# ANALYTICAL REPORT

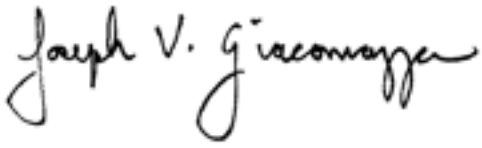
Job Number: 480-133255-1

Job Description: Hyland Landfill Region 9

Contract Number: C008010

For:
New York State D.E.C.
625 Broadway
Division of Environmental Remediation
Albany, NY 12233-7014

Attention: Mr. Vincent Fay



Approved for release.
Joe V Giacomazza
Project Management Assistant II
4/10/2018 4:14 PM

Designee for
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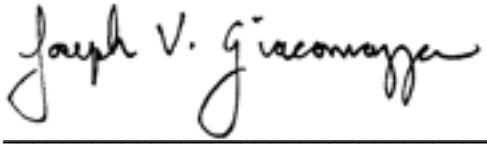
04/10/2018

Job Number: 480-133255-1

Job Description: Hyland Landfill Region 9

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.
Joe V Giacomazza
Project Management Assistant II
4/10/2018 4:14 PM

Designee for
Orlette S Johnson

# Table of Contents

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**Job Narrative**
**480-133255-1**

**Comments**
No additional comments.

**Receipt**
The samples were received on 3/28/2018 2:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3º C.

**GC/MS Semi VOA**
Method(s) 8270D SIM ID: The 1,4-Dioxane result reported for samples R9-032818-C1 (480-133255-1) and R9-032818-POND (480-133255-2) recovered above the upper calibration range. The results are to be considered estimated and have been qualified with an "E" flag.

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

**LCMS**
Method(s) 537 (modified): The following samples were diluted due to the nature of the sample matrix resulted in a suppressed internal standard response in the undiluted extract: R9-032818-C1 (480-133255-1) and R9-032818-POND (480-133255-2). Elevated reporting limits (RLs) are provided.

Method(s) 537 (modified): Results for samples R9-032818-C1 (480-133255-1) and R9-032818-POND (480-133255-2) were reported from the analysis of a diluted extract due to matrix issues in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recoveries associated with the following samples are below the method recommended limit for 13C2-PFTeDA and/or 13C4 PFBA: R9-032818-C1 (480-133255-1) and R9-032818-POND (480-133255-2). 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 samples.

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for several analytes in the following samples: R9-032818-C1 (480-133255-1) and R9-032818-POND (480-133255-2). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

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

**Organic Prep**
Method(s) 3510C: Due to the matrix, the initial volume(s) used for the following samples deviated from the standard procedure: R9-032818-C1 (480-133255-1) and R9-032818-POND (480-133255-2). The reporting limits (RLs) have been adjusted proportionately.

Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-216477.

Method(s) 3535: The following samples: R9-032818-C1 (480-133255-1) and R9-032818-POND (480-133255-2) was/were decanted prior to extraction, due to containing excess sediment which had the potential to clog the solid-phase column.

Method(s) 3535: The following samples were a dark brown prior to analysis, and eluted into an amber color.

R9-032818-C1 (480-133255-1) and R9-032818-POND (480-133255-2)
3535 - water - 320-216477

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

## Qualifiers

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| E | Result exceeded calibration range. |
| U | Indicates the analyte was analyzed for but not detected. |

### LCMS

| Qualifier | Qualifier Description |
|---|---|
| * | Isotope Dilution analyte  is outside acceptance limits. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| U | Indicates the analyte was analyzed for but not detected. |
| B | Compound was found in the blank and sample. |

## 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) |

# Sample Summary

Client: New York State D.E.C.
Project/Site: Hyland Landfill Region 9

TestAmerica Job ID: 480-133255-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 480-133255-1 | R9-032818-C1 | Water | 03/28/18 11:25 | 03/28/18 14:10 |
| 480-133255-2 | R9-032818-POND | Water | 03/28/18 11:50 | 03/28/18 14:10 |

# Detection Summary

Client: New York State D.E.C.
Project/Site: Hyland Landfill Region 9

TestAmerica Job ID: 480-133255-1

## Client Sample ID: R9-032818-C1 — Lab Sample ID: 480-133255-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 120 | E | 2.0 | 1.0 | ug/L | 1 | | 8270D SIM ID | Total/NA |
| Perfluorobutanoic acid (PFBA) | 3170 | | 20.3 | 3.55 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluoropentanoic acid (PFPeA) | 1310 | | 20.3 | 4.97 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorohexanoic acid (PFHxA) | 3050 | | 20.3 | 5.89 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluoroheptanoic acid (PFHpA) | 968 | | 20.3 | 2.54 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorooctanoic acid (PFOA) | 2510 | B | 20.3 | 8.63 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorononanoic acid (PFNA) | 92.3 | | 20.3 | 2.74 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorodecanoic acid (PFDA) | 120 | | 20.3 | 3.15 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluoroundecanoic acid (PFUnA) | 41.3 | | 20.3 | 11.2 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorododecanoic acid (PFDoA) | 35.9 | | 20.3 | 5.58 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorobutanesulfonic acid (PFBS) | 1830 | | 20.3 | 2.03 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorohexanesulfonic acid (PFHxS) | 747 | B | 20.3 | 1.73 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluoroheptanesulfonic Acid (PFHpS) | 7.41 | J | 20.3 | 1.93 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 326 | | 20.3 | 5.48 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorooctane Sulfonamide (FOSA) | 13.3 | J | 20.3 | 3.55 | ng/L | 10 | | 537 (modified) | Total/NA |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 352 | | 203 | 31.5 | ng/L | 10 | | 537 (modified) | Total/NA |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 302 | | 203 | 19.3 | ng/L | 10 | | 537 (modified) | Total/NA |
| 6:2FTS | 234 | | 203 | 20.3 | ng/L | 10 | | 537 (modified) | Total/NA |
| 8:2FTS | 82.8 | J | 203 | 20.3 | ng/L | 10 | | 537 (modified) | Total/NA |

## Client Sample ID: R9-032818-POND — Lab Sample ID: 480-133255-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 69 | E | 2.0 | 1.0 | ug/L | 1 | | 8270D SIM ID | Total/NA |
| Perfluorobutanoic acid (PFBA) | 2320 | | 19.8 | 3.47 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluoropentanoic acid (PFPeA) | 426 | | 19.8 | 4.86 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorohexanoic acid (PFHxA) | 1550 | | 19.8 | 5.76 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluoroheptanoic acid (PFHpA) | 304 | | 19.8 | 2.48 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorooctanoic acid (PFOA) | 895 | B | 19.8 | 8.44 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorononanoic acid (PFNA) | 59.4 | | 19.8 | 2.68 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorodecanoic acid (PFDA) | 140 | | 19.8 | 3.08 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluoroundecanoic acid (PFUnA) | 14.7 | J | 19.8 | 10.9 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorododecanoic acid (PFDoA) | 16.1 | J | 19.8 | 5.46 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorobutanesulfonic acid (PFBS) | 2150 | | 19.8 | 1.98 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorohexanesulfonic acid (PFHxS) | 312 | B | 19.8 | 1.69 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluoroheptanesulfonic Acid (PFHpS) | 5.44 | J | 19.8 | 1.89 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 193 | | 19.8 | 5.36 | ng/L | 10 | | 537 (modified) | Total/NA |
| Perfluorooctane Sulfonamide (FOSA) | 16.5 | J | 19.8 | 3.47 | ng/L | 10 | | 537 (modified) | Total/NA |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 213 | | 198 | 30.8 | ng/L | 10 | | 537 (modified) | Total/NA |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 93.4 | J | 198 | 18.9 | ng/L | 10 | | 537 (modified) | Total/NA |
| 6:2FTS | 209 | | 198 | 19.8 | ng/L | 10 | | 537 (modified) | Total/NA |
| 8:2FTS | 37.1 | J | 198 | 19.8 | ng/L | 10 | | 537 (modified) | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: R9-032818-C1

**Date Collected: 03/28/18 11:25**
**Date Received: 03/28/18 14:10**

## Lab Sample ID: 480-133255-1

**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **1,4-Dioxane** | **120** | **E** | 2.0 | 1.0 | ug/L | | 03/29/18 14:07 | 04/07/18 00:00 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Dioxane-d8* | *39* | | *15 - 110* | *03/29/18 14:07* | *04/07/18 00:00* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Perfluorobutanoic acid (PFBA)** | **3170** | | 20.3 | 3.55 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluoropentanoic acid (PFPeA)** | **1310** | | 20.3 | 4.97 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluorohexanoic acid (PFHxA)** | **3050** | | 20.3 | 5.89 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluoroheptanoic acid (PFHpA)** | **968** | | 20.3 | 2.54 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluorooctanoic acid (PFOA)** | **2510** | **B** | 20.3 | 8.63 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluorononanoic acid (PFNA)** | **92.3** | | 20.3 | 2.74 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluorodecanoic acid (PFDA)** | **120** | | 20.3 | 3.15 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluoroundecanoic acid (PFUnA)** | **41.3** | | 20.3 | 11.2 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluorododecanoic acid (PFDoA)** | **35.9** | | 20.3 | 5.58 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| Perfluorotridecanoic Acid (PFTriA) | 13.2 | U | 20.3 | 13.2 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| Perfluorotetradecanoic acid (PFTeA) | 2.94 | U | 20.3 | 2.94 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluorobutanesulfonic acid (PFBS)** | **1830** | | 20.3 | 2.03 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluorohexanesulfonic acid (PFHxS)** | **747** | **B** | 20.3 | 1.73 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluoroheptanesulfonic Acid (PFHpS)** | **7.41** | **J** | 20.3 | 1.93 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluorooctanesulfonic acid (PFOS)** | **326** | | 20.3 | 5.48 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| Perfluorodecanesulfonic acid (PFDS) | 3.25 | U | 20.3 | 3.25 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **Perfluorooctane Sulfonamide (FOSA)** | **13.3** | **J** | 20.3 | 3.55 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)** | **352** | | 203 | 31.5 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)** | **302** | | 203 | 19.3 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **6:2FTS** | **234** | | 203 | 20.3 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |
| **8:2FTS** | **82.8** | **J** | 203 | 20.3 | ng/L | | 04/05/18 12:06 | 04/08/18 15:20 | 10 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *9* | * | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C5 PFPeA* | *46* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C2 PFHxA* | *70* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C4-PFHpA* | *85* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C4 PFOA* | *82* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C5 PFNA* | *123* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C2 PFDA* | *147* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C2 PFUnA* | *145* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C2 PFDoA* | *81* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C2-PFTeDA* | *18* | * | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C3-PFBS* | *150* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *18O2 PFHxS* | *115* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |

## Client Sample ID: R9-032818-C1

**Lab Sample ID: 480-133255-1**

**Date Collected: 03/28/18 11:25**

**Matrix: Water**

**Date Received: 03/28/18 14:10**

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

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFOS* | *127* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *13C8 FOSA* | *112* | | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *d3-NMeFOSAA* | *162* | * | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *d5-NEtFOSAA* | *164* | * | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *M2-6:2FTS* | *399* | * | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |
| *M2-8:2FTS* | *395* | * | *25 - 150* | *04/05/18 12:06* | *04/08/18 15:20* | *10* |

## Client Sample ID: R9-032818-POND

**Lab Sample ID: 480-133255-2**

**Date Collected: 03/28/18 11:50**

**Matrix: Water**

**Date Received: 03/28/18 14:10**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **1,4-Dioxane** | **69** | **E** | 2.0 | 1.0 | ug/L | | 03/29/18 14:07 | 04/07/18 00:24 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Dioxane-d8* | *29* | | *15 - 110* | *03/29/18 14:07* | *04/07/18 00:24* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Perfluorobutanoic acid (PFBA)** | **2320** | | 19.8 | 3.47 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluoropentanoic acid (PFPeA)** | **426** | | 19.8 | 4.86 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluorohexanoic acid (PFHxA)** | **1550** | | 19.8 | 5.76 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluoroheptanoic acid (PFHpA)** | **304** | | 19.8 | 2.48 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluorooctanoic acid (PFOA)** | **895** | **B** | 19.8 | 8.44 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluorononanoic acid (PFNA)** | **59.4** | | 19.8 | 2.68 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluorodecanoic acid (PFDA)** | **140** | | 19.8 | 3.08 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluoroundecanoic acid (PFUnA)** | **14.7** | **J** | 19.8 | 10.9 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluorododecanoic acid (PFDoA)** | **16.1** | **J** | 19.8 | 5.46 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| Perfluorotridecanoic Acid (PFTriA) | 12.9 | U | 19.8 | 12.9 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| Perfluorotetradecanoic acid (PFTeA) | 2.88 | U | 19.8 | 2.88 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluorobutanesulfonic acid (PFBS)** | **2150** | | 19.8 | 1.98 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluorohexanesulfonic acid (PFHxS)** | **312** | **B** | 19.8 | 1.69 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluoroheptanesulfonic Acid (PFHpS)** | **5.44** | **J** | 19.8 | 1.89 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluorooctanesulfonic acid (PFOS)** | **193** | | 19.8 | 5.36 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| Perfluorodecanesulfonic acid (PFDS) | 3.18 | U | 19.8 | 3.18 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **Perfluorooctane Sulfonamide (FOSA)** | **16.5** | **J** | 19.8 | 3.47 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)** | **213** | | 198 | 30.8 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)** | **93.4** | **J** | 198 | 18.9 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **6:2FTS** | **209** | | 198 | 19.8 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| **8:2FTS** | **37.1** | **J** | 198 | 19.8 | ng/L | | 04/05/18 12:06 | 04/08/18 15:27 | 10 |

## Client Sample ID: R9-032818-POND
**Date Collected: 03/28/18 11:50**
**Date Received: 03/28/18 14:10**

## Lab Sample ID: 480-133255-2
**Matrix: Water**

| Isotope Dilution | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 13C4 PFBA | 6 | * | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C5 PFPeA | 35 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C2 PFHxA | 56 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C4-PFHpA | 75 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C4 PFOA | 81 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C5 PFNA | 107 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C2 PFDA | 134 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C2 PFUnA | 114 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C2 PFDoA | 64 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C2-PFTeDA | 12 | * | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C3-PFBS | 130 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 18O2 PFHxS | 105 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C4 PFOS | 130 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| 13C8 FOSA | 96 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| d3-NMeFOSAA | 149 | | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| d5-NEtFOSAA | 170 | * | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| M2-6:2FTS | 328 | * | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |
| M2-8:2FTS | 363 | * | 25 - 150 | 04/05/18 12:06 | 04/08/18 15:27 | 10 |

# Isotope Dilution Summary

Client: New York State D.E.C.
Project/Site: Hyland Landfill Region 9

TestAmerica Job ID: 480-133255-1

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

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

| | | Percent Isotope Dilution Recovery (Acceptance Limits) |
|---|---|---|
| Lab Sample ID | Client Sample ID | DXE (15-110) |
| 480-133255-1 | R9-032818-C1 | 39 |
| 480-133255-2 | R9-032818-POND | 29 |
| LCS 480-406424/2-A | Lab Control Sample | 41 |
| LCSD 480-406424/3-A | Lab Control Sample Dup | 43 |
| MB 480-406424/1-A | Method Blank | 53 |

**Surrogate Legend**

DXE = 1,4-Dioxane-d8

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

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

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Client Sample ID | PFBA (25-150) | PFPeA (25-150) | PFHxA (25-150) | PFHpA (25-150) | PFOA (25-150) | PFNA (25-150) | PFDA (25-150) | PFUnA (25-150) |
| 480-133255-1 | R9-032818-C1 | 9 * | 46 | 70 | 85 | 82 | 123 | 147 | 145 |
| 480-133255-2 | R9-032818-POND | 6 * | 35 | 56 | 75 | 81 | 107 | 134 | 114 |
| LCS 320-216477/2-A | Lab Control Sample | 83 | 86 | 86 | 91 | 89 | 94 | 93 | 93 |
| LCSD 320-216477/3-A | Lab Control Sample Dup | 96 | 95 | 96 | 99 | 101 | 109 | 109 | 113 |
| MB 320-216477/1-A | Method Blank | 69 | 70 | 67 | 73 | 73 | 78 | 81 | 78 |

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Client Sample ID | PFDoA (25-150) | PFTDA (25-150) | 3C3-PFBS (25-150) | PFHxS (25-150) | PFOS (25-150) | PFOSA (25-150) | -NMeFOS/ (25-150) | -NEtFOSA (25-150) |
| 480-133255-1 | R9-032818-C1 | 81 | 18 * | 150 | 115 | 127 | 112 | 162 * | 164 * |
| 480-133255-2 | R9-032818-POND | 64 | 12 * | 130 | 105 | 130 | 96 | 149 | 170 * |
| LCS 320-216477/2-A | Lab Control Sample | 95 | 94 | 81 | 87 | 88 | 74 | 95 | 91 |
| LCSD 320-216477/3-A | Lab Control Sample Dup | 111 | 113 | 93 | 94 | 101 | 90 | 119 | 112 |
| MB 320-216477/1-A | Method Blank | 79 | 76 | 69 | 71 | 74 | 63 | 83 | 79 |

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | M262FTS (25-150) | M282FTS (25-150) |
| 480-133255-1 | R9-032818-C1 | 399 * | 395 * |
| 480-133255-2 | R9-032818-POND | 328 * | 363 * |
| LCS 320-216477/2-A | Lab Control Sample | 90 | 92 |
| LCSD 320-216477/3-A | Lab Control Sample Dup | 105 | 121 |
| MB 320-216477/1-A | Method Blank | 78 | 77 |

**Surrogate Legend**

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS

# Isotope Dilution Summary

Client: New York State D.E.C.
Project/Site: Hyland Landfill Region 9

TestAmerica Job ID: 480-133255-1

PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

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

**Lab Sample ID: MB 480-406424/1-A**
**Matrix: Water**
**Analysis Batch: 407525**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 406424**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 0.10 | U | 0.20 | 0.10 | ug/L | | 03/29/18 14:07 | 04/06/18 22:48 | 1 |

| *Isotope Dilution* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Dioxane-d8* | *53* | | *15 - 110* | *03/29/18 14:07* | *04/06/18 22:48* | *1* |

**Lab Sample ID: LCS 480-406424/2-A**
**Matrix: Water**
**Analysis Batch: 407525**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 406424**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 1.00 | 1.12 | | ug/L | | 112 | 40 - 140 |

| *Isotope Dilution* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,4-Dioxane-d8* | *41* | | *15 - 110* |

**Lab Sample ID: LCSD 480-406424/3-A**
**Matrix: Water**
**Analysis Batch: 407525**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 406424**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 1.00 | 1.07 | | ug/L | | 107 | 40 - 140 | 5 | 20 |

| *Isotope Dilution* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,4-Dioxane-d8* | *43* | | *15 - 110* |

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

**Lab Sample ID: MB 320-216477/1-A**
**Matrix: Water**
**Analysis Batch: 216860**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 216477**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 0.35 | U | 2.00 | 0.35 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluoropentanoic acid (PFPeA) | 0.49 | U | 2.00 | 0.49 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorohexanoic acid (PFHxA) | 0.58 | U | 2.00 | 0.58 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluoroheptanoic acid (PFHpA) | 0.25 | U | 2.00 | 0.25 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorooctanoic acid (PFOA) | 1.353 | J | 2.00 | 0.85 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorononanoic acid (PFNA) | 0.27 | U | 2.00 | 0.27 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorodecanoic acid (PFDA) | 0.31 | U | 2.00 | 0.31 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluoroundecanoic acid (PFUnA) | 1.10 | U | 2.00 | 1.10 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorododecanoic acid (PFDoA) | 0.55 | U | 2.00 | 0.55 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorotridecanoic Acid (PFTriA) | 1.30 | U | 2.00 | 1.30 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorotetradecanoic acid (PFTeA) | 0.29 | U | 2.00 | 0.29 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | 0.20 | U | 2.00 | 0.20 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | 0.240 | J | 2.00 | 0.17 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluoroheptanesulfonic Acid (PFHpS) | 0.19 | U | 2.00 | 0.19 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | 0.54 | U | 2.00 | 0.54 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | 0.32 | U | 2.00 | 0.32 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |

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

**Lab Sample ID: MB 320-216477/1-A**
**Matrix: Water**
**Analysis Batch: 216860**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 216477**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorooctane Sulfonamide (FOSA) | 0.35 | U | 2.00 | 0.35 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 3.10 | U | 20.0 | 3.10 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 1.90 | U | 20.0 | 1.90 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| 6:2FTS | 2.00 | U | 20.0 | 2.00 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |
| 8:2FTS | 2.00 | U | 20.0 | 2.00 | ng/L | | 04/05/18 12:06 | 04/07/18 14:53 | 1 |

| *Isotope Dilution* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *69* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C5 PFPeA* | *70* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C2 PFHxA* | *67* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C4-PFHpA* | *73* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C4 PFOA* | *73* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C5 PFNA* | *78* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C2 PFDA* | *81* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C2 PFUnA* | *78* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C2 PFDoA* | *79* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C2-PFTeDA* | *76* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C3-PFBS* | *69* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *18O2 PFHxS* | *71* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C4 PFOS* | *74* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *13C8 FOSA* | *63* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *d3-NMeFOSAA* | *83* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *d5-NEtFOSAA* | *79* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *M2-6:2FTS* | *78* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |
| *M2-8:2FTS* | *77* | | *25 - 150* | *04/05/18 12:06* | *04/07/18 14:53* | *1* |

**Lab Sample ID: LCS 320-216477/2-A**
**Matrix: Water**
**Analysis Batch: 216860**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 216477**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 40.0 | 38.98 | | ng/L | | 97 | 70 - 130 |
| Perfluoropentanoic acid (PFPeA) | 40.0 | 34.85 | | ng/L | | 87 | 66 - 126 |
| Perfluorohexanoic acid (PFHxA) | 40.0 | 37.07 | | ng/L | | 93 | 66 - 126 |
| Perfluoroheptanoic acid (PFHpA) | 40.0 | 36.13 | | ng/L | | 90 | 66 - 126 |
| Perfluorooctanoic acid (PFOA) | 40.0 | 35.66 | | ng/L | | 89 | 64 - 124 |
| Perfluorononanoic acid (PFNA) | 40.0 | 36.68 | | ng/L | | 92 | 68 - 128 |
| Perfluorodecanoic acid (PFDA) | 40.0 | 38.96 | | ng/L | | 97 | 69 - 129 |
| Perfluoroundecanoic acid (PFUnA) | 40.0 | 37.90 | | ng/L | | 95 | 60 - 120 |
| Perfluorododecanoic acid (PFDoA) | 40.0 | 36.22 | | ng/L | | 91 | 71 - 131 |
| Perfluorotridecanoic Acid (PFTriA) | 40.0 | 36.73 | | ng/L | | 92 | 72 - 132 |
| Perfluorotetradecanoic acid (PFTeA) | 40.0 | 36.91 | | ng/L | | 92 | 68 - 128 |
| Perfluorobutanesulfonic acid (PFBS) | 35.4 | 33.58 | | ng/L | | 95 | 73 - 133 |

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

**Lab Sample ID: LCS 320-216477/2-A**
**Matrix: Water**
**Analysis Batch: 216860**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 216477**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Perfluorohexanesulfonic acid (PFHxS) | 36.4 | 32.60 | | ng/L | | 90 | 63 - 123 |
| Perfluoroheptanesulfonic Acid (PFHpS) | 38.1 | 34.25 | | ng/L | | 90 | 68 - 128 |
| Perfluorooctanesulfonic acid (PFOS) | 37.1 | 33.20 | | ng/L | | 89 | 67 - 127 |
| Perfluorodecanesulfonic acid (PFDS) | 38.6 | 32.74 | | ng/L | | 85 | 68 - 128 |
| Perfluorooctane Sulfonamide (FOSA) | 40.0 | 37.51 | | ng/L | | 94 | 70 - 130 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 40.0 | 37.58 | | ng/L | | 94 | 67 - 127 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 40.0 | 40.77 | | ng/L | | 102 | 65 - 125 |
| 6:2FTS | 37.9 | 31.88 | | ng/L | | 84 | 66 - 126 |
| 8:2FTS | 38.3 | 36.19 | | ng/L | | 94 | 67 - 127 |

| *Isotope Dilution* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *13C4 PFBA* | *83* | | *25 - 150* |
| *13C5 PFPeA* | *86* | | *25 - 150* |
| *13C2 PFHxA* | *86* | | *25 - 150* |
| *13C4-PFHpA* | *91* | | *25 - 150* |
| *13C4 PFOA* | *89* | | *25 - 150* |
| *13C5 PFNA* | *94* | | *25 - 150* |
| *13C2 PFDA* | *93* | | *25 - 150* |
| *13C2 PFUnA* | *93* | | *25 - 150* |
| *13C2 PFDoA* | *95* | | *25 - 150* |
| *13C2-PFTeDA* | *94* | | *25 - 150* |
| *13C3-PFBS* | *81* | | *25 - 150* |
| *18O2 PFHxS* | *87* | | *25 - 150* |
| *13C4 PFOS* | *88* | | *25 - 150* |
| *13C8 FOSA* | *74* | | *25 - 150* |
| *d3-NMeFOSAA* | *95* | | *25 - 150* |
| *d5-NEtFOSAA* | *91* | | *25 - 150* |
| *M2-6:2FTS* | *90* | | *25 - 150* |
| *M2-8:2FTS* | *92* | | *25 - 150* |

**Lab Sample ID: LCSD 320-216477/3-A**
**Matrix: Water**
**Analysis Batch: 216860**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 216477**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 40.0 | 39.53 | | ng/L | | 99 | 70 - 130 | 1 | 30 |
| Perfluoropentanoic acid (PFPeA) | 40.0 | 35.96 | | ng/L | | 90 | 66 - 126 | 3 | 30 |
| Perfluorohexanoic acid (PFHxA) | 40.0 | 36.22 | | ng/L | | 91 | 66 - 126 | 2 | 30 |
| Perfluoroheptanoic acid (PFHpA) | 40.0 | 35.89 | | ng/L | | 90 | 66 - 126 | 1 | 30 |
| Perfluorooctanoic acid (PFOA) | 40.0 | 34.61 | | ng/L | | 87 | 64 - 124 | 3 | 30 |
| Perfluorononanoic acid (PFNA) | 40.0 | 36.92 | | ng/L | | 92 | 68 - 128 | 1 | 30 |

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

**Lab Sample ID: LCSD 320-216477/3-A**
**Matrix: Water**
**Analysis Batch: 216860**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 216477**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorodecanoic acid (PFDA) | | | 40.0 | 38.38 | | ng/L | | 96 | 69 - 129 | 1 | 30 |
| Perfluoroundecanoic acid (PFUnA) | | | 40.0 | 37.35 | | ng/L | | 93 | 60 - 120 | 1 | 30 |
| Perfluorododecanoic acid (PFDoA) | | | 40.0 | 37.13 | | ng/L | | 93 | 71 - 131 | 2 | 30 |
| Perfluorotridecanoic Acid (PFTriA) | | | 40.0 | 37.50 | | ng/L | | 94 | 72 - 132 | 2 | 30 |
| Perfluorotetradecanoic acid (PFTeA) | | | 40.0 | 36.86 | | ng/L | | 92 | 68 - 128 | 0 | 30 |
| Perfluorobutanesulfonic acid (PFBS) | | | 35.4 | 33.62 | | ng/L | | 95 | 73 - 133 | 0 | 30 |
| Perfluorohexanesulfonic acid (PFHxS) | | | 36.4 | 34.37 | | ng/L | | 94 | 63 - 123 | 5 | 30 |
| Perfluoroheptanesulfonic Acid (PFHpS) | | | 38.1 | 33.89 | | ng/L | | 89 | 68 - 128 | 1 | 30 |
| Perfluorooctanesulfonic acid (PFOS) | | | 37.1 | 33.59 | | ng/L | | 91 | 67 - 127 | 1 | 30 |
| Perfluorodecanesulfonic acid (PFDS) | | | 38.6 | 33.90 | | ng/L | | 88 | 68 - 128 | 3 | 30 |
| Perfluorooctane Sulfonamide (FOSA) | | | 40.0 | 36.58 | | ng/L | | 91 | 70 - 130 | 3 | 30 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | | | 40.0 | 37.33 | | ng/L | | 93 | 67 - 127 | 1 | 30 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | | | 40.0 | 37.06 | | ng/L | | 93 | 65 - 125 | 10 | 30 |
| 6:2FTS | | | 37.9 | 32.88 | | ng/L | | 87 | 66 - 126 | 3 | 30 |
| 8:2FTS | | | 38.3 | 31.47 | | ng/L | | 82 | 67 - 127 | 14 | 30 |

| *Isotope Dilution* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *13C4 PFBA* | *96* | | *25 - 150* |
| *13C5 PFPeA* | *95* | | *25 - 150* |
| *13C2 PFHxA* | *96* | | *25 - 150* |
| *13C4-PFHpA* | *99* | | *25 - 150* |
| *13C4 PFOA* | *101* | | *25 - 150* |
| *13C5 PFNA* | *109* | | *25 - 150* |
| *13C2 PFDA* | *109* | | *25 - 150* |
| *13C2 PFUnA* | *113* | | *25 - 150* |
| *13C2 PFDoA* | *111* | | *25 - 150* |
| *13C2-PFTeDA* | *113* | | *25 - 150* |
| *13C3-PFBS* | *93* | | *25 - 150* |
| *18O2 PFHxS* | *94* | | *25 - 150* |
| *13C4 PFOS* | *101* | | *25 - 150* |
| *13C8 FOSA* | *90* | | *25 - 150* |
| *d3-NMeFOSAA* | *119* | | *25 - 150* |
| *d5-NEtFOSAA* | *112* | | *25 - 150* |
| *M2-6:2FTS* | *105* | | *25 - 150* |
| *M2-8:2FTS* | *121* | | *25 - 150* |

# QC Association Summary

Client: New York State D.E.C.
Project/Site: Hyland Landfill Region 9

TestAmerica Job ID: 480-133255-1

## GC/MS Semi VOA

### Prep Batch: 406424

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-133255-1 | R9-032818-C1 | Total/NA | Water | 3510C | |
| 480-133255-2 | R9-032818-POND | Total/NA | Water | 3510C | |
| MB 480-406424/1-A | Method Blank | Total/NA | Water | 3510C | |
| LCS 480-406424/2-A | Lab Control Sample | Total/NA | Water | 3510C | |
| LCSD 480-406424/3-A | Lab Control Sample Dup | Total/NA | Water | 3510C | |

### Analysis Batch: 407525

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-133255-1 | R9-032818-C1 | Total/NA | Water | 8270D SIM ID | 406424 |
| 480-133255-2 | R9-032818-POND | Total/NA | Water | 8270D SIM ID | 406424 |
| MB 480-406424/1-A | Method Blank | Total/NA | Water | 8270D SIM ID | 406424 |
| LCS 480-406424/2-A | Lab Control Sample | Total/NA | Water | 8270D SIM ID | 406424 |
| LCSD 480-406424/3-A | Lab Control Sample Dup | Total/NA | Water | 8270D SIM ID | 406424 |

## LCMS

### Prep Batch: 216477

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-133255-1 | R9-032818-C1 | Total/NA | Water | 3535 | |
| 480-133255-2 | R9-032818-POND | Total/NA | Water | 3535 | |
| MB 320-216477/1-A | Method Blank | Total/NA | Water | 3535 | |
| LCS 320-216477/2-A | Lab Control Sample | Total/NA | Water | 3535 | |
| LCSD 320-216477/3-A | Lab Control Sample Dup | Total/NA | Water | 3535 | |

### Analysis Batch: 216860

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 320-216477/1-A | Method Blank | Total/NA | Water | 537 (modified) | 216477 |
| LCS 320-216477/2-A | Lab Control Sample | Total/NA | Water | 537 (modified) | 216477 |
| LCSD 320-216477/3-A | Lab Control Sample Dup | Total/NA | Water | 537 (modified) | 216477 |

### Analysis Batch: 216884

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-133255-1 | R9-032818-C1 | Total/NA | Water | 537 (modified) | 216477 |
| 480-133255-2 | R9-032818-POND | Total/NA | Water | 537 (modified) | 216477 |

# Lab Chronicle

Client: New York State D.E.C.
Project/Site: Hyland Landfill Region 9

TestAmerica Job ID: 480-133255-1

## Client Sample ID: R9-032818-C1

**Date Collected: 03/28/18 11:25**
**Date Received: 03/28/18 14:10**

## Lab Sample ID: 480-133255-1

**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3510C | | | 406424 | 03/29/18 14:07 | ATG | TAL BUF |
| Total/NA | Analysis | 8270D SIM ID | | 1 | 407525 | 04/07/18 00:00 | DMR | TAL BUF |
| Total/NA | Prep | 3535 | | | 216477 | 04/05/18 12:06 | KMK | TAL SAC |
| Total/NA | Analysis | 537 (modified) | | 10 | 216884 | 04/08/18 15:20 | CBW | TAL SAC |

## Client Sample ID: R9-032818-POND

**Date Collected: 03/28/18 11:50**
**Date Received: 03/28/18 14:10**

## Lab Sample ID: 480-133255-2

**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3510C | | | 406424 | 03/29/18 14:07 | ATG | TAL BUF |
| Total/NA | Analysis | 8270D SIM ID | | 1 | 407525 | 04/07/18 00:24 | DMR | TAL BUF |
| Total/NA | Prep | 3535 | | | 216477 | 04/05/18 12:06 | KMK | TAL SAC |
| Total/NA | Analysis | 537 (modified) | | 10 | 216884 | 04/08/18 15:27 | CBW | TAL SAC |

**Laboratory References:**

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

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

# Method Summary

Client: New York State D.E.C.
Project/Site: Hyland Landfill Region 9

TestAmerica Job ID: 480-133255-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8270D SIM ID | Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) | SW846 | TAL BUF |
| 537 (modified) | Fluorinated Alkyl Substances | EPA | TAL SAC |

**Protocol References:**

EPA = US Environmental Protection Agency

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

**Laboratory References:**

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

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

# Accreditation/Certification Summary

Client: New York State D.E.C. TestAmerica Job ID: 480-133255-1
Project/Site: Hyland Landfill Region 9

## Laboratory: TestAmerica Buffalo

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

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| New York | NELAP | 2 | 10026 | 03-31-18 * |

## Laboratory: TestAmerica Sacramento

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

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

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

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| 537 (modified) | 3535 | Water | 6:2FTS |
| 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) |
| USEPA UCMR | Federal | 1 | CA00044 | 11-06-18 |

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) |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

## Laboratory: TestAmerica Sacramento (Continued)

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

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| USEPA UCMR | Federal | 1 | CA00044 | 11-06-18 |

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 | 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) |

# Method 8270D SIM-ID

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

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Buffalo  Job No.: 480-133255-1

SDG No.:

Matrix: Water  Level: Low

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

| Client Sample ID | Lab Sample ID | DXE # |
|---|---|---|
| R9-032818-C1 | 480-133255-1 | 39 |
| R9-032818-POND | 480-133255-2 | 29 |
| | MB 480-406424/1-A | 53 |
| | LCS 480-406424/2-A | 41 |
| | LCSD 480-406424/3-A | 43 |

| | QC LIMITS |
|---|---|
| DXE = 1,4-Dioxane-d8 | 15-110 |

# Column to be used to flag recovery values

FORM II 8270D SIM ID

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Matrix: Water Level: Low Lab File ID: U3306742.D

Lab ID: LCS 480-406424/2-A Client ID:

| COMPOUND | SPIKE ADDED (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC | QC LIMITS REC | # |
|---|---|---|---|---|---|
| 1,4-Dioxane | 1.00 | 1.12 | 112 | 40-140 | |
| 1,4-Dioxane-d8 | 10.0 | 4.05 | 41 | 15-110 | |

# Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Matrix: Water Level: Low Lab File ID: U3306743.D

Lab ID: LCSD 480-406424/3-A Client ID:

| COMPOUND | SPIKE ADDED (ug/L) | LCSD CONCENTRATION (ug/L) | LCSD % REC | % RPD | QC LIMITS RPD | QC LIMITS REC | # |
|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 1.00 | 1.07 | 107 | 5 | 20 | 40-140 | |
| 1,4-Dioxane-d8 | 10.0 | 4.29 | 43 | | | 15-110 | |

# Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Lab File ID: U3306741.D Lab Sample ID: MB 480-406424/1-A

Matrix: Water Date Extracted: 03/29/2018 14:07

Instrument ID: HP5973U Date Analyzed: 04/06/2018 22:48

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

| CLIENT SAMPLE ID | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|
| | LCS 480-406424/2-A | U3306742.D | 04/06/2018 23:12 |
| | LCSD 480-406424/3-A | U3306743.D | 04/06/2018 23:36 |
| R9-032818-C1 | 480-133255-1 | U3306744.D | 04/07/2018 00:00 |
| R9-032818-POND | 480-133255-2 | U3306745.D | 04/07/2018 00:24 |

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

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Lab File ID: U3306713.D DFTPP Injection Date: 04/06/2018

Instrument ID: HP5973U DFTPP Injection Time: 11:27

Analysis Batch No.: 407524

| M/E | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE | |
|---|---|---|---|
| 51 | 10-80% of Base Peak | 35.1 | |
| 68 | Less than 2% of mass 69 | 0.0 | (0.0) 1 |
| 69 | Mass 69 Relative abundance | 33.3 | |
| 70 | Less than 2% of mass 69 | 0.1 | (0.4) 1 |
| 127 | 10-80% of Base Peak | 46.0 | |
| 197 | Less than 2% of mass 198 | 0.0 | |
| 198 | Base peak | 100.0 | |
| 199 | 5-9% of mass 198 | 7.1 | |
| 275 | 10-60% of Base Peak | 29.9 | |
| 365 | Greater than 1% of mass 198 | 4.2 | |
| 441 | present but less than 24% of mass 442 | 16.0 | (16.5) 2 |
| 442 | Greater than 50% of mass 198 | 96.8 | |
| 443 | 15-24% of mass 442 | 19.3 | (19.9) 2 |

1-Value is % mass 69 2-Value is % mass 442

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

| CLIENT SAMPLE ID | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| | IC 480-407524/3 | U3306714.D | 04/06/2018 | 11:56 |
| | IC 480-407524/4 | U3306715.D | 04/06/2018 | 12:20 |
| | ICIS 480-407524/5 | U3306716.D | 04/06/2018 | 12:44 |
| | IC 480-407524/6 | U3306717.D | 04/06/2018 | 13:07 |
| | IC 480-407524/7 | U3306718.D | 04/06/2018 | 13:31 |
| | IC 480-407524/8 | U3306719.D | 04/06/2018 | 13:55 |

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

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Lab File ID: U3306739.D DFTPP Injection Date: 04/06/2018

Instrument ID: HP5973U DFTPP Injection Time: 21:56

Analysis Batch No.: 407525

| M/E | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE | |
|---|---|---|---|
| 51 | 10-80% of Base Peak | 35.0 | |
| 68 | Less than 2% of mass 69 | 0.0 | (0.0) 1 |
| 69 | Mass 69 Relative abundance | 34.5 | |
| 70 | Less than 2% of mass 69 | 0.2 | (0.6) 1 |
| 127 | 10-80% of Base Peak | 45.9 | |
| 197 | Less than 2% of mass 198 | 0.0 | |
| 198 | Base peak | 100.0 | |
| 199 | 5-9% of mass 198 | 6.7 | |
| 275 | 10-60% of Base Peak | 28.8 | |
| 365 | Greater than 1% of mass 198 | 3.9 | |
| 441 | present but less than 24% of mass 442 | 15.3 | (16.3) 2 |
| 442 | Greater than 50% of mass 198 | 93.8 | |
| 443 | 15-24% of mass 442 | 19.2 | (20.4) 2 |

1-Value is % mass 69 2-Value is % mass 442

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

| CLIENT SAMPLE ID | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| | CCVIS 480-407525/3 | U3306740.D | 04/06/2018 | 22:24 |
| | MB 480-406424/1-A | U3306741.D | 04/06/2018 | 22:48 |
| | LCS 480-406424/2-A | U3306742.D | 04/06/2018 | 23:12 |
| | LCSD 480-406424/3-A | U3306743.D | 04/06/2018 | 23:36 |
| R9-032818-C1 | 480-133255-1 | U3306744.D | 04/07/2018 | 00:00 |
| R9-032818-POND | 480-133255-2 | U3306745.D | 04/07/2018 | 00:24 |

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

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Sample No.: ICIS 480-407524/5 Date Analyzed: 04/06/2018 12:44

Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)

Lab File ID (Standard): U3306716.D Heated Purge: (Y/N) N

Calibration ID: 33489

| | | DCBd4 | | | | | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| INITIAL CALIBRATION MID-POINT | | 108366 | 5.91 | | | | |
| UPPER LIMIT | | 216732 | 6.41 | | | | |
| LOWER LIMIT | | 54183 | 5.41 | | | | |
| LAB SAMPLE ID | CLIENT SAMPLE ID | | | | | | |
| CCVIS 480-407525/3 | | 102476 | 5.91 | | | | |

DCBd4 = 1,4-Dichlorobenzene-d4

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 ID

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

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Sample No.: CCVIS 480-407525/3 Date Analyzed: 04/06/2018 22:24

Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)

Lab File ID (Standard): U3306740.D Heated Purge: (Y/N) N

Calibration ID: 33489

| | | DCBd4 | | | | | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12/24 HOUR STD | | 102476 | 5.91 | | | | |
| UPPER LIMIT | | 204952 | 6.41 | | | | |
| LOWER LIMIT | | 51238 | 5.41 | | | | |
| LAB SAMPLE ID | CLIENT SAMPLE ID | | | | | | |
| MB 480-406424/1-A | | 100376 | 5.93 | | | | |
| LCS 480-406424/2-A | | 110442 | 5.93 | | | | |
| LCSD 480-406424/3-A | | 107837 | 5.93 | | | | |
| 480-133255-1 | R9-032818-C1 | 105520 | 5.93 | | | | |
| 480-133255-2 | R9-032818-POND | 98586 | 5.93 | | | | |

DCBd4 = 1,4-Dichlorobenzene-d4

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 ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-133255-1

SDG No.:

Client Sample ID: R9-032818-C1 | Lab Sample ID: 480-133255-1

Matrix: Water | Lab File ID: U3306744.D

Analysis Method: 8270D SIM ID | Date Collected: 03/28/2018 11:25

Extract. Method: 3510C | Date Extracted: 03/29/2018 14:07

Sample wt/vol: 100(mL) | Date Analyzed: 04/07/2018 00:00

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

Injection Volume: 1(uL) | Level: (low/med) Low

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

Analysis Batch No.: 407525 | Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | RL | MDL |
|---|---|---|---|---|---|
| 123-91-1 | 1,4-Dioxane | 120 | E | 2.0 | 1.0 |

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

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306744.D
Lims ID: 480-133255-B-1-A
Client ID: R9-032818-C1
Sample Type: Client
Inject. Date: 07-Apr-2018 00:00:30 ALS Bottle#: 33 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070462-007
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 17:02:30 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 16:20:00

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | OnCol Amt ng/ul | %Rec | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.734 | 2.694 | 0.040 | 82 | 167108 | 3.86 | 38.6 | |
| | 3 1,4-Dioxane | 88 | 2.774 | 2.734 | 0.040 | 92 | 199907 | 11.6 | | Ea |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.925 | 5.912 | 0.013 | 97 | 105520 | 1.00 | | |

## QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount
Review Flags
a - User Assigned ID

## Reagents:

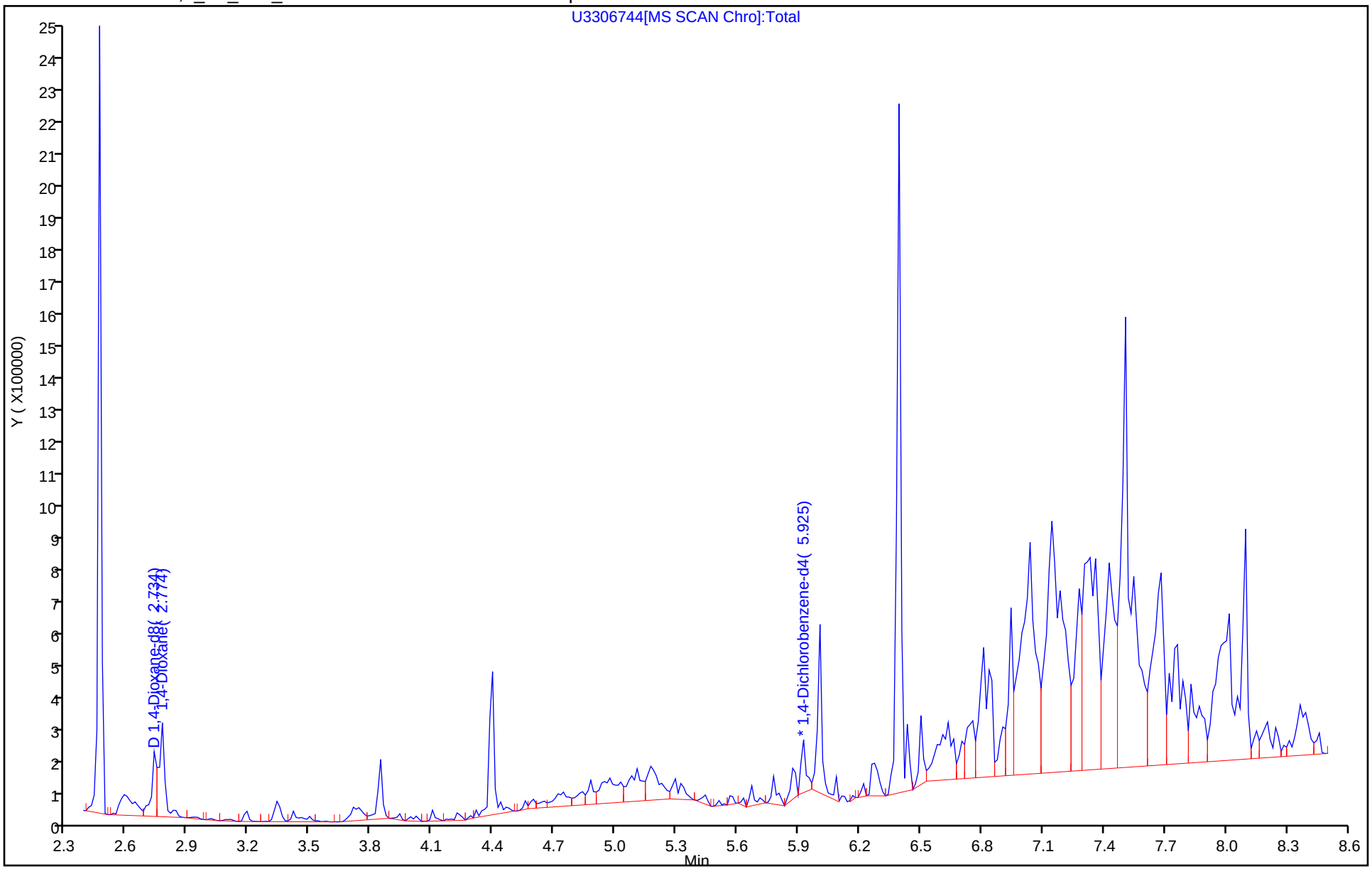
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 17:02:36 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306744.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 07-Apr-2018 00:00:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | 480-133255-B-1-A | Lab Sample ID: | 480-133255-1 | Worklist Smp#: | 7 |
| Client ID: | R9-032818-C1 | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 33 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |

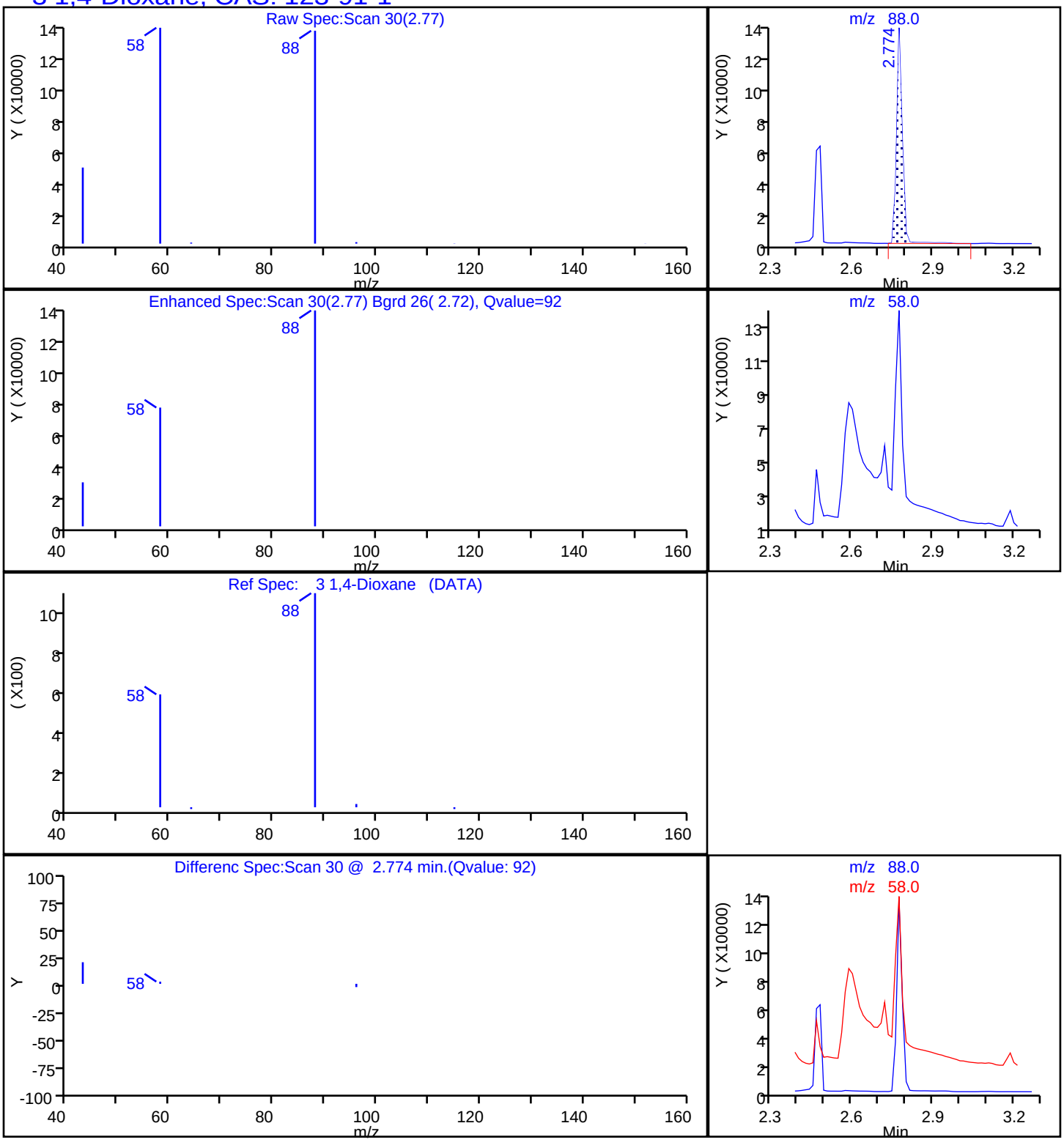


TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306744.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 07-Apr-2018 00:00:30 | Instrument ID: | HP5973U | | |
| Lims ID: | 480-133255-B-1-A | Lab Sample ID: | 480-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | DR | ALS Bottle#: | 33 | Worklist Smp#: | 7 |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | | |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |
| Column: | | Detector | MS SCAN | | |

