Integration Results

RT: 5.07
Area: 33801
Amount: 2.084809
Amount Units: ng/ml



Manual Integration Results

RT: 5.07
Area: 35924
Amount: 2.214426
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:25:54

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

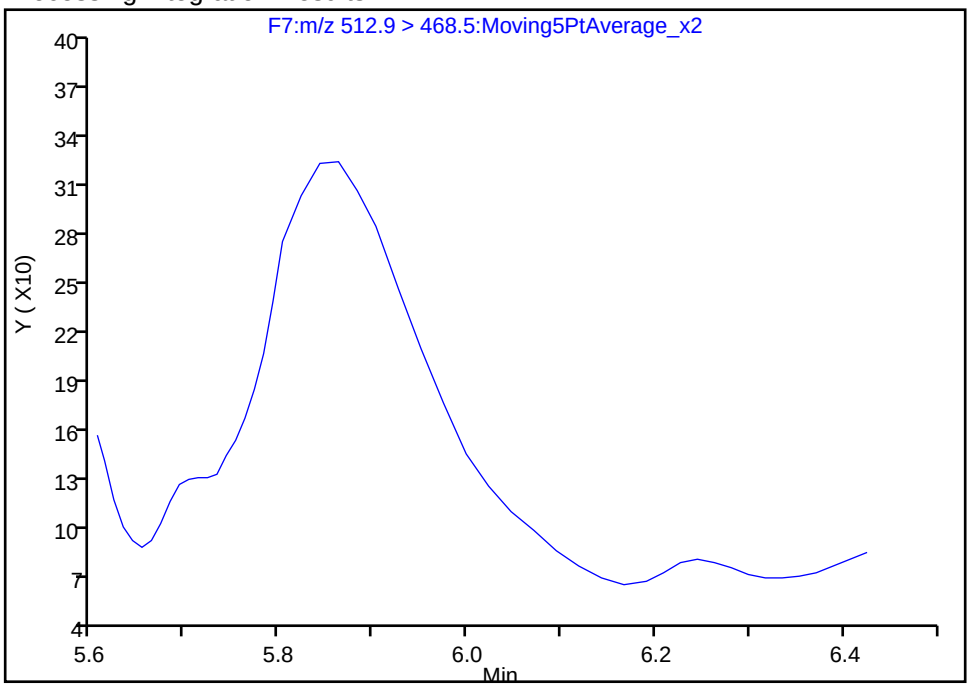
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F7:MRM		

26 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

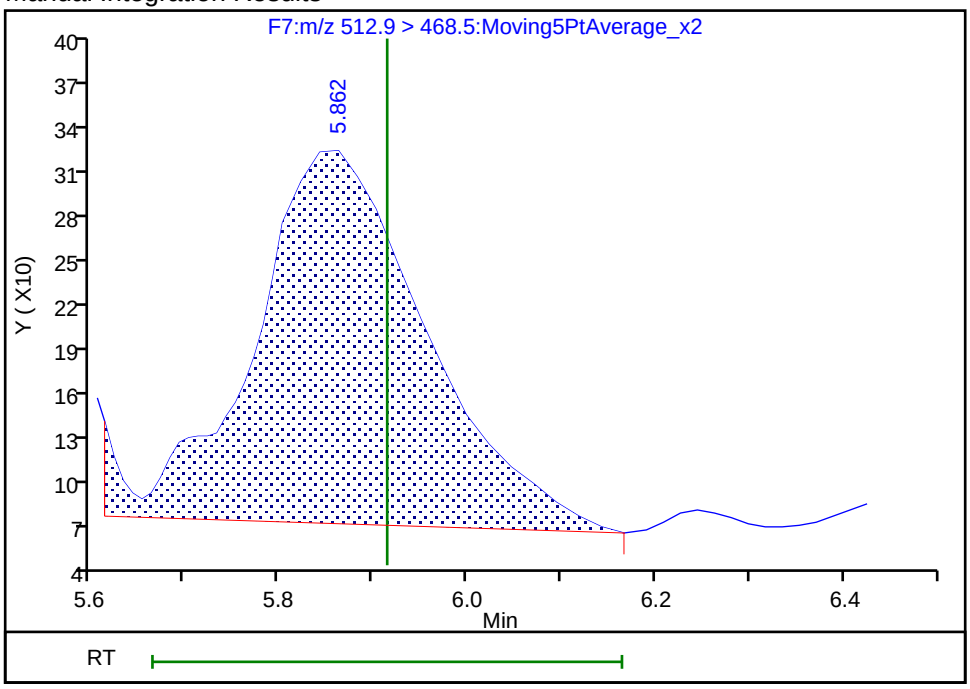
Not Detected
Expected RT: 5.91

Processing Integration Results



Manual Integration Results

RT: 5.86
Area: 3069
Amount: 0.406148
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:26:49
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

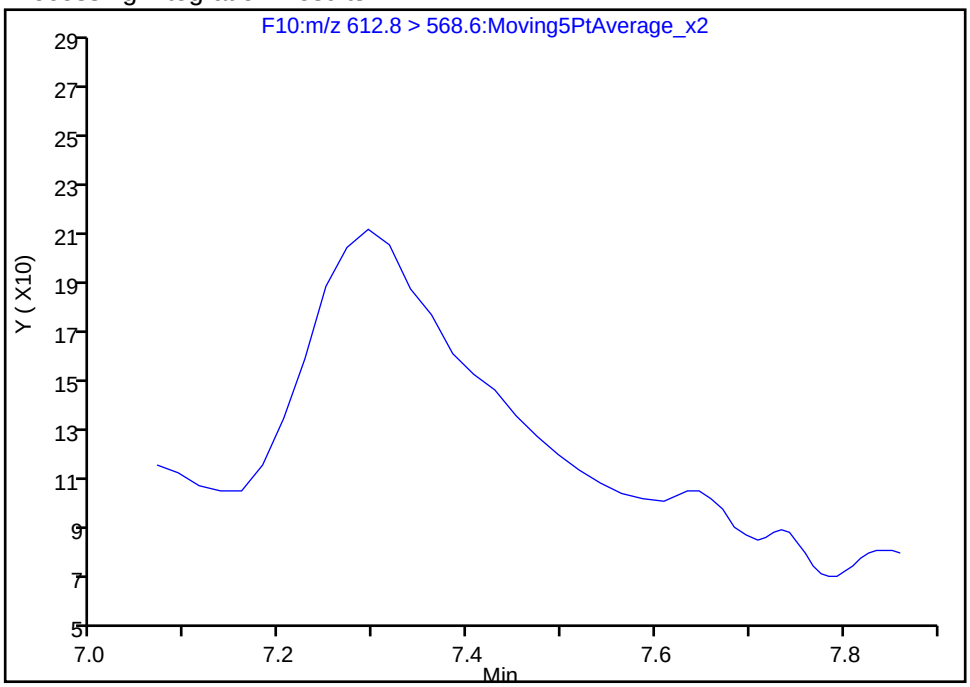
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F10:MRM		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

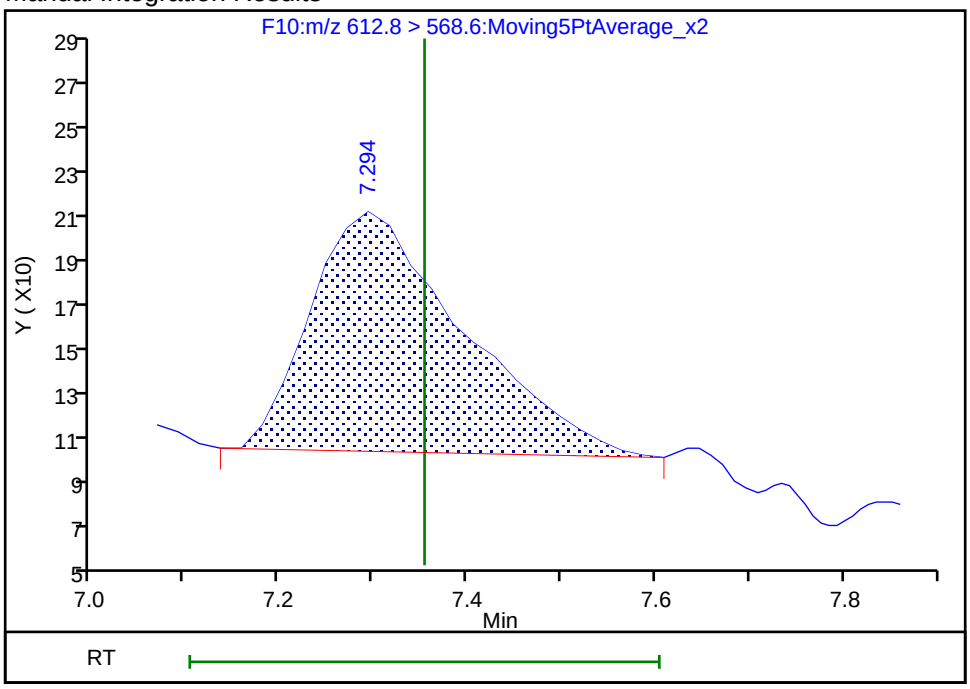
Not Detected
Expected RT: 7.35

Processing Integration Results



Manual Integration Results

RT: 7.29
Area: 1149
Amount: 0.183133
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:03:01
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

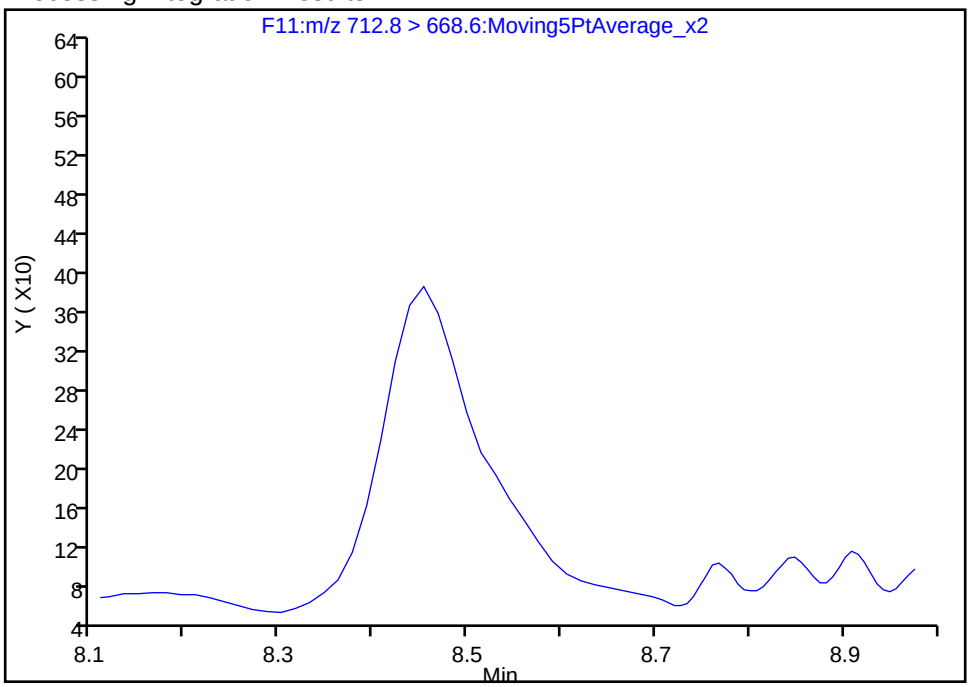
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F11:MRM		

44 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

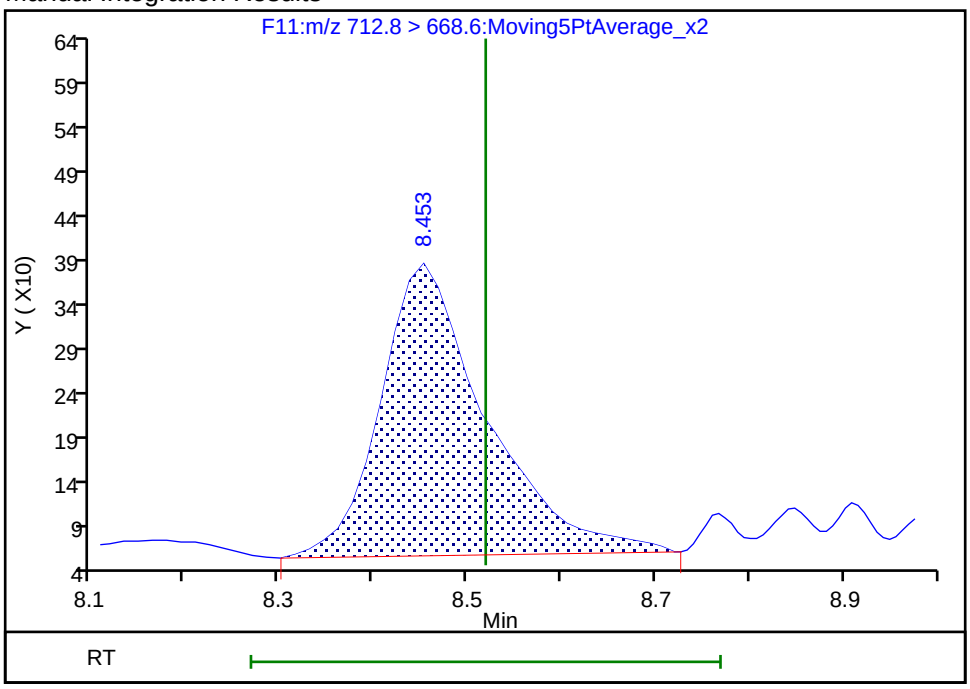
Not Detected
Expected RT: 8.52

Processing Integration Results



Manual Integration Results

RT: 8.45
Area: 2554
Amount: 0.077126
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:03:08
Audit Action: Assigned Compound ID Audit Reason: Assign Peak

TestAmerica Burlington

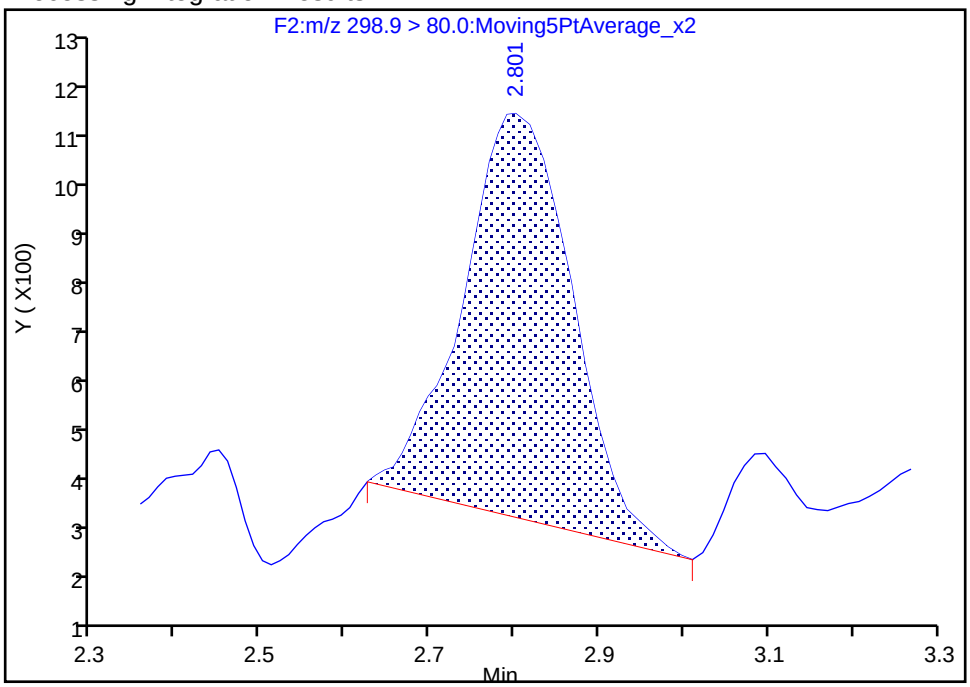
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d
Injection Date: 11-May-2018 18:41:29 Instrument ID: LC410
Lims ID: 200-43262-A-4-A Lab Sample ID: 200-43262-4
Client ID: MW-3D
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 41
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

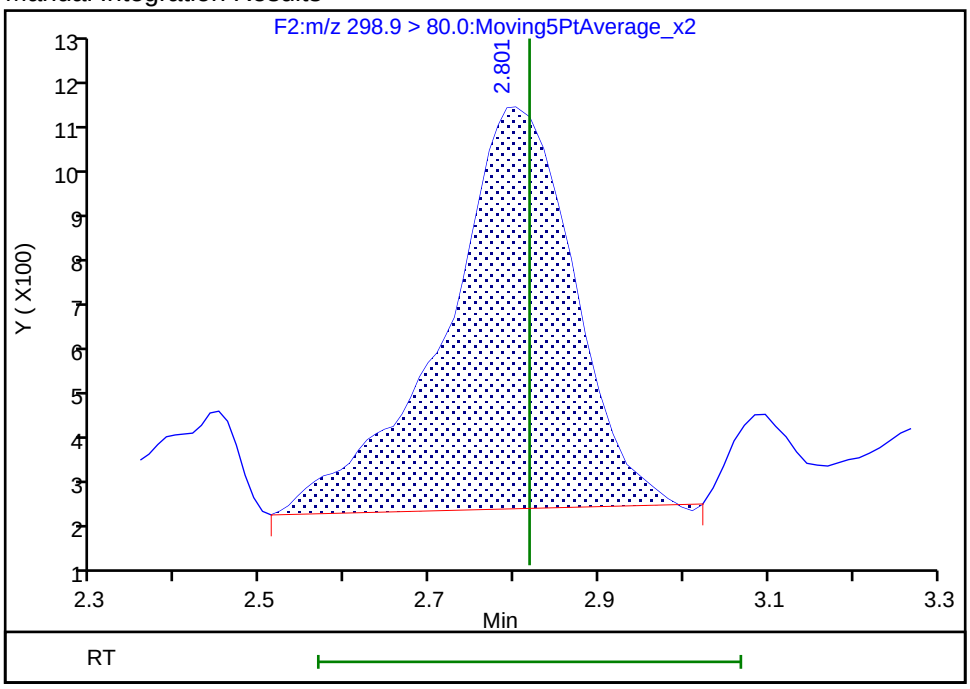
Processing Integration Results

RT: 2.80
Area: 7234
Amount: 1.391936
Amount Units: ng/ml



Manual Integration Results

RT: 2.80
Area: 9387
Amount: 1.740426
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:23:22
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

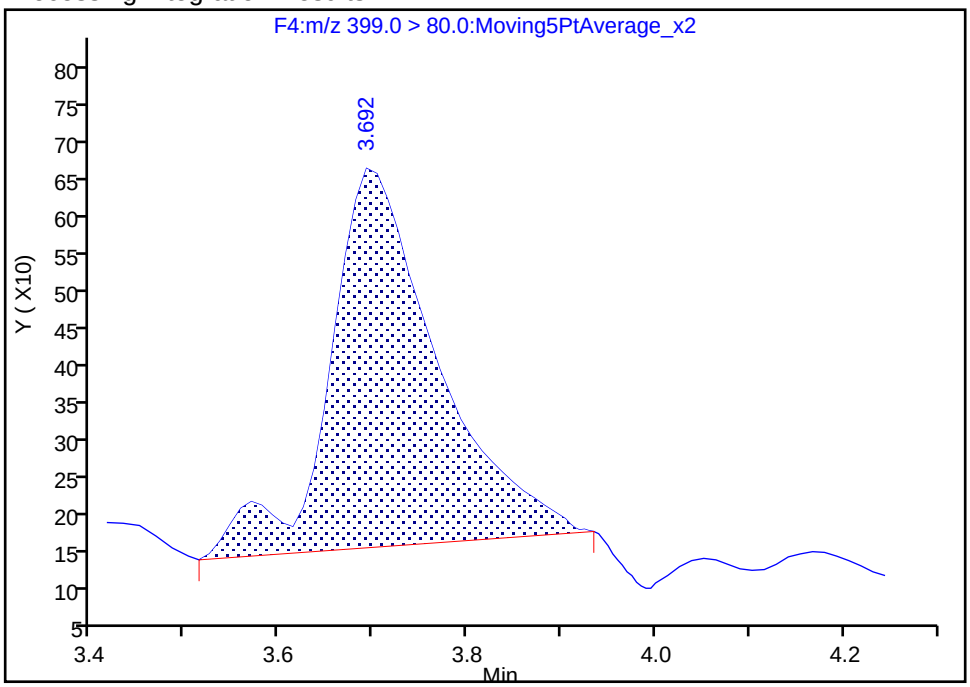
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F4:MRM		

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

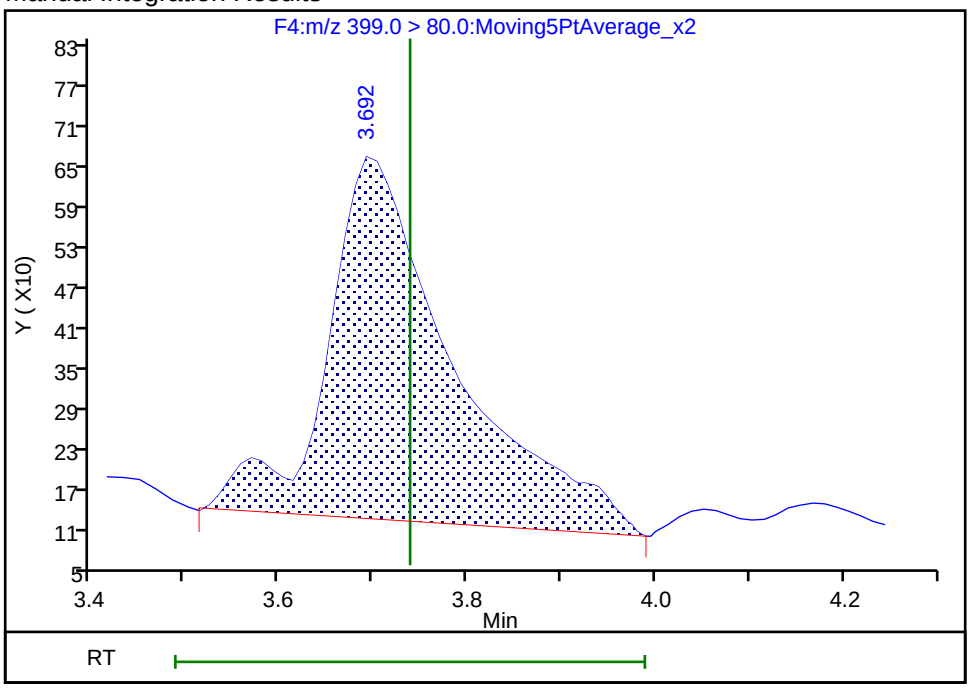
Processing Integration Results

RT: 3.69
Area: 4081
Amount: 0.657240
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 5045
Amount: 0.767866
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:24:06
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

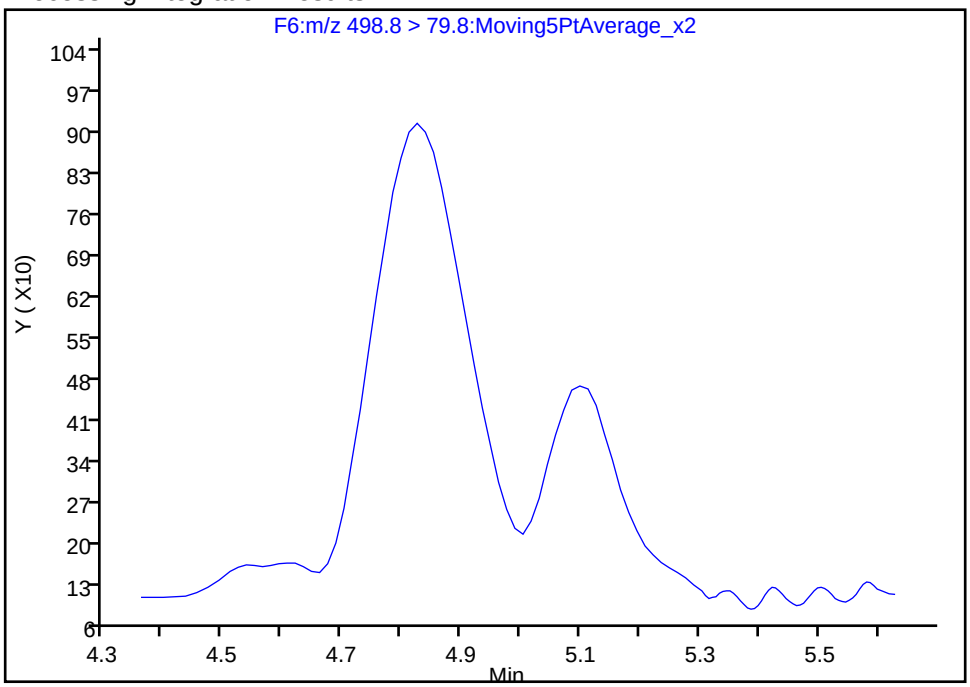
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F6:MRM		

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

Signal: 1

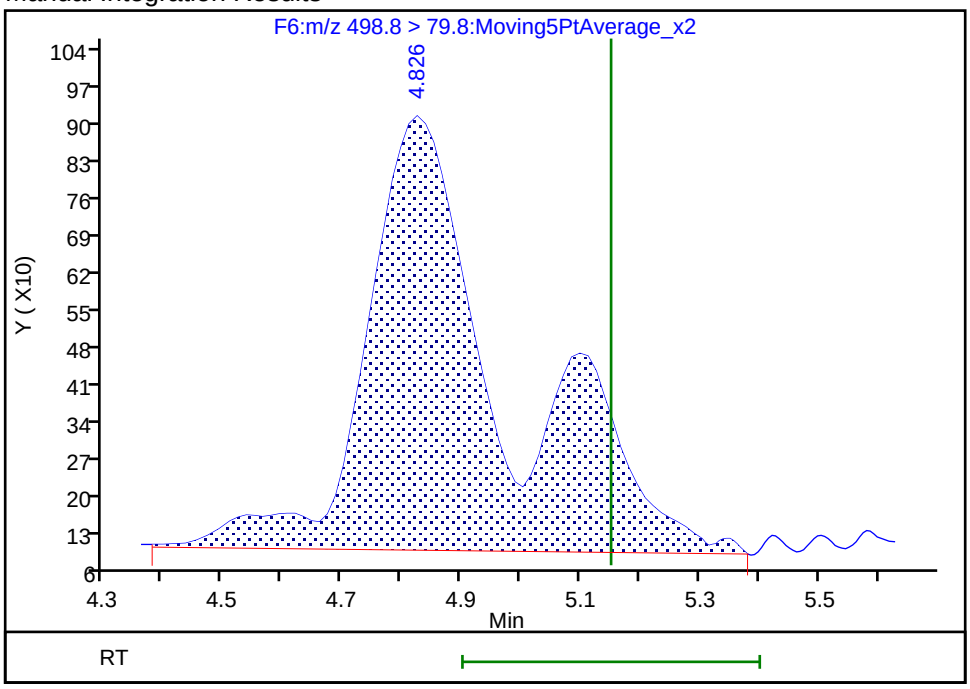
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 4.83
Area: 13283
Amount: 2.195513
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:26:34
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

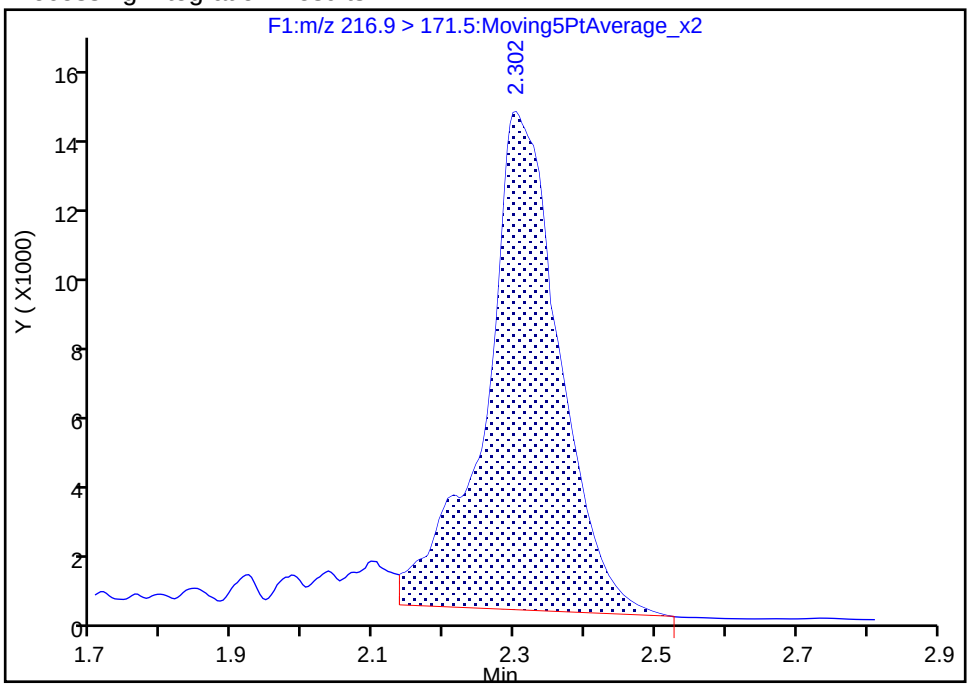
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A41.d				
Injection Date:	11-May-2018 18:41:29	Instrument ID:	LC410		
Lims ID:	200-43262-A-4-A	Lab Sample ID:	200-43262-4		
Client ID:	MW-3D				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	41
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F1:MRM		

D 2 13C4 PFBA, CAS: STL00992

Signal: 1

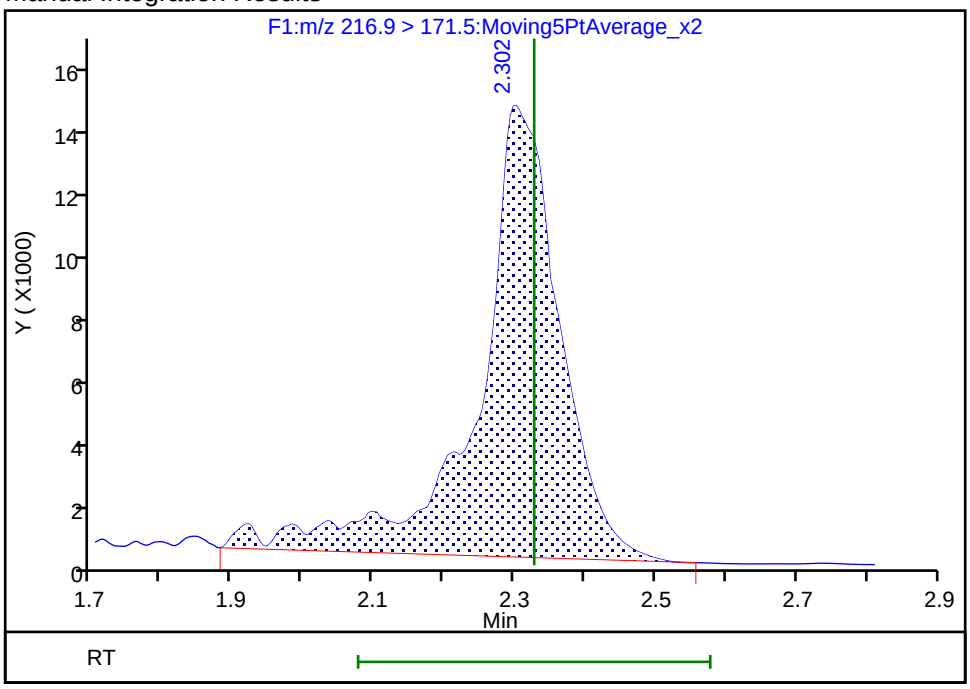
Processing Integration Results

RT: 2.30
Area: 103680
Amount: 9.815151
Amount Units: ng/ml



Manual Integration Results

RT: 2.30
Area: 115430
Amount: 10.927497
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:22:53

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: FB | Lab Sample ID: 200-43262-5

Matrix: Water | Lab File ID: PF051018A42.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 18:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 264.7(mL) | Date Analyzed: 05/11/2018 18:57

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.22	J	1.89	0.42
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.89	U	1.89	0.42
307-24-4	Perfluorohexanoic acid (PFHxA)	0.52	J B	1.89	0.42
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.89	U	1.89	0.27
335-67-1	Perfluorooctanoic acid (PFOA)	1.89	U	1.89	0.44
375-95-1	Perfluorononanoic acid (PFNA)	1.89	U	1.89	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	0.52	J B	1.89	0.42
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.89	U	1.89	0.42
307-55-1	Perfluorododecanoic acid (PFDoA)	1.89	U	1.89	0.42
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.89	U	1.89	0.42
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.89	U	1.89	0.42
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.83	J	1.89	0.83
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.53	J B	1.89	0.26
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.89	U	1.89	0.42
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.89	U	1.89	0.42
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.89	U	1.89	0.28
754-91-6	Perfluorooctane Sulfonamide (FOSA)	1.89	U	1.89	0.42
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.89	U	1.89	0.57
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.89	U	1.89	0.57
27619-97-2	6:2FTS	1.89	U	1.89	0.57
39108-34-4	8:2FTS	1.89	U	1.89	0.57

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: FB | Lab Sample ID: 200-43262-5

Matrix: Water | Lab File ID: PF051018A42.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 18:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 264.7(mL) | Date Analyzed: 05/11/2018 18:57

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	47		25-150
STL00992	13C4 PFBA	65		25-150
STL01893	13C5 PFPeA	80		25-150
STL00993	13C2 PFHxA	80		25-150
STL01892	13C4-PFHpA	82		25-150
STL00990	13C4 PFOA	73		25-150
STL00995	13C5 PFNA	72		25-150
STL00996	13C2 PFDA	66		25-150
STL00997	13C2 PFUnA	71		25-150
STL00998	13C2 PFDoA	54		25-150
STL02116	13C2-PFTeDA	53		25-150
STL02337	13C3-PFBS	79		25-150
STL00994	18O2 PFHxS	75		25-150
STL00991	13C4 PFOS	72		25-150
STL02118	d3-NMeFOSAA	54		25-150
STL02117	d5-NEtFOSAA	56		25-150
STL02279	M2-6:2FTS	82		25-150
STL02280	M2-8:2FTS	76		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A42.d
Lims ID: 200-43262-A-5-A
Client ID: FB
Sample Type: Client
Inject. Date: 11-May-2018 18:57:43 ALS Bottle#: 0 Worklist Smp#: 42
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-042 5
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:17 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: murrayjw Date: 14-May-2018 09:36:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.326	2.328	-0.002	1.000	304712	32.3		64.6	138	
1 Perfluorobutyric acid										M
212.9 > 168.9	2.413	2.334	0.079	1.037	4897	0.6484			3.5	M
D 3 13C5-PFPeA										
267.7 > 222.6	2.739	2.753	-0.014	1.000	288885	40.2		80.3	1317	
6 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.818	2.818	0.0	1.006	1870	0.4371			18.8	M
D 5 13C3-PFBS										
302.0 > 79.8	2.801	2.820	-0.019	1.000	277277	36.9		79.5	582	
D 7 13C2 PFHxA										
314.8 > 269.6	3.152	3.170	-0.018	1.000	419164	39.9		79.9	904	
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.140	3.172	-0.032	0.996	508	0.2771			2.7	M
D 10 13C4-PFHpA										
366.9 > 321.8	3.681	3.696	-0.015	1.000	725608	40.9		81.7	1048	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.681	3.739	-0.058	0.991	753	0.2813			4.0	
D 13 18O2 PFHxS										
402.9 > 83.8	3.715	3.742	-0.027	1.000	295361	35.4		74.9	1008	
D 14 M2-6:2FTS										
428.6 > 408.6	4.291	4.321	-0.030	1.000	64027	39.1		82.3	361	
D 17 13C4 PFOA										
416.9 > 371.8	4.330	4.363	-0.033	1.000	630946	36.4		72.8	1045	
* 49 13C2-PFOA										
414.9 > 369.8	4.330	4.363	-0.033		999675	50.0			2524	
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.355	4.368	-0.013	1.006	3378	0.1306			1.3	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C5 PFNA										
467.8 > 422.8	5.099	5.127	-0.028	1.000	739119	35.9		71.8	883	
D 22 13C4 PFOS										
502.8 > 79.8	5.099	5.154	-0.055	1.000	255833	34.2		71.5	797	
D 23 M2-8:2FTS										
528.8 > 508.8	5.843	5.882	-0.039	1.000	158976	36.2		75.6	781	
D 25 13C2 PFDA										
514.9 > 469.5	5.863	5.910	-0.047	1.000	817568	32.8		65.5	961	
26 Perfluorodecanoic acid										M
512.9 > 468.5	5.882	5.914	-0.032	1.003	416	0.2740			2.5	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.223	6.271	-0.048	1.000	144480	27.2		54.5	591	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.598	6.640	-0.042	1.000	129304	28.1		56.1	702	
D 33 13C2 PFUnA										
564.8 > 519.8	6.616	6.676	-0.060	1.000	834279	35.6		71.2	2484	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.634	6.676	-0.042	1.003	3522	0.1992			10.2	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	317223	23.6		47.2	2080	
37 Perfluorododecanoic acid										M
612.8 > 568.6	7.339	7.354	-0.015	1.006	972	0.2053			3.7	M
D 36 13C2 PFDoA										
614.8 > 569.6	7.294	7.358	-0.064	1.000	661037	26.8		53.7	1118	
D 43 13C2-PFTeDA										
714.8 > 669.6	8.453	8.514	-0.061	1.000	599604	26.4		52.8	1648	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 14-May-2018 12:12:25 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A42.d

Injection Date: 11-May-2018 18:57:43 Instrument ID: LC410

Lims ID: 200-43262-A-5-A Lab Sample ID: 200-43262-5

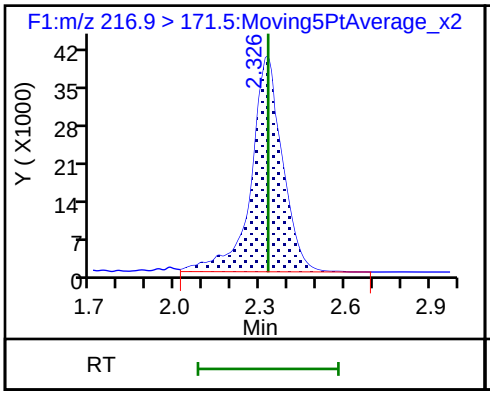
Client ID: FB

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 42

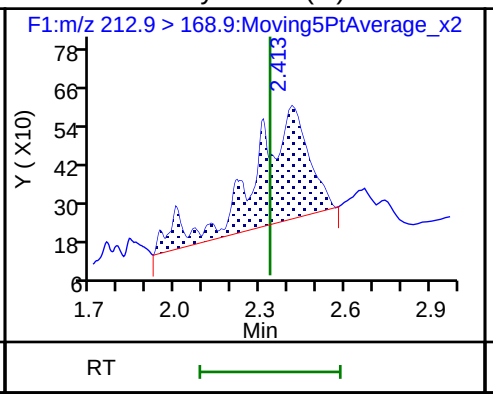
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

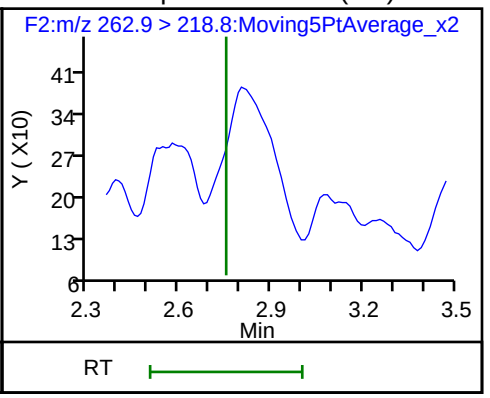
D 2 13C4 PFBA



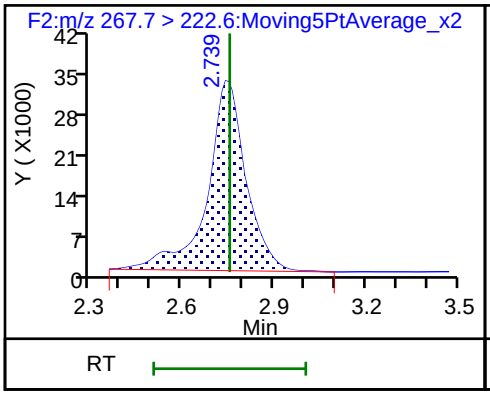
1 Perfluorobutyric acid (M)



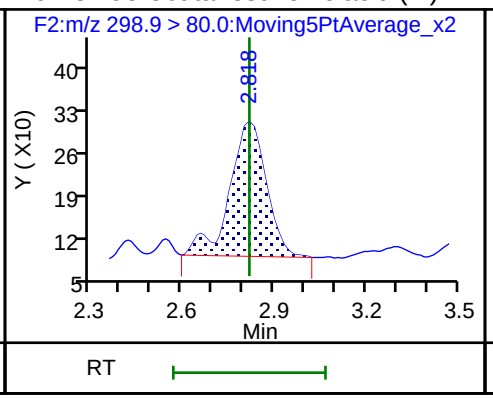
4 Perfluoropentanoic acid (ND)



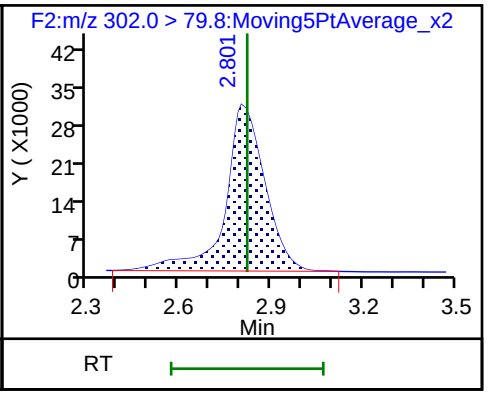
D 3 13C5-PFPeA



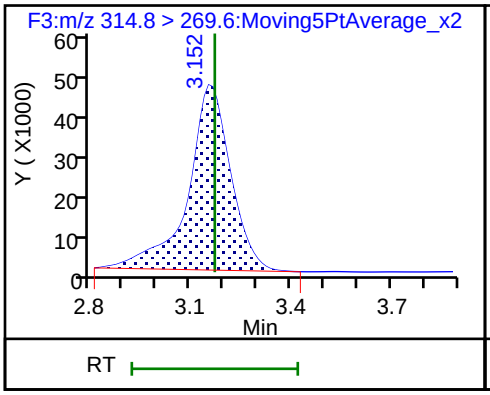
6 Perfluorobutanesulfonic acid (M)



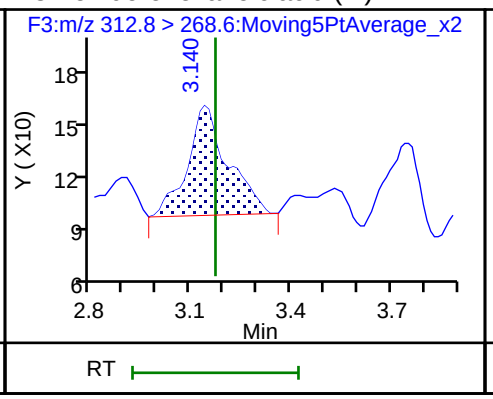
D 5 13C3-PFBS



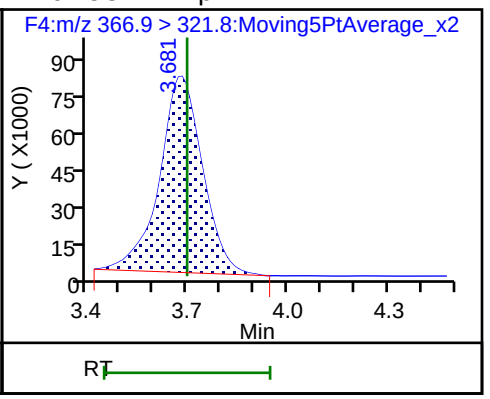
D 7 13C2 PFHxA



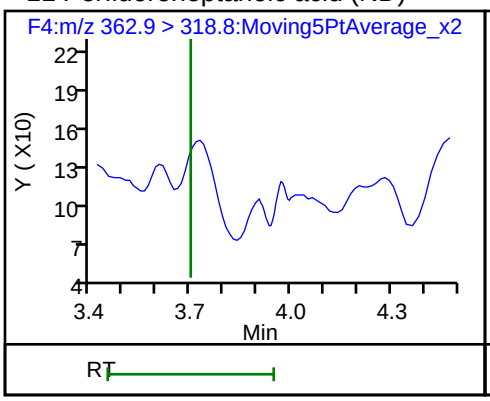
8 Perfluorohexanoic acid (M)



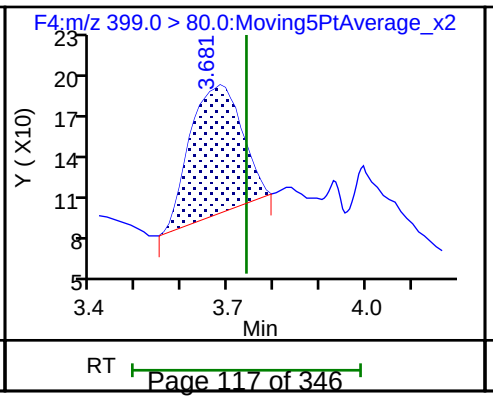
D 10 13C4-PFHpA



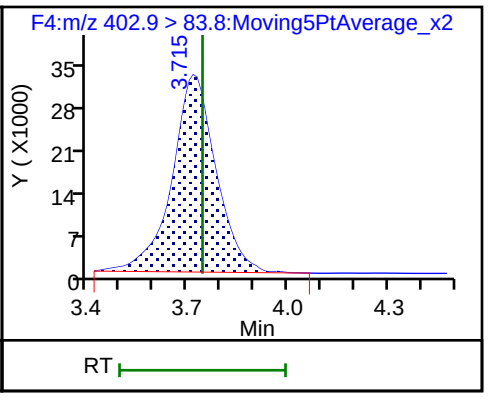
11 Perfluoroheptanoic acid (ND)



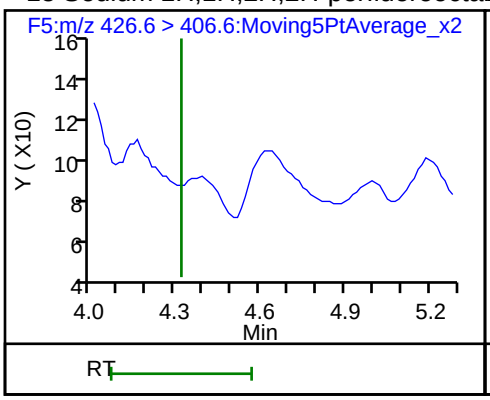
12 Perfluorohexanesulfonic acid



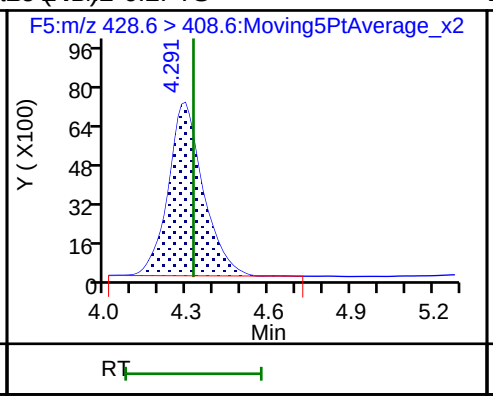
D 13 18O2 PFHxS



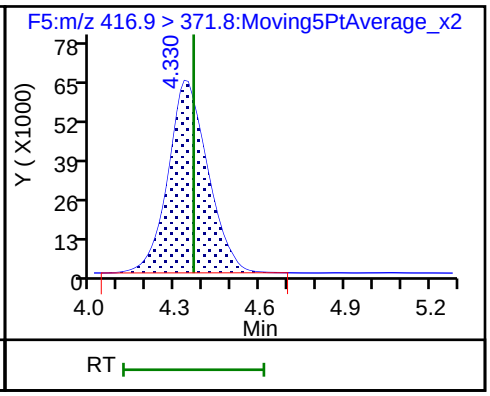
15 Sodium 1H,1H,2H,2H-perfluorooctane (ND)



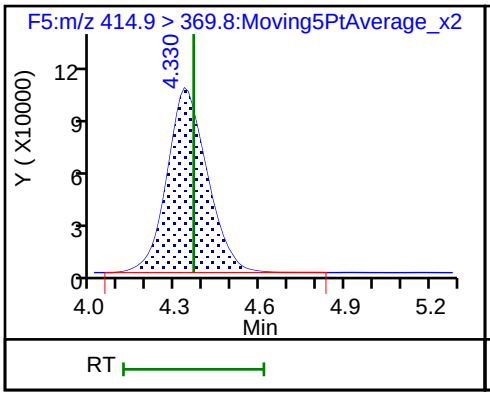
D 14 M2-6:2FTS



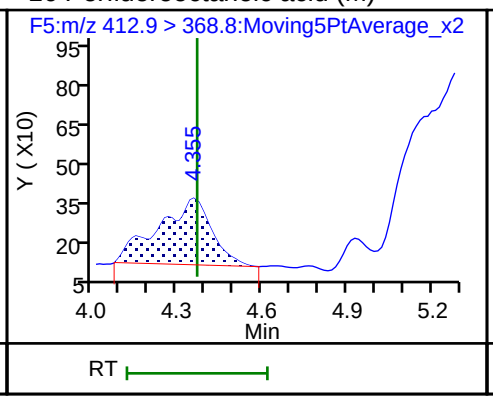
D 17 13C4 PFOA



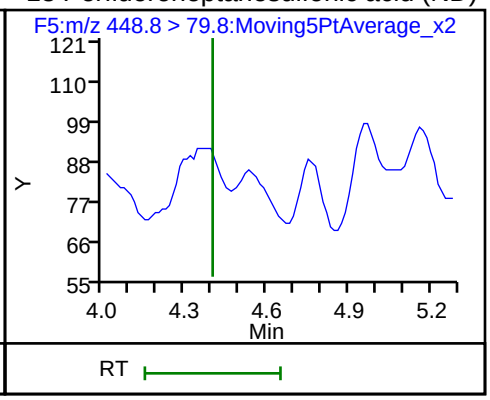
* 49 13C2-PFOA



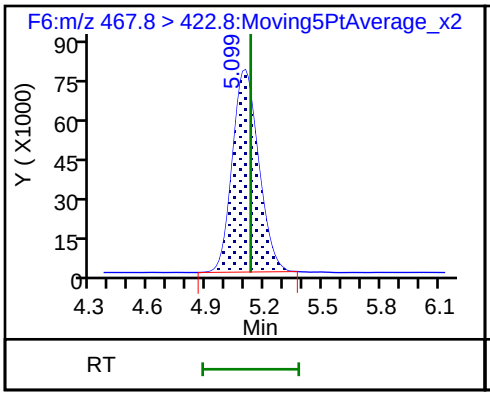
16 Perfluorooctanoic acid (M)



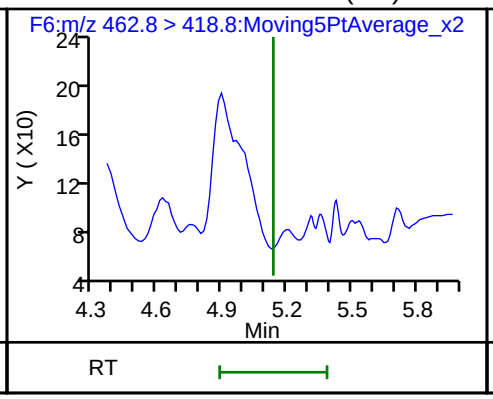
18 Perfluoroheptanesulfonic acid (ND)



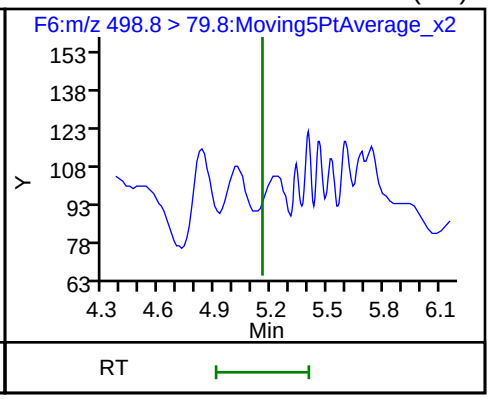
D 21 13C5 PFNA



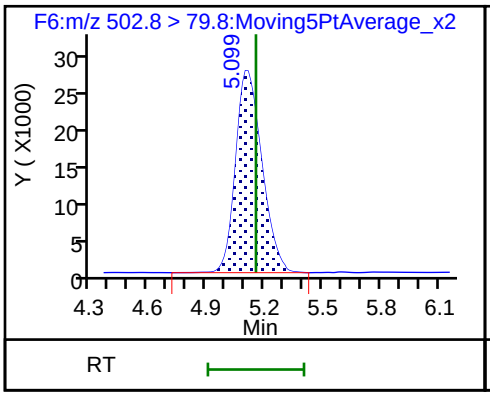
19 Perfluorononanoic acid (ND)



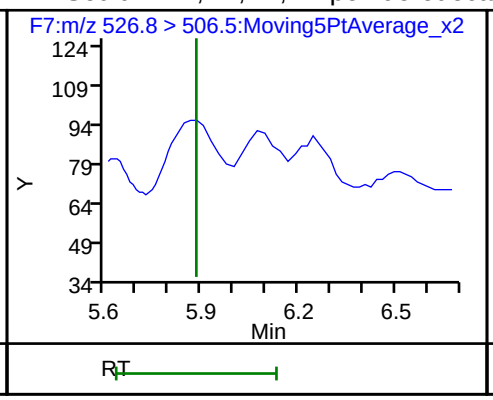
20 Perfluorooctane sulfonic acid (ND)



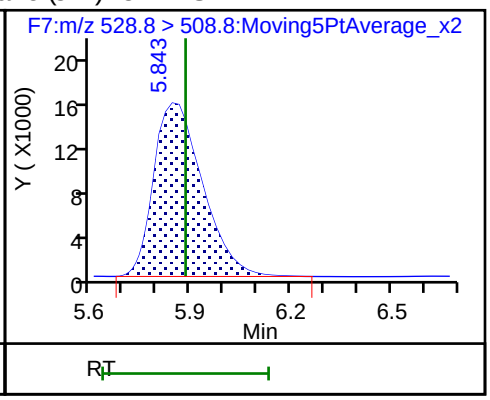
D 22 13C4 PFOS



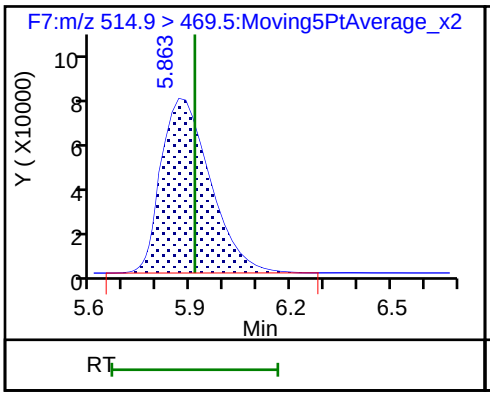
24 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



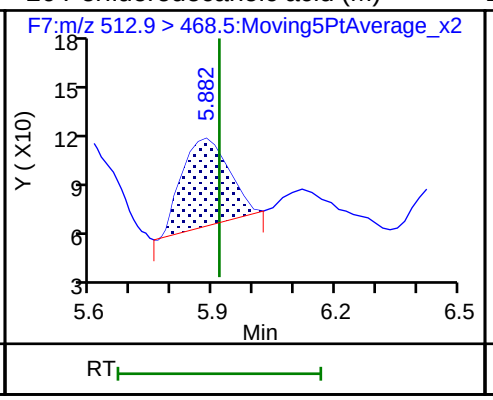
D 23 M2-8:2FTS



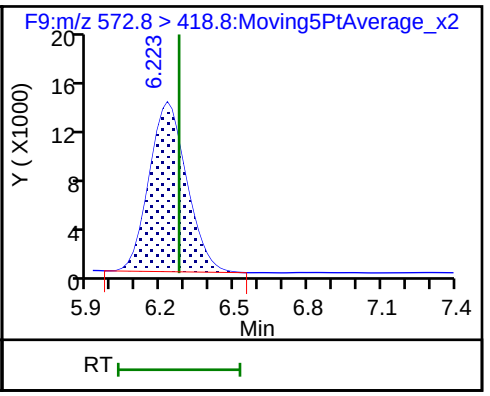
D 25 13C2 PFDA



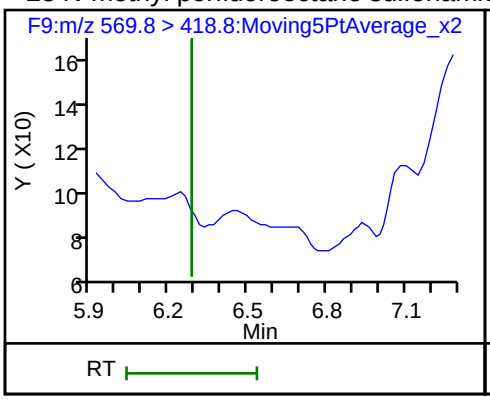
26 Perfluorodecanoic acid (M)



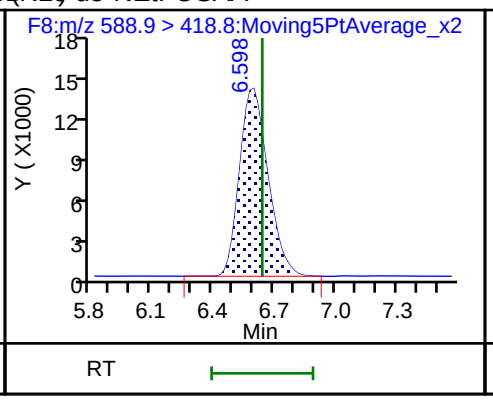
D 27 d3-NMeFOSAA



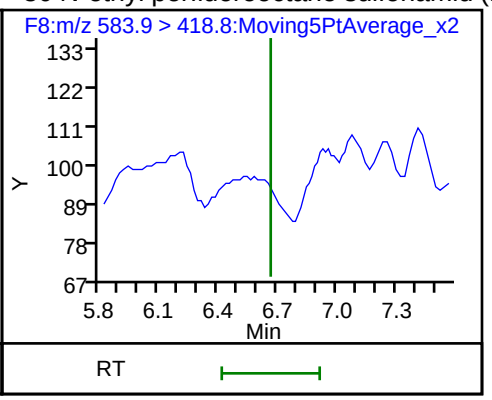
28 N-methyl perfluorooctane sulfonamid (ND)



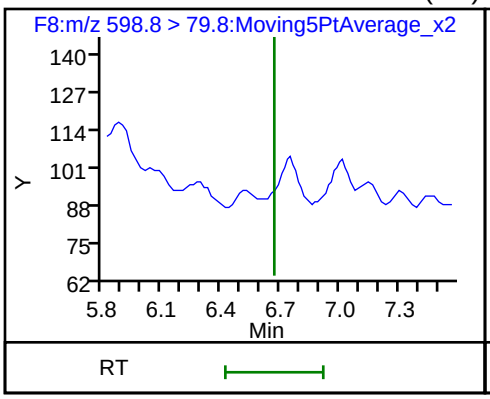
D 29 d5-NEtFOSAA



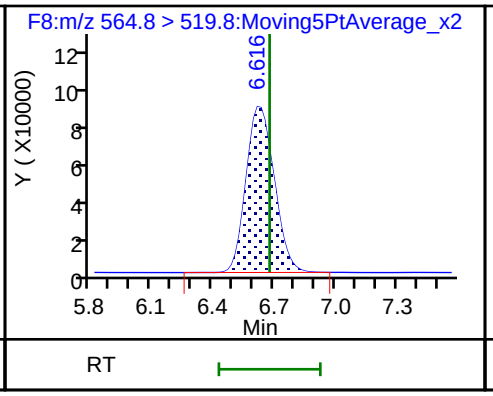
30 N-ethyl perfluorooctane sulfonamid (ND)



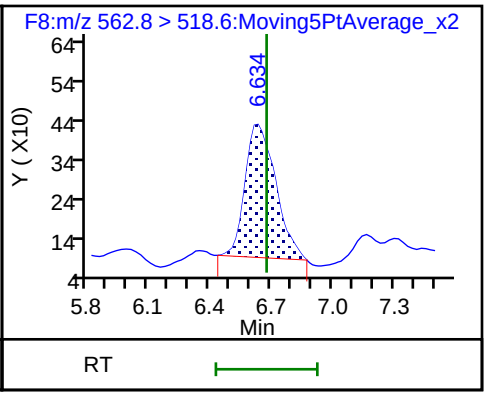
31 Perfluorodecane Sulfonic acid (ND)



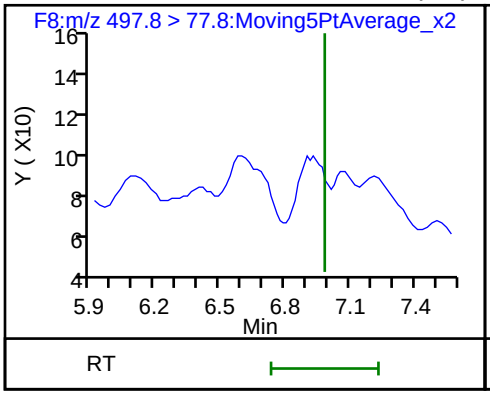
D 33 13C2 PFUnA



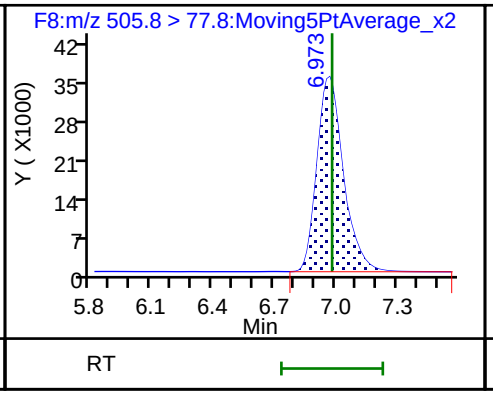
32 Perfluoroundecanoic acid



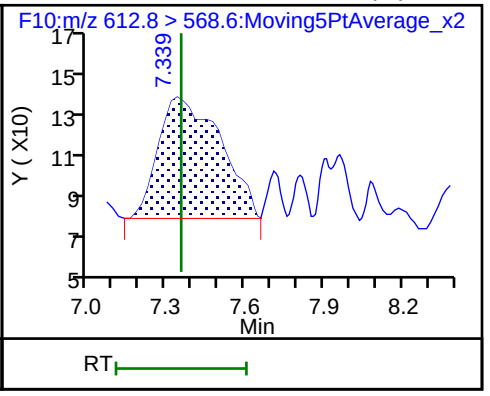
34 Perfluorooctane Sulfonamide (ND)



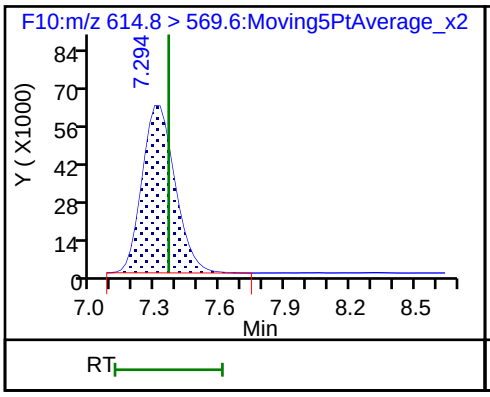
D 35 13C8 FOSA



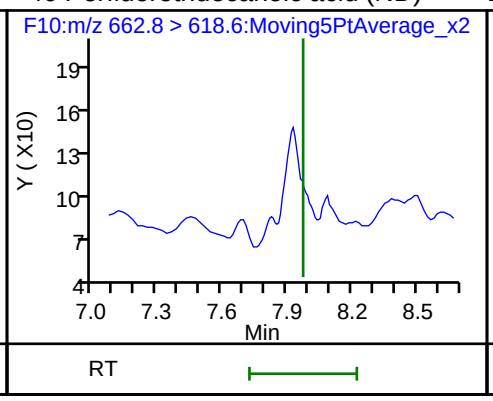
37 Perfluorododecanoic acid (M)



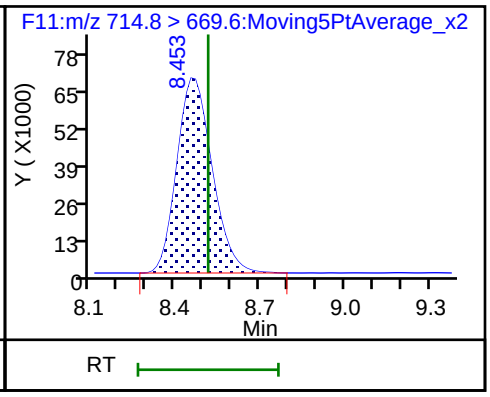
D 36 13C2 PFDoA



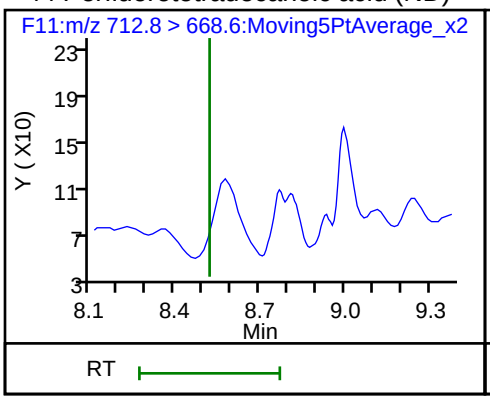
40 Perfluorotridecanoic acid (ND)



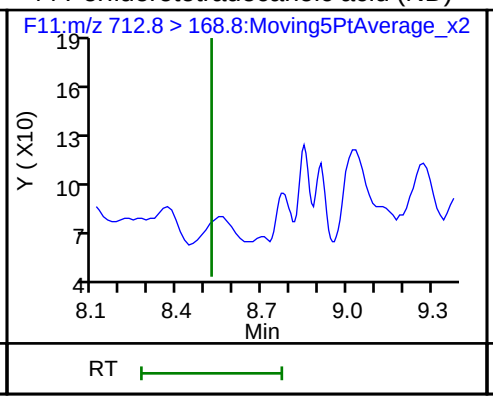
D 43 13C2-PFTeDA



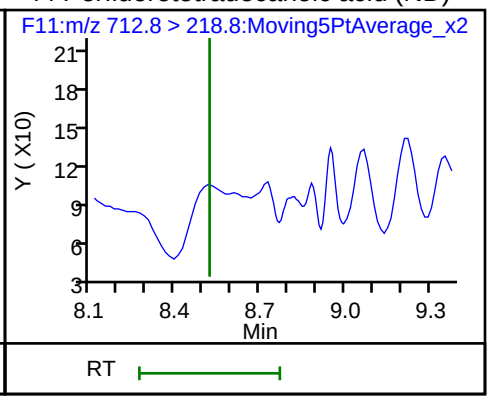
44 Perfluorotetradecanoic acid (ND)



44 Perfluorotetradecanoic acid (ND)



44 Perfluorotetradecanoic acid (ND)



TestAmerica Burlington

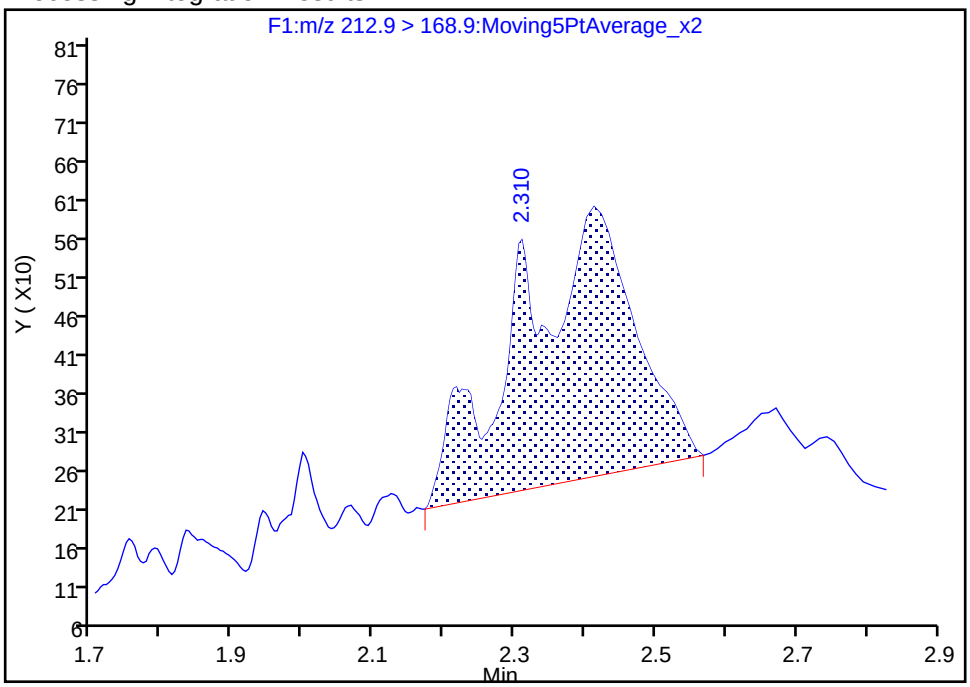
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A42.d
Injection Date: 11-May-2018 18:57:43 Instrument ID: LC410
Lims ID: 200-43262-A-5-A Lab Sample ID: 200-43262-5
Client ID: FB
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 42
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

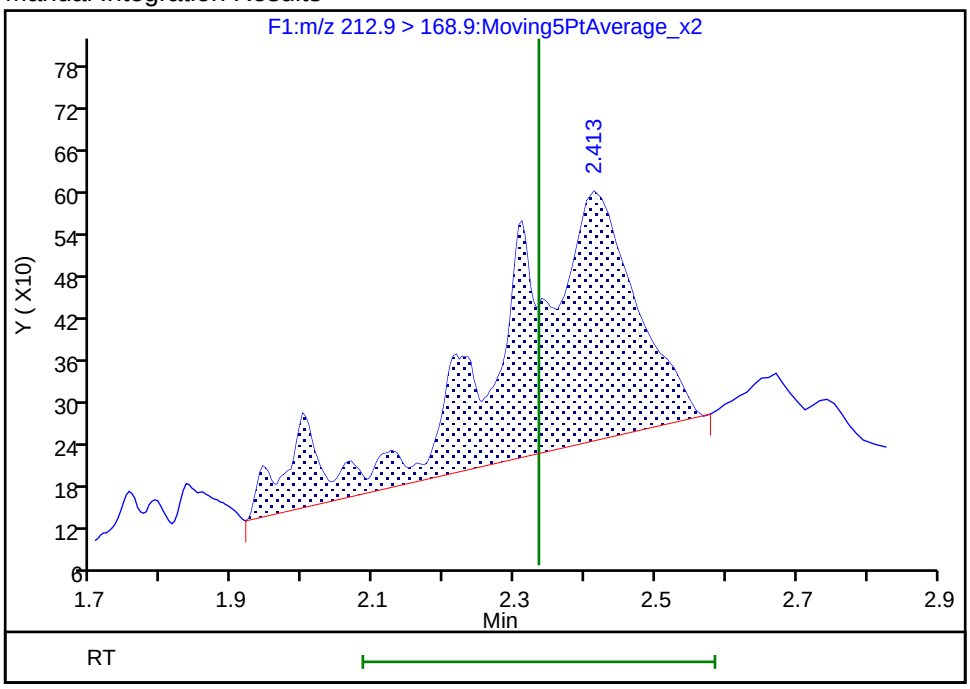
Processing Integration Results

RT: 2.31
Area: 3915
Amount: 0.473290
Amount Units: ng/ml



Manual Integration Results

RT: 2.41
Area: 4897
Amount: 0.648410
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:03:37
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

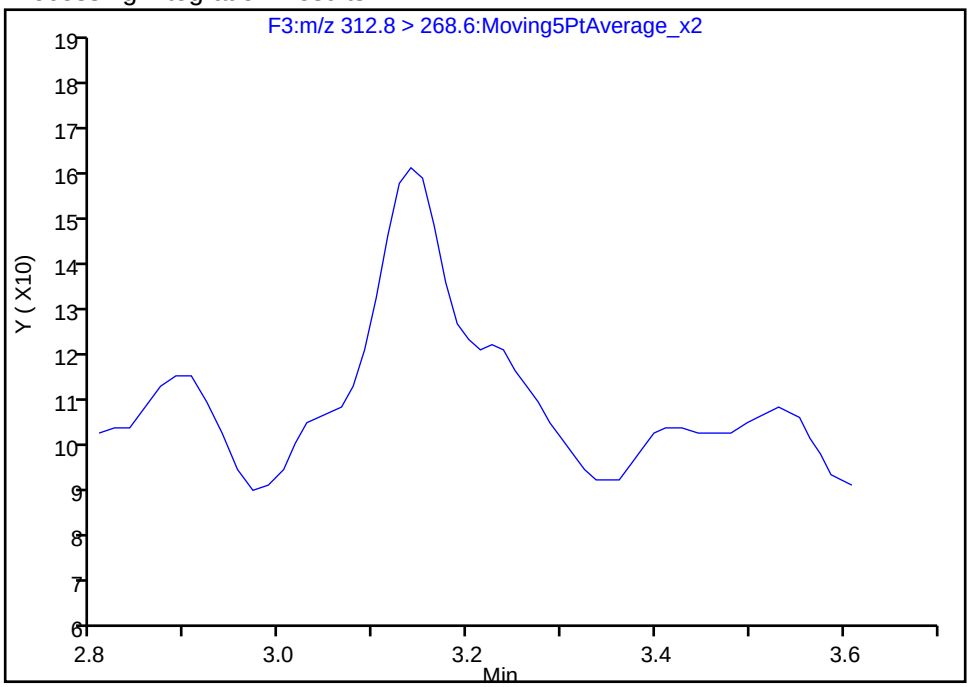
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A42.d				
Injection Date:	11-May-2018 18:57:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-5-A	Lab Sample ID:	200-43262-5		
Client ID:	FB				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	42
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F3:MRM		

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

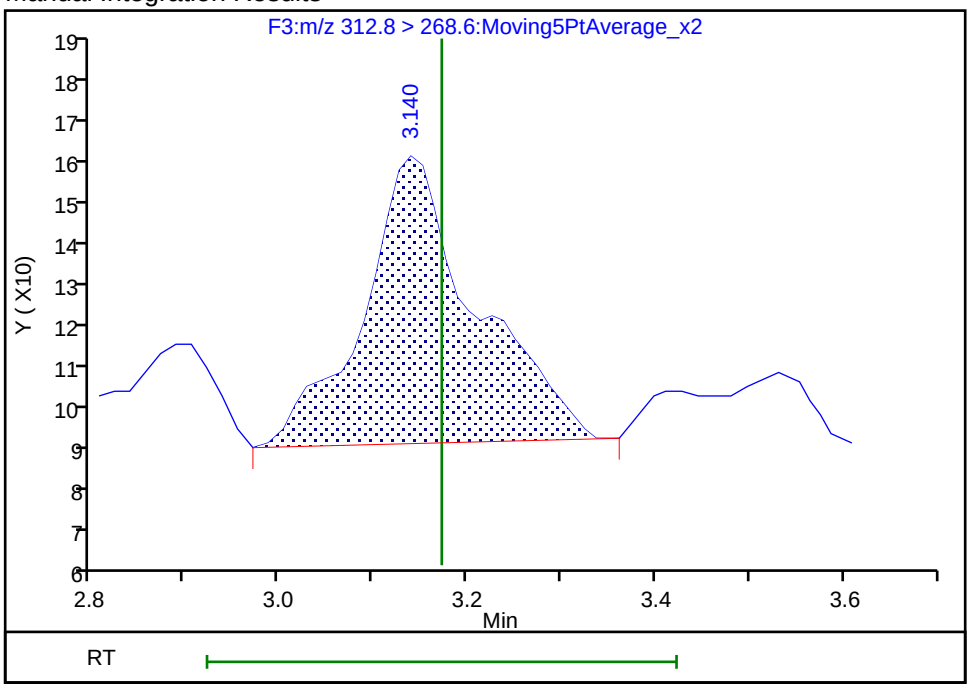
Not Detected
Expected RT: 3.17

Processing Integration Results



Manual Integration Results

RT: 3.14
Area: 508
Amount: 0.277074
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:03:46
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

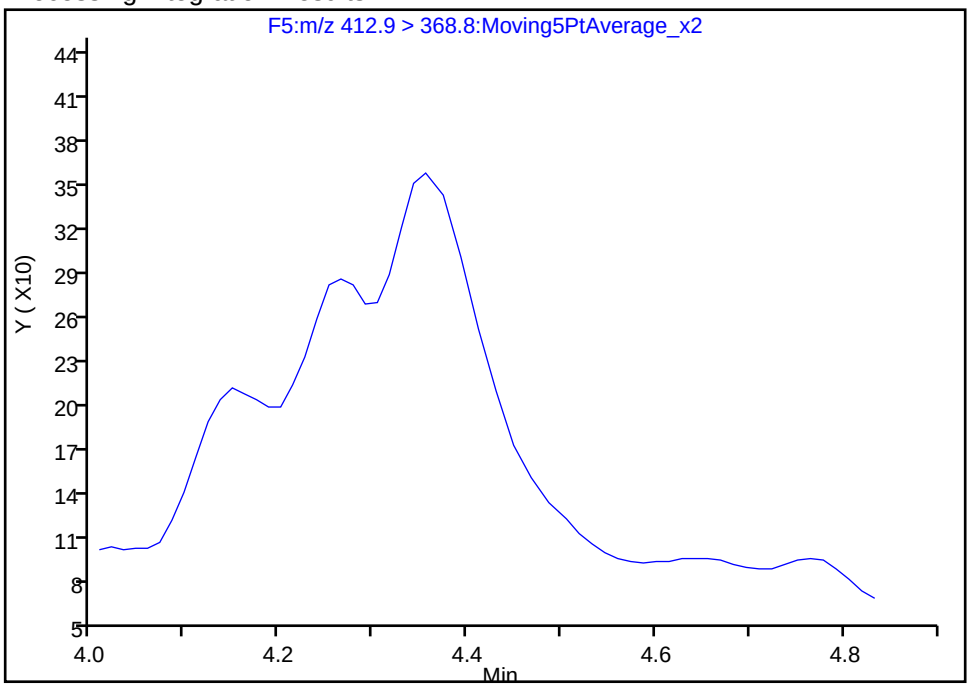
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A42.d				
Injection Date:	11-May-2018 18:57:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-5-A	Lab Sample ID:	200-43262-5		
Client ID:	FB				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	42
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F5:MRM		

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

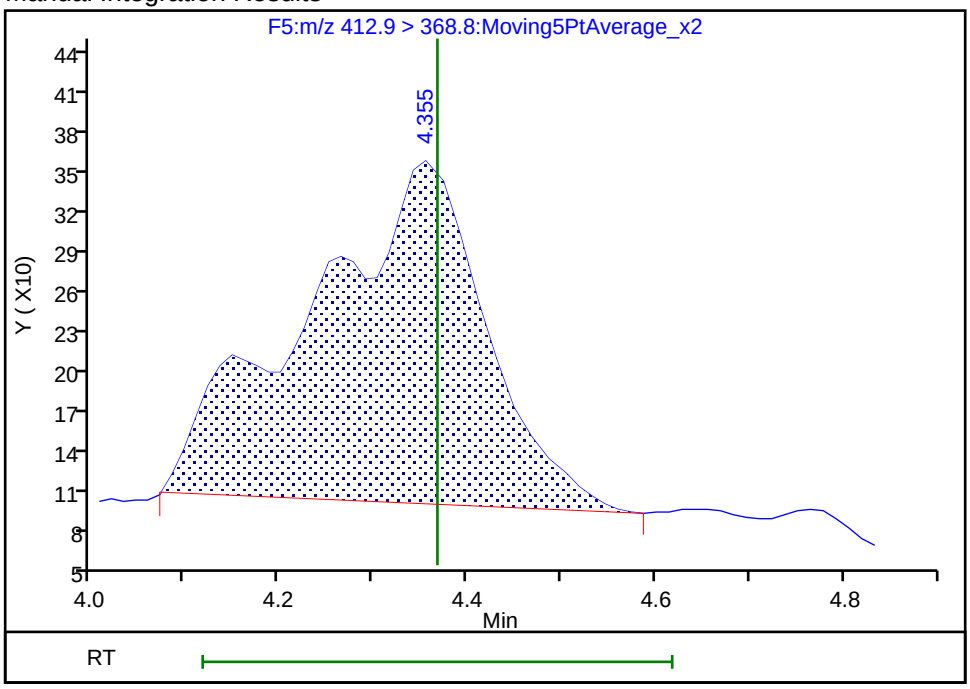
Not Detected
Expected RT: 4.37

Processing Integration Results



Manual Integration Results

RT: 4.36
Area: 3378
Amount: 0.130639
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:03:59
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

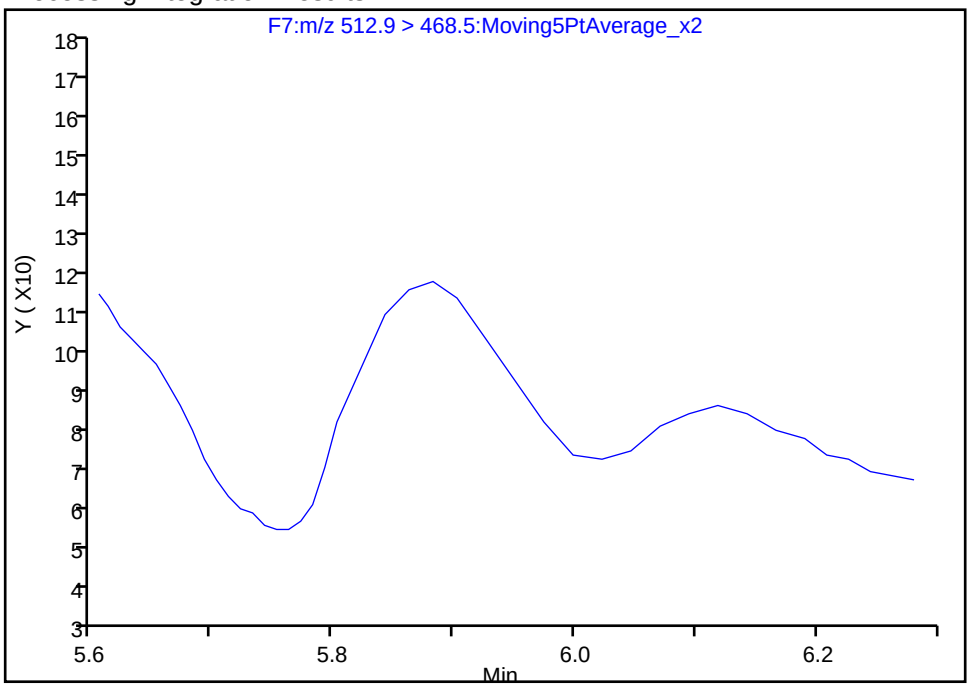
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A42.d
Injection Date: 11-May-2018 18:57:43 Instrument ID: LC410
Lims ID: 200-43262-A-5-A Lab Sample ID: 200-43262-5
Client ID: FB
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 42
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

26 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

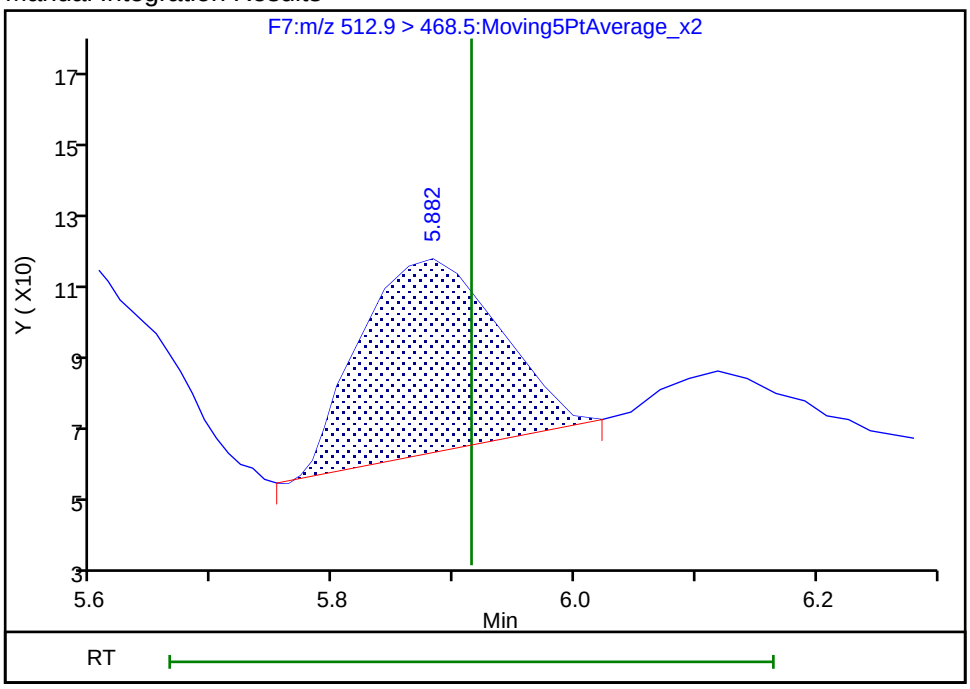
Not Detected
Expected RT: 5.91

Processing Integration Results



Manual Integration Results

RT: 5.88
Area: 416
Amount: 0.274014
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 12:04:18
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

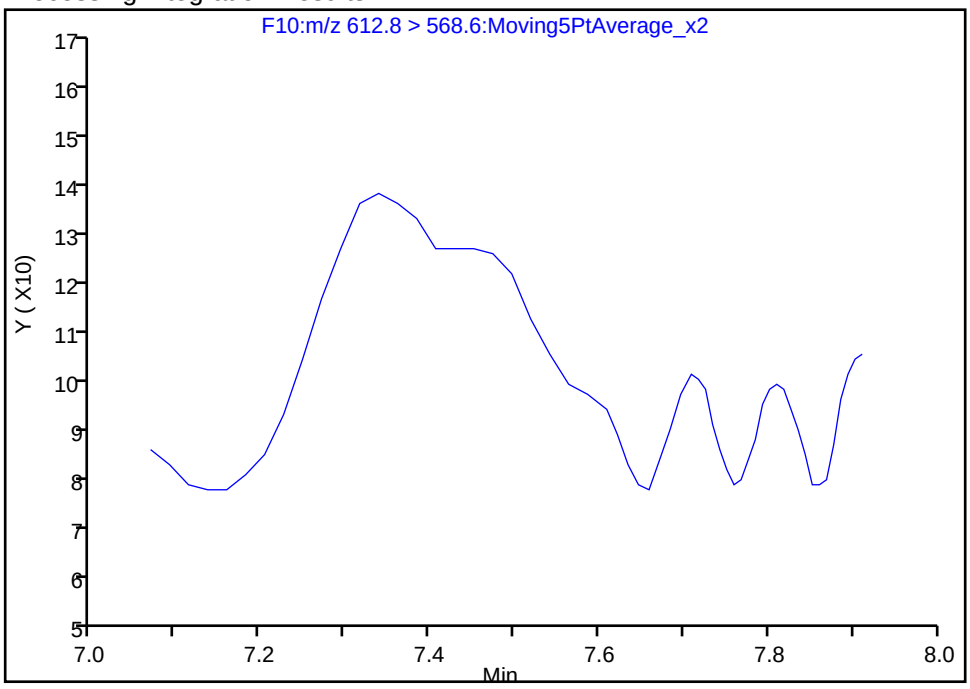
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A42.d				
Injection Date:	11-May-2018 18:57:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-5-A	Lab Sample ID:	200-43262-5		
Client ID:	FB				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	42
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F10:MRM		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

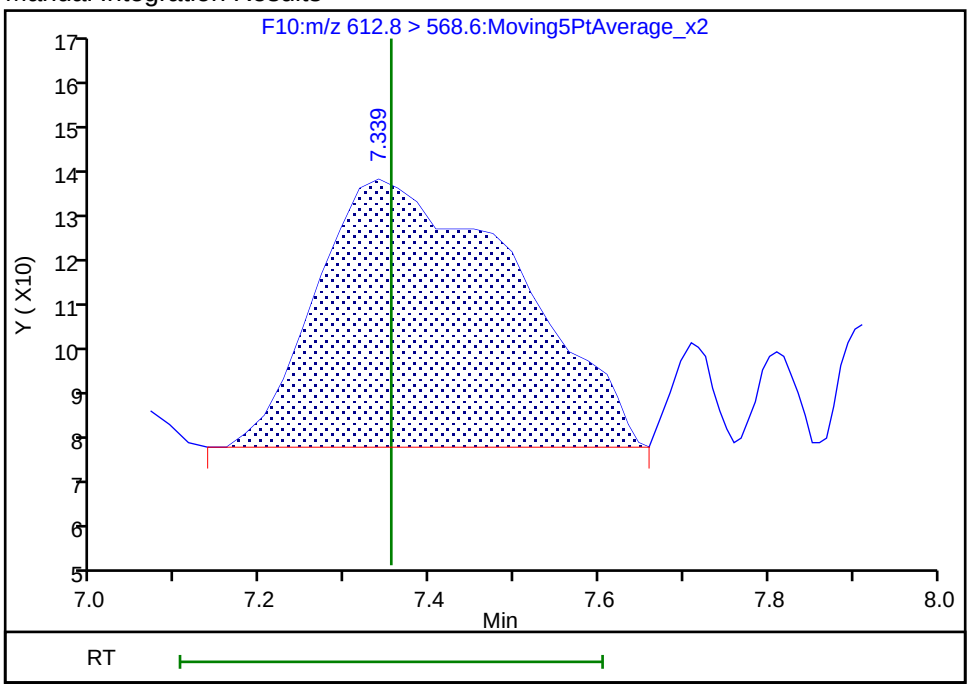
Not Detected
Expected RT: 7.35

Processing Integration Results



Manual Integration Results

RT: 7.34
Area: 972
Amount: 0.205260
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:36:28
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

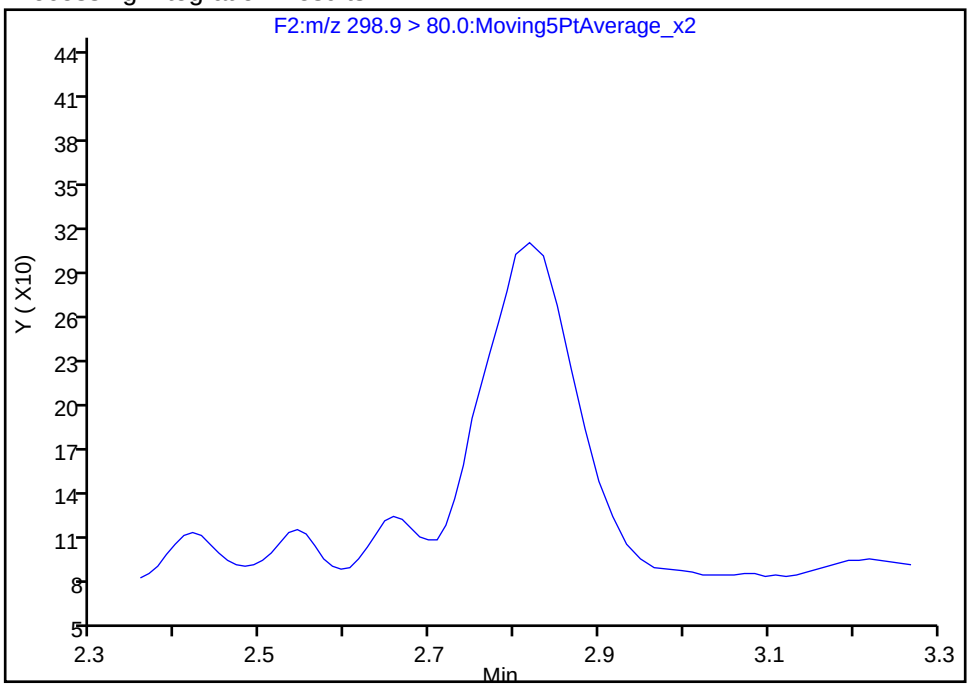
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A42.d				
Injection Date:	11-May-2018 18:57:43	Instrument ID:	LC410		
Lims ID:	200-43262-A-5-A	Lab Sample ID:	200-43262-5		
Client ID:	FB				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	42
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F2:MRM		

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

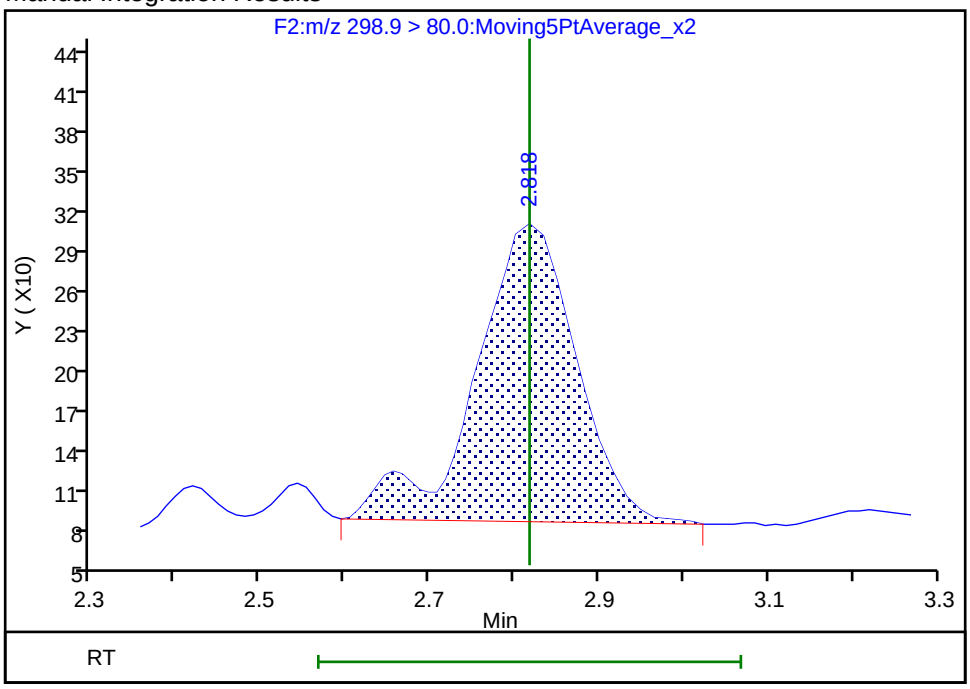
Not Detected
Expected RT: 2.82

Processing Integration Results



Manual Integration Results

RT: 2.82
Area: 1870
Amount: 0.437064
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:35:38
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

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

Lab Name: TestAmerica Burlington Job No.: 200-43262-1 Analy Batch No.: 129349

SDG No.:

Instrument ID: LC410 GC Column: C-18 ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2018 09:16 Calibration End Date: 05/11/2018 10:37 Calibration ID: 39402

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-129349/6	PF051018A06.d
Level 2	IC 200-129349/7	PF051018A07.d
Level 3	IC 200-129349/8	PF051018A08.d
Level 4	IC 200-129349/9	PF051018A09.d
Level 5	IC 200-129349/10	PF051018A10.d
Level 6	IC 200-129349/11	PF051018A11.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	1.1065 0.9252	1.0652	0.9672	0.9061	0.9181	L2ID	0.2069	0.9201							0.9990		0.9900
Perfluoropentanoic acid (PFPeA)	2.0926 2.0743	1.8095	2.2480	2.2672	2.2036	L2ID	-0.183	2.1701							0.9930		0.9900
Perfluorobutanesulfonic acid (PFBS)	1.1268 1.4336	1.1788	1.4204	1.3910	1.5147	L2ID	-0.321	1.4516							0.9980		0.9900
Perfluorohexanoic acid (PFHxA)	1.0187 1.0001	0.6547	0.9668	0.9752	1.0331	L1ID	-0.218	1.0060							0.9990		0.9900
Perfluoroheptanoic acid (PFHpA)	1.0888 1.0082	1.0541	1.0838	1.0365	1.0492	L2ID	0.0529	1.0378							0.9990		0.9900
Perfluorohexanesulfonic acid (PFHxS)	0.9724 1.2264	1.3035	1.2337	1.2281	1.3851	L2ID	-0.247	1.3050							0.9940		0.9900
6:2FTS	1.2370 +++++	0.6971	0.9272	1.1321	1.1548	AveID		1.0296				21.2		35.0			
Perfluorooctanoic acid (PFOA)	1.2001 0.9607	1.0069	1.1089	1.0792	1.0796	L2ID	0.1327	1.0333							0.9950		0.9900
Perfluoroheptanesulfonic Acid (PFHpS)	0.8708 0.9520	0.6966	0.9810	0.9422	0.9995	L1ID	-0.178	0.9623							0.9990		0.9900
Perfluorononanoic acid (PFNA)	0.9480 0.8787	0.8565	0.9136	1.0201	0.9559	L2ID	-0.020	0.9346							0.9950		0.9900
Perfluorooctanesulfonic acid (PFOS)	0.9286 1.1451	1.0780	1.0397	1.0488	1.1345	L2ID	-0.157	1.1124							0.9980		0.9900
8:2FTS	0.8635 +++++	0.3167	0.9854	0.8219	0.8514	AveID		0.7678				33.8		35.0			
Perfluorodecanoic acid (PFDA)	0.7376 0.9390	0.8295	0.9264	0.9411	1.0146	L2ID	-0.240	0.9691							0.9990		0.9900
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.1281 1.1313	0.8845	1.2264	1.2464	1.1314	L1ID	-0.054	1.1406							0.9990		0.9900
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.8775 0.9705	0.8957	1.0567	1.0387	1.0071	L2ID	-0.151	1.0190							0.9970		0.9900

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 Burlington Job No.: 200-43262-1 Analy Batch No.: 129349

SDG No.:

Instrument ID: LC410 GC Column: C-18 ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2018 09:16 Calibration End Date: 05/11/2018 10:37 Calibration ID: 39402

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorodecanesulfonic acid (PFDS)	1.0676 1.0227	1.0879	1.0590	0.9971	1.1505	L2ID	0.0156	1.0594							0.9960		0.9900
Perfluoroundecanoic acid (PFUnA)	1.0189 0.9290	0.8833	1.0193	1.0277	0.9537	L2ID	0.0186	0.9665							0.9950		0.9900
Perfluorooctane Sulfonamide (FOSA)	0.8000 0.8606	0.7765	0.9717	0.9322	0.9203	L2ID	-0.136	0.9171							0.9950		0.9900
Perfluorododecanoic acid (PFDoA)	0.7827 0.8711	0.8151	0.8745	0.8311	0.9390	L2ID	-0.108	0.8842							0.9980		0.9900
Perfluorotridecanoic Acid (PFTriA)	0.7023 0.8408	0.8545	0.9093	0.8697	0.9528	L2ID	-0.181	0.9086							0.9960		0.9900
Perfluorotetradecanoic acid (PFTeA)	0.9363 0.8870	0.9810	0.9137	0.9131	0.9339	L2ID	0.0417	0.9152							0.9990		0.9900
13C4 PFBA	0.5037 0.5880	0.4481	0.3975	0.4595	0.4324	Ave		0.4715				14.2		30.0			
13C5 PFPeA	0.4485 0.4144	0.3720	0.2885	0.3297	0.3050	Ave		0.3597				17.6		30.0			
13C3-PFBS	0.4351 0.4375	0.3795	0.3142	0.3591	0.3267	Ave		0.3754				14.0		30.0			
13C2 PFHxA	0.6050 0.6245	0.5460	0.4365	0.5065	0.4320	Ave		0.5251				15.6		30.0			
13C4-PFHpA	1.0390 1.0484	0.8885	0.7207	0.8793	0.7516	Ave		0.8879				15.5		30.0			
18O2 PFHxS	0.5009 0.4959	0.4219	0.3523	0.3998	0.3297	Ave		0.4167				17.1		30.0			
M2-6:2FTS	0.0941 0.1110	0.0858	0.0631	0.0700	0.0677	Ave		0.0819				22.6		30.0			
13C4 PFOA	0.8645 0.9794	0.9404	0.7907	0.8316	0.7956	Ave		0.8670				9.0		30.0			
13C5 PFNA	1.0327 1.1865	1.0692	0.9696	0.9295	0.9937	Ave		1.0302				8.8		30.0			
13C4 PFOS	0.3865 0.3810	0.4149	0.3546	0.3585	0.3494	Ave		0.3741				6.7		30.0			
M2-8:2FTS	0.1931 0.3121	0.2068	0.2074	0.1820	0.2169	Ave		0.2197				21.3		30.0			
13C2 PFDA	1.2262 1.4130	1.3367	1.1374	1.1724	1.2015	Ave		1.2479				8.5		30.0			
d3-NMeFOSAA	0.2423 0.3204	0.2866	0.2348	0.2361	0.2716	Ave		0.2653				12.9		30.0			
d5-NEtFOSAA	0.2319 0.2553	0.2420	0.2109	0.2107	0.2321	Ave		0.2305				7.6		30.0			

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 Burlington Job No.: 200-43262-1 Analy Batch No.: 129349

SDG No.:

Instrument ID: LC410 GC Column: C-18 ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2018 09:16 Calibration End Date: 05/11/2018 10:37 Calibration ID: 39402

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C2 PFUnA	1.2052 1.2090	1.2329	1.1415	1.1056	1.1347	Ave		1.1715				4.3		30.0			
13C8 FOSA	0.7460 0.7395	0.7381	0.6030	0.5861	0.6214	Ave		0.6724				11.3		30.0			
13C2 PFDoA	1.2036 1.4672	1.2551	1.1393	1.1486	1.1754	Ave		1.2315				10.0		30.0			
13C2-PFTeDA	1.1409 1.3395	1.1438	1.0809	1.0241	1.0912	Ave		1.1367				9.6		30.0			

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 Burlington Job No.: 200-43262-1 Analy Batch No.: 129349

SDG No.:

Instrument ID: LC410 GC Column: C-18 ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2018 09:16 Calibration End Date: 05/11/2018 10:37 Calibration ID: 39402

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-129349/6	PF051018A06.d
Level 2	IC 200-129349/7	PF051018A07.d
Level 3	IC 200-129349/8	PF051018A08.d
Level 4	IC 200-129349/9	PF051018A09.d
Level 5	IC 200-129349/10	PF051018A10.d
Level 6	IC 200-129349/11	PF051018A11.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		L2ID	5555 1010765	15227	37535	114526	344259	1.00 200	2.00	5.00	20.0	50.0
Perfluoropentanoic acid (PFPeA)		L2ID	9355 1597351	21478	63326	205592	582718	1.00 200	2.00	5.00	20.0	50.0
Perfluorobutanesulfonic acid (PFBS)		L2ID	4320 1030286	12615	38521	121462	379377	0.884 177	1.77	4.42	17.7	44.2
Perfluorohexanoic acid (PFHxA)		L1ID	6143 1160620	11404	41202	135866	387027	1.00 200	2.00	5.00	20.0	50.0
Perfluoroheptanoic acid (PFHpA)		L2ID	11277 1964181	29878	76266	250713	683786	1.00 200	2.00	5.00	20.0	50.0
Perfluorohexanesulfonic acid (PFHxS)		L2ID	4418 1028471	15967	38612	122927	360294	0.910 182	1.82	4.55	18.2	45.5
6:2FTS		AveID	1100 +++++	1808	5412	20662	64304	0.948 +++++	1.90	4.74	19.0	47.4
Perfluorooctanoic acid (PFOA)		L2ID	10342 1748277	30209	85612	246875	744865	1.00 200	2.00	5.00	20.0	50.0
Perfluoroheptanesulfonic Acid (PFHpS)		L1ID	3194 641622	8778	32331	88457	288280	0.952 190	1.90	4.76	19.0	47.6
Perfluorononanoic acid (PFNA)		L2ID	9758 1937336	29215	86497	260811	823627	1.00 200	2.00	5.00	20.0	50.0
Perfluorooctanesulfonic acid (PFOS)		L2ID	3320 752332	13241	33403	95988	318981	0.928 186	1.86	4.64	18.6	46.4
8:2FTS		AveID	1592 +++++	2002	19120	39416	153385	0.958 +++++	1.92	4.79	19.2	47.9
Perfluorodecanoic acid (PFDA)		L2ID	9015 2465510	35377	102875	303516	1057024	1.00 200	2.00	5.00	20.0	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		L1ID	2725 673562	8087	28120	80940	266444	1.00 200	2.00	5.00	20.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		L2ID	2028 460320	6914	21756	60210	202719	1.00 200	2.00	5.00	20.0	50.0
Perfluorodecanesulfonic acid (PFDS)		L2ID	3965 697974	13882	35343	94797	336027	0.964 193	1.93	4.82	19.3	48.2

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

Lab Name: TestAmerica Burlington Job No.: 200-43262-1 Analy Batch No.: 129349

SDG No.:

Instrument ID: LC410 GC Column: C-18 ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2018 09:16 Calibration End Date: 05/11/2018 10:37 Calibration ID: 39402

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Perfluoroundecanoic acid (PFUnA)		L2ID	12241 2086920	34740	113609	312557	938305	1.00 200	2.00	5.00	20.0	50.0
Perfluorooctane Sulfonamide (FOSA)		L2ID	5949 1182526	18283	57211	150290	495851	1.00 200	2.00	5.00	20.0	50.0
Perfluorododecanoic acid (PFDoA)		L2ID	9390 2375076	32639	97277	262592	956981	1.00 200	2.00	5.00	20.0	50.0
Perfluorotridecanoic Acid (PFTriA)		L2ID	8425 2292429	34216	101151	274804	971029	1.00 200	2.00	5.00	20.0	50.0
Perfluorotetradecanoic acid (PFTeA)		L2ID	10648 2207932	35800	96426	257221	883611	1.00 200	2.00	5.00	20.0	50.0
13C4 PFBA	13PFOA	Ave	251025 273135	357380	388089	315995	374972	50.0 50.0	50.0	50.0	50.0	50.0
13C5 PFPeA	13PFOA	Ave	223522 192519	296736	281704	226703	264445	50.0 50.0	50.0	50.0	50.0	50.0
13C3-PFBS	13PFOA	Ave	201660 189018	281466	285317	229656	263494	46.5 46.5	46.5	46.5	46.5	46.5
13C2 PFHxA	13PFOA	Ave	301518 290114	435447	426187	348306	374624	50.0 50.0	50.0	50.0	50.0	50.0
13C4-PFHpA	13PFOA	Ave	517841 487037	708622	703710	604683	651704	50.0 50.0	50.0	50.0	50.0	50.0
18O2 PFHxS	13PFOA	Ave	236156 217940	318340	325367	260128	270410	47.3 47.3	47.3	47.3	47.3	47.3
M2-6:2FTS	13PFOA	Ave	44557 48984	64976	58495	45722	55802	47.5 47.5	47.5	47.5	47.5	47.5
13C4 PFOA	13PFOA	Ave	430875 454953	750021	772024	571905	689914	50.0 50.0	50.0	50.0	50.0	50.0
13C5 PFNA	13PFOA	Ave	514683 551180	852735	946731	639192	861646	50.0 50.0	50.0	50.0	50.0	50.0
13C4 PFOS	13PFOA	Ave	184164 169199	316349	330973	235698	289639	47.8 47.8	47.8	47.8	47.8	47.8
M2-8:2FTS	13PFOA	Ave	92183 138908	158023	194038	119893	180147	47.9 47.9	47.9	47.9	47.9	47.9
13C2 PFDA	13PFOA	Ave	611126 656402	1066155	1110498	806295	1041802	50.0 50.0	50.0	50.0	50.0	50.0
d3-NMeFOSAA	13PFOA	Ave	120774 148853	228585	229295	162350	235504	50.0 50.0	50.0	50.0	50.0	50.0
d5-NEtFOSAA	13PFOA	Ave	115557 118582	192983	205889	144917	201294	50.0 50.0	50.0	50.0	50.0	50.0
13C2 PFUnA	13PFOA	Ave	600693 561624	983299	1114554	760357	983907	50.0 50.0	50.0	50.0	50.0	50.0
13C8 FOSA	13PFOA	Ave	371829 343524	588657	588801	403073	538810	50.0 50.0	50.0	50.0	50.0	50.0

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

Lab Name: TestAmerica Burlington Job No.: 200-43262-1 Analy Batch No.: 129349

SDG No.:

Instrument ID: LC410 GC Column: C-18 ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2018 09:16 Calibration End Date: 05/11/2018 10:37 Calibration ID: 39402

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
13C2 PFDoA	13PF OA	Ave	599852 681596	1001036	1112366	789916	1019184	50.0 50.0	50.0	50.0	50.0	50.0
13C2-PFTeDA	13PF OA	Ave	568613 622273	912300	1055378	704268	946154	50.0 50.0	50.0	50.0	50.0	50.0

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L1ID = Linear 1/conc IsoDil
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 11-May-2018 09:16:15 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-006 IC 1
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 11:28:16 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 15:04:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.334	2.328	0.006	1.000	251025	53.4		107	315	
1 Perfluorobutyric acid										M
212.9 > 168.9	2.347	2.334	0.013	1.005	5555	0.9776		97.8	11.8	M
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.760	2.751	0.009	1.000	9355	1.05		105	20.7	M
D 3 13C5-PFPeA										
267.7 > 222.6	2.760	2.753	0.007	1.000	223522	62.3		125	1641	
6 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.818	2.818	0.0	0.994	4320	0.9073		103	42.2	M
D 5 13C3-PFBS										
302.0 > 79.8	2.834	2.820	0.014	1.000	201660	53.9		116	412	
D 7 13C2 PFHxA										
314.8 > 269.6	3.177	3.170	0.007	1.000	301518	57.6		115	1472	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.177	3.172	0.005	1.000	6143	1.23		123	73.4	
D 10 13C4-PFHpA										
366.9 > 321.8	3.703	3.696	0.007	1.000	517841	58.5		117	1192	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.715	3.698	0.017	1.003	11277	1.00		99.8	193	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.748	3.739	0.009	0.997	4418	0.8670		95.3	25.2	
D 13 18O2 PFHxS										
402.9 > 83.8	3.759	3.742	0.017	1.000	236156	56.8		120	486	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.342	4.319	0.023	1.003	1100	1.14		120	17.6	
D 14 M2-6:2FTS										
428.6 > 408.6	4.330	4.321	0.009	1.000	44557	54.6		115	262	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.393	4.363	0.030	1.000	430875	49.9		99.7	1990	
* 49 13C2-PFOA										
414.9 > 369.8	4.393	4.363	0.030		498399	50.0			5676	
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.393	4.368	0.025	1.000	10342	1.03		103	15.7	M
18 Perfluoroheptanesulfonic acid										M
448.8 > 79.8	4.430	4.399	0.031	0.855	3194	1.05		110	42.7	M
D 21 13C5 PFNA										
467.8 > 422.8	5.154	5.127	0.027	1.000	514683	50.1		100	2310	
19 Perfluorononanoic acid										M
462.8 > 418.8	5.168	5.136	0.032	1.003	9758	1.04		104	64.2	M
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.181	5.152	0.029	1.000	3320	0.9154		98.6	31.8	M
D 22 13C4 PFOS										
502.8 > 79.8	5.181	5.154	0.027	1.000	184164	49.4		103	741	
24 Sodium 1H,1H,2H,2H-perfluorodecane										M
526.8 > 506.5	5.950	5.880	0.070	1.008	1592	1.08		112	8.9	M
D 23 M2-8:2FTS										
528.8 > 508.8	5.902	5.882	0.020	1.000	92183	42.1		87.9	550	
D 25 13C2 PFDA										
514.9 > 469.5	5.950	5.910	0.040	1.000	611126	49.1		98.3	3357	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.950	5.914	0.036	1.000	9015	1.01		101	40.8	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.295	6.271	0.024	1.000	120774	45.7		91.3	680	
28 N-methyl perfluorooctane sulfonami										M
569.8 > 418.8	6.313	6.283	0.030	1.003	2725	1.04		104	12.3	M
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.670	6.640	0.030	1.000	115557	50.3		101	842	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.706	6.664	0.042	1.005	2028	1.01		101	14.5	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.706	6.667	0.039	1.294	3965	0.9567		99.2	32.4	
D 33 13C2 PFUnA										
564.8 > 519.8	6.706	6.676	0.030	1.000	600693	51.4		103	1776	
32 Perfluoroundecanoic acid										M
562.8 > 518.6	6.706	6.676	0.030	1.000	12241	1.04		104	69.2	M
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	7.001	6.984	0.017	1.000	5949	1.02		102	56.9	
D 35 13C8 FOSA										
505.8 > 77.8	7.001	6.984	0.017	1.000	371829	55.5		111	2179	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.354	0.008	0.997	9390	1.01		101	117	
D 36 13C2 PFDoA										
614.8 > 569.6	7.384	7.358	0.026	1.000	599852	48.9		97.7	2274	
40 Perfluorotridecanoic acid										M
662.8 > 618.6	8.004	7.974	0.030	1.084	8425	0.9726		97.3	106	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.529	8.514	0.015	1.000	568613	50.2		100	923	
44 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.545	8.519	0.026	1.002	10648	0.9775		97.8	59.1	M
712.8 > 168.8	8.545	8.519	0.026	1.002	1595		6.68(0.00-0.00)	97.8	8.9	M
712.8 > 218.8	8.499	8.519	-0.020	0.996	586		18.17(0.00-0.00)	97.8	4.4	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21-L1_00002 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 11:28:16 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d

Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410

Lims ID: IC

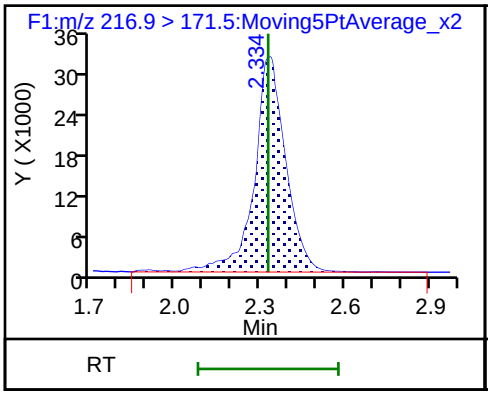
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6

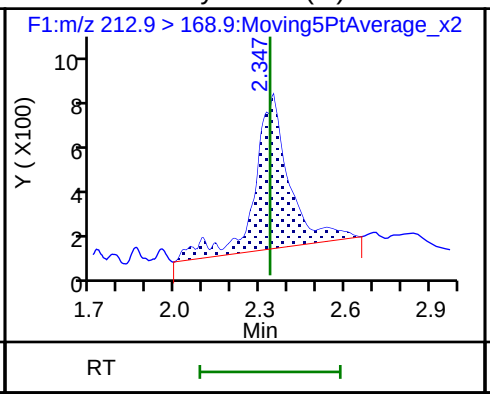
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

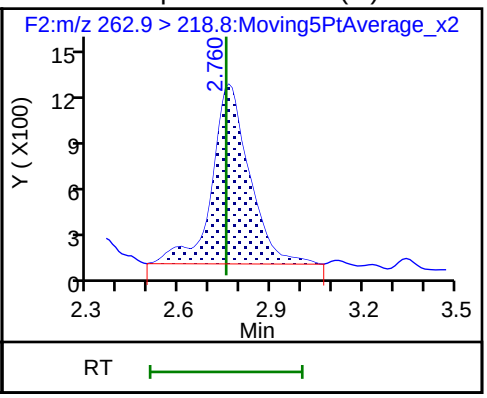
D 2 13C4 PFBA



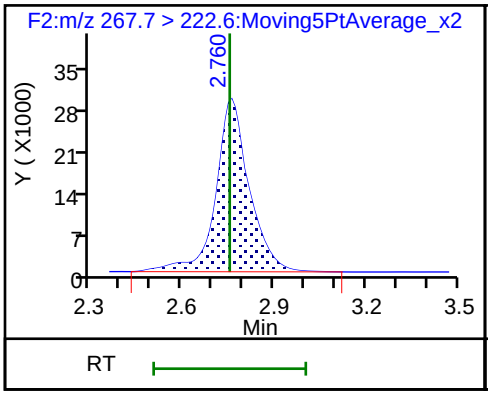
1 Perfluorobutyric acid (M)



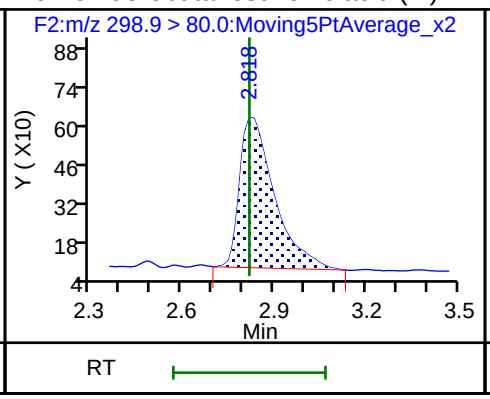
4 Perfluoropentanoic acid (M)



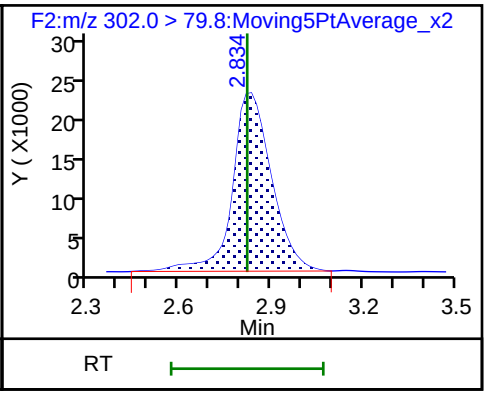
D 3 13C5-PFPeA



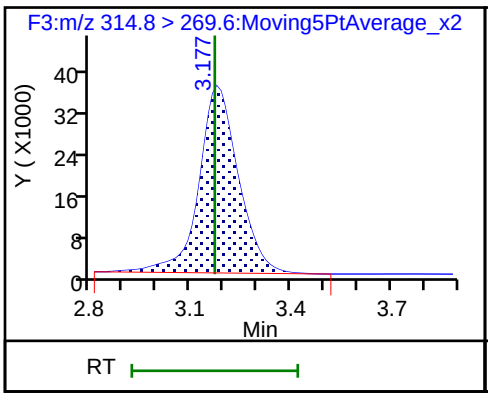
6 Perfluorobutanesulfonic acid (M)



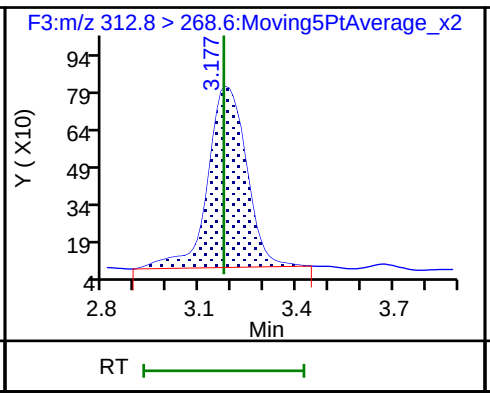
D 5 13C3-PFBS



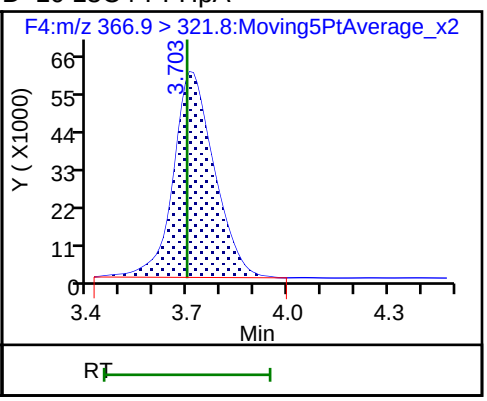
D 7 13C2 PFHxA



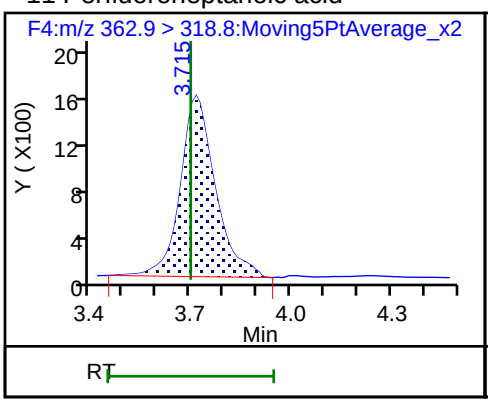
8 Perfluorohexanoic acid



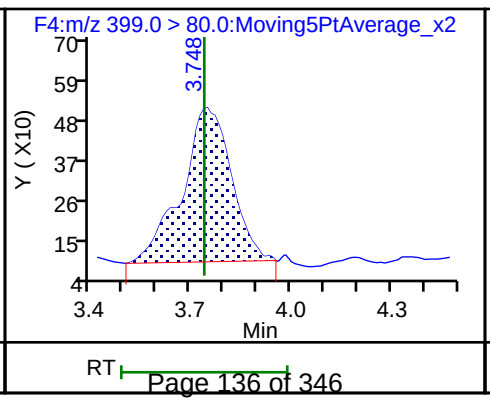
D 10 13C4-PFHpA



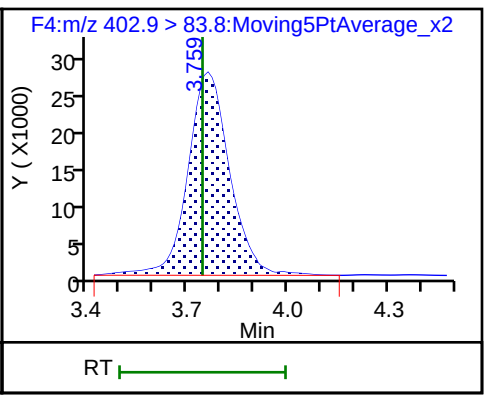
11 Perfluoroheptanoic acid



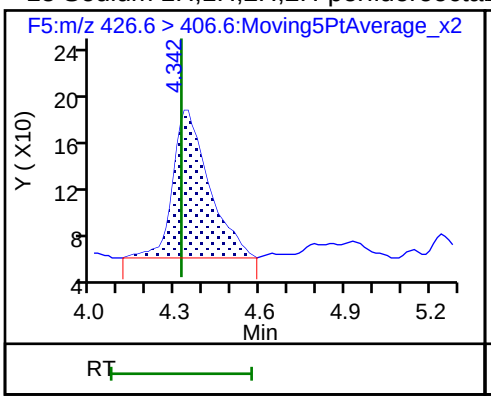
12 Perfluorohexanesulfonic acid



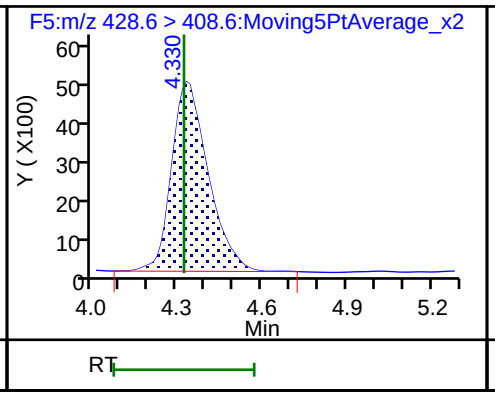
D 13 18O2 PFHxS



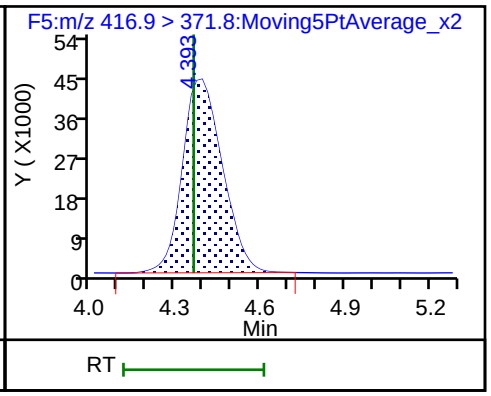
15 Sodium 1H,1H,2H,2H-perfluorooctane



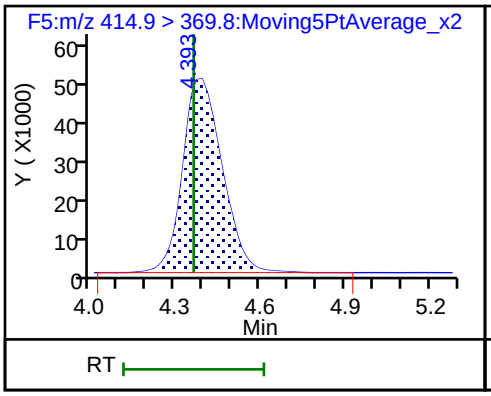
D 14 M2-6:2FTS



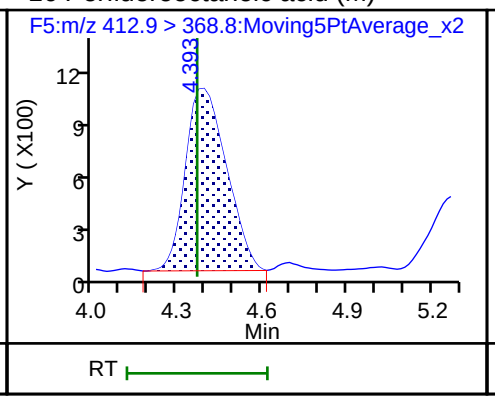
D 17 13C4 PFOA



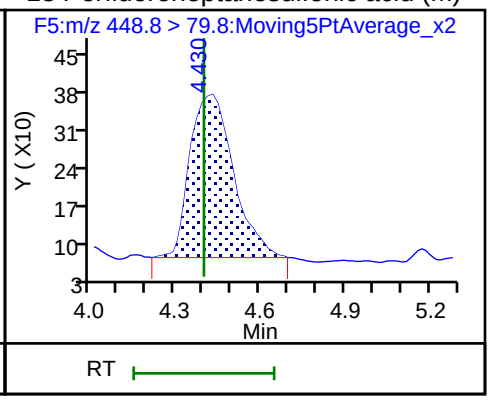
* 49 13C2-PFOA



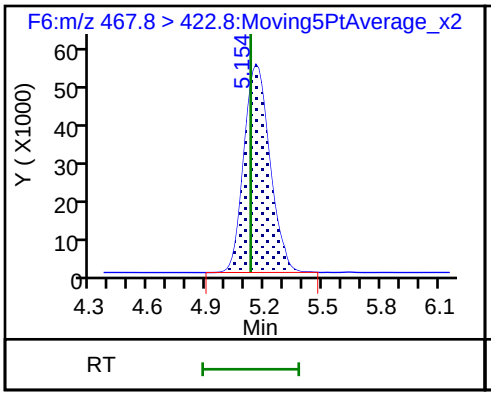
16 Perfluorooctanoic acid (M)



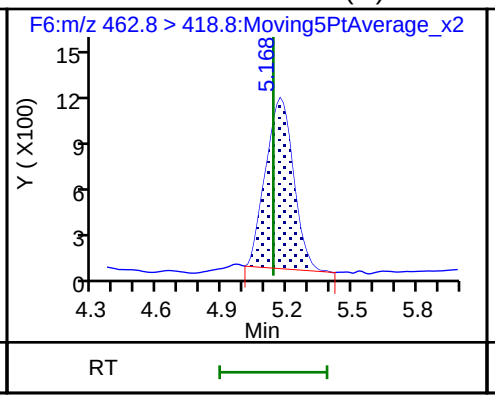
18 Perfluoroheptanesulfonic acid (M)



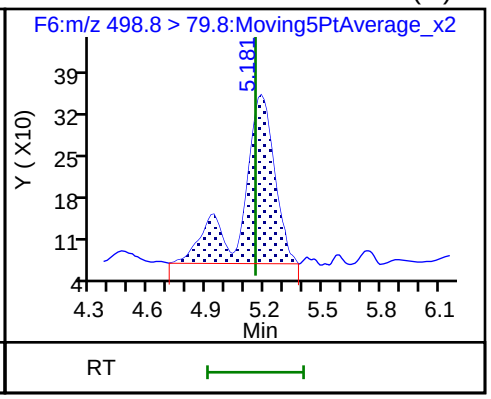
D 21 13C5 PFNA



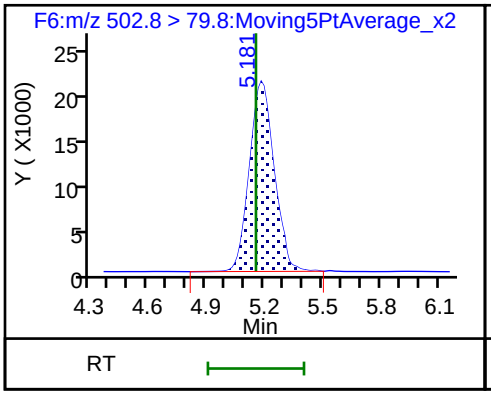
19 Perfluorononanoic acid (M)



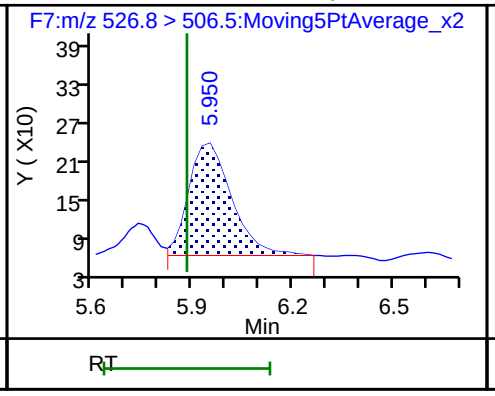
20 Perfluorooctane sulfonic acid (M)



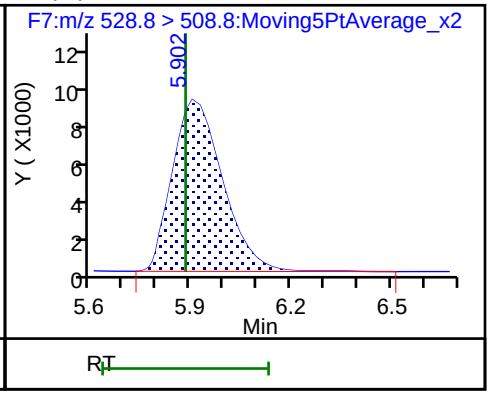
D 22 13C4 PFOS



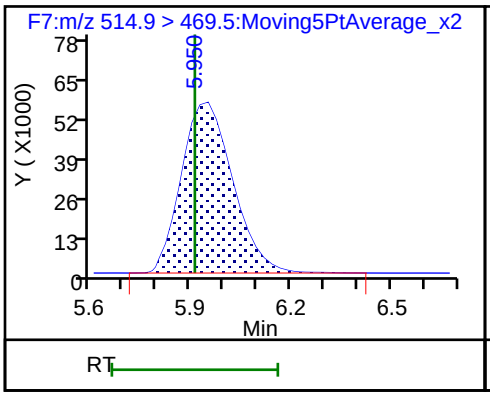
24 Sodium 1H,1H,2H,2H-perfluorodecane



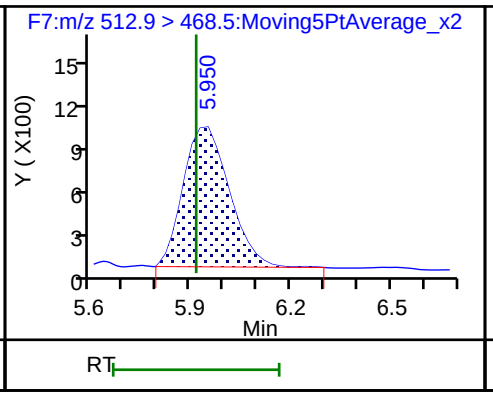
D 23 M2-8:2FTS



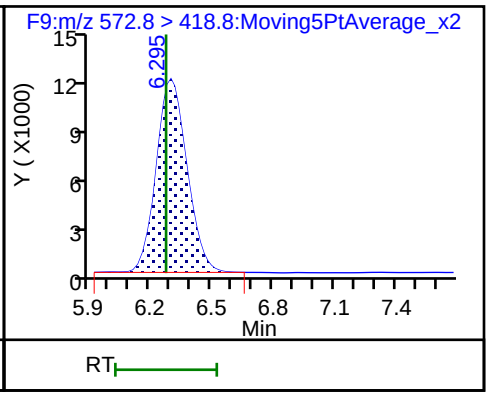
D 25 13C2 PFDA



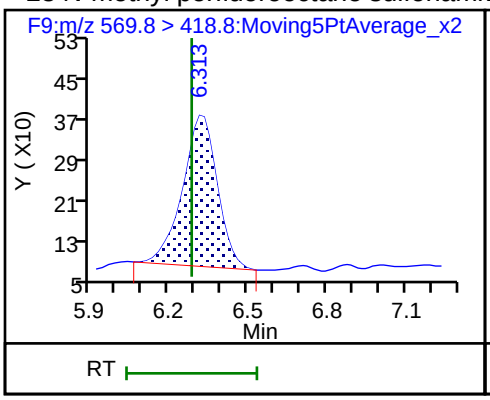
26 Perfluorodecanoic acid



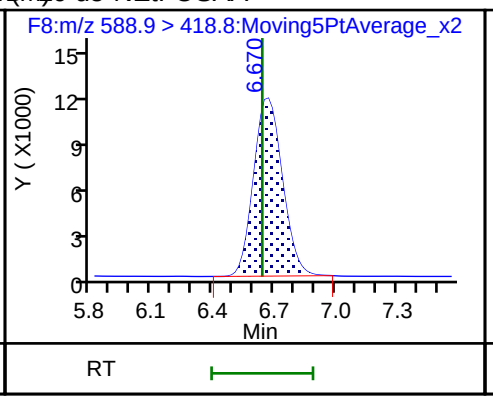
D 27 d3-NMeFOSAA



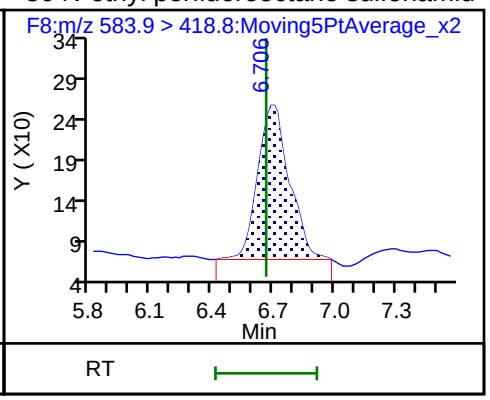
28 N-methyl perfluorooctane sulfonamid (M)



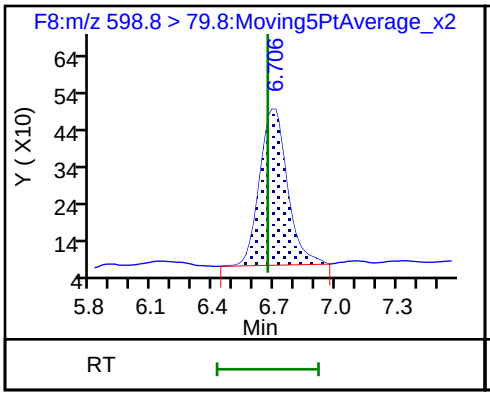
D 29 d5-NEtFOSAA



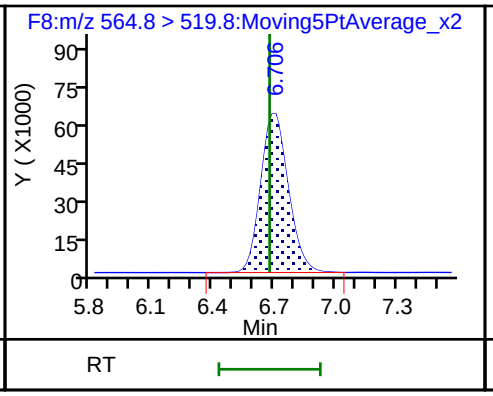
30 N-ethyl perfluorooctane sulfonamid



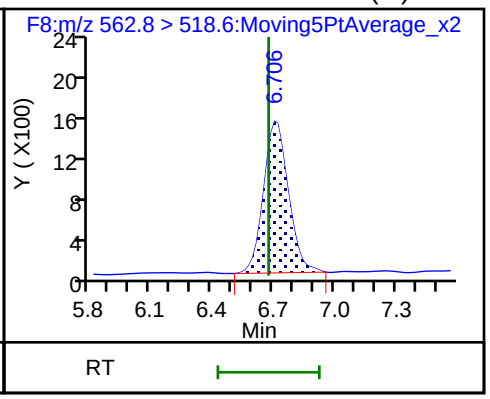
31 Perfluorodecane Sulfonic acid



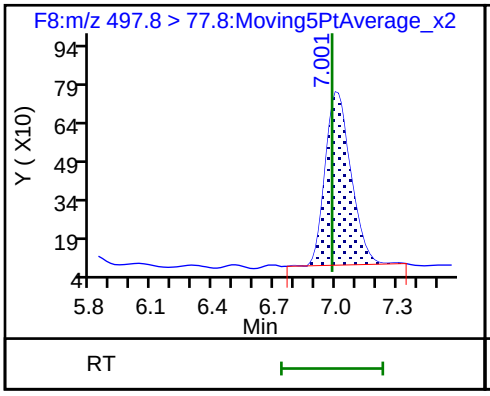
D 33 13C2 PFUnA



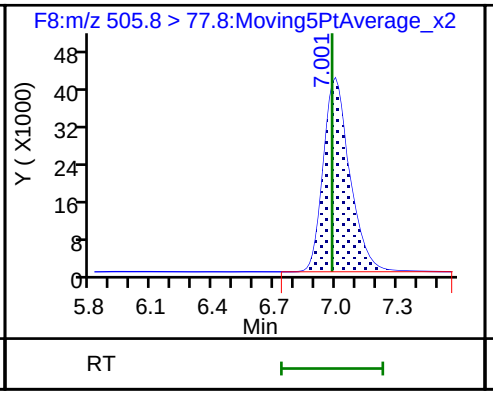
32 Perfluoroundecanoic acid (M)



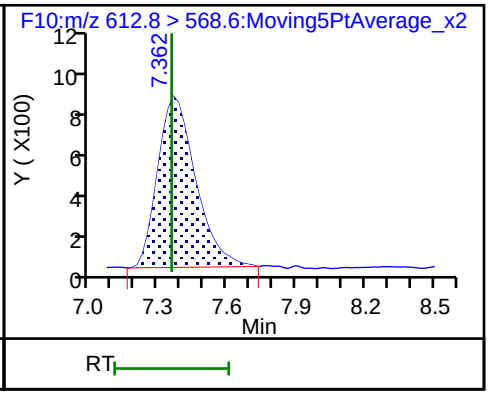
34 Perfluorooctane Sulfonamide



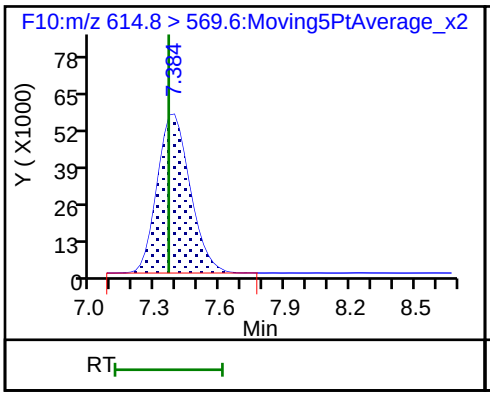
D 35 13C8 FOSA



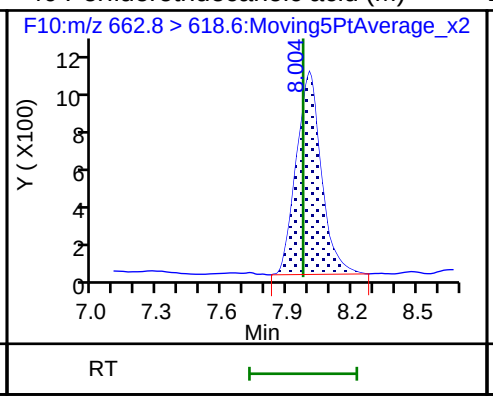
37 Perfluorododecanoic acid



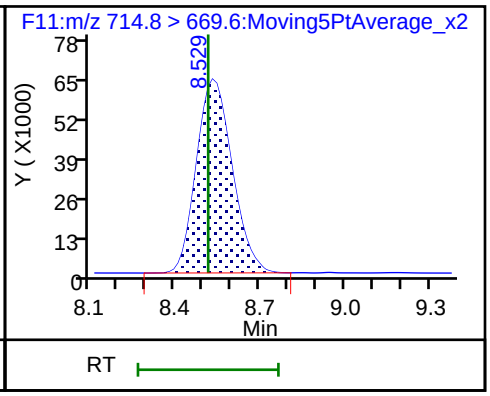
D 36 13C2 PFDoA



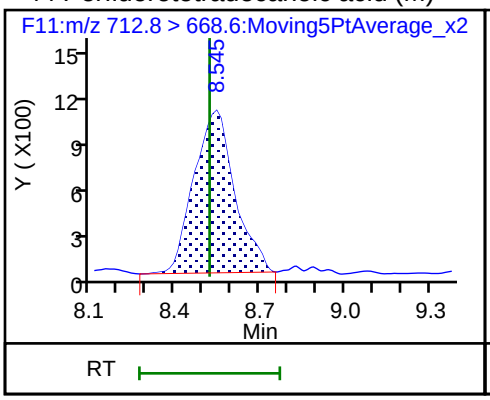
40 Perfluorotridecanoic acid (M)



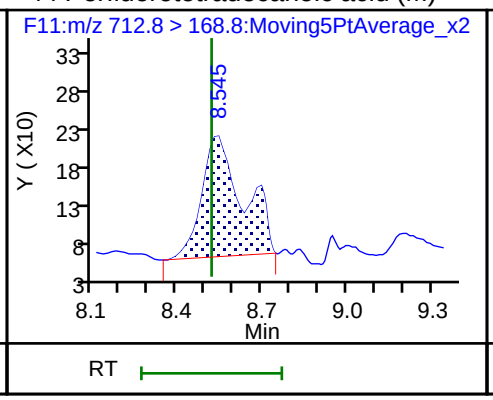
D 43 13C2-PFTeDA



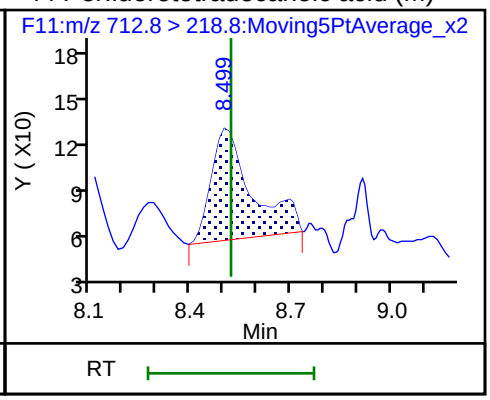
44 Perfluorotetradecanoic acid (M)



44 Perfluorotetradecanoic acid (M)



44 Perfluorotetradecanoic acid (M)



Manual Integration/User Assign Peak Report

TestAmerica Burlington

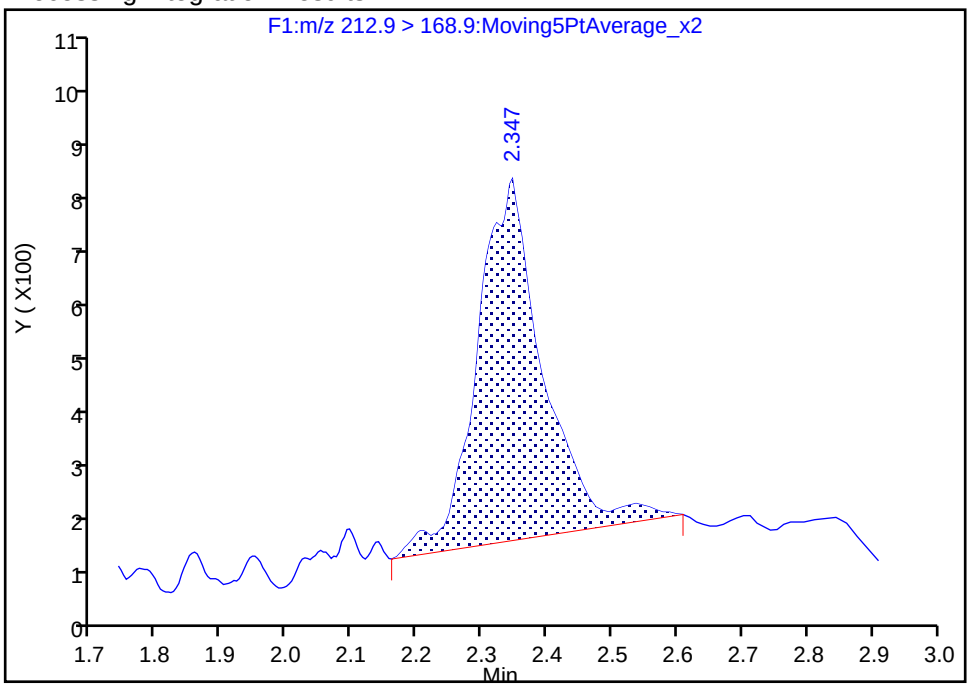
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

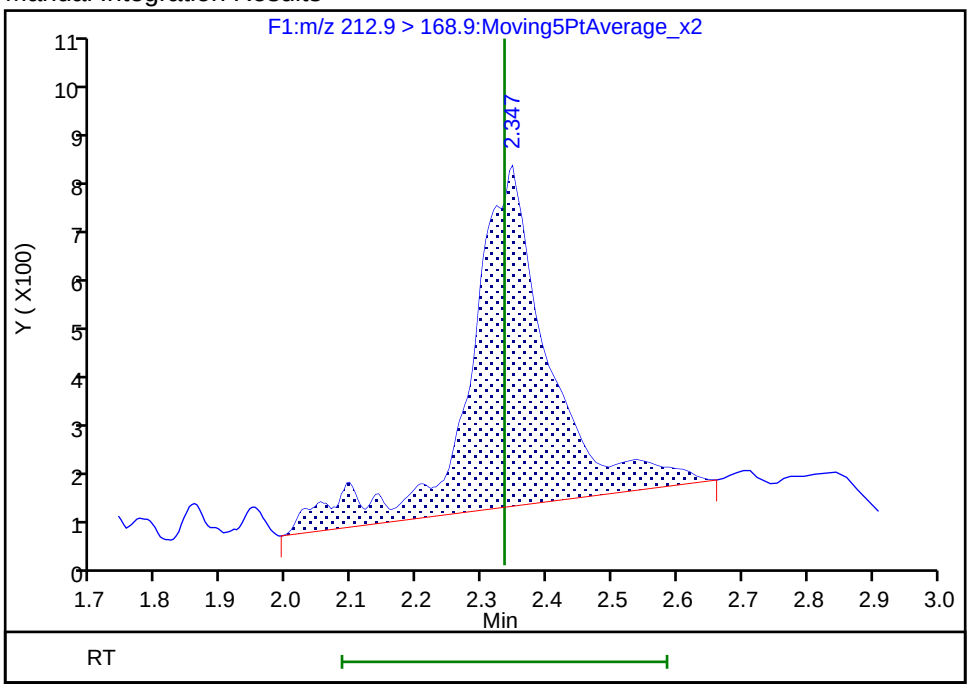
Processing Integration Results

RT: 2.35
Area: 4400
Amount: 1.019797
Amount Units: ng/ml



Manual Integration Results

RT: 2.35
Area: 5555
Amount: 0.977617
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 14:21:00
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

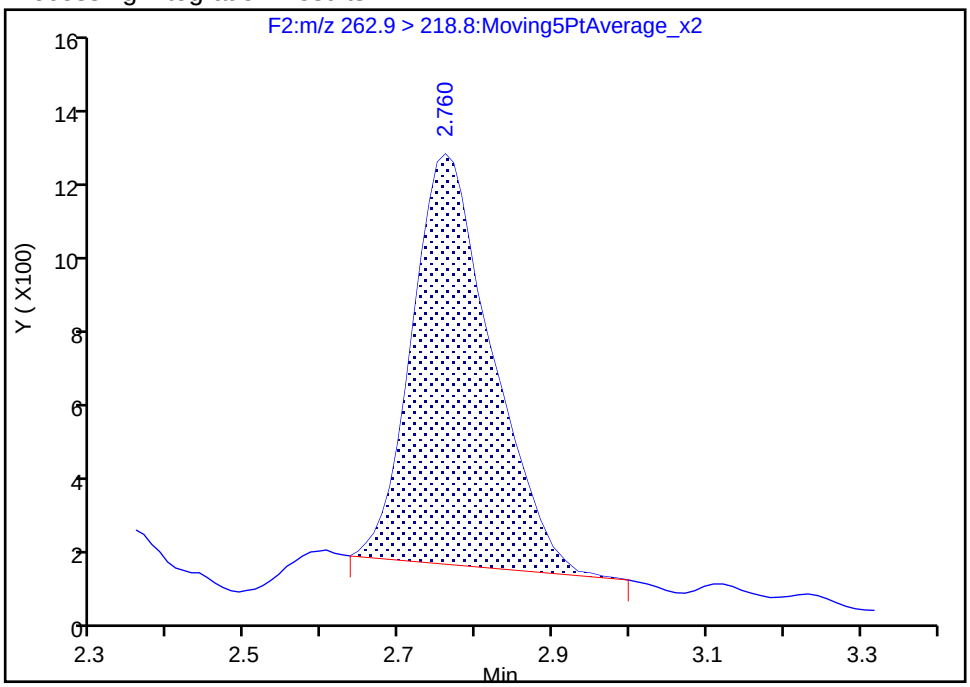
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

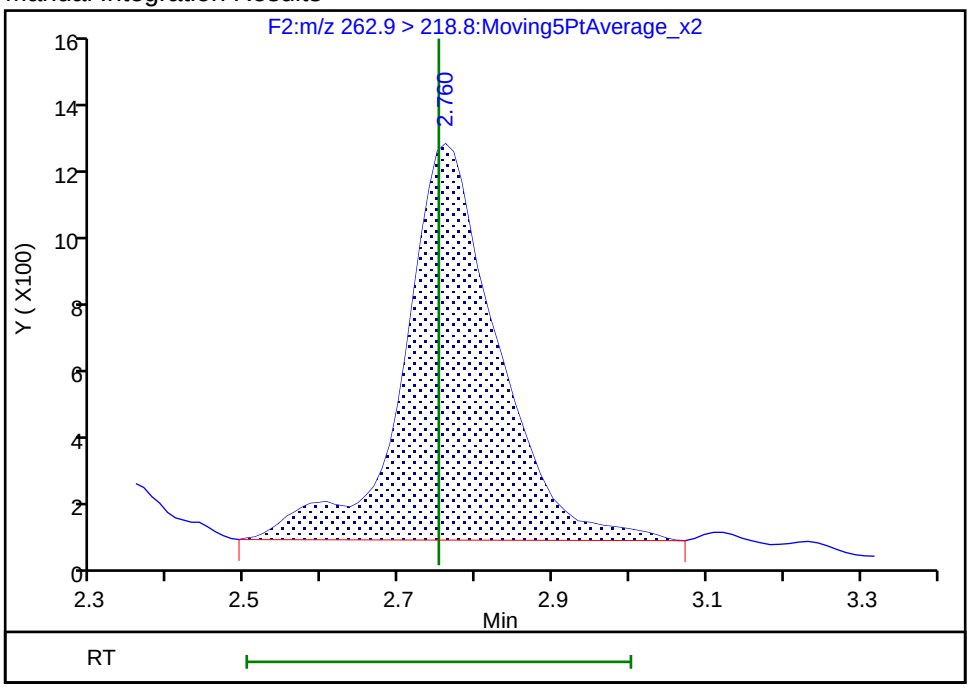
Processing Integration Results

RT: 2.76
Area: 7405
Amount: 1.052264
Amount Units: ng/ml



Manual Integration Results

RT: 2.76
Area: 9355
Amount: 1.048825
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 14:21:08
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

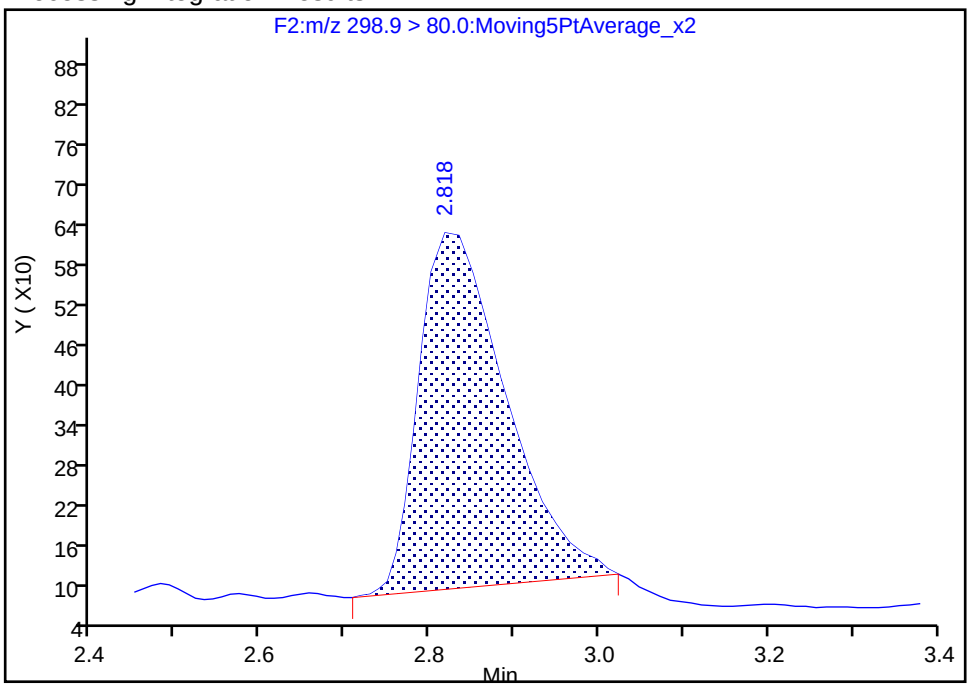
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

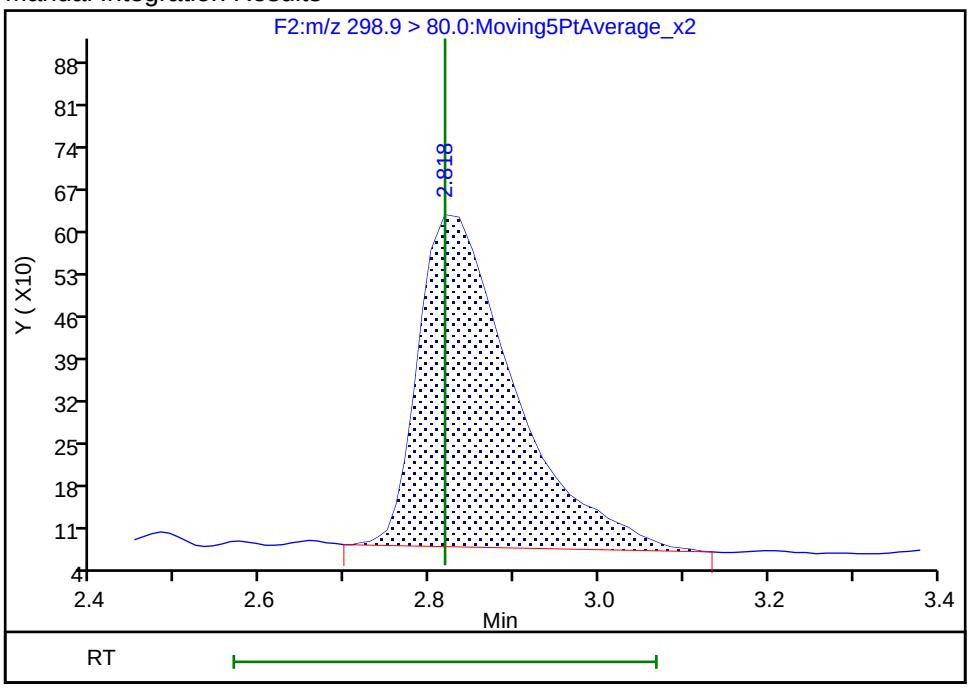
Processing Integration Results

RT: 2.82
Area: 3806
Amount: 0.886276
Amount Units: ng/ml



Manual Integration Results

RT: 2.82
Area: 4320
Amount: 0.907259
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 14:21:15
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

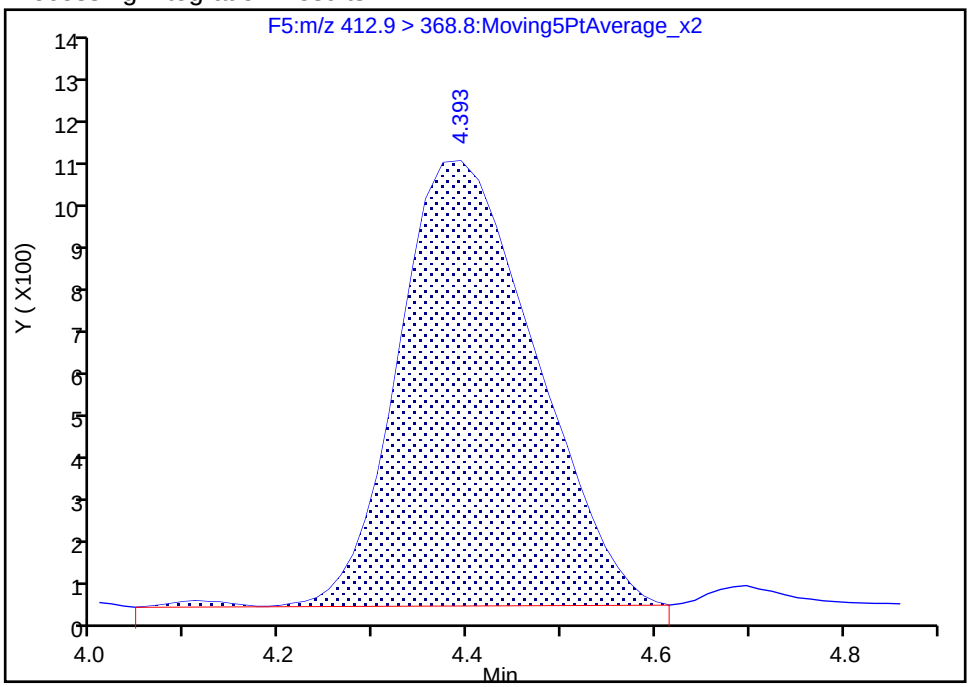
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

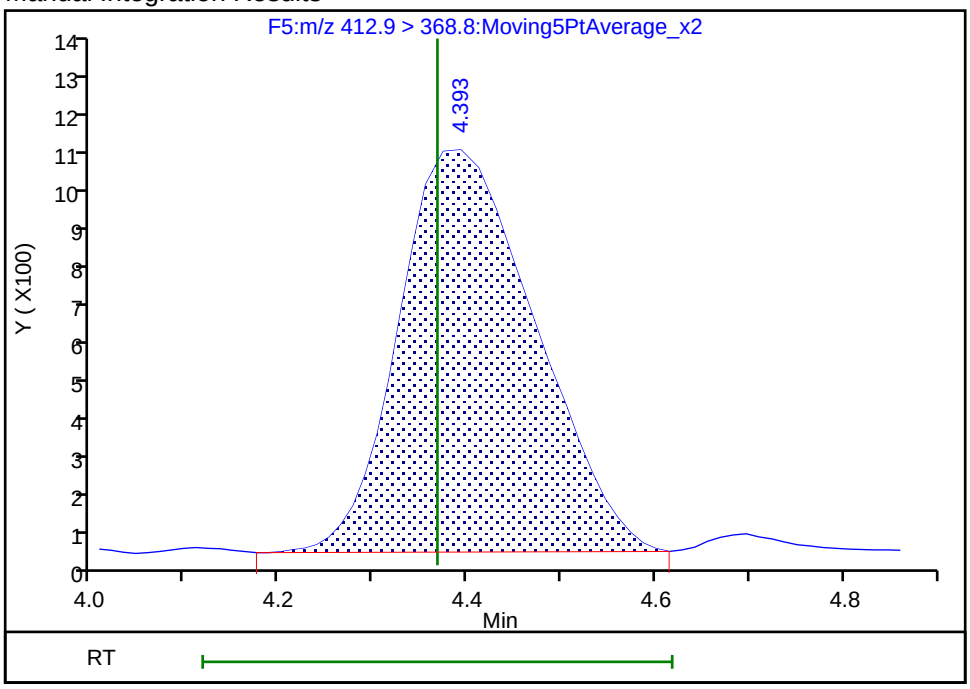
Processing Integration Results

RT: 4.39
Area: 10413
Amount: 1.024710
Amount Units: ng/ml



Manual Integration Results

RT: 4.39
Area: 10342
Amount: 1.032989
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:03:07
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

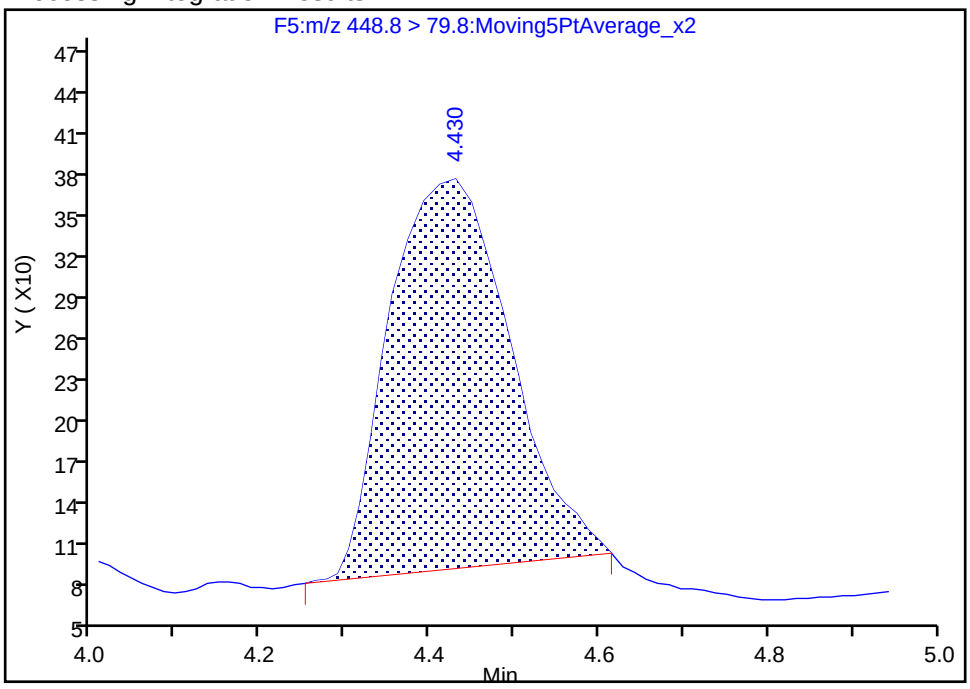
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

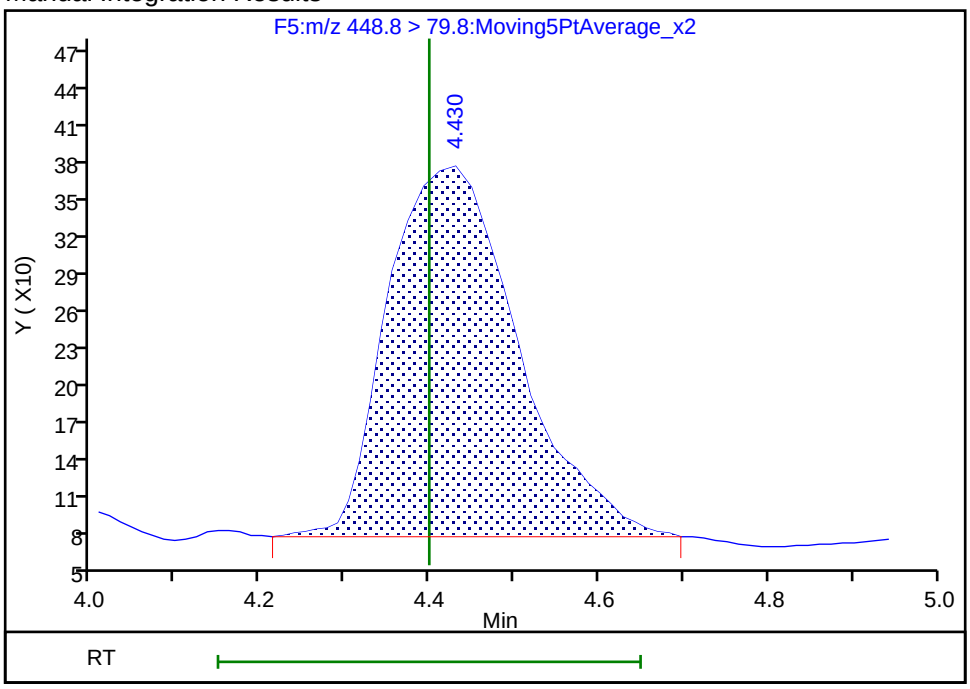
Processing Integration Results

RT: 4.43
Area: 2818
Amount: 1.002623
Amount Units: ng/ml



Manual Integration Results

RT: 4.43
Area: 3194
Amount: 1.046307
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 14:21:31
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

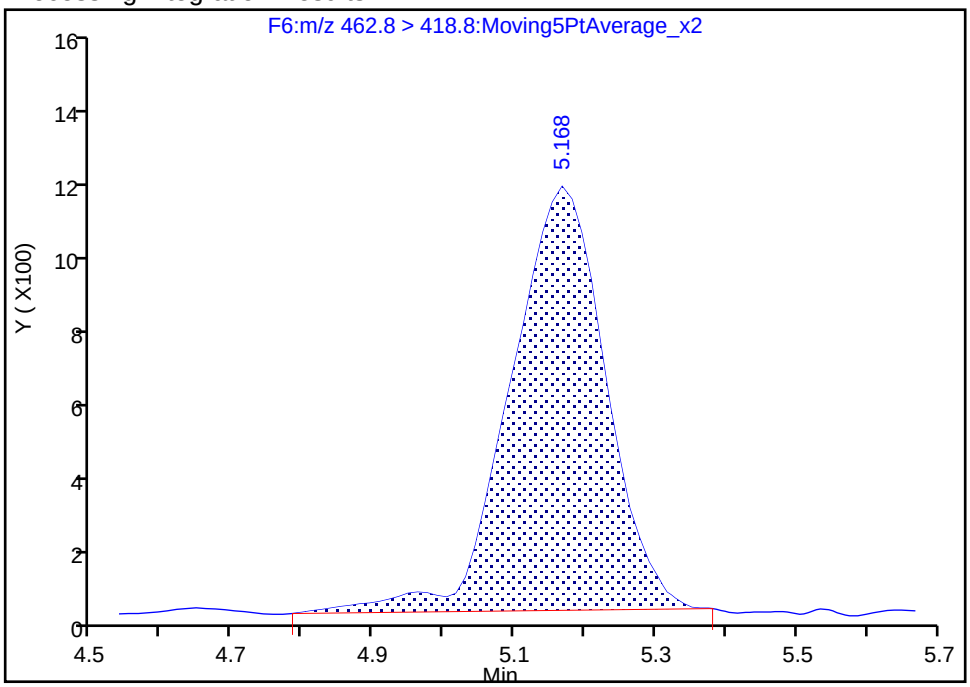
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

19 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

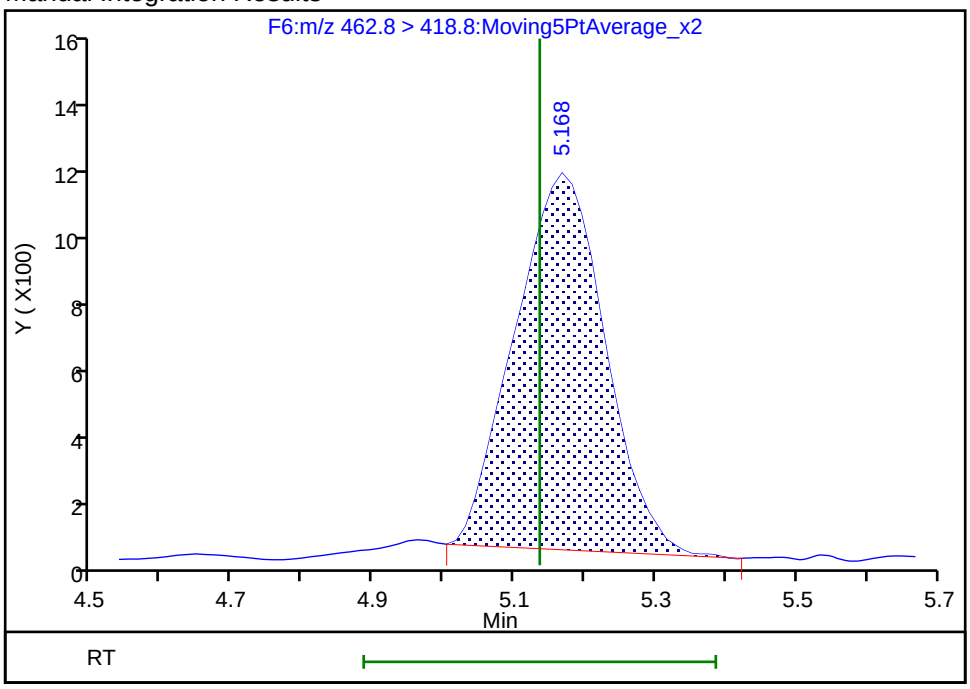
Processing Integration Results

RT: 5.17
Area: 10462
Amount: 1.027720
Amount Units: ng/ml



Manual Integration Results

RT: 5.17
Area: 9758
Amount: 1.035377
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:03:32
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

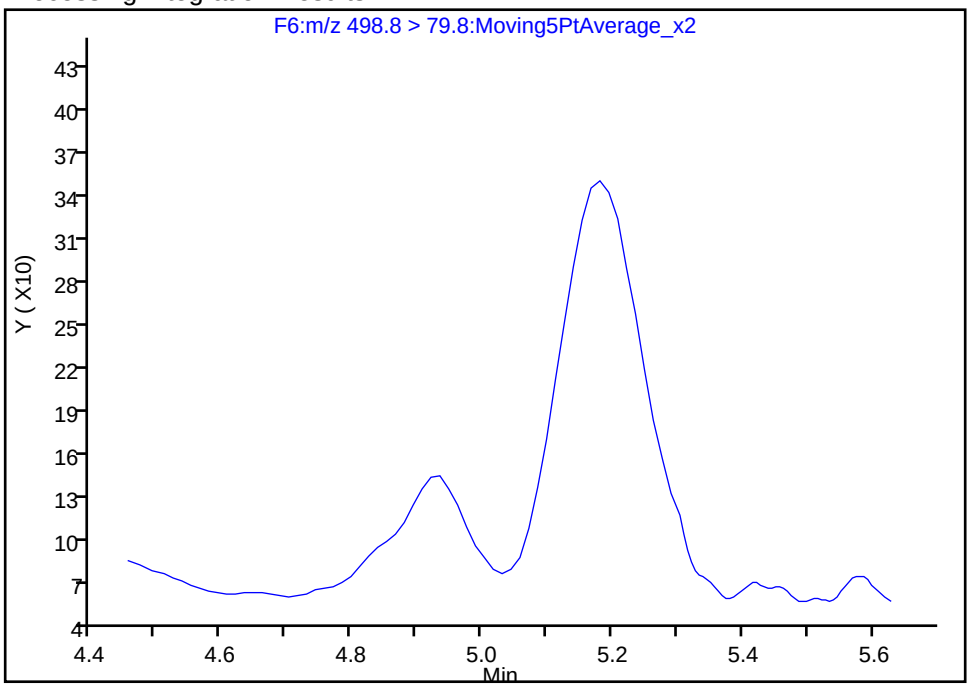
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

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

Signal: 1

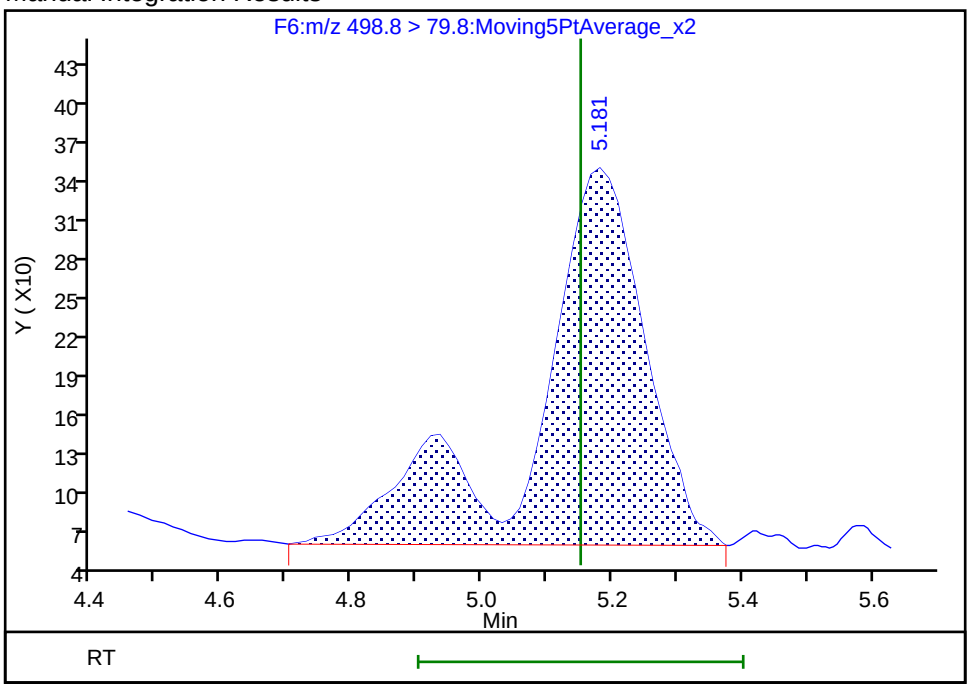
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 5.18
Area: 3320
Amount: 0.915394
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:02:18
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

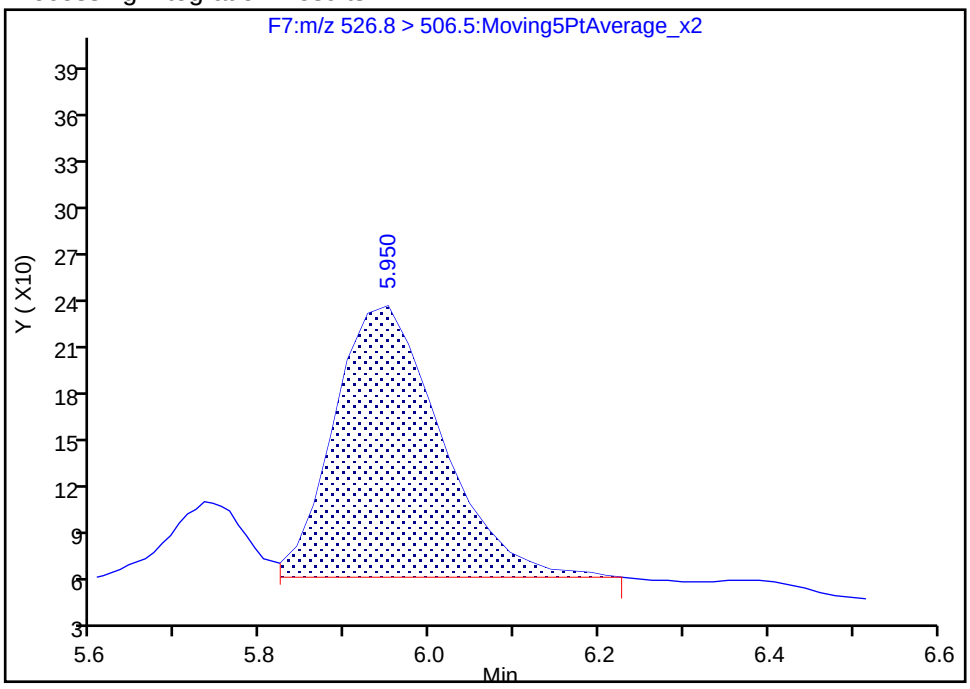
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

24 Sodium 1H,1H,2H,2H-perfluorodecane sulfonate, CAS: 39108-34-4

Signal: 1

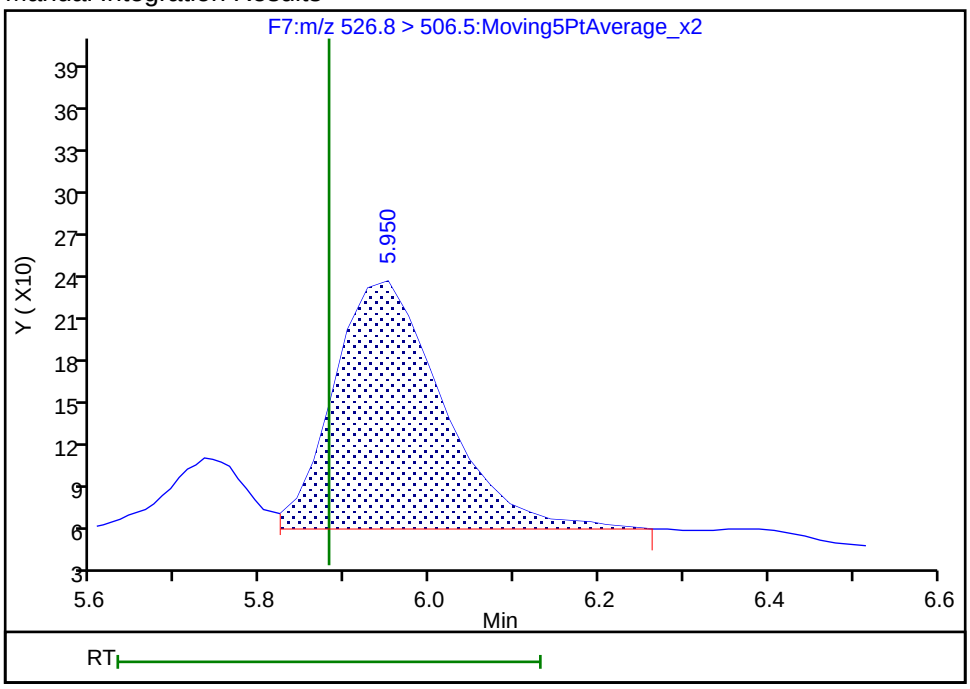
Processing Integration Results

RT: 5.95
Area: 1541
Amount: 1.074128
Amount Units: ng/ml



Manual Integration Results

RT: 5.95
Area: 1592
Amount: 1.077423
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:50:20
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

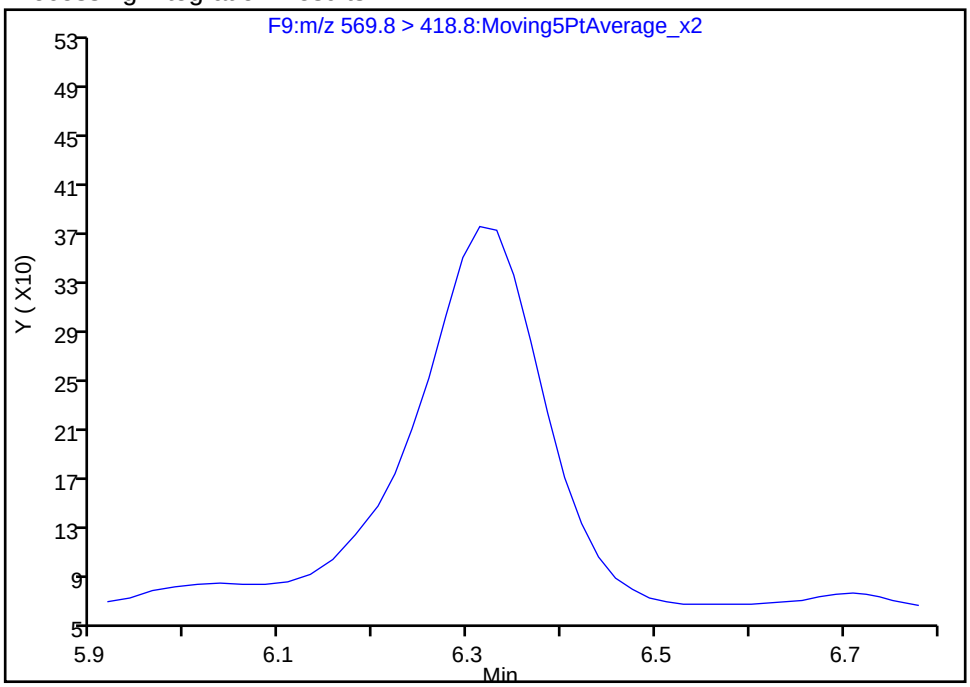
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F9:MRM

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

Signal: 1

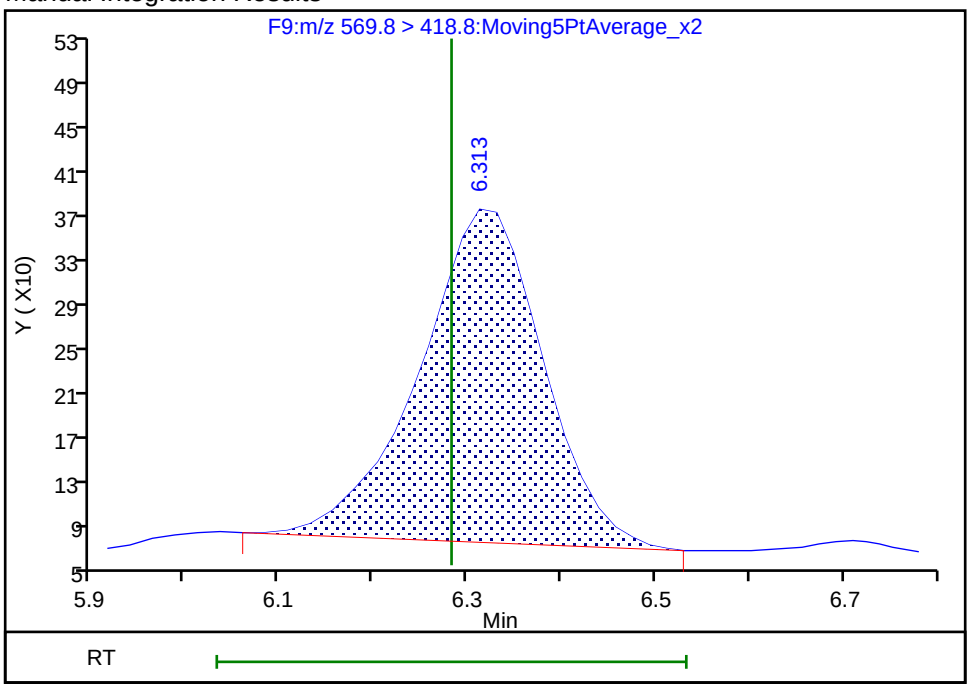
Not Detected
Expected RT: 6.28

Processing Integration Results



Manual Integration Results

RT: 6.31
Area: 2725
Amount: 1.036404
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:02:47
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Burlington

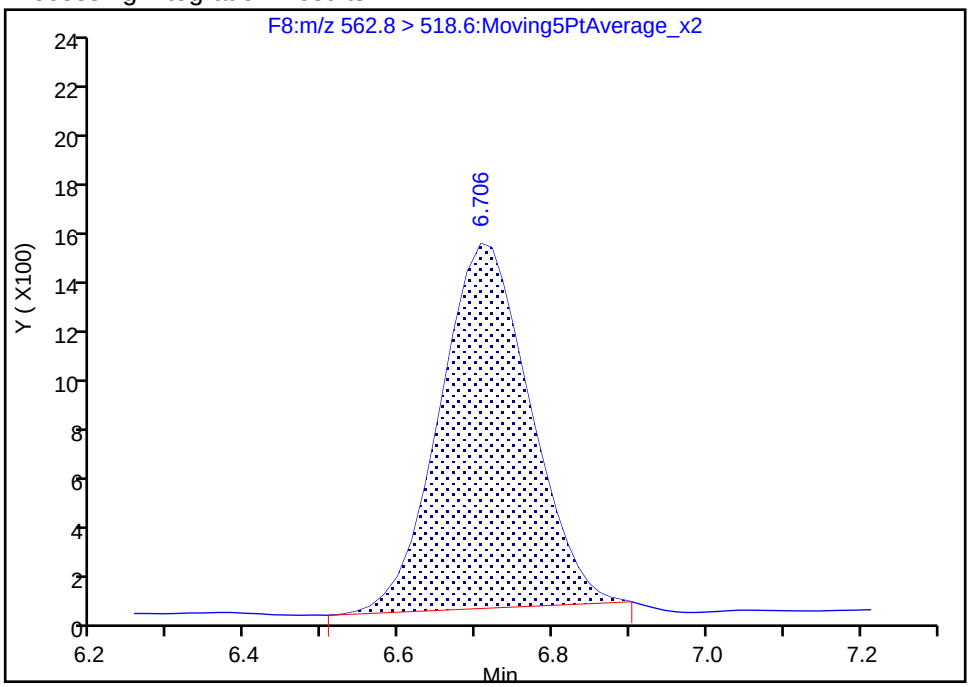
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

32 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

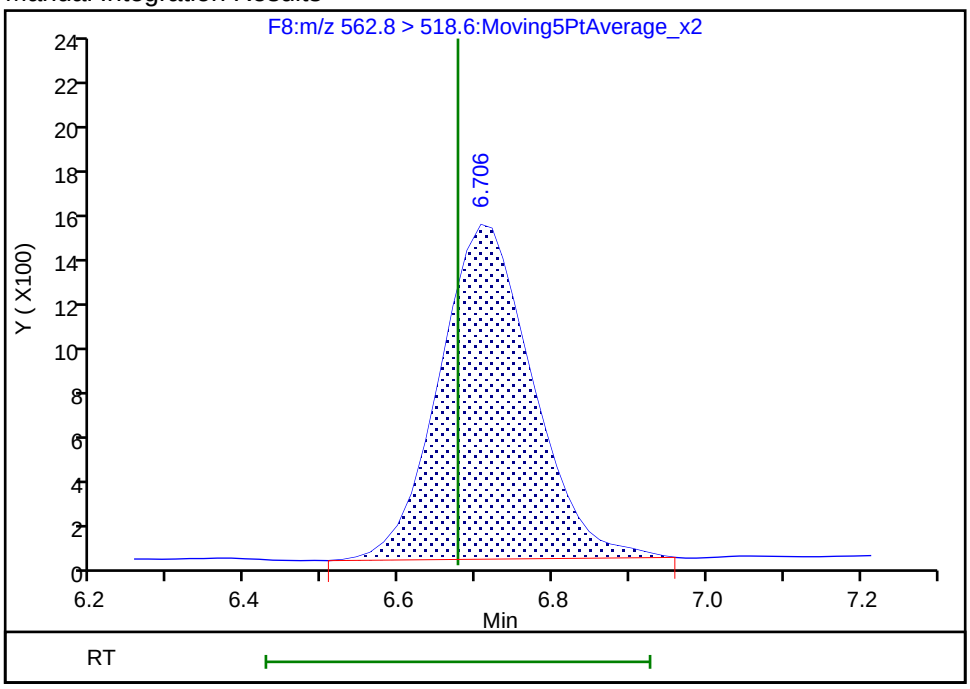
Processing Integration Results

RT: 6.71
Area: 11697
Amount: 1.029802
Amount Units: ng/ml



Manual Integration Results

RT: 6.71
Area: 12241
Amount: 1.035036
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:03:59
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

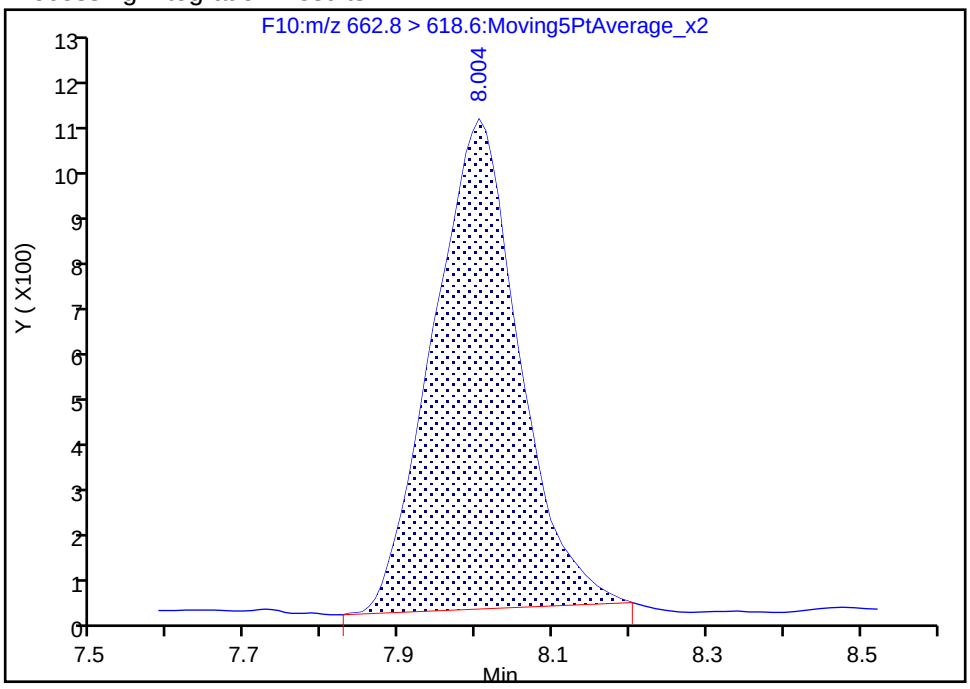
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

40 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

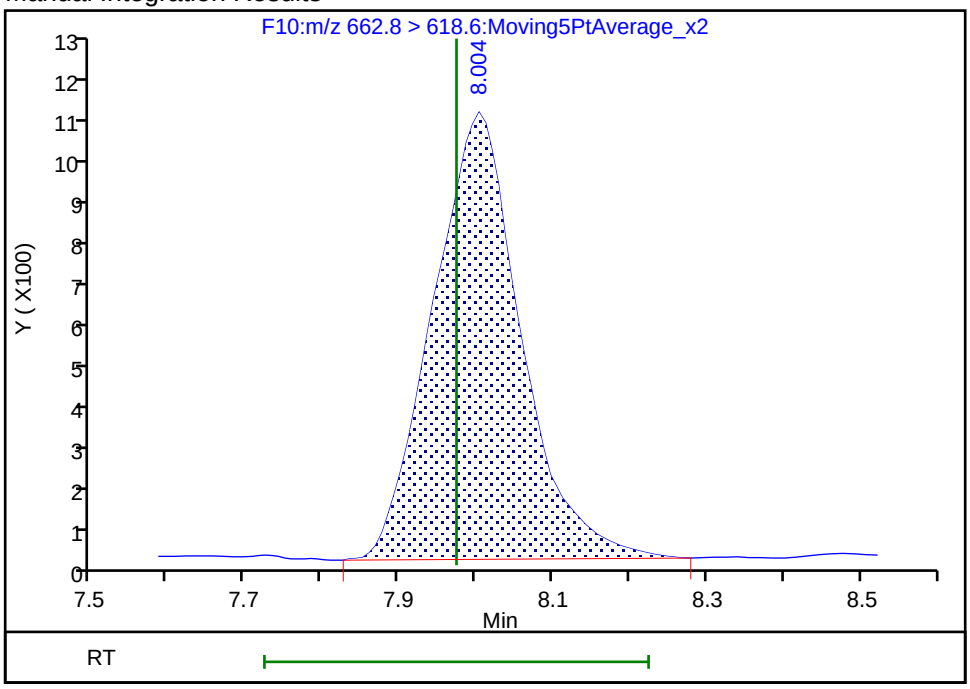
Processing Integration Results

RT: 8.00
Area: 8142
Amount: 0.992093
Amount Units: ng/ml



Manual Integration Results

RT: 8.00
Area: 8425
Amount: 0.972627
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:04:11
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

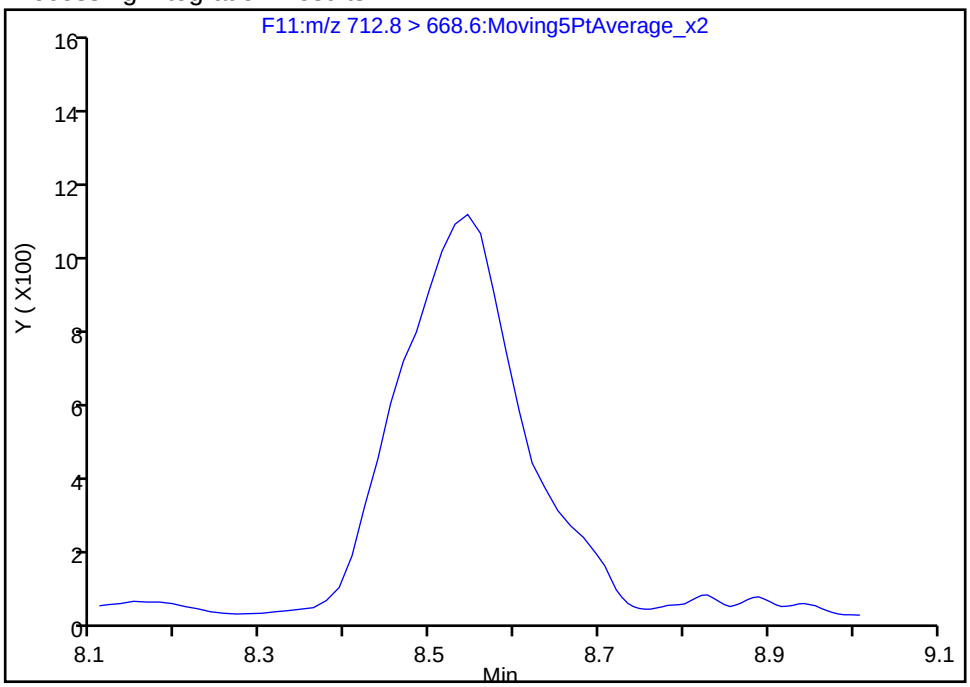
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

44 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

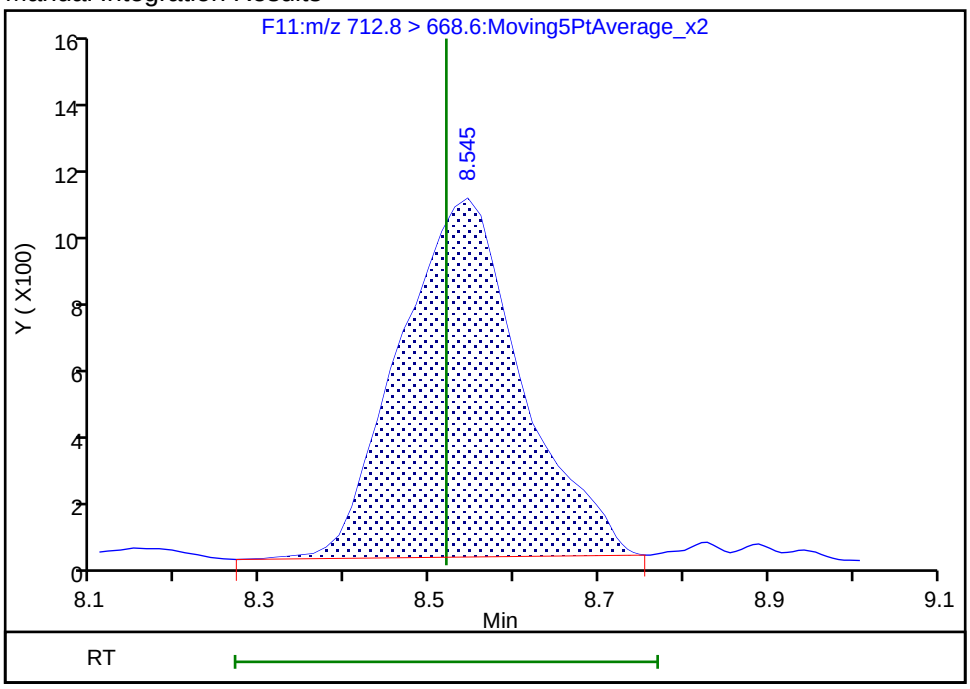
Not Detected
Expected RT: 8.52

Processing Integration Results



Manual Integration Results

RT: 8.54
Area: 10648
Amount: 0.977548
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:04:24
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

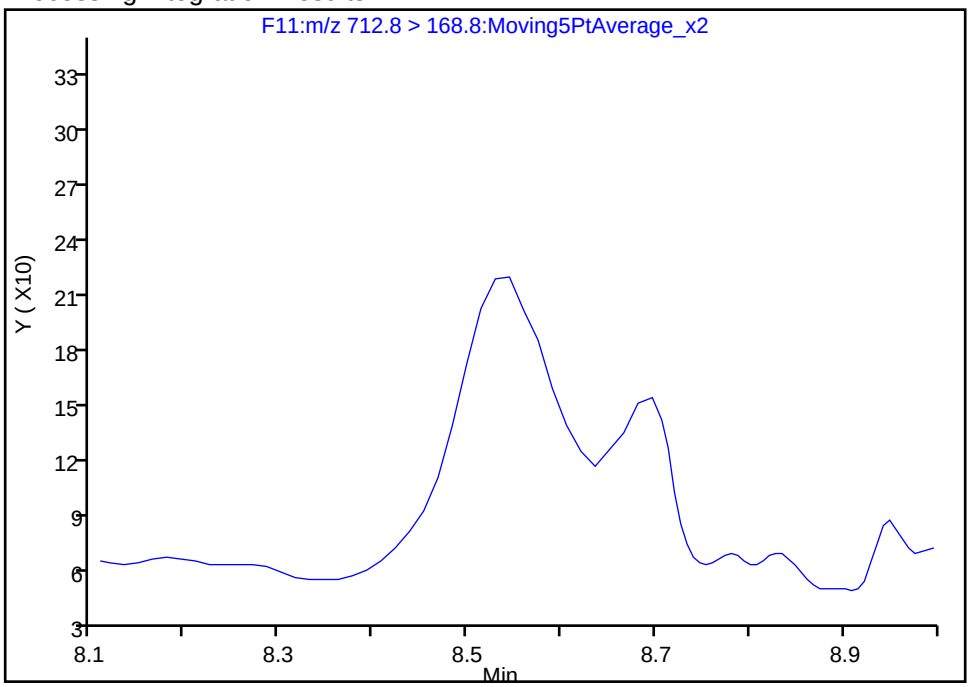
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

44 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

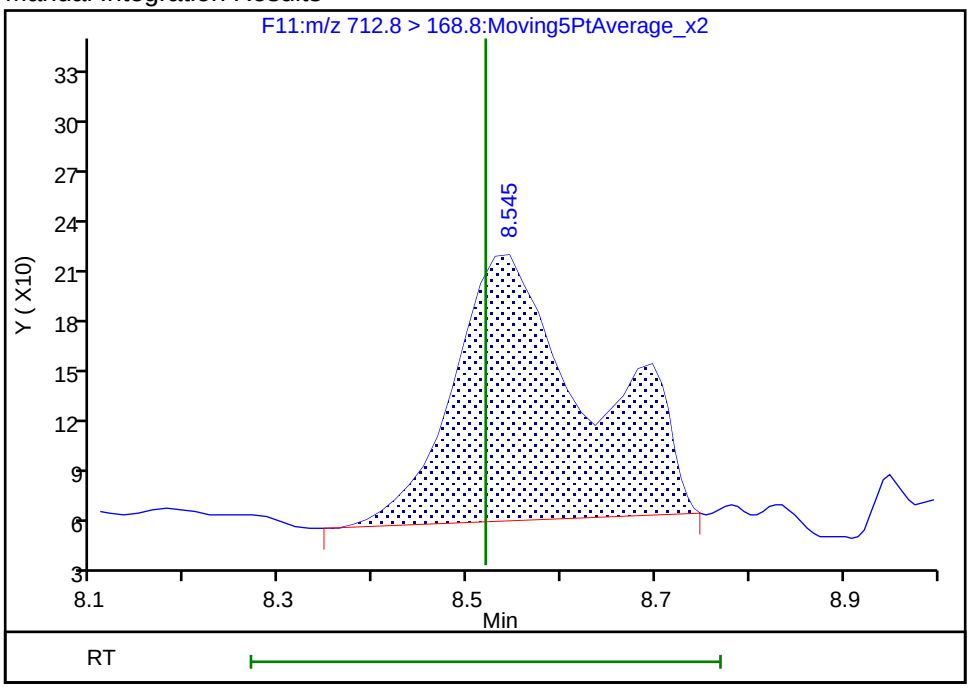
Not Detected
Expected RT: 8.52

Processing Integration Results



Manual Integration Results

RT: 8.54
Area: 1595
Amount: 0.977548
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:04:27
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

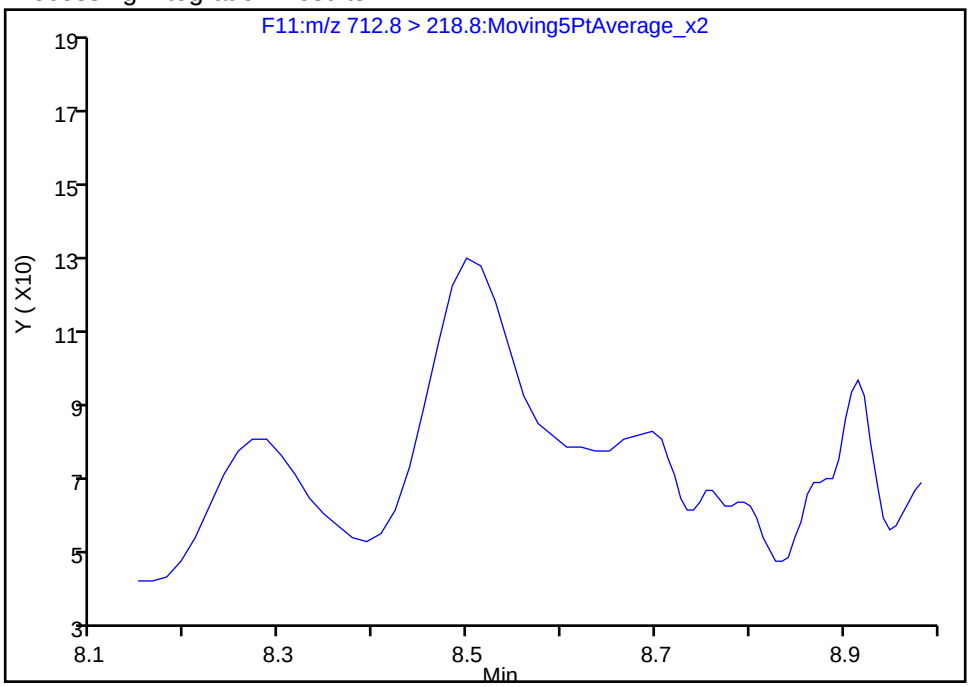
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A06.d
Injection Date: 11-May-2018 09:16:15 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

44 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 3

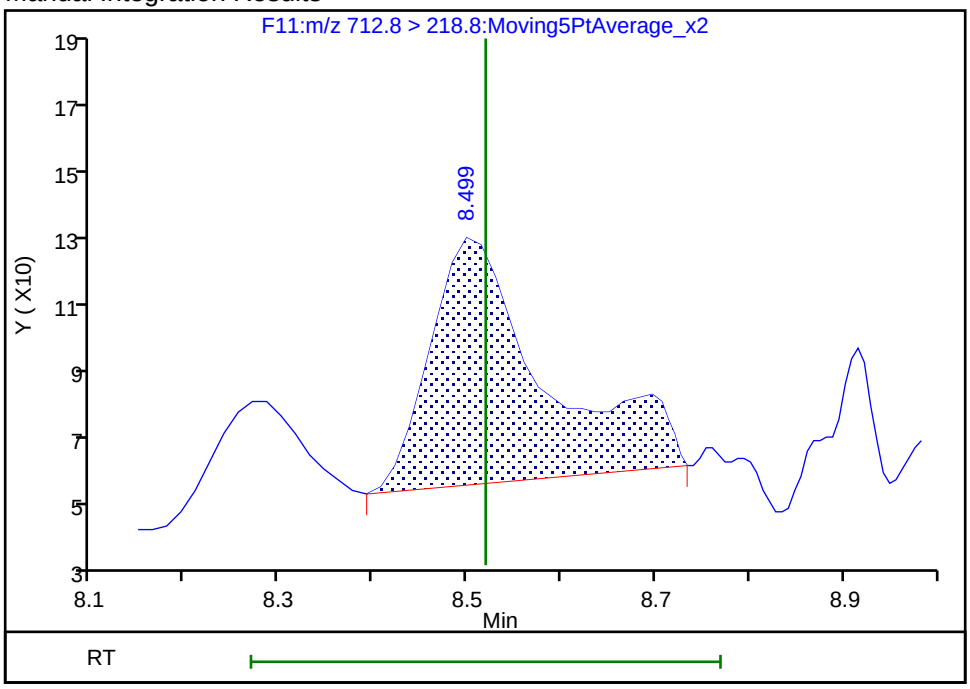
Not Detected
Expected RT: 8.52

Processing Integration Results



Manual Integration Results

RT: 8.50
Area: 586
Amount: 0.977548
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:04:31
Audit Action: Manually Integrated Audit Reason: Missed Peak

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 11-May-2018 09:32:21 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-007 IC 2
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 11:28:18 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 15:06:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.326	2.328	-0.002	1.000	357380	47.5		95.0	202	
1 Perfluorobutyric acid										M
212.9 > 168.9	2.338	2.334	0.004	1.005	15227	2.09		105	45.9	M
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.750	2.751	-0.001	1.000	21478	1.75		87.6	64.3	M
D 3 13C5-PFPeA										
267.7 > 222.6	2.750	2.753	-0.003	1.000	296736	51.7		103	929	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.818	2.818	0.0	1.000	12615	1.66		93.7	83.6	
D 5 13C3-PFBS										
302.0 > 79.8	2.818	2.820	-0.002	1.000	281466	47.0		101	238	
D 7 13C2 PFHxA										
314.8 > 269.6	3.177	3.170	0.007	1.000	435447	52.0		104	2599	
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.189	3.172	0.017	1.004	11404	1.52		75.9	40.8	M
D 10 13C4-PFHpA										M
366.9 > 321.8	3.703	3.696	0.007	1.000	708622	50.0		100	320	M
11 Perfluoroheptanoic acid										M
362.9 > 318.8	3.703	3.698	0.005	1.000	29878	1.98		99.0	127	M
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.737	3.739	-0.002	0.997	15967	2.01		110	132	M
D 13 18O2 PFHxS										
402.9 > 83.8	3.748	3.742	0.006	1.000	318340	47.9		101	500	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.304	4.319	-0.015	0.994	1808	1.28		67.7	24.1	
D 14 M2-6:2FTS										
428.6 > 408.6	4.330	4.321	0.009	1.000	64976	49.7		105	533	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.363	0.011	1.000	750021	54.2		108	1712	
* 49 13C2-PFOA										
414.9 > 369.8	4.374	4.363	0.011		797573	50.0			2094	
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.374	4.368	0.006	1.000	30209	1.82		91.0	32.6	M
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.393	4.399	-0.006	0.852	8778	1.56		82.1	86.4	
D 21 13C5 PFNA										
467.8 > 422.8	5.127	5.127	0.0	1.000	852735	51.9		104	984	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.136	0.004	1.003	29215	1.85		92.7	215	
20 Perfluorooctane sulfonic acid										
498.8 > 79.8	5.154	5.152	0.002	1.000	13241	1.94		104	88.9	
D 22 13C4 PFOS										
502.8 > 79.8	5.154	5.154	0.0	1.000	316349	53.0		111	1880	
24 Sodium 1H,1H,2H,2H-perfluorodecane										M
526.8 > 506.5	5.843	5.880	-0.037	0.993	2002	0.7904		41.3	26.9	M
D 23 M2-8:2FTS										
528.8 > 508.8	5.882	5.882	0.0	1.000	158023	45.1		94.1	895	
D 25 13C2 PFDA										
514.9 > 469.5	5.902	5.910	-0.008	1.000	1066155	53.6		107	8902	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.926	5.914	0.012	1.004	35377	1.96		98.0	347	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.271	0.006	1.000	228585	54.0		108	1762	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.295	6.283	0.012	1.003	8087	1.60		79.9	34.7	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.652	6.640	0.012	1.000	192983	52.5		105	1929	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.670	6.664	0.006	1.003	6914	1.91		95.3	99.9	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.670	6.667	0.003	1.294	13882	1.97		102	205	
D 33 13C2 PFUnA										
564.8 > 519.8	6.688	6.676	0.012	1.000	983299	52.6		105	5680	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.688	6.676	0.012	1.000	34740	1.81		90.4	275	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.987	6.984	0.003	1.000	18283	1.84		92.1	176	
D 35 13C8 FOSA										
505.8 > 77.8	6.987	6.984	0.003	1.000	588657	54.9		110	6581	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.354	0.008	1.000	32639	1.97		98.3	264	
D 36 13C2 PFDoA										
614.8 > 569.6	7.362	7.358	0.004	1.000	1001036	51.0		102	2923	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.987	7.974	0.013	1.085	34216	2.08		104	639	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.530	8.514	0.016	1.000	912300	50.3		101	903	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.530	8.519	0.011	1.000	35800	2.10		105	208	
712.8 > 168.8	8.545	8.519	0.026	1.002	5983		5.98(0.00-0.00)	105	73.5	
712.8 > 218.8	8.530	8.519	0.011	1.000	5146		6.96(0.00-0.00)	105	28.3	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21-L2_00002 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 11:28:18 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d

Injection Date: 11-May-2018 09:32:21 Instrument ID: LC410

Lims ID: IC

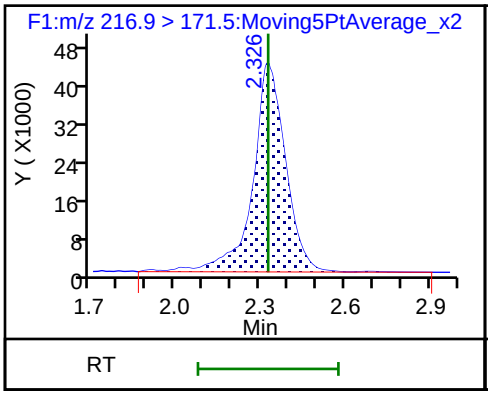
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7

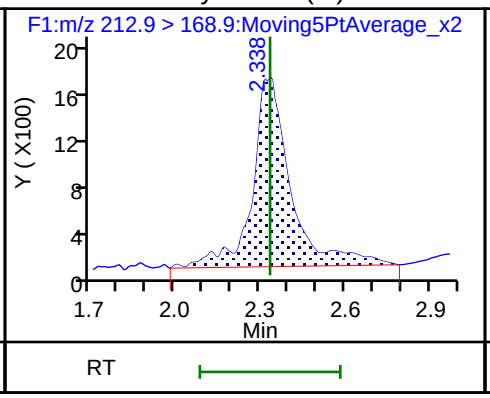
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

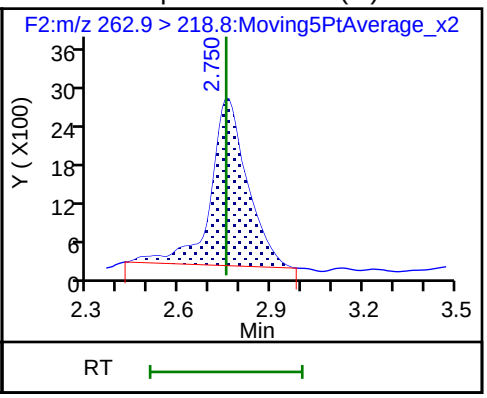
D 2 13C4 PFBA



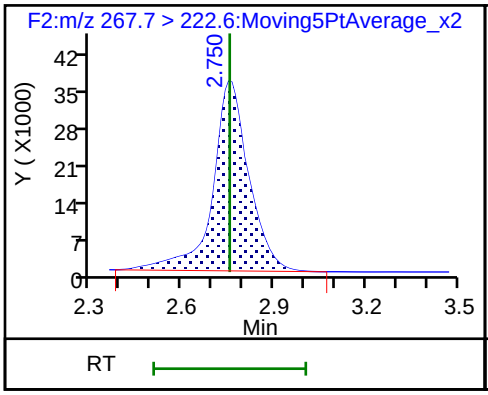
1 Perfluorobutyric acid (M)



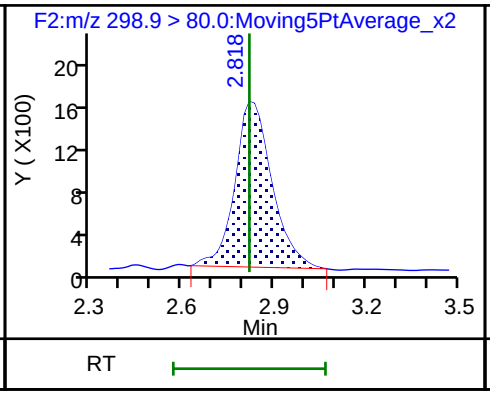
4 Perfluoropentanoic acid (M)



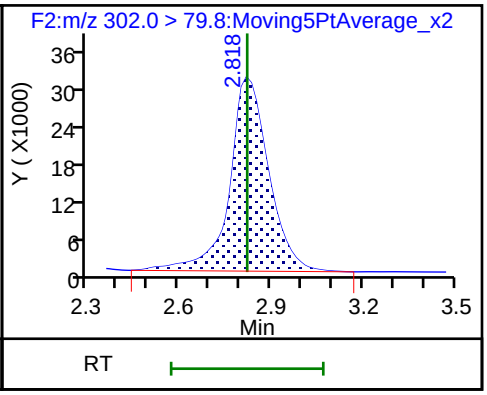
D 3 13C5-PFPeA



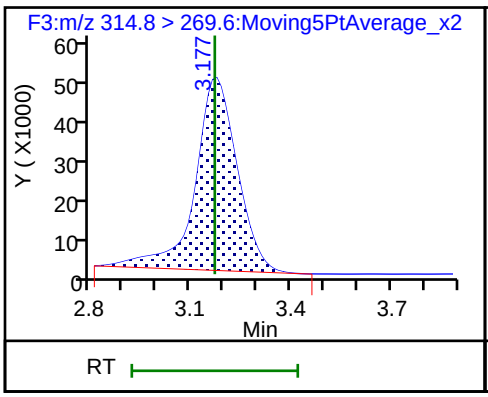
6 Perfluorobutanesulfonic acid



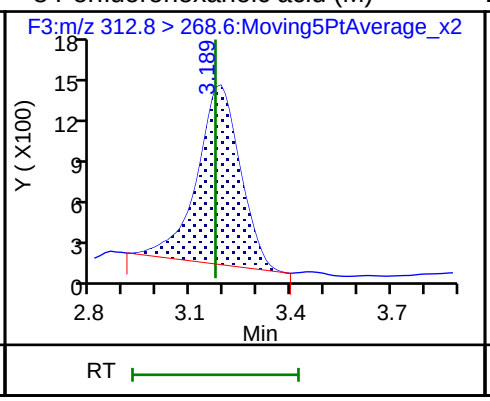
D 5 13C3-PFBS



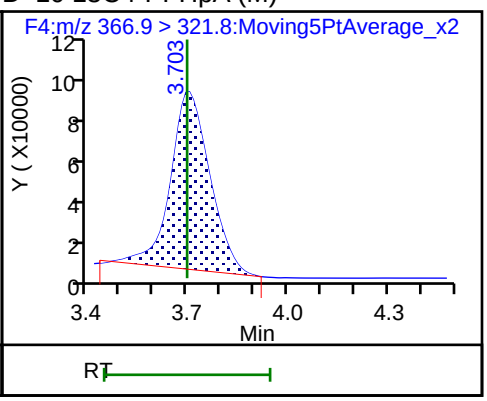
D 7 13C2 PFHxA



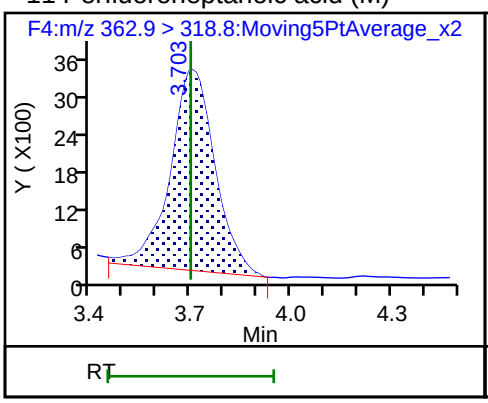
8 Perfluorohexanoic acid (M)



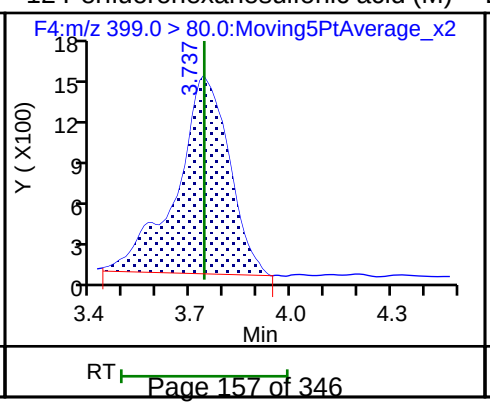
D 10 13C4-PFHpA (M)



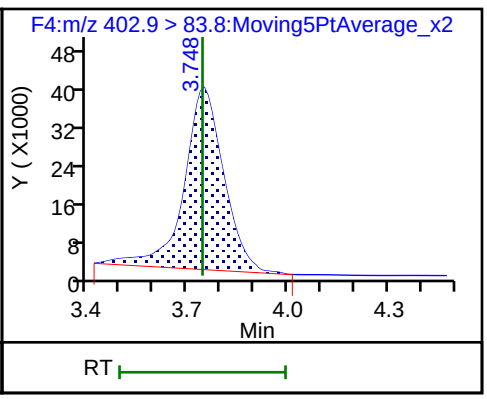
11 Perfluoroheptanoic acid (M)



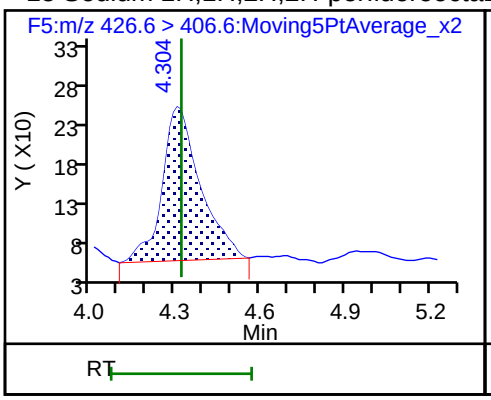
12 Perfluorohexanesulfonic acid (M)



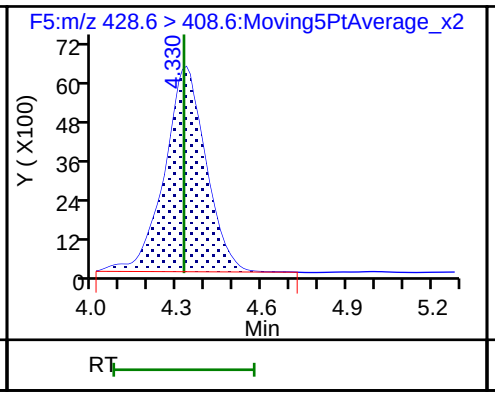
D 13 18O2 PFHxS



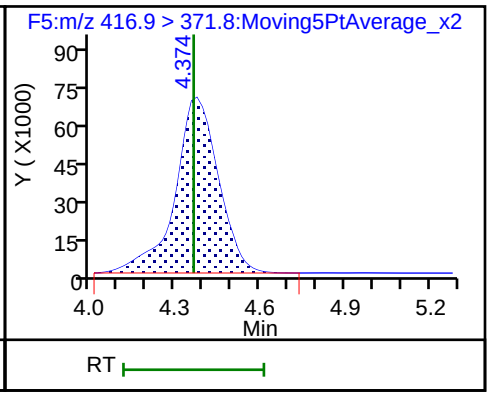
15 Sodium 1H,1H,2H,2H-perfluorooctane



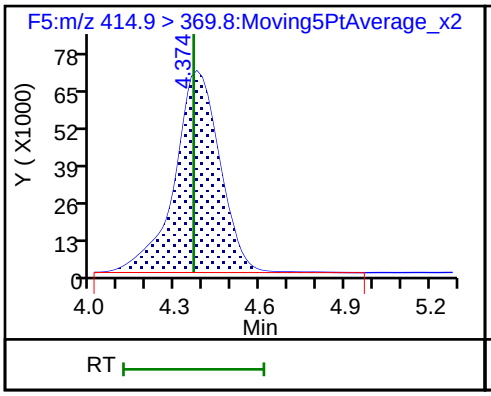
D 14 M2-6:2FTS



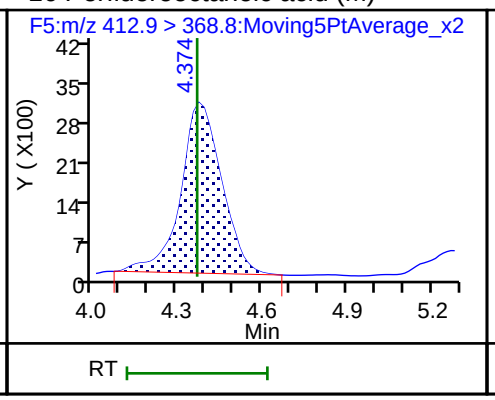
D 17 13C4 PFOA



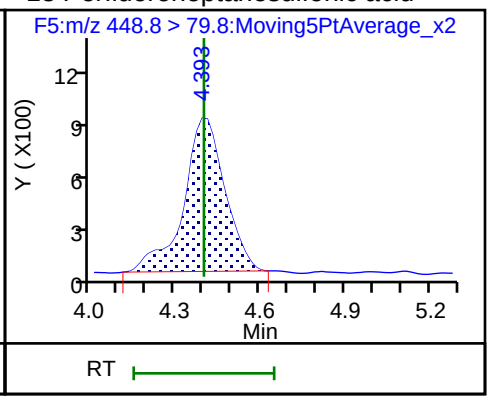
* 49 13C2-PFOA



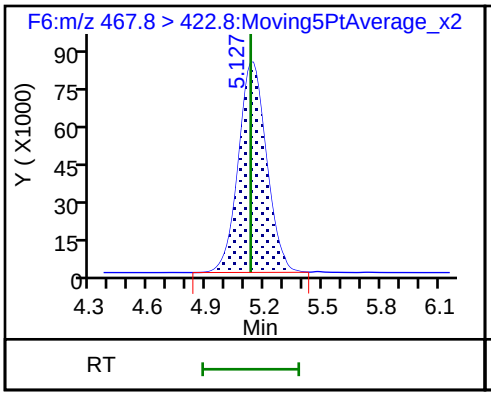
16 Perfluorooctanoic acid (M)



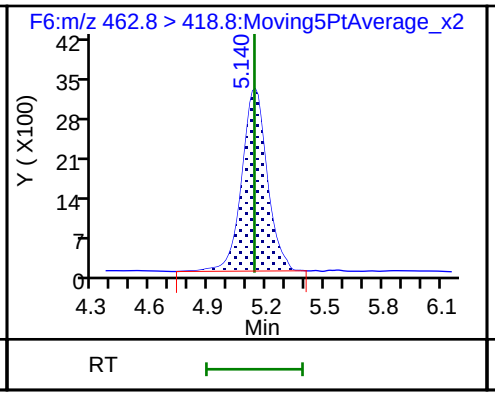
18 Perfluoroheptanesulfonic acid



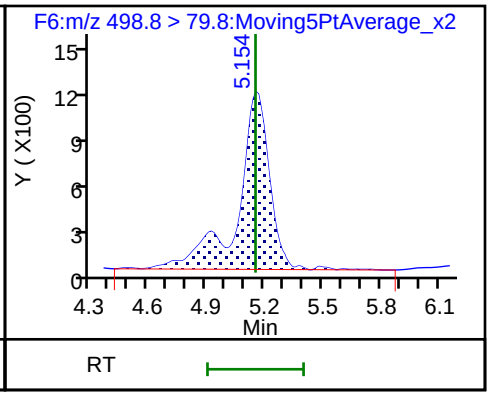
D 21 13C5 PFNA



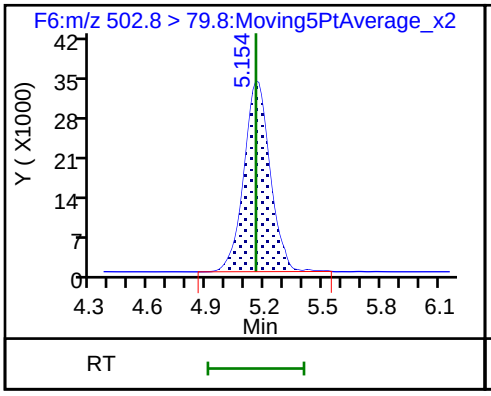
19 Perfluorononanoic acid



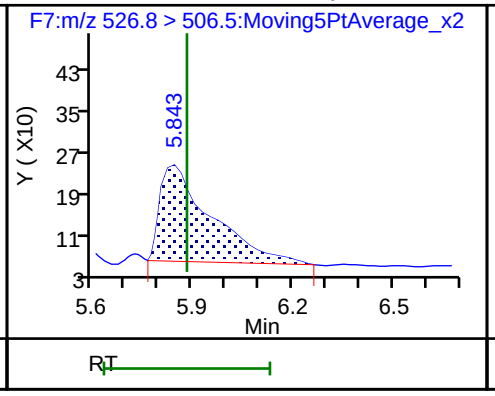
20 Perfluorooctane sulfonic acid



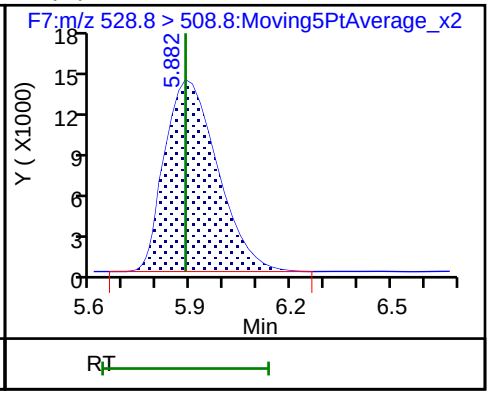
D 22 13C4 PFOS



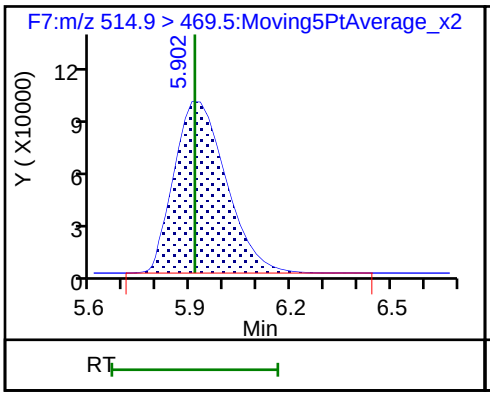
24 Sodium 1H,1H,2H,2H-perfluorodecane



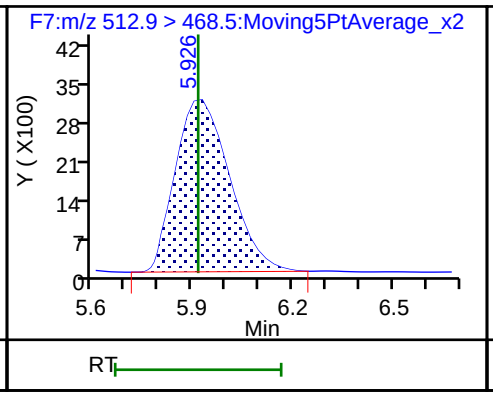
D 23 M2-8:2FTS



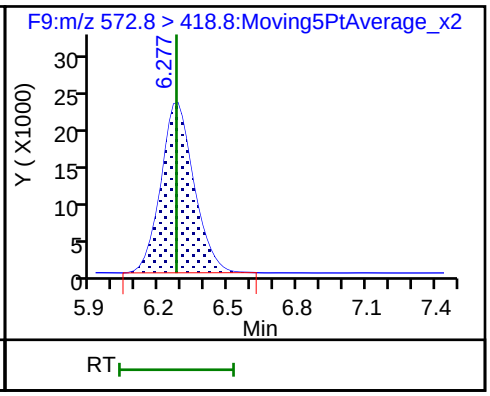
D 25 13C2 PFDA



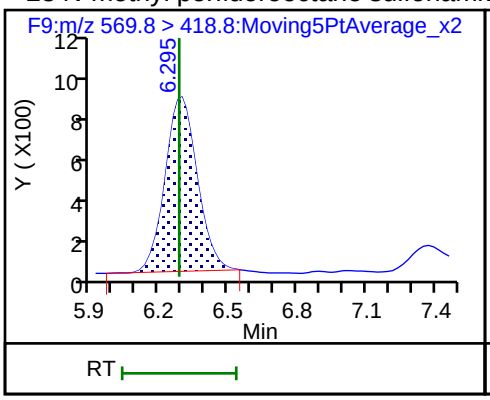
26 Perfluorodecanoic acid



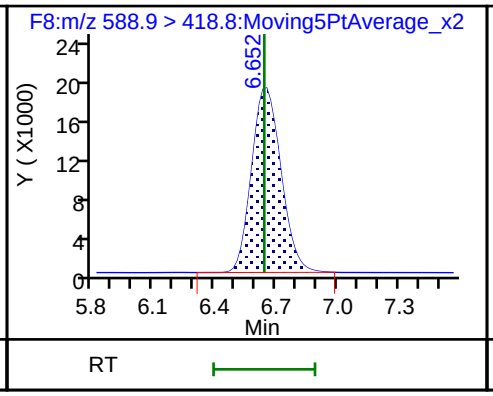
D 27 d3-NMeFOSAA



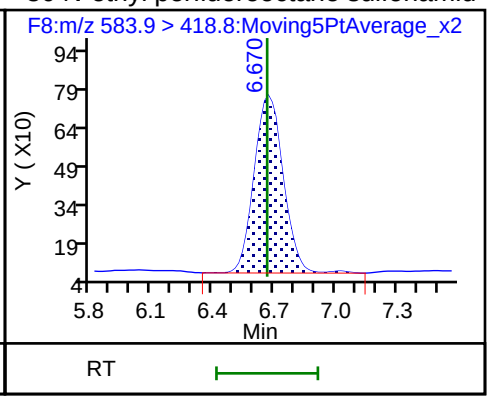
28 N-methyl perfluorooctane sulfonami



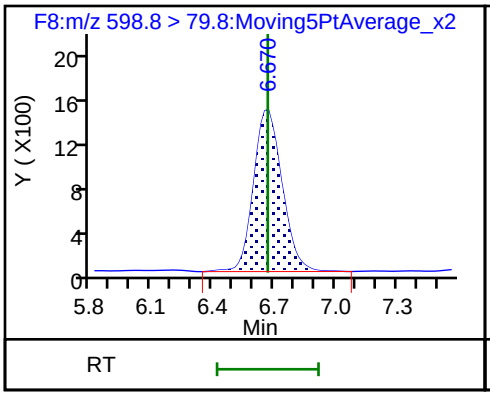
D 29 d5-NEtFOSAA



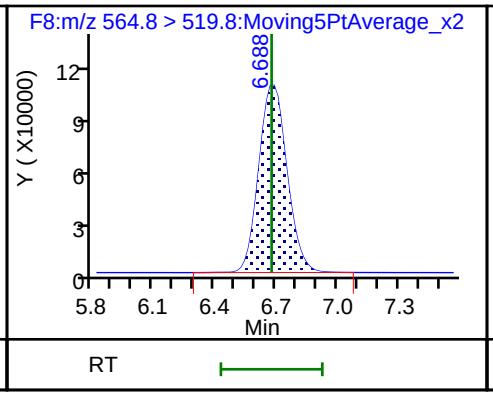
30 N-ethyl perfluorooctane sulfonamid



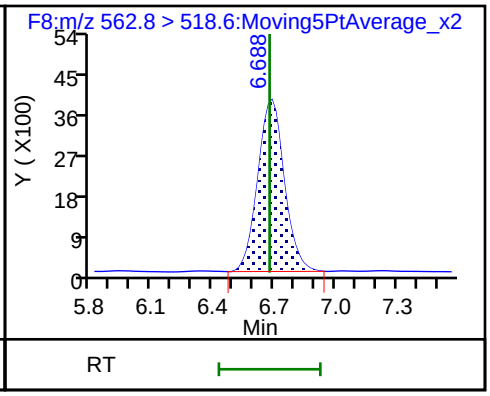
31 Perfluorodecane Sulfonic acid



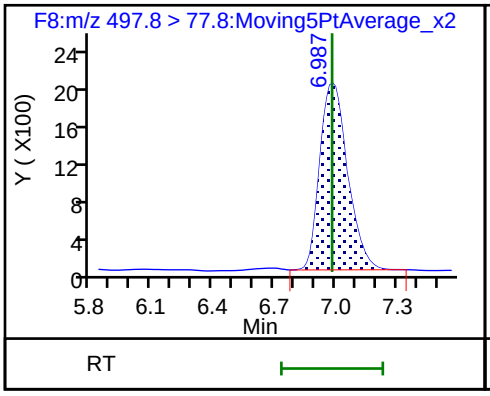
D 33 13C2 PFUnA



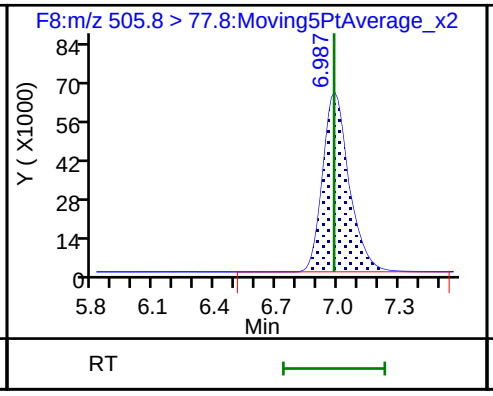
32 Perfluoroundecanoic acid



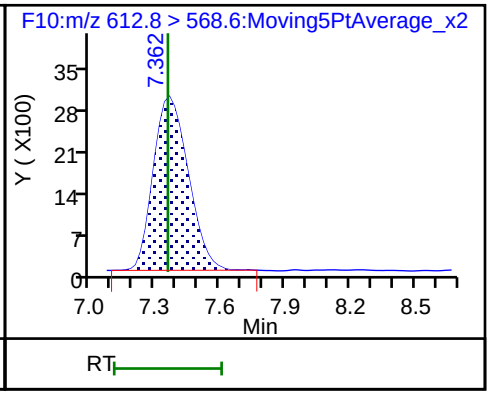
34 Perfluorooctane Sulfonamide



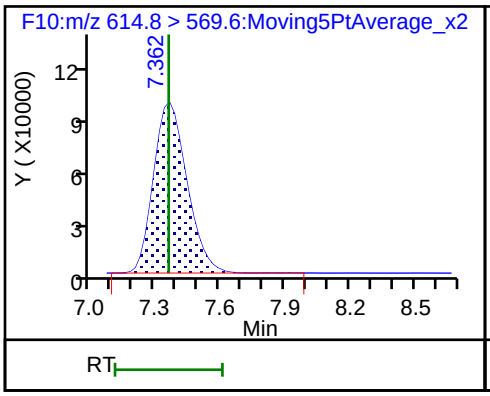
D 35 13C8 FOSA



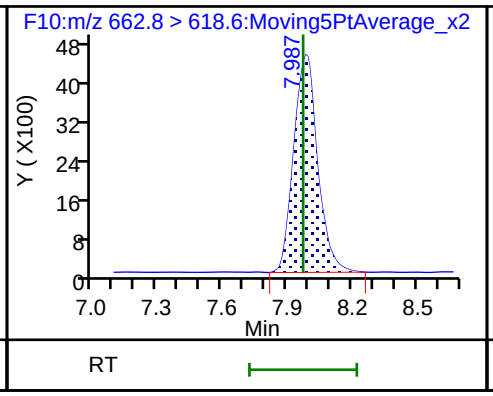
37 Perfluorododecanoic acid



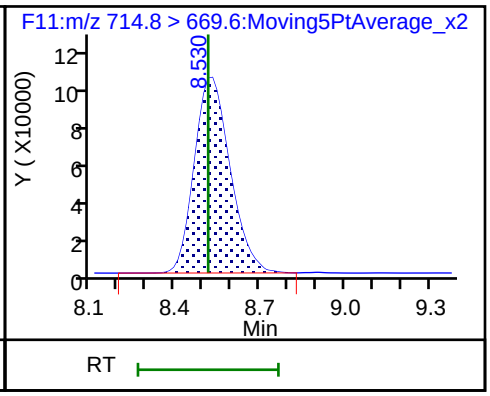
D 36 13C2 PFDoA



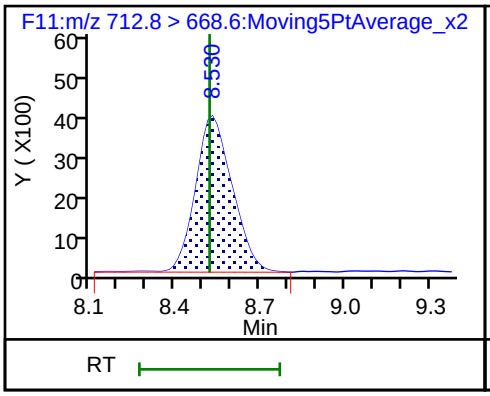
40 Perfluorotridecanoic acid



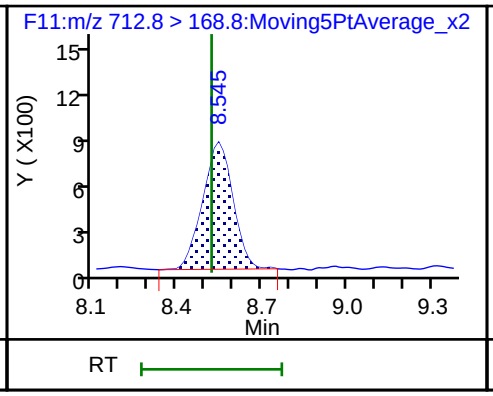
D 43 13C2-PFTeDA



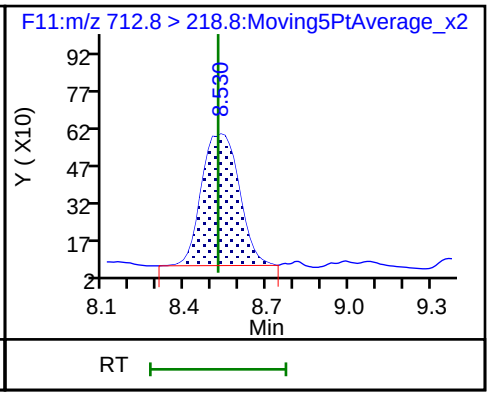
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Burlington

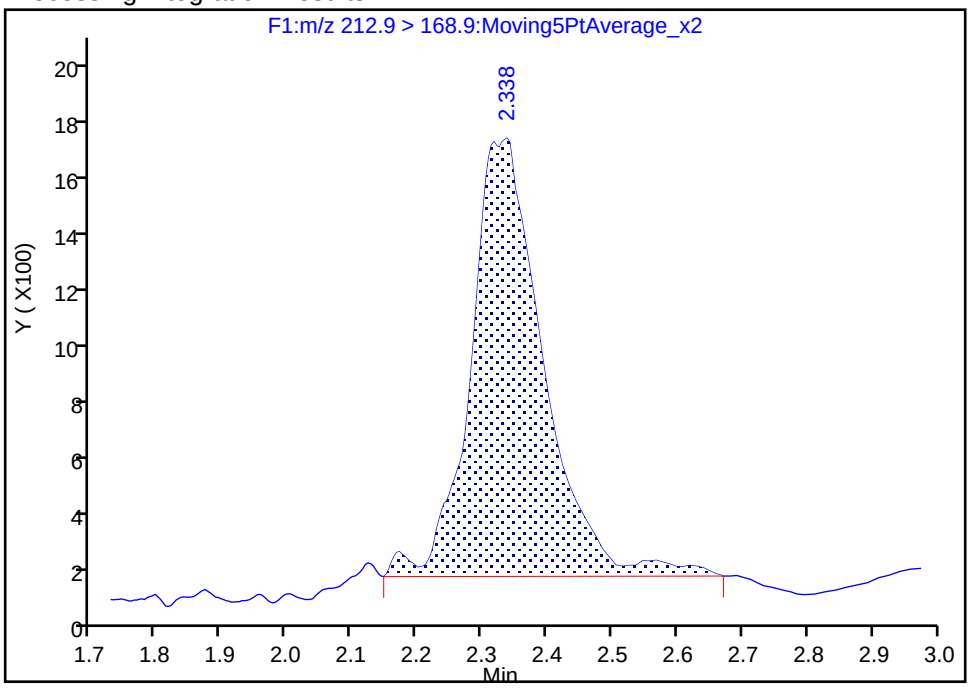
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d
Injection Date: 11-May-2018 09:32:21 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

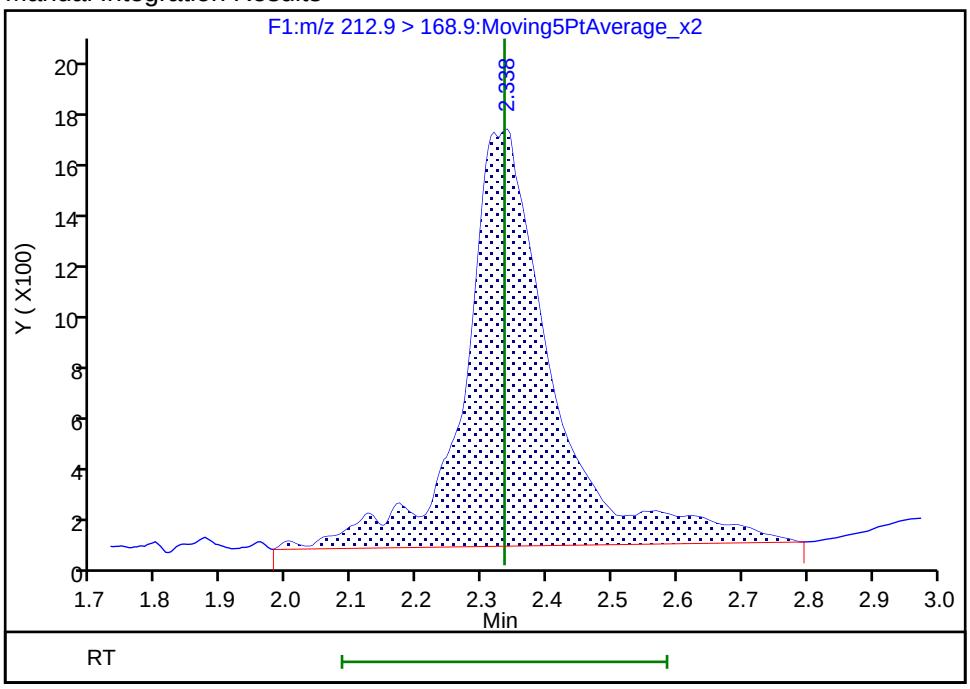
Processing Integration Results

RT: 2.34
Area: 11947
Amount: 1.743277
Amount Units: ng/ml



Manual Integration Results

RT: 2.34
Area: 15227
Amount: 2.090379
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:05:08
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

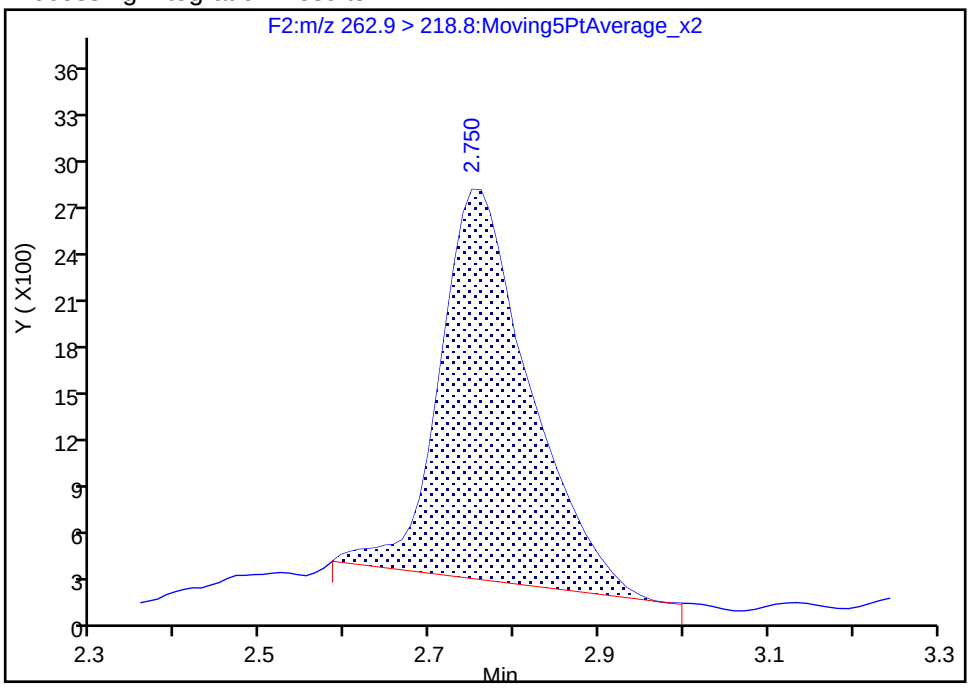
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d
Injection Date: 11-May-2018 09:32:21 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

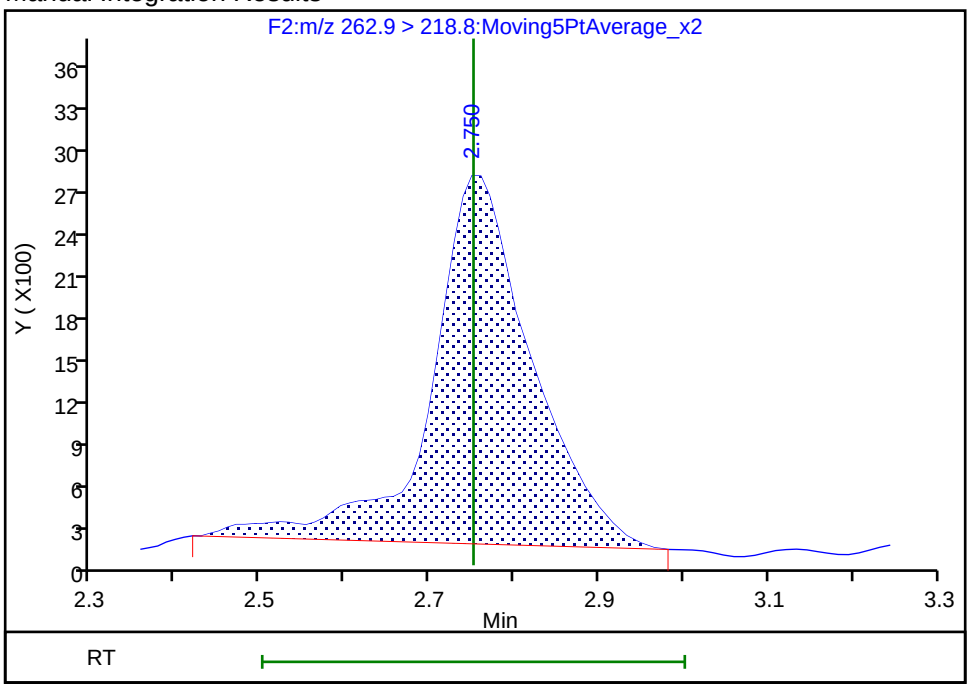
Processing Integration Results

RT: 2.75
Area: 18286
Amount: 1.585416
Amount Units: ng/ml



Manual Integration Results

RT: 2.75
Area: 21478
Amount: 1.752197
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:05:16
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

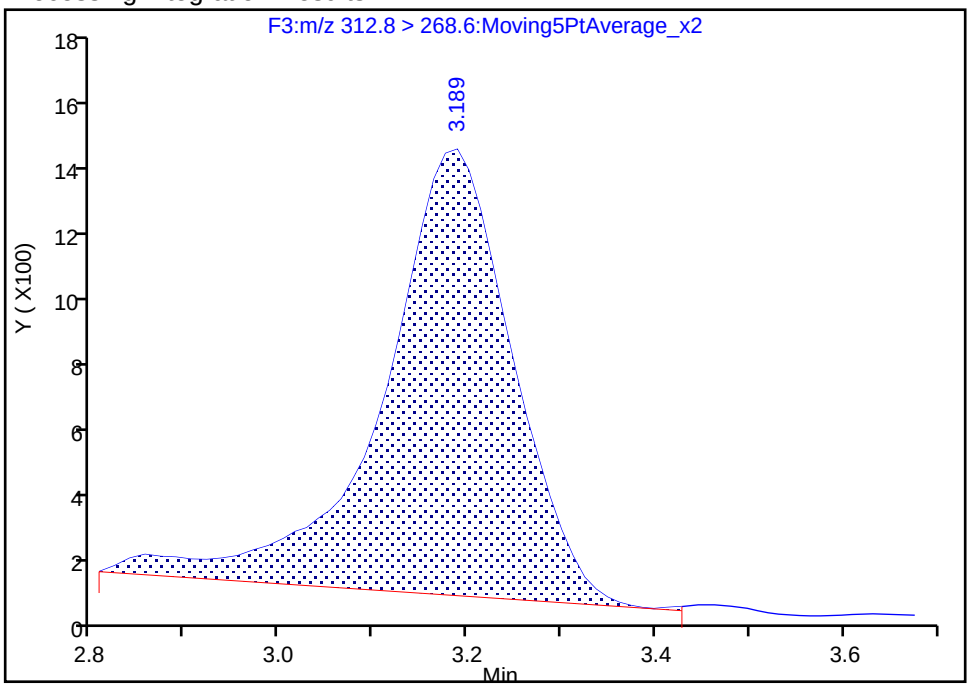
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d
Injection Date: 11-May-2018 09:32:21 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

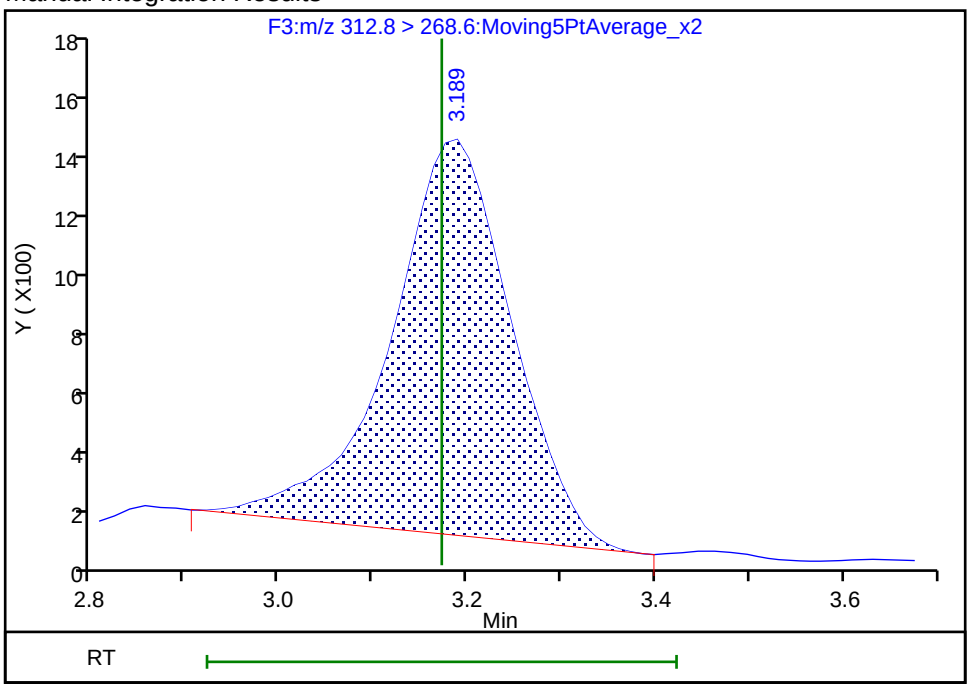
Processing Integration Results

RT: 3.19
Area: 12506
Amount: 1.579597
Amount Units: ng/ml



Manual Integration Results

RT: 3.19
Area: 11404
Amount: 1.518531
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:05:25
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

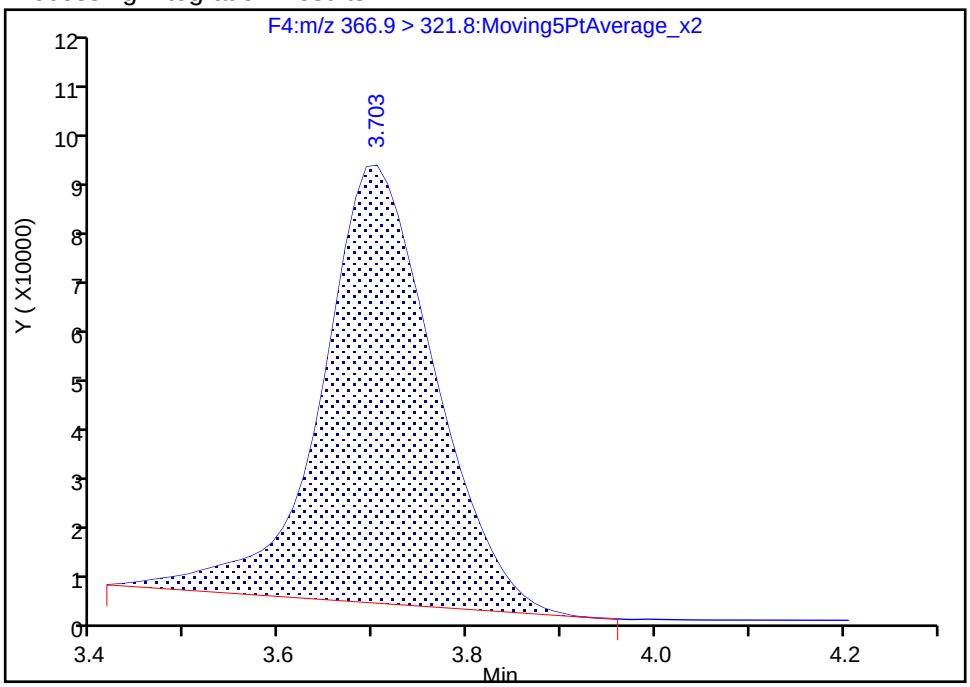
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d
Injection Date: 11-May-2018 09:32:21 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

D 10 13C4-PFHpA, CAS: STL01892

Signal: 1

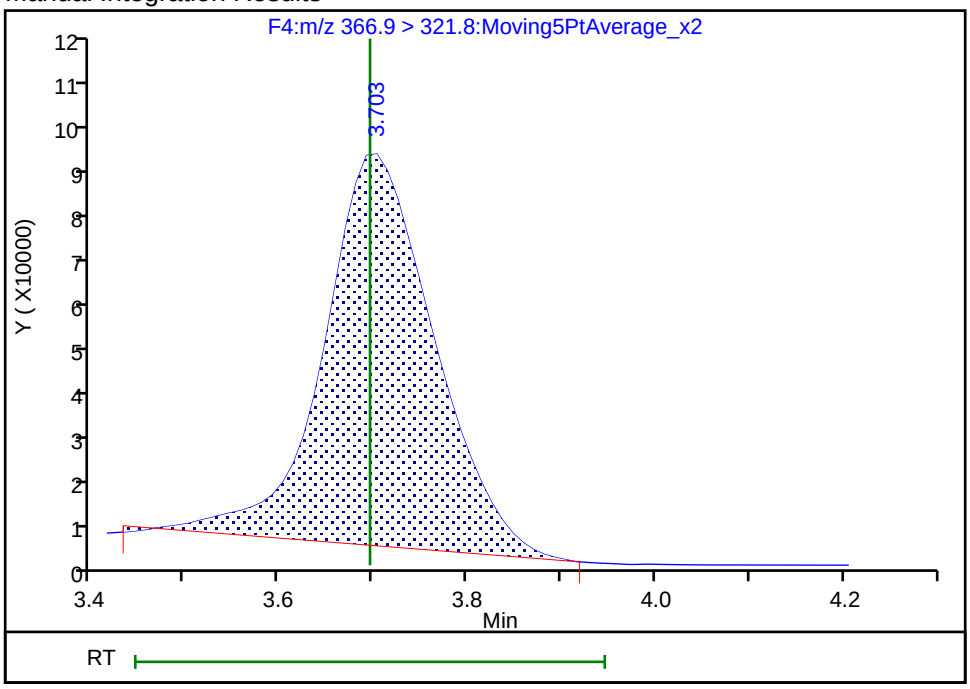
Processing Integration Results

RT: 3.70
Area: 734006
Amount: 50.968832
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 708622
Amount: 50.031257
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:05:42
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

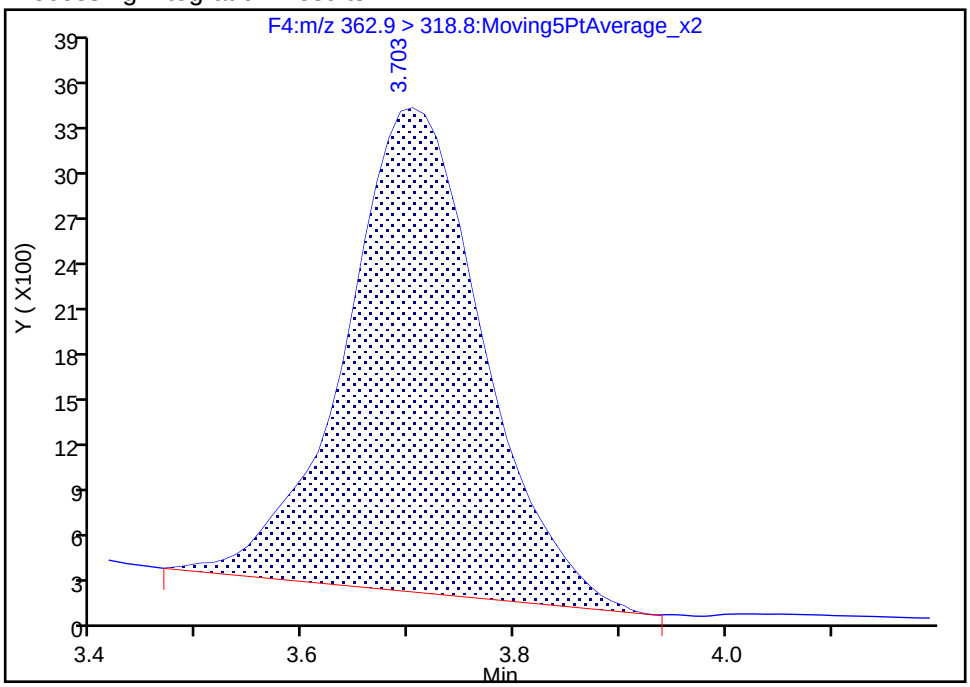
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d
Injection Date: 11-May-2018 09:32:21 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

11 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

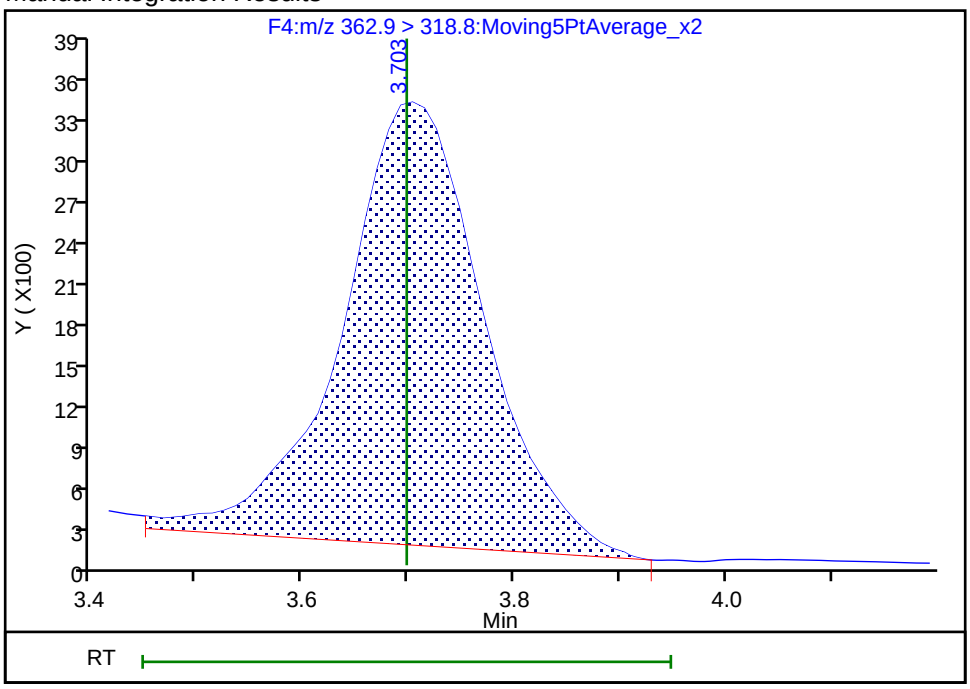
Processing Integration Results

RT: 3.70
Area: 28807
Amount: 1.885525
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 29878
Amount: 1.980410
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:05:51
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

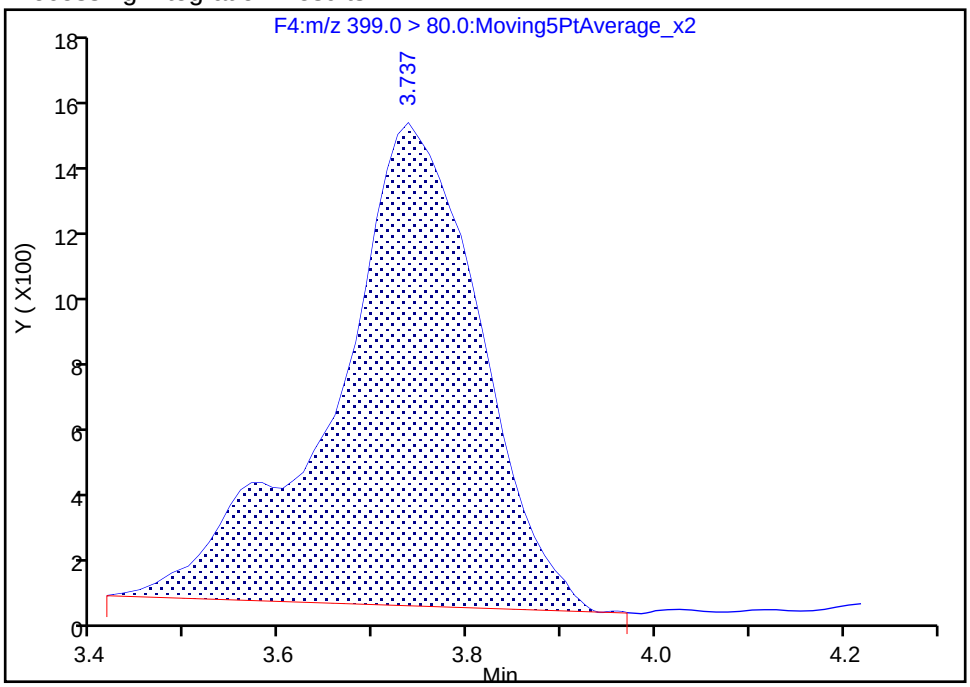
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d
Injection Date: 11-May-2018 09:32:21 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

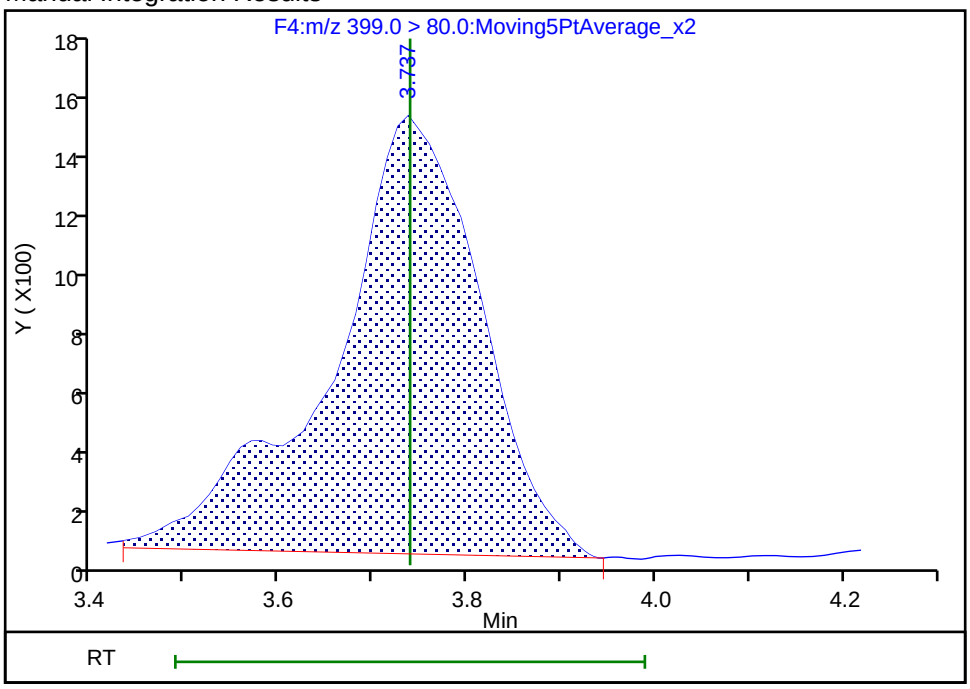
Processing Integration Results

RT: 3.74
Area: 15797
Amount: 1.972644
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 15967
Amount: 2.006826
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:05:56
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

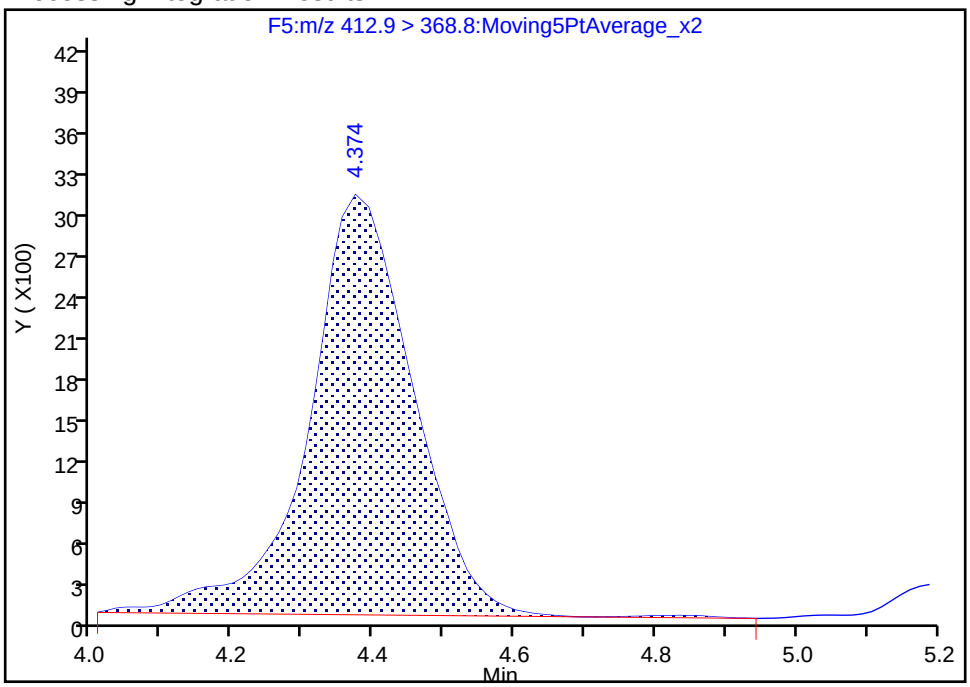
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d
Injection Date: 11-May-2018 09:32:21 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

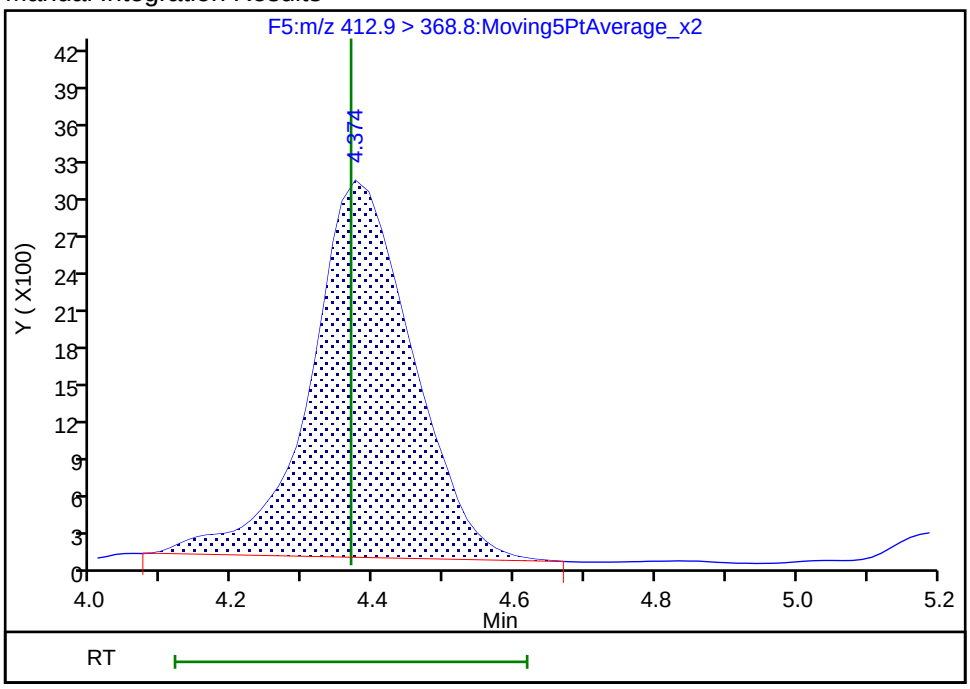
Processing Integration Results

RT: 4.37
Area: 31248
Amount: 1.872526
Amount Units: ng/ml



Manual Integration Results

RT: 4.37
Area: 30209
Amount: 1.820505
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:06:15
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

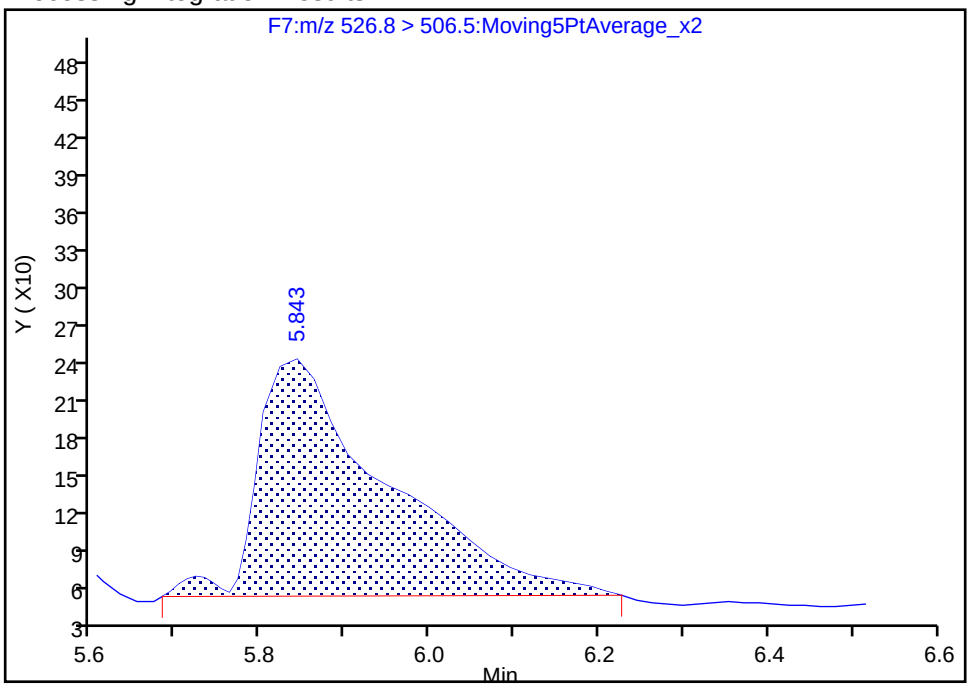
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A07.d
Injection Date: 11-May-2018 09:32:21 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

24 Sodium 1H,1H,2H,2H-perfluorodecane sulfonate, CAS: 39108-34-4

Signal: 1

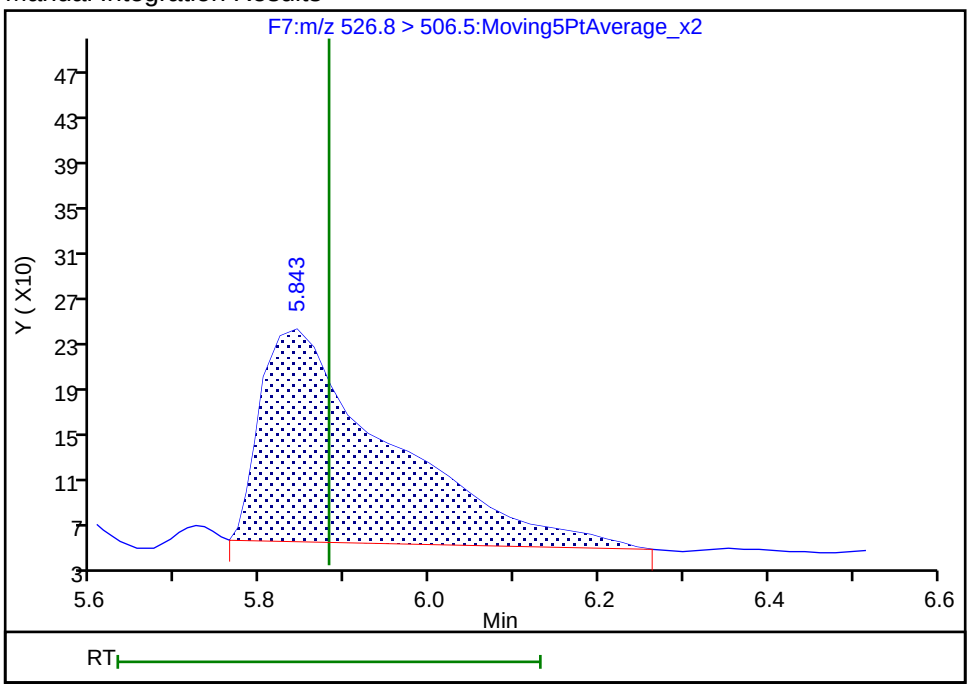
Processing Integration Results

RT: 5.84
Area: 2008
Amount: 0.893077
Amount Units: ng/ml



Manual Integration Results

RT: 5.84
Area: 2002
Amount: 0.790383
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:48:20
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 11-May-2018 09:48:35 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-008 IC 3
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 11:28:19 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 15:08:31

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.322	2.328	-0.006	1.000	388089	42.1		84.3	542	
1 Perfluorobutyric acid										M
212.9 > 168.9	2.334	2.334	0.0	1.005	37535	5.03		101	112	M
4 Perfluoropentanoic acid										
262.9 > 218.8	2.750	2.751	-0.001	1.000	63326	5.26		105	141	
D 3 13C5-PFPeA										M
267.7 > 222.6	2.750	2.753	-0.003	1.000	281704	40.1		80.2	529	M
6 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.818	2.818	0.0	1.000	38521	4.55		103	138	M
D 5 13C3-PFBS										M
302.0 > 79.8	2.818	2.820	-0.002	1.000	285317	38.9		83.7	270	M
D 7 13C2 PFHxA										
314.8 > 269.6	3.164	3.170	-0.006	1.000	426187	41.6		83.1	294	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.164	3.172	-0.008	1.000	41202	5.02		100	89.3	
D 10 13C4-PFHpA										M
366.9 > 321.8	3.692	3.696	-0.004	1.000	703710	40.6		81.2	266	M
11 Perfluoroheptanoic acid										M
362.9 > 318.8	3.692	3.698	-0.006	1.000	76266	5.17		103	157	M
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.737	3.739	-0.002	1.000	38612	4.49		98.7	56.2	
D 13 18O2 PFHxS										M
402.9 > 83.8	3.737	3.742	-0.005	1.000	325367	40.0		84.5	196	M
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.330	4.319	0.011	1.003	5412	4.27		90.0	37.1	
D 14 M2-6:2FTS										
428.6 > 408.6	4.317	4.321	-0.004	1.000	58495	36.6		77.0	397	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.355	4.363	-0.008	1.000	772024	45.6		91.2	2287	
* 49 13C2-PFOA										
414.9 > 369.8	4.355	4.363	-0.008		976376	50.0			2659	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.368	0.006	1.004	85612	5.24		105	72.4	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.393	4.399	-0.006	0.852	32331	5.04		106	149	
D 21 13C5 PFNA										
467.8 > 422.8	5.127	5.127	0.0	1.000	946731	47.1		94.1	2011	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.136	0.004	1.003	86497	4.91		98.2	394	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.140	5.152	-0.012	0.997	33403	4.48		96.5	165	M
D 22 13C4 PFOS										
502.8 > 79.8	5.154	5.154	0.0	1.000	330973	45.3		94.8	815	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.863	5.880	-0.017	0.997	19120	6.15		128	119	
D 23 M2-8:2FTS										
528.8 > 508.8	5.882	5.882	0.0	1.000	194038	45.2		94.4	1000	
D 25 13C2 PFDA										
514.9 > 469.5	5.902	5.910	-0.008	1.000	1110498	45.6		91.1	2653	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.902	5.914	-0.012	1.000	102875	5.03		101	566	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.271	0.006	1.000	229295	44.3		88.5	863	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.277	6.283	-0.006	1.000	28120	5.42		108	82.7	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.640	-0.006	1.000	205889	45.7		91.5	1491	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.670	6.664	0.006	1.005	21756	5.33		107	355	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.670	6.667	0.003	1.294	35343	4.80		99.7	226	
D 33 13C2 PFUnA										
564.8 > 519.8	6.670	6.676	-0.006	1.000	1114554	48.7		97.4	1917	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.670	6.676	-0.006	1.000	113609	5.25		105	368	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.987	6.984	0.003	1.000	57211	5.45		109	302	
D 35 13C8 FOSA										
505.8 > 77.8	6.987	6.984	0.003	1.000	588801	44.8		89.7	2757	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.354	0.008	1.000	97277	5.07		101	451	
D 36 13C2 PFDoA										
614.8 > 569.6	7.362	7.358	0.004	1.000	1112366	46.3		92.5	4388	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.970	7.974	-0.004	1.083	101151	5.20		104	609	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.514	8.514	0.0	1.000	1055378	47.5		95.1	1878	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.514	8.519	-0.005	1.000	96426	4.95		98.9	329	
712.8 > 168.8	8.514	8.519	-0.005	1.000	26906		3.58(0.00-0.00)	98.9	157	
712.8 > 218.8	8.530	8.519	0.011	1.002	12919		7.46(0.00-0.00)	98.9	55.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21-L3_00003 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 11:28:20 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d

Injection Date: 11-May-2018 09:48:35 Instrument ID: LC410

Lims ID: IC

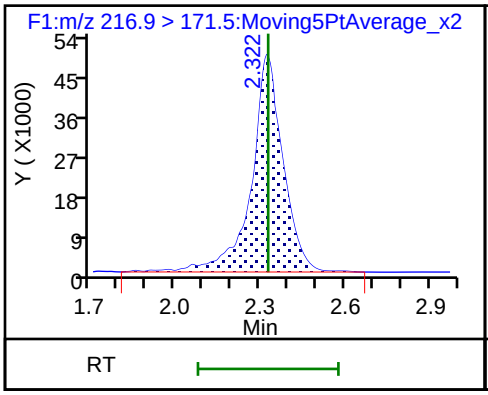
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8

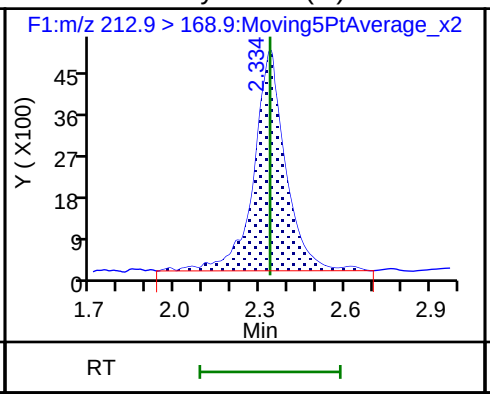
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

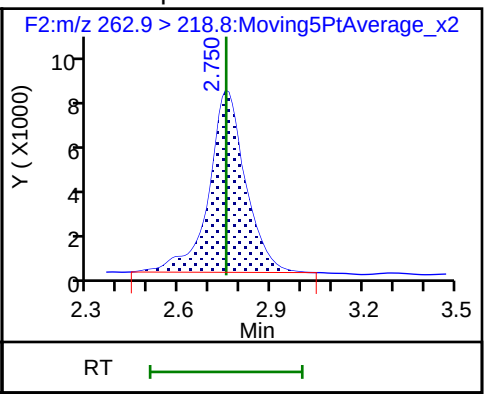
D 2 13C4 PFBA



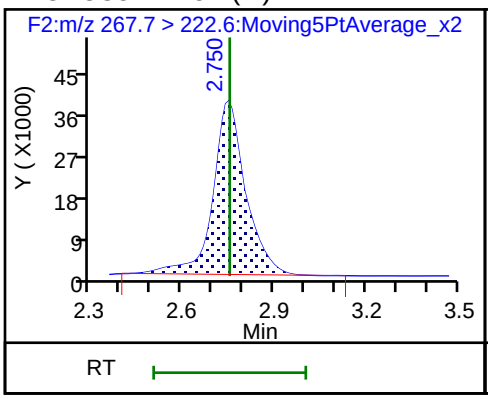
1 Perfluorobutyric acid (M)



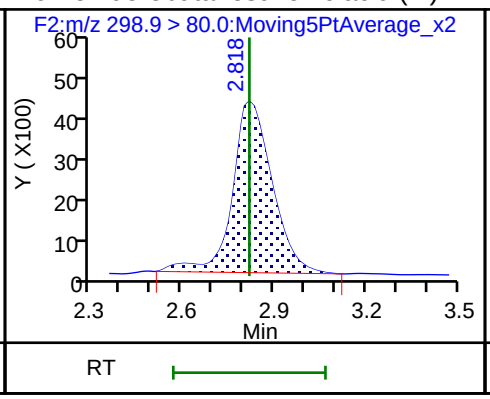
4 Perfluoropentanoic acid



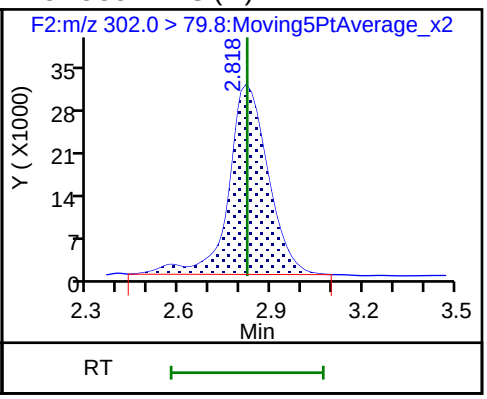
D 3 13C5-PFPeA (M)



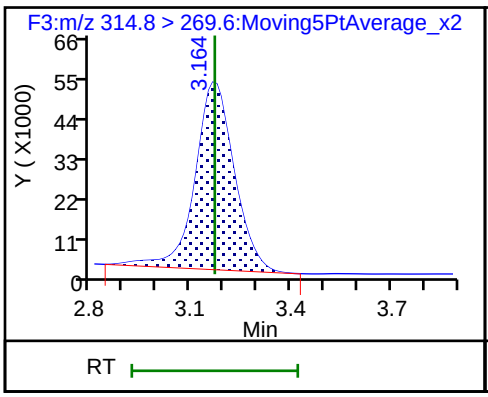
6 Perfluorobutanesulfonic acid (M)



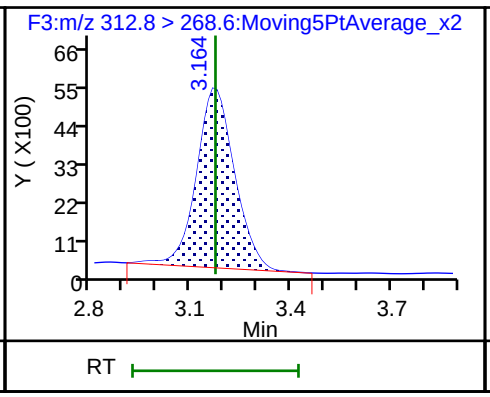
D 5 13C3-PFBS (M)



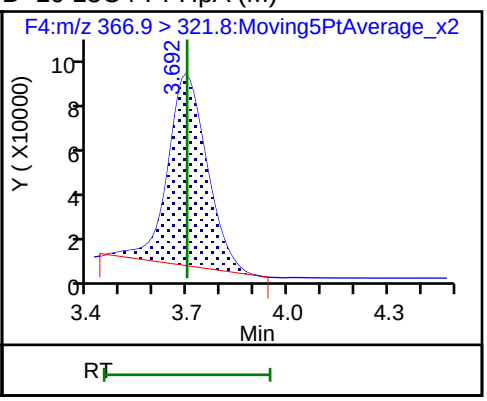
D 7 13C2 PFHxA



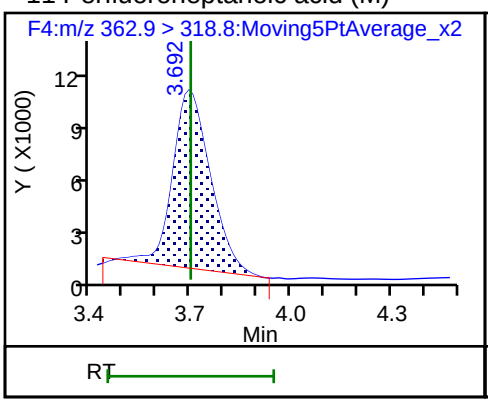
8 Perfluorohexanoic acid



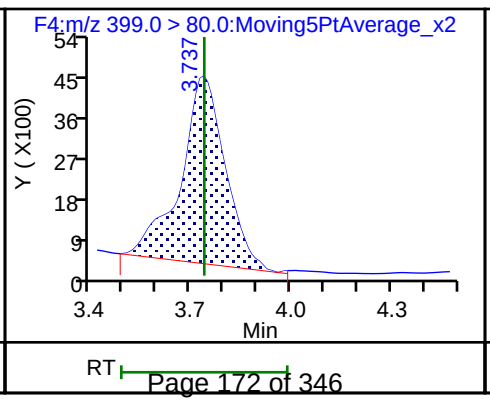
D 10 13C4-PFHpA (M)



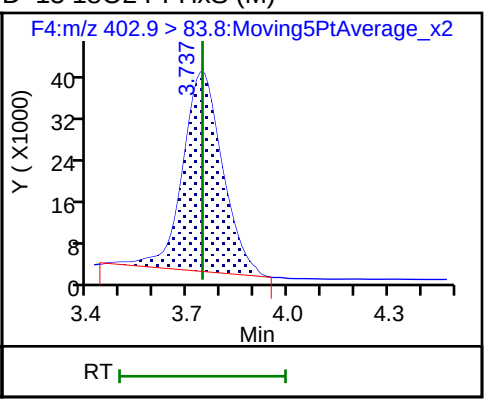
11 Perfluoroheptanoic acid (M)



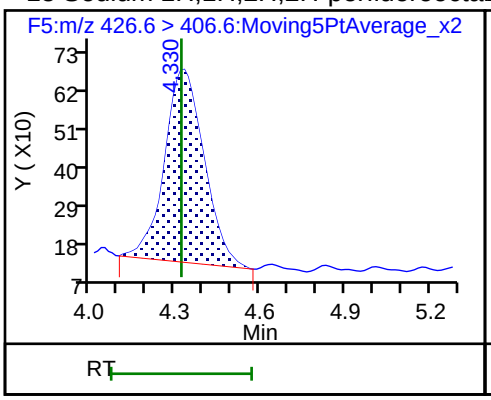
12 Perfluorohexanesulfonic acid



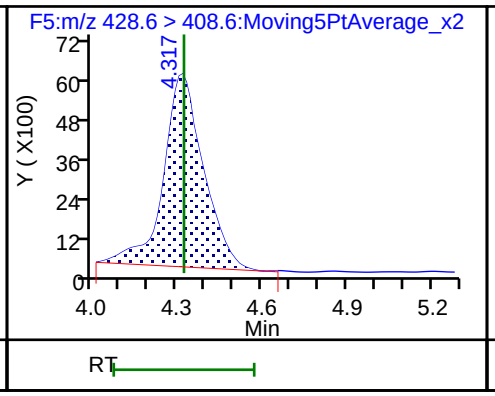
D 13 18O2 PFHxS (M)



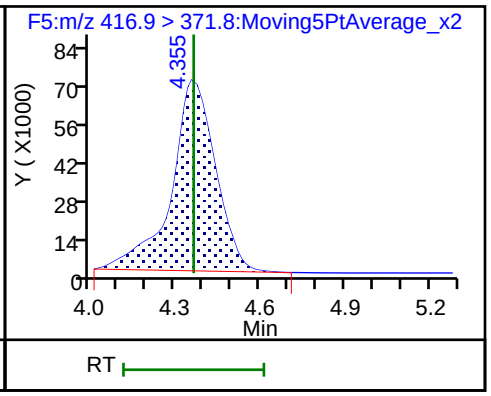
15 Sodium 1H,1H,2H,2H-perfluorooctane



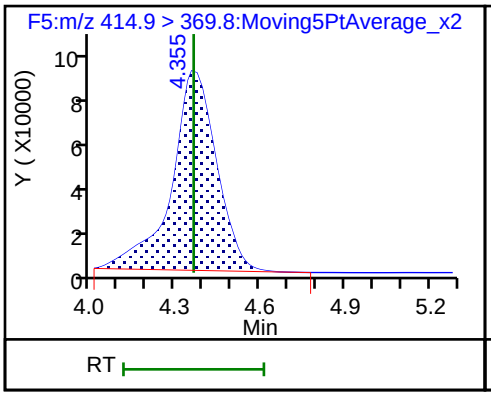
D 14 M2-6:2FTS



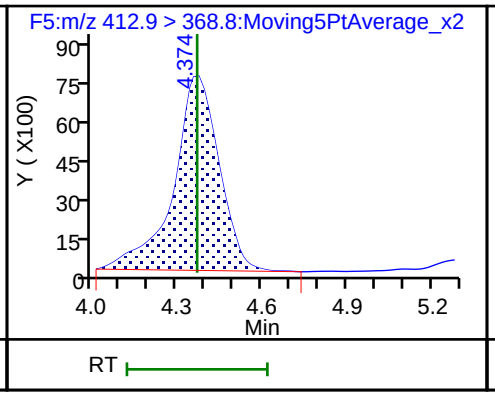
D 17 13C4 PFOA



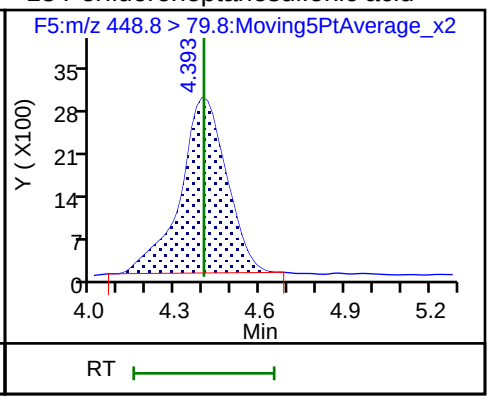
* 49 13C2-PFOA



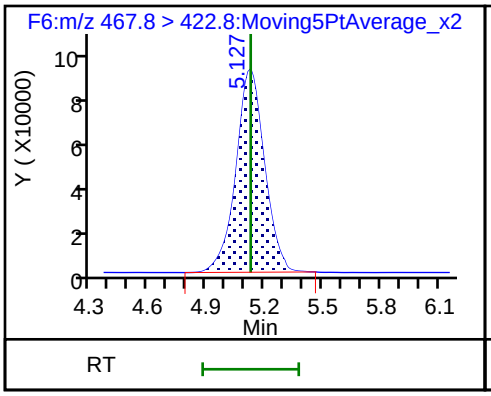
16 Perfluorooctanoic acid



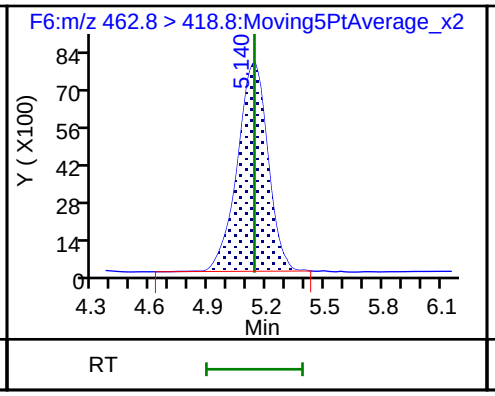
18 Perfluoroheptanesulfonic acid



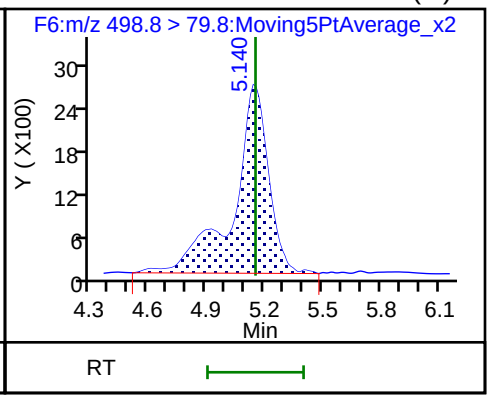
D 21 13C5 PFNA



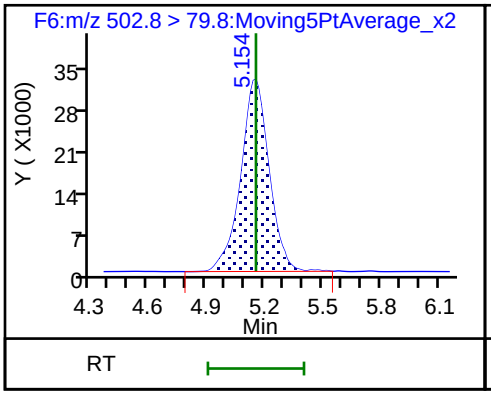
19 Perfluorononanoic acid



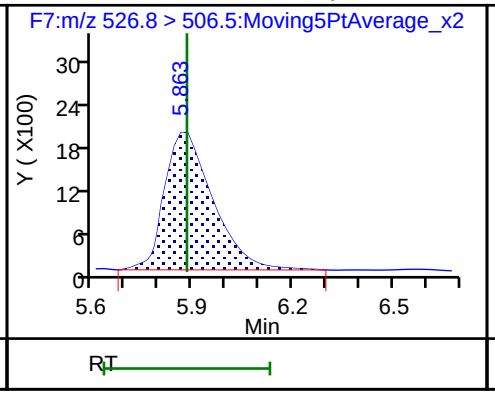
20 Perfluorooctane sulfonic acid (M)



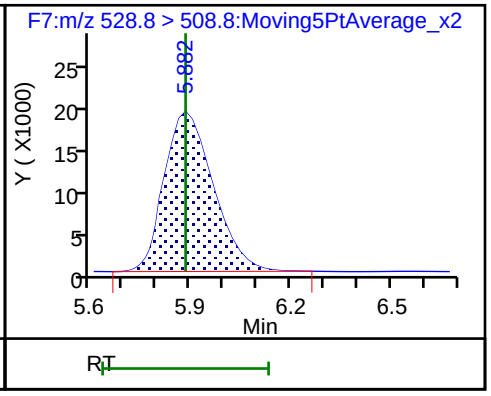
D 22 13C4 PFOS



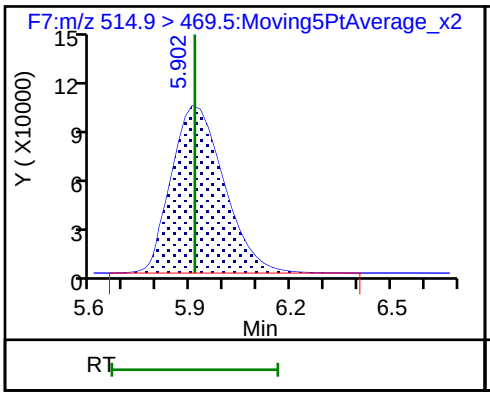
24 Sodium 1H,1H,2H,2H-perfluorodecane



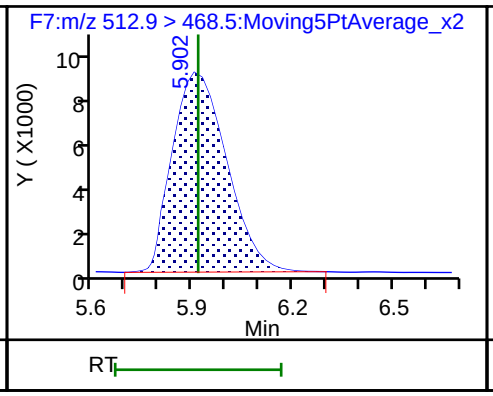
D 23 M2-8:2FTS



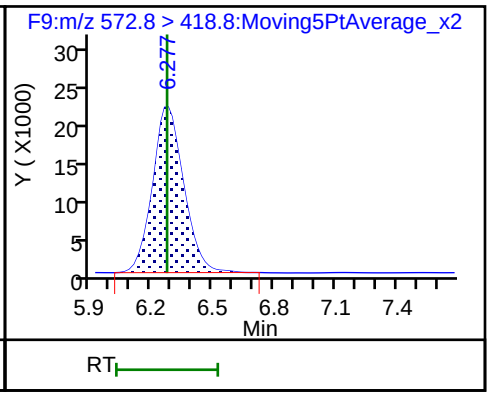
D 25 13C2 PFDA



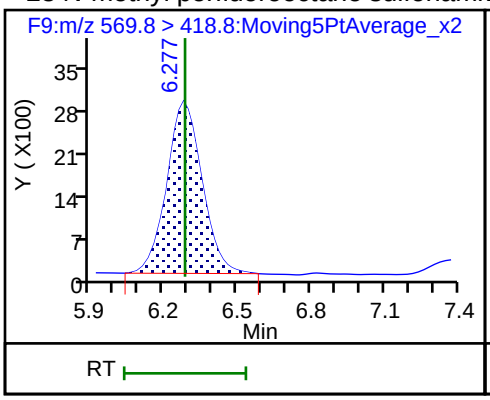
26 Perfluorodecanoic acid



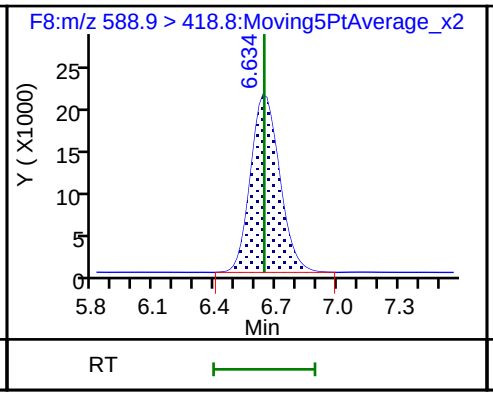
D 27 d3-NMeFOSAA



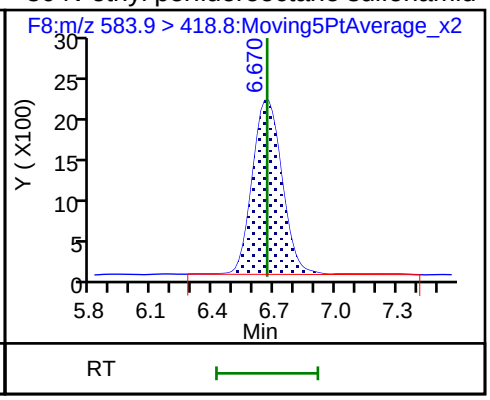
28 N-methyl perfluorooctane sulfonami



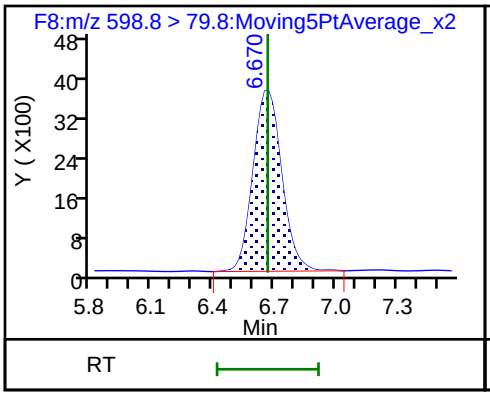
D 29 d5-NEtFOSAA



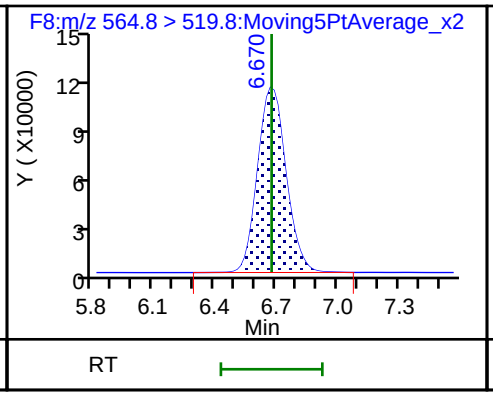
30 N-ethyl perfluorooctane sulfonamid



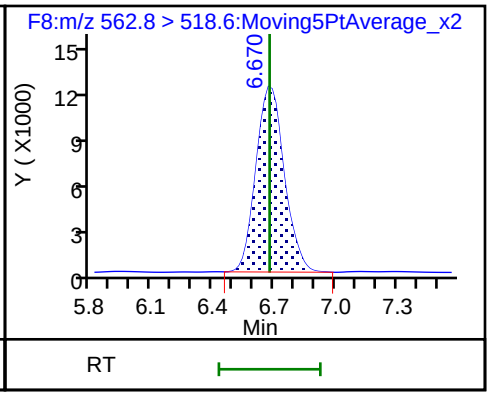
31 Perfluorodecane Sulfonic acid



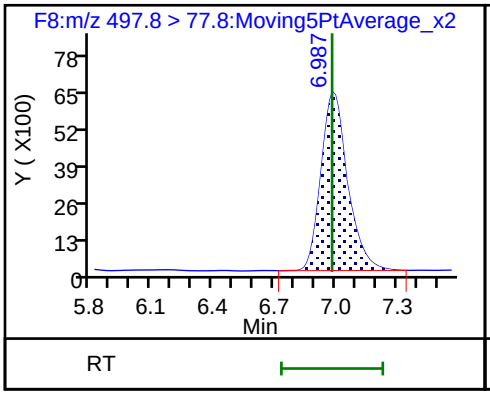
D 33 13C2 PFUnA



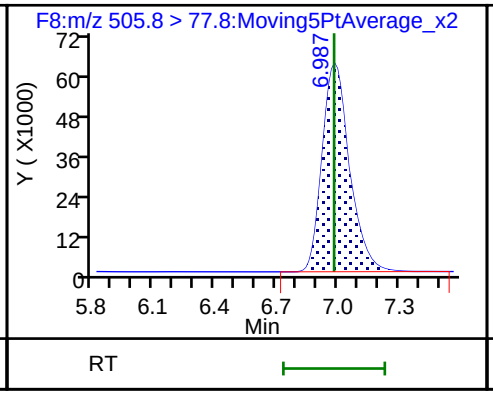
32 Perfluoroundecanoic acid



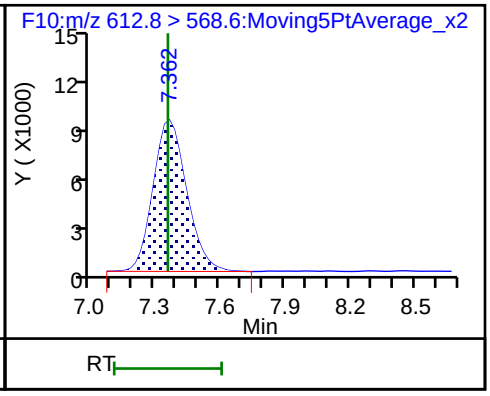
34 Perfluorooctane Sulfonamide



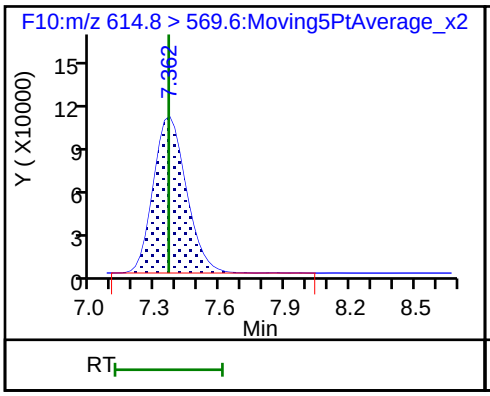
D 35 13C8 FOSA



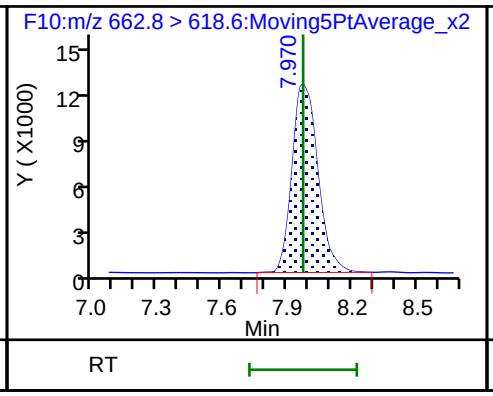
37 Perfluorododecanoic acid



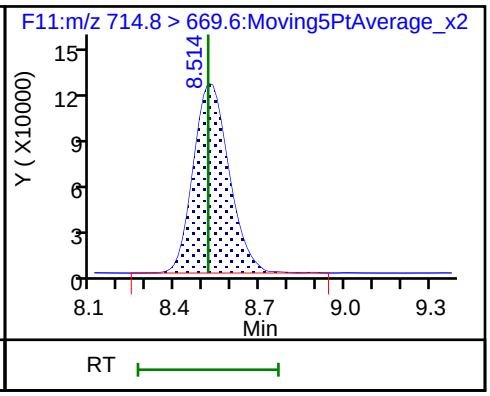
D 36 13C2 PFDoA



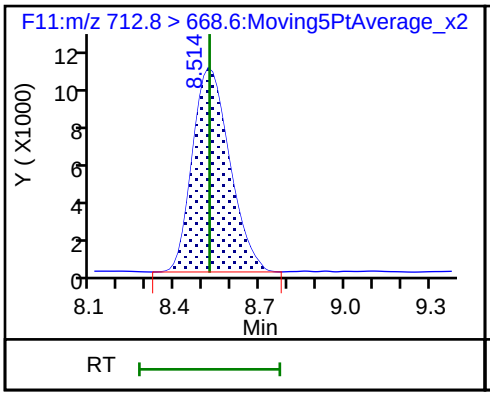
40 Perfluorotridecanoic acid



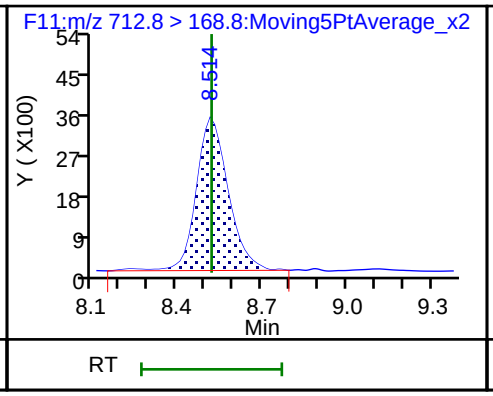
D 43 13C2-PFTeDA



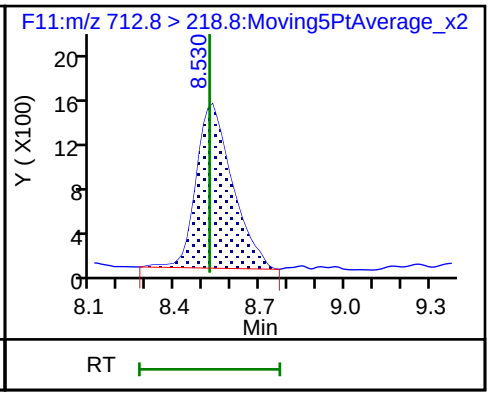
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