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

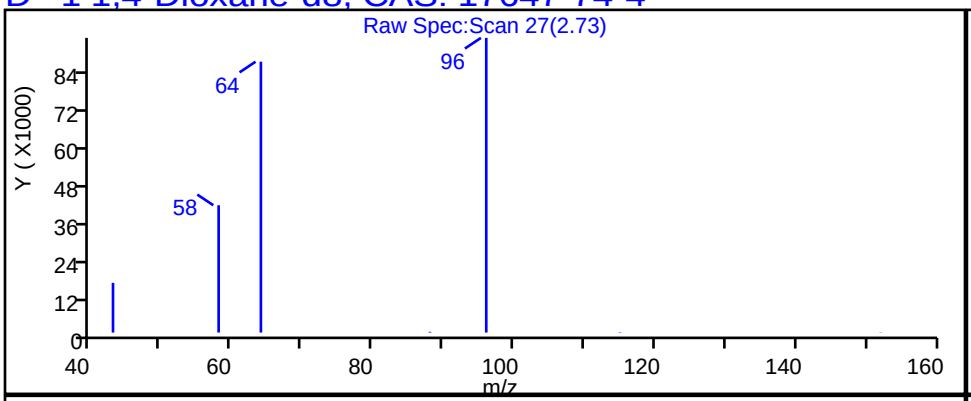


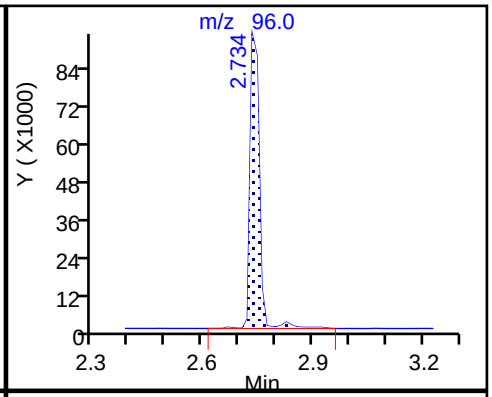
TestAmerica Buffalo

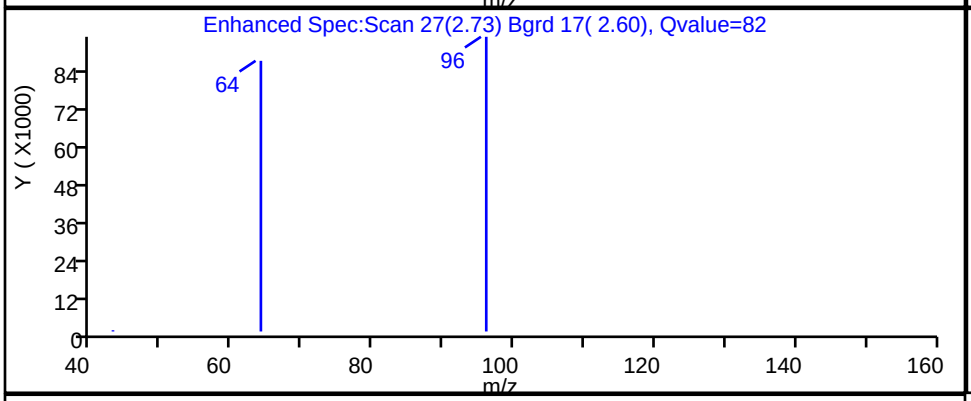
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306744.D

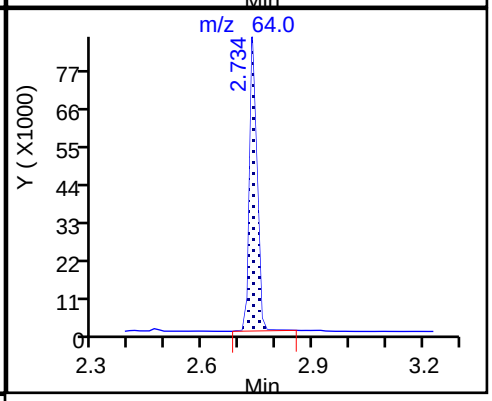
| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 07-Apr-2018 00:00:30 | Instrument ID: | HP5973U | | |
| Lims ID: | 480-133255-B-1-A | Lab Sample ID: | 480-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | DR | ALS Bottle#: | 33 | Worklist Smp#: | 7 |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | | |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |
| Column: | | Detector | MS SCAN | | |

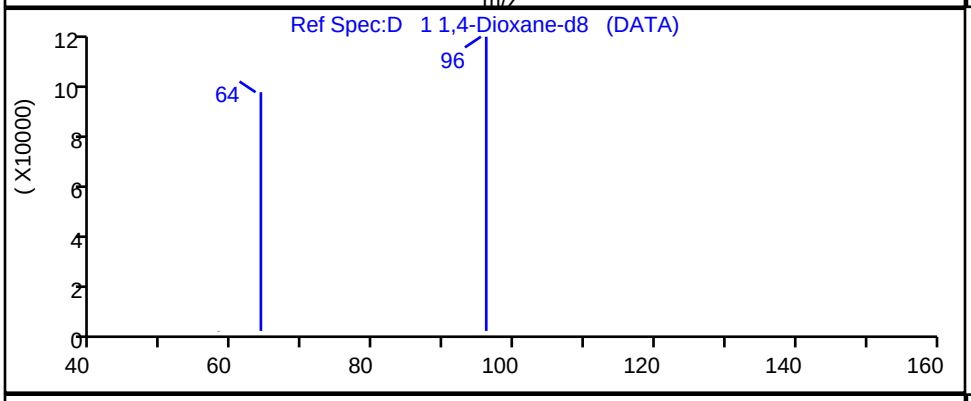
## D 1 1,4-Dioxane-d8, CAS: 17647-74-4

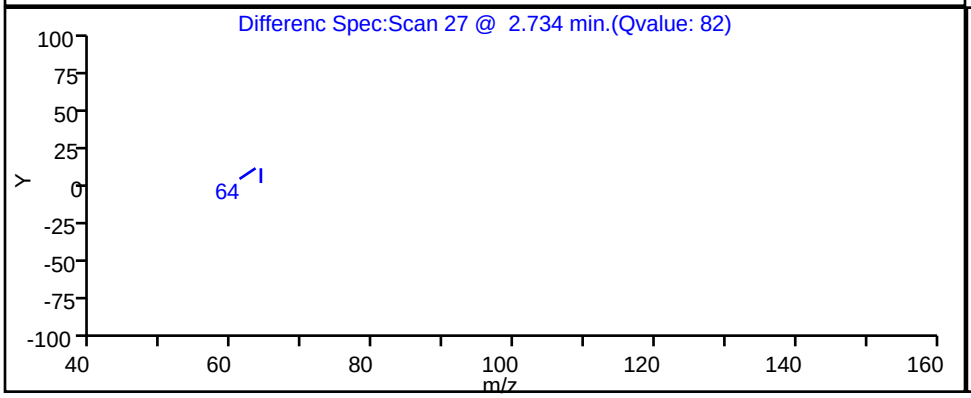


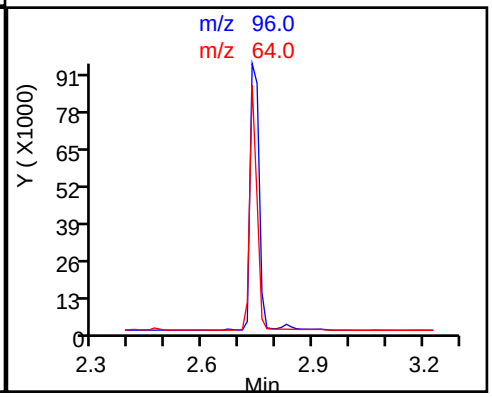



Manual Integration/User Assign Peak Report

TestAmerica Buffalo

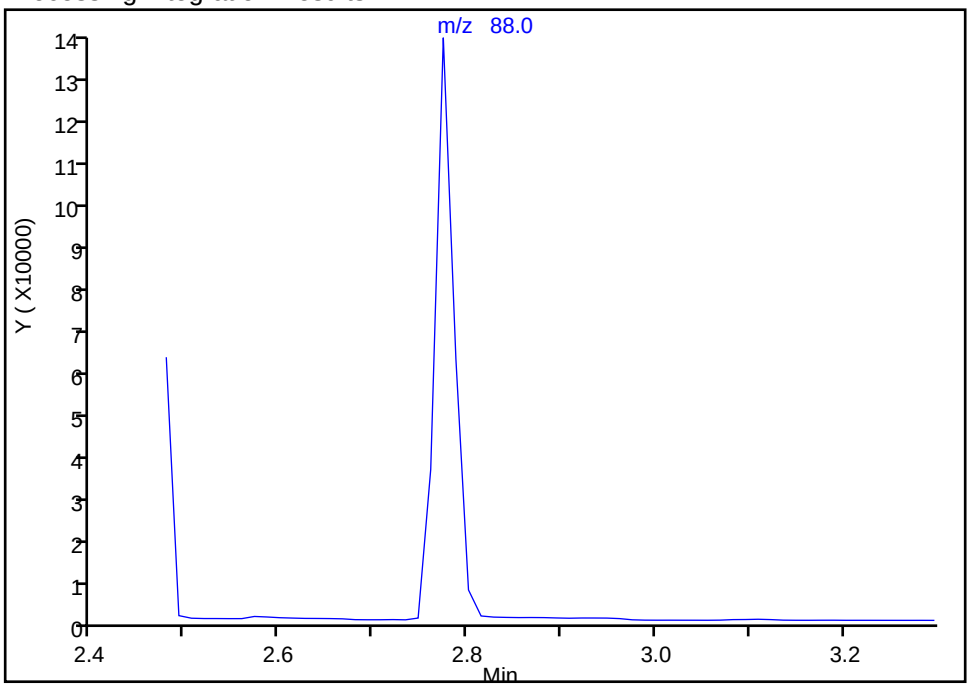
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306744.D | | | | |
| Injection Date: | 07-Apr-2018 00:00:30 | Instrument ID: | HP5973U | | |
| Lims ID: | 480-133255-B-1-A | Lab Sample ID: | 480-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | DR | ALS Bottle#: | 33 | Worklist Smp#: | 7 |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | | |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |
| Column: | | Detector | MS SCAN | | |

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

Signal: 1

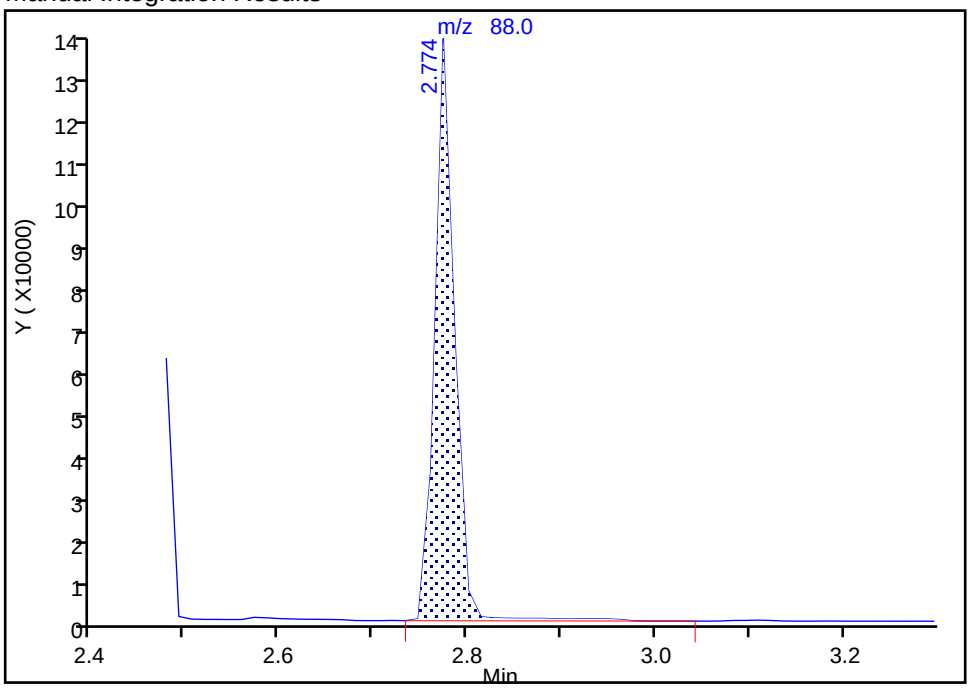
Not Detected
Expected RT: 2.73

Processing Integration Results




Manual Integration Results

RT: 2.77
Area: 199907
Amount: 11.597951
Amount Units: ng/ul




Reviewer: richardsd, 09-Apr-2018 16:19:55
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-133255-1

SDG No.:

Client Sample ID: R9-032818-POND | Lab Sample ID: 480-133255-2

Matrix: Water | Lab File ID: U3306745.D

Analysis Method: 8270D SIM ID | Date Collected: 03/28/2018 11:50

Extract. Method: 3510C | Date Extracted: 03/29/2018 14:07

Sample wt/vol: 100(mL) | Date Analyzed: 04/07/2018 00:24

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

Injection Volume: 1(uL) | Level: (low/med) Low

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

Analysis Batch No.: 407525 | Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | RL | MDL |
|---|---|---|---|---|---|
| 123-91-1 | 1,4-Dioxane | 69 | E | 2.0 | 1.0 |

| CAS NO. | ISOTOPE DILUTION | %REC | Q | LIMITS |
|---|---|---|---|---|
| 17647-74-4 | 1,4-Dioxane-d8 | 29 | | 15-110 |

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306745.D
Lims ID: 480-133255-B-2-A
Client ID: R9-032818-POND
Sample Type: Client
Inject. Date: 07-Apr-2018 00:24:30 ALS Bottle#: 34 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070462-008
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 17:02:30 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 16:20:06

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | OnCol Amt ng/ul | %Rec | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.734 | 2.694 | 0.040 | 88 | 118662 | 2.93 | 29.3 | |
| | 3 1,4-Dioxane | 88 | 2.774 | 2.734 | 0.040 | 84 | 84641 | 6.92 | | Ea |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.925 | 5.912 | 0.013 | 98 | 98586 | 1.00 | | a |

## QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount
Review Flags
a - User Assigned ID

## Reagents:

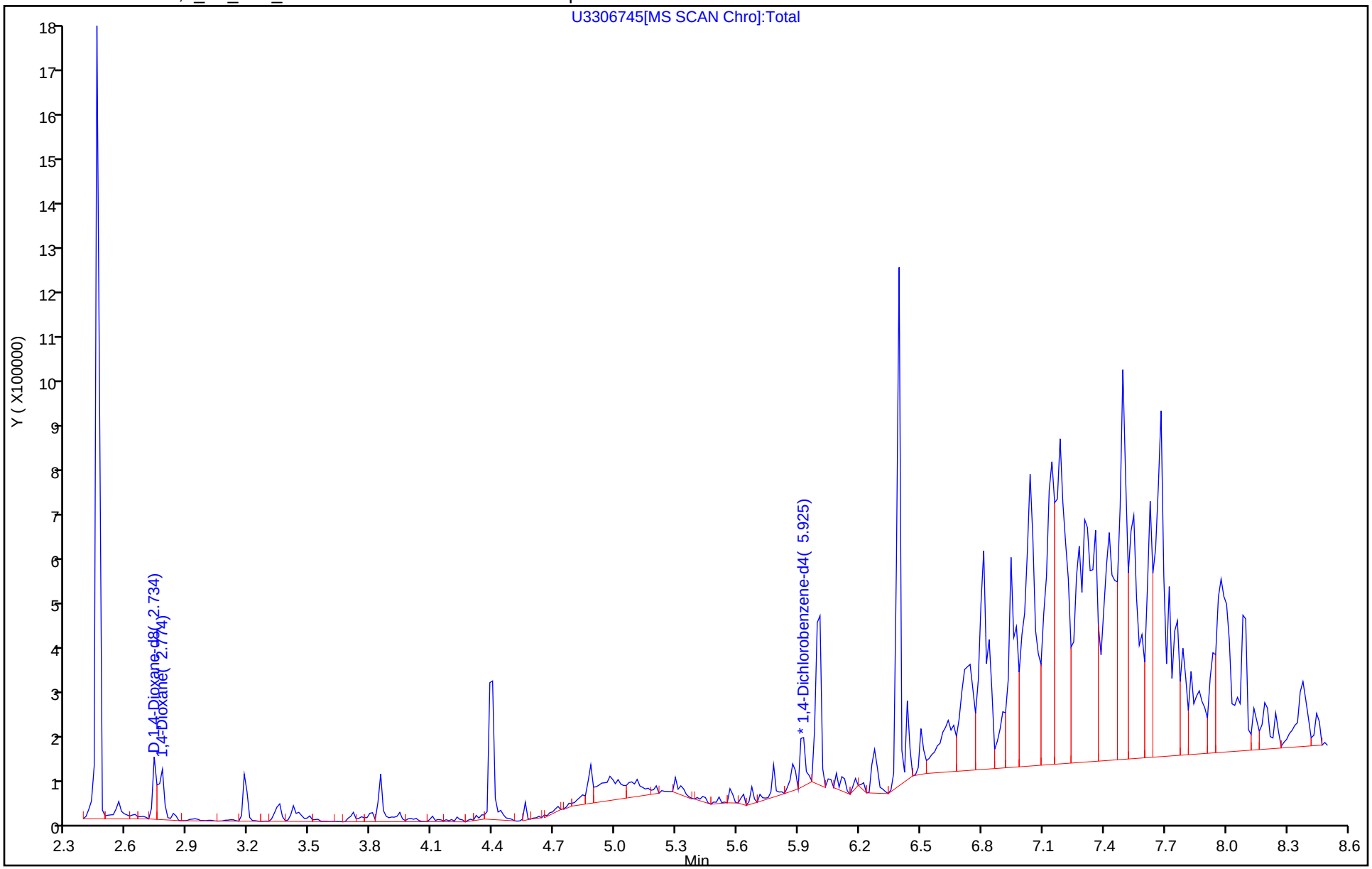
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 17:02:37 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306745.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 07-Apr-2018 00:24:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | 480-133255-B-2-A | Lab Sample ID: | 480-133255-2 | Worklist Smp#: | 8 |
| Client ID: | R9-032818-POND | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 34 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



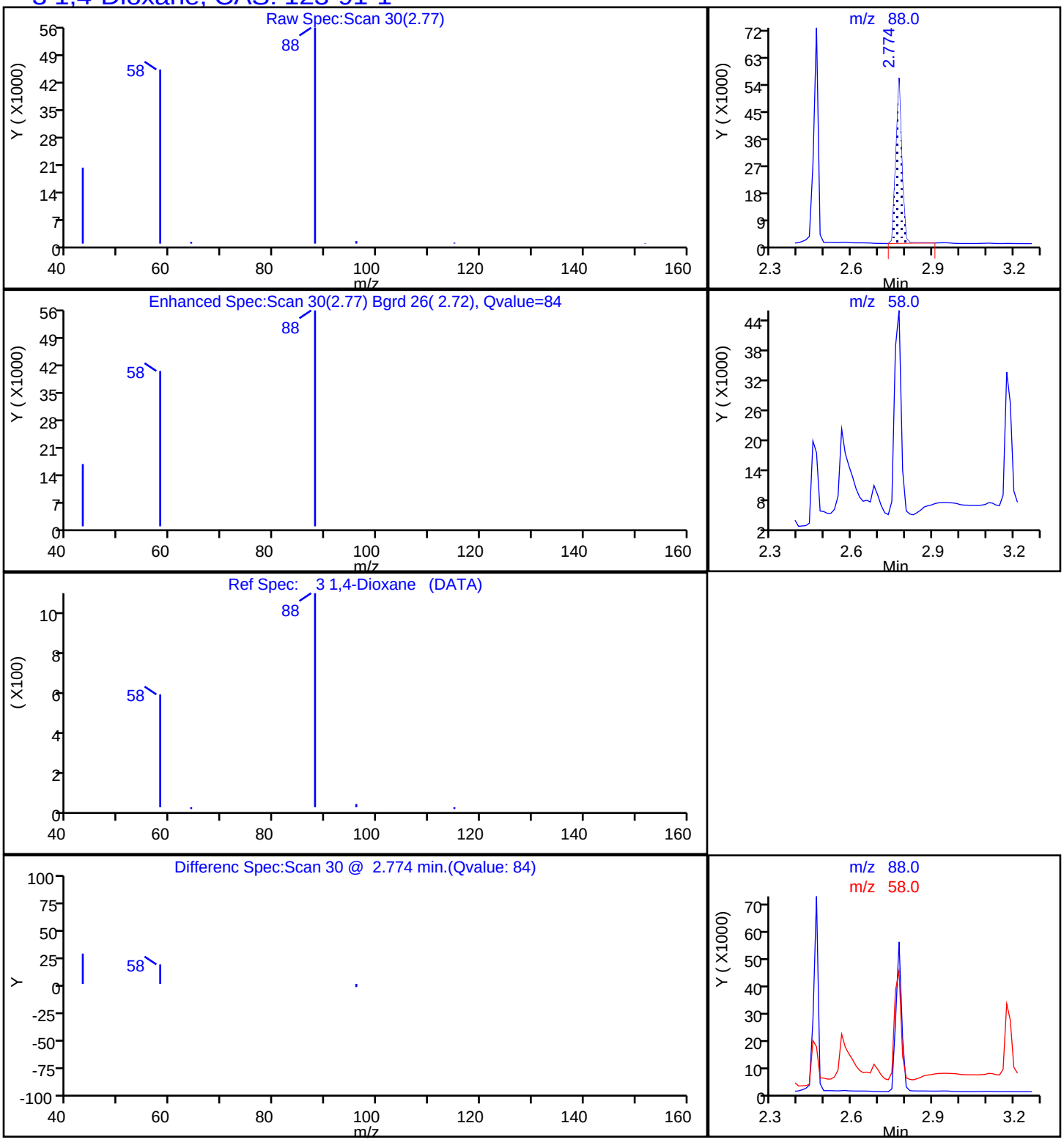
Report Date: 09-Apr-2018 17:02:37 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306745.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 07-Apr-2018 00:24:30 | Instrument ID: | HP5973U | | |
| Lims ID: | 480-133255-B-2-A | Lab Sample ID: | 480-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | DR | ALS Bottle#: | 34 | Worklist Smp#: | 8 |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | | |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |
| Column: | | Detector | MS SCAN | | |

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



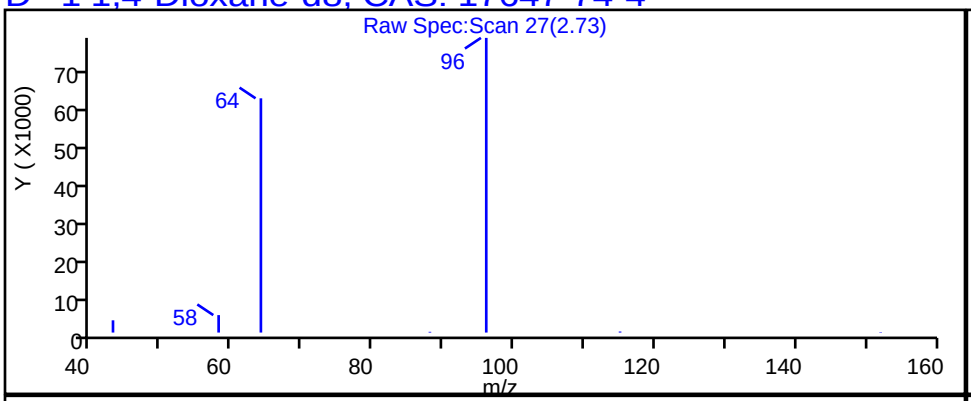
Report Date: 09-Apr-2018 17:02:37 Chrom Revision: 2.2 13-Mar-2018 08:45:20

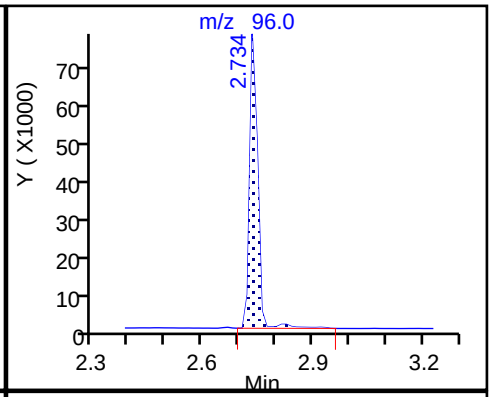
TestAmerica Buffalo

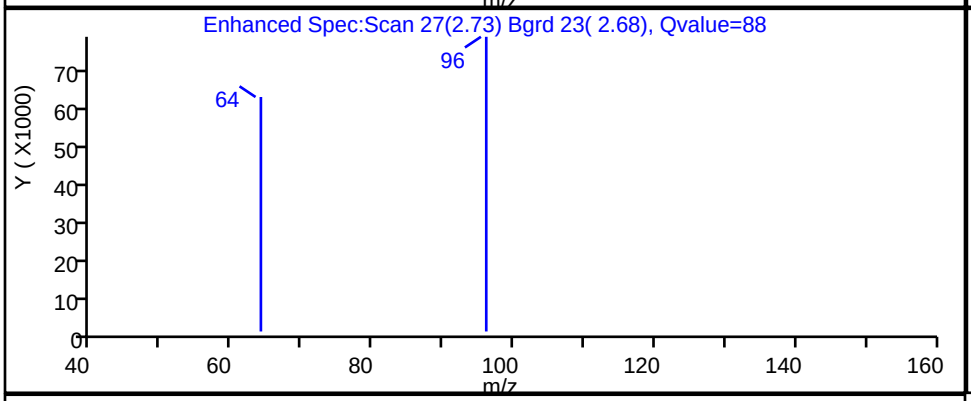
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306745.D

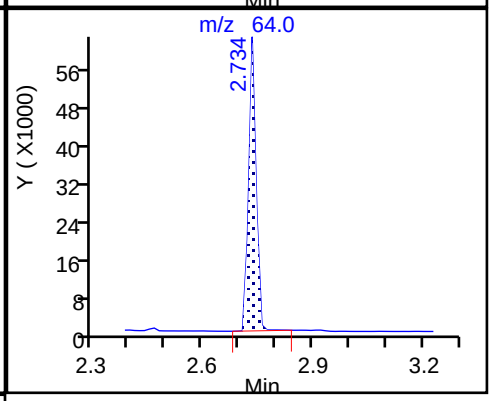
| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 07-Apr-2018 00:24:30 | Instrument ID: | HP5973U | | |
| Lims ID: | 480-133255-B-2-A | Lab Sample ID: | 480-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | DR | ALS Bottle#: | 34 | Worklist Smp#: | 8 |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | | |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |
| Column: | | Detector | MS SCAN | | |

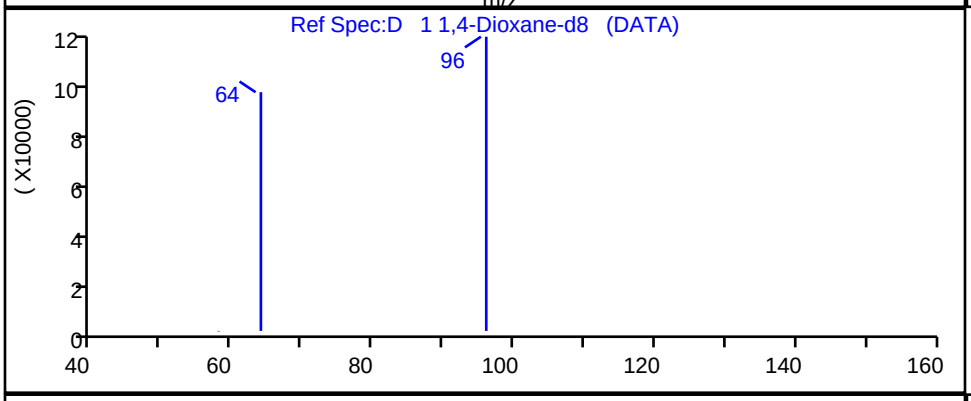
## D 1 1,4-Dioxane-d8, CAS: 17647-74-4

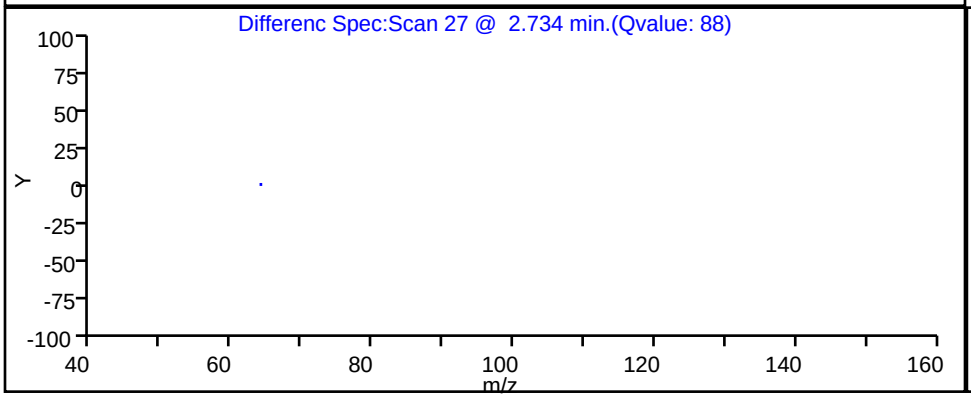


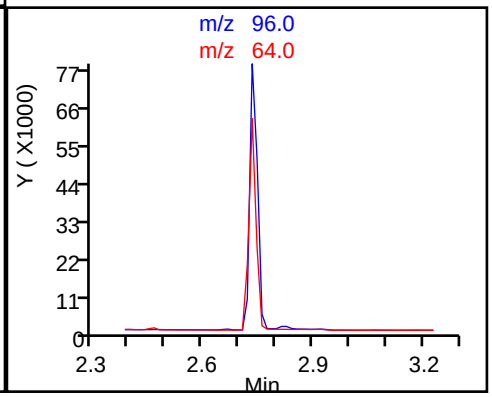



Manual Integration/User Assign Peak Report

TestAmerica Buffalo

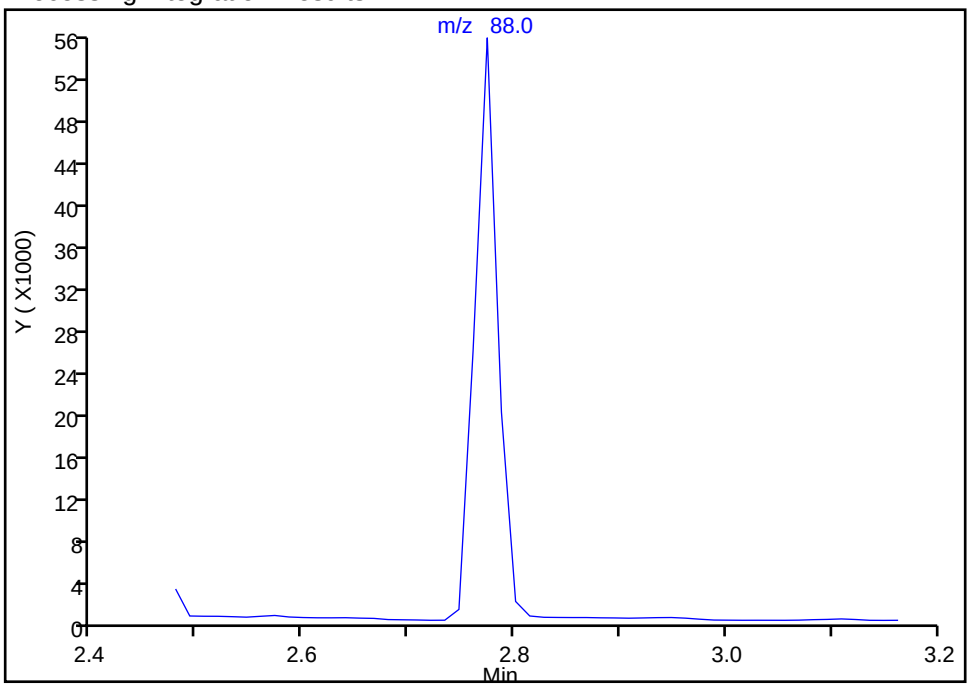
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306745.D | | | | |
| Injection Date: | 07-Apr-2018 00:24:30 | Instrument ID: | HP5973U | | |
| Lims ID: | 480-133255-B-2-A | Lab Sample ID: | 480-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | DR | ALS Bottle#: | 34 | Worklist Smp#: | 8 |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | | |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |
| Column: | | Detector | MS SCAN | | |

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

Signal: 1

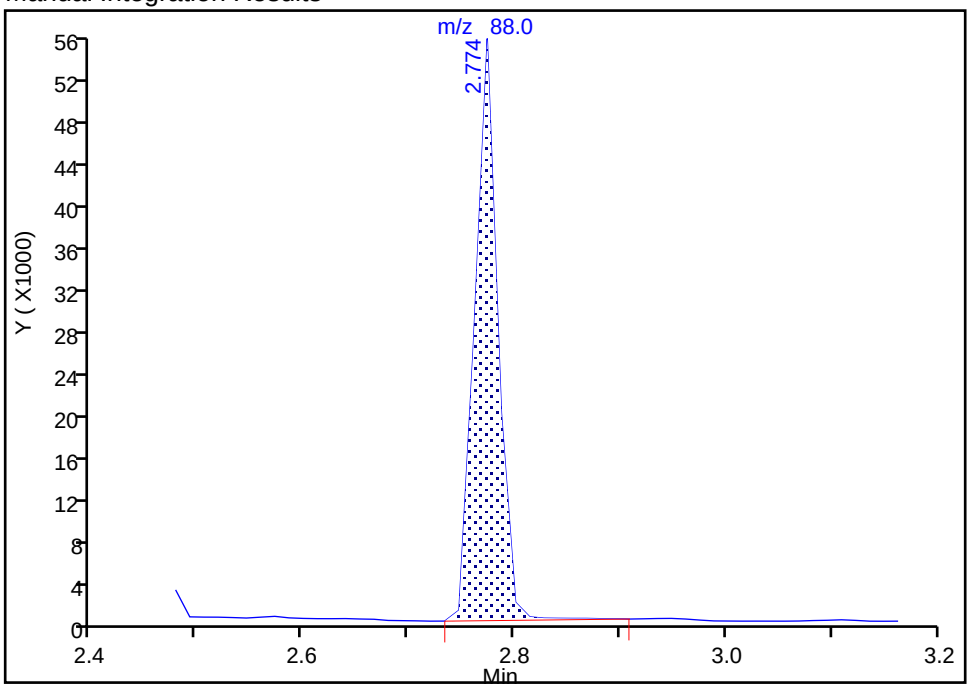
Not Detected
Expected RT: 2.73

Processing Integration Results




Manual Integration Results

RT: 2.77
Area: 84641
Amount: 6.915437
Amount Units: ng/ul




Reviewer: richardsd, 09-Apr-2018 16:20:03
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

TestAmerica Buffalo

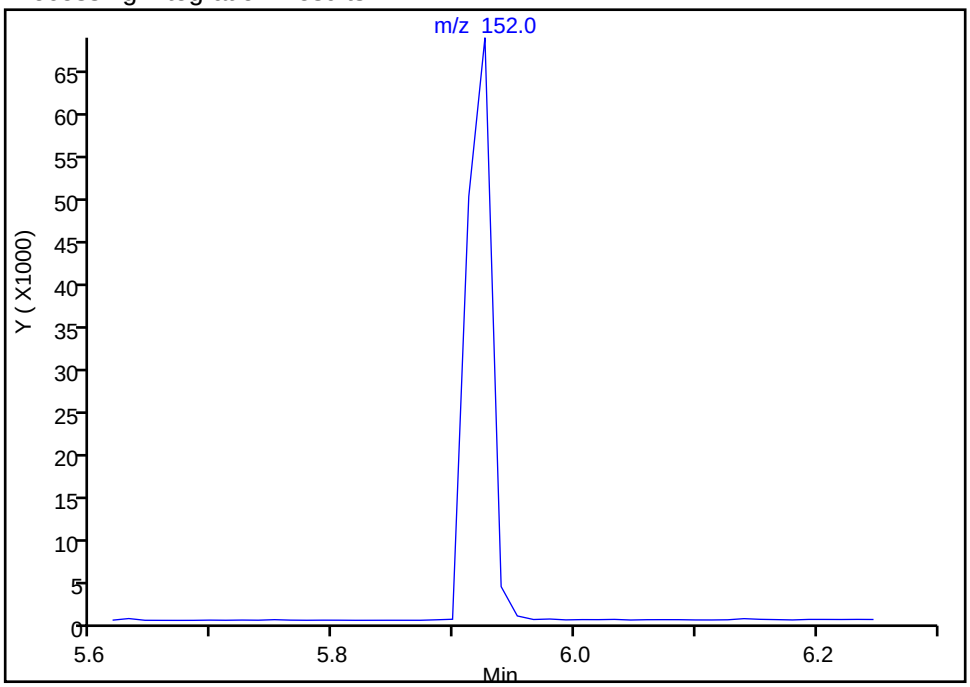
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306745.D | | | | |
| Injection Date: | 07-Apr-2018 00:24:30 | Instrument ID: | HP5973U | | |
| Lims ID: | 480-133255-B-2-A | Lab Sample ID: | 480-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | DR | ALS Bottle#: | 34 | Worklist Smp#: | 8 |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | | |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |
| Column: | | Detector | MS SCAN | | |

## * 2 1,4-Dichlorobenzene-d4, CAS: 3855-82-1

Signal: 1

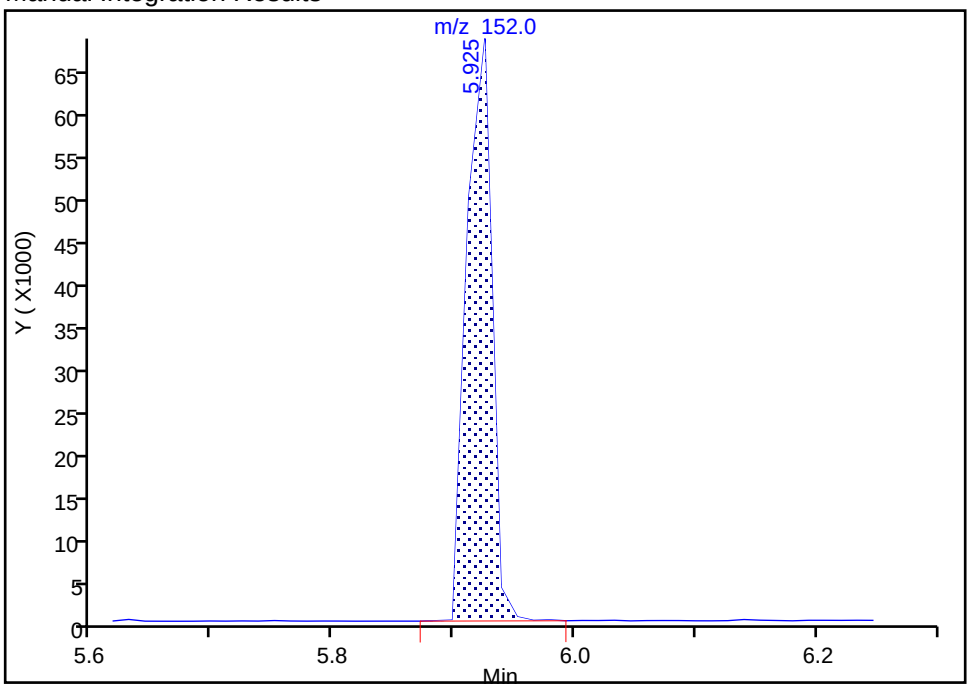
Processing Integration Results

Not Detected
Expected RT: 5.91




Manual Integration Results

RT: 5.93
Area: 98586
Amount: 1.000000
Amount Units: ng/ul




Reviewer: richardsd, 09-Apr-2018 16:20:04
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

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

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1 Analy Batch No.: 407524

SDG No.:

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

Calibration Start Date: 04/06/2018 11:56 Calibration End Date: 04/06/2018 13:55 Calibration ID: 33489

Calibration Files:

| LEVEL: | LAB SAMPLE ID: | LAB FILE ID: |
|---|---|---|
| Level 1 | IC 480-407524/3 | U3306714.D |
| Level 2 | IC 480-407524/4 | U3306715.D |
| Level 3 | ICIS 480-407524/5 | U3306716.D |
| Level 4 | IC 480-407524/6 | U3306717.D |
| Level 5 | IC 480-407524/7 | U3306718.D |
| Level 6 | IC 480-407524/8 | U3306719.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 | 1.0069 1.0454 | 1.0339 | 1.0195 | 1.0420 | 1.0410 | AveID | | 1.0315 | | | 0.0100 | 1.5 | | 20.0 | | | |
| 1,4-Dioxane-d8 | 0.4063 0.4437 | 0.3932 | 0.3886 | 0.4111 | 0.4213 | Ave | | 0.4107 | | | 0.0100 | 4.9 | | 20.0 | | | |

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

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

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1 Analy Batch No.: 407524

SDG No.:

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

Calibration Start Date: 04/06/2018 11:56 Calibration End Date: 04/06/2018 13:55 Calibration ID: 33489

Calibration Files:

| LEVEL: | LAB SAMPLE ID: | LAB FILE ID: |
|---|---|---|
| Level 1 | IC 480-407524/3 | U3306714.D |
| Level 2 | IC 480-407524/4 | U3306715.D |
| Level 3 | ICIS 480-407524/5 | U3306716.D |
| Level 4 | IC 480-407524/6 | U3306717.D |
| Level 5 | IC 480-407524/7 | U3306718.D |
| Level 6 | IC 480-407524/8 | U3306719.D |

| ANALYTE | IS REF | CURVE TYPE | RESPONSE | | | | | CONCENTRATION (NG/UL) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LVL 1<br>LVL 6 | LVL 2 | LVL 3 | LVL 4 | LVL 5 | LVL 1<br>LVL 6 | LVL 2 | LVL 3 | LVL 4 | LVL 5 |
| 1,4-Dioxane | | AveID | 9367<br>63672 | 20674 | 25763 | 39068 | 50216 | 0.200<br>1.20 | 0.400 | 0.600 | 0.800 | 1.00 |
| 1,4-Dioxane-d8 | DCBd 4 | Ave | 93029<br>609088 | 199956 | 252698 | 374940 | 482365 | 2.00<br>12.0 | 4.00 | 6.00 | 8.00 | 10.0 |

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306714.D
Lims ID: IC - SIM 0.2
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 06-Apr-2018 11:56:30 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070461-003
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 11:56:10 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 06-Apr-2018 12:24:27

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.694 | 2.693 | 0.001 | 99 | 93029 | 2.00 | 1.98 | M |
| | 3 1,4-Dioxane | 88 | 2.734 | 2.734 | 0.000 | 95 | 9367 | 0.2000 | 0.1952 | |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.912 | 5.912 | 0.000 | 81 | 114489 | 1.00 | 1.00 | |

## QC Flag Legend

Review Flags
M - Manually Integrated

## Reagents:

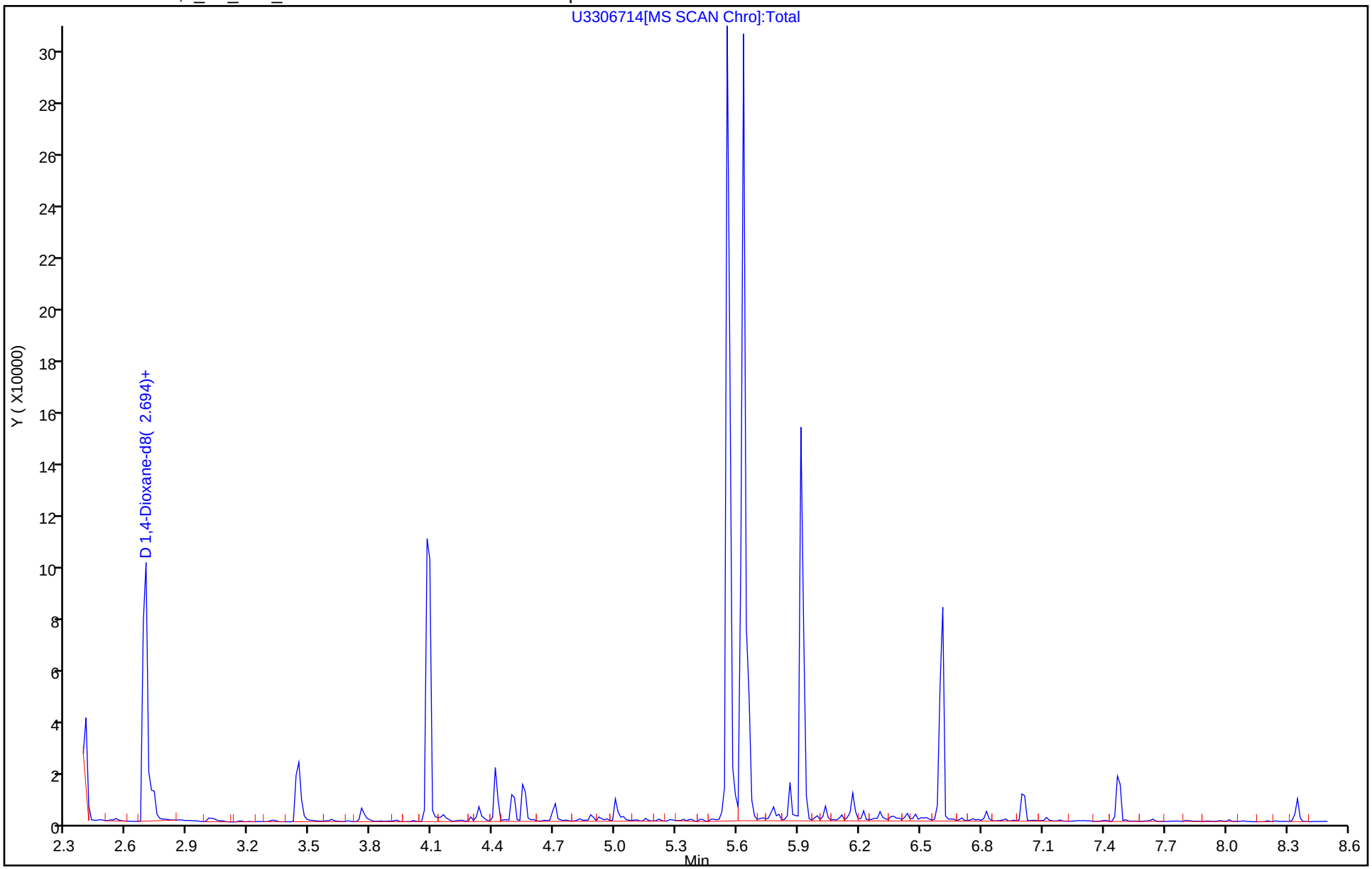
MB_1,4SIM_WRK_00046 Amount Added: 1.00 Units: mL
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 11:56:10 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306714.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 11:56:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | IC - SIM 0.2 | | | Worklist Smp#: | 3 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 3 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



Manual Integration/User Assign Peak Report

TestAmerica Buffalo

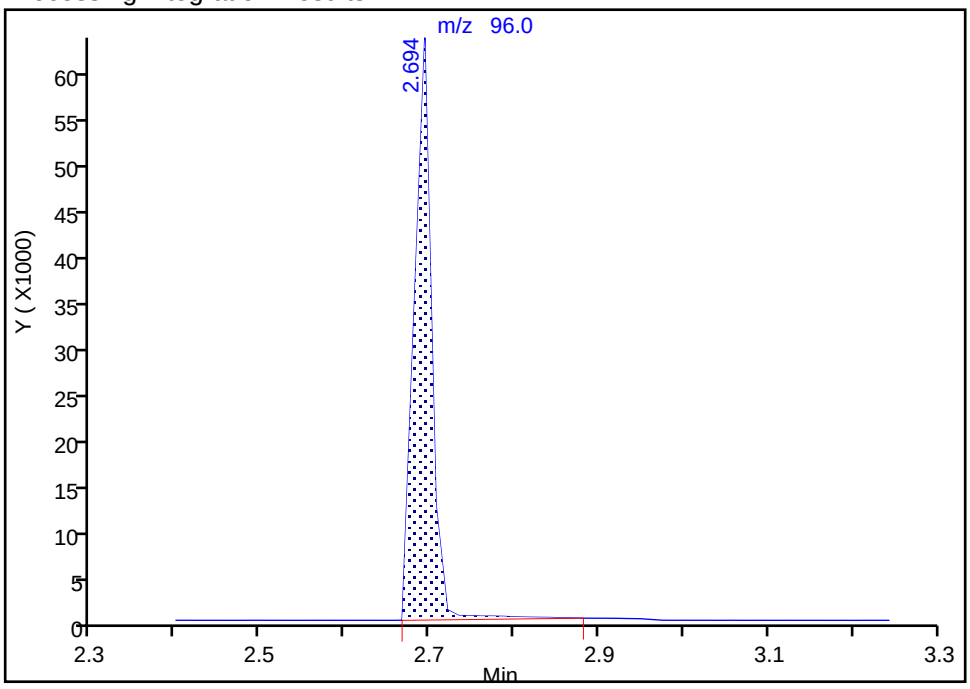
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306714.D
Injection Date: 06-Apr-2018 11:56:30 Instrument ID: HP5973U
Lims ID: IC - SIM 0.2
Client ID:
Operator ID: DR ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

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

Signal: 1

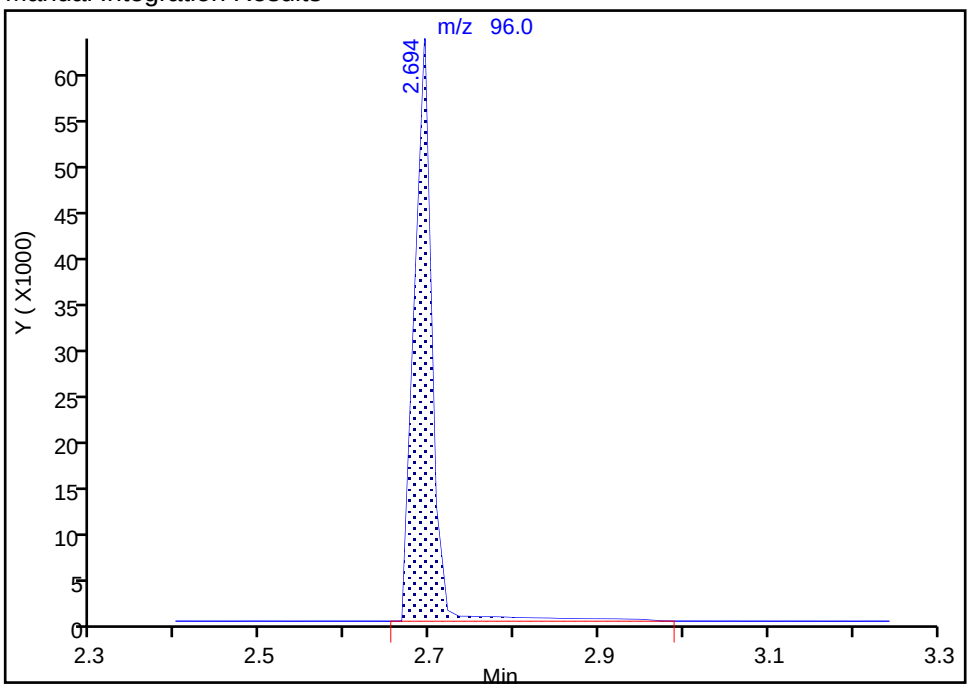
Processing Integration Results

RT: 2.69
Area: 90508
Amount: 1.933510
Amount Units: ng/ul




Manual Integration Results

RT: 2.69
Area: 93029
Amount: 1.978487
Amount Units: ng/ul




Reviewer: richardsd, 09-Apr-2018 11:50:49
Audit Action: Manually Integrated Audit Reason: Peak Tail

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306715.D
Lims ID: IC - SIM 0.4
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 06-Apr-2018 12:20:30 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070461-004
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 11:56:10 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 11:48:20

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.694 | 2.693 | 0.001 | 100 | 199956 | 4.00 | 3.83 | |
| | 3 1,4-Dioxane | 88 | 2.734 | 2.734 | 0.000 | 96 | 20674 | 0.4000 | 0.4010 | |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.912 | 5.912 | 0.000 | 86 | 127129 | 1.00 | 1.00 | |

## Reagents:

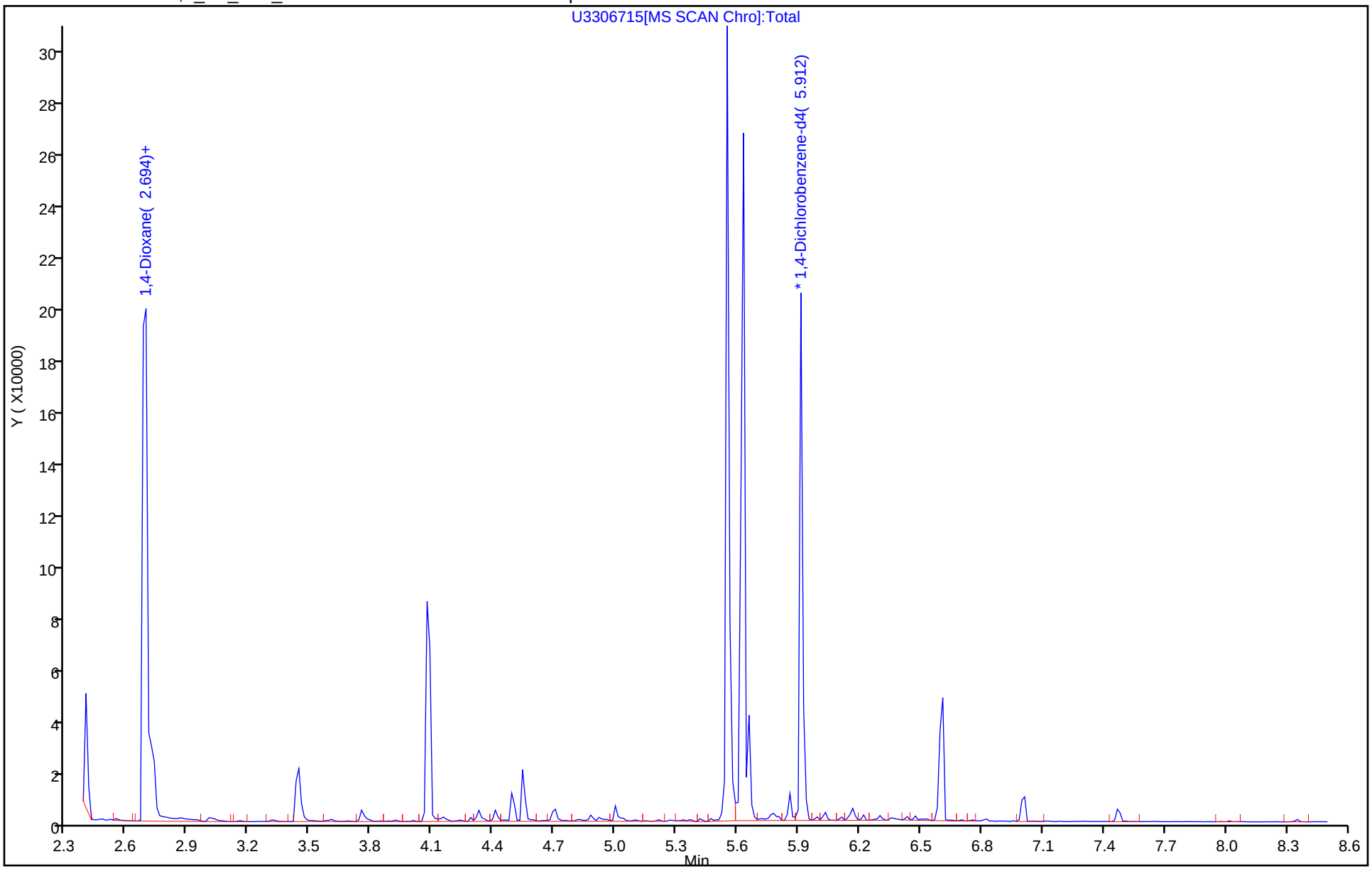
MB_1,4SIM_WRK_00047 Amount Added: 1.00 Units: mL
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 11:56:11 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306715.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 12:20:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | IC - SIM 0.4 | | | Worklist Smp#: | 4 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 4 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306716.D
Lims ID: ICIS - SIM 0.6
Client ID:
Sample Type: ICIS Calib Level: 3
Inject. Date: 06-Apr-2018 12:44:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070461-005
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 11:56:11 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 11:48:27

| Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|
| D 1 1,4-Dioxane-d8 | 96 | 2.693 | 2.693 | 0.000 | 100 | 252698 | 6.00 | 5.68 | |
| 3 1,4-Dioxane | 88 | 2.734 | 2.734 | 0.000 | 96 | 25763 | 0.6000 | 0.5931 | |
| * 2 1,4-Dichlorobenzene-d4 | 152 | 5.912 | 5.912 | 0.000 | 85 | 108366 | 1.00 | 1.00 | |

## Reagents:

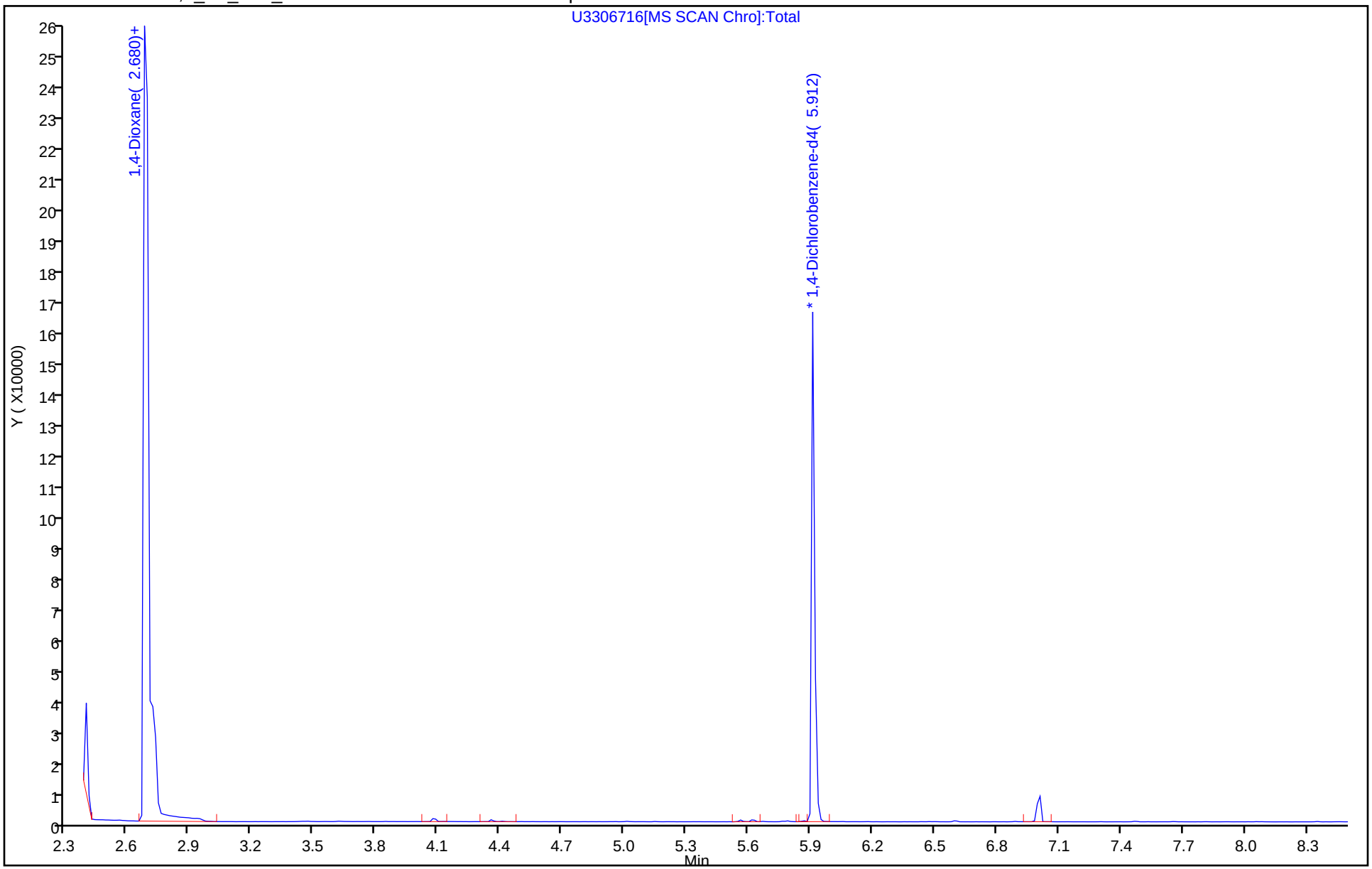
MB_1,4SIM_WRK_00052 Amount Added: 1.00 Units: mL
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 11:56:11 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306716.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 12:44:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | ICIS - SIM 0.6 | | | Worklist Smp#: | 5 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 5 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306717.D
Lims ID: IC - SIM 0.8
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 06-Apr-2018 13:07:30 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070461-006
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 11:56:12 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 11:48:33

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.694 | 2.693 | 0.001 | 98 | 374940 | 8.00 | 8.01 | |
| | 3 1,4-Dioxane | 88 | 2.734 | 2.734 | 0.000 | 95 | 39068 | 0.8000 | 0.8082 | |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.912 | 5.912 | 0.000 | 84 | 114011 | 1.00 | 1.00 | |

## Reagents:

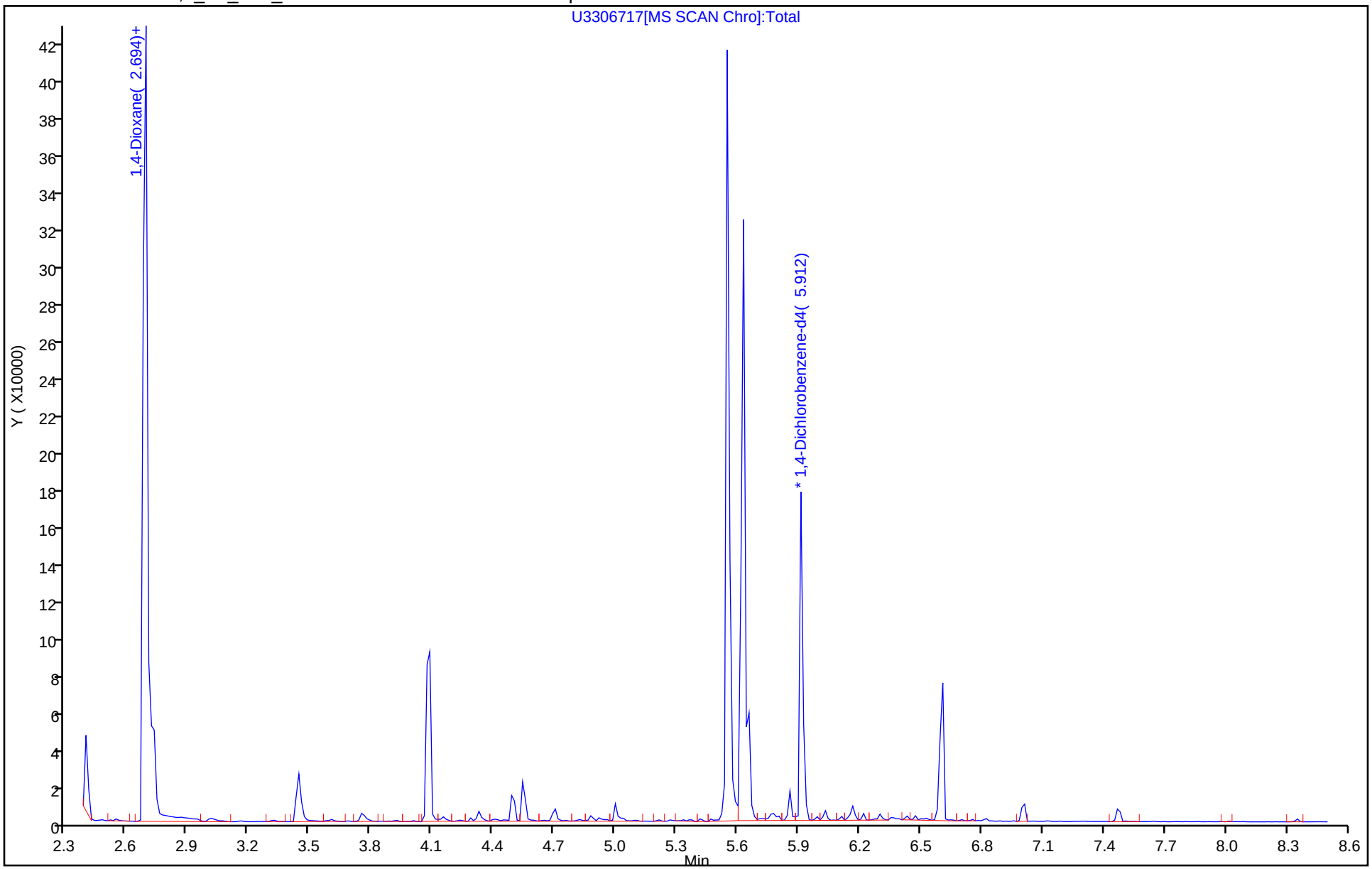
MB_1,4SIM_WRK_00049 Amount Added: 1.00 Units: mL
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 11:56:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306717.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 13:07:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | IC - SIM 0.8 | | | Worklist Smp#: | 6 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 6 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306718.D
Lims ID: IC - SIM 1.0
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 06-Apr-2018 13:31:30 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070461-007
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 11:56:12 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 11:49:21

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.694 | 2.693 | 0.001 | 99 | 482365 | 10.0 | 10.3 | |
| | 3 1,4-Dioxane | 88 | 2.720 | 2.734 | -0.014 | 74 | 50216 | 1.00 | 1.01 | |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.912 | 5.912 | 0.000 | 83 | 114506 | 1.00 | 1.00 | |

## Reagents:

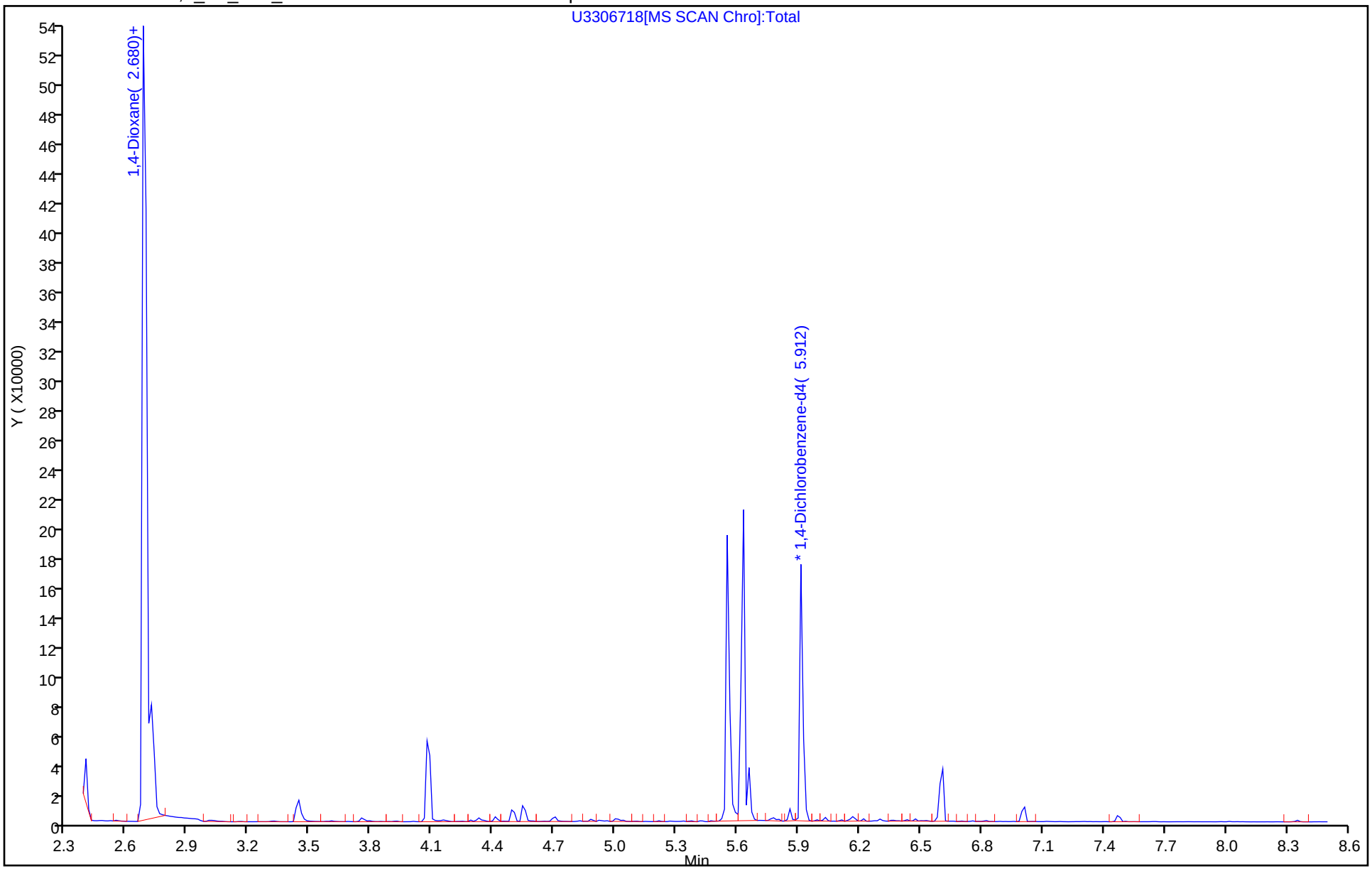
MB_1,4SIM_WRK_00050 Amount Added: 1.00 Units: mL
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 11:56:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306718.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 13:31:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | IC - SIM 1.0 | | | Worklist Smp#: | 7 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 7 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D
Lims ID: IC - SIM 1.2
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 06-Apr-2018 13:55:30 ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070461-008
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 11:56:13 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 11:49:43

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.694 | 2.693 | 0.001 | 99 | 609088 | 12.0 | 13.0 | |
| | 3 1,4-Dioxane | 88 | 2.720 | 2.734 | -0.014 | 75 | 63672 | 1.20 | 1.22 | |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.912 | 5.912 | 0.000 | 80 | 114395 | 1.00 | 1.00 | |

## Reagents:

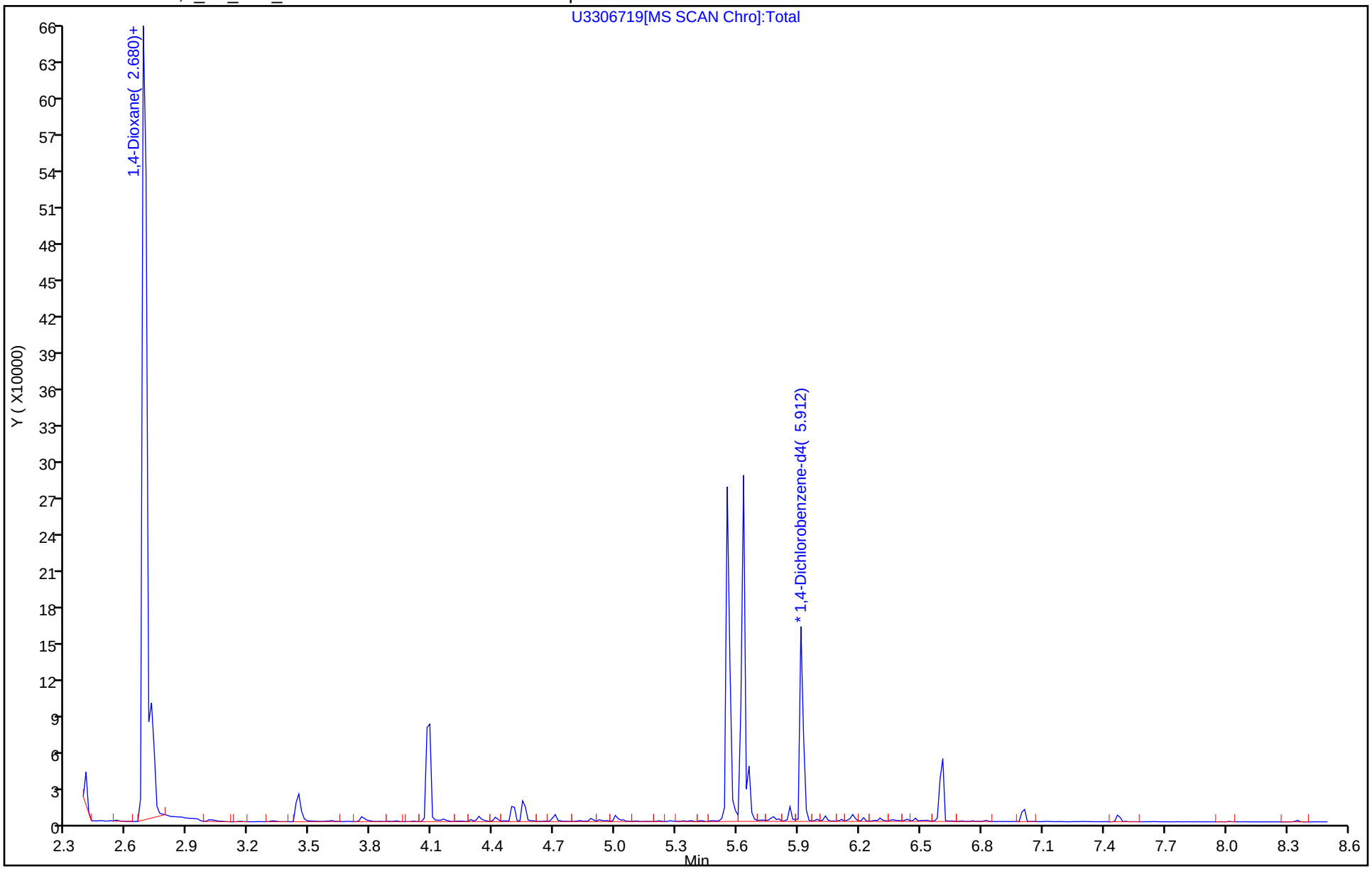
MB_1,4SIM_WRK_00051 Amount Added: 1.00 Units: mL
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 11:56:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 13:55:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | IC - SIM 1.2 | | | Worklist Smp#: | 8 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 8 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCVIS 480-407525/3 Calibration Date: 04/06/2018 22:24

Instrument ID: HP5973U Calib Start Date: 04/06/2018 11:56

GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 04/06/2018 13:55

Lab File ID: U3306740.D Conc. Units: ug/L

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | AveID | 1.031 | 1.053 | 0.0100 | 612 | 600 | 2.1 | 20.0 |
| 1,4-Dioxane-d8 | Ave | 0.4107 | 0.3619 | 0.0100 | 5290 | 6000 | -11.9 | 20.0 |

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306740.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 06-Apr-2018 22:24:30 ALS Bottle#: 29 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070462-003
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 17:02:30 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 11:47:52

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.680 | 2.694 | -0.014 | 92 | 222544 | 6.00 | 5.29 | M |
| | 3 1,4-Dioxane | 88 | 2.721 | 2.721 | 0.000 | 83 | 23425 | 0.6000 | 0.6123 | |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.912 | 5.912 | 0.000 | 87 | 102476 | 1.00 | 1.00 | |

## QC Flag Legend

Review Flags
M - Manually Integrated

## Reagents:

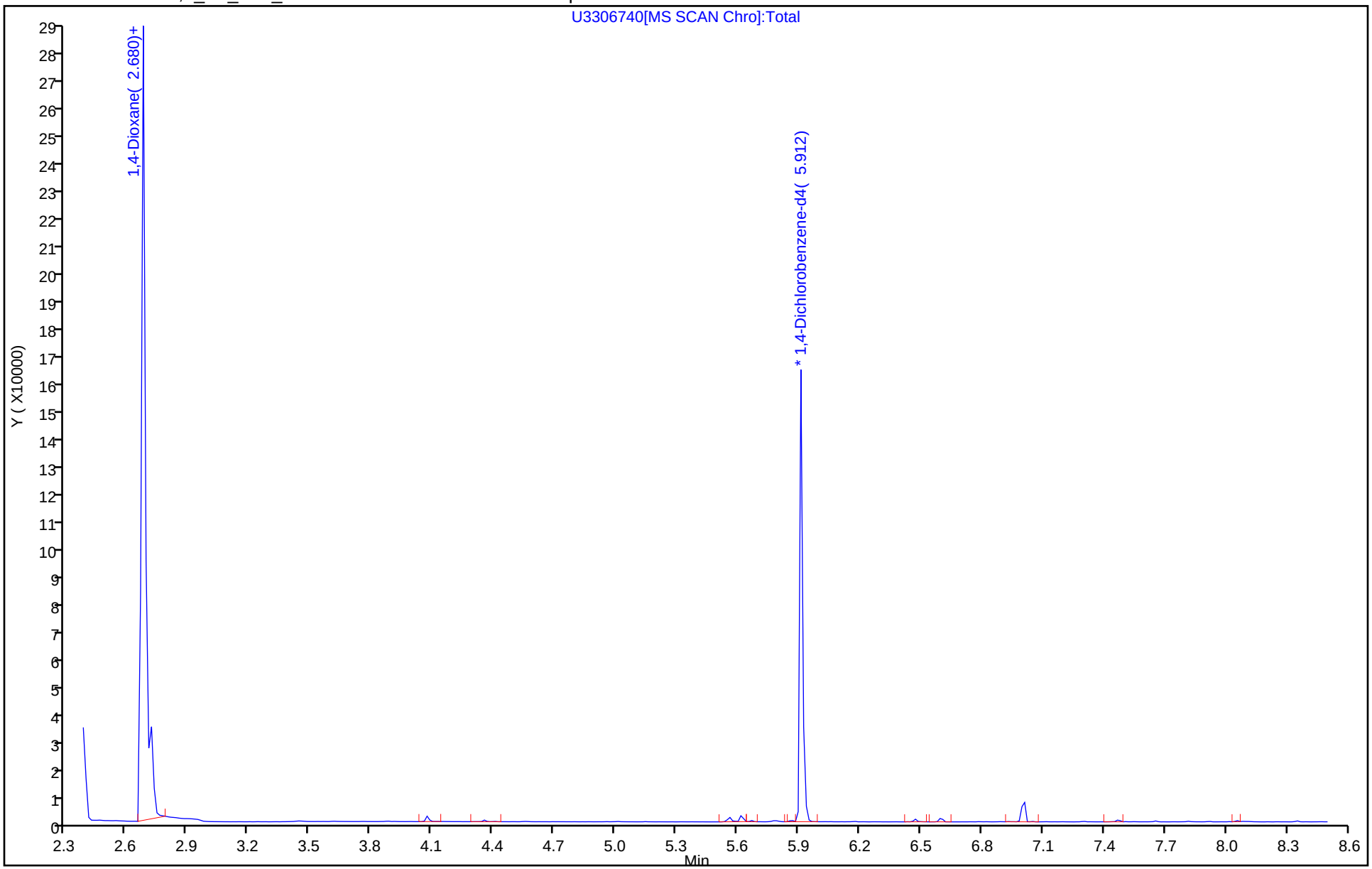
MB_1,4SIM_WRK_00052 Amount Added: 1.00 Units: mL
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 17:02:31 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306740.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 22:24:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | CCVIS | | | Worklist Smp#: | 3 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 29 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



Manual Integration/User Assign Peak Report

TestAmerica Buffalo

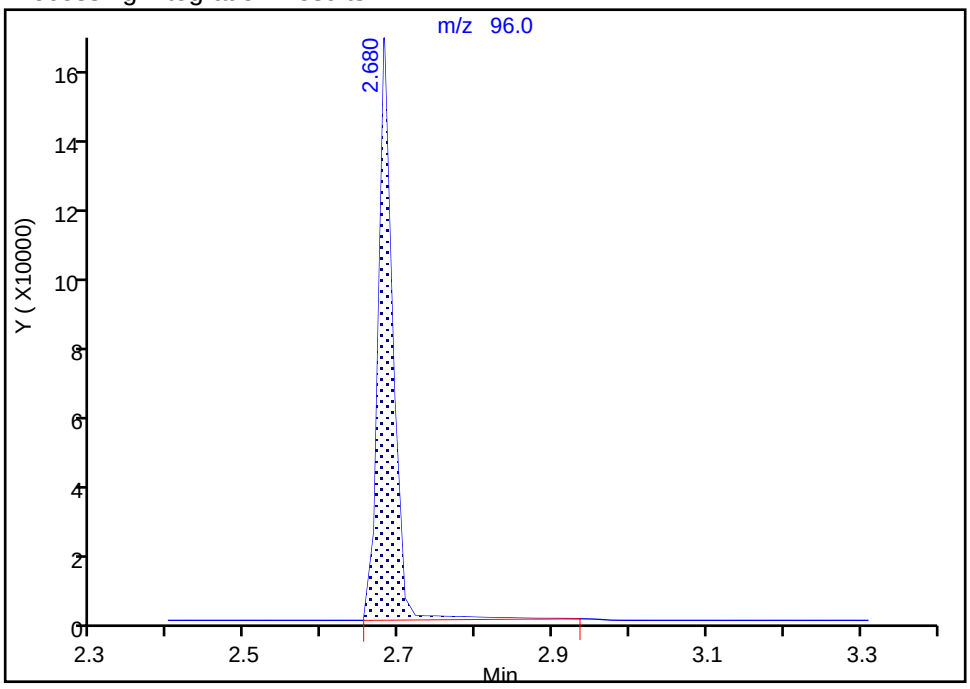
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306740.D
Injection Date: 06-Apr-2018 22:24:30 Instrument ID: HP5973U
Lims ID: CCVIS
Client ID:
Operator ID: DR ALS Bottle#: 29 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

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

Signal: 1

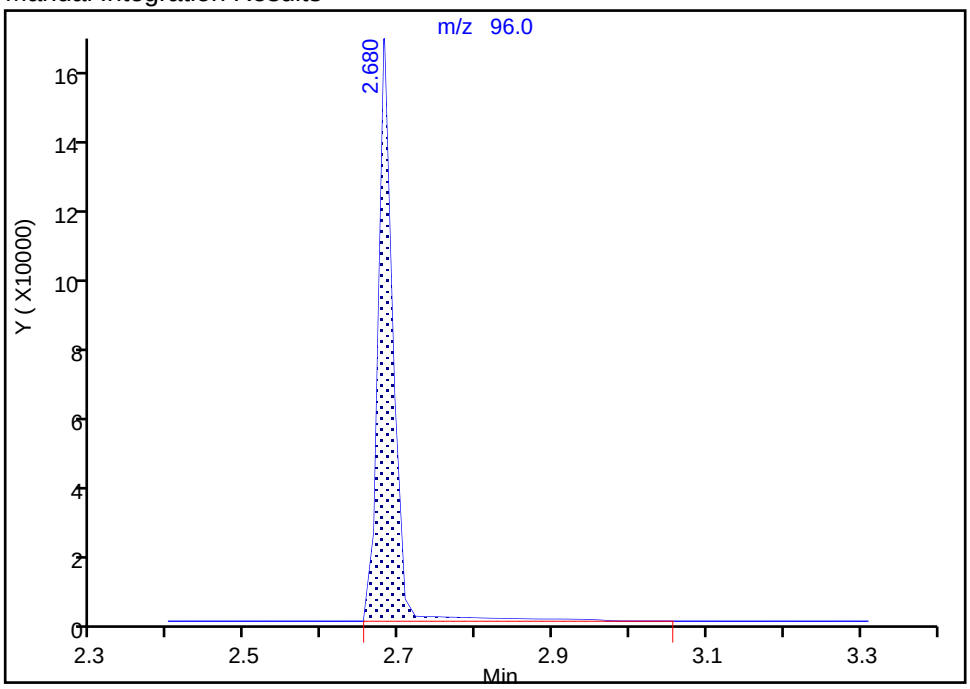
Processing Integration Results

RT: 2.68
Area: 217850
Amount: 5.199466
Amount Units: ng/ul




Manual Integration Results

RT: 2.68
Area: 222544
Amount: 5.287767
Amount Units: ng/ul




Reviewer: richardsd, 09-Apr-2018 11:44:57
Audit Action: Manually Integrated Audit Reason: Peak Tail

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306713.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 06-Apr-2018 11:27:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070461-002
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 11:56:08 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: Deconvolution ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 06-Apr-2018 12:24:17

| Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|
| 4 DFTPP | | | | | | | | | |
| 7 4,4'-DDE | 246 | 10.992 | 10.992 | 0.000 | 0 | 1539 | | NR | |
| 5 4,4'-DDD | 235 | 11.312 | 11.312 | 0.000 | 84 | 3546 | | NR | |
| 6 4,4'-DDT | 235 | 11.569 | 11.569 | 0.000 | 100 | 1006613 | NR | NR | |

## QC Flag Legend

Processing Flags
NR - Missing Quant Standard

## Reagents:

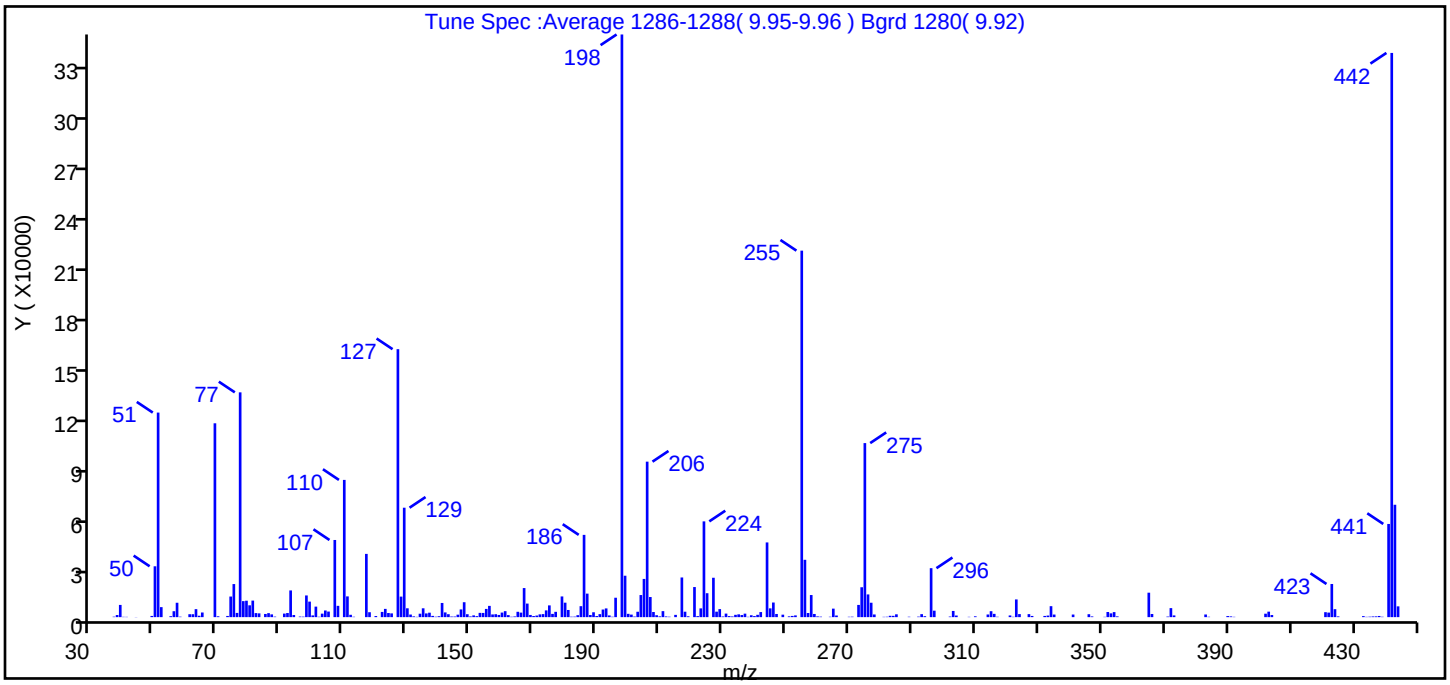
MB_DFTPP_WRK_00327 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306713.D
Injection Date: 06-Apr-2018 11:27:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP




| m/z | Ion Abundance Criteria | % Relative Abundance |
|---|---|---|
| 198 | base peak, or >90% of 442 | 100.0 (103.3) |
| 51 | 10-80% of the base peak | 35.1 |
| 68 | <2% of mass 69 | 0.0 (0.0) |
| 69 | Present | 33.3 |
| 70 | <2% of mass 69 | 0.1 (0.4) |
| 127 | 10-80% of the base peak | 46.0 |
| 197 | <2% of mass 198 | 0.0 |
| 199 | 5-9% of mass 198 | 7.1 |
| 275 | 10-60% of the base peak | 29.9 |
| 365 | >1% of mass 198 | 4.2 |
| 441 | present but <24% of mass 442 | 16.0 (16.5) |
| 442 | base peak, or >50% of 198 | 96.8 |
| 443 | 15-24% of mass 442 | 19.3 (19.9) |

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306713.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 06-Apr-2018 11:27:30
Spectrum: Tune Spec :Average 1286-1288( 9.95-9.96 ) Bgrd 1280( 9.92)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 266

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 277 | 131.00 | 1541 | 200.00 | 1959 | 283.00 | 804 |
| 38.00 | 1246 | 132.00 | 452 | 201.00 | 1505 | 284.00 | 778 |
| 39.00 | 7247 | 133.00 | 176 | 202.00 | 343 | 285.00 | 1680 |
| 40.00 | 191 | 134.00 | 2028 | 203.00 | 3193 | 289.00 | 242 |
| 41.00 | 171 | 135.00 | 5243 | 204.00 | 13104 | 292.00 | 310 |
| 44.00 | 85 | 136.00 | 2202 | 205.00 | 22664 | 293.00 | 1776 |
| 49.00 | 718 | 137.00 | 2641 | 206.00 | 92208 | 294.00 | 563 |
| 50.00 | 30160 | 138.00 | 747 | 207.00 | 11930 | 296.00 | 29040 |
| 51.00 | 121312 | 139.00 | 256 | 208.00 | 3047 | 297.00 | 3831 |
| 52.00 | 5934 | 140.00 | 547 | 209.00 | 1146 | 302.00 | 349 |
| 55.00 | 562 | 141.00 | 8405 | 210.00 | 458 | 303.00 | 3671 |
| 56.00 | 3520 | 142.00 | 2800 | 211.00 | 3559 | 304.00 | 955 |
| 57.00 | 8530 | 143.00 | 1735 | 212.00 | 415 | 308.00 | 182 |
| 58.00 | 269 | 144.00 | 360 | 213.00 | 253 | 310.00 | 494 |
| 61.00 | 1735 | 145.00 | 354 | 215.00 | 1347 | 314.00 | 1573 |
| 62.00 | 1737 | 146.00 | 1461 | 217.00 | 23528 | 315.00 | 3525 |
| 63.00 | 4741 | 147.00 | 4576 | 218.00 | 3227 | 316.00 | 1945 |
| 64.00 | 827 | 148.00 | 8848 | 219.00 | 508 | 317.00 | 228 |
| 65.00 | 2755 | 149.00 | 1731 | 221.00 | 17848 | 321.00 | 997 |
| 69.00 | 114960 | 150.00 | 420 | 222.00 | 603 | 322.00 | 203 |
| 70.00 | 503 | 151.00 | 1042 | 223.00 | 5199 | 323.00 | 10505 |
| 73.00 | 708 | 152.00 | 589 | 224.00 | 56792 | 324.00 | 1809 |
| 74.00 | 12221 | 153.00 | 2532 | 225.00 | 14194 | 327.00 | 1787 |
| 75.00 | 19616 | 154.00 | 2491 | 227.00 | 23360 | 328.00 | 707 |
| 76.00 | 2508 | 155.00 | 4874 | 228.00 | 3245 | 332.00 | 719 |
| 77.00 | 133312 | 156.00 | 6681 | 229.00 | 4767 | 333.00 | 930 |
| 78.00 | 9496 | 157.00 | 1600 | 230.00 | 381 | 334.00 | 6504 |
| 79.00 | 9740 | 158.00 | 1739 | 231.00 | 2100 | 335.00 | 1538 |
| 80.00 | 7018 | 159.00 | 1297 | 232.00 | 624 | 341.00 | 1548 |
| 81.00 | 9814 | 160.00 | 2706 | 233.00 | 403 | 346.00 | 1743 |
| 82.00 | 2402 | 161.00 | 3541 | 234.00 | 1378 | 347.00 | 424 |
| 83.00 | 2240 | 162.00 | 1200 | 235.00 | 1655 | 351.00 | 180 |
| 85.00 | 1885 | 163.00 | 235 | 236.00 | 1243 | 352.00 | 3050 |

Report Date: 09-Apr-2018 11:56:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306713.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 06-Apr-2018 11:27:30
Spectrum: Tune Spec :Average 1286-1288( 9.95-9.96 ) Bgrd 1280( 9.92)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 266

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 86.00 | 2376 | 164.00 | 403 | 237.00 | 2072 | 353.00 | 2251 |
| 87.00 | 1636 | 165.00 | 3172 | 238.00 | 194 | 354.00 | 2990 |
| 88.00 | 302 | 166.00 | 2679 | 239.00 | 1116 | 355.00 | 449 |
| 91.00 | 2100 | 167.00 | 17248 | 240.00 | 627 | 365.00 | 14501 |
| 92.00 | 2444 | 168.00 | 8043 | 241.00 | 1375 | 366.00 | 1868 |
| 93.00 | 15839 | 169.00 | 1298 | 242.00 | 3008 | 371.00 | 329 |
| 94.00 | 1257 | 170.00 | 658 | 244.00 | 44304 | 372.00 | 5350 |
| 96.00 | 340 | 171.00 | 949 | 245.00 | 5208 | 373.00 | 1020 |
| 97.00 | 290 | 172.00 | 1645 | 246.00 | 8673 | 383.00 | 1577 |
| 98.00 | 12866 | 173.00 | 1803 | 247.00 | 1877 | 384.00 | 227 |
| 99.00 | 9210 | 174.00 | 4009 | 249.00 | 1468 | 390.00 | 639 |
| 100.00 | 1025 | 175.00 | 6971 | 251.00 | 462 | 391.00 | 433 |
| 101.00 | 6238 | 176.00 | 1926 | 252.00 | 725 | 392.00 | 184 |
| 102.00 | 227 | 177.00 | 3157 | 253.00 | 1028 | 402.00 | 2038 |
| 103.00 | 2073 | 179.00 | 12275 | 255.00 | 217344 | 403.00 | 3255 |
| 104.00 | 3943 | 180.00 | 8577 | 256.00 | 34008 | 404.00 | 1250 |
| 105.00 | 3308 | 181.00 | 4251 | 257.00 | 2449 | 421.00 | 2941 |
| 107.00 | 45760 | 182.00 | 270 | 258.00 | 13110 | 422.00 | 2696 |
| 108.00 | 6701 | 183.00 | 304 | 259.00 | 1881 | 423.00 | 19664 |
| 110.00 | 81384 | 184.00 | 1165 | 260.00 | 444 | 424.00 | 4726 |
| 111.00 | 12304 | 185.00 | 6506 | 261.00 | 285 | 425.00 | 443 |
| 112.00 | 1397 | 186.00 | 48792 | 264.00 | 241 | 433.00 | 602 |
| 113.00 | 222 | 187.00 | 13947 | 265.00 | 5043 | 434.00 | 182 |
| 117.00 | 37512 | 188.00 | 1263 | 266.00 | 967 | 435.00 | 276 |
| 118.00 | 2915 | 189.00 | 2893 | 270.00 | 218 | 436.00 | 411 |
| 120.00 | 657 | 190.00 | 651 | 271.00 | 269 | 437.00 | 457 |
| 122.00 | 3091 | 191.00 | 1781 | 273.00 | 7245 | 438.00 | 688 |
| 123.00 | 4899 | 192.00 | 4511 | 274.00 | 17728 | 439.00 | 232 |
| 124.00 | 2442 | 193.00 | 5173 | 275.00 | 103216 | 441.00 | 55264 |
| 125.00 | 2232 | 194.00 | 1015 | 276.00 | 13472 | 442.00 | 334592 |
| 127.00 | 158912 | 195.00 | 237 | 277.00 | 8544 | 443.00 | 66648 |
| 128.00 | 12178 | 196.00 | 11510 | 278.00 | 1587 | 444.00 | 6401 |
| 129.00 | 64896 | 198.00 | 345536 | 281.00 | 180 | | |
| 130.00 | 5249 | 199.00 | 24560 | 282.00 | 233 | | |

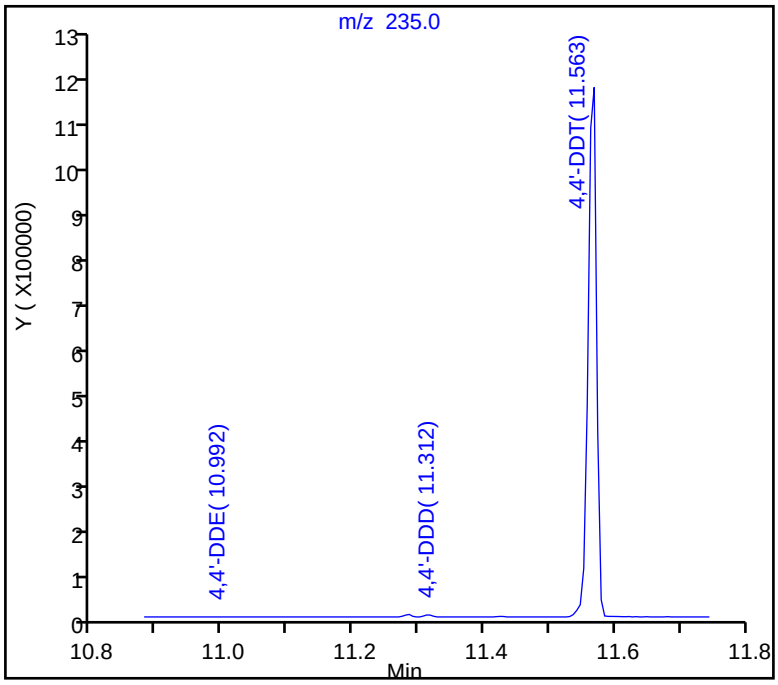
| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 86.00 | 2376 | 164.00 | 403 | 237.00 | 2072 | 353.00 | 2251 |
| 87.00 | 1636 | 165.00 | 3172 | 238.00 | 194 | 354.00 | 2990 |
| 88.00 | 302 | 166.00 | 2679 | 239.00 | 1116 | 355.00 | 449 |
| 91.00 | 2100 | 167.00 | 17248 | 240.00 | 627 | 365.00 | 14501 |
| 92.00 | 2444 | 168.00 | 8043 | 241.00 | 1375 | 366.00 | 1868 |
| 93.00 | 15839 | 169.00 | 1298 | 242.00 | 3008 | 371.00 | 329 |
| 94.00 | 1257 | 170.00 | 658 | 244.00 | 44304 | 372.00 | 5350 |
| 96.00 | 340 | 171.00 | 949 | 245.00 | 5208 | 373.00 | 1020 |
| 97.00 | 290 | 172.00 | 1645 | 246.00 | 8673 | 383.00 | 1577 |
| 98.00 | 12866 | 173.00 | 1803 | 247.00 | 1877 | 384.00 | 227 |
| 99.00 | 9210 | 174.00 | 4009 | 249.00 | 1468 | 390.00 | 639 |
| 100.00 | 1025 | 175.00 | 6971 | 251.00 | 462 | 391.00 | 433 |
| 101.00 | 6238 | 176.00 | 1926 | 252.00 | 725 | 392.00 | 184 |
| 102.00 | 227 | 177.00 | 3157 | 253.00 | 1028 | 402.00 | 2038 |
| 103.00 | 2073 | 179.00 | 12275 | 255.00 | 217344 | 403.00 | 3255 |
| 104.00 | 3943 | 180.00 | 8577 | 256.00 | 34008 | 404.00 | 1250 |
| 105.00 | 3308 | 181.00 | 4251 | 257.00 | 2449 | 421.00 | 2941 |
| 107.00 | 45760 | 182.00 | 270 | 258.00 | 13110 | 422.00 | 2696 |
| 108.00 | 6701 | 183.00 | 304 | 259.00 | 1881 | 423.00 | 19664 |
| 110.00 | 81384 | 184.00 | 1165 | 260.00 | 444 | 424.00 | 4726 |
| 111.00 | 12304 | 185.00 | 6506 | 261.00 | 285 | 425.00 | 443 |
| 112.00 | 1397 | 186.00 | 48792 | 264.00 | 241 | 433.00 | 602 |
| 113.00 | 222 | 187.00 | 13947 | 265.00 | 5043 | 434.00 | 182 |
| 117.00 | 37512 | 188.00 | 1263 | 266.00 | 967 | 435.00 | 276 |
| 118.00 | 2915 | 189.00 | 2893 | 270.00 | 218 | 436.00 | 411 |
| 120.00 | 657 | 190.00 | 651 | 271.00 | 269 | 437.00 | 457 |
| 122.00 | 3091 | 191.00 | 1781 | 273.00 | 7245 | 438.00 | 688 |
| 123.00 | 4899 | 192.00 | 4511 | 274.00 | 17728 | 439.00 | 232 |
| 124.00 | 2442 | 193.00 | 5173 | 275.00 | 103216 | 441.00 | 55264 |
| 125.00 | 2232 | 194.00 | 1015 | 276.00 | 13472 | 442.00 | 334592 |
| 127.00 | 158912 | 195.00 | 237 | 277.00 | 8544 | 443.00 | 66648 |
| 128.00 | 12178 | 196.00 | 11510 | 278.00 | 1587 | 444.00 | 6401 |
| 129.00 | 64896 | 198.00 | 345536 | 281.00 | 180 | | |
| 130.00 | 5249 | 199.00 | 24560 | 282.00 | 233 | | |

Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306713.D
Injection Date: 06-Apr-2018 11:27:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

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




SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 1006613
5 4,4'-DDD, Area = 3546
7 4,4'-DDE, Area = 1539

%Breakdown: 0.50%, Max Limit: 20.00%
Passed

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306739.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 06-Apr-2018 21:56:30 ALS Bottle#: 28 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070462-002
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 17:02:29 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: Deconvolution ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 11:43:48

| Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|
| 4 DFTPP | | | | | | | | | |
| 7 4,4'-DDE | 246 | 10.992 | 10.992 | 0.000 | 0 | 2205 | | NR | |
| 5 4,4'-DDD | 235 | 11.286 | 11.286 | 0.000 | 1 | 25225 | | NR | a |
| 6 4,4'-DDT | 235 | 11.569 | 11.569 | 0.000 | 99 | 888007 | NR | NR | |

## QC Flag Legend

Processing Flags
NR - Missing Quant Standard
Review Flags
a - User Assigned ID

## Reagents:

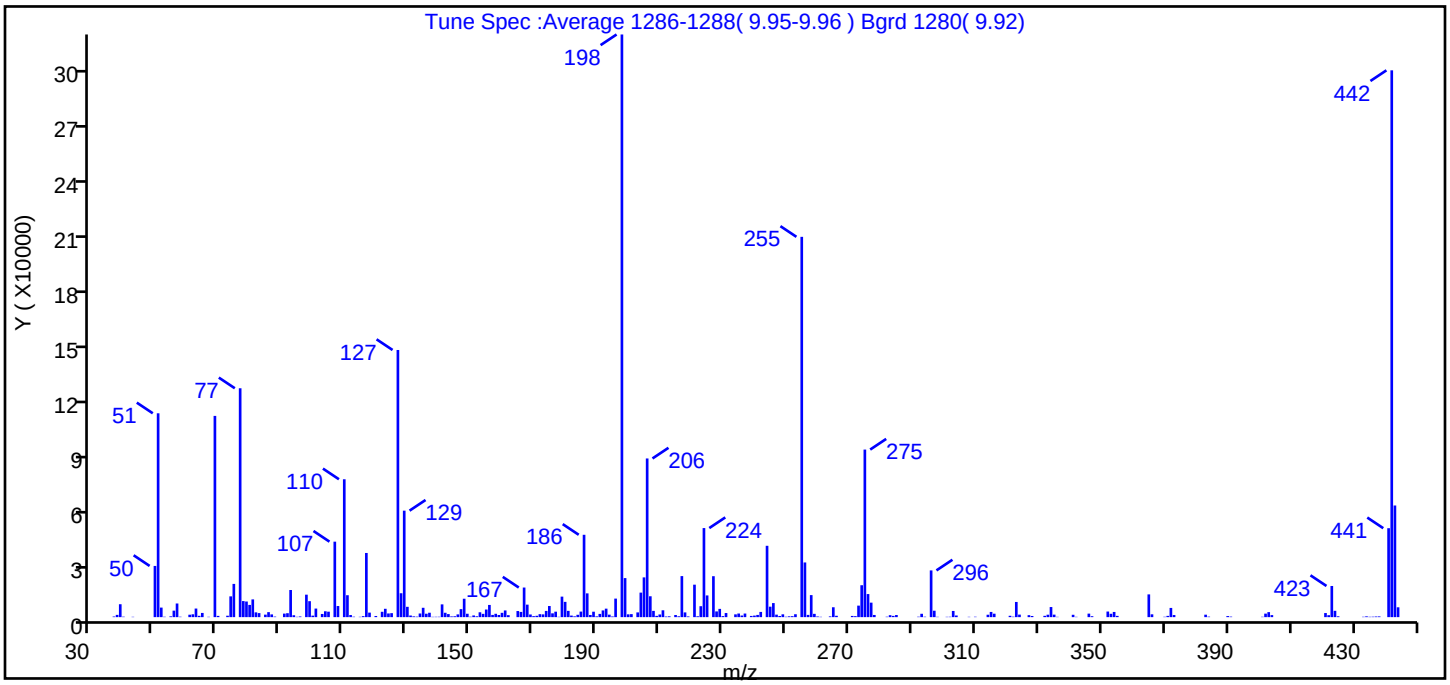
MB_DFTPP_WRK_00327 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306739.D
Injection Date: 06-Apr-2018 21:56:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 28 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP




| m/z | Ion Abundance Criteria | % Relative Abundance |
|---|---|---|
| 198 | base peak, or >90% of 442 | 100.0 (106.6) |
| 51 | 10-80% of the base peak | 35.0 |
| 68 | <2% of mass 69 | 0.0 (0.0) |
| 69 | Present | 34.5 |
| 70 | <2% of mass 69 | 0.2 (0.6) |
| 127 | 10-80% of the base peak | 45.9 |
| 197 | <2% of mass 198 | 0.0 |
| 199 | 5-9% of mass 198 | 6.7 |
| 275 | 10-60% of the base peak | 28.8 |
| 365 | >1% of mass 198 | 3.9 |
| 441 | present but <24% of mass 442 | 15.3 (16.3) |
| 442 | base peak, or >50% of 198 | 93.8 |
| 443 | 15-24% of mass 442 | 19.2 (20.4) |