TestAmerica Burlington

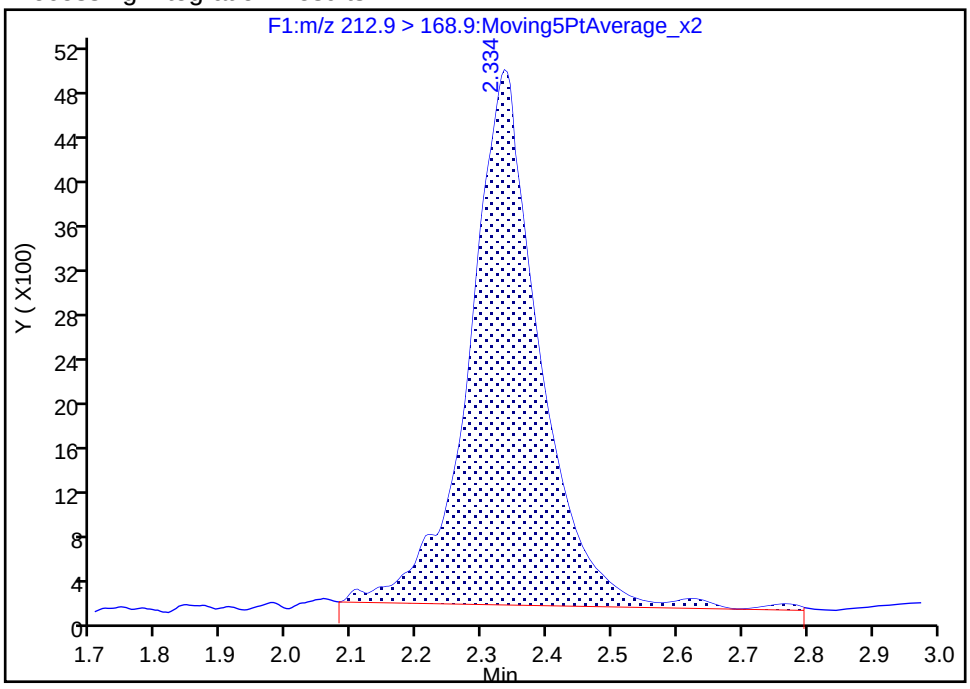
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d
Injection Date: 11-May-2018 09:48:35 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

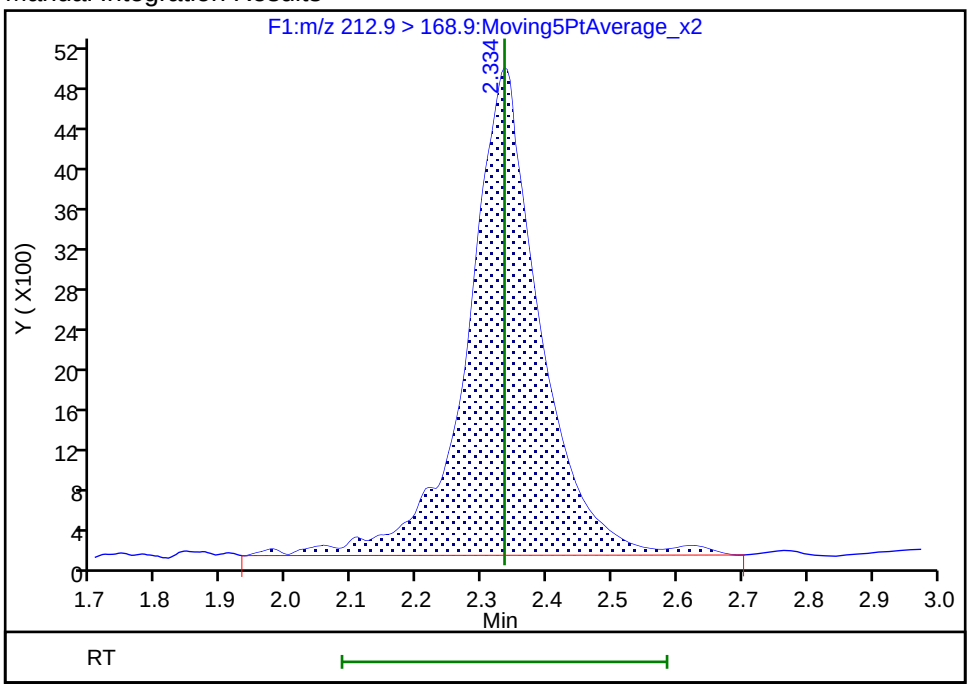
Processing Integration Results

RT: 2.33
Area: 36050
Amount: 4.844702
Amount Units: ng/ml



Manual Integration Results

RT: 2.33
Area: 37535
Amount: 5.030689
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:07:07
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

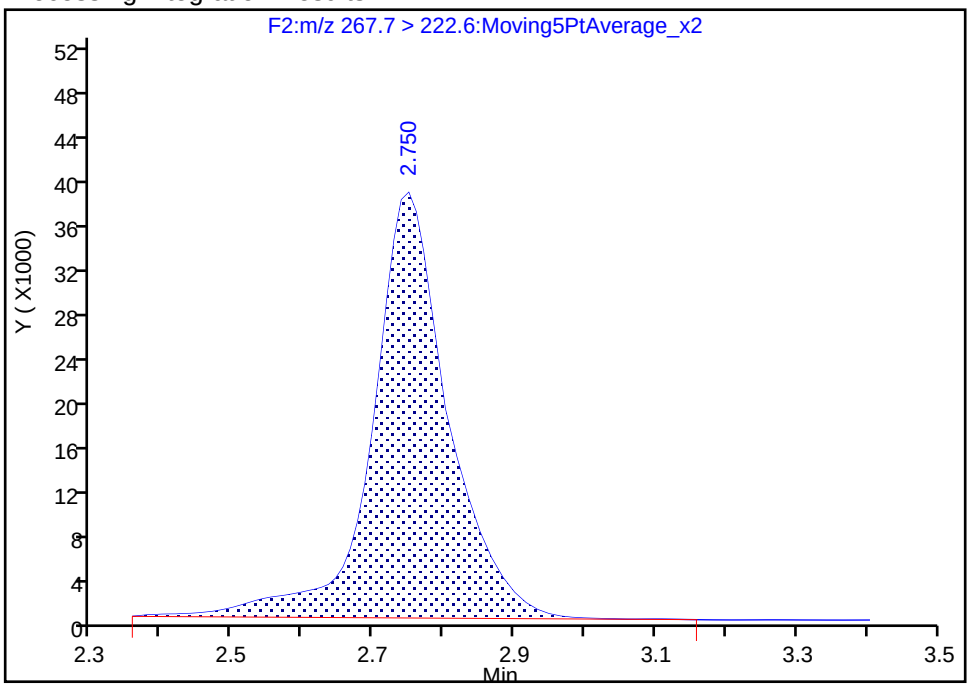
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d
Injection Date: 11-May-2018 09:48:35 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 3 13C5-PFPeA, CAS: STL01893

Signal: 1

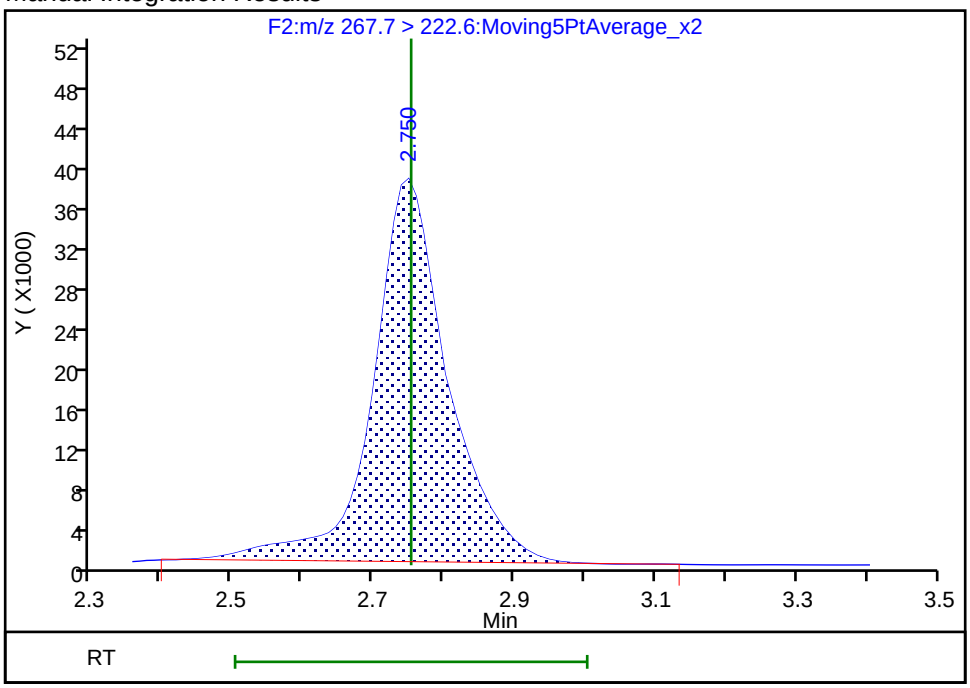
Processing Integration Results

RT: 2.75
Area: 288070
Amount: 39.671247
Amount Units: ng/ml



Manual Integration Results

RT: 2.75
Area: 281704
Amount: 40.107446
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:07:16
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

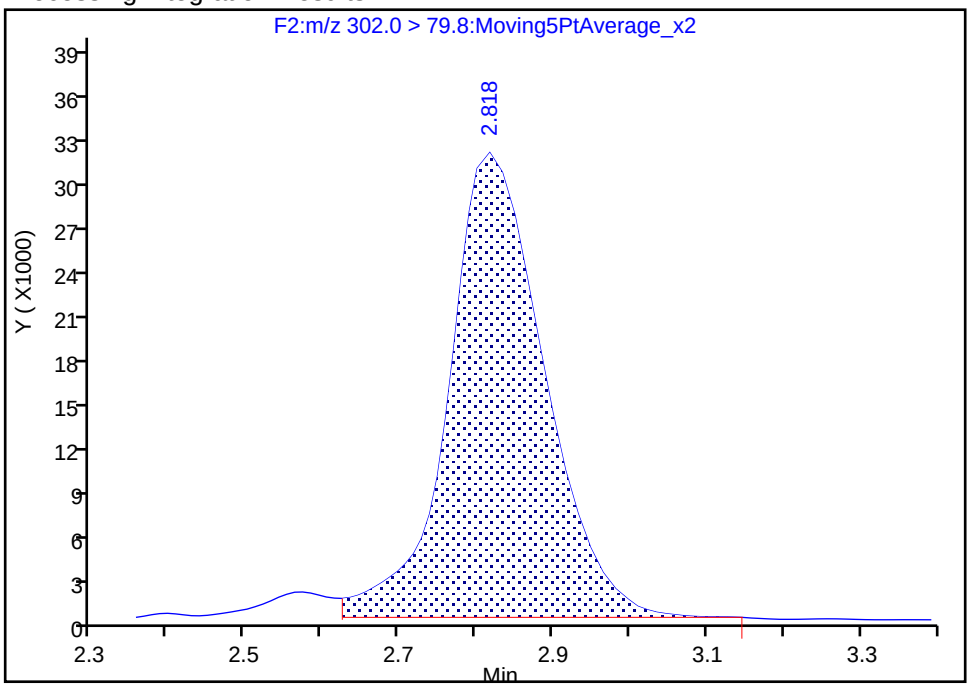
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d
Injection Date: 11-May-2018 09:48:35 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 5 13C3-PFBS, CAS: STL02337

Signal: 1

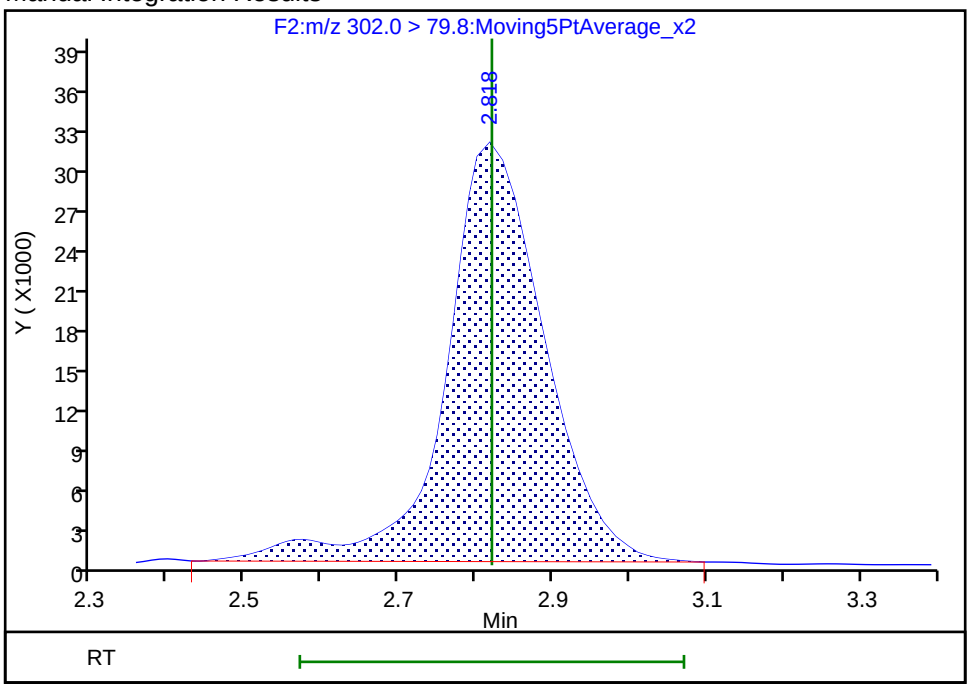
Processing Integration Results

RT: 2.82
Area: 277288
Amount: 38.038406
Amount Units: ng/ml



Manual Integration Results

RT: 2.82
Area: 285317
Amount: 38.926369
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:07:31
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

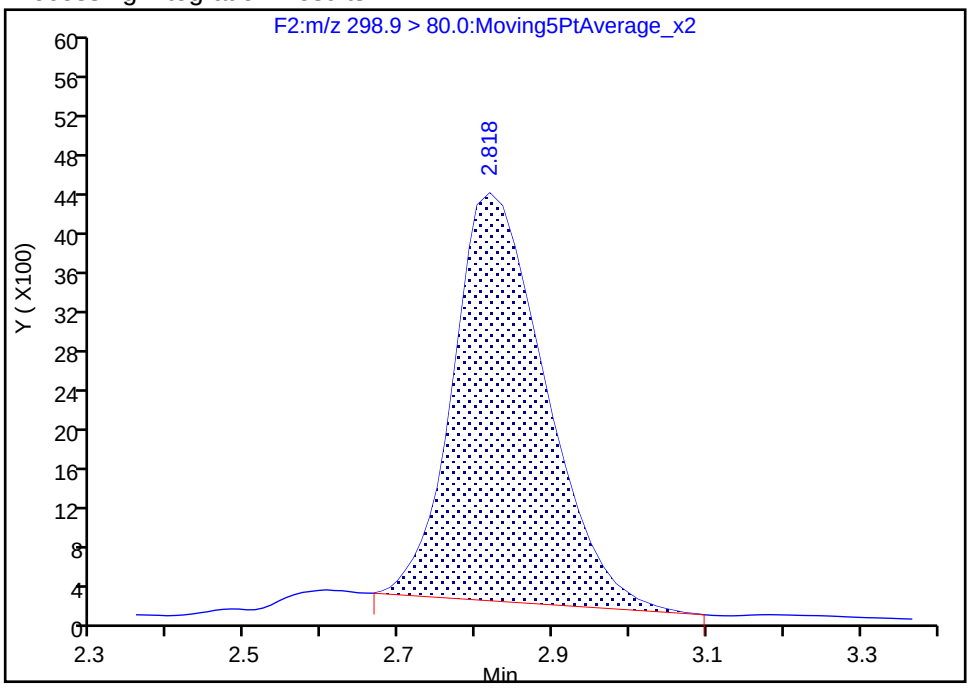
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d
Injection Date: 11-May-2018 09:48:35 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

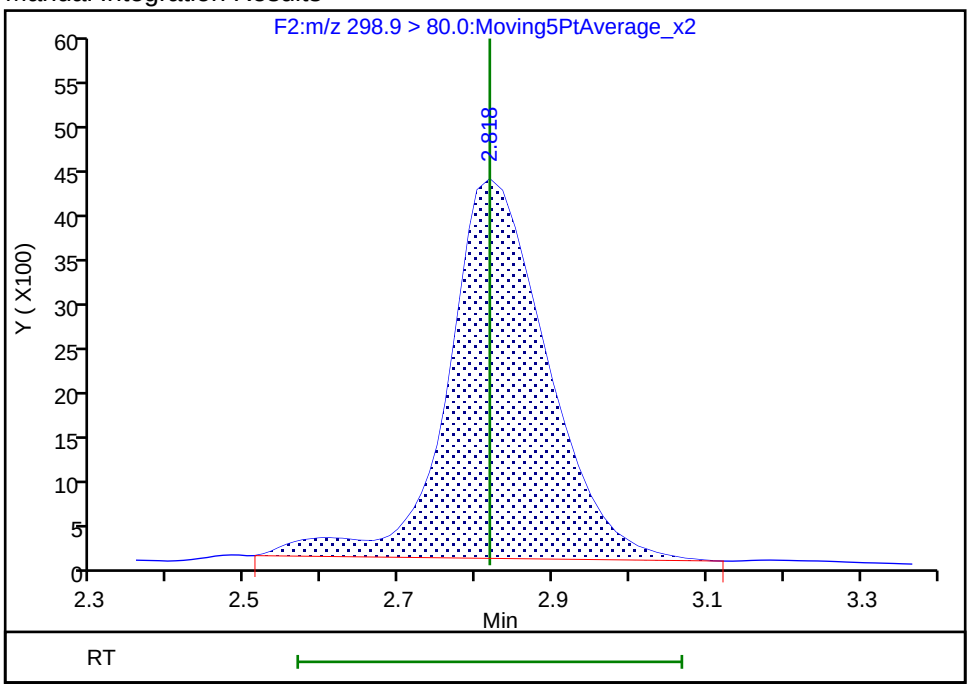
Processing Integration Results

RT: 2.82
Area: 34626
Amount: 4.507896
Amount Units: ng/ml



Manual Integration Results

RT: 2.82
Area: 38521
Amount: 4.545958
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:07:22
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

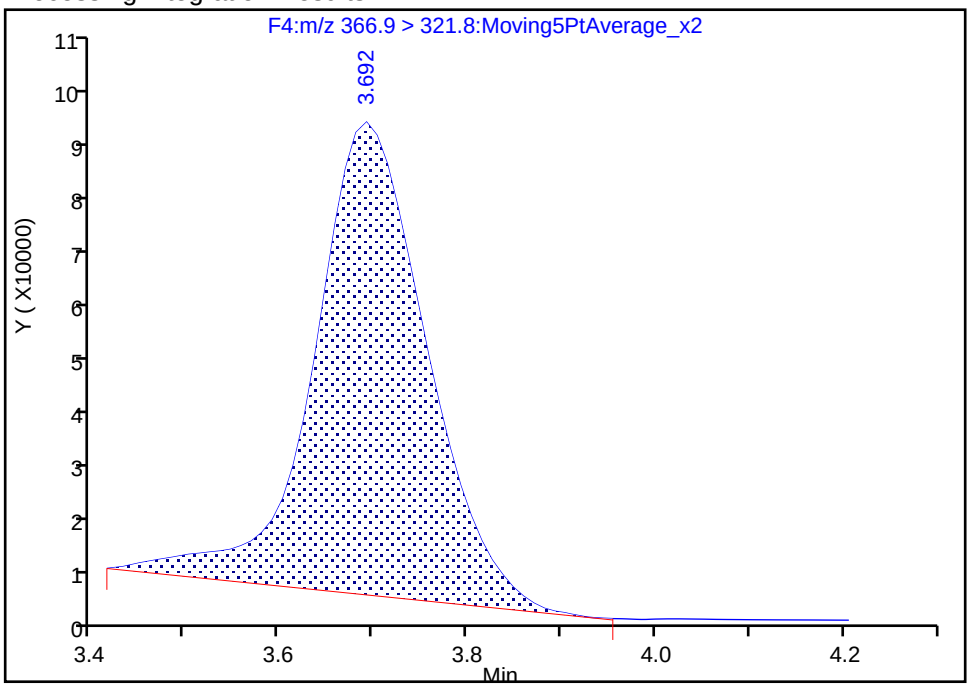
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d
Injection Date: 11-May-2018 09:48:35 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

D 10 13C4-PFHpA, CAS: STL01892

Signal: 1

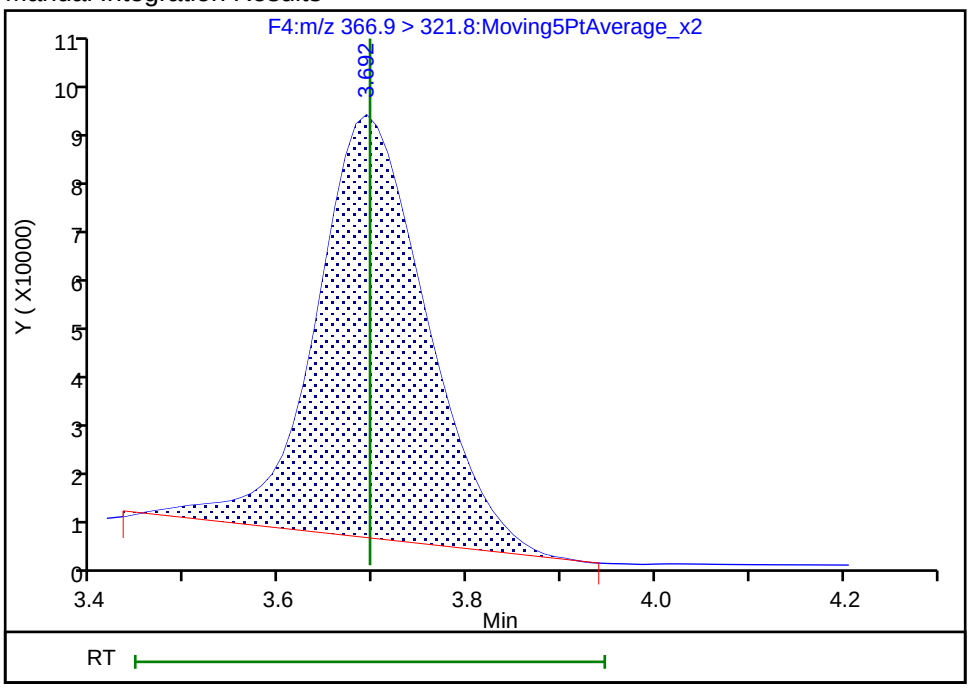
Processing Integration Results

RT: 3.69
Area: 731413
Amount: 41.981185
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 703710
Amount: 40.585776
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:07:41
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

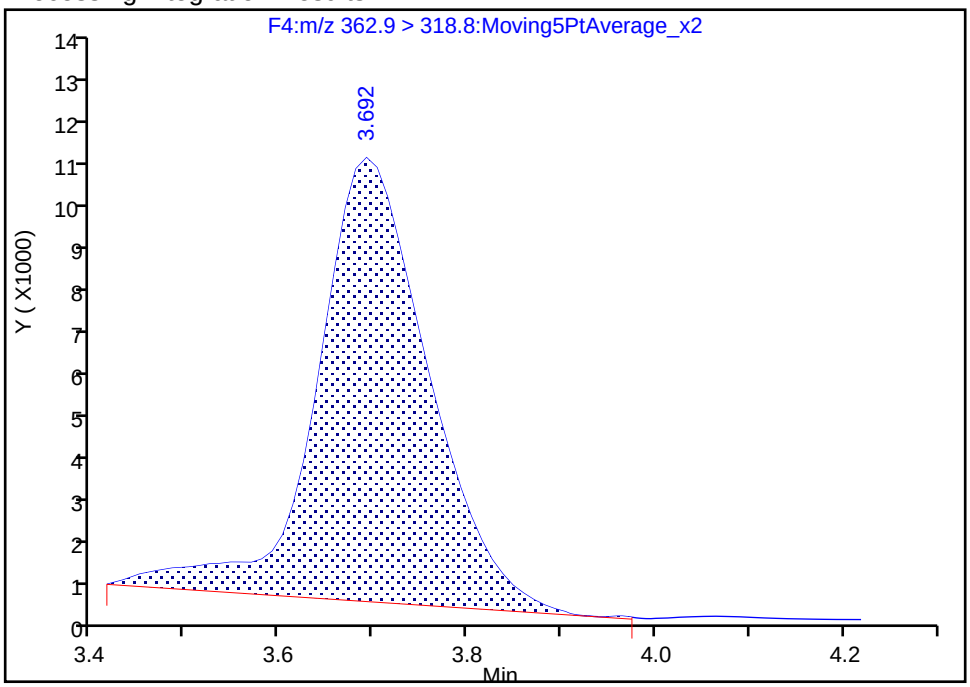
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d
Injection Date: 11-May-2018 09:48:35 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

11 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

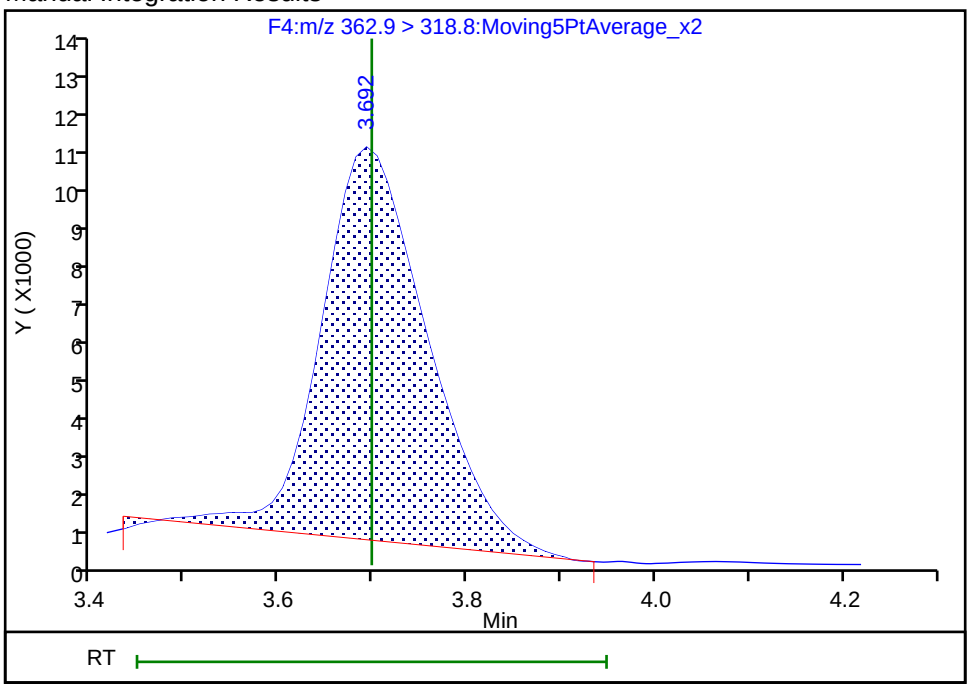
Processing Integration Results

RT: 3.69
Area: 82353
Amount: 5.151707
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 76266
Amount: 5.170498
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:07:46
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

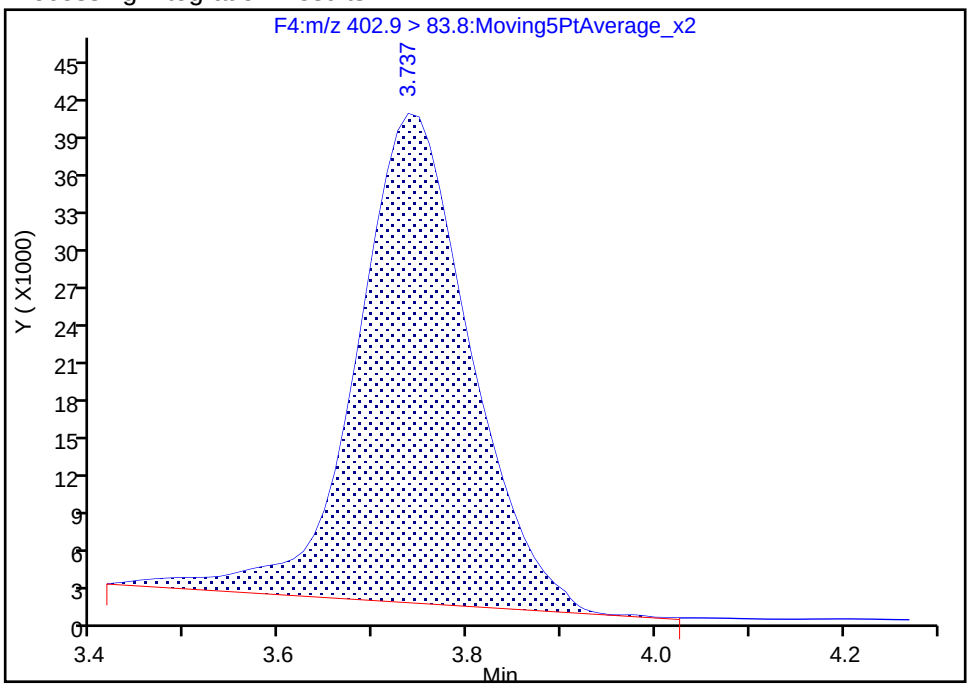
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d
Injection Date: 11-May-2018 09:48:35 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

D 13 18O2 PFHxS, CAS: STL00994

Signal: 1

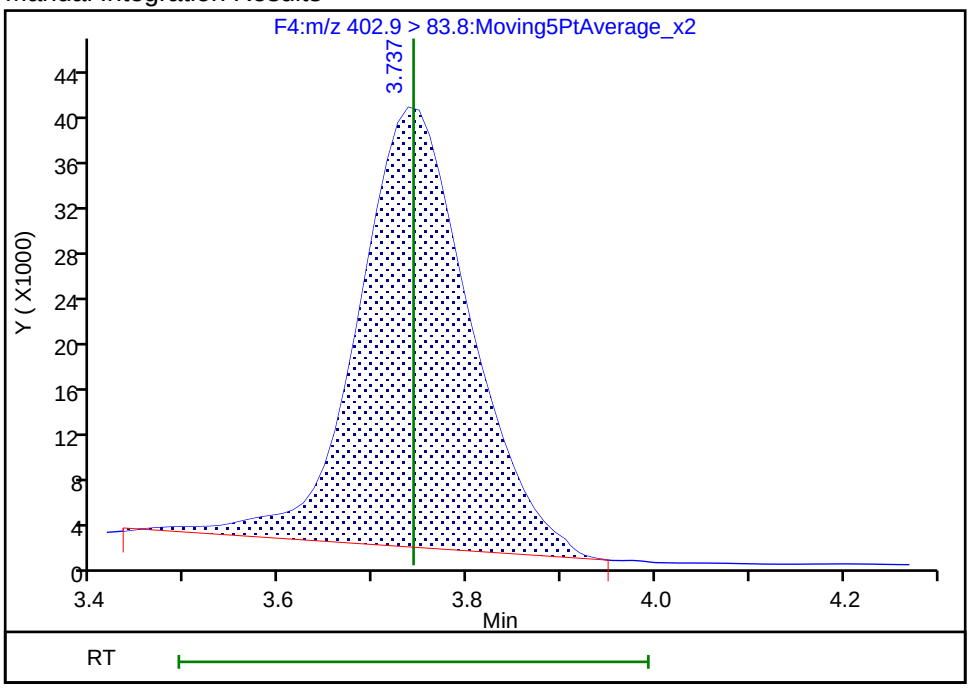
Processing Integration Results

RT: 3.74
Area: 333202
Amount: 39.881571
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 325367
Amount: 39.980878
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:07:53
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

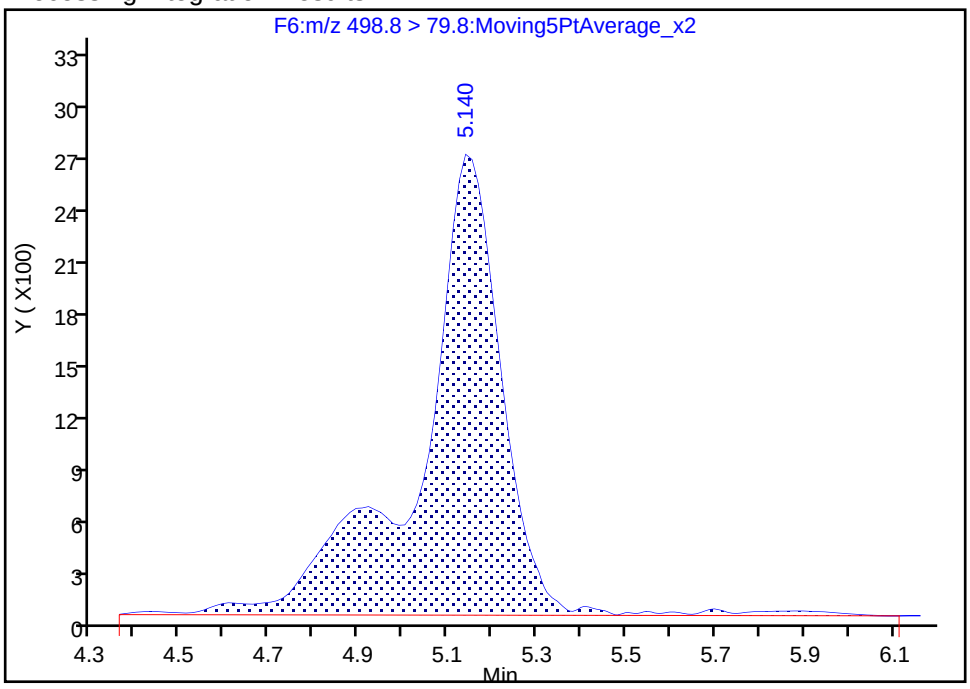
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A08.d
Injection Date: 11-May-2018 09:48:35 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

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

Signal: 1

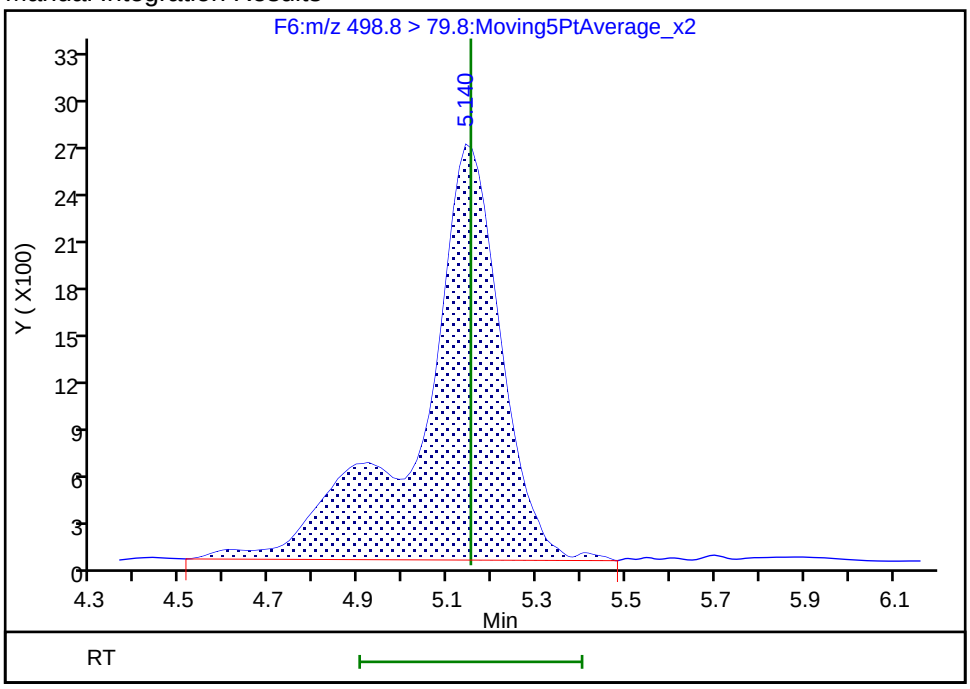
Processing Integration Results

RT: 5.14
Area: 34315
Amount: 4.535826
Amount Units: ng/ml



Manual Integration Results

RT: 5.14
Area: 33403
Amount: 4.477588
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:08:13
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A09.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 11-May-2018 10:04:41 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-009 IC 4
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 11:28:21 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 15:09:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.326	2.328	-0.002	1.000	315995	48.7		97.4	416	
1 Perfluorobutyric acid										
212.9 > 168.9	2.326	2.334	-0.008	1.000	114526	19.5		97.3	236	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.750	2.751	-0.001	1.000	205592	21.0		105	690	
D 3 13C5-PFPeA										
267.7 > 222.6	2.750	2.753	-0.003	1.000	226703	45.8		91.7	505	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.818	2.818	0.0	1.000	121462	17.2		97.1	418	
D 5 13C3-PFBS										M
302.0 > 79.8	2.818	2.820	-0.002	1.000	229656	44.5		95.7	267	M
D 7 13C2 PFHxA										
314.8 > 269.6	3.164	3.170	-0.006	1.000	348306	48.2		96.5	3670	
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.164	3.172	-0.008	1.000	135866	19.6		98.0	582	M
D 10 13C4-PFHpA										M
366.9 > 321.8	3.692	3.696	-0.004	1.000	604683	49.5		99.0	738	M
11 Perfluoroheptanoic acid										M
362.9 > 318.8	3.692	3.698	-0.006	1.000	250713	19.9		99.6	334	M
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.737	3.739	-0.002	1.000	122927	17.3		95.1	448	M
D 13 18O2 PFHxS										
402.9 > 83.8	3.737	3.742	-0.005	1.000	260128	45.4		95.9	539	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.317	4.319	-0.002	1.000	20662	20.8		110	328	
D 14 M2-6:2FTS										
428.6 > 408.6	4.317	4.321	-0.004	1.000	45722	40.6		85.4	257	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.355	4.363	-0.008	1.000	571905	48.0		95.9	3630	
* 49 13C2-PFOA										
414.9 > 369.8	4.355	4.363	-0.008		687702	50.0			6124	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.355	4.368	-0.013	1.000	246875	20.8		104	129	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.393	4.399	-0.006	0.855	88457	18.8		98.9	424	
D 21 13C5 PFNA										
467.8 > 422.8	5.113	5.127	-0.014	1.000	639192	45.1		90.2	1257	
19 Perfluorononanoic acid										
462.8 > 418.8	5.127	5.136	-0.009	1.003	260811	21.8		109	1050	
20 Perfluorooctane sulfonic acid										
498.8 > 79.8	5.140	5.152	-0.012	1.000	95988	17.6		95.0	1086	
D 22 13C4 PFOS										
502.8 > 79.8	5.140	5.154	-0.014	1.000	235698	45.8		95.8	1280	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.882	5.880	0.002	1.000	39416	20.5		107	439	
D 23 M2-8:2FTS										
528.8 > 508.8	5.882	5.882	0.0	1.000	119893	39.7		82.8	1041	
D 25 13C2 PFDA										
514.9 > 469.5	5.902	5.910	-0.008	1.000	806295	47.0		94.0	5860	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.902	5.914	-0.012	1.000	303516	19.7		98.4	1453	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.259	6.271	-0.012	1.000	162350	44.5		89.0	969	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.277	6.283	-0.006	1.003	80940	21.9		110	260	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.640	-0.006	1.000	144917	45.7		91.4	563	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.652	6.664	-0.012	1.003	60210	20.5		103	888	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.652	6.667	-0.015	1.294	94797	18.1		94.1	2414	
D 33 13C2 PFUnA										
564.8 > 519.8	6.670	6.676	-0.006	1.000	760357	47.2		94.4	6613	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.670	6.676	-0.006	1.000	312557	21.2		106	2959	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.973	6.984	-0.011	1.000	150290	20.5		102	2308	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	403073	43.6		87.2	2187	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.339	7.354	-0.015	1.000	262592	18.9		94.6	2031	
D 36 13C2 PFDoA										
614.8 > 569.6	7.339	7.358	-0.019	1.000	789916	46.6		93.3	2085	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.962	7.974	-0.012	1.085	274804	19.3		96.7	1681	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.499	8.514	-0.015	1.000	704268	45.0		90.1	1090	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.514	8.519	-0.005	1.002	257221	19.9		99.5	917	
712.8 > 168.8	8.499	8.519	-0.020	1.000	57736		4.46(0.00-0.00)	99.5	420	
712.8 > 218.8	8.499	8.519	-0.020	1.000	33665		7.64(0.00-0.00)	99.5	319	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21-L4_00003 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 11:28:22 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A09.d

Injection Date: 11-May-2018 10:04:41 Instrument ID: LC410

Lims ID: IC

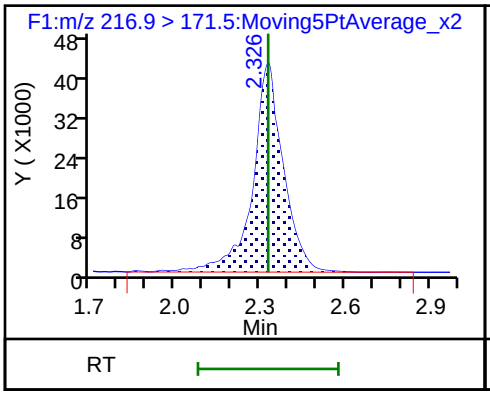
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9

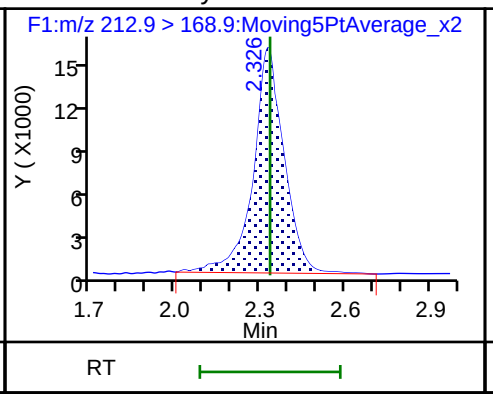
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

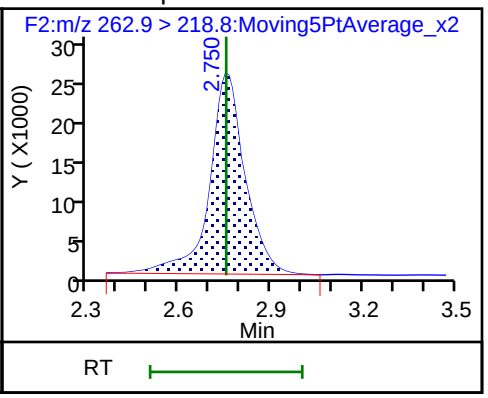
D 2 13C4 PFBA



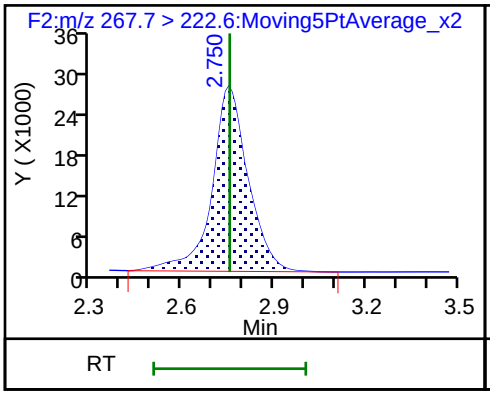
1 Perfluorobutyric acid



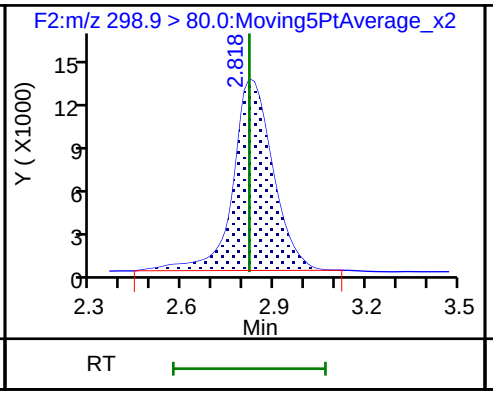
4 Perfluoropentanoic acid



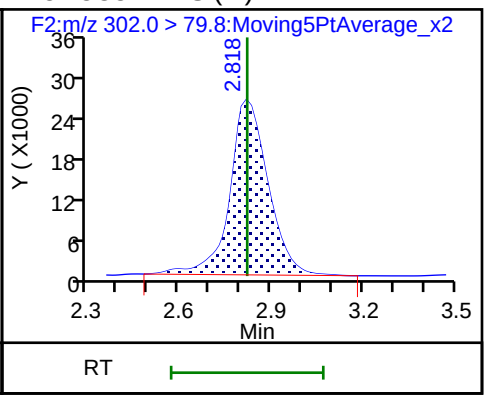
D 3 13C5-PFPeA



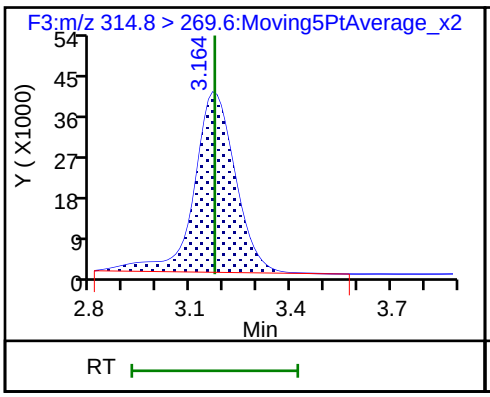
6 Perfluorobutanesulfonic acid



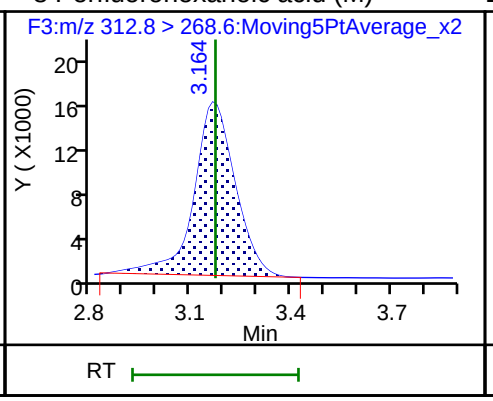
D 5 13C3-PFBS (M)



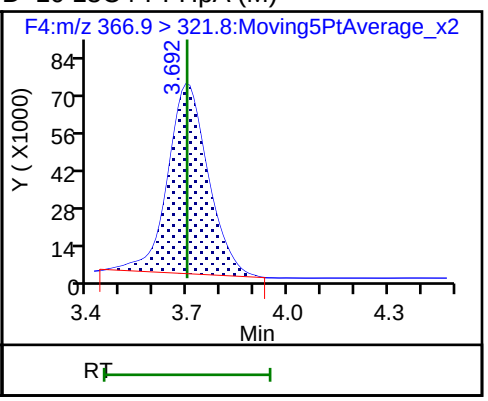
D 7 13C2 PFHxA



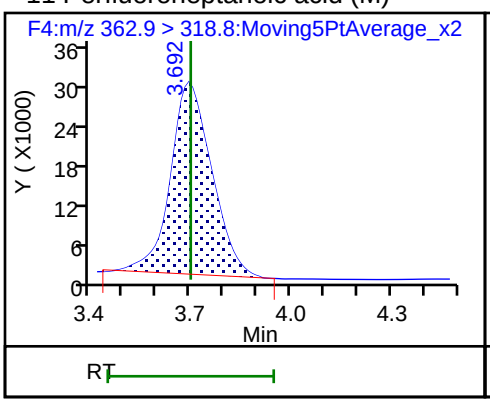
8 Perfluorohexanoic acid (M)



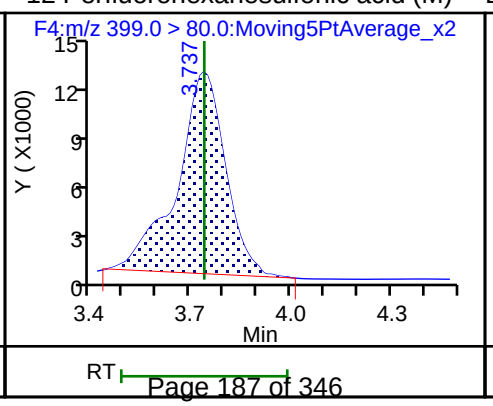
D 10 13C4-PFHpA (M)



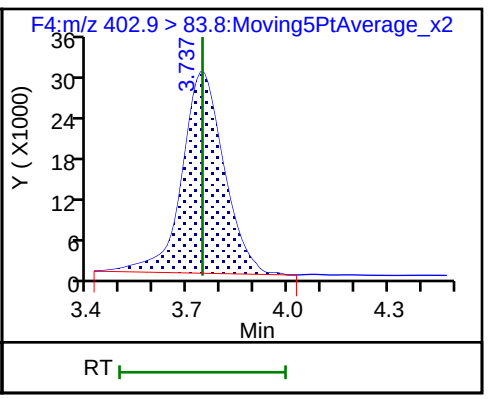
11 Perfluoroheptanoic acid (M)



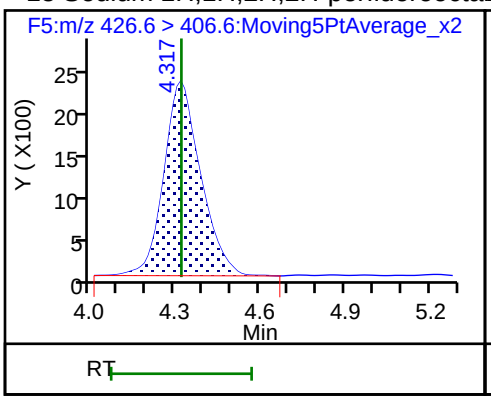
12 Perfluorohexanesulfonic acid (M)



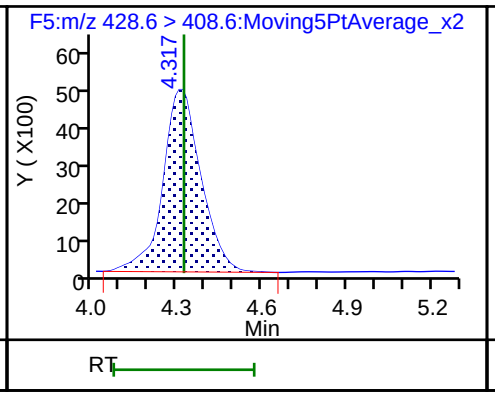
D 13 18O2 PFHxS



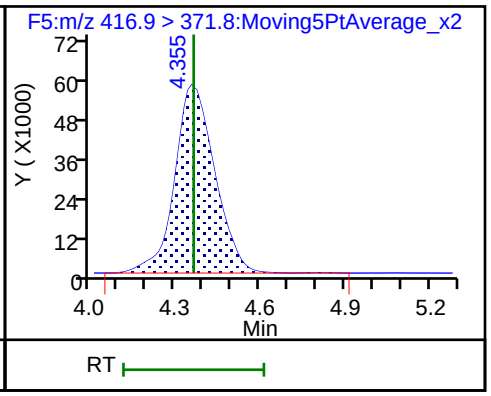
15 Sodium 1H,1H,2H,2H-perfluorooctane



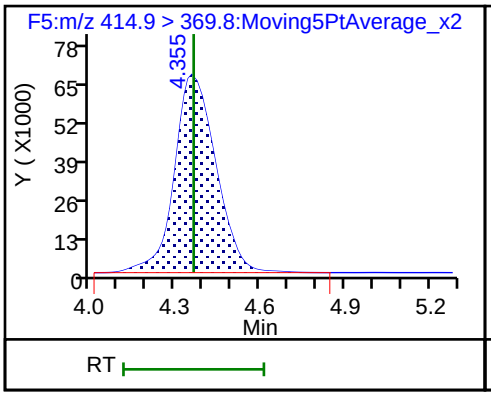
D 14 M2-6:2FTS



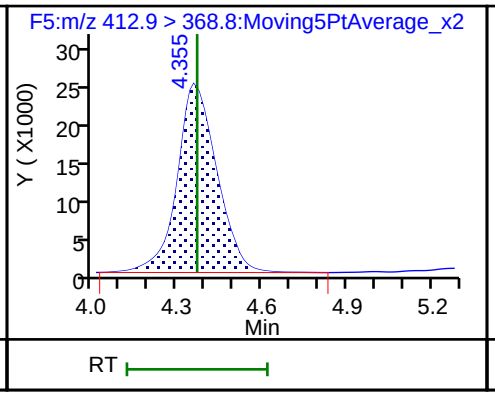
D 17 13C4 PFOA



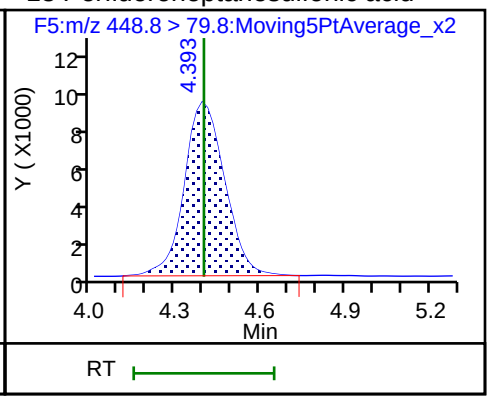
* 49 13C2-PFOA



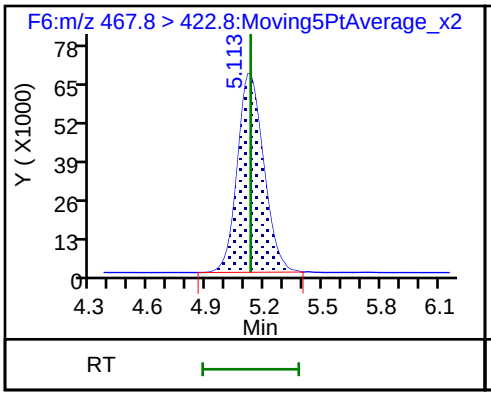
16 Perfluorooctanoic acid



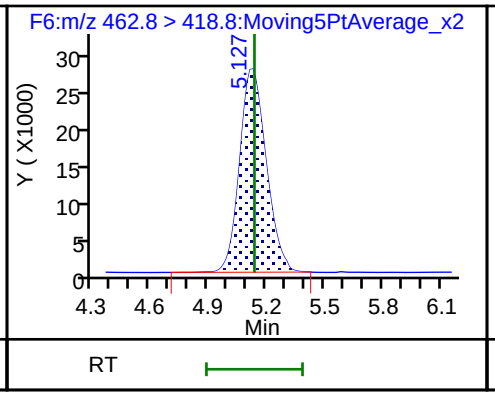
18 Perfluoroheptanesulfonic acid



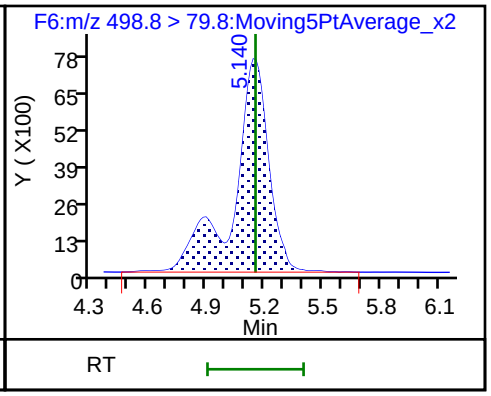
D 21 13C5 PFNA



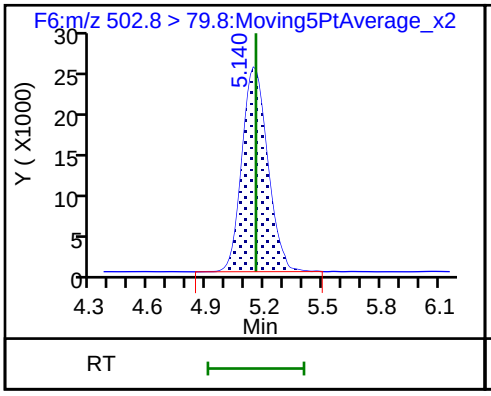
19 Perfluorononanoic acid



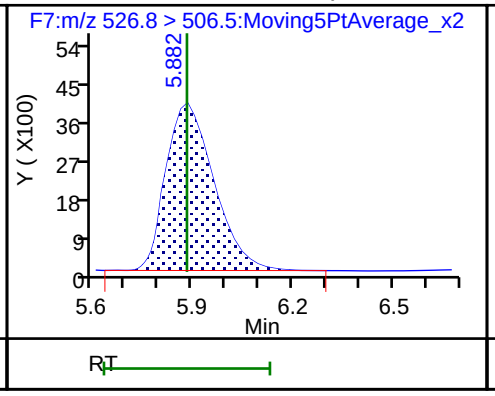
20 Perfluorooctane sulfonic acid



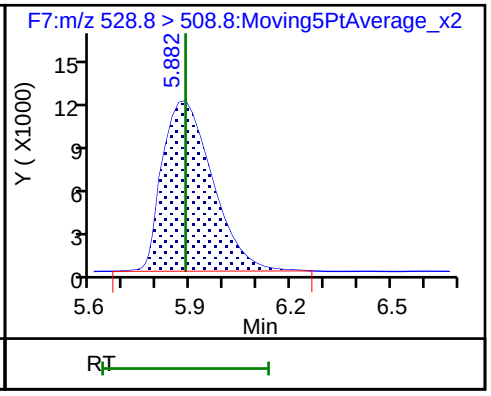
D 22 13C4 PFOS



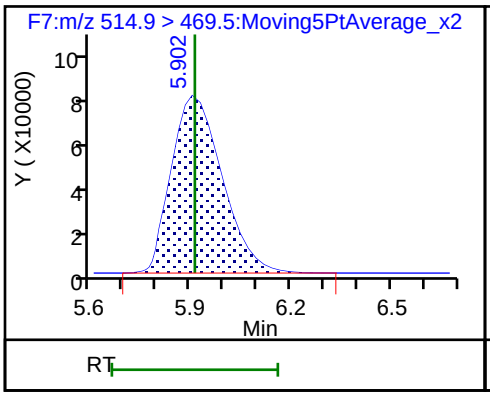
24 Sodium 1H,1H,2H,2H-perfluorodecane



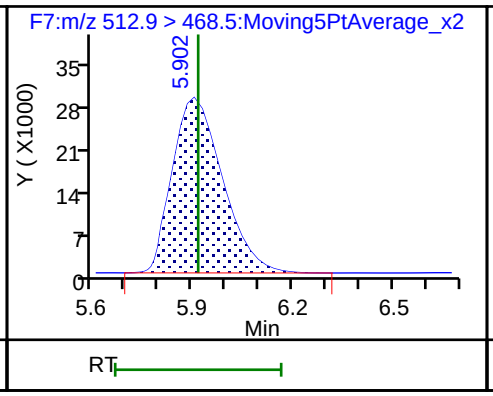
D 23 M2-8:2FTS



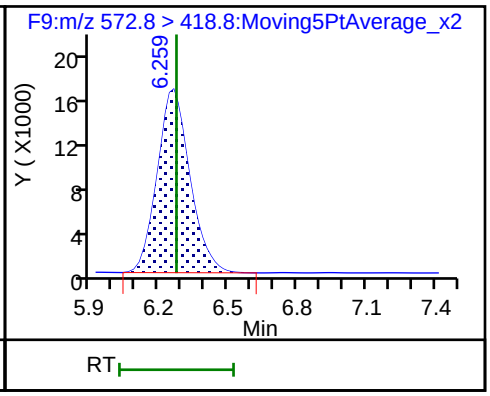
D 25 13C2 PFDA



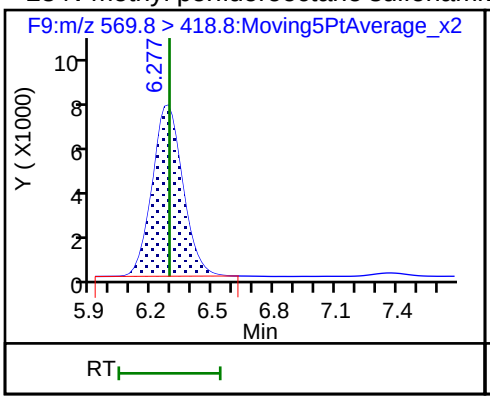
26 Perfluorodecanoic acid



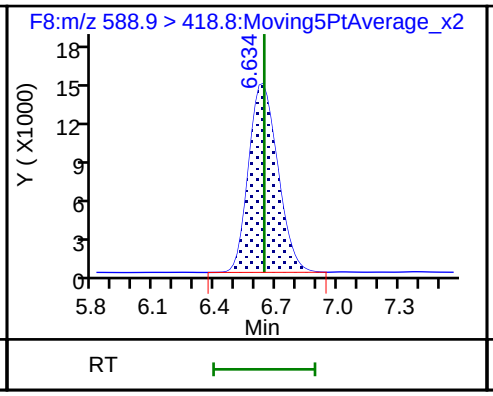
D 27 d3-NMeFOSAA



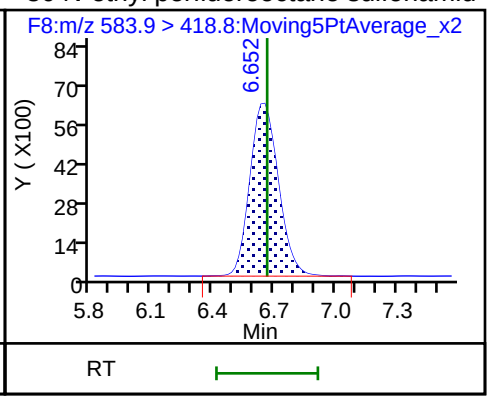
28 N-methyl perfluorooctane sulfonami



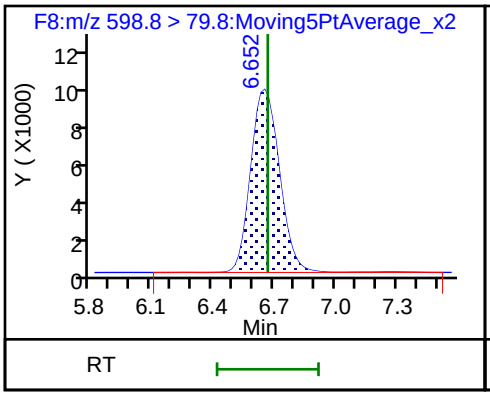
D 29 d5-NEtFOSAA



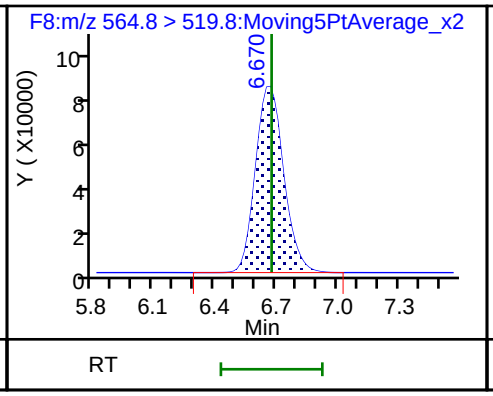
30 N-ethyl perfluorooctane sulfonamid



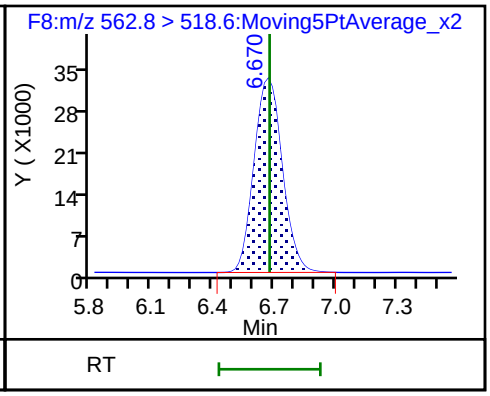
31 Perfluorodecane Sulfonic acid



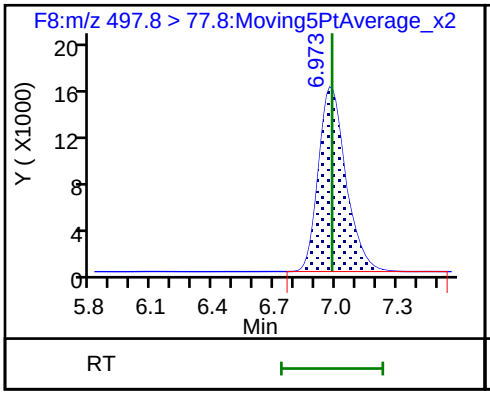
D 33 13C2 PFUnA



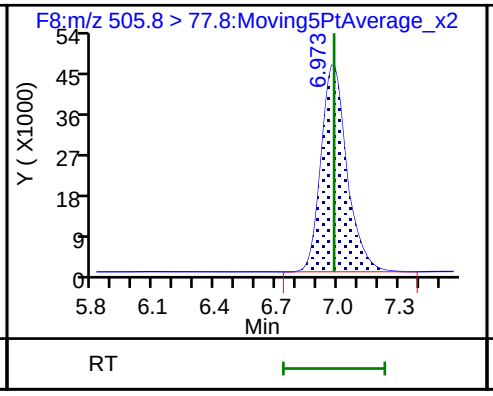
32 Perfluoroundecanoic acid



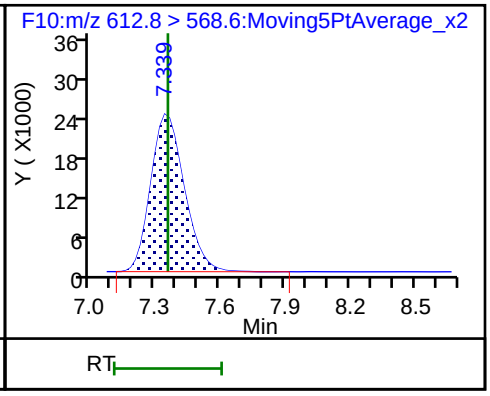
34 Perfluorooctane Sulfonamide



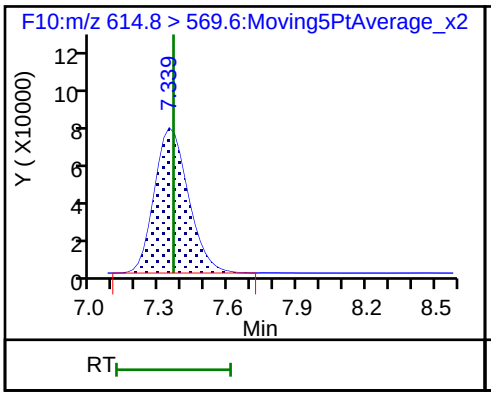
D 35 13C8 FOSA



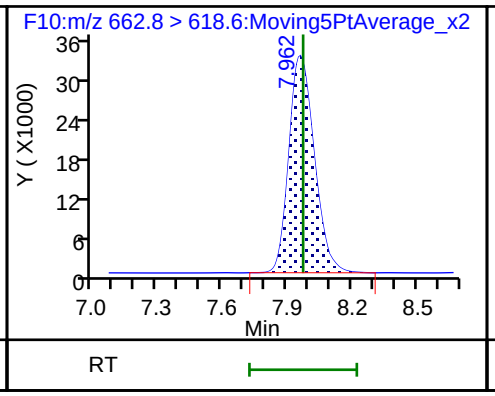
37 Perfluorododecanoic acid



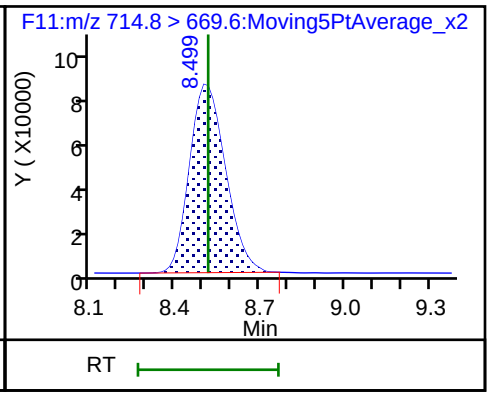
D 36 13C2 PFDoA



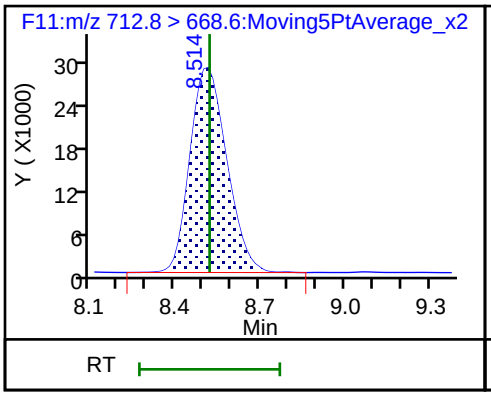
40 Perfluorotridecanoic acid



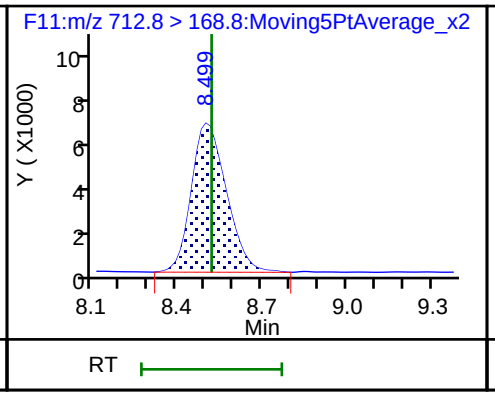
D 43 13C2-PFTeDA



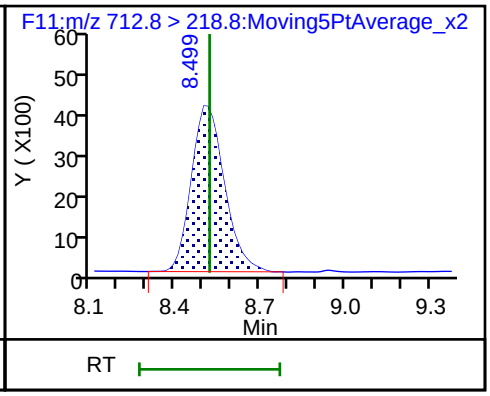
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



TestAmerica Burlington

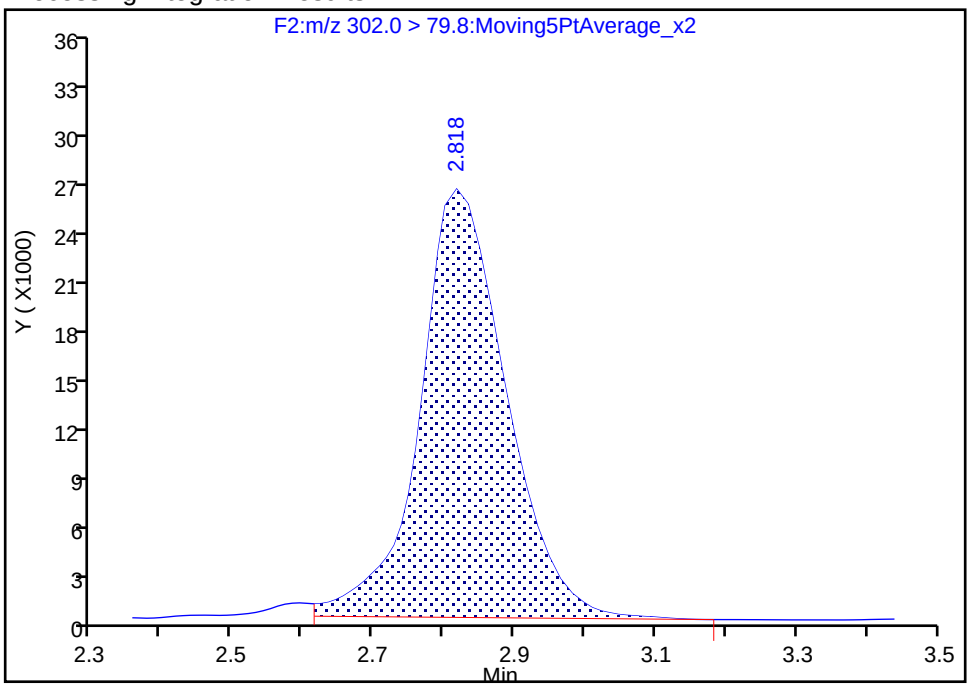
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A09.d
Injection Date: 11-May-2018 10:04:41 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 5 13C3-PFBS, CAS: STL02337

Signal: 1

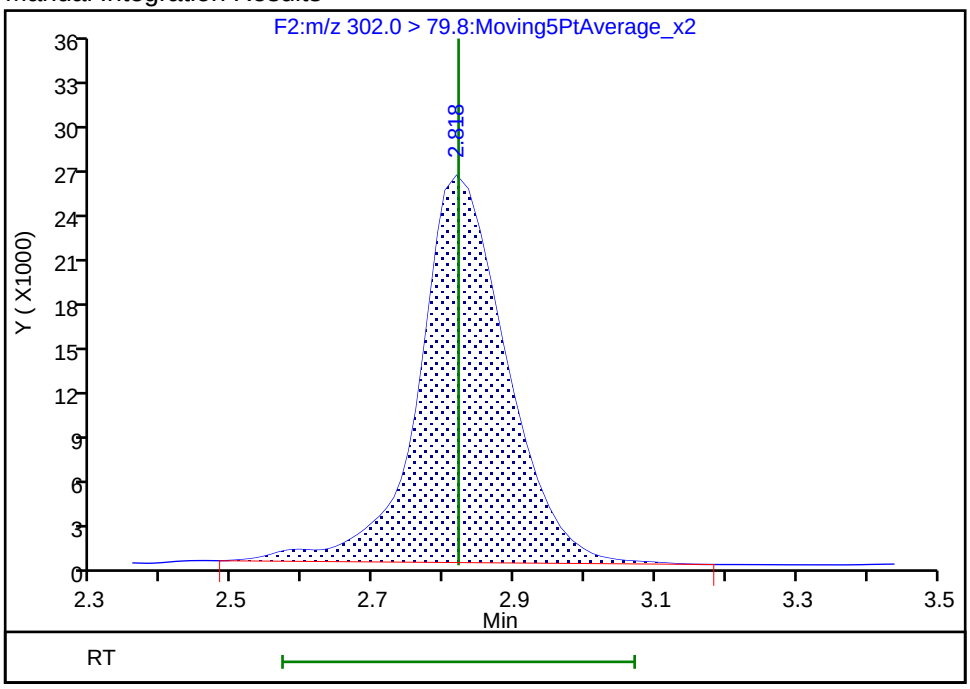
Processing Integration Results

RT: 2.82
Area: 226380
Amount: 44.402854
Amount Units: ng/ml



Manual Integration Results

RT: 2.82
Area: 229656
Amount: 44.484719
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:09:36
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

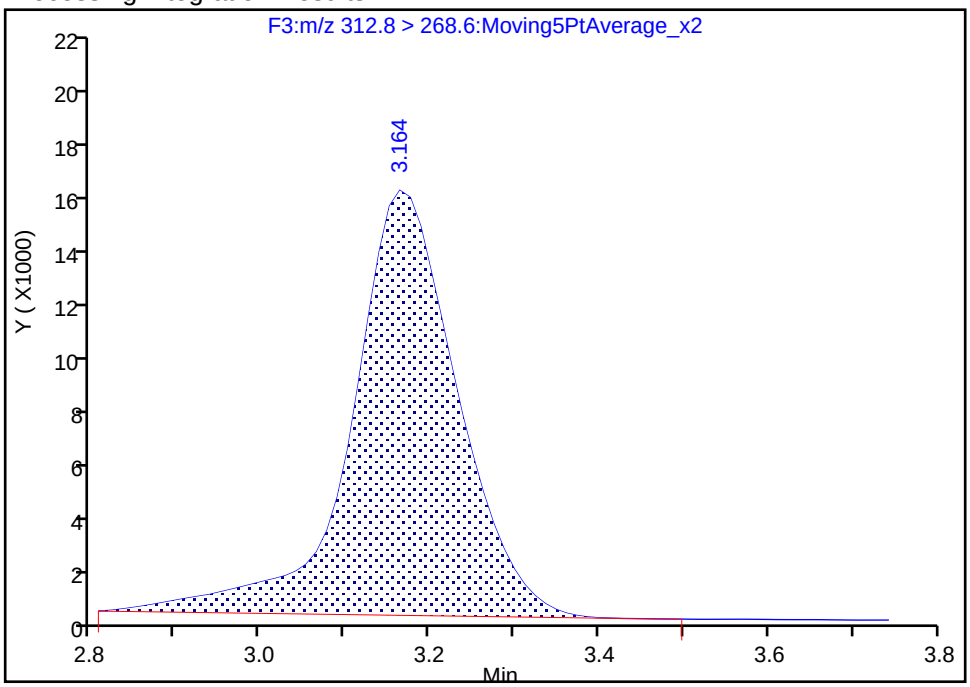
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A09.d
Injection Date: 11-May-2018 10:04:41 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

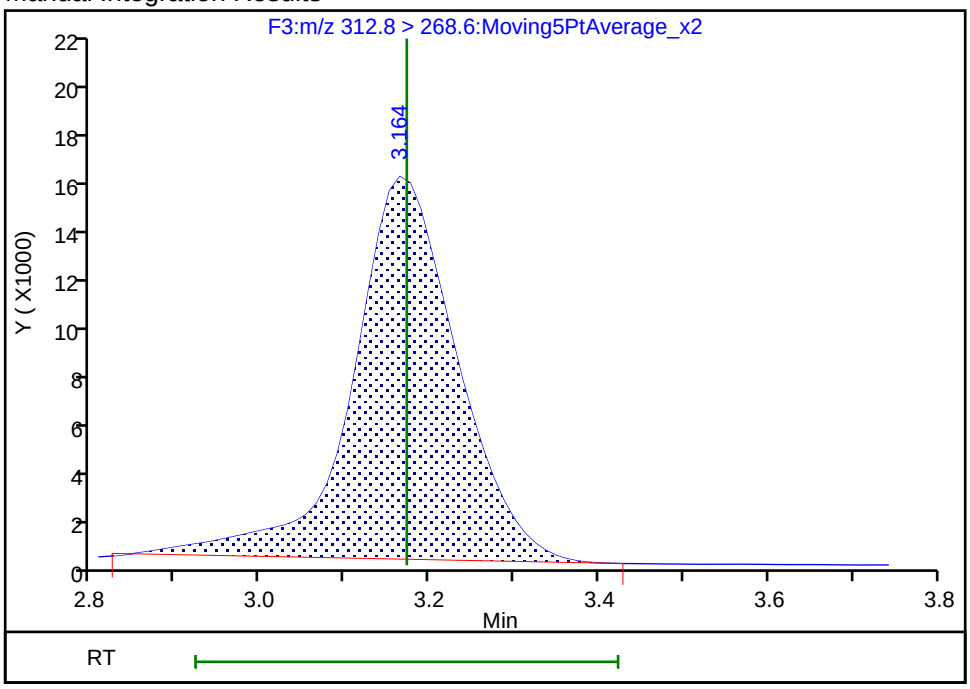
Processing Integration Results

RT: 3.16
Area: 138435
Amount: 21.862611
Amount Units: ng/ml



Manual Integration Results

RT: 3.16
Area: 135866
Amount: 19.605018
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:09:29
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

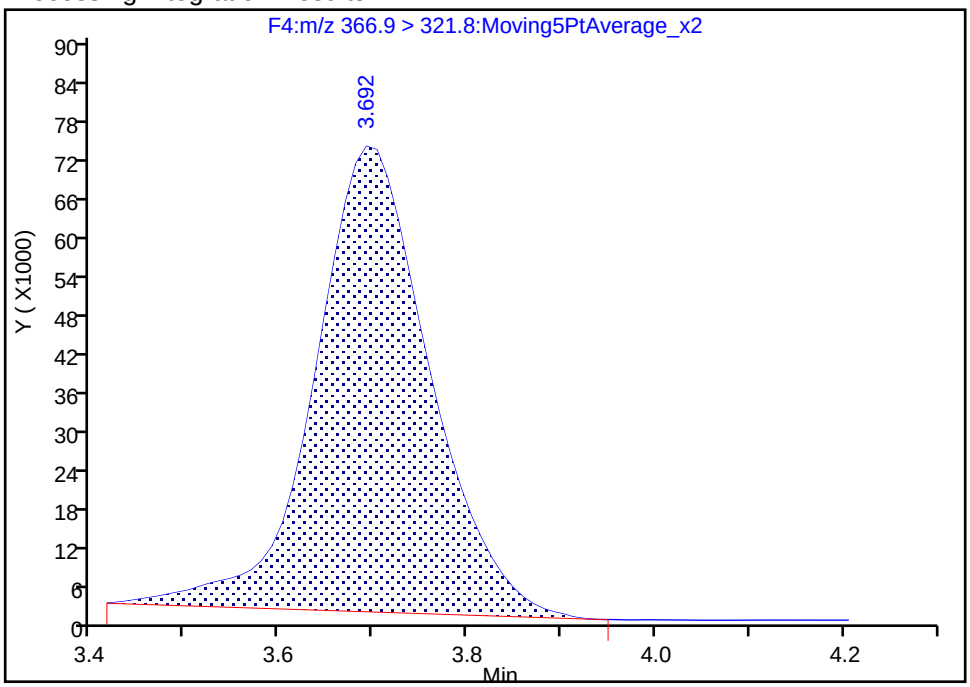
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A09.d
Injection Date: 11-May-2018 10:04:41 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

D 10 13C4-PFHpA, CAS: STL01892

Signal: 1

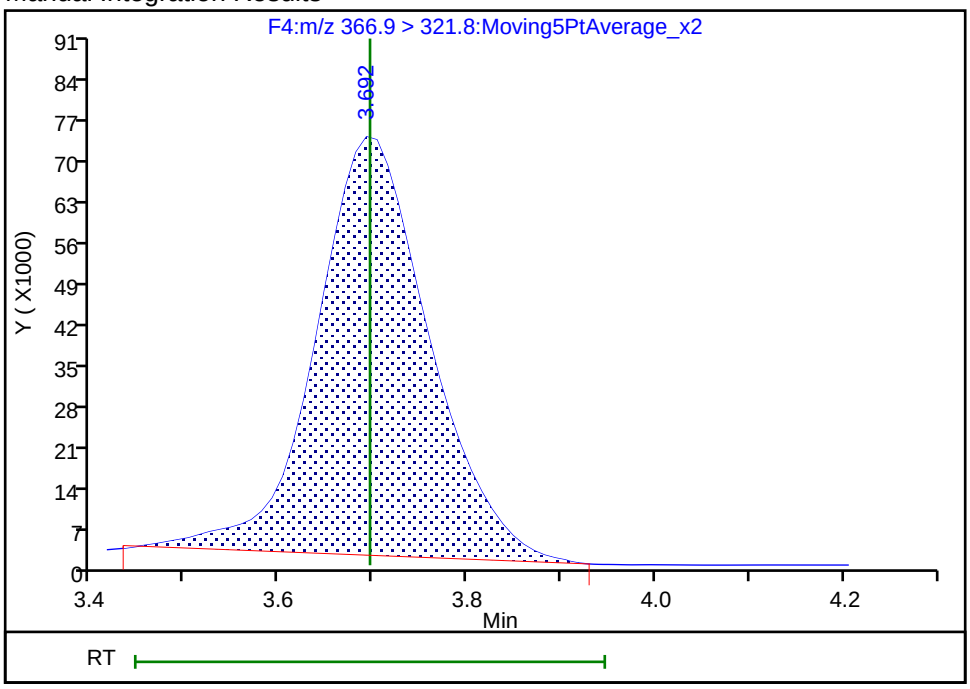
Processing Integration Results

RT: 3.69
Area: 616429
Amount: 50.576421
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 604683
Amount: 49.513622
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:09:21
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

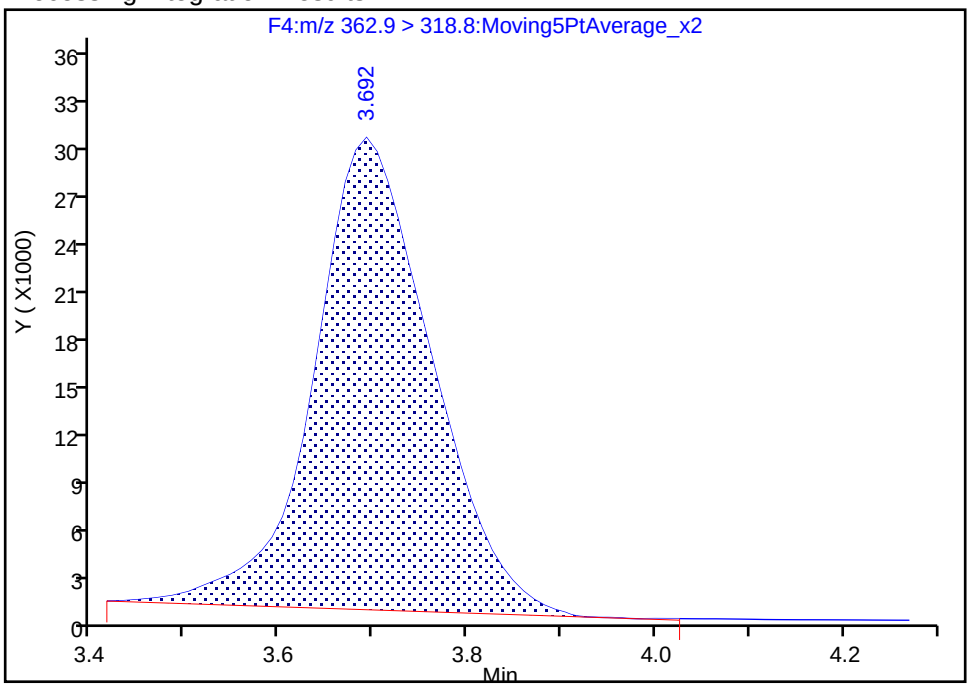
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A09.d
Injection Date: 11-May-2018 10:04:41 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

11 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

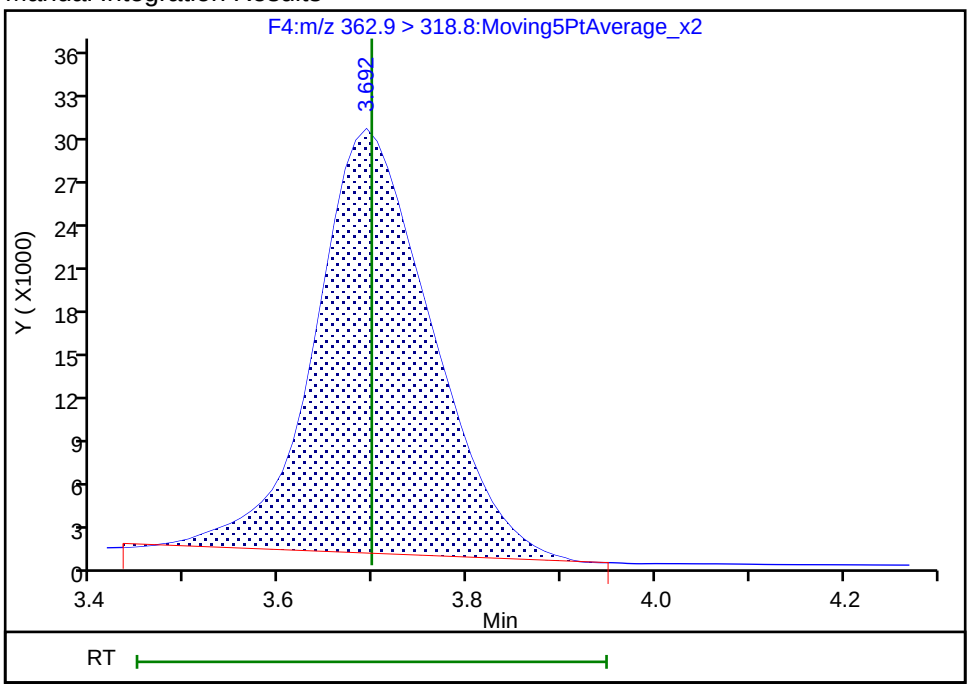
Processing Integration Results

RT: 3.69
Area: 255856
Amount: 19.902365
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 250713
Amount: 19.924866
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:09:24
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

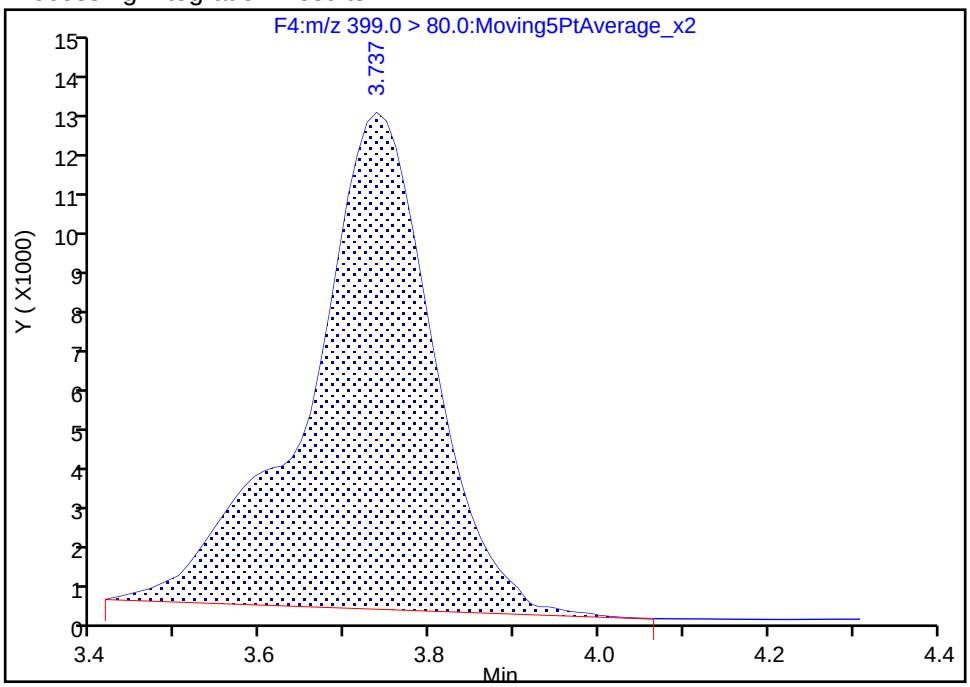
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A09.d
Injection Date: 11-May-2018 10:04:41 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

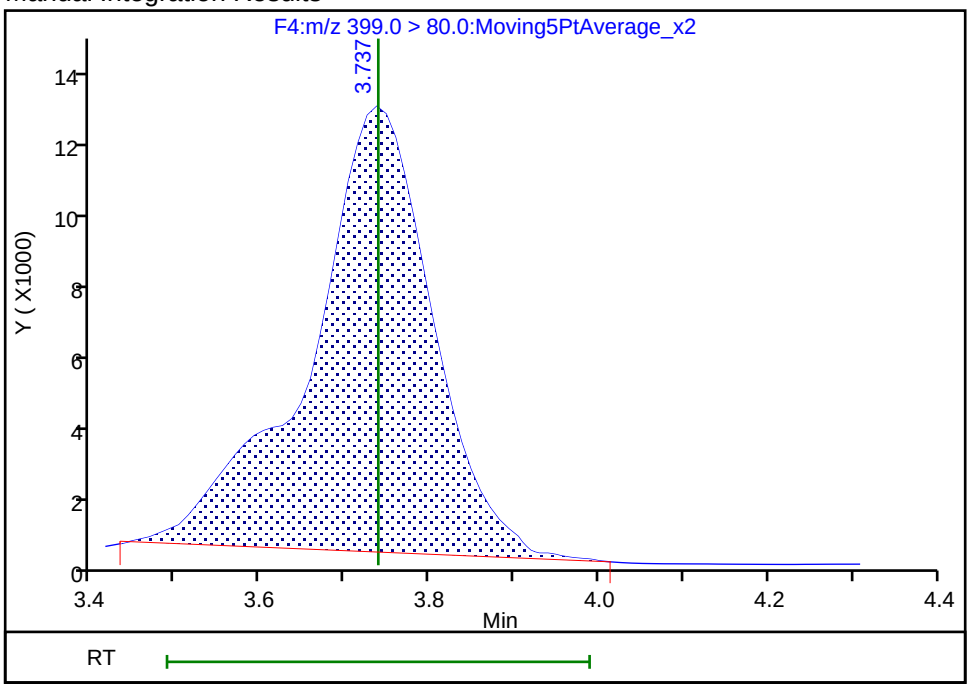
Processing Integration Results

RT: 3.74
Area: 126028
Amount: 17.576413
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 122927
Amount: 17.316672
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:09:15
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Report Date: 14-May-2018 11:28:23 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 11-May-2018 10:20:47 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-010 IC 5
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 11:28:23 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 15:35:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.330	2.328	0.002	1.000	374972	45.9		91.7	387	
1 Perfluorobutyric acid										
212.9 > 168.9	2.334	2.334	0.0	1.002	344259	49.7		99.3	277	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.750	2.751	-0.001	0.996	582718	50.9		102	1897	
D 3 13C5-PFPeA										
267.7 > 222.6	2.760	2.753	0.007	1.000	264445	42.4		84.8	663	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.818	2.818	0.0	1.000	379377	46.3		105	747	
D 5 13C3-PFBS										M
302.0 > 79.8	2.818	2.820	-0.002	1.000	263494	40.5		87.1	612	M
D 7 13C2 PFHxA										M
314.8 > 269.6	3.177	3.170	0.007	1.000	374624	41.1		82.3	222	M
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.177	3.172	0.005	1.000	387027	51.6		103	554	M
D 10 13C4-PFHpA										M
366.9 > 321.8	3.692	3.696	-0.004	1.000	651704	42.3		84.6	253	M
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.692	3.698	-0.006	1.000	683786	50.5		101	135	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.737	3.739	-0.002	1.000	360294	48.5		107	282	
D 13 18O2 PFHxS										M
402.9 > 83.8	3.737	3.742	-0.005	1.000	270410	37.4		79.1	118	M
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.317	4.319	-0.002	1.000	64304	53.2		112	279	
D 14 M2-6:2FTS										M
428.6 > 408.6	4.317	4.321	-0.004	1.000	55802	39.3		82.7	177	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										M
416.9 > 371.8	4.355	4.363	-0.008	1.000	689914	45.9		91.8	527	M
* 49 13C2-PFOA										M
414.9 > 369.8	4.355	4.363	-0.008		867110	50.0			636	M
16 Perfluorooctanoic acid										
412.9 > 368.8	4.355	4.368	-0.013	1.000	744865	52.1		104	484	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.393	4.399	-0.006	0.855	288280	49.6		104	734	
D 21 13C5 PFNA										
467.8 > 422.8	5.127	5.127	0.0	1.000	861646	48.2		96.5	1328	
19 Perfluorononanoic acid										
462.8 > 418.8	5.127	5.136	-0.009	1.000	823627	51.2		102	973	
20 Perfluorooctane sulfonic acid										
498.8 > 79.8	5.154	5.152	0.002	1.003	318981	47.5		102	1098	
D 22 13C4 PFOS										
502.8 > 79.8	5.140	5.154	-0.014	1.000	289639	44.6		93.4	637	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.882	5.880	0.002	1.000	153385	53.1		111	1796	
D 23 M2-8:2FTS										
528.8 > 508.8	5.882	5.882	0.0	1.000	180147	47.3		98.7	883	
D 25 13C2 PFDA										
514.9 > 469.5	5.902	5.910	-0.008	1.000	1041802	48.1		96.3	2405	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.902	5.914	-0.012	1.000	1057024	52.6		105	16138	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.259	6.271	-0.012	1.000	235504	51.2		102	1128	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.277	6.283	-0.006	1.003	266444	49.6		99.3	630	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.640	-0.006	1.000	201294	50.4		101	806	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.652	6.664	-0.012	1.003	202719	49.6		99.1	1428	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.652	6.667	-0.015	1.294	336027	52.3		109	3791	
D 33 13C2 PFUnA										
564.8 > 519.8	6.670	6.676	-0.006	1.000	983907	48.4		96.9	2233	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.670	6.676	-0.006	1.000	938305	49.3		98.6	1932	
34 Perfluorooctane Sulfonamide										M
497.8 > 77.8	6.987	6.984	0.003	1.000	495851	50.3		101	1736	M
D 35 13C8 FOSA										
505.8 > 77.8	6.987	6.984	0.003	1.000	538810	46.2		92.4	1935	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.354	0.008	1.000	956981	53.2		106	2510	
D 36 13C2 PFDoA										
614.8 > 569.6	7.362	7.358	0.004	1.000	1019184	47.7		95.4	2438	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.970	7.974	-0.004	1.083	971029	52.6		105	2497	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.514	8.514	0.0	1.000	946154	48.0		96.0	2332	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.514	8.519	-0.005	1.000	883611	51.0		102	1679	
712.8 > 168.8	8.514	8.519	-0.005	1.000	193581		4.56(0.00-0.00)	102	865	
712.8 > 218.8	8.514	8.519	-0.005	1.000	110701		7.98(0.00-0.00)	102	736	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21-L5_00003 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 11:28:23 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d

Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410

Lims ID: IC

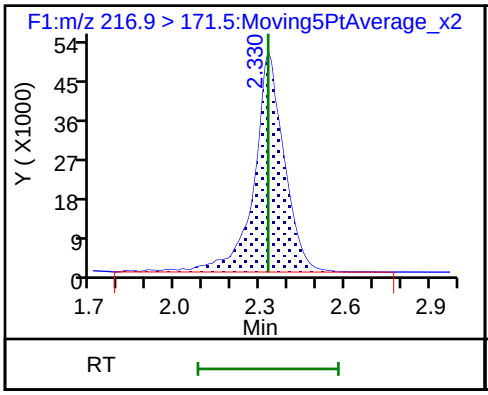
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10

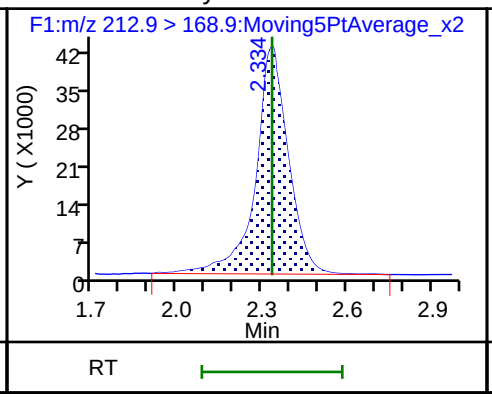
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

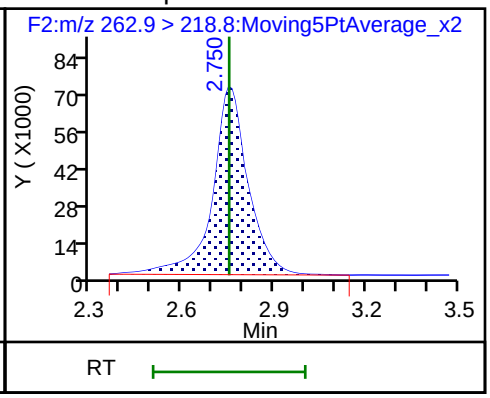
D 2 13C4 PFBA



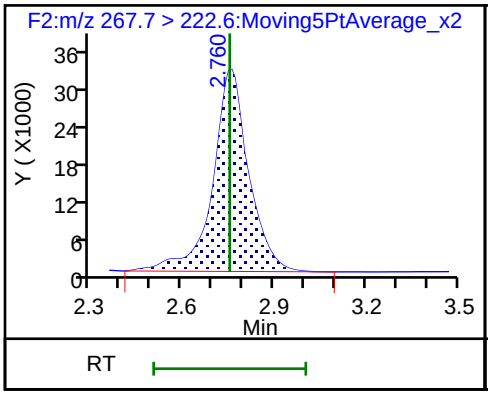
1 Perfluorobutyric acid



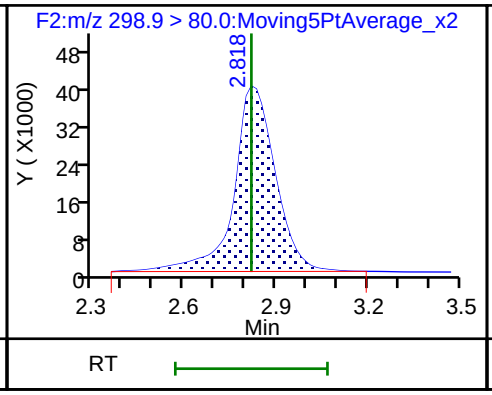
4 Perfluoropentanoic acid



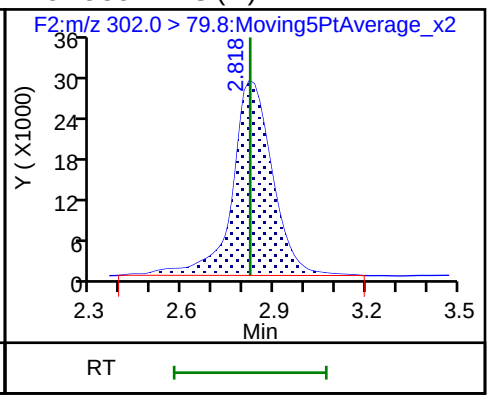
D 3 13C5-PFPeA



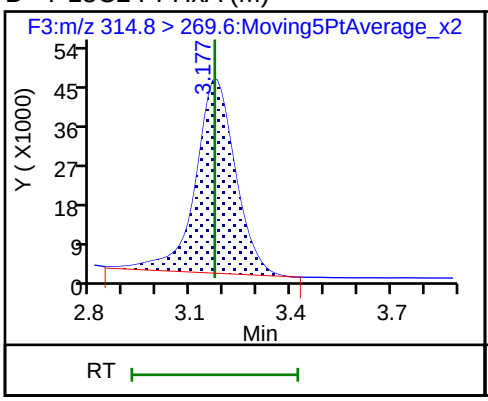
6 Perfluorobutanesulfonic acid



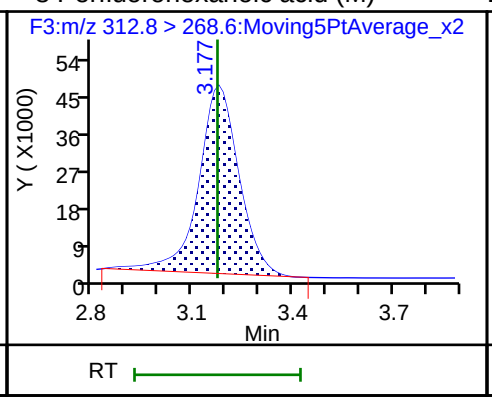
D 5 13C3-PFBS (M)



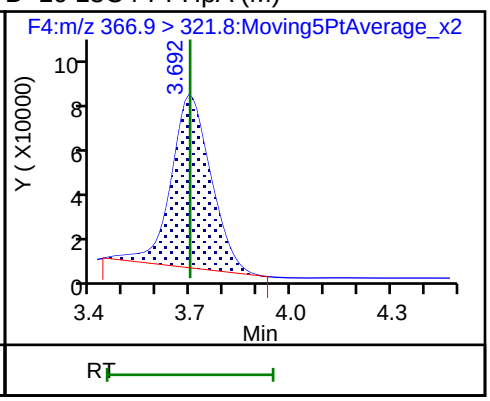
D 7 13C2 PFHxA (M)



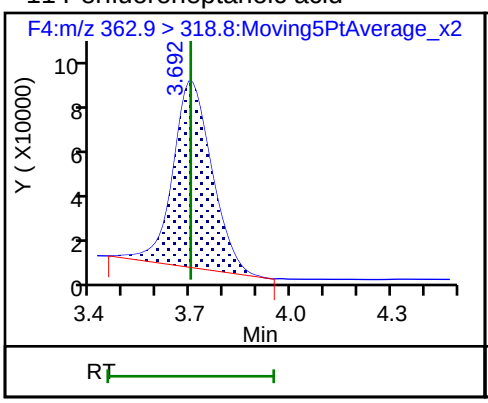
8 Perfluorohexanoic acid (M)



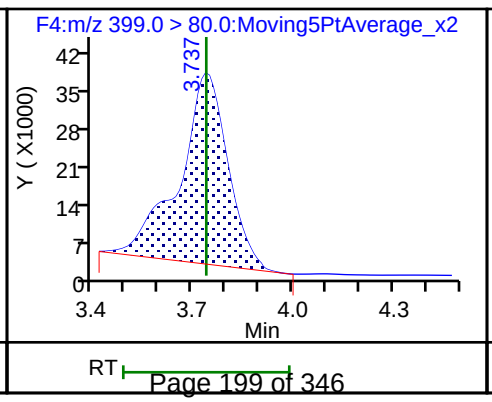
D 10 13C4-PFHpA (M)



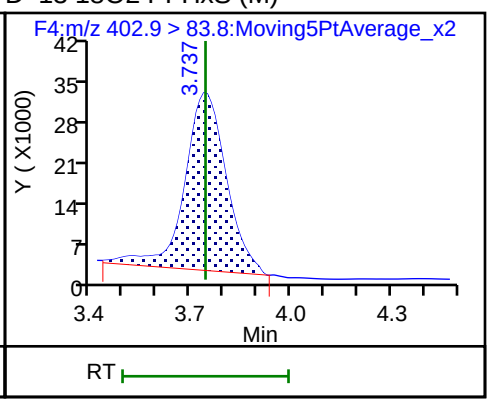
11 Perfluoroheptanoic acid



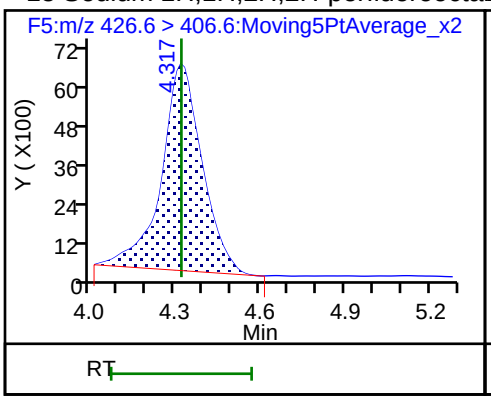
12 Perfluorohexanesulfonic acid



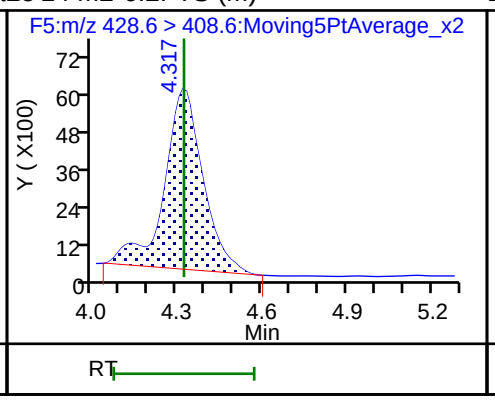
D 13 18O2 PFHxS (M)



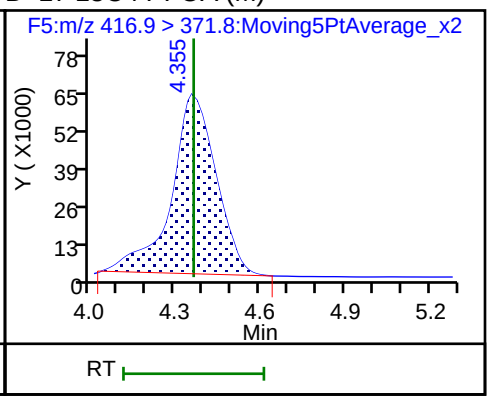
15 Sodium 1H,1H,2H,2H-perfluorooctane



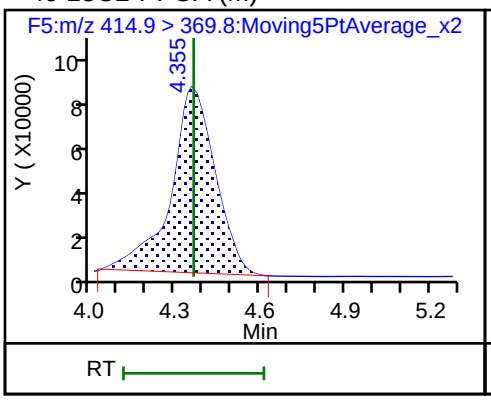
D 14 M2-6:2FTS (M)



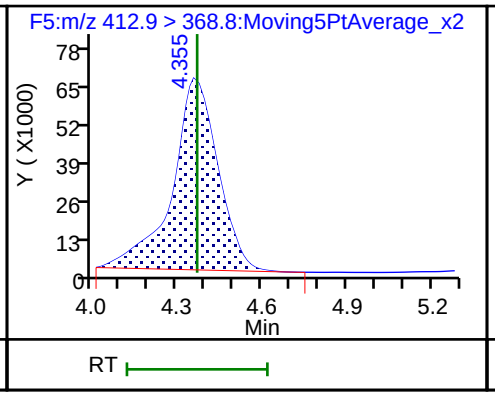
D 17 13C4 PFOA (M)



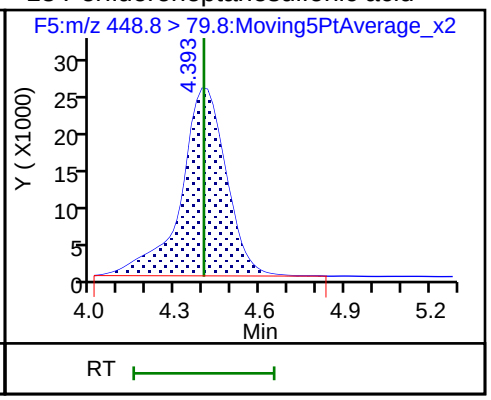
* 49 13C2-PFOA (M)



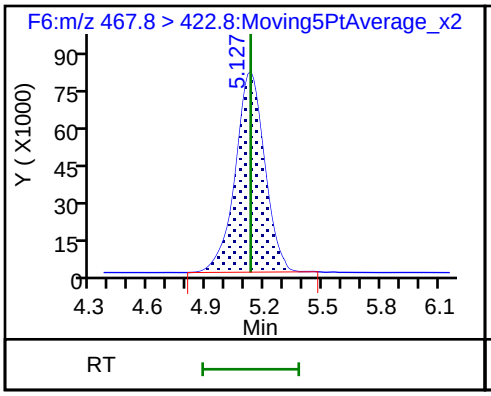
16 Perfluorooctanoic acid



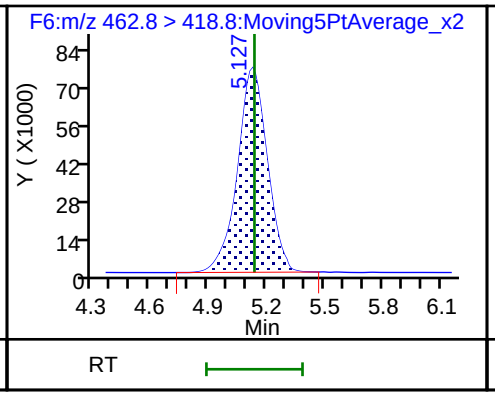
18 Perfluoroheptanesulfonic acid



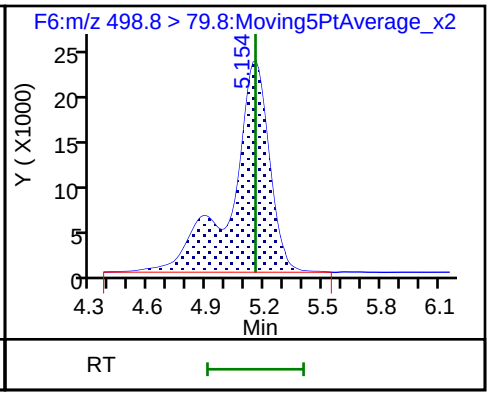
D 21 13C5 PFNA



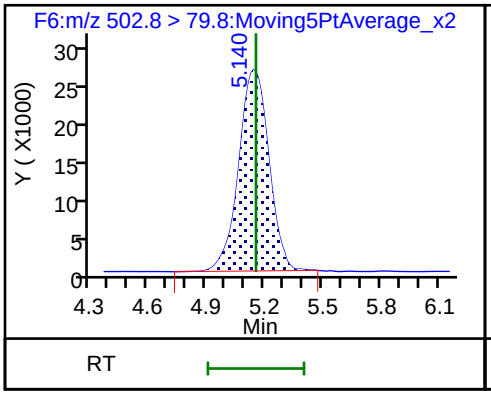
19 Perfluorononanoic acid



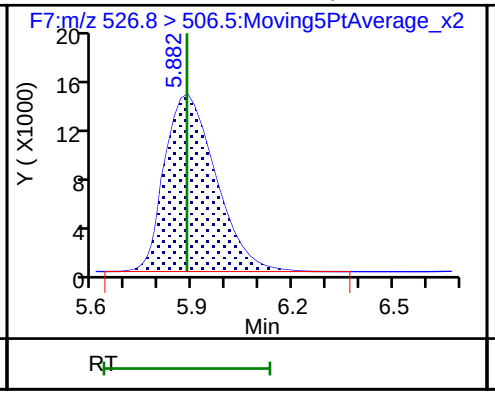
20 Perfluorooctane sulfonic acid



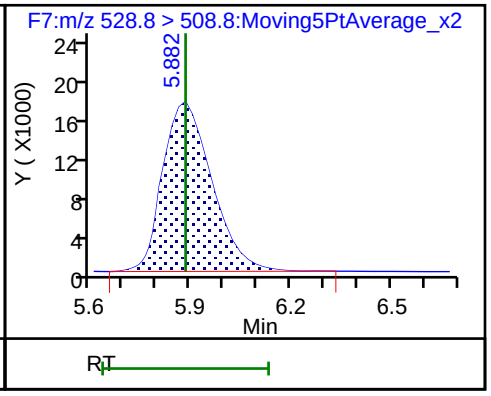
D 22 13C4 PFOS



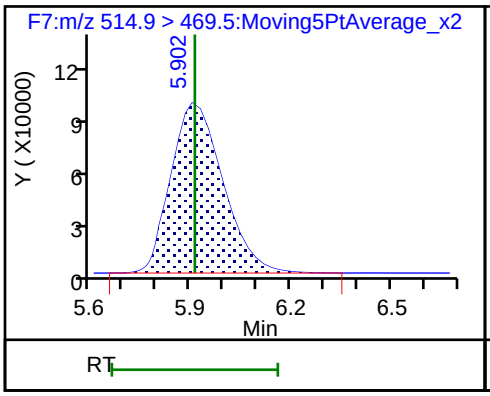
24 Sodium 1H,1H,2H,2H-perfluorodecane



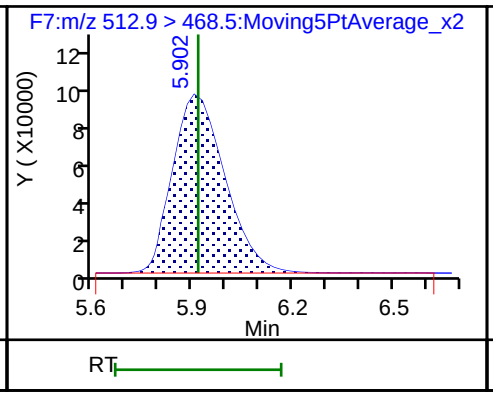
D 23 M2-8:2FTS



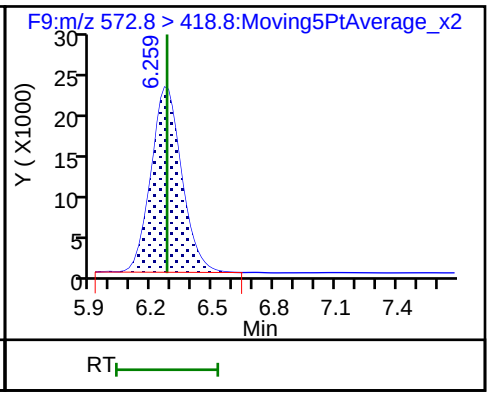
D 25 13C2 PFDA



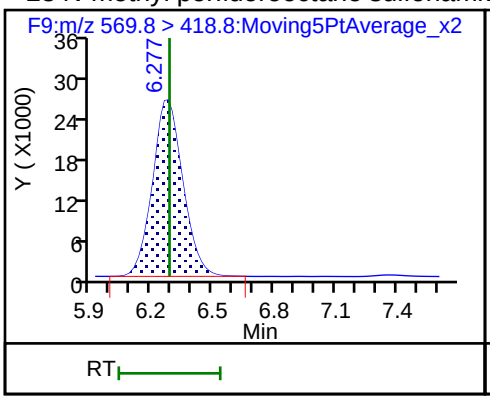
26 Perfluorodecanoic acid



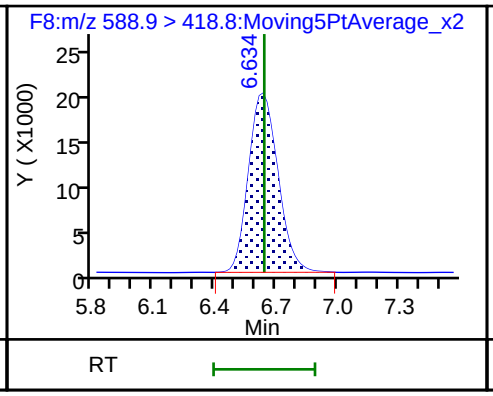
D 27 d3-NMeFOSAA



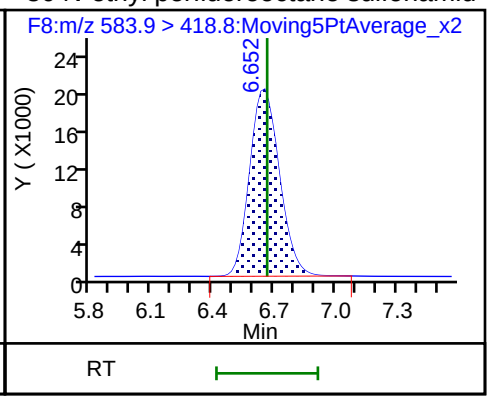
28 N-methyl perfluorooctane sulfonami



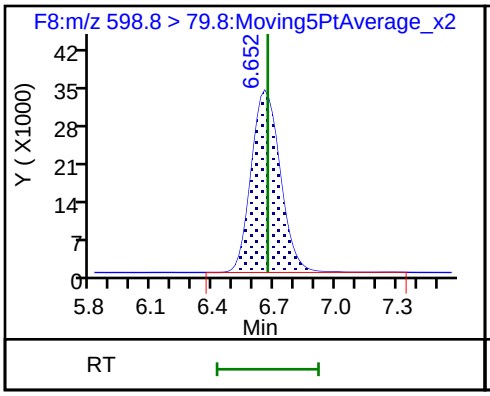
D 29 d5-NEtFOSAA



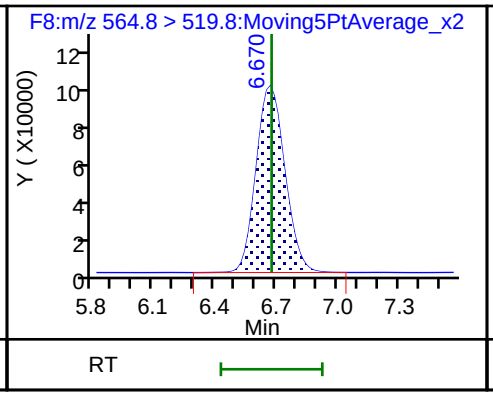
30 N-ethyl perfluorooctane sulfonamid



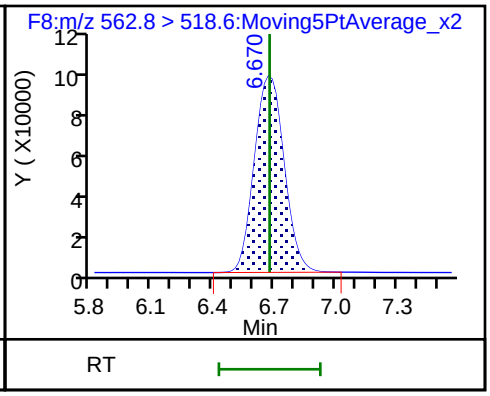
31 Perfluorodecane Sulfonic acid



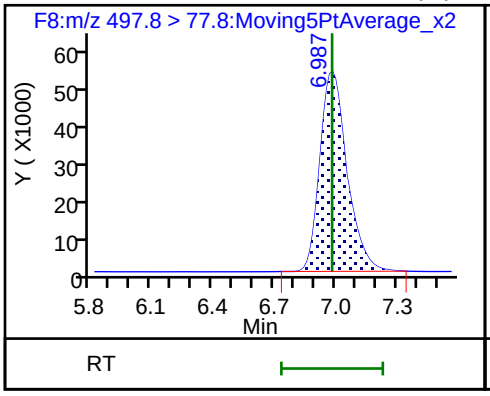
D 33 13C2 PFUnA



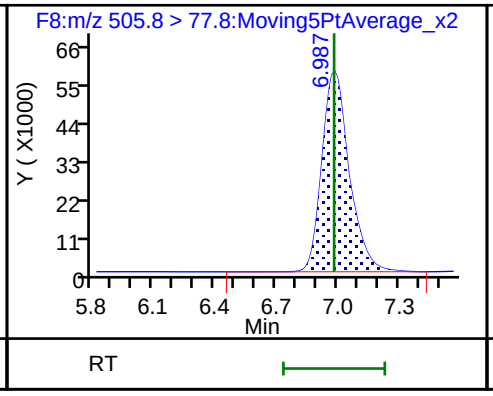
32 Perfluoroundecanoic acid



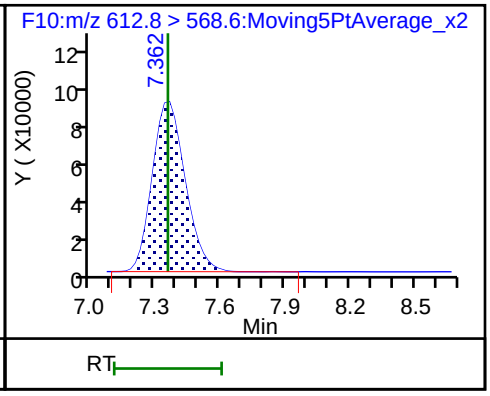
34 Perfluorooctane Sulfonamide (M)



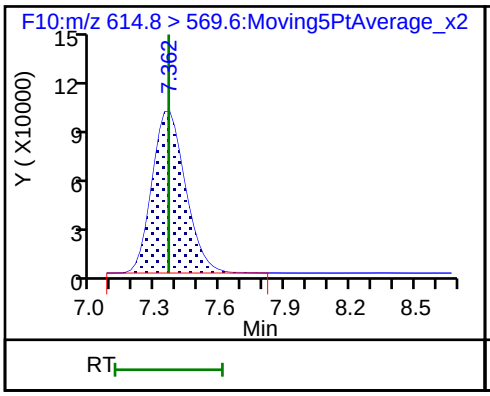
D 35 13C8 FOSA



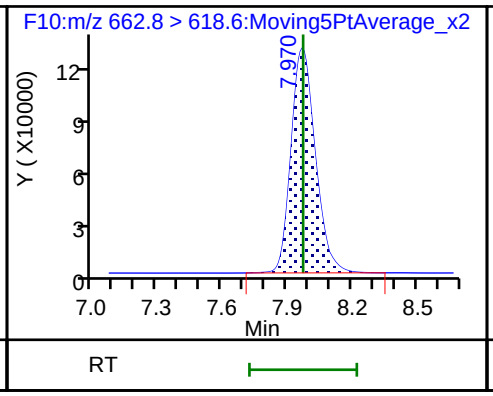
37 Perfluorododecanoic acid



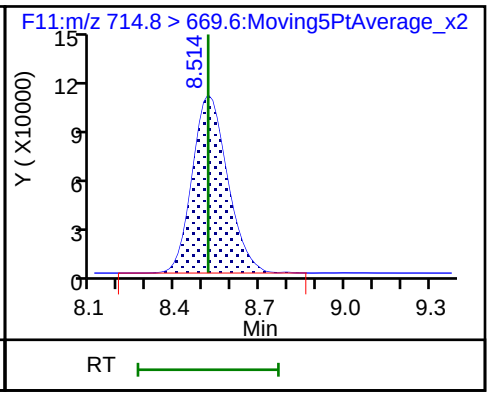
D 36 13C2 PFDoA



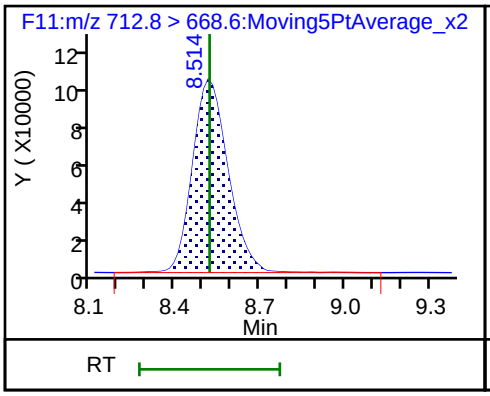
40 Perfluorotridecanoic acid



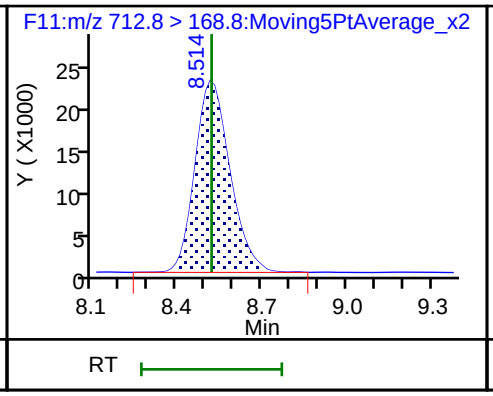
D 43 13C2-PFTeDA



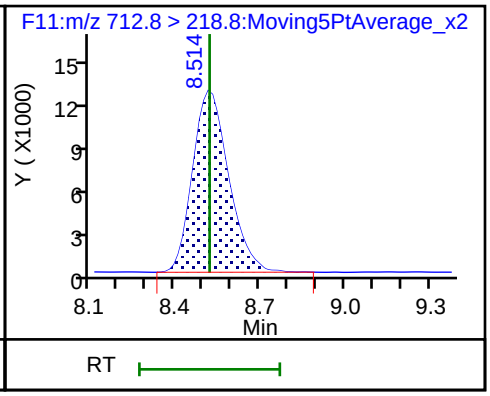
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



TestAmerica Burlington

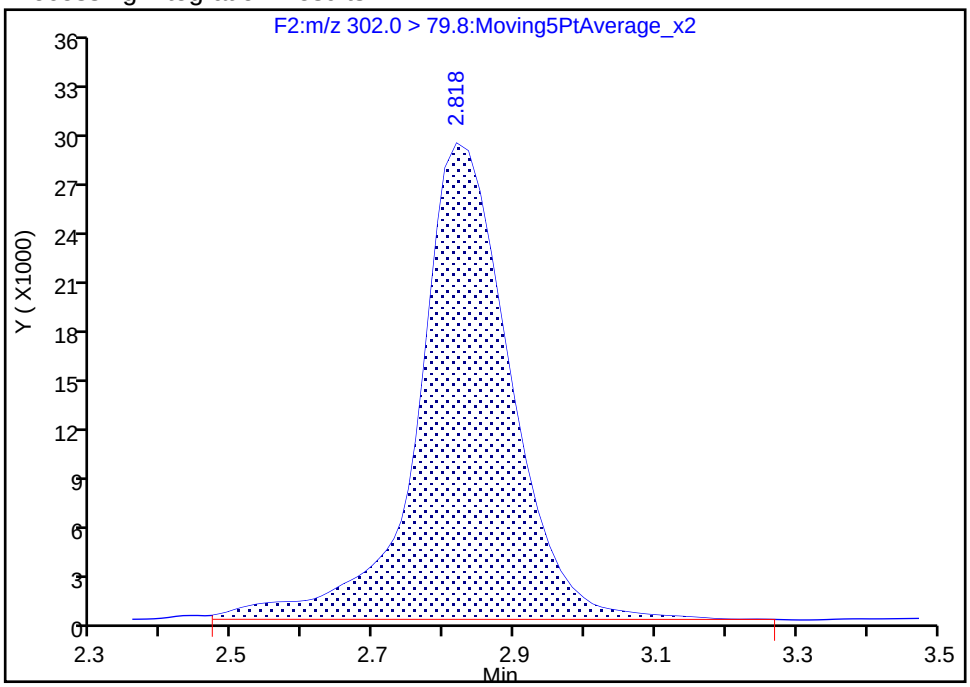
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 5 13C3-PFBS, CAS: STL02337

Signal: 1

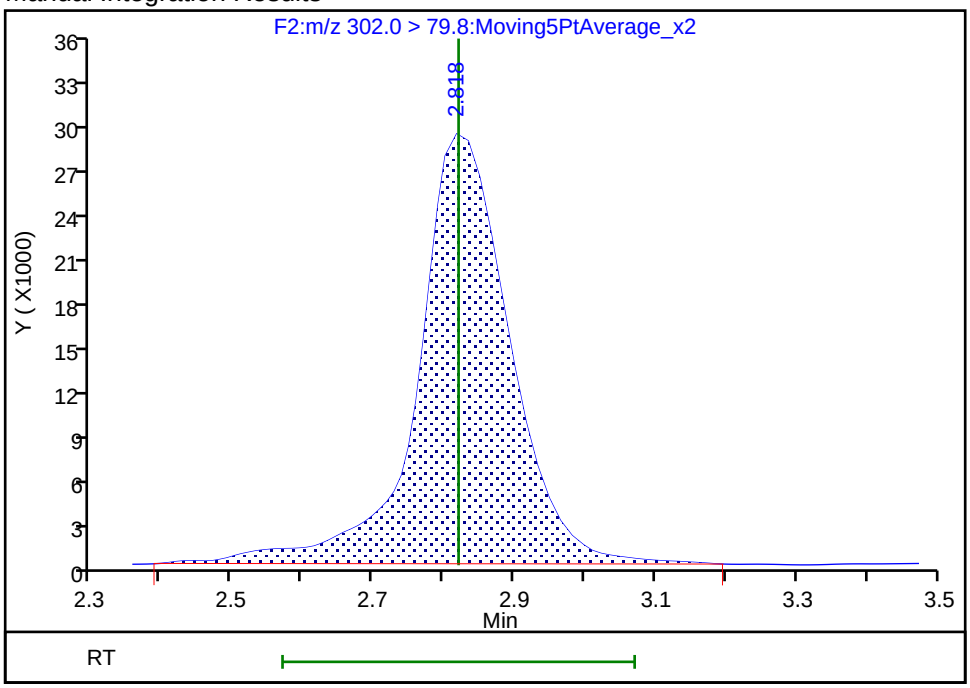
Processing Integration Results

RT: 2.82
Area: 264534
Amount: 41.260262
Amount Units: ng/ml



Manual Integration Results

RT: 2.82
Area: 263494
Amount: 40.479010
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:33:54
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

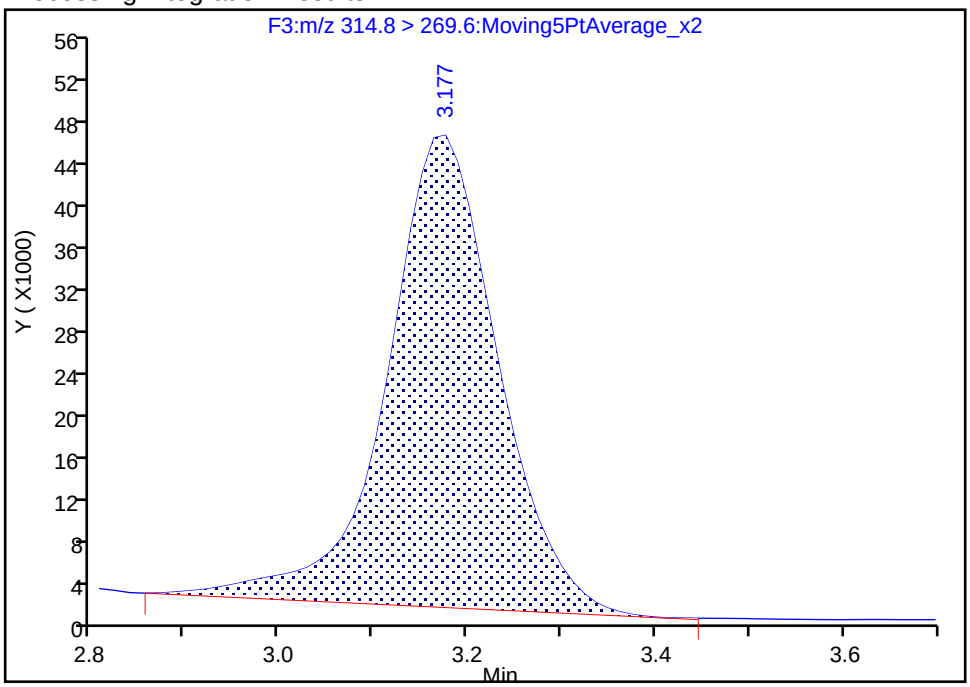
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

D 7 13C2 PFHxA, CAS: STL00993

Signal: 1

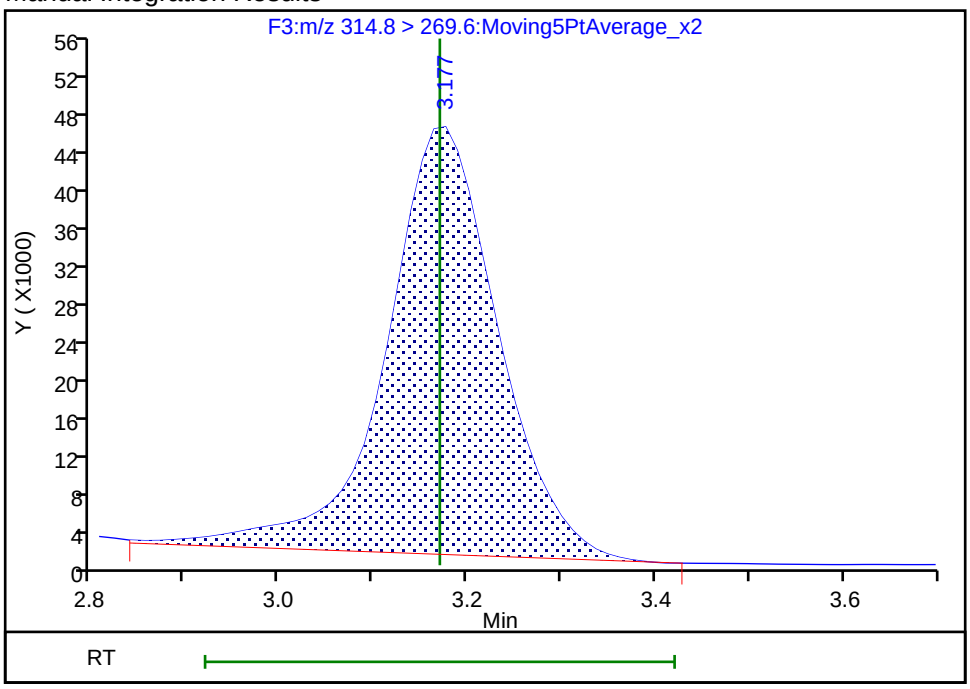
Processing Integration Results

RT: 3.18
Area: 371061
Amount: 41.663960
Amount Units: ng/ml



Manual Integration Results

RT: 3.18
Area: 374624
Amount: 41.140284
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:34:01
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

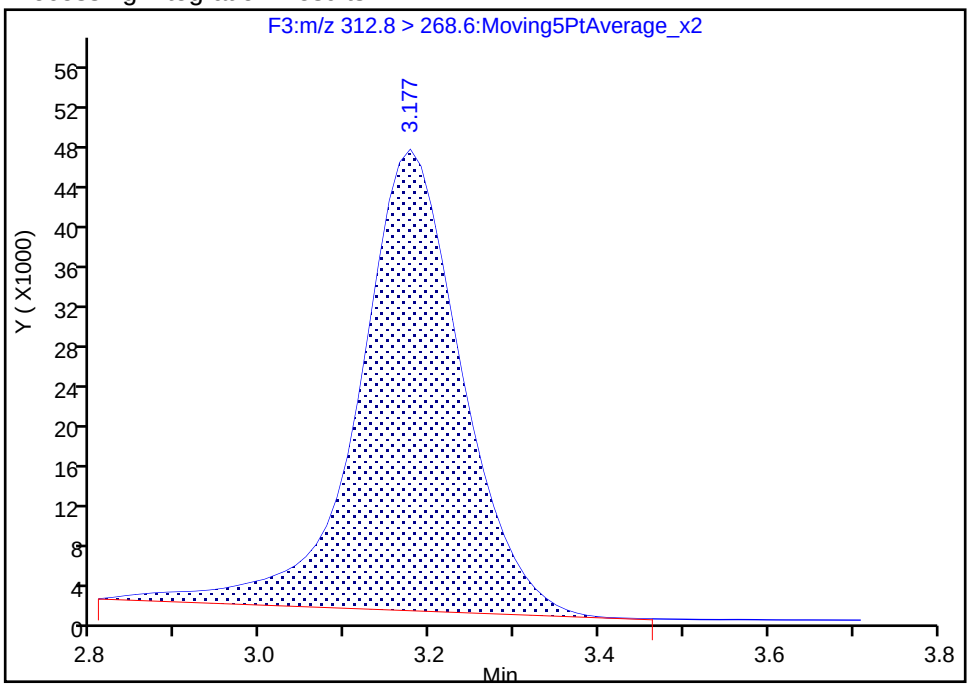
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

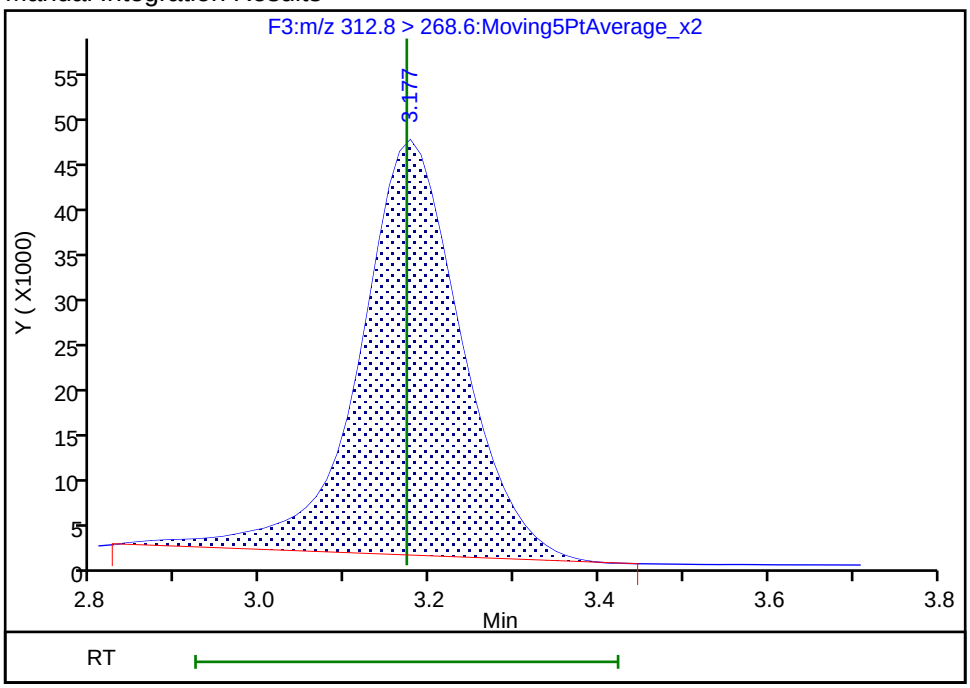
Processing Integration Results

RT: 3.18
Area: 393735
Amount: 51.107308
Amount Units: ng/ml



Manual Integration Results

RT: 3.18
Area: 387027
Amount: 51.565946
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:34:07
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

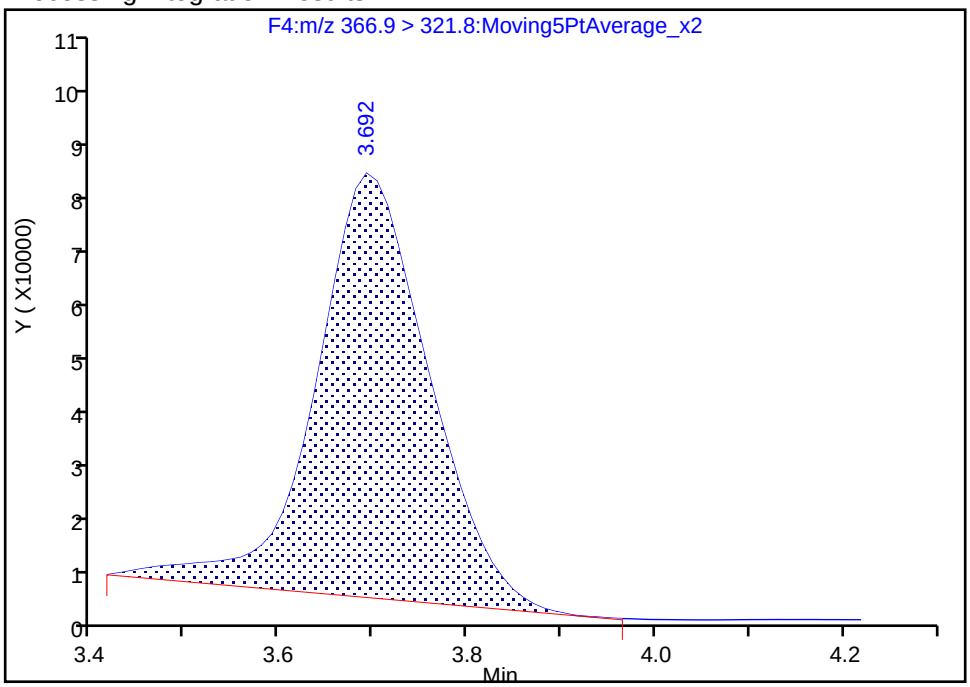
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

D 10 13C4-PFHpA, CAS: STL01892

Signal: 1

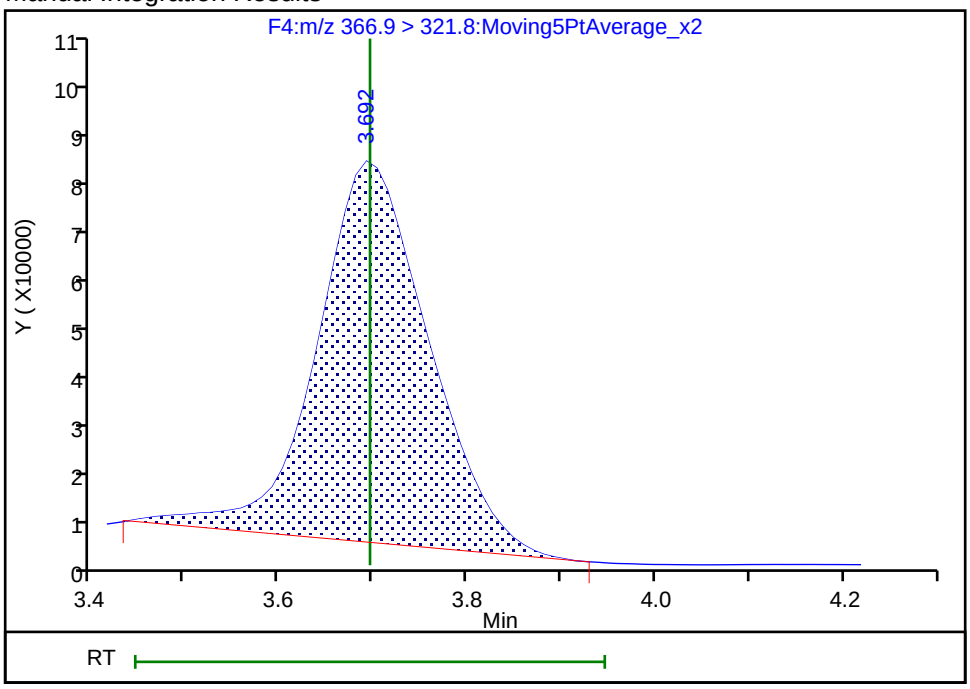
Processing Integration Results

RT: 3.69
Area: 668283
Amount: 44.034903
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 651704
Amount: 42.322705
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:34:15
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

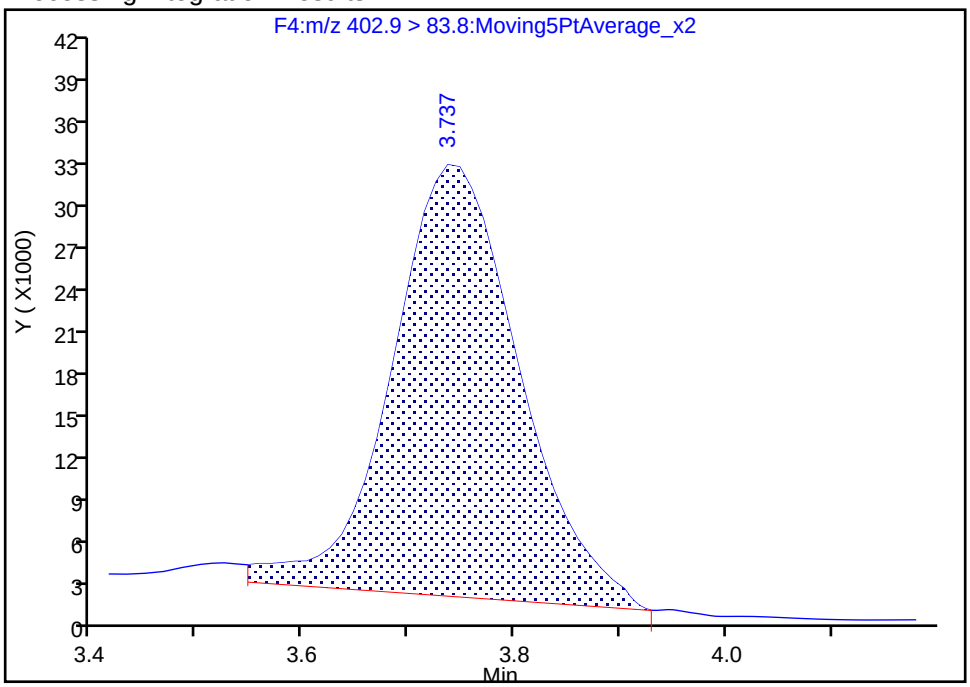
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

D 13 18O2 PFHxS, CAS: STL00994

Signal: 1

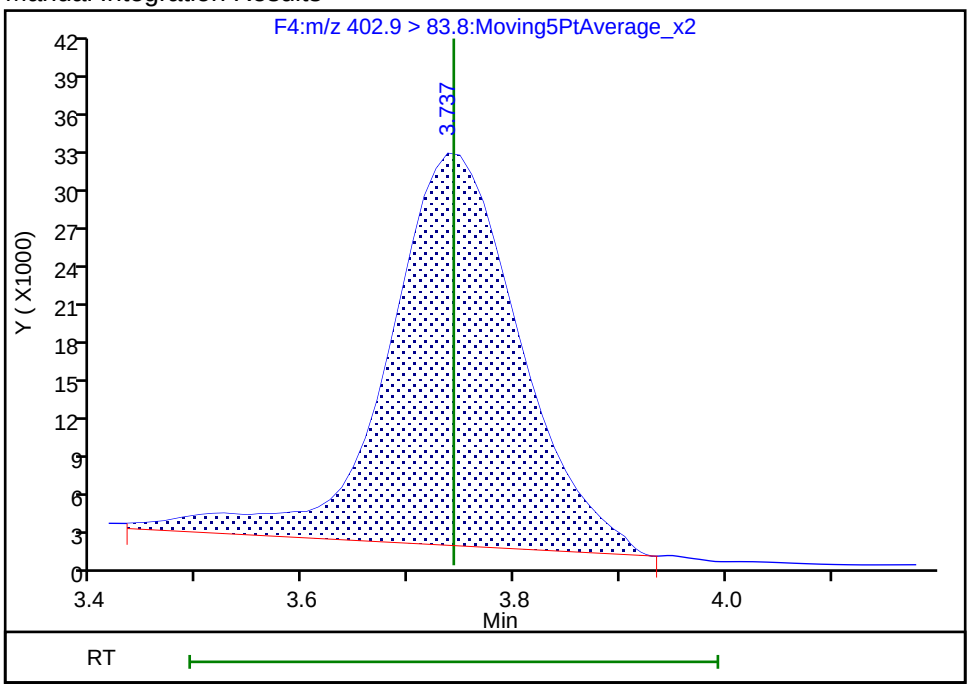
Processing Integration Results

RT: 3.74
Area: 260147
Amount: 36.970418
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 270410
Amount: 37.414890
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:34:22
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

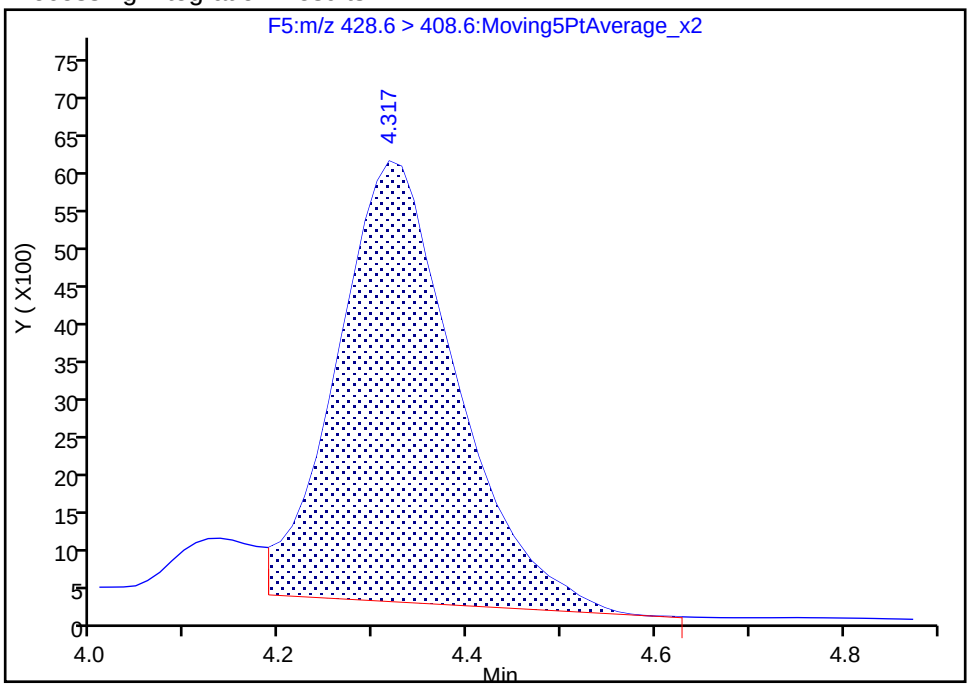
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

D 14 M2-6:2FTS, CAS: STL02279

Signal: 1

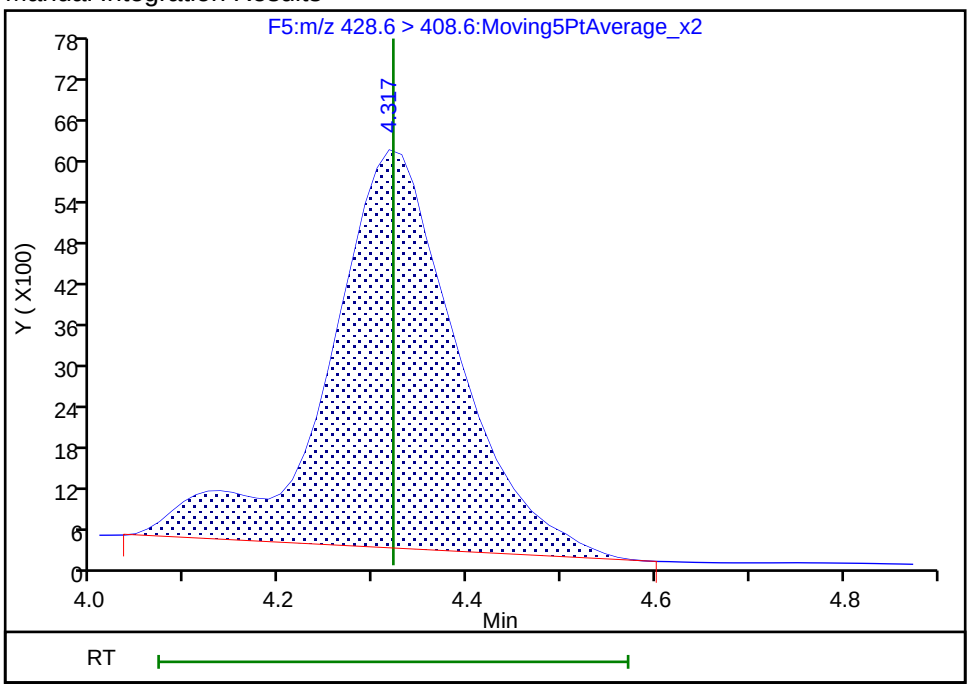
Processing Integration Results

RT: 4.32
Area: 51679
Amount: 38.953426
Amount Units: ng/ml



Manual Integration Results

RT: 4.32
Area: 55802
Amount: 39.268563
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:34:27
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