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306739.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 06-Apr-2018 21:56:30
Spectrum: Tune Spec :Average 1286-1288( 9.95-9.96 ) Bgrd 1280( 9.92)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 264

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 340 | 130.00 | 5546 | 199.00 | 20984 | 283.00 | 1053 |
| 38.00 | 1219 | 131.00 | 872 | 200.00 | 1508 | 284.00 | 679 |
| 39.00 | 6941 | 132.00 | 408 | 201.00 | 1623 | 285.00 | 1141 |
| 40.00 | 248 | 133.00 | 267 | 203.00 | 2545 | 292.00 | 237 |
| 43.00 | 175 | 134.00 | 1958 | 204.00 | 13178 | 293.00 | 1806 |
| 50.00 | 27512 | 135.00 | 5031 | 205.00 | 21360 | 294.00 | 232 |
| 51.00 | 109536 | 136.00 | 1833 | 206.00 | 85264 | 296.00 | 25112 |
| 52.00 | 5134 | 137.00 | 2371 | 207.00 | 11218 | 297.00 | 3448 |
| 53.00 | 215 | 138.00 | 173 | 208.00 | 3359 | 298.00 | 179 |
| 55.00 | 434 | 139.00 | 196 | 209.00 | 685 | 301.00 | 172 |
| 56.00 | 3488 | 140.00 | 213 | 210.00 | 1429 | 302.00 | 208 |
| 57.00 | 7334 | 141.00 | 6862 | 211.00 | 3682 | 303.00 | 3325 |
| 58.00 | 222 | 142.00 | 2350 | 212.00 | 315 | 304.00 | 884 |
| 61.00 | 1306 | 143.00 | 1639 | 213.00 | 445 | 308.00 | 175 |
| 62.00 | 1531 | 144.00 | 391 | 215.00 | 1144 | 310.00 | 221 |
| 63.00 | 4622 | 145.00 | 470 | 216.00 | 449 | 314.00 | 1295 |
| 64.00 | 708 | 146.00 | 1474 | 217.00 | 22056 | 315.00 | 2796 |
| 65.00 | 2257 | 147.00 | 4298 | 218.00 | 2543 | 316.00 | 1849 |
| 67.00 | 181 | 148.00 | 9895 | 219.00 | 385 | 321.00 | 727 |
| 69.00 | 108136 | 149.00 | 1823 | 221.00 | 17448 | 322.00 | 249 |
| 70.00 | 677 | 150.00 | 234 | 222.00 | 457 | 323.00 | 8160 |
| 73.00 | 765 | 151.00 | 907 | 223.00 | 5883 | 324.00 | 1359 |
| 74.00 | 11170 | 152.00 | 458 | 224.00 | 47864 | 327.00 | 1060 |
| 75.00 | 17864 | 153.00 | 2611 | 225.00 | 11666 | 328.00 | 621 |
| 77.00 | 122984 | 154.00 | 1769 | 227.00 | 22000 | 332.00 | 704 |
| 78.00 | 8634 | 155.00 | 4093 | 228.00 | 3075 | 333.00 | 1305 |
| 79.00 | 8396 | 156.00 | 6560 | 229.00 | 4438 | 334.00 | 5430 |
| 80.00 | 6572 | 157.00 | 1194 | 230.00 | 560 | 335.00 | 1342 |
| 81.00 | 9537 | 158.00 | 1800 | 231.00 | 2209 | 336.00 | 168 |
| 82.00 | 2569 | 159.00 | 1155 | 234.00 | 1494 | 341.00 | 1271 |
| 83.00 | 2174 | 160.00 | 2317 | 235.00 | 1946 | 342.00 | 170 |
| 85.00 | 1348 | 161.00 | 3595 | 236.00 | 868 | 346.00 | 1891 |
| 86.00 | 2684 | 162.00 | 1061 | 237.00 | 1934 | 347.00 | 501 |

Report Date: 09-Apr-2018 17:02:29 Chrom Revision: 2.2 13-Mar-2018 08:45:20
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306739.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 06-Apr-2018 21:56:30
Spectrum: Tune Spec :Average 1286-1288( 9.95-9.96 ) Bgrd 1280( 9.92)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 264

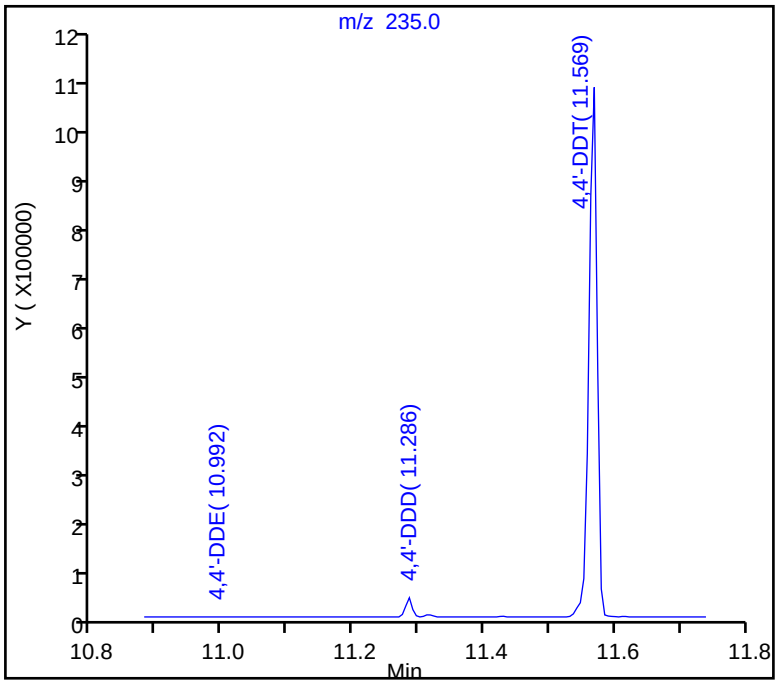
| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 87.00 | 1473 | 165.00 | 3282 | 239.00 | 654 | 352.00 | 3012 |
| 88.00 | 287 | 166.00 | 2809 | 240.00 | 833 | 353.00 | 1807 |
| 91.00 | 1896 | 167.00 | 15910 | 241.00 | 1191 | 354.00 | 2791 |
| 92.00 | 2120 | 168.00 | 6718 | 242.00 | 2806 | 355.00 | 684 |
| 93.00 | 14583 | 169.00 | 1426 | 244.00 | 38336 | 365.00 | 12224 |
| 94.00 | 1020 | 170.00 | 538 | 245.00 | 5622 | 366.00 | 1522 |
| 95.00 | 181 | 171.00 | 729 | 246.00 | 7554 | 370.00 | 194 |
| 96.00 | 365 | 172.00 | 1601 | 247.00 | 1343 | 371.00 | 678 |
| 98.00 | 12075 | 173.00 | 1493 | 248.00 | 619 | 372.00 | 4949 |
| 99.00 | 8577 | 174.00 | 3342 | 249.00 | 1518 | 373.00 | 1131 |
| 100.00 | 805 | 175.00 | 5980 | 250.00 | 214 | 383.00 | 1317 |
| 101.00 | 4610 | 176.00 | 2048 | 251.00 | 437 | 384.00 | 271 |
| 103.00 | 1705 | 177.00 | 2938 | 252.00 | 514 | 390.00 | 577 |
| 104.00 | 3153 | 178.00 | 182 | 253.00 | 1563 | 391.00 | 280 |
| 105.00 | 2931 | 179.00 | 11025 | 255.00 | 204352 | 401.00 | 198 |
| 107.00 | 40560 | 180.00 | 8212 | 256.00 | 29384 | 402.00 | 1886 |
| 108.00 | 5976 | 181.00 | 3375 | 257.00 | 1208 | 403.00 | 2688 |
| 110.00 | 74088 | 182.00 | 837 | 258.00 | 11841 | 404.00 | 1094 |
| 111.00 | 11779 | 183.00 | 426 | 259.00 | 1771 | 421.00 | 2204 |
| 112.00 | 1139 | 184.00 | 1266 | 260.00 | 356 | 422.00 | 1046 |
| 113.00 | 237 | 185.00 | 2984 | 261.00 | 174 | 423.00 | 16744 |
| 115.00 | 177 | 186.00 | 44256 | 264.00 | 404 | 424.00 | 3392 |
| 116.00 | 524 | 187.00 | 12776 | 265.00 | 5311 | 425.00 | 456 |
| 117.00 | 34480 | 188.00 | 1161 | 266.00 | 734 | 433.00 | 198 |
| 118.00 | 2431 | 189.00 | 2922 | 271.00 | 649 | 434.00 | 428 |
| 120.00 | 622 | 190.00 | 403 | 272.00 | 525 | 435.00 | 192 |
| 122.00 | 2876 | 191.00 | 1744 | 273.00 | 6189 | 436.00 | 246 |
| 123.00 | 4491 | 192.00 | 3610 | 274.00 | 17144 | 437.00 | 343 |
| 124.00 | 1979 | 193.00 | 4563 | 275.00 | 90040 | 438.00 | 392 |
| 125.00 | 2143 | 194.00 | 1331 | 276.00 | 12400 | 441.00 | 47792 |
| 127.00 | 143552 | 195.00 | 356 | 277.00 | 7788 | 442.00 | 293824 |
| 128.00 | 12844 | 196.00 | 9963 | 278.00 | 1170 | 443.00 | 59992 |
| 129.00 | 57216 | 198.00 | 313088 | 282.00 | 228 | 444.00 | 5296 |

Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306739.D
Injection Date: 06-Apr-2018 21:56:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 28 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

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




SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 888007
5 4,4'-DDD, Area = 25225
7 4,4'-DDE, Area = 2205

%Breakdown: 3.00%, Max Limit: 20.00%
Passed

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-133255-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 480-406424/1-A

Matrix: Water | Lab File ID: U3306741.D

Analysis Method: 8270D SIM ID | Date Collected:

Extract. Method: 3510C | Date Extracted: 03/29/2018 14:07

Sample wt/vol: 1000(mL) | Date Analyzed: 04/06/2018 22:48

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

Injection Volume: 1(uL) | Level: (low/med) Low

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

Analysis Batch No.: 407525 | Units: ug/L

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

| CAS NO. | ISOTOPE DILUTION | %REC | Q | LIMITS |
|---|---|---|---|---|
| 17647-74-4 | 1,4-Dioxane-d8 | 53 | | 15-110 |

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306741.D
Lims ID: MB 480-406424/1-A
Client ID:
Sample Type: MB
Inject. Date: 06-Apr-2018 22:48:30 ALS Bottle#: 30 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070462-004
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 17:02:30 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 16:16:30

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.761 | 2.694 | 0.067 | 82 | 219811 | 10.0 | 5.33 | |
| | 3 1,4-Dioxane | 88 | | 2.734 | | | | | ND | |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.925 | 5.912 | 0.013 | 100 | 100376 | 1.00 | 1.00 | |
| | 7 4,4'-DDE | 246 | | 10.992 | | | | | ND | |
| | 5 4,4'-DDD | 235 | | 11.312 | | | | | ND | |
| | 6 4,4'-DDT | 235 | | 11.569 | | | | | ND | |

## Reagents:

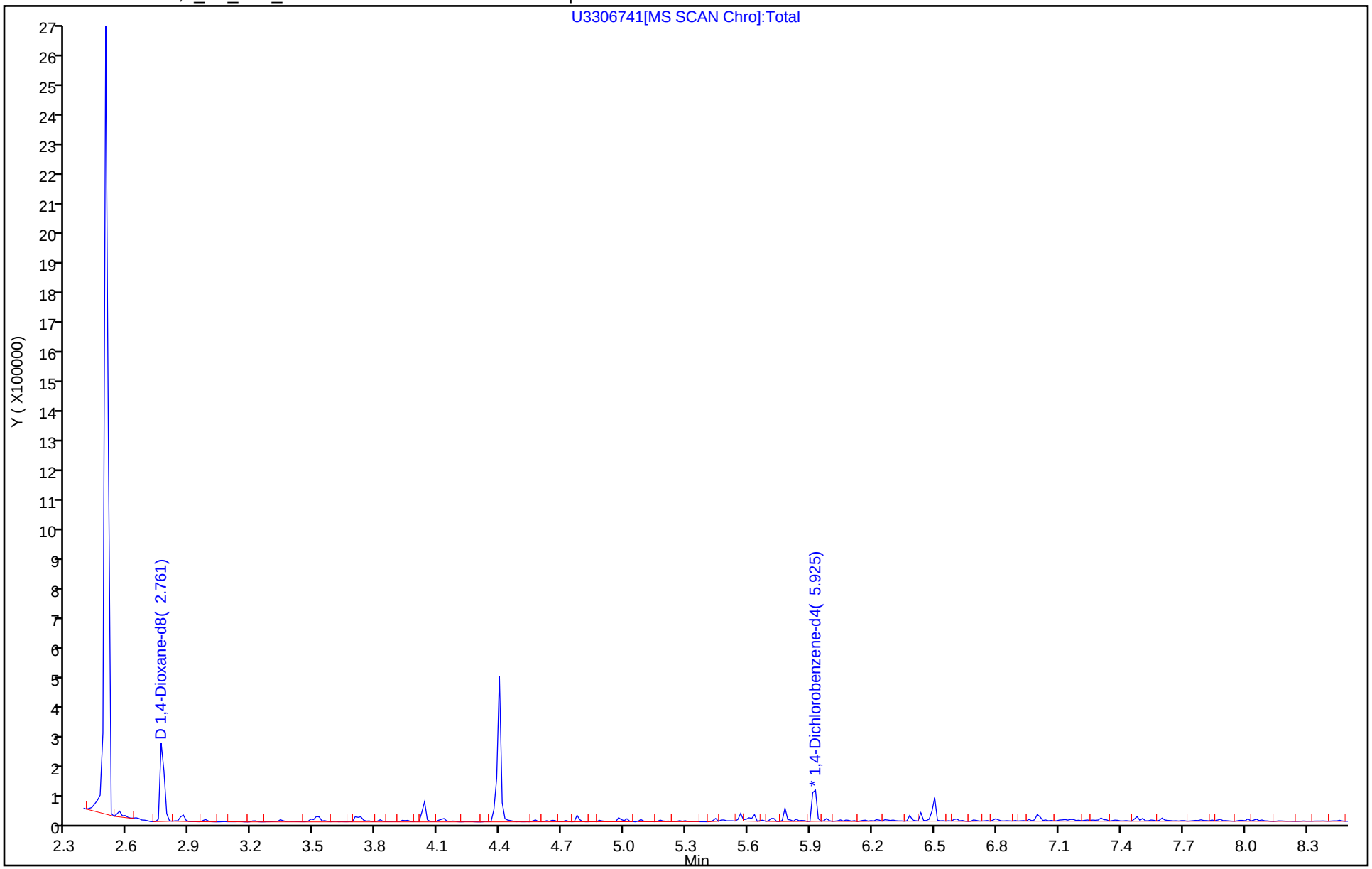
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 17:02:32 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

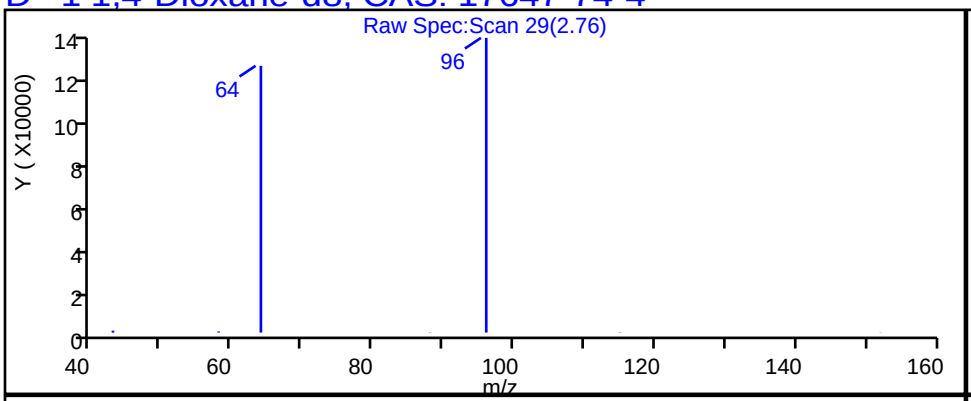
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306741.D

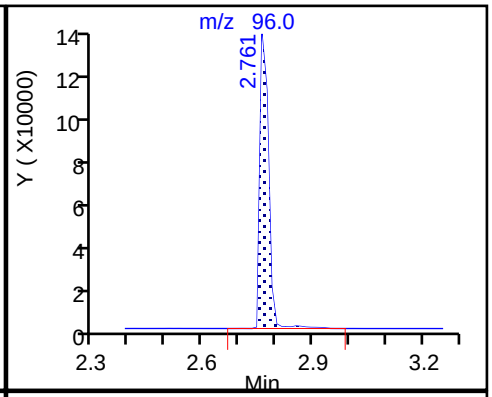
| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 22:48:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | MB 480-406424/1-A | | | Worklist Smp#: | 4 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 30 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |

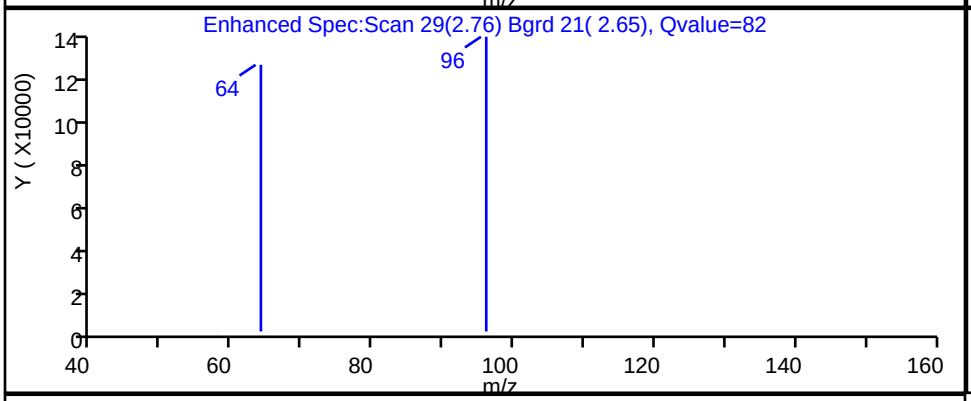


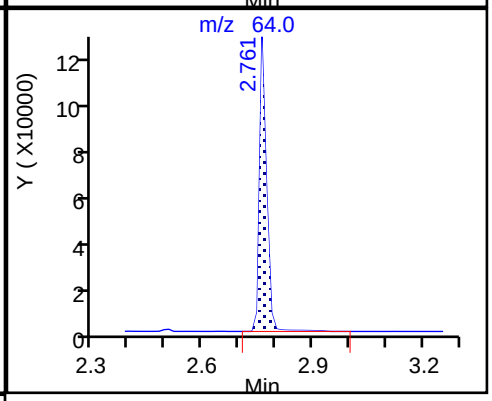
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306741.D
Injection Date: 06-Apr-2018 22:48:30 Instrument ID: HP5973U
Lims ID: MB 480-406424/1-A
Client ID:
Operator ID: DR ALS Bottle#: 30 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

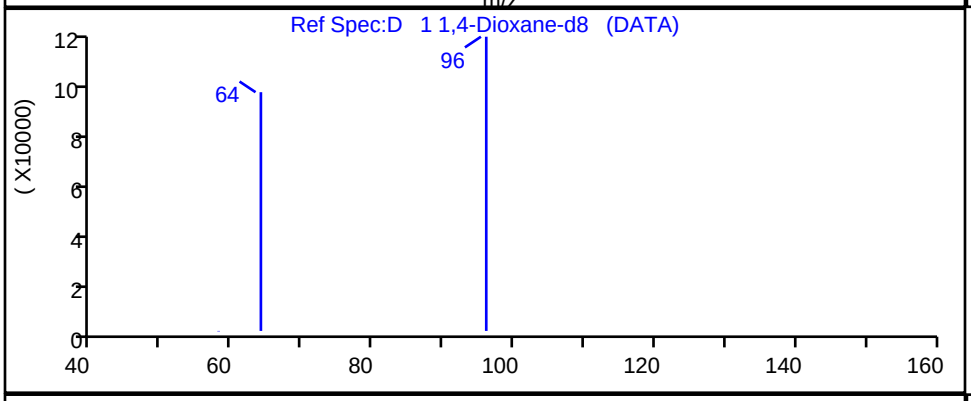
## D 1 1,4-Dioxane-d8, CAS: 17647-74-4

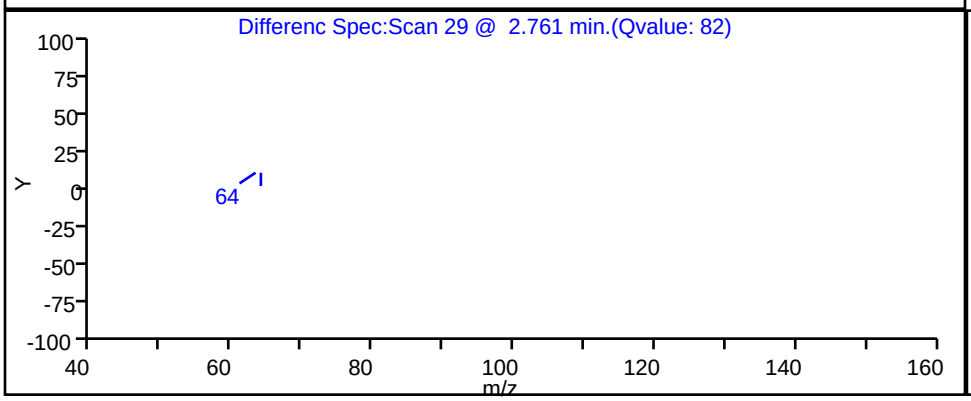


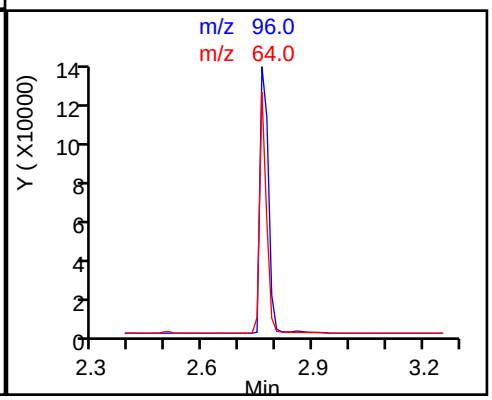



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-133255-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 480-406424/2-A

Matrix: Water | Lab File ID: U3306742.D

Analysis Method: 8270D SIM ID | Date Collected:

Extract. Method: 3510C | Date Extracted: 03/29/2018 14:07

Sample wt/vol: 1000(mL) | Date Analyzed: 04/06/2018 23:12

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

Injection Volume: 1(uL) | Level: (low/med) Low

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

Analysis Batch No.: 407525 | Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | RL | MDL |
|---|---|---|---|---|---|
| 123-91-1 | 1,4-Dioxane | 1.12 | | 0.20 | 0.10 |

| CAS NO. | ISOTOPE DILUTION | %REC | Q | LIMITS |
|---|---|---|---|---|
| 17647-74-4 | 1,4-Dioxane-d8 | 41 | | 15-110 |

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306742.D
Lims ID: LCS 480-406424/2-A
Client ID:
Sample Type: LCS
Inject. Date: 06-Apr-2018 23:12:30 ALS Bottle#: 31 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070462-005
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 17:02:30 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 16:17:52

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.801 | 2.694 | 0.107 | 94 | 183881 | 10.0 | 4.05 | |
| | 3 1,4-Dioxane | 88 | 2.841 | 2.734 | 0.107 | 90 | 21302 | 1.00 | 1.12 | a |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.925 | 5.912 | 0.013 | 98 | 110442 | 1.00 | 1.00 | |

## QC Flag Legend

Review Flags
a - User Assigned ID

## Reagents:

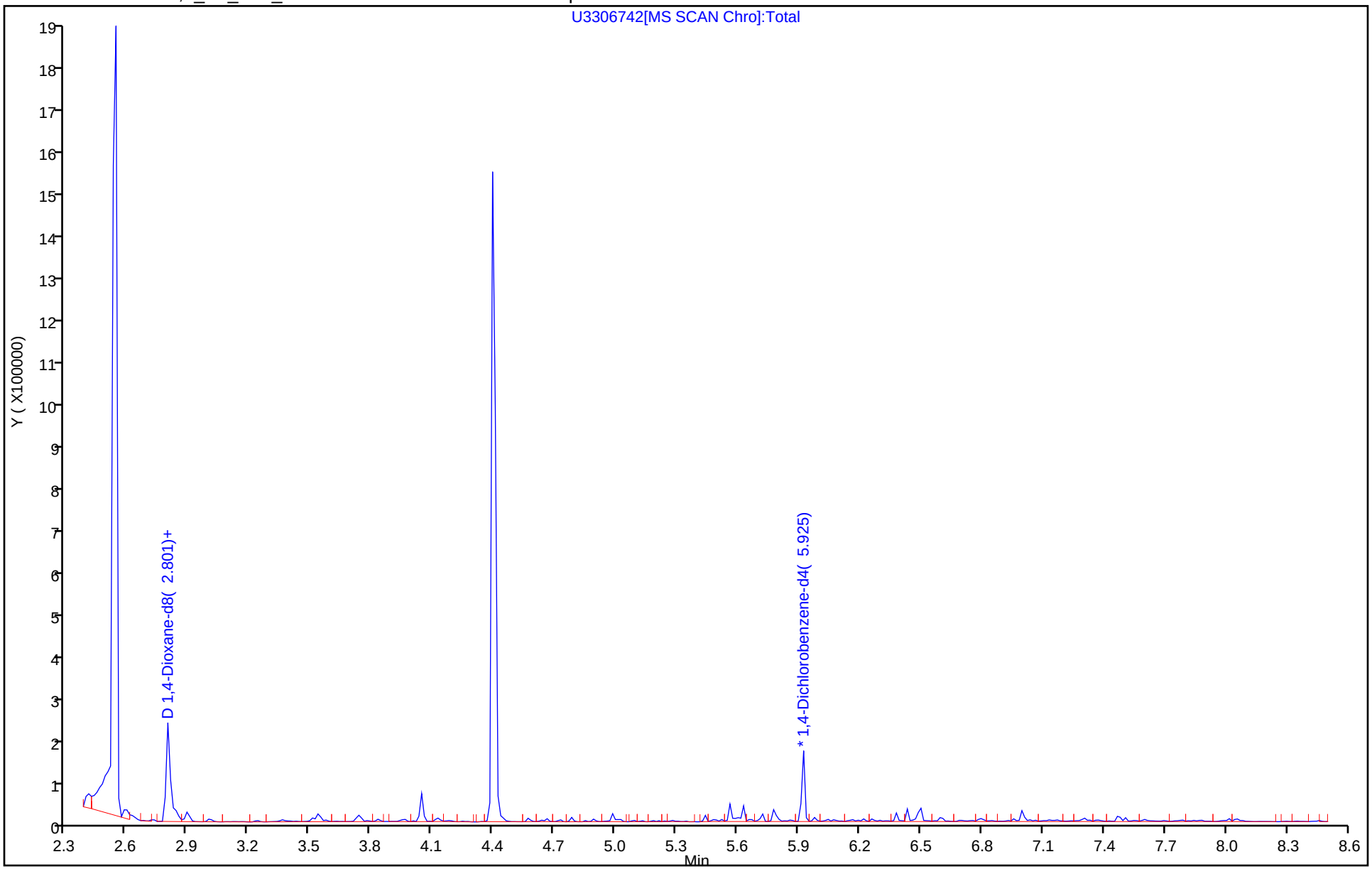
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 17:02:33 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306742.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 23:12:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | LCS 480-406424/2-A | | | Worklist Smp#: | 5 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 31 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



Manual Integration/User Assign Peak Report

TestAmerica Buffalo

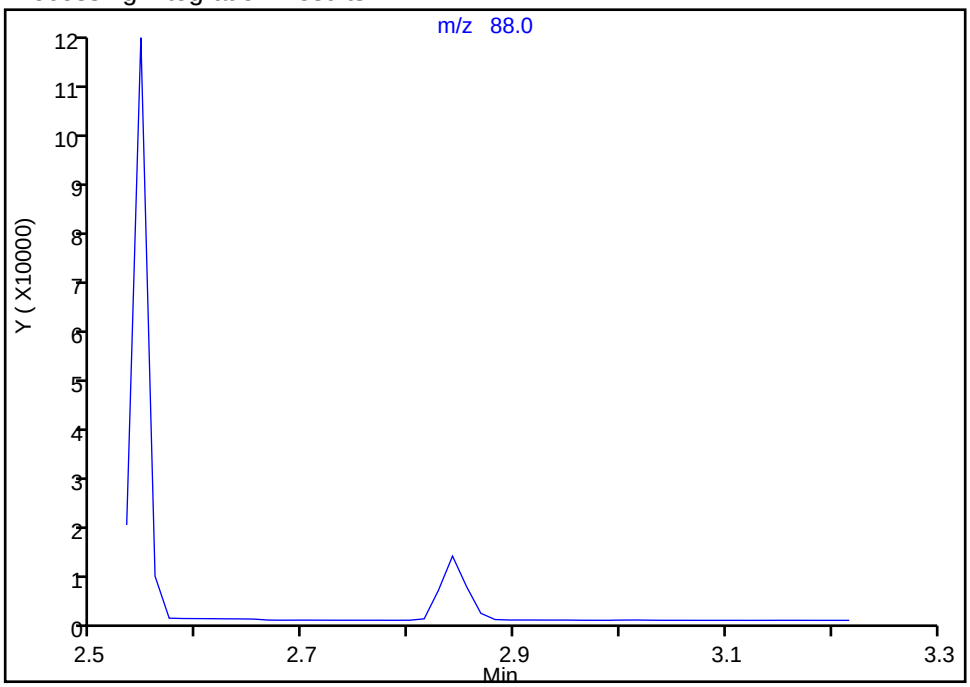
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306742.D
Injection Date: 06-Apr-2018 23:12:30 Instrument ID: HP5973U
Lims ID: LCS 480-406424/2-A
Client ID:
Operator ID: DR ALS Bottle#: 31 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

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

Signal: 1

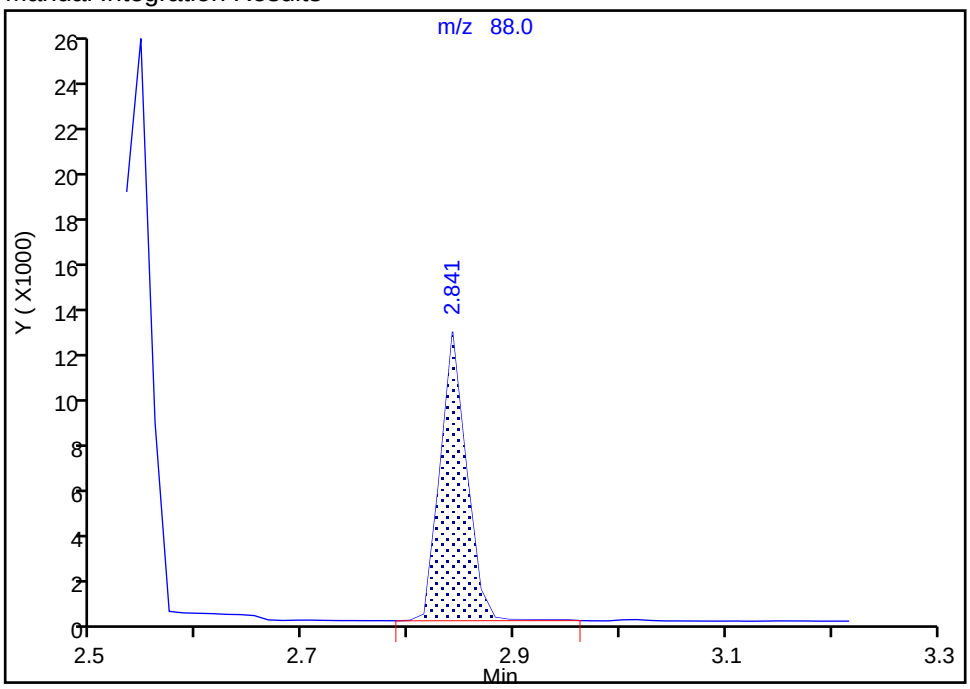
Not Detected
Expected RT: 2.73

Processing Integration Results




Manual Integration Results

RT: 2.84
Area: 21302
Amount: 1.123140
Amount Units: ng/ul




Reviewer: richardsd, 09-Apr-2018 16:17:51
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-133255-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 480-406424/3-A

Matrix: Water | Lab File ID: U3306743.D

Analysis Method: 8270D SIM ID | Date Collected:

Extract. Method: 3510C | Date Extracted: 03/29/2018 14:07

Sample wt/vol: 1000(mL) | Date Analyzed: 04/06/2018 23:36

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

Injection Volume: 1(uL) | Level: (low/med) Low

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

Analysis Batch No.: 407525 | Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | RL | MDL |
|---|---|---|---|---|---|
| 123-91-1 | 1,4-Dioxane | 1.07 | | 0.20 | 0.10 |

| CAS NO. | ISOTOPE DILUTION | %REC | Q | LIMITS |
|---|---|---|---|---|
| 17647-74-4 | 1,4-Dioxane-d8 | 43 | | 15-110 |

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306743.D
Lims ID: LCSD 480-406424/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 06-Apr-2018 23:36:30 ALS Bottle#: 32 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0070462-006
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Apr-2018 17:02:30 Calib Date: 06-Apr-2018 13:55:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70461.b\U3306719.D

Column 1 : Det: MS SCAN
Process Host: XAWRK029

First Level Reviewer: richardsd Date: 09-Apr-2018 16:17:58

| | Compound | Sig | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Q | Response | Cal Amt ng/ul | OnCol Amt ng/ul | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 1 1,4-Dioxane-d8 | 96 | 2.801 | 2.694 | 0.107 | 99 | 190146 | 10.0 | 4.29 | |
| | 3 1,4-Dioxane | 88 | 2.827 | 2.734 | 0.093 | 78 | 20995 | 1.00 | 1.07 | a |
| * | 2 1,4-Dichlorobenzene-d4 | 152 | 5.925 | 5.912 | 0.013 | 98 | 107837 | 1.00 | 1.00 | |

## QC Flag Legend

Review Flags
a - User Assigned ID

## Reagents:

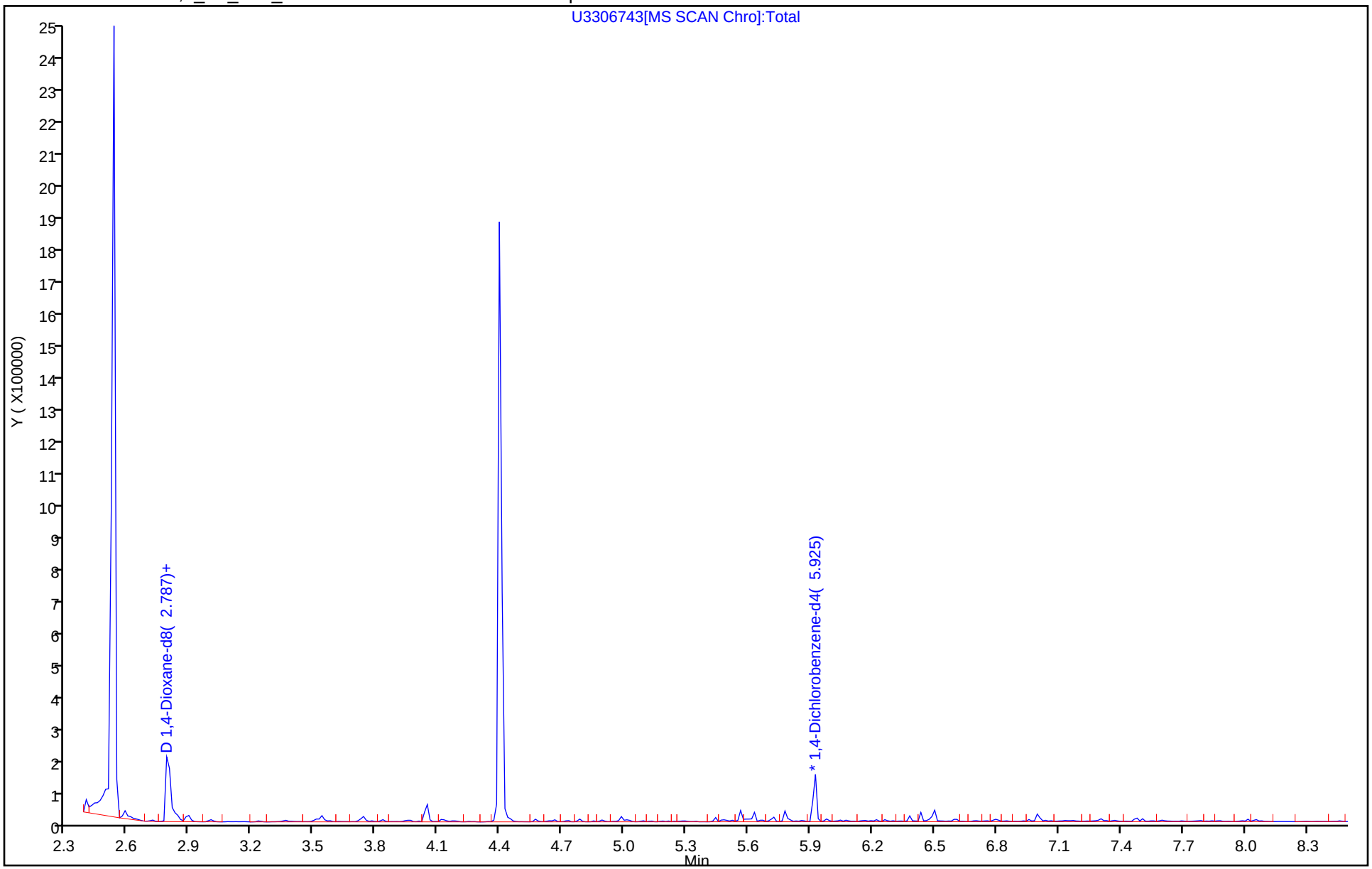
MB_SIMIS_WRK_00005 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Apr-2018 17:02:35 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306743.D

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 06-Apr-2018 23:36:30 | Instrument ID: | HP5973U | Operator ID: | DR |
| Lims ID: | LCSD 480-406424/3-A | | | Worklist Smp#: | 6 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 ul | Dil. Factor: | 1.0000 | ALS Bottle#: | 32 |
| Method: | 1,4_Dx_SIM_HP5973U | Limit Group: | MB - 8270D SIM ID ICAL | | |



Manual Integration/User Assign Peak Report

TestAmerica Buffalo

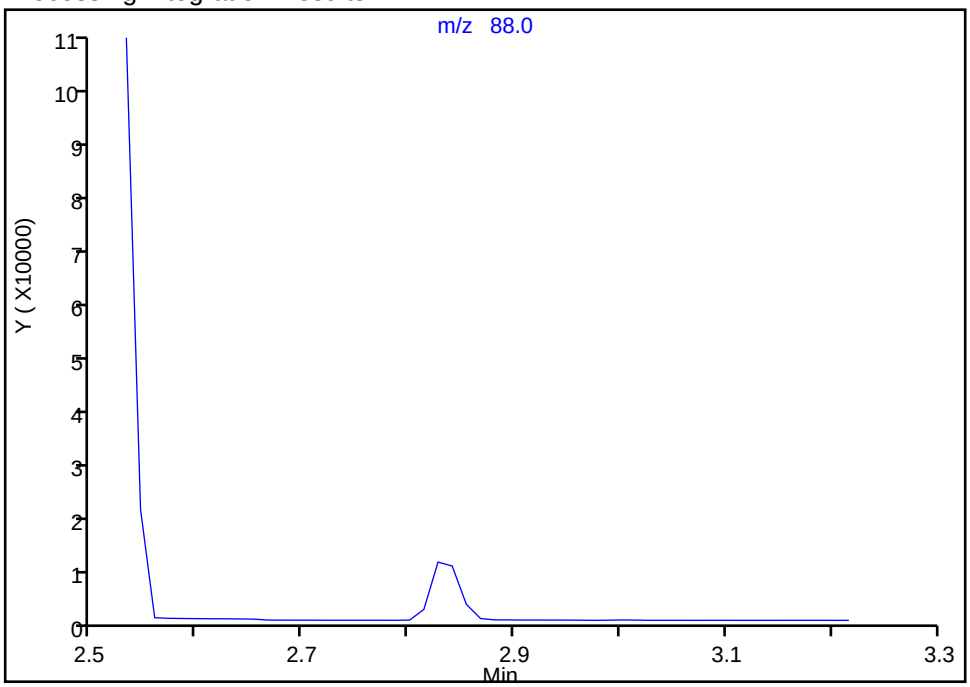
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180406-70462.b\U3306743.D
Injection Date: 06-Apr-2018 23:36:30 Instrument ID: HP5973U
Lims ID: LCSD 480-406424/3-A
Client ID:
Operator ID: DR ALS Bottle#: 32 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

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

Signal: 1

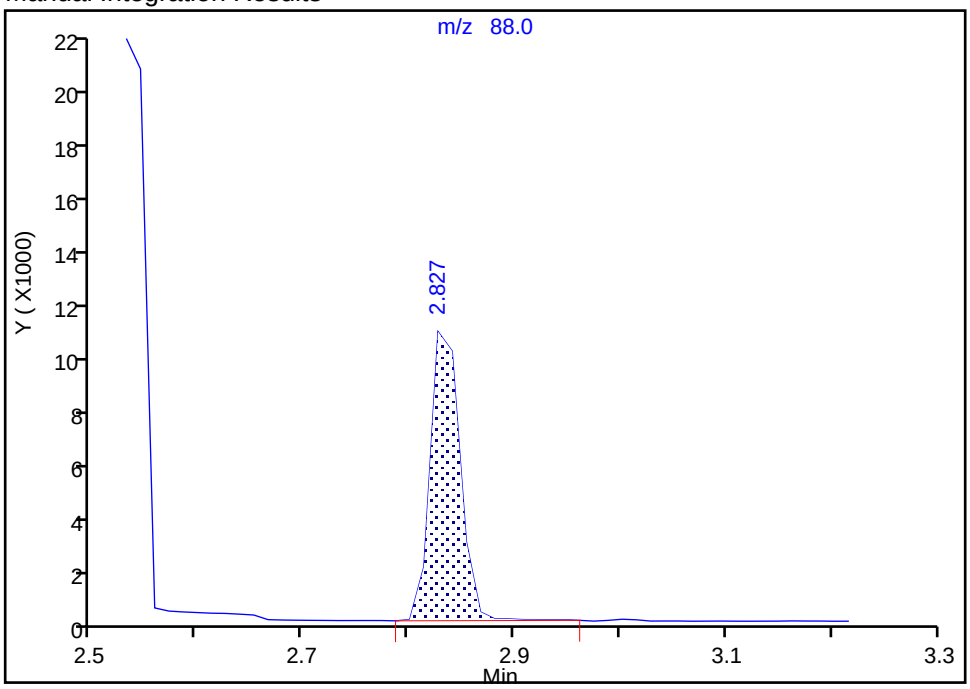
Processing Integration Results

Not Detected
Expected RT: 2.73




Manual Integration Results

RT: 2.83
Area: 20995
Amount: 1.070482
Amount Units: ng/ul




Reviewer: richardsd, 09-Apr-2018 16:17:56
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Instrument ID: HP5973U Start Date: 04/06/2018 11:27

Analysis Batch Number: 407524 End Date: 04/06/2018 21:03

| LAB SAMPLE ID | CLIENT SAMPLE ID | DATE ANALYZED | DILUTION FACTOR | LAB FILE ID | COLUMN ID |
|---|---|---|---|---|---|
| DFTPP 480-407524/2 | | 04/06/2018 11:27 | 1 | U3306713.D | RXI-5Sil MS(0.5 0.25(mm) |
| IC 480-407524/3 | | 04/06/2018 11:56 | 1 | U3306714.D | RXI-5Sil MS(0.5 0.25(mm) |
| IC 480-407524/4 | | 04/06/2018 12:20 | 1 | U3306715.D | RXI-5Sil MS(0.5 0.25(mm) |
| ICIS 480-407524/5 | | 04/06/2018 12:44 | 1 | U3306716.D | RXI-5Sil MS(0.5 0.25(mm) |
| IC 480-407524/6 | | 04/06/2018 13:07 | 1 | U3306717.D | RXI-5Sil MS(0.5 0.25(mm) |
| IC 480-407524/7 | | 04/06/2018 13:31 | 1 | U3306718.D | RXI-5Sil MS(0.5 0.25(mm) |
| IC 480-407524/8 | | 04/06/2018 13:55 | 1 | U3306719.D | RXI-5Sil MS(0.5 0.25(mm) |
| ICV 480-407524/9 | | 04/06/2018 14:19 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| CCVIS 480-407524/10 | | 04/06/2018 14:43 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 15:06 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 15:30 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 15:54 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 16:18 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 16:41 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 17:05 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 17:29 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 17:53 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 18:16 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 18:40 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 19:04 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 19:28 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 19:52 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 20:16 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 20:39 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/06/2018 21:03 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |

8270D SIM ID

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-133255-1

SDG No.:

Instrument ID: HP5973U Start Date: 04/06/2018 21:56

Analysis Batch Number: 407525 End Date: 04/07/2018 06:21

| LAB SAMPLE ID | CLIENT SAMPLE ID | DATE ANALYZED | DILUTION FACTOR | LAB FILE ID | COLUMN ID |
|---|---|---|---|---|---|
| DFTPP 480-407525/2 | | 04/06/2018 21:56 | 1 | U3306739.D | RXI-5Sil MS(0.5 0.25(mm) |
| CCVIS 480-407525/3 | | 04/06/2018 22:24 | 1 | U3306740.D | RXI-5Sil MS(0.5 0.25(mm) |
| MB 480-406424/1-A | | 04/06/2018 22:48 | 1 | U3306741.D | RXI-5Sil MS(0.5 0.25(mm) |
| LCS 480-406424/2-A | | 04/06/2018 23:12 | 1 | U3306742.D | RXI-5Sil MS(0.5 0.25(mm) |
| LCSD 480-406424/3-A | | 04/06/2018 23:36 | 1 | U3306743.D | RXI-5Sil MS(0.5 0.25(mm) |
| 480-133255-1 | | 04/07/2018 00:00 | 1 | U3306744.D | RXI-5Sil MS(0.5 0.25(mm) |
| 480-133255-2 | | 04/07/2018 00:24 | 1 | U3306745.D | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 00:48 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 01:12 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 01:36 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 02:00 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 02:24 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 02:47 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 03:11 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 03:35 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 03:59 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 04:23 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 04:46 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 05:10 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 05:34 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 05:57 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |
| ZZZZZ | | 04/07/2018 06:21 | 1 | | RXI-5Sil MS(0.5 0.25(mm) |

8270D SIM ID

# GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo  Job No.: 480-133255-1

SDG No.:

Batch Number: 406424  Batch Start Date: 03/29/18 14:07  Batch Analyst: Gruning, Anton T

Batch Method: 3510C  Batch End Date:

| Lab Sample ID | Client Sample ID | Method Chain | Basis | InitialAmount | FinalAmount | ReceivedpH | FirstAdjustpH | SecondAdjustpH | OP_SIM_LCS 00002 |
|---|---|---|---|---|---|---|---|---|---|
| MB 480-406424/1 | | 3510C, 8270D SIM ID | | 1000 mL | 1 mL | 7 SU | <2 SU | >11 SU | |
| LCS 480-406424/2 | | 3510C, 8270D SIM ID | | 1000 mL | 1 mL | 7 SU | <2 SU | >11 SU | 1 mL |
| LCSD 480-406424/3 | | 3510C, 8270D SIM ID | | 1000 mL | 1 mL | 7 SU | <2 SU | >11 SU | 1 mL |
| 480-133255-B-1 | R9-032818-C1 | 3510C, 8270D SIM ID | T | 100 mL | 1 mL | 8 SU | <2 SU | >11 SU | |
| 480-133255-B-2 | R9-032818-POND | 3510C, 8270D SIM ID | T | 100 mL | 1 mL | 8 SU | <2 SU | >11 SU | |

| Lab Sample ID | Client Sample ID | Method Chain | Basis | OP_SimSurr 00002 | AnalysisComment | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MB 480-406424/1 | | 3510C, 8270D SIM ID | | 1 mL | | | | | |
| LCS 480-406424/2 | | 3510C, 8270D SIM ID | | 1 mL | | | | | |
| LCSD 480-406424/3 | | 3510C, 8270D SIM ID | | 1 mL | | | | | |
| 480-133255-B-1 | R9-032818-C1 | 3510C, 8270D SIM ID | T | 1 mL | Dark | | | | |
| 480-133255-B-2 | R9-032818-POND | 3510C, 8270D SIM ID | T | 1 mL | Dark | | | | |

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM ID

# GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo  Job No.: 480-133255-1

SDG No.:

Batch Number: 406424  Batch Start Date: 03/29/18 14:07  Batch Analyst: Gruning, Anton T

Batch Method: 3510C  Batch End Date:

| Batch Notes | |
|---|---|
| Acid Used for pH Adjustment ID | 4536397 |
| Base Used to Adjust pH ID | 4413635 |
| Analyst ID - Concentration | AG |
| Analyst ID - Extraction | AG |
| Method/Fraction | 3510C/8270D_SIM |
| Na2SO4 ID | 4415323 |
| Prep Solvent ID | 4539052 |
| Prep Solvent Volume Used | 360 mL |
| Analyst ID - Spike Analyst | AG |
| Analyst ID - Spike Witness Analyst | AG |
| Sufficient Volume for Batch QC | No |
| Vial Lot Number | 1524410933 |

| Basis | Basis Description |
|---|---|
| T | Total/NA |

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM ID

# Method PFC IDA

## Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Matrix: Water  Level: Low

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

| Client Sample ID | Lab Sample ID | PFBA # | PFPeA # | PFBS # | PFHxA # | PFHpA # | PFHxS # | M262FTS # | PFOA # |
|---|---|---|---|---|---|---|---|---|---|
| R9-032818-C1 | 480-133255-1 | 9 * | 46 | 150 | 70 | 85 | 115 | 399 * | 82 |
| R9-032818-POND | 480-133255-2 | 6 * | 35 | 130 | 56 | 75 | 105 | 328 * | 81 |
| | MB 320-216477/1-A | 69 | 70 | 69 | 67 | 73 | 71 | 78 | 73 |
| | LCS 320-216477/2-A | 83 | 86 | 81 | 86 | 91 | 87 | 90 | 89 |
| | LCSD 320-216477/3-A | 96 | 95 | 93 | 96 | 99 | 94 | 105 | 101 |

| | 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 Sacramento  Job No.: 480-133255-1

SDG No.:

Matrix: Water  Level: Low

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

| Client Sample ID | Lab Sample ID | PFOS # | PFNA # | PFOSA # | M282FTS # | PFDA # | d3NMFOS # | d5NEFOS # | PFUnA # |
|---|---|---|---|---|---|---|---|---|---|
| R9-032818-C1 | 480-133255-1 | 127 | 123 | 112 | 395 * | 147 | 162 * | 164 * | 145 |
| R9-032818-POND | 480-133255-2 | 130 | 107 | 96 | 363 * | 134 | 149 | 170 * | 114 |
| | MB 320-216477/1-A | 74 | 78 | 63 | 77 | 81 | 83 | 79 | 78 |
| | LCS 320-216477/2-A | 88 | 94 | 74 | 92 | 93 | 95 | 91 | 93 |
| | LCSD 320-216477/3-A | 101 | 109 | 90 | 121 | 109 | 119 | 112 | 113 |

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

# Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Matrix: Water Level: Low

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

| Client Sample ID | Lab Sample ID | PFDoA # | PFTDA # |
|---|---|---|---|
| R9-032818-C1 | 480-133255-1 | 81 | 18 * |
| R9-032818-POND | 480-133255-2 | 64 | 12 * |
| | MB 320-216477/1-A | 79 | 76 |
| | LCS 320-216477/2-A | 95 | 94 |
| | LCSD 320-216477/3-A | 111 | 113 |

| | 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 Sacramento Job No.: 480-133255-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.07LLA1_049.d

Lab ID: LCS 320-216477/2-A Client ID:

| COMPOUND | SPIKE ADDED (ng/L) | LCS CONCENTRATION (ng/L) | LCS % REC | QC LIMITS REC | # |
|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 40.0 | 38.98 | 97 | 70-130 | |
| Perfluoropentanoic acid (PFPeA) | 40.0 | 34.85 | 87 | 66-126 | |
| Perfluorohexanoic acid (PFHxA) | 40.0 | 37.07 | 93 | 66-126 | |
| Perfluoroheptanoic acid (PFHpA) | 40.0 | 36.13 | 90 | 66-126 | |
| Perfluorooctanoic acid (PFOA) | 40.0 | 35.66 | 89 | 64-124 | |
| Perfluorononanoic acid (PFNA) | 40.0 | 36.68 | 92 | 68-128 | |
| Perfluorodecanoic acid (PFDA) | 40.0 | 38.96 | 97 | 69-129 | |
| Perfluoroundecanoic acid (PFUnA) | 40.0 | 37.90 | 95 | 60-120 | |
| Perfluorododecanoic acid (PFDoA) | 40.0 | 36.22 | 91 | 71-131 | |
| Perfluorotridecanoic Acid (PFTriA) | 40.0 | 36.73 | 92 | 72-132 | |
| Perfluorotetradecanoic acid (PFTeA) | 40.0 | 36.91 | 92 | 68-128 | |
| Perfluorobutanesulfonic acid (PFBS) | 35.4 | 33.58 | 95 | 73-133 | |
| Perfluorohexanesulfonic acid (PFHxS) | 36.4 | 32.60 | 90 | 63-123 | |
| Perfluoroheptanesulfonic Acid (PFHpS) | 38.1 | 34.25 | 90 | 68-128 | |
| Perfluorooctanesulfonic acid (PFOS) | 37.1 | 33.20 | 89 | 67-127 | |
| Perfluorodecanesulfonic acid (PFDS) | 38.6 | 32.74 | 85 | 68-128 | |
| Perfluorooctane Sulfonamide (FOSA) | 40.0 | 37.51 | 94 | 70-130 | |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 40.0 | 37.58 | 94 | 67-127 | |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 40.0 | 40.77 | 102 | 65-125 | |
| 6:2FTS | 37.9 | 31.88 | 84 | 66-126 | |
| 8:2FTS | 38.3 | 36.19 | 94 | 67-127 | |
| 13C4 PFBA | 100 | 83.01 | 83 | 25-150 | |
| 13C5 PFPeA | 100 | 86.39 | 86 | 25-150 | |
| 13C2 PFHxA | 100 | 86.09 | 86 | 25-150 | |
| 13C4-PFHpA | 100 | 91.05 | 91 | 25-150 | |
| 13C4 PFOA | 100 | 88.69 | 89 | 25-150 | |
| 13C5 PFNA | 100 | 93.86 | 94 | 25-150 | |
| 13C2 PFDA | 100 | 93.03 | 93 | 25-150 | |
| 13C2 PFUnA | 100 | 92.53 | 93 | 25-150 | |
| 13C2 PFDoA | 100 | 95.11 | 95 | 25-150 | |

# Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.07LLA1_049.d

Lab ID: LCS 320-216477/2-A Client ID:

| COMPOUND | SPIKE ADDED (ng/L) | LCS CONCENTRATION (ng/L) | LCS % REC | QC LIMITS REC | # |
|---|---|---|---|---|---|
| 13C2-PFTeDA | 100 | 94.45 | 94 | 25-150 | |
| 13C3-PFBS | 93.0 | 74.99 | 81 | 25-150 | |
| 18O2 PFHxS | 94.6 | 82.75 | 87 | 25-150 | |
| 13C4 PFOS | 95.6 | 84.52 | 88 | 25-150 | |
| 13C8 FOSA | 100 | 73.67 | 74 | 25-150 | |
| d3-NMeFOSAA | 100 | 95.48 | 95 | 25-150 | |
| d5-NEtFOSAA | 100 | 90.97 | 91 | 25-150 | |
| M2-6:2FTS | 95.0 | 85.40 | 90 | 25-150 | |
| M2-8:2FTS | 95.8 | 87.77 | 92 | 25-150 | |

# Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.07LLA1_050.d

Lab ID: LCSD 320-216477/3-A Client ID:

| COMPOUND | SPIKE ADDED (ng/L) | LCSD CONCENTRATION (ng/L) | LCSD % REC | % RPD | QC LIMITS RPD | QC LIMITS REC | # |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 40.0 | 39.53 | 99 | 1 | 30 | 70-130 | |
| Perfluoropentanoic acid (PFPeA) | 40.0 | 35.96 | 90 | 3 | 30 | 66-126 | |
| Perfluorohexanoic acid (PFHxA) | 40.0 | 36.22 | 91 | 2 | 30 | 66-126 | |
| Perfluoroheptanoic acid (PFHpA) | 40.0 | 35.89 | 90 | 1 | 30 | 66-126 | |
| Perfluorooctanoic acid (PFOA) | 40.0 | 34.61 | 87 | 3 | 30 | 64-124 | |
| Perfluorononanoic acid (PFNA) | 40.0 | 36.92 | 92 | 1 | 30 | 68-128 | |
| Perfluorodecanoic acid (PFDA) | 40.0 | 38.38 | 96 | 1 | 30 | 69-129 | |
| Perfluoroundecanoic acid (PFUnA) | 40.0 | 37.35 | 93 | 1 | 30 | 60-120 | |
| Perfluorododecanoic acid (PFDoA) | 40.0 | 37.13 | 93 | 2 | 30 | 71-131 | |
| Perfluorotridecanoic Acid (PFTriA) | 40.0 | 37.50 | 94 | 2 | 30 | 72-132 | |
| Perfluorotetradecanoic acid (PFTeA) | 40.0 | 36.86 | 92 | 0 | 30 | 68-128 | |
| Perfluorobutanesulfonic acid (PFBS) | 35.4 | 33.62 | 95 | 0 | 30 | 73-133 | |
| Perfluorohexanesulfonic acid (PFHxS) | 36.4 | 34.37 | 94 | 5 | 30 | 63-123 | |
| Perfluoroheptanesulfonic Acid (PFHpS) | 38.1 | 33.89 | 89 | 1 | 30 | 68-128 | |
| Perfluorooctanesulfonic acid (PFOS) | 37.1 | 33.59 | 91 | 1 | 30 | 67-127 | |
| Perfluorodecanesulfonic acid (PFDS) | 38.6 | 33.90 | 88 | 3 | 30 | 68-128 | |
| Perfluorooctane Sulfonamide (FOSA) | 40.0 | 36.58 | 91 | 3 | 30 | 70-130 | |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 40.0 | 37.33 | 93 | 1 | 30 | 67-127 | |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 40.0 | 37.06 | 93 | 10 | 30 | 65-125 | |
| 6:2FTS | 37.9 | 32.88 | 87 | 3 | 30 | 66-126 | |
| 8:2FTS | 38.3 | 31.47 | 82 | 14 | 30 | 67-127 | |
| 13C4 PFBA | 100 | 95.75 | 96 | | | 25-150 | |
| 13C5 PFPeA | 100 | 94.54 | 95 | | | 25-150 | |
| 13C2 PFHxA | 100 | 96.49 | 96 | | | 25-150 | |
| 13C4-PFHpA | 100 | 99.27 | 99 | | | 25-150 | |
| 13C4 PFOA | 100 | 101.4 | 101 | | | 25-150 | |
| 13C5 PFNA | 100 | 108.9 | 109 | | | 25-150 | |
| 13C2 PFDA | 100 | 108.7 | 109 | | | 25-150 | |
| 13C2 PFUnA | 100 | 113.0 | 113 | | | 25-150 | |
| 13C2 PFDoA | 100 | 110.7 | 111 | | | 25-150 | |

# Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Matrix: Water  Level: Low  Lab File ID: 2018.04.07LLA1_050.d

Lab ID: LCSD 320-216477/3-A  Client ID:

| COMPOUND | SPIKE ADDED (ng/L) | LCSD CONCENTRATION (ng/L) | LCSD % REC | % RPD | QC LIMITS RPD | QC LIMITS REC | # |
|---|---|---|---|---|---|---|---|
| 13C2-PFTeDA | 100 | 112.8 | 113 | | | 25-150 | |
| 13C3-PFBS | 93.0 | 86.05 | 93 | | | 25-150 | |
| 18O2 PFHxS | 94.6 | 88.94 | 94 | | | 25-150 | |
| 13C4 PFOS | 95.6 | 96.24 | 101 | | | 25-150 | |
| 13C8 FOSA | 100 | 89.53 | 90 | | | 25-150 | |
| d3-NMeFOSAA | 100 | 119.0 | 119 | | | 25-150 | |
| d5-NEtFOSAA | 100 | 111.8 | 112 | | | 25-150 | |
| M2-6:2FTS | 95.0 | 100.2 | 105 | | | 25-150 | |
| M2-8:2FTS | 95.8 | 116.0 | 121 | | | 25-150 | |

# Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Lab File ID: 2018.04.07LLA1_048.d  Lab Sample ID: MB 320-216477/1-A

Matrix: Water  Date Extracted: 04/05/2018 12:06

Instrument ID: A8_N  Date Analyzed: 04/07/2018 14:53

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

| CLIENT SAMPLE ID | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|
| | LCS 320-216477/2-A | 2018.04.07LLA1_049.d | 04/07/2018 15:01 |
| | LCSD 320-216477/3-A | 2018.04.07LLA1_050.d | 04/07/2018 15:08 |
| R9-032818-C1 | 480-133255-1 | 2018.04.08LLA_011.d | 04/08/2018 15:20 |
| R9-032818-POND | 480-133255-2 | 2018.04.08LLA_012.d | 04/08/2018 15:27 |

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Sample No.: IC 320-215537/5 Date Analyzed: 03/29/2018 17:50

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

Lab File ID (Standard): 2018.03.29A_ICALB_0 Heated Purge: (Y/N) N

Calibration ID: 38353

| | | 13PFOA | | | | | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| INITIAL CALIBRATION MID-POINT | | 4517618 | 2.69 | | | | |
| UPPER LIMIT | | 6776427 | 2.89 | | | | |
| LOWER LIMIT | | 2258809 | 2.49 | | | | |
| LAB SAMPLE ID | CLIENT SAMPLE ID | | | | | | |
| ICB 320-215537/9 | | 4317989 | 2.69 | | | | |
| ICV 320-215537/10 | | 4235745 | 2.68 | | | | |
| CCV 320-216820/3 CCVIS | | 4896716 | 2.66 | | | | |
| CCV 320-216884/3 CCVIS | | 4369632 | 2.68 | | | | |

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

# Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Sample No.: CCV 320-216820/3 Date Analyzed: 04/07/2018 09:16

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

Lab File ID (Standard): 2018.04.07LLA_006.d Heated Purge: (Y/N) N

Calibration ID: 38353

| | | 13PFOA | | | | | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12/24 HOUR STD | | 4896716 | 2.66 | | | | |
| UPPER LIMIT | | 7345074 | 2.86 | | | | |
| LOWER LIMIT | | 2448358 | 2.46 | | | | |
| LAB SAMPLE ID | CLIENT SAMPLE ID | | | | | | |
| CCB 320-216820/1 | | 4655047 | 2.66 | | | | |
| CCVL 320-216820/2 | | 4898002 | 2.66 | | | | |
| CCV 320-216860/1 | | 4558791 | 2.67 | | | | |
| MB 320-216477/1-A | | 5966832 | 2.66 | | | | |
| LCS 320-216477/2-A | | 4919500 | 2.67 | | | | |
| LCSD 320-216477/3-A | | 4751609 | 2.67 | | | | |
| CCV 320-216860/12 | | 4626093 | 2.66 | | | | |

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

# Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Sample No.: CCV 320-216884/3 Date Analyzed: 04/08/2018 14:40

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

Lab File ID (Standard): 2018.04.08LLA_006.d Heated Purge: (Y/N) N

Calibration ID: 38353

| | | 13PFOA | | | | | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12/24 HOUR STD | | 4369632 | 2.68 | | | | |
| UPPER LIMIT | | 6554448 | 2.88 | | | | |
| LOWER LIMIT | | 2184816 | 2.48 | | | | |
| LAB SAMPLE ID | CLIENT SAMPLE ID | | | | | | |
| CCB 320-216884/1 | | 4396034 | 2.70 | | | | |
| CCVL 320-216884/2 | | 4302682 | 2.69 | | | | |
| 480-133255-1 | R9-032818-C1 | 337614* | 2.68 | | | | |
| 480-133255-2 | R9-032818-POND | 526922* | 2.67 | | | | |
| CCV 320-216884/10 | | 4638678 | 2.68 | | | | |

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

# Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: R9-032818-C1 | Lab Sample ID: 480-133255-1

Matrix: Water | Lab File ID: 2018.04.08LLA_011.d

Analysis Method: 537 (modified) | Date Collected: 03/28/2018 11:25

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 246.3(mL) | Date Analyzed: 04/08/2018 15:20

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216884 | Units: ng/L

| CAS NO. | COMPOUND NAME | RESULT | Q | RL | MDL |
|---|---|---|---|---|---|
| 375-22-4 | Perfluorobutanoic acid (PFBA) | 3170 | | 20.3 | 3.55 |
| 2706-90-3 | Perfluoropentanoic acid (PFPeA) | 1310 | | 20.3 | 4.97 |
| 307-24-4 | Perfluorohexanoic acid (PFHxA) | 3050 | | 20.3 | 5.89 |
| 375-85-9 | Perfluoroheptanoic acid (PFHpA) | 968 | | 20.3 | 2.54 |
| 335-67-1 | Perfluorooctanoic acid (PFOA) | 2510 | B | 20.3 | 8.63 |
| 375-95-1 | Perfluorononanoic acid (PFNA) | 92.3 | | 20.3 | 2.74 |
| 335-76-2 | Perfluorodecanoic acid (PFDA) | 120 | | 20.3 | 3.15 |
| 2058-94-8 | Perfluoroundecanoic acid (PFUnA) | 41.3 | | 20.3 | 11.2 |
| 307-55-1 | Perfluorododecanoic acid (PFDoA) | 35.9 | | 20.3 | 5.58 |
| 72629-94-8 | Perfluorotridecanoic Acid (PFTriA) | 13.2 | U | 20.3 | 13.2 |
| 376-06-7 | Perfluorotetradecanoic acid (PFTeA) | 2.94 | U | 20.3 | 2.94 |
| 375-73-5 | Perfluorobutanesulfonic acid (PFBS) | 1830 | | 20.3 | 2.03 |
| 355-46-4 | Perfluorohexanesulfonic acid (PFHxS) | 747 | B | 20.3 | 1.73 |
| 375-92-8 | Perfluoroheptanesulfonic Acid (PFHpS) | 7.41 | J | 20.3 | 1.93 |
| 1763-23-1 | Perfluorooctanesulfonic acid (PFOS) | 326 | | 20.3 | 5.48 |
| 335-77-3 | Perfluorodecanesulfonic acid (PFDS) | 3.25 | U | 20.3 | 3.25 |
| 754-91-6 | Perfluorooctane Sulfonamide (FOSA) | 13.3 | J | 20.3 | 3.55 |
| 2355-31-9 | N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 352 | | 203 | 31.5 |
| 2991-50-6 | N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 302 | | 203 | 19.3 |
| 27619-97-2 | 6:2FTS | 234 | | 203 | 20.3 |
| 39108-34-4 | 8:2FTS | 82.8 | J | 203 | 20.3 |

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: R9-032818-C1 | Lab Sample ID: 480-133255-1

Matrix: Water | Lab File ID: 2018.04.08LLA_011.d

Analysis Method: 537 (modified) | Date Collected: 03/28/2018 11:25

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 246.3(mL) | Date Analyzed: 04/08/2018 15:20

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216884 | Units: ng/L

| CAS NO. | ISOTOPE DILUTION | %REC | Q | LIMITS |
|---|---|---|---|---|
| STL00992 | 13C4 PFBA | 9 | * | 25-150 |
| STL01893 | 13C5 PFPeA | 46 | | 25-150 |
| STL00993 | 13C2 PFHxA | 70 | | 25-150 |
| STL01892 | 13C4-PFHpA | 85 | | 25-150 |
| STL00990 | 13C4 PFOA | 82 | | 25-150 |
| STL00995 | 13C5 PFNA | 123 | | 25-150 |
| STL00996 | 13C2 PFDA | 147 | | 25-150 |
| STL00997 | 13C2 PFUnA | 145 | | 25-150 |
| STL00998 | 13C2 PFDoA | 81 | | 25-150 |
| STL02116 | 13C2-PFTeDA | 18 | * | 25-150 |
| STL02337 | 13C3-PFBS | 150 | | 25-150 |
| STL00994 | 18O2 PFHxS | 115 | | 25-150 |
| STL00991 | 13C4 PFOS | 127 | | 25-150 |
| STL01056 | 13C8 FOSA | 112 | | 25-150 |
| STL02118 | d3-NMeFOSAA | 162 | * | 25-150 |
| STL02117 | d5-NEtFOSAA | 164 | * | 25-150 |
| STL02279 | M2-6:2FTS | 399 | * | 25-150 |
| STL02280 | M2-8:2FTS | 395 | * | 25-150 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d
Lims ID: 480-133255-C-1-A
Client ID: R9-032818-C1
Sample Type: Client
Inject. Date: 08-Apr-2018 15:20:03 ALS Bottle#: 5 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 480-133255-c-1-a 10X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 11:40:53 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 11:36:04

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | M |
| 217.00 > 172.00 | 1.424 | 1.424 | 0.0 | 1.000 | 41701 | 0.0223 | | 8.9 | 242 | M |
| 2 Perfluorobutyric acid | | | | | | | | | | M |
| 212.90 > 169.00 | 1.424 | 1.430 | -0.006 | 1.000 | 1203051 | 7.80 | | | 19.4 | M |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.702 | 1.693 | 0.009 | 0.557 | 140702 | 0.1158 | | 46.3 | 286 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | M |
| 262.90 > 219.00 | 1.702 | 1.711 | -0.009 | 1.000 | 2169771 | 3.22 | | | 36.7 | M |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.738 | 1.729 | 0.009 | 1.000 | 9715 | 0.3492 | | 150 | 5.0 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | M |
| 298.90 > 80.00 | 1.738 | 1.747 | -0.009 | 1.000 | 14846209 | 4.50 | | | 234 | M |
| 298.90 > 99.00 | 1.738 | 1.747 | -0.009 | 1.000 | 6429864 | | 2.31(1.25-3.74) | | 2035 | M |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.991 | 1.981 | 0.010 | 1.000 | 234952 | 0.1754 | | 70.2 | 2051 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | M |
| 313.00 > 269.00 | 1.991 | 2.003 | -0.012 | 1.000 | 7219832 | 7.51 | | | 279 | M |
| 313.00 > 119.00 | 1.991 | 2.003 | -0.012 | 1.000 | 676155 | | 10.68(5.03-15.10) | | 373 | M |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.319 | 2.306 | 0.013 | 1.000 | 274964 | 0.2136 | | 85.4 | 3857 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.332 | 2.319 | 0.013 | 1.000 | 437147 | 0.2723 | | 115 | 3231 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | M |
| 363.00 > 319.00 | 2.319 | 2.332 | -0.013 | 1.000 | 2847730 | 2.38 | | | 375 | M |
| 363.00 > 169.00 | 2.319 | 2.332 | -0.013 | 1.000 | 1094003 | | 2.60(1.13-3.40) | | 2459 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | M |
| 399.00 > 80.00 | 2.332 | 2.345 | -0.013 | 1.000 | 3799565 | 1.84 | | | 140 | M |
| 399.00 > 99.00 | 2.332 | 2.345 | -0.013 | 1.000 | 1433520 | | 2.65(1.50-4.49) | | 210 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.647 | 2.628 | 0.019 | 1.000 | 281884 | 0.9475 | | 399 | 136 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.647 | 2.660 | -0.013 | 1.000 | 1275286 | 0.5753 | | | 4377 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.671 | 2.660 | 0.011 | 1.000 | 261017 | 0.2062 | | 82.5 | 937 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.679 | 2.682 | -0.003 | | 337614 | 0.2500 | | | 4378 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.671 | 2.690 | -0.019 | 1.000 | 7639851 | 6.17 | | | 1358 | |
| 413.00 > 169.00 | 2.679 | 2.690 | -0.011 | 1.003 | 4309857 | | 1.77(0.84-2.52) | | 5761 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | M |
| 449.00 > 80.00 | 2.679 | 2.690 | -0.011 | 1.000 | 34363 | 0.0182 | | | 7.9 | M |
| 449.00 > 99.00 | 2.679 | 2.690 | -0.011 | 1.000 | 10590 | | 3.24(1.94-5.82) | | 10.3 | M |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.058 | 3.023 | 0.035 | 1.000 | 330195 | 0.3083 | | 123 | 5862 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.051 | 3.023 | 0.028 | 1.000 | 337860 | 0.3030 | | 127 | 201 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | M |
| 499.00 > 80.00 | 3.051 | 3.056 | -0.005 | 1.000 | 1295019 | 0.8017 | | | 318 | M |
| 499.00 > 99.00 | 3.051 | 3.056 | -0.005 | 1.000 | 276350 | | 4.69(2.31-6.93) | | 46.9 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.051 | 3.056 | -0.005 | 0.998 | 308838 | 0.2272 | | | 234 | |
| 463.00 > 169.00 | 3.051 | 3.056 | -0.005 | 0.998 | 79900 | | 3.87(1.90-5.69) | | 408 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.368 | 3.359 | 0.009 | 1.000 | 440416 | 0.2796 | | 112 | 5169 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | M |
| 498.00 > 78.00 | 3.378 | 3.366 | 0.012 | 1.003 | 56953 | 0.0327 | | | 114 | M |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.406 | 3.377 | 0.029 | 1.000 | 327382 | 0.9463 | | 395 | 436 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.415 | 3.387 | 0.028 | 1.000 | 332691 | 0.3678 | | 147 | 7718 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.406 | 3.413 | -0.007 | 1.000 | 376209 | 0.2040 | | | 10673 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.415 | 3.422 | -0.007 | 1.000 | 387817 | 0.2946 | | | 543 | |
| 513.00 > 169.00 | 3.415 | 3.422 | -0.007 | 1.000 | 75586 | | 5.13(2.36-7.09) | | 576 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.564 | 3.536 | 0.028 | 1.000 | 195742 | 0.4045 | | 162 | 2762 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.573 | 3.582 | -0.009 | 1.003 | 715579 | 0.8670 | | | 276 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.739 | 3.706 | 0.033 | 1.000 | 207573 | 0.4088 | | 164 | 2277 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.749 | 3.717 | 0.032 | 1.000 | 267207 | 0.3619 | | 145 | 8308 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.749 | 3.747 | 0.002 | 1.000 | 87274 | 0.1018 | | | 206 | |
| 563.00 > 169.00 | 3.749 | 3.747 | 0.002 | 1.000 | 24506 | | 3.56(2.12-6.36) | | 349 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.749 | 3.747 | 0.002 | 1.003 | 566244 | 0.7436 | | | 253 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.038 | 4.007 | 0.031 | 1.000 | 166193 | 0.2022 | | 80.9 | 2522 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.049 | 4.047 | 0.002 | 1.003 | 63492 | 0.0884 | | | 56.8 | |
| 613.00 > 169.00 | 4.049 | 4.047 | 0.002 | 1.003 | 16449 | | 3.86(2.13-6.40) | | 134 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.307 | 4.316 | -0.009 | 1.000 | 6792 | 0.008838 | | | 5.8 | |
| 663.00 > 169.00 | 4.307 | 4.316 | -0.009 | 1.000 | 1867 | | 3.64(1.25-3.76) | | 17.3 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.551 | 4.510 | 0.041 | 1.000 | 46090 | 0.0441 | | 17.7 | 322 | |

## QC Flag Legend

Review Flags

M - Manually Integrated

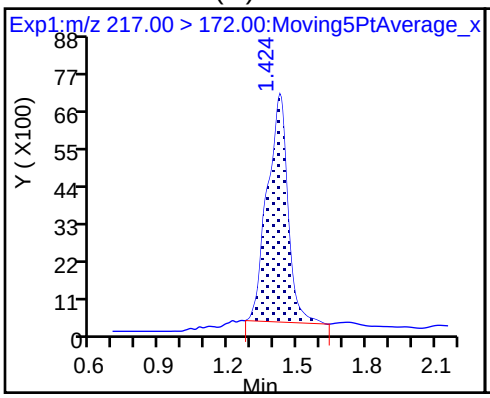
Report Date: 09-Apr-2018 11:41:07 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

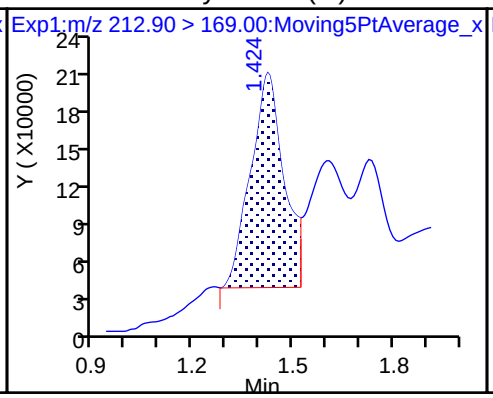
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |

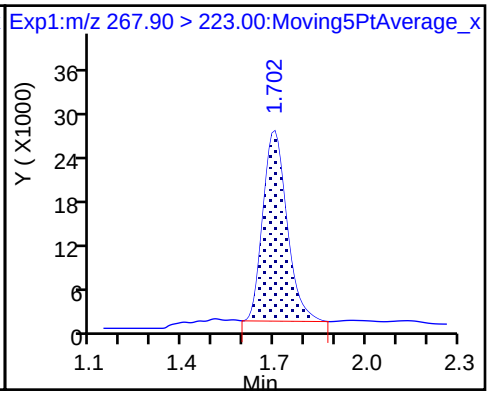
D 1 13C4 PFBA (M)



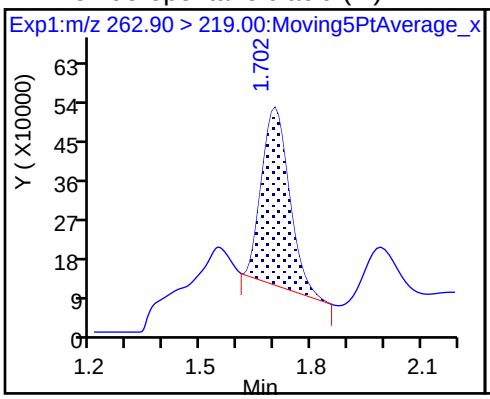

2 Perfluorobutyric acid (M)



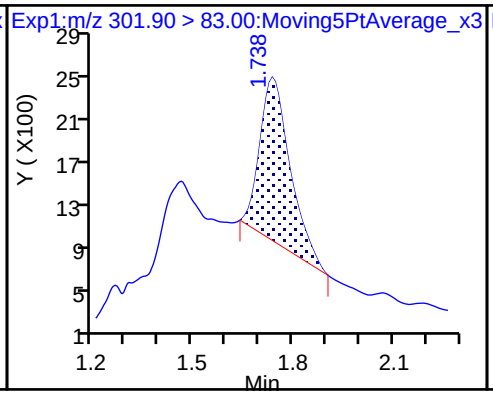

D 3 13C5-PFPeA



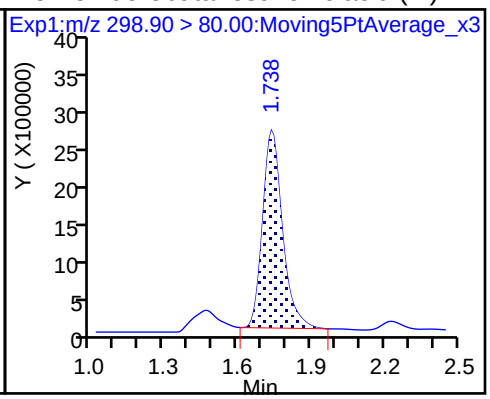

4 Perfluoropentanoic acid (M)



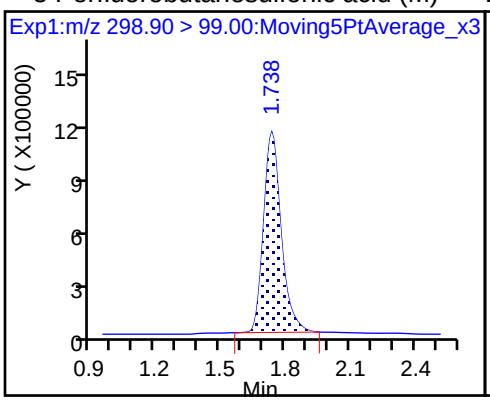

D 47 13C3-PFBS



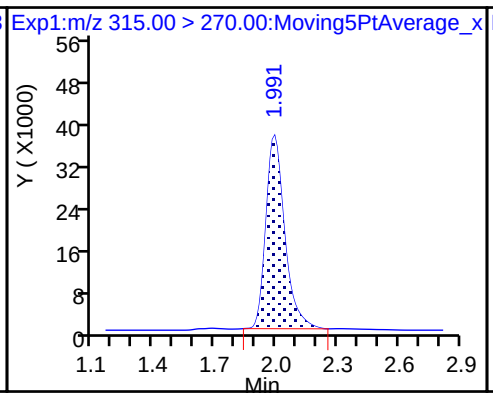

5 Perfluorobutanesulfonic acid (M)



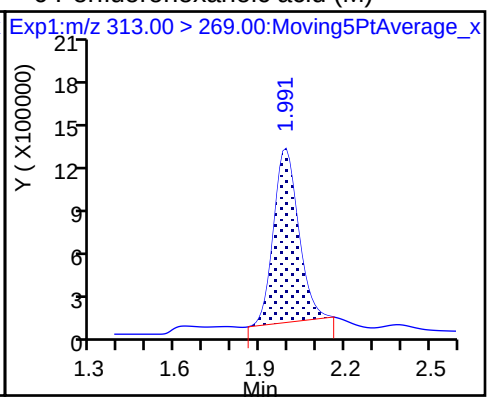

5 Perfluorobutanesulfonic acid (M)



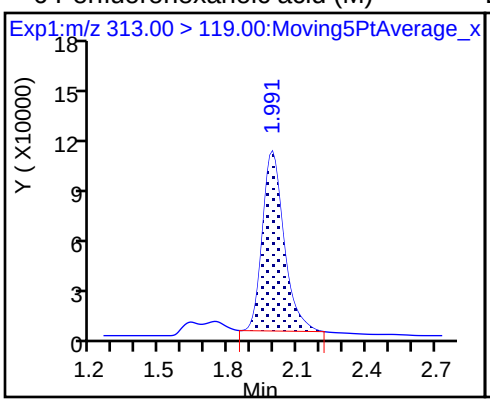

D 7 13C2 PFHxA



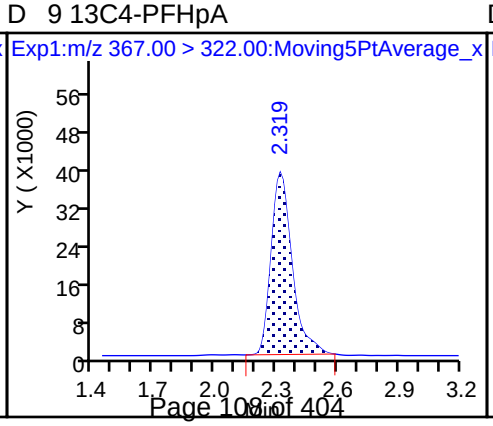

6 Perfluorohexanoic acid (M)



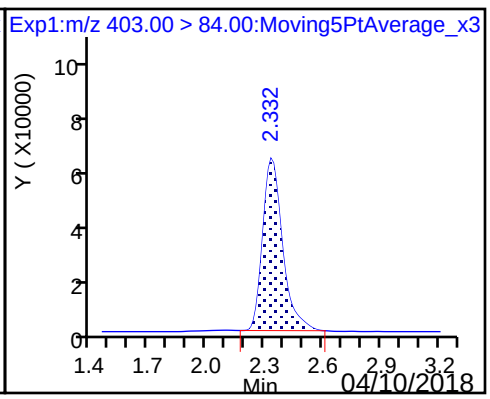

6 Perfluorohexanoic acid (M)



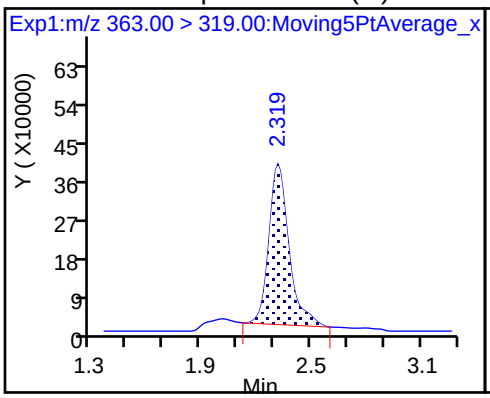

D 9 13C4-PFHpA



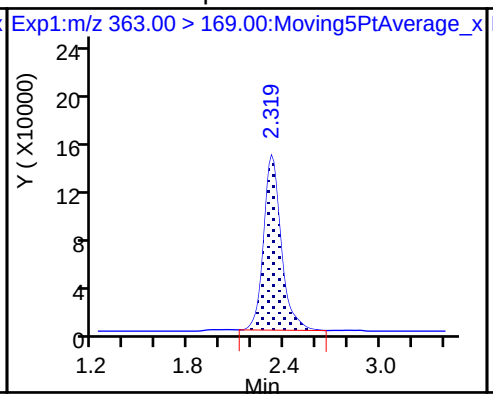

D 11 18O2 PFHxS



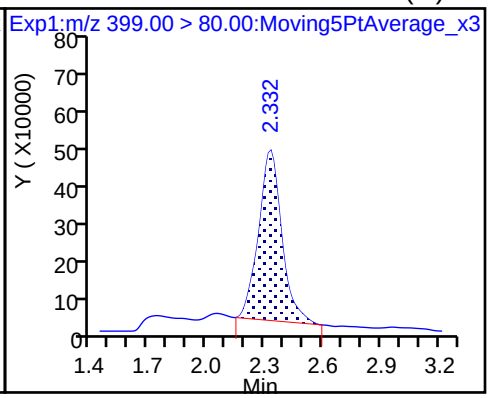
10 Perfluoroheptanoic acid (M)