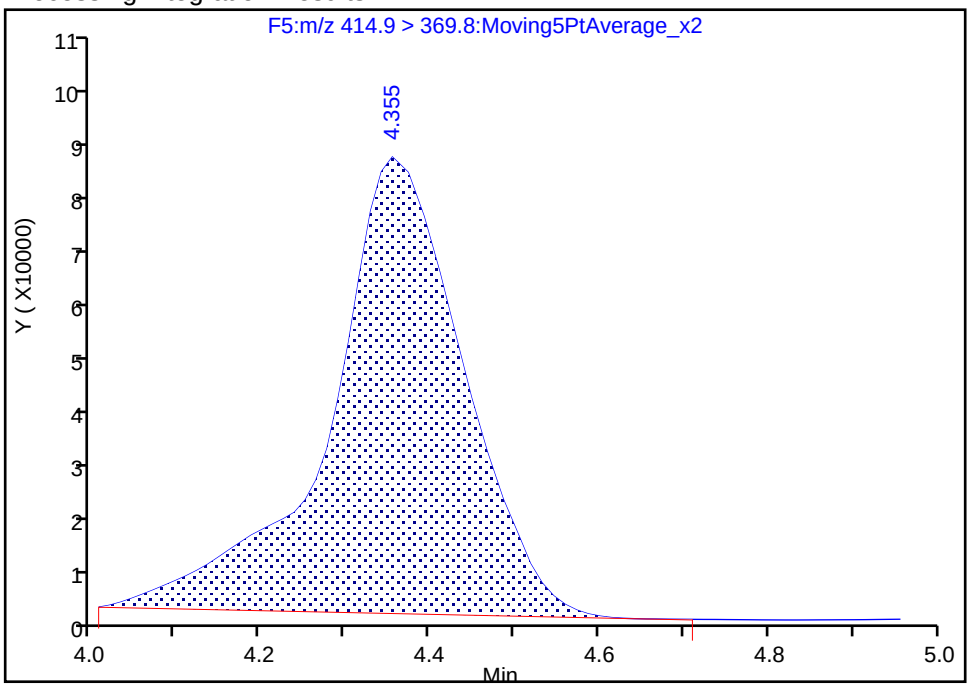
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

* 49 13C2-PFOA, CAS: STL00623

Signal: 1

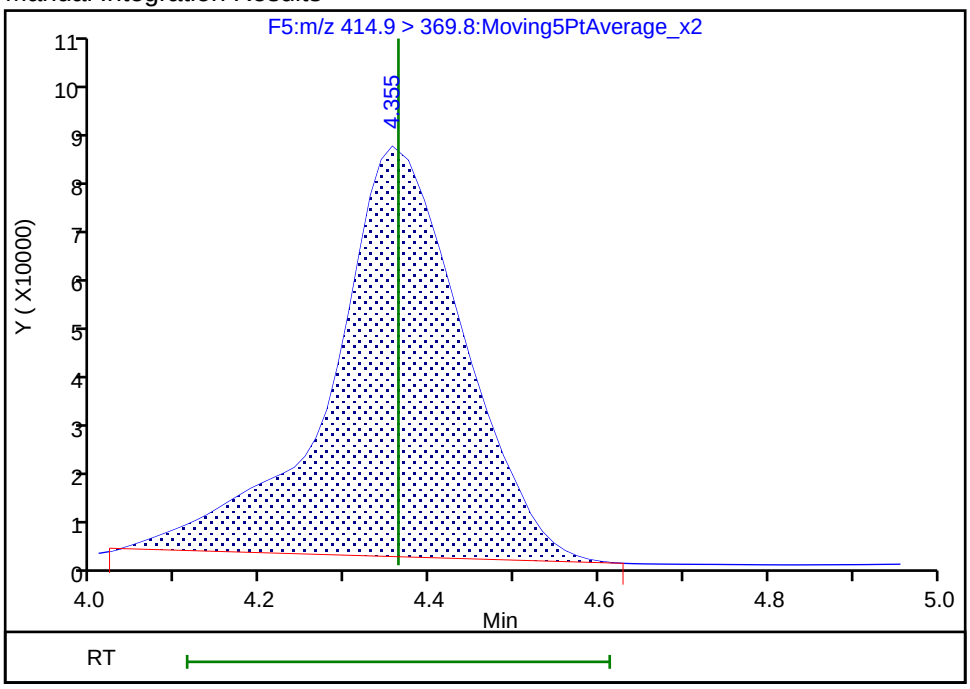
Processing Integration Results

RT: 4.36
Area: 886115
Amount: 50.000000
Amount Units: ng/ml



Manual Integration Results

RT: 4.36
Area: 867110
Amount: 50.000000
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:34:39
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

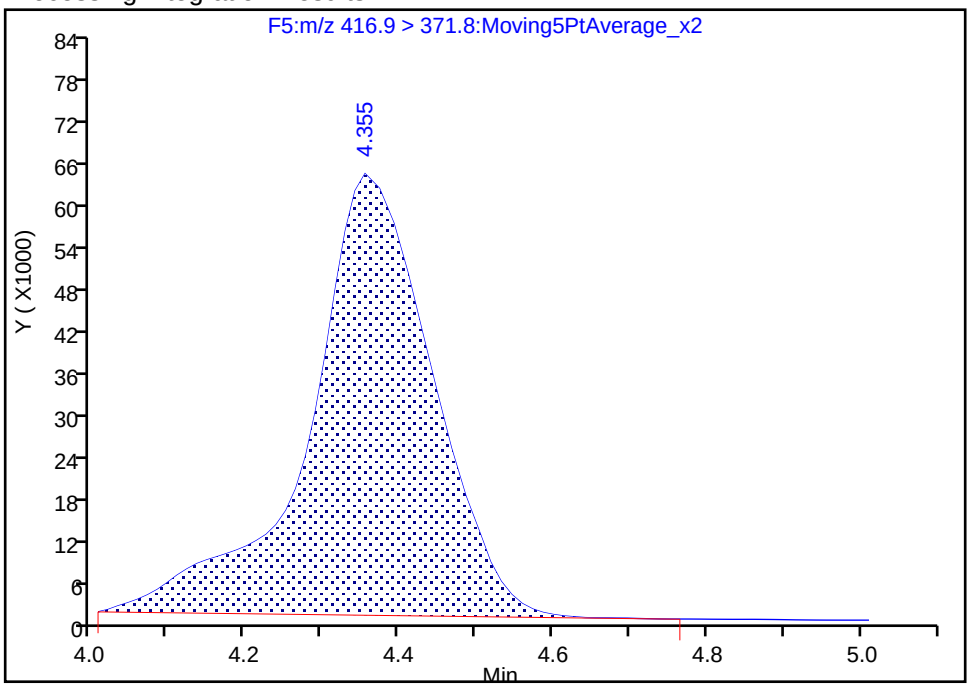
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

D 17 13C4 PFOA, CAS: STL00990

Signal: 1

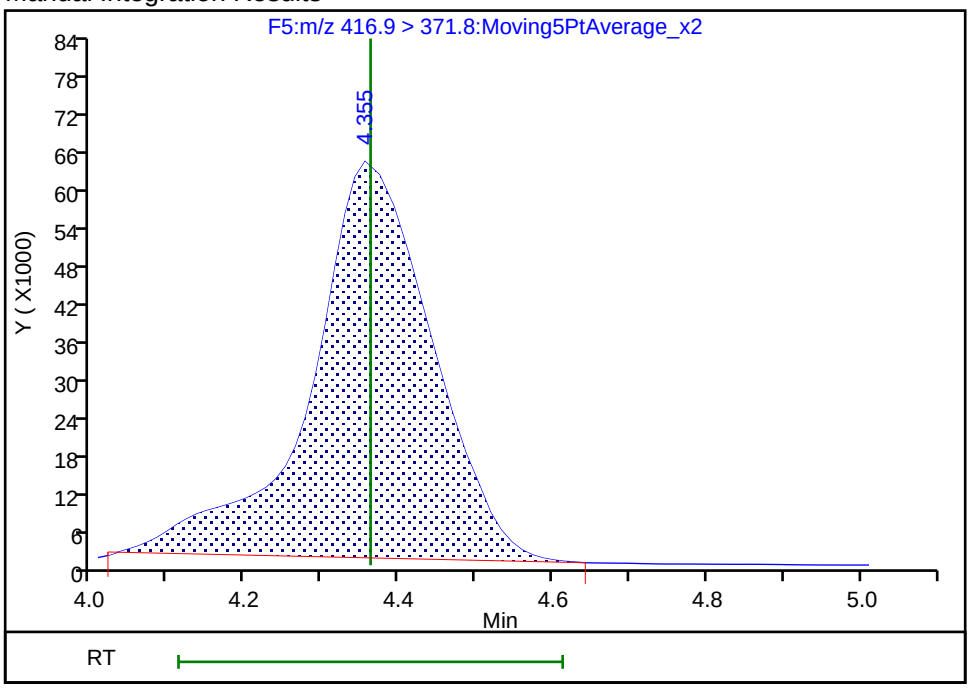
Processing Integration Results

RT: 4.36
Area: 707520
Amount: 47.238169
Amount Units: ng/ml



Manual Integration Results

RT: 4.36
Area: 689914
Amount: 45.883103
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:34:34
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

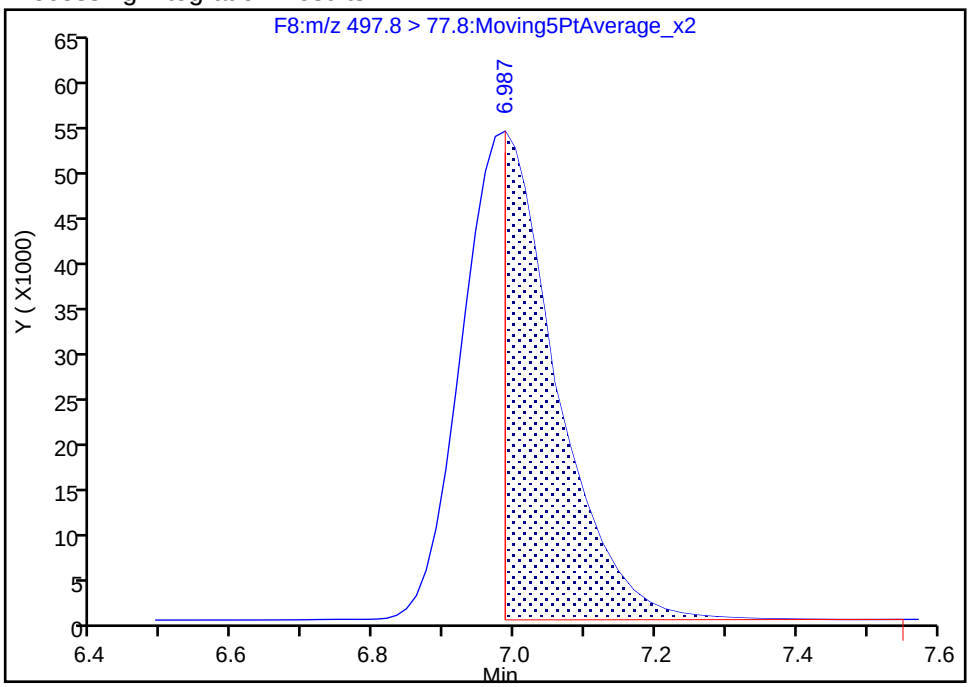
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A10.d
Injection Date: 11-May-2018 10:20:47 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

34 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

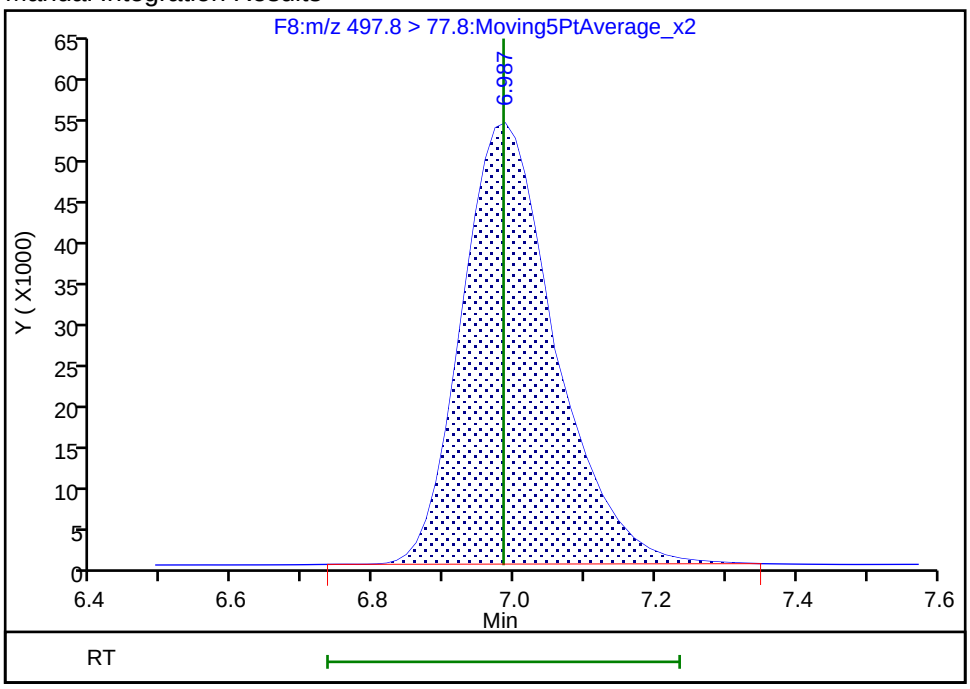
Processing Integration Results

RT: 6.99
Area: 272606
Amount: 31.730935
Amount Units: ng/ml



Manual Integration Results

RT: 6.99
Area: 495851
Amount: 50.319414
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:34:58
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 11-May-2018 10:37:01 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-011 IC 6
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 11:28:15 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: kirchnerb Date: 14-May-2018 11:28:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.326	2.328	-0.002	1.000	273135	62.3		125	499	
1 Perfluorobutyric acid										
212.9 > 168.9	2.326	2.334	-0.008	1.000	1010765	200.9		100	516	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.750	2.751	-0.001	1.000	1597351	191.3		95.6	2152	
D 3 13C5-PFPeA										
267.7 > 222.6	2.750	2.753	-0.003	1.000	192519	57.6		115	837	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.818	2.818	0.0	1.000	1030286	174.8		98.9	924	
D 5 13C3-PFBS										M
302.0 > 79.8	2.818	2.820	-0.002	1.000	189018	54.2		117	338	M
D 7 13C2 PFHxA										
314.8 > 269.6	3.164	3.170	-0.006	1.000	290114	59.5		119	1178	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.164	3.172	-0.008	1.000	1160620	199.1		99.5	4206	
D 10 13C4-PFHpA										
366.9 > 321.8	3.692	3.696	-0.004	1.000	487037	59.0		118	690	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.692	3.698	-0.006	1.000	1964181	194.3		97.1	1722	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.737	3.739	-0.002	1.000	1028471	171.2		94.1	853	
D 13 18O2 PFHxS										
402.9 > 83.8	3.737	3.742	-0.005	1.000	217940	56.3		119	1214	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.304	4.319	-0.015	0.997	169660	159.8		84.3	918	
D 14 M2-6:2FTS										
428.6 > 408.6	4.316	4.321	-0.005	1.000	48984	64.3		135	343	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 49 13C2-PFOA										
414.9 > 369.8	4.342	4.363	-0.021		464541	50.0			1554	
D 17 13C4 PFOA										
416.9 > 371.8	4.342	4.363	-0.021	1.000	454953	56.5		113	1341	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.355	4.368	-0.013	1.003	1748277	185.8		92.9	1681	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.393	4.399	-0.006	0.852	641622	188.6		99.0	1287	
D 21 13C5 PFNA										
467.8 > 422.8	5.113	5.127	-0.014	1.000	551180	57.6		115	757	
19 Perfluorononanoic acid										
462.8 > 418.8	5.113	5.136	-0.023	1.000	1937336	188.1		94.0	10730	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.140	5.152	-0.012	0.997	752332	191.2		103	692	M
D 22 13C4 PFOS										
502.8 > 79.8	5.154	5.154	0.0	1.000	169199	48.7		102	518	
D 23 M2-8:2FTS										
528.8 > 508.8	5.862	5.882	-0.020	1.000	138908	68.0		142	4552	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.862	5.880	-0.018	1.000	367579	165.1		86.2	3353	
D 25 13C2 PFDA										
514.9 > 469.5	5.902	5.910	-0.008	1.000	656402	56.6		113	3257	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.902	5.914	-0.012	1.000	2465510	194.0		97.0	2513	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.259	6.271	-0.012	1.000	148853	60.4		121	587	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.259	6.283	-0.024	1.000	673562	198.4		99.2	1623	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.616	6.640	-0.024	1.000	118582	55.4		111	659	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.634	6.664	-0.030	1.003	460320	190.6		95.3	1876	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.652	6.667	-0.015	1.291	697974	186.1		96.5	6806	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.652	6.676	-0.024	1.000	2086920	192.2		96.1	4210	
D 33 13C2 PFUnA										
564.8 > 519.8	6.652	6.676	-0.024	1.000	561624	51.6		103	2020	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	343524	55.0		110	1440	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.973	6.984	-0.011	1.000	1182526	187.8		93.9	2644	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.339	7.354	-0.015	1.000	2375076	197.2		98.6	2723	
D 36 13C2 PFDoA										
614.8 > 569.6	7.339	7.358	-0.019	1.000	681596	59.6		119	1540	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.953	7.974	-0.021	1.084	2292429	185.3		92.6	3357	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.499	8.514	-0.015	1.000	622273	58.9		118	1390	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.499	8.519	-0.020	1.000	2207932	193.8		96.9	2173	
712.8 > 168.8	8.514	8.519	-0.005	1.002	491659		4.49(0.00-0.00)	96.9	980	
712.8 > 218.8	8.514	8.519	-0.005	1.002	277963		7.94(0.00-0.00)	96.9	1666	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21-L6_00002 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 11:28:15 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Injection Date: 11-May-2018 10:37:01 Instrument ID: LC410

Lims ID: IC

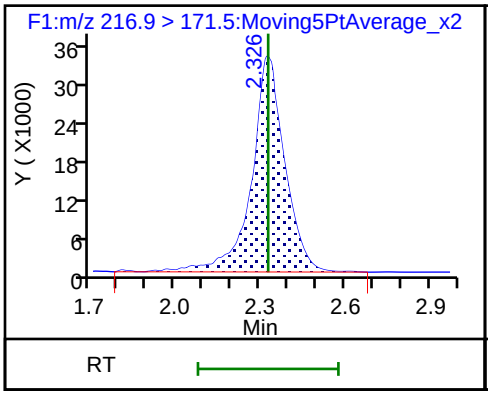
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 11

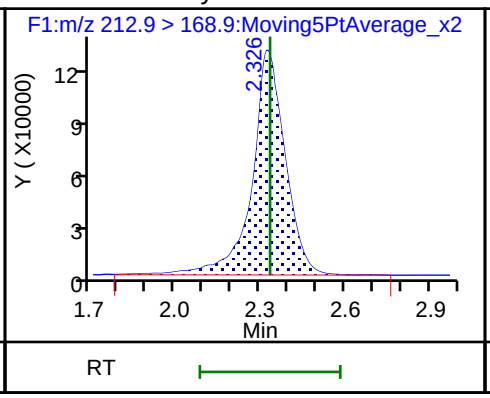
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

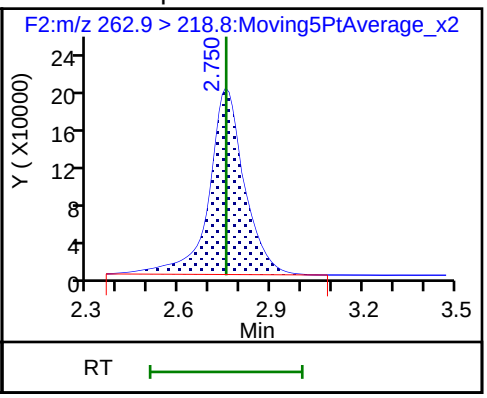
D 2 13C4 PFBA



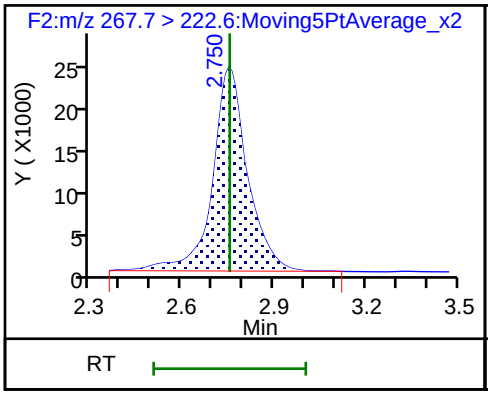
1 Perfluorobutyric acid



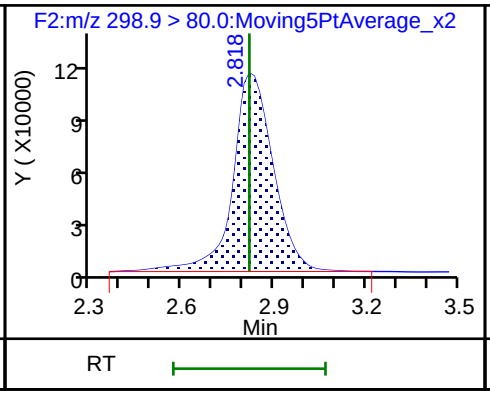
4 Perfluoropentanoic acid



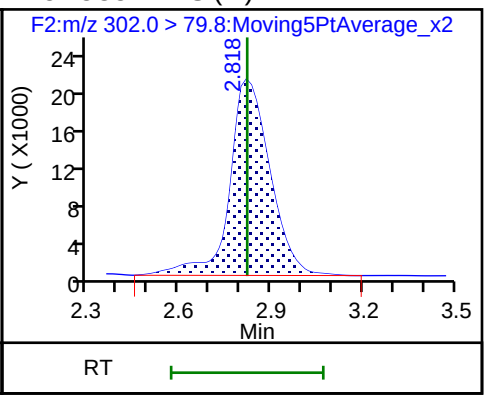
D 3 13C5-PFPeA



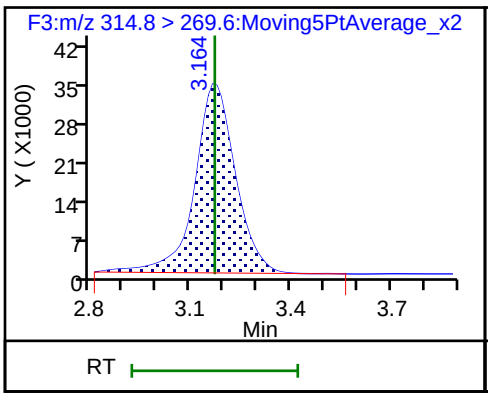
6 Perfluorobutanesulfonic acid



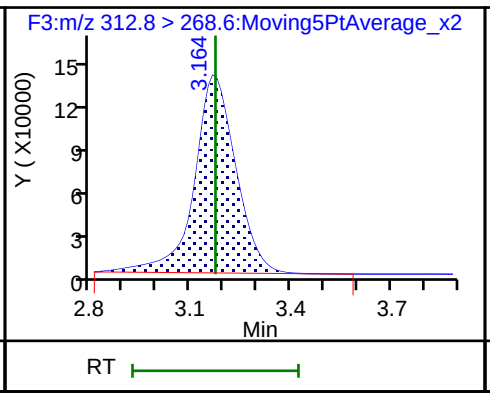
D 5 13C3-PFBS (M)



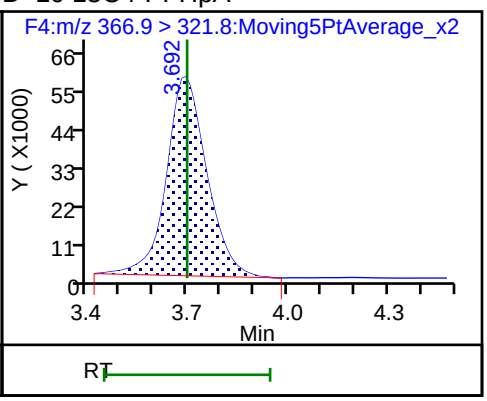
D 7 13C2 PFHxA



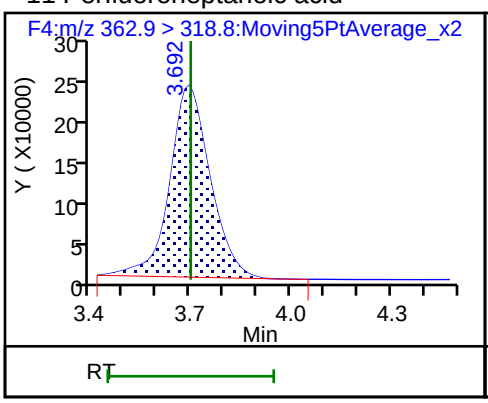
8 Perfluorohexanoic acid



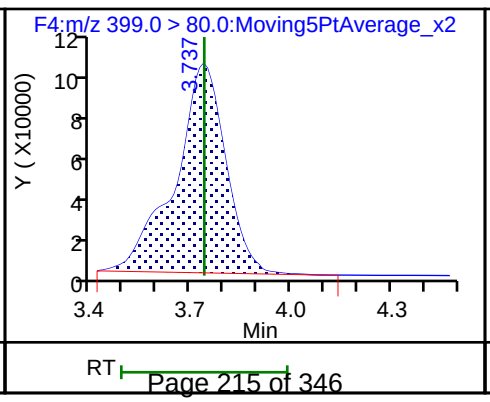
D 10 13C4-PFHpA



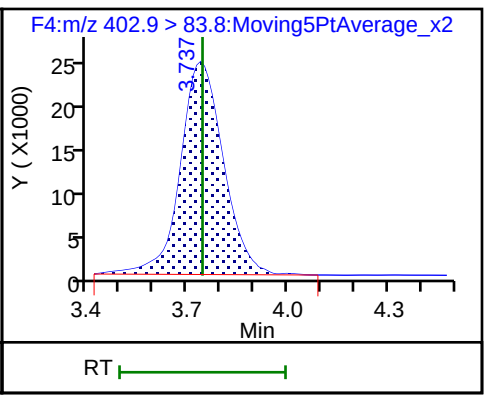
11 Perfluoroheptanoic acid



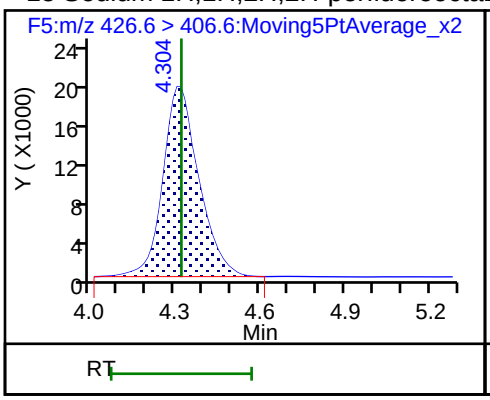
12 Perfluorohexanesulfonic acid



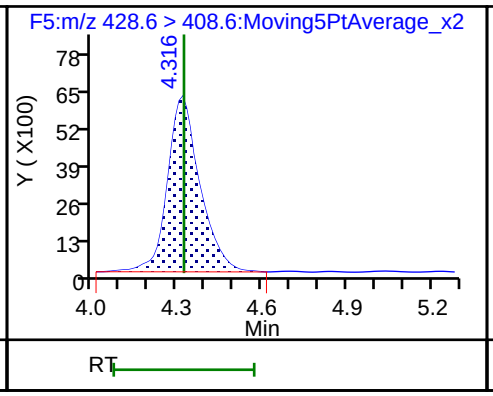
D 13 18O2 PFHxS



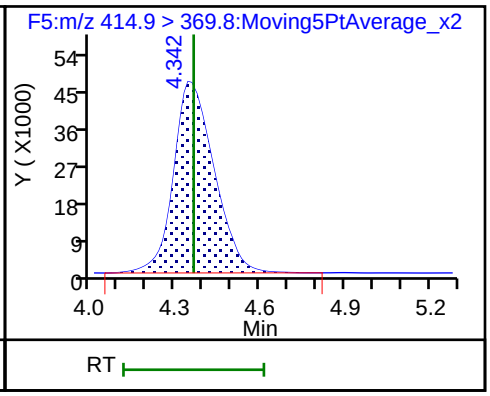
15 Sodium 1H,1H,2H,2H-perfluorooctane



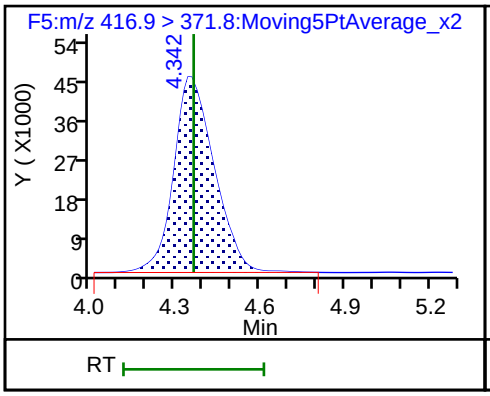
D 14 M2-6:2FTS



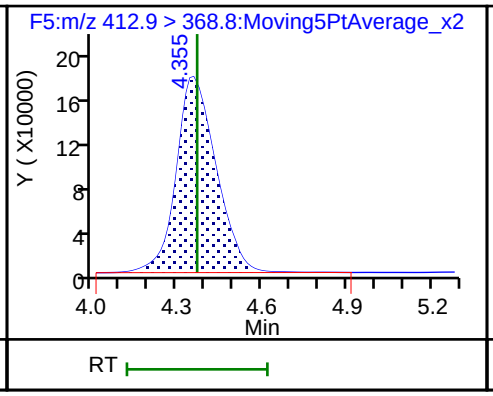
* 49 13C2-PFOA



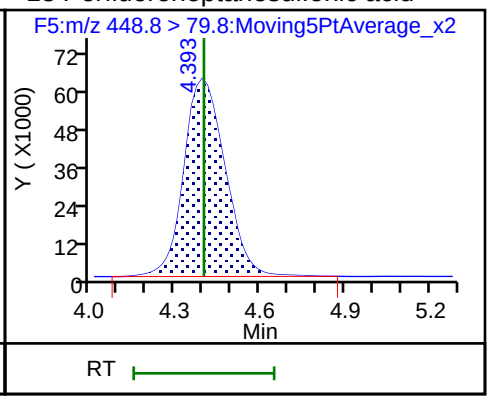
D 17 13C4 PFOA



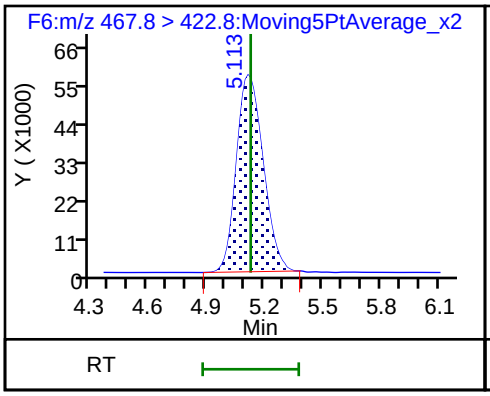
16 Perfluorooctanoic acid



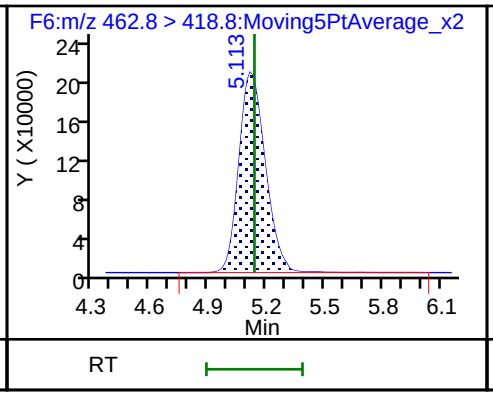
18 Perfluoroheptanesulfonic acid



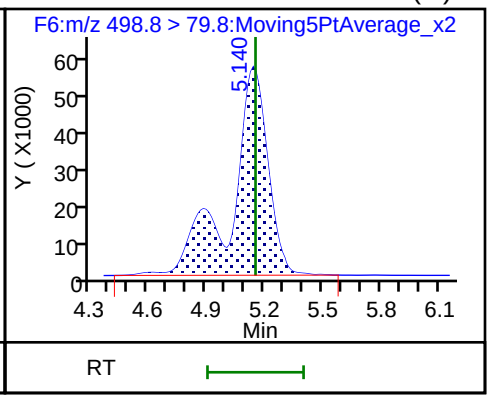
D 21 13C5 PFNA



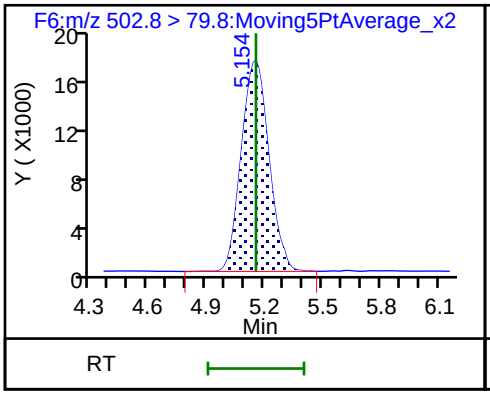
19 Perfluorononanoic acid



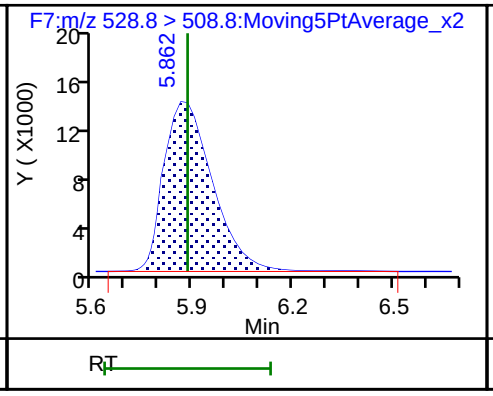
20 Perfluorooctane sulfonic acid (M)



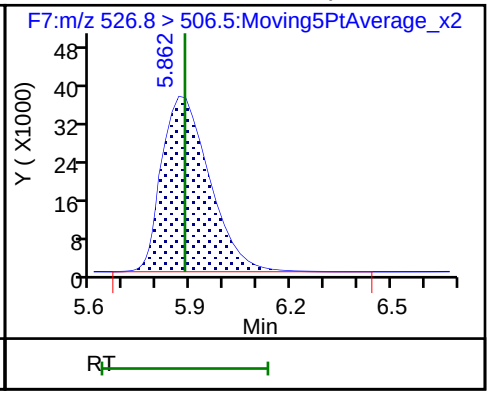
D 22 13C4 PFOS



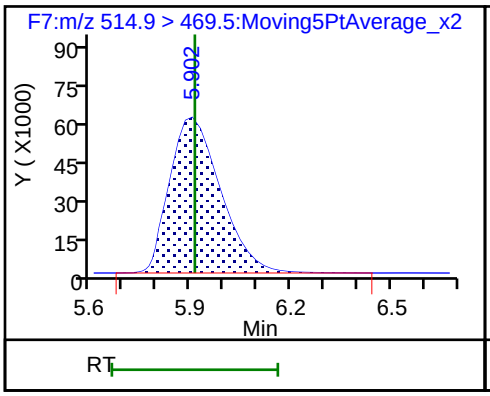
D 23 M2-8:2FTS



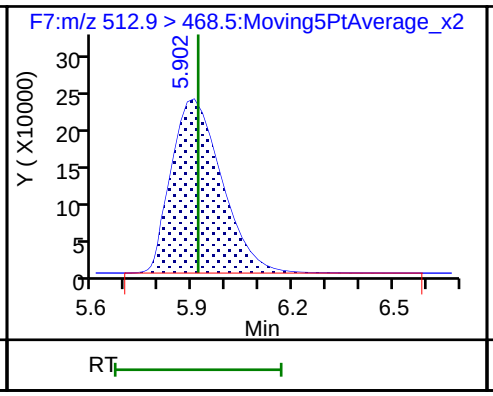
24 Sodium 1H,1H,2H,2H-perfluorodecane



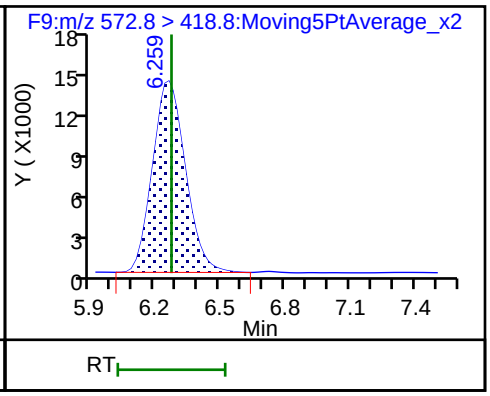
D 25 13C2 PFDA



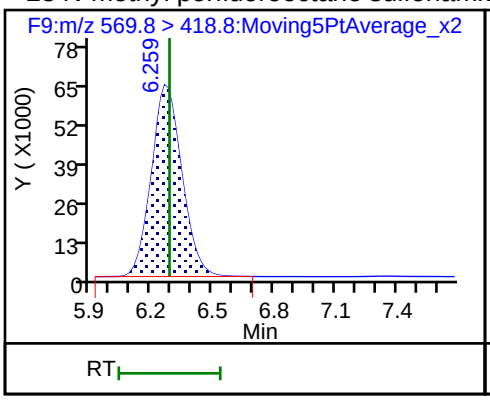
26 Perfluorodecanoic acid



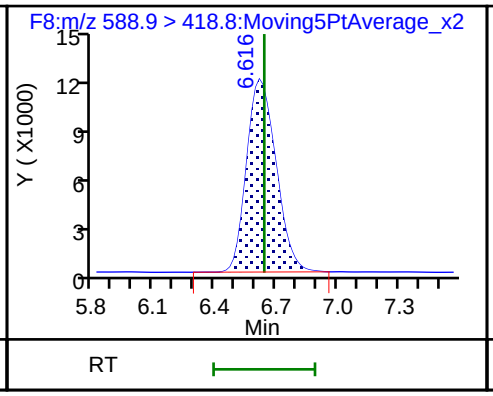
D 27 d3-NMeFOSAA



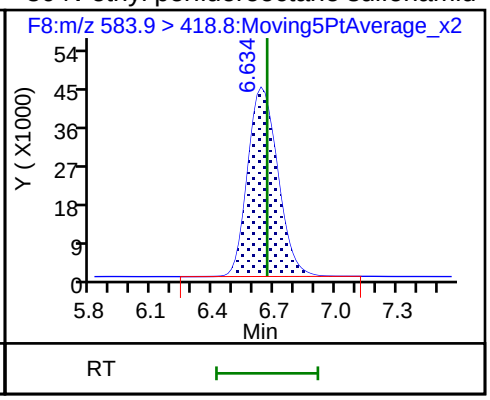
28 N-methyl perfluorooctane sulfonami



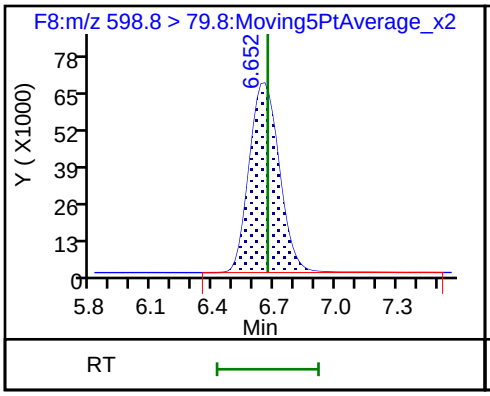
D 29 d5-NEtFOSAA



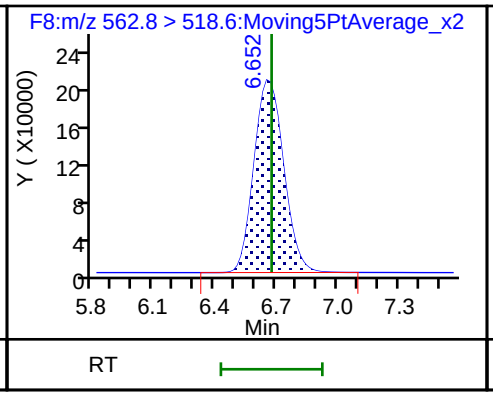
30 N-ethyl perfluorooctane sulfonamid



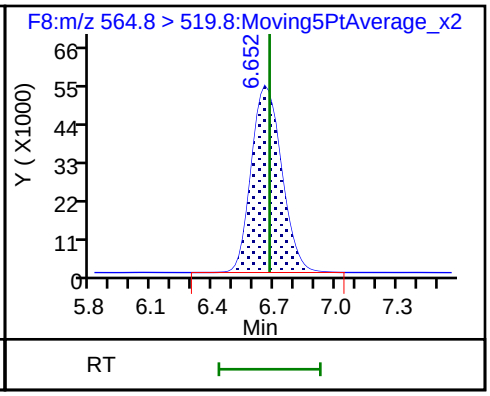
31 Perfluorodecane Sulfonic acid



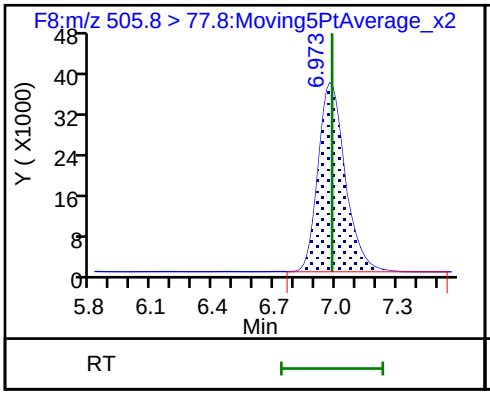
32 Perfluoroundecanoic acid



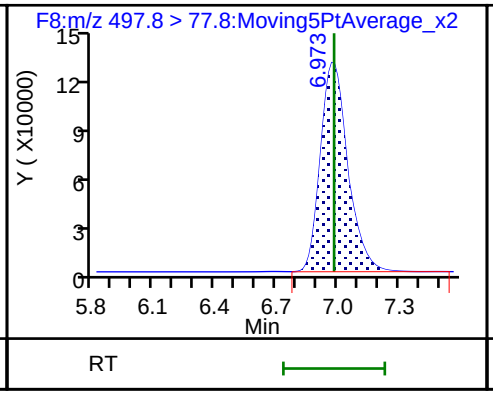
D 33 13C2 PFUnA



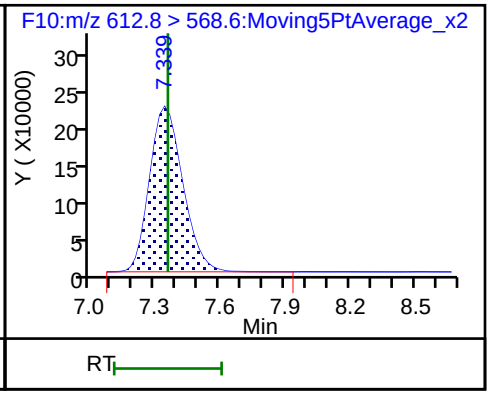
D 35 13C8 FOSA



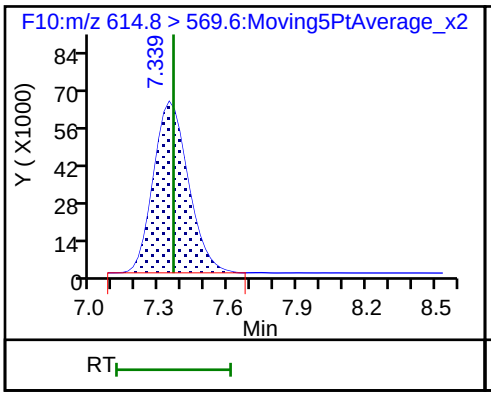
34 Perfluorooctane Sulfonamide



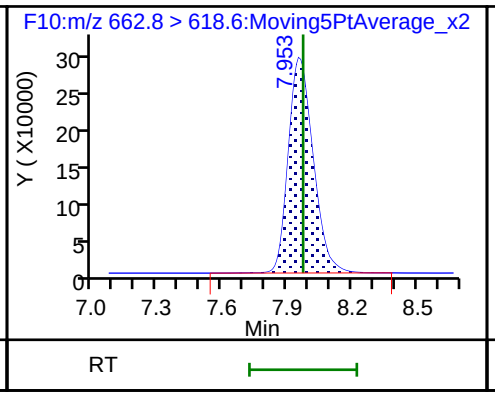
37 Perfluorododecanoic acid



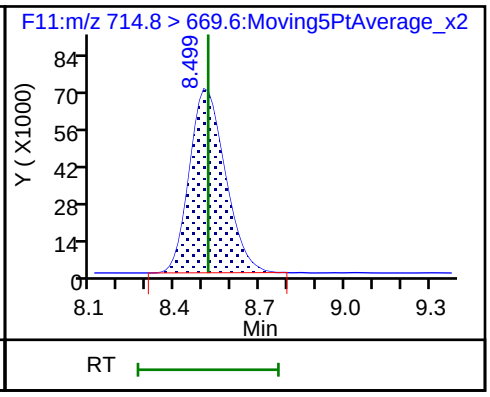
D 36 13C2 PFDoA



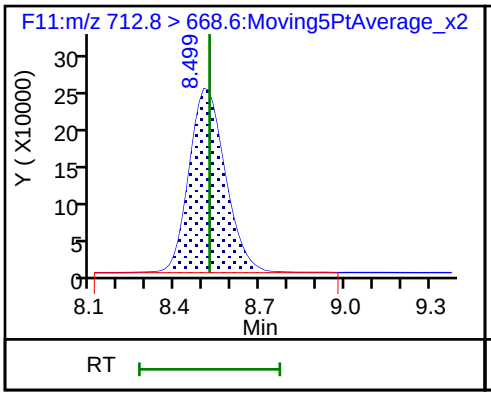
40 Perfluorotridecanoic acid



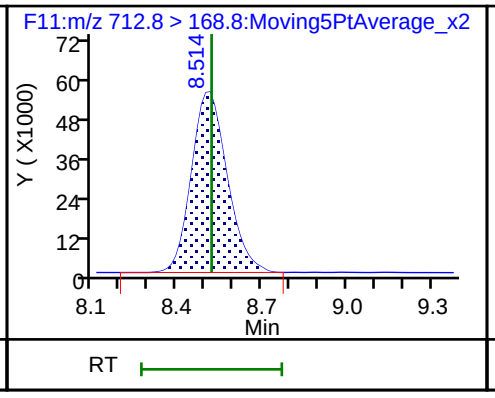
D 43 13C2-PFTeDA



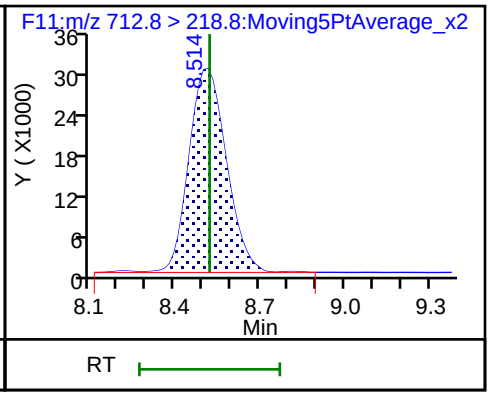
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



TestAmerica Burlington

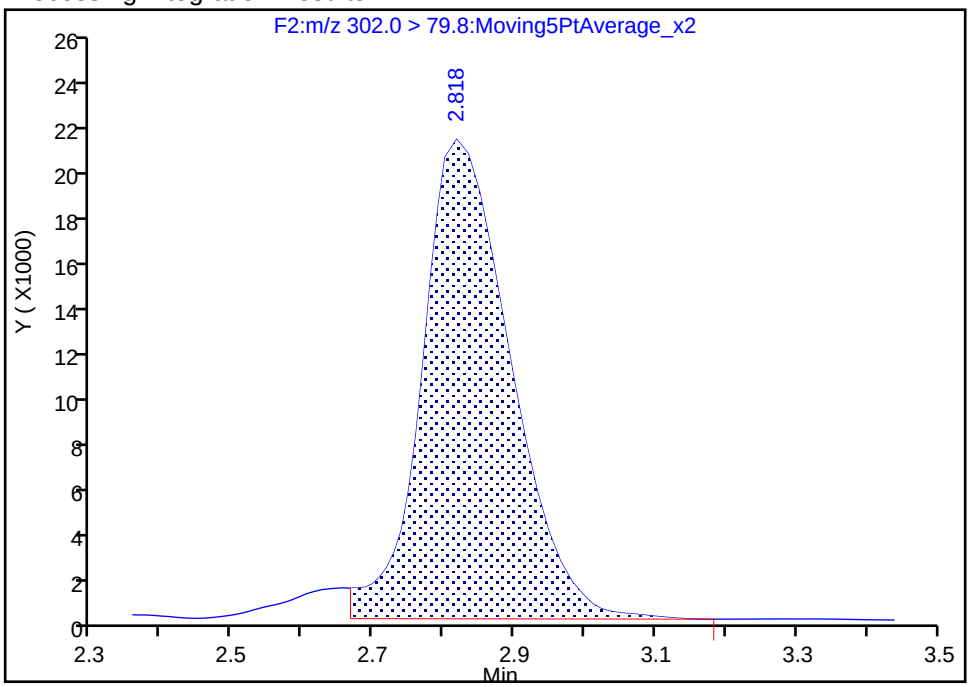
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d
Injection Date: 11-May-2018 10:37:01 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 5 13C3-PFBS, CAS: STL02337

Signal: 1

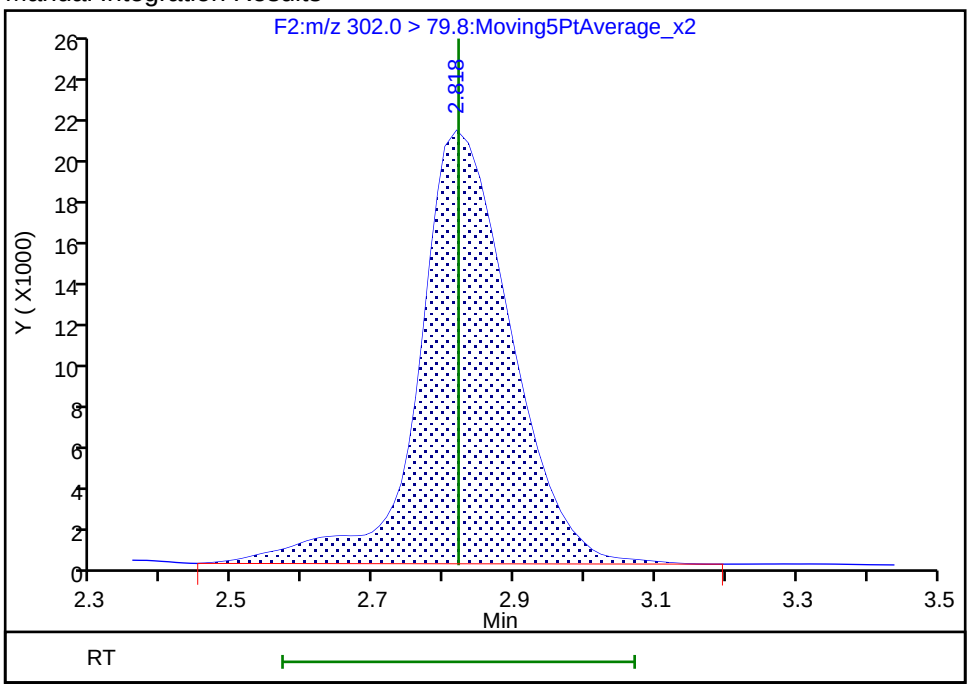
Processing Integration Results

RT: 2.82
Area: 180734
Amount: 52.271224
Amount Units: ng/ml



Manual Integration Results

RT: 2.82
Area: 189018
Amount: 54.201644
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:35:54
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

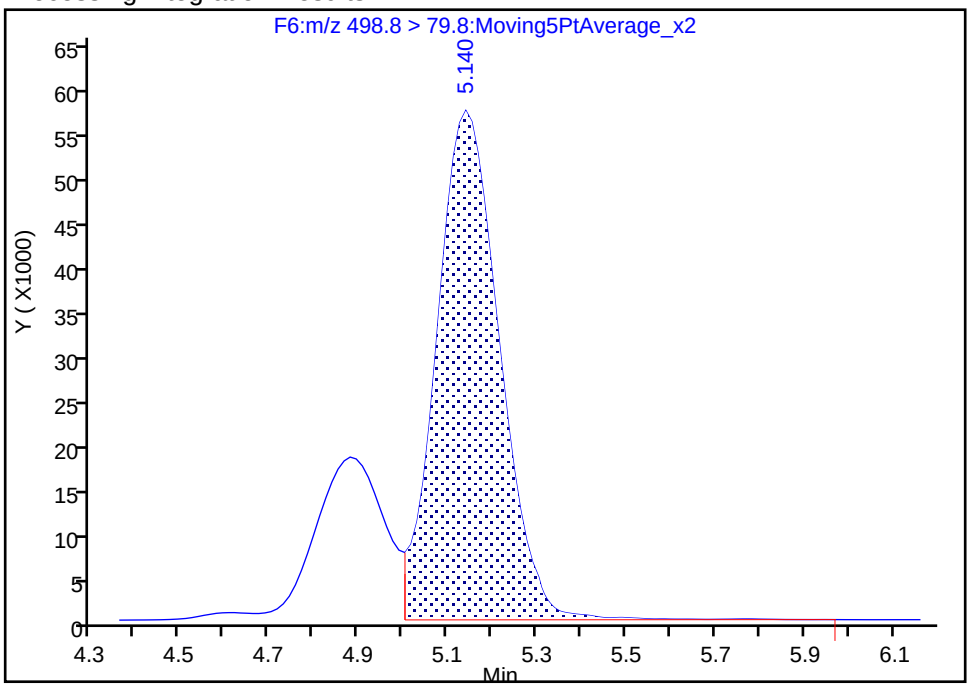
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d
Injection Date: 11-May-2018 10:37:01 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

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

Signal: 1

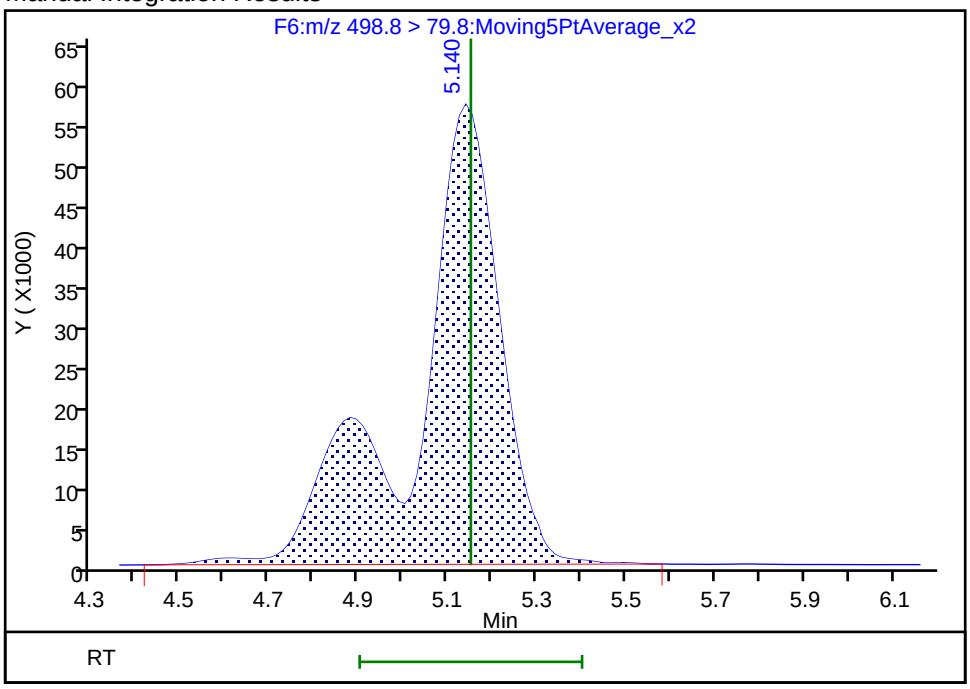
Processing Integration Results

RT: 5.14
Area: 556665
Amount: 155.2716
Amount Units: ng/ml



Manual Integration Results

RT: 5.14
Area: 752332
Amount: 191.2117
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:35:33
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: ICV 200-129349/13 Calibration Date: 05/11/2018 11:09

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A13.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L2ID		0.9588		20610	20000	3.1	40.0
Perfluoropentanoic acid (PFPeA)	L2ID		2.457		22730	20000	13.7	40.0
Perfluorobutanesulfonic acid (PFBS)	L2ID		1.426		17590	17700	-0.5	40.0
Perfluorohexanoic acid (PFHxA)	L1ID		1.033		20760	20000	3.8	40.0
Perfluoroheptanoic acid (PFHpA)	L2ID		1.125		21630	20000	8.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	L2ID		1.316		18550	18200	1.9	40.0
6:2FTS	AveID	1.030	0.9597		17670	19000	-6.8	40.0
Perfluorooctanoic acid (PFOA)	L2ID		1.092		21000	20000	5.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	L1ID		1.037		20700	19000	8.7	50.0
Perfluorononanoic acid (PFNA)	L2ID		1.054		22570	20000	12.9	40.0
Perfluorooctanesulfonic acid (PFOS)	L2ID		1.188		19970	18600	7.6	40.0
8:2FTS	AveID	0.7678	0.9799		24450	19200	27.6	40.0
Perfluorodecanoic acid (PFDA)	L2ID		1.068		22290	20000	11.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	L1ID		1.134		19930	20000	-0.4	40.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	L2ID		0.9567		18930	20000	-5.4	40.0
Perfluorodecanesulfonic acid (PFDS)	L2ID		1.090		19820	19300	2.8	50.0
Perfluoroundecanoic acid (PFUnA)	L2ID		1.018		21050	20000	5.2	40.0
Perfluorooctane Sulfonamide (FOSA)	L2ID		0.9254		20330	20000	1.6	40.0
Perfluorododecanoic acid (PFDoA)	L2ID		0.9132		20780	20000	3.9	40.0
Perfluorotridecanoic Acid (PFTriA)	L2ID		0.9356		20790	20000	4.0	50.0
Perfluorotetradecanoic acid (PFTeA)	L2ID		0.9823		21420	20000	7.1	40.0
13C4 PFBA	Ave	0.4715	0.4950		52490	50000	5.0	50.0
13C5 PFPeA	Ave	0.3597	0.4045		56230	50000	12.5	50.0
13C3-PFBS	Ave	0.3754	0.4242		52550	46500	13.0	50.0
13C2 PFHxA	Ave	0.5251	0.5587		53200	50000	6.4	50.0
13C4-PFHpA	Ave	0.8879	0.8985		50600	50000	1.2	50.0
18O2 PFHxS	Ave	0.4167	0.4441		50410	47300	6.6	50.0
M2-6:2FTS	Ave	0.0819	0.0884		51230	47500	7.9	50.0
13C4 PFOA	Ave	0.8670	0.9874		56940	50000	13.9	50.0
13C5 PFNA	Ave	1.030	1.119		54310	50000	8.6	50.0
13C4 PFOS	Ave	0.3741	0.4188		53500	47800	11.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: ICV 200-129349/13 Calibration Date: 05/11/2018 11:09

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A13.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-8:2FTS	Ave	0.2197	0.2225		48500	47900	1.2	50.0
13C2 PFDA	Ave	1.248	1.294		51850	50000	3.7	50.0
d3-NMeFOSAA	Ave	0.2653	0.2779		52370	50000	4.7	50.0
d5-NEtFOSAA	Ave	0.2305	0.2669		57900	50000	15.8	50.0
13C2 PFUnA	Ave	1.171	1.308		55820	50000	11.6	50.0
13C8 FOSA	Ave	0.6724	0.6980		51910	50000	3.8	50.0
13C2 PFDoA	Ave	1.232	1.423		57780	50000	15.6	50.0
13C2-PFTeDA	Ave	1.137	1.213		53350	50000	6.7	50.0

FORM VII 537 (modified)

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A13.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 11-May-2018 11:09:13 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-013 ICV
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist:

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:13:25 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 15:41:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.318	2.328	-0.010	1.000	383247	52.5		105	371	
1 Perfluorobutyric acid										
212.9 > 168.9	2.330	2.334	-0.004	1.005	146977	20.6			226	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.760	2.751	0.009	1.000	307820	22.7			828	
D 3 13C5-PFPeA										
267.7 > 222.6	2.760	2.753	0.007	1.000	313177	56.2		112	940	
6 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.834	2.818	0.016	1.006	165569	17.6			461	M
D 5 13C3-PFBS										
302.0 > 79.8	2.818	2.820	-0.002	1.000	305397	52.5		113	2019	
D 7 13C2 PFHxA										
314.8 > 269.6	3.177	3.170	0.007	1.000	432507	53.2		106	1611	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.177	3.172	0.005	1.000	178771	20.8			1541	
D 10 13C4-PFHpA										
366.9 > 321.8	3.703	3.696	0.007	1.000	695640	50.6		101	664	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.703	3.698	0.005	1.000	312984	21.6			478	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.748	3.739	0.009	1.003	164760	18.5			408	
D 13 18O2 PFHxS										
402.9 > 83.8	3.737	3.742	-0.005	1.000	325272	50.4		107	330	
15 Sodium 1H,1H,2H,2H-perfluorooctane										M
426.6 > 406.6	4.317	4.319	-0.002	1.000	24900	17.7			211	M
D 14 M2-6:2FTS										M
428.6 > 408.6	4.317	4.321	-0.004	1.000	65004	51.2		108	358	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.355	4.363	-0.008	1.000	764444	56.9		114	4773	
* 49 13C2-PFOA										M
414.9 > 369.8	4.355	4.363	-0.008		774207	50.0			1876	M
16 Perfluorooctanoic acid										
412.9 > 368.8	4.355	4.368	-0.013	1.000	333758	21.0			370	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.393	4.399	-0.006	0.855	128024	20.7			589	
D 21 13C5 PFNA										
467.8 > 422.8	5.113	5.127	-0.014	1.000	866331	54.3		109	1336	
19 Perfluorononanoic acid										
462.8 > 418.8	5.127	5.136	-0.009	1.003	365208	22.6			937	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.140	5.152	-0.012	1.000	143009	20.0			694	M
D 22 13C4 PFOS										
502.8 > 79.8	5.140	5.154	-0.014	1.000	309937	53.5		112	2125	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.882	5.880	0.002	1.000	64670	24.5			575	
D 23 M2-8:2FTS										
528.8 > 508.8	5.882	5.882	0.0	1.000	164987	48.5		101	1570	
D 25 13C2 PFDA										
514.9 > 469.5	5.902	5.910	-0.008	1.000	1001919	51.9		104	2371	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.882	5.914	-0.032	0.997	428109	22.3			1591	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.241	6.271	-0.030	1.000	215127	52.4		105	1543	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.259	6.283	-0.024	1.003	97569	19.9			310	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.616	6.640	-0.024	1.000	206636	57.9		116	1319	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.634	6.664	-0.030	1.003	79075	18.9			879	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.634	6.667	-0.033	1.291	136273	19.8			1284	
D 33 13C2 PFUnA										
564.8 > 519.8	6.652	6.676	-0.024	1.000	1012579	55.8		112	4818	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.652	6.676	-0.024	1.000	412335	21.0			2772	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.973	6.984	-0.011	1.000	200039	20.3			1970	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	540395	51.9		104	2360	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.339	7.354	-0.015	1.003	402468	20.8			1629	
D 36 13C2 PFDoA										
614.8 > 569.6	7.317	7.358	-0.041	1.000	1101807	57.8		116	3085	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.945	7.974	-0.029	1.086	412340	20.8			3278	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.484	8.514	-0.030	1.000	939049	53.4		107	1993	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.484	8.519	-0.035	1.000	368976	21.4			1201	
712.8 > 168.8	8.499	8.519	-0.020	1.002	84635		4.36(0.00-0.00)		777	
712.8 > 218.8	8.484	8.519	-0.035	1.000	43307		8.52(0.00-0.00)		450	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21ISICV_00002 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 12:13:26 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A13.d

Injection Date: 11-May-2018 11:09:13 Instrument ID: LC410

Lims ID: ICV

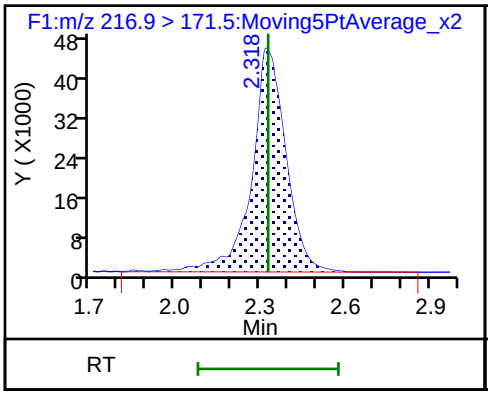
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13

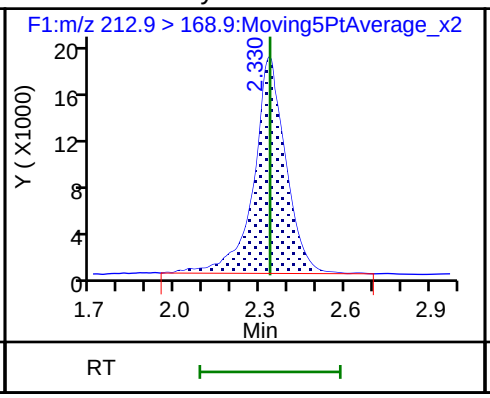
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

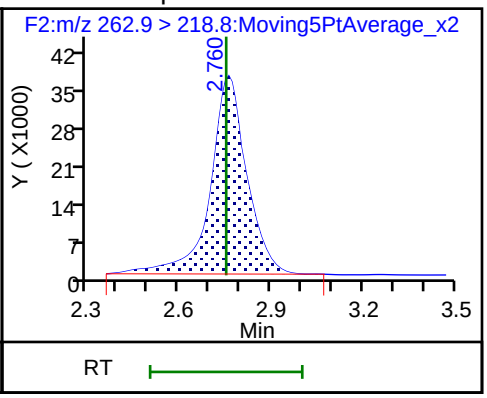
D 2 13C4 PFBA



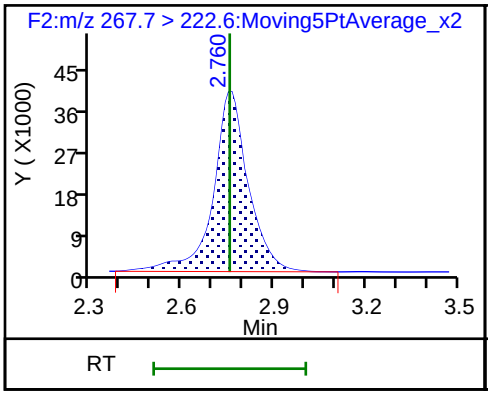
1 Perfluorobutyric acid



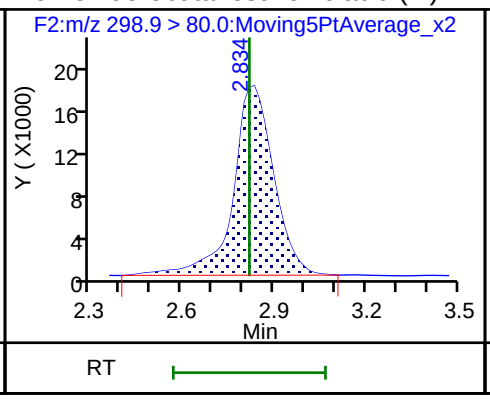
4 Perfluoropentanoic acid



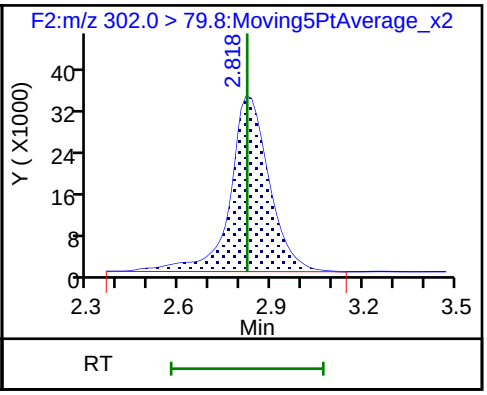
D 3 13C5-PFPeA



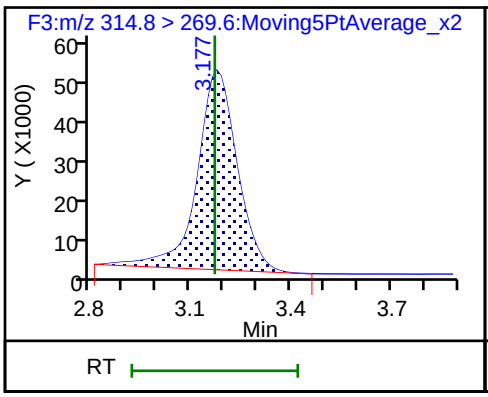
6 Perfluorobutanesulfonic acid (M)



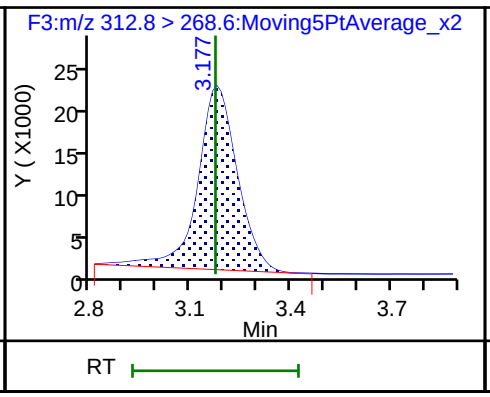
D 5 13C3-PFBS



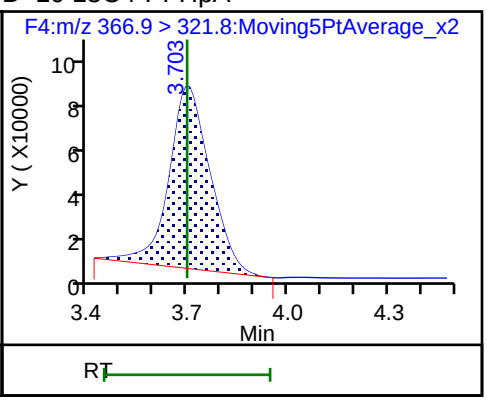
D 7 13C2 PFHxA



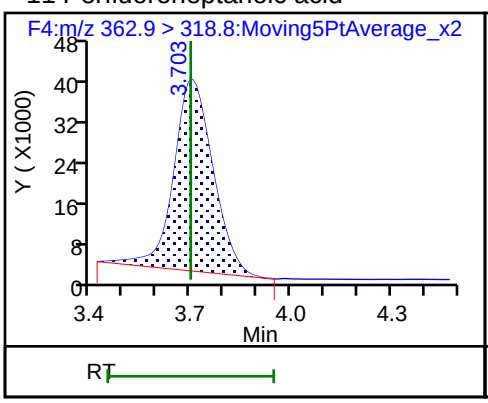
8 Perfluorohexanoic acid



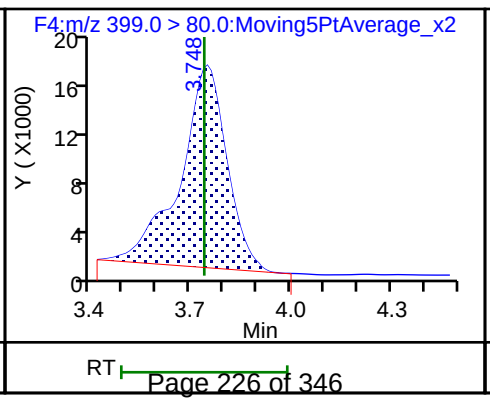
D 10 13C4-PFHpA



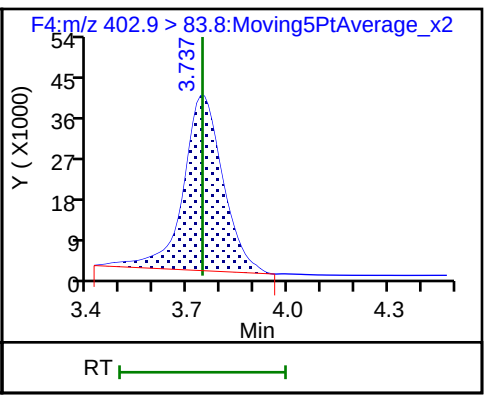
11 Perfluoroheptanoic acid



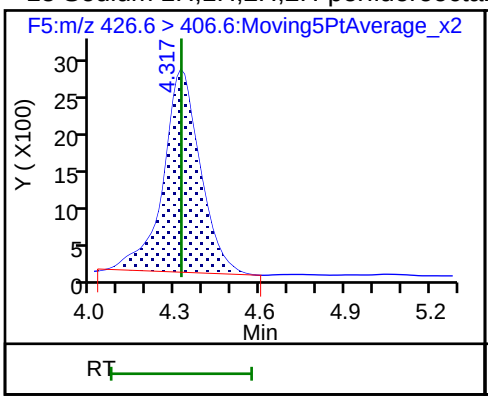
12 Perfluorohexanesulfonic acid



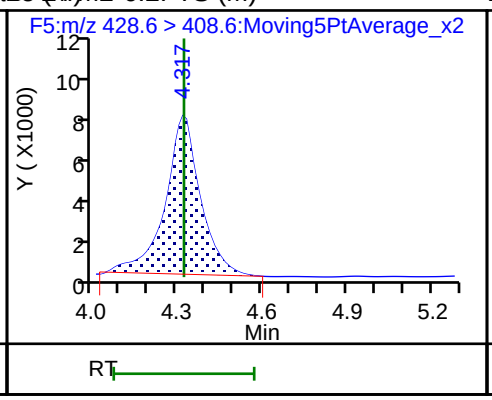
D 13 18O2 PFHxS



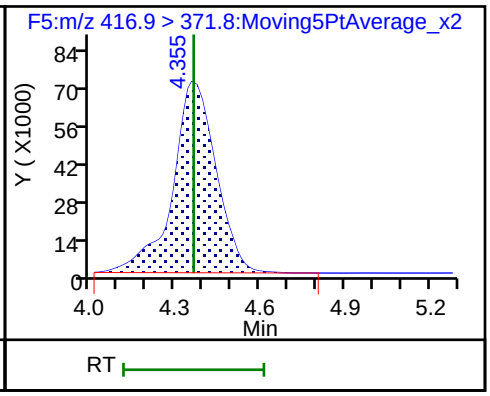
15 Sodium 1H,1H,2H,2H-perfluorooctane (M)



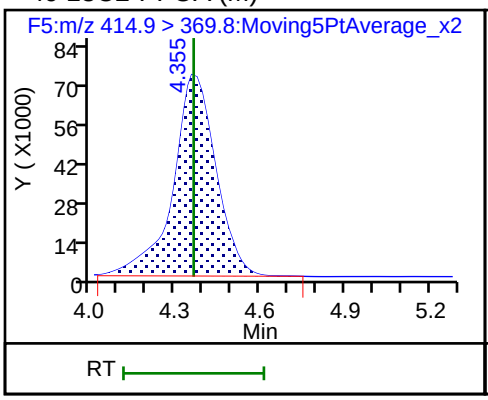
D 14 M2-6:2FTS (M)



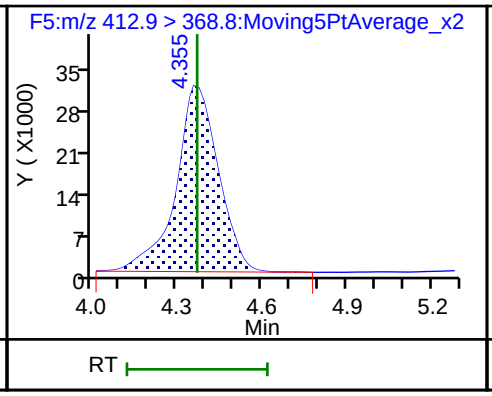
D 17 13C4 PFOA



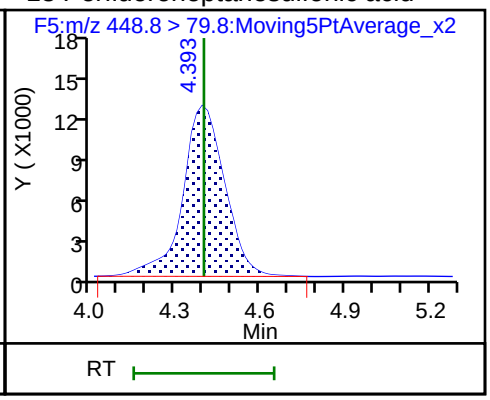
* 49 13C2-PFOA (M)



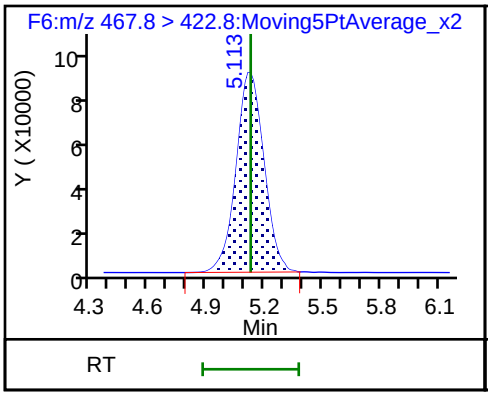
16 Perfluorooctanoic acid



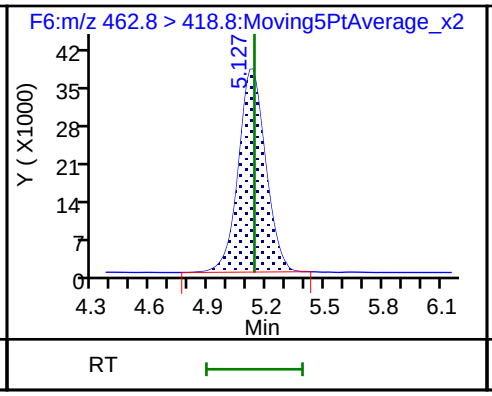
18 Perfluoroheptanesulfonic acid



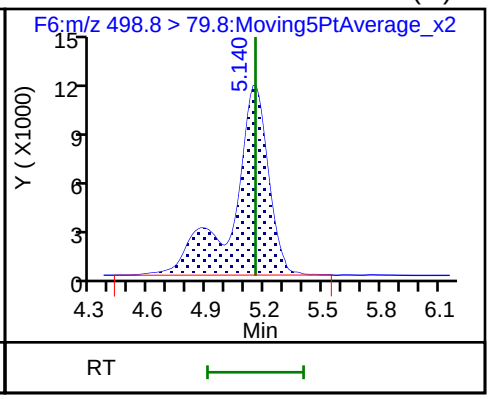
D 21 13C5 PFNA



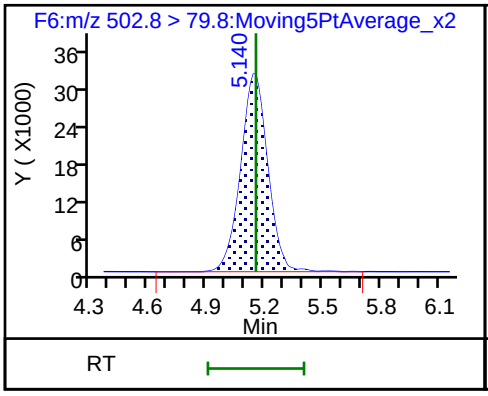
19 Perfluorononanoic acid



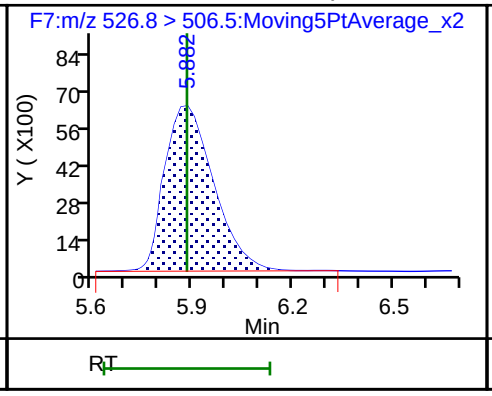
20 Perfluorooctane sulfonic acid (M)



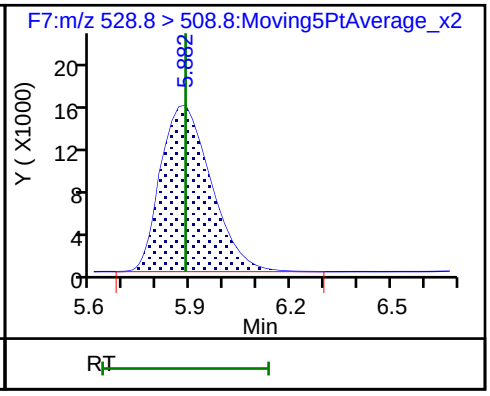
D 22 13C4 PFOS



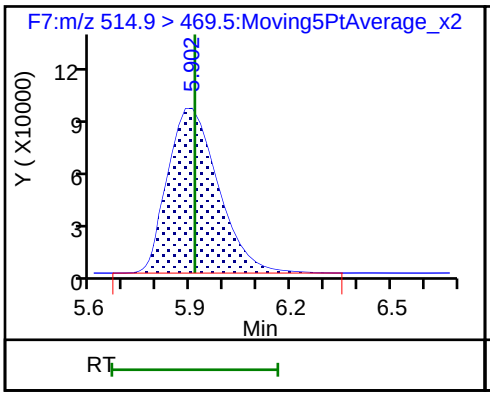
24 Sodium 1H,1H,2H,2H-perfluorodecane



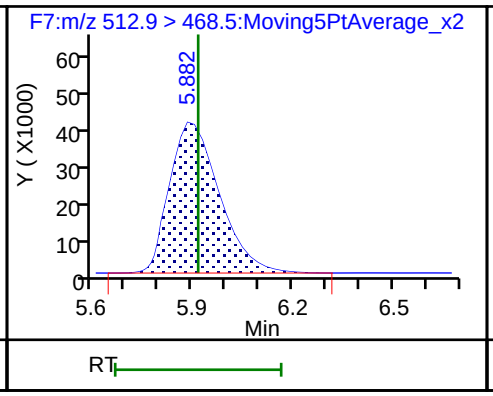
D 23 M2-8:2FTS



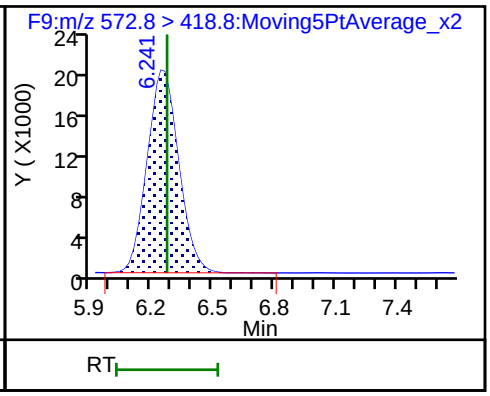
D 25 13C2 PFDA



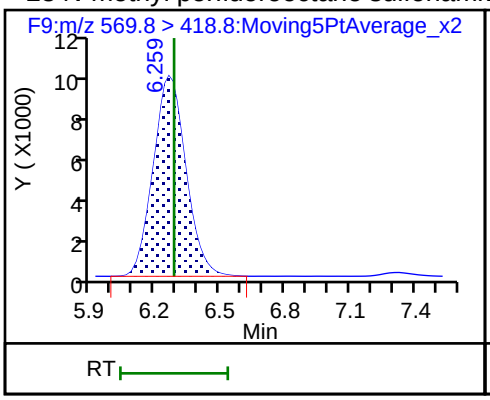
26 Perfluorodecanoic acid



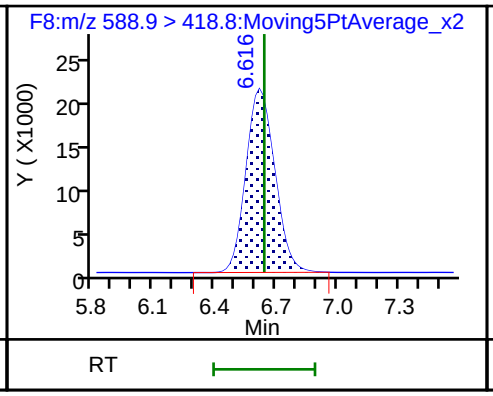
D 27 d3-NMeFOSAA



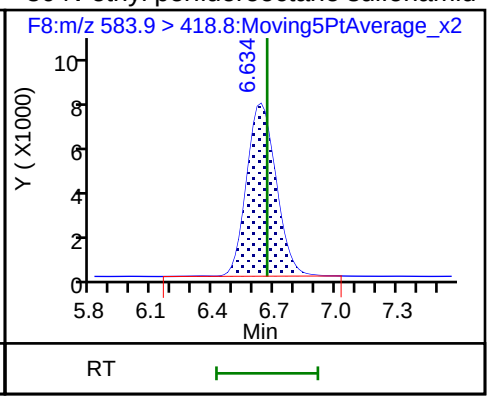
28 N-methyl perfluorooctane sulfonami



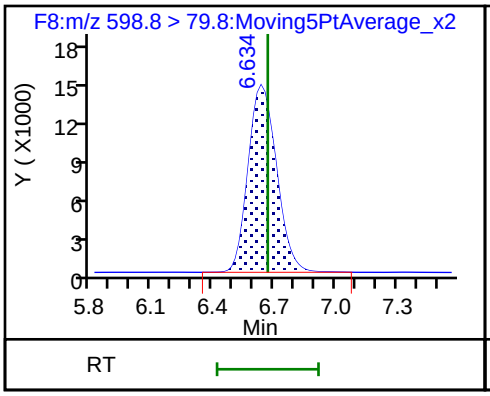
D 29 d5-NEtFOSAA



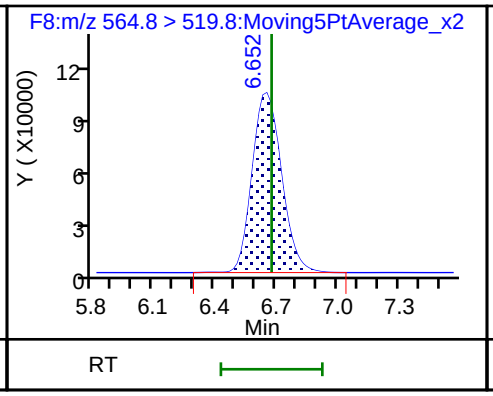
30 N-ethyl perfluorooctane sulfonamid



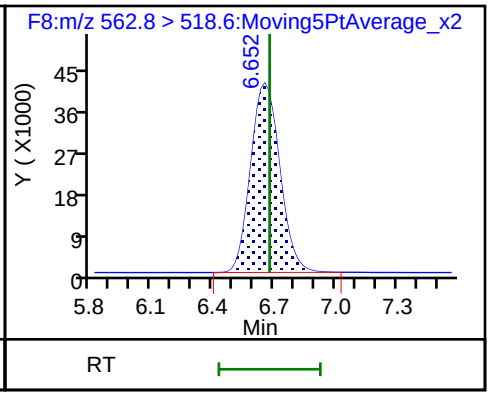
31 Perfluorodecane Sulfonic acid



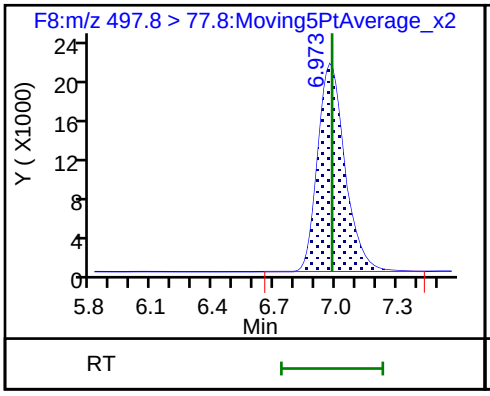
D 33 13C2 PFUnA



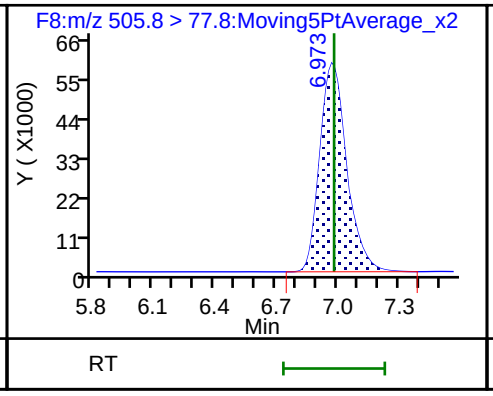
32 Perfluoroundecanoic acid



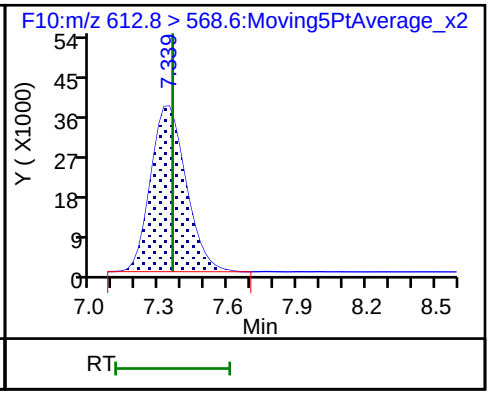
34 Perfluorooctane Sulfonamide



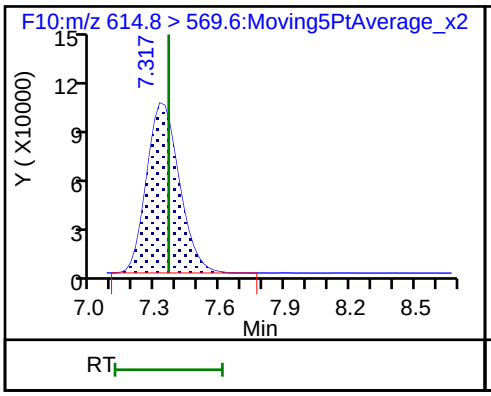
D 35 13C8 FOSA



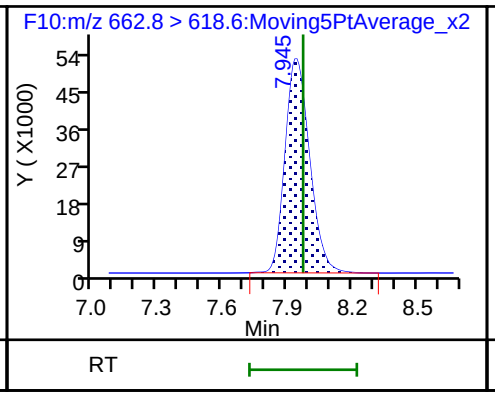
37 Perfluorododecanoic acid



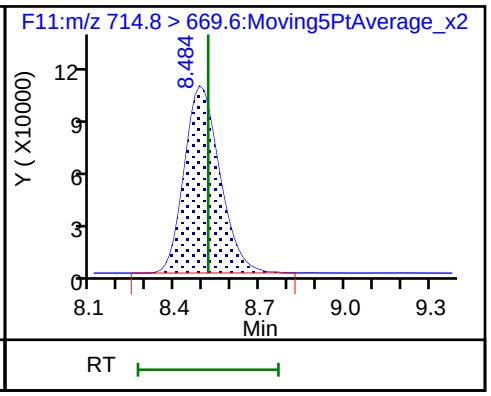
D 36 13C2 PFDoA



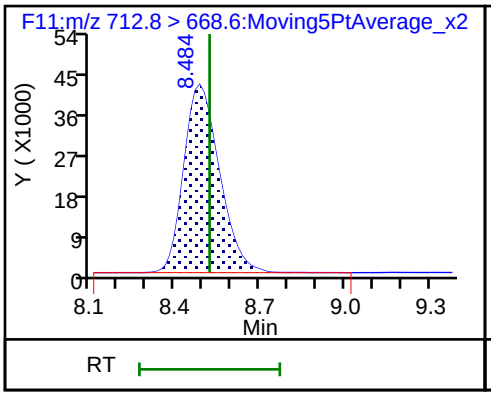
40 Perfluorotridecanoic acid



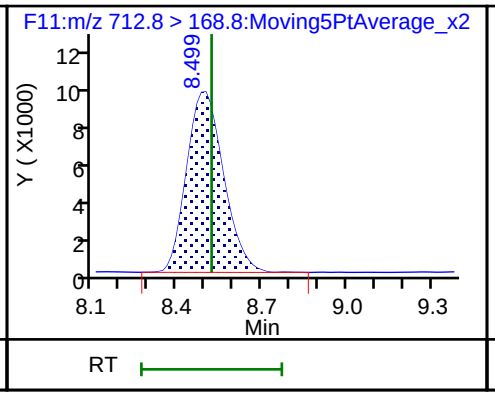
D 43 13C2-PFTeDA



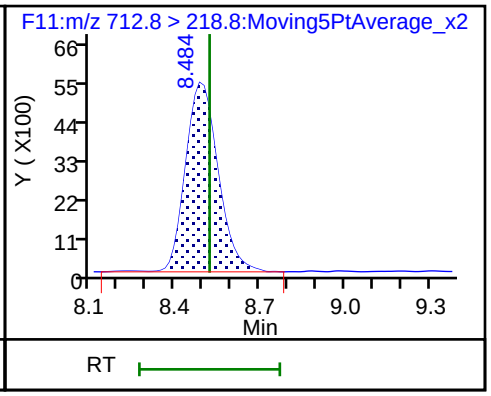
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Burlington

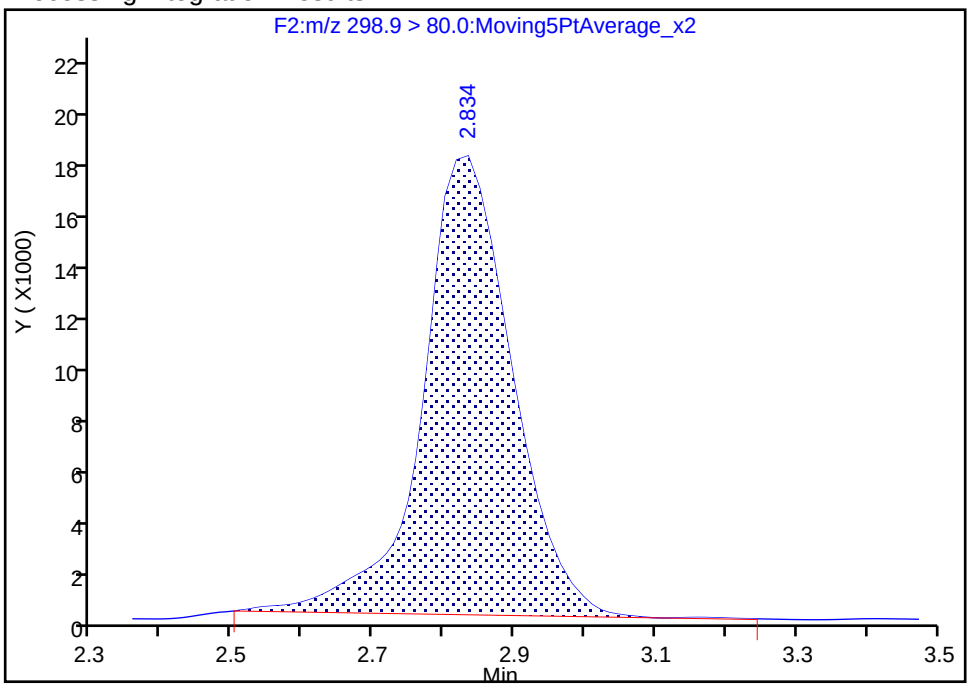
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A13.d
Injection Date: 11-May-2018 11:09:13 Instrument ID: LC410
Lims ID: ICV
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

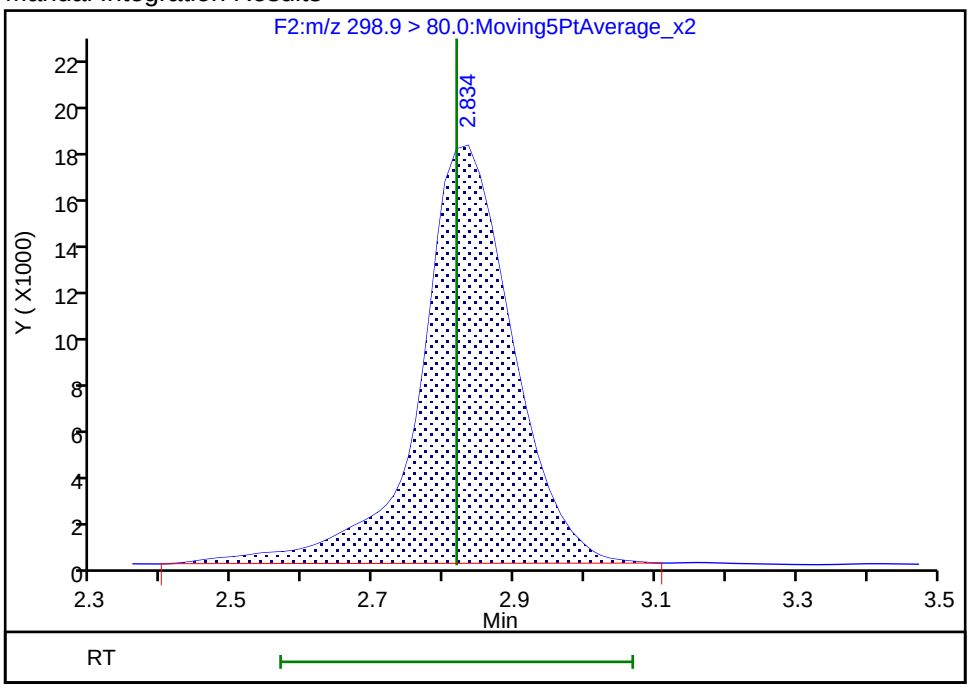
Processing Integration Results

RT: 2.83
Area: 159606
Amount: 16.962517
Amount Units: ng/ml



Manual Integration Results

RT: 2.83
Area: 165569
Amount: 17.587991
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:40:17
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

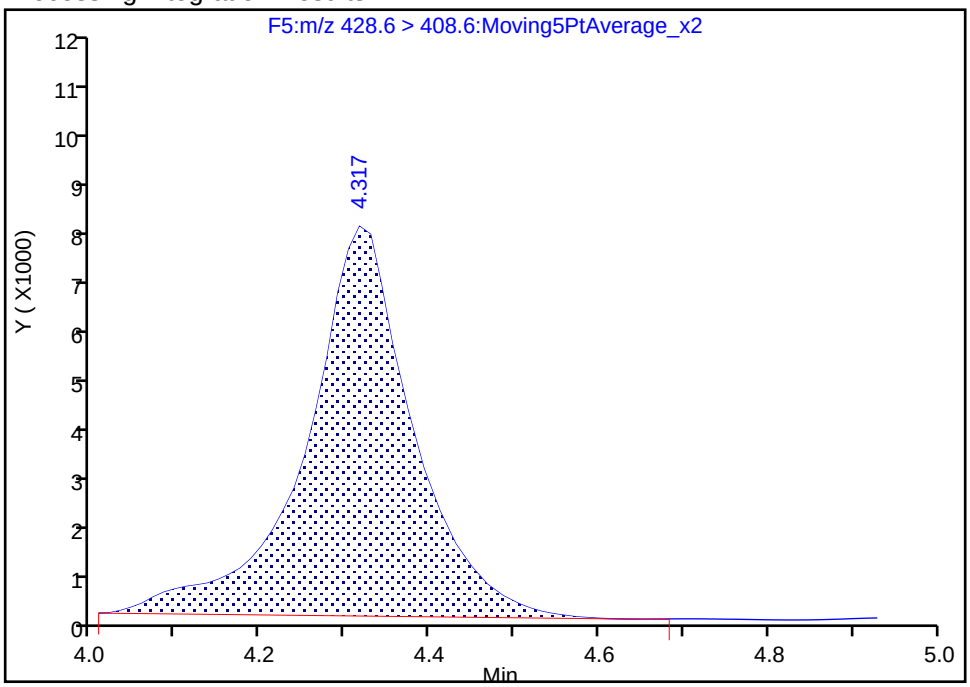
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A13.d
Injection Date: 11-May-2018 11:09:13 Instrument ID: LC410
Lims ID: ICV
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

D 14 M2-6:2FTS, CAS: STL02279

Signal: 1

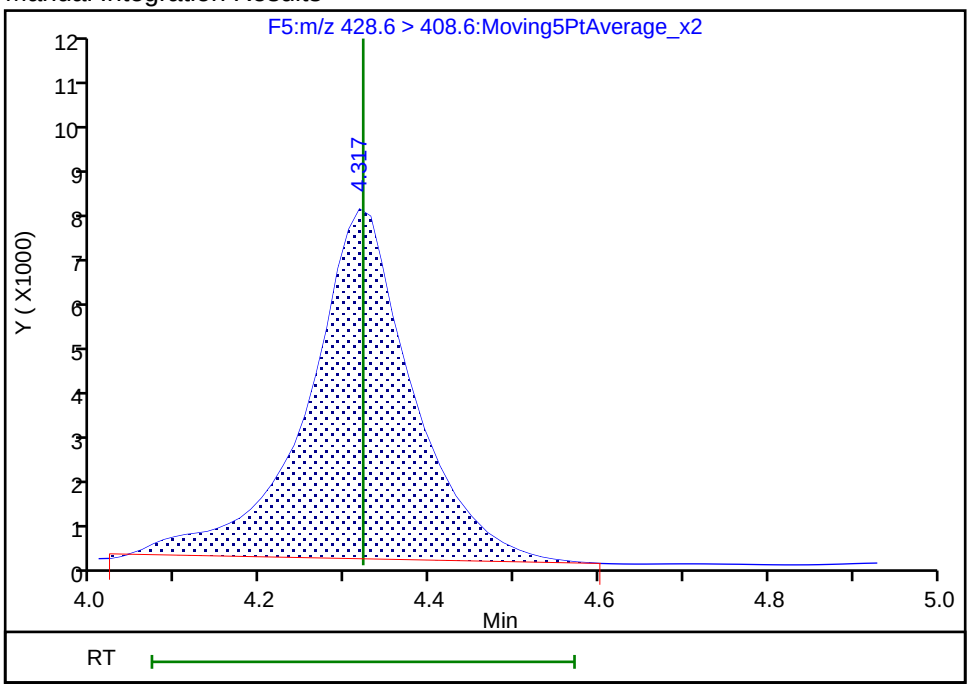
Processing Integration Results

RT: 4.32
Area: 66852
Amount: 53.031974
Amount Units: ng/ml



Manual Integration Results

RT: 4.32
Area: 65004
Amount: 51.233312
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:40:32
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

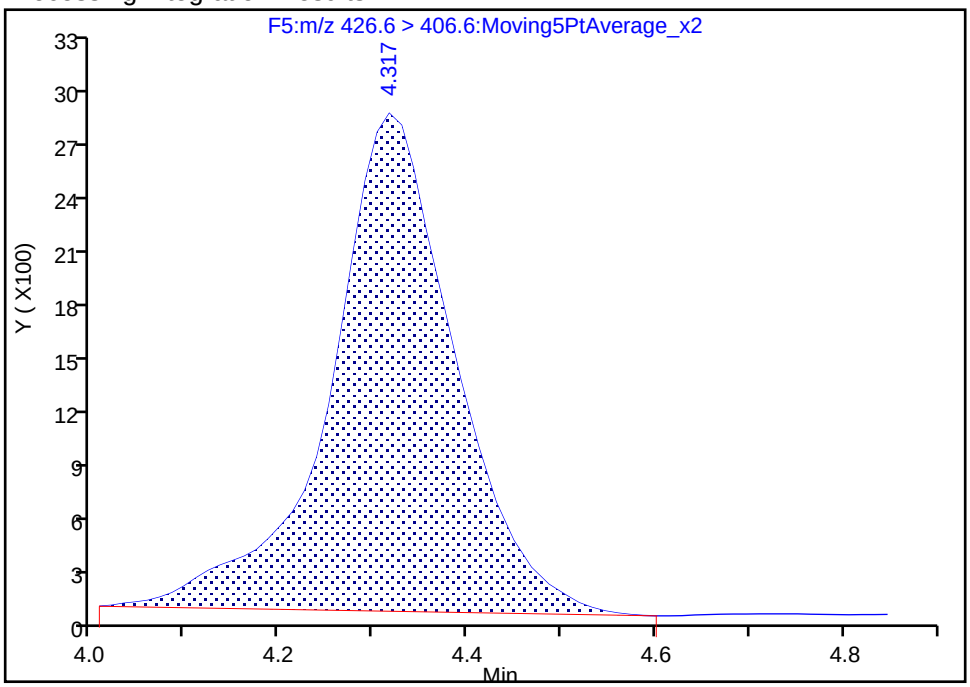
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A13.d
Injection Date: 11-May-2018 11:09:13 Instrument ID: LC410
Lims ID: ICV
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

15 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate, CAS: 27619-97-2

Signal: 1

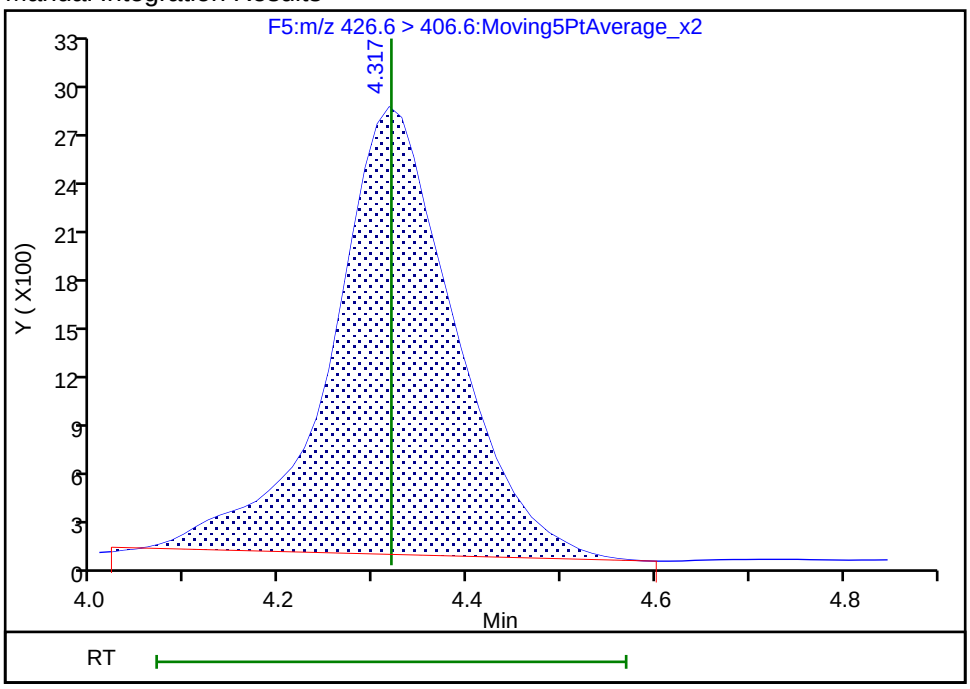
Processing Integration Results

RT: 4.32
Area: 25440
Amount: 18.027959
Amount Units: ng/ml



Manual Integration Results

RT: 4.32
Area: 24900
Amount: 17.671314
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:40:28
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

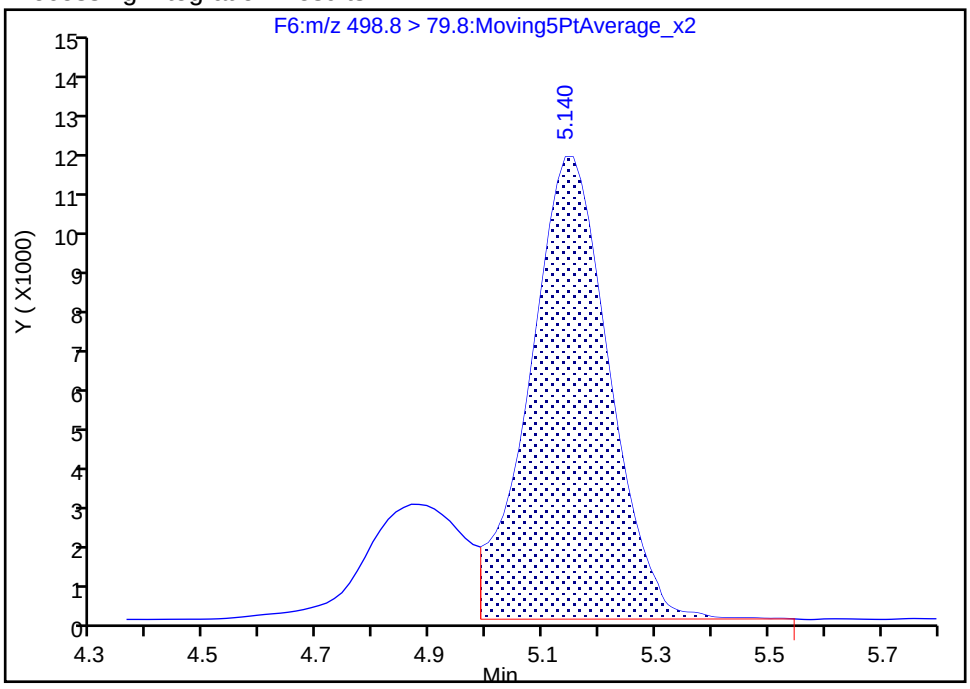
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A13.d
Injection Date: 11-May-2018 11:09:13 Instrument ID: LC410
Lims ID: ICV
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

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

Signal: 1

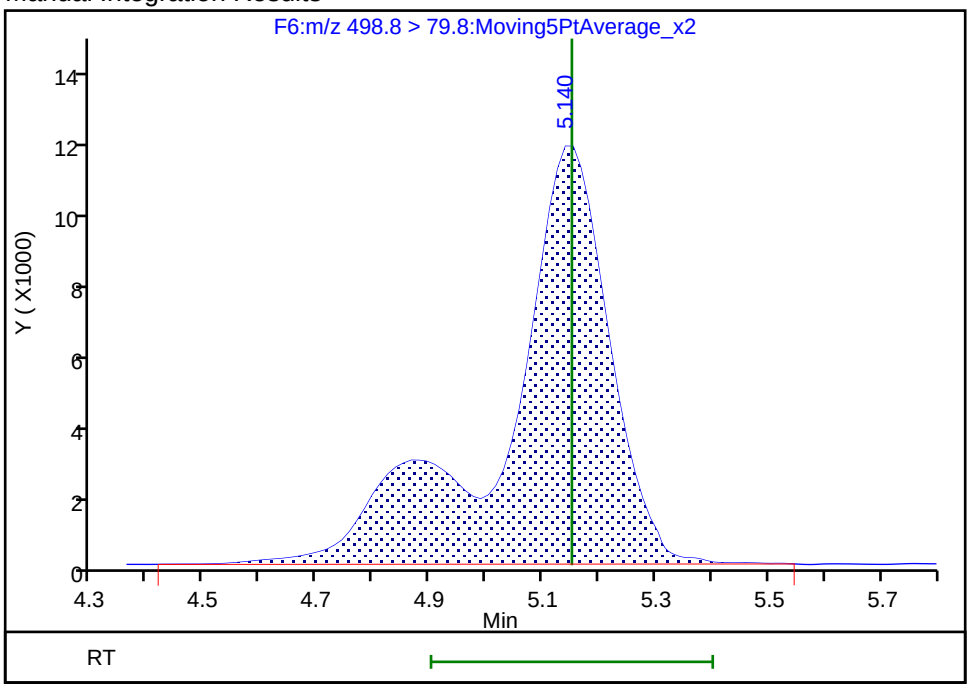
Processing Integration Results

RT: 5.14
Area: 109180
Amount: 15.278169
Amount Units: ng/ml



Manual Integration Results

RT: 5.14
Area: 143009
Amount: 19.968447
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 15:40:50
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: CCV 200-129349/33 Calibration Date: 05/11/2018 16:32

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A33.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L2ID		0.9217		4784	5000	-4.3	40.0
Perfluoropentanoic acid (PFPeA)	L2ID		1.948		4573	5000	-8.5	40.0
Perfluorobutanesulfonic acid (PFBS)	L2ID		1.210		3905	4420	-11.7	40.0
Perfluorohexanoic acid (PFHxA)	L1ID		1.058		5474	5000	9.5	40.0
Perfluoroheptanoic acid (PFHpA)	L2ID		1.060		5057	5000	1.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	L2ID		0.9426		3475	4550	-23.6	40.0
6:2FTS	AveID	1.030	1.258		5793	4740	22.2	40.0
Perfluorooctanoic acid (PFOA)	L2ID		1.068		5038	5000	0.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	L1ID		0.8954		4614	4760	-3.1	50.0
Perfluorononanoic acid (PFNA)	L2ID		1.007		5408	5000	8.2	40.0
Perfluorooctanesulfonic acid (PFOS)	L2ID		1.083		4658	4640	0.4	40.0
8:2FTS	AveID	0.7678	0.7593		4737	4790	-1.1	40.0
Perfluorodecanoic acid (PFDA)	L2ID		1.049		5660	5000	13.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	L1ID		1.218		5388	5000	7.8	40.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	L2ID		0.9609		4863	5000	-2.7	40.0
Perfluorodecanesulfonic acid (PFDS)	L2ID		0.9939		4507	4820	-6.5	50.0
Perfluoroundecanoic acid (PFUnA)	L2ID		1.072		5524	5000	10.5	40.0
Perfluorooctane Sulfonamide (FOSA)	L2ID		0.9347		5244	5000	4.9	40.0
Perfluorododecanoic acid (PFDoA)	L2ID		0.9619		5561	5000	11.2	40.0
Perfluorotridecanoic Acid (PFTriA)	L2ID		0.9038		5173	5000	3.5	50.0
Perfluorotetradecanoic acid (PFTeA)	L2ID		0.8648		4679	5000	-6.4	40.0
13C4 PFBA	Ave	0.4715	0.4090		43370	50000	-13.3	50.0
13C5 PFPeA	Ave	0.3597	0.3533		49110	50000	-1.8	50.0
13C3-PFBS	Ave	0.3754	0.3617		44810	46500	-3.6	50.0
13C2 PFHxA	Ave	0.5251	0.4380		41710	50000	-16.6	50.0
13C4-PFHpA	Ave	0.8879	0.8171		46010	50000	-8.0	50.0
18O2 PFHxS	Ave	0.4167	0.3997		45370	47300	-4.1	50.0
M2-6:2FTS	Ave	0.0819	0.0667		38650	47500	-18.6	50.0
13C4 PFOA	Ave	0.8670	0.7891		45500	50000	-9.0	50.0
13C5 PFNA	Ave	1.030	0.9379		45520	50000	-9.0	50.0
13C4 PFOS	Ave	0.3741	0.3797		48510	47800	1.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: CCV 200-129349/33 Calibration Date: 05/11/2018 16:32

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A33.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-8:2FTS	Ave	0.2197	0.1725		37600	47900	-21.5	50.0
13C2 PFDA	Ave	1.248	1.091		43730	50000	-12.5	50.0
d3-NMeFOSAA	Ave	0.2653	0.2230		42030	50000	-15.9	50.0
d5-NEtFOSAA	Ave	0.2305	0.2187		47440	50000	-5.1	50.0
13C2 PFUnA	Ave	1.171	1.070		45660	50000	-8.7	50.0
13C8 FOSA	Ave	0.6724	0.6676		49640	50000	-0.7	50.0
13C2 PFDoA	Ave	1.232	1.080		43870	50000	-12.3	50.0
13C2-PFTeDA	Ave	1.137	1.014		44590	50000	-10.8	50.0

FORM VII 537 (modified)

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Lims ID: CCV L3
Client ID:
Sample Type: CCV
Inject. Date: 11-May-2018 16:32:17 ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-033 CCV3
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:41 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 17:52:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.318	2.328	-0.010	1.000	355810	43.4		86.7	285	
1 Perfluorobutyric acid										M
212.9 > 168.9	2.334	2.334	0.0	1.007	32796	4.78		95.7	58.8	M
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.750	2.751	-0.001	1.000	59861	4.57		91.5	100	M
D 3 13C5-PFPeA										
267.7 > 222.6	2.750	2.753	-0.003	1.000	307310	49.1		98.2	1841	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.818	2.818	0.0	1.000	33651	3.90		88.3	118	
D 5 13C3-PFBS										
302.0 > 79.8	2.818	2.820	-0.002	1.000	292630	44.8		96.4	240	
D 7 13C2 PFHxA										M
314.8 > 269.6	3.164	3.170	-0.006	1.000	380991	41.7		83.4	494	M
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.164	3.172	-0.008	1.000	40294	5.47		109	218	M
D 10 13C4-PFHpA										M
366.9 > 321.8	3.681	3.696	-0.015	1.000	710761	46.0		92.0	366	M
11 Perfluoroheptanoic acid										M
362.9 > 318.8	3.692	3.698	-0.006	1.003	75363	5.06		101	205	M
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.737	3.739	-0.002	1.000	29825	3.48		76.4	60.8	M
D 13 18O2 PFHxS										
402.9 > 83.8	3.737	3.742	-0.005	1.000	328935	45.4		95.9	194	
15 Sodium 1H,1H,2H,2H-perfluorooctane										M
426.6 > 406.6	4.304	4.319	-0.015	0.997	6918	5.79		122	67.2	M
D 14 M2-6:2FTS										M
428.6 > 408.6	4.317	4.321	-0.004	1.000	55094	38.6		81.4	185	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.342	4.363	-0.021	1.000	686413	45.5		91.0	1224	
* 49 13C2-PFOA										
414.9 > 369.8	4.342	4.363	-0.021		869900	50.0			1714	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.342	4.368	-0.026	1.000	73293	5.04		101	37.2	
18 Perfluoroheptanesulfonic acid										M
448.8 > 79.8	4.374	4.399	-0.025	0.853	28156	4.61		96.9	129	M
D 21 13C5 PFNA										
467.8 > 422.8	5.099	5.127	-0.028	1.000	815833	45.5		91.0	1101	
19 Perfluorononanoic acid										
462.8 > 418.8	5.113	5.136	-0.023	1.003	82154	5.41		108	267	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.127	5.152	-0.025	1.000	33194	4.66		100	124	M
D 22 13C4 PFOS										
502.8 > 79.8	5.127	5.154	-0.027	1.000	315780	48.5		101	967	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.843	5.880	-0.037	0.997	10914	4.74		98.9	45.0	
D 23 M2-8:2FTS										
528.8 > 508.8	5.863	5.882	-0.019	1.000	143745	37.6		78.5	404	
D 25 13C2 PFDA										
514.9 > 469.5	5.882	5.910	-0.028	1.000	949405	43.7		87.5	1218	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.882	5.914	-0.032	1.000	99598	5.66		113	609	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.241	6.271	-0.030	1.000	193988	42.0		84.1	433	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.241	6.283	-0.042	1.000	23634	5.39		108	76.2	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.616	6.640	-0.024	1.000	190236	47.4		94.9	667	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.634	6.664	-0.030	1.003	18280	4.86		97.3	141	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.634	6.667	-0.033	1.294	31647	4.51		93.5	141	
D 33 13C2 PFUnA										
564.8 > 519.8	6.634	6.676	-0.042	1.000	930601	45.7		91.3	2138	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.652	6.676	-0.024	1.003	99717	5.52		110	382	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.987	6.984	0.003	1.000	54280	5.24		105	356	
D 35 13C8 FOSA										
505.8 > 77.8	6.987	6.984	0.003	1.000	580720	49.6		99.3	2244	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.317	7.354	-0.037	1.000	90404	5.56		111	298	
D 36 13C2 PFDoA										
614.8 > 569.6	7.317	7.358	-0.041	1.000	939891	43.9		87.7	1149	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.936	7.974	-0.038	1.085	84947	5.17		103	496	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.484	8.514	-0.030	1.000	881882	44.6		89.2	973	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.484	8.519	-0.035	1.000	76261	4.68		93.6	384	
712.8 > 168.8	8.484	8.519	-0.035	1.000	19363		3.94(0.00-0.00)		68.0	
712.8 > 218.8	8.484	8.519	-0.035	1.000	11339		6.73(0.00-0.00)		37.5	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21-L3_00002 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 12:12:41 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d

Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410

Lims ID: CCV L3

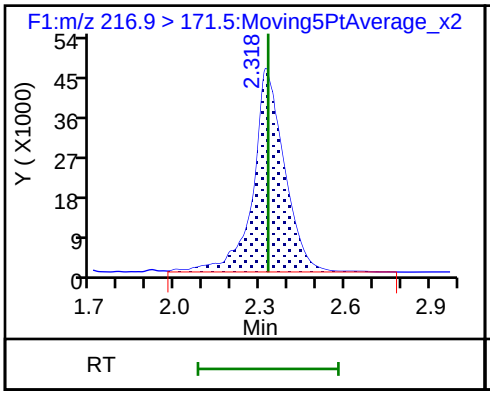
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33

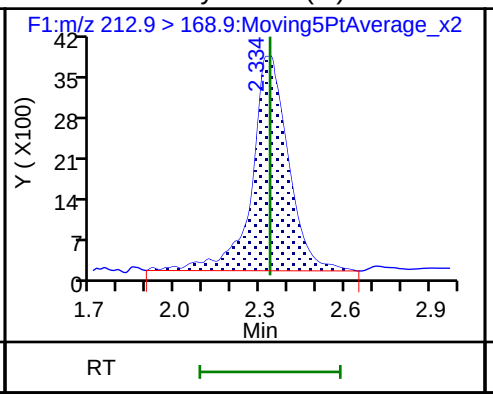
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

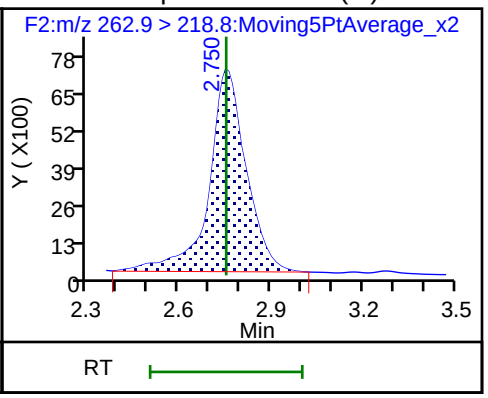
D 2 13C4 PFBA



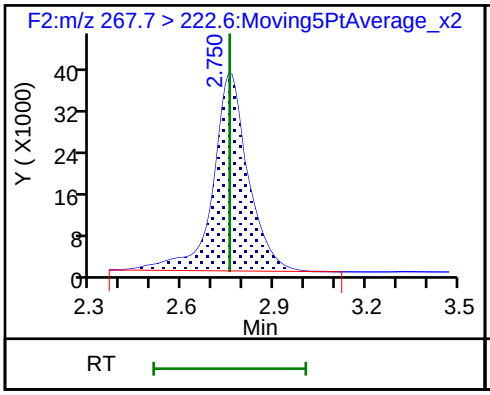
1 Perfluorobutyric acid (M)



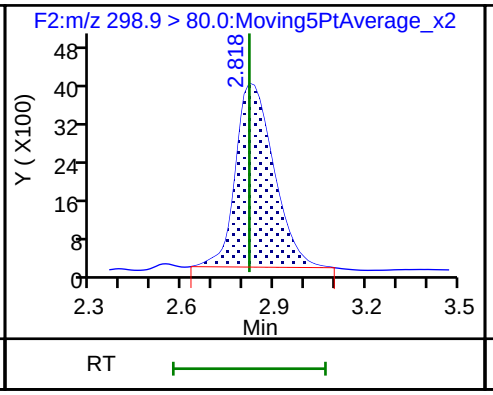
4 Perfluoropentanoic acid (M)



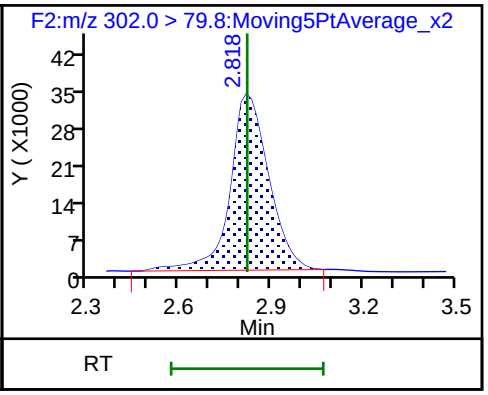
D 3 13C5-PFPeA



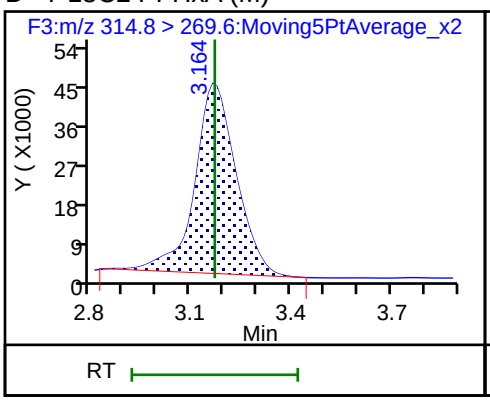
6 Perfluorobutanesulfonic acid



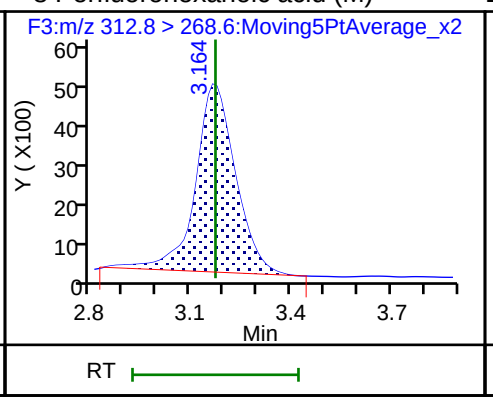
D 5 13C3-PFBS



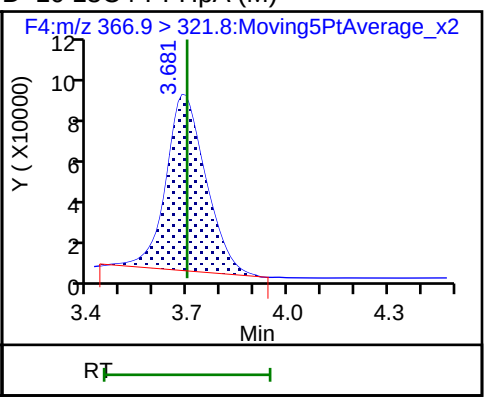
D 7 13C2 PFHxA (M)



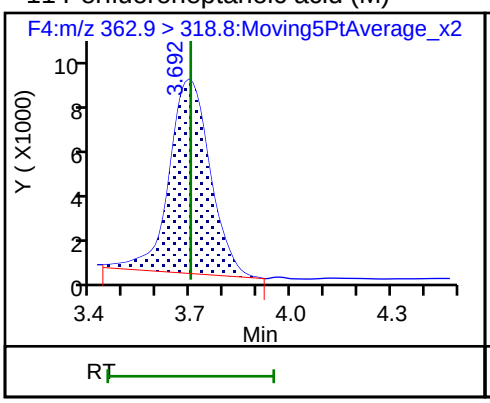
8 Perfluorohexanoic acid (M)



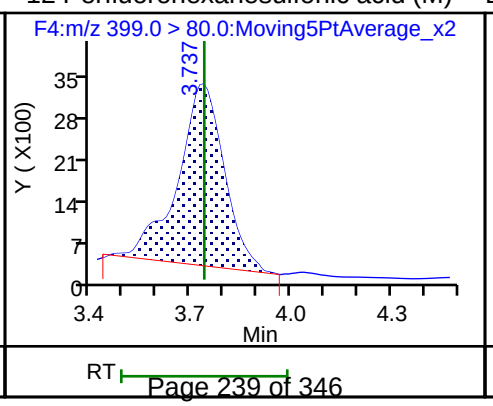
D 10 13C4-PFHpA (M)



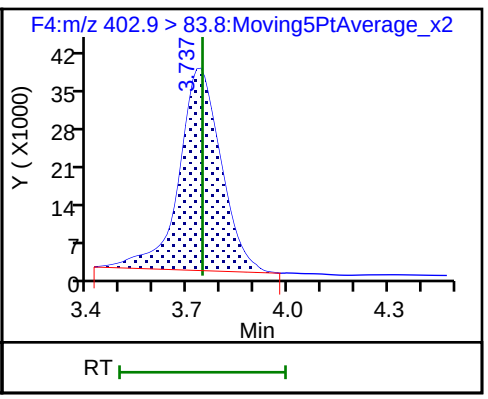
11 Perfluoroheptanoic acid (M)



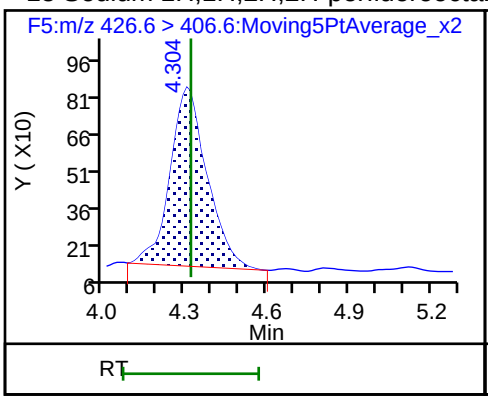
12 Perfluorohexanesulfonic acid (M)



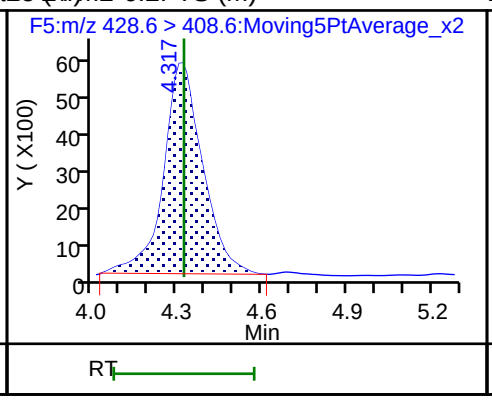
D 13 18O2 PFHxS



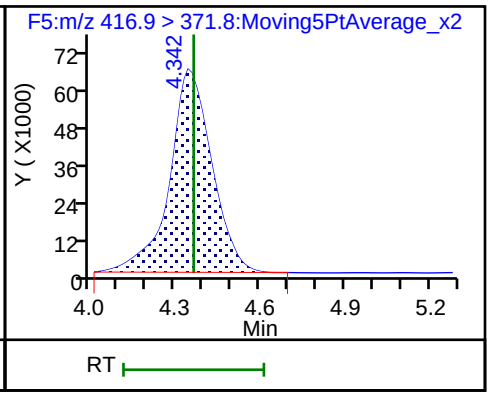
15 Sodium 1H,1H,2H,2H-perfluorooctane (M)



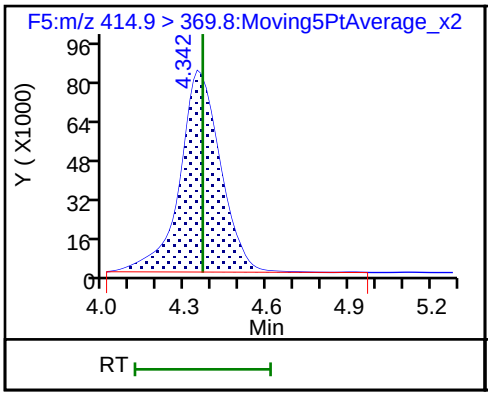
D 14 M2-6:2FTS (M)



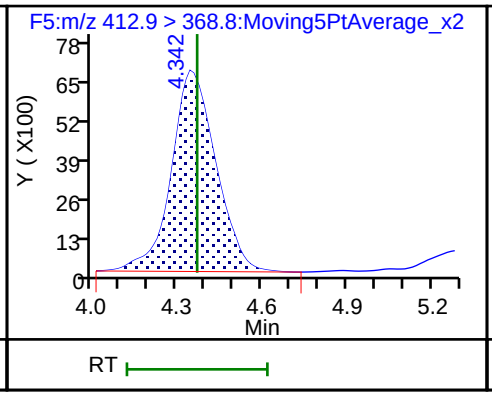
D 17 13C4 PFOA



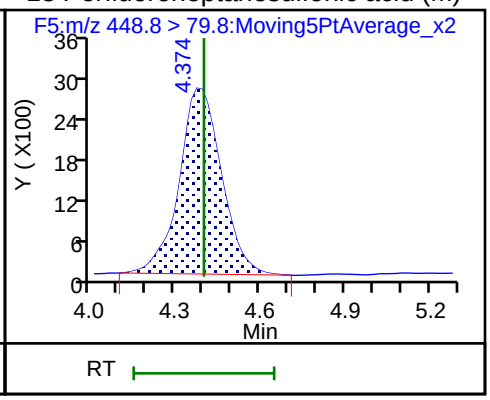
* 49 13C2-PFOA



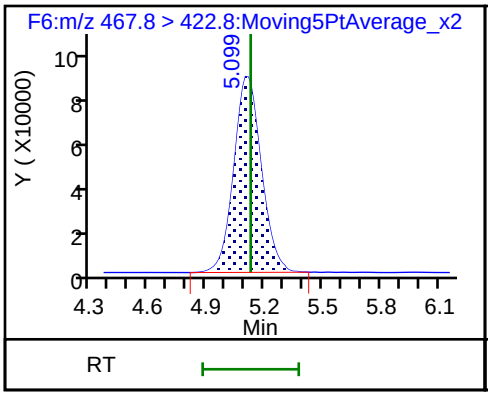
16 Perfluorooctanoic acid



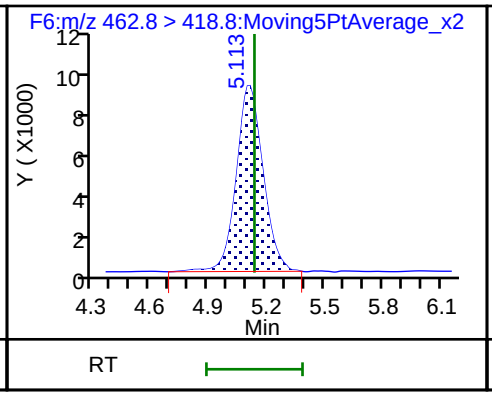
18 Perfluoroheptanesulfonic acid (M)



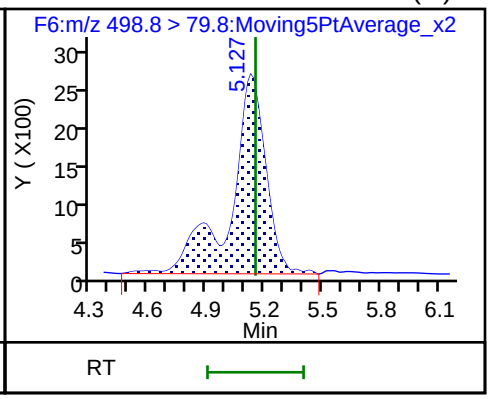
D 21 13C5 PFNA



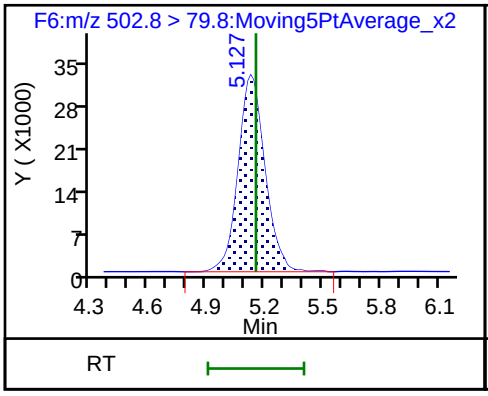
19 Perfluorononanoic acid



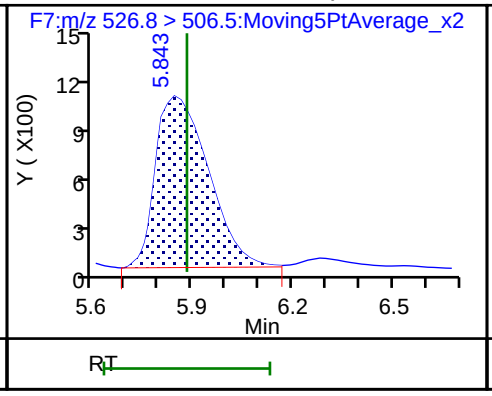
20 Perfluorooctane sulfonic acid (M)



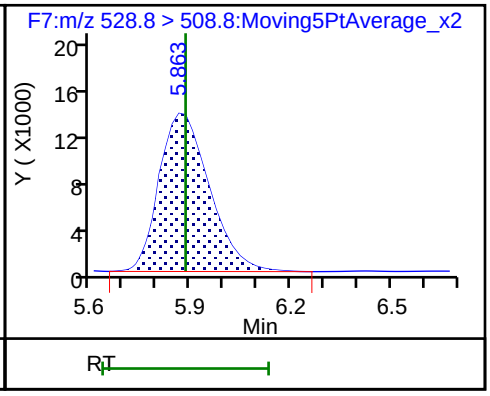
D 22 13C4 PFOS



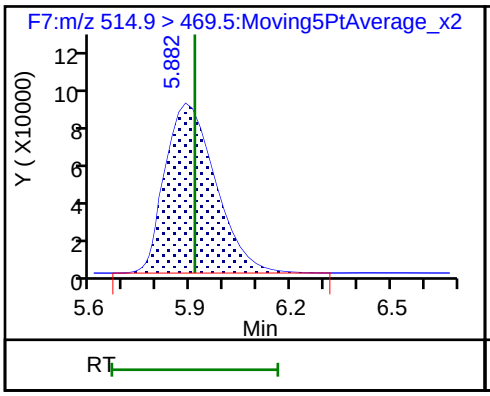
24 Sodium 1H,1H,2H,2H-perfluorodecane



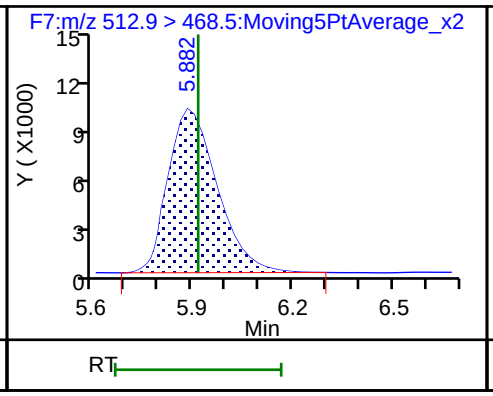
D 23 M2-8:2FTS



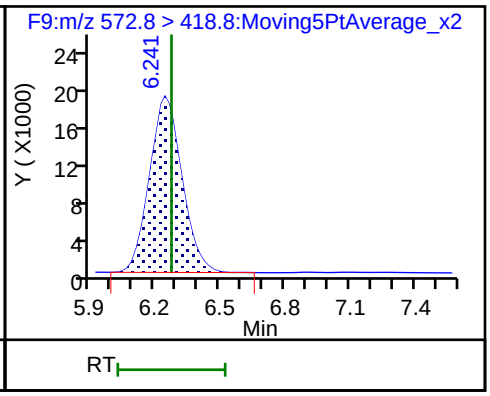
D 25 13C2 PFDA



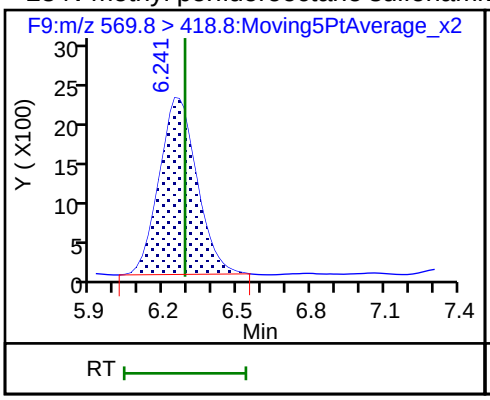
26 Perfluorodecanoic acid



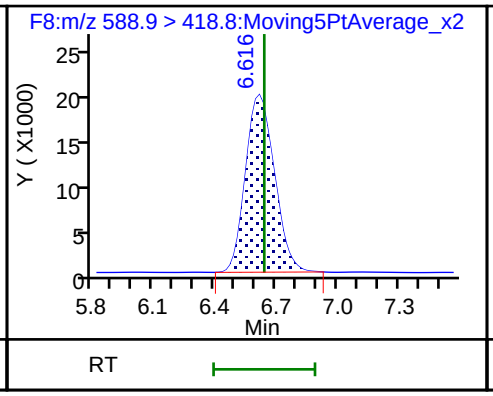
D 27 d3-NMeFOSAA



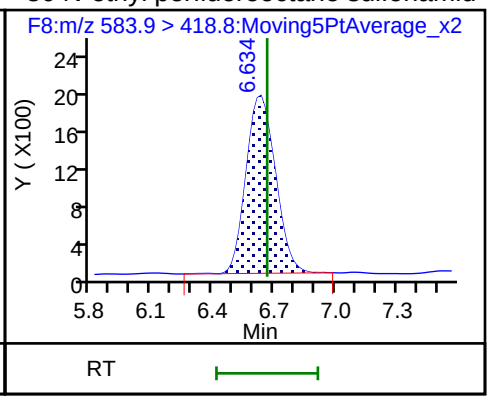
28 N-methyl perfluorooctane sulfonami



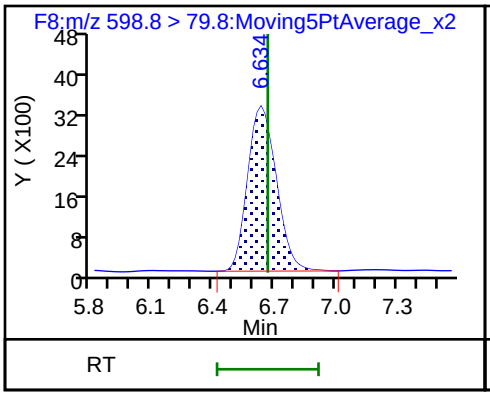
D 29 d5-NEtFOSAA



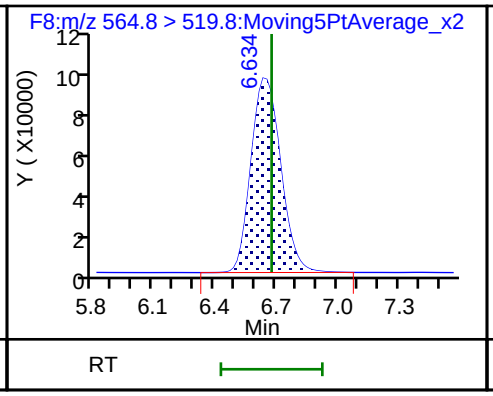
30 N-ethyl perfluorooctane sulfonamid



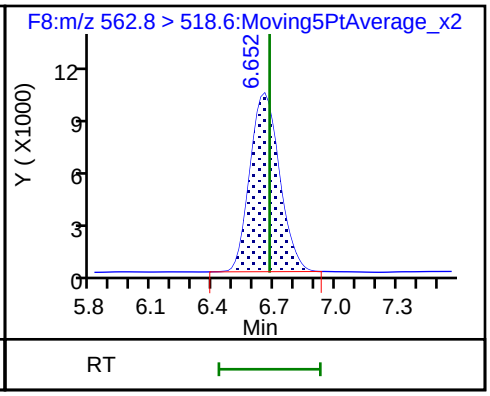
31 Perfluorodecane Sulfonic acid



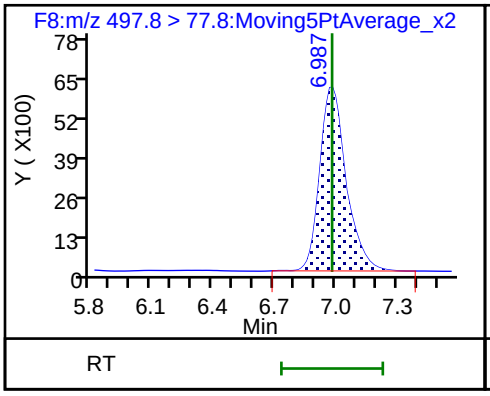
D 33 13C2 PFUnA



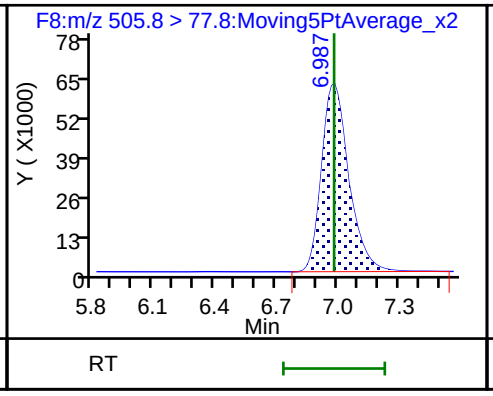
32 Perfluoroundecanoic acid



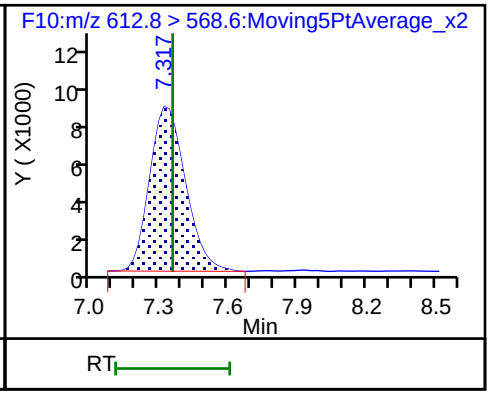
34 Perfluorooctane Sulfonamide



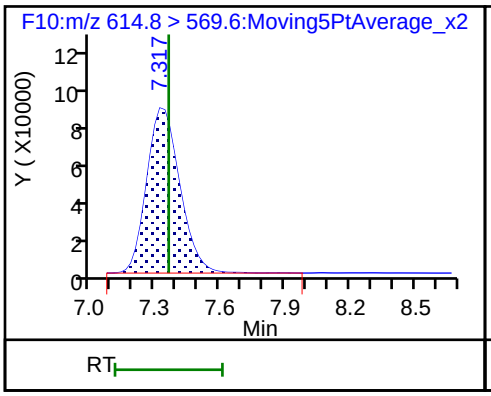
D 35 13C8 FOSA



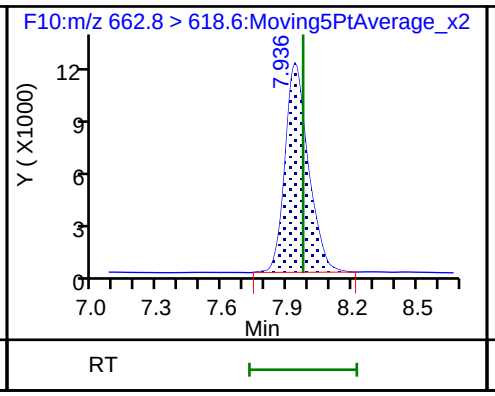
37 Perfluorododecanoic acid



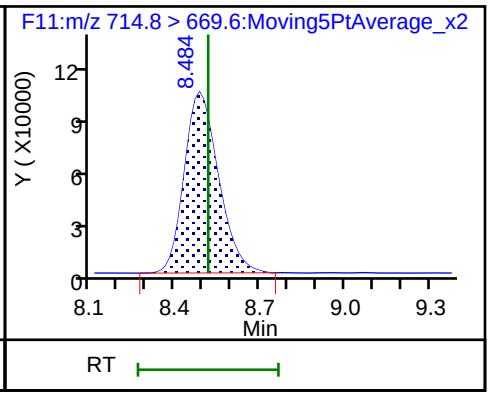
D 36 13C2 PFDoA



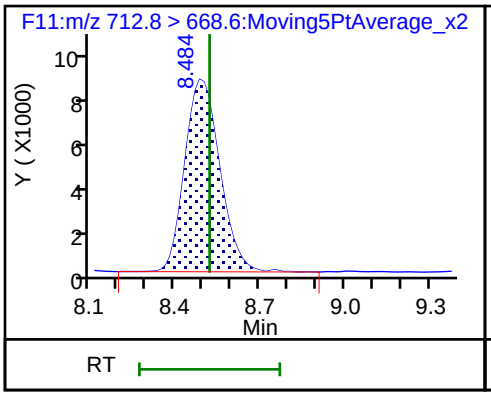
40 Perfluorotridecanoic acid



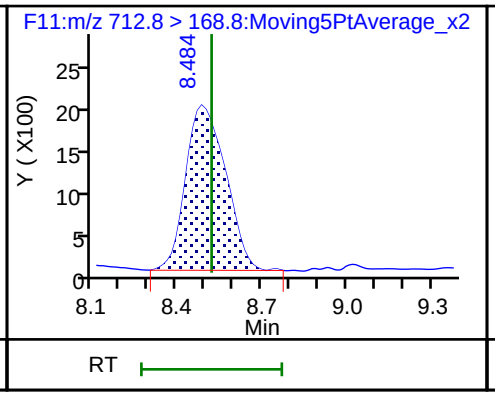
D 43 13C2-PFTeDA



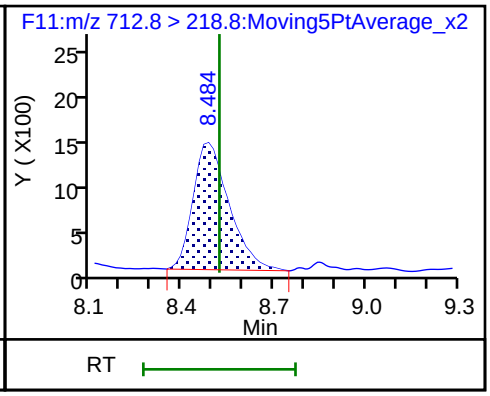
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



TestAmerica Burlington

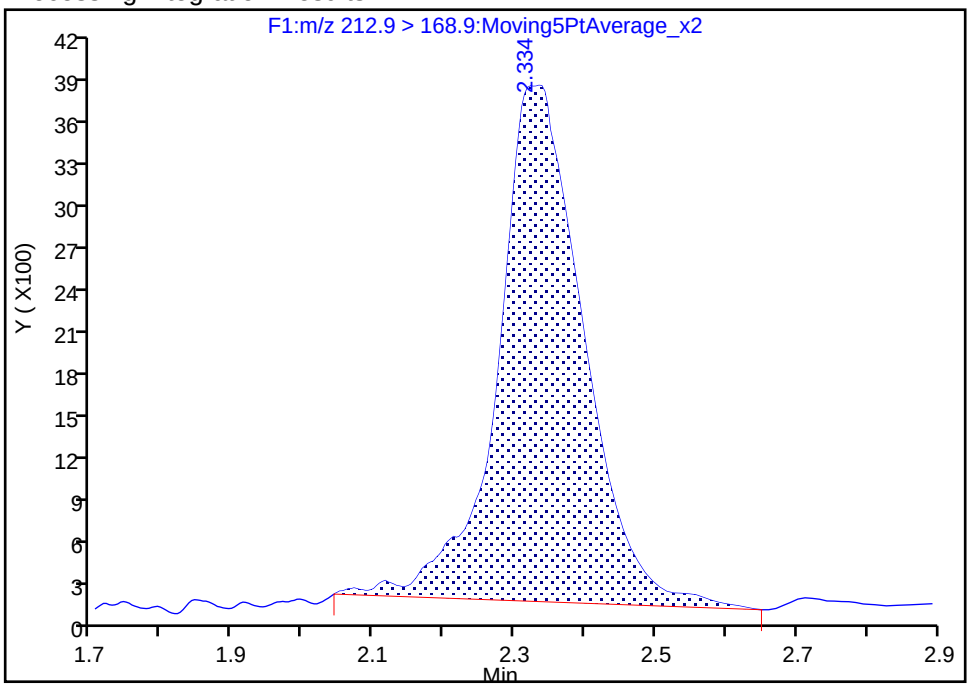
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

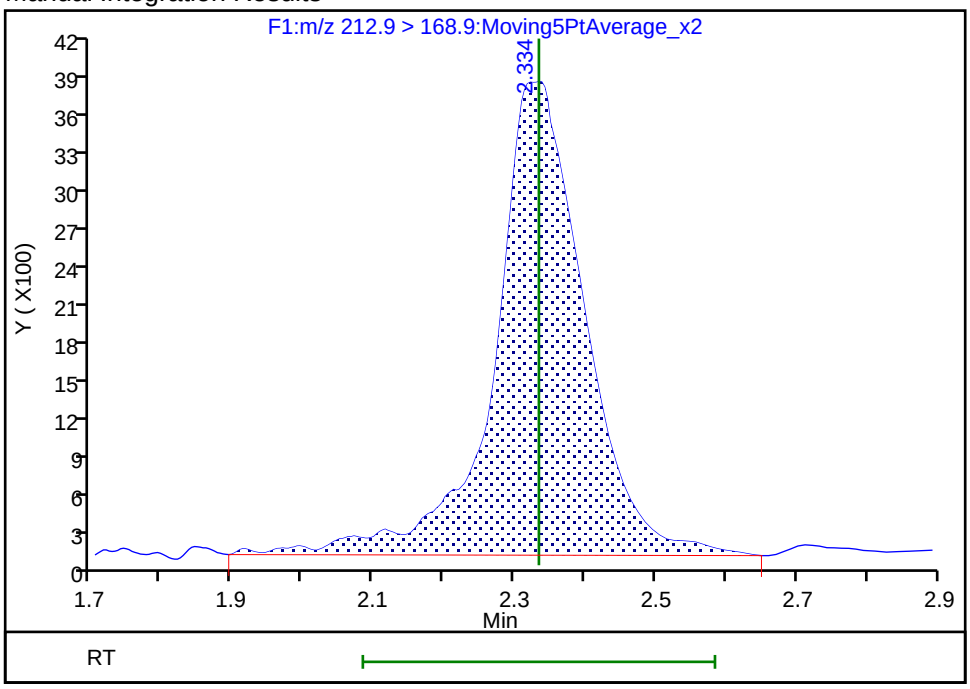
Processing Integration Results

RT: 2.33
Area: 30556
Amount: 4.441640
Amount Units: ng/ml



Manual Integration Results

RT: 2.33
Area: 32796
Amount: 4.783733
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:51:21
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

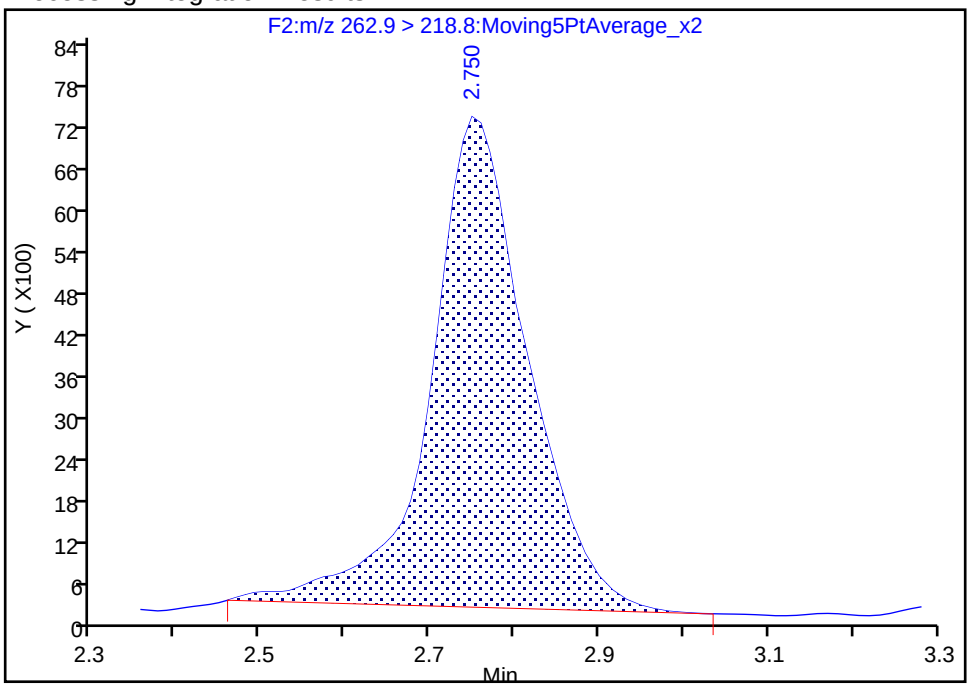
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

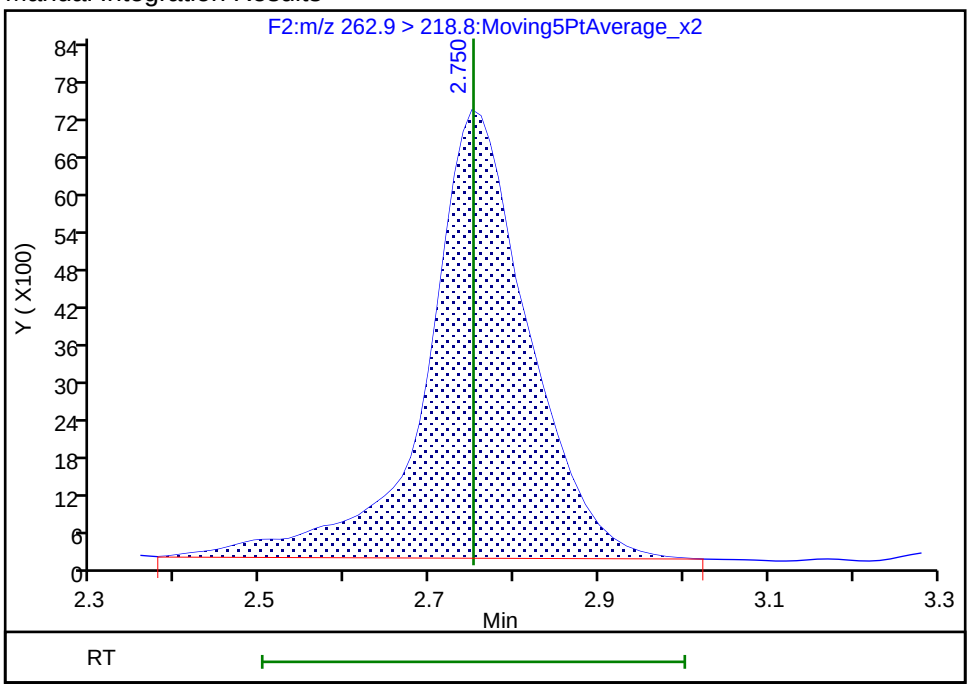
Processing Integration Results

RT: 2.75
Area: 56796
Amount: 4.342732
Amount Units: ng/ml



Manual Integration Results

RT: 2.75
Area: 59861
Amount: 4.572526
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:51:25
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

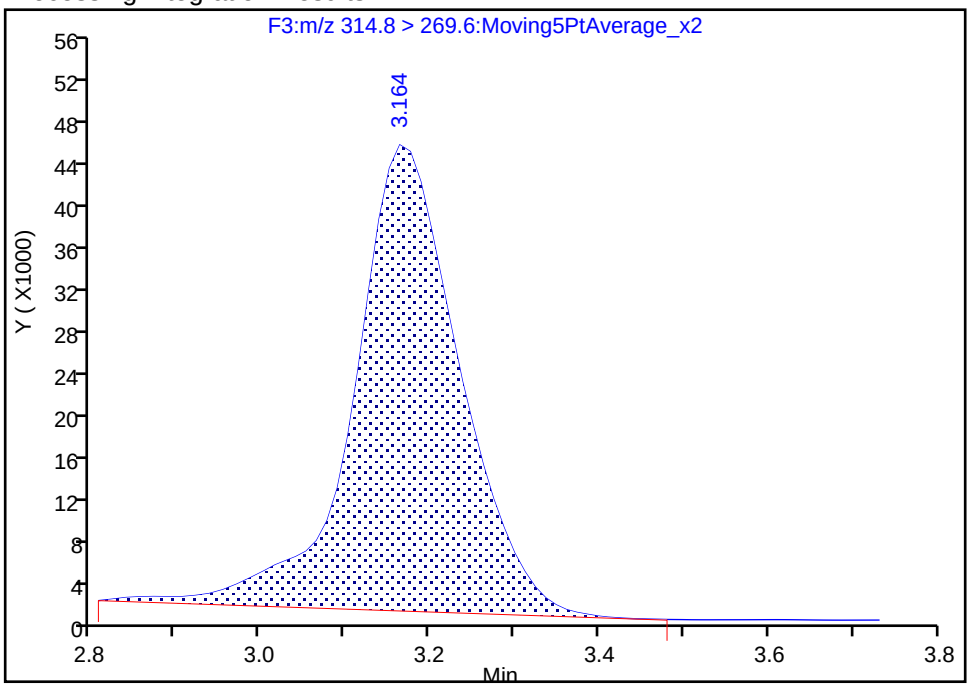
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

D 7 13C2 PFHxA, CAS: STL00993

Signal: 1

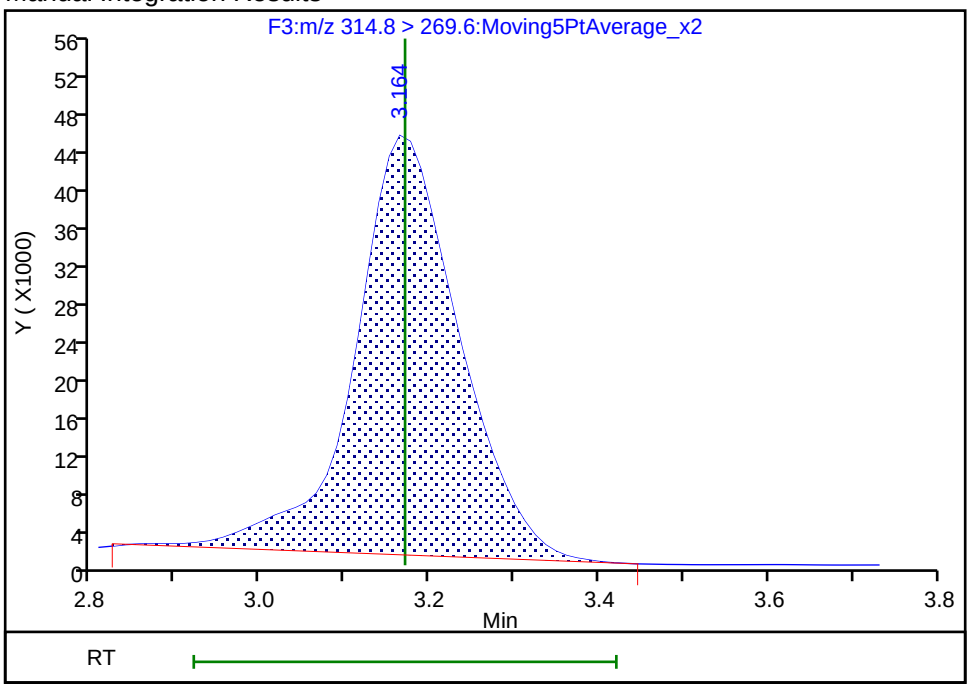
Processing Integration Results

RT: 3.16
Area: 389264
Amount: 42.610909
Amount Units: ng/ml



Manual Integration Results

RT: 3.16
Area: 380991
Amount: 41.705302
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:51:39
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

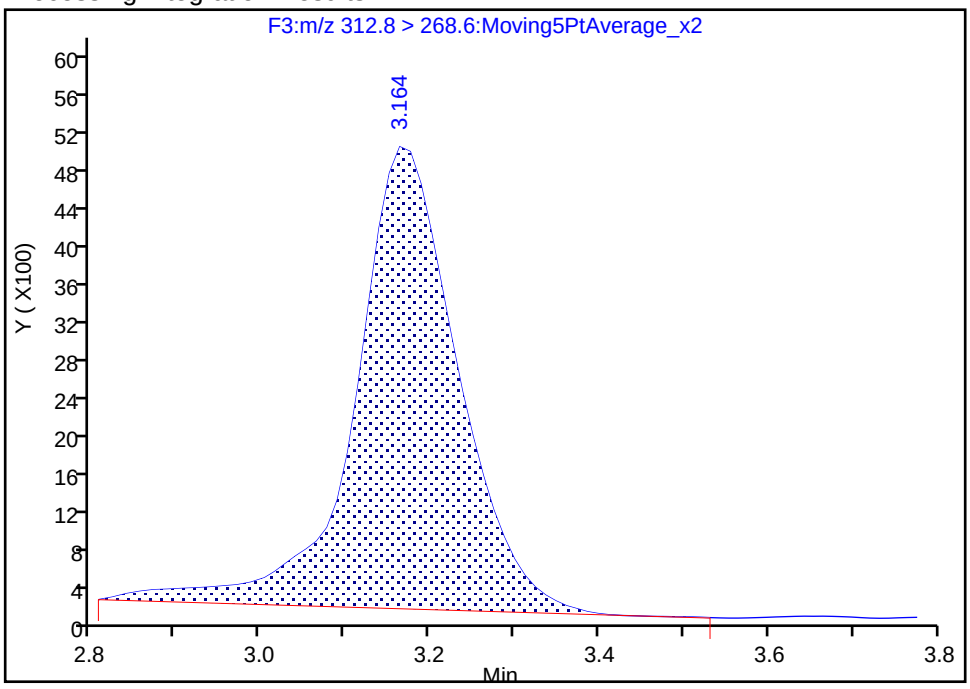
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

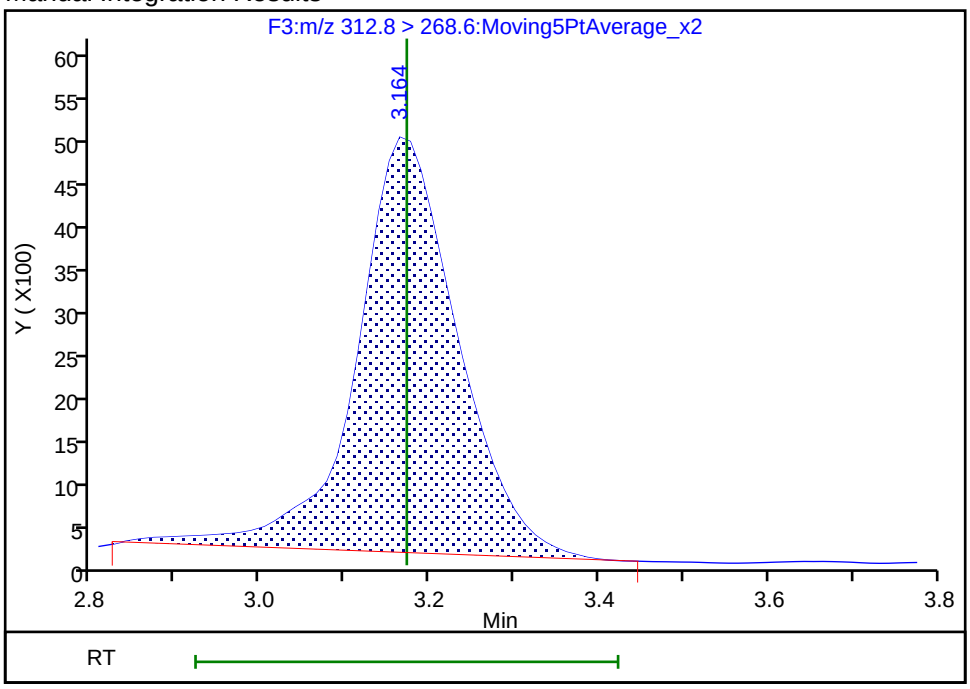
Processing Integration Results

RT: 3.16
Area: 41445
Amount: 5.623691
Amount Units: ng/ml



Manual Integration Results

RT: 3.16
Area: 40294
Amount: 5.473533
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:51:42
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

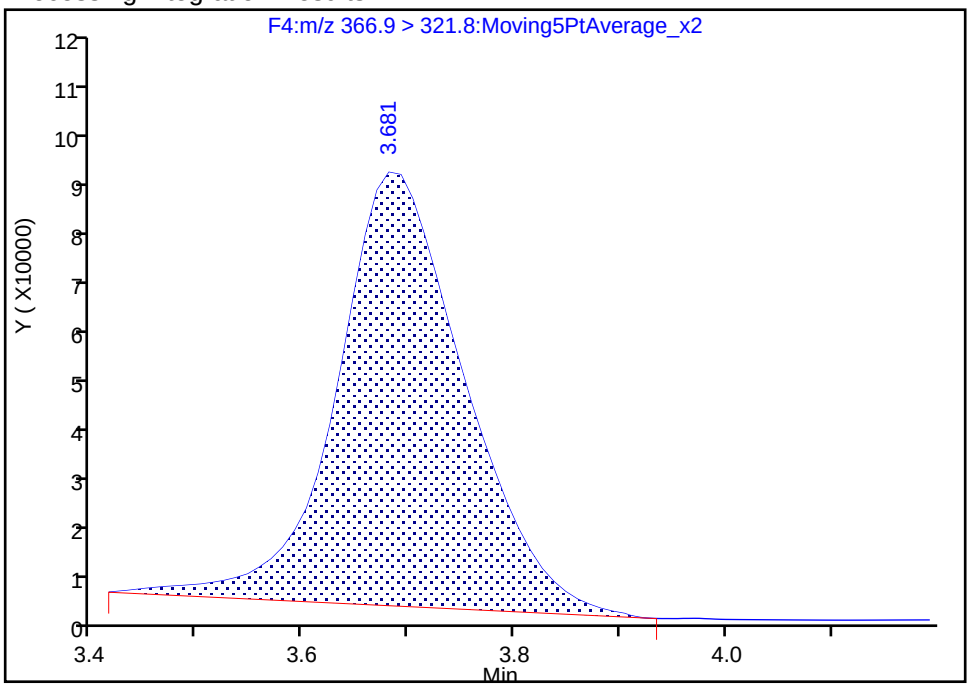
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

D 10 13C4-PFHpA, CAS: STL01892

Signal: 1

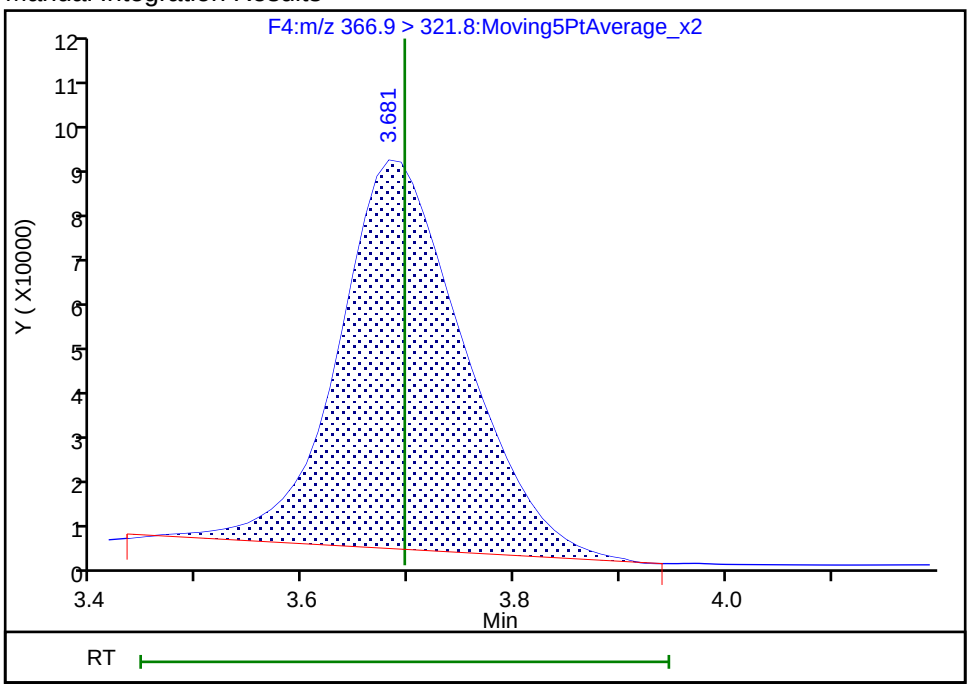
Processing Integration Results

RT: 3.68
Area: 732368
Amount: 47.408613
Amount Units: ng/ml



Manual Integration Results

RT: 3.68
Area: 710761
Amount: 46.009920
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:51:46
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

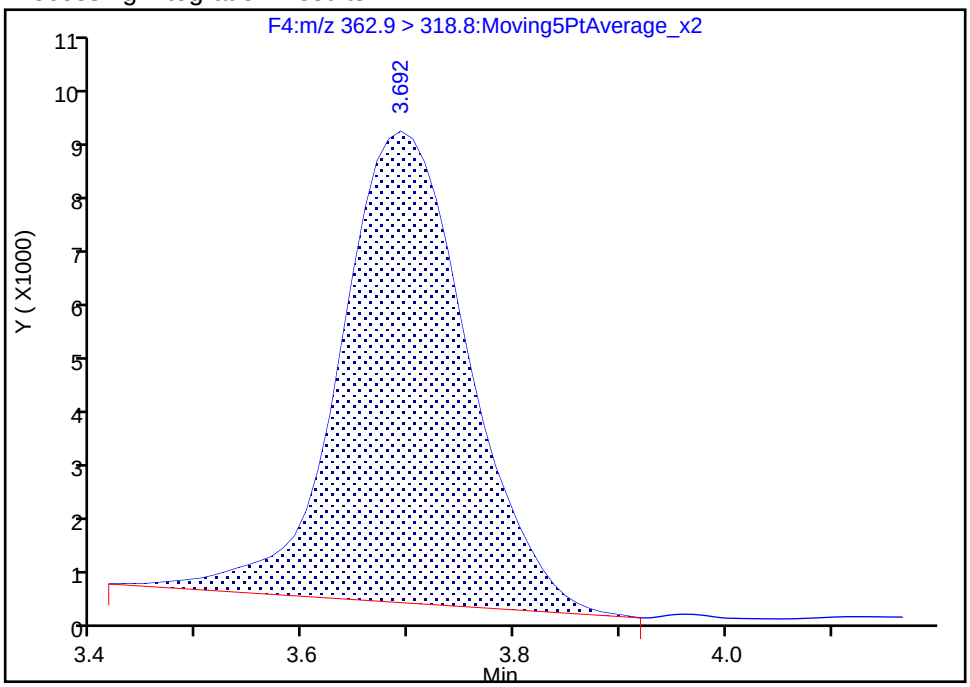
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

11 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

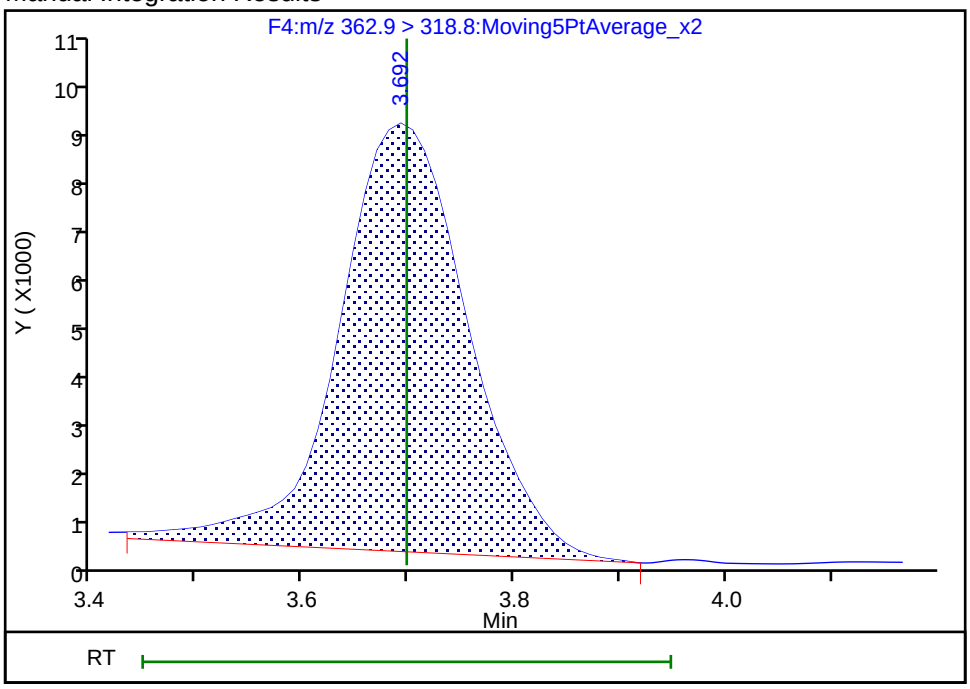
Processing Integration Results

RT: 3.69
Area: 74141
Amount: 4.974656
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 75363
Amount: 5.057489
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:51:49
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

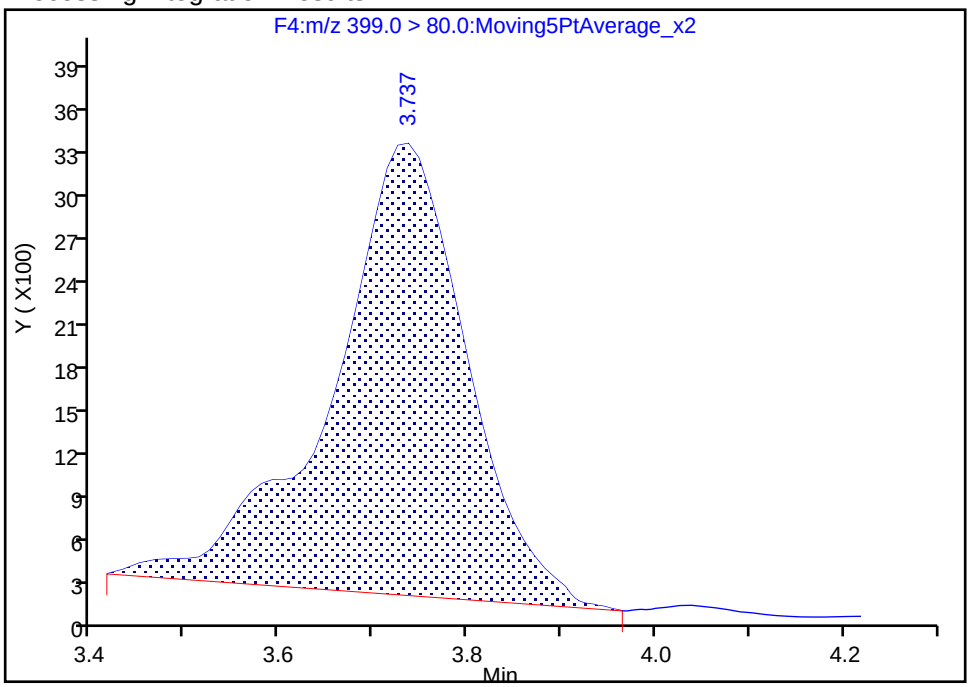
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

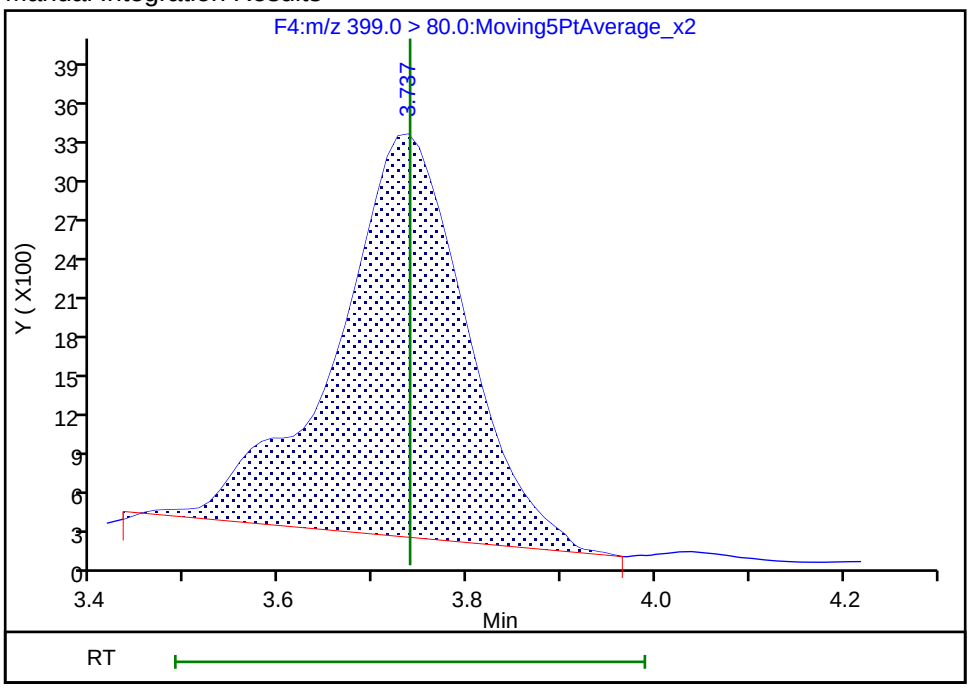
Processing Integration Results

RT: 3.74
Area: 31329
Amount: 3.640963
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 29825
Amount: 3.475242
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:51:54
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

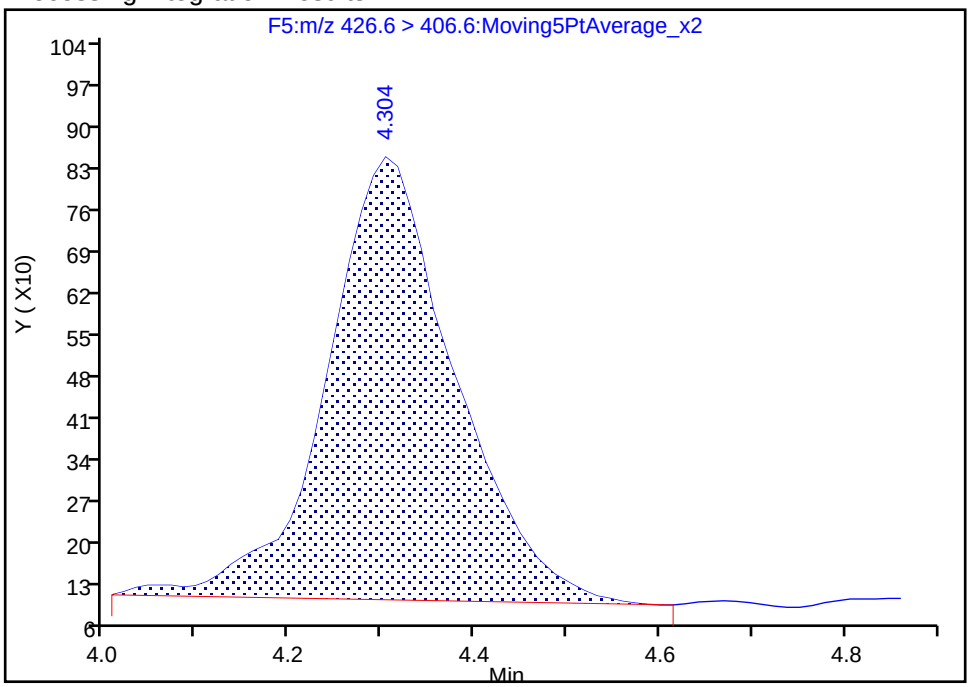
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

15 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate, CAS: 27619-97-2

Signal: 1

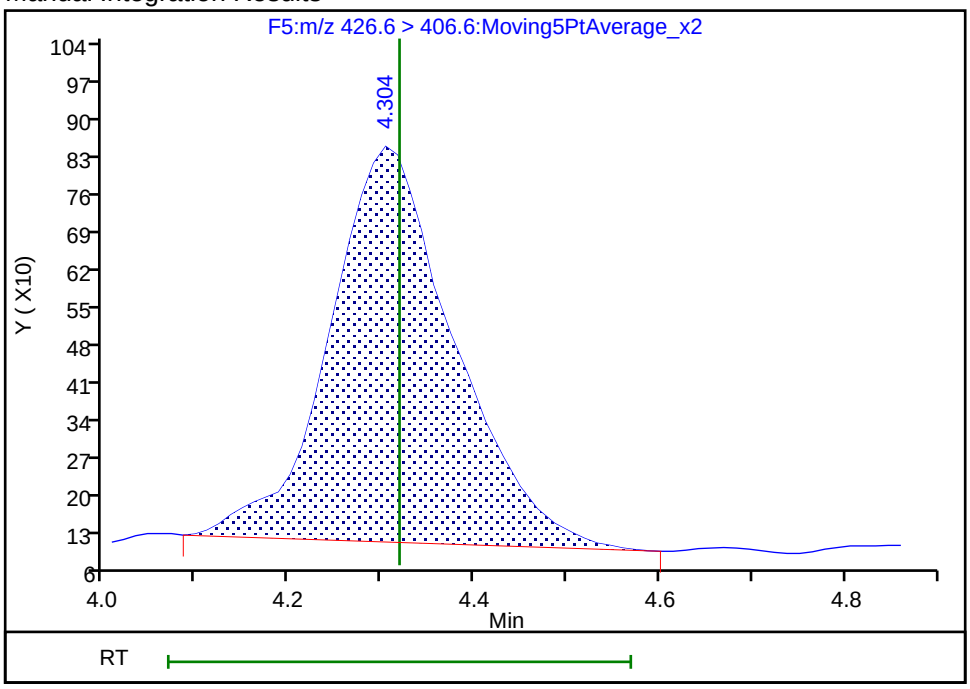
Processing Integration Results

RT: 4.30
Area: 7207
Amount: 5.908950
Amount Units: ng/ml



Manual Integration Results

RT: 4.30
Area: 6918
Amount: 5.792764
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:51:59
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

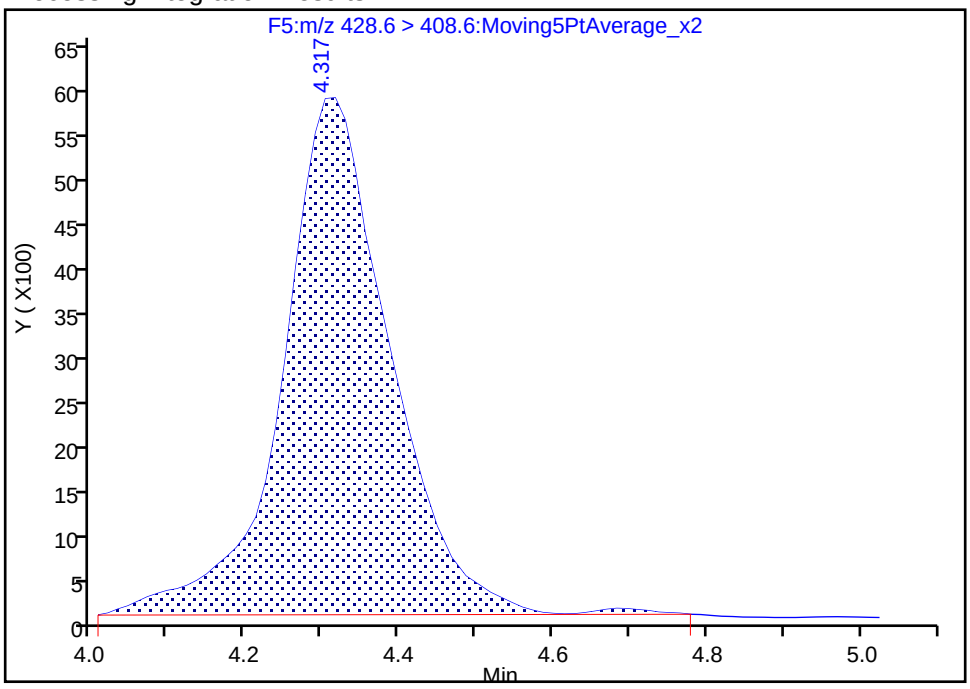
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

D 14 M2-6:2FTS, CAS: STL02279

Signal: 1

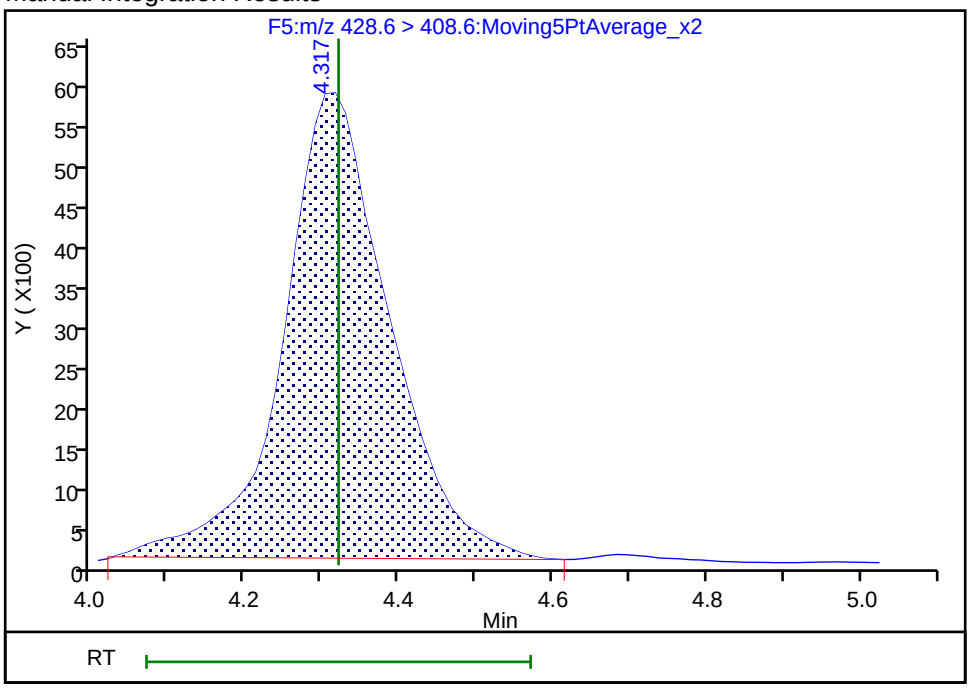
Processing Integration Results

RT: 4.32
Area: 56267
Amount: 39.468795
Amount Units: ng/ml



Manual Integration Results

RT: 4.32
Area: 55094
Amount: 38.645988
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:52:03
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

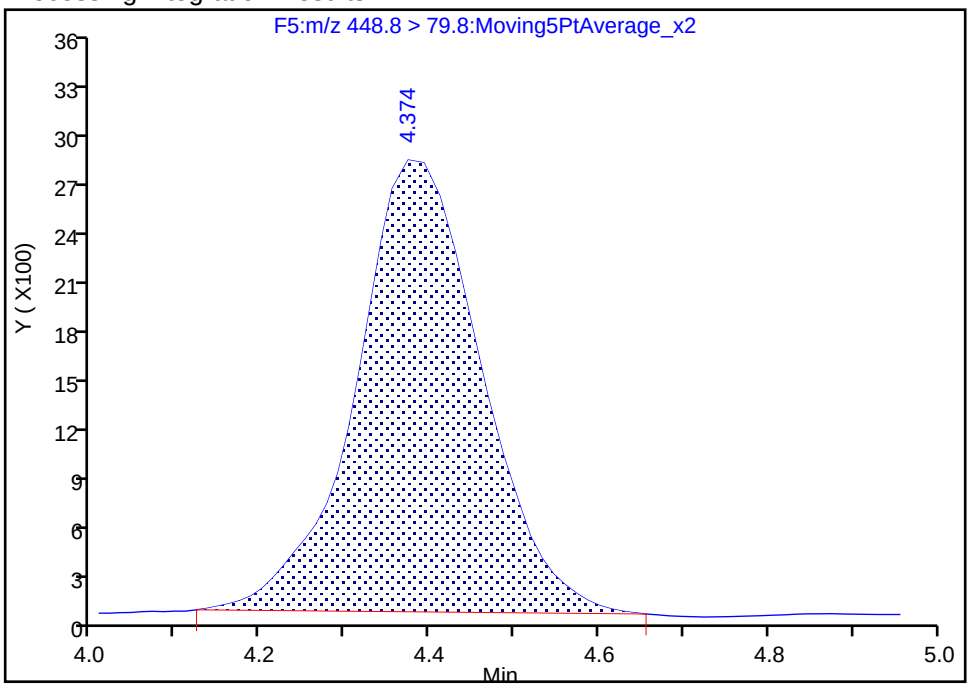
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

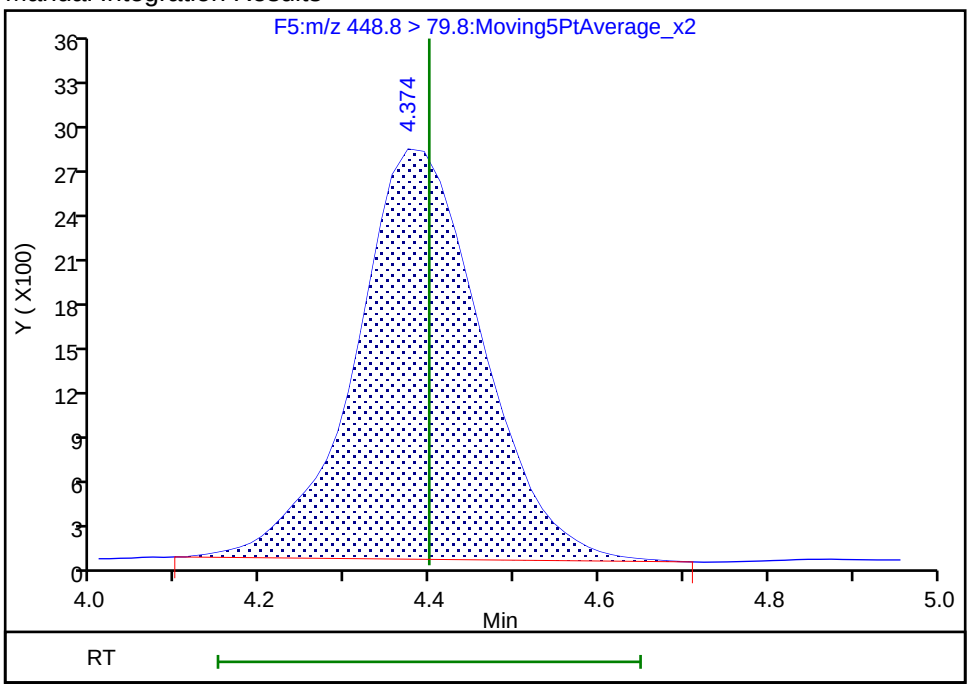
Processing Integration Results

RT: 4.37
Area: 27775
Amount: 4.553992
Amount Units: ng/ml



Manual Integration Results

RT: 4.37
Area: 28156
Amount: 4.613926
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:52:13
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

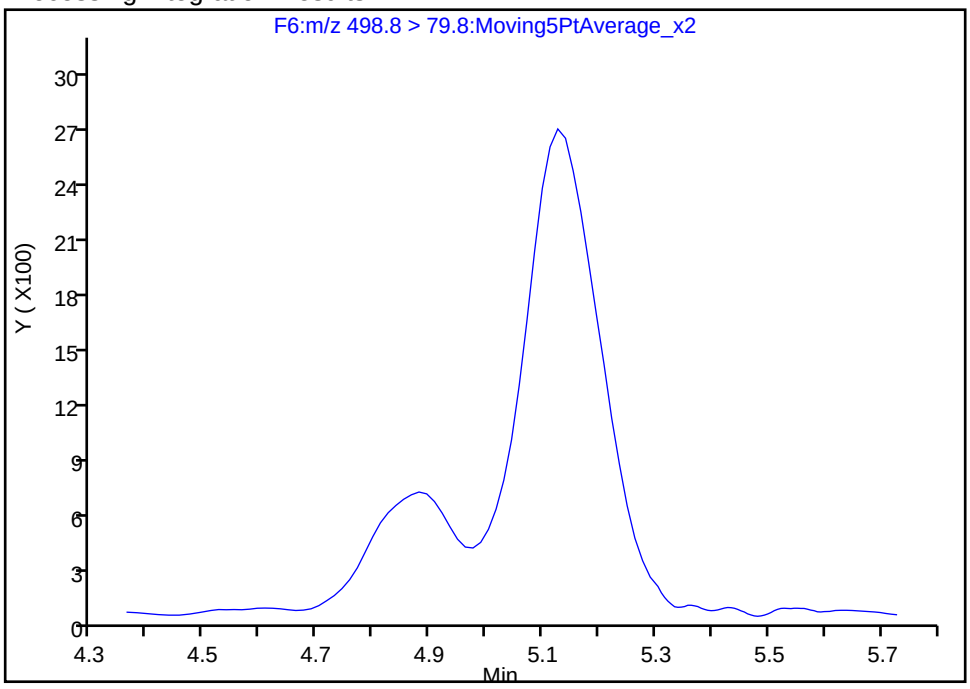
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A33.d
Injection Date: 11-May-2018 16:32:17 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

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

Signal: 1

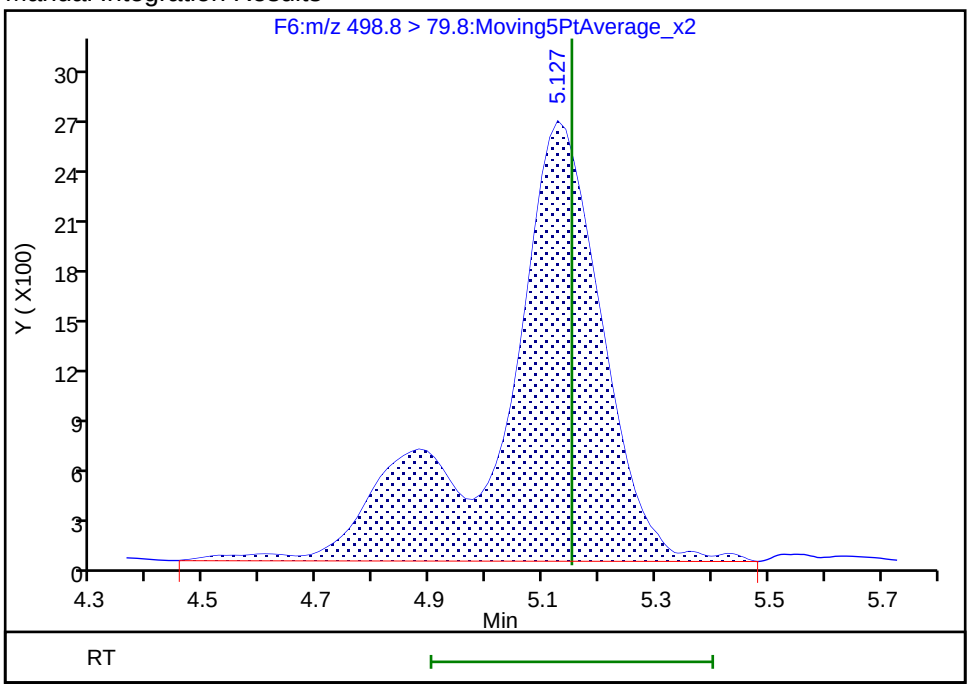
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 5.13
Area: 33194
Amount: 4.657805
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:52:19
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: CCV 200-129349/48 Calibration Date: 05/11/2018 20:34

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A48.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L2ID		0.9382		50760	50000	1.5	40.0
Perfluoropentanoic acid (PFPeA)	L2ID		1.699		39220	50000	-21.6	40.0
Perfluorobutanesulfonic acid (PFBS)	L2ID		1.223		37460	44200	-15.3	40.0
Perfluorohexanoic acid (PFHxA)	L1ID		1.022		51020	50000	2.0	40.0
Perfluoroheptanoic acid (PFHpA)	L2ID		1.049		50510	50000	1.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	L2ID		1.200		42010	45500	-7.7	40.0
6:2FTS	AveID	1.030	1.010		46520	47400	-1.9	40.0
Perfluorooctanoic acid (PFOA)	L2ID		1.037		50060	50000	0.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	L1ID		1.035		51380	47600	7.9	50.0
Perfluorononanoic acid (PFNA)	L2ID		1.043		55810	50000	11.6	40.0
Perfluorooctanesulfonic acid (PFOS)	L2ID		1.192		49840	46400	7.4	40.0
8:2FTS	AveID	0.7678	0.9099		56770	47900	18.5	40.0
Perfluorodecanoic acid (PFDA)	L2ID		1.003		52010	50000	4.0	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	L1ID		1.307		57340	50000	14.7	40.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	L2ID		1.041		51220	50000	2.4	40.0
Perfluorodecanesulfonic acid (PFDS)	L2ID		1.071		48700	48200	1.0	50.0
Perfluoroundecanoic acid (PFUnA)	L2ID		1.012		52340	50000	4.7	40.0
Perfluorooctane Sulfonamide (FOSA)	L2ID		0.8894		48640	50000	-2.7	40.0
Perfluorododecanoic acid (PFDoA)	L2ID		0.8910		50510	50000	1.0	40.0
Perfluorotridecanoic Acid (PFTriA)	L2ID		0.8989		49670	50000	-0.7	50.0
Perfluorotetradecanoic acid (PFTeA)	L2ID		0.9463		51650	50000	3.3	40.0
13C4 PFBA	Ave	0.4715	0.4587		48640	50000	-2.7	50.0
13C5 PFPeA	Ave	0.3597	0.4314		59970	50000	19.9	50.0
13C3-PFBS	Ave	0.3754	0.4147		51370	46500	10.5	50.0
13C2 PFHxA	Ave	0.5251	0.5732		54590	50000	9.2	50.0
13C4-PFHpA	Ave	0.8879	0.9378		52810	50000	5.6	50.0
18O2 PFHxS	Ave	0.4167	0.4132		46890	47300	-0.9	50.0
M2-6:2FTS	Ave	0.0819	0.0950		55050	47500	15.9	50.0
13C4 PFOA	Ave	0.8670	0.8415		48530	50000	-2.9	50.0
13C5 PFNA	Ave	1.030	0.9405		45650	50000	-8.7	50.0
13C4 PFOS	Ave	0.3741	0.4038		51580	47800	7.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: CCV 200-129349/48 Calibration Date: 05/11/2018 20:34

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A48.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-8:2FTS	Ave	0.2197	0.2082		45400	47900	-5.2	50.0
13C2 PFDA	Ave	1.248	1.142		45770	50000	-8.5	50.0
d3-NMeFOSAA	Ave	0.2653	0.2383		44910	50000	-10.2	50.0
d5-NEtFOSAA	Ave	0.2305	0.2164		46950	50000	-6.1	50.0
13C2 PFUnA	Ave	1.171	1.087		46380	50000	-7.2	50.0
13C8 FOSA	Ave	0.6724	0.8042		59810	50000	19.6	50.0
13C2 PFDoA	Ave	1.232	1.279		51930	50000	3.9	50.0
13C2-PFTeDA	Ave	1.137	1.078		47430	50000	-5.1	50.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A48.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 11-May-2018 20:34:35 ALS Bottle#: 0 Worklist Smp#: 48
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-048 CCV5
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:17 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: murrayjw Date: 14-May-2018 08:25:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										M
216.9 > 171.5	2.318	2.328	-0.010	1.000	320918	48.6		97.3	423	M
1 Perfluorobutyric acid										M
212.9 > 168.9	2.318	2.334	-0.016	1.000	301079	50.8		102	419	M
4 Perfluoropentanoic acid										
262.9 > 218.8	2.750	2.751	-0.001	1.000	512737	39.2		78.4	771	
D 3 13C5-PFPeA										
267.7 > 222.6	2.750	2.753	-0.003	1.000	301853	60.0		120	1494	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.818	2.818	0.0	1.000	313641	37.5		84.7	527	
D 5 13C3-PFBS										M
302.0 > 79.8	2.818	2.820	-0.002	1.000	269807	51.4		110	198	M
D 7 13C2 PFHxA										
314.8 > 269.6	3.152	3.170	-0.018	1.000	401069	54.6		109	407	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.164	3.172	-0.008	1.004	409980	51.0		102	1997	
D 10 13C4-PFHpA										
366.9 > 321.8	3.670	3.696	-0.026	1.000	656144	52.8		106	996	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.681	3.698	-0.017	1.003	688607	50.5		101	828	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.726	3.739	-0.013	1.000	315562	42.0		92.3	446	
D 13 18O2 PFHxS										
402.9 > 83.8	3.726	3.742	-0.016	1.000	273456	46.9		99.1	334	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.304	4.319	-0.015	1.000	63646	46.5		98.1	678	
D 14 M2-6:2FTS										
428.6 > 408.6	4.304	4.321	-0.017	1.000	63121	55.0		116	564	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.342	4.363	-0.021	1.000	588752	48.5		97.1	1513	
* 49 13C2-PFOA										
414.9 > 369.8	4.342	4.363	-0.021		699664	50.0			1132	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.342	4.368	-0.026	1.000	610640	50.1		100	357	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.374	4.399	-0.025	0.853	278329	51.4		108	1671	
D 21 13C5 PFNA										
467.8 > 422.8	5.099	5.127	-0.028	1.000	658015	45.6		91.3	794	
19 Perfluorononanoic acid										
462.8 > 418.8	5.099	5.136	-0.037	1.000	686171	55.8		112	2580	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.127	5.152	-0.025	1.000	312383	49.8		107	645	M
D 22 13C4 PFOS										
502.8 > 79.8	5.127	5.154	-0.027	1.000	270075	51.6		108	476	
24 Sodium 1H,1H,2H,2H-perfluorodecane										E
526.8 > 506.5	5.843	5.880	-0.037	0.997	127000	56.8		119	2165	E
D 23 M2-8:2FTS										
528.8 > 508.8	5.862	5.882	-0.020	1.000	139577	45.4		94.8	1043	
D 25 13C2 PFDA										
514.9 > 469.5	5.882	5.910	-0.028	1.000	799169	45.8		91.5	1684	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.882	5.914	-0.032	1.000	801785	52.0		104	1591	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.241	6.271	-0.030	1.000	166729	44.9		89.8	730	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.241	6.283	-0.042	1.000	217916	57.3		115	813	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.598	6.640	-0.042	1.000	151407	46.9		93.9	838	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.616	6.664	-0.048	1.003	157600	51.2		102	1408	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.616	6.667	-0.051	1.291	291575	48.7		101	4255	
D 33 13C2 PFUnA										
564.8 > 519.8	6.634	6.676	-0.042	1.000	760250	46.4		92.8	3326	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.634	6.676	-0.042	1.000	769450	52.3		105	3225	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.987	6.984	0.003	1.002	500456	48.6		97.3	2012	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	562699	59.8		120	5060	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.317	7.354	-0.037	1.000	797436	50.5		101	1754	
D 36 13C2 PFDoA										
614.8 > 569.6	7.317	7.358	-0.041	1.000	894955	51.9		104	1542	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.928	7.974	-0.046	1.084	804449	49.7		99.3	3226	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.468	8.514	-0.046	1.000	754488	47.4		94.9	1362	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.468	8.519	-0.051	1.000	713968	51.7		103	2631	
712.8 > 168.8	8.484	8.519	-0.035	1.002	166122		4.30(0.00-0.00)		955	
712.8 > 218.8	8.484	8.519	-0.035	1.002	85863		8.32(0.00-0.00)		1079	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21-L5_00003 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 12:12:18 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A48.d

Injection Date: 11-May-2018 20:34:35 Instrument ID: LC410

Lims ID: CCV L5

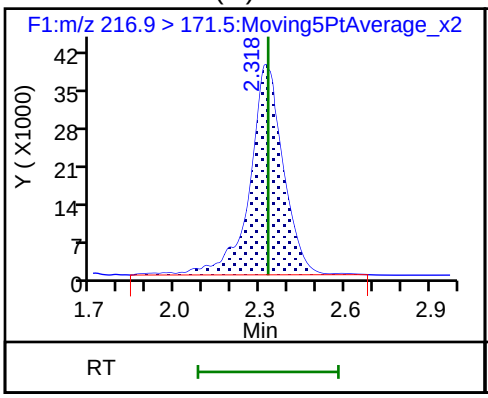
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 48

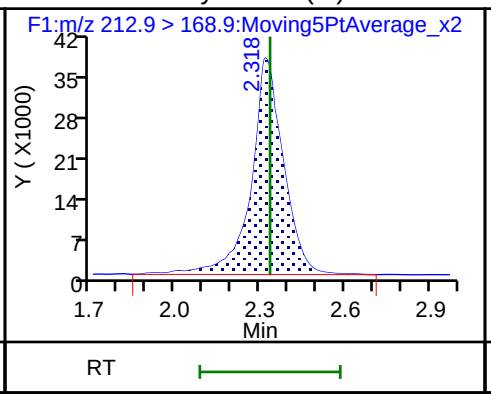
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

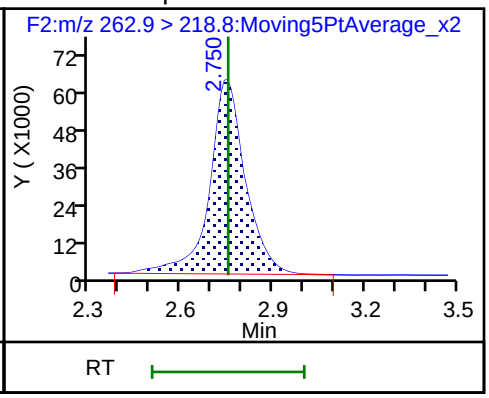
D 2 13C4 PFBA (M)



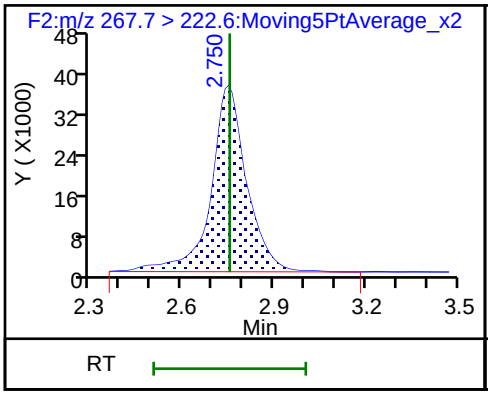
1 Perfluorobutyric acid (M)



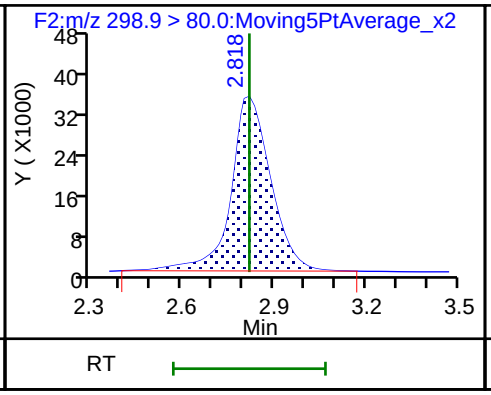
4 Perfluoropentanoic acid



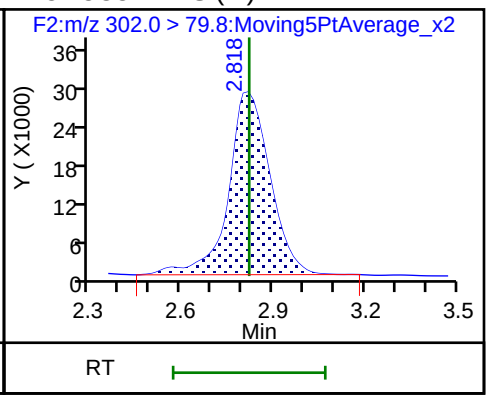
D 3 13C5-PFPeA



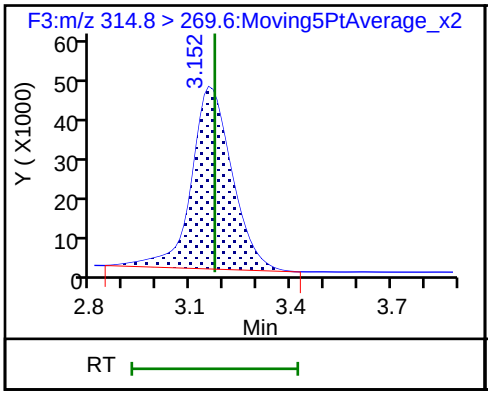
6 Perfluorobutanesulfonic acid



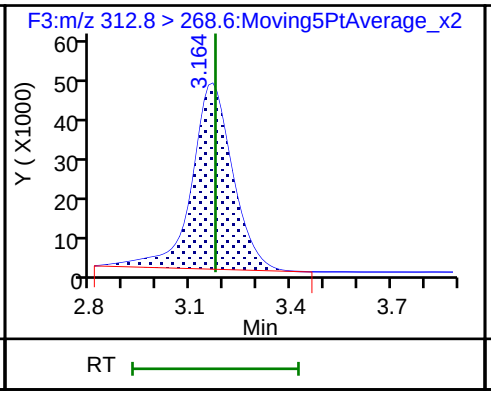
D 5 13C3-PFBS (M)



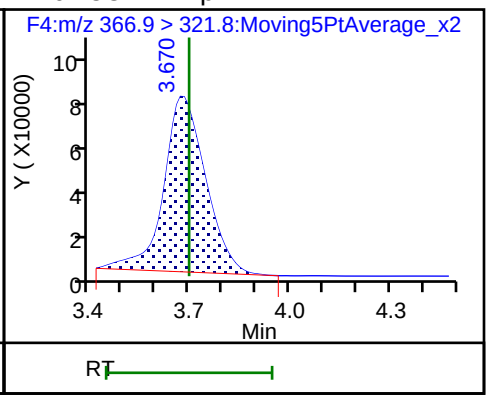
D 7 13C2 PFHxA



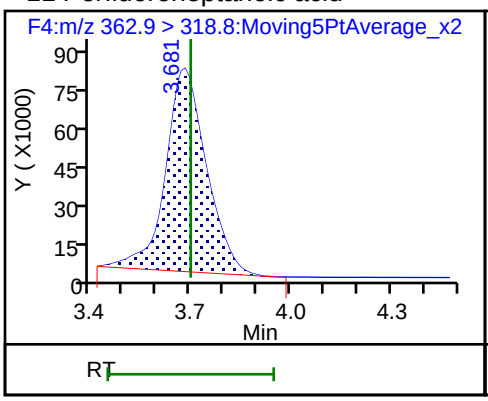
8 Perfluorohexanoic acid



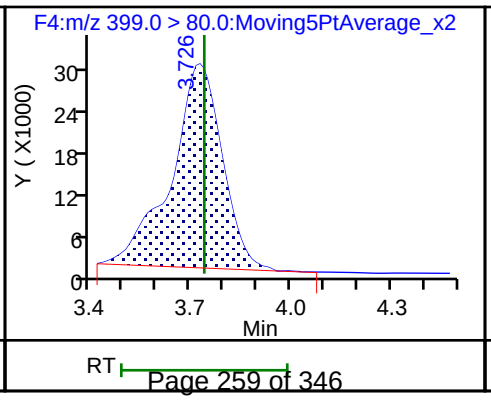
D 10 13C4-PFHpA



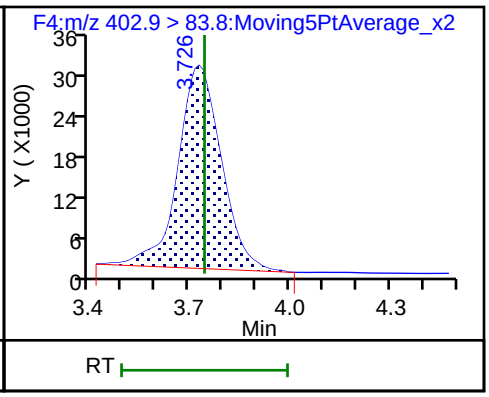
11 Perfluoroheptanoic acid



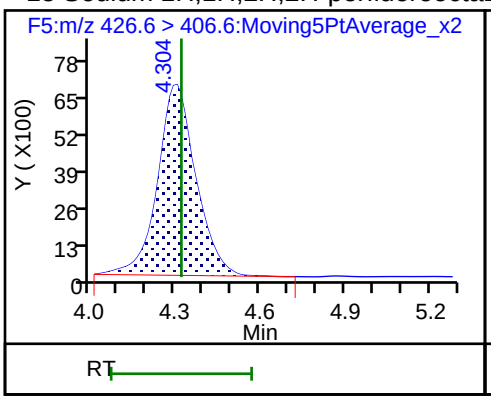
12 Perfluorohexanesulfonic acid



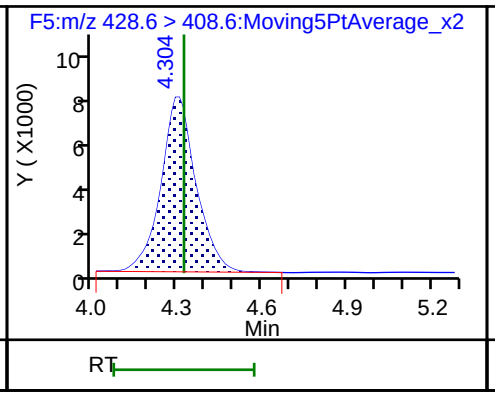
D 13 18O2 PFHxS



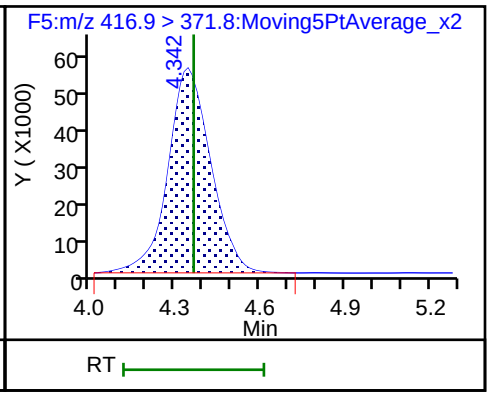
15 Sodium 1H,1H,2H,2H-perfluorooctane



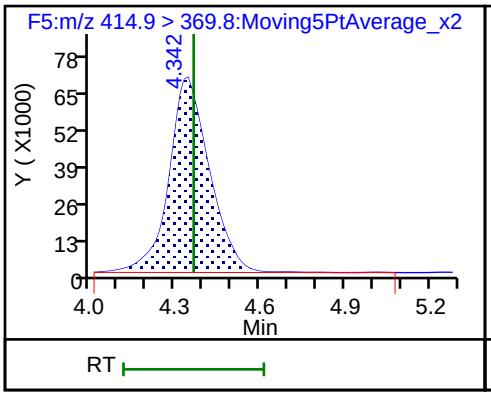
D 14 M2-6:2FTS



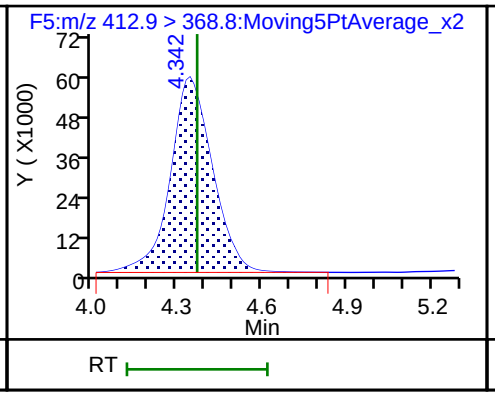
D 17 13C4 PFOA



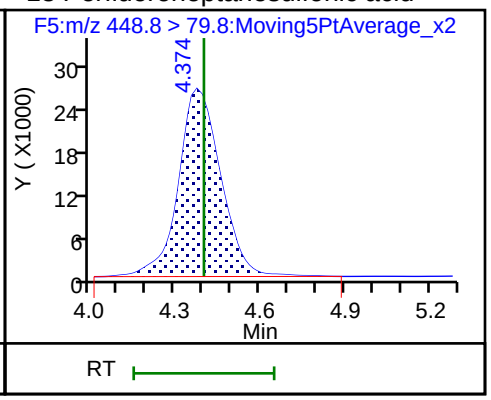
* 49 13C2-PFOA



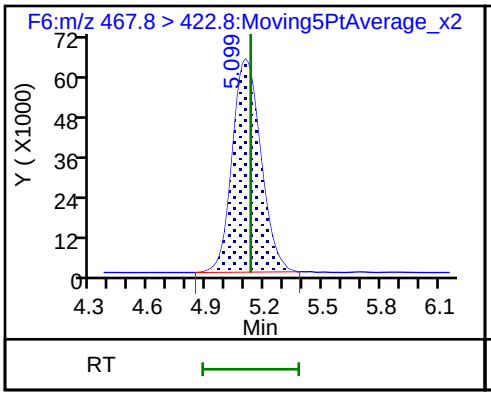
16 Perfluorooctanoic acid



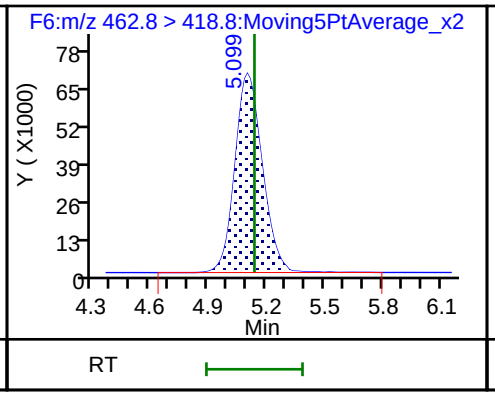
18 Perfluoroheptanesulfonic acid



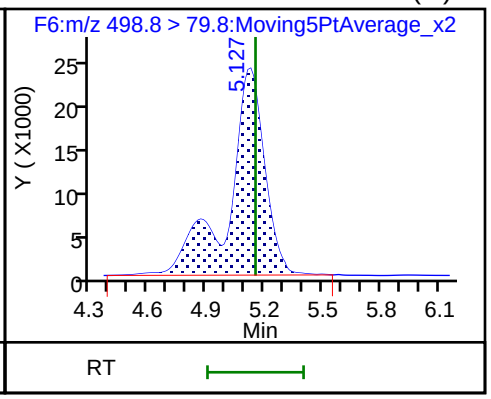
D 21 13C5 PFNA



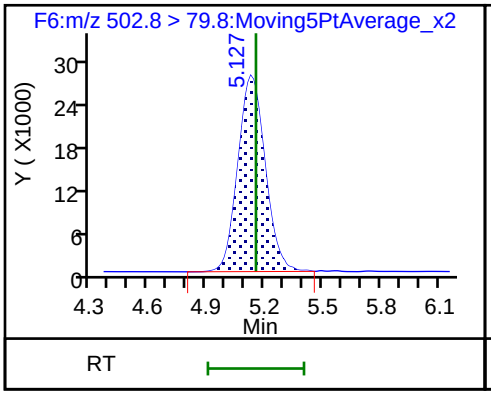
19 Perfluorononanoic acid



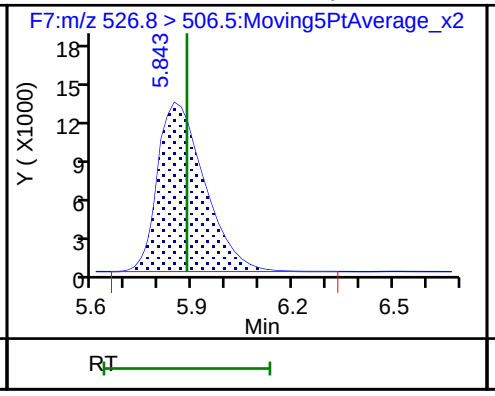
20 Perfluorooctane sulfonic acid (M)



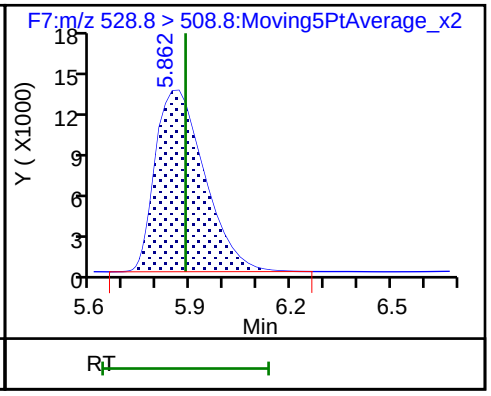
D 22 13C4 PFOS



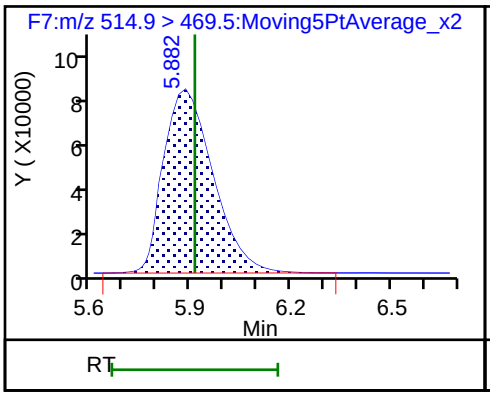
24 Sodium 1H,1H,2H,2H-perfluorodecane



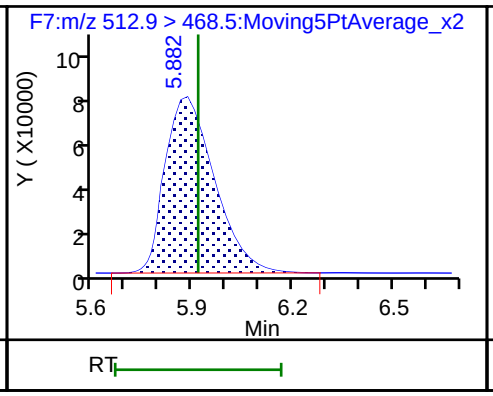
D 23 M2-8:2FTS



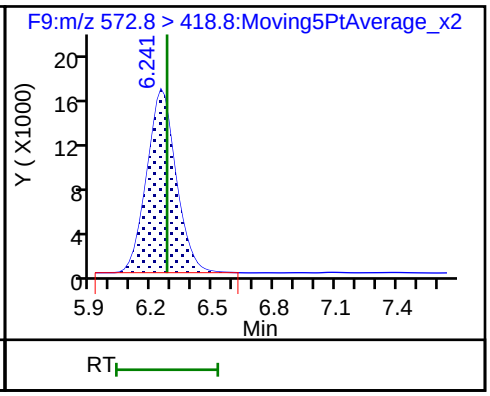
D 25 13C2 PFDA



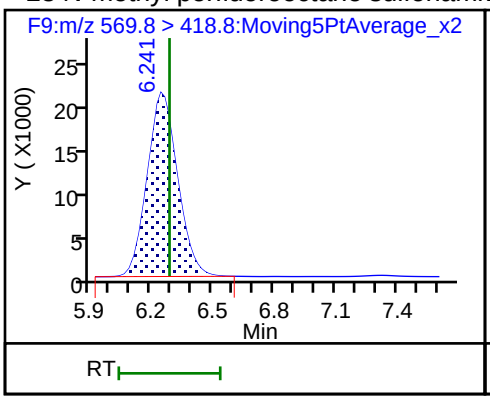
26 Perfluorodecanoic acid



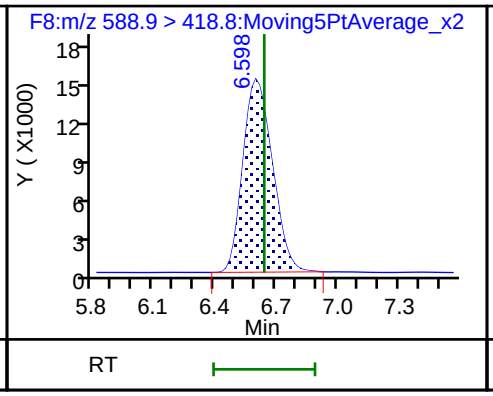
D 27 d3-NMeFOSAA



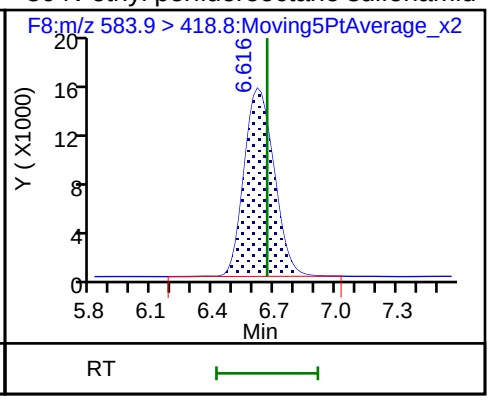
28 N-methyl perfluorooctane sulfonami



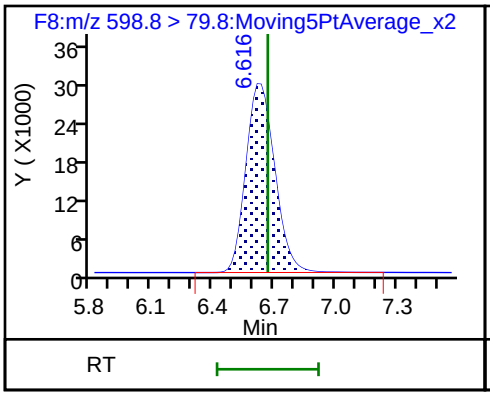
D 29 d5-NEtFOSAA



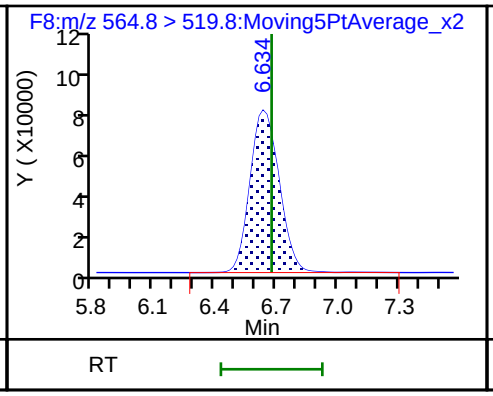
30 N-ethyl perfluorooctane sulfonamid



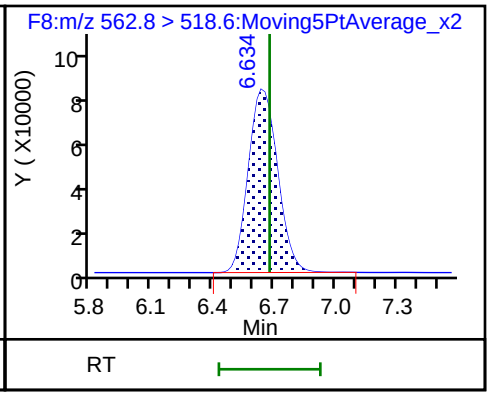
31 Perfluorodecane Sulfonic acid



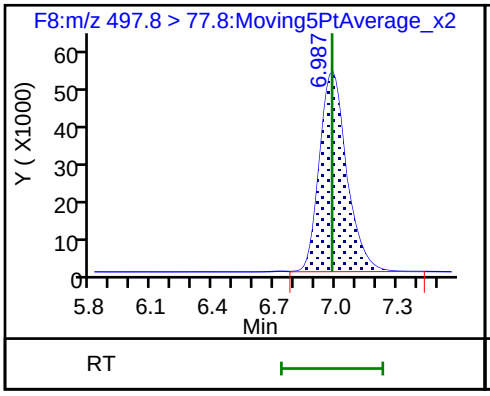
D 33 13C2 PFUnA



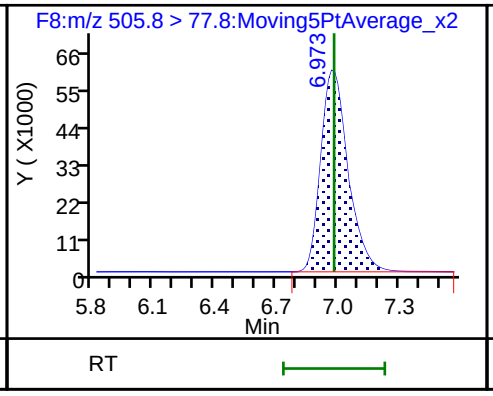
32 Perfluoroundecanoic acid



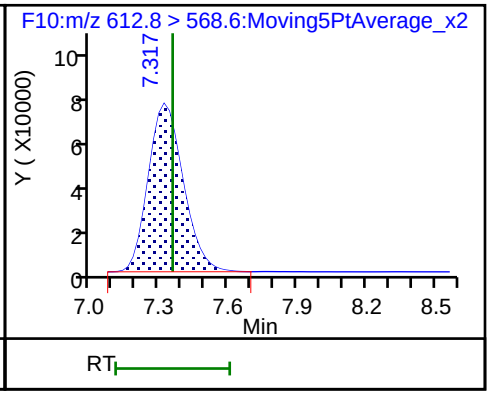
34 Perfluorooctane Sulfonamide



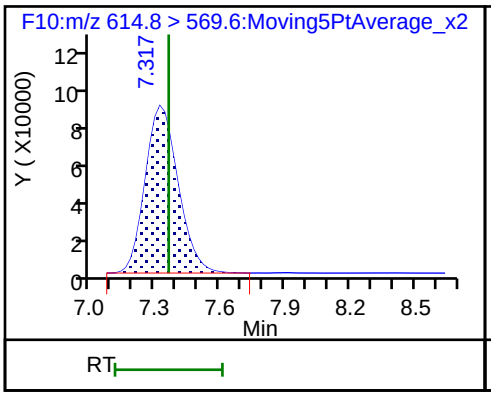
D 35 13C8 FOSA



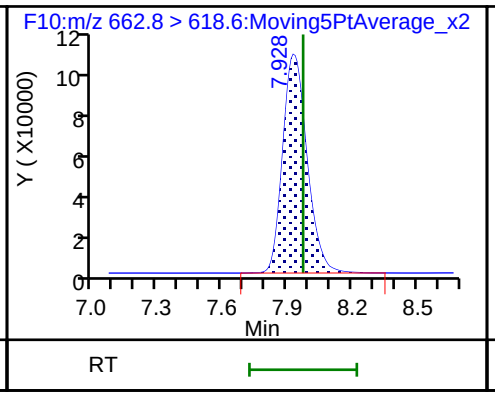
37 Perfluorododecanoic acid



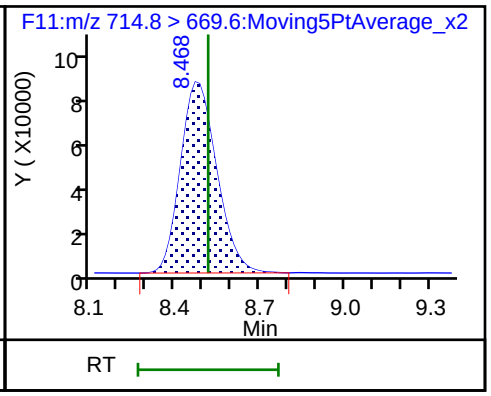
D 36 13C2 PFDoA



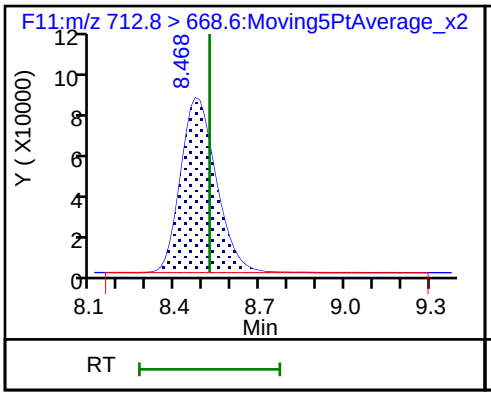
40 Perfluorotridecanoic acid



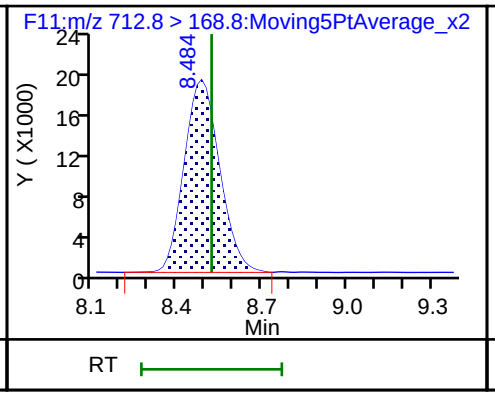
D 43 13C2-PFTeDA



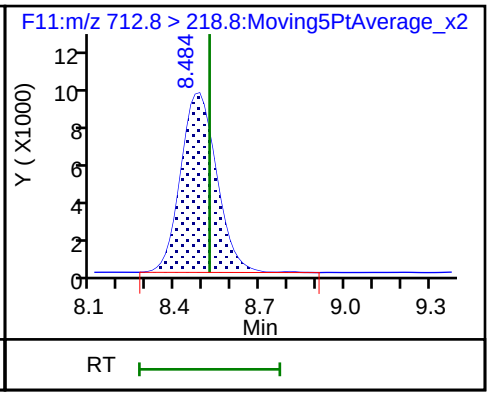
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Burlington

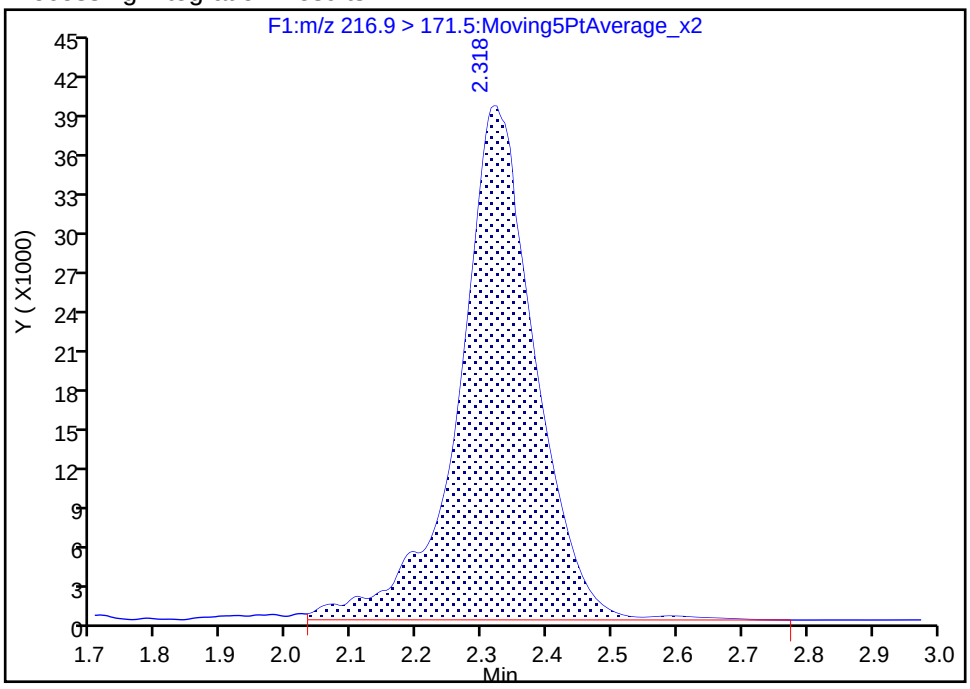
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A48.d
Injection Date: 11-May-2018 20:34:35 Instrument ID: LC410
Lims ID: CCV L5
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 48
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 2 13C4 PFBA, CAS: STL00992

Signal: 1

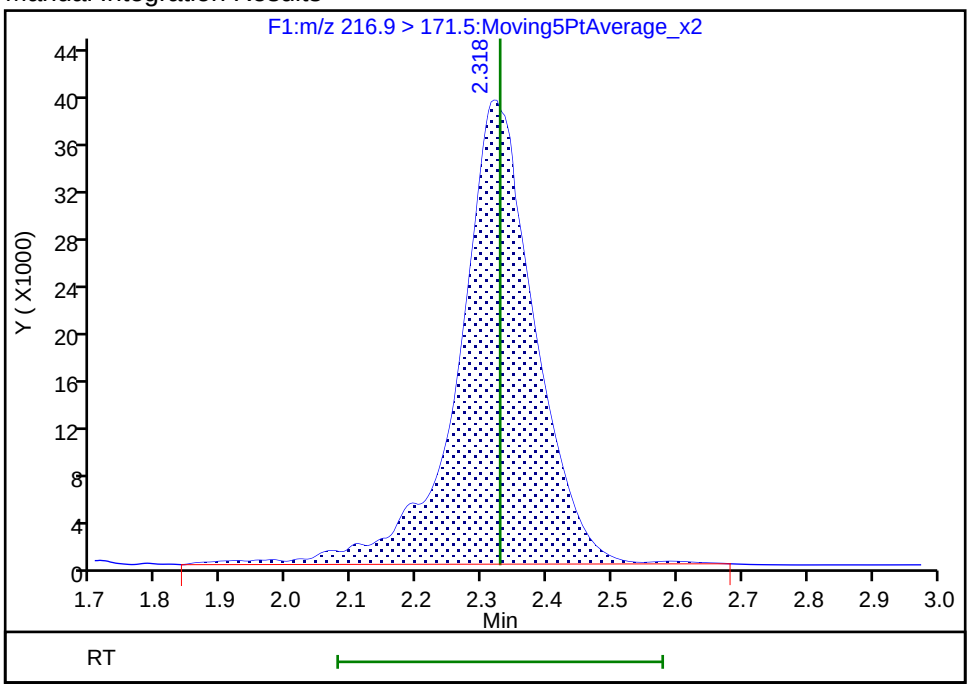
Processing Integration Results

RT: 2.32
Area: 320129
Amount: 48.518166
Amount Units: ng/ml



Manual Integration Results

RT: 2.32
Area: 320918
Amount: 48.637746
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:23:32
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

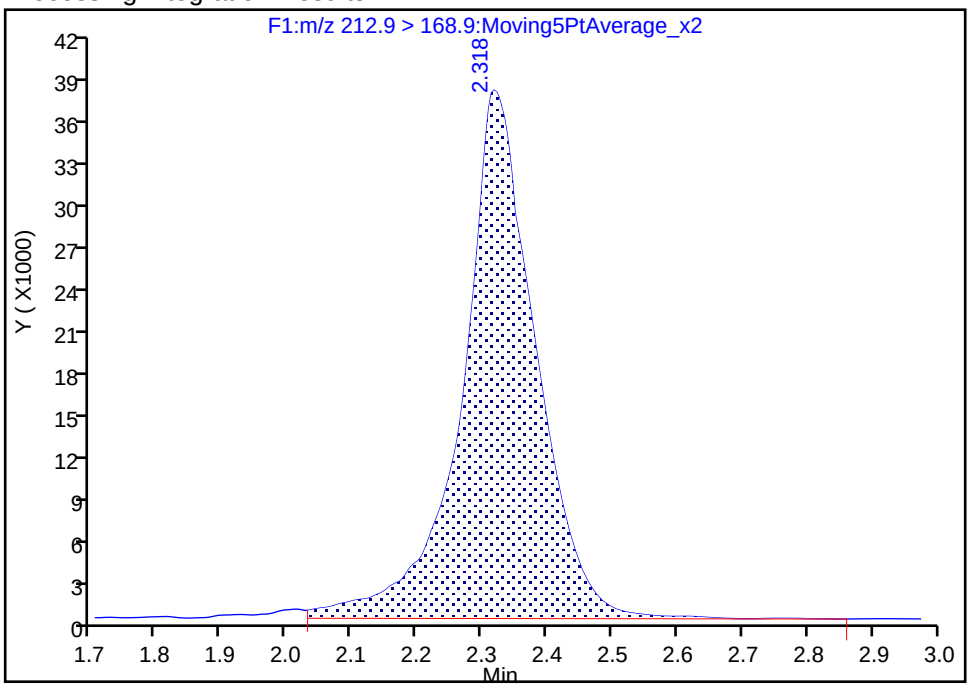
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A48.d
Injection Date: 11-May-2018 20:34:35 Instrument ID: LC410
Lims ID: CCV L5
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 48
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

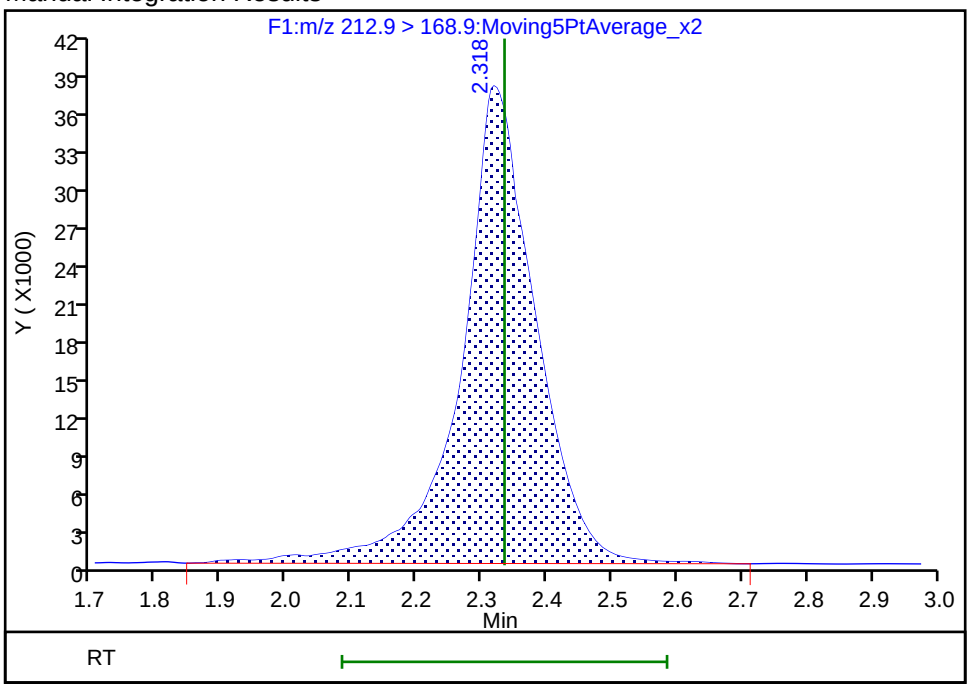
Processing Integration Results

RT: 2.32
Area: 298349
Amount: 50.292937
Amount Units: ng/ml



Manual Integration Results

RT: 2.32
Area: 301079
Amount: 50.755193
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:23:40
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

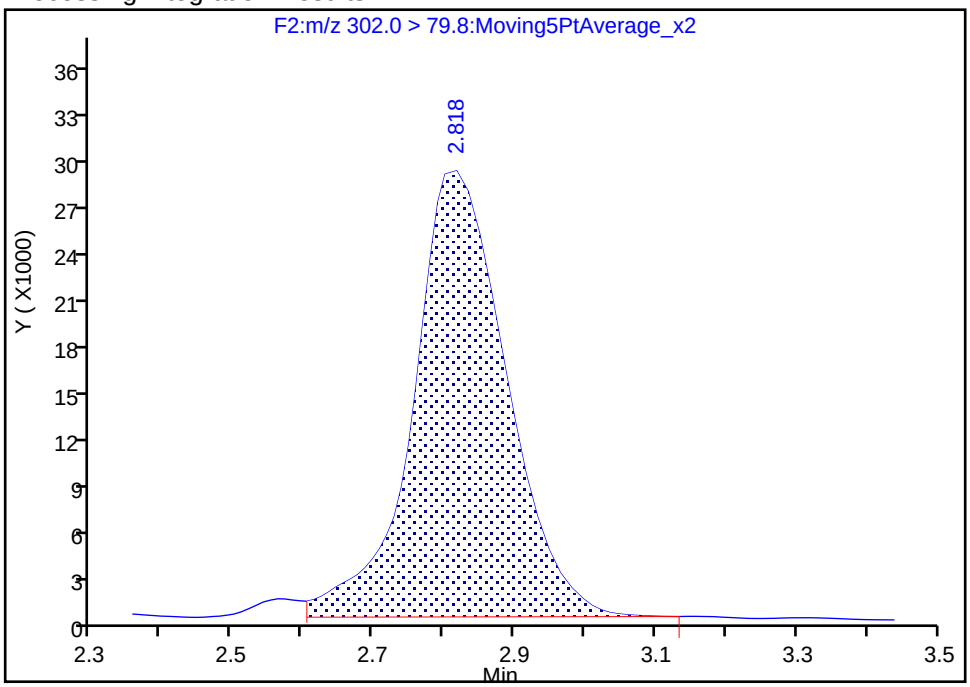
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A48.d
Injection Date: 11-May-2018 20:34:35 Instrument ID: LC410
Lims ID: CCV L5
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 48
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 5 13C3-PFBS, CAS: STL02337

Signal: 1

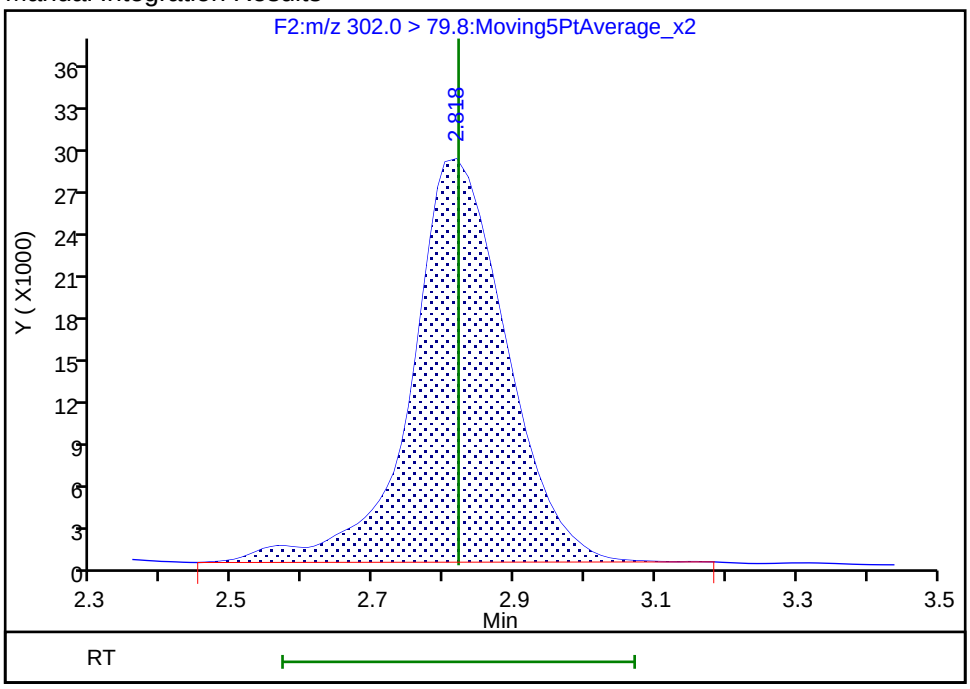
Processing Integration Results

RT: 2.82
Area: 263872
Amount: 50.238554
Amount Units: ng/ml



Manual Integration Results

RT: 2.82
Area: 269807
Amount: 51.368517
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:23:57
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

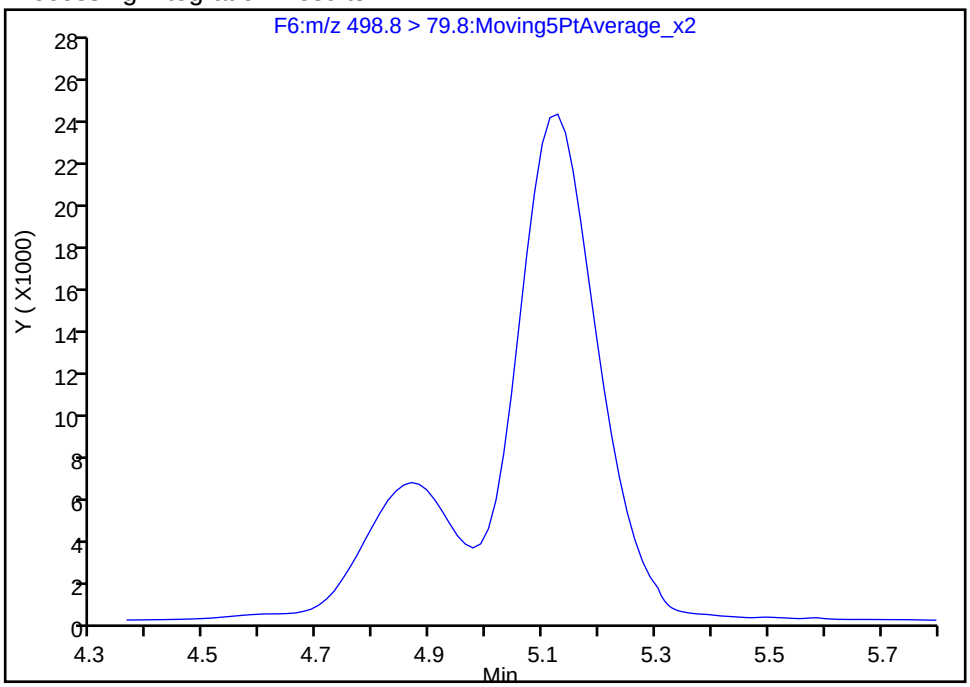
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A48.d
Injection Date: 11-May-2018 20:34:35 Instrument ID: LC410
Lims ID: CCV L5
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 48
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

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

Signal: 1

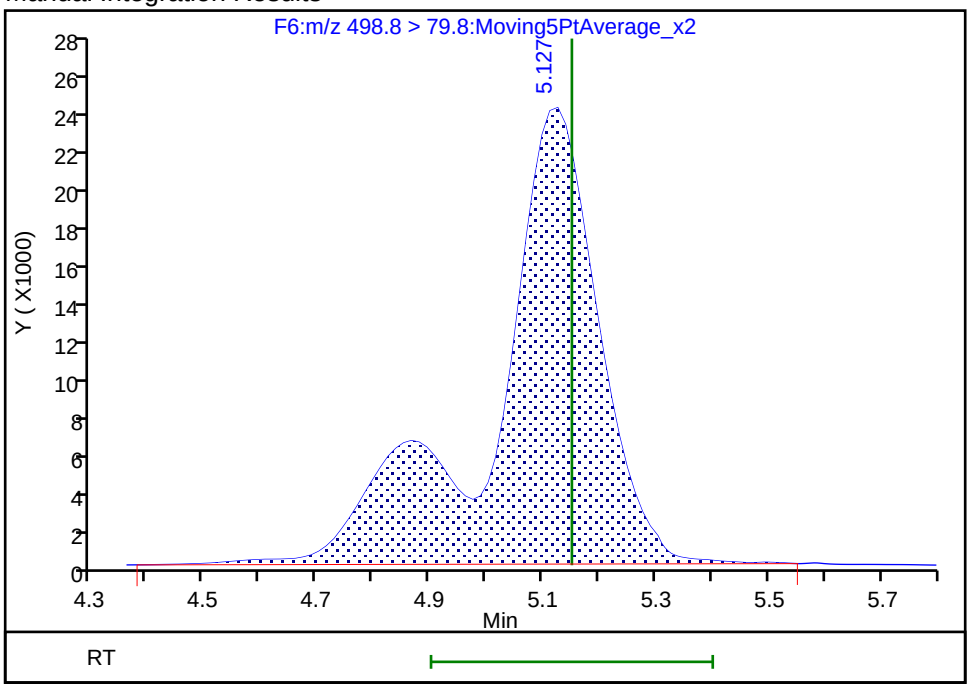
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 5.13
Area: 312383
Amount: 49.844102
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:24:41
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: CCV 200-129349/59 Calibration Date: 05/11/2018 23:32

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A59.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L2ID		0.9439		20290	20000	1.5	40.0
Perfluoropentanoic acid (PFPeA)	L2ID		2.191		20270	20000	1.4	40.0
Perfluorobutanesulfonic acid (PFBS)	L2ID		1.408		17370	17700	-1.7	40.0
Perfluorohexanoic acid (PFHxA)	L1ID		1.037		20830	20000	4.2	40.0
Perfluoroheptanoic acid (PFHpA)	L2ID		1.140		21920	20000	9.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	L2ID		1.154		16280	18200	-10.5	40.0
6:2FTS	AveID	1.030	1.032		19000	19000	0.2	40.0
Perfluorooctanoic acid (PFOA)	L2ID		1.001		19250	20000	-3.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	L1ID		1.004		20050	19000	5.3	50.0
Perfluorononanoic acid (PFNA)	L2ID		0.9652		20680	20000	3.4	40.0
Perfluorooctanesulfonic acid (PFOS)	L2ID		1.163		19550	18600	5.3	40.0
8:2FTS	AveID	0.7678	0.9094		22690	19200	18.4	40.0
Perfluorodecanoic acid (PFDA)	L2ID		0.9446		19740	20000	-1.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	L1ID		1.235		21700	20000	8.5	40.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	L2ID		1.032		20400	20000	2.0	40.0
Perfluorodecanesulfonic acid (PFDS)	L2ID		1.055		19190	19300	-0.5	50.0
Perfluoroundecanoic acid (PFUnA)	L2ID		1.008		20840	20000	4.2	40.0
Perfluorooctane Sulfonamide (FOSA)	L2ID		0.9120		20040	20000	0.2	40.0
Perfluorododecanoic acid (PFDoA)	L2ID		1.014		23060	20000	15.3	40.0
Perfluorotridecanoic Acid (PFTriA)	L2ID		0.9531		21180	20000	5.9	50.0
Perfluorotetradecanoic acid (PFTeA)	L2ID		0.8651		18860	20000	-5.7	40.0
13C4 PFBA	Ave	0.4715	0.4181		44330	50000	-11.3	50.0
13C5 PFPeA	Ave	0.3597	0.3036		42210	50000	-15.6	50.0
13C3-PFBS	Ave	0.3754	0.3391		42010	46500	-9.6	50.0
13C2 PFHxA	Ave	0.5251	0.4447		42350	50000	-15.3	50.0
13C4-PFHpA	Ave	0.8879	0.7613		42870	50000	-14.3	50.0
18O2 PFHxS	Ave	0.4167	0.3645		41370	47300	-12.5	50.0
M2-6:2FTS	Ave	0.0819	0.0640		37120	47500	-21.8	50.0
13C4 PFOA	Ave	0.8670	0.8271		47700	50000	-4.6	50.0
13C5 PFNA	Ave	1.030	0.9924		48160	50000	-3.7	50.0
13C4 PFOS	Ave	0.3741	0.3551		45360	47800	-5.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: CCV 200-129349/59 Calibration Date: 05/11/2018 23:32

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A59.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-8:2FTS	Ave	0.2197	0.2088		45520	47900	-5.0	50.0
13C2 PFDA	Ave	1.248	1.226		49120	50000	-1.8	50.0
d3-NMeFOSAA	Ave	0.2653	0.2431		45820	50000	-8.4	50.0
d5-NEtFOSAA	Ave	0.2305	0.2283		49530	50000	-0.9	50.0
13C2 PFUnA	Ave	1.171	1.180		50370	50000	0.7	50.0
13C8 FOSA	Ave	0.6724	0.6404		47630	50000	-4.7	50.0
13C2 PFDoA	Ave	1.232	1.171		47530	50000	-4.9	50.0
13C2-PFTeDA	Ave	1.137	1.145		50340	50000	0.7	50.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A59.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 11-May-2018 23:32:21 ALS Bottle#: 0 Worklist Smp#: 59
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-059 CCV4
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 13:08:10 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: murrayjw Date: 14-May-2018 08:26:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.318	2.328	-0.010	1.000	371706	44.3		88.7	501	
1 Perfluorobutyric acid										
212.9 > 168.9	2.318	2.334	-0.016	1.000	140345	20.3		101	239	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.739	2.751	-0.012	1.000	236557	20.3		101	350	
D 3 13C5-PFPeA										
267.7 > 222.6	2.739	2.753	-0.014	1.000	269971	42.2		84.4	1522	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.801	2.818	-0.017	1.000	150133	17.4		98.3	224	
D 5 13C3-PFBS										
302.0 > 79.8	2.801	2.820	-0.019	1.000	280434	42.0		90.4	429	
D 7 13C2 PFHxA										
314.8 > 269.6	3.140	3.170	-0.030	1.000	395402	42.3		84.7	236	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.152	3.172	-0.020	1.004	164011	20.8		104	196	
D 10 13C4-PFHpA										
366.9 > 321.8	3.659	3.696	-0.037	1.000	676901	42.9		85.7	120	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.659	3.698	-0.039	1.000	308726	21.9		110	481	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.703	3.739	-0.036	1.000	136127	16.3		89.5	321	
D 13 18O2 PFHxS										
402.9 > 83.8	3.703	3.742	-0.039	1.000	306605	41.4		87.5	295	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.278	4.319	-0.041	1.000	22283	19.0		100	103	
D 14 M2-6:2FTS										
428.6 > 408.6	4.278	4.321	-0.043	1.000	54096	37.1		78.2	374	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.317	4.363	-0.046	1.000	735403	47.7		95.4	1689	
* 49 13C2-PFOA										
414.9 > 369.8	4.317	4.363	-0.046		889141	50.0			1040	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.317	4.368	-0.051	1.000	294502	19.2		96.2	162	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.355	4.399	-0.044	0.854	120708	20.1		105	545	
D 21 13C5 PFNA										
467.8 > 422.8	5.072	5.127	-0.055	1.000	882351	48.2		96.3	710	
19 Perfluorononanoic acid										
462.8 > 418.8	5.072	5.136	-0.064	1.000	340673	20.7		103	607	
20 Perfluorooctane sulfonic acid										
498.8 > 79.8	5.099	5.152	-0.053	1.000	136341	19.6		105	667	
D 22 13C4 PFOS										
502.8 > 79.8	5.099	5.154	-0.055	1.000	301822	45.4		94.9	370	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.843	5.880	-0.037	1.003	64697	22.7		118	556	
D 23 M2-8:2FTS										
528.8 > 508.8	5.823	5.882	-0.059	1.000	177848	45.5		95.0	1370	
D 25 13C2 PFDA										
514.9 > 469.5	5.843	5.910	-0.067	1.000	1089934	49.1		98.2	6556	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.843	5.914	-0.071	1.000	411821	19.7		98.7	781	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.223	6.271	-0.048	1.000	216171	45.8		91.6	525	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.223	6.283	-0.060	1.000	106801	21.7		109	297	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.580	6.640	-0.060	1.000	203012	49.5		99.1	1434	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.598	6.664	-0.066	1.003	83801	20.4		102	1048	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.598	6.667	-0.069	1.294	128431	19.2		99.5	1616	
D 33 13C2 PFUnA										
564.8 > 519.8	6.616	6.676	-0.060	1.000	1049393	50.4		101	1536	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.616	6.676	-0.060	1.000	423099	20.8		104	1718	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.959	6.984	-0.025	1.000	207725	20.0		100	2309	
D 35 13C8 FOSA										
505.8 > 77.8	6.959	6.984	-0.025	1.000	569435	47.6		95.3	4294	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.294	7.354	-0.060	1.000	422200	23.1		115	1734	
D 36 13C2 PFDoA										
614.8 > 569.6	7.294	7.358	-0.064	1.000	1040965	47.5		95.1	2281	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.903	7.974	-0.071	1.083	396835	21.2		106	1524	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.453	8.514	-0.061	1.000	1017668	50.3		101	1605	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.453	8.519	-0.066	1.000	352141	18.9		94.3	793	
712.8 > 168.8	8.453	8.519	-0.066	1.000	79212		4.45(0.00-0.00)		522	
712.8 > 218.8	8.453	8.519	-0.066	1.000	40834		8.62(0.00-0.00)		267	

Reagents:

LCPFAS21-L4_00002 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 13:08:11 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A59.d

Injection Date: 11-May-2018 23:32:21 Instrument ID: LC410

Lims ID: CCV L4

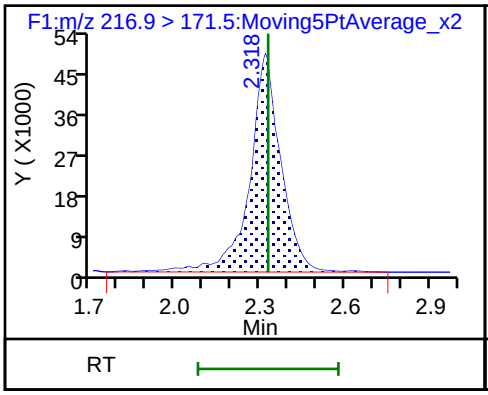
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 59

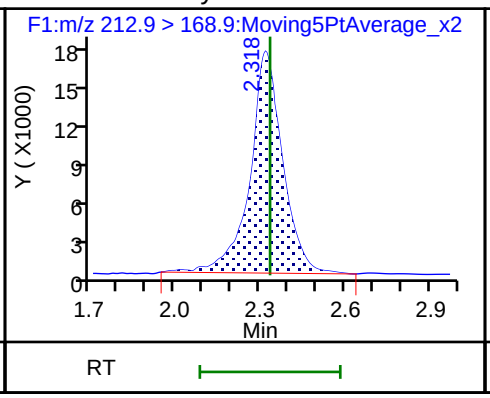
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

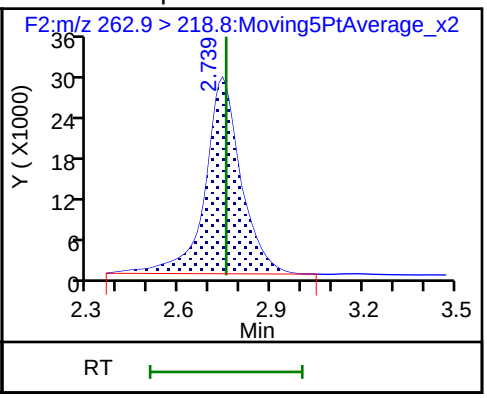
D 2 13C4 PFBA



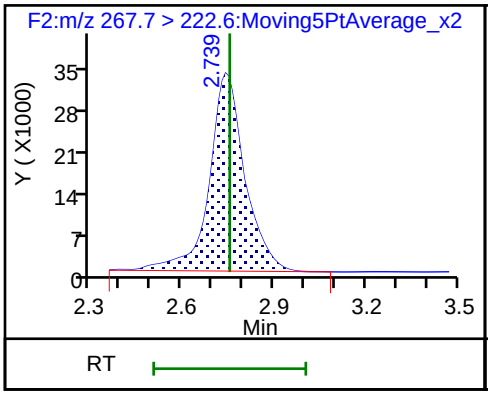
1 Perfluorobutyric acid



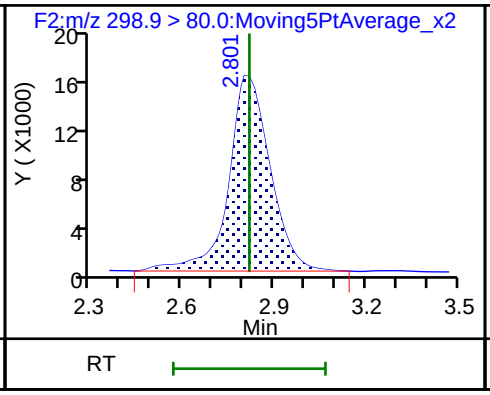
4 Perfluoropentanoic acid



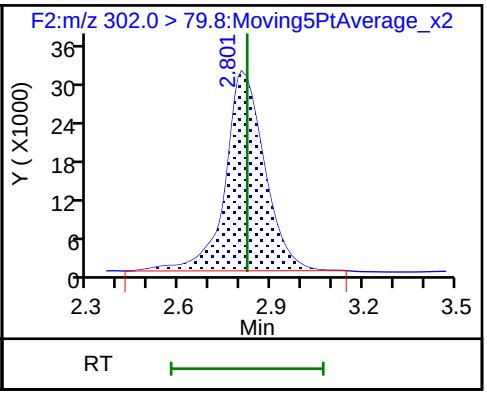
D 3 13C5-PFPeA



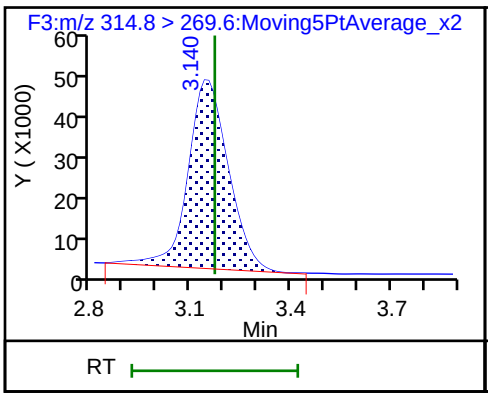
6 Perfluorobutanesulfonic acid



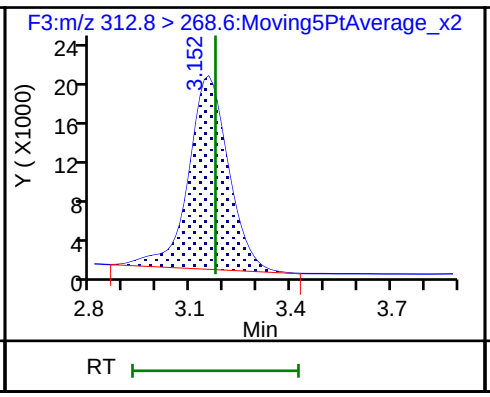
D 5 13C3-PFBS



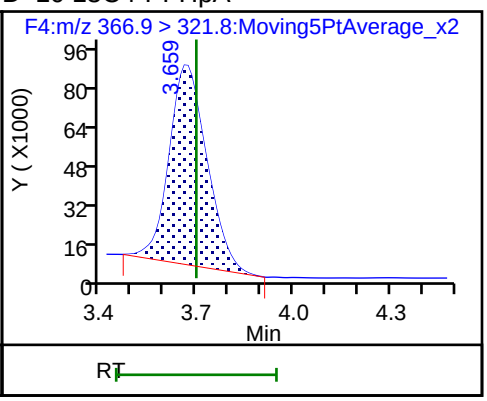
D 7 13C2 PFHxA



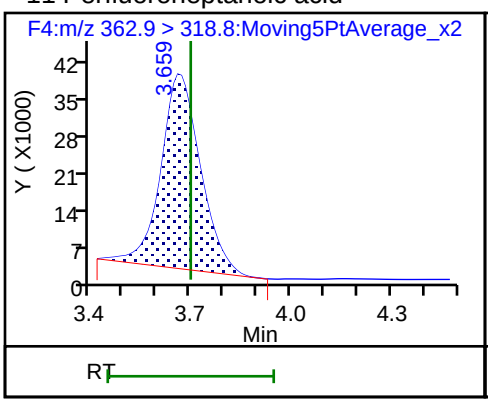
8 Perfluorohexanoic acid



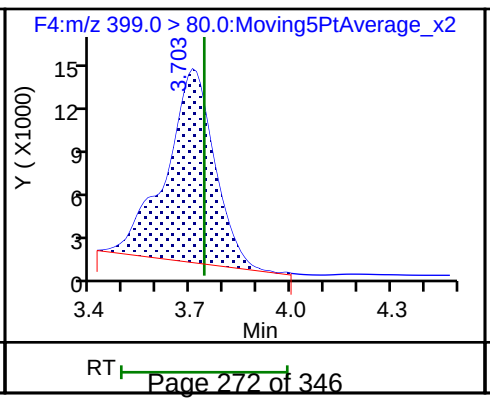
D 10 13C4-PFHpA



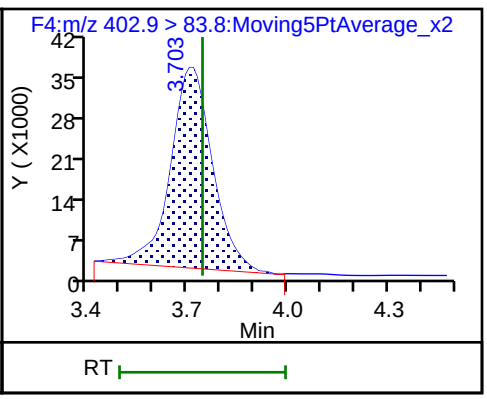
11 Perfluoroheptanoic acid



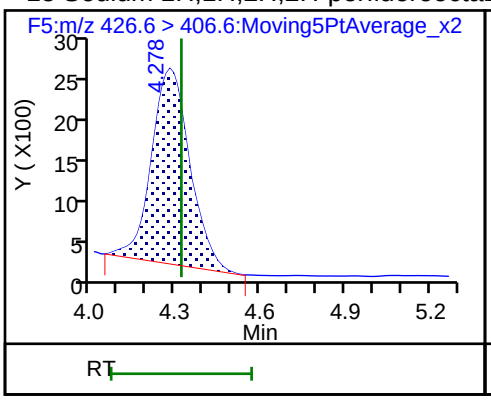
12 Perfluorohexanesulfonic acid



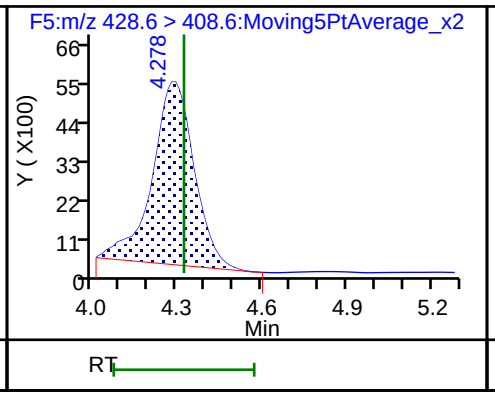
D 13 18O2 PFHxS



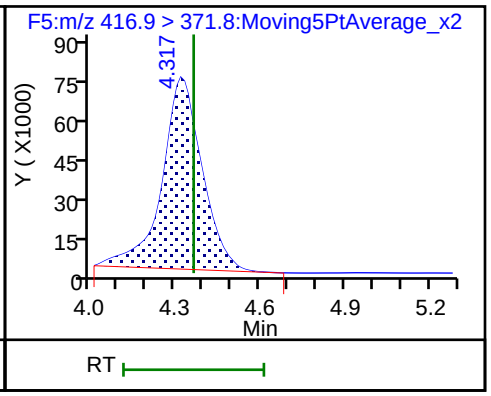
15 Sodium 1H,1H,2H,2H-perfluorooctane



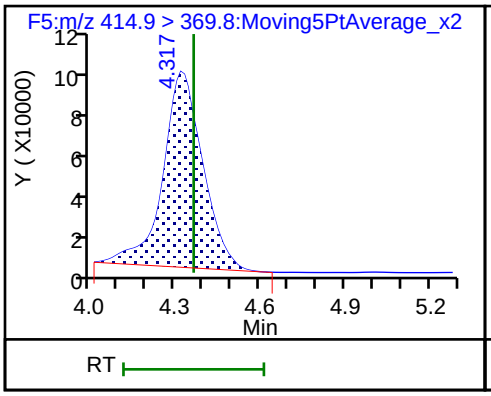
D 14 M2-6:2FTS



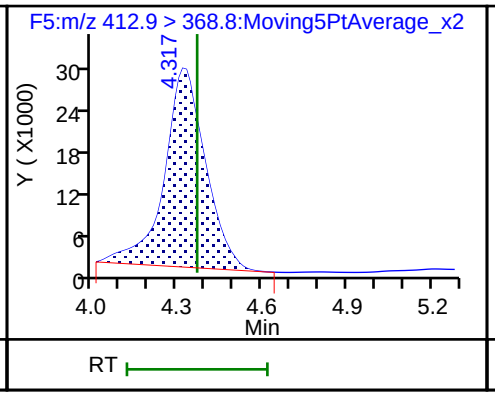
D 17 13C4 PFOA



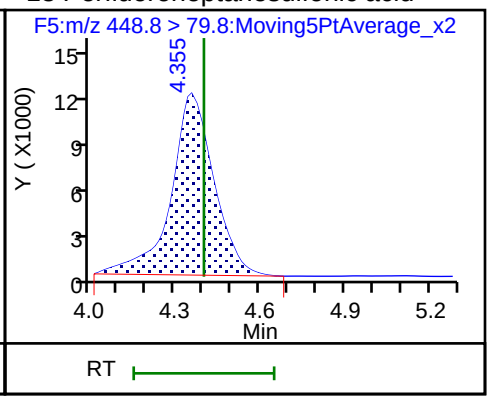
* 49 13C2-PFOA



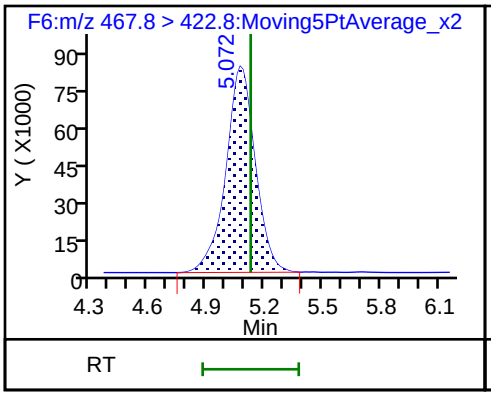
16 Perfluorooctanoic acid



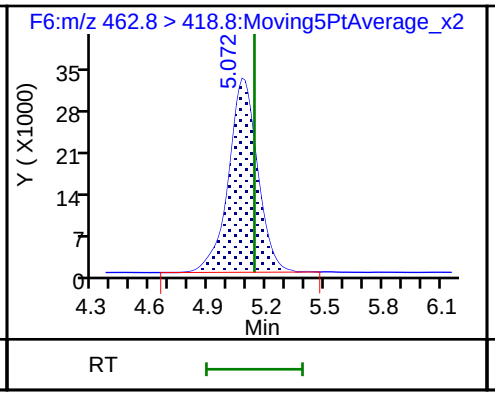
18 Perfluoroheptanesulfonic acid



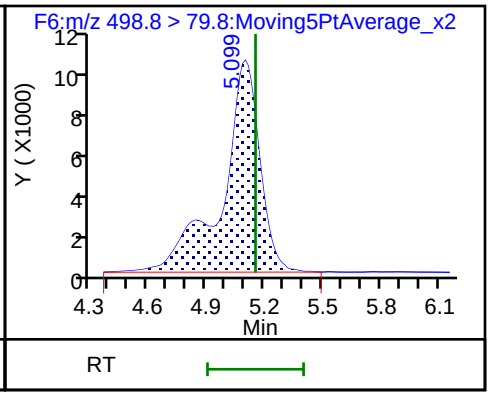
D 21 13C5 PFNA



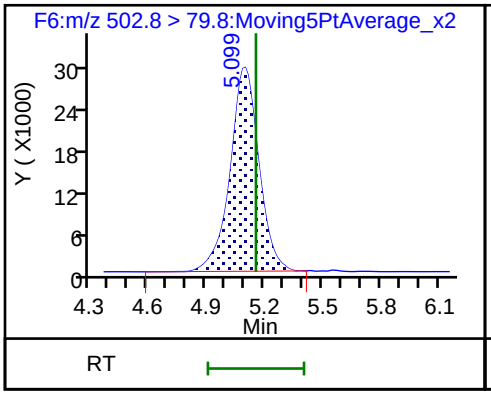
19 Perfluorononanoic acid



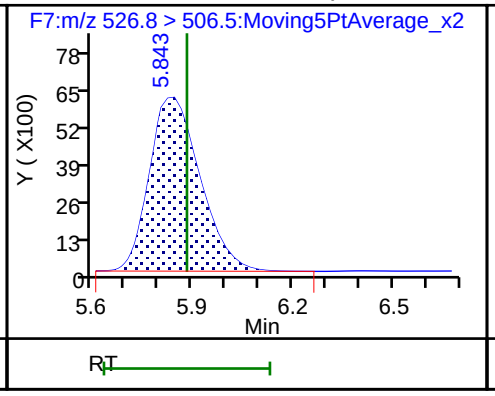
20 Perfluorooctane sulfonic acid



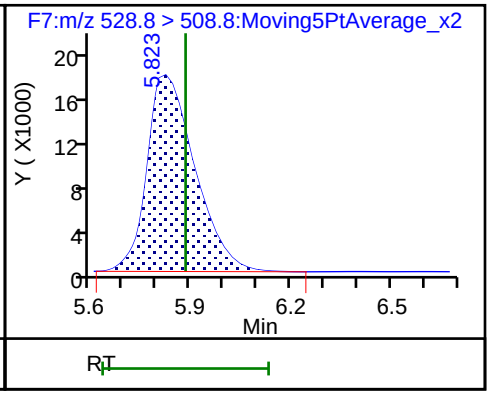
D 22 13C4 PFOS



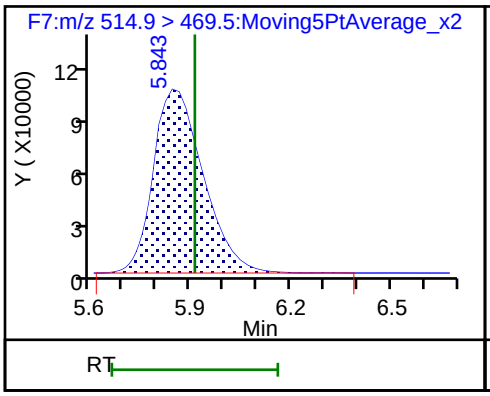
24 Sodium 1H,1H,2H,2H-perfluorodecane



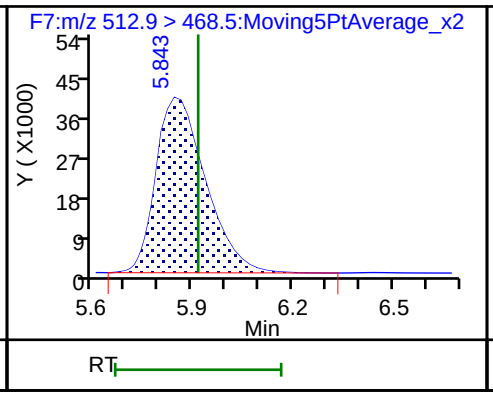
D 23 M2-8:2FTS



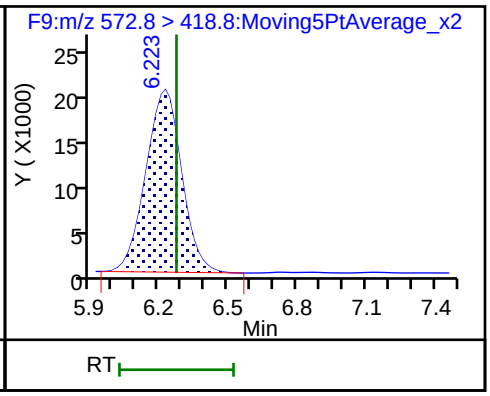
D 25 13C2 PFDA



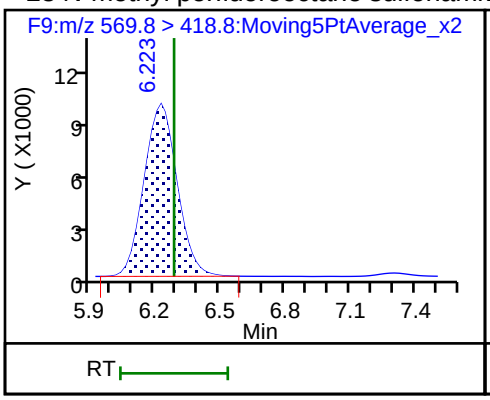
26 Perfluorodecanoic acid



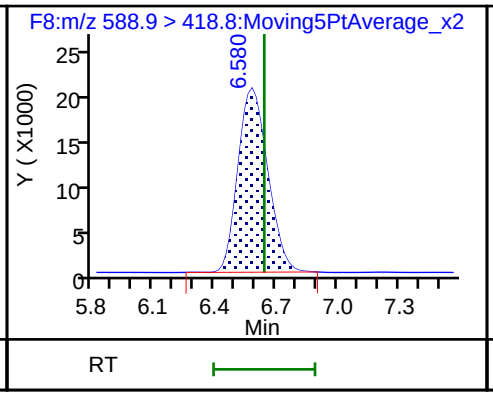
D 27 d3-NMeFOSAA



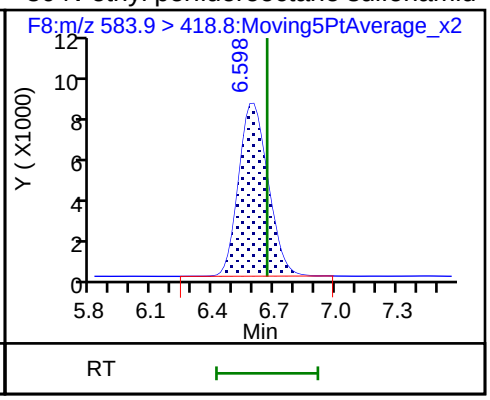
28 N-methyl perfluorooctane sulfonami



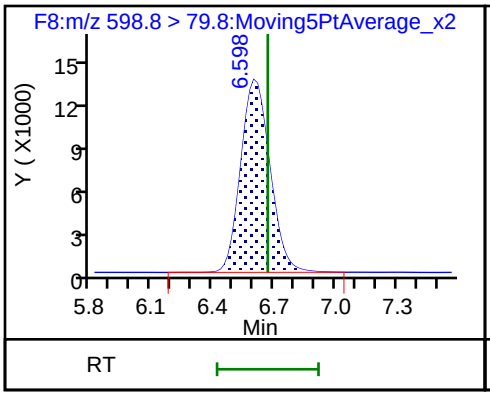
D 29 d5-NEtFOSAA



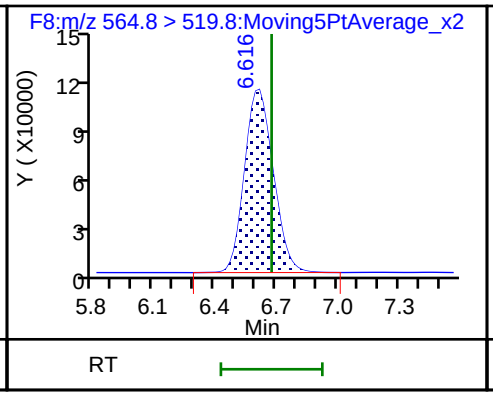
30 N-ethyl perfluorooctane sulfonamid



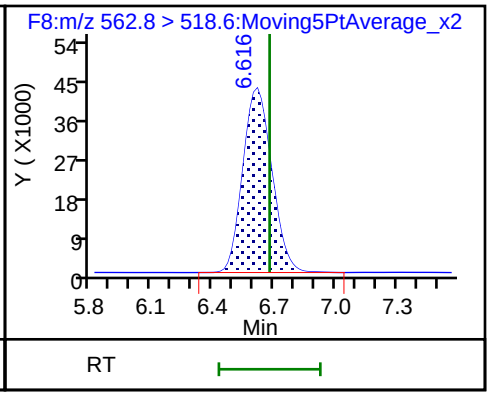
31 Perfluorodecane Sulfonic acid



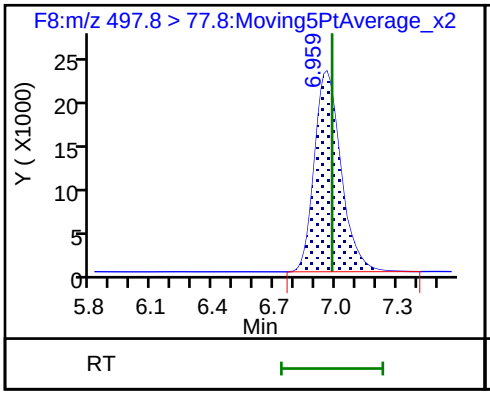
D 33 13C2 PFUnA



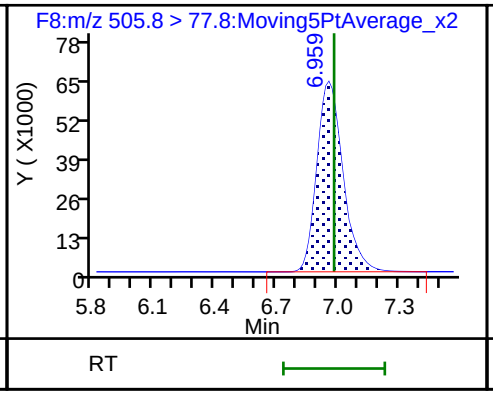
32 Perfluoroundecanoic acid



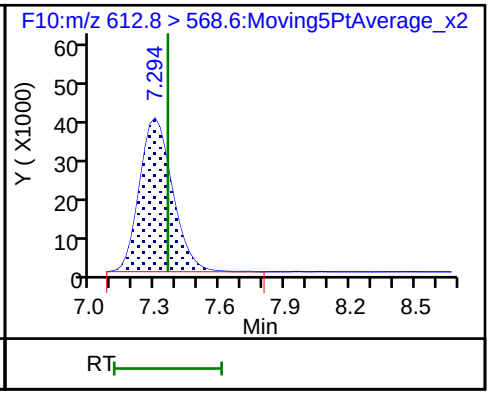
34 Perfluorooctane Sulfonamide



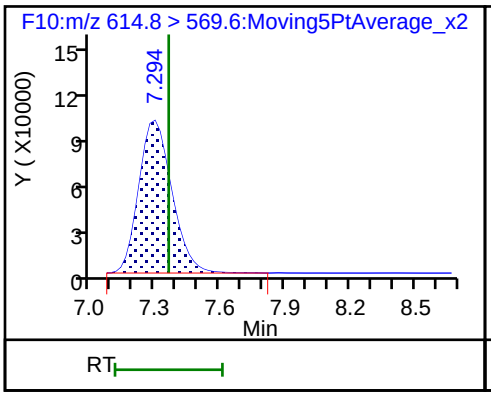
D 35 13C8 FOSA



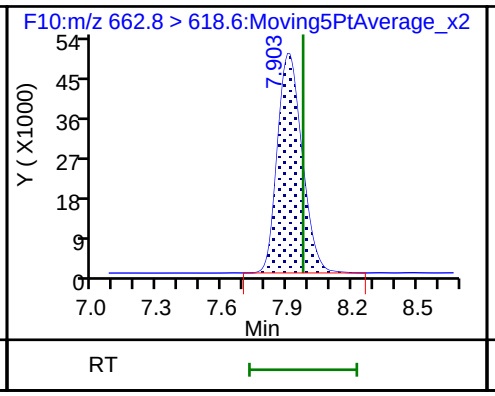
37 Perfluorododecanoic acid



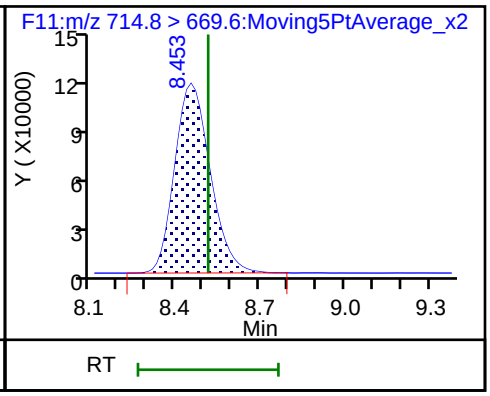
D 36 13C2 PFDoA



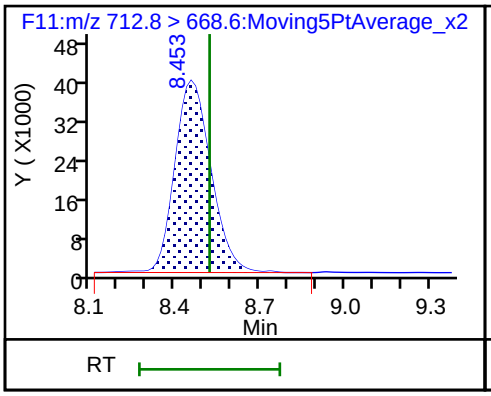
40 Perfluorotridecanoic acid



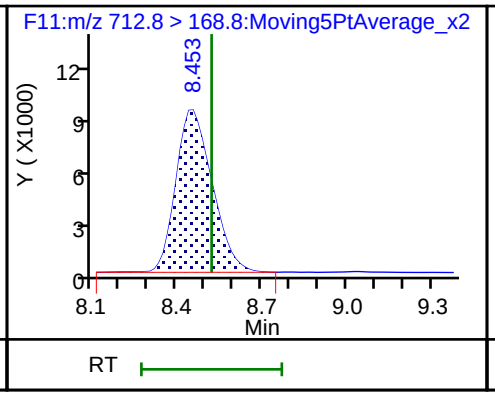
D 43 13C2-PFTeDA



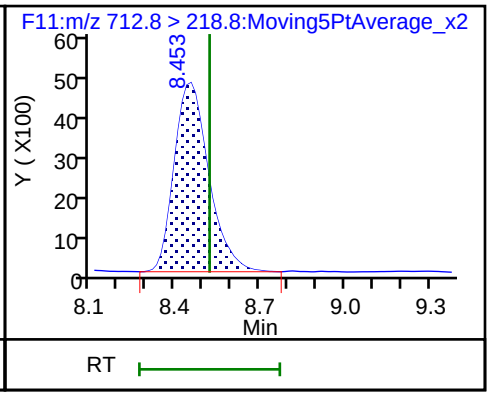
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: CCV 200-129349/62 Calibration Date: 05/12/2018 00:20

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A62.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L2ID		0.9493		4933	5000	-1.3	40.0
Perfluoropentanoic acid (PFPeA)	L2ID		2.050		4808	5000	-3.8	40.0
Perfluorobutanesulfonic acid (PFBS)	L2ID		1.423		4555	4420	3.0	40.0
Perfluorohexanoic acid (PFHxA)	L1ID		1.039		5379	5000	7.6	40.0
Perfluoroheptanoic acid (PFHpA)	L2ID		1.038		4950	5000	-1.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	L2ID		1.170		4266	4550	-6.2	40.0
6:2FTS	AveID	1.030	1.028		4731	4740	-0.2	40.0
Perfluorooctanoic acid (PFOA)	L2ID		1.021		4812	5000	-3.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	L1ID		0.9380		4825	4760	1.4	50.0
Perfluorononanoic acid (PFNA)	L2ID		0.9563		5137	5000	2.7	40.0
Perfluorooctanesulfonic acid (PFOS)	L2ID		0.999		4306	4640	-7.2	40.0
8:2FTS	AveID	0.7678	1.049		6543	4790	36.6	40.0
Perfluorodecanoic acid (PFDA)	L2ID		0.9719		5263	5000	5.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	L1ID		1.215		5371	5000	7.4	40.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	L2ID		1.007		5088	5000	1.8	40.0
Perfluorodecanesulfonic acid (PFDS)	L2ID		1.041		4721	4820	-2.1	50.0
Perfluoroundecanoic acid (PFUnA)	L2ID		1.029		5305	5000	6.1	40.0
Perfluorooctane Sulfonamide (FOSA)	L2ID		0.9220		5175	5000	3.5	40.0
Perfluorododecanoic acid (PFDoA)	L2ID		0.9073		5253	5000	5.1	40.0
Perfluorotridecanoic Acid (PFTriA)	L2ID		0.8590		4927	5000	-1.5	50.0
Perfluorotetradecanoic acid (PFTeA)	L2ID		0.8545		4623	5000	-7.5	40.0
13C4 PFBA	Ave	0.4715	0.4344		46060	50000	-7.9	50.0
13C5 PFPeA	Ave	0.3597	0.3435		47750	50000	-4.5	50.0
13C3-PFBS	Ave	0.3754	0.3562		44130	46500	-5.1	50.0
13C2 PFHxA	Ave	0.5251	0.4826		45950	50000	-8.1	50.0
13C4-PFHpA	Ave	0.8879	0.8654		48730	50000	-2.5	50.0
18O2 PFHxS	Ave	0.4167	0.3781		42910	47300	-9.3	50.0
M2-6:2FTS	Ave	0.0819	0.0755		43740	47500	-7.9	50.0
13C4 PFOA	Ave	0.8670	0.7881		45450	50000	-9.1	50.0
13C5 PFNA	Ave	1.030	0.9419		45710	50000	-8.6	50.0
13C4 PFOS	Ave	0.3741	0.3542		45250	47800	-5.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Lab Sample ID: CCV 200-129349/62 Calibration Date: 05/12/2018 00:20

Instrument ID: LC410 Calib Start Date: 05/11/2018 09:16

GC Column: C-18 ID: 4.60(mm) Calib End Date: 05/11/2018 10:37

Lab File ID: PF051018A62.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-8:2FTS	Ave	0.2197	0.1748		38110	47900	-20.4	50.0
13C2 PFDA	Ave	1.248	1.096		43930	50000	-12.1	50.0
d3-NMeFOSAA	Ave	0.2653	0.2329		43880	50000	-12.2	50.0
d5-NEtFOSAA	Ave	0.2305	0.2025		43940	50000	-12.1	50.0
13C2 PFUnA	Ave	1.171	1.021		43580	50000	-12.8	50.0
13C8 FOSA	Ave	0.6724	0.5827		43330	50000	-13.3	50.0
13C2 PFDoA	Ave	1.232	1.089		44220	50000	-11.6	50.0
13C2-PFTeDA	Ave	1.137	1.002		44070	50000	-11.9	50.0

FORM VII 537 (modified)

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A62.d
Lims ID: CCV L3
Client ID:
Sample Type: CCV
Inject. Date: 12-May-2018 00:20:47 ALS Bottle#: 0 Worklist Smp#: 62
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-062 CCV3
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410
Sublist: chrom-PFCISO_12MRM*sub4

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 13:08:06 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: murrayjw Date: 14-May-2018 08:29:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.318	2.328	-0.010	1.000	322122	46.1		92.1	474	
1 Perfluorobutyric acid										
212.9 > 168.9	2.326	2.334	-0.008	1.004	30578	4.93		98.7	74.2	
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.750	2.751	-0.001	1.000	52230	4.81		96.2	116	M
D 3 13C5-PFPeA										
267.7 > 222.6	2.750	2.753	-0.003	1.000	254763	47.8		95.5	1547	
6 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.818	2.818	0.0	1.000	33236	4.55		103	192	M
D 5 13C3-PFBS										
302.0 > 79.8	2.818	2.820	-0.002	1.000	245676	44.1		94.9	445	
D 7 13C2 PFHxA										
314.8 > 269.6	3.164	3.170	-0.006	1.000	357874	46.0		91.9	625	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.164	3.172	-0.008	1.000	37170	5.38		108	1459	
D 10 13C4-PFHpA										
366.9 > 321.8	3.681	3.696	-0.015	1.000	641823	48.7		97.5	721	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.681	3.698	-0.017	1.000	66628	4.95		99.0	270	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.726	3.739	-0.013	1.003	29839	4.27		93.8	128	
D 13 18O2 PFHxS										
402.9 > 83.8	3.715	3.742	-0.027	1.000	265230	42.9		90.7	565	
15 Sodium 1H,1H,2H,2H-perfluorooctane										M
426.6 > 406.6	4.291	4.319	-0.028	0.997	5451	4.73		99.8	50.1	M
D 14 M2-6:2FTS										
428.6 > 408.6	4.304	4.321	-0.017	1.000	53157	43.7		92.1	165	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.342	4.363	-0.021	1.000	584469	45.4		90.9	806	
* 49 13C2-PFOA										
414.9 > 369.8	4.330	4.363	-0.033		741618	50.0			1446	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.342	4.368	-0.026	1.000	59670	4.81		96.2	30.5	
18 Perfluoroheptanesulfonic acid										M
448.8 > 79.8	4.374	4.399	-0.025	0.855	23456	4.82		101	155	M
D 21 13C5 PFNA										
467.8 > 422.8	5.085	5.127	-0.042	1.000	698507	45.7		91.4	613	
19 Perfluorononanoic acid										
462.8 > 418.8	5.085	5.136	-0.051	1.000	66801	5.14		103	316	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.127	5.152	-0.025	1.003	24342	4.31		92.8	136	M
D 22 13C4 PFOS										
502.8 > 79.8	5.113	5.154	-0.041	1.000	251118	45.3		94.7	833	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.843	5.880	-0.037	1.000	13026	6.54		137	59.6	
D 23 M2-8:2FTS										
528.8 > 508.8	5.843	5.882	-0.039	1.000	124201	38.1		79.6	612	
D 25 13C2 PFDA										
514.9 > 469.5	5.863	5.910	-0.047	1.000	813108	43.9		87.9	4223	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.863	5.914	-0.051	1.000	79028	5.26		105	286	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.223	6.271	-0.048	1.000	172693	43.9		87.8	651	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.223	6.283	-0.060	1.000	20974	5.37		107	52.6	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.598	6.640	-0.042	1.000	150191	43.9		87.9	403	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.616	6.664	-0.048	1.003	15120	5.09		102	89.1	
31 Perfluorodecane Sulfonic acid										M
598.8 > 79.8	6.616	6.667	-0.051	1.294	26354	4.72		97.9	169	M
D 33 13C2 PFUnA										
564.8 > 519.8	6.616	6.676	-0.060	1.000	757274	43.6		87.2	3638	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.616	6.676	-0.060	1.000	77934	5.31		106	410	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.973	6.984	-0.011	1.000	39839	5.17		103	214	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	432109	43.3		86.7	1898	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.317	7.354	-0.037	1.003	73286	5.25		105	362	
D 36 13C2 PFDoA										
614.8 > 569.6	7.294	7.358	-0.064	1.000	807699	44.2		88.4	1936	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.911	7.974	-0.063	1.085	69384	4.93		98.5	423	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.453	8.514	-0.061	1.000	743100	44.1		88.1	1688	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.453	8.519	-0.066	1.000	63498	4.62		92.5	260	
712.8 > 168.8	8.453	8.519	-0.066	1.000	12596		5.04(0.00-0.00)		54.5	
712.8 > 218.8	8.453	8.519	-0.066	1.000	6432		9.87(0.00-0.00)		21.2	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS21-L3_00002 Amount Added: 100.00 Units: uL

Report Date: 14-May-2018 13:08:07 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A62.d

Injection Date: 12-May-2018 00:20:47 Instrument ID: LC410

Lims ID: CCV L3

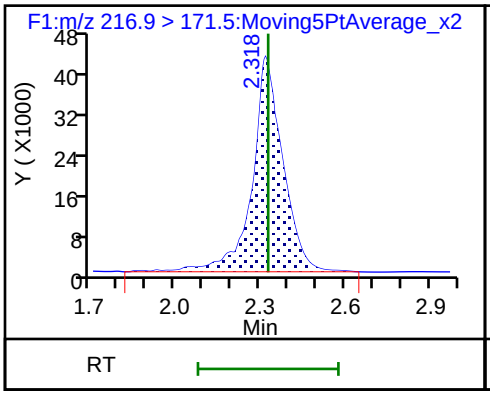
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 62

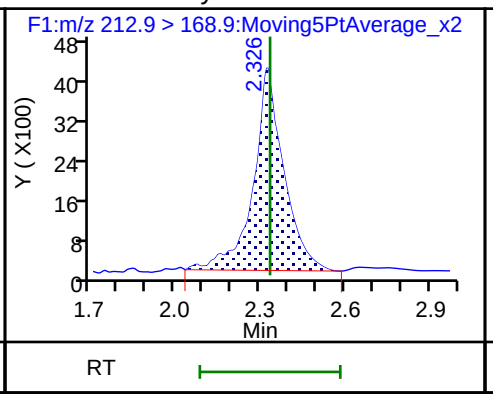
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

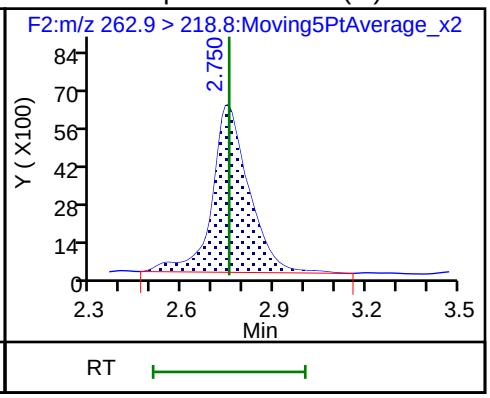
D 2 13C4 PFBA



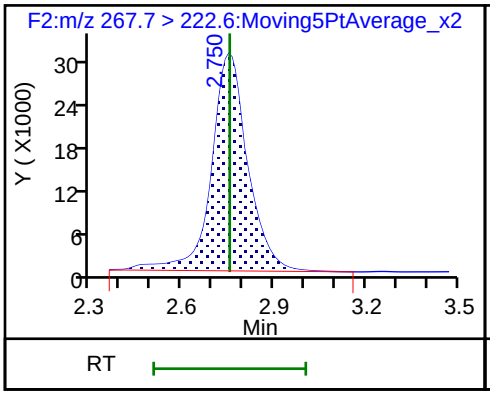
1 Perfluorobutyric acid



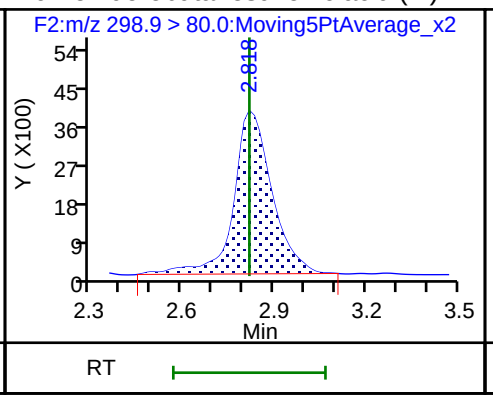
4 Perfluoropentanoic acid (M)



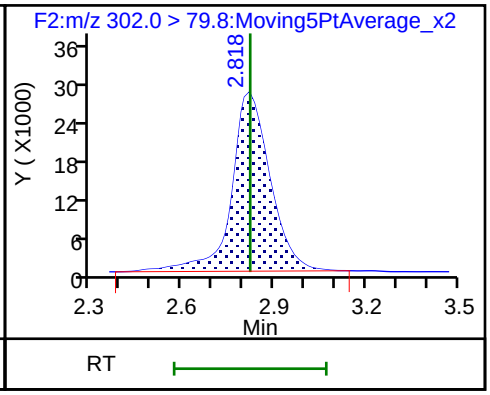
D 3 13C5-PFPeA



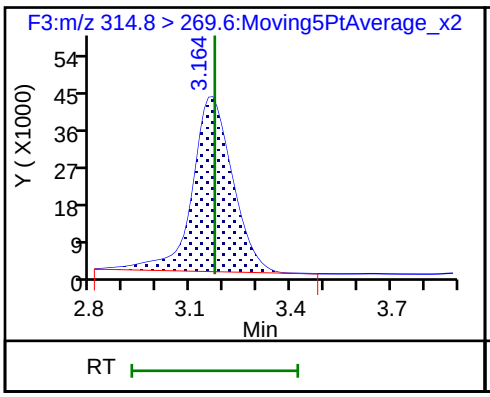
6 Perfluorobutanesulfonic acid (M)