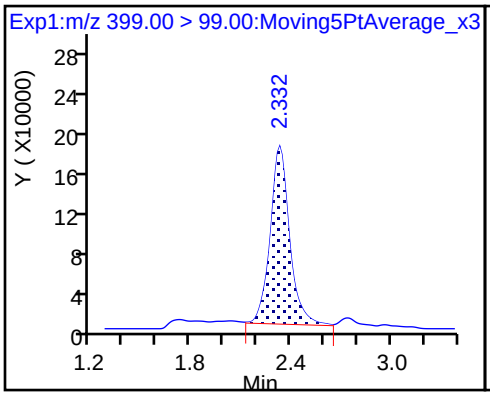

10 Perfluoroheptanoic acid



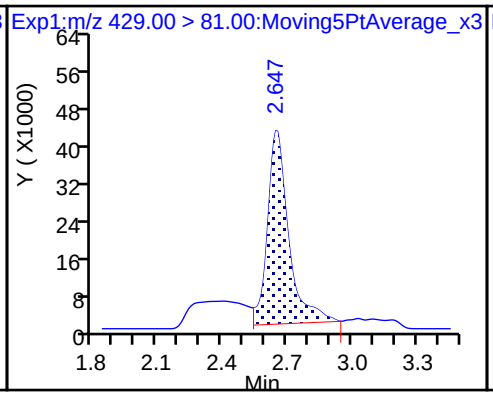

8 Perfluorohexanesulfonic acid (M)



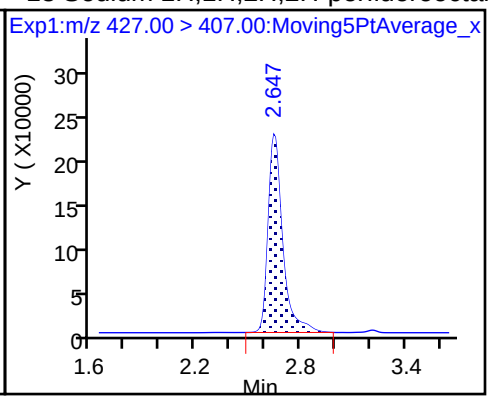

8 Perfluorohexanesulfonic acid



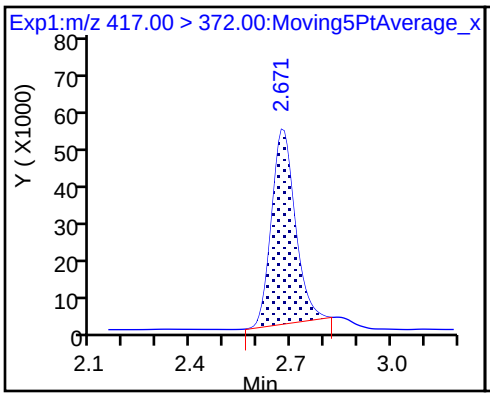

D 12 M2-6:2FTS



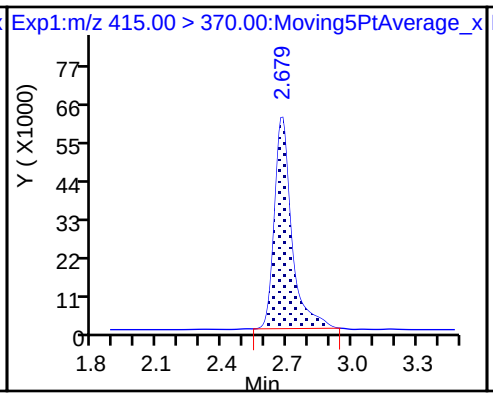

13 Sodium 1H,1H,2H,2H-perfluorooctane



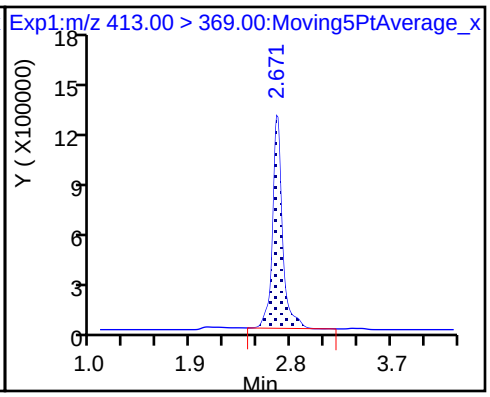

D 14 13C4 PFOA



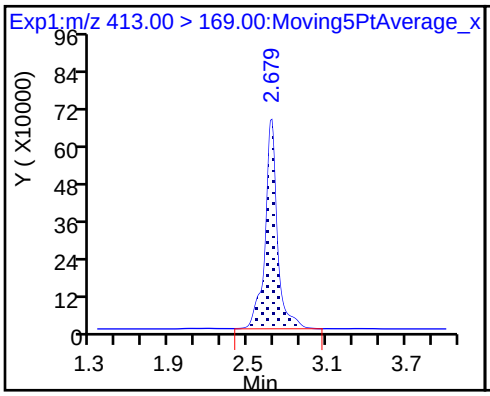

* 62 13C2-PFOA



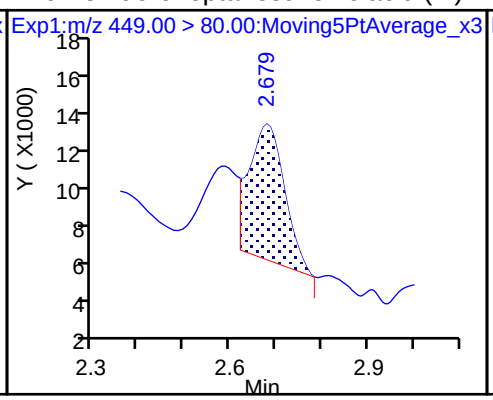

15 Perfluorooctanoic acid



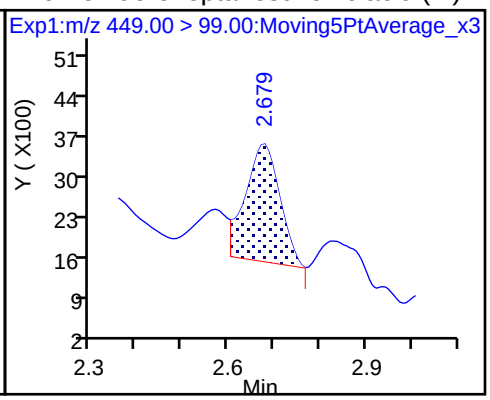

15 Perfluorooctanoic acid



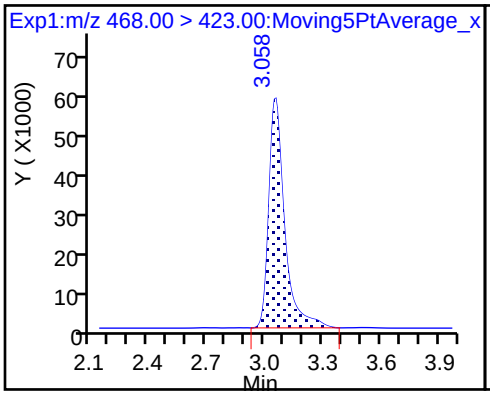

16 Perfluoroheptanesulfonic acid (M)



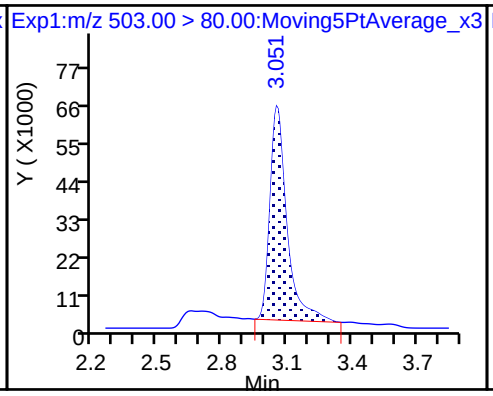

16 Perfluoroheptanesulfonic acid (M)



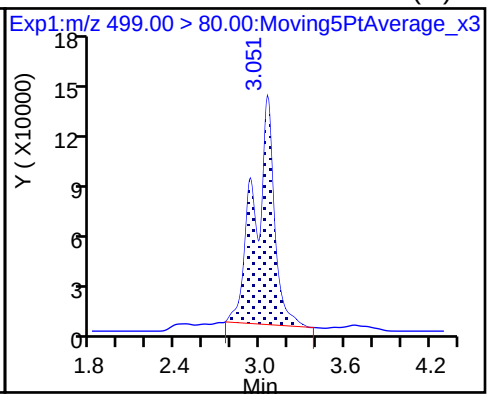
D 19 13C5 PFNA



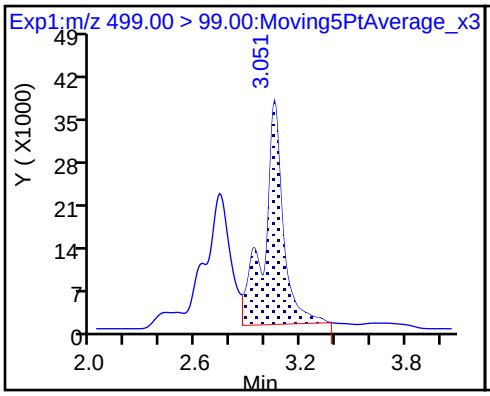

D 18 13C4 PFOS



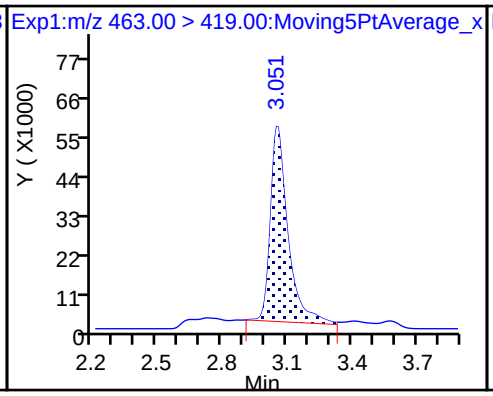

17 Perfluorooctane sulfonic acid (M)



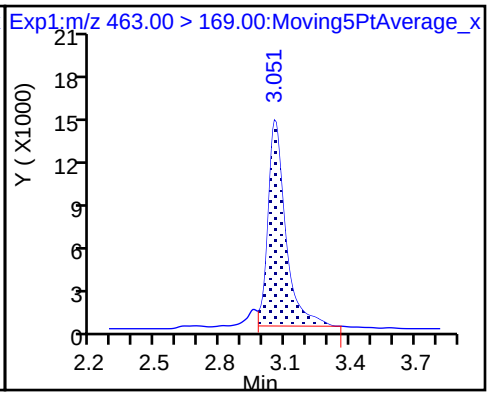

17 Perfluorooctane sulfonic acid



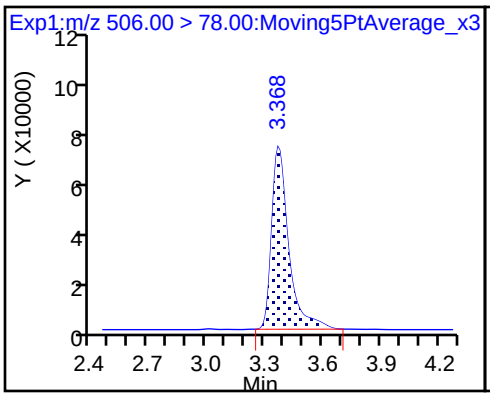

20 Perfluorononanoic acid



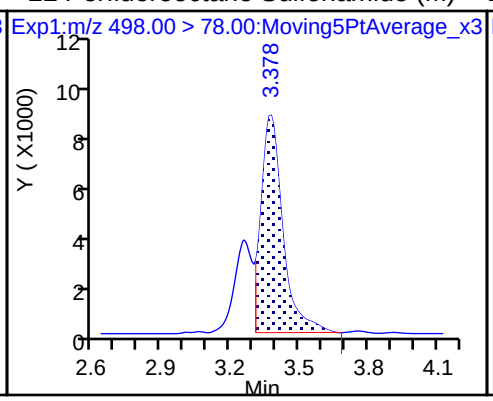

20 Perfluorononanoic acid



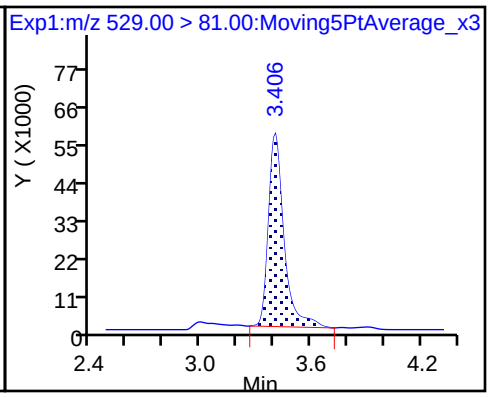

D 21 13C8 FOSA



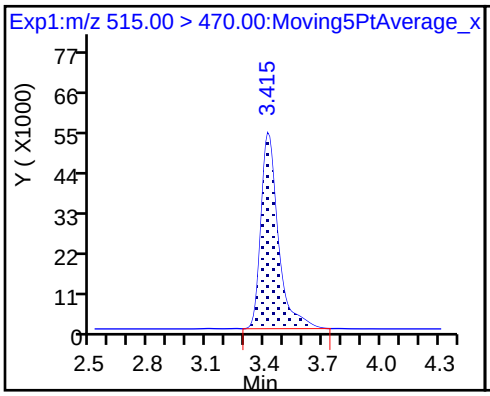

22 Perfluorooctane Sulfonamide (M)



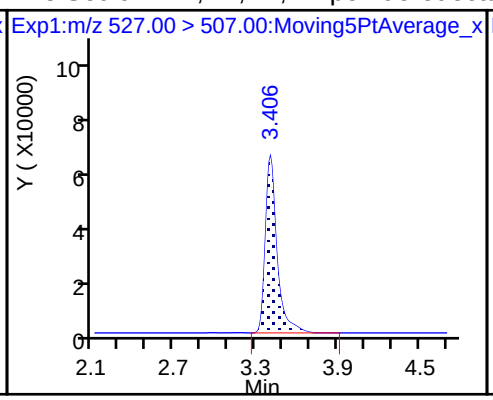

D 26 M2-8:2FTS



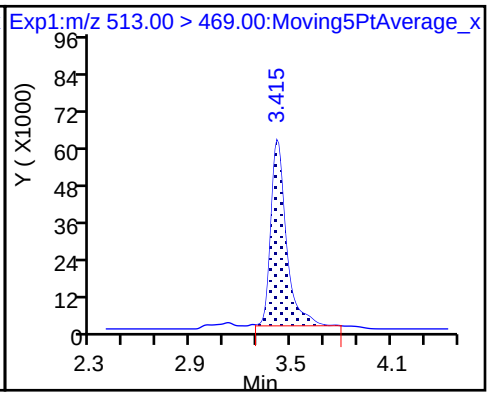

D 23 13C2 PFDA



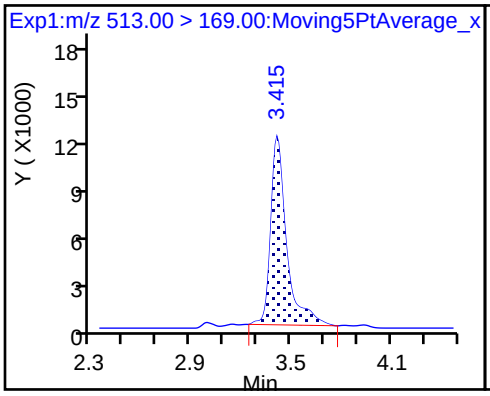

25 Sodium 1H,1H,2H,2H-perfluorodecan



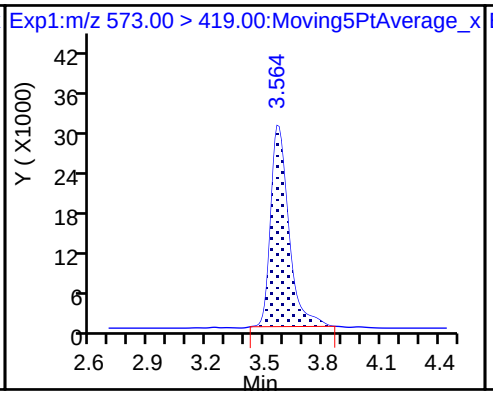

24 Perfluorodecanoic acid



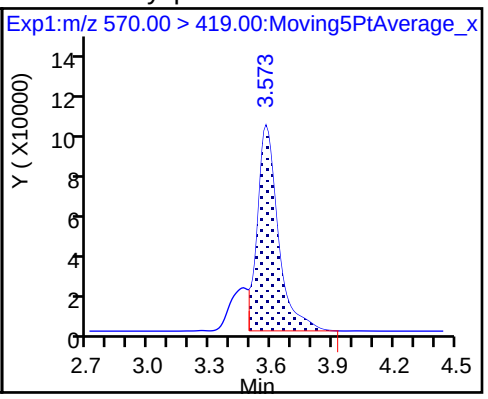
24 Perfluorodecanoic acid



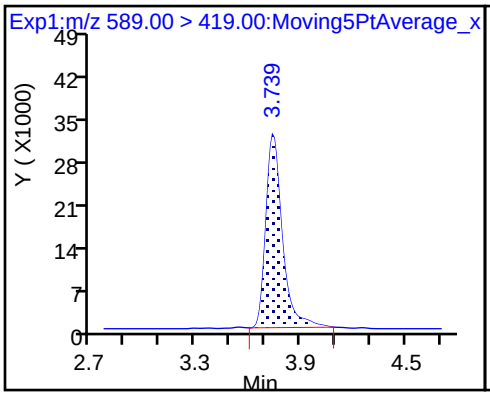

D 27 d3-NMeFOSAA



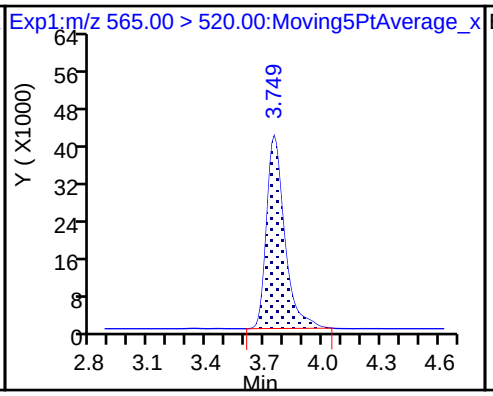

28 N-methyl perfluorooctane sulfonami



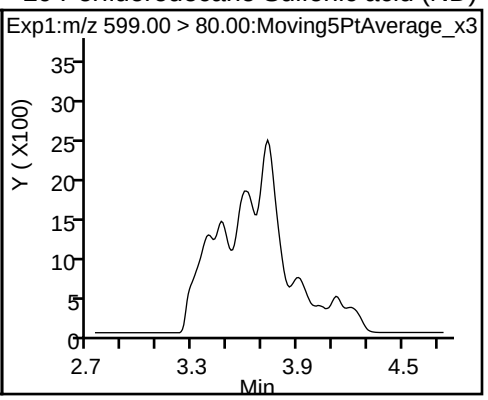

D 32 d5-NEtFOSAA



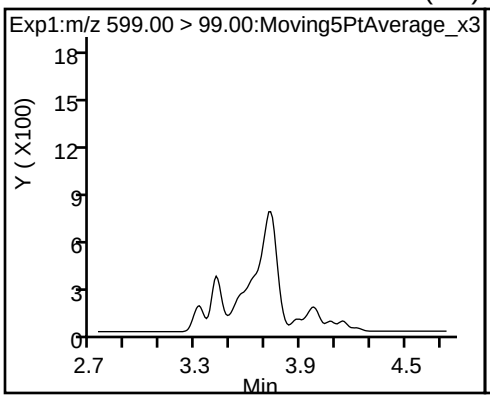

D 30 13C2 PFUnA



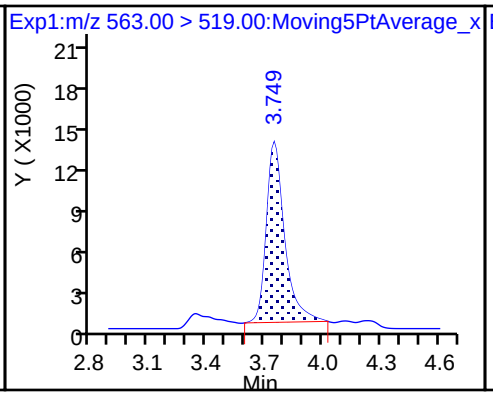

29 Perfluorodecane Sulfonic acid (ND)



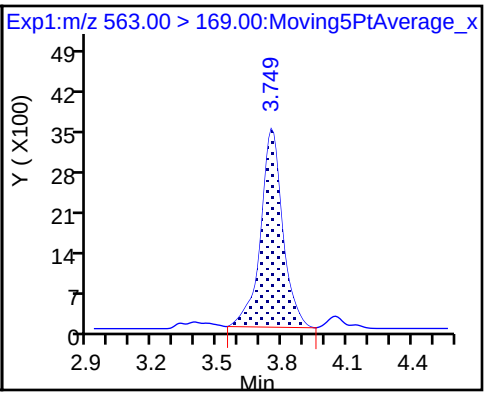

29 Perfluorodecane Sulfonic acid (ND)



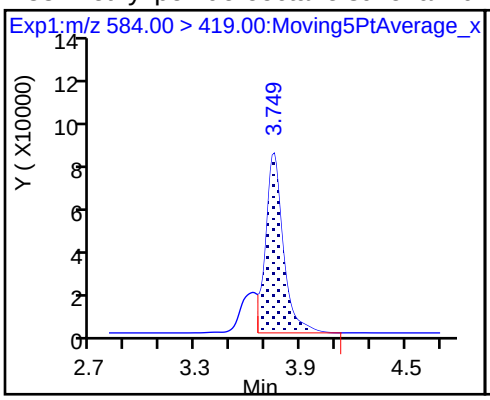

31 Perfluoroundecanoic acid



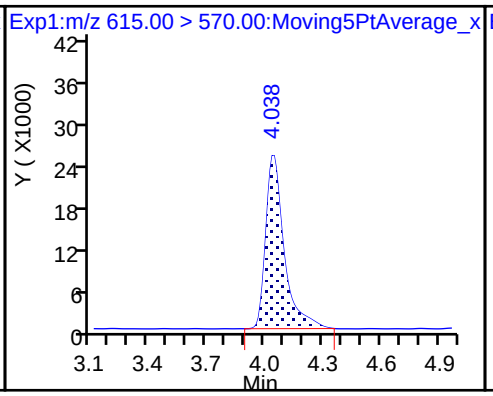

31 Perfluoroundecanoic acid



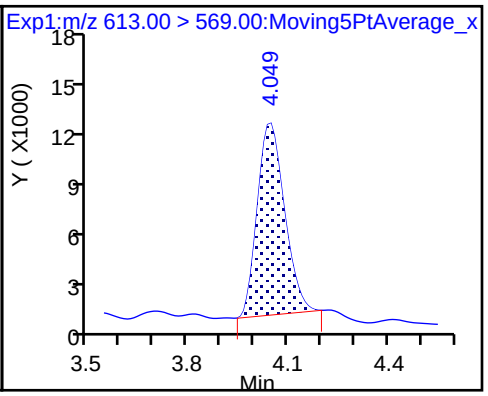

33 N-ethyl perfluorooctane sulfonamid



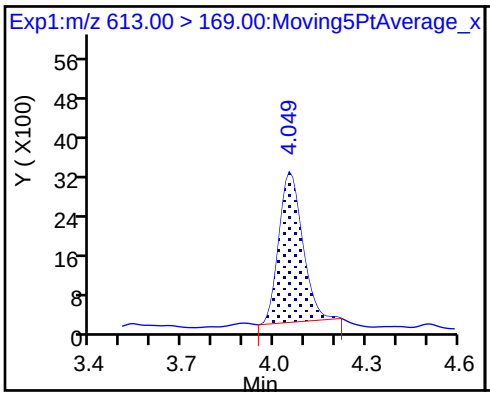

D 36 13C2 PFDoA



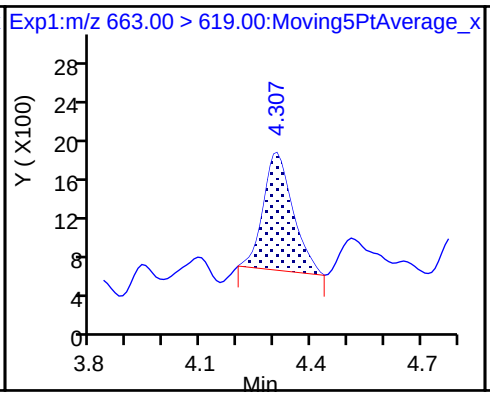

37 Perfluorododecanoic acid



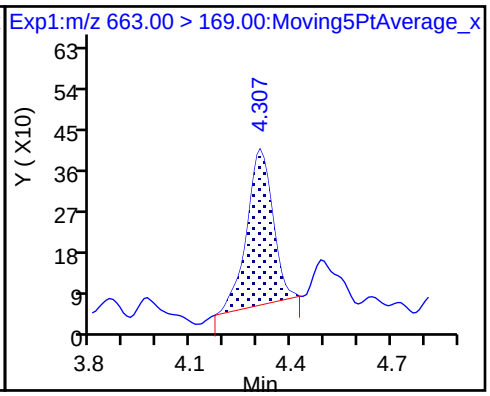
37 Perfluorododecanoic acid



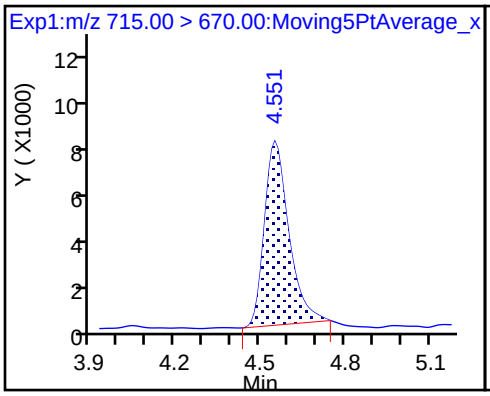

41 Perfluorotridecanoic acid



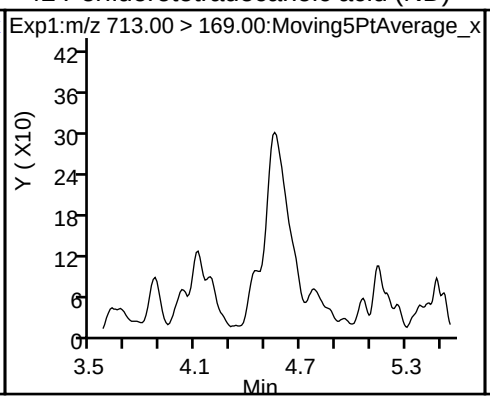

41 Perfluorotridecanoic acid



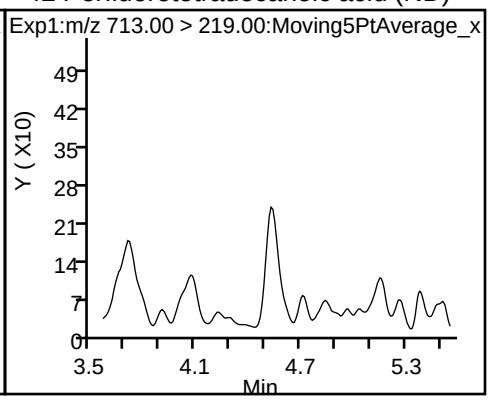

D 43 13C2-PFTeDA




42 Perfluorotetradecanoic acid (ND)




42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

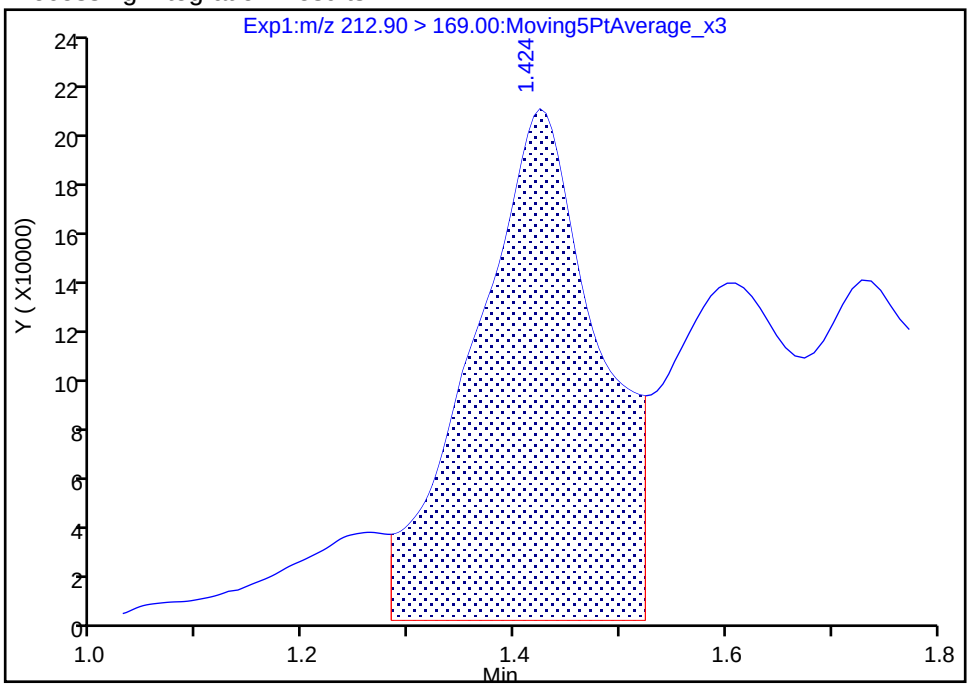
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

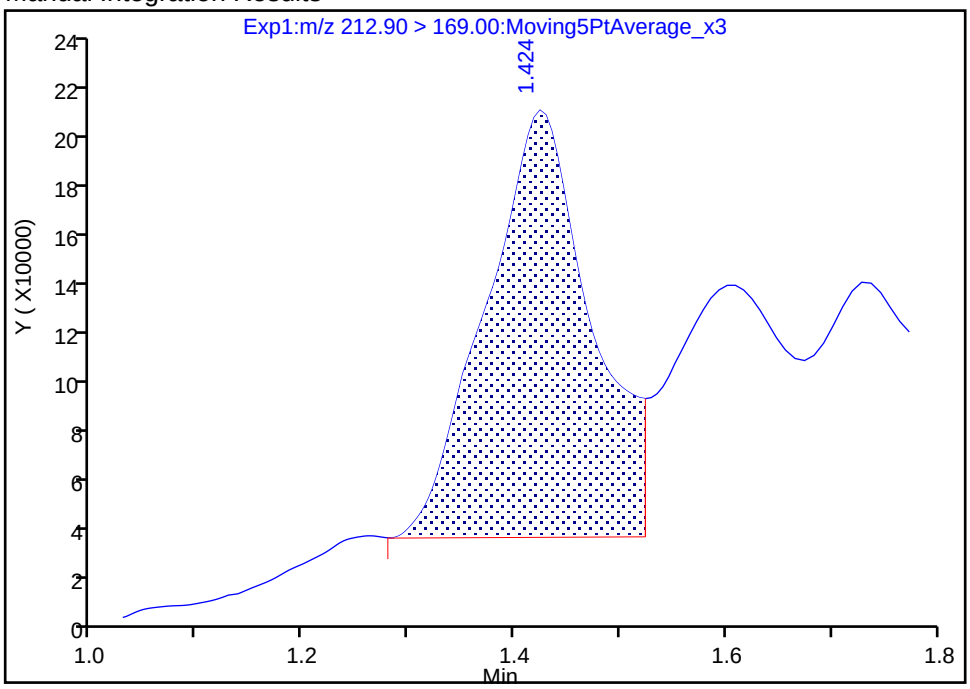
Processing Integration Results

RT: 1.42
Area: 1713846
Amount: 12.972925
Amount Units: ng/ml




Manual Integration Results

RT: 1.42
Area: 1203051
Amount: 7.804081
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:34:34

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

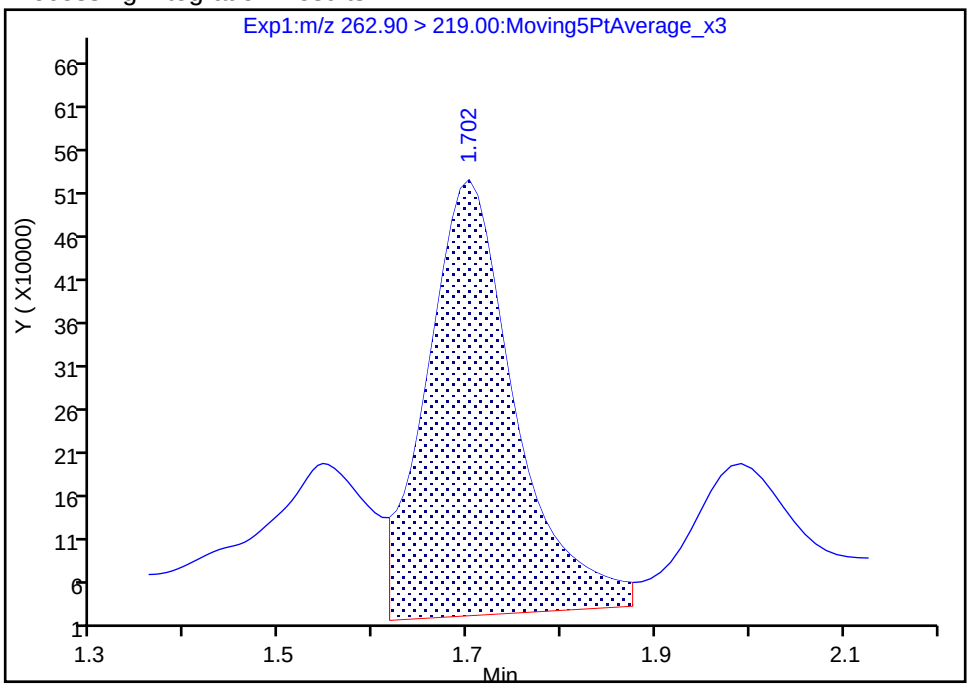
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

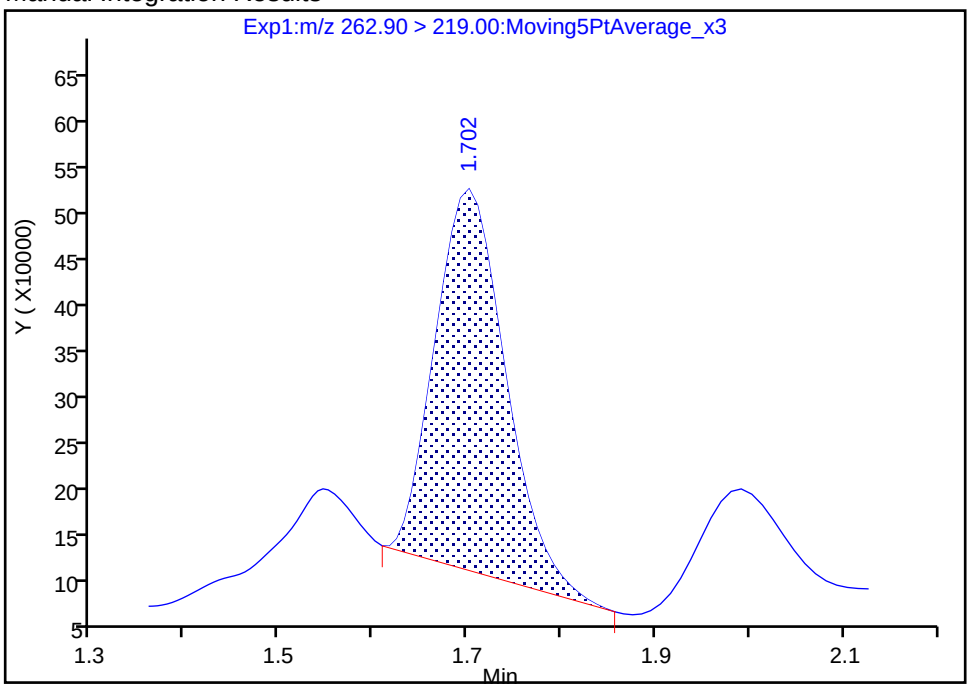
Processing Integration Results

RT: 1.70
Area: 3261288
Amount: 4.841367
Amount Units: ng/ml




Manual Integration Results

RT: 1.70
Area: 2169771
Amount: 3.221015
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:34:50

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

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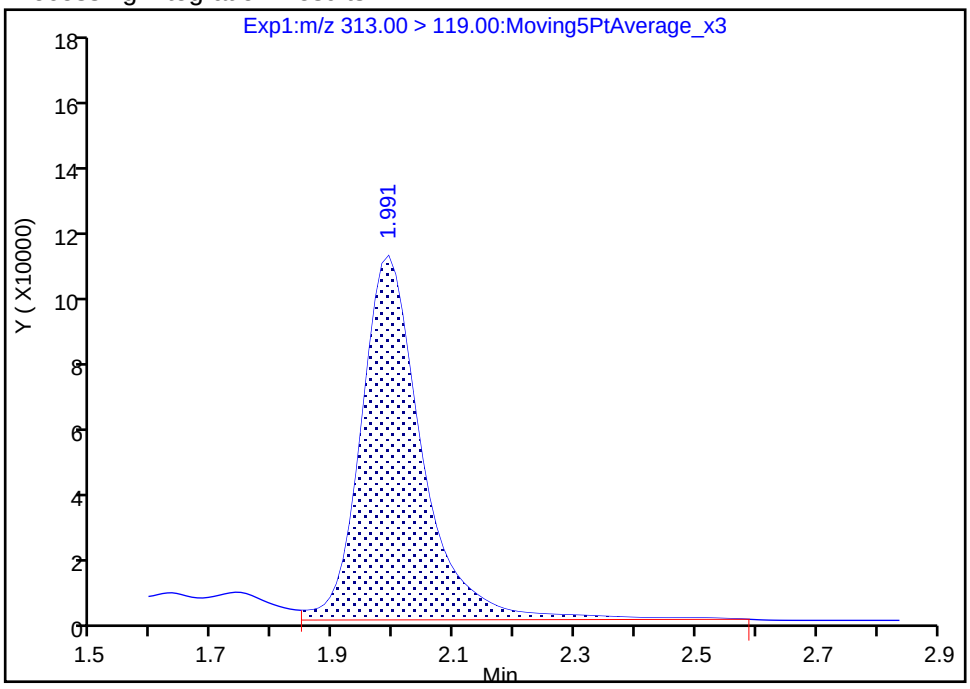
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

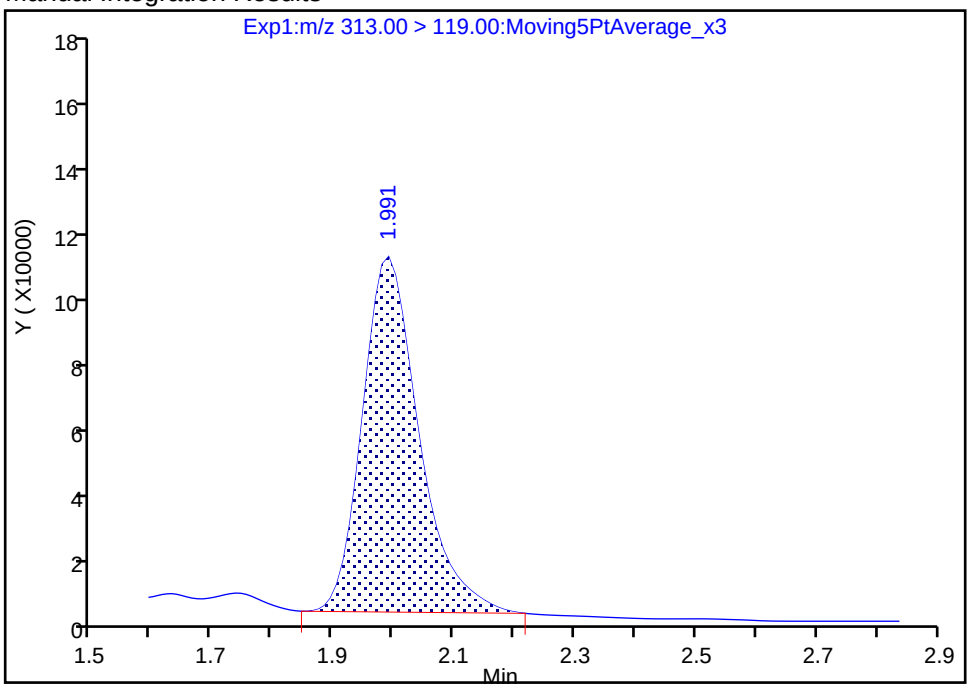
Processing Integration Results

RT: 1.99
Area: 748795
Amount: 9.774426
Amount Units: ng/ml




Manual Integration Results

RT: 1.99
Area: 676155
Amount: 7.507362
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:35:03

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

| | | | | | |
|---|---|---|---|---|---|
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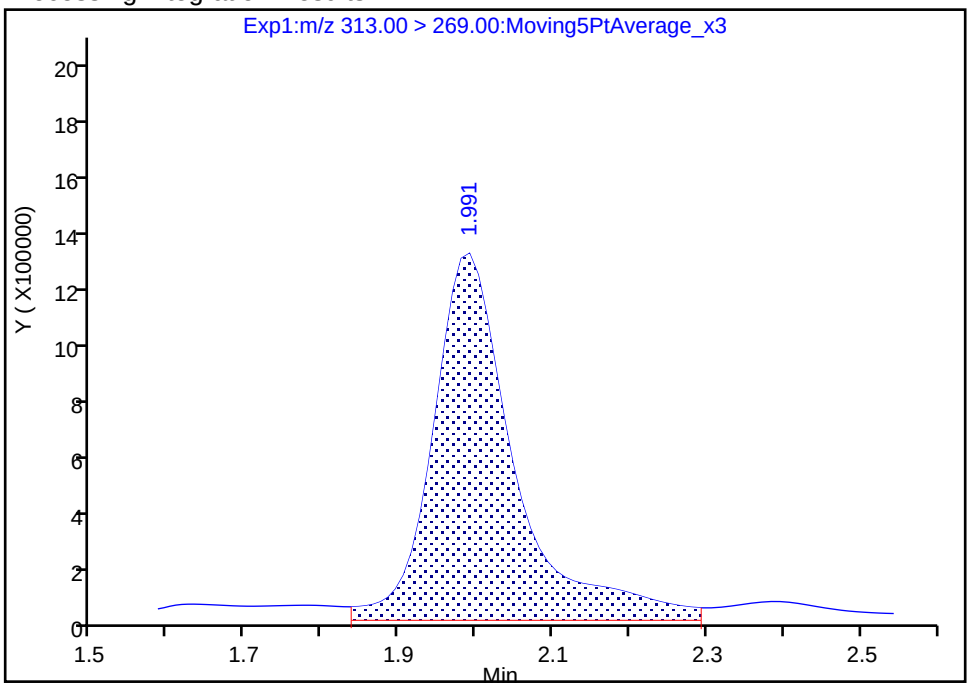
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

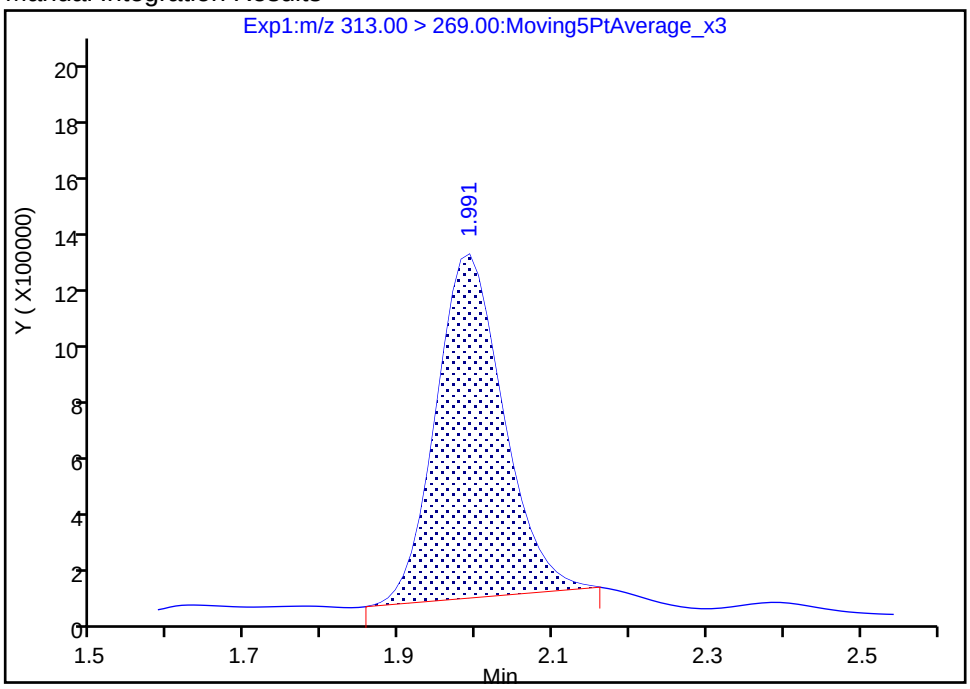
Processing Integration Results

RT: 1.99
Area: 9400067
Amount: 9.774426
Amount Units: ng/ml




Manual Integration Results

RT: 1.99
Area: 7219832
Amount: 7.507362
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:35:05
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

| | | | | | |
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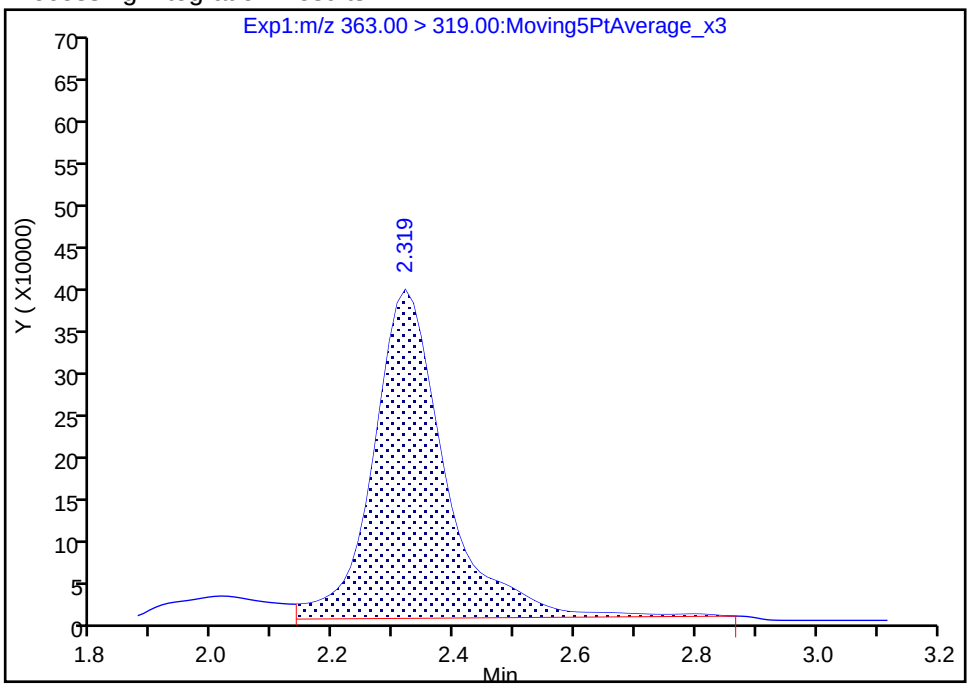
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

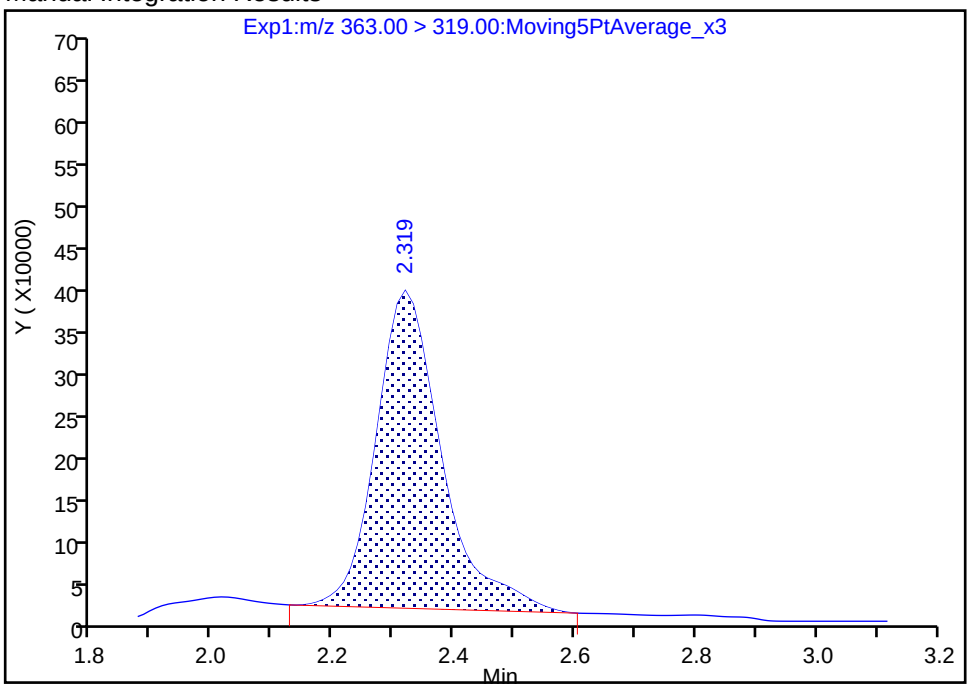
Processing Integration Results

RT: 2.32
Area: 3224147
Amount: 2.697969
Amount Units: ng/ml




Manual Integration Results

RT: 2.32
Area: 2847730
Amount: 2.382983
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:35:14

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

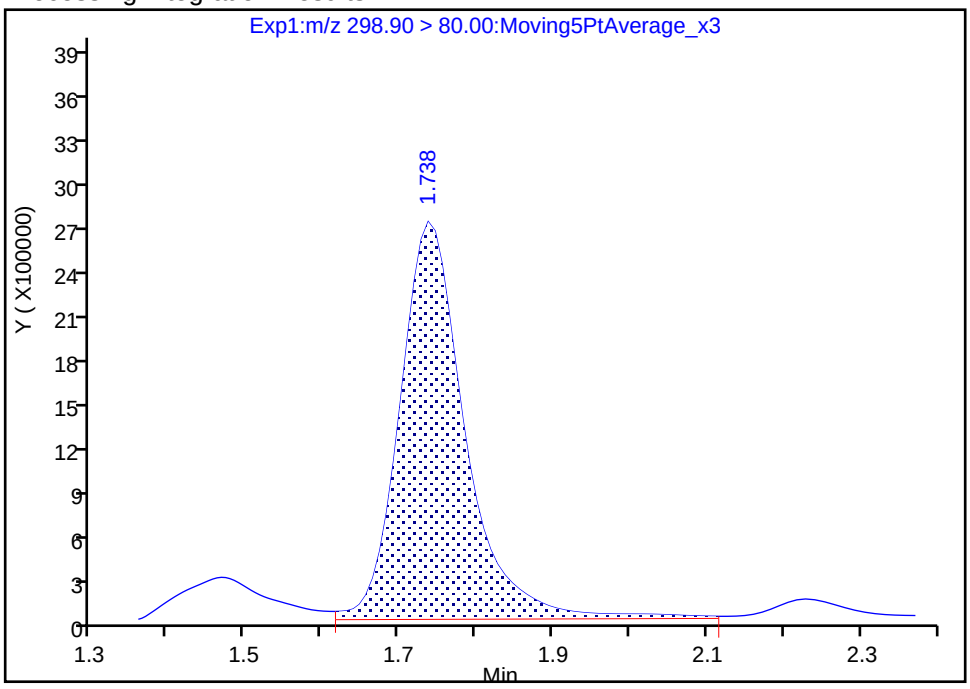
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

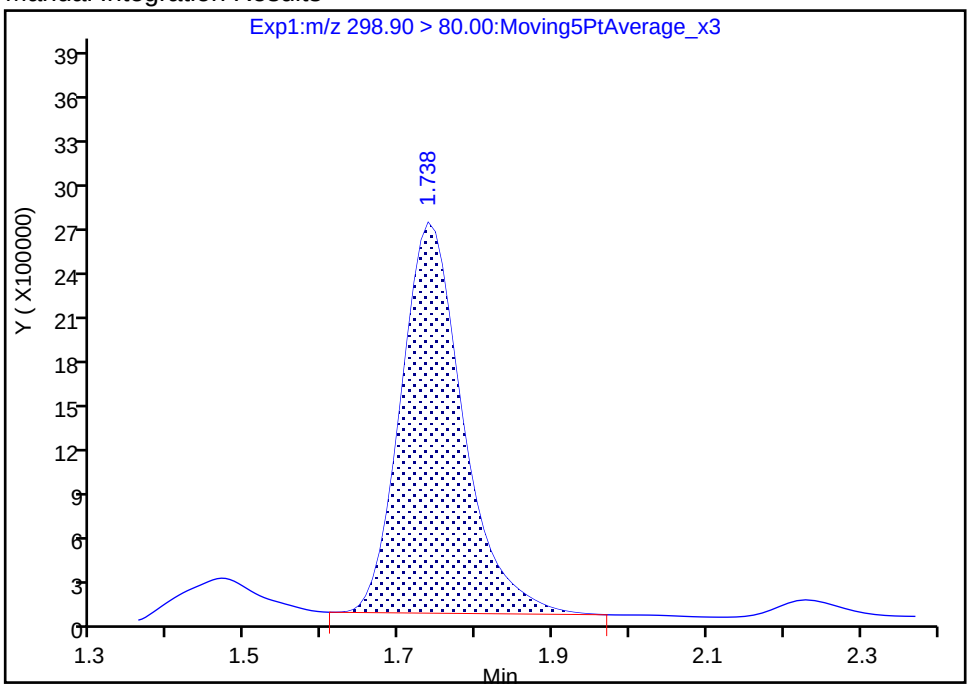
Processing Integration Results

RT: 1.74
Area: 16009108
Amount: 4.856401
Amount Units: ng/ml




Manual Integration Results

RT: 1.74
Area: 14846209
Amount: 4.503633
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:34:56

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

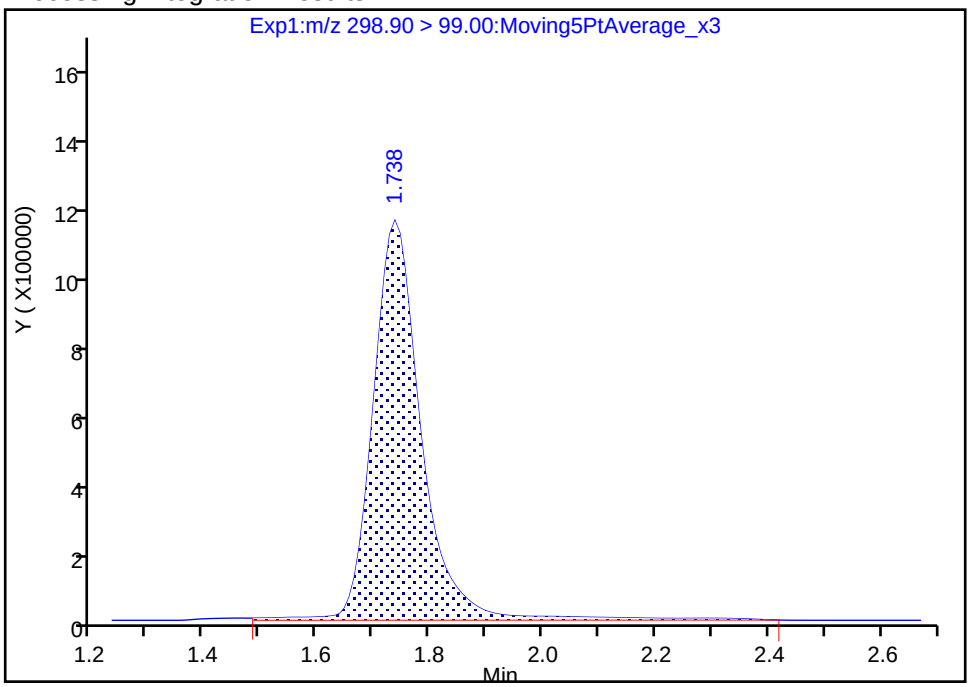
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

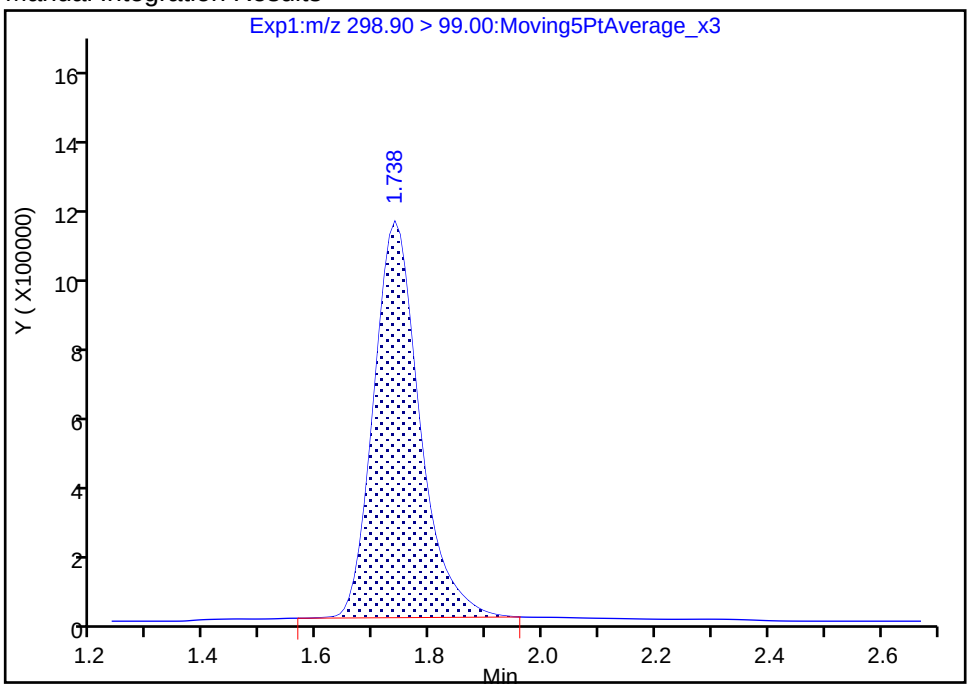
Processing Integration Results

RT: 1.74
Area: 6874350
Amount: 4.856401
Amount Units: ng/ml




Manual Integration Results

RT: 1.74
Area: 6429864
Amount: 4.503633
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:34:57
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

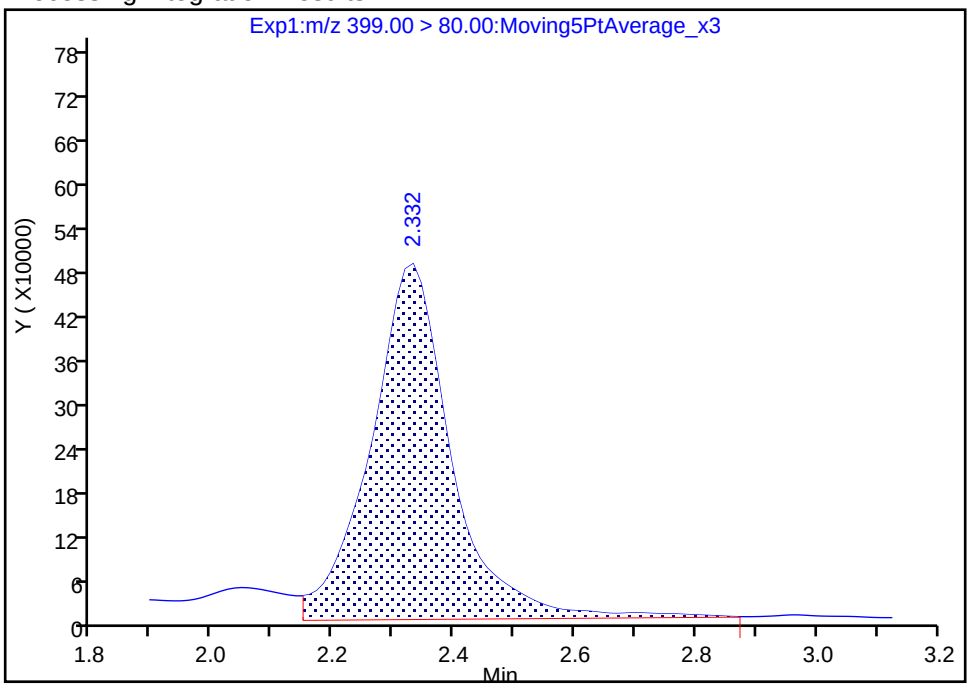
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

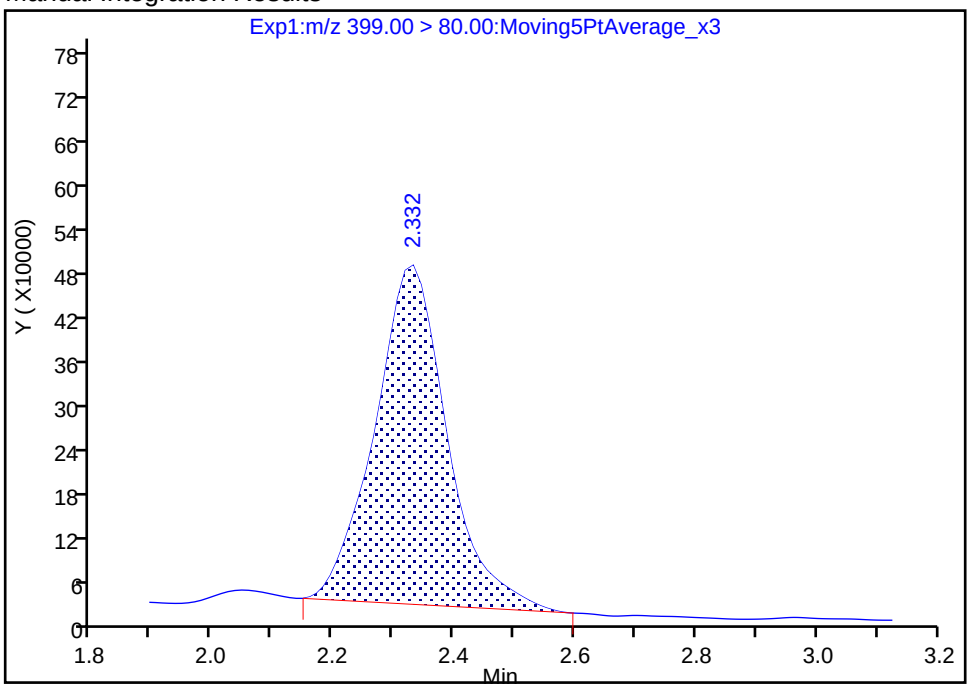
Processing Integration Results

RT: 2.33
Area: 4476795
Amount: 2.168426
Amount Units: ng/ml




Manual Integration Results

RT: 2.33
Area: 3799565
Amount: 1.840396
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:35:21

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

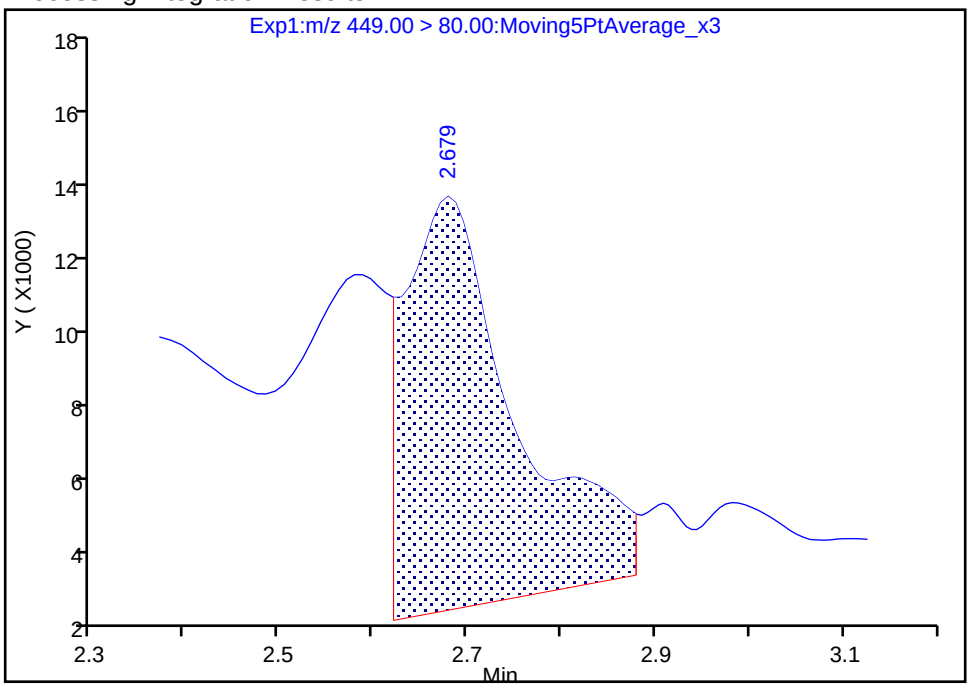
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

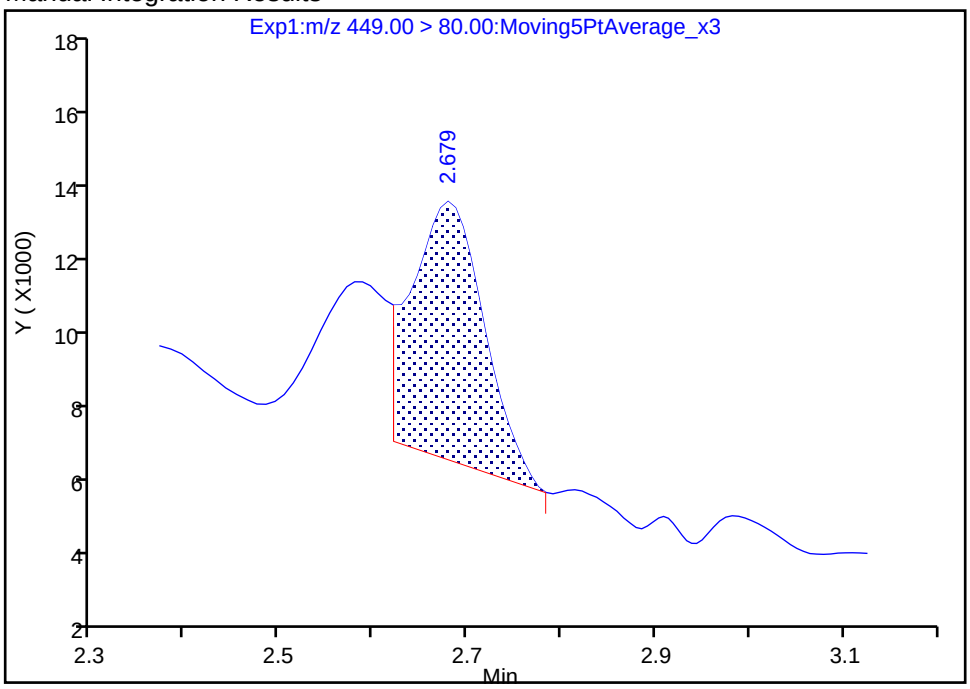
Processing Integration Results

RT: 2.68
Area: 86434
Amount: 0.045879
Amount Units: ng/ml




Manual Integration Results

RT: 2.68
Area: 34363
Amount: 0.018240
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:35:29

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

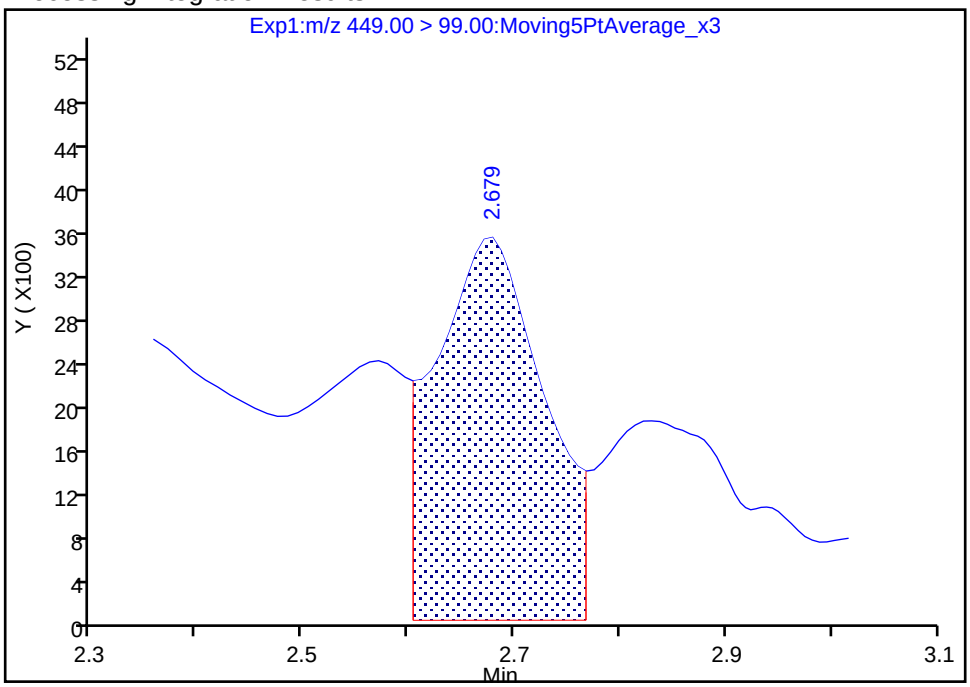
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