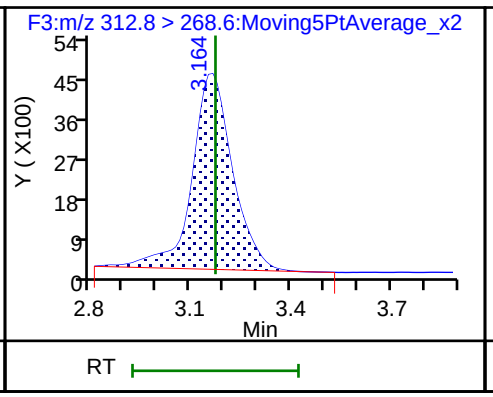
D 5 13C3-PFBS



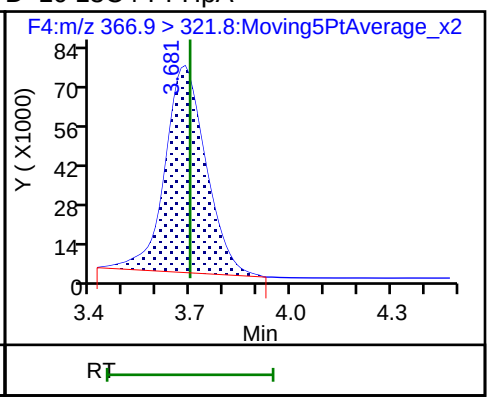
D 7 13C2 PFHxA



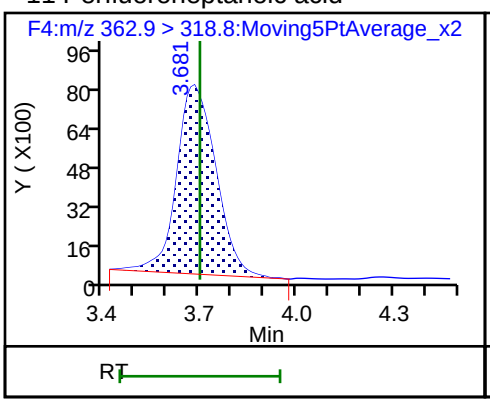
8 Perfluorohexanoic acid



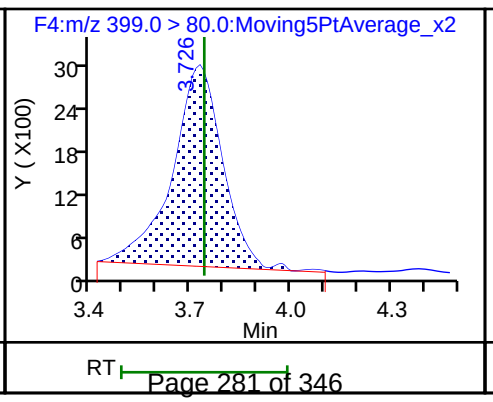
D 10 13C4-PFHpA



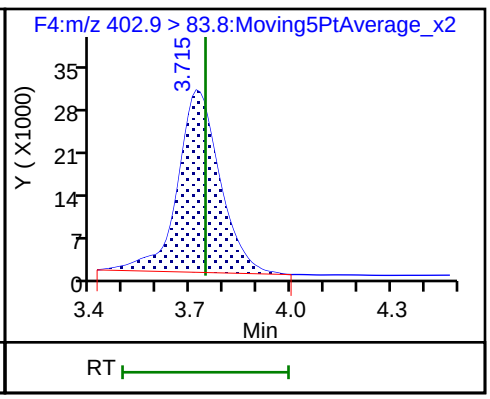
11 Perfluoroheptanoic acid



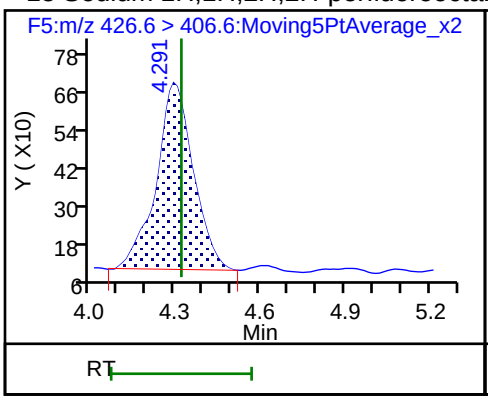
12 Perfluorohexanesulfonic acid



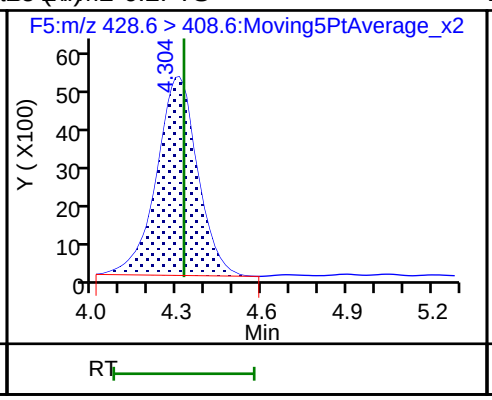
D 13 18O2 PFHxS



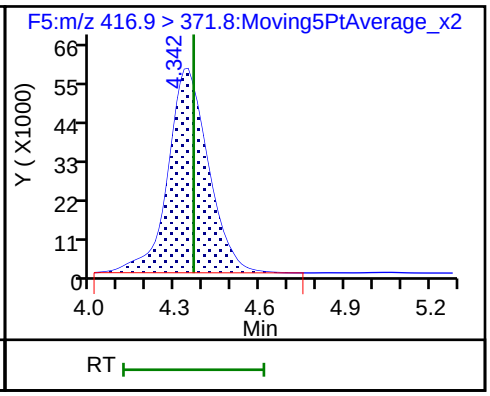
15 Sodium 1H,1H,2H,2H-perfluorooctane (M)



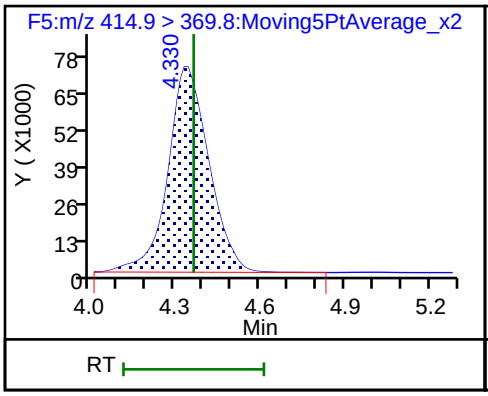
D 14 M2-6:2FTS



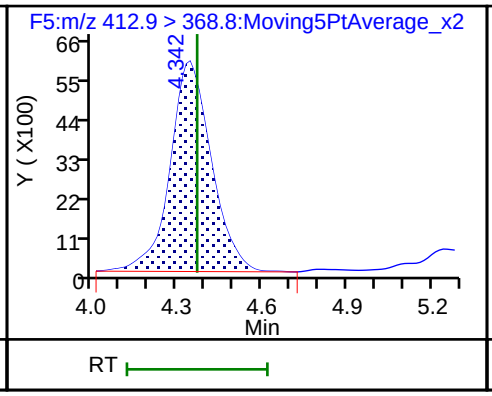
D 17 13C4 PFOA



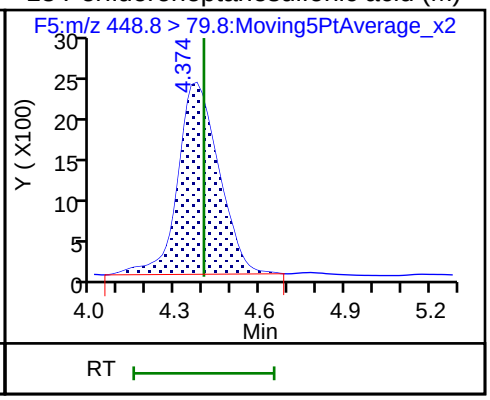
* 49 13C2-PFOA



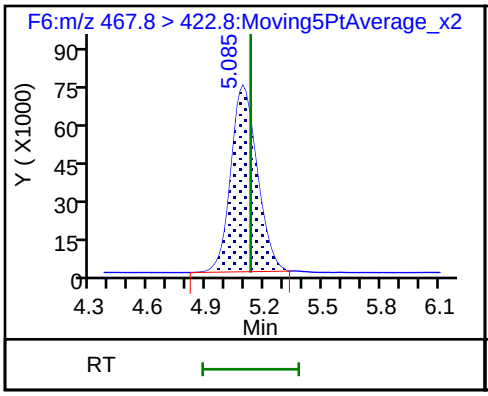
16 Perfluorooctanoic acid



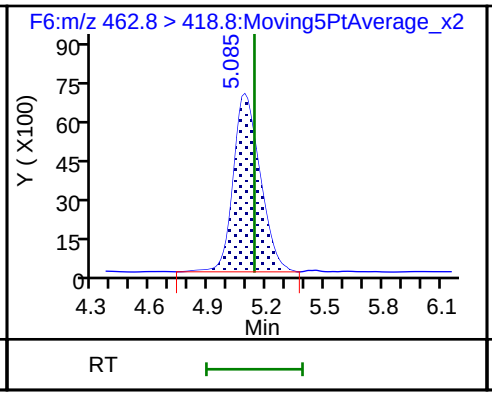
18 Perfluoroheptanesulfonic acid (M)



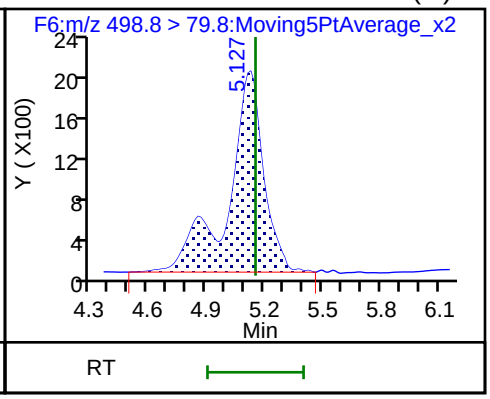
D 21 13C5 PFNA



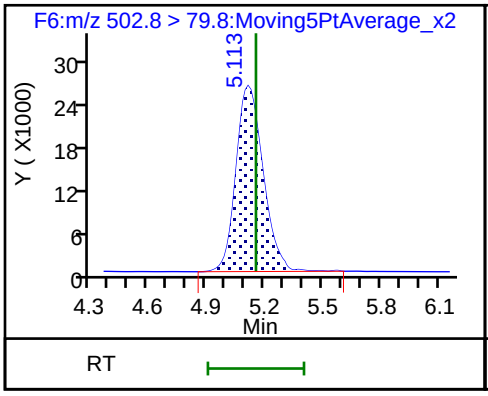
19 Perfluorononanoic acid



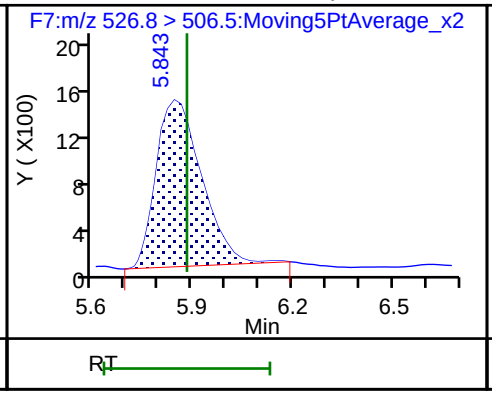
20 Perfluorooctane sulfonic acid (M)



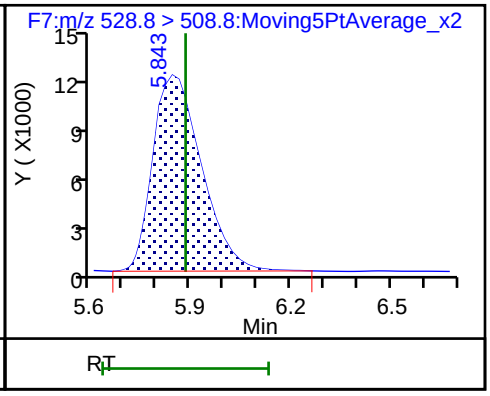
D 22 13C4 PFOS



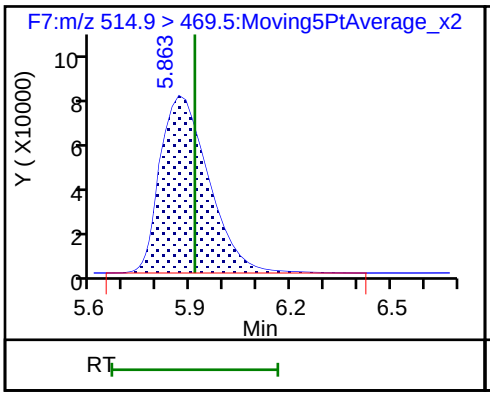
24 Sodium 1H,1H,2H,2H-perfluorodecane



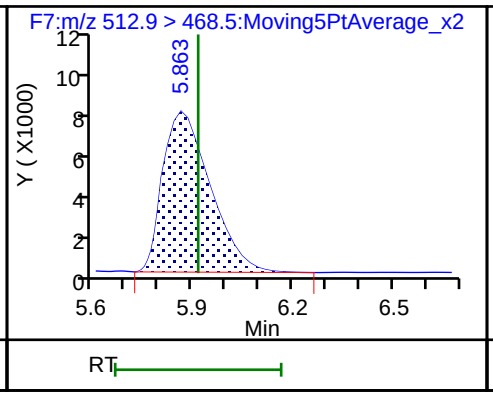
D 23 M2-8:2FTS



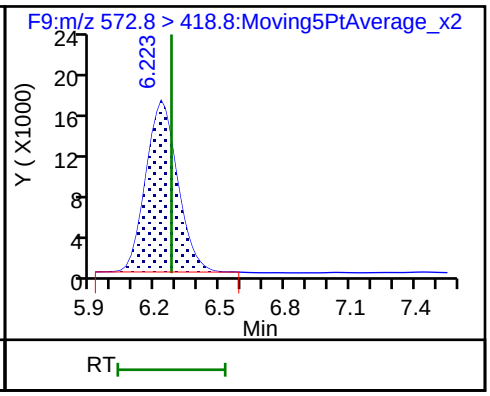
D 25 13C2 PFDA



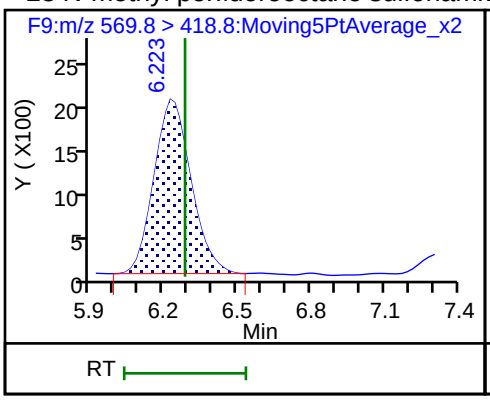
26 Perfluorodecanoic acid



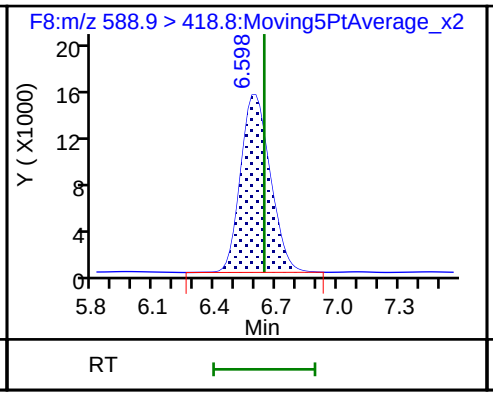
D 27 d3-NMeFOSAA



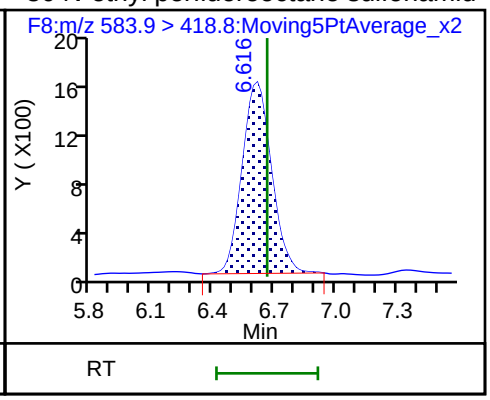
28 N-methyl perfluorooctane sulfonami



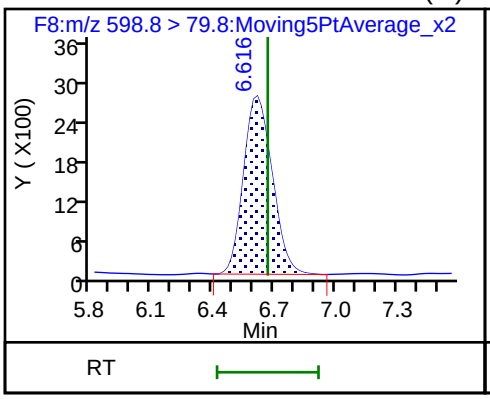
D 29 d5-NEtFOSAA



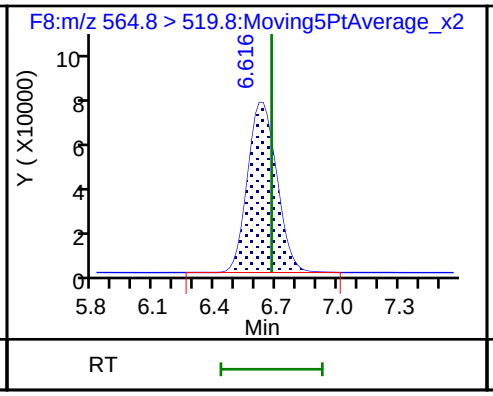
30 N-ethyl perfluorooctane sulfonamid



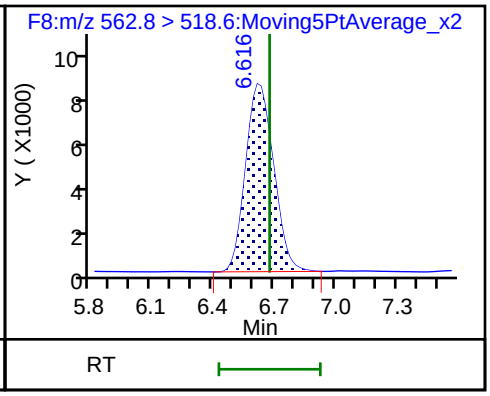
31 Perfluorodecane Sulfonic acid (M)



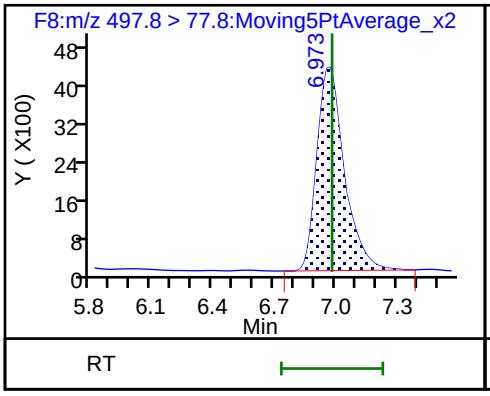
D 33 13C2 PFUnA



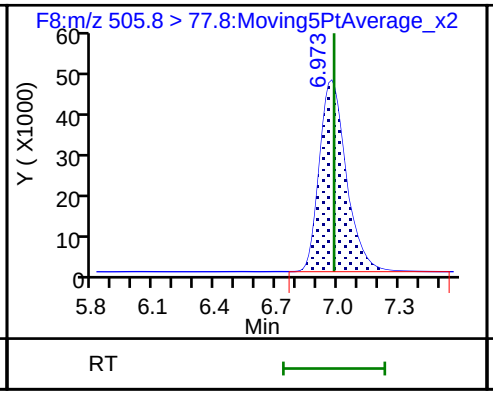
32 Perfluoroundecanoic acid



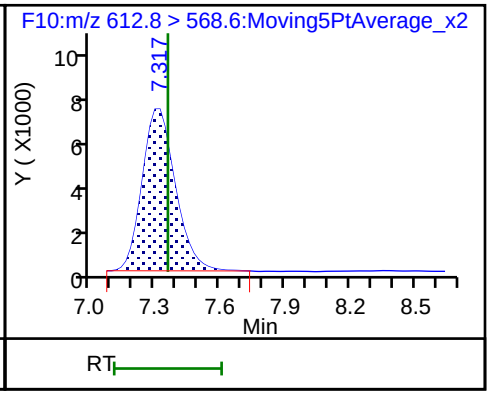
34 Perfluorooctane Sulfonamide



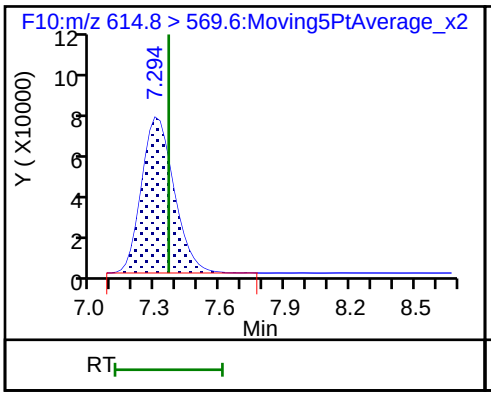
D 35 13C8 FOSA



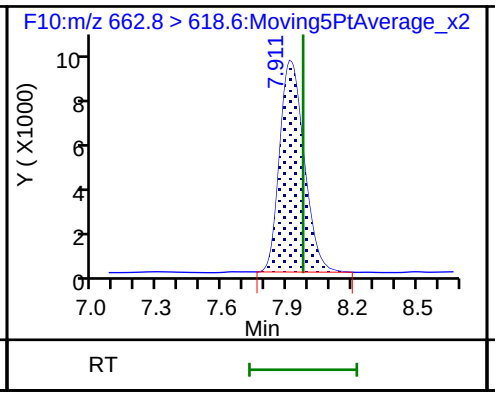
37 Perfluorododecanoic acid



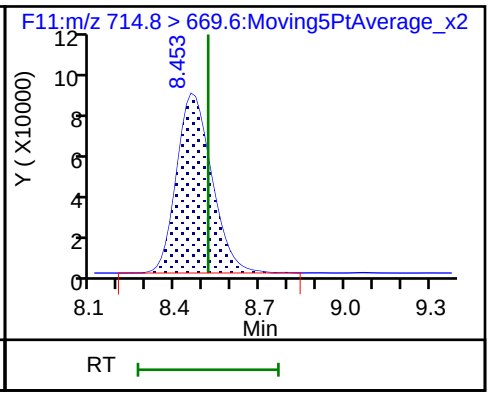
D 36 13C2 PFDoA



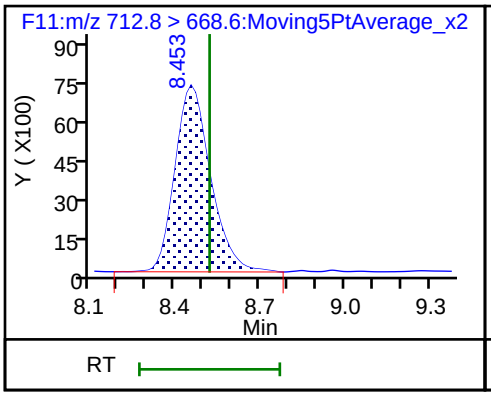
40 Perfluorotridecanoic acid



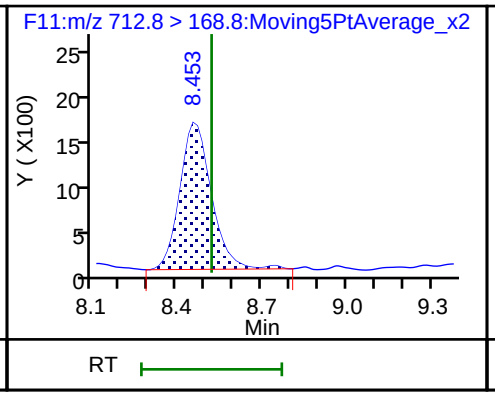
D 43 13C2-PFTeDA



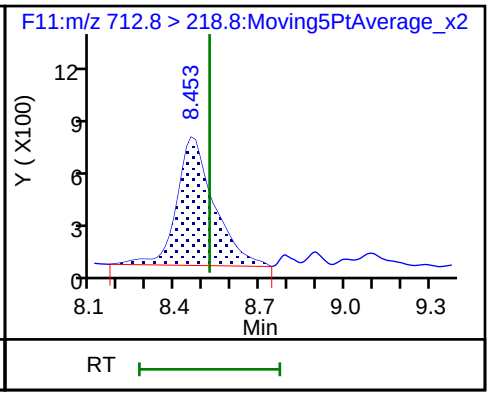
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Burlington

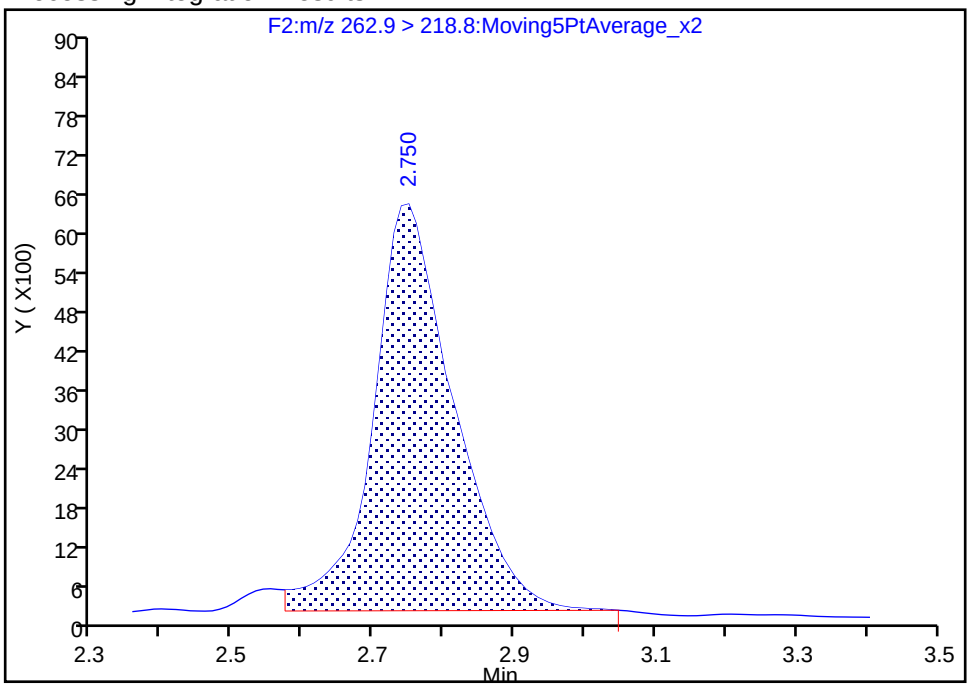
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A62.d
Injection Date: 12-May-2018 00:20:47 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 62
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

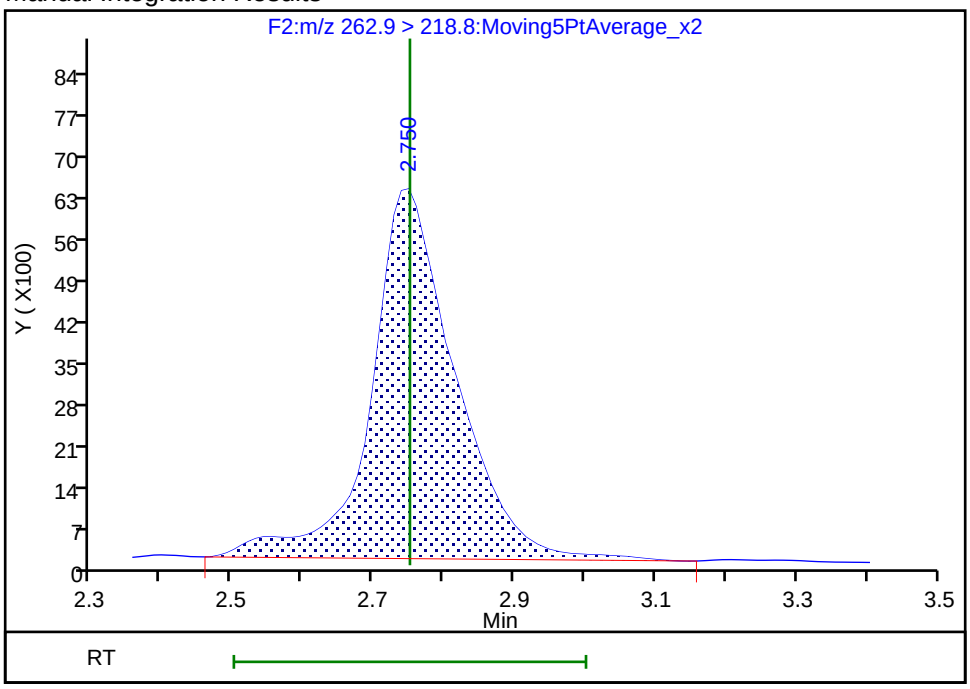
Processing Integration Results

RT: 2.75
Area: 49477
Amount: 4.559109
Amount Units: ng/ml



Manual Integration Results

RT: 2.75
Area: 52230
Amount: 4.808083
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:27:31
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Burlington

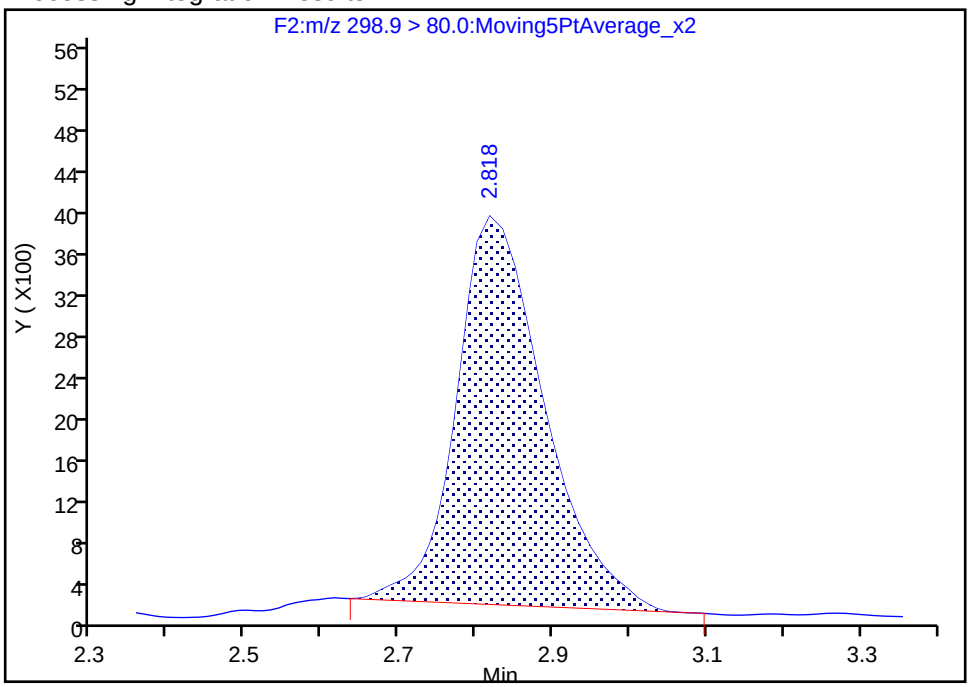
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A62.d
Injection Date: 12-May-2018 00:20:47 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 62
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

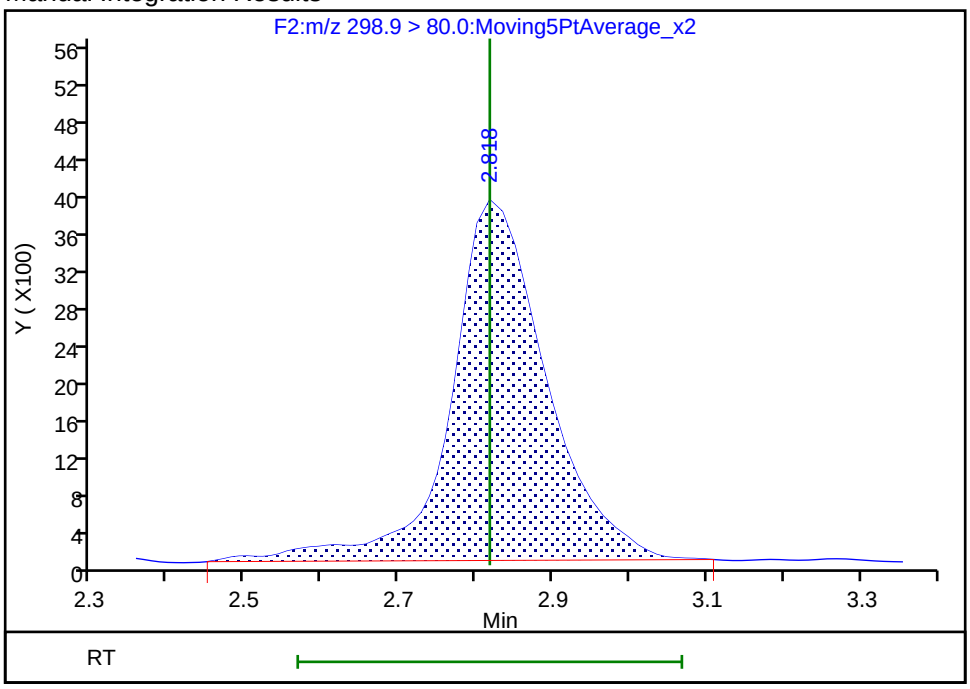
Processing Integration Results

RT: 2.82
Area: 29808
Amount: 4.107712
Amount Units: ng/ml



Manual Integration Results

RT: 2.82
Area: 33236
Amount: 4.554692
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:27:49
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

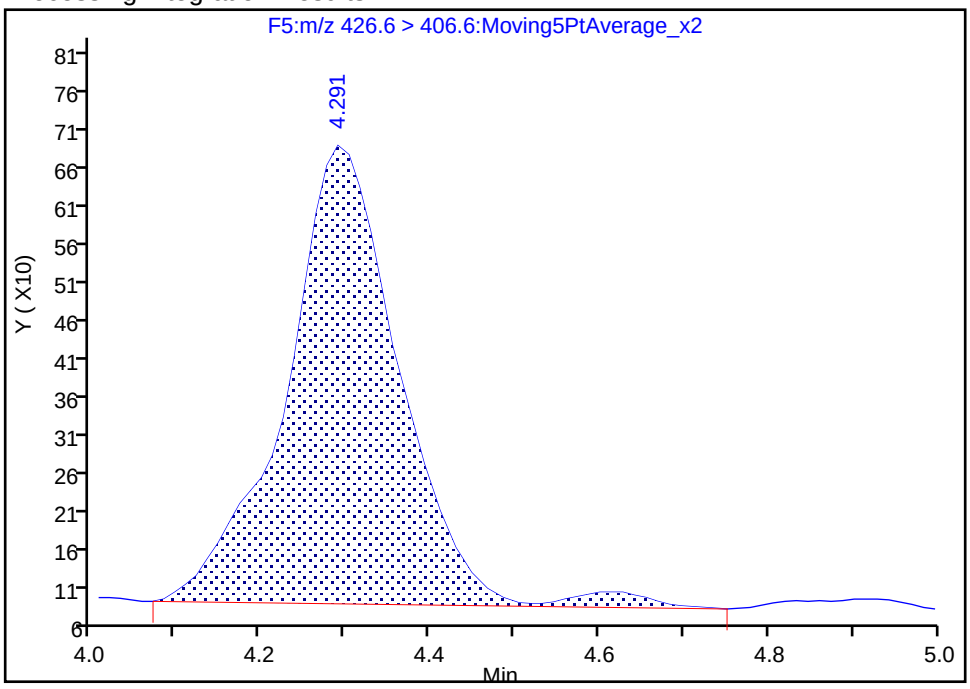
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A62.d
Injection Date: 12-May-2018 00:20:47 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 62
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

15 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate, CAS: 27619-97-2

Signal: 1

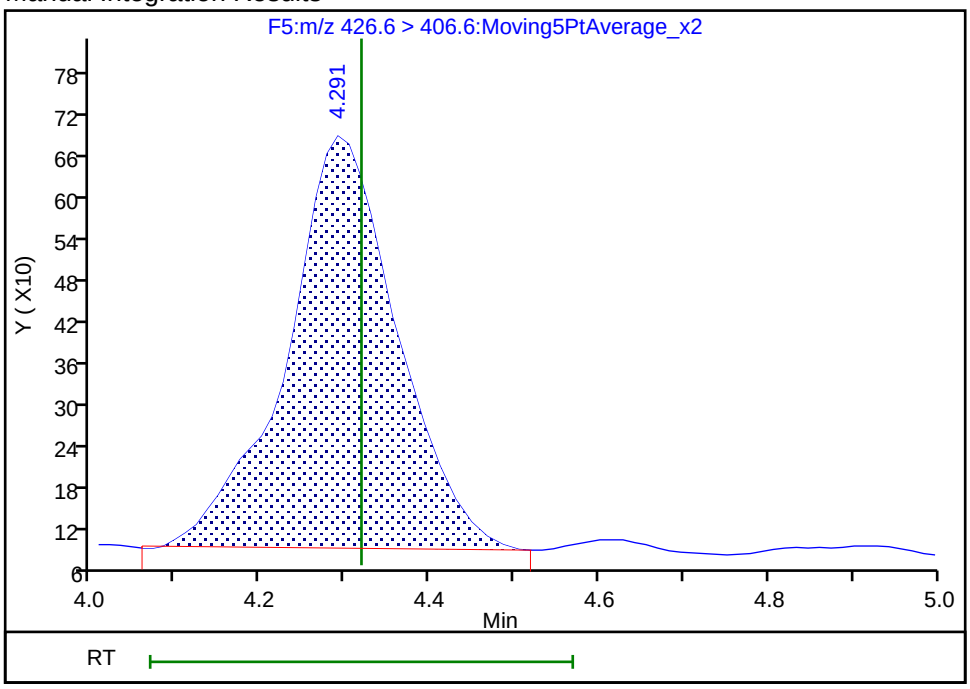
Processing Integration Results

RT: 4.29
Area: 5670
Amount: 4.920760
Amount Units: ng/ml



Manual Integration Results

RT: 4.29
Area: 5451
Amount: 4.730699
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:28:16
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

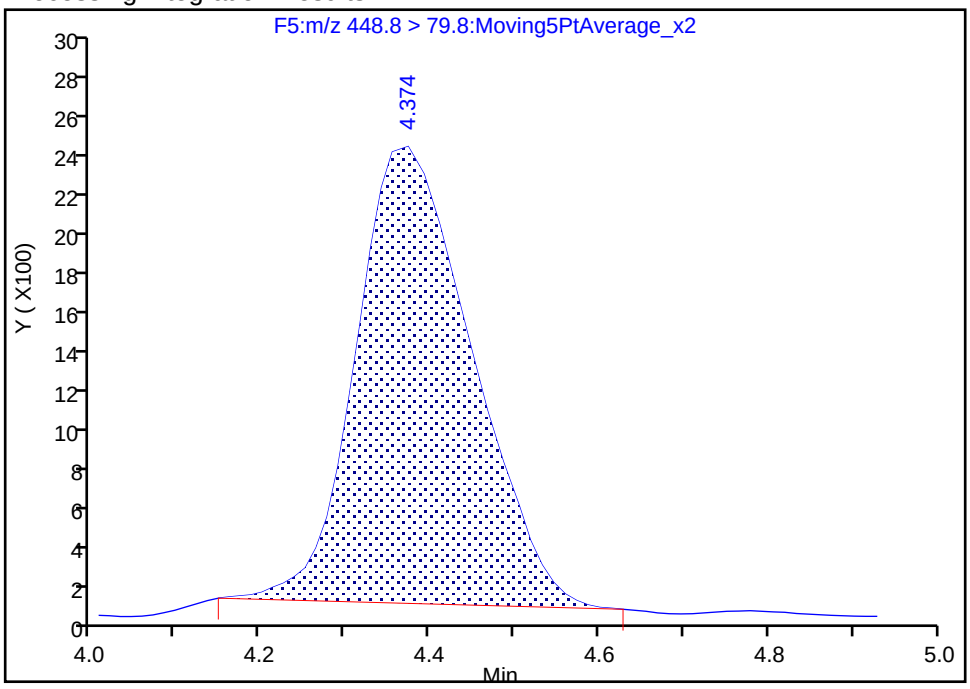
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A62.d
Injection Date: 12-May-2018 00:20:47 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 62
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

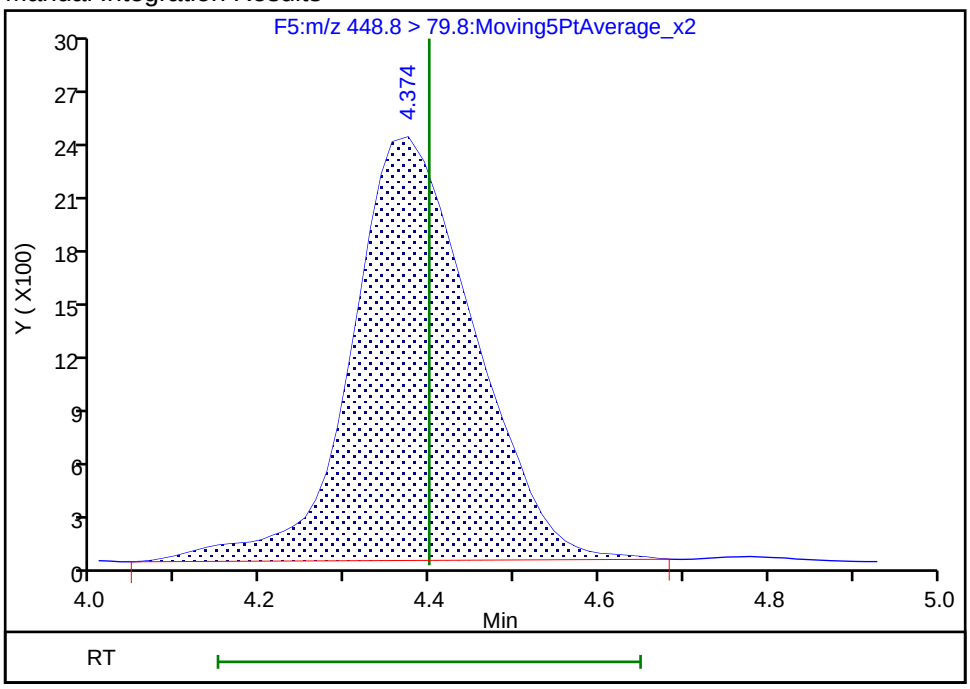
Processing Integration Results

RT: 4.37
Area: 21589
Amount: 4.455375
Amount Units: ng/ml



Manual Integration Results

RT: 4.37
Area: 23456
Amount: 4.824692
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:28:30
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

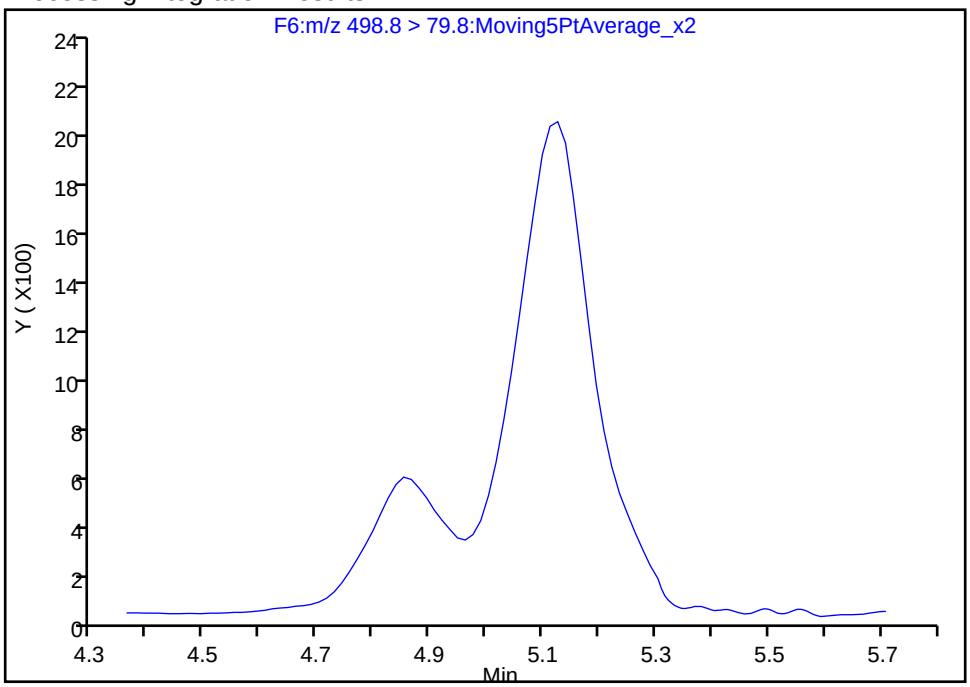
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A62.d
Injection Date: 12-May-2018 00:20:47 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 62
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

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

Signal: 1

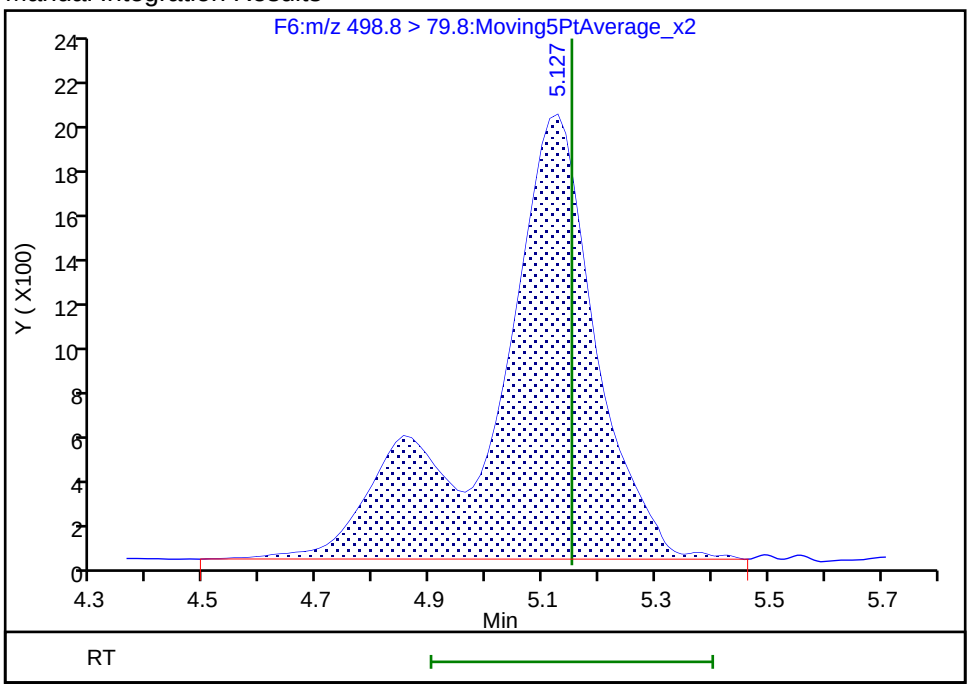
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 5.13
Area: 24342
Amount: 4.306169
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:28:42
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

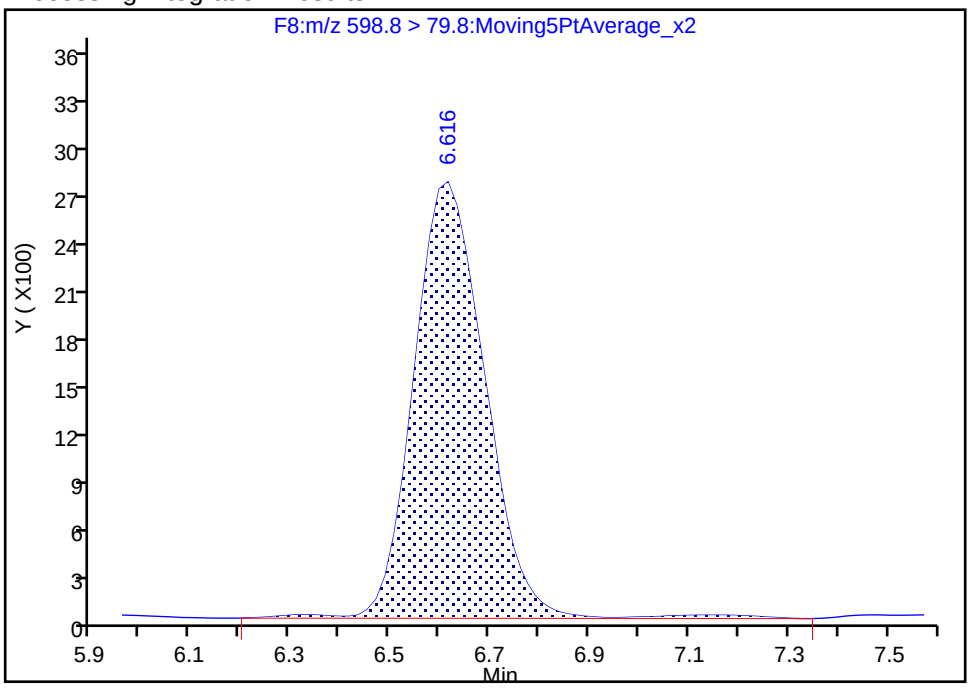
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A62.d
Injection Date: 12-May-2018 00:20:47 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 62
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

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

Signal: 1

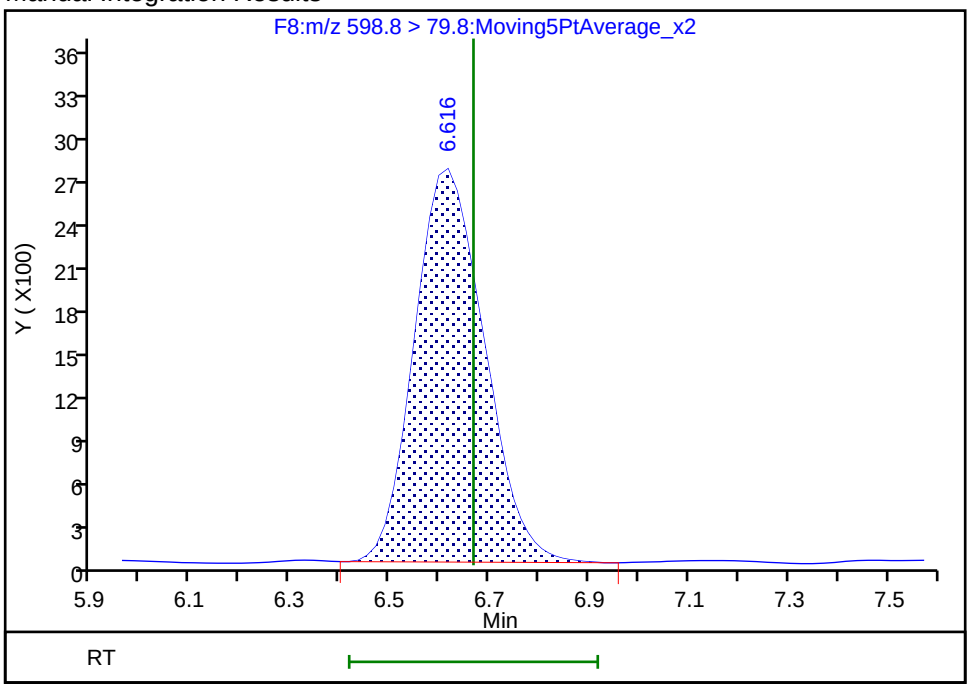
Processing Integration Results

RT: 6.62
Area: 27071
Amount: 4.849465
Amount Units: ng/ml



Manual Integration Results

RT: 6.62
Area: 26354
Amount: 4.720632
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 08:29:29
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 200-129214/1-A

Matrix: Water | Lab File ID: PF051018A34.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 250(mL) | Date Analyzed: 05/11/2018 16:48

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.00	U	2.00	0.44
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.639	J	2.00	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	0.616	J	2.00	0.44
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.29
335-67-1	Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.47
375-95-1	Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	0.564	J	2.00	0.44
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	0.44
307-55-1	Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.44
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	2.00	U	2.00	0.44
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.00	U	2.00	0.44
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.88
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.704	J	2.00	0.28
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.00	U	2.00	0.44
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.44
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.30
754-91-6	Perfluorooctane Sulfonamide (FOSA)	2.00	U	2.00	0.44
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.00	U	2.00	0.60
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2.00	U	2.00	0.60
27619-97-2	6:2FTS	2.00	U	2.00	0.60
39108-34-4	8:2FTS	2.00	U	2.00	0.60

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 200-129214/1-A

Matrix: Water | Lab File ID: PF051018A34.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 250(mL) | Date Analyzed: 05/11/2018 16:48

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	45		25-150
STL00992	13C4 PFBA	61		25-150
STL01893	13C5 PFPeA	75		25-150
STL00993	13C2 PFHxA	72		25-150
STL01892	13C4-PFHpA	75		25-150
STL00990	13C4 PFOA	70		25-150
STL00995	13C5 PFNA	63		25-150
STL00996	13C2 PFDA	64		25-150
STL00997	13C2 PFUnA	62		25-150
STL00998	13C2 PFDoA	48		25-150
STL02116	13C2-PFTeDA	46		25-150
STL02337	13C3-PFBS	74		25-150
STL00994	18O2 PFHxS	73		25-150
STL00991	13C4 PFOS	69		25-150
STL02118	d3-NMeFOSAA	52		25-150
STL02117	d5-NEtFOSAA	55		25-150
STL02279	M2-6:2FTS	83		25-150
STL02280	M2-8:2FTS	66		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A34.d
Lims ID: MB 200-129214/1-A
Client ID:
Sample Type: MB
Inject. Date: 11-May-2018 16:48:23 ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-034 MB 214
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:17 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 17:53:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.326	2.328	-0.002	1.000	365615	30.3		60.6	136	
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.801	2.751	0.050	1.019	3518	0.3195			5.2	M
D 3 13C5-PFPeA										
267.7 > 222.6	2.750	2.753	-0.003	1.000	345028	37.5		74.9	1290	
D 5 13C3-PFBS										
302.0 > 79.8	2.818	2.820	-0.002	1.000	332254	34.6		74.3	326	
D 7 13C2 PFHxA										
314.8 > 269.6	3.164	3.170	-0.006	1.000	484175	36.0		72.0	1823	
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.127	3.172	-0.045	0.988	886	0.3078			4.6	M
D 10 13C4-PFHpA										
366.9 > 321.8	3.681	3.696	-0.015	1.000	849328	37.4		74.7	774	
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.737	3.739	-0.002	1.006	1671	0.3522			12.3	M
D 13 18O2 PFHxS										
402.9 > 83.8	3.715	3.742	-0.027	1.000	370904	34.8		73.5	2242	
D 14 M2-6:2FTS										
428.6 > 408.6	4.304	4.321	-0.017	1.000	83127	39.6		83.4	384	
D 17 13C4 PFOA										
416.9 > 371.8	4.342	4.363	-0.021	1.000	776742	35.0		70.0	1359	
* 49 13C2-PFOA										
414.9 > 369.8	4.342	4.363	-0.021		1280252	50.0			1621	
D 21 13C5 PFNA										
467.8 > 422.8	5.113	5.127	-0.014	1.000	832182	31.5		63.1	824	
D 22 13C4 PFOS										
502.8 > 79.8	5.127	5.154	-0.027	1.000	314855	32.9		68.8	787	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Sodium 1H,1H,2H,2H-perfluorodecane										M
526.8 > 506.5	5.882	5.880	0.002	1.003	728	0.2535			3.8	M
D 23 M2-8:2FTS										
528.8 > 508.8	5.863	5.882	-0.019	1.000	179171	31.8		66.5	635	
D 25 13C2 PFDA										
514.9 > 469.5	5.882	5.910	-0.028	1.000	1026819	32.1		64.3	2950	
26 Perfluorodecanoic acid										M
512.9 > 468.5	5.902	5.914	-0.012	1.003	686	0.2822			2.2	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.241	6.271	-0.030	1.000	175518	25.8		51.7	389	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.598	6.640	-0.042	1.000	162629	27.6		55.1	618	
D 33 13C2 PFUnA										
564.8 > 519.8	6.652	6.676	-0.024	1.000	924651	30.8		61.7	1979	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.634	6.676	-0.042	0.997	894	0.0308			5.1	
D 35 13C8 FOSA										
505.8 > 77.8	6.987	6.984	0.003	1.000	388643	22.6		45.1	1365	
D 36 13C2 PFDoA										
614.8 > 569.6	7.317	7.358	-0.041	1.000	763251	24.2		48.4	2085	
D 43 13C2-PFTeDA										
714.8 > 669.6	8.469	8.514	-0.045	1.000	664297	22.8		45.6	1426	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 14-May-2018 12:12:39 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A34.d

Injection Date: 11-May-2018 16:48:23 Instrument ID: LC410

Lims ID: MB 200-129214/1-A

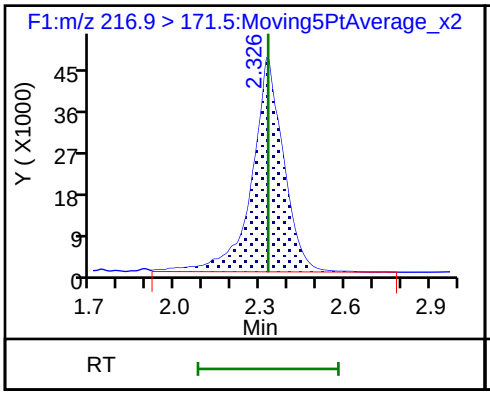
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 34

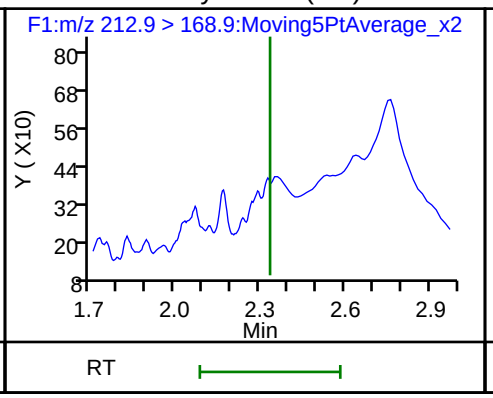
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

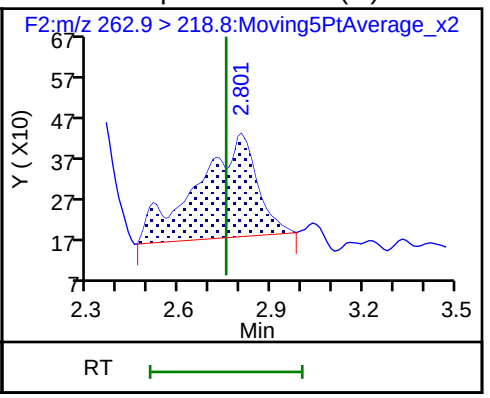
D 2 13C4 PFBA



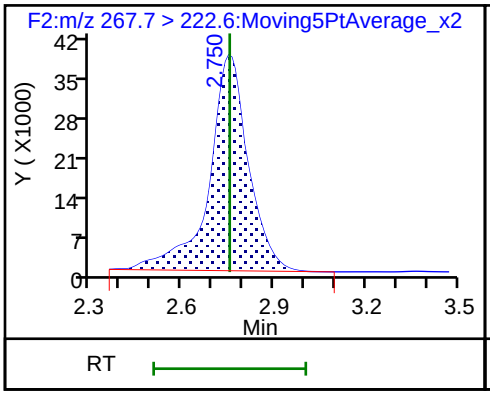
1 Perfluorobutyric acid (ND)



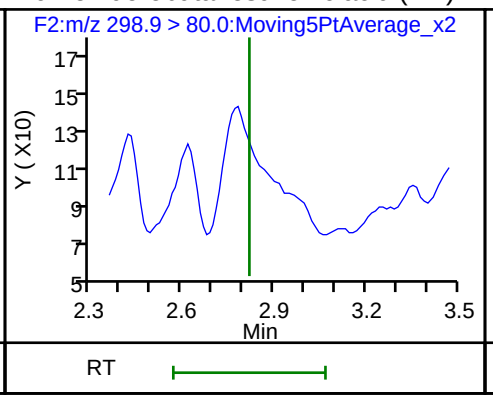
4 Perfluoropentanoic acid (M)



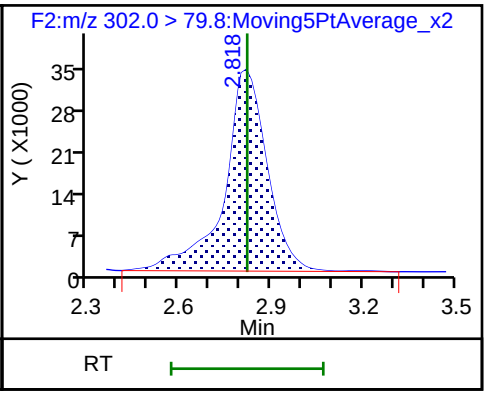
D 3 13C5-PFPeA



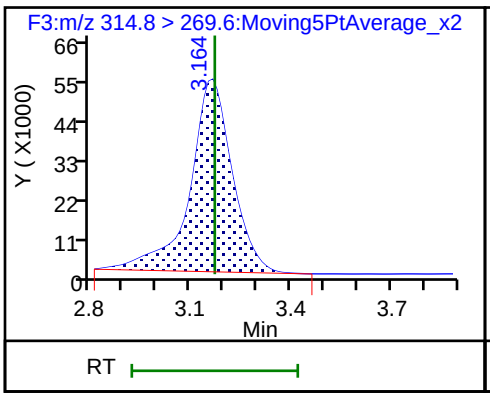
6 Perfluorobutanesulfonic acid (ND)



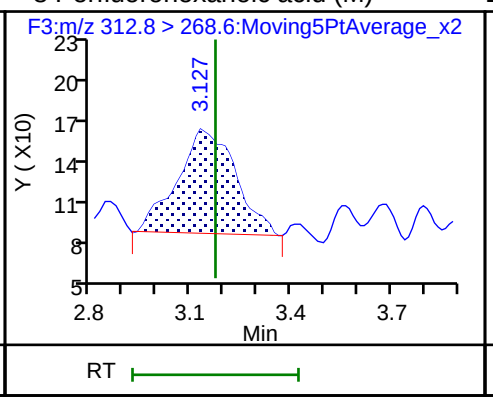
D 5 13C3-PFBS



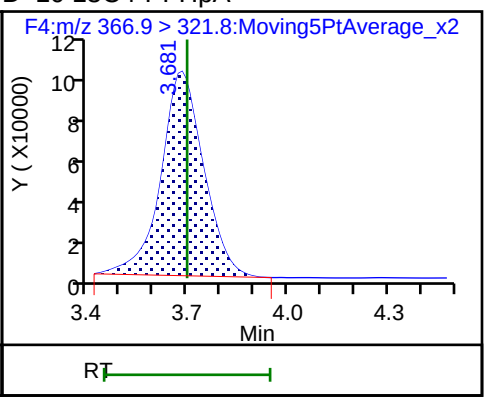
D 7 13C2 PFHxA



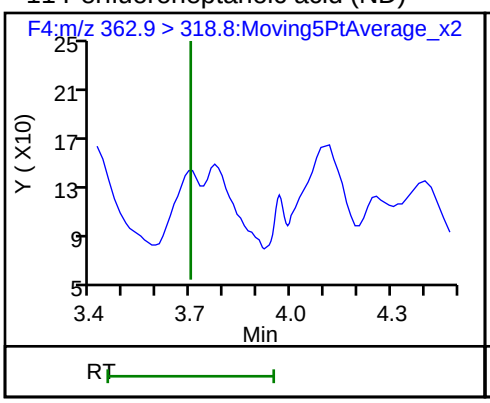
8 Perfluorohexanoic acid (M)



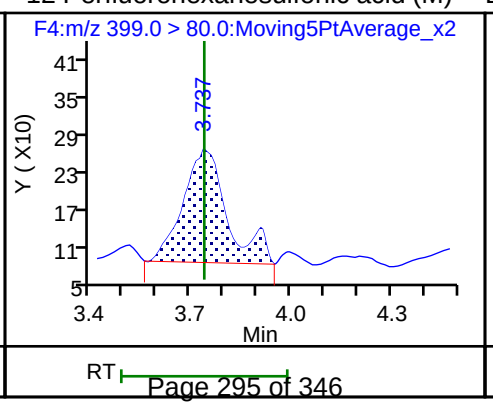
D 10 13C4-PFHpA



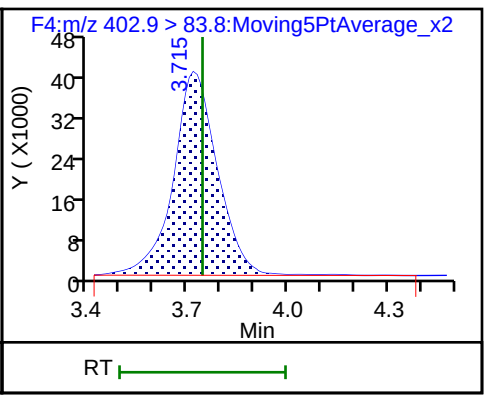
11 Perfluoroheptanoic acid (ND)



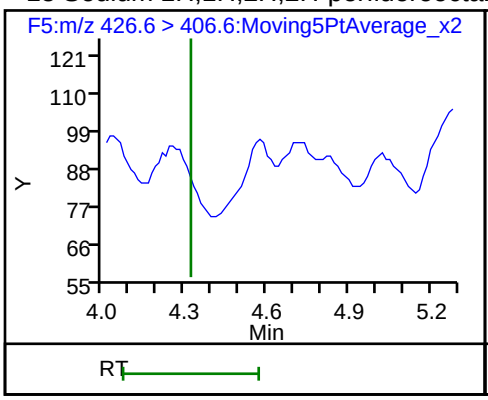
12 Perfluorohexanesulfonic acid (M)



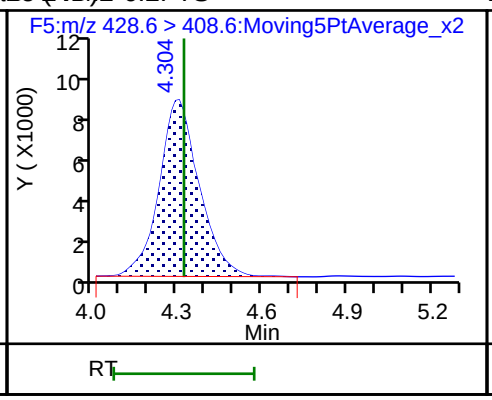
D 13 18O2 PFHxS



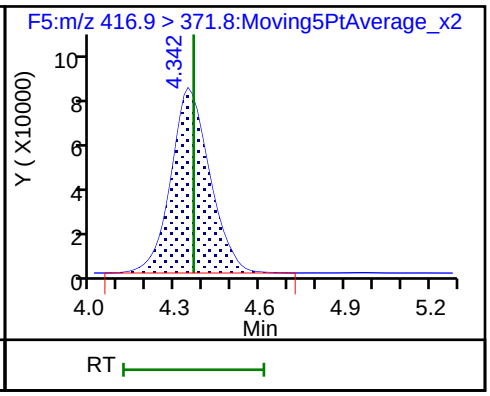
15 Sodium 1H,1H,2H,2H-perfluorooctane (ND)



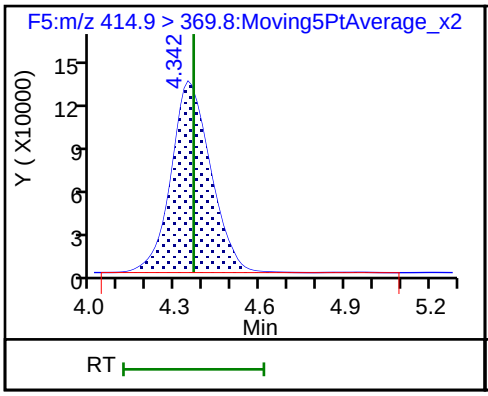
D 13 M2-6:2FTS



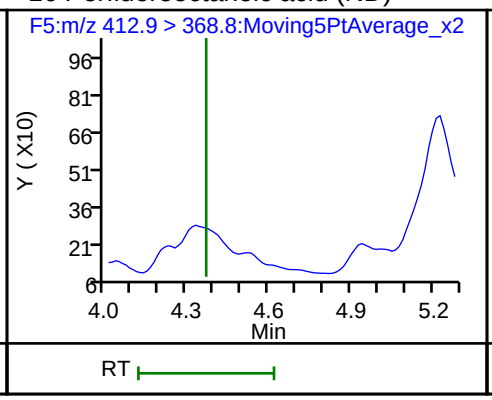
D 17 13C4 PFOA



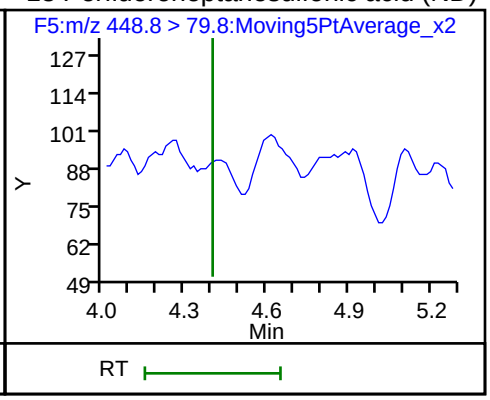
* 49 13C2-PFOA



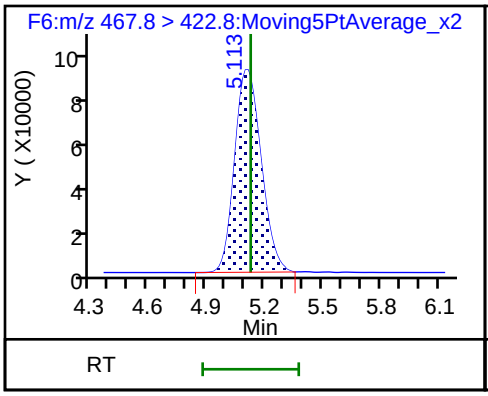
16 Perfluorooctanoic acid (ND)



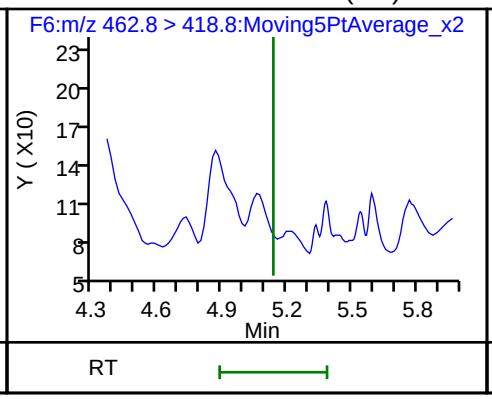
18 Perfluoroheptanesulfonic acid (ND)



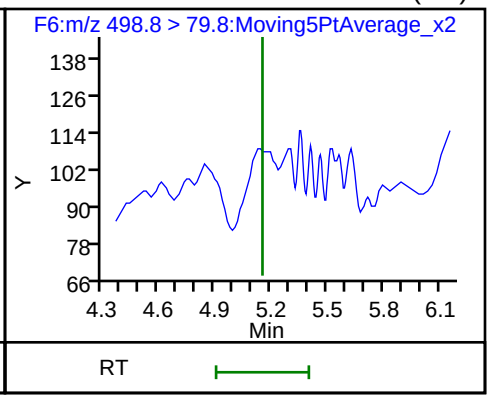
D 21 13C5 PFNA



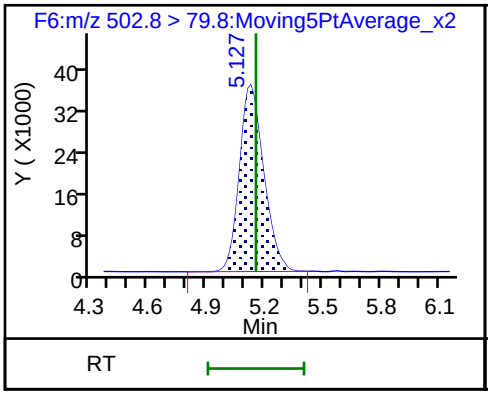
19 Perfluorononanoic acid (ND)



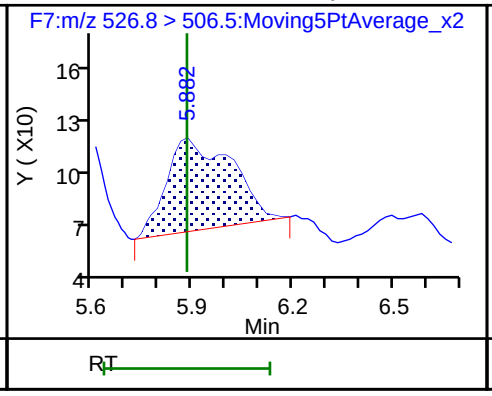
20 Perfluorooctane sulfonic acid (ND)



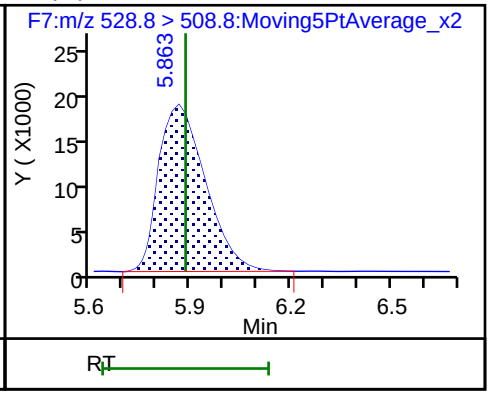
D 22 13C4 PFOS



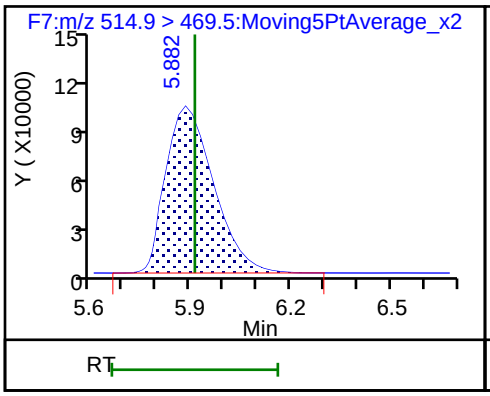
24 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



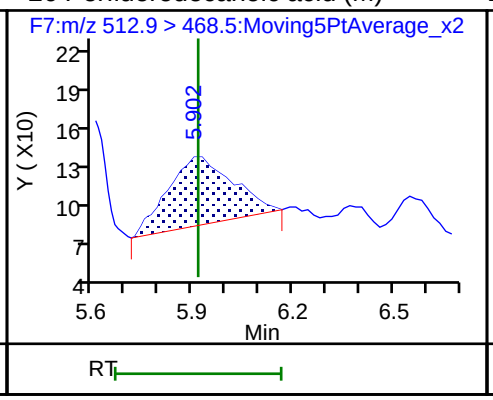
D 23 M2-8:2FTS



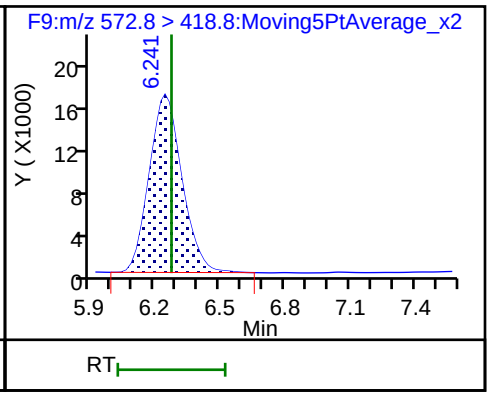
D 25 13C2 PFDA



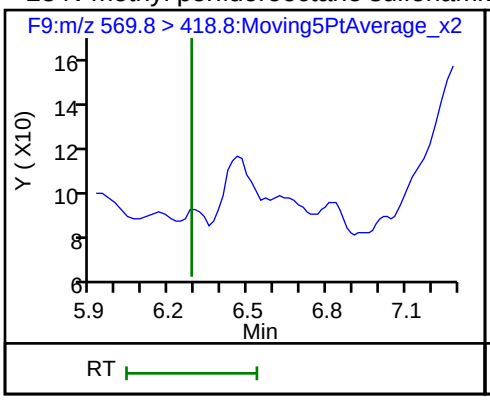
26 Perfluorodecanoic acid (M)



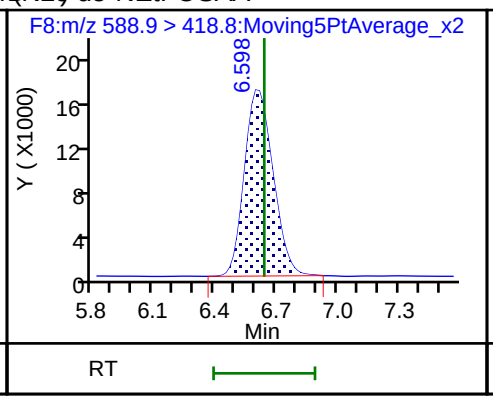
D 27 d3-NMeFOSAA



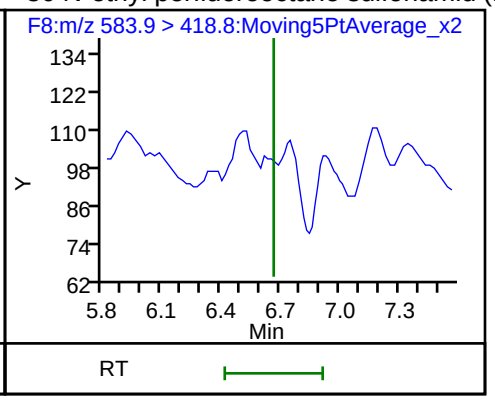
28 N-methyl perfluorooctane sulfonamid (ND)



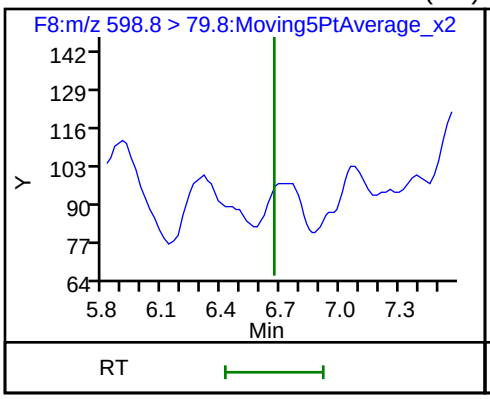
D 29 d5-NEtFOSAA



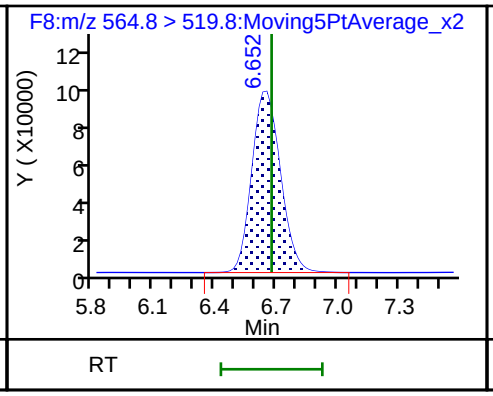
30 N-ethyl perfluorooctane sulfonamid (ND)



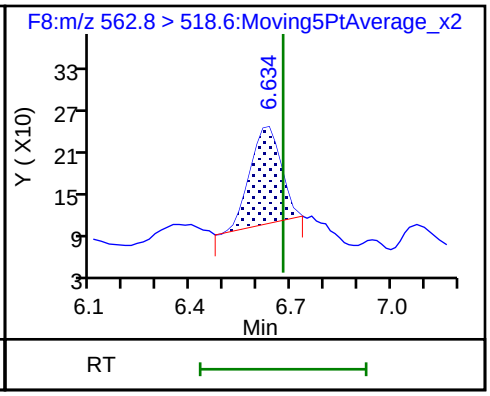
31 Perfluorodecane Sulfonic acid (ND)



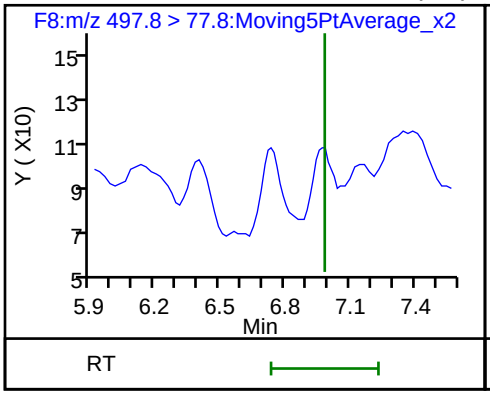
D 33 13C2 PFUnA



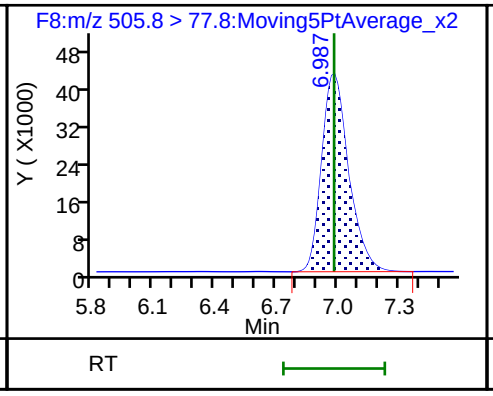
32 Perfluoroundecanoic acid



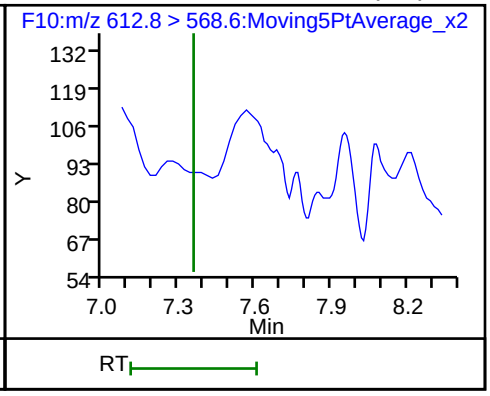
34 Perfluorooctane Sulfonamide (ND)



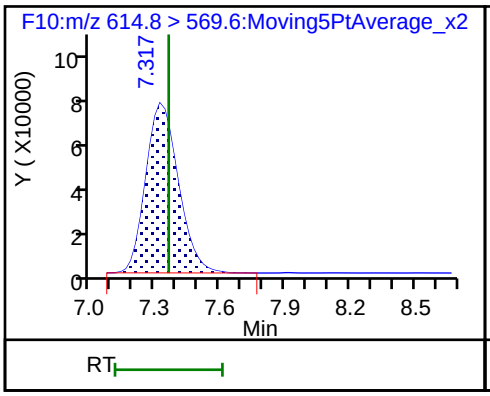
D 35 13C8 FOSA



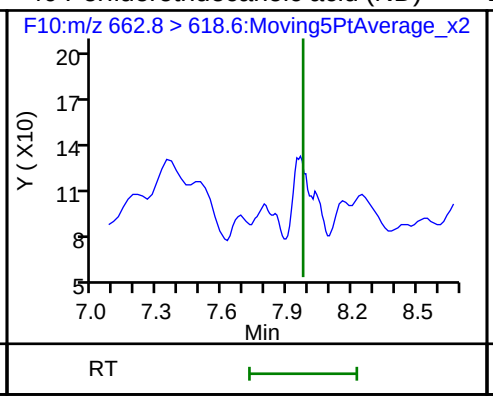
37 Perfluorododecanoic acid (ND)



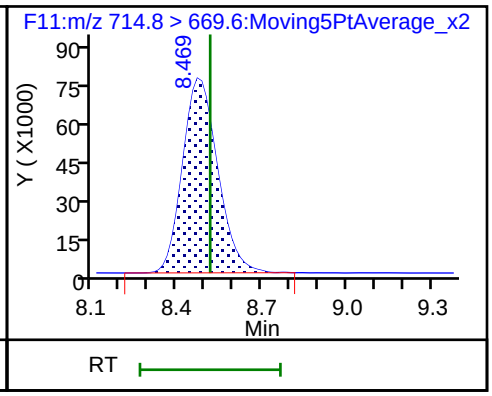
D 36 13C2 PFDoA



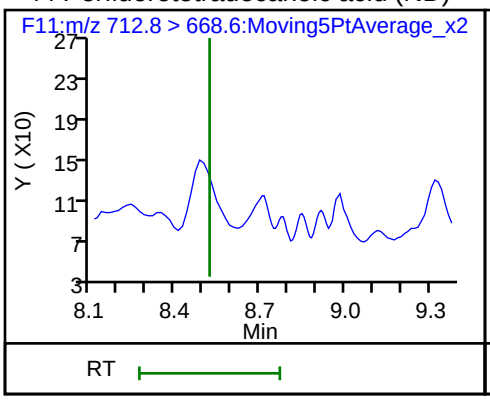
40 Perfluorotridecanoic acid (ND)



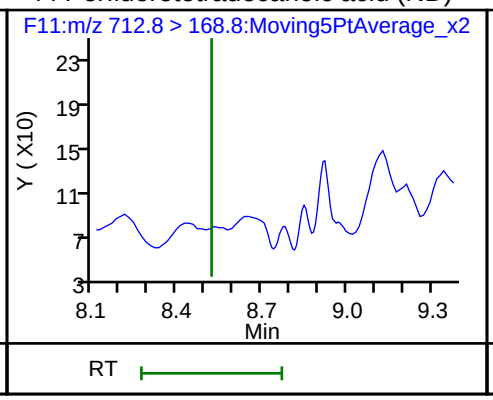
D 43 13C2-PFTeDA



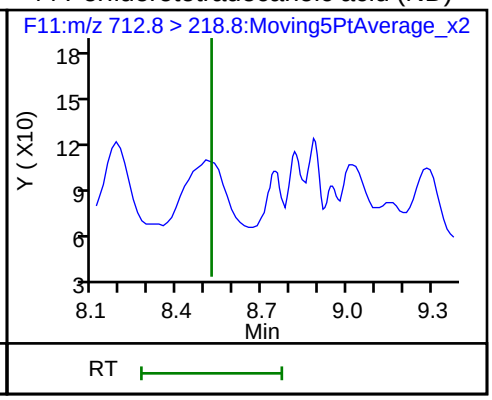
44 Perfluorotetradecanoic acid (ND)



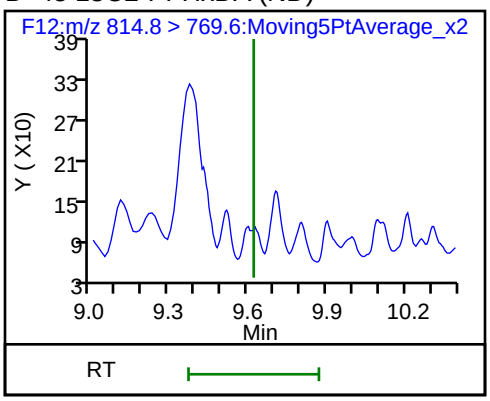
44 Perfluorotetradecanoic acid (ND)



44 Perfluorotetradecanoic acid (ND)



D 45 13C2-PFHxDA (ND)



Manual Integration/User Assign Peak Report

TestAmerica Burlington

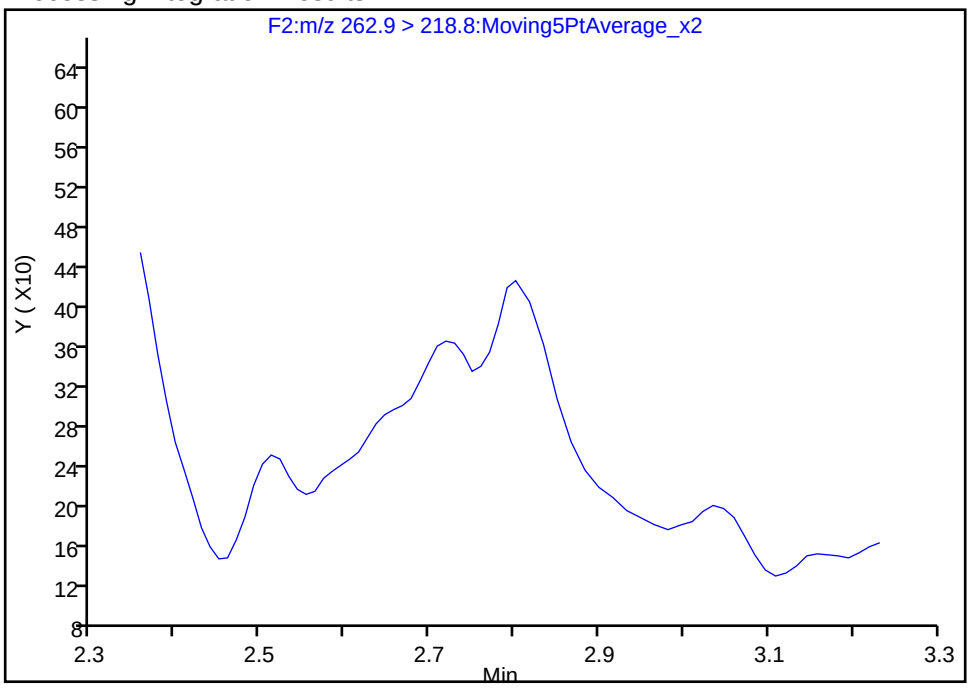
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A34.d
Injection Date: 11-May-2018 16:48:23 Instrument ID: LC410
Lims ID: MB 200-129214/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

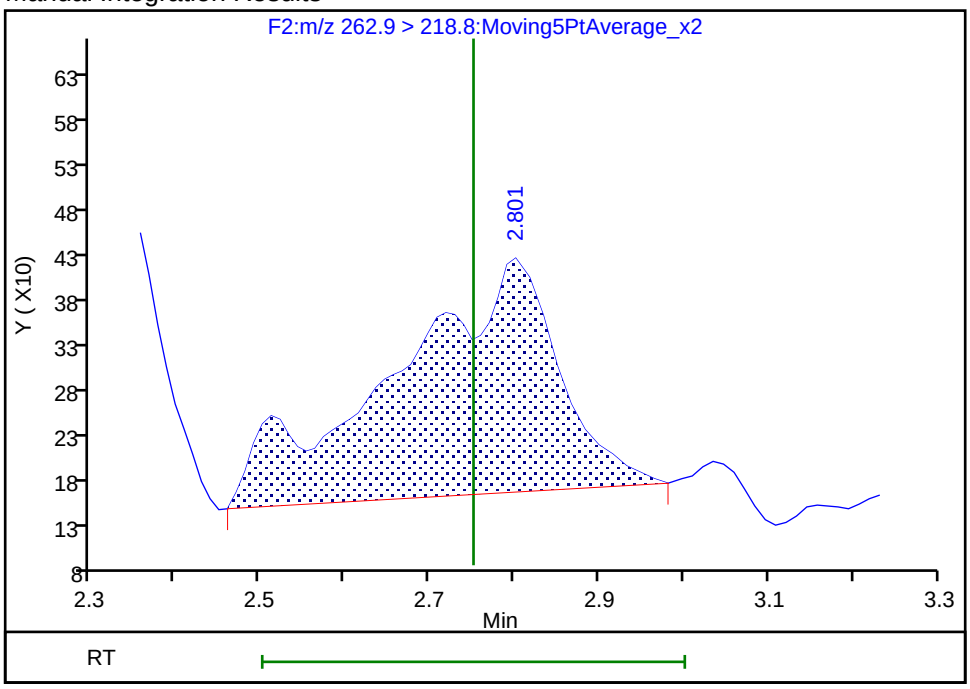
Not Detected
Expected RT: 2.75

Processing Integration Results



Manual Integration Results

RT: 2.80
Area: 3518
Amount: 0.319457
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 11:56:04
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

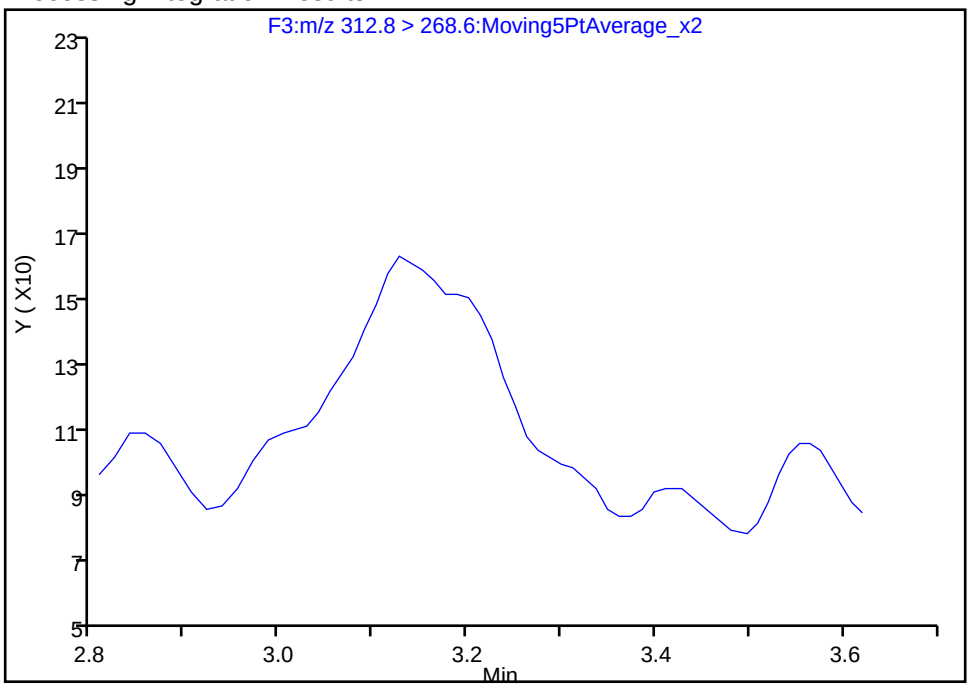
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A34.d
Injection Date: 11-May-2018 16:48:23 Instrument ID: LC410
Lims ID: MB 200-129214/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

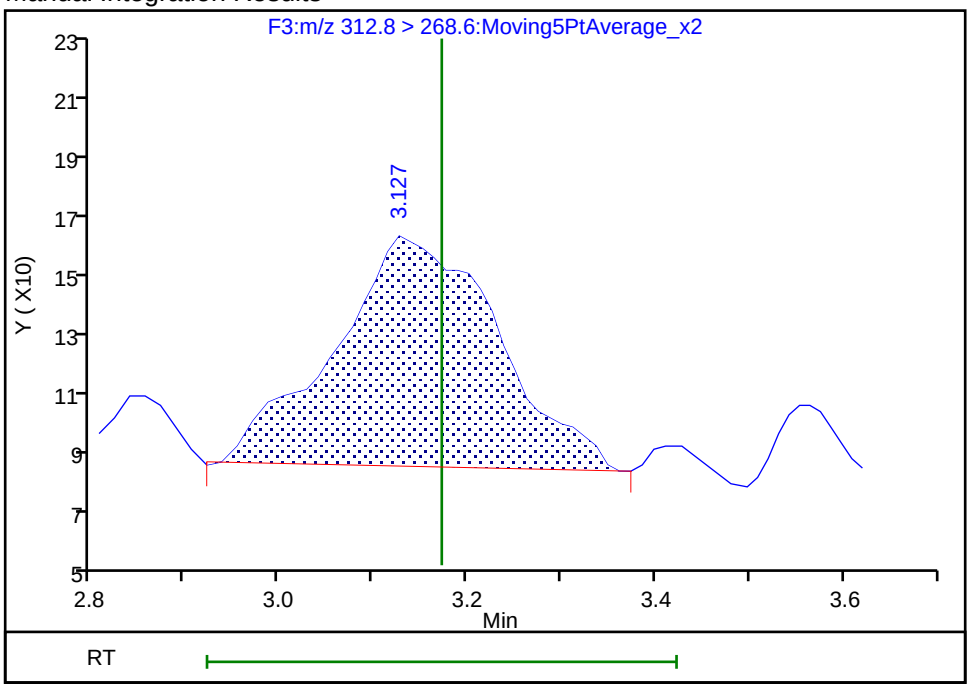
Not Detected
Expected RT: 3.17

Processing Integration Results



Manual Integration Results

RT: 3.13
Area: 886
Amount: 0.307790
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 11:56:13
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

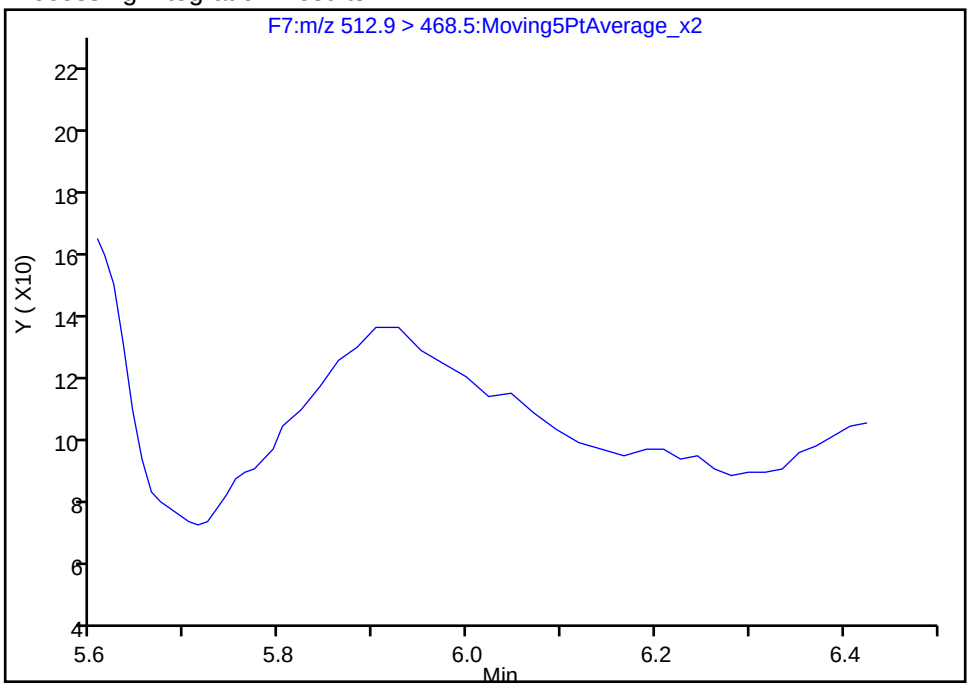
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A34.d
Injection Date: 11-May-2018 16:48:23 Instrument ID: LC410
Lims ID: MB 200-129214/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

26 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

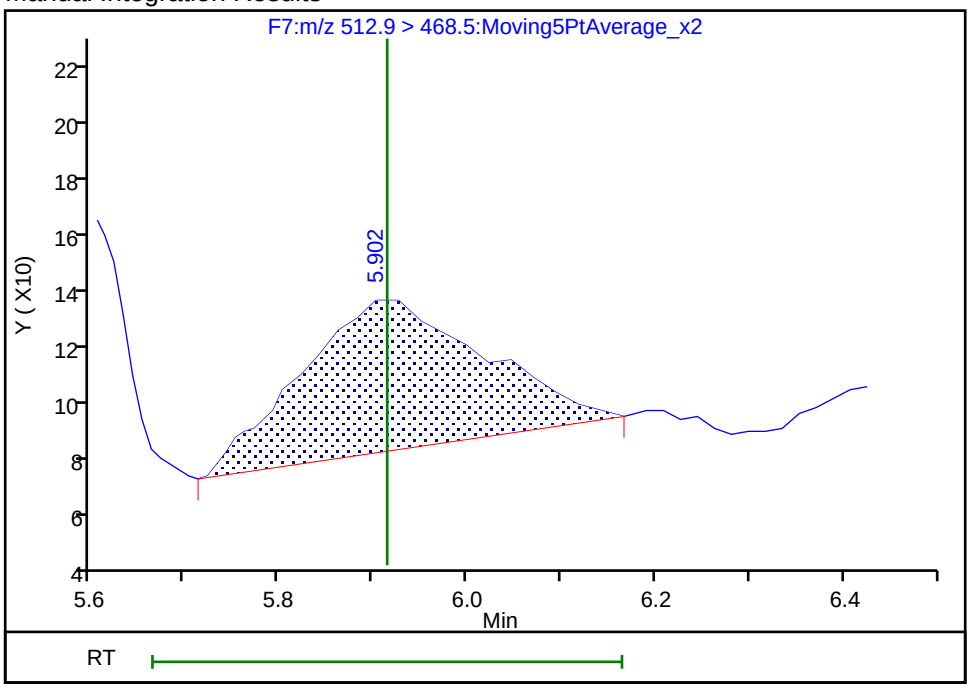
Not Detected
Expected RT: 5.91

Processing Integration Results



Manual Integration Results

RT: 5.90
Area: 686
Amount: 0.282231
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:57:28
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

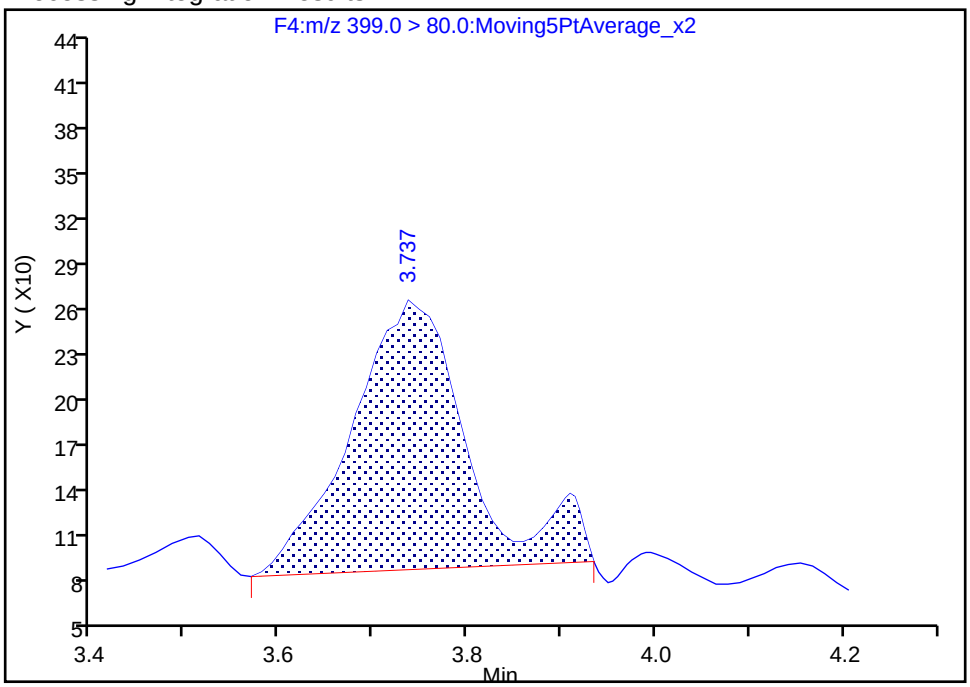
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A34.d
Injection Date: 11-May-2018 16:48:23 Instrument ID: LC410
Lims ID: MB 200-129214/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

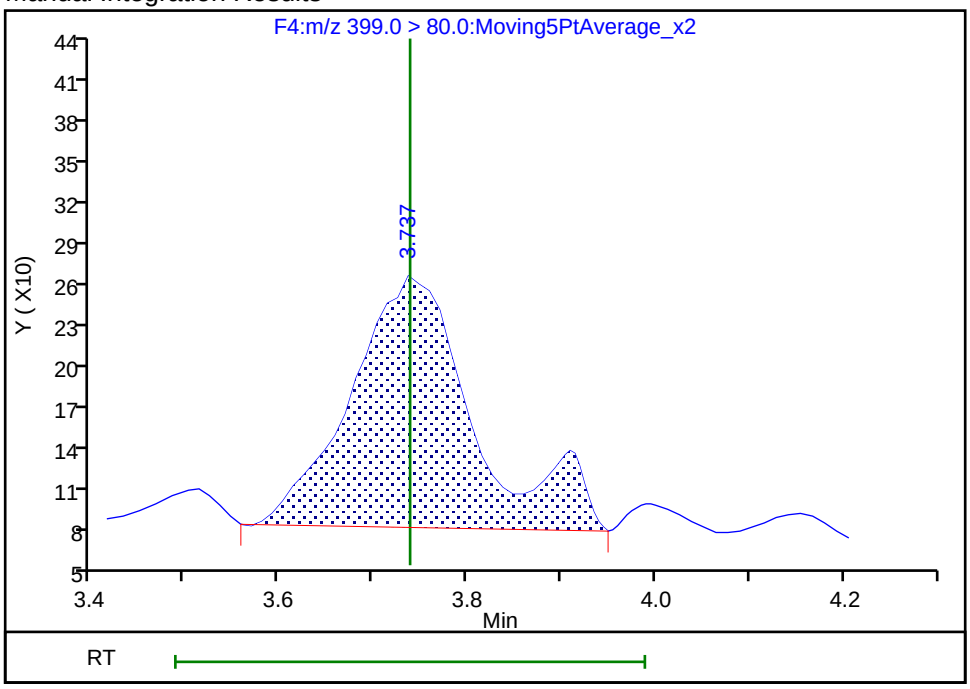
Processing Integration Results

RT: 3.74
Area: 1525
Amount: 0.337937
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 1671
Amount: 0.352204
Amount Units: ng/ml



Reviewer: kirchnerb, 14-May-2018 11:56:26
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Burlington

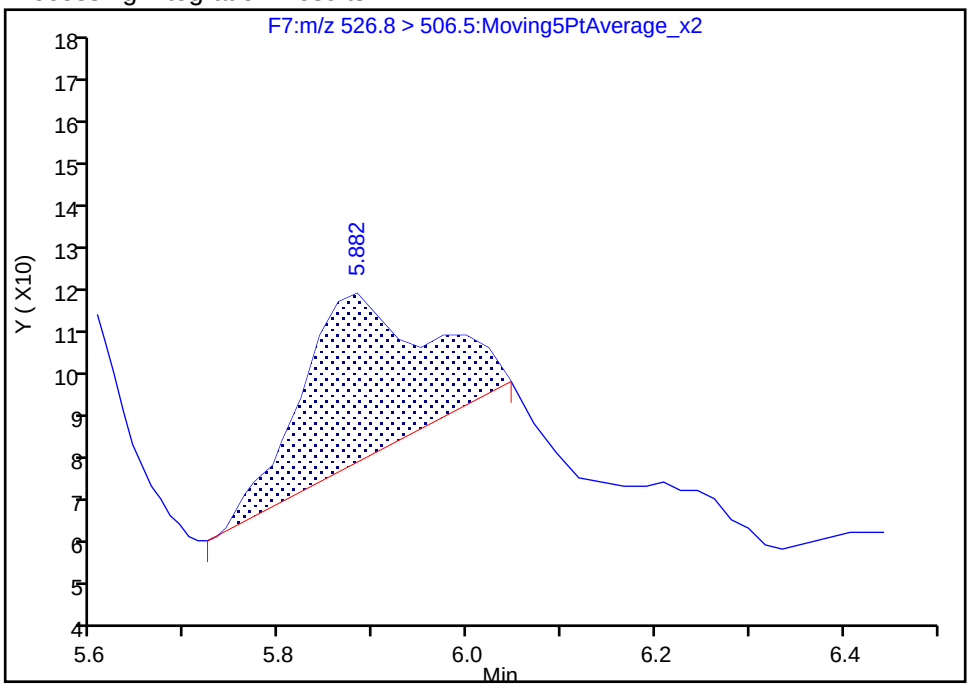
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A34.d
Injection Date: 11-May-2018 16:48:23 Instrument ID: LC410
Lims ID: MB 200-129214/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

24 Sodium 1H,1H,2H,2H-perfluorodecane sulfonate, CAS: 39108-34-4

Signal: 1

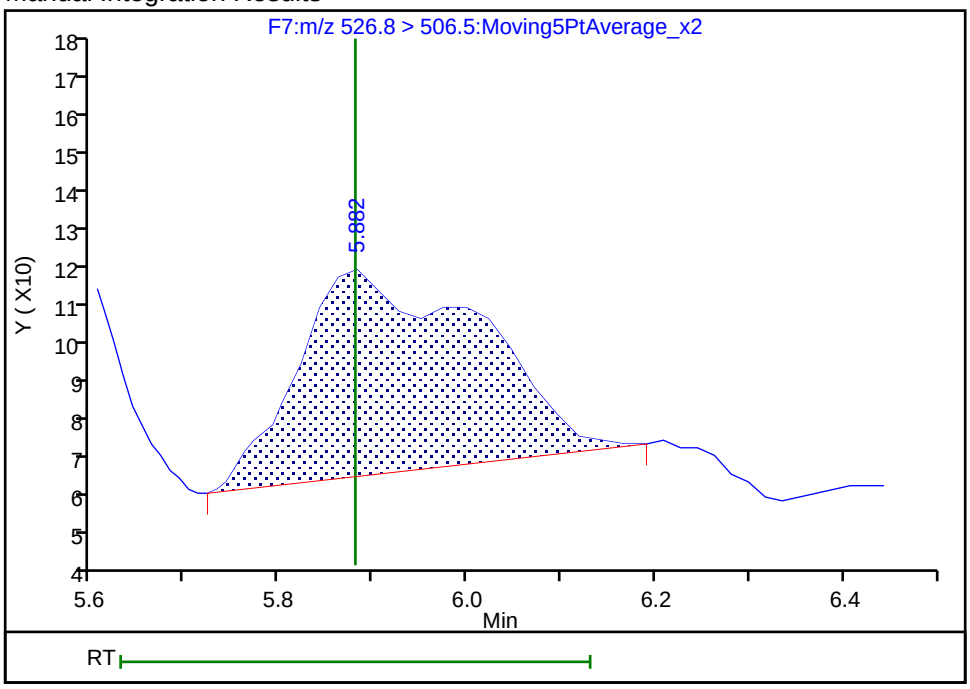
Processing Integration Results

RT: 5.88
Area: 373
Amount: 0.129878
Amount Units: ng/ml



Manual Integration Results

RT: 5.88
Area: 728
Amount: 0.253488
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:57:38
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 200-129214/2-A

Matrix: Water | Lab File ID: PF051018A35.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 250(mL) | Date Analyzed: 05/11/2018 17:04

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	37.83		2.00	0.44
2706-90-3	Perfluoropentanoic acid (PFPeA)	32.71		2.00	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	42.14		2.00	0.44
375-85-9	Perfluoroheptanoic acid (PFHpA)	39.70		2.00	0.29
335-67-1	Perfluorooctanoic acid (PFOA)	39.49		2.00	0.47
375-95-1	Perfluorononanoic acid (PFNA)	39.27		2.00	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	43.04		2.00	0.44
2058-94-8	Perfluoroundecanoic acid (PFUnA)	41.04		2.00	0.44
307-55-1	Perfluorododecanoic acid (PFDoA)	36.55		2.00	0.44
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	31.53		2.00	0.44
376-06-7	Perfluorotetradecanoic acid (PFTeA)	38.19		2.00	0.44
375-73-5	Perfluorobutanesulfonic acid (PFBS)	30.69		2.00	0.88
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	30.98		2.00	0.28
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	35.23		2.00	0.44
335-77-3	Perfluorodecanesulfonic acid (PFDS)	30.61		2.00	0.44
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	35.16		2.00	0.30
754-91-6	Perfluorooctane Sulfonamide (FOSA)	38.68		2.00	0.44
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	36.84		2.00	0.60
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.91		2.00	0.60
27619-97-2	6:2FTS	37.72		2.00	0.60
39108-34-4	8:2FTS	41.21		2.00	0.60

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 200-129214/2-A

Matrix: Water | Lab File ID: PF051018A35.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 250(mL) | Date Analyzed: 05/11/2018 17:04

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	47		25-150
STL00992	13C4 PFBA	66		25-150
STL01893	13C5 PFPeA	80		25-150
STL00993	13C2 PFHxA	74		25-150
STL01892	13C4-PFHpA	72		25-150
STL00990	13C4 PFOA	71		25-150
STL00995	13C5 PFNA	69		25-150
STL00996	13C2 PFDA	62		25-150
STL00997	13C2 PFUnA	65		25-150
STL00998	13C2 PFDoA	57		25-150
STL02116	13C2-PFTeDA	46		25-150
STL02337	13C3-PFBS	77		25-150
STL00994	18O2 PFHxS	78		25-150
STL00991	13C4 PFOS	77		25-150
STL02118	d3-NMeFOSAA	59		25-150
STL02117	d5-NEtFOSAA	56		25-150
STL02279	M2-6:2FTS	85		25-150
STL02280	M2-8:2FTS	69		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A35.d
Lims ID: LCS 200-129214/2-A
Client ID:
Sample Type: LCS
Inject. Date: 11-May-2018 17:04:37 ALS Bottle#: 0 Worklist Smp#: 35
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-035 LCS
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:17 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: chirgwinb Date: 11-May-2018 17:54:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.322	2.328	-0.006	1.000	306129	33.0		65.9	395	
1 Perfluorobutyric acid										
212.9 > 168.9	2.318	2.334	-0.016	0.998	107827	18.9		94.6	102	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.739	2.751	-0.012	1.000	201183	16.4		81.8	188	
D 3 13C5-PFPeA										
267.7 > 222.6	2.739	2.753	-0.014	1.000	284913	40.2		80.4	449	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.801	2.818	-0.017	1.000	124256	15.3		86.8	231	
D 5 13C3-PFBS										
302.0 > 79.8	2.801	2.820	-0.019	1.000	263151	35.6		76.5	630	
D 7 13C2 PFHxA										
314.8 > 269.6	3.164	3.170	-0.006	1.000	382280	37.0		73.9	822	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.152	3.172	-0.020	0.996	160386	21.1		105	627	
D 10 13C4-PFHpA										
366.9 > 321.8	3.681	3.696	-0.015	1.000	633226	36.2		72.4	1098	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.681	3.698	-0.017	1.000	261531	19.8		99.2	572	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.715	3.739	-0.024	1.000	127489	15.5		85.1	288	
D 13 18O2 PFHxS										
402.9 > 83.8	3.715	3.742	-0.027	1.000	301963	36.8		77.8	491	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.278	4.319	-0.041	0.997	26554	18.9		99.5	172	
D 14 M2-6:2FTS										
428.6 > 408.6	4.291	4.321	-0.030	1.000	64945	40.2		84.7	258	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.330	4.363	-0.033	1.000	604254	35.4		70.8	793	
* 49 13C2-PFOA										
414.9 > 369.8	4.330	4.363	-0.033		984874	50.0			3016	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.330	4.368	-0.038	1.000	248183	19.7		98.7	102	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.374	4.399	-0.025	0.855	95071	17.6		92.5	253	
D 21 13C5 PFNA										
467.8 > 422.8	5.085	5.127	-0.042	1.000	697424	34.4		68.7	1240	
19 Perfluorononanoic acid										
462.8 > 418.8	5.099	5.136	-0.037	1.003	255717	19.6		98.2	520	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.113	5.152	-0.039	1.000	109979	17.6		94.7	596	M
D 22 13C4 PFOS										
502.8 > 79.8	5.113	5.154	-0.041	1.000	270977	36.8		76.9	915	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.863	5.880	-0.017	1.003	47456	20.6		108	466	
D 23 M2-8:2FTS										
528.8 > 508.8	5.843	5.882	-0.039	1.000	143673	33.2		69.3	1020	
D 25 13C2 PFDA										
514.9 > 469.5	5.863	5.910	-0.047	1.000	764490	31.1		62.2	1353	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.863	5.914	-0.051	1.000	315207	21.5		108	1001	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.241	6.271	-0.030	1.000	154068	29.5		59.0	702	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.241	6.283	-0.042	1.000	64583	18.4		92.1	258	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.598	6.640	-0.042	1.000	127014	28.0		56.0	717	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.616	6.664	-0.048	1.003	52571	20.5		102	519	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.616	6.667	-0.051	1.294	92015	15.3		79.4	751	
D 33 13C2 PFUnA										
564.8 > 519.8	6.634	6.676	-0.042	1.000	754147	32.7		65.4	2139	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.634	6.676	-0.042	1.000	299428	20.5		103	1424	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.973	6.984	-0.011	1.000	108402	19.3		96.7	604	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	307947	23.3		46.5	1461	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.317	7.354	-0.037	1.000	222479	18.3		91.4	658	
D 36 13C2 PFDoA										
614.8 > 569.6	7.317	7.358	-0.041	1.000	692959	28.6		57.1	1214	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.928	7.974	-0.046	1.084	196305	15.8		78.8	1154	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.468	8.514	-0.046	1.000	514586	23.0		46.0	946	
44 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.468	8.519	-0.051	1.000	180298	19.1		95.5	617	M
712.8 > 168.8	8.468	8.519	-0.051	1.000	40493		4.45(0.00-0.00)		142	
712.8 > 218.8	8.468	8.519	-0.051	1.000	20474		8.81(0.00-0.00)		68.4	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 14-May-2018 12:12:38 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A35.d

Injection Date: 11-May-2018 17:04:37 Instrument ID: LC410

Lims ID: LCS 200-129214/2-A

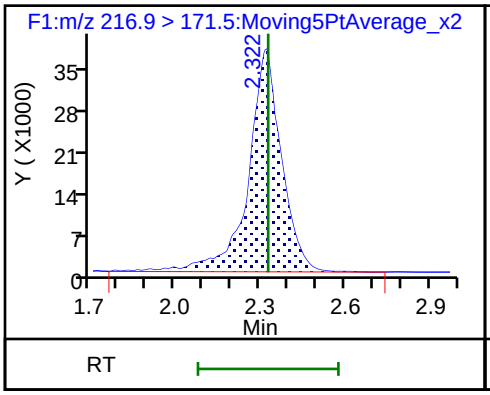
Client ID:

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 35

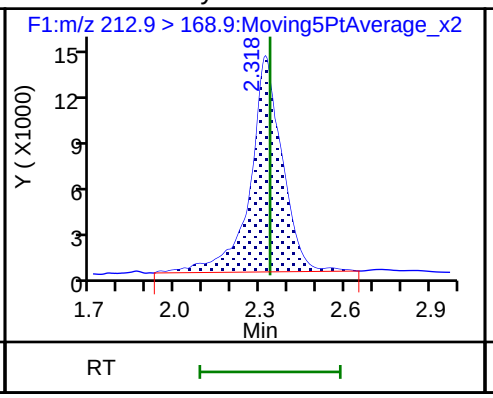
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

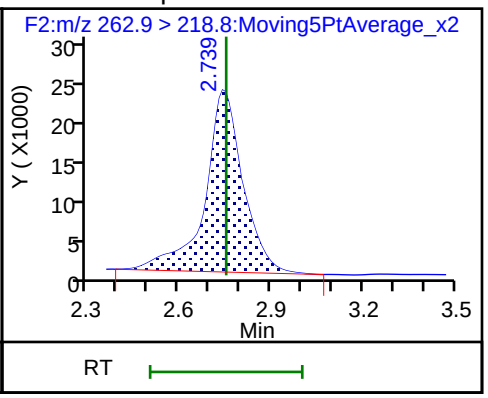
D 2 13C4 PFBA



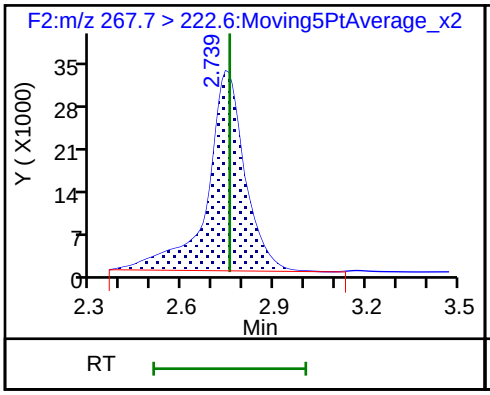
1 Perfluorobutyric acid



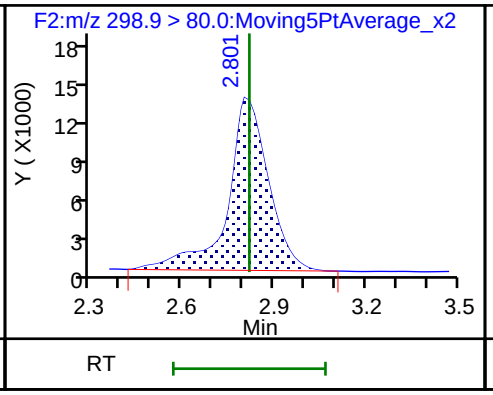
4 Perfluoropentanoic acid



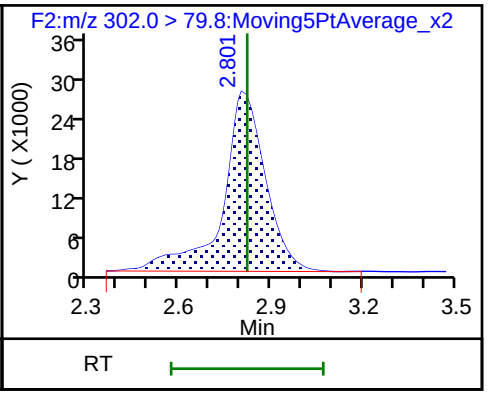
D 3 13C5-PFPeA



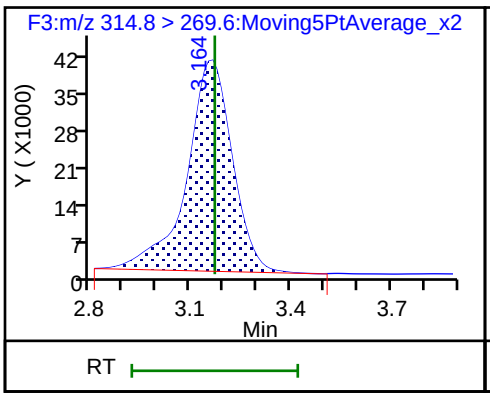
6 Perfluorobutanesulfonic acid



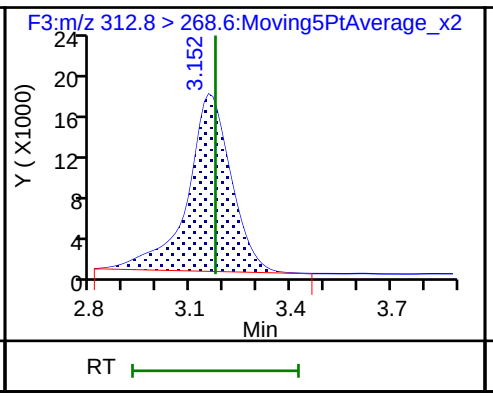
D 5 13C3-PFBS



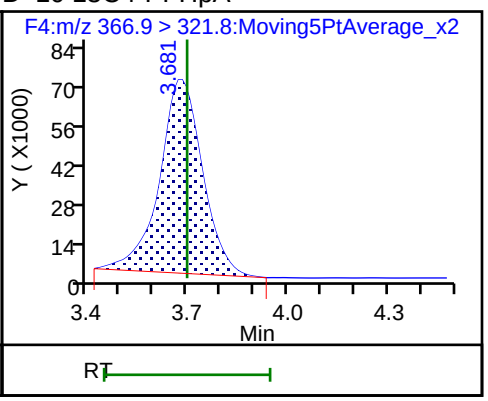
D 7 13C2 PFHxA



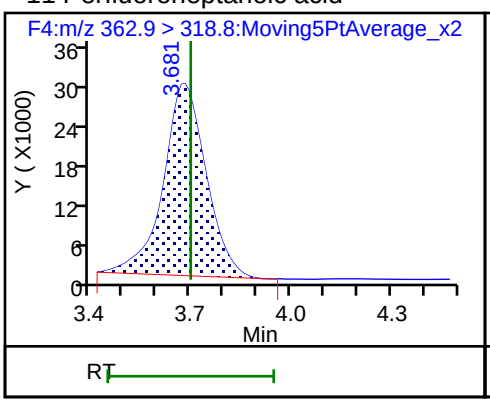
8 Perfluorohexanoic acid



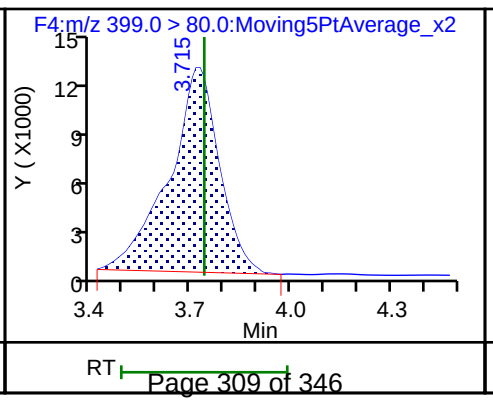
D 10 13C4-PFHpA



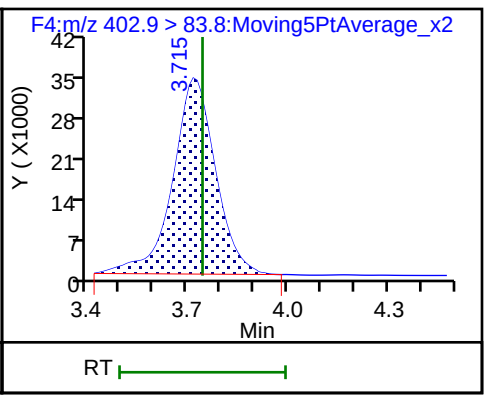
11 Perfluoroheptanoic acid



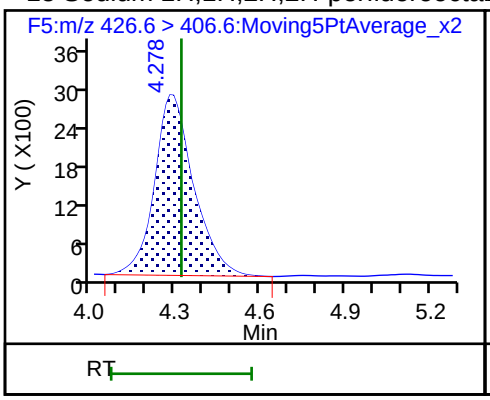
12 Perfluorohexanesulfonic acid



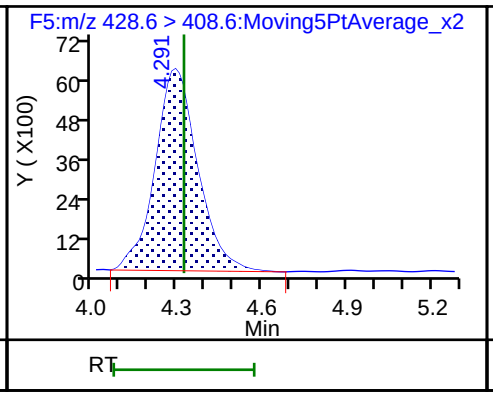
D 13 18O2 PFHxS



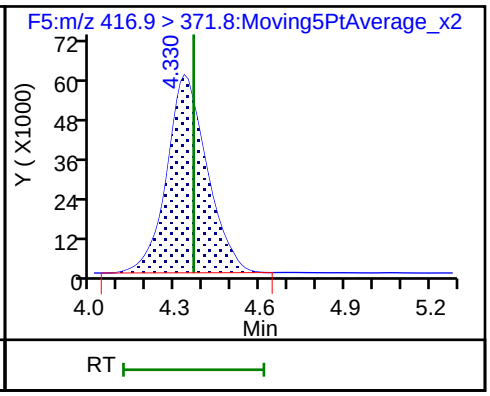
15 Sodium 1H,1H,2H,2H-perfluorooctane



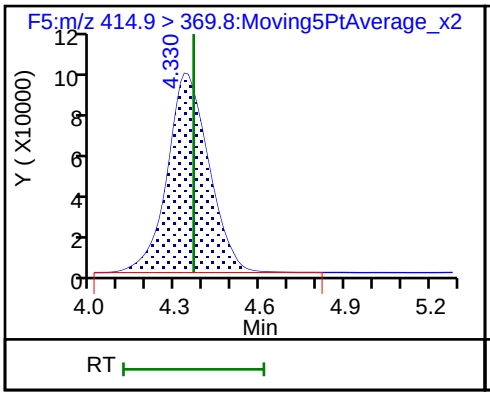
D 14 M2-6:2FTS



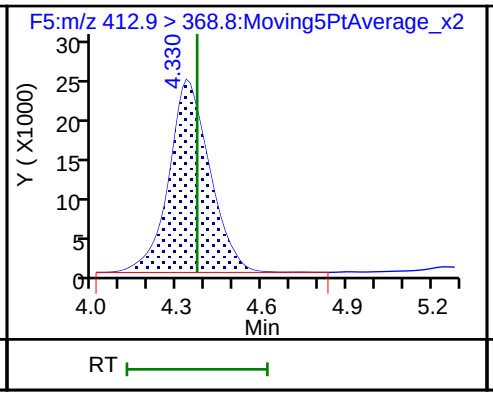
D 17 13C4 PFOA



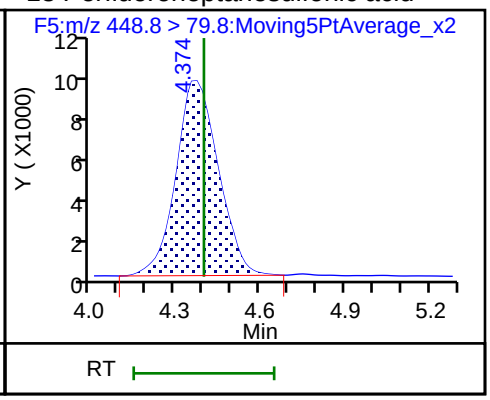
* 49 13C2-PFOA



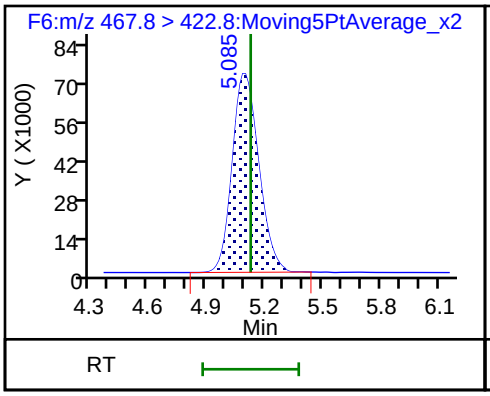
16 Perfluorooctanoic acid



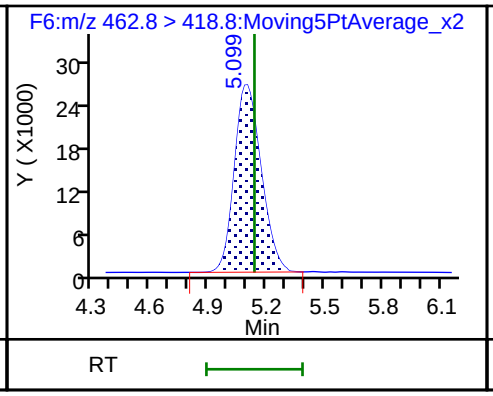
18 Perfluoroheptanesulfonic acid



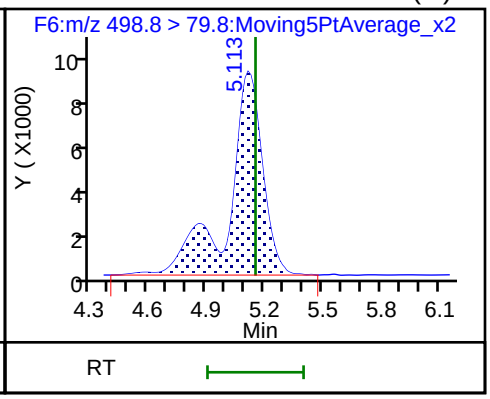
D 21 13C5 PFNA



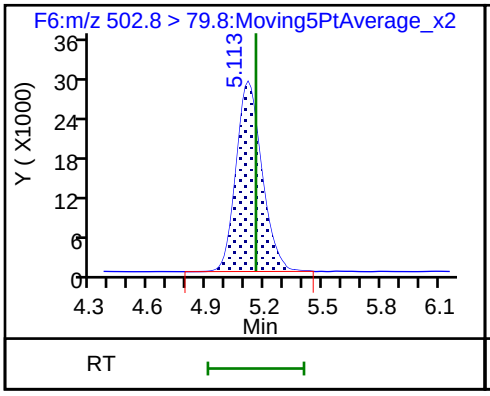
19 Perfluorononanoic acid



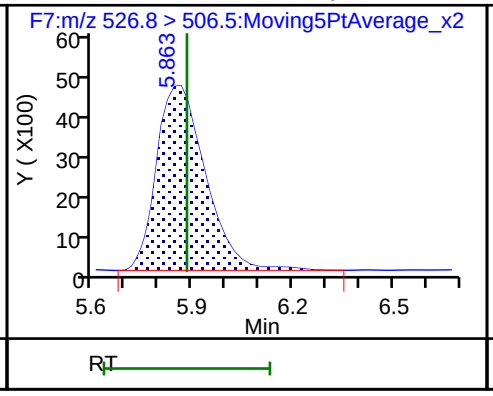
20 Perfluorooctane sulfonic acid (M)



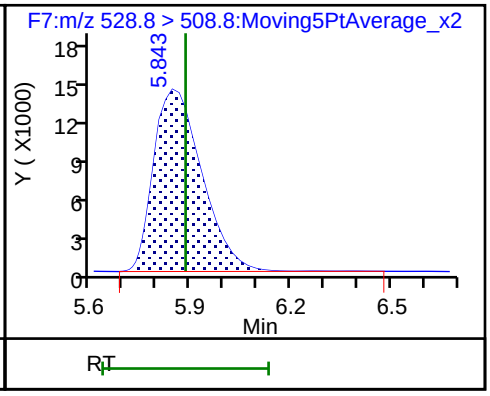
D 22 13C4 PFOS



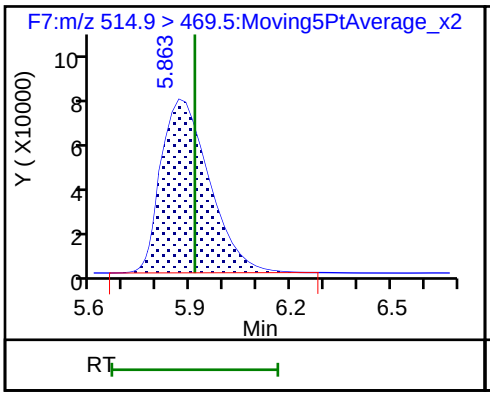
24 Sodium 1H,1H,2H,2H-perfluorodecane



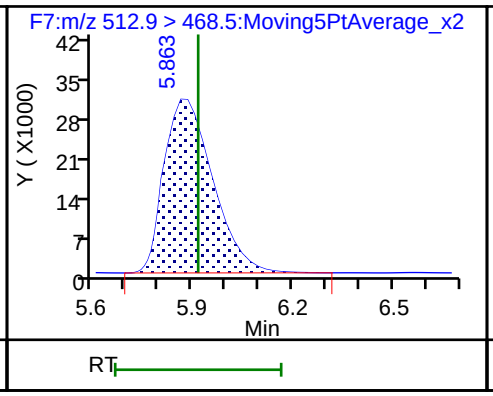
D 23 M2-8:2FTS



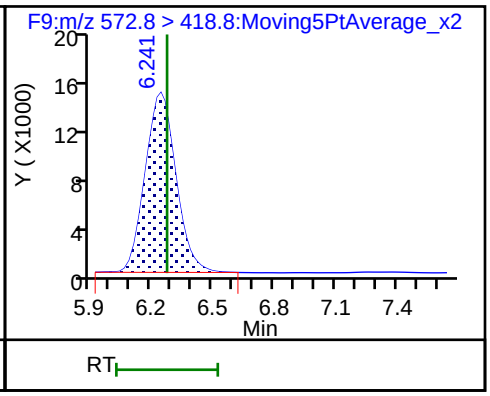
D 25 13C2 PFDA



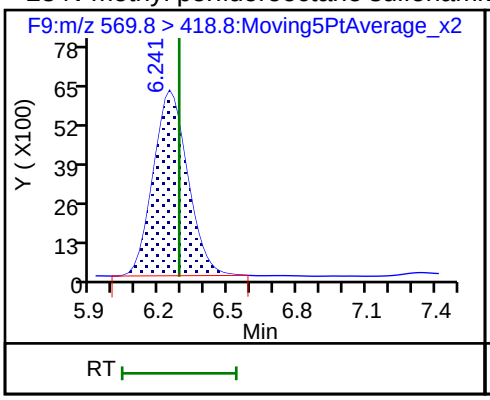
26 Perfluorodecanoic acid



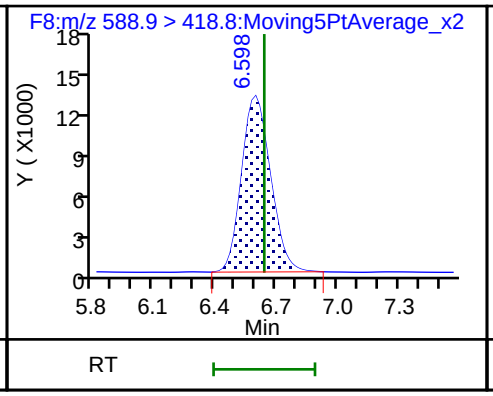
D 27 d3-NMeFOSAA



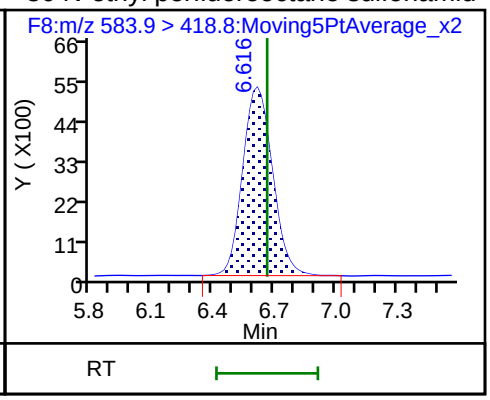
28 N-methyl perfluorooctane sulfonami



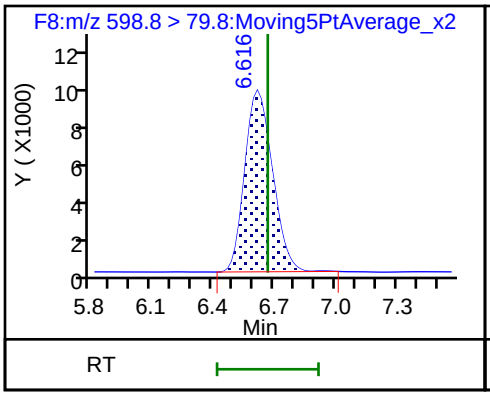
D 29 d5-NEtFOSAA



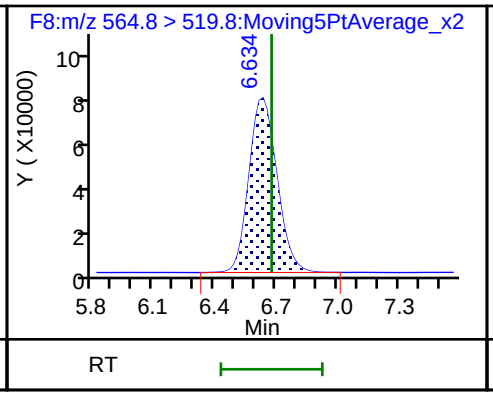
30 N-ethyl perfluorooctane sulfonamid



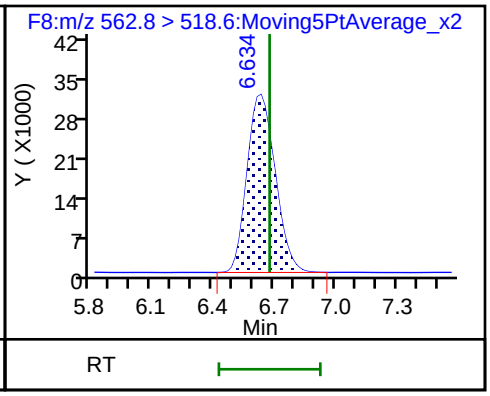
31 Perfluorodecane Sulfonic acid



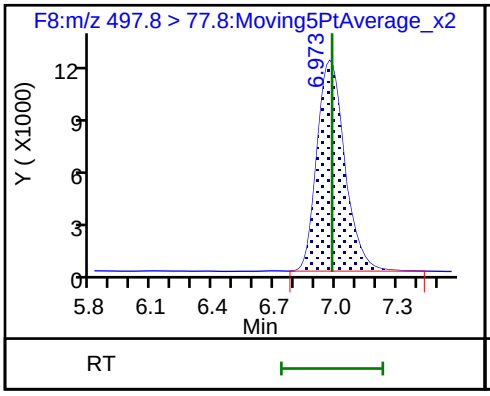
D 33 13C2 PFUnA



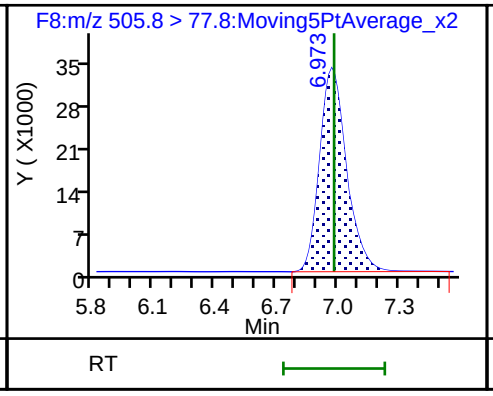
32 Perfluoroundecanoic acid



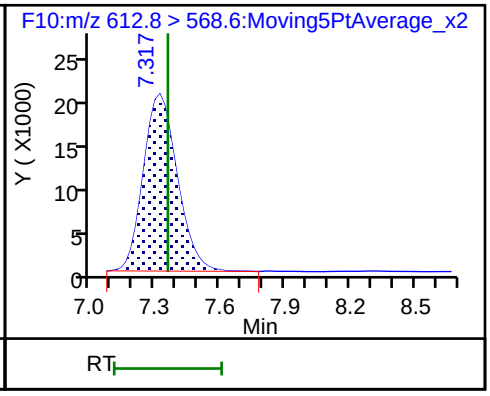
34 Perfluorooctane Sulfonamide



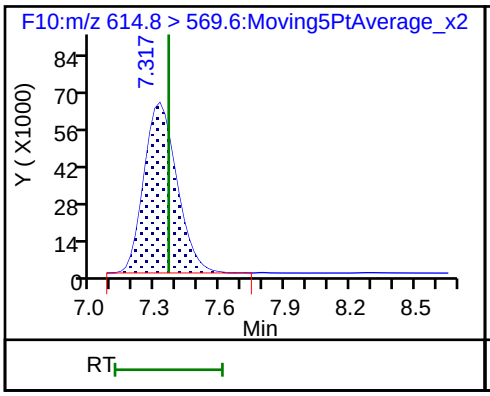
D 35 13C8 FOSA



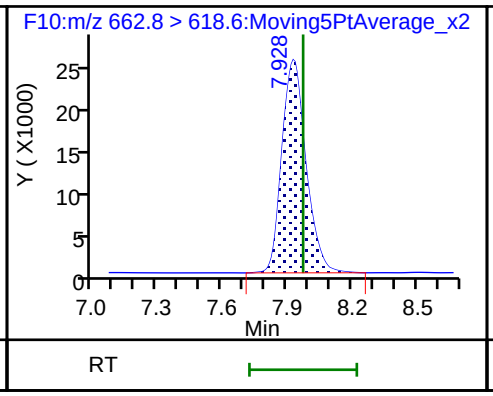
37 Perfluorododecanoic acid



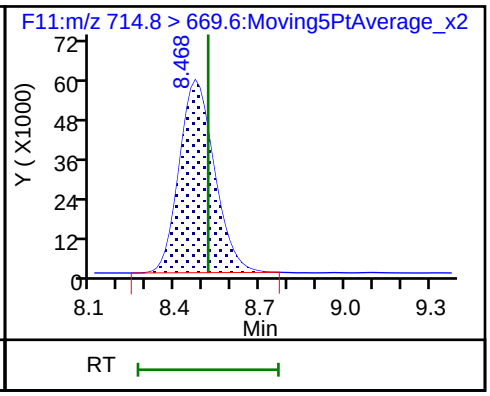
D 36 13C2 PFDoA



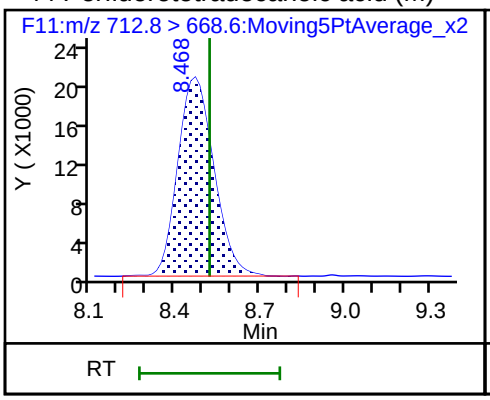
40 Perfluorotridecanoic acid



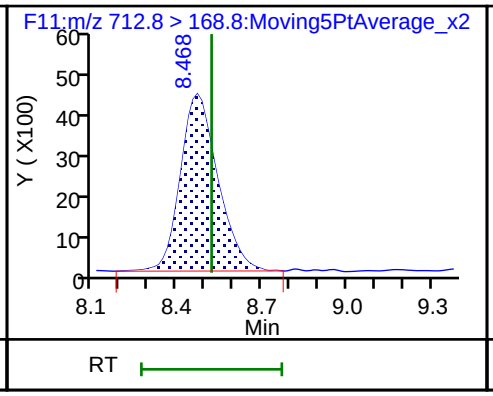
D 43 13C2-PFTeDA



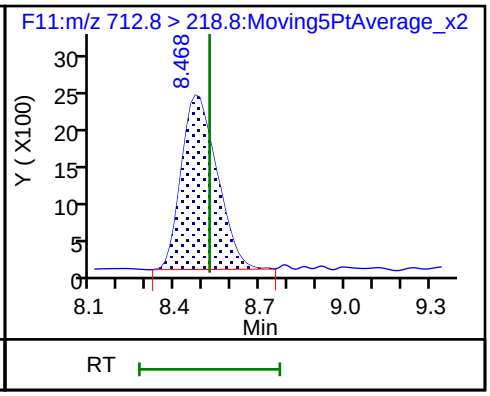
44 Perfluorotetradecanoic acid (M)



44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Burlington

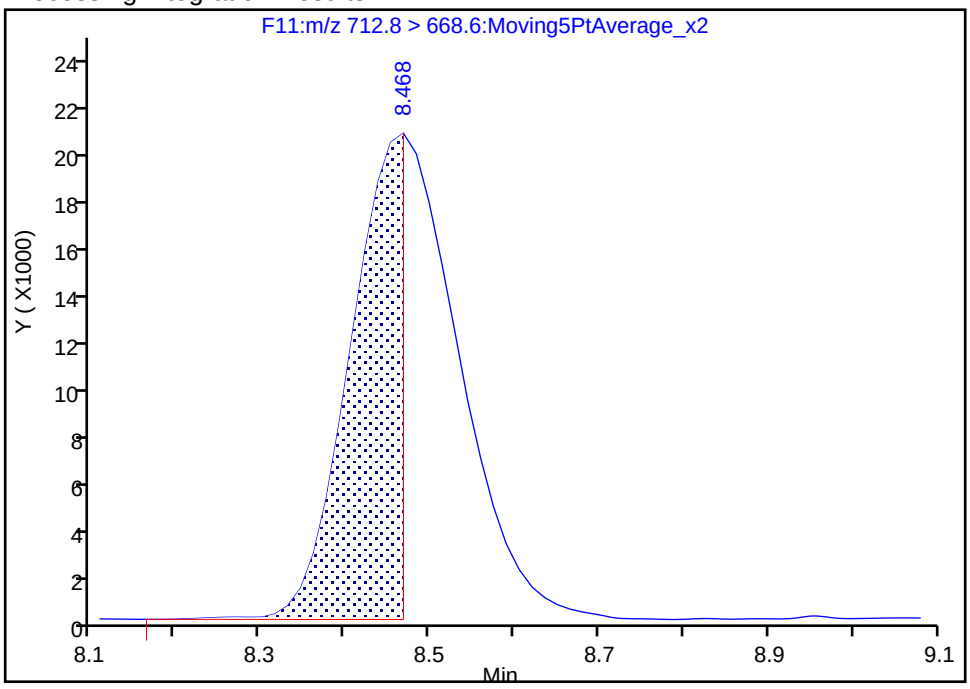
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A35.d
Injection Date: 11-May-2018 17:04:37 Instrument ID: LC410
Lims ID: LCS 200-129214/2-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 35
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

44 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

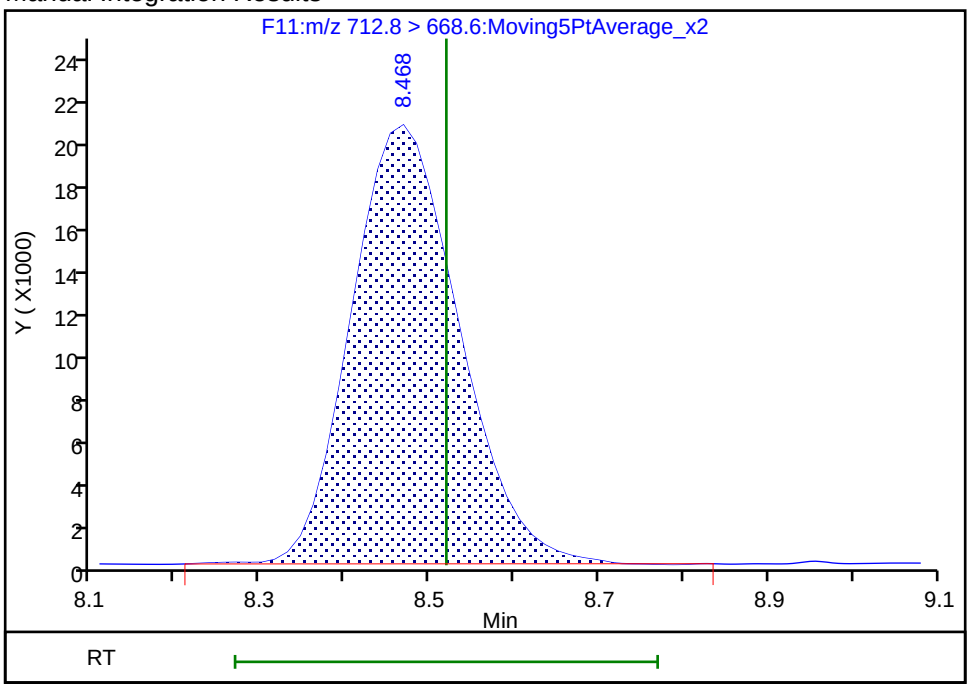
Processing Integration Results

RT: 8.47
Area: 86231
Amount: 9.109743
Amount Units: ng/ml



Manual Integration Results

RT: 8.47
Area: 180298
Amount: 19.097000
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:53:42
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

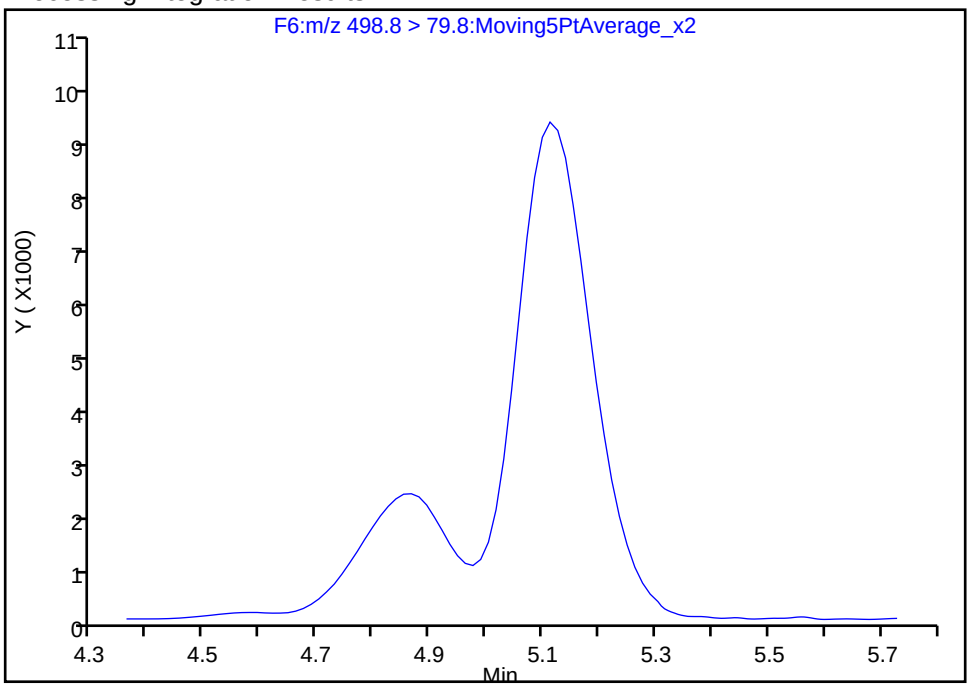
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A35.d
Injection Date: 11-May-2018 17:04:37 Instrument ID: LC410
Lims ID: LCS 200-129214/2-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 35
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

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

Signal: 1

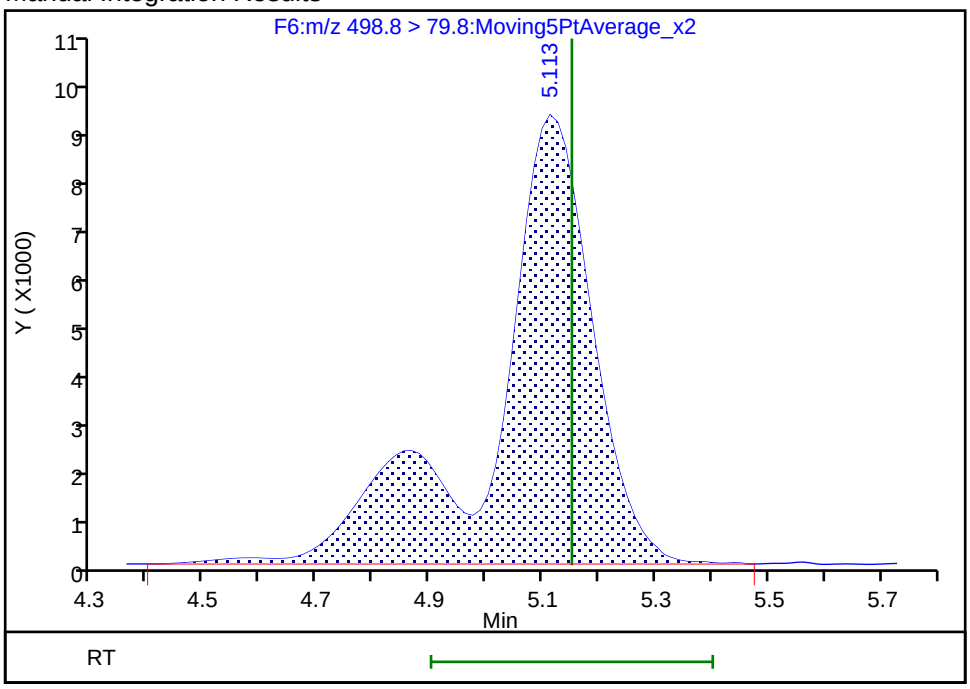
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 5.11
Area: 109979
Amount: 17.581277
Amount Units: ng/ml



Reviewer: chirgwinb, 11-May-2018 17:53:59
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-6 MS | Lab Sample ID: 200-43262-1 MS

Matrix: Water | Lab File ID: PF051018A37.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 13:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 146.8(mL) | Date Analyzed: 05/11/2018 17:36