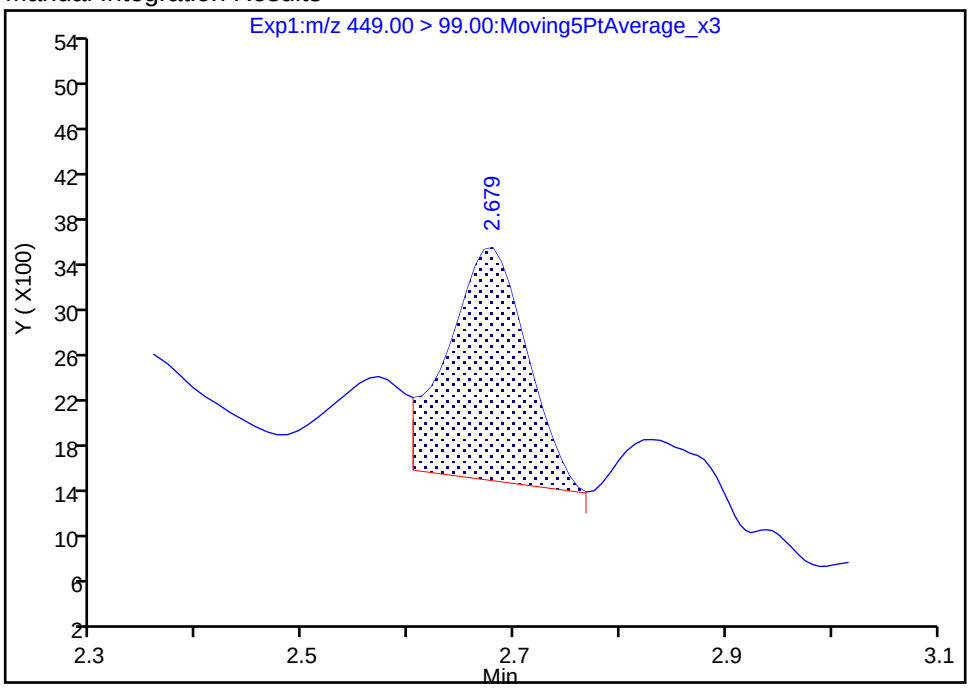
Processing Integration Results

RT: 2.68
Area: 25000
Amount: 0.045879
Amount Units: ng/ml




Manual Integration Results

RT: 2.68
Area: 10590
Amount: 0.018240
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:35:32
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

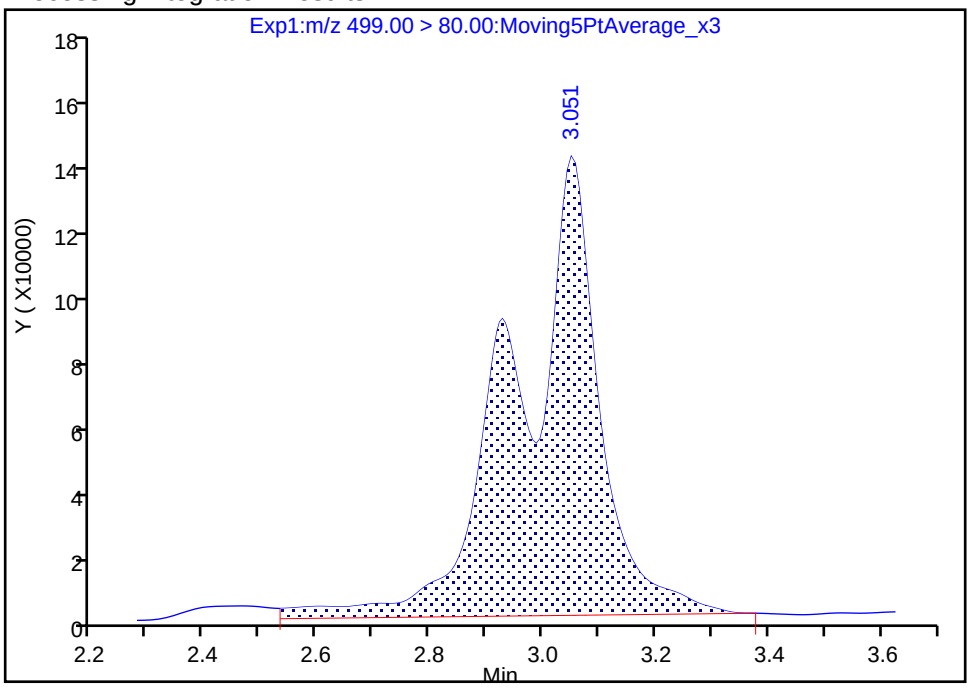
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

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

Signal: 1

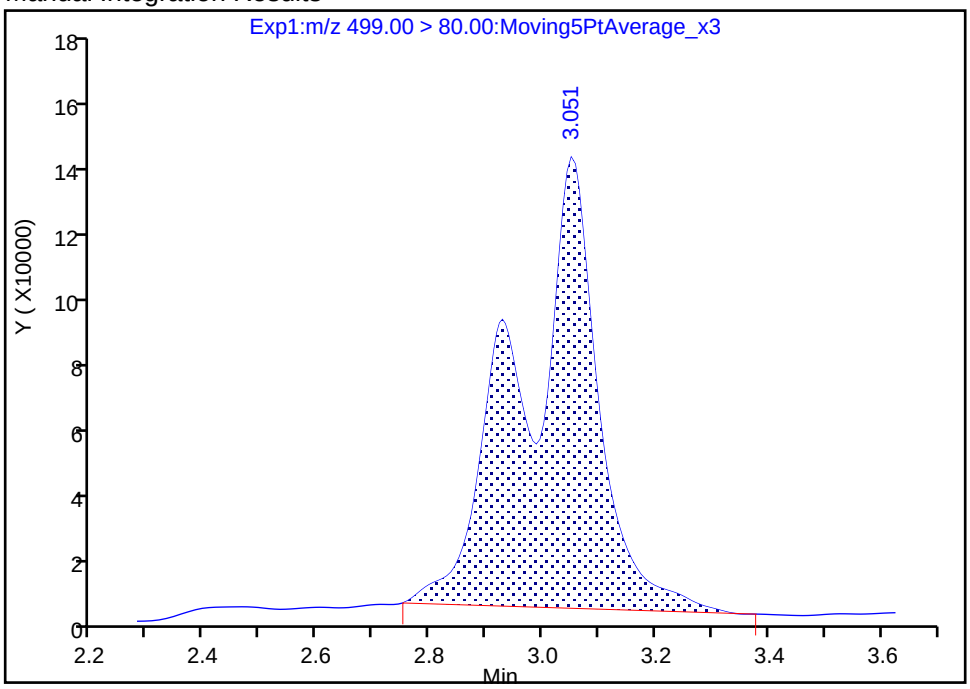
Processing Integration Results

RT: 3.05
Area: 1428406
Amount: 0.884308
Amount Units: ng/ml




Manual Integration Results

RT: 3.05
Area: 1295019
Amount: 0.801730
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:35:39

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

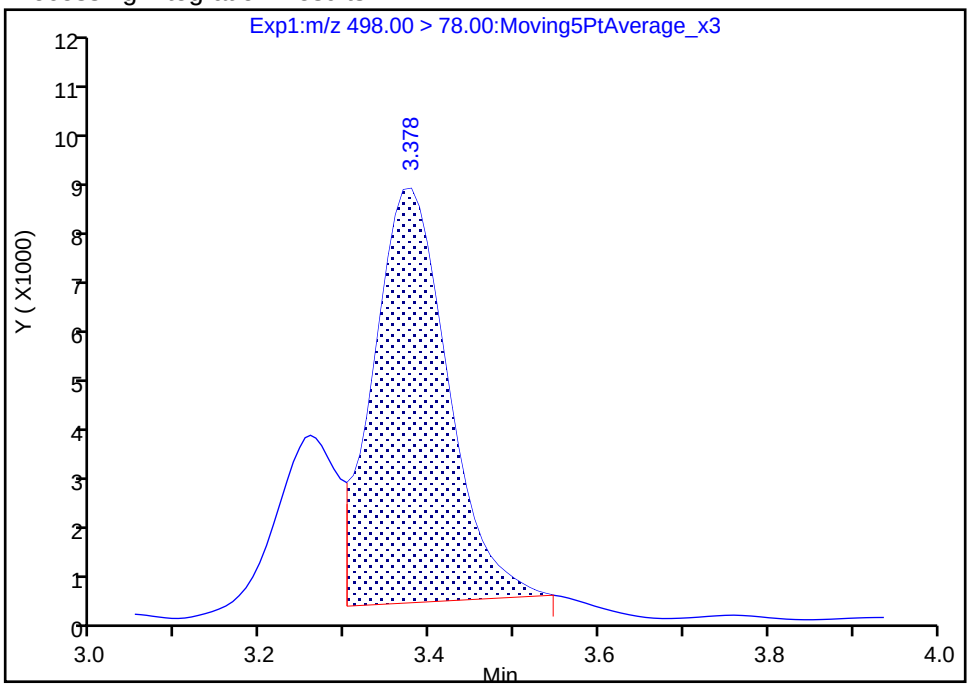
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 22 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

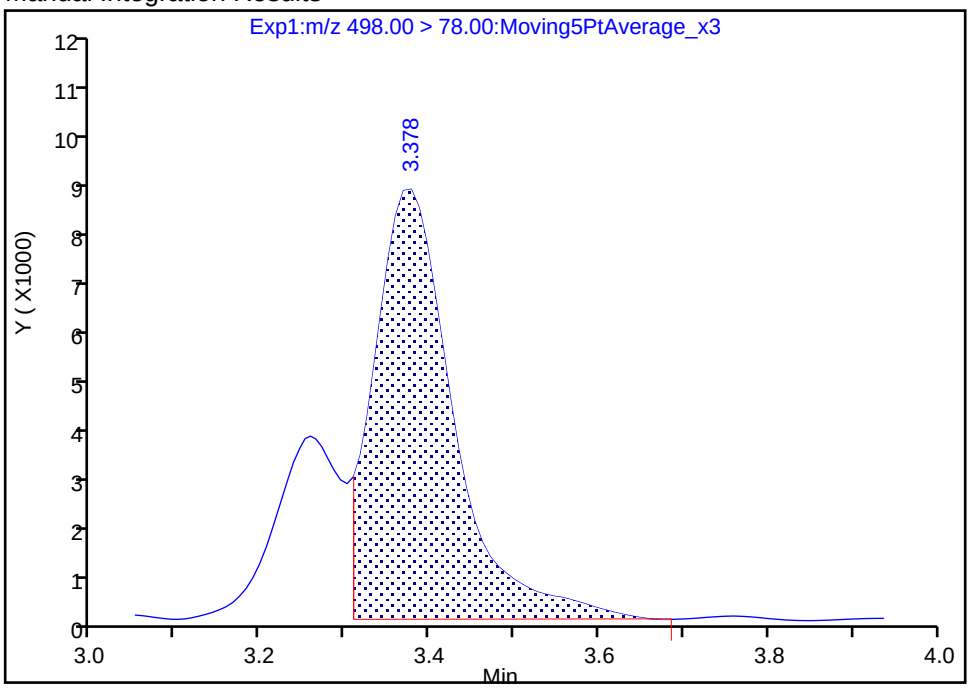
Processing Integration Results

RT: 3.38
Area: 51550
Amount: 0.029626
Amount Units: ng/ml




Manual Integration Results

RT: 3.38
Area: 56953
Amount: 0.032731
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:35:52

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

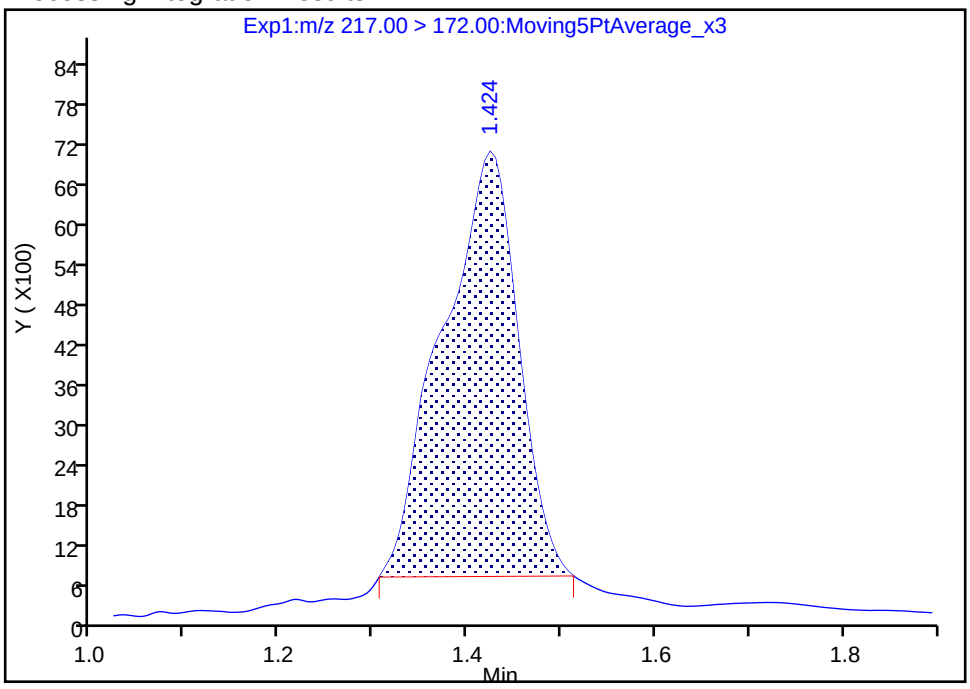
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_011.d | | | | |
| Injection Date: | 08-Apr-2018 15:20:03 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-1-A | Lab Sample ID: | 320-133255-1 | | |
| Client ID: | R9-032818-C1 | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 5 | Worklist Smp#: | 8 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## D 1 13C4 PFBA, CAS: STL00992

Signal: 1

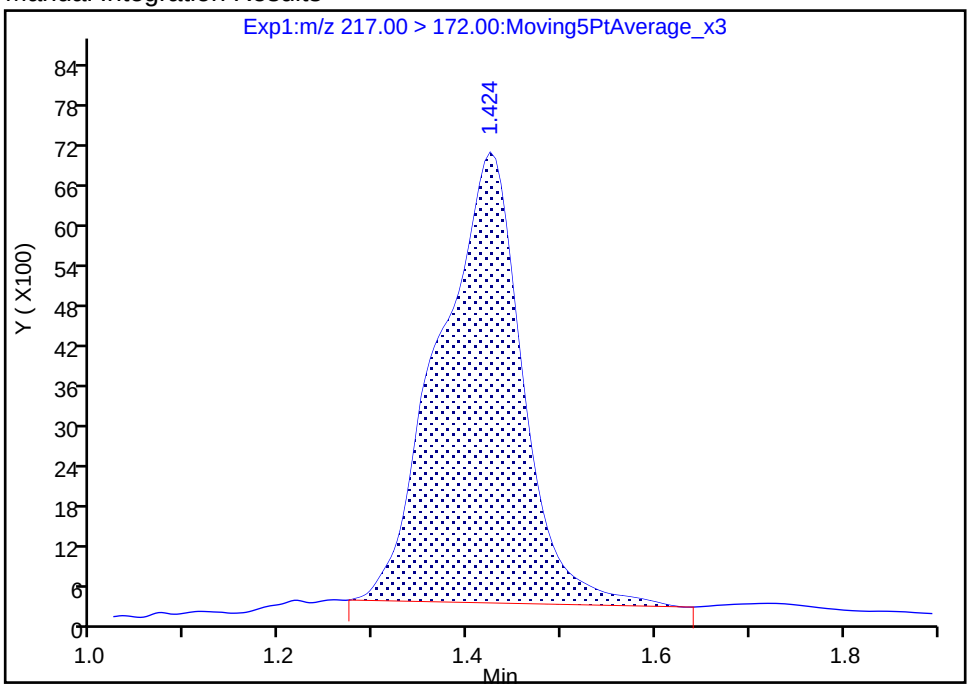
Processing Integration Results

RT: 1.42
Area: 35737
Amount: 0.019149
Amount Units: ng/ml




Manual Integration Results

RT: 1.42
Area: 41701
Amount: 0.022345
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:34:44

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: R9-032818-POND | Lab Sample ID: 480-133255-2

Matrix: Water | Lab File ID: 2018.04.08LLA_012.d

Analysis Method: 537 (modified) | Date Collected: 03/28/2018 11:50

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 251.9(mL) | Date Analyzed: 04/08/2018 15:27

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216884 | Units: ng/L

| CAS NO. | COMPOUND NAME | RESULT | Q | RL | MDL |
|---|---|---|---|---|---|
| 375-22-4 | Perfluorobutanoic acid (PFBA) | 2320 | | 19.8 | 3.47 |
| 2706-90-3 | Perfluoropentanoic acid (PFPeA) | 426 | | 19.8 | 4.86 |
| 307-24-4 | Perfluorohexanoic acid (PFHxA) | 1550 | | 19.8 | 5.76 |
| 375-85-9 | Perfluoroheptanoic acid (PFHpA) | 304 | | 19.8 | 2.48 |
| 335-67-1 | Perfluorooctanoic acid (PFOA) | 895 | B | 19.8 | 8.44 |
| 375-95-1 | Perfluorononanoic acid (PFNA) | 59.4 | | 19.8 | 2.68 |
| 335-76-2 | Perfluorodecanoic acid (PFDA) | 140 | | 19.8 | 3.08 |
| 2058-94-8 | Perfluoroundecanoic acid (PFUnA) | 14.7 | J | 19.8 | 10.9 |
| 307-55-1 | Perfluorododecanoic acid (PFDoA) | 16.1 | J | 19.8 | 5.46 |
| 72629-94-8 | Perfluorotridecanoic Acid (PFTriA) | 12.9 | U | 19.8 | 12.9 |
| 376-06-7 | Perfluorotetradecanoic acid (PFTeA) | 2.88 | U | 19.8 | 2.88 |
| 375-73-5 | Perfluorobutanesulfonic acid (PFBS) | 2150 | | 19.8 | 1.98 |
| 355-46-4 | Perfluorohexanesulfonic acid (PFHxS) | 312 | B | 19.8 | 1.69 |
| 375-92-8 | Perfluoroheptanesulfonic Acid (PFHpS) | 5.44 | J | 19.8 | 1.89 |
| 1763-23-1 | Perfluorooctanesulfonic acid (PFOS) | 193 | | 19.8 | 5.36 |
| 335-77-3 | Perfluorodecanesulfonic acid (PFDS) | 3.18 | U | 19.8 | 3.18 |
| 754-91-6 | Perfluorooctane Sulfonamide (FOSA) | 16.5 | J | 19.8 | 3.47 |
| 2355-31-9 | N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 213 | | 198 | 30.8 |
| 2991-50-6 | N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 93.4 | J | 198 | 18.9 |
| 27619-97-2 | 6:2FTS | 209 | | 198 | 19.8 |
| 39108-34-4 | 8:2FTS | 37.1 | J | 198 | 19.8 |

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: R9-032818-POND | Lab Sample ID: 480-133255-2

Matrix: Water | Lab File ID: 2018.04.08LLA_012.d

Analysis Method: 537 (modified) | Date Collected: 03/28/2018 11:50

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 251.9(mL) | Date Analyzed: 04/08/2018 15:27

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216884 | Units: ng/L

| CAS NO. | ISOTOPE DILUTION | %REC | Q | LIMITS |
|---|---|---|---|---|
| STL00992 | 13C4 PFBA | 6 | * | 25-150 |
| STL01893 | 13C5 PFPeA | 35 | | 25-150 |
| STL00993 | 13C2 PFHxA | 56 | | 25-150 |
| STL01892 | 13C4-PFHpA | 75 | | 25-150 |
| STL00990 | 13C4 PFOA | 81 | | 25-150 |
| STL00995 | 13C5 PFNA | 107 | | 25-150 |
| STL00996 | 13C2 PFDA | 134 | | 25-150 |
| STL00997 | 13C2 PFUnA | 114 | | 25-150 |
| STL00998 | 13C2 PFDoA | 64 | | 25-150 |
| STL02116 | 13C2-PFTeDA | 12 | * | 25-150 |
| STL02337 | 13C3-PFBS | 130 | | 25-150 |
| STL00994 | 18O2 PFHxS | 105 | | 25-150 |
| STL00991 | 13C4 PFOS | 130 | | 25-150 |
| STL01056 | 13C8 FOSA | 96 | | 25-150 |
| STL02118 | d3-NMeFOSAA | 149 | | 25-150 |
| STL02117 | d5-NEtFOSAA | 170 | * | 25-150 |
| STL02279 | M2-6:2FTS | 328 | * | 25-150 |
| STL02280 | M2-8:2FTS | 363 | * | 25-150 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d
Lims ID: 480-133255-C-2-A
Client ID: R9-032818-POND
Sample Type: Client
Inject. Date: 08-Apr-2018 15:27:54 ALS Bottle#: 6 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 480-133255-c-2-a 10X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 11:40:53 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 11:40:18

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.419 | 1.424 | -0.005 | 1.000 | 40879 | 0.0140 | | 5.6 | 159 | |
| 2 Perfluorobutyric acid | | | | | | | | | | M |
| 212.90 > 169.00 | 1.425 | 1.430 | -0.005 | 1.004 | 883566 | 5.85 | | | 11.5 | M |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.703 | 1.693 | 0.010 | 0.558 | 167660 | 0.0884 | | 35.4 | 320 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | M |
| 262.90 > 219.00 | 1.694 | 1.711 | -0.017 | 0.995 | 861887 | 1.07 | | | 13.4 | M |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.730 | 1.729 | 0.001 | 1.000 | 13163 | 0.3032 | | 130 | 6.1 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | M |
| 298.90 > 80.00 | 1.739 | 1.747 | -0.008 | 1.005 | 24167614 | 5.41 | | | 330 | M |
| 298.90 > 99.00 | 1.739 | 1.747 | -0.008 | 1.005 | 11658054 | | 2.07(1.25-3.74) | | 37036 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.982 | 1.981 | 0.001 | 1.000 | 294997 | 0.1411 | | 56.5 | 1665 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | M |
| 313.00 > 269.00 | 1.982 | 2.003 | -0.021 | 1.000 | 4712745 | 3.90 | | | 124 | M |
| 313.00 > 119.00 | 1.982 | 2.003 | -0.021 | 1.000 | 435616 | | 10.82(5.03-15.10) | | 233 | M |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.321 | 2.306 | 0.015 | 1.000 | 376224 | 0.1872 | | 74.9 | 4060 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.334 | 2.319 | 0.015 | 1.000 | 622990 | 0.2487 | | 105 | 3383 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | M |
| 363.00 > 319.00 | 2.321 | 2.332 | -0.011 | 1.000 | 1252900 | 0.7662 | | | 73.5 | M |
| 363.00 > 169.00 | 2.308 | 2.332 | -0.024 | 0.994 | 571025 | | 2.19(1.13-3.40) | | 1350 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | M |
| 399.00 > 80.00 | 2.321 | 2.345 | -0.024 | 0.994 | 2312241 | 0.7859 | | | 69.3 | M |
| 399.00 > 99.00 | 2.321 | 2.345 | -0.024 | 0.994 | 799064 | | 2.89(1.50-4.49) | | 106 | M |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.647 | 2.628 | 0.019 | 1.000 | 362193 | 0.7800 | | 328 | 134 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.647 | 2.660 | -0.013 | 1.000 | 1498326 | 0.5261 | | | 5140 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.672 | 2.660 | 0.012 | 1.000 | 398226 | 0.2016 | | 80.6 | 6611 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.672 | 2.682 | -0.010 | | 526922 | 0.2500 | | | 6102 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.672 | 2.690 | -0.018 | 1.000 | 4258714 | 2.25 | | | 549 | |
| 413.00 > 169.00 | 2.672 | 2.690 | -0.018 | 1.000 | 2532295 | | 1.68(0.84-2.52) | | 3232 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | RM |
| 449.00 > 80.00 | 2.680 | 2.690 | -0.010 | 1.000 | 41294 | 0.0137 | | | 4.7 | RM |
| 449.00 > 99.00 | 2.672 | 2.690 | -0.018 | 0.997 | 5846 | | 7.06(1.94-5.82) | | 4.8 | M |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.051 | 3.023 | 0.028 | 1.000 | 445602 | 0.2666 | | 107 | 4547 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.044 | 3.023 | 0.021 | 1.000 | 540506 | 0.3106 | | 130 | 288 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | M |
| 499.00 > 80.00 | 3.051 | 3.056 | -0.005 | 1.002 | 1255872 | 0.4860 | | | 257 | M |
| 499.00 > 99.00 | 3.051 | 3.056 | -0.005 | 1.002 | 273335 | | 4.59(2.31-6.93) | | 47.8 | M |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.051 | 3.056 | -0.005 | 1.000 | 274435 | 0.1496 | | | 147 | |
| 463.00 > 169.00 | 3.051 | 3.056 | -0.005 | 1.000 | 77083 | | 3.56(1.90-5.69) | | 366 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.369 | 3.359 | 0.010 | 1.000 | 588959 | 0.2396 | | 95.8 | 7397 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.378 | 3.366 | 0.012 | 1.003 | 96723 | 0.0416 | | | 148 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.406 | 3.377 | 0.029 | 1.000 | 469041 | 0.8687 | | 363 | 380 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.415 | 3.387 | 0.028 | 1.000 | 473653 | 0.3355 | | 134 | 12578 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.397 | 3.413 | -0.016 | 0.997 | 246967 | 0.0935 | | | 5017 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.415 | 3.422 | -0.007 | 1.000 | 663033 | 0.3538 | | | 670 | |
| 513.00 > 169.00 | 3.415 | 3.422 | -0.007 | 1.000 | 125966 | | 5.26(2.36-7.09) | | 443 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.564 | 3.536 | 0.028 | 1.000 | 280823 | 0.3719 | | 149 | 3308 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.574 | 3.582 | -0.008 | 1.003 | 634819 | 0.5361 | | | 251 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.739 | 3.706 | 0.033 | 1.000 | 337741 | 0.4262 | | 170 | 4758 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.749 | 3.717 | 0.032 | 1.000 | 328560 | 0.2851 | | 114 | 8259 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | M |
| 563.00 > 519.00 | 3.749 | 3.747 | 0.002 | 1.000 | 39136 | 0.0371 | | | 67.7 | M |
| 563.00 > 169.00 | 3.739 | 3.747 | -0.008 | 0.997 | 15688 | | 2.49(2.12-6.36) | | 220 | M |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | M |
| 584.00 > 419.00 | 3.739 | 3.747 | -0.008 | 1.000 | 291467 | 0.2352 | | | 284 | M |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.039 | 4.007 | 0.032 | 1.000 | 205351 | 0.1601 | | 64.0 | 2530 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.039 | 4.047 | -0.008 | 1.000 | 36009 | 0.0406 | | | 29.3 | |
| 613.00 > 169.00 | 4.039 | 4.047 | -0.008 | 1.000 | 12900 | | 2.79(2.13-6.40) | | 68.9 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.551 | 4.510 | 0.041 | 1.000 | 50415 | 0.0309 | | 12.4 | 448 | |

## QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

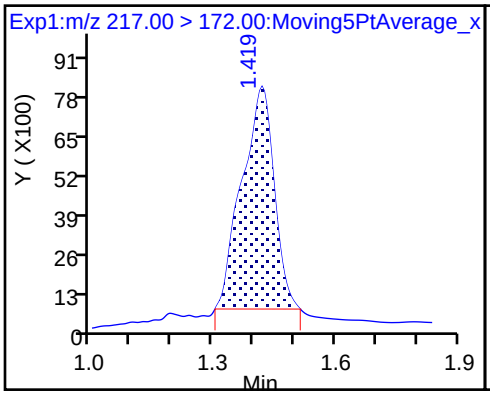
Report Date: 09-Apr-2018 11:41:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

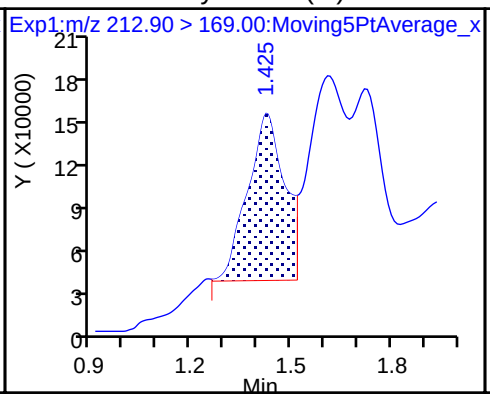
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |

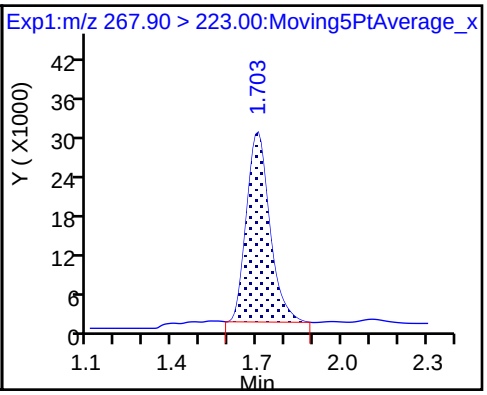
D 1 13C4 PFBA



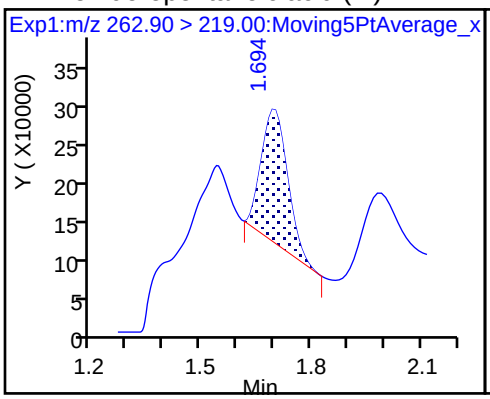

2 Perfluorobutyric acid (M)



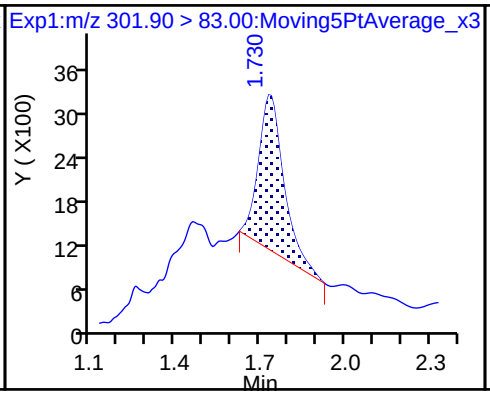

D 3 13C5-PFPeA



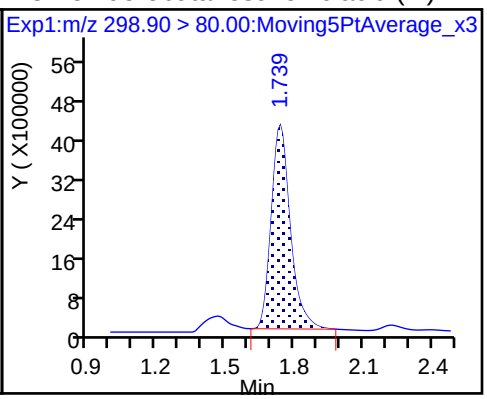

4 Perfluoropentanoic acid (M)



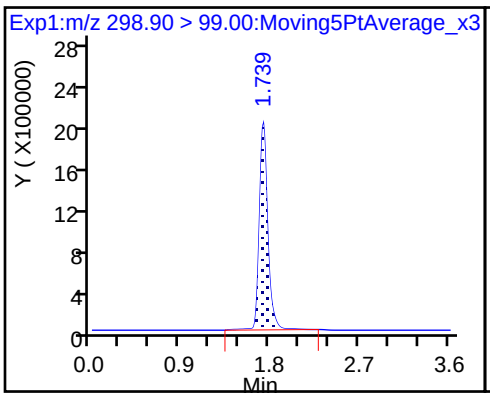

D 47 13C3-PFBS



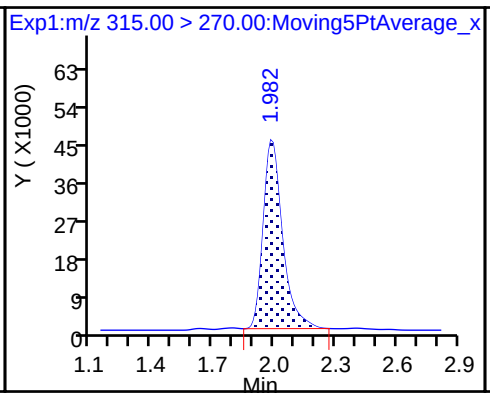

5 Perfluorobutanesulfonic acid (M)



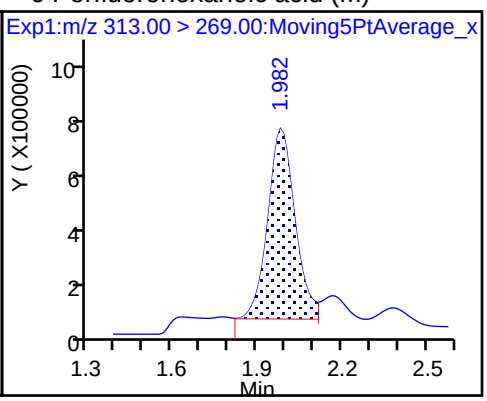

5 Perfluorobutanesulfonic acid



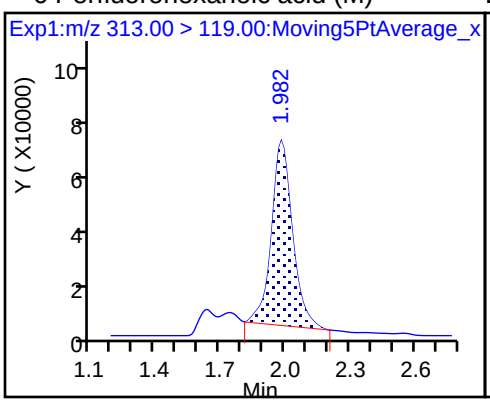

D 7 13C2 PFHxA



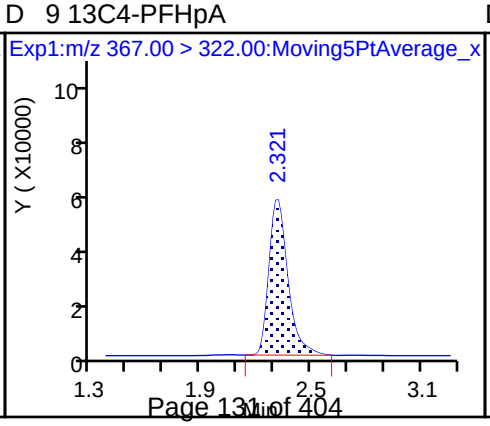

6 Perfluorohexanoic acid (M)



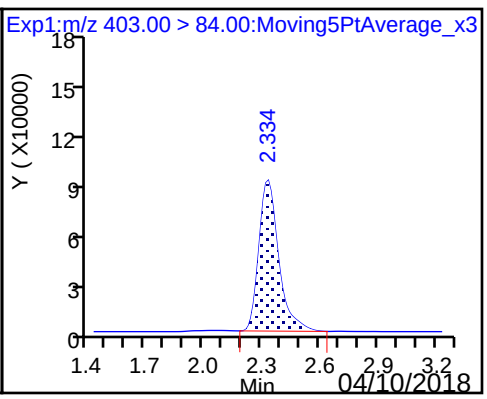

6 Perfluorohexanoic acid (M)



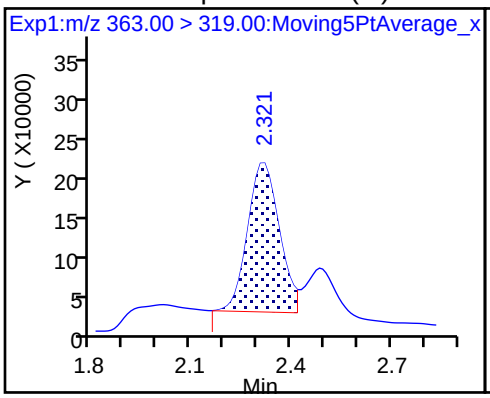

D 9 13C4-PFHpA



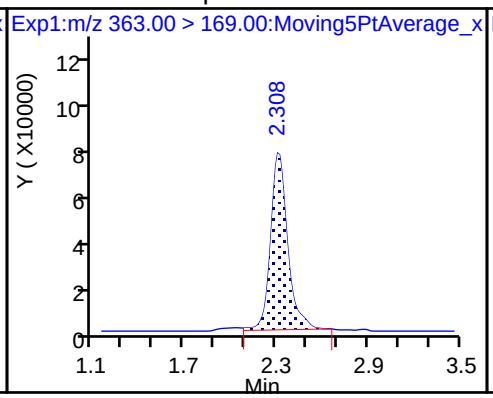

D 11 18O2 PFHxS



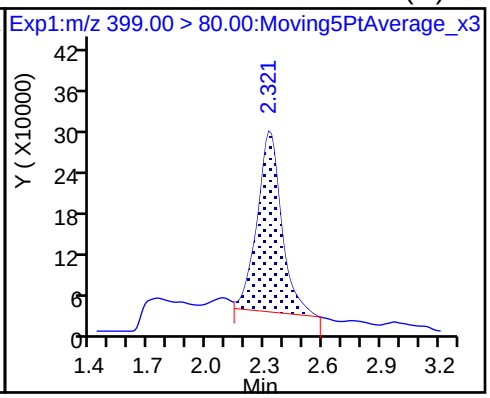
10 Perfluoroheptanoic acid (M)