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	94.66		3.41	0.76
2706-90-3	Perfluoropentanoic acid (PFPeA)	90.34		3.41	0.76
307-24-4	Perfluorohexanoic acid (PFHxA)	106.5		3.41	0.76
375-85-9	Perfluoroheptanoic acid (PFHpA)	88.62		3.41	0.49
335-67-1	Perfluorooctanoic acid (PFOA)	94.03		3.41	0.80
375-95-1	Perfluorononanoic acid (PFNA)	74.98		3.41	0.44
335-76-2	Perfluorodecanoic acid (PFDA)	63.38		3.41	0.76
2058-94-8	Perfluoroundecanoic acid (PFUnA)	62.26		3.41	0.76
307-55-1	Perfluorododecanoic acid (PFDoA)	70.81		3.41	0.76
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	59.64		3.41	0.76
376-06-7	Perfluorotetradecanoic acid (PFTeA)	63.00		3.41	0.76
375-73-5	Perfluorobutanesulfonic acid (PFBS)	56.79		3.41	1.50
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	51.42		3.41	0.48
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	58.42		3.41	0.76
335-77-3	Perfluorodecanesulfonic acid (PFDS)	37.93		3.41	0.76
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	61.56		3.41	0.51
754-91-6	Perfluorooctane Sulfonamide (FOSA)	69.24		3.41	0.76
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	64.01		3.41	1.02
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	68.85		3.41	1.02
27619-97-2	6:2FTS	66.30		3.41	1.02
39108-34-4	8:2FTS	83.07		3.41	1.02

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-6 MS | Lab Sample ID: 200-43262-1 MS

Matrix: Water | Lab File ID: PF051018A37.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 13:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 146.8(mL) | Date Analyzed: 05/11/2018 17:36

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	22		25-150
STL00992	13C4 PFBA	17		25-150
STL01893	13C5 PFPeA	27		25-150
STL00993	13C2 PFHxA	29		25-150
STL01892	13C4-PFHpA	38		25-150
STL00990	13C4 PFOA	32		25-150
STL00995	13C5 PFNA	34		25-150
STL00996	13C2 PFDA	31		25-150
STL00997	13C2 PFUnA	31		25-150
STL00998	13C2 PFDoA	22		25-150
STL02116	13C2-PFTeDA	22		25-150
STL02337	13C3-PFBS	42		25-150
STL00994	18O2 PFHxS	46		25-150
STL00991	13C4 PFOS	42		25-150
STL02118	d3-NMeFOSAA	25		25-150
STL02117	d5-NEtFOSAA	25		25-150
STL02279	M2-6:2FTS	51		25-150
STL02280	M2-8:2FTS	33		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A37.d
Lims ID: 200-43262-B-1-A MS
Client ID: MW-6
Sample Type: MS
Inject. Date: 11-May-2018 17:36:57 ALS Bottle#: 0 Worklist Smp#: 37
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-037 1MS
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:17 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: murrayjw Date: 14-May-2018 09:08:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										M
216.9 > 171.5	2.322	2.328	-0.006	1.000	104123	8.34		16.7	55.2	M
1 Perfluorobutyric acid										M
212.9 > 168.9	2.326	2.334	-0.008	1.002	53687	27.8		139	55.3	M
4 Perfluoropentanoic acid										
262.9 > 218.8	2.739	2.751	-0.012	1.000	146194	26.5		133	252	
D 3 13C5-PFPeA										
267.7 > 222.6	2.739	2.753	-0.014	1.000	127397	13.4		26.7	432	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.801	2.818	-0.017	1.000	99300	16.7		94.3	157	
D 5 13C3-PFBS										
302.0 > 79.8	2.801	2.820	-0.019	1.000	193350	19.4		41.8	985	
D 7 13C2 PFHxA										
314.8 > 269.6	3.152	3.170	-0.018	1.000	204934	14.7		29.5	649	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.152	3.172	-0.020	1.000	128004	31.3		156	577	
D 10 13C4-PFHpA										
366.9 > 321.8	3.670	3.696	-0.026	1.000	441772	18.8		37.6	937	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.670	3.698	-0.028	1.000	239056	26.0		130	619	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.715	3.739	-0.024	1.000	98325	15.1		82.9	378	
D 13 18O2 PFHxS										
402.9 > 83.8	3.715	3.742	-0.027	1.000	239050	21.7		45.8	632	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.278	4.319	-0.041	1.003	22095	19.5		103	242	
D 14 M2-6:2FTS										
428.6 > 408.6	4.265	4.321	-0.056	1.000	52362	24.1		50.8	292	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.330	4.363	-0.033	1.000	368712	16.1		32.1	1137	
* 49 13C2-PFOA										
414.9 > 369.8	4.330	4.363	-0.033		1324334	50.0			2283	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.330	4.368	-0.038	1.000	211351	27.6		138	86.5	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.355	4.399	-0.044	0.850	67919	17.2		90.1	307	
D 21 13C5 PFNA										
467.8 > 422.8	5.099	5.127	-0.028	1.000	460443	16.9		33.7	804	
19 Perfluorononanoic acid										
462.8 > 418.8	5.099	5.136	-0.037	1.000	189284	22.0		110	526	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.113	5.152	-0.039	0.997	82983	18.1		97.4	396	M
D 22 13C4 PFOS										
502.8 > 79.8	5.127	5.154	-0.027	1.000	198852	20.1		42.0	871	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.843	5.880	-0.037	1.000	35844	24.4		127	273	
D 23 M2-8:2FTS										
528.8 > 508.8	5.843	5.882	-0.039	1.000	91682	15.8		32.9	1257	
D 25 13C2 PFDA										
514.9 > 469.5	5.882	5.910	-0.028	1.000	504987	15.3		30.6	1568	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.882	5.914	-0.032	1.000	179699	18.6		93.0	548	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.223	6.271	-0.048	1.000	87651	12.5		24.9	255	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.241	6.283	-0.042	1.003	37485	18.8		94.0	208	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.598	6.640	-0.042	1.000	75177	12.3		24.6	408	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.616	6.664	-0.048	1.003	30742	20.2		101	444	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.616	6.667	-0.051	1.291	49142	11.1		57.8	481	
D 33 13C2 PFUnA										
564.8 > 519.8	6.634	6.676	-0.042	1.000	481080	15.5		31.0	1102	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.634	6.676	-0.042	1.000	170154	18.3		91.4	577	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.973	6.984	-0.011	1.000	70870	20.3		102	419	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	191443	10.8		21.5	949	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.317	7.354	-0.037	1.000	129026	20.8		104	675	
D 36 13C2 PFDoA										
614.8 > 569.6	7.317	7.358	-0.041	1.000	353016	10.8		21.6	1054	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.928	7.974	-0.046	1.084	111046	17.5		87.6	813	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.453	8.514	-0.061	1.000	332332	11.0		22.1	1039	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.453	8.519	-0.066	1.000	112782	18.5		92.5	419	
712.8 > 168.8	8.468	8.519	-0.051	1.002	23626		4.77(0.00-0.00)		95.1	
712.8 > 218.8	8.484	8.519	-0.035	1.004	11609		9.72(0.00-0.00)		39.4	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 14-May-2018 12:12:35 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A37.d

Injection Date: 11-May-2018 17:36:57 Instrument ID: LC410

Lims ID: 200-43262-B-1-A MS

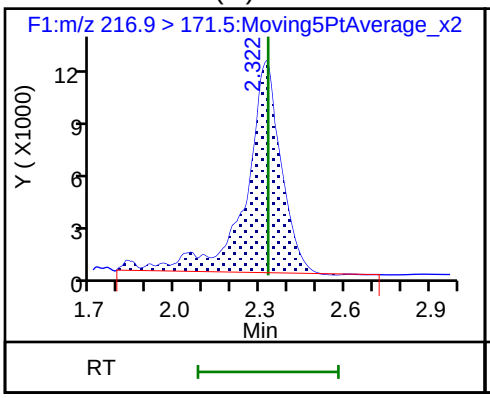
Client ID: MW-6

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 37

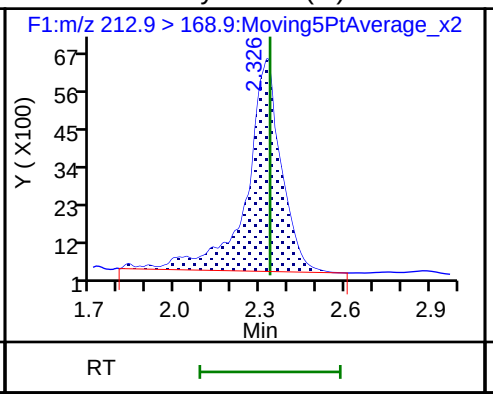
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

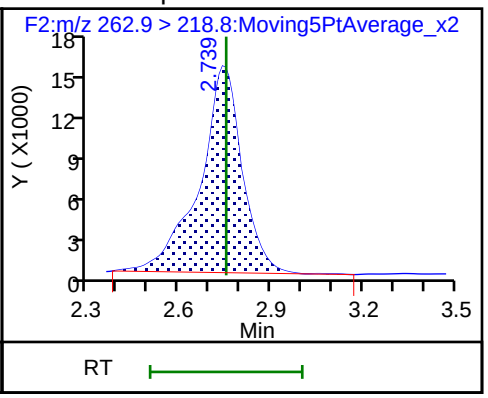
D 2 13C4 PFBA (M)



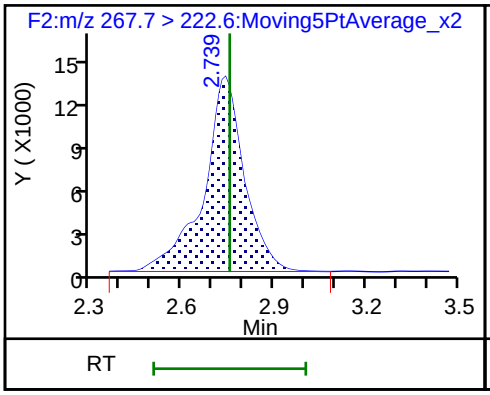
1 Perfluorobutyric acid (M)



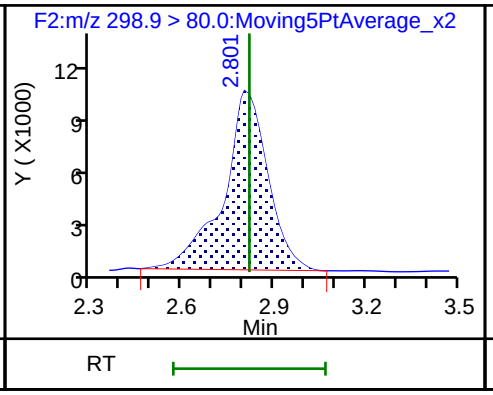
4 Perfluoropentanoic acid



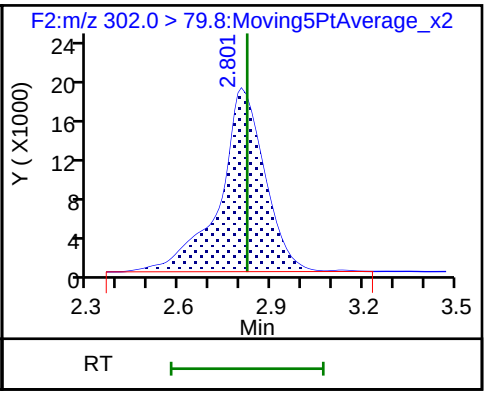
D 3 13C5-PFPeA



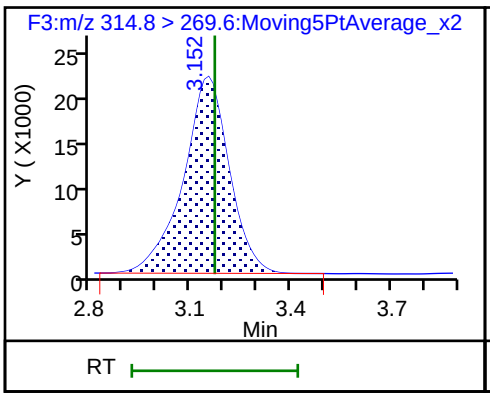
6 Perfluorobutanesulfonic acid



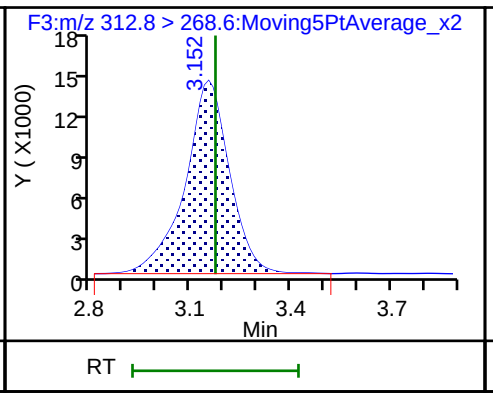
D 5 13C3-PFBS



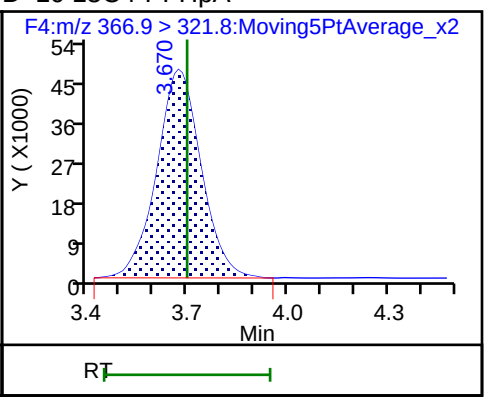
D 7 13C2 PFHxA



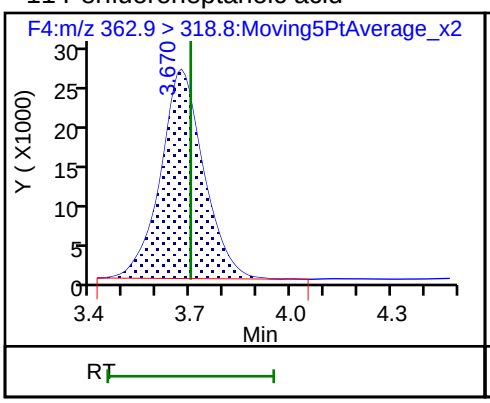
8 Perfluorohexanoic acid



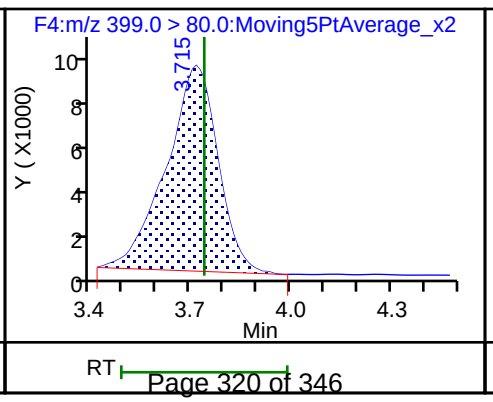
D 10 13C4-PFHpA



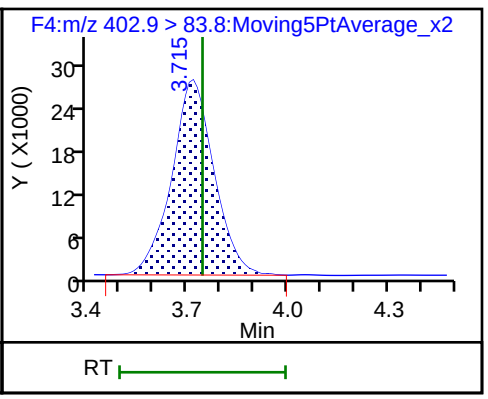
11 Perfluoroheptanoic acid



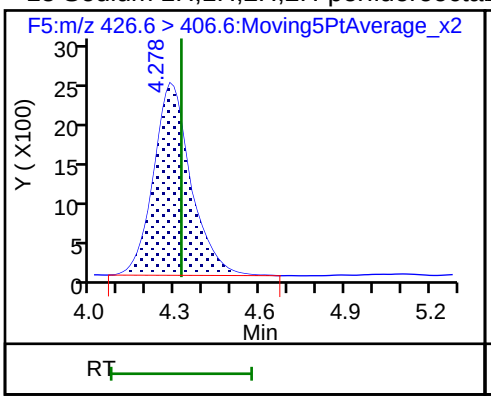
12 Perfluorohexanesulfonic acid



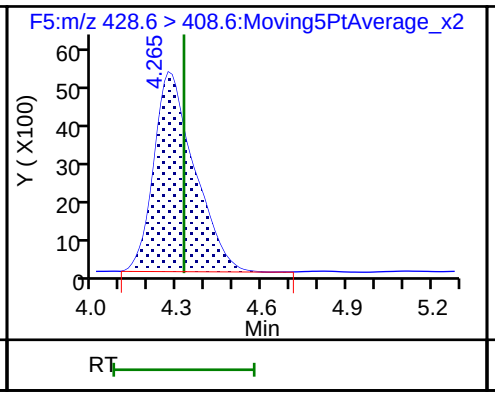
D 13 18O2 PFHxS



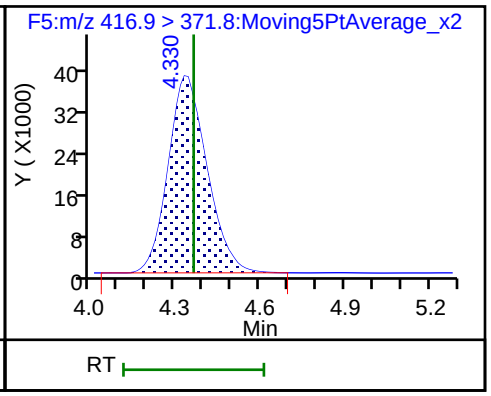
15 Sodium 1H,1H,2H,2H-perfluorooctane



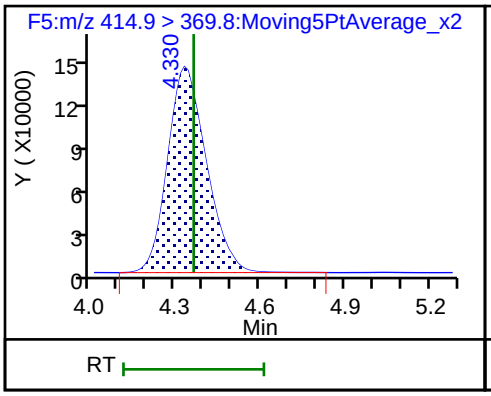
D 14 M2-6:2FTS



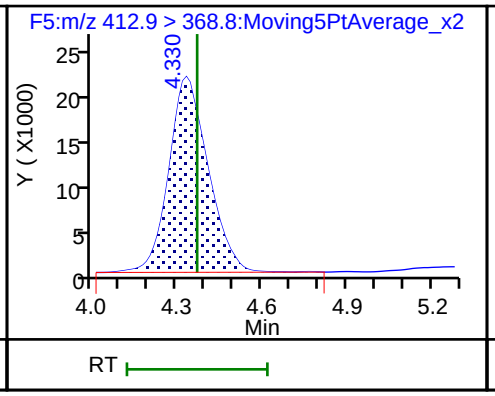
D 17 13C4 PFOA



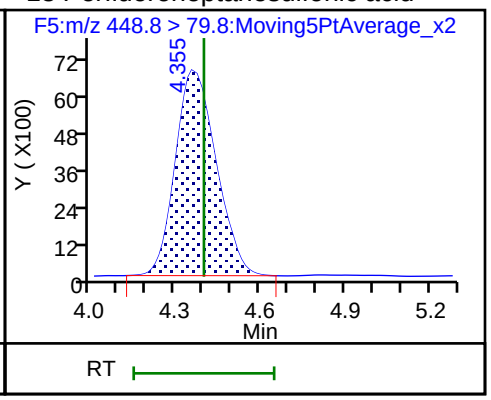
* 49 13C2-PFOA



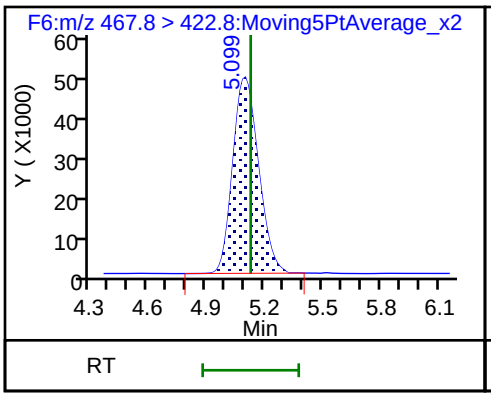
16 Perfluorooctanoic acid



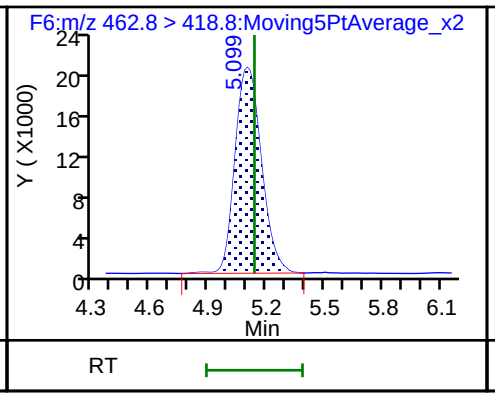
18 Perfluoroheptanesulfonic acid



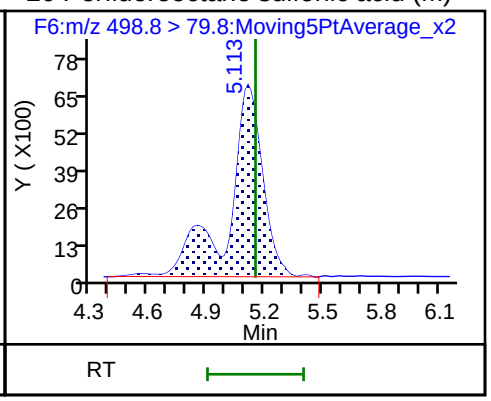
D 21 13C5 PFNA



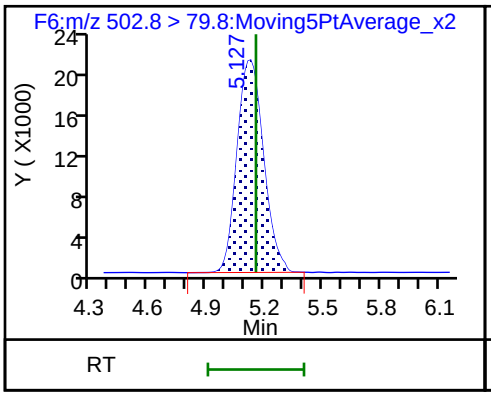
19 Perfluorononanoic acid



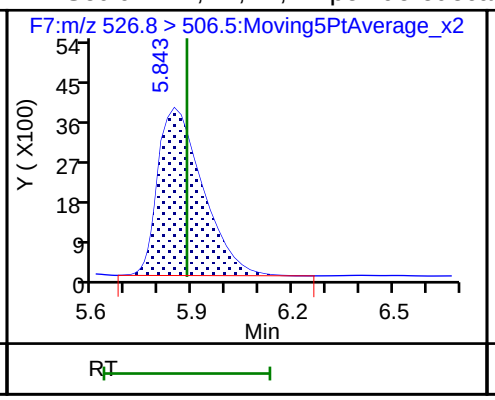
20 Perfluorooctane sulfonic acid (M)



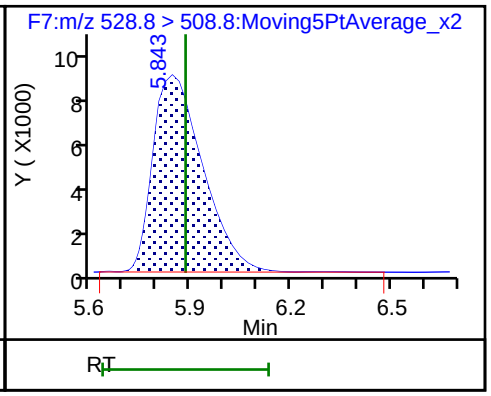
D 22 13C4 PFOS



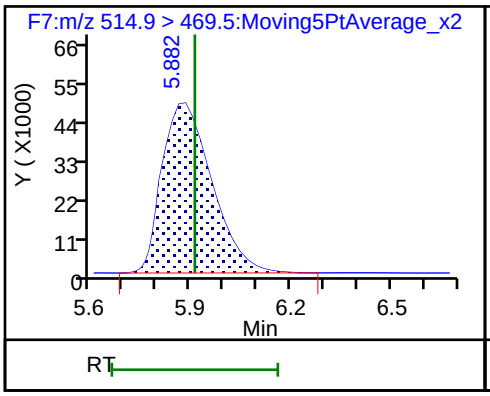
24 Sodium 1H,1H,2H,2H-perfluorodecane



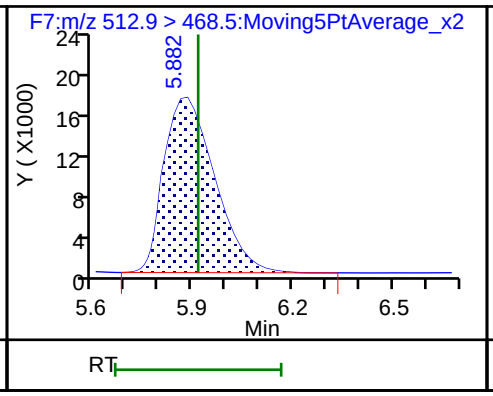
D 23 M2-8:2FTS



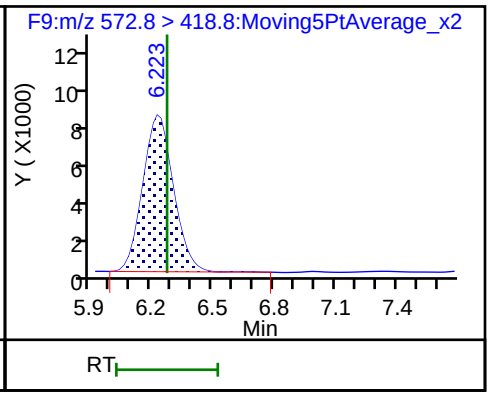
D 25 13C2 PFDA



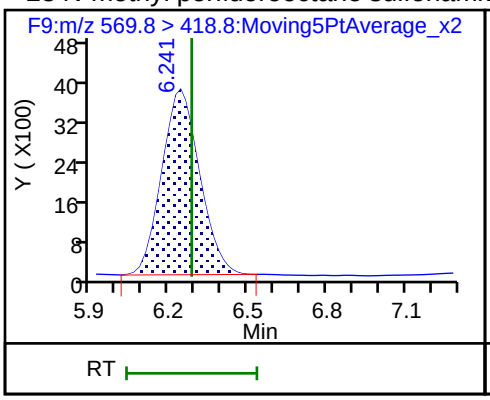
26 Perfluorodecanoic acid



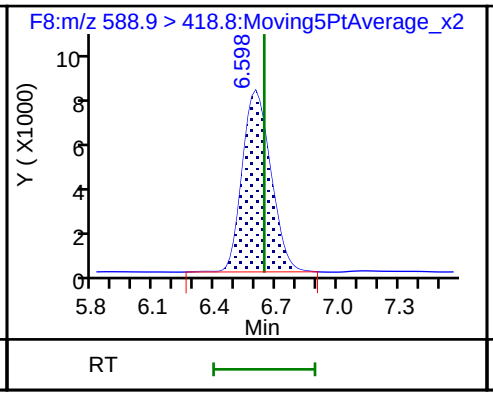
D 27 d3-NMeFOSAA



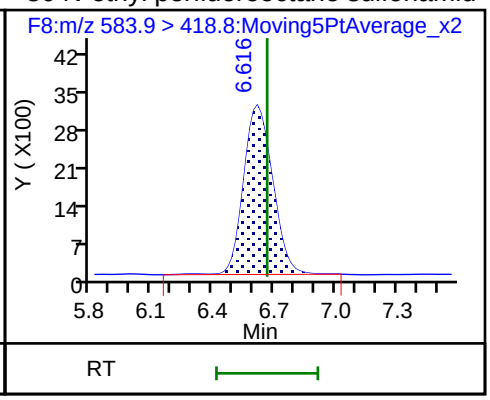
28 N-methyl perfluorooctane sulfonami



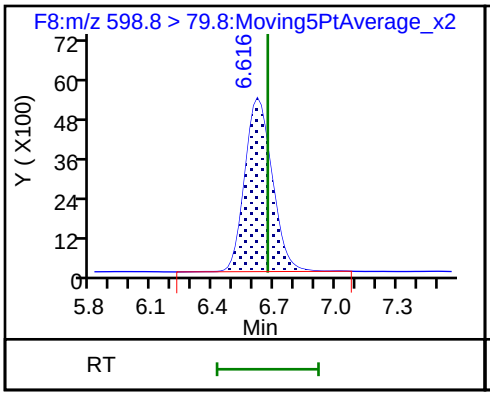
D 29 d5-NEtFOSAA



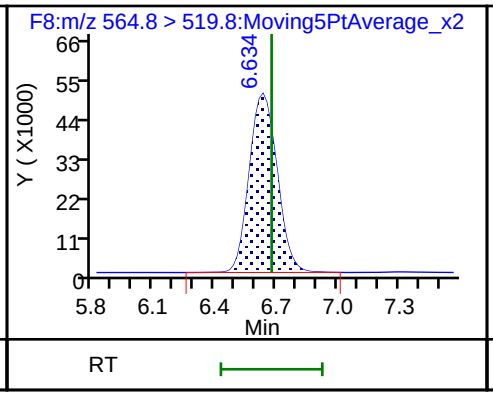
30 N-ethyl perfluorooctane sulfonamid



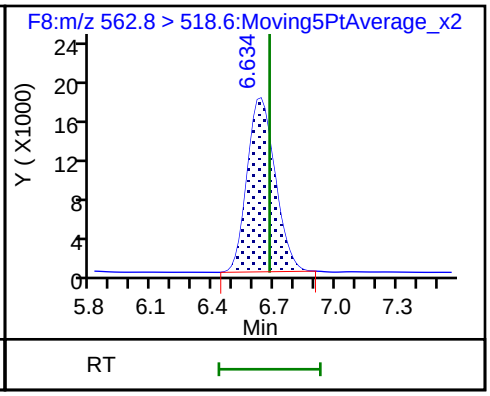
31 Perfluorodecane Sulfonic acid



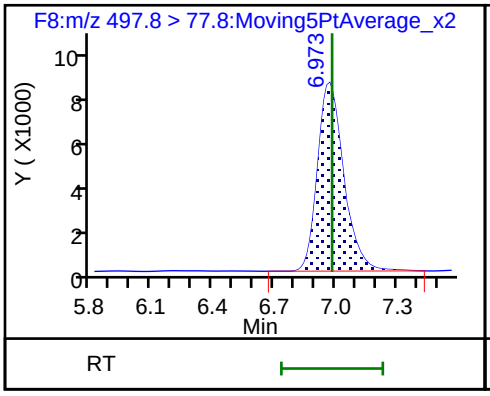
D 33 13C2 PFUnA



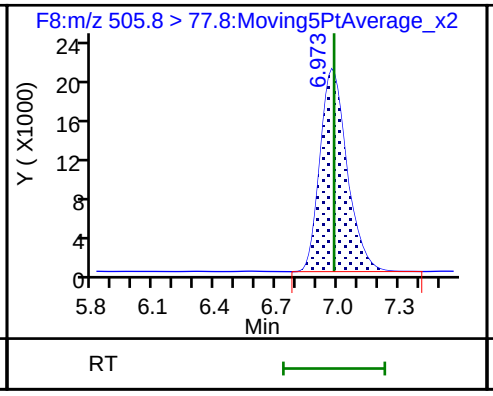
32 Perfluoroundecanoic acid



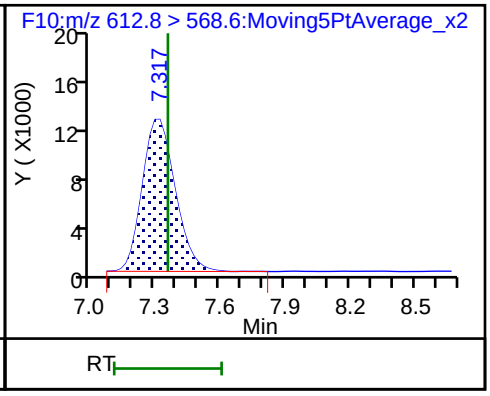
34 Perfluorooctane Sulfonamide



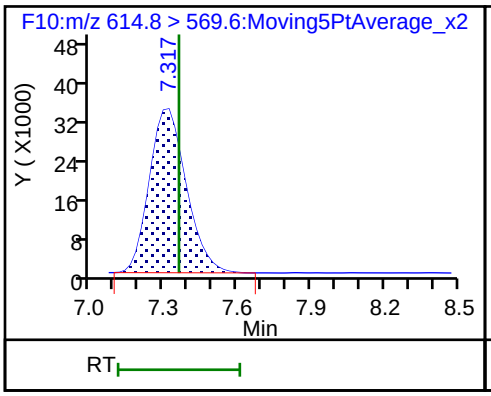
D 35 13C8 FOSA



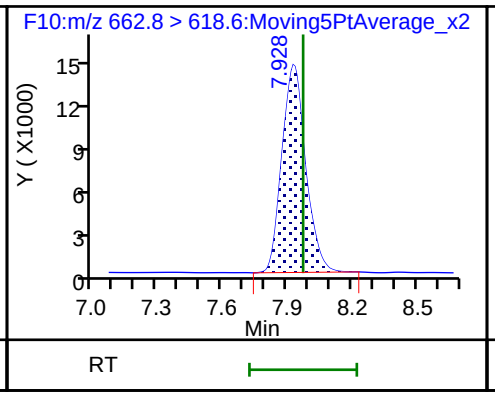
37 Perfluorododecanoic acid



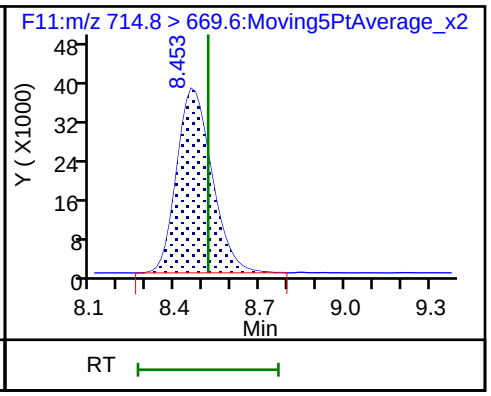
D 36 13C2 PFDoA



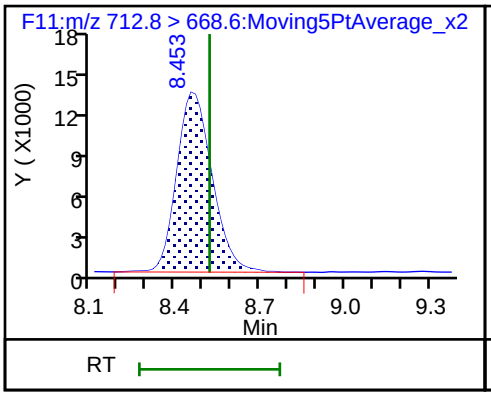
40 Perfluorotridecanoic acid



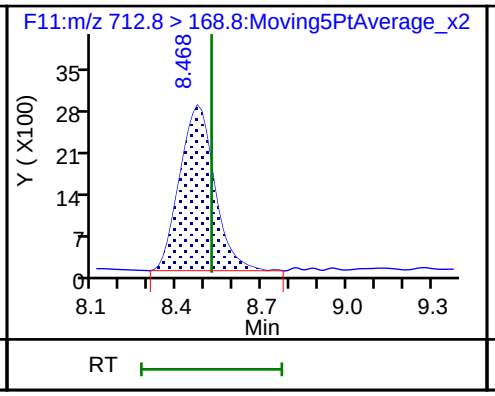
D 43 13C2-PFTeDA



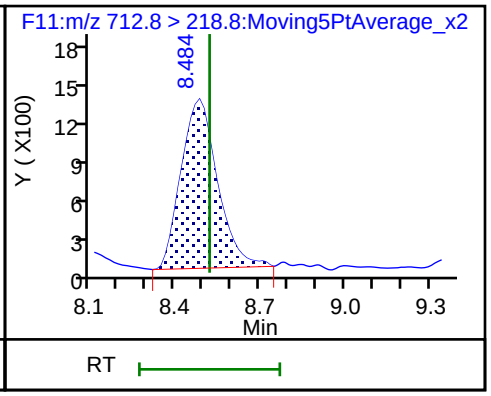
44 Perfluorotetradecanoic acid



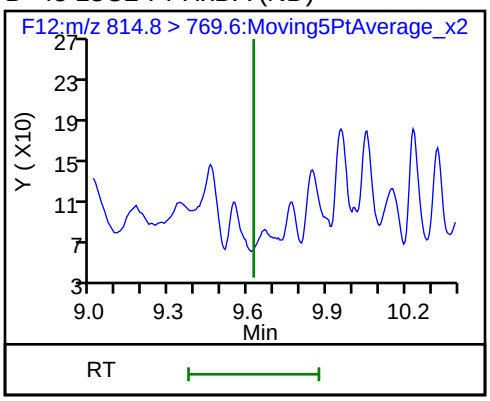
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



D 45 13C2-PFHxDA (ND)



Manual Integration/User Assign Peak Report

TestAmerica Burlington

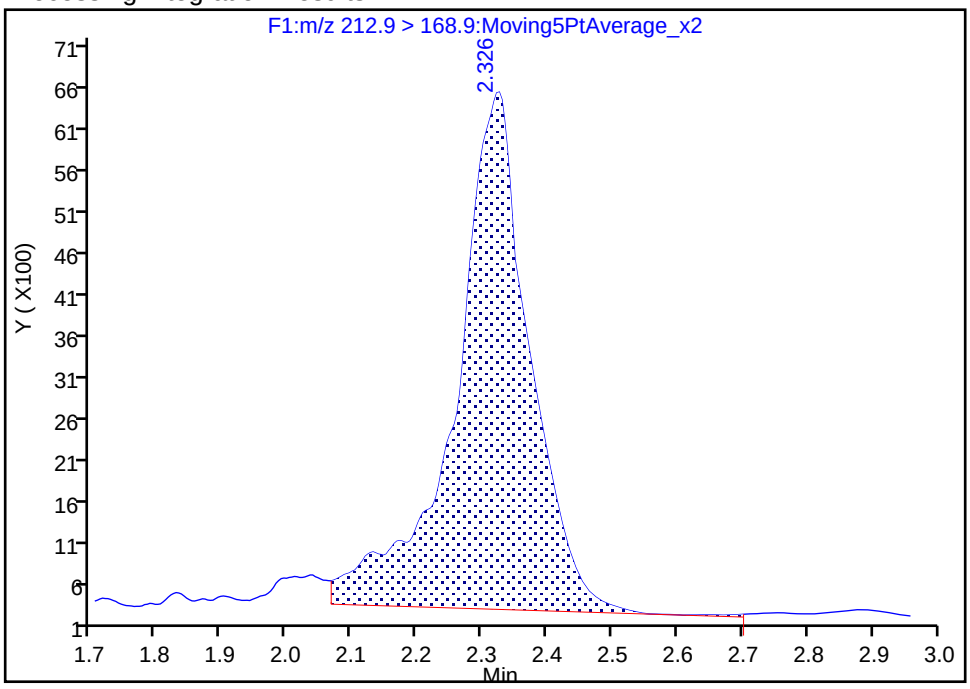
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A37.d
Injection Date: 11-May-2018 17:36:57 Instrument ID: LC410
Lims ID: 200-43262-B-1-A MS
Client ID: MW-6
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 37
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

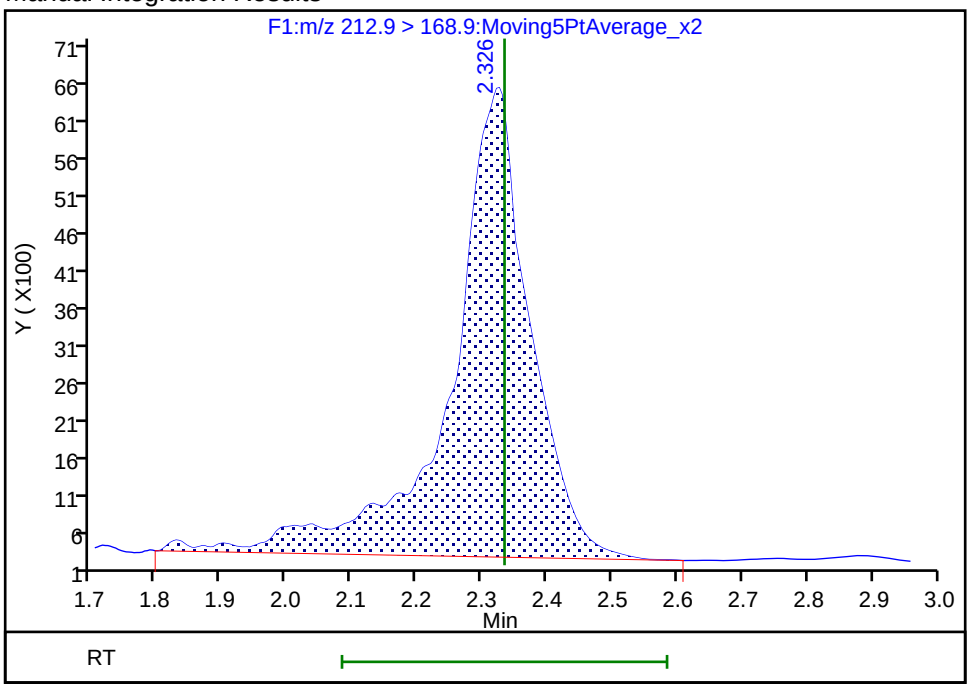
Processing Integration Results

RT: 2.33
Area: 50154
Amount: 25.949297
Amount Units: ng/ml



Manual Integration Results

RT: 2.33
Area: 53687
Amount: 27.793085
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:06:40
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

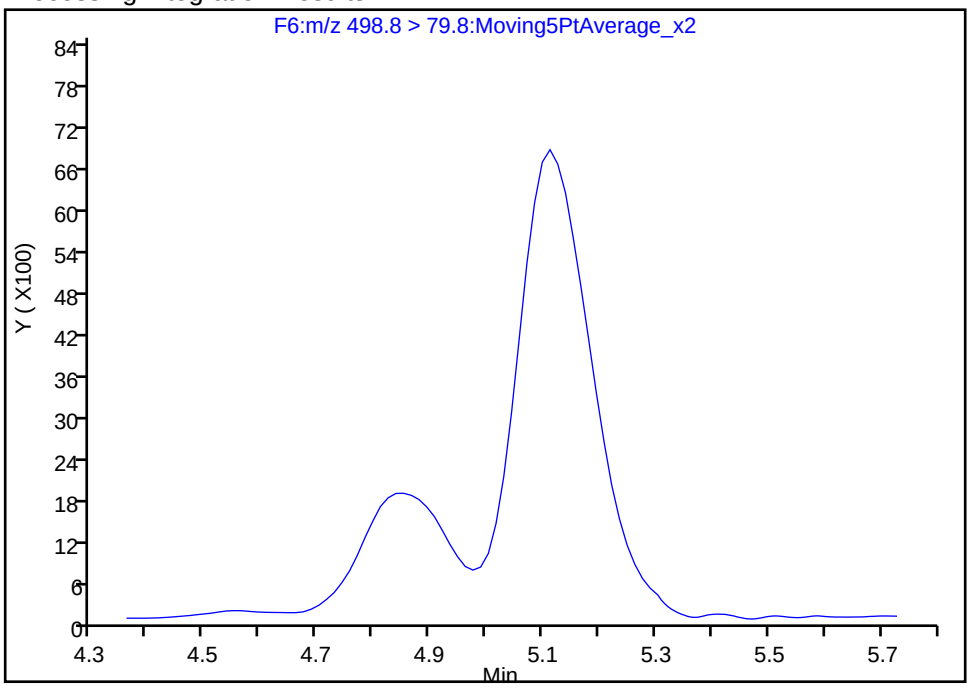
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A37.d				
Injection Date:	11-May-2018 17:36:57	Instrument ID:	LC410		
Lims ID:	200-43262-B-1-A MS				
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	37
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F6:MRM		

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

Signal: 1

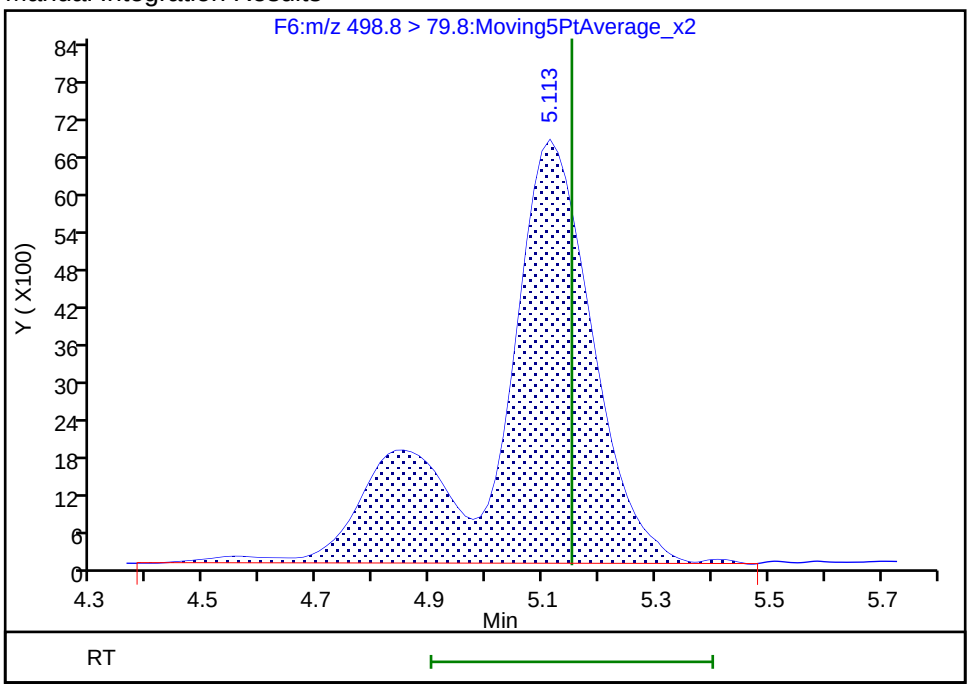
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 5.11
Area: 82983
Amount: 18.073275
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:07:19
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

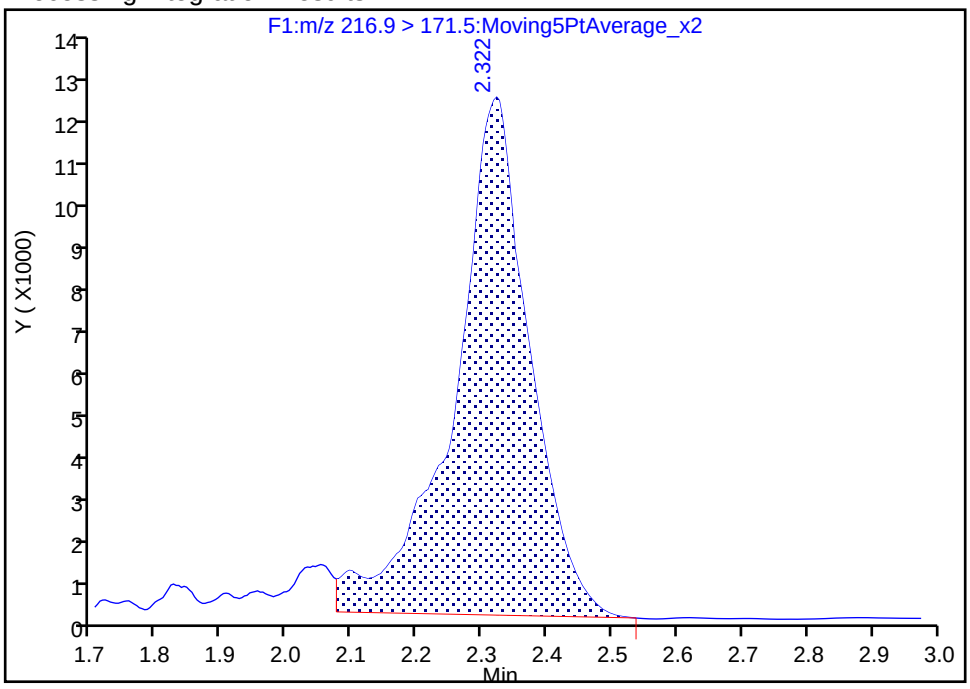
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A37.d
Injection Date: 11-May-2018 17:36:57 Instrument ID: LC410
Lims ID: 200-43262-B-1-A MS
Client ID: MW-6
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 37
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 2 13C4 PFBA, CAS: STL00992

Signal: 1

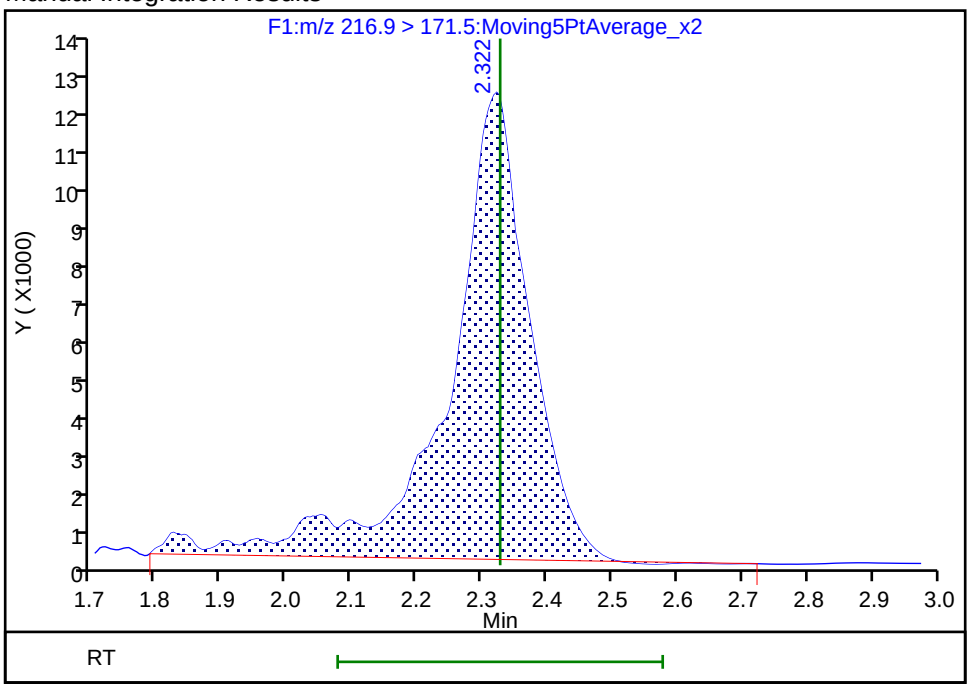
Processing Integration Results

RT: 2.32
Area: 97074
Amount: 7.772743
Amount Units: ng/ml



Manual Integration Results

RT: 2.32
Area: 104123
Amount: 8.337158
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:06:14
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-6 MSD | Lab Sample ID: 200-43262-1 MSD

Matrix: Water | Lab File ID: PF051018A38.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 13:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 211.5(mL) | Date Analyzed: 05/11/2018 17:53

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	63.24		2.36	0.52
2706-90-3	Perfluoropentanoic acid (PFPeA)	61.01		2.36	0.52
307-24-4	Perfluorohexanoic acid (PFHxA)	75.41		2.36	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	66.18		2.36	0.34
335-67-1	Perfluorooctanoic acid (PFOA)	62.07		2.36	0.56
375-95-1	Perfluorononanoic acid (PFNA)	52.64		2.36	0.31
335-76-2	Perfluorodecanoic acid (PFDA)	47.88		2.36	0.52
2058-94-8	Perfluoroundecanoic acid (PFUnA)	45.81		2.36	0.52
307-55-1	Perfluorododecanoic acid (PFDoA)	45.73		2.36	0.52
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	38.21		2.36	0.52
376-06-7	Perfluorotetradecanoic acid (PFTeA)	40.43		2.36	0.52
375-73-5	Perfluorobutanesulfonic acid (PFBS)	41.91		2.36	1.04
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	37.81		2.36	0.33
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	44.12		2.36	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	31.40		2.36	0.52
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	45.51		2.36	0.35
754-91-6	Perfluorooctane Sulfonamide (FOSA)	47.17		2.36	0.52
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	46.23		2.36	0.71
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	42.00		2.36	0.71
27619-97-2	6:2FTS	44.09		2.36	0.71
39108-34-4	8:2FTS	51.36		2.36	0.71

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-43262-1

SDG No.:

Client Sample ID: MW-6 MSD | Lab Sample ID: 200-43262-1 MSD

Matrix: Water | Lab File ID: PF051018A38.d

Analysis Method: 537 (modified) | Date Collected: 04/26/2018 13:00

Extraction Method: 3535 | Date Extracted: 05/07/2018 14:00

Sample wt/vol: 211.5(mL) | Date Analyzed: 05/11/2018 17:53

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: C-18 ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 129349 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	36		25-150
STL00992	13C4 PFBA	28		25-150
STL01893	13C5 PFPeA	42		25-150
STL00993	13C2 PFHxA	43		25-150
STL01892	13C4-PFHpA	55		25-150
STL00990	13C4 PFOA	51		25-150
STL00995	13C5 PFNA	50		25-150
STL00996	13C2 PFDA	46		25-150
STL00997	13C2 PFUnA	44		25-150
STL00998	13C2 PFDoA	36		25-150
STL02116	13C2-PFTeDA	31		25-150
STL02337	13C3-PFBS	59		25-150
STL00994	18O2 PFHxS	65		25-150
STL00991	13C4 PFOS	60		25-150
STL02118	d3-NMeFOSAA	39		25-150
STL02117	d5-NEtFOSAA	37		25-150
STL02279	M2-6:2FTS	77		25-150
STL02280	M2-8:2FTS	50		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A38.d
Lims ID: 200-43262-B-1-B MSD
Client ID: MW-6
Sample Type: MSD
Inject. Date: 11-May-2018 17:53:03 ALS Bottle#: 0 Worklist Smp#: 38
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 200-0030469-038 1MD
Misc. Info.: PFAS21 051018A ICAL
Operator ID: BC Instrument ID: LC410

Method: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PFCISO_12MRM.m
Limit Group: LC_PFC_ICAL
Last Update: 14-May-2018 12:12:17 Calib Date: 11-May-2018 10:37:01
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A11.d

Column 1 : Det: F1:MRM
Process Host: XAWRK036

First Level Reviewer: murrayjw Date: 14-May-2018 09:10:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
216.9 > 171.5	2.318	2.328	-0.010	1.000	122437	13.9		27.9	47.4	
1 Perfluorobutyric acid										M
212.9 > 168.9	2.322	2.334	-0.012	1.002	60782	26.8		134	42.7	M
4 Perfluoropentanoic acid										
262.9 > 218.8	2.739	2.751	-0.012	1.000	158082	25.8		129	236	
D 3 13C5-PFPeA										
267.7 > 222.6	2.739	2.753	-0.014	1.000	141606	21.1		42.3	915	
6 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.801	2.818	-0.017	1.000	103948	17.7		100	238	
D 5 13C3-PFBS										
302.0 > 79.8	2.801	2.820	-0.019	1.000	190196	27.2		58.5	450	
D 7 13C2 PFHxA										
314.8 > 269.6	3.152	3.170	-0.018	1.000	210973	21.6		43.1	909	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.164	3.172	-0.008	1.004	134481	31.9		159	577	
D 10 13C4-PFHpA										
366.9 > 321.8	3.681	3.696	-0.015	1.000	451630	27.3		54.6	770	
11 Perfluoroheptanoic acid										
362.9 > 318.8	3.681	3.698	-0.017	1.000	262912	28.0		140	895	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.715	3.739	-0.024	1.000	104365	16.0		87.9	242	
D 13 18O2 PFHxS										
402.9 > 83.8	3.715	3.742	-0.027	1.000	239346	30.8		65.2	697	
15 Sodium 1H,1H,2H,2H-perfluorooctane										
426.6 > 406.6	4.291	4.319	-0.028	1.003	22675	18.7		98.4	230	
D 14 M2-6:2FTS										
428.6 > 408.6	4.278	4.321	-0.043	1.000	56088	36.8		77.4	235	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.342	4.363	-0.021	1.000	409455	25.4		50.7	5529	
* 49 13C2-PFOA										
414.9 > 369.8	4.342	4.363	-0.021		931219	50.0			7163	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.342	4.368	-0.026	1.000	223277	26.3		131	168	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.374	4.399	-0.025	0.853	74223	18.7		98.0	483	
D 21 13C5 PFNA										
467.8 > 422.8	5.099	5.127	-0.028	1.000	482714	25.2		50.3	752	
19 Perfluorononanoic acid										
462.8 > 418.8	5.099	5.136	-0.037	1.000	200722	22.3		111	504	
20 Perfluorooctane sulfonic acid										M
498.8 > 79.8	5.127	5.152	-0.025	1.000	88732	19.3		104	346	M
D 22 13C4 PFOS										
502.8 > 79.8	5.127	5.154	-0.027	1.000	199527	28.6		59.9	706	
24 Sodium 1H,1H,2H,2H-perfluorodecane										
526.8 > 506.5	5.863	5.880	-0.017	1.003	34100	21.7		113	121	
D 23 M2-8:2FTS										
528.8 > 508.8	5.843	5.882	-0.039	1.000	97914	23.9		50.0	218	
D 25 13C2 PFDA										
514.9 > 469.5	5.882	5.910	-0.028	1.000	532718	22.9		45.8	3286	
26 Perfluorodecanoic acid										
512.9 > 468.5	5.882	5.914	-0.032	1.000	206543	20.3		101	510	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.223	6.271	-0.048	1.000	96429	19.5		39.0	320	
28 N-methyl perfluorooctane sulfonami										
569.8 > 418.8	6.241	6.283	-0.042	1.003	42912	19.6		97.8	286	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.598	6.640	-0.042	1.000	80460	18.7		37.5	350	
30 N-ethyl perfluorooctane sulfonamid										
583.9 > 418.8	6.616	6.664	-0.048	1.003	28886	17.8		88.8	229	
31 Perfluorodecane Sulfonic acid										
598.8 > 79.8	6.616	6.667	-0.051	1.291	58803	13.3		68.9	496	
D 33 13C2 PFUnA										
564.8 > 519.8	6.634	6.676	-0.042	1.000	484817	22.2		44.4	1519	
32 Perfluoroundecanoic acid										
562.8 > 518.6	6.634	6.676	-0.042	1.000	181784	19.4		96.9	900	
34 Perfluorooctane Sulfonamide										
497.8 > 77.8	6.973	6.984	-0.011	1.000	82607	20.0		99.8	378	
D 35 13C8 FOSA										
505.8 > 77.8	6.973	6.984	-0.011	1.000	227391	18.2		36.3	1431	
37 Perfluorododecanoic acid										
612.8 > 568.6	7.317	7.354	-0.037	1.000	139359	19.3		96.7	533	
D 36 13C2 PFDoA										
614.8 > 569.6	7.317	7.358	-0.041	1.000	409958	17.9		35.7	1091	
40 Perfluorotridecanoic acid										
662.8 > 618.6	7.920	7.974	-0.054	1.082	118931	16.2		80.8	685	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
714.8 > 669.6	8.453	8.514	-0.061	1.000	332254	15.7		31.4	486	
44 Perfluorotetradecanoic acid										
712.8 > 668.6	8.469	8.519	-0.050	1.002	104292	17.1		85.5	548	
712.8 > 168.8	8.469	8.519	-0.050	1.002	23760		4.39(0.00-0.00)		91.9	
712.8 > 218.8	8.469	8.519	-0.050	1.002	11317		9.22(0.00-0.00)		64.6	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 14-May-2018 12:12:33 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A38.d

Injection Date: 11-May-2018 17:53:03 Instrument ID: LC410

Lims ID: 200-43262-B-1-B MSD

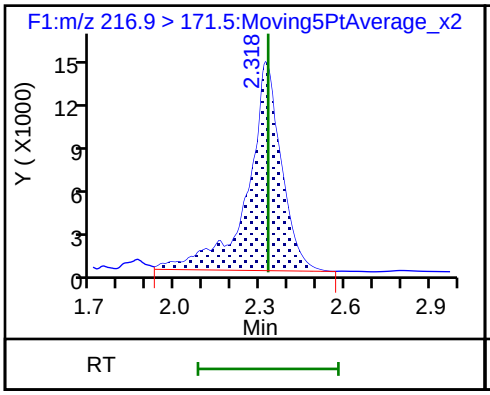
Client ID: MW-6

Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 38

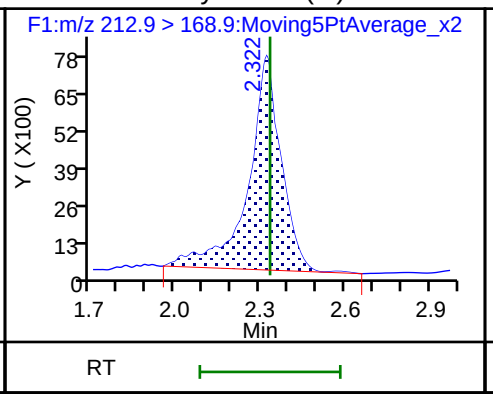
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL

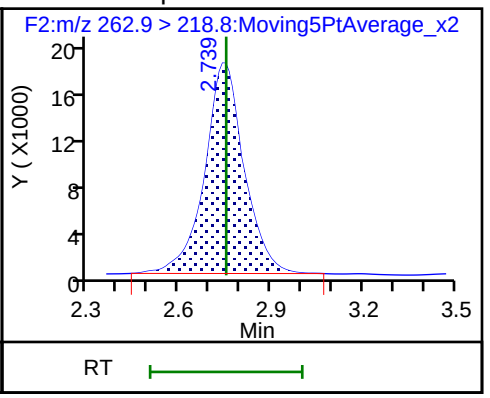
D 2 13C4 PFBA



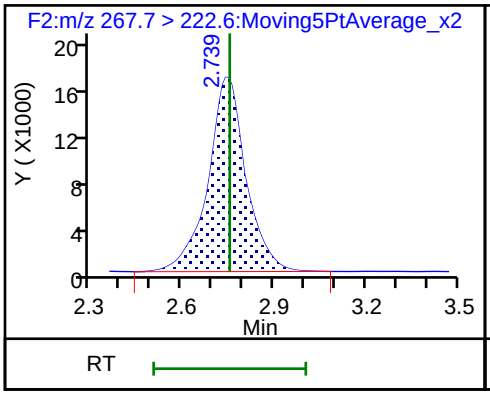
1 Perfluorobutyric acid (M)



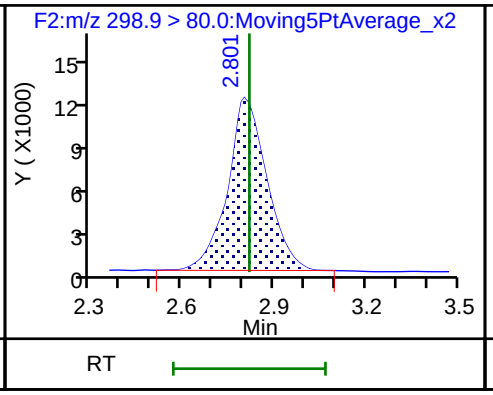
4 Perfluoropentanoic acid



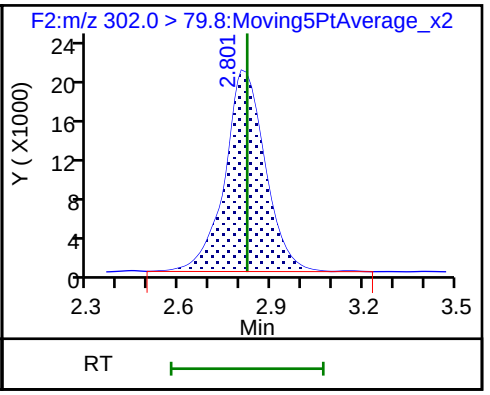
D 3 13C5-PFPeA



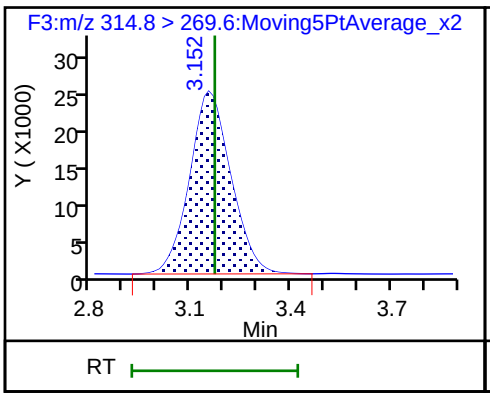
6 Perfluorobutanesulfonic acid



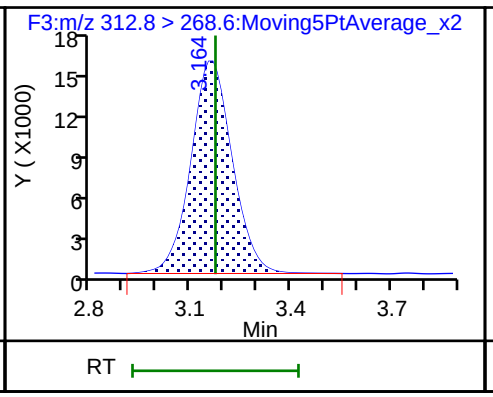
D 5 13C3-PFBS



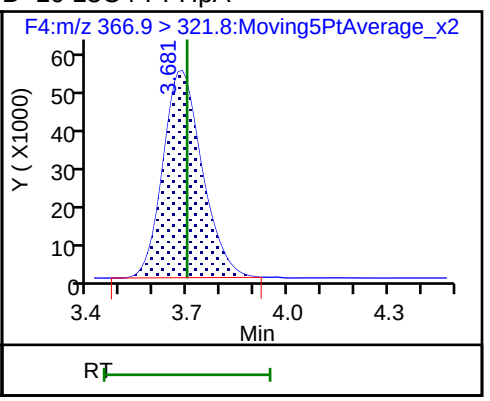
D 7 13C2 PFHxA



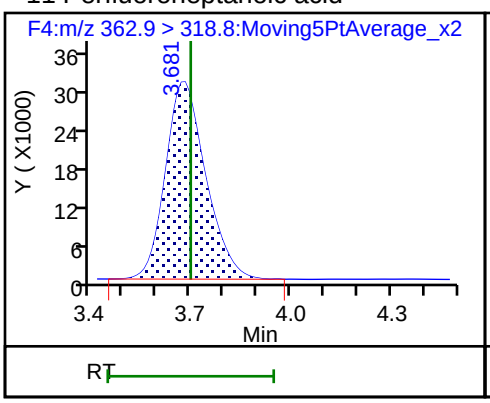
8 Perfluorohexanoic acid



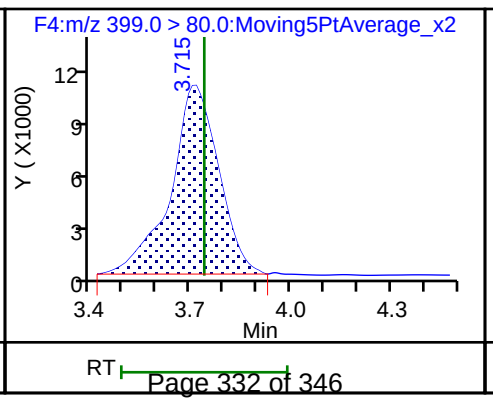
D 10 13C4-PFHpA



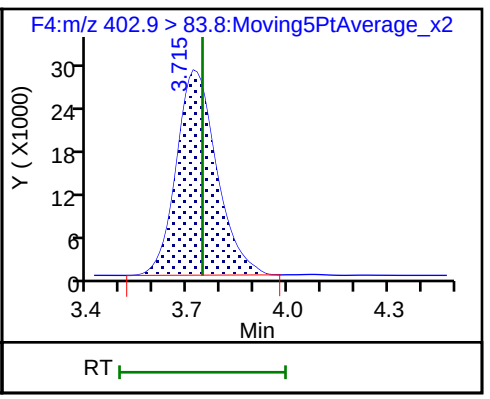
11 Perfluoroheptanoic acid



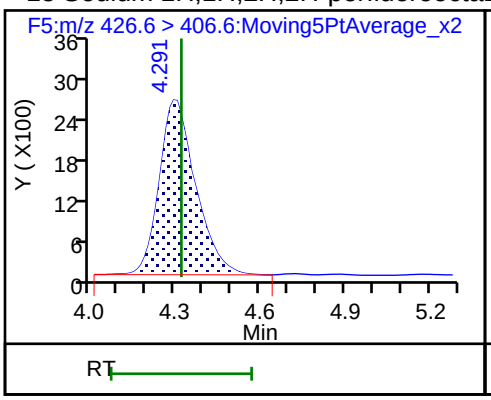
12 Perfluorohexanesulfonic acid



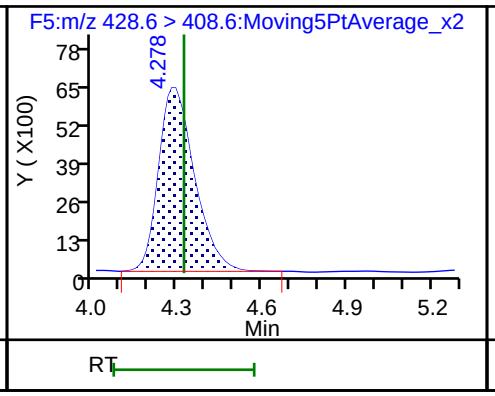
D 13 18O2 PFHxS



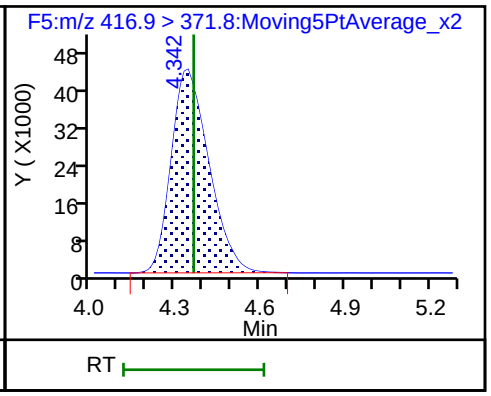
15 Sodium 1H,1H,2H,2H-perfluorooctane



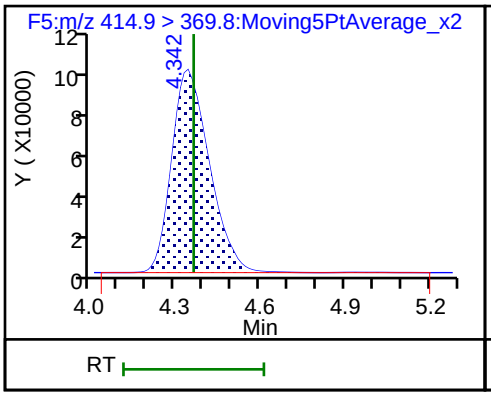
D 14 M2-6:2FTS



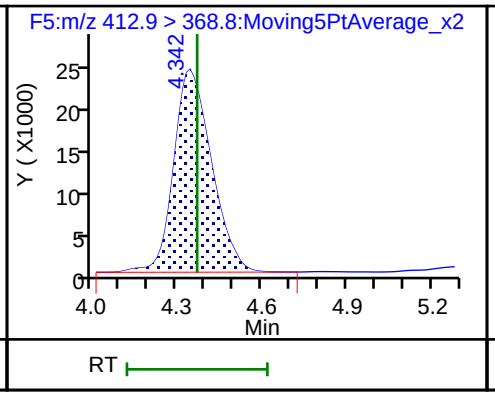
D 17 13C4 PFOA



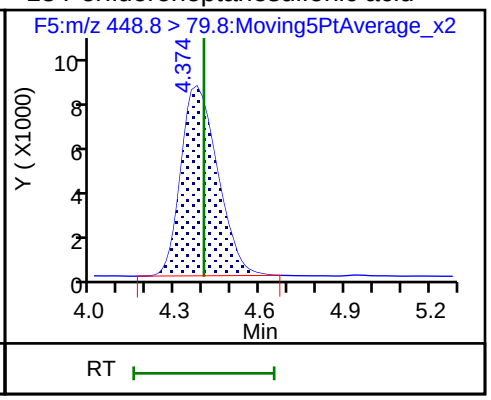
* 49 13C2-PFOA



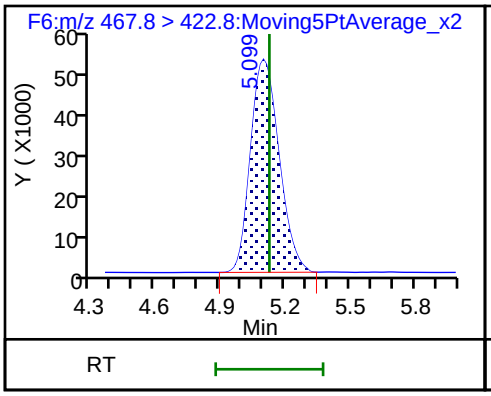
16 Perfluorooctanoic acid



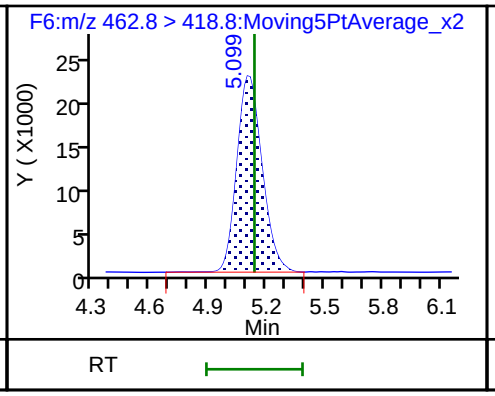
18 Perfluoroheptanesulfonic acid



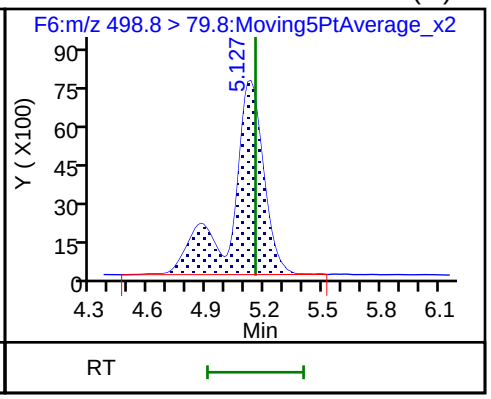
D 21 13C5 PFNA



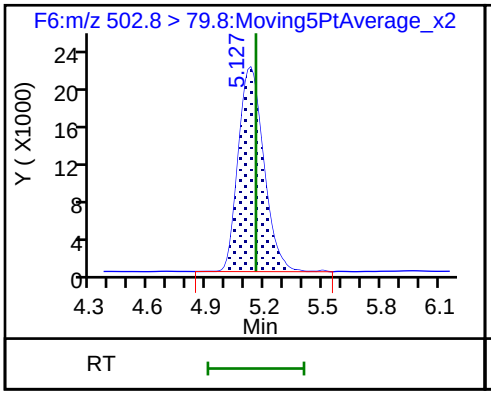
19 Perfluorononanoic acid



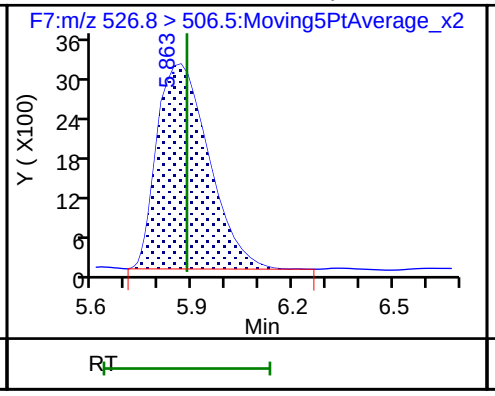
20 Perfluorooctane sulfonic acid (M)



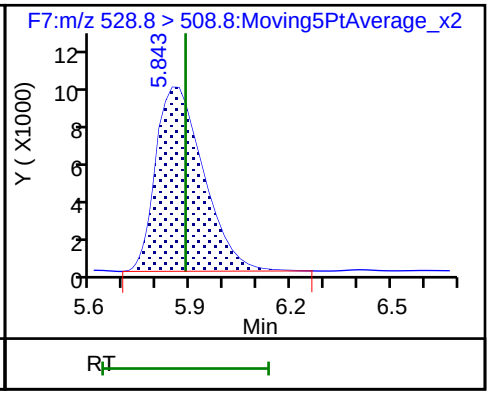
D 22 13C4 PFOS



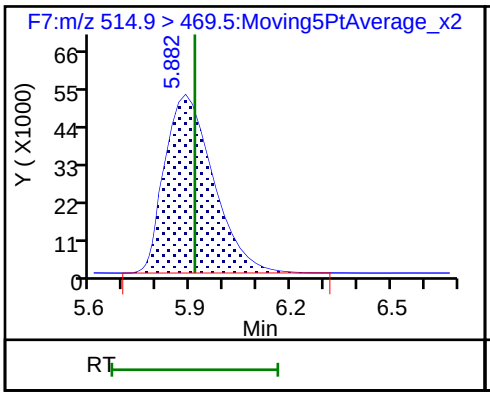
24 Sodium 1H,1H,2H,2H-perfluorodecane



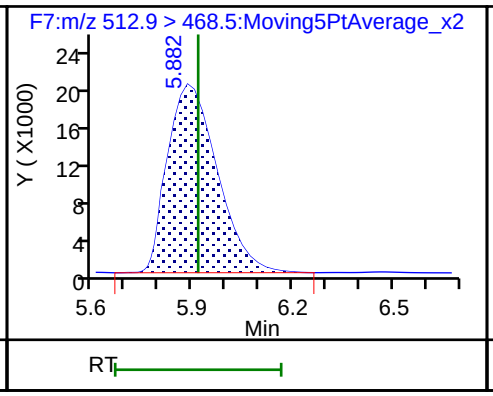
D 23 M2-8:2FTS



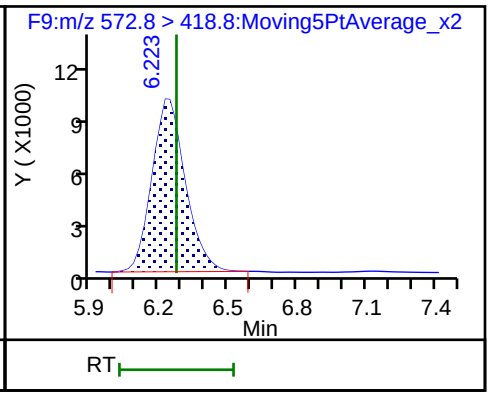
D 25 13C2 PFDA



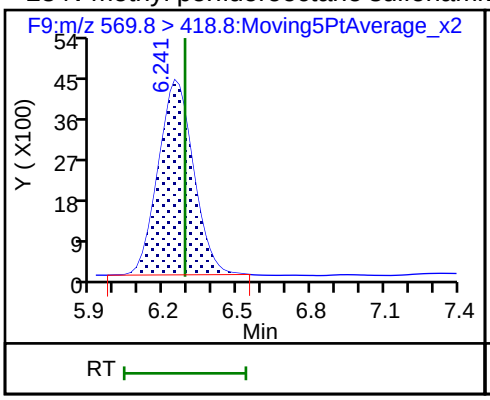
26 Perfluorodecanoic acid



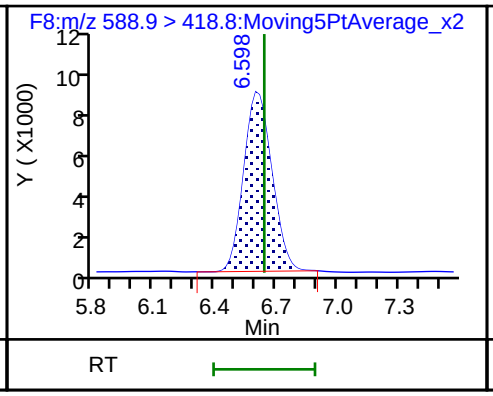
D 27 d3-NMeFOSAA



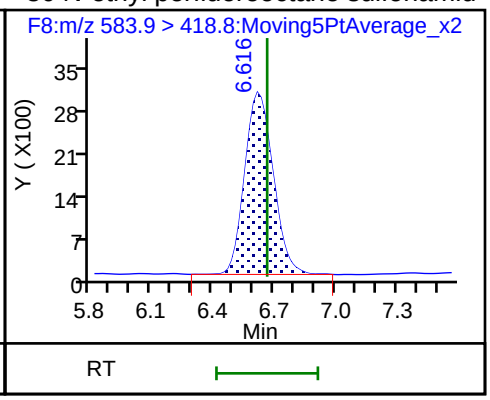
28 N-methyl perfluorooctane sulfonami



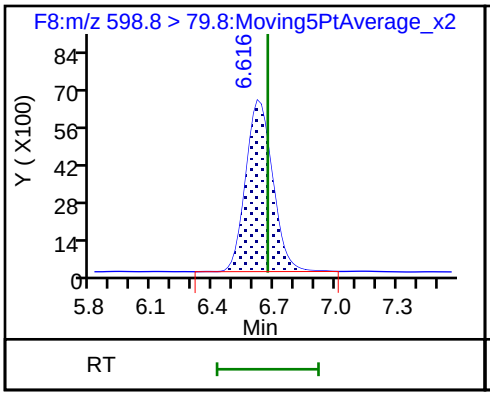
D 29 d5-NEtFOSAA



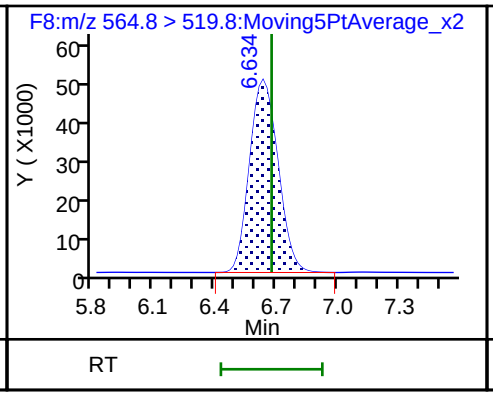
30 N-ethyl perfluorooctane sulfonamid



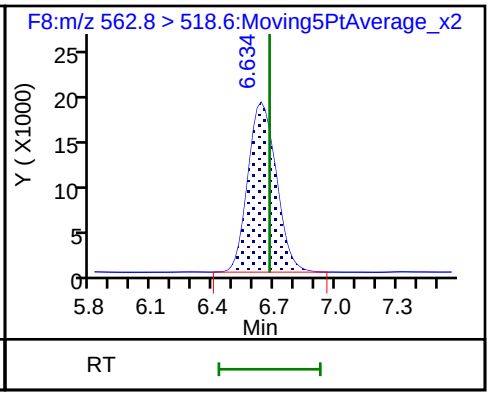
31 Perfluorodecane Sulfonic acid



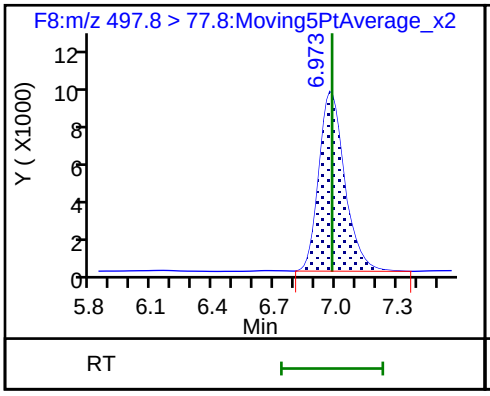
D 33 13C2 PFUnA



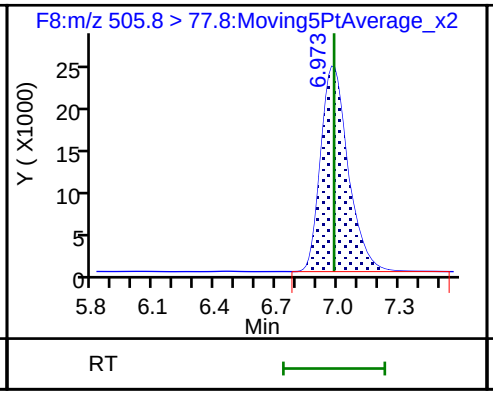
32 Perfluoroundecanoic acid



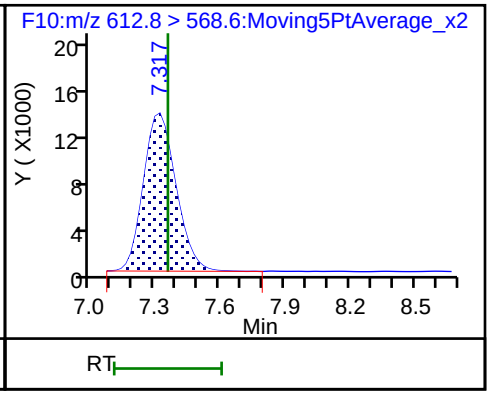
34 Perfluorooctane Sulfonamide



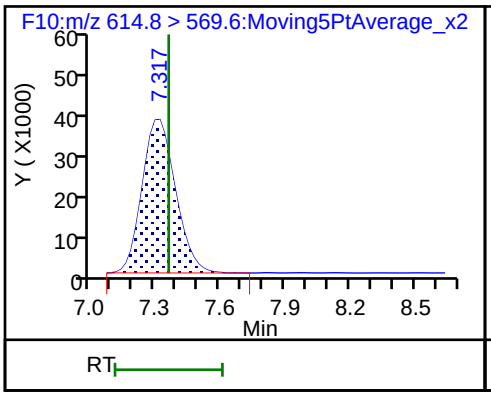
D 35 13C8 FOSA



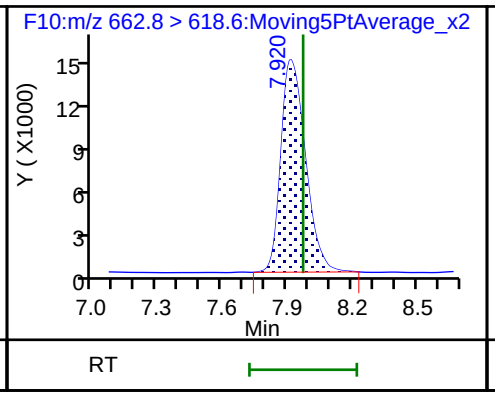
37 Perfluorododecanoic acid



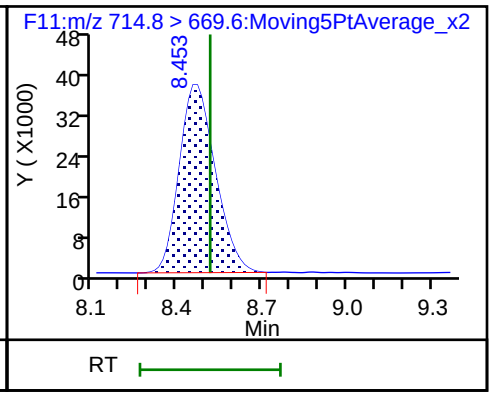
D 36 13C2 PFDoA



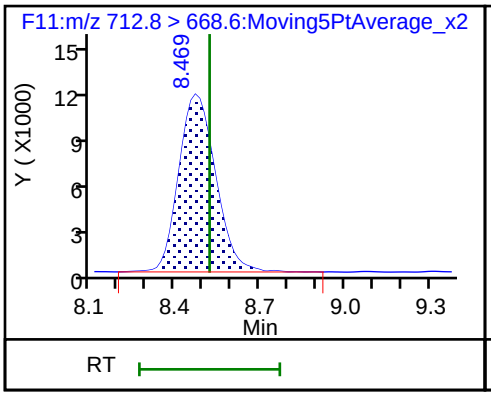
40 Perfluorotridecanoic acid



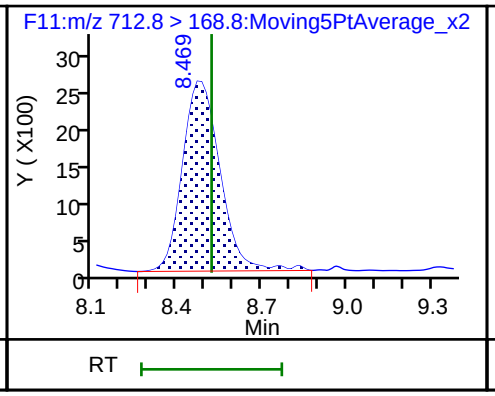
D 43 13C2-PFTeDA



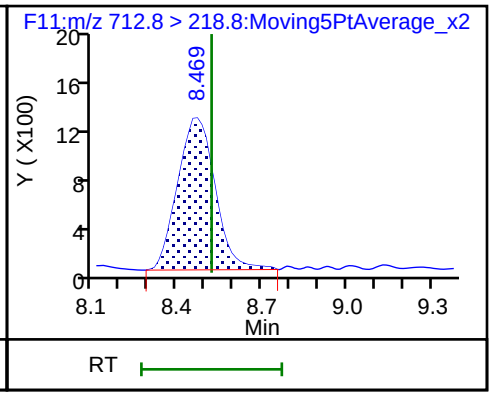
44 Perfluorotetradecanoic acid



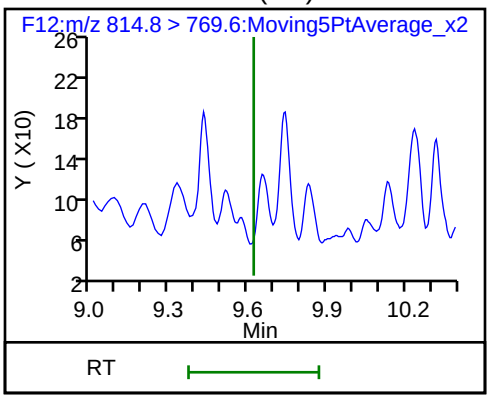
44 Perfluorotetradecanoic acid



44 Perfluorotetradecanoic acid



D 45 13C2-PFHxDA (ND)



Manual Integration/User Assign Peak Report

TestAmerica Burlington

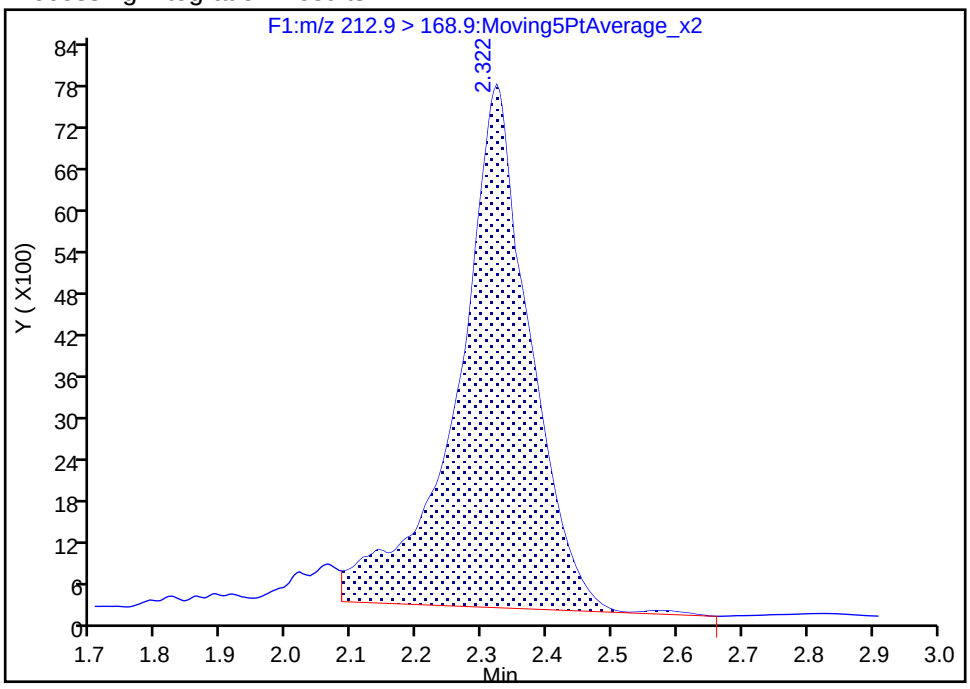
Data File:	\\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A38.d				
Injection Date:	11-May-2018 17:53:03	Instrument ID:	LC410		
Lims ID:	200-43262-B-1-B MSD				
Client ID:	MW-6				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	38
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector	F1:MRM		

1 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

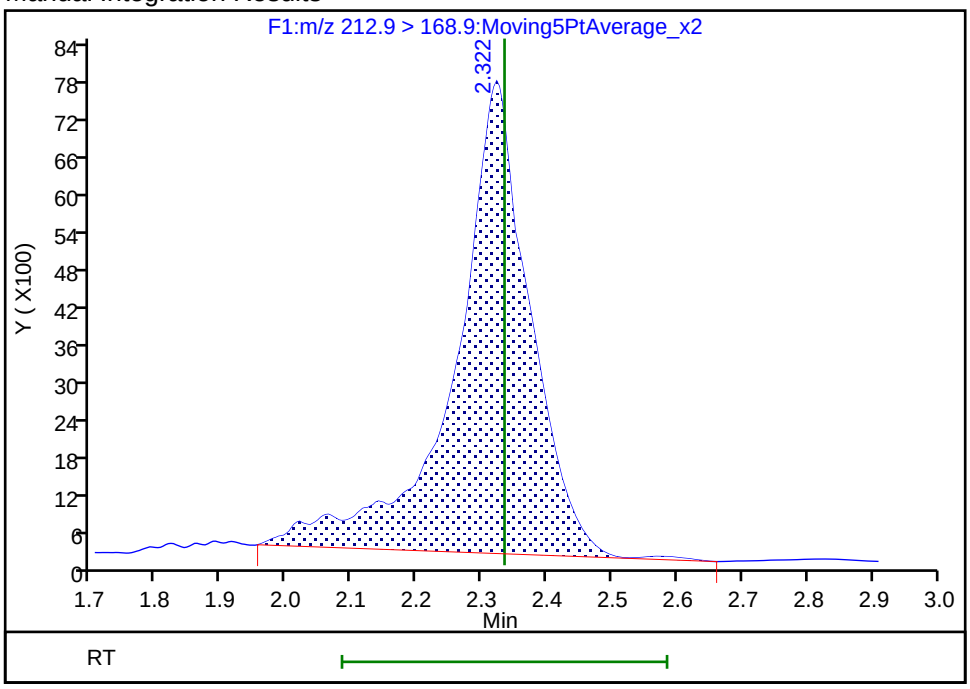
Processing Integration Results

RT: 2.32
Area: 58584
Amount: 25.775547
Amount Units: ng/ml



Manual Integration Results

RT: 2.32
Area: 60782
Amount: 26.751050
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:09:18

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

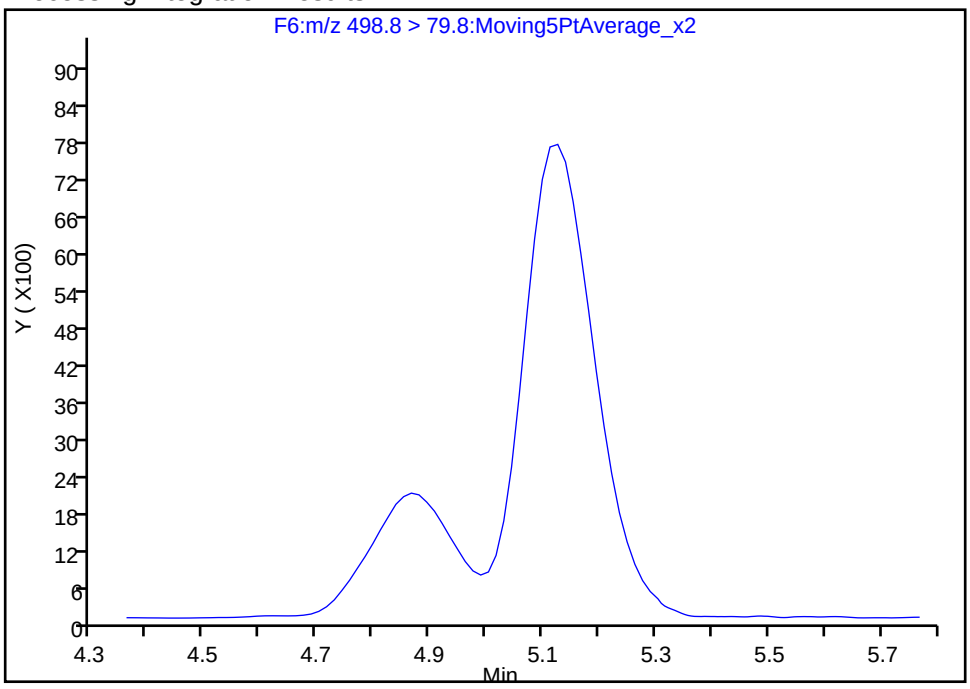
Data File: \\ChromNA\Burlington\ChromData\LC410\20180510-30469.b\PF051018A38.d
Injection Date: 11-May-2018 17:53:03 Instrument ID: LC410
Lims ID: 200-43262-B-1-B MSD
Client ID: MW-6
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 38
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

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

Signal: 1

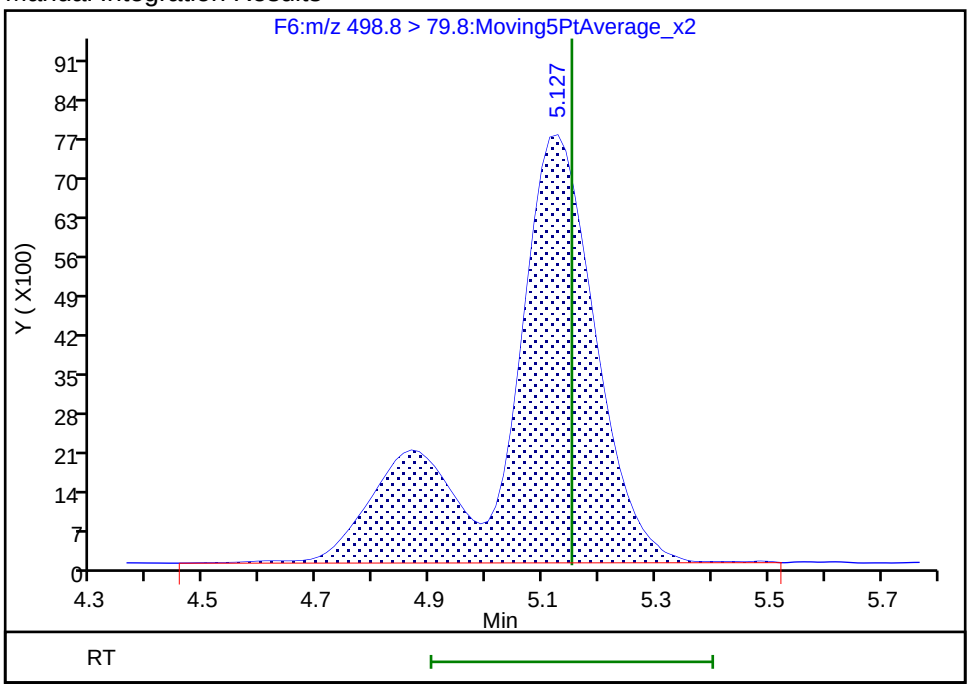
Not Detected
Expected RT: 5.15

Processing Integration Results



Manual Integration Results

RT: 5.13
Area: 88732
Amount: 19.250760
Amount Units: ng/ml



Reviewer: murrayjw, 14-May-2018 09:10:15
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Instrument ID: LC410 Start Date: 05/11/2018 09:16

Analysis Batch Number: 129349 End Date: 05/12/2018 00:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 200-129349/6		05/11/2018 09:16	1	PF051018A06.d	C-18 4.6(mm)
IC 200-129349/7		05/11/2018 09:32	1	PF051018A07.d	C-18 4.6(mm)
IC 200-129349/8		05/11/2018 09:48	1	PF051018A08.d	C-18 4.6(mm)
IC 200-129349/9		05/11/2018 10:04	1	PF051018A09.d	C-18 4.6(mm)
IC 200-129349/10		05/11/2018 10:20	1	PF051018A10.d	C-18 4.6(mm)
IC 200-129349/11		05/11/2018 10:37	1	PF051018A11.d	C-18 4.6(mm)
ICB 200-129349/12		05/11/2018 10:53	1	PF051018A12.d	C-18 4.6(mm)
ICV 200-129349/13		05/11/2018 11:09	1	PF051018A13.d	C-18 4.6(mm)
ZZZZZ		05/11/2018 11:25	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 11:41	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 11:57	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 12:13	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 12:29	5		C-18 4.6(mm)
ZZZZZ		05/11/2018 12:46	5		C-18 4.6(mm)
ZZZZZ		05/11/2018 13:02	5		C-18 4.6(mm)
ZZZZZ		05/11/2018 13:18	10		C-18 4.6(mm)
ZZZZZ		05/11/2018 13:34	5		C-18 4.6(mm)
ZZZZZ		05/11/2018 13:50	2		C-18 4.6(mm)
ZZZZZ		05/11/2018 14:06	5		C-18 4.6(mm)
CCV 200-129349/25		05/11/2018 14:23	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 14:39	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 14:55	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 15:11	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 15:27	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 15:43	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 15:59	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 16:16	1		C-18 4.6(mm)
CCV 200-129349/33		05/11/2018 16:32	1	PF051018A33.d	C-18 4.6(mm)
MB 200-129214/1-A		05/11/2018 16:48	1	PF051018A34.d	C-18 4.6(mm)
LCS 200-129214/2-A		05/11/2018 17:04	1	PF051018A35.d	C-18 4.6(mm)
200-43262-1		05/11/2018 17:20	1	PF051018A36.d	C-18 4.6(mm)
200-43262-1 MS		05/11/2018 17:36	1	PF051018A37.d	C-18 4.6(mm)
200-43262-1 MSD		05/11/2018 17:53	1	PF051018A38.d	C-18 4.6(mm)
ZZZZZ		05/11/2018 18:09	20		C-18 4.6(mm)
200-43262-3		05/11/2018 18:25	1	PF051018A40.d	C-18 4.6(mm)
200-43262-4		05/11/2018 18:41	1	PF051018A41.d	C-18 4.6(mm)
200-43262-5		05/11/2018 18:57	1	PF051018A42.d	C-18 4.6(mm)
ZZZZZ		05/11/2018 19:13	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 19:30	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 19:46	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 20:02	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 20:18	1		C-18 4.6(mm)
CCV 200-129349/48		05/11/2018 20:34	1	PF051018A48.d	C-18 4.6(mm)
ZZZZZ		05/11/2018 20:50	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 21:06	1		C-18 4.6(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Instrument ID: LC410 Start Date: 05/11/2018 09:16

Analysis Batch Number: 129349 End Date: 05/12/2018 00:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		05/11/2018 21:23	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 21:39	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 21:55	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 22:11	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 22:27	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 22:43	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 23:00	1		C-18 4.6(mm)
ZZZZZ		05/11/2018 23:16	1		C-18 4.6(mm)
CCV 200-129349/59		05/11/2018 23:32	1	PF051018A59.d	C-18 4.6(mm)
200-43262-2		05/11/2018 23:48	5	PF051018A60.d	C-18 4.6(mm)
ZZZZZ		05/12/2018 00:04	1		C-18 4.6(mm)
CCV 200-129349/62		05/12/2018 00:20	1	PF051018A62.d	C-18 4.6(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-43262-1

SDG No.:

Batch Number: 129214 Batch Start Date: 05/07/18 14:00 Batch Analyst: Murray, John W

Batch Method: 3535 Batch End Date: 05/07/18 16:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFCIDA21 00002	LCPFC_21SP 00001
MB 200-129214/1		3535, 537 (modified)		250 g	0 g	250 mL	0.5 mL	0.025 mL	
LCS 200-129214/2		3535, 537 (modified)		250 g	0 g	250 mL	0.5 mL	0.025 mL	0.01 mL
200-43262-A-1	MW-6	3535, 537 (modified)	T	296.23 g	54.00 g	242.2 mL	0.5 mL	0.025 mL	
200-43262-B-1 MS	MW-6	3535, 537 (modified)	T	292.18 g	145.37 g	146.8 mL	0.5 mL	0.025 mL	0.01 mL
200-43262-B-1 MSD	MW-6	3535, 537 (modified)	T	297.26 g	85.72 g	211.5 mL	0.5 mL	0.025 mL	0.01 mL
200-43262-A-2	MW-1	3535, 537 (modified)	T	289.01 g	27.90 g	261.1 mL	0.5 mL	0.025 mL	
200-43262-A-3	MW-3	3535, 537 (modified)	T	290.21 g	27.50 g	262.7 mL	0.5 mL	0.025 mL	
200-43262-A-4	MW-3D	3535, 537 (modified)	T	300.30 g	29.46 g	270.8 mL	0.5 mL	0.025 mL	
200-43262-A-5	FB	3535, 537 (modified)	T	292.49 g	27.82 g	264.7 mL	0.5 mL	0.025 mL	

Lab Sample ID	Client Sample ID	Method Chain	Basis	PFAS21 IS Stk 00001	AnalysisComment				
MB 200-129214/1		3535, 537 (modified)		0.005 mL					
LCS 200-129214/2		3535, 537 (modified)		0.005 mL					
200-43262-A-1	MW-6	3535, 537 (modified)	T	0.005 mL	Unable to extract entire sample due to sediment present in sample; 26.21 mL not extracted				
200-43262-B-1 MS	MW-6	3535, 537 (modified)	T	0.005 mL	Unable to extract entire sample due to sediment present in sample; 117.50 mL not extracted				

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 Burlington Job No.: 200-43262-1

SDG No.:

Batch Number: 129214 Batch Start Date: 05/07/18 14:00 Batch Analyst: Murray, John W

Batch Method: 3535 Batch End Date: 05/07/18 16:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	PFAS21 IS Stk 00001	AnalysisComment				
200-43262-B-1 MSD	MW-6	3535, 537 (modified)	T	0.005 mL	Unable to extract entire sample due to sediment present in sample; 56.32 mL not extracted				
200-43262-A-2	MW-1	3535, 537 (modified)	T	0.005 mL					
200-43262-A-3	MW-3	3535, 537 (modified)	T	0.005 mL					
200-43262-A-4	MW-3D	3535, 537 (modified)	T	0.005 mL					
200-43262-A-5	FB	3535, 537 (modified)	T	0.005 mL					

Batch Notes	
Balance ID	M02926
First End time	1645
H2O ID	041018B
Hexane ID	1138942
Manifold ID	IDA 1, IDA 2
Methanol ID	193866
Pipette ID	V05476
Analyst ID - Reagent Drop	JWM
Analyst ID - SU Reagent Drop	JWM
Analyst ID - SU Reagent Drop Witness	BC
Solvent Lot #	1142010
Solvent Name	0.3% NH4OH in MeOH
SOP Number	BR-LC-009r1
SPE Cartridge Type	Waters Oasis WAX 500mg Lot 003737320A
First Start time	1400

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 Burlington Job No.: 200-43262-1

SDG No.:

Batch Number: 129214 Batch Start Date: 05/07/18 14:00 Batch Analyst: Murray, John W

Batch Method: 3535 Batch End Date: 05/07/18 16:45

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

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NYSC
460501

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) John Bukoski	Samplers Name (Printed) John Bukoski	Site/Project Identification IW
Company FPM Group	P. O. # 1245g-17-03	State (Location of site): NJ: ☐ NY: ☒ Other:
Address 909 Marconi Ave	Analysis Turnaround Time: Standard ☒	Regulatory Program: DKQP: ☐
City Lonkonkoma State NY	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	
Phone 5163813535 Fax		

Sample Identification	Date	Time	Matrix	No. of Cont.	PFAS										LAB USE ONLY Project No: / Job No: / Sample Numbers
MW-6	4/26/18	1300		6	x										
MW-1	↓	1500		2	x										
MW-3		1730		2	x										
MW-3D		1735		2	x										
FB		1800		2	x										

200-43262 COC

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH
6 = Other _____, 7 = Other _____ Soil: / Water:

Special Instructions ASP CAT B MS/MSD on MW-6 Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
1)	FPM	4/30/18 1200	1)	
2)	TANYC	4/30/18 1700	2)	
3)			3)	
4)			4) 5/1/18 1020	T A L

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No. 578)

TAL - 0016 (0715)

ORIGIN ID:AIVA (646) 745-0906
TESTAMERICA NYC

47-32 32ND PLACE,
SUITE 1141
LONG ISLAND CITY, NY 11101
UNITED STATES US

SHIP DATE: 30APR18
ACTWGT: 10.00 LB
CAD: 101905570/INET3980
DIMS: 26x20x18 IN

BILL RECIPIENT

TO SAMPLING RECEIVING BVT
TESTAMERICA
30 COMMUNITY DR STE 11

SOUTH BURLINGTON VT 05403
(802) 660-1990 REF:
INV:
PO: DEPT:

552J2/782B/DCA5

FedEx Express

J1911180126011uv

TUE - 01 MAY 3:00P
STANDARD OVERNIGHT

TRK# 0201 7721 1654 7344

NC BTVA

05403
VT-US BTV

Login Sample Receipt Checklist

Client: FPM Group Limited

Job Number: 200-43262-1

Login Number: 43262
List Number: 1
Creator: Hahl, Victoria L

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	99886
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	4.4ºC
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	John Bukoski
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.	N/A	
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

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ANALYTICAL REPORT

Job Number: 460-155037-1

Job Description: IW Industries

For:
FPM Group Limited
909 Marconi Avenue
Ronkonkoma, NY 11779

Attention: Mr. John Bukoski

Approved for release.
Thomas A Chupela
Project Management Assistant I
5/3/2018 9:31 AM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
05/03/2018

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 LAO00132

Job Number: 460-155037-1

Job Description: IW Industries

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
5/3/2018 9:31 AM

Designee for
Melissa Haas

Table of Contents

Table of Contents

CASE NARRATIVE

Client: FPM Group Limited

Project: IW Industries

Report Number: 460-155037-1

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 4/30/2018 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3º 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 METHOD 8270 SIM
Samples MW-6 (460-155037-1), MW-1 (460-155037-2), MW-3 (460-155037-3), FB (460-155037-4) and MW-3D (460-155037-5) were analyzed for 1,4 Dioxane by Method 8270 SIM in accordance with EPA SW-846 Method 8270D SIM DKQP. The samples were prepared on 05/01/2018 and analyzed on 05/02/2018.

The continuing calibration verification (CCV) associated with batch 460-515822 recovered above the upper control limit for 1,4-Dioxane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Refer to the QC report for details.

No other difficulties were encountered during the SVOC SIM DKQP analysis.

All other quality control parameters were within the acceptance limits.

Sample Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 460-155037-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-155037-1	MW-6	Water	04/26/18 13:00	04/30/18 16:40
460-155037-2	MW-1	Water	04/26/18 15:00	04/30/18 16:40
460-155037-3	MW-3	Water	04/26/18 17:30	04/30/18 16:40
460-155037-4	FB	Water	04/26/18 18:00	04/30/18 16:40
460-155037-5	MW-3D	Water	04/26/18 17:35	04/30/18 16:40

Detection Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 460-155037-1

Client Sample ID: MW-6 — Lab Sample ID: 460-155037-1

No Detections.

Client Sample ID: MW-1 — Lab Sample ID: 460-155037-2

No Detections.

Client Sample ID: MW-3 — Lab Sample ID: 460-155037-3

No Detections.

Client Sample ID: FB — Lab Sample ID: 460-155037-4

No Detections.

Client Sample ID: MW-3D — Lab Sample ID: 460-155037-5

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 460-155037-1

Method	Method Description	Protocol	Laboratory
8270D SIM	1,4-Dioxane (GC/MS SIM)	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 ID: MW-6
Lab Sample ID: 460-155037-1
Date Collected: 04/26/18 13:00
Matrix: Water
Date Received: 04/30/18 16:40

Method: 8270D SIM - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	MDL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.18	U	0.18	0.18	ug/L		05/01/18 20:12	05/02/18 11:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*64*		*38 - 125*	*05/01/18 20:12*	*05/02/18 11:47*	*1*

Client Sample ID: MW-1
Lab Sample ID: 460-155037-2
Date Collected: 04/26/18 15:00
Matrix: Water
Date Received: 04/30/18 16:40

Method: 8270D SIM - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	MDL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.17	U	0.17	0.17	ug/L		05/01/18 20:12	05/02/18 12:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*46*		*38 - 125*	*05/01/18 20:12*	*05/02/18 12:08*	*1*

Client Sample ID: MW-3
Lab Sample ID: 460-155037-3
Date Collected: 04/26/18 17:30
Matrix: Water
Date Received: 04/30/18 16:40

Method: 8270D SIM - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	MDL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.18	U	0.18	0.18	ug/L		05/01/18 20:12	05/02/18 12:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*66*		*38 - 125*	*05/01/18 20:12*	*05/02/18 12:30*	*1*

Client Sample ID: FB
Lab Sample ID: 460-155037-4
Date Collected: 04/26/18 18:00
Matrix: Water
Date Received: 04/30/18 16:40

Method: 8270D SIM - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	MDL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.18	U	0.18	0.18	ug/L		05/01/18 20:12	05/02/18 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*68*		*38 - 125*	*05/01/18 20:12*	*05/02/18 12:52*	*1*

Client Sample ID: MW-3D
Lab Sample ID: 460-155037-5
Date Collected: 04/26/18 17:35
Matrix: Water
Date Received: 04/30/18 16:40

Method: 8270D SIM - 1,4-Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	MDL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.17	U	0.17	0.17	ug/L		05/01/18 20:12	05/02/18 13:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*72*		*38 - 125*	*05/01/18 20:12*	*05/02/18 13:14*	*1*

Surrogate Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 460-155037-1

Method: 8270D SIM - 1,4-Dioxane (GC/MS SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	NBZ (38-125)								
460-155037-1	MW-6	64								
460-155037-1 MS	MW-6	73								
460-155037-1 MSD	MW-6	69								
460-155037-2	MW-1	46								
460-155037-3	MW-3	66								
460-155037-4	FB	68								
460-155037-5	MW-3D	72								
LCS 460-515743/2-A	Lab Control Sample	74								
LCSD 460-515743/3-A	Lab Control Sample Dup	78								
MB 460-515743/1-A	Method Blank	80								

Surrogate Legend

NBZ = Nitrobenzene-d5

Method: 8270D SIM - 1,4-Dioxane (GC/MS SIM)

Lab Sample ID: MB 460-515743/1-A
Matrix: Water
Analysis Batch: 515822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 515743

Analyte	MB Result	MB Qualifier	MDL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.17	U	0.17	0.17	ug/L		05/01/18 20:12	05/02/18 09:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*80*		*38 - 125*	*05/01/18 20:12*	*05/02/18 09:57*	*1*

Lab Sample ID: LCS 460-515743/2-A
Matrix: Water
Analysis Batch: 515822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 515743

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			0.800	0.794		ug/L		99	10 - 137		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5	*74*		*38 - 125*

Lab Sample ID: LCSD 460-515743/3-A
Matrix: Water
Analysis Batch: 515822

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 515743

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane			0.800	0.794		ug/L		99	10 - 137	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Nitrobenzene-d5	*78*		*38 - 125*

Lab Sample ID: 460-155037-1 MS
Matrix: Water
Analysis Batch: 515822

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 515743

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane	0.18	U	0.833	0.808		ug/L		97	10 - 137		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5	*73*		*38 - 125*

Lab Sample ID: 460-155037-1 MSD
Matrix: Water
Analysis Batch: 515822

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 515743

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	0.18	U	0.833	0.978		ug/L		117	10 - 137	19	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5	*69*		*38 - 125*

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.
¤	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)

GC/MS Semi VOA

Prep Batch: 515743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-155037-1	MW-6	Total/NA	Water	3510C	
460-155037-2	MW-1	Total/NA	Water	3510C	
460-155037-3	MW-3	Total/NA	Water	3510C	
460-155037-4	FB	Total/NA	Water	3510C	
460-155037-5	MW-3D	Total/NA	Water	3510C	
MB 460-515743/1-A	Method Blank	Total/NA	Water	3510C	
LCS 460-515743/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 460-515743/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
460-155037-1 MS	MW-6	Total/NA	Water	3510C	
460-155037-1 MSD	MW-6	Total/NA	Water	3510C	

Analysis Batch: 515822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-155037-1	MW-6	Total/NA	Water	8270D SIM	515743
460-155037-2	MW-1	Total/NA	Water	8270D SIM	515743
460-155037-3	MW-3	Total/NA	Water	8270D SIM	515743
460-155037-4	FB	Total/NA	Water	8270D SIM	515743
460-155037-5	MW-3D	Total/NA	Water	8270D SIM	515743
MB 460-515743/1-A	Method Blank	Total/NA	Water	8270D SIM	515743
LCS 460-515743/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	515743
LCSD 460-515743/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	515743
460-155037-1 MS	MW-6	Total/NA	Water	8270D SIM	515743
460-155037-1 MSD	MW-6	Total/NA	Water	8270D SIM	515743

Lab Chronicle

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 460-155037-1

Client Sample ID: MW-6
Lab Sample ID: 460-155037-1
Date Collected: 04/26/18 13:00
Matrix: Water
Date Received: 04/30/18 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			515743	05/01/18 20:12	GXY	TAL EDI
Total/NA	Analysis	8270D SIM		1	515822	05/02/18 11:47	SK	TAL EDI

Client Sample ID: MW-1
Lab Sample ID: 460-155037-2
Date Collected: 04/26/18 15:00
Matrix: Water
Date Received: 04/30/18 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			515743	05/01/18 20:12	GXY	TAL EDI
Total/NA	Analysis	8270D SIM		1	515822	05/02/18 12:08	SK	TAL EDI

Client Sample ID: MW-3
Lab Sample ID: 460-155037-3
Date Collected: 04/26/18 17:30
Matrix: Water
Date Received: 04/30/18 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			515743	05/01/18 20:12	GXY	TAL EDI
Total/NA	Analysis	8270D SIM		1	515822	05/02/18 12:30	SK	TAL EDI

Client Sample ID: FB
Lab Sample ID: 460-155037-4
Date Collected: 04/26/18 18:00
Matrix: Water
Date Received: 04/30/18 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			515743	05/01/18 20:12	GXY	TAL EDI
Total/NA	Analysis	8270D SIM		1	515822	05/02/18 12:52	SK	TAL EDI

Client Sample ID: MW-3D
Lab Sample ID: 460-155037-5
Date Collected: 04/26/18 17:35
Matrix: Water
Date Received: 04/30/18 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			515743	05/01/18 20:12	GXY	TAL EDI
Total/NA	Analysis	8270D SIM		1	515822	05/02/18 13:14	SK	TAL EDI

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 460-155037-1

Laboratory: TestAmerica Edison

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-18
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-18
New York	NELAP	2	11452	04-01-19
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20

8270D_SIM_14DX

1,4-Dioxane (GC/MS SIM)

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Rtxi-5Sil M ID: 0.25(mm)

Client Sample ID	Lab Sample ID	NBZ #
MW-6	460-155037-1	64
MW-1	460-155037-2	46
MW-3	460-155037-3	66
FB	460-155037-4	68
MW-3D	460-155037-5	72
	MB 460-515743/1-A	80
	LCS 460-515743/2-A	74
	LCSD 460-515743/3-A	78
MW-6 MS	460-155037-1 MS	73
MW-6 MSD	460-155037-1 MSD	69

	QC LIMITS
NBZ = Nitrobenzene-d5	38-125

Column to be used to flag recovery values

FORM II 8270D SIM

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Matrix: Water Level: Low Lab File ID: h229696.D

Lab ID: LCS 460-515743/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	0.800	0.794	99	10-137	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Matrix: Water Level: Low Lab File ID: h229697.D

Lab ID: LCSD 460-515743/3-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
1,4-Dioxane	0.800	0.794	99	0	30	10-137	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM

FORM III
GC/MS SEMI VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Matrix: Water Level: Low Lab File ID: h229698.D

Lab ID: 460-155037-1 MS Client ID: MW-6 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,4-Dioxane	0.833	0.18 U	0.808	97	10-137	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM

FORM III
GC/MS SEMI VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Matrix: Water Level: Low Lab File ID: h229699.D

Lab ID: 460-155037-1 MSD Client ID: MW-6 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
1,4-Dioxane	0.833	0.978	117	19	30	10-137	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Lab File ID: h229695.D Lab Sample ID: MB 460-515743/1-A

Matrix: Water Date Extracted: 05/01/2018 20:12

Instrument ID: CBNAMS9 Date Analyzed: 05/02/2018 09:57

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 460-515743/2-A	h229696.D	05/02/2018 10:19
	LCSD 460-515743/3-A	h229697.D	05/02/2018 10:41
MW-6 MS	460-155037-1 MS	h229698.D	05/02/2018 11:03
MW-6 MSD	460-155037-1 MSD	h229699.D	05/02/2018 11:25
MW-6	460-155037-1	h229700.D	05/02/2018 11:47
MW-1	460-155037-2	h229701.D	05/02/2018 12:08
MW-3	460-155037-3	h229702.D	05/02/2018 12:30
FB	460-155037-4	h229703.D	05/02/2018 12:52
MW-3D	460-155037-5	h229704.D	05/02/2018 13:14

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

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Lab File ID: h229153.D DFTPP Injection Date: 04/12/2018

Instrument ID: CBNAMS9 DFTPP Injection Time: 13:07

Analysis Batch No.: 510570

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 60.0 % of mass 198	48.3	
68	Less than 2.0 % of mass 69	0.0	(0.0) 1
69	Mass 69 relative abundance	47.0	
70	Less than 2.0 % of mass 69	0.0	(0.0) 1
127	40.0 - 60.0 % of mass 198	51.4	
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	5.9	
275	10.0 - 30.0 % of mass 198	20.3	
365	Greater than 1.0 % of mass 198	1.7	
441	Present but less than mass 443	9.1	(67.8) 3
442	Greater than 40.0 % of mass 198	70.1	
443	17.0 - 23.0 % of mass 442	13.5	(19.2) 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 460-510570/2	h229154.D	04/12/2018	14:15
	STD6 460-510570/3	h229155.D	04/12/2018	14:36
	STD5 460-510570/4	h229156.D	04/12/2018	14:57
	STD4 460-510570/5	h229157.D	04/12/2018	15:19
	STD2 460-510570/6	h229158.D	04/12/2018	15:40
	STD1 460-510570/7	h229159.D	04/12/2018	16:01

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

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Lab File ID: h229692a.D DFTPP Injection Date: 05/02/2018

Instrument ID: CBNAMS9 DFTPP Injection Time: 06:56

Analysis Batch No.: 515822

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 60.0 % of mass 198	51.5	
68	Less than 2.0 % of mass 69	0.6	(1.2) 1
69	Mass 69 relative abundance	48.2	
70	Less than 2.0 % of mass 69	0.0	(0.0) 1
127	40.0 - 60.0 % of mass 198	56.8	
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	7.0	
275	10.0 - 30.0 % of mass 198	21.5	
365	Greater than 1.0 % of mass 198	1.8	
441	Present but less than mass 443	9.9	(76.5) 3
442	Greater than 40.0 % of mass 198	67.0	
443	17.0 - 23.0 % of mass 442	12.9	(19.3) 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 460-515822/2	h229693c.D	05/02/2018	08:37
	MB 460-515743/1-A	h229695.D	05/02/2018	09:57
	LCS 460-515743/2-A	h229696.D	05/02/2018	10:19
	LCSD 460-515743/3-A	h229697.D	05/02/2018	10:41
MW-6 MS	460-155037-1 MS	h229698.D	05/02/2018	11:03
MW-6 MSD	460-155037-1 MSD	h229699.D	05/02/2018	11:25
MW-6	460-155037-1	h229700.D	05/02/2018	11:47
MW-1	460-155037-2	h229701.D	05/02/2018	12:08
MW-3	460-155037-3	h229702.D	05/02/2018	12:30
FB	460-155037-4	h229703.D	05/02/2018	12:52
MW-3D	460-155037-5	h229704.D	05/02/2018	13:14

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

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Sample No.: CCVIS 460-515822/2 Date Analyzed: 05/02/2018 08:37

Instrument ID: CBNAMS9 GC Column: Rtxi-5Sil MS ID: 0.25(mm)

Lab File ID (Standard): h229693c.D Heated Purge: (Y/N) N

Calibration ID: 67607

		DCBd4		NPT			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		5877	4.10	14622	5.33		
UPPER LIMIT		11754	4.60	29244	5.83		
LOWER LIMIT		2939	3.60	7311	4.83		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 460-515743/1-A		6012	4.11	14928	5.33		
LCS 460-515743/2-A		5756	4.11	14659	5.33		
LCSD 460-515743/3-A		6095	4.11	15711	5.33		
460-155037-1 MS	MW-6 MS	6027	4.11	15499	5.33		
460-155037-1 MSD	MW-6 MSD	5081	4.11	12707	5.33		
460-155037-1	MW-6	5943	4.11	14089	5.33		
460-155037-2	MW-1	5735	4.11	14578	5.33		
460-155037-3	MW-3	5477	4.11	14300	5.33		
460-155037-4	FB	6266	4.11	15472	5.33		
460-155037-5	MW-3D	6052	4.11	15289	5.33		

DCBd4 = 1,4-Dichlorobenzene-d4
NPT = Naphthalene-d8

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-155037-1

SDG No.:

Client Sample ID: MW-6 | Lab Sample ID: 460-155037-1

Matrix: Water | Lab File ID: h229700.D

Analysis Method: 8270D SIM | Date Collected: 04/26/2018 13:00

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 240(mL) | Date Analyzed: 05/02/2018 11:47

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.18	U	0.18	0.18

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	64		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229700.D
Lims ID: 460-155037-A-1-A
Client ID: MW-6
Sample Type: Client
Inject. Date: 02-May-2018 11:47:30 ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-009
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:50:15 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:50:15

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
* 5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	99	5943	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	91	17555	0.6358	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	100	14089	0.2000	
$ 9 2-Fluorobiphenyl	172	6.370	6.370	0.000	95	30686	0.6997	
* 11 Acenaphthene-d10	164	6.989	6.989	0.000	99	4339	0.2000	
$ 20 2,4,6-Tribromophenol	330	7.752	7.752	0.000	87	5006	0.6230	
* 17 Phenanthrene-d10	188	8.383	8.383	0.000	97	6604	0.2000	
$ 23 Terphenyl-d14	244	9.906	9.906	0.000	100	10670	0.7626	
* 25 Chrysene-d12	240	10.910	10.910	0.000	96	3551	0.2000	
* 30 Perylene-d12	264	12.597	12.597	0.000	100	2377	0.2000	

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

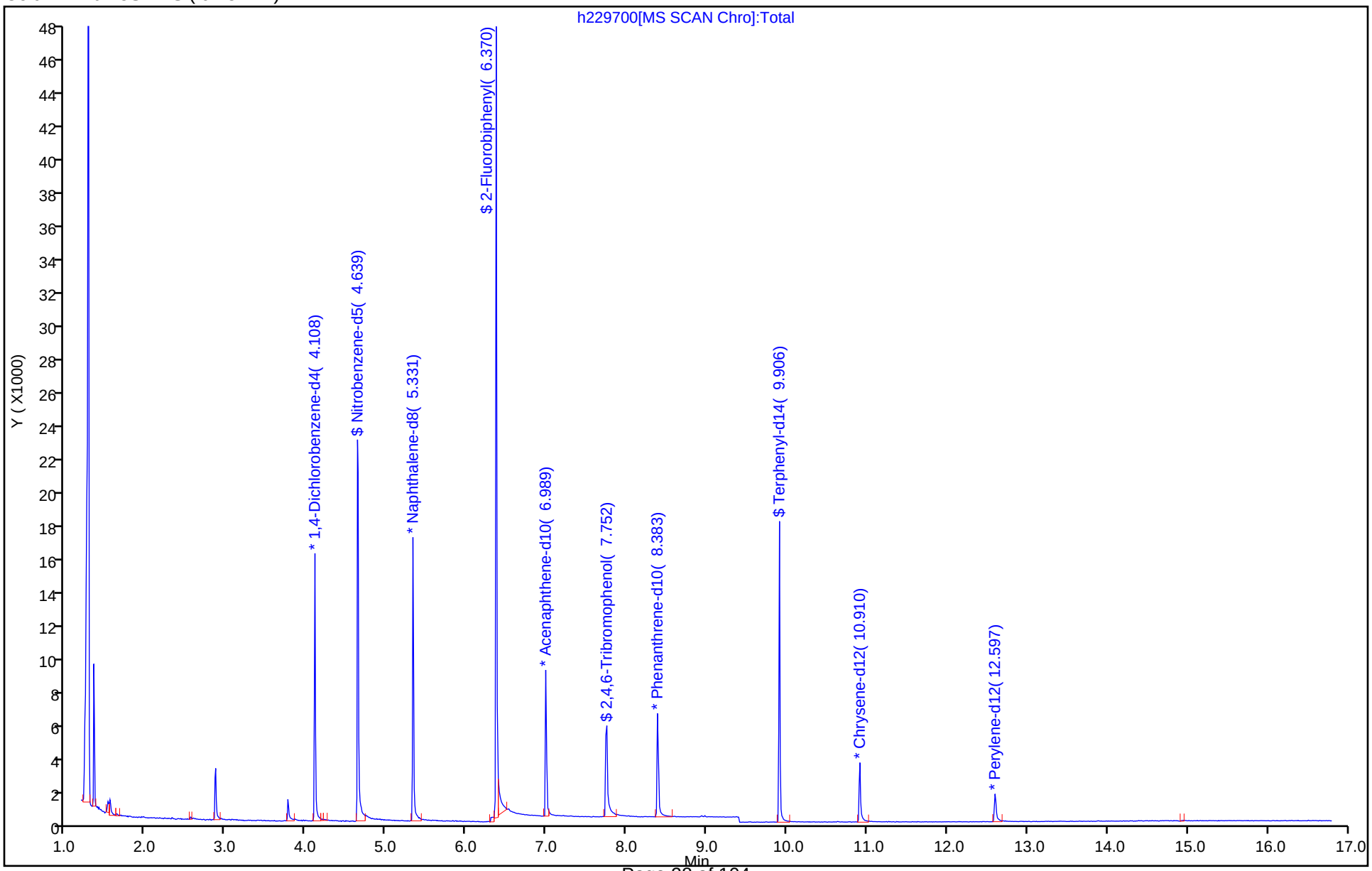
Report Date: 03-May-2018 13:50:16 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229700.D

Injection Date:	02-May-2018 11:47:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	460-155037-A-1-A	Lab Sample ID:	460-155037-1	Worklist Smp#:	9
Client ID:	MW-6				
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-155037-1

SDG No.:

Client Sample ID: MW-1 | Lab Sample ID: 460-155037-2

Matrix: Water | Lab File ID: h229701.D

Analysis Method: 8270D SIM | Date Collected: 04/26/2018 15:00

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 250(mL) | Date Analyzed: 05/02/2018 12:08

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.17	U	0.17	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	46		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229701.D
Lims ID: 460-155037-B-2-A
Client ID: MW-1
Sample Type: Client
Inject. Date: 02-May-2018 12:08:30 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-010
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:50:39 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:50:39

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
* 5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	100	5735	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	91	13075	0.4577	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	100	14578	0.2000	
* 11 Acenaphthene-d10	164	6.988	6.989	-0.001	100	4906	0.2000	
* 17 Phenanthrene-d10	188	8.383	8.383	0.000	99	8246	0.2000	
* 25 Chrysene-d12	240	10.910	10.910	0.000	95	4680	0.2000	
* 30 Perylene-d12	264	12.597	12.597	0.000	100	3934	0.2000	
35 DFTPP								

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

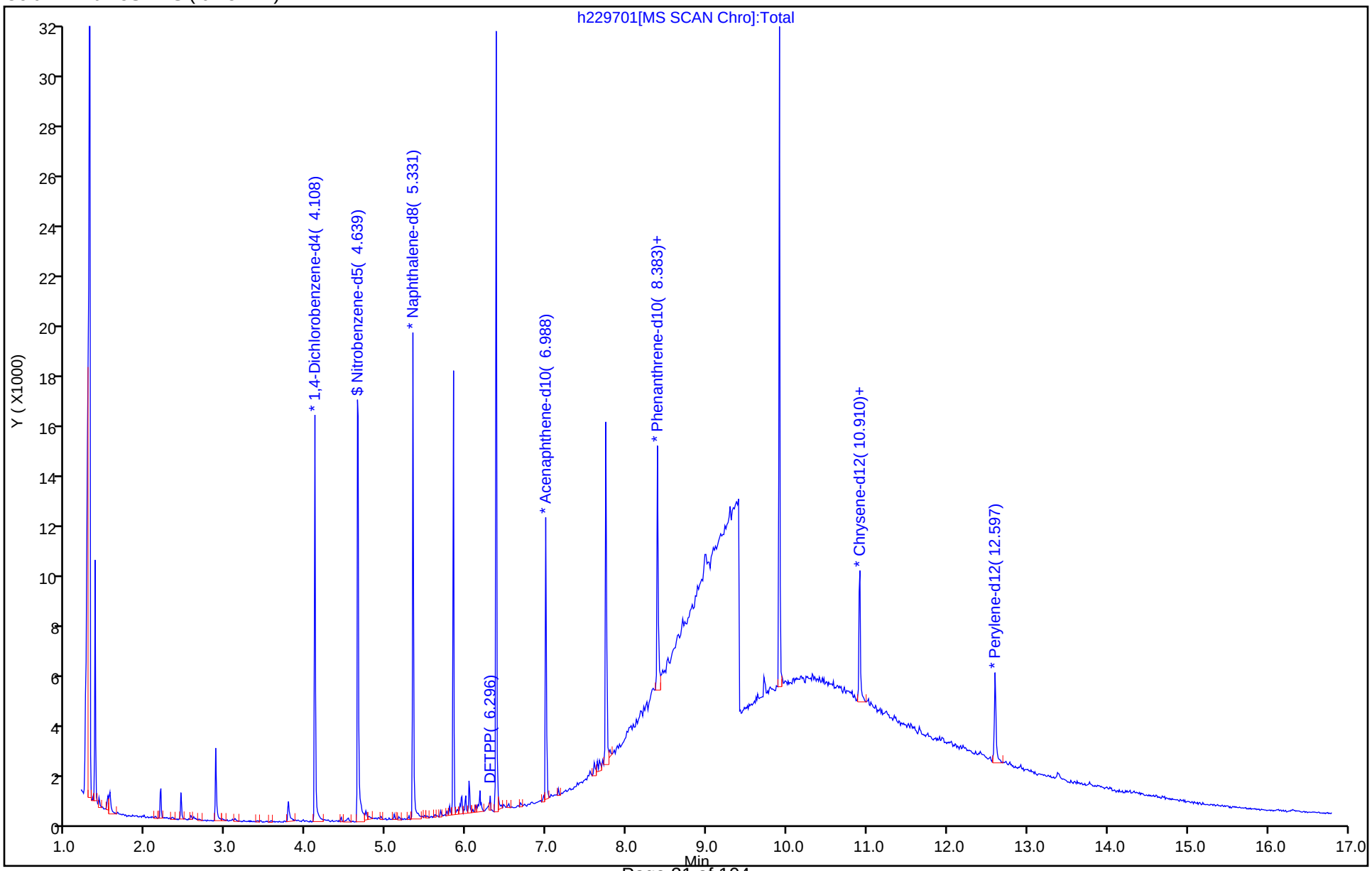
Report Date: 03-May-2018 13:50:40 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229701.D

Injection Date:	02-May-2018 12:08:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	460-155037-B-2-A	Lab Sample ID:	460-155037-2	Worklist Smp#:	10
Client ID:	MW-1				
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-155037-1

SDG No.:

Client Sample ID: MW-3 | Lab Sample ID: 460-155037-3

Matrix: Water | Lab File ID: h229702.D

Analysis Method: 8270D SIM | Date Collected: 04/26/2018 17:30

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 245(mL) | Date Analyzed: 05/02/2018 12:30

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.18	U	0.18	0.18

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	66		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229702.D
Lims ID: 460-155037-B-3-A
Client ID: MW-3
Sample Type: Client
Inject. Date: 02-May-2018 12:30:30 ALS Bottle#: 11 Worklist Smp#: 11
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-011
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:51:41 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:51:41

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
* 5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	100	5477	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	91	18546	0.6618	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	100	14300	0.2000	
* 11 Acenaphthene-d10	164	6.988	6.989	-0.001	99	4489	0.2000	
* 17 Phenanthrene-d10	188	8.383	8.383	0.000	97	7452	0.2000	
* 25 Chrysene-d12	240	10.910	10.910	0.000	95	4876	0.2000	
* 30 Perylene-d12	264	12.597	12.597	0.000	100	3726	0.2000	

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

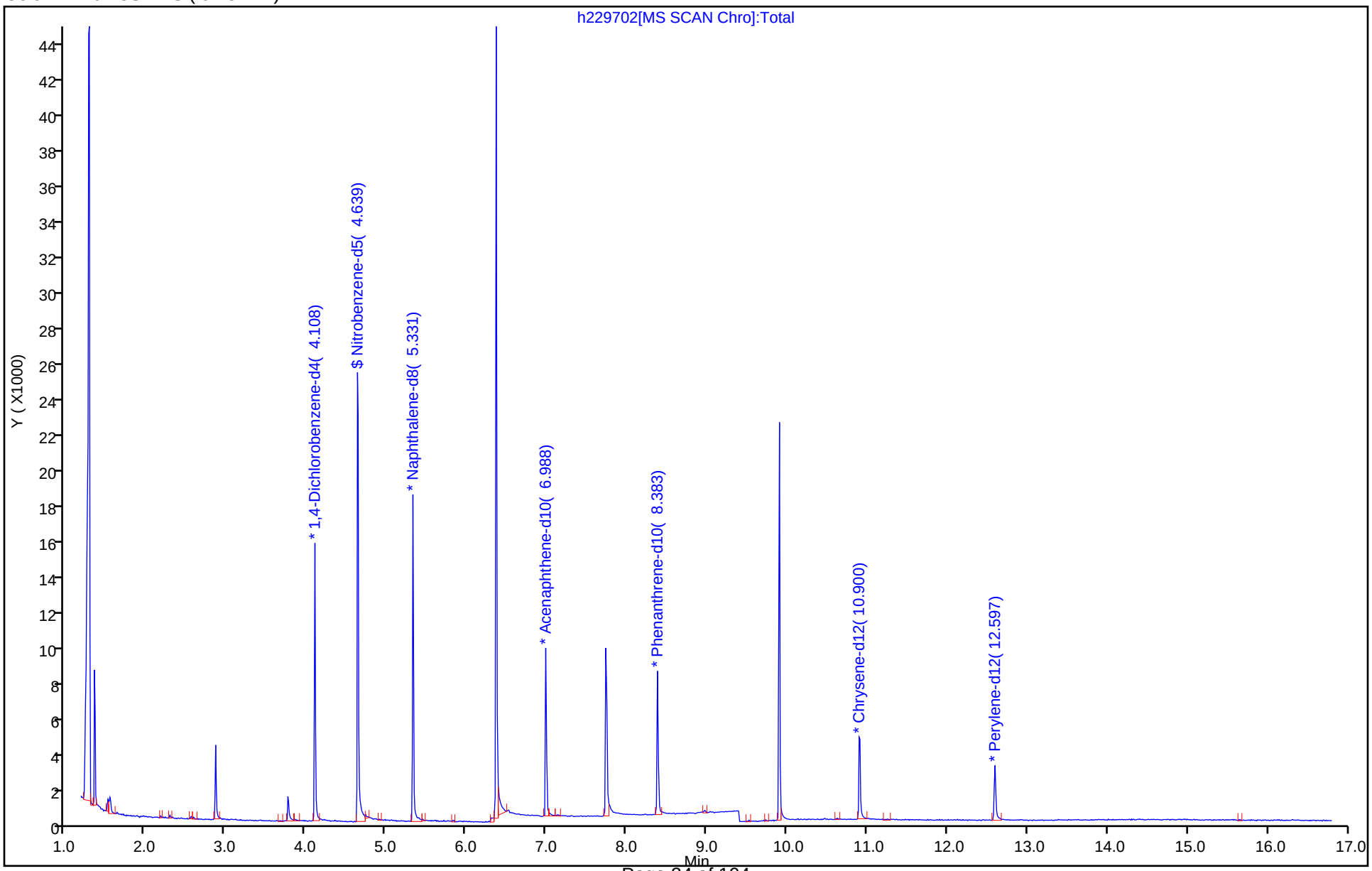
Report Date: 03-May-2018 13:51:44 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229702.D

Injection Date:	02-May-2018 12:30:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	460-155037-B-3-A	Lab Sample ID:	460-155037-3	Worklist Smp#:	11
Client ID:	MW-3				
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-155037-1

SDG No.:

Client Sample ID: FB | Lab Sample ID: 460-155037-4

Matrix: Water | Lab File ID: h229703.D

Analysis Method: 8270D SIM | Date Collected: 04/26/2018 18:00

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 245(mL) | Date Analyzed: 05/02/2018 12:52

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.18	U	0.18	0.18

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	68		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229703.D
Lims ID: 460-155037-A-4-A
Client ID: FB
Sample Type: Client
Inject. Date: 02-May-2018 12:52:30 ALS Bottle#: 12 Worklist Smp#: 12
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-012
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:52:04 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:52:14

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
* 5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	100	6266	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	93	20514	0.6766	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	100	15472	0.2000	
* 11 Acenaphthene-d10	164	6.989	6.989	0.000	99	5438	0.2000	
* 17 Phenanthrene-d10	188	8.383	8.383	0.000	98	8653	0.2000	
* 25 Chrysene-d12	240	10.910	10.910	0.000	95	4811	0.2000	
* 30 Perylene-d12	264	12.597	12.597	0.000	99	3375	0.2000	

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

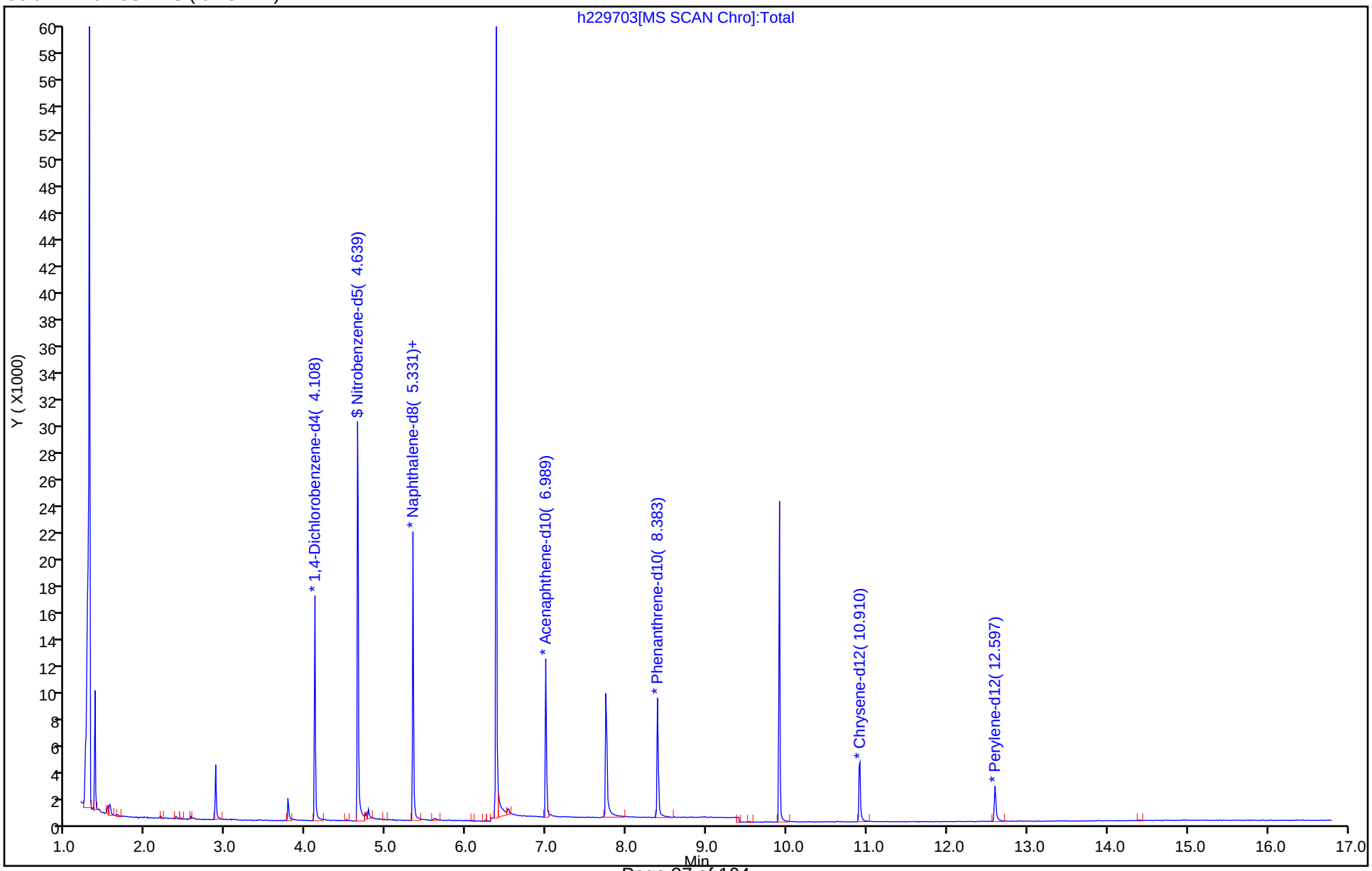
Report Date: 03-May-2018 13:52:15 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229703.D

Injection Date:	02-May-2018 12:52:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	460-155037-A-4-A	Lab Sample ID:	460-155037-4	Worklist Smp#:	12
Client ID:	FB				
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	12
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-155037-1

SDG No.:

Client Sample ID: MW-3D | Lab Sample ID: 460-155037-5

Matrix: Water | Lab File ID: h229704.D

Analysis Method: 8270D SIM | Date Collected: 04/26/2018 17:35

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 250(mL) | Date Analyzed: 05/02/2018 13:14

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.17	U	0.17	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	72		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229704.D
Lims ID: 460-155037-A-5-A
Client ID: MW-3D
Sample Type: Client
Inject. Date: 02-May-2018 13:14:30 ALS Bottle#: 13 Worklist Smp#: 13
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-013
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:52:33 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:52:33

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
* 5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	100	6052	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	92	21717	0.7248	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	100	15289	0.2000	
* 11 Acenaphthene-d10	164	6.989	6.989	0.000	100	5117	0.2000	
* 17 Phenanthrene-d10	188	8.383	8.383	0.000	98	7905	0.2000	
* 25 Chrysene-d12	240	10.910	10.910	0.000	96	4837	0.2000	
* 30 Perylene-d12	264	12.597	12.597	0.000	100	3472	0.2000	

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

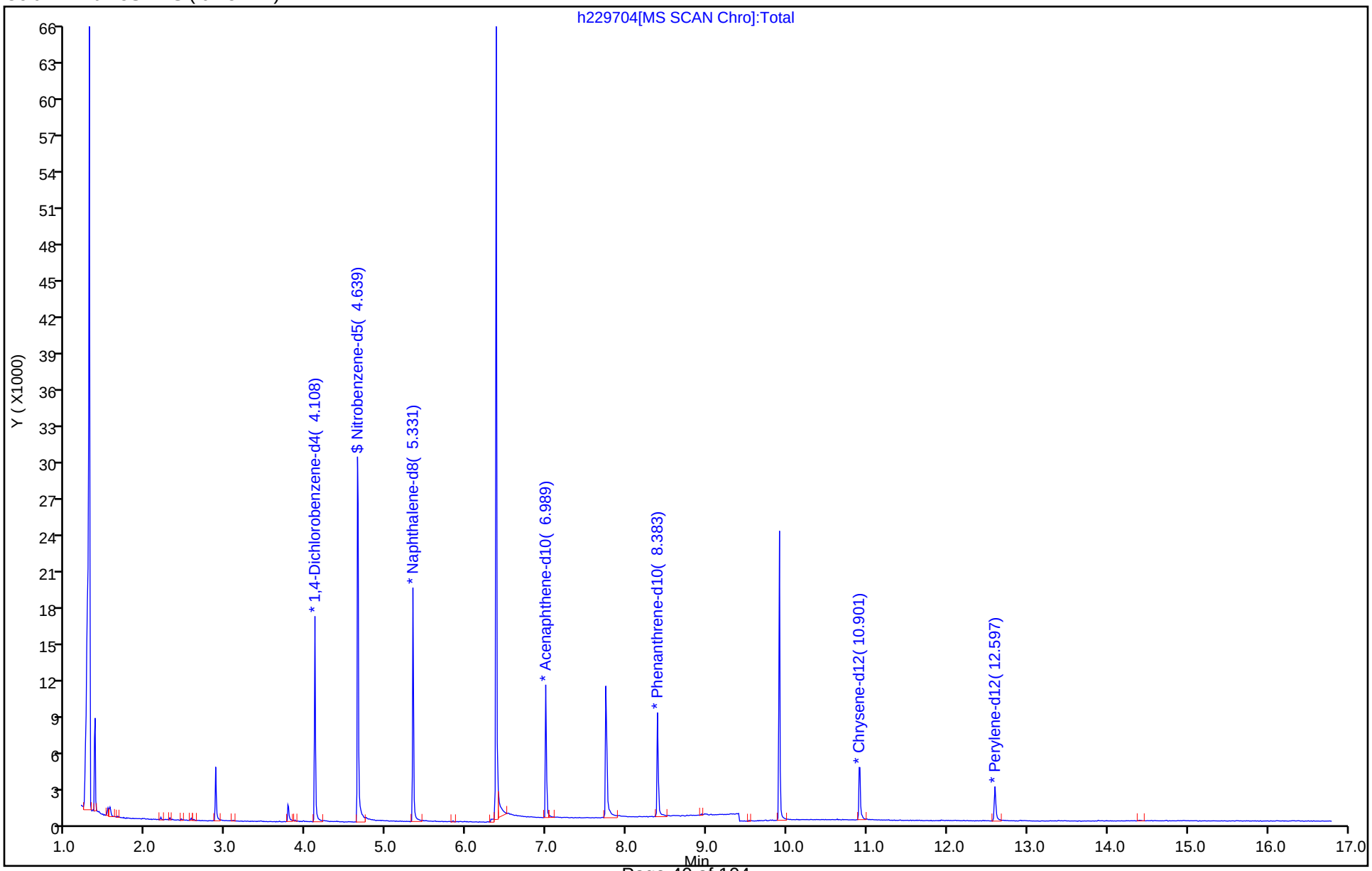
Report Date: 03-May-2018 13:52:34 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229704.D

Injection Date:	02-May-2018 13:14:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	460-155037-A-5-A	Lab Sample ID:	460-155037-5	Worklist Smp#:	13
Client ID:	MW-3D				
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	13
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



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

Lab Name: TestAmerica Edison Job No.: 460-155037-1 Analy Batch No.: 510570

SDG No.:

Instrument ID: CBNAMS9 GC Column: Rtxi-5Sil M ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/12/2018 14:15 Calibration End Date: 04/12/2018 16:01 Calibration ID: 67607

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	ICIS 460-510570/2	h229154.D
Level 2	STD6 460-510570/3	h229155.D
Level 3	STD5 460-510570/4	h229156.D
Level 4	STD4 460-510570/5	h229157.D
Level 5	STD2 460-510570/6	h229158.D
Level 6	STD1 460-510570/7	h229159.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,4-Dioxane	0.5502 0.3685	0.5454	0.5534	0.6085	0.6648	Ave		0.5485			0.0100	18.1		20.0			
Nitrobenzene-d5	0.3873 0.3659	0.4023	0.3963	0.3989	0.4010	Ave		0.3919			0.0100	3.5		20.0			

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

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

Lab Name: TestAmerica Edison Job No.: 460-155037-1 Analy Batch No.: 510570

SDG No.:

Instrument ID: CBNAMS9 GC Column: Rtxi-5Sil M ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/12/2018 14:15 Calibration End Date: 04/12/2018 16:01 Calibration ID: 67607

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	ICIS 460-510570/2	h229154.D
Level 2	STD6 460-510570/3	h229155.D
Level 3	STD5 460-510570/4	h229156.D
Level 4	STD4 460-510570/5	h229157.D
Level 5	STD2 460-510570/6	h229158.D
Level 6	STD1 460-510570/7	h229159.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
1,4-Dioxane	DCBd 4	Ave	2371 337	20217	8598	4374	1305	0.200 0.0400	2.00	0.800	0.400	0.100
Nitrobenzene-d5	NPT	Ave	8779 2186	193754	19949	14789	4039	0.400 0.100	10.0	1.00	0.800	0.200

Curve Type Legend:
Ave = Average ISTD

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229154.D
Lims ID: icis
Client ID:
Sample Type: ICIS Calib Level: 3
Inject. Date: 12-Apr-2018 14:15:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0070269-002
Operator ID: Instrument ID: CBNAMS9
Sublist: chrom-BNsurrSIM_LVI_9*sub4

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 12-Apr-2018 16:48:40 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK027

First Level Reviewer: asfawa Date: 12-Apr-2018 16:48:26

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.768	1.768	0.000	48	2371	0.2000	0.2006	
2 N-Nitrosodimethylamine	74	1.994	1.994	0.000	62	1431	0.1000	0.1023	
3 Bis(2-chloroethyl)ether	93	4.086	4.086	0.000	51	466	0.0200	0.0187	
* 5 1,4-Dichlorobenzene-d4	152	4.343	4.343	0.000	98	4309	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.866	4.866	0.000	93	8779	0.4000	0.3953	
* 7 Naphthalene-d8	136	5.550	5.550	0.000	99	11334	0.2000	0.2000	
8 Naphthalene	128	5.574	5.574	0.000	80	1531	0.0200	0.0210	
$ 9 2-Fluorobiphenyl	172	6.583	6.583	0.000	98	15814	0.4000	0.4147	
10 Acenaphthylene	152	7.069	7.069	0.000	92	1344	0.0200	0.0207	
* 11 Acenaphthene-d10	164	7.214	7.214	0.000	93	3773	0.2000	0.2000	
12 Acenaphthene	154	7.240	7.240	0.000	88	684	0.0200	0.0201	
13 Fluorene	166	7.727	7.727	0.000	52	834	0.0200	0.0220	
14 4,6-Dinitro-2-methylphenol	198	7.780	7.780	0.000	73	998	0.4000	0.3671	
$ 20 2,4,6-Tribromophenol	330	7.951	7.951	0.000	92	2799	0.4000	0.4006	
15 Hexachlorobenzene	284	8.253	8.253	0.000	34	446	0.0200	0.0184	
16 Pentachlorophenol	266	8.437	8.437	0.000	93	454	0.1000	0.0781	
* 17 Phenanthrene-d10	188	8.608	8.608	0.000	100	7358	0.2000	0.2000	
18 Phenanthrene	178	8.621	8.621	0.000	92	1120	0.0200	0.0204	
19 Anthracene	178	8.674	8.674	0.000	95	962	0.0200	0.0182	
21 Fluoranthene	202	9.742	9.742	0.000	95	1060	0.0200	0.0206	
22 Pyrene	202	9.957	9.957	0.000	92	1102	0.0200	0.0214	
$ 23 Terphenyl-d14	244	10.113	10.113	0.000	98	8727	0.4000	0.4116	
24 Benzo[a]anthracene	228	11.195	11.195	0.000	81	798	0.0200	0.0213	
* 25 Chrysene-d12	240	11.204	11.204	0.000	97	5381	0.2000	0.2000	
26 Chrysene	228	11.234	11.234	0.000	94	925	0.0200	0.0209	
27 Benzo[b]fluoranthene	252	12.530	12.530	0.000	95	754	0.0200	0.0207	
28 Benzo[k]fluoranthene	252	12.569	12.569	0.000	84	832	0.0200	0.0199	
29 Benzo[a]pyrene	252	12.969	12.969	0.000	93	647	0.0200	0.0202	
* 30 Perylene-d12	264	13.057	13.057	0.000	100	4718	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.578	14.578	0.000	86	622	0.0200	0.0195	
32 Dibenz(a,h)anthracene	278	14.617	14.617	0.000	80	581	0.0200	0.0191	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
33 Benzo[g,h,i]perylene	276	14.987	14.987	0.000	86	804	0.0200	0.0212	

Reagents:

SM_simSlviL3_00010 Amount Added: 1.00 Units: mL

Report Date: 12-Apr-2018 16:48:43 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229154.D

Injection Date: 12-Apr-2018 14:15:30 Instrument ID: CBNAMS9 Operator ID:

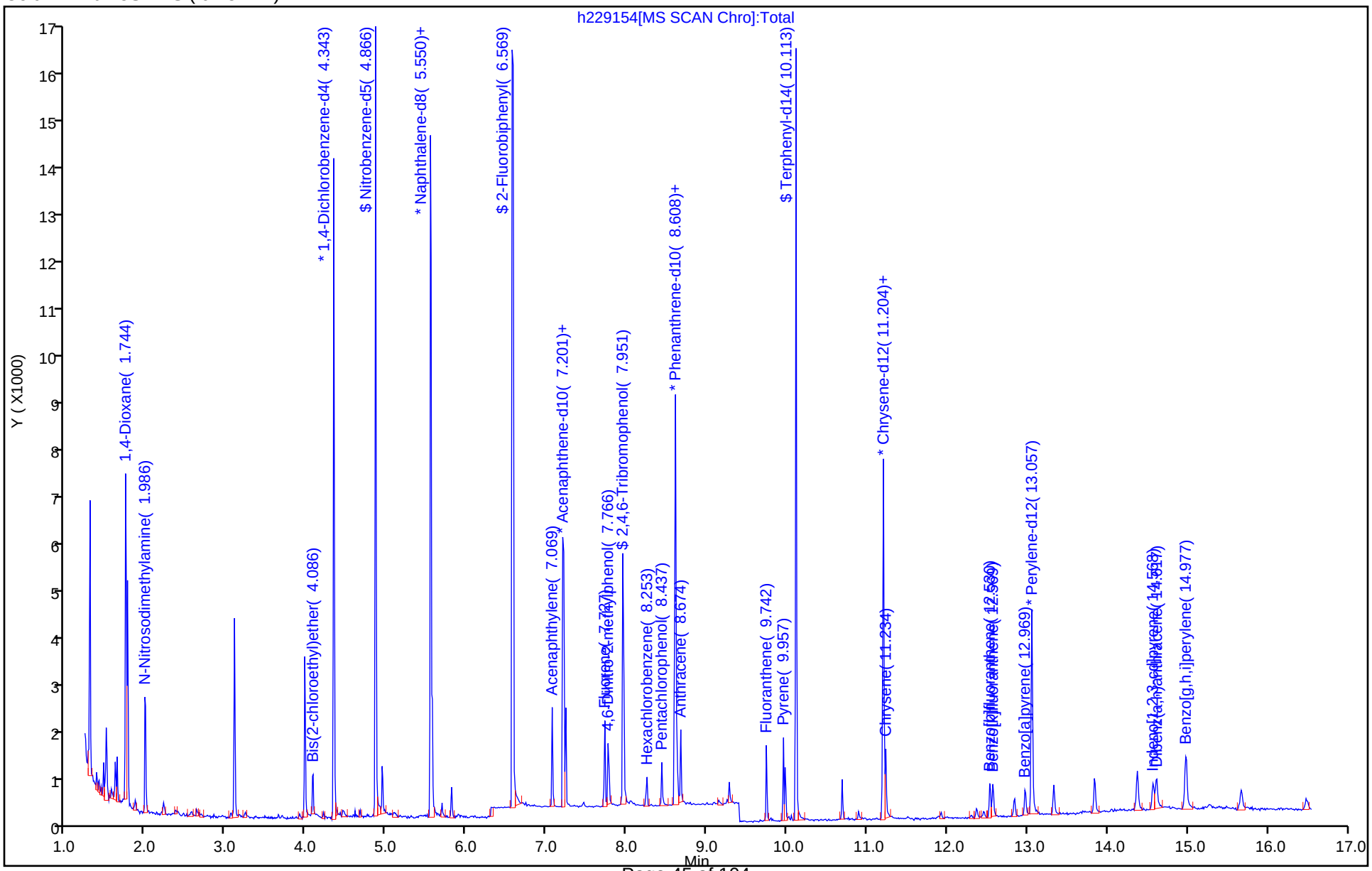
Lims ID: icis Worklist Smp#: 2

Client ID:

Injection Vol: 5.0 ul Dil. Factor: 1.0000 ALS Bottle#: 2

Method: BNsurrSIM_LVI_9 Limit Group: SV 8270D SIM ICAL

Column: Rtxi-5Sil MS (0.25 mm)



Report Date: 12-Apr-2018 16:48:48 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229155.D
Lims ID: std6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 12-Apr-2018 14:36:30 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0070269-003
Operator ID: Instrument ID: CBNAMS9
Sublist: chrom-BNsurrSIM_LVI_9*sub4

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 12-Apr-2018 16:48:46 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK027

First Level Reviewer: zhaoc Date: 12-Apr-2018 15:24:55

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.760	1.768	-0.008	70	20217	2.00	1.99	
2 N-Nitrosodimethylamine	74	1.978	1.994	-0.016	62	11884	1.00	0.9879	
3 Bis(2-chloroethyl)ether	93	4.078	4.086	-0.008	39	21117	1.00	0.9872	
* 5 1,4-Dichlorobenzene-d4	152	4.343	4.343	0.000	98	3707	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.866	4.866	0.000	90	193754	10.0	10.3	
* 7 Naphthalene-d8	136	5.550	5.550	0.000	100	9633	0.2000	0.2000	
8 Naphthalene	128	5.574	5.574	0.000	80	23751	0.4000	0.3838	
$ 9 2-Fluorobiphenyl	172	6.582	6.583	-0.001	98	301934	10.0	9.49	
10 Acenaphthylene	152	7.069	7.069	0.000	94	22867	0.4000	0.4231	
* 11 Acenaphthene-d10	164	7.201	7.214	-0.013	98	3147	0.2000	0.2000	
12 Acenaphthene	154	7.240	7.240	0.000	77	11336	0.4000	0.3993	
13 Fluorene	166	7.727	7.727	0.000	77	12821	0.4000	0.4050	
14 4,6-Dinitro-2-methylphenol	198	7.766	7.780	-0.014	83	7049	2.00	2.00	
$ 20 2,4,6-Tribromophenol	330	7.951	7.951	0.000	94	68441	10.0	11.7	
15 Hexachlorobenzene	284	8.253	8.253	0.000	54	20409	1.00	1.03	
16 Pentachlorophenol	266	8.437	8.437	0.000	88	7889	1.00	1.00	
* 17 Phenanthrene-d10	188	8.608	8.608	0.000	100	6009	0.2000	0.2000	
18 Phenanthrene	178	8.621	8.621	0.000	96	17758	0.4000	0.3969	M
19 Anthracene	178	8.674	8.674	0.000	99	18671	0.4000	0.4334	a
21 Fluoranthene	202	9.742	9.742	0.000	96	16839	0.4000	0.4009	
22 Pyrene	202	9.957	9.957	0.000	91	18540	0.4000	0.3759	
$ 23 Terphenyl-d14	244	10.113	10.113	0.000	97	184702	10.0	9.08	
24 Benzo[a]anthracene	228	11.195	11.195	0.000	34	13773	0.4000	0.3840	
* 25 Chrysene-d12	240	11.204	11.204	0.000	98	5162	0.2000	0.2000	
26 Chrysene	228	11.234	11.234	0.000	99	16214	0.4000	0.3815	
27 Benzo[b]fluoranthene	252	12.530	12.530	0.000	95	13771	0.4000	0.3810	
28 Benzo[k]fluoranthene	252	12.569	12.569	0.000	85	16431	0.4000	0.3967	
29 Benzo[a]pyrene	252	12.969	12.969	0.000	97	13116	0.4000	0.4124	
* 30 Perylene-d12	264	13.057	13.057	0.000	100	4681	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.568	14.578	-0.010	93	12541	0.4000	0.3958	
32 Dibenz(a,h)anthracene	278	14.607	14.617	-0.009	81	12185	0.4000	0.4027	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
33 Benzo[g,h,i]perylene	276	14.987	14.987	0.000	86	13898	0.4000	0.3697	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

SM_simSlviL6_00008 Amount Added: 1.00 Units: mL

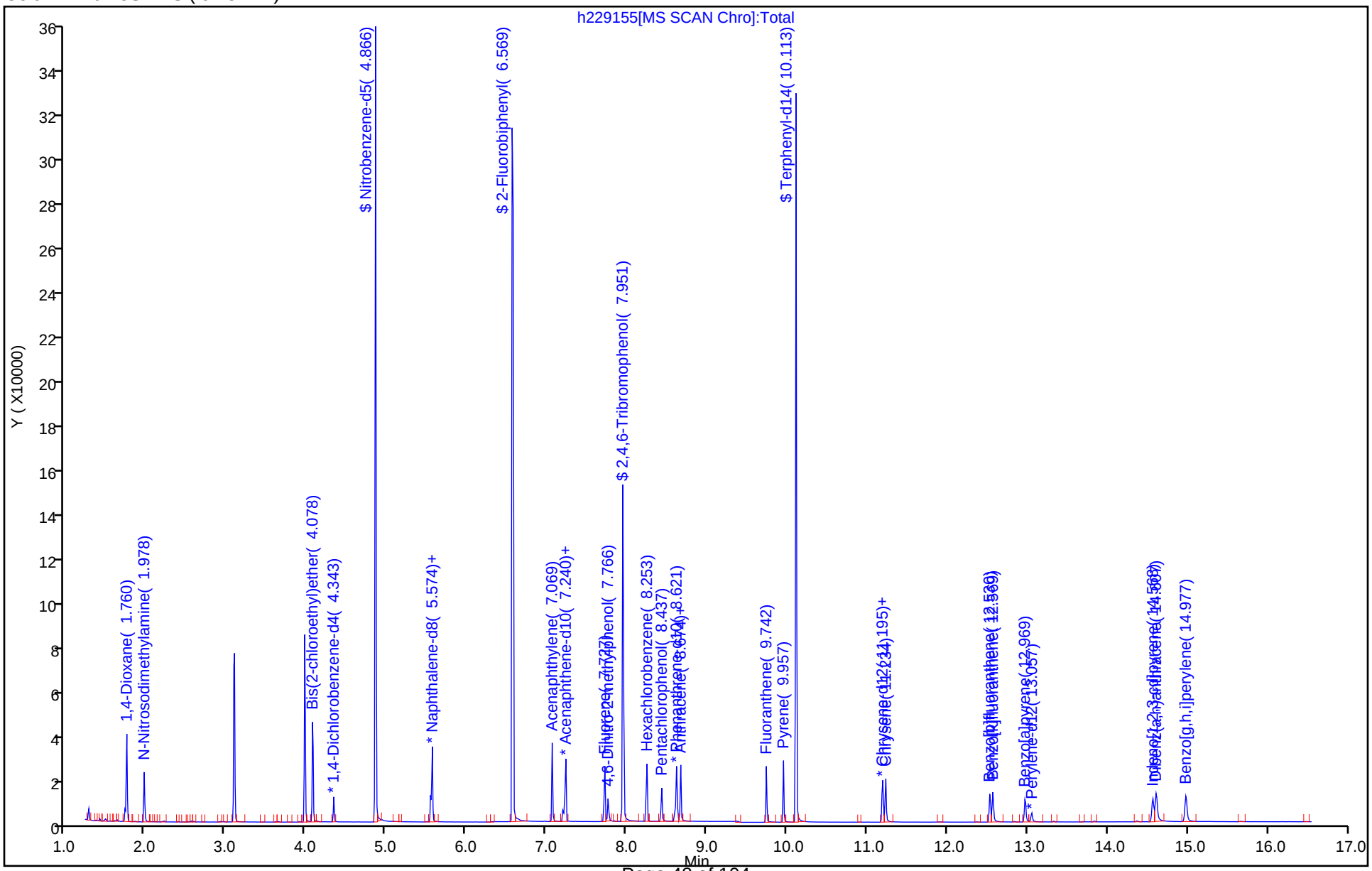
Report Date: 12-Apr-2018 16:48:48 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229155.D

Injection Date:	12-Apr-2018 14:36:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	std6			Worklist Smp#:	3
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



Report Date: 12-Apr-2018 16:48:52 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229156.D
Lims ID: std5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 12-Apr-2018 14:57:30 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0070269-004
Operator ID: Instrument ID: CBNAMS9
Sublist: chrom-BNsurrSIM_LVI_9*sub4

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 12-Apr-2018 16:48:51 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK027

First Level Reviewer: zhaoc Date: 12-Apr-2018 15:43:11

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.769	1.768	0.001	61	8598	0.8000	0.8072	
2 N-Nitrosodimethylamine	74	1.986	1.994	-0.008	77	5133	0.4000	0.4073	
3 Bis(2-chloroethyl)ether	93	4.078	4.086	-0.008	49	8720	0.4000	0.3891	
* 5 1,4-Dichlorobenzene-d4	152	4.343	4.343	0.000	97	3884	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.866	4.866	0.000	91	19949	1.00	1.01	
* 7 Naphthalene-d8	136	5.550	5.550	0.000	100	10067	0.2000	0.2000	
8 Naphthalene	128	5.574	5.574	0.000	87	13404	0.2000	0.2072	
$ 9 2-Fluorobiphenyl	172	6.569	6.583	-0.014	97	33498	1.00	0.9694	
10 Acenaphthylene	152	7.069	7.069	0.000	99	11938	0.2000	0.2033	
* 11 Acenaphthene-d10	164	7.201	7.214	-0.013	99	3419	0.2000	0.2000	
12 Acenaphthene	154	7.240	7.240	0.000	75	5988	0.2000	0.1941	
13 Fluorene	166	7.727	7.727	0.000	78	6917	0.2000	0.2011	
14 4,6-Dinitro-2-methylphenol	198	7.767	7.780	-0.013	78	2986	1.00	1.01	
$ 20 2,4,6-Tribromophenol	330	7.951	7.951	0.000	94	6672	1.00	1.05	
15 Hexachlorobenzene	284	8.253	8.253	0.000	49	8157	0.4000	0.4040	
16 Pentachlorophenol	266	8.437	8.437	0.000	85	2501	0.4000	0.4152	
* 17 Phenanthrene-d10	188	8.608	8.608	0.000	100	6132	0.2000	0.2000	
18 Phenanthrene	178	8.622	8.621	0.001	96	9504	0.2000	0.2081	M
19 Anthracene	178	8.674	8.674	0.000	96	9926	0.2000	0.2258	
21 Fluoranthene	202	9.742	9.742	0.000	97	8704	0.2000	0.2031	
22 Pyrene	202	9.957	9.957	0.000	95	9068	0.2000	0.2108	
$ 23 Terphenyl-d14	244	10.113	10.113	0.000	99	18389	1.00	1.04	
24 Benzo[a]anthracene	228	11.195	11.195	0.000	45	6698	0.2000	0.2141	
* 25 Chrysene-d12	240	11.205	11.204	0.001	98	4502	0.2000	0.2000	
26 Chrysene	228	11.234	11.234	0.000	98	7968	0.2000	0.2150	
27 Benzo[b]fluoranthene	252	12.530	12.530	0.000	95	6434	0.2000	0.2103	
28 Benzo[k]fluoranthene	252	12.569	12.569	0.000	63	7548	0.2000	0.2153	
29 Benzo[a]pyrene	252	12.969	12.969	0.000	94	5737	0.2000	0.2131	
* 30 Perylene-d12	264	13.057	13.057	0.000	100	3962	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.568	14.578	-0.010	91	5587	0.2000	0.2083	
32 Dibenz(a,h)anthracene	278	14.607	14.617	-0.009	76	5202	0.2000	0.2031	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
33 Benzo[g,h,i]perylene	276	14.977	14.987	-0.010	77	6326	0.2000	0.1988	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

SM_simSlviL5_00008 Amount Added: 1.00 Units: mL

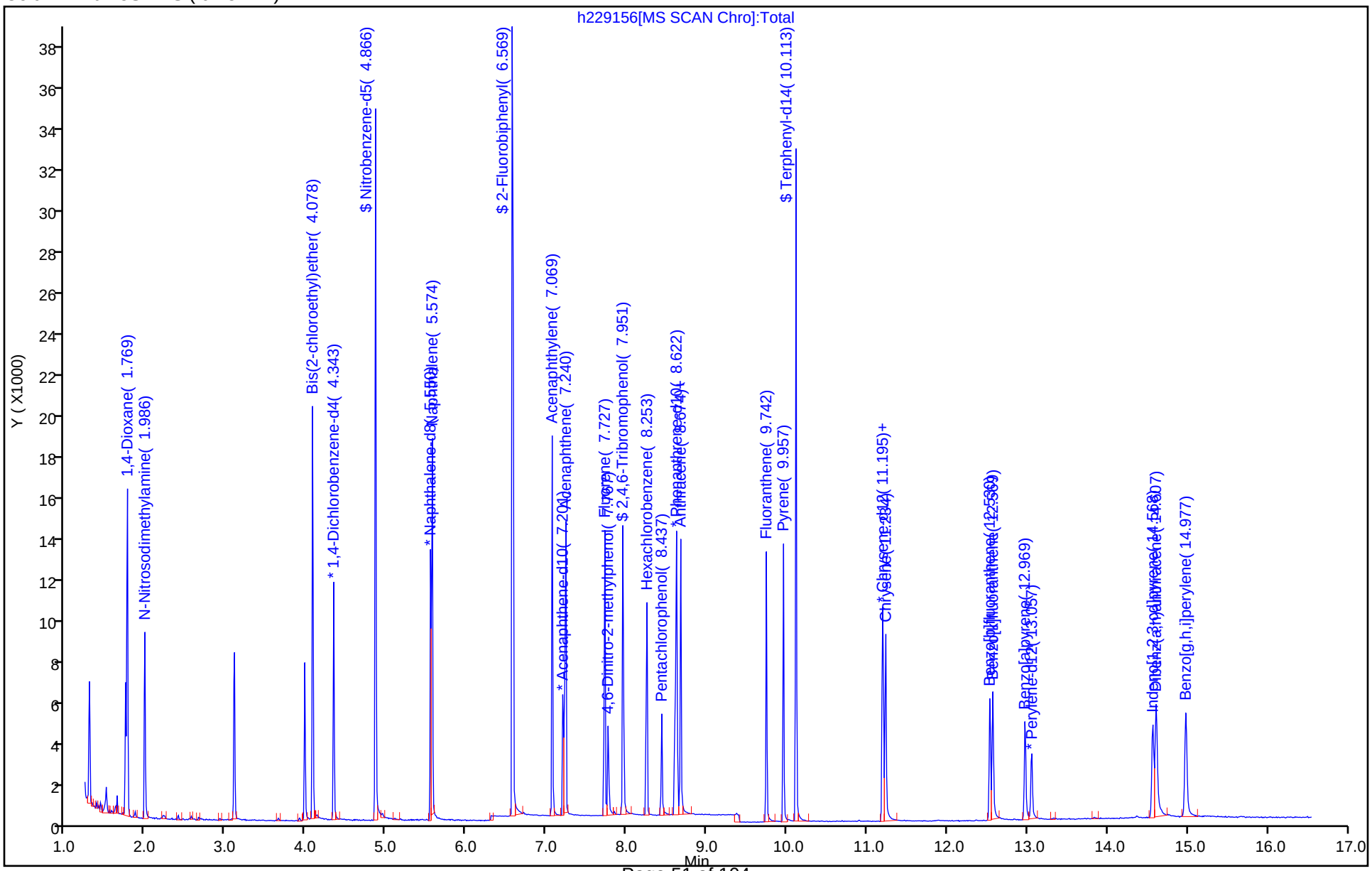
Report Date: 12-Apr-2018 16:48:52 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229156.D

Injection Date:	12-Apr-2018 14:57:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	std5			Worklist Smp#:	4
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



Report Date: 12-Apr-2018 16:48:56 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229157.D
Lims ID: std4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 12-Apr-2018 15:19:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0070269-005
Operator ID: Instrument ID: CBNAMS9
Sublist: chrom-BNsurrSIM_LVI_9*sub4

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 12-Apr-2018 16:48:55 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK027

First Level Reviewer: zhaoc Date: 12-Apr-2018 15:50:29

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.760	1.768	-0.008	55	4374	0.4000	0.4438	
2 N-Nitrosodimethylamine	74	1.978	1.994	-0.016	69	2323	0.2000	0.1992	
3 Bis(2-chloroethyl)ether	93	4.077	4.086	-0.009	61	4036	0.2000	0.1946	
* 5 1,4-Dichlorobenzene-d4	152	4.343	4.343	0.000	96	3594	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.866	4.866	0.000	89	14789	0.8000	0.8143	
* 7 Naphthalene-d8	136	5.550	5.550	0.000	100	9268	0.2000	0.2000	
8 Naphthalene	128	5.574	5.574	0.000	87	6011	0.1000	0.1010	
$ 9 2-Fluorobiphenyl	172	6.569	6.583	-0.014	97	25928	0.8000	0.8206	
10 Acenaphthylene	152	7.069	7.069	0.000	92	5305	0.1000	0.0988	
* 11 Acenaphthene-d10	164	7.201	7.214	-0.013	98	3126	0.2000	0.2000	
12 Acenaphthene	154	7.240	7.240	0.000	82	2743	0.1000	0.0973	
13 Fluorene	166	7.727	7.727	0.000	66	2959	0.1000	0.0941	
14 4,6-Dinitro-2-methylphenol	198	7.766	7.780	-0.014	72	2041	0.8000	0.7990	
$ 20 2,4,6-Tribromophenol	330	7.950	7.951	-0.001	95	4720	0.8000	0.8153	
15 Hexachlorobenzene	284	8.253	8.253	0.000	62	3837	0.2000	0.2062	
16 Pentachlorophenol	266	8.437	8.437	0.000	84	899	0.2000	0.1866	
* 17 Phenanthrene-d10	188	8.608	8.608	0.000	100	5653	0.2000	0.2000	
18 Phenanthrene	178	8.621	8.621	0.000	96	4249	0.1000	0.1009	M
19 Anthracene	178	8.674	8.674	0.000	97	4339	0.1000	0.1071	
21 Fluoranthene	202	9.742	9.742	0.000	94	3966	0.1000	0.1004	
22 Pyrene	202	9.957	9.957	0.000	94	4093	0.1000	0.0946	
$ 23 Terphenyl-d14	244	10.113	10.113	0.000	99	14287	0.8000	0.8010	
24 Benzo[a]anthracene	228	11.195	11.195	0.000	66	2841	0.1000	0.0903	
* 25 Chrysene-d12	240	11.204	11.204	0.000	98	4527	0.2000	0.2000	
26 Chrysene	228	11.234	11.234	0.000	95	3550	0.1000	0.0952	
27 Benzo[b]fluoranthene	252	12.530	12.530	0.000	95	2823	0.1000	0.0994	
28 Benzo[k]fluoranthene	252	12.569	12.569	0.000	69	3305	0.1000	0.1016	
29 Benzo[a]pyrene	252	12.969	12.969	0.000	93	2460	0.1000	0.0985	
* 30 Perylene-d12	264	13.057	13.057	0.000	100	3677	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.568	14.578	-0.010	86	2456	0.1000	0.0987	
32 Dibenz(a,h)anthracene	278	14.607	14.617	-0.009	66	2489	0.1000	0.1047	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
33 Benzo[g,h,i]perylene	276	14.987	14.987	0.000	62	3017	0.1000	0.1022	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

SM_simSlviL4_00007 Amount Added: 1.00 Units: mL

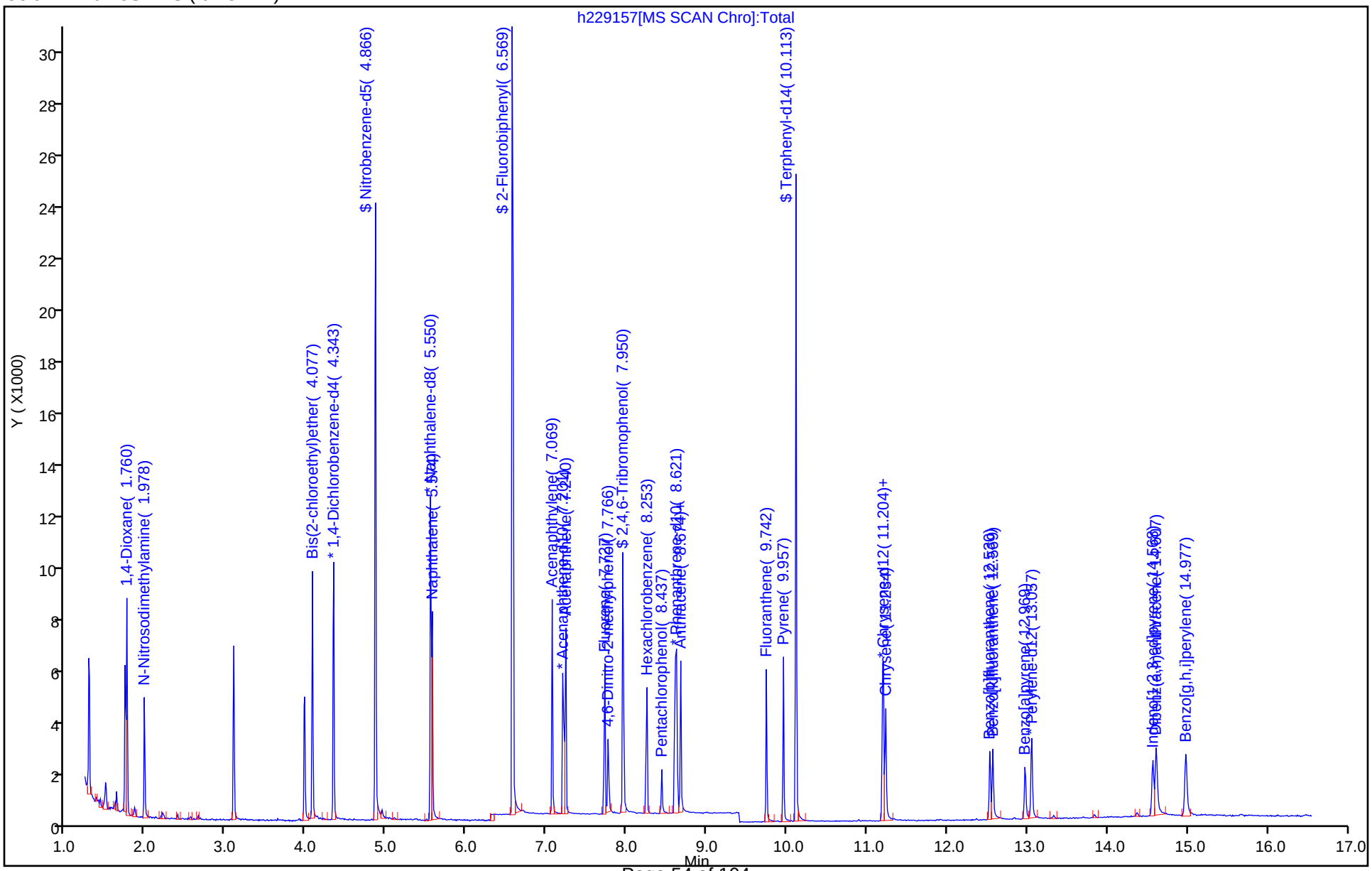
Report Date: 12-Apr-2018 16:48:56 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229157.D

Injection Date:	12-Apr-2018 15:19:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	std4			Worklist Smp#:	5
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229158.D
Lims ID: std2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 12-Apr-2018 15:40:30 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0070269-006
Operator ID: Instrument ID: CBNAMS9
Sublist: chrom-BNsurrSIM_LVI_9*sub4

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 12-Apr-2018 16:48:58 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK027

First Level Reviewer: asfawa Date: 12-Apr-2018 16:05:42

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.776	1.768	0.008	100	1305	0.1000	0.1212	
2 N-Nitrosodimethylamine	74	2.002	1.994	0.008	92	616	0.0500	0.0484	
3 Bis(2-chloroethyl)ether	93	4.086	4.086	0.000	91	106	0.005000	0.004679	
* 5 1,4-Dichlorobenzene-d4	152	4.343	4.343	0.000	98	3926	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.866	4.866	0.000	95	4039	0.2000	0.2046	
* 7 Naphthalene-d8	136	5.550	5.550	0.000	100	10073	0.2000	0.2000	
8 Naphthalene	128	5.574	5.574	0.000	95	629	0.0100	0.009719	
$ 9 2-Fluorobiphenyl	172	6.582	6.583	-0.001	91	7001	0.2000	0.2057	
10 Acenaphthylene	152	7.069	7.069	0.000	100	537	0.0100	0.009286	
* 11 Acenaphthene-d10	164	7.201	7.214	-0.013	99	3367	0.2000	0.2000	
12 Acenaphthene	154	7.240	7.240	0.000	95	303	0.0100	0.0100	
13 Fluorene	166	7.727	7.727	0.000	99	347	0.0100	0.0102	
14 4,6-Dinitro-2-methylphenol	198	7.780	7.780	0.000	80	354	0.2000	0.2021	
$ 20 2,4,6-Tribromophenol	330	7.951	7.951	0.000	100	1111	0.2000	0.1782	
15 Hexachlorobenzene	284	8.253	8.253	0.000	99	115	0.005000	0.005810	a
16 Pentachlorophenol	266	8.437	8.437	0.000	1	152	0.0500	0.0331	Ma
* 17 Phenanthrene-d10	188	8.608	8.608	0.000	100	6012	0.2000	0.2000	
18 Phenanthrene	178	8.621	8.621	0.000	97	441	0.0100	0.009851	Ma
19 Anthracene	178	8.674	8.674	0.000	100	405	0.0100	0.009397	
21 Fluoranthene	202	9.742	9.742	0.000	100	409	0.0100	0.009733	
22 Pyrene	202	9.957	9.957	0.000	99	436	0.0100	0.009828	
$ 23 Terphenyl-d14	244	10.113	10.113	0.000	100	3726	0.2000	0.2037	
24 Benzo[a]anthracene	228	11.195	11.195	0.000	49	319	0.0100	0.009889	
* 25 Chrysene-d12	240	11.204	11.204	0.000	97	4643	0.2000	0.2000	
26 Chrysene	228	11.234	11.234	0.000	99	364	0.0100	0.009522	
27 Benzo[b]fluoranthene	252	12.530	12.530	0.000	97	297	0.0100	0.0100	
28 Benzo[k]fluoranthene	252	12.569	12.569	0.000	94	318	0.0100	0.009363	a
29 Benzo[a]pyrene	252	12.969	12.969	0.000	99	241	0.0100	0.009242	
* 30 Perylene-d12	264	13.057	13.057	0.000	100	3838	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.568	14.578	-0.010	98	255	0.0100	0.009817	M
32 Dibenz(a,h)anthracene	278	14.616	14.617	0.000	36	216	0.0100	0.008707	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
33 Benzo[g,h,i]perylene	276	14.977	14.987	-0.010	88	303	0.0100	0.009830	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

SM_simSlviL2_00008 Amount Added: 1.00 Units: mL

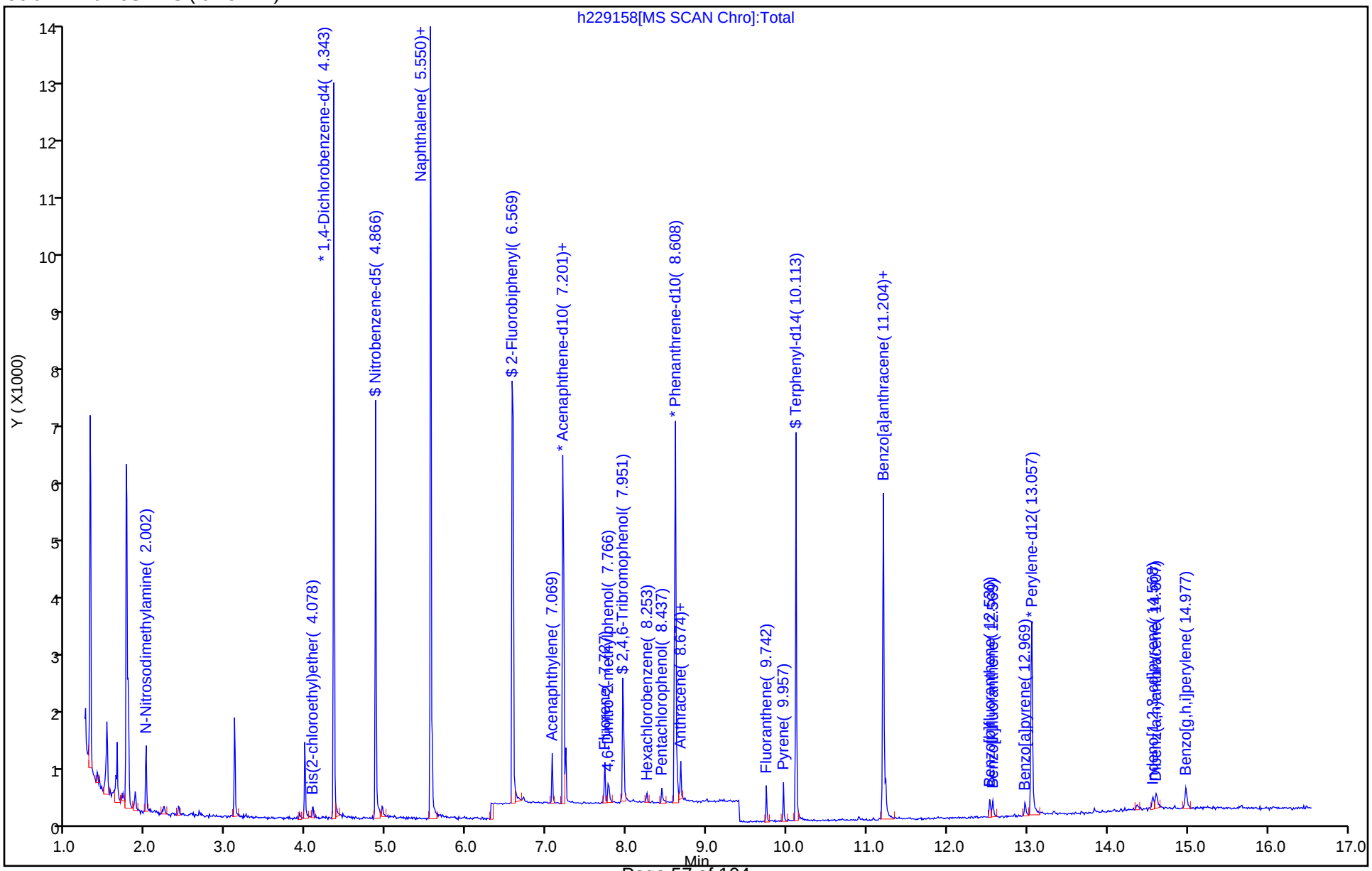
Report Date: 12-Apr-2018 16:49:00 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229158.D

Injection Date:	12-Apr-2018 15:40:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	std2			Worklist Smp#:	6
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D
Lims ID: std1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 12-Apr-2018 16:01:30 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0070269-007
Operator ID: Instrument ID: CBNAMS9
Sublist: chrom-BNsurrSIM_LVI_9*sub4

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 12-Apr-2018 16:49:02 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK027

First Level Reviewer: asfawa Date: 12-Apr-2018 16:23:46

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.704	1.768	-0.064	75	337	0.0400	0.0269	
2 N-Nitrosodimethylamine	74	1.994	1.994	0.000	94	299	0.0200	0.0202	
3 Bis(2-chloroethyl)ether	93	4.078	4.086	-0.008	88	63	0.002000	0.002388	a
* 5 1,4-Dichlorobenzene-d4	152	4.343	4.343	0.000	99	4572	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.866	4.866	0.000	98	2186	0.1000	0.0933	
* 7 Naphthalene-d8	136	5.550	5.550	0.000	100	11950	0.2000	0.2000	
8 Naphthalene	128	5.574	5.574	0.000	100	373	0.005000	0.004858	a
$ 9 2-Fluorobiphenyl	172	6.569	6.583	-0.014	95	4076	0.1000	0.0990	
10 Acenaphthylene	152	7.069	7.069	0.000	100	340	0.005000	0.004860	
* 11 Acenaphthene-d10	164	7.201	7.214	-0.013	98	4073	0.2000	0.2000	
12 Acenaphthene	154	7.240	7.240	0.000	97	194	0.005000	0.005280	
13 Fluorene	166	7.727	7.727	0.000	90	188	0.005000	0.004589	
14 4,6-Dinitro-2-methylphenol	198	7.780	7.780	0.000	78	168	0.1000	0.1191	
$ 20 2,4,6-Tribromophenol	330	7.951	7.951	0.000	95	649	0.1000	0.0860	
15 Hexachlorobenzene	284	8.253	8.253	0.000	1	42	0.002000	0.001690	Ma
16 Pentachlorophenol	266	8.437	8.437	0.000	1	94	0.0200	0.0165	Ma
* 17 Phenanthrene-d10	188	8.608	8.608	0.000	100	7546	0.2000	0.2000	
18 Phenanthrene	178	8.622	8.621	0.001	79	267	0.005000	0.004752	M
19 Anthracene	178	8.674	8.674	0.000	90	234	0.005000	0.004326	a
21 Fluoranthene	202	9.742	9.742	0.000	98	257	0.005000	0.004873	
22 Pyrene	202	9.957	9.957	0.000	99	267	0.005000	0.005027	
$ 23 Terphenyl-d14	244	10.113	10.113	0.000	100	2205	0.1000	0.1007	
24 Benzo[a]anthracene	228	11.195	11.195	0.000	96	195	0.005000	0.005049	a
* 25 Chrysene-d12	240	11.205	11.204	0.001	100	5559	0.2000	0.2000	
26 Chrysene	228	11.234	11.234	0.000	93	234	0.005000	0.005113	a
27 Benzo[b]fluoranthene	252	12.530	12.530	0.000	92	178	0.005000	0.004823	a
28 Benzo[k]fluoranthene	252	12.569	12.569	0.000	53	208	0.005000	0.004917	a
29 Benzo[a]pyrene	252	12.969	12.969	0.000	72	160	0.005000	0.004927	a
* 30 Perylene-d12	264	13.057	13.057	0.000	100	4780	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.568	14.578	-0.010	81	166	0.005000	0.005131	
32 Dibenz(a,h)anthracene	278	14.607	14.617	-0.009	57	171	0.005000	0.005535	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
33 Benzo[g,h,i]perylene	276	14.977	14.987	-0.010	56	195	0.005000	0.005080	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

SM_simSlviL1_00008 Amount Added: 1.00 Units: mL

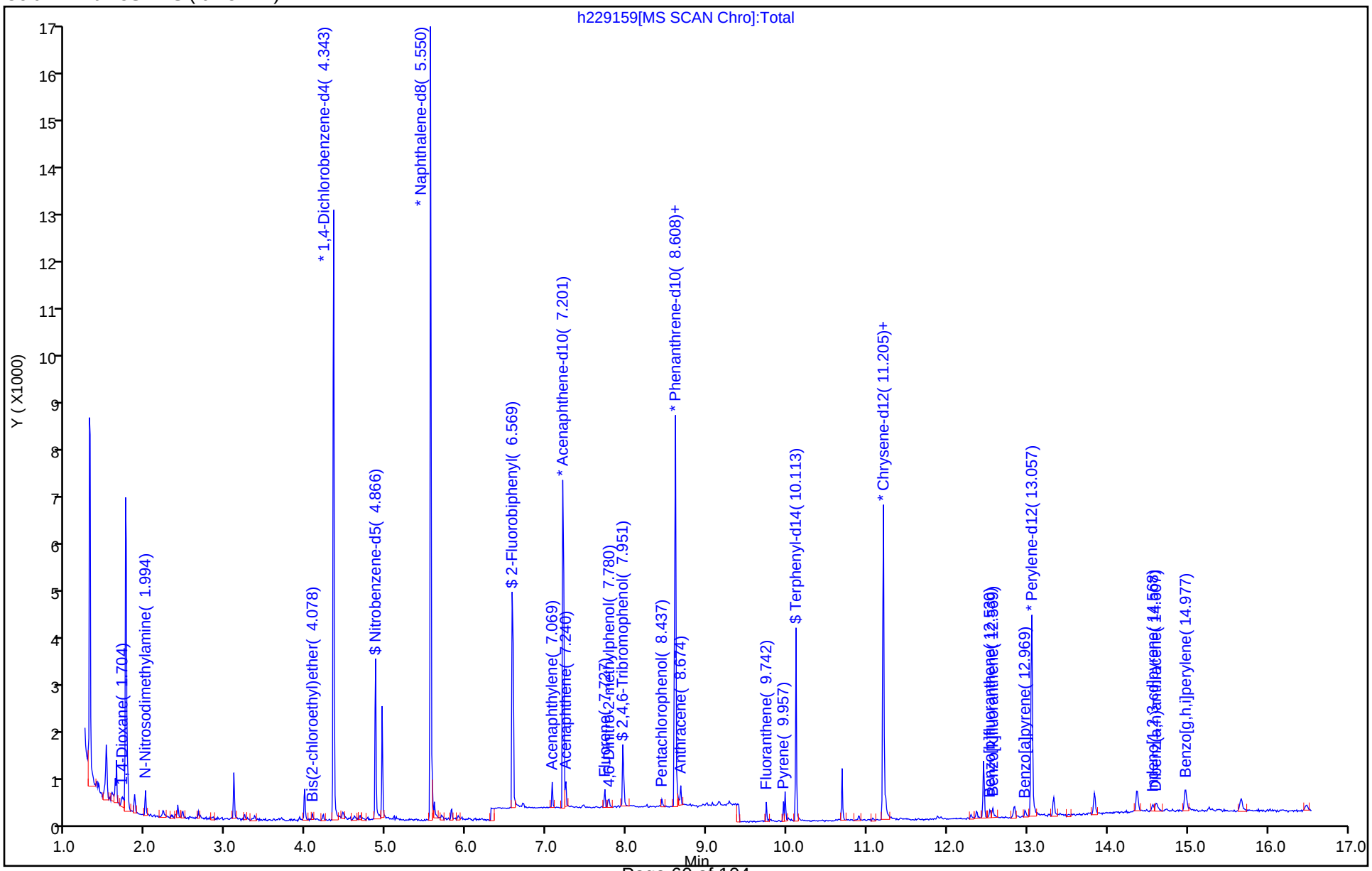
Report Date: 12-Apr-2018 16:49:04 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Injection Date:	12-Apr-2018 16:01:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	std1			Worklist Smp#:	7
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Lab Sample ID: CCVIS 460-515822/2 Calibration Date: 05/02/2018 08:37

Instrument ID: CBNAMS9 Calib Start Date: 04/12/2018 14:15

GC Column: Rtxi-5Sil MS ID: 0.25(mm) Calib End Date: 04/12/2018 16:01

Lab File ID: h229693c.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.5485	0.6932		253	200	26.4*	20.0
N-Nitrosodimethylamine	Ave	0.6490	0.4904		75.6	100	-24.4*	20.0
Bis(2-chloroethyl)ether	Ave	1.154	0.9767	0.7000	16.9	20.0	-15.4	20.0
Naphthalene	Ave	1.285	1.182	0.7000	18.4	20.0	-8.0	20.0
Acenaphthylene	Ave	3.435	3.272	0.9000	19.1	20.0	-4.7	20.0
Acenaphthene	Ave	1.804	1.583	0.9000	17.5	20.0	-12.3	20.0
Fluorene	Ave	2.012	1.818	0.9000	18.1	20.0	-9.6	20.0
4,6-Dinitro-2-methylphenol	Qua		0.0837	0.0100	257	200	28.3*	20.0
Hexachlorobenzene	Ave	0.6585	0.7472	0.1000	22.7	20.0	13.5	20.0
Pentachlorophenol	QuaF		0.1814	0.0500	112	100	12.0	20.0
Phenanthrene	Ave	1.489	1.873	0.7000	25.2	20.0	25.8*	20.0
Anthracene	Ave	1.434	1.696	0.7000	23.7	20.0	18.3	20.0
Fluoranthene	Ave	1.398	1.479	0.6000	21.2	20.0	5.8	20.0
Pyrene	Ave	1.911	2.652	0.6000	27.8	20.0	38.8*	20.0
Benzo[a]anthracene	Ave	1.390	1.507	0.8000	21.7	20.0	8.5	20.0
Chrysene	Ave	1.647	1.996	0.7000	24.2	20.0	21.2*	20.0
Benzo[b]fluoranthene	Ave	1.544	1.467		19.0	20.0	-5.0	20.0
Benzo[k]fluoranthene	Ave	1.770	1.798	0.7000	20.3	20.0	1.6	20.0
Benzo[a]pyrene	Ave	1.359	1.407	0.7000	20.7	20.0	3.6	20.0
Indeno[1,2,3-cd]pyrene	Ave	1.354	1.245	0.5000	18.4	20.0	-8.1	20.0
Dibenz(a,h)anthracene	Ave	1.293	1.138	0.4000	17.6	20.0	-12.0	20.0
Benzo[g,h,i]perylene	Ave	1.606	1.585	0.5000	19.7	20.0	-1.3	20.0
Nitrobenzene-d5	Ave	0.3919	0.3388		346	400	-13.6	20.0

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229693c.D
Lims ID: ccvis
Client ID:
Sample Type: CCVIS
Inject. Date: 02-May-2018 08:37:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-002
Operator ID: Instrument ID: CBNAMS9
Sublist: chrom-BNsurrSIM_LVI_9*sub4

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:44:33 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:44:33

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.533	1.533	0.000	100	4074	0.2000	0.2528	
2 N-Nitrosodimethylamine	74	1.767	1.767	0.000	96	1441	0.1000	0.0756	
3 Bis(2-chloroethyl)ether	93	3.851	3.851	0.000	95	574	0.0200	0.0169	
* 5 1,4-Dichlorobenzene-d4	152	4.100	4.100	0.000	98	5877	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	94	9908	0.4000	0.3458	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	99	14622	0.2000	0.2000	
8 Naphthalene	128	5.355	5.355	0.000	100	1729	0.0200	0.0184	
$ 9 2-Fluorobiphenyl	172	6.370	6.370	0.000	95	23422	0.4000	0.5039	
10 Acenaphthylene	152	6.857	6.857	0.000	100	1505	0.0200	0.0191	
* 11 Acenaphthene-d10	164	6.989	6.989	0.000	100	4599	0.2000	0.2000	
12 Acenaphthene	154	7.028	7.028	0.000	97	728	0.0200	0.0175	
13 Fluorene	166	7.515	7.515	0.000	96	836	0.0200	0.0181	
14 4,6-Dinitro-2-methylphenol	198	7.581	7.581	0.000	83	577	0.2000	0.2567	
$ 20 2,4,6-Tribromophenol	330	7.752	7.752	0.000	89	3346	0.4000	0.3929	
15 Hexachlorobenzene	284	8.041	8.041	0.000	98	515	0.0200	0.0227	
16 Pentachlorophenol	266	8.238	8.238	0.000	92	625	0.1000	0.1120	
* 17 Phenanthrene-d10	188	8.383	8.383	0.000	95	6892	0.2000	0.2000	
18 Phenanthrene	178	8.409	8.409	0.000	93	1291	0.0200	0.0252	
19 Anthracene	178	8.462	8.462	0.000	99	1169	0.0200	0.0237	
21 Fluoranthene	202	9.526	9.526	0.000	100	1019	0.0200	0.0212	
22 Pyrene	202	9.731	9.731	0.000	97	1019	0.0200	0.0278	
$ 23 Terphenyl-d14	244	9.906	9.906	0.000	97	7291	0.4000	0.4816	
24 Benzo[a]anthracene	228	10.901	10.901	0.000	44	579	0.0200	0.0217	
* 25 Chrysene-d12	240	10.910	10.910	0.000	96	3842	0.2000	0.2000	
26 Chrysene	228	10.940	10.940	0.000	99	767	0.0200	0.0242	
27 Benzo[b]fluoranthene	252	12.129	12.129	0.000	98	469	0.0200	0.0190	
28 Benzo[k]fluoranthene	252	12.158	12.158	0.000	50	575	0.0200	0.0203	
29 Benzo[a]pyrene	252	12.529	12.529	0.000	98	450	0.0200	0.0207	
* 30 Perylene-d12	264	12.597	12.597	0.000	100	3198	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.010	14.010	0.000	100	398	0.0200	0.0184	
32 Dibenz(a,h)anthracene	278	14.049	14.049	0.000	97	364	0.0200	0.0176	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
33 Benzo[g,h,i]perylene	276	14.342	14.342	0.000	95	507	0.0200	0.0197	

Reagents:

SM_simSlviL3_00011 Amount Added: 1.00 Units: mL

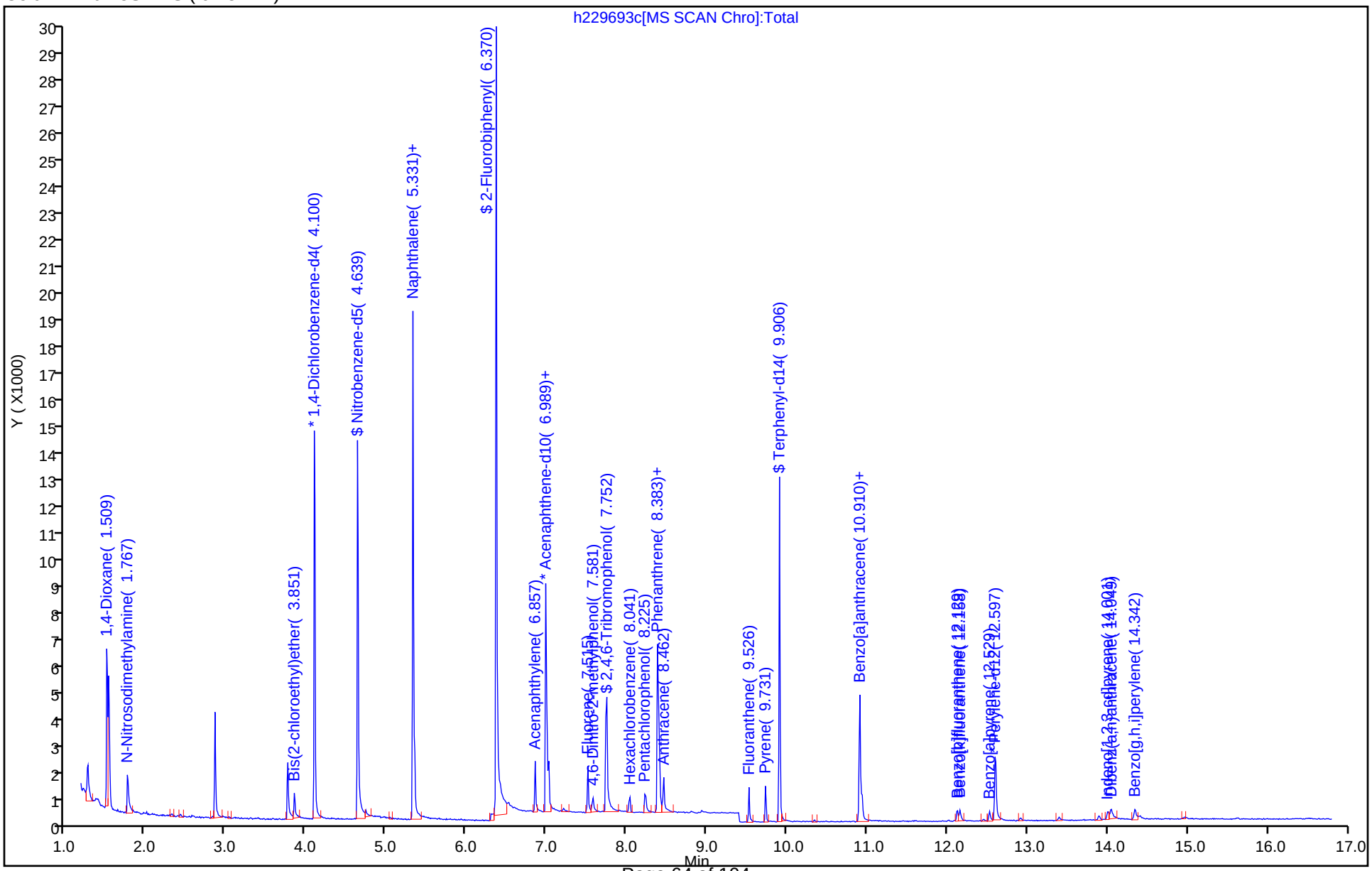
Report Date: 03-May-2018 13:44:36 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229693c.D

Injection Date:	02-May-2018 08:37:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	ccvis			Worklist Smp#:	2
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229153.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 12-Apr-2018 13:07:30 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0070257-001
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 12-Apr-2018 16:42:32 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK027

First Level Reviewer: zhaoc Date: 12-Apr-2018 14:16:35

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
4 Pentachlorophenol_T	266	5.062	5.062	0.000	0	34633	NR	NR	
35 DFTPP									
36 Benzidine_T	184	6.775	6.775	0.000	0	313129	NR	NR	
37 4,4'-DDD	235	7.414	7.414	0.000	0	1021		NR	Ma
39 4,4'-DDT	235	7.711	7.711	0.000	0	141705	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard
Review Flags
M - Manually Integrated
a - User Assigned ID

Reagents:

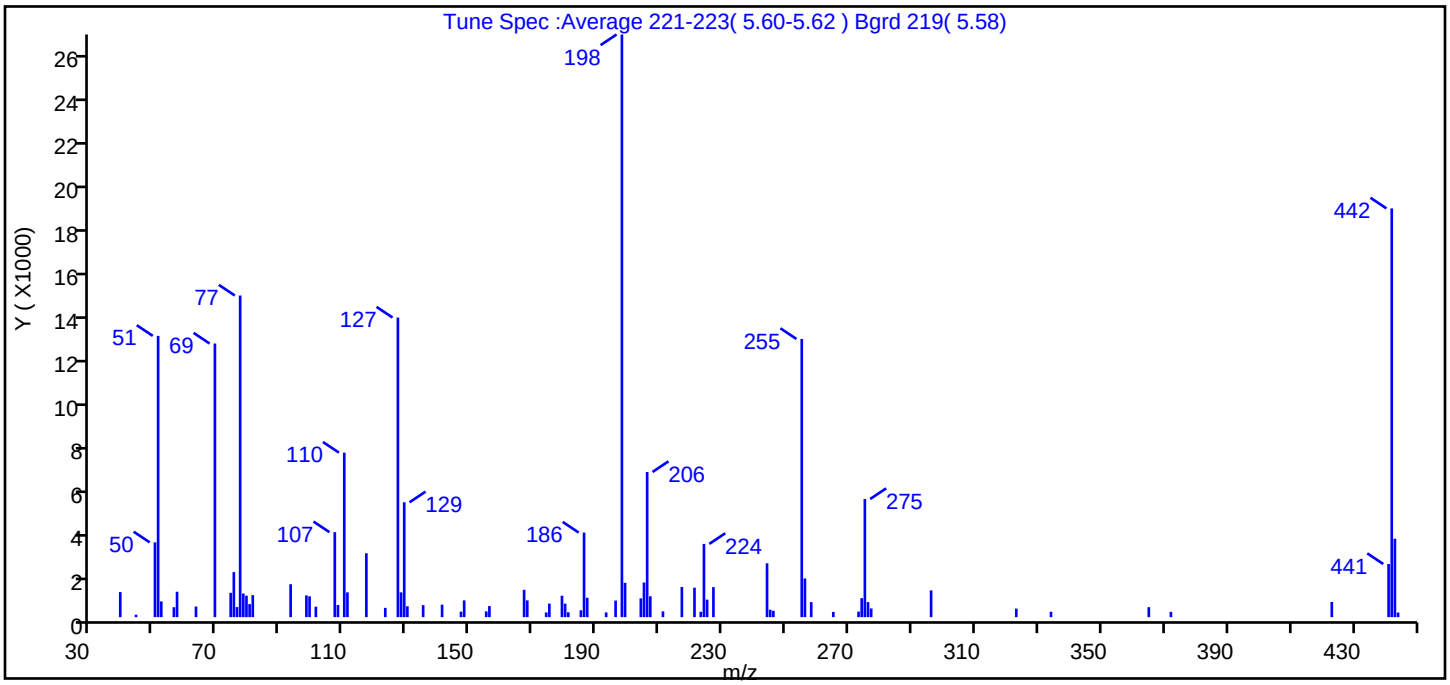
SMDFTP_CH_00024 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229153.D
Injection Date: 12-Apr-2018 13:07:30 Instrument ID: CBNAMS9
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Method: BNsurrSIM_LVI_9 Limit Group: SV 8270D SIM ICAL
Tune Method: DFTPP Method 8270

35 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	48.3
68	<2% of mass 69	0.0 (0.0)
69	Present	47.0
70	<2% of mass 69	0.0 (0.0)
127	40-60% of mass 198	51.4
197	<1% of mass 198	0.0
199	5-9% of mass 198	5.9
275	10-30% of mass 198	20.3
365	>1% of mass 198	1.7
441	Present but less than mass 443	9.1 (67.8)
442	>40% of mass 198	70.1
443	17-23% of mass 442	13.5 (19.2)

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229153.D\BNsurrSIM_LVI_9.rslt\spectra.d
Injection Date: 12-Apr-2018 13:07:30
Spectrum: Tune Spec :Average 221-223(5.60-5.62) Bgrd 219(5.58)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 84

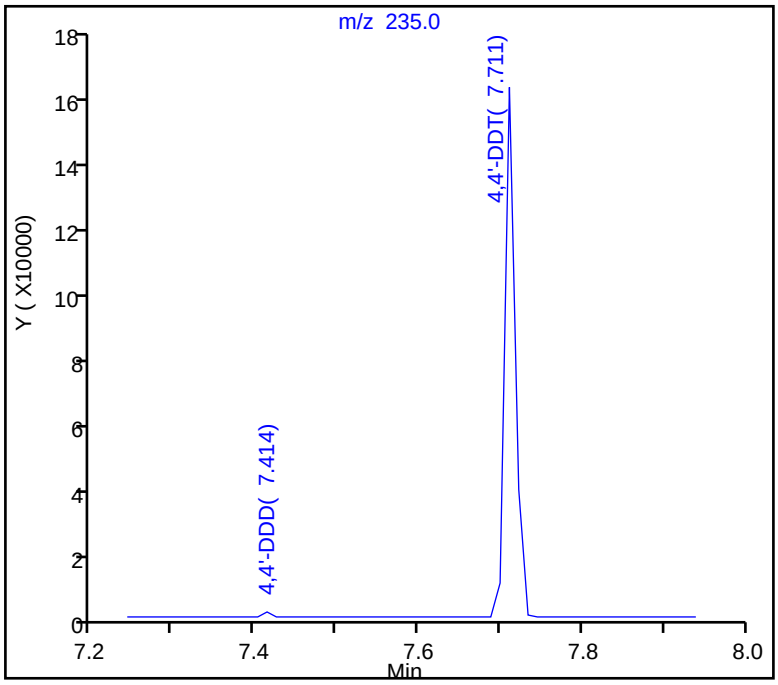
m/z	Y	m/z	Y	m/z	Y	m/z	Y
39.00	1120	107.00	3798	180.00	604	245.00	334
44.00	108	108.00	543	181.00	217	246.00	286
50.00	3344	110.00	7354	185.00	307	255.00	12436
51.00	12574	111.00	1108	186.00	3780	256.00	1729
52.00	703	117.00	2856	187.00	866	258.00	671
56.00	444	123.00	415	193.00	212	265.00	234
57.00	1137	127.00	13392	196.00	740	273.00	248
63.00	475	128.00	1108	198.00	26048	274.00	848
69.00	12232	129.00	5135	199.00	1534	275.00	5282
74.00	1087	130.00	485	204.00	840	276.00	672
75.00	2013	135.00	537	205.00	1549	277.00	389
76.00	450	141.00	558	206.00	6489	296.00	1195
77.00	14378	147.00	246	207.00	933	323.00	380
78.00	1055	148.00	750	211.00	258	334.00	241
79.00	960	155.00	259	217.00	1348	365.00	446
80.00	582	156.00	495	221.00	1317	372.00	239
81.00	984	167.00	1221	223.00	240	423.00	679
93.00	1471	168.00	750	224.00	3274	441.00	2375
98.00	973	174.00	210	225.00	783	442.00	18272
99.00	933	175.00	607	227.00	1342	443.00	3504
101.00	467	179.00	957	244.00	2409	444.00	205

Breakdown Report

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229153.D
Injection Date: 12-Apr-2018 13:07:30 Instrument ID: CBNAMS9
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Method: BNsurrSIM_LVI_9 Limit Group: SV 8270D SIM ICAL

39 4,4'-DDT, Detector: MS SCAN



SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

39 4,4'-DDT, Area = 141705
37 4,4'-DDD, Area = 1021
38 4,4'-DDE, Area = 0

%Breakdown: 0.72%, Max Limit: 20.00%
Passed

Peak Tailing Report

TestAmerica Edison

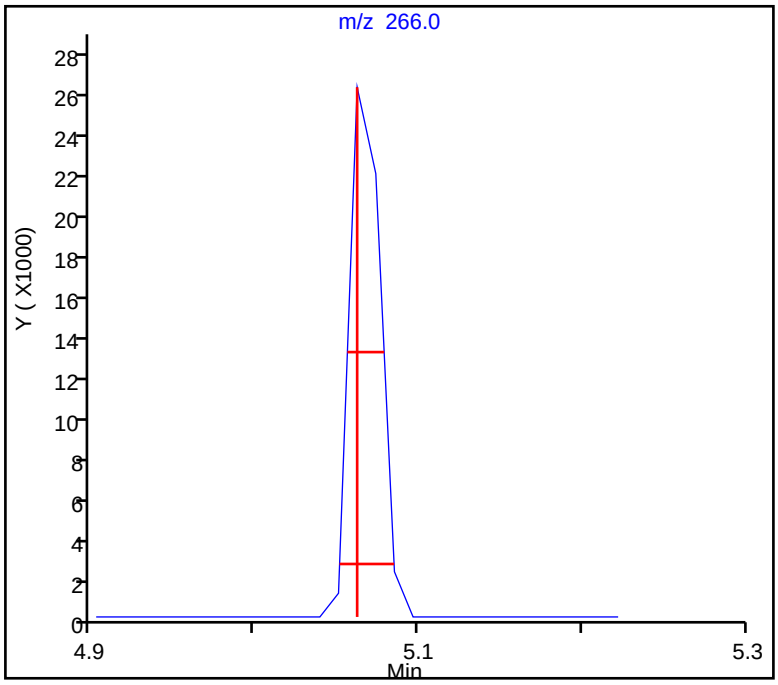
Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229153.D
Injection Date: 12-Apr-2018 13:07:30 Instrument ID: CBNAMS9
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Method: BNsurrSIM_LVI_9 Limit Group: SV 8270D SIM ICAL

4 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.023 (min.)
Front Width = 0.011 (min.)

Tailing Factor = * 2.1, Max. Tailing < 2.00
Failed



Peak Tailing Report

TestAmerica Edison

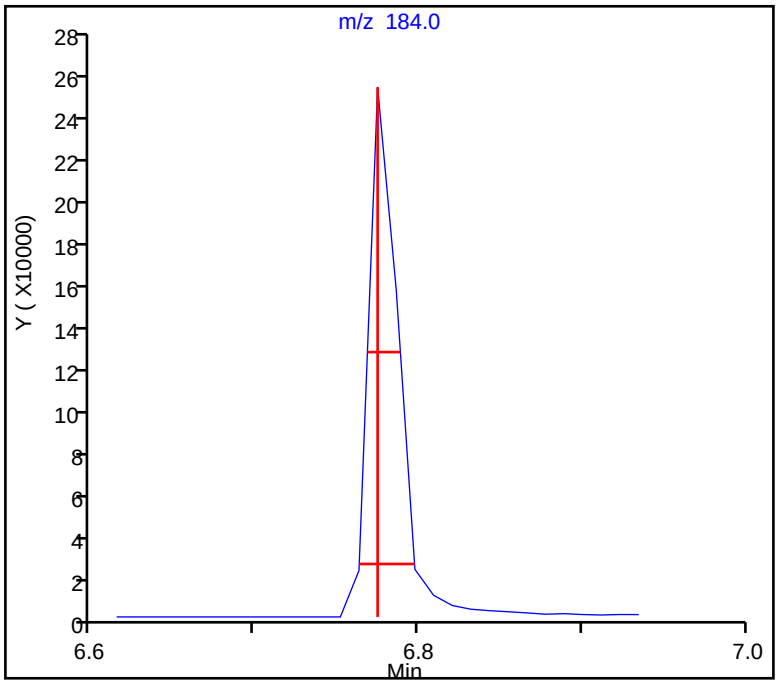
Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229153.D
Injection Date: 12-Apr-2018 13:07:30 Instrument ID: CBNAMS9
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Method: BNsurrSIM_LVI_9 Limit Group: SV 8270D SIM ICAL

36 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.023 (min.)
Front Width = 0.011 (min.)

Tailing Factor = * 2.0, Max. Tailing < 2.00
Failed



TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229692a.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 02-May-2018 06:56:30 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-001
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:43:41 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:43:41

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
4 Pentachlorophenol_T	266	4.525	4.525	0.000	0	47120	NR	NR	
35 DFTPP									
36 Benzidine_T	184	6.261	6.261	0.000	0	423215	NR	NR	
37 4,4'-DDD	235	6.889	6.889	0.000	0	1951		NR	
39 4,4'-DDT	235	7.197	7.197	0.000	0	179728	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

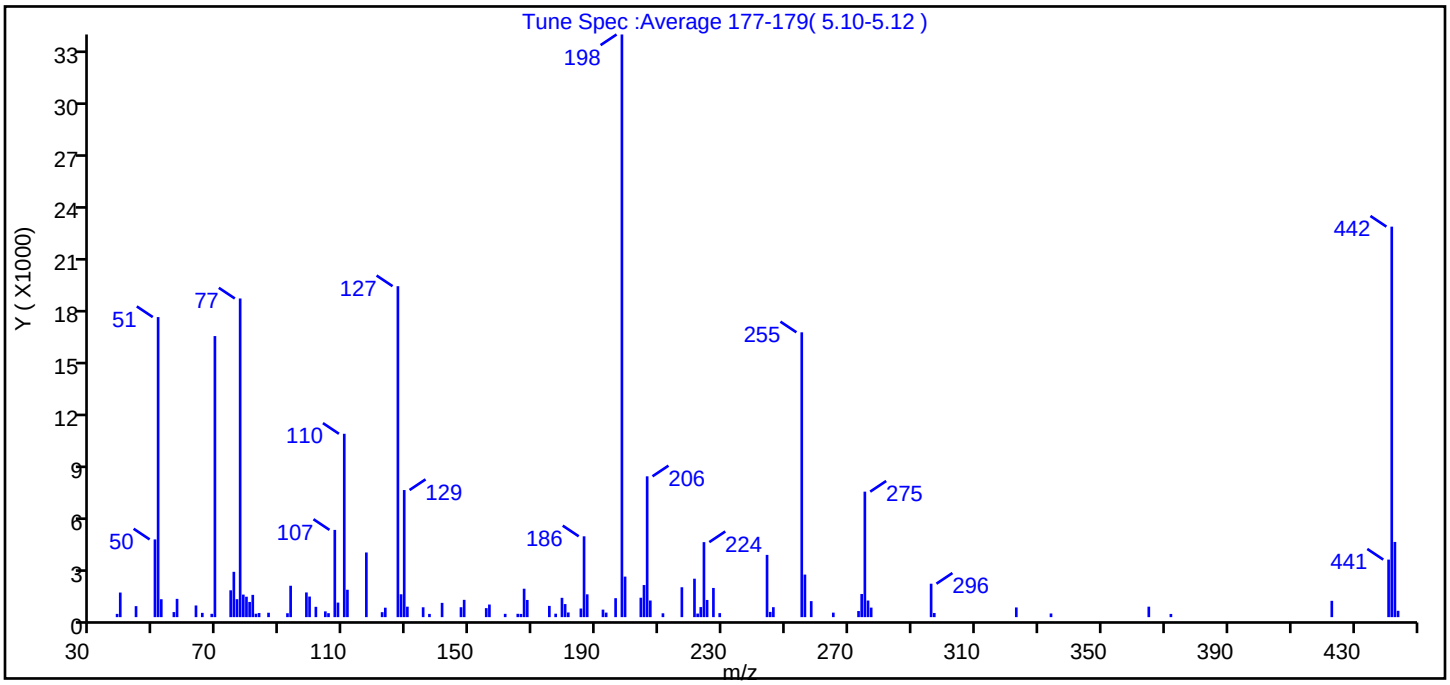
SMDFTP_CH_00024 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229692a.D
Injection Date: 02-May-2018 06:56:30 Instrument ID: CBNAMS9
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Method: BNsurrSIM_LVI_9 Limit Group: SV 8270D SIM ICAL
Tune Method: DFTPP Method 8270

35 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	51.5
68	<2% of mass 69	0.6 (1.2)
69	Present	48.2
70	<2% of mass 69	0.0 (0.0)
127	40-60% of mass 198	56.8
197	<1% of mass 198	0.0
199	5-9% of mass 198	7.0
275	10-30% of mass 198	21.5
365	>1% of mass 198	1.8
441	Present but less than mass 443	9.9 (76.5)
442	>40% of mass 198	67.0
443	17-23% of mass 442	12.9 (19.3)

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229692a.D\BNsurrSIM_LVI_9.rslt\spectra.
Injection Date: 02-May-2018 06:56:30
Spectrum: Tune Spec :Average 177-179(5.10-5.12)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 102

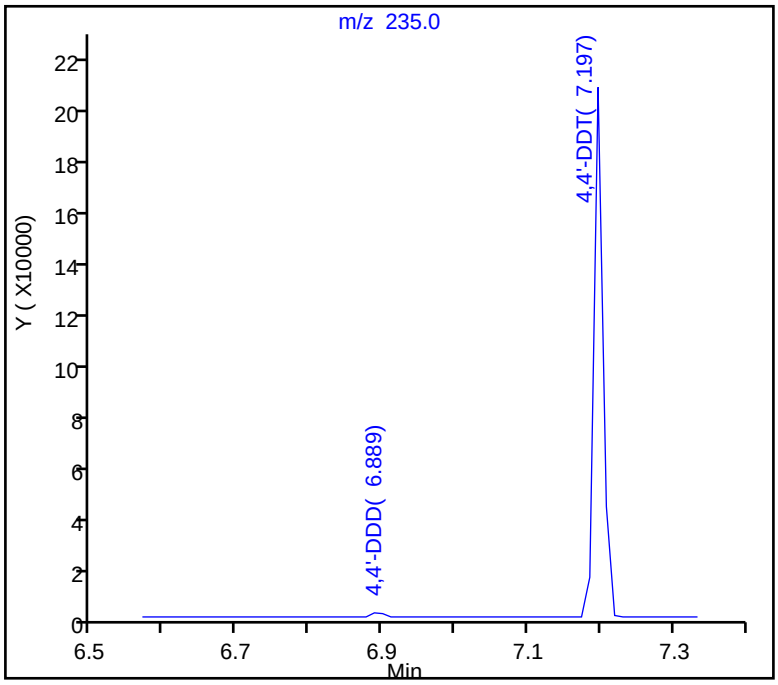
m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	187	99.00	1178	168.00	984	229.00	230
39.00	1408	101.00	591	175.00	644	244.00	3564
44.00	630	104.00	330	177.00	198	245.00	300
50.00	4449	105.00	227	179.00	1106	246.00	570
51.00	17176	107.00	4994	180.00	748	255.00	16304
52.00	1025	108.00	833	181.00	267	256.00	2437
56.00	290	110.00	10496	185.00	494	258.00	917
57.00	1047	111.00	1568	186.00	4627	265.00	258
63.00	668	117.00	3702	187.00	1306	273.00	350
65.00	245	122.00	285	192.00	430	274.00	1326
68.00	191	123.00	541	193.00	260	275.00	7183
69.00	16089	127.00	18944	196.00	1086	276.00	951
74.00	1537	128.00	1309	198.00	33352	277.00	546
75.00	2594	129.00	7276	199.00	2320	296.00	1914
76.00	1029	130.00	599	204.00	1111	297.00	238
77.00	18240	135.00	565	205.00	1838	323.00	556
78.00	1291	137.00	185	206.00	8061	334.00	210
79.00	1169	141.00	817	207.00	952	365.00	599
80.00	870	147.00	568	211.00	220	372.00	183
81.00	1275	148.00	990	217.00	1711	423.00	934
82.00	196	155.00	516	221.00	2201	441.00	3294
83.00	236	156.00	722	222.00	205	442.00	22352
86.00	252	161.00	190	223.00	577	443.00	4304
92.00	224	165.00	192	224.00	4294	444.00	364
93.00	1797	166.00	185	225.00	984		
98.00	1414	167.00	1627	227.00	1671		

Breakdown Report

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229692a.D
Injection Date: 02-May-2018 06:56:30 Instrument ID: CBNAMS9
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Method: BNsurrSIM_LVI_9 Limit Group: SV 8270D SIM ICAL

39 4,4'-DDT, Detector: MS SCAN



SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

39 4,4'-DDT, Area = 179728
37 4,4'-DDD, Area = 1951
38 4,4'-DDE, Area = 0

%Breakdown: 1.07%, Max Limit: 20.00%
Passed

Peak Tailing Report

TestAmerica Edison

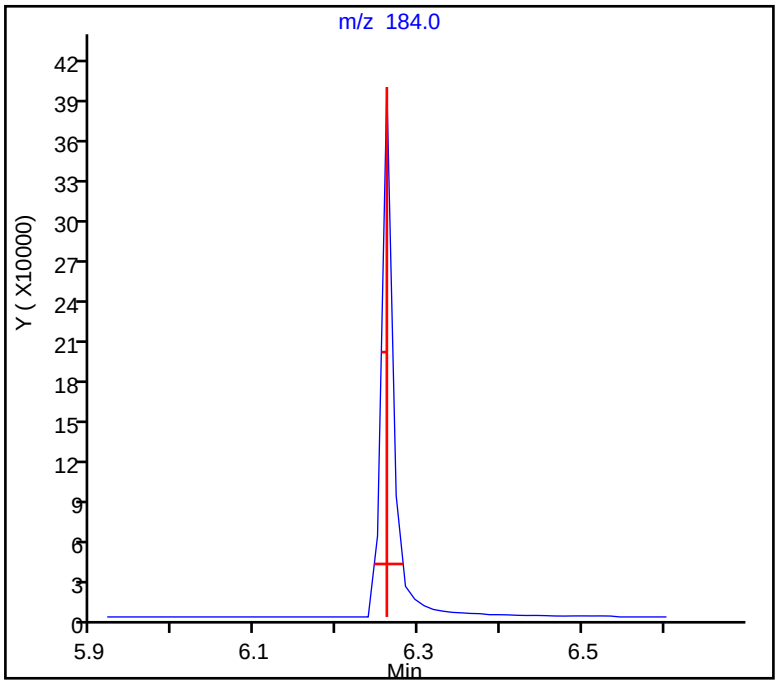
Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229692a.D
Injection Date: 02-May-2018 06:56:30 Instrument ID: CBNAMS9
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Method: BNsurrSIM_LVI_9 Limit Group: SV 8270D SIM ICAL

36 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.020 (min.)
Front Width = 0.015 (min.)

Tailing Factor = 1.3, Max. Tailing < 2.00
Passed



Peak Tailing Report

TestAmerica Edison

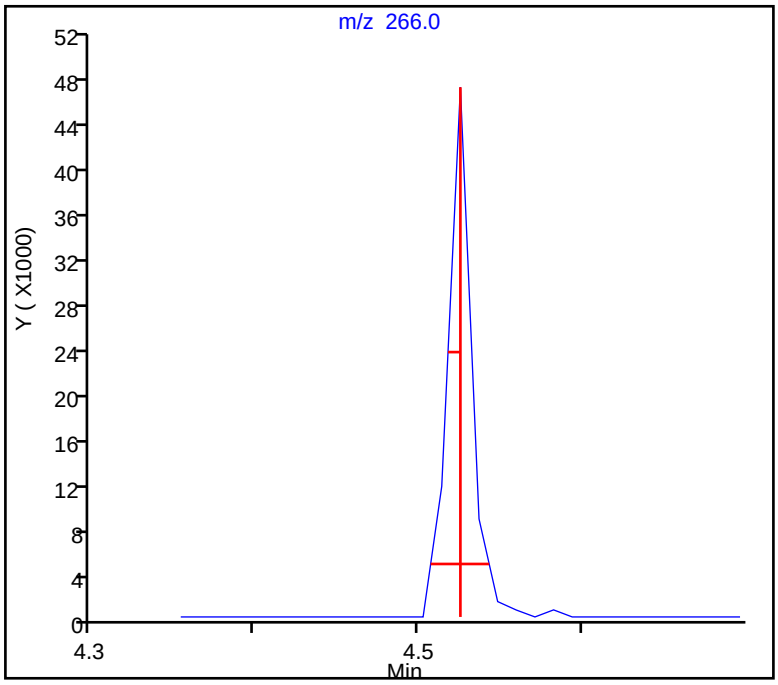
Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229692a.D
Injection Date: 02-May-2018 06:56:30 Instrument ID: CBNAMS9
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Method: BNsurrSIM_LVI_9 Limit Group: SV 8270D SIM ICAL

4 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.018 (min.)
Front Width = 0.018 (min.)

Tailing Factor = 1.0, Max. Tailing < 2.00
Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-155037-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 460-515743/1-A

Matrix: Water | Lab File ID: h229695.D

Analysis Method: 8270D SIM | Date Collected:

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 250(mL) | Date Analyzed: 05/02/2018 09:57

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.17	U	0.17	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	80		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229695.D
Lims ID: MB 460-515743/1-A
Client ID:
Sample Type: MB
Inject. Date: 02-May-2018 09:57:30 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-004
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:45:04 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:45:04

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	100	6012	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	91	23504	1.00	0.8034	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	100	14928	0.2000	0.2000	
$ 9 2-Fluorobiphenyl	172	6.370	6.370	0.000	96	41987	1.00	0.8684	
* 11 Acenaphthene-d10	164	6.989	6.989	0.000	98	4784	0.2000	0.2000	
$ 20 2,4,6-Tribromophenol	330	7.752	7.752	0.000	87	6155	1.00	0.6947	
* 17 Phenanthrene-d10	188	8.396	8.383	0.013	98	8012	0.2000	0.2000	
$ 23 Terphenyl-d14	244	9.906	9.906	0.000	92	14337	1.00	0.7857	
* 25 Chrysene-d12	240	10.910	10.910	0.000	93	4631	0.2000	0.2000	
* 30 Perylene-d12	264	12.607	12.597	0.010	100	3159	0.2000	0.2000	

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

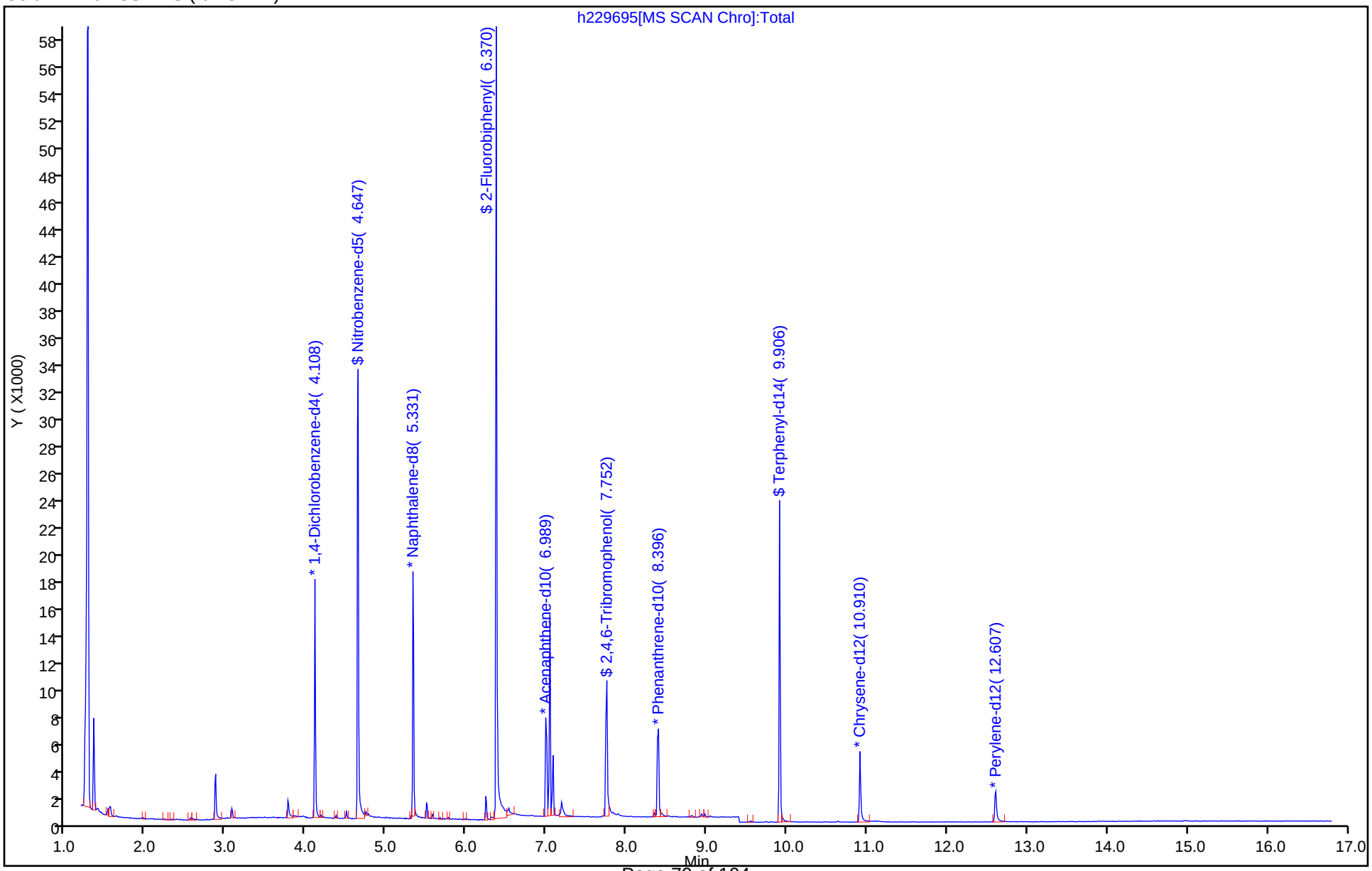
Report Date: 03-May-2018 13:45:06 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229695.D

Injection Date:	02-May-2018 09:57:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	MB 460-515743/1-A			Worklist Smp#:	4
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



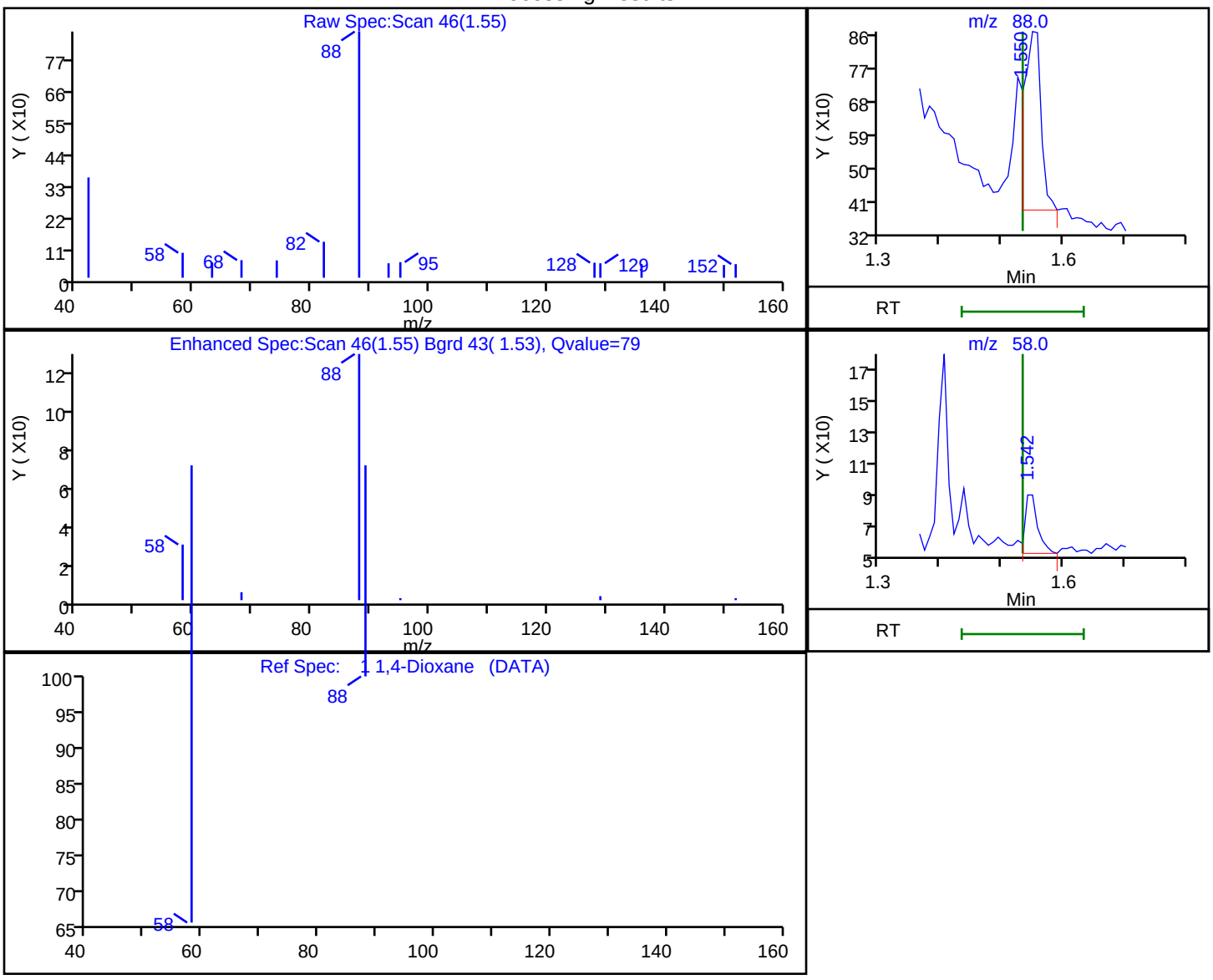
User Disabled Compound Report

TestAmerica Edison

Data File:	\\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229695.D				
Injection Date:	02-May-2018 09:57:30	Instrument ID:	CBNAMS9		
Lims ID:	MB 460-515743/1-A				
Client ID:					
Operator ID:		ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	5.0 ul	Dil. Factor:	1.0000		
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		
Column:	Rtxi-5Sil MS (0.25 mm)	Detector	MS SCAN		

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

Processing Results



RT	Mass	Response	Amount
1.55	88.00	929	0.056346
1.54	58.00	52	

Reviewer: asfawa, 02-May-2018 13:55:25

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.: 460-155037-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 460-515743/2-A

Matrix: Water | Lab File ID: h229696.D

Analysis Method: 8270D SIM | Date Collected:

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 250(mL) | Date Analyzed: 05/02/2018 10:19

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.794		0.17	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	74		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229696.D
Lims ID: LCS 460-515743/2-A
Client ID:
Sample Type: LCS
Inject. Date: 02-May-2018 10:19:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-005
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:46:07 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:46:07

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.549	1.533	0.016	98	1567	0.1000	0.0993	
2 N-Nitrosodimethylamine	74	1.783	1.767	0.016	90	457	0.1000	0.0245	
3 Bis(2-chloroethyl)ether	93	3.859	3.851	0.008	86	2805	0.1000	0.0845	
* 5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	99	5756	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	94	21212	1.00	0.7384	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	100	14659	0.2000	0.2000	
8 Naphthalene	128	5.355	5.355	0.000	100	6153	0.1000	0.0653	
$ 9 2-Fluorobiphenyl	172	6.370	6.370	0.000	94	42476	1.00	0.8454	
10 Acenaphthylene	152	6.857	6.857	0.000	99	6633	0.1000	0.0777	
* 11 Acenaphthene-d10	164	6.988	6.989	-0.001	100	4971	0.2000	0.2000	
12 Acenaphthene	154	7.028	7.028	0.000	49	3172	0.1000	0.0707	
13 Fluorene	166	7.515	7.515	0.000	100	3770	0.1000	0.0754	
14 4,6-Dinitro-2-methylphenol	198	7.580	7.581	-0.001	83	549	0.2000	0.2254	
$ 20 2,4,6-Tribromophenol	330	7.738	7.752	-0.014	99	6228	1.00	0.6765	
15 Hexachlorobenzene	284	8.041	8.041	0.000	96	1785	0.1000	0.0685	
16 Pentachlorophenol	266	8.238	8.238	0.000	90	830	0.2000	0.1282	
* 17 Phenanthrene-d10	188	8.383	8.383	0.000	98	7910	0.2000	0.2000	
18 Phenanthrene	178	8.409	8.409	0.000	96	6525	0.1000	0.1108	
19 Anthracene	178	8.462	8.462	0.000	99	4966	0.1000	0.0876	
21 Fluoranthene	202	9.526	9.526	0.000	97	5364	0.1000	0.0970	
22 Pyrene	202	9.731	9.731	0.000	98	5333	0.1000	0.1203	
$ 23 Terphenyl-d14	244	9.906	9.906	0.000	100	14255	1.00	0.7795	
24 Benzo[a]anthracene	228	10.900	10.901	-0.001	88	3281	0.1000	0.1018	
* 25 Chrysene-d12	240	10.910	10.910	0.000	99	4641	0.2000	0.2000	
26 Chrysene	228	10.930	10.940	-0.010	97	4235	0.1000	0.1108	
27 Benzo[b]fluoranthene	252	12.119	12.129	-0.010	100	2567	0.1000	0.1029	
28 Benzo[k]fluoranthene	252	12.158	12.158	0.000	98	3510	0.1000	0.1228	
29 Benzo[a]pyrene	252	12.519	12.529	-0.010	100	2224	0.1000	0.1013	
* 30 Perylene-d12	264	12.597	12.597	0.000	100	3231	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.001	14.001	-0.009	98	1518	0.1000	0.0694	M
32 Dibenz(a,h)anthracene	278	14.040	14.049	-0.009	91	1768	0.1000	0.0847	
33 Benzo[g,h,i]perylene	276	14.342	14.353	0.000	94	2436	0.1000	0.0939	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

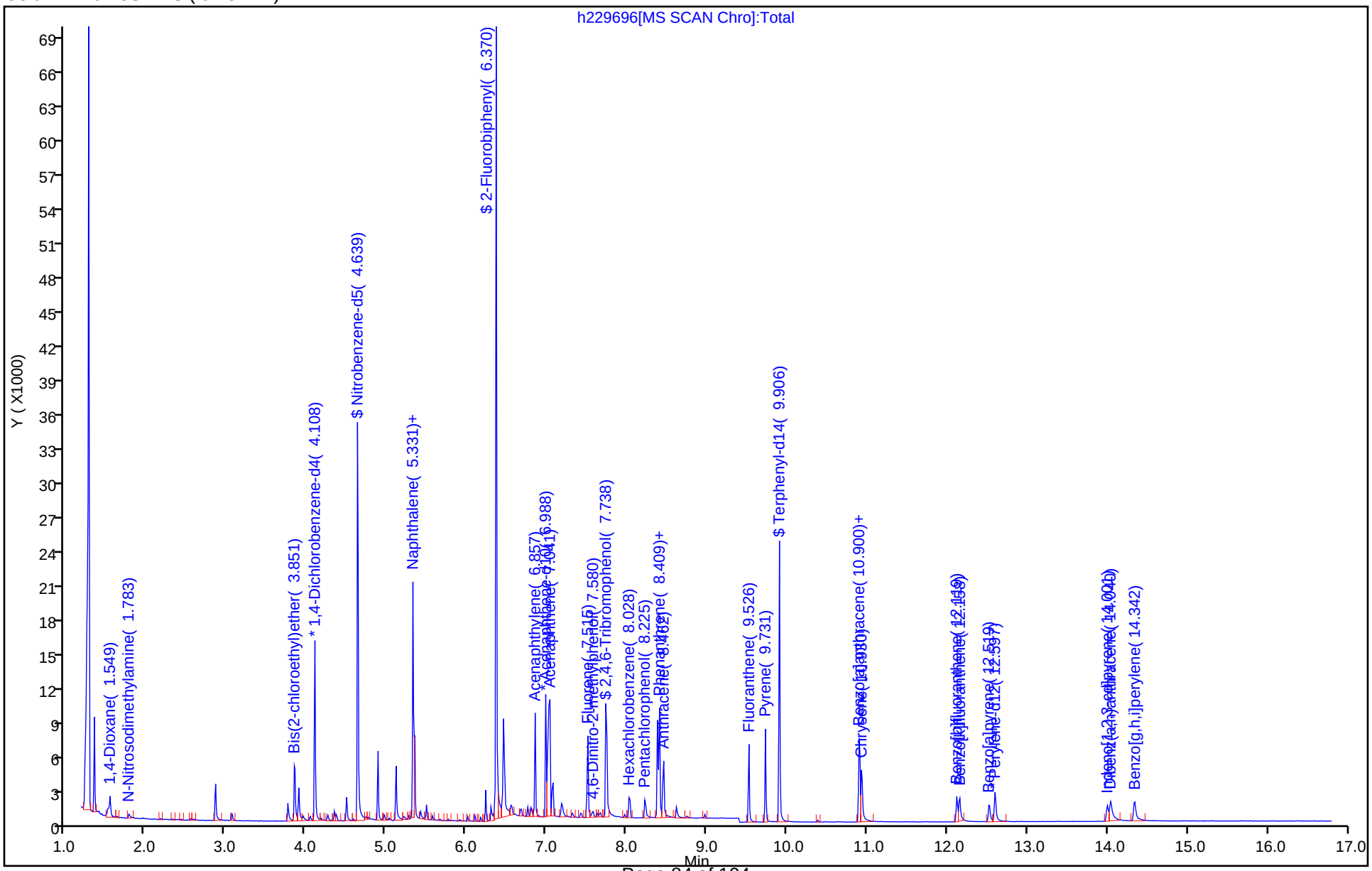
Report Date: 03-May-2018 13:46:09 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229696.D

Injection Date:	02-May-2018 10:19:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	LCS 460-515743/2-A			Worklist Smp#:	5
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-155037-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 460-515743/3-A

Matrix: Water | Lab File ID: h229697.D

Analysis Method: 8270D SIM | Date Collected:

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 250(mL) | Date Analyzed: 05/02/2018 10:41

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.794		0.17	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	78		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229697.D
Lims ID: LCSD 460-515743/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 02-May-2018 10:41:30 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-006
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:46:59 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:46:59

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.550	1.533	0.017	94	1658	0.1000	0.0992	
2 N-Nitrosodimethylamine	74	1.783	1.767	0.016	83	542	0.1000	0.0274	
3 Bis(2-chloroethyl)ether	93	3.859	3.851	0.008	86	3174	0.1000	0.0902	
* 5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	99	6095	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	94	24067	1.00	0.7817	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	100	15711	0.2000	0.2000	
8 Naphthalene	128	5.355	5.355	0.000	100	7136	0.1000	0.0707	
$ 9 2-Fluorobiphenyl	172	6.370	6.370	0.000	94	48687	1.00	0.8733	
10 Acenaphthylene	152	6.857	6.857	0.000	100	7519	0.1000	0.0794	
* 11 Acenaphthene-d10	164	6.989	6.989	0.000	100	5516	0.2000	0.2000	
12 Acenaphthene	154	7.028	7.028	0.000	48	3509	0.1000	0.0705	
13 Fluorene	166	7.515	7.515	0.000	98	4564	0.1000	0.0823	
14 4,6-Dinitro-2-methylphenol	198	7.581	7.581	0.000	73	595	0.2000	0.2272	
$ 20 2,4,6-Tribromophenol	330	7.738	7.752	-0.014	99	7240	1.00	0.7087	
15 Hexachlorobenzene	284	8.041	8.041	0.000	100	2057	0.1000	0.0738	
16 Pentachlorophenol	266	8.238	8.238	0.000	93	912	0.2000	0.1312	
* 17 Phenanthrene-d10	188	8.383	8.383	0.000	98	8471	0.2000	0.2000	
18 Phenanthrene	178	8.409	8.409	0.000	96	7533	0.1000	0.1194	
19 Anthracene	178	8.462	8.462	0.000	99	5658	0.1000	0.0932	
21 Fluoranthene	202	9.526	9.526	0.000	97	6037	0.1000	0.1020	
22 Pyrene	202	9.731	9.731	0.000	99	6004	0.1000	0.1347	
$ 23 Terphenyl-d14	244	9.906	9.906	0.000	100	14882	1.00	0.8098	
24 Benzo[a]anthracene	228	10.901	10.901	0.000	89	3412	0.1000	0.1053	
* 25 Chrysene-d12	240	10.910	10.910	0.000	99	4664	0.2000	0.2000	
26 Chrysene	228	10.930	10.940	-0.010	97	4362	0.1000	0.1136	
27 Benzo[b]fluoranthene	252	12.119	12.129	-0.010	100	2550	0.1000	0.1042	
28 Benzo[k]fluoranthene	252	12.158	12.158	0.000	86	3455	0.1000	0.1232	
29 Benzo[a]pyrene	252	12.529	12.529	0.000	100	2526	0.1000	0.1173	
* 30 Perylene-d12	264	12.597	12.597	0.000	100	3170	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.001	14.001	-0.009	97	1675	0.1000	0.0781	
32 Dibenz(a,h)anthracene	278	14.049	14.049	0.000	99	1628	0.1000	0.0795	
33 Benzo[g,h,i]perylene	276	14.342	14.353	0.000	90	2459	0.1000	0.0966	

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

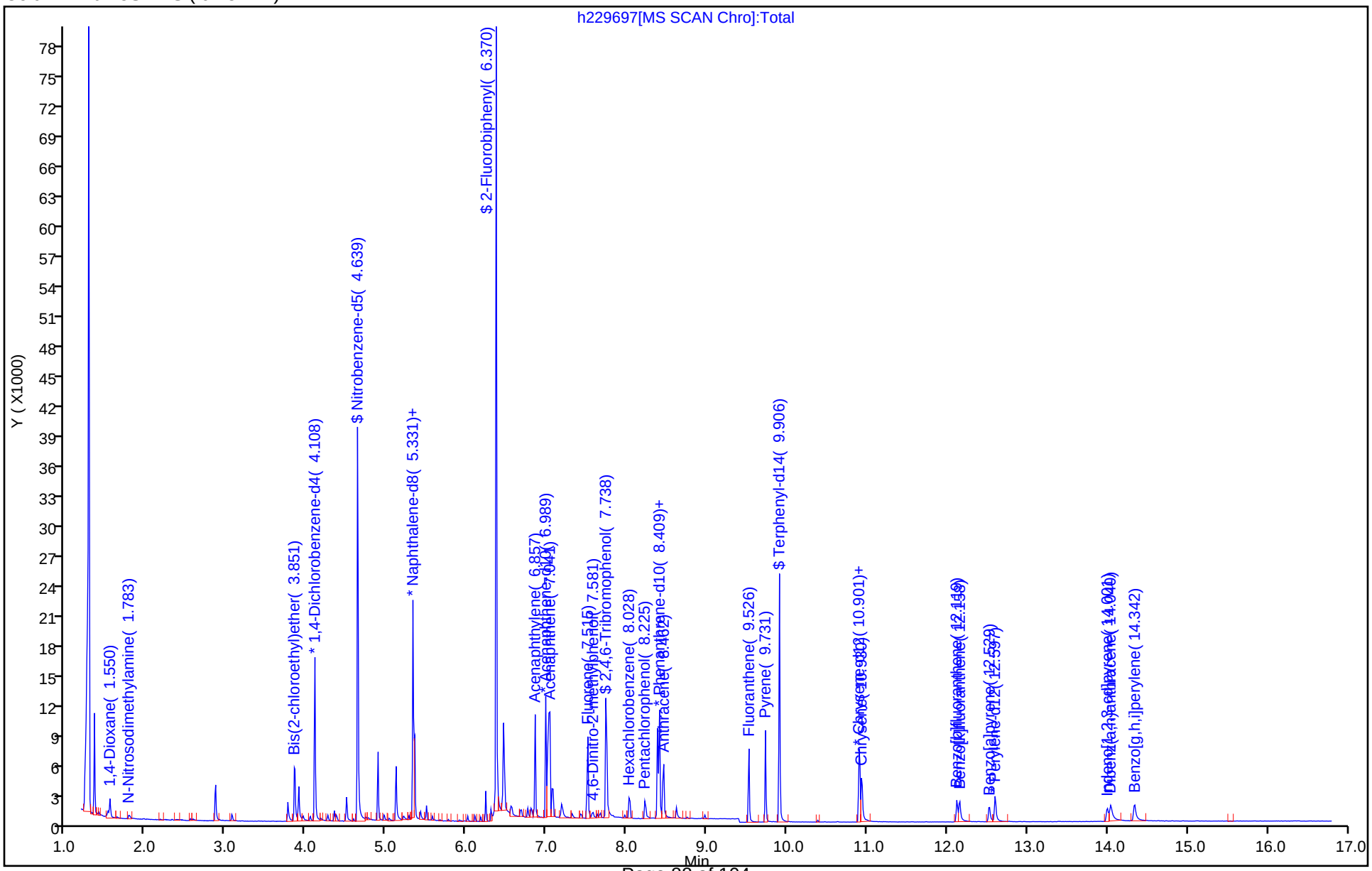
Report Date: 03-May-2018 13:47:01 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229697.D

Injection Date:	02-May-2018 10:41:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	LCSD 460-515743/3-A			Worklist Smp#:	6
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-155037-1

SDG No.:

Client Sample ID: MW-6 MS | Lab Sample ID: 460-155037-1 MS

Matrix: Water | Lab File ID: h229698.D

Analysis Method: 8270D SIM | Date Collected: 04/26/2018 13:00

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 240(mL) | Date Analyzed: 05/02/2018 11:03

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.808		0.18	0.18

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	73		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229698.D
Lims ID: 460-155037-B-1-A MS
Client ID: MW-6
Sample Type: MS
Inject. Date: 02-May-2018 11:03:30 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-007
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:46:59 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:47:49

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 1,4-Dioxane	88	1.558	1.533	0.025	97	1602		0.0969	
2 N-Nitrosodimethylamine	74	1.791	1.767	0.024	87	494		0.0253	
3 Bis(2-chloroethyl)ether	93	3.859	3.851	0.008	87	3123		0.0898	
* 5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	100	6027	0.2000	0.2000	
$ 6 Nitrobenzene-d5	82	4.639	4.639	0.000	93	22262	1.00	0.7329	
* 7 Naphthalene-d8	136	5.331	5.331	0.000	100	15499	0.2000	0.2000	
8 Naphthalene	128	5.355	5.355	0.000	100	6649		0.0668	
$ 9 2-Fluorobiphenyl	172	6.370	6.370	0.000	95	43810	1.00	0.8185	
10 Acenaphthylene	152	6.857	6.857	0.000	100	7318		0.0805	
* 11 Acenaphthene-d10	164	6.989	6.989	0.000	100	5296	0.2000	0.2000	
12 Acenaphthene	154	7.028	7.028	0.000	98	3350		0.0701	
13 Fluorene	166	7.515	7.515	0.000	98	4071		0.0764	
14 4,6-Dinitro-2-methylphenol	198	7.580	7.581	-0.001	69	584		0.2187	
$ 20 2,4,6-Tribromophenol	330	7.738	7.752	-0.014	100	7327	1.00	0.7471	
15 Hexachlorobenzene	284	8.041	8.041	0.000	98	1885		0.0651	
16 Pentachlorophenol	266	8.238	8.238	0.000	93	951		0.1317	
* 17 Phenanthrene-d10	188	8.383	8.383	0.000	98	8797	0.2000	0.2000	
18 Phenanthrene	178	8.409	8.409	0.000	95	6665		0.1018	
19 Anthracene	178	8.462	8.462	0.000	99	5470		0.0867	
21 Fluoranthene	202	9.526	9.526	0.000	97	5655		0.0920	
22 Pyrene	202	9.731	9.731	0.000	99	5564		0.1237	
$ 23 Terphenyl-d14	244	9.906	9.906	0.000	100	13848	1.00	0.7465	
24 Benzo[a]anthracene	228	10.901	10.901	0.000	88	3201		0.0979	
* 25 Chrysene-d12	240	10.910	10.910	0.000	99	4708	0.2000	0.2000	
26 Chrysene	228	10.930	10.940	-0.010	98	4041		0.1043	
27 Benzo[b]fluoranthene	252	12.119	12.129	-0.010	100	2282		0.0954	
28 Benzo[k]fluoranthene	252	12.158	12.158	0.000	97	3136		0.1144	
29 Benzo[a]pyrene	252	12.529	12.529	0.000	100	2242		0.1065	
* 30 Perylene-d12	264	12.597	12.597	0.000	100	3098	0.2000	0.2000	
31 Indeno[1,2,3-cd]pyrene	276	14.001	14.001	-0.009	97	1471		0.0702	
32 Dibenz(a,h)anthracene	278	14.040	14.049	-0.009	92	1472		0.0735	
33 Benzo[g,h,i]perylene	276	14.342	14.353	0.000	92	2053		0.0825	

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

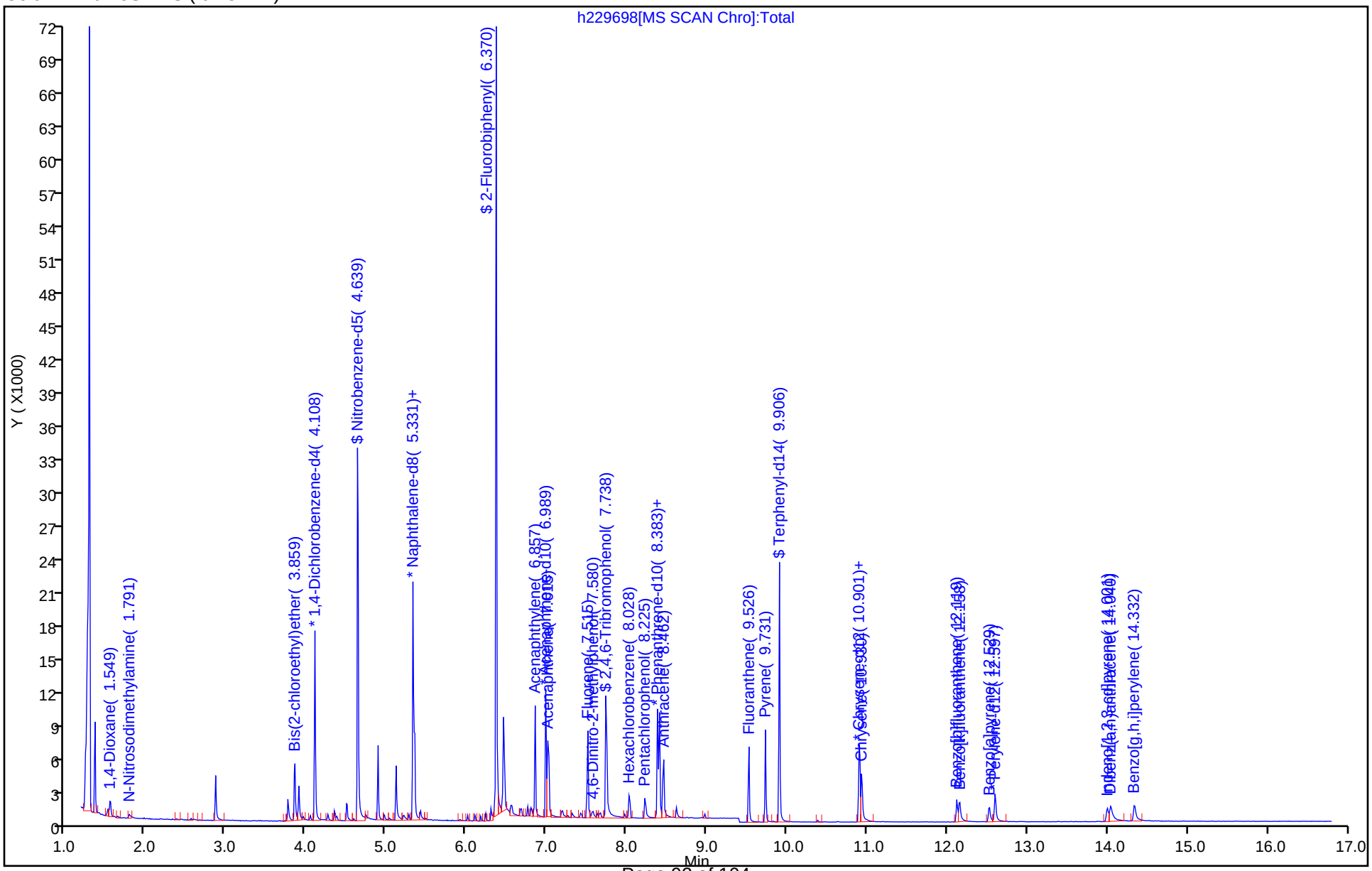
Report Date: 03-May-2018 13:47:50 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229698.D

Injection Date:	02-May-2018 11:03:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	460-155037-B-1-A MS			Worklist Smp#:	7
Client ID:	MW-6				
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-155037-1

SDG No.:

Client Sample ID: MW-6 MSD | Lab Sample ID: 460-155037-1 MSD

Matrix: Water | Lab File ID: h229699.D

Analysis Method: 8270D SIM | Date Collected: 04/26/2018 13:00

Extract. Method: 3510C | Date Extracted: 05/01/2018 20:12

Sample wt/vol: 240(mL) | Date Analyzed: 05/02/2018 11:25

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.: 515822 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	MDL	MDL
123-91-1	1,4-Dioxane	0.978		0.18	0.18

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	69		38-125

TestAmerica Edison
Target Compound Quantitation Report

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229699.D
Lims ID: 460-155037-B-1-B MSD
Client ID: MW-6
Sample Type: MSD
Inject. Date: 02-May-2018 11:25:30 ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 460-0071381-008
Operator ID: Instrument ID: CBNAMS9

Method: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\BNsurrSIM_LVI_9.m
Limit Group: SV 8270D SIM ICAL
Last Update: 03-May-2018 13:48:46 Calib Date: 12-Apr-2018 16:01:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Edison\ChromData\CBNAMS9\20180412-70269.b\h229159.D

Column 1 : Rtxi-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: khlungprakhons Date: 03-May-2018 13:48:46

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
	1 1,4-Dioxane	88	1.549	1.533	0.016	91	1636		0.1174	
	2 N-Nitrosodimethylamine	74	1.791	1.767	0.024	93	393		0.0238	
	3 Bis(2-chloroethyl)ether	93	3.858	3.851	0.007	88	2460		0.0839	
*	5 1,4-Dichlorobenzene-d4	152	4.108	4.100	0.008	100	5081	0.2000	0.2000	
$	6 Nitrobenzene-d5	82	4.639	4.639	0.000	91	17176	1.00	0.6897	
*	7 Naphthalene-d8	136	5.331	5.331	0.000	100	12707	0.2000	0.2000	
	8 Naphthalene	128	5.355	5.355	0.000	100	5161		0.0632	
$	9 2-Fluorobiphenyl	172	6.370	6.370	0.000	94	36033	1.00	0.7813	
	10 Acenaphthylene	152	6.857	6.857	0.000	100	5101		0.0651	
*	11 Acenaphthene-d10	164	6.988	6.989	-0.001	100	4563	0.2000	0.2000	
	12 Acenaphthene	154	7.015	7.028	-0.013	87	2602		0.0632	
	13 Fluorene	166	7.515	7.515	0.000	99	3161		0.0689	
	14 4,6-Dinitro-2-methylphenol	198	7.580	7.581	-0.001	83	397		0.1994	
$	20 2,4,6-Tribromophenol	330	7.738	7.752	-0.014	98	5674	1.00	0.6715	
	15 Hexachlorobenzene	284	8.041	8.041	0.000	100	1507		0.0665	
	16 Pentachlorophenol	266	8.238	8.238	0.000	92	638		0.1143	
*	17 Phenanthrene-d10	188	8.383	8.383	0.000	97	6883	0.2000	0.2000	
	18 Phenanthrene	178	8.409	8.409	0.000	96	5264		0.1027	
	19 Anthracene	178	8.462	8.462	0.000	98	3902		0.0791	
	21 Fluoranthene	202	9.526	9.526	0.000	97	4069		0.0846	
	22 Pyrene	202	9.731	9.731	0.000	98	4040		0.1047	
$	23 Terphenyl-d14	244	9.906	9.906	0.000	100	11194	1.00	0.7034	
	24 Benzo[a]anthracene	228	10.900	10.901	-0.001	81	2348		0.0837	
*	25 Chrysene-d12	240	10.910	10.910	0.000	100	4039	0.2000	0.2000	
	26 Chrysene	228	10.930	10.940	-0.010	98	3444		0.1036	
	27 Benzo[b]fluoranthene	252	12.119	12.129	-0.010	100	1831		0.0887	
	28 Benzo[k]fluoranthene	252	12.158	12.158	0.000	96	2464		0.1042	
	29 Benzo[a]pyrene	252	12.519	12.529	-0.010	100	1565		0.0862	
*	30 Perylene-d12	264	12.597	12.597	0.000	100	2672	0.2000	0.2000	
	31 Indeno[1,2,3-cd]pyrene	276	14.000	14.000	-0.010	99	1141		0.0631	M
	32 Dibenz(a,h)anthracene	278	14.039	14.049	-0.010	89	1511		0.0875	
	33 Benzo[g,h,i]perylene	276	14.342	14.353	0.000	93	1933		0.0901	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

SM_SIMISTDLVI_00022 Amount Added: 20.00 Units: uL Run Reagent

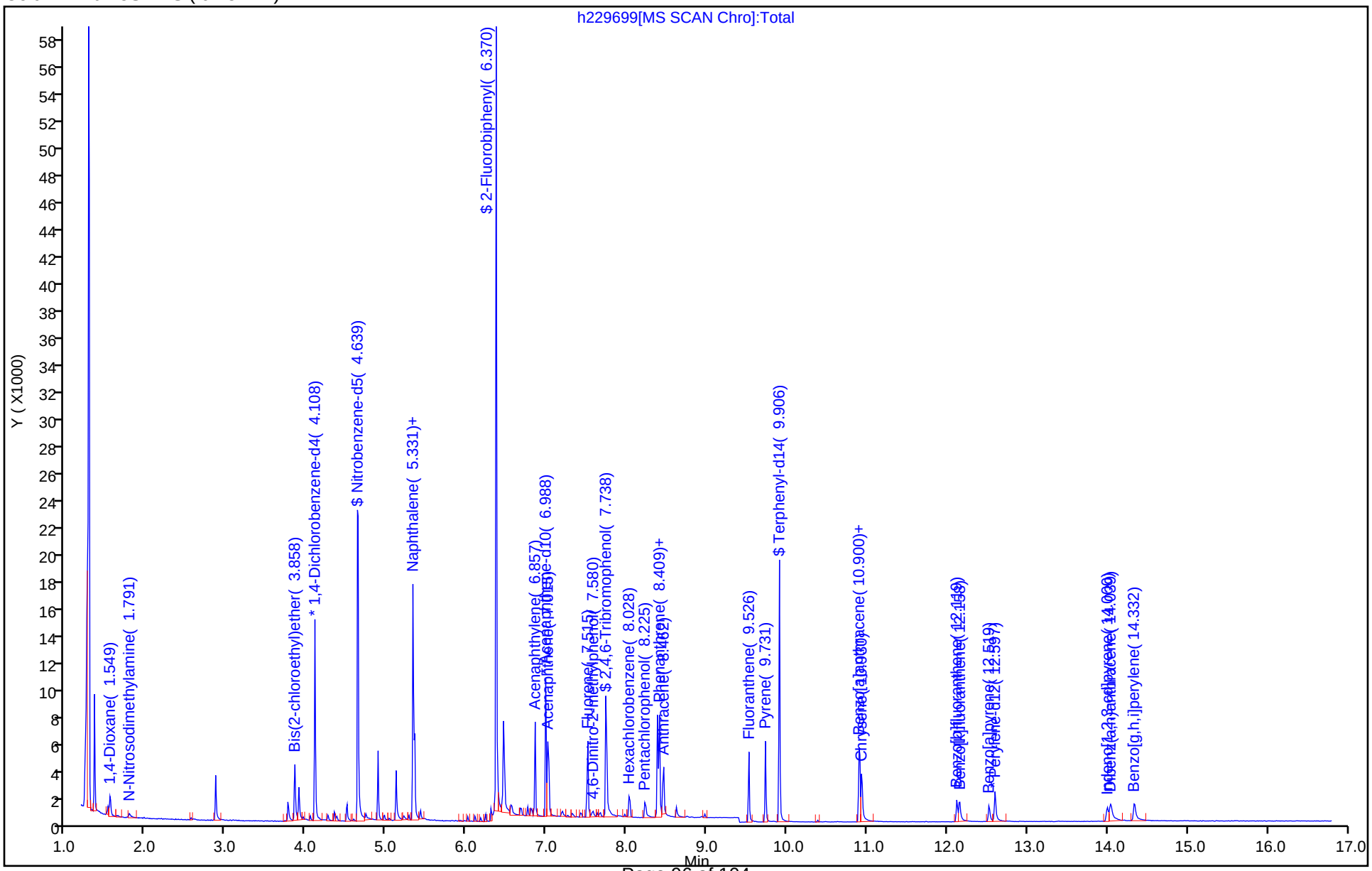
Report Date: 03-May-2018 13:48:51 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Edison

Data File: \\ChromNA\Edison\ChromData\CBNAMS9\20180502-71381.b\h229699.D

Injection Date:	02-May-2018 11:25:30	Instrument ID:	CBNAMS9	Operator ID:	
Lims ID:	460-155037-B-1-B MSD			Worklist Smp#:	8
Client ID:	MW-6				
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	BNsurrSIM_LVI_9	Limit Group:	SV 8270D SIM ICAL		

Column: Rtxi-5Sil MS (0.25 mm)



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Instrument ID: CBNAMS9 Start Date: 04/12/2018 13:07

Analysis Batch Number: 510570 End Date: 04/12/2018 23:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 460-510570/1		04/12/2018 13:07	1	h229153.D	Rtxi-5Sil MS 0.25(mm)
ICIS 460-510570/2		04/12/2018 14:15	1	h229154.D	Rtxi-5Sil MS 0.25(mm)
STD6 460-510570/3 IC		04/12/2018 14:36	1	h229155.D	Rtxi-5Sil MS 0.25(mm)
STD5 460-510570/4 IC		04/12/2018 14:57	1	h229156.D	Rtxi-5Sil MS 0.25(mm)
STD4 460-510570/5 IC		04/12/2018 15:19	1	h229157.D	Rtxi-5Sil MS 0.25(mm)
STD2 460-510570/6 IC		04/12/2018 15:40	1	h229158.D	Rtxi-5Sil MS 0.25(mm)
STD1 460-510570/7 IC		04/12/2018 16:01	1	h229159.D	Rtxi-5Sil MS 0.25(mm)
ICV 460-510570/8		04/12/2018 16:22	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 16:43	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 17:05	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 17:26	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 17:47	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 18:08	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 18:29	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 18:50	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 19:12	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 19:33	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 19:54	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 20:15	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 20:36	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 20:58	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 21:19	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 21:40	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 22:01	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 22:22	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 22:43	1		Rtxi-5Sil MS 0.25(mm)
ZZZZZ		04/12/2018 23:04	1		Rtxi-5Sil MS 0.25(mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Instrument ID: CBNAMS9 Start Date: 05/02/2018 06:56

Analysis Batch Number: 515822 End Date: 05/02/2018 13:14

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 460-515822/1		05/02/2018 06:56	1	h229692a.D	Rtxi-5Sil MS 0.25(mm)
CCVIS 460-515822/2		05/02/2018 08:37	1	h229693c.D	Rtxi-5Sil MS 0.25(mm)
MB 460-515743/1-A		05/02/2018 09:57	1	h229695.D	Rtxi-5Sil MS 0.25(mm)
LCS 460-515743/2-A		05/02/2018 10:19	1	h229696.D	Rtxi-5Sil MS 0.25(mm)
LCSD 460-515743/3-A		05/02/2018 10:41	1	h229697.D	Rtxi-5Sil MS 0.25(mm)
460-155037-1 MS		05/02/2018 11:03	1	h229698.D	Rtxi-5Sil MS 0.25(mm)
460-155037-1 MSD		05/02/2018 11:25	1	h229699.D	Rtxi-5Sil MS 0.25(mm)
460-155037-1		05/02/2018 11:47	1	h229700.D	Rtxi-5Sil MS 0.25(mm)
460-155037-2		05/02/2018 12:08	1	h229701.D	Rtxi-5Sil MS 0.25(mm)
460-155037-3		05/02/2018 12:30	1	h229702.D	Rtxi-5Sil MS 0.25(mm)
460-155037-4		05/02/2018 12:52	1	h229703.D	Rtxi-5Sil MS 0.25(mm)
460-155037-5		05/02/2018 13:14	1	h229704.D	Rtxi-5Sil MS 0.25(mm)

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Batch Number: 515743 Batch Start Date: 05/01/18 20:12 Batch Analyst: Yallabandi, Gopichand X

Batch Method: 3510C Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	SecondAdjustpH	OP_BNA SIM SP 00015
MB 460-515743/1		3510C, 8270D SIM		250 mL	2 mL	7 SU	<2 SU	>12 SU	
LCS 460-515743/2		3510C, 8270D SIM		250 mL	2 mL	7 SU	<2 SU	>12 SU	20 uL
LCSD 460-515743/3		3510C, 8270D SIM		250 mL	2 mL	7 SU	<2 SU	>12 SU	20 uL
460-155037-B-1 MS	MW-6	3510C, 8270D SIM	T	240 mL	2 mL	6 SU	<2 SU	>12 SU	20 uL
460-155037-B-1 MSD	MW-6	3510C, 8270D SIM	T	240 mL	2 mL	6 SU	<2 SU	>12 SU	20 uL
460-155037-A-1	MW-6	3510C, 8270D SIM	T	240 mL	2 mL	6 SU	<2 SU	>12 SU	
460-155037-B-2	MW-1	3510C, 8270D SIM	T	250 mL	2 mL	7 SU	<2 SU	>12 SU	
460-155037-B-3	MW-3	3510C, 8270D SIM	T	245 mL	2 mL	7 SU	<2 SU	>12 SU	
460-155037-A-4	FB	3510C, 8270D SIM	T	245 mL	2 mL	5 SU	<2 SU	>12 SU	
460-155037-A-5	MW-3D	3510C, 8270D SIM	T	250 mL	2 mL	7 SU	<2 SU	>12 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	OP_BNASurroga 00014					
MB 460-515743/1		3510C, 8270D SIM		20 uL					
LCS 460-515743/2		3510C, 8270D SIM		20 uL					
LCSD 460-515743/3		3510C, 8270D SIM		20 uL					
460-155037-B-1 MS	MW-6	3510C, 8270D SIM	T	20 uL					
460-155037-B-1 MSD	MW-6	3510C, 8270D SIM	T	20 uL					
460-155037-A-1	MW-6	3510C, 8270D SIM	T	20 uL					
460-155037-B-2	MW-1	3510C, 8270D SIM	T	20 uL					
460-155037-B-3	MW-3	3510C, 8270D SIM	T	20 uL					
460-155037-A-4	FB	3510C, 8270D SIM	T	20 uL					

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.

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Batch Number: 515743 Batch Start Date: 05/01/18 20:12 Batch Analyst: Yallabandi, Gopichand X

Batch Method: 3510C Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	OP_BNASurroga 00014					
460-155037-A-5	MW-3D	3510C, 8270D SIM	T	20 uL					

Batch Notes	
Acid Used for pH Adjustment ID	186983
Base Used to Adjust pH ID	OP2524
Batch Comment	3510C LVI 8270D
Analyst ID - Concentration	gy
Equipment ID - Concentration 1	BNA
Analyst ID - Extraction	gy
Method/Fraction	8270d bna SIM ONLY
Na2SO4 ID	176006
Pipette/Syringe/Dispenser ID	BNA
Prep Solvent ID	196933
Prep Solvent Volume Used	120 mL
Analyst ID - Spike Analyst	gy
Analyst ID - Spike Witness Analyst	freddy
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.

Shipping and Receiving Documents

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

NYSC
460501

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

Name (for report and invoice): John Bukoski	Samplers Name (Printed): John Bukoski	Site/Project Identification: IW
Company: FPM	P. O. #: 1245G-17-03	State (Location of site): NJ: ☐ NY: ☒ Other:
		Regulatory Program: DKQP: ☐
Address: 909 Marconi Ave		
City: Ronkonkoma State: NY		
Phone: 631 737-6200 Fax:		

Analysis Turnaround Time: Standard ☒
Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

LAB USE ONLY
Project No:
Job No: 155037

Sample Identification	Date	Time	Matrix	No. of. Cont.	1,4-Dioxane	Sample Numbers
MW-6	4/26/18	1300		6	X	1
MW-1	↓	1506		2	X	2
MW-3	↓	1730		2	X	3
FB	↓	1800		2	X	4
MW-3D	↓	1735		2	X	5

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH
6 = Other ______, 7 = Other ______
Soil:
Water:

460-155037 Chain of Custody

Special Instructions: MS/MSD on MW-6 ASP CAT B

Water Metals Filtered (Yes/No)? ______

Relinquished by	Company	Date / Time	Received by	Company
1)	FPM	4/30/18 1200	1)	TA
2)	TA	4/30/18 16:40	2)	TA Edison
3)			3)	
4)			4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).
Massachusetts (M-NJ312), North Carolina (No. 578)

2.3/2.3 IR# 11 No [illegible]

TAL - 0016 (0715)

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 155037

Number of Coolers: 1 IR Gun # 11

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.1 °C	2.0 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

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:** 4/20/18

Login Sample Receipt Checklist

Client: FPM Group Limited

Job Number: 460-155037-1

Login Number: 155037
List Number: 1
Creator: Fernandez, Diana X

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
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.	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT 3

DATA USABILITY SUMMARY REPORTS

FPM

DATA USABILITY SUMMARY REPORT
FOR APRIL 2018 GROUNDWATER SAMPLING
PERFLUORINATED HYDROCARBONS
LAB REPORT #200-43262-1
I.W. INDUSTRIES, INC. SITE
35 MELVILLE PARK ROAD, MELVILLE, NEW YORK

This DUSR was prepared using the entire original laboratory report, including the sample data summary report and the extended data package. The sampling event included three groundwater samples collected from the existing groundwater monitoring well network. The primary environmental samples include MW-1, MW-3, and MW-6.

Sample Collection Procedures

The samples were collected in laboratory-provided glassware utilizing dedicated or disposable sampling equipment. Samples for Quality Assurance/Quality Control (QA/QC) were also obtained to evaluate field sampling methods and laboratory procedures. All sample collection was conducted under Chain of Custody (COC) procedures and in accordance with the Site Management Plan for the site and our December 21, 2017 work plan, both of which are approved by the NYSDEC.

Sample Analyses

The samples were transmitted via overnight courier and analyzed by TestAmerica at their Edison, NJ facility, which is New York State Department of Health-certified for the analyses performed. The samples were prepared and analyzed for perfluorinated alkyl substances (PFAs) using Methods 537(modified) and 3535. The analytical methods and analytes are appropriate for the intended use of the data. The sample holding times were met and no sample management issues were reported by the laboratory.

The MW-1 sample required dilution due to the sample matrix and elevated reporting limits are provided.

Surrogate recoveries in each of the samples were within acceptance limits for the PFAs.

A field blank sample (FB) was collected to evaluate potential contamination from field sampling procedures. Low estimated concentrations of perfluorobutanoic acid (PFBA), perfluorohexanoic acid (PFHxA), perfluorodecanoic acid ((PFDA), perfluorobutanesulfonic acid (PFBS), and perfluorohexanesulfonic acid (PFHxS) were detected in the field blank. The detections were generally somewhat lower than the detections of these compounds in the primary environmental samples. PFHxA, PFDA, and PFHxS were also detected in a laboratory (method) blank, suggesting possible lab contamination for these compounds. Based on this information, which indicates that only very low levels of these PFAs were detected in the field blank, cross-contamination from field sampling procedures does not appear to present a significant concern in this dataset.

A duplicate sample was collected and utilized to evaluate the precision of the laboratory analysis. The results from the duplicate sample (MW-3D) and the associated parent sample (MW-3) are very similar and, therefore, the laboratory results are likely to be precise.

A matrix spike/matrix spike duplicate (MS/MSD) sample was prepared to evaluate the effect of

the matrix on the reliability of the analytical results. Spiking occurs in the laboratory prior to sample preparation and analysis. Based on information provided by the analytical laboratory, the percent recoveries (%Rs) for the MS and MSD samples were within QC limits. However, due to the nature of the matrix of this sample (turbid), the relative percent differences (RPDs) between the MS and MSD results exceeded the limits for several PFAs compounds. Therefore, matrix-related effects may affect the precision of the analytical results for those samples that were turbid (MW-6).

A method blank (MB) sample was analyzed by the laboratory to evaluate the potential for cross-contamination associated with the sample preparation and analysis. The MB results included detections of PFHxA, PFDA, and PFHxS at low estimated concentrations. The MB detections were generally somewhat lower than the detections of these compounds in the primary environmental samples. The detections in the primary environmental samples have been B-flagged. Based on the MB results, which show only low estimated levels of potential laboratory contaminants, laboratory contamination does not appear to present a significant concern for the samples in this dataset.

A laboratory control sample (LCS) and LCS duplicate (LCSD) were used by the laboratory to verify the accuracy and precision of the analyses. The LCS and LCSD results were all within established limits and, therefore, the associated data are anticipated to be accurate and precise.

Isotope Dilution Analyte (IDA) recovery for M2-6:2FTS and M2-8:2FTS is above the method-recommended limit in the MW-1, MW-3, and MW-3D samples, suggesting a high bias. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries and we note that these PFAs compounds were not detected in any of the samples.

The IDA recovery for some PFAs is below the method-recommended limit in the MS, MW-1, MW-3, and MW-3D samples, suggesting a high bias. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which was achieved for all IDAs in the samples.

Questions and Responses

1. Is the data package complete as defined under the current requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

   The data package is complete. The external and internal chain of custody forms are present and complete. The case narrative and sample analysis summaries are present and complete. The analytical QA/QC summary forms, including surrogate recovery forms, LCS forms, IDL forms, initial and continuing calibration summary forms, standards raw data, tuning criteria report, and MB data are all present and complete. The data report forms, including sample prep logs, and injection logs are all present and complete. The raw data used to identify and quantify the contract-specified analytes are present and complete.

   Data completeness for the field program was also verified. The numbers and types of samples are in agreement with the NYSDEC-approved work plan.

2. Have all holding times been met?

   All samples were received and analyzed within the EPA-recommended holding times for the analyses performed.

3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data, fall within the protocol-required limits and specifications?

   No – Although the majority of QC data were found to fall within the protocol-required limits and specifications, minor exceptions were noted above; however, these exceptions do not appear to significantly affect the data set.

4. Have all of the data been generated using established and agreed-upon analytical protocols?

   Yes - all of the data were generated using Method Methods 537(modified)/3535 (PFAs).

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

   Yes – a representative number of raw data results were compared with the reported data results to confirm that the reported analytical results (identification and quantification) are substantiated by the raw data.

6. Have the correct data qualifiers been used?

   Yes – results below the quantitation limit and above the method detection limit have been J-qualified, results analyzed for but not detected have been U-qualified, and results for which laboratory contamination is suspected are B-qualified. No other qualifiers were indicated or applied.

7. Have any quality control (QC) exceedances been specifically noted in the DUSR and have the corresponding QC summary sheets from the data package been attached to the DUSR?

   Yes – exceedances have been noted in the DUSR and the corresponding QC summary sheets are attached.

Conclusions

The groundwater samples were collected in accordance with NYSDEC guidance. No field or laboratory conditions occurred that would result in non-valid analytical data other than as noted above. The data appear to be adequate for their intended purpose.

Attachments

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 200-43262-1

Job Description: IW Industries

For:
FPM Group Limited
909 Marconi Avenue
Ronkonkoma, NY 11779

Attention: Mr. John Bukoski

Approved for release.
Thomas A Chupela
Project Management Assistant I
5/16/2018 2:41 PM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
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melissa.haas@testamericainc.com
05/16/2018

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 LAO00132

Job Number: 200-43262-1

Job Description: IW Industries

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
5/16/2018 2:41 PM

Designee for
Melissa Haas

CASE NARRATIVE

Client: FPM Group Limited

Project: IW Industries

Report Number: 200-43262-1

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 5/1/2018 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.4° 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 MW-6 (200-43262-1), MW-1 (200-43262-2), MW-3 (200-43262-3), MW-3D (200-43262-4) and FB (200-43262-5) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with PFC. The samples were prepared on 05/07/2018 and analyzed on 05/11/2018.

The following sample and its associated MS and MSD eluted through the SPE cartridges at very different rates and there was a lot of variation in the total volume extracted for these samples. MW-6 (200-43262-1), MW-6 (200-43262-1[MS]) and MW-6 (200-43262-1[MSD])

The entire volume for the following samples was not extracted due to sediment present in the samples clogging the SPE cartridges and significantly slowing the elution process. The amounts for volume extracted and volume not extracted were calculated and recorded in the prep batch worksheet. MW-6 (200-43262-1), MW-6 (200-43262-1[MS]) and MW-6 (200-43262-1[MSD])

The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 200-129214 and analytical batch 200-129349 was outside control limits. Due to the sample matrix containing excessive particulate matter, the entire sample containers were not able to be extracted - as noted in the prep batch, approximately 120 mL of the MS could not be eluted through the solid phase cartridge, and approximately 50mL of the MSD could not be eluted. Therefore the final concentrations are considerably different. The precision is calculated between the concentration of the MS and the concentration of the MSD rather than between the percent recoveries. As seen on the forms, the percent recovery of the MS and MSD are both within limits. MW-6 (200-43262-1), MW-6 (200-43262-1[MS]) and MW-6 (200-43262-1[MSD])

Isotope Dilution Analyte (IDA) recovery for M2-6:2FTS and M2-8:2FTS is above the method recommended limit for the following samples: MW-1 (200-43262-2), MW-3 (200-43262-3) and MW-3D (200-43262-4). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: MW-6 (200-43262-1[MS]), MW-1 (200-43262-2), MW-3 (200-43262-3) and MW-3D (200-43262-4). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s). 13C4 PFBA recovery is low for samples 2, 3, 4, and 1MS. 13C2 PFDoA and 13C2-PFTeDA recovery is low for sample 1MS.

Perfluorodecanoic acid (PFDA), Perfluorohexanesulfonic acid (PFHxS), Perfluorohexanoic acid (PFHxA) and Perfluoropentanoic acid (PFPeA) were detected in method blank MB 200-129214/1-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.

Several analytes exceeded the RPD limit for the MSD of sample MW-6MSD (200-43262-1) in batch 200-129349.

Refer to the QC report for details.

The following sample was diluted due to the nature of the sample matrix: MW-1 (200-43262-2). Elevated reporting limits (RLs) are provided.

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

All other quality control parameters were within the acceptance limits.

Method Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 200-43262-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL BUR
3535	Solid-Phase Extraction (SPE)	SW846	TAL BUR

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 BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Client Sample ID: MW-3D (Continued)

Lab Sample ID: 200-43262-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	15.4		1.85	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	4.09		1.85	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.75	J B	1.85	0.41	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.21		1.85	0.81	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.42	J B	1.85	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.05		1.85	0.28	ng/L	1		537 (modified)	Total/NA

Client Sample ID: FB

Lab Sample ID: 200-43262-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.22	J	1.89	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.52	J B	1.89	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.52	J B	1.89	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.83	J	1.89	0.83	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.53	J B	1.89	0.26	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

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

Lab Sample ID: 200-43262-1 MS
Matrix: Water
Analysis Batch: 129349

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 129214

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFOA	*32*		*25 - 150*
13C5 PFNA	*34*		*25 - 150*
13C2 PFDA	*31*		*25 - 150*
13C2 PFUnA	*31*		*25 - 150*
13C2 PFDoA	*22*		*25 - 150*
13C2-PFTeDA	*22*		*25 - 150*
13C3-PFBS	*42*		*25 - 150*
18O2 PFHxS	*46*		*25 - 150*
13C4 PFOS	*42*		*25 - 150*
d3-NMeFOSAA	*25*		*25 - 150*
d5-NEtFOSAA	*25*		*25 - 150*
M2-6:2FTS	*51*		*25 - 150*
M2-8:2FTS	*33*		*25 - 150*

Lab Sample ID: 200-43262-1 MSD
Matrix: Water
Analysis Batch: 129349

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 129214

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	19.3		47.3	63.24	*	ng/L		93	40 - 160	40	30
Perfluoropentanoic acid (PFPeA)	18.1	B	47.3	61.01	*	ng/L		91	40 - 160	39	30
Perfluorohexanoic acid (PFHxA)	19.9	B	47.3	75.41	*	ng/L		117	40 - 160	34	30
Perfluoroheptanoic acid (PFHpA)	15.0		47.3	66.18		ng/L		108	40 - 160	29	30
Perfluorooctanoic acid (PFOA)	14.5		47.3	62.07	*	ng/L		101	40 - 160	41	30
Perfluorononanoic acid (PFNA)	2.92		47.3	52.64	*	ng/L		105	40 - 160	35	30
Perfluorodecanoic acid (PFDA)	0.72	J B	47.3	47.88		ng/L		100	40 - 160	28	30
Perfluoroundecanoic acid (PFUnA)	2.06	U	47.3	45.81		ng/L		97	40 - 160	30	30
Perfluorododecanoic acid (PFDoA)	2.06	U	47.3	45.73	*	ng/L		97	40 - 160	43	30
Perfluorotridecanoic Acid (PFTriA)	0.47	J	47.3	38.21	*	ng/L		80	40 - 160	44	30
Perfluorotetradecanoic acid (PFTeA)	2.06	U	47.3	40.43	*	ng/L		86	40 - 160	44	30
Perfluorobutanesulfonic acid (PFBS)	2.37		41.8	41.91		ng/L		95	40 - 160	30	30
Perfluorohexanesulfonic acid (PFHxS)	1.18	J B	43.0	37.81	*	ng/L		85	40 - 160	31	30
Perfluoroheptanesulfonic Acid (PFHpS)	2.06	U	45.0	44.12		ng/L		98	40 - 160	28	30
Perfluorodecanesulfonic acid (PFDS)	2.06	U	45.6	31.40		ng/L		69	40 - 160	19	30
Perfluorooctanesulfonic acid (PFOS)	1.64	J	43.9	45.51		ng/L		100	40 - 160	30	30
Perfluorooctane Sulfonamide (FOSA)	2.06	U	47.3	47.17	*	ng/L		100	40 - 160	38	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.06	U	47.3	46.23	*	ng/L		98	40 - 160	32	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2.06	U	47.3	42.00	*	ng/L		89	40 - 160	48	30

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

Lab Sample ID: 200-43262-1 MSD
Matrix: Water
Analysis Batch: 129349

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 129214

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
6:2FTS	2.06	U	44.8	44.09	*	ng/L		98	40 - 160	40	30
8:2FTS	2.06	U	45.3	51.36	*	ng/L		113	40 - 160	47	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C8 FOSA	*36*		*25 - 150*
13C4 PFBA	*28*		*25 - 150*
13C5 PFPeA	*42*		*25 - 150*
13C2 PFHxA	*43*		*25 - 150*
13C4-PFHpA	*55*		*25 - 150*
13C4 PFOA	*51*		*25 - 150*
13C5 PFNA	*50*		*25 - 150*
13C2 PFDA	*46*		*25 - 150*
13C2 PFUnA	*44*		*25 - 150*
13C2 PFDoA	*36*		*25 - 150*
13C2-PFTeDA	*31*		*25 - 150*
13C3-PFBS	*59*		*25 - 150*
18O2 PFHxS	*65*		*25 - 150*
13C4 PFOS	*60*		*25 - 150*
d3-NMeFOSAA	*39*		*25 - 150*
d5-NEtFOSAA	*37*		*25 - 150*
M2-6:2FTS	*77*		*25 - 150*
M2-8:2FTS	*50*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 200-129214/1-A
Matrix: Water
Analysis Batch: 129349

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 129214

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluoropentanoic acid (PFPeA)	0.639	J	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorohexanoic acid (PFHxA)	0.616	J	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.29	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.47	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.26	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorodecanoic acid (PFDA)	0.564	J	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorotridecanoic Acid (PFTriA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorotetradecanoic acid (PFTeA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.88	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorohexanesulfonic acid (PFHxS)	0.704	J	2.00	0.28	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.30	ng/L		05/07/18 14:00	05/11/18 16:48	1
Perfluorooctane Sulfonamide (FOSA)	2.00	U	2.00	0.44	ng/L		05/07/18 14:00	05/11/18 16:48	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.00	U	2.00	0.60	ng/L		05/07/18 14:00	05/11/18 16:48	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2.00	U	2.00	0.60	ng/L		05/07/18 14:00	05/11/18 16:48	1
6:2FTS	2.00	U	2.00	0.60	ng/L		05/07/18 14:00	05/11/18 16:48	1
8:2FTS	2.00	U	2.00	0.60	ng/L		05/07/18 14:00	05/11/18 16:48	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*45*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C4 PFBA	*61*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C5 PFPeA	*75*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2 PFHxA	*72*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C4-PFHpA	*75*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C4 PFOA	*70*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C5 PFNA	*63*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2 PFDA	*64*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2 PFUnA	*62*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2 PFDoA	*48*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C2-PFTeDA	*46*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C3-PFBS	*74*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
18O2 PFHxS	*73*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
13C4 PFOS	*69*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
d3-NMeFOSAA	*52*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
d5-NEtFOSAA	*55*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
M2-6:2FTS	*83*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*
M2-8:2FTS	*66*		*25 - 150*	*05/07/18 14:00*	*05/11/18 16:48*	*1*

DATA USABILITY SUMMARY REPORT
FOR APRIL 2018 GROUNDWATER SAMPLING
1,4-DIOXANE
LAB REPORT #460-155037-1
I.W. INDUSTRIES, INC. SITE
35 MELVILLE PARK RAOD, MELVILLE, NEW YORK

This data usability summary report (DUSR) was prepared using the entire original laboratory report, including the sample data summary report and the extended data package. The sampling event included three groundwater samples collected from the existing groundwater monitoring well network. The primary environmental samples include MW-1, MW-3 and MW-6.

Sample Collection Procedures

The samples were collected in laboratory-provided glassware utilizing dedicated or disposable sampling equipment. Samples for Quality Assurance/Quality Control (QA/QC) were also obtained to evaluate field sampling methods and laboratory procedures. All sample collection was conducted under Chain of Custody (COC) procedures and in accordance with the Site Management Plan for the site and our December 21, 2017 work plan, both of which are approved by the NYSDEC.

Sample Analyses

The samples were transmitted via overnight courier and analyzed by TestAmerica at their Edison, New Jersey facility, which is New York State Department of Health-certified for the analyses performed. The samples were prepared and analyzed for 1,4-dioxane using Method 8270D-SIM. The analytical method and analyte are appropriate for the intended use of the data. The sample holding times were met and no problems with sample receipt or handling were reported by the laboratory.

Surrogate recoveries in each of the samples were within acceptance limits for 1,4-dioxane, indicating that the data are anticipated to be accurate.

A field blank sample (FB) was collected to evaluate potential contamination from field sampling procedures. 1,4-Dioxane was not detected in the FB sample, which had been prepared by pouring laboratory-provided blank water over the dedicated HDPE sample tubing. Based on this information, cross-contamination from field sampling procedures does not appear to affect this dataset.

A duplicate sample was collected and utilized to evaluate the precision of the laboratory analysis. 1,4-Dioxane was not detected in the duplicate sample (MW-3D) or in the associated parent sample (MW-3). Based on these results, the laboratory results are likely to be precise.

A matrix spike/matrix spike duplicate (MS/MSD) sample was prepared to evaluate the effect of the matrix on the reliability of the analytical results. Spiking occurs in the laboratory prior to sample preparation and analysis. Based on information provided by the analytical laboratory, the MS/MSD results were within QC limits and, therefore, matrix-related effects do not appear to significantly affect the analytical results.

A method blank (MB) sample was analyzed by the laboratory to evaluate the potential for cross-contamination associated with the sample preparation and analysis. The MB results did not show

1,4-dioxane above the method detection limit and, therefore, potential laboratory contamination by 1,4-dioxane does not appear to present a concern.

Laboratory control samples (LCSs) were used by the laboratory to verify the accuracy and precision of the analyses. The LCS results were all within established limits and, therefore, the laboratory results are likely to be precise.

The continuing calibration verification (CCV) associated with batch 515822 recovered above the upper control limit for dioxane, suggesting that the sample results could be biased high. However, 1,4-dioxane was not detected in the samples associated with this CCV and, therefore, the data have been reported without qualification.

Questions and Responses

1. Is the data package complete as defined under the current requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

   The data package is complete. The external and internal chain of custody forms are present and complete. The case narrative and sample analysis summaries are present and complete. The analytical QA/QC summary forms, including surrogate recovery forms, LCS forms, IDL forms, initial and continuing calibration summary forms, standards raw data, tuning criteria report, and MB data are all present and complete. The data report forms, including sample prep logs, and injection logs are all present and complete. The raw data used to identify and quantify the contract-specified analytes are present and complete.

   Data completeness for the field program was also verified. The numbers and types of samples are in agreement with the NYSDEC-approved workplan.

2. Have all holding times been met?

   All samples were received and analyzed within the EPA-recommended holding time for the analysis performed.

3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data, fall within the protocol-required limits and specifications?

   No – Although nearly all of QC data were found to fall within the protocol-required limits and specifications, a minor exception was noted above; however, this exception does not appear to significantly affect the data set.

4. Have all of the data been generated using established and agreed-upon analytical protocols?

   Yes - all of the data were generated using Method 8270D-SIM (1,4-dioxane)

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

   Yes – a representative number of raw data results were compared with the reported data results to confirm that the reported analytical results (identification and quantification) are substantiated by the raw data.

6. Have the correct data qualifiers been used?

   Yes – Results below the method detection limit are U-qualified. No other qualifiers were indicated or applied.

7. Have any quality control (QC) exceedances been specifically noted in the DUSR and have the corresponding QC summary sheets from the data package been attached to the DUSR?

   Yes.

Conclusions

The groundwater samples were collected in accordance with NYSDEC guidance. No field or laboratory conditions occurred that would result in non-valid analytical data other than as noted above. The data appear to be adequate for their intended purpose.

\\Lisa11\Clients\Transaero\PFAS&Dioxane\DUSRGW-14dioxane.Docx

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 460-155037-1

Job Description: IW Industries

For:
FPM Group Limited
909 Marconi Avenue
Ronkonkoma, NY 11779

Attention: Mr. John Bukoski

Approved for release.
Thomas A Chupela
Project Management Assistant I
5/3/2018 9:31 AM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
05/03/2018

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 LAO00132

Job Number: 460-155037-1

Job Description: IW Industries

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
5/3/2018 9:31 AM

Designee for
Melissa Haas

CASE NARRATIVE

Client: FPM Group Limited

Project: IW Industries

Report Number: 460-155037-1

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 4/30/2018 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° 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 METHOD 8270 SIM
Samples MW-6 (460-155037-1), MW-1 (460-155037-2), MW-3 (460-155037-3), FB (460-155037-4) and MW-3D (460-155037-5) were analyzed for 1,4 Dioxane by Method 8270 SIM in accordance with EPA SW-846 Method 8270D SIM DKQP. The samples were prepared on 05/01/2018 and analyzed on 05/02/2018.

The continuing calibration verification (CCV) associated with batch 460-515822 recovered above the upper control limit for 1,4-Dioxane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Refer to the QC report for details.

No other difficulties were encountered during the SVOC SIM DKQP analysis.

All other quality control parameters were within the acceptance limits.

Method Summary

Client: FPM Group Limited
Project/Site: IW Industries

TestAmerica Job ID: 460-155037-1

Method	Method Description	Protocol	Laboratory
8270D SIM	1,4-Dioxane (GC/MS SIM)	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

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Edison Job No.: 460-155037-1

SDG No.:

Lab Sample ID: CCVIS 460-515822/2 Calibration Date: 05/02/2018 08:37

Instrument ID: CBNAMS9 Calib Start Date: 04/12/2018 14:15

GC Column: Rtxi-5Sil MS ID: 0.25(mm) Calib End Date: 04/12/2018 16:01

Lab File ID: h229693c.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.5485	0.6932		253	200	26.4*	20.0
N-Nitrosodimethylamine	Ave	0.6490	0.4904		75.6	100	-24.4*	20.0
Bis(2-chloroethyl)ether	Ave	1.154	0.9767	0.7000	16.9	20.0	-15.4	20.0
Naphthalene	Ave	1.285	1.182	0.7000	18.4	20.0	-8.0	20.0
Acenaphthylene	Ave	3.435	3.272	0.9000	19.1	20.0	-4.7	20.0
Acenaphthene	Ave	1.804	1.583	0.9000	17.5	20.0	-12.3	20.0
Fluorene	Ave	2.012	1.818	0.9000	18.1	20.0	-9.6	20.0
4,6-Dinitro-2-methylphenol	Qua		0.0837	0.0100	257	200	28.3*	20.0
Hexachlorobenzene	Ave	0.6585	0.7472	0.1000	22.7	20.0	13.5	20.0
Pentachlorophenol	QuaF		0.1814	0.0500	112	100	12.0	20.0
Phenanthrene	Ave	1.489	1.873	0.7000	25.2	20.0	25.8*	20.0
Anthracene	Ave	1.434	1.696	0.7000	23.7	20.0	18.3	20.0
Fluoranthene	Ave	1.398	1.479	0.6000	21.2	20.0	5.8	20.0
Pyrene	Ave	1.911	2.652	0.6000	27.8	20.0	38.8*	20.0
Benzo[a]anthracene	Ave	1.390	1.507	0.8000	21.7	20.0	8.5	20.0
Chrysene	Ave	1.647	1.996	0.7000	24.2	20.0	21.2*	20.0
Benzo[b]fluoranthene	Ave	1.544	1.467		19.0	20.0	-5.0	20.0
Benzo[k]fluoranthene	Ave	1.770	1.798	0.7000	20.3	20.0	1.6	20.0
Benzo[a]pyrene	Ave	1.359	1.407	0.7000	20.7	20.0	3.6	20.0
Indeno[1,2,3-cd]pyrene	Ave	1.354	1.245	0.5000	18.4	20.0	-8.1	20.0
Dibenz(a,h)anthracene	Ave	1.293	1.138	0.4000	17.6	20.0	-12.0	20.0
Benzo[g,h,i]perylene	Ave	1.606	1.585	0.5000	19.7	20.0	-1.3	20.0
Nitrobenzene-d5	Ave	0.3919	0.3388		346	400	-13.6	20.0