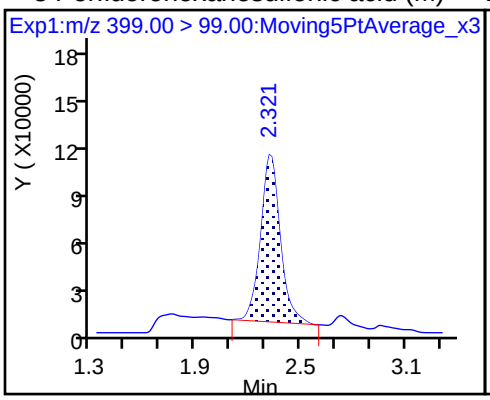

10 Perfluoroheptanoic acid



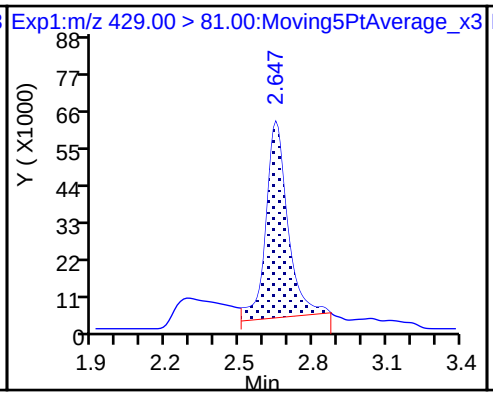

8 Perfluorohexanesulfonic acid (M)



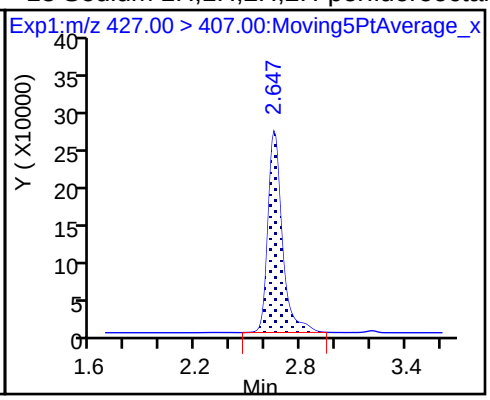

8 Perfluorohexanesulfonic acid (M)



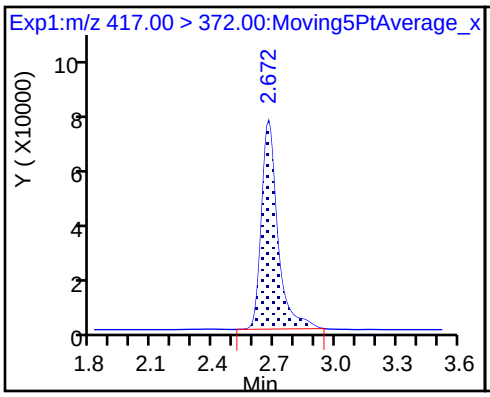

D 12 M2-6:2FTS



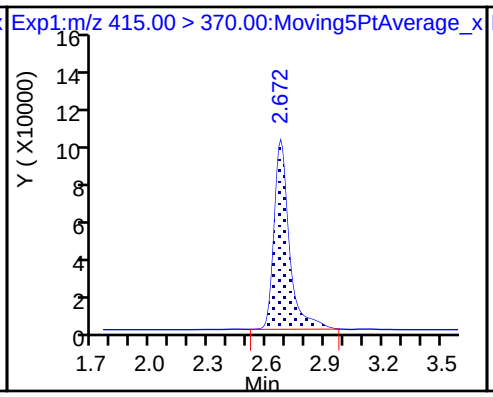

13 Sodium 1H,1H,2H,2H-perfluorooctane



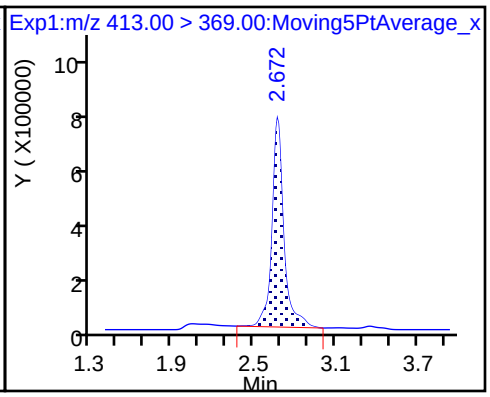

D 14 13C4 PFOA



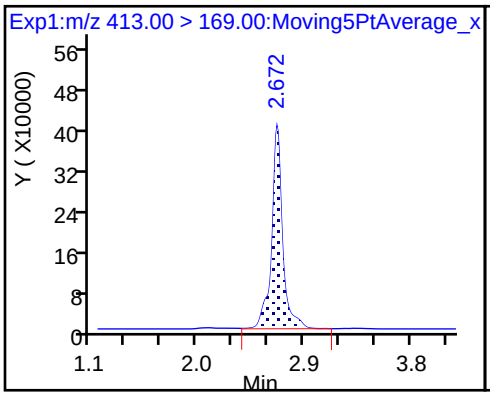

* 62 13C2-PFOA



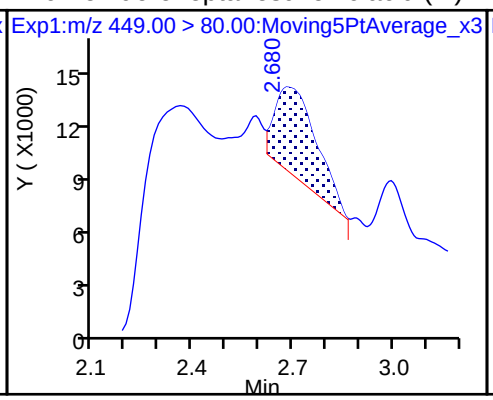

15 Perfluorooctanoic acid



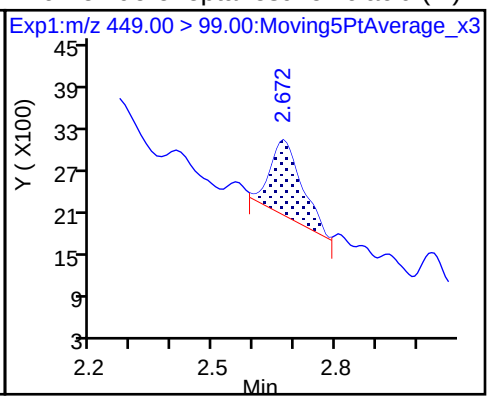

15 Perfluorooctanoic acid



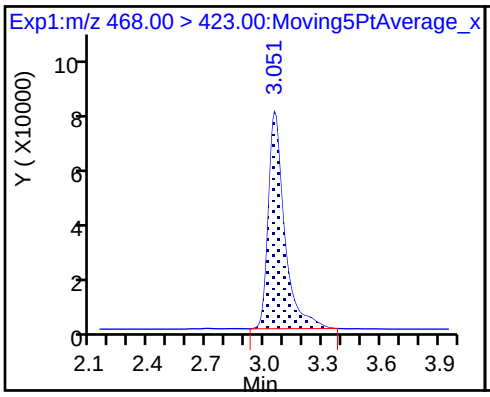

16 Perfluoroheptanesulfonic acid (M)



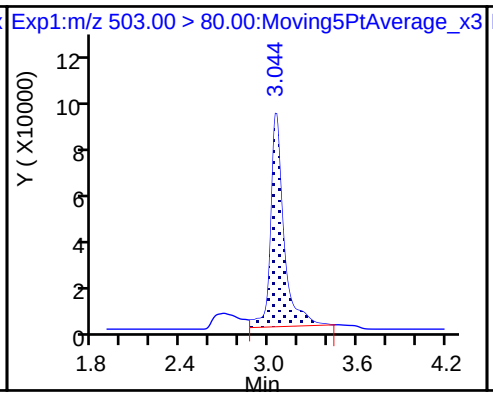

16 Perfluoroheptanesulfonic acid (M)



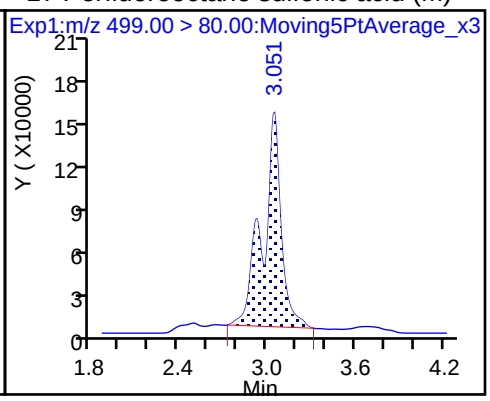
D 19 13C5 PFNA



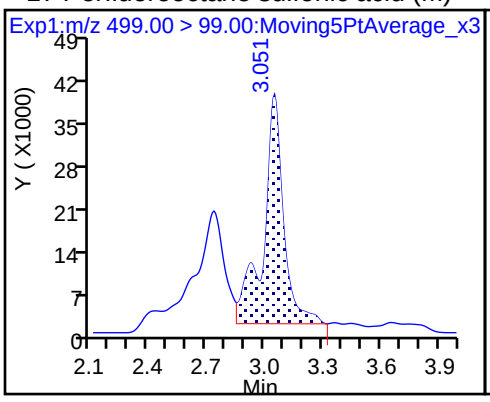

D 18 13C4 PFOS



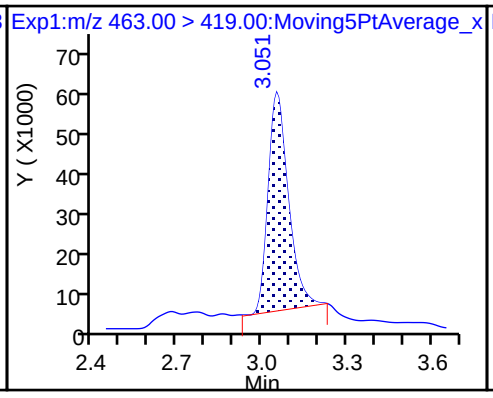

17 Perfluorooctane sulfonic acid (M)



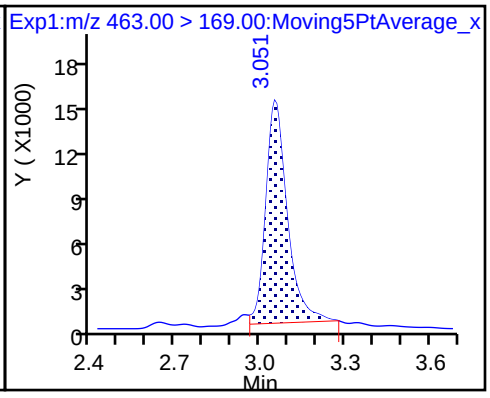

17 Perfluorooctane sulfonic acid (M)



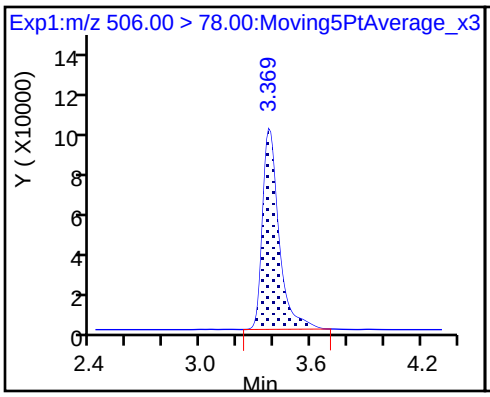

20 Perfluorononanoic acid



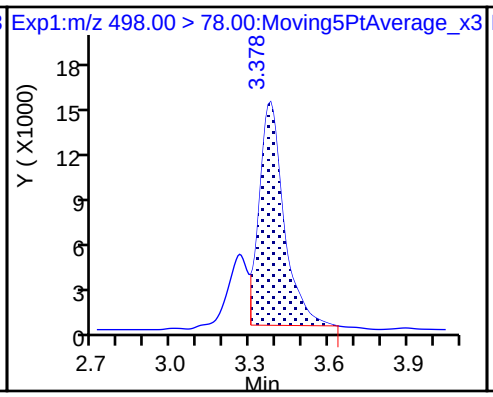

20 Perfluorononanoic acid



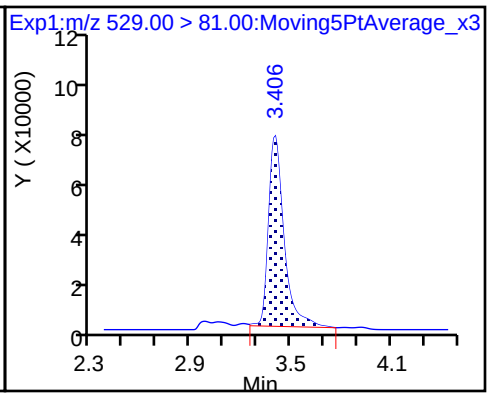

D 21 13C8 FOSA



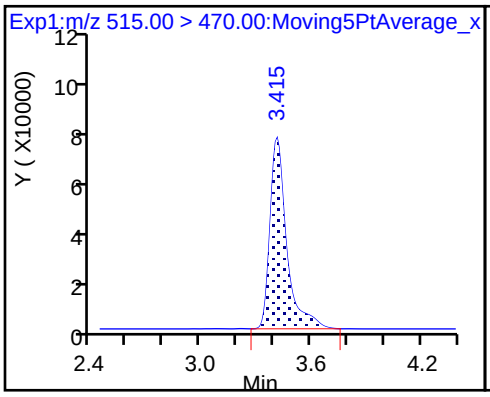

22 Perfluorooctane Sulfonamide



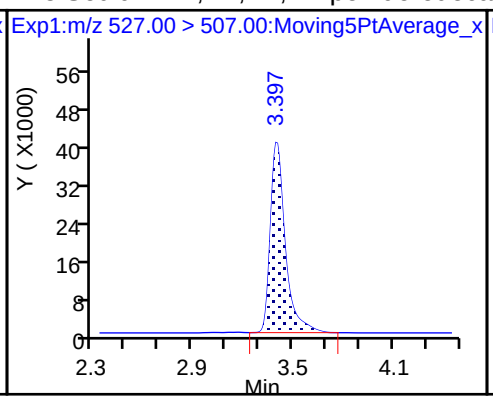

D 26 M2-8:2FTS



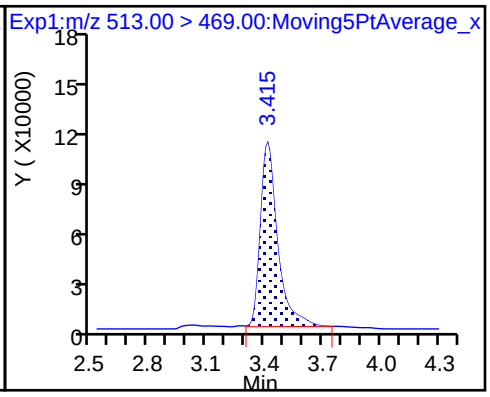

D 23 13C2 PFDA



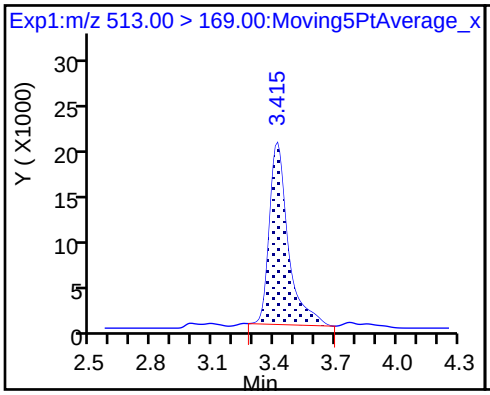

25 Sodium 1H,1H,2H,2H-perfluorodecan



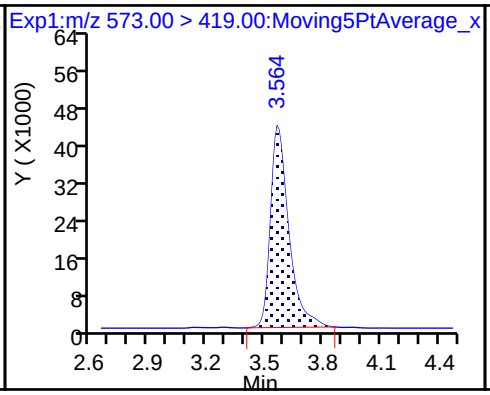

24 Perfluorodecanoic acid



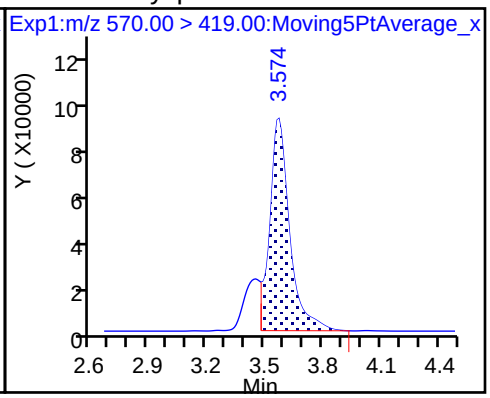
24 Perfluorodecanoic acid



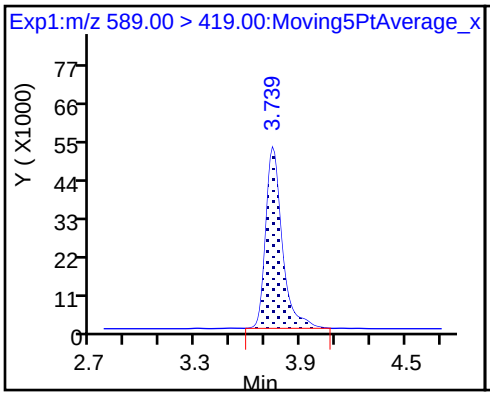

D 27 d3-NMeFOSAA



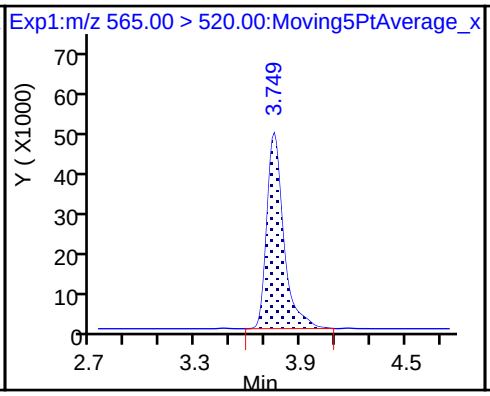

28 N-methyl perfluorooctane sulfonami



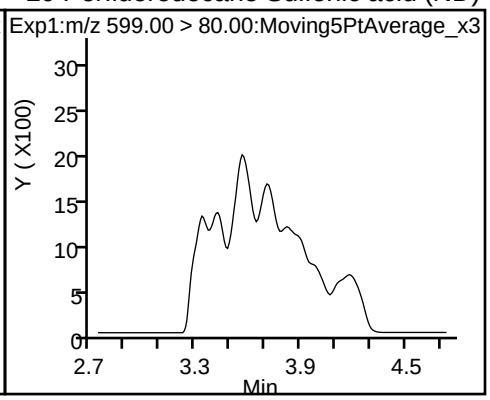

D 32 d5-NEtFOSAA



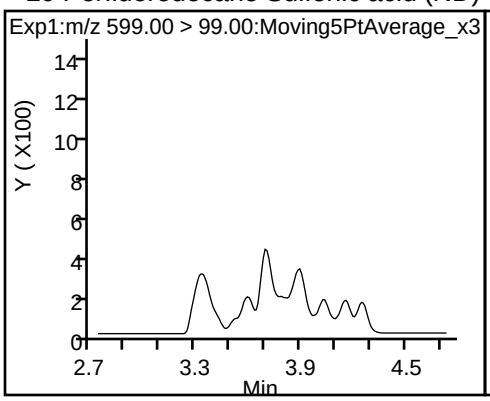

D 30 13C2 PFUnA



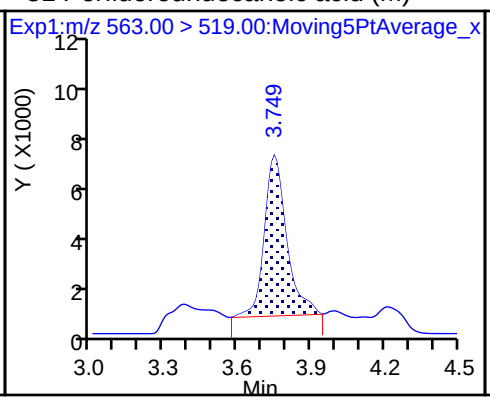

29 Perfluorodecane Sulfonic acid (ND)



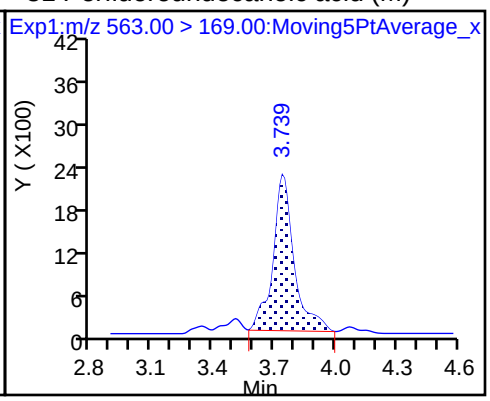

29 Perfluorodecane Sulfonic acid (ND)



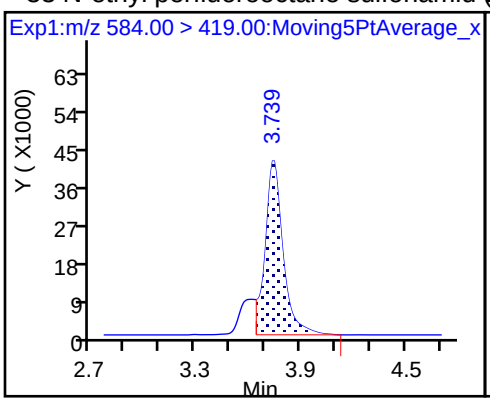

31 Perfluoroundecanoic acid (M)



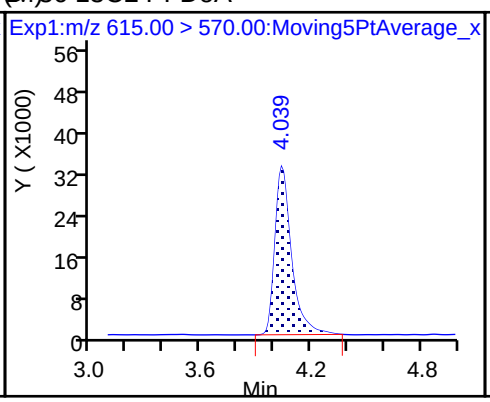

31 Perfluoroundecanoic acid (M)



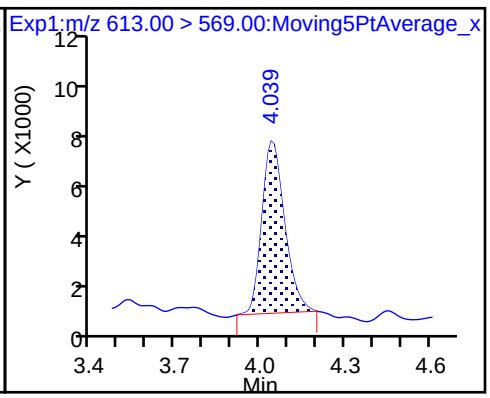

33 N-ethyl perfluorooctane sulfonamid (M)



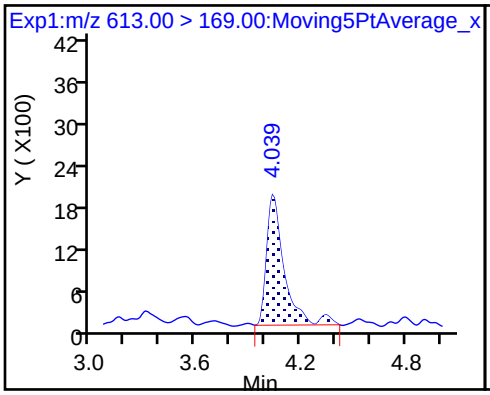

D 36 13C2 PFDoA



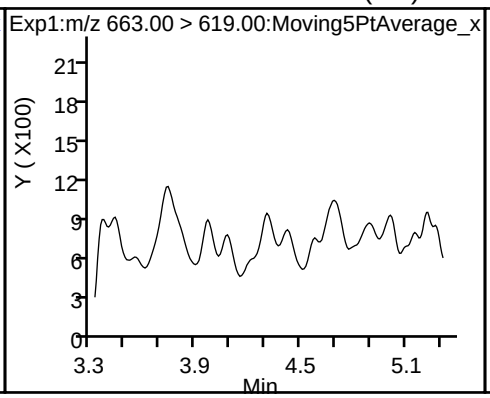

37 Perfluorododecanoic acid



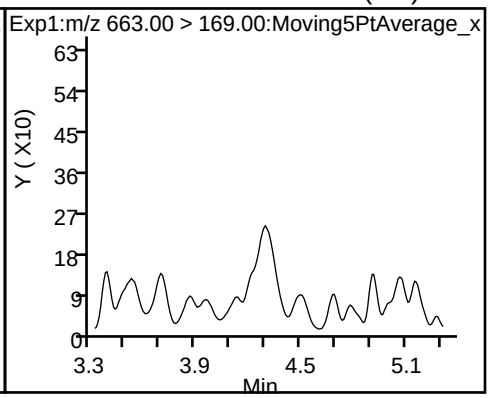
37 Perfluorododecanoic acid



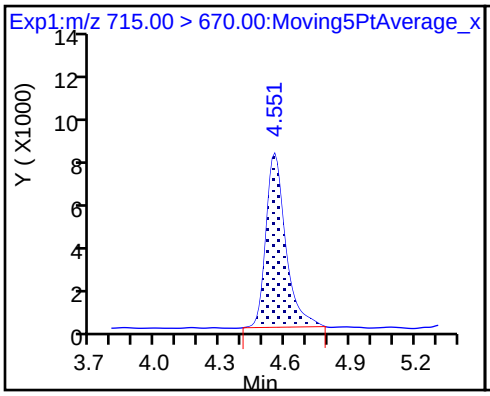

41 Perfluorotridecanoic acid (ND)



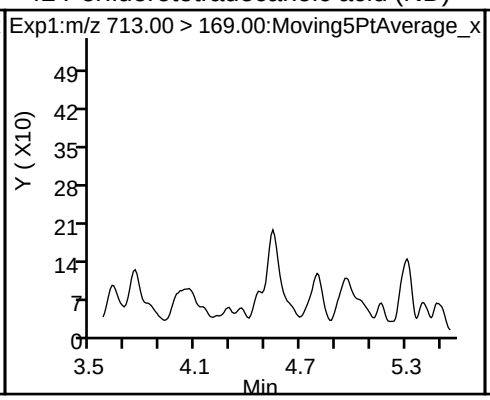

41 Perfluorotridecanoic acid (ND)



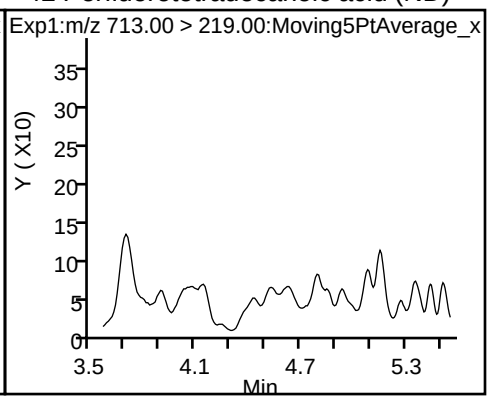

D 43 13C2-PFTeDA




42 Perfluorotetradecanoic acid (ND)




42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

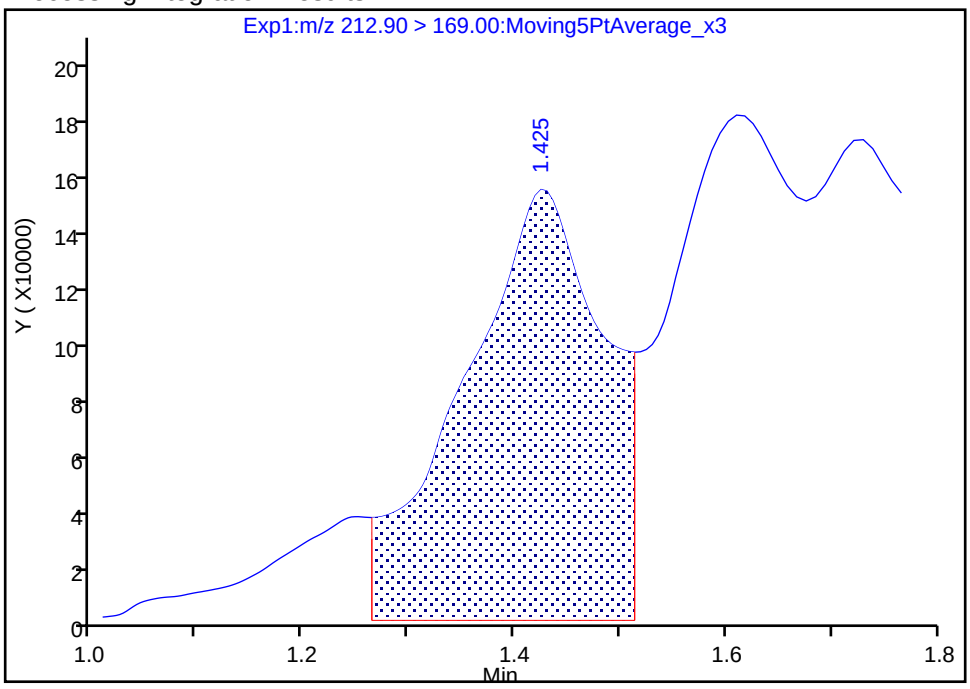
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

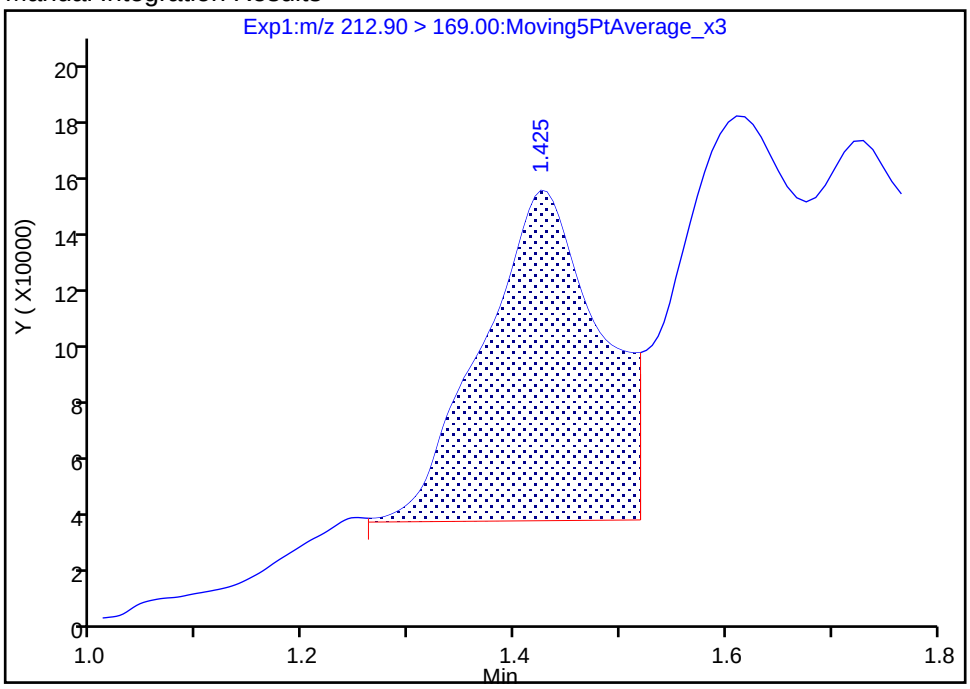
Processing Integration Results

RT: 1.43
Area: 1383904
Amount: 9.157774
Amount Units: ng/ml




Manual Integration Results

RT: 1.43
Area: 883566
Amount: 5.846863
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:38:33

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

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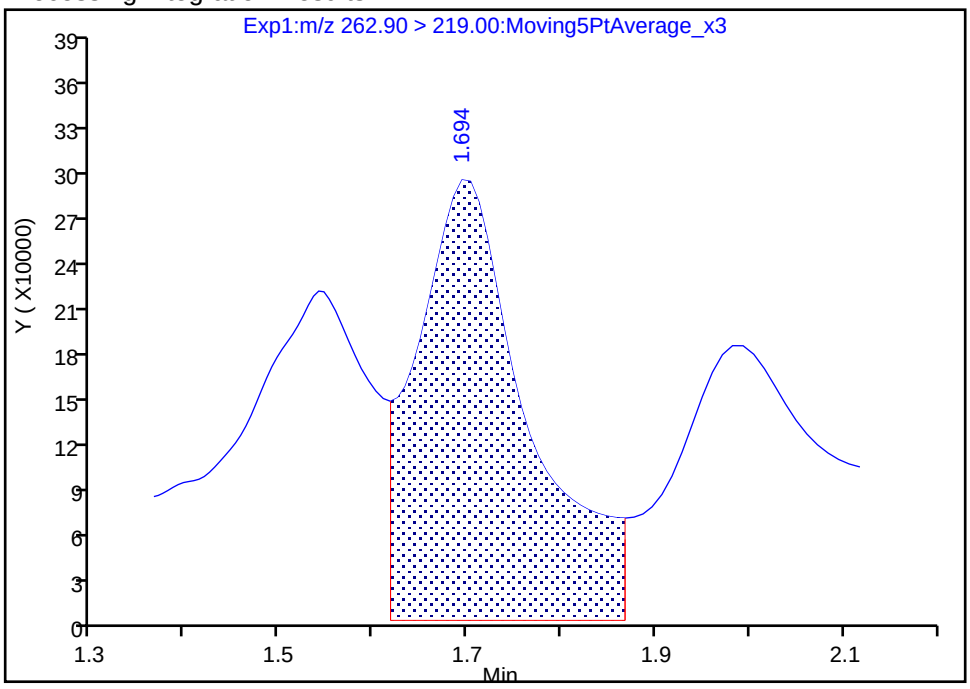
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

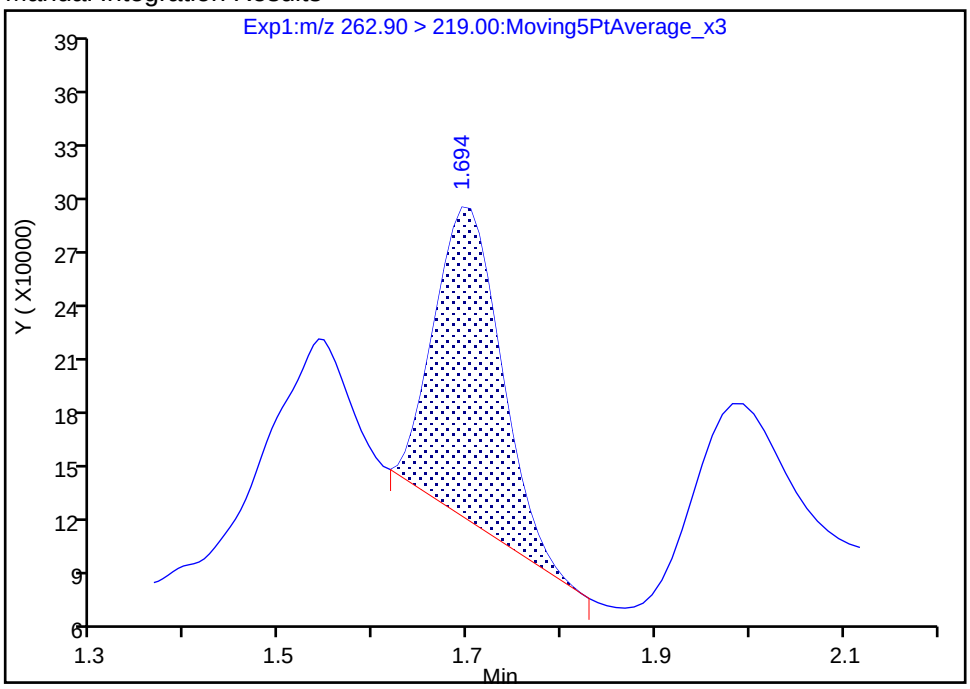
Processing Integration Results

RT: 1.69
Area: 2400213
Amount: 2.990194
Amount Units: ng/ml




Manual Integration Results

RT: 1.69
Area: 861887
Amount: 1.073742
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:38:40

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

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|---|---|---|---|---|---|
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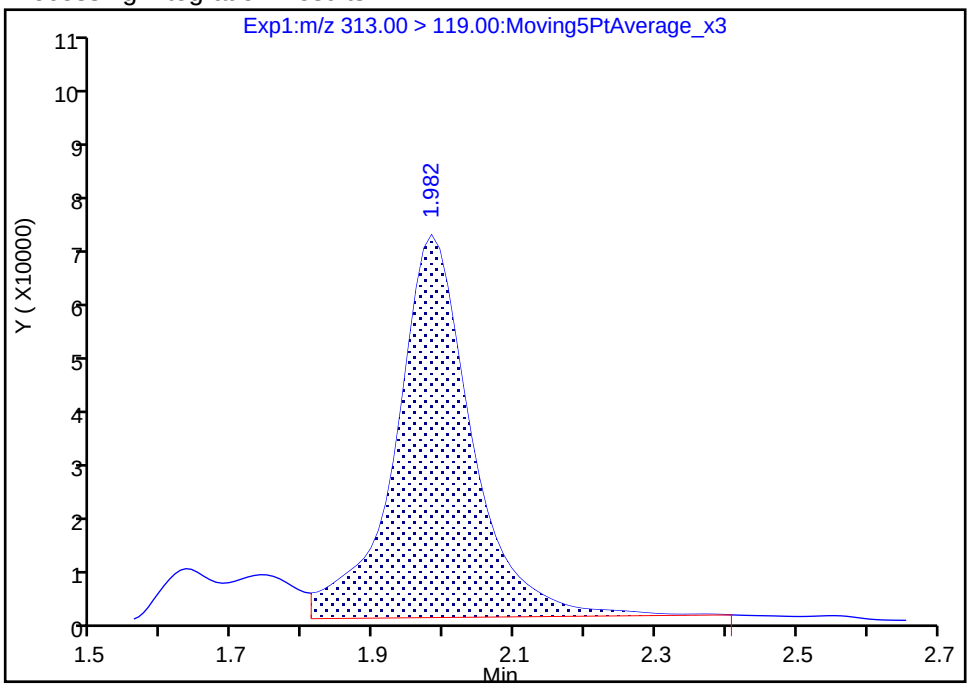
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

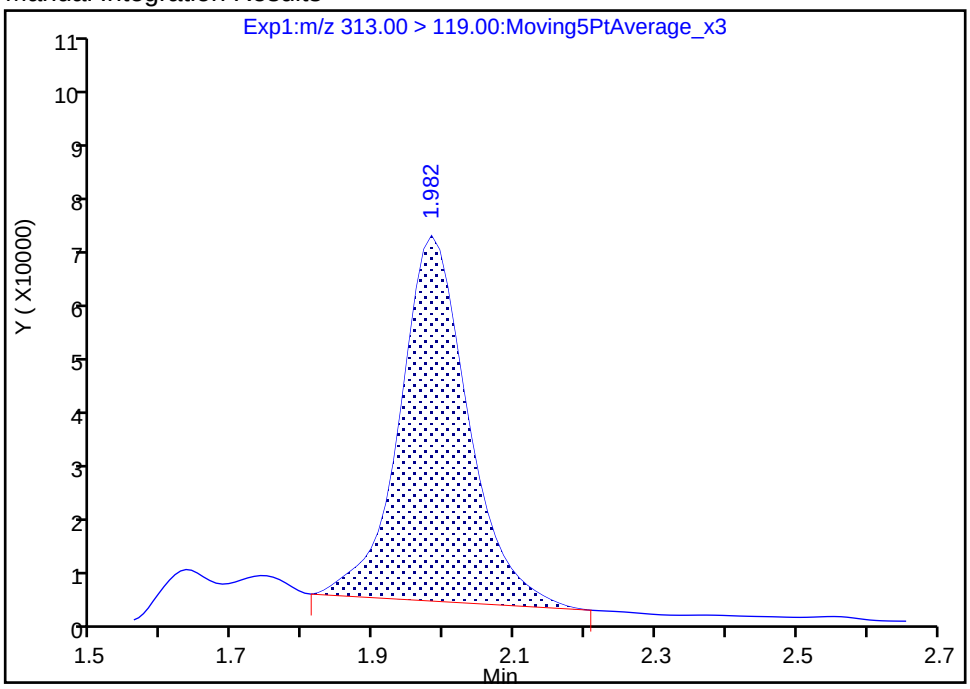
Processing Integration Results

RT: 1.98
Area: 508753
Amount: 4.731943
Amount Units: ng/ml




Manual Integration Results

RT: 1.98
Area: 435616
Amount: 3.902975
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:38:49

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

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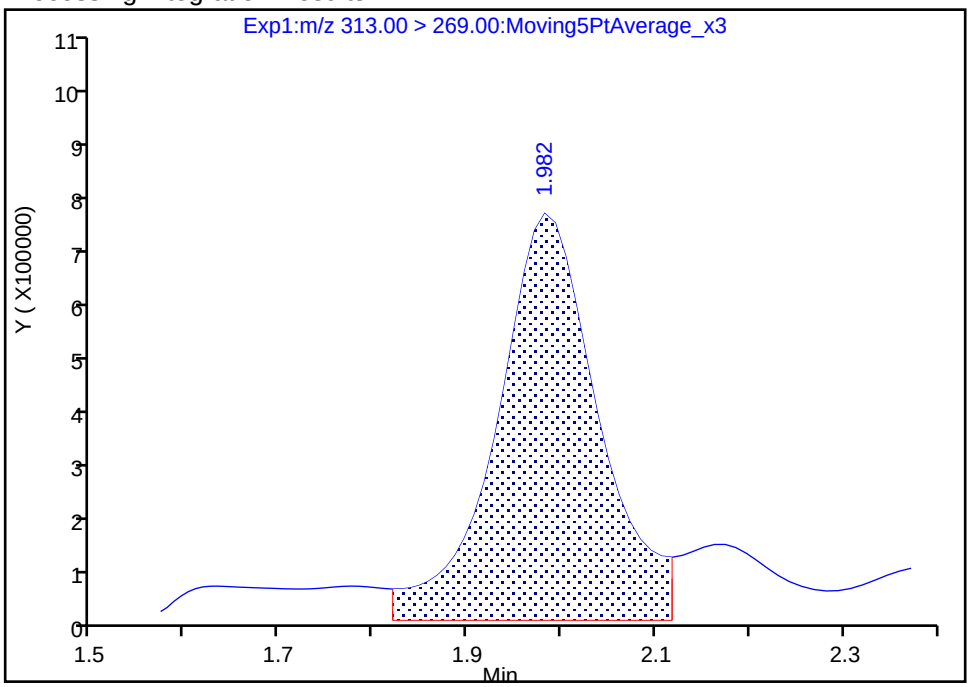
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

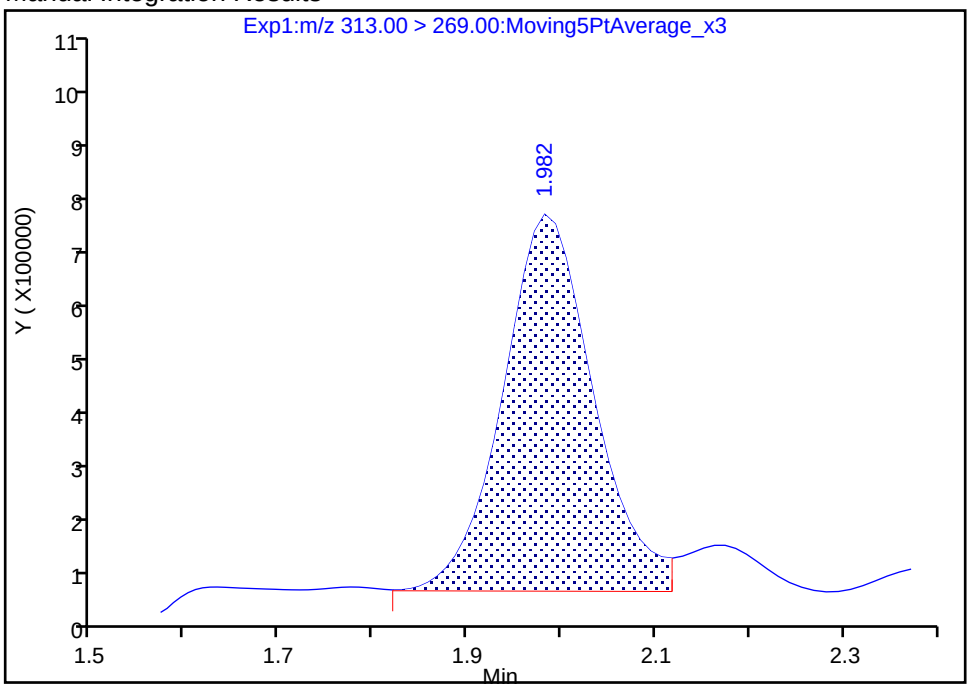
Processing Integration Results

RT: 1.98
Area: 5713703
Amount: 4.731943
Amount Units: ng/ml




Manual Integration Results

RT: 1.98
Area: 4712745
Amount: 3.902975
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:38:54
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

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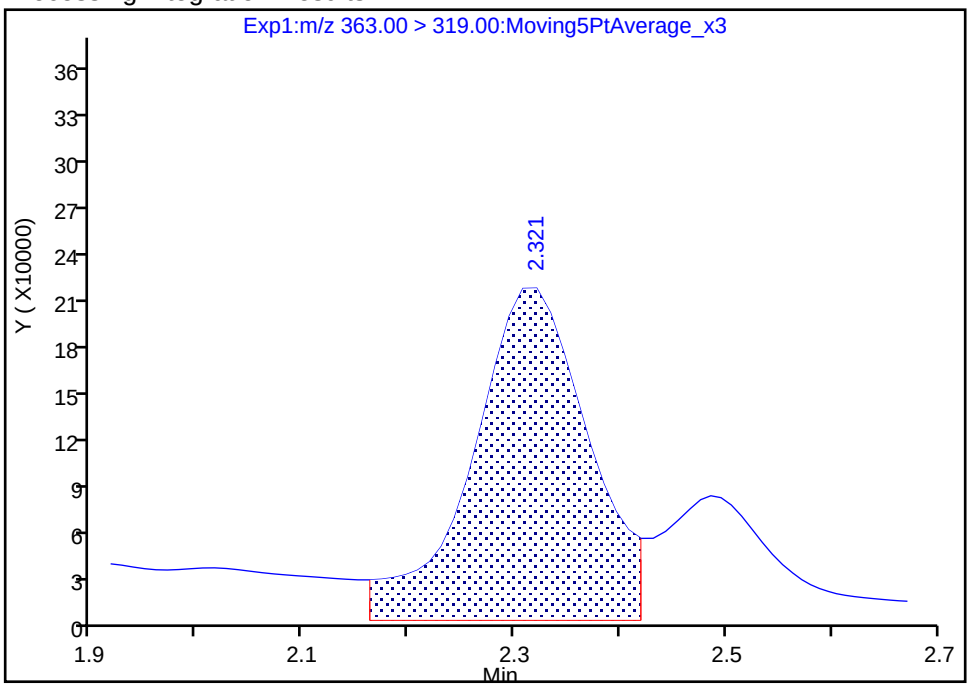
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

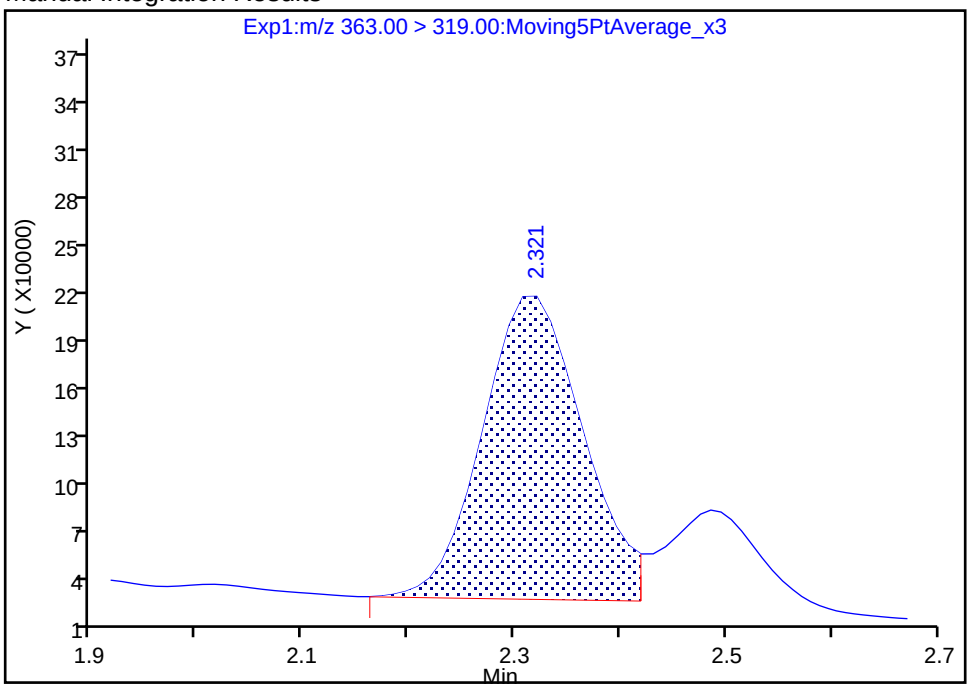
Processing Integration Results

RT: 2.32
Area: 1632548
Amount: 0.998429
Amount Units: ng/ml




Manual Integration Results

RT: 2.32
Area: 1252900
Amount: 0.766245
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:38:59

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

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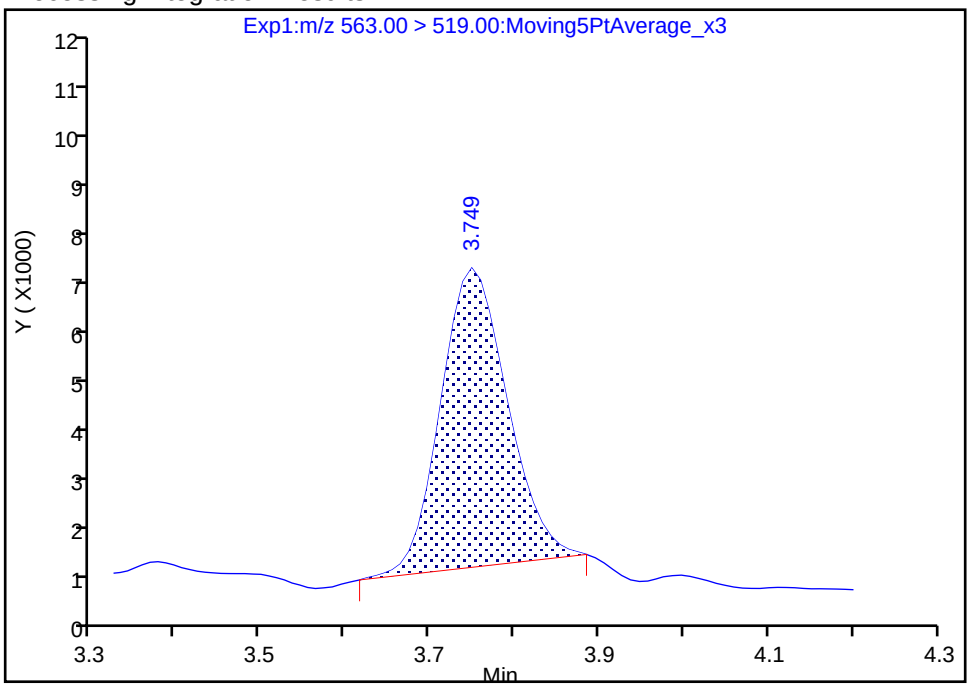
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

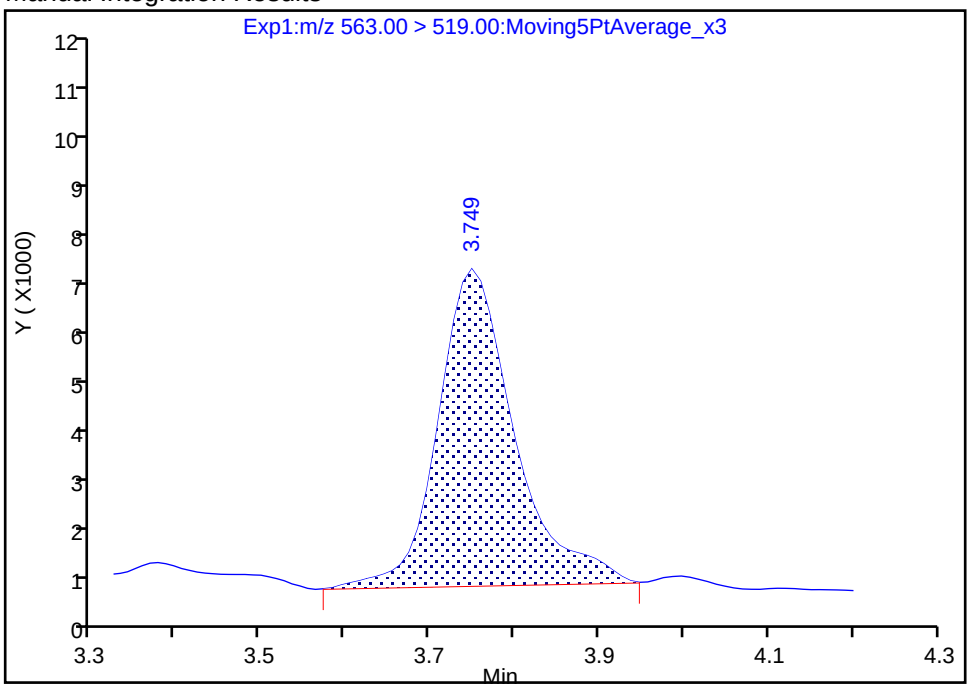
Processing Integration Results

RT: 3.75
Area: 32146
Amount: 0.030485
Amount Units: ng/ml




Manual Integration Results

RT: 3.75
Area: 39136
Amount: 0.037114
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:39:57

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

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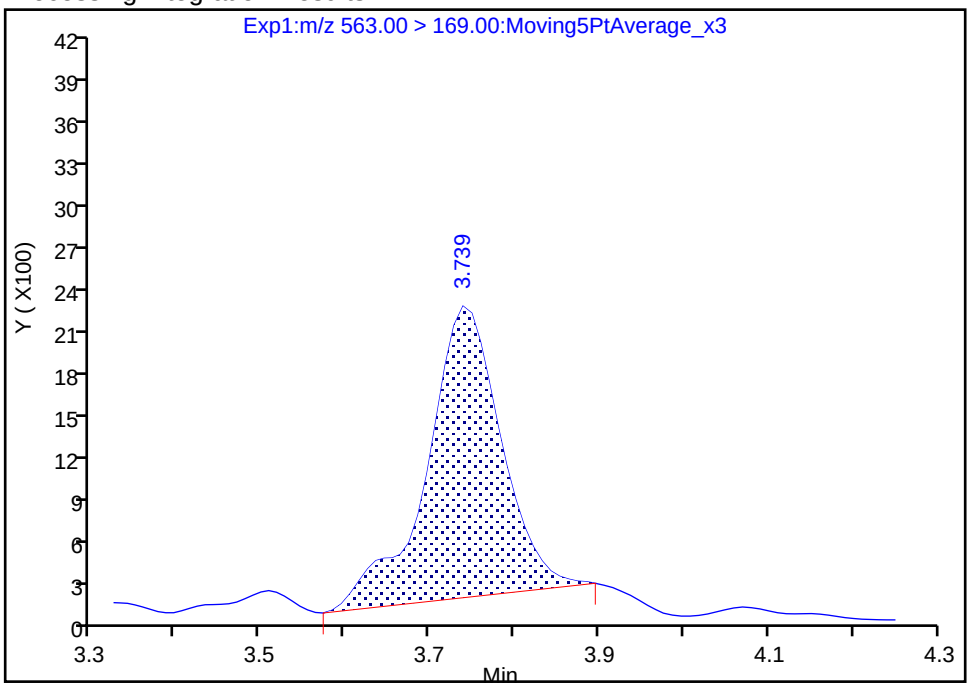
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

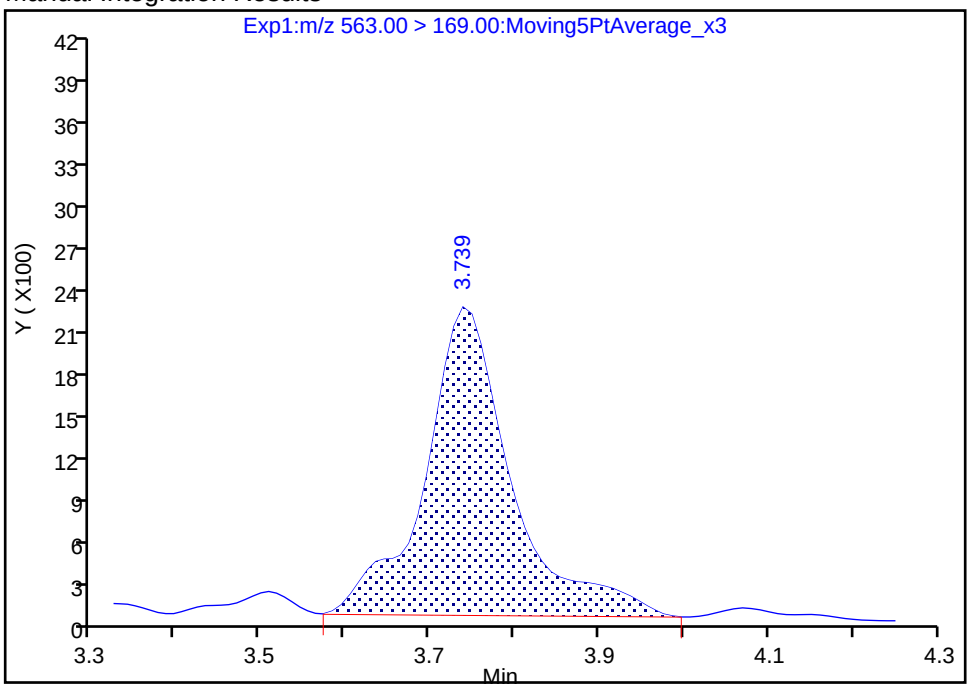
Processing Integration Results

RT: 3.74
Area: 12748
Amount: 0.030485
Amount Units: ng/ml




Manual Integration Results

RT: 3.74
Area: 15688
Amount: 0.037114
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:40:02

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

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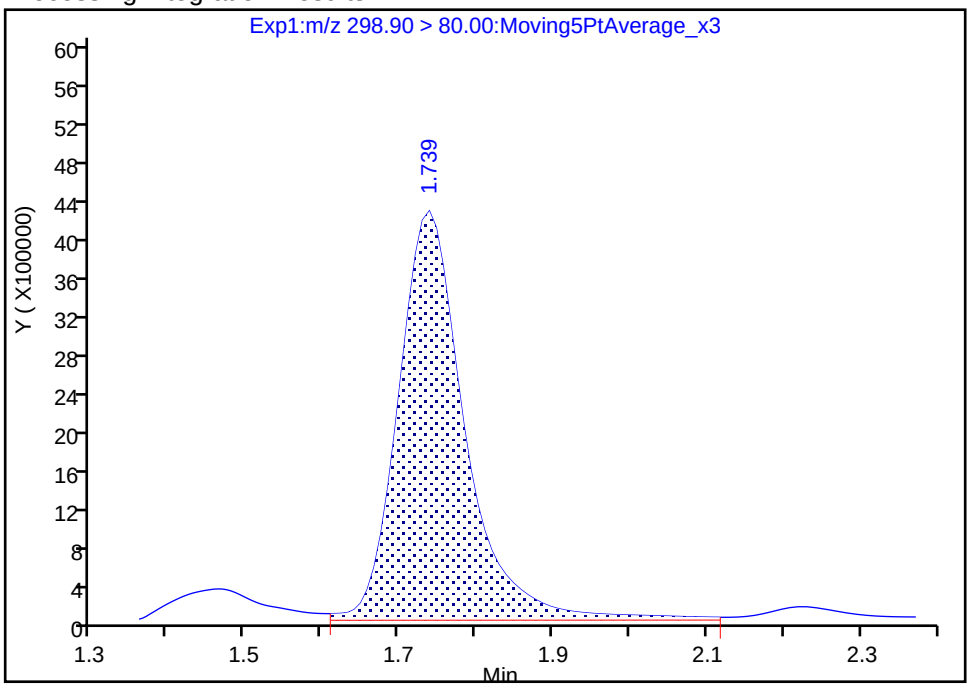
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

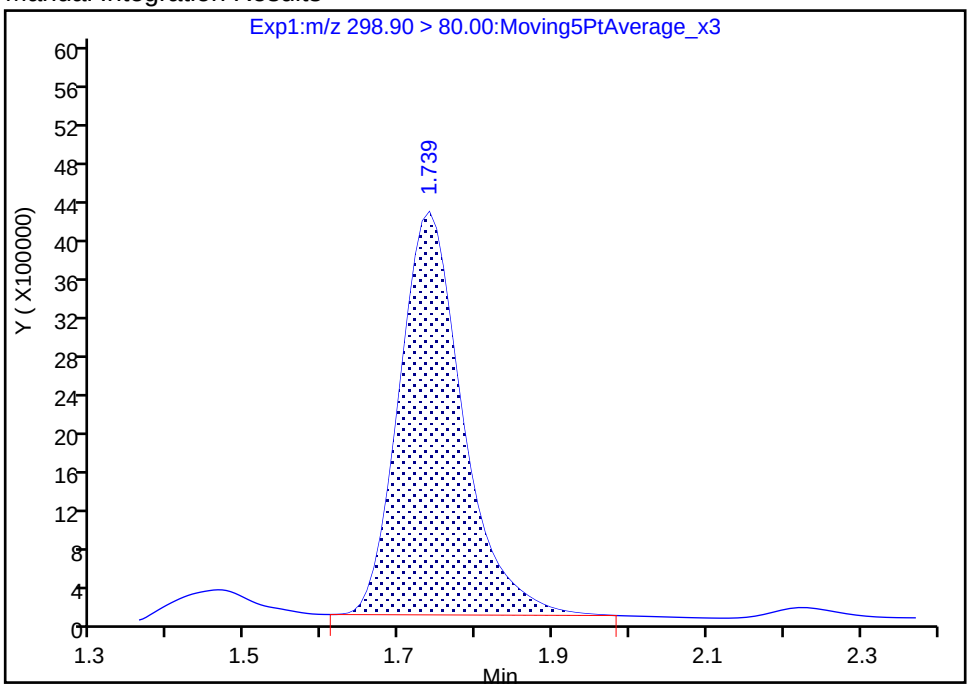
Processing Integration Results

RT: 1.74
Area: 25913447
Amount: 5.801771
Amount Units: ng/ml




Manual Integration Results

RT: 1.74
Area: 24167614
Amount: 5.410895
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:38:45

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

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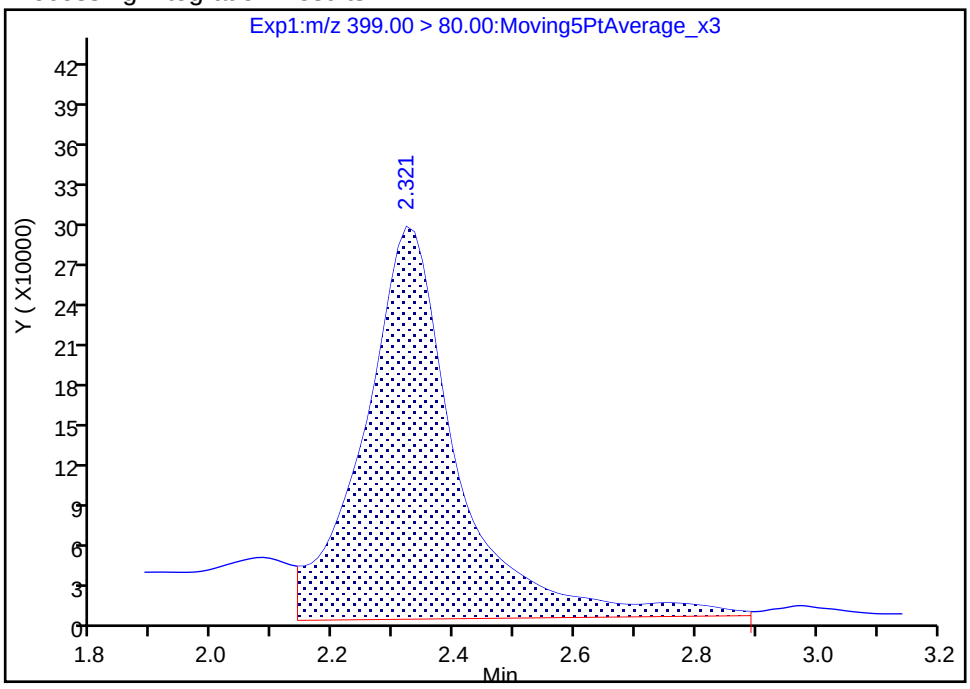
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

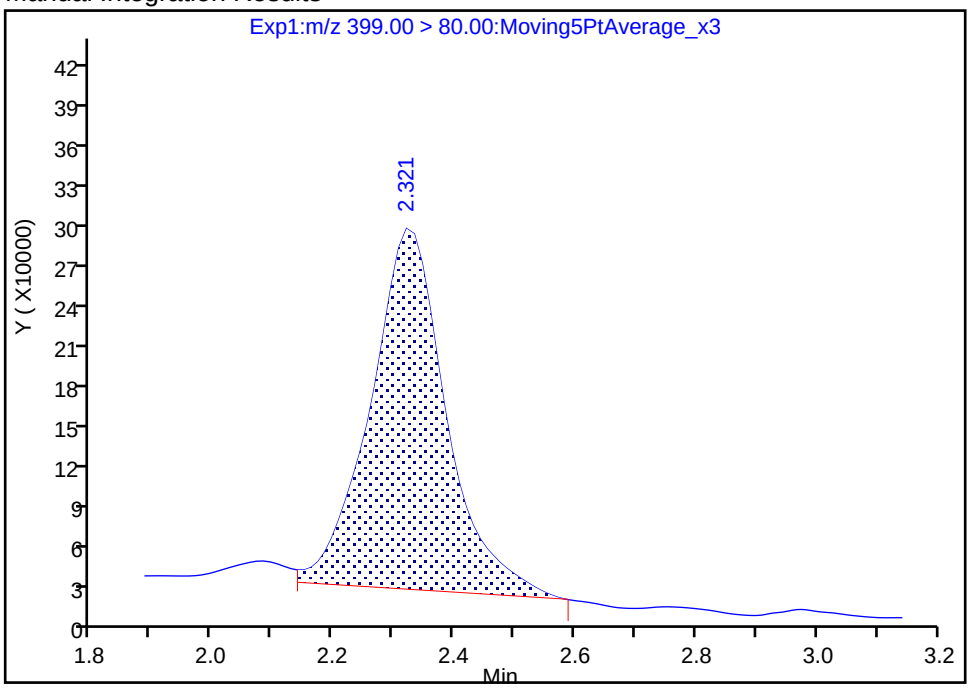
Processing Integration Results

RT: 2.32
Area: 3112639
Amount: 1.057919
Amount Units: ng/ml




Manual Integration Results

RT: 2.32
Area: 2312241
Amount: 0.785881
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:39:14

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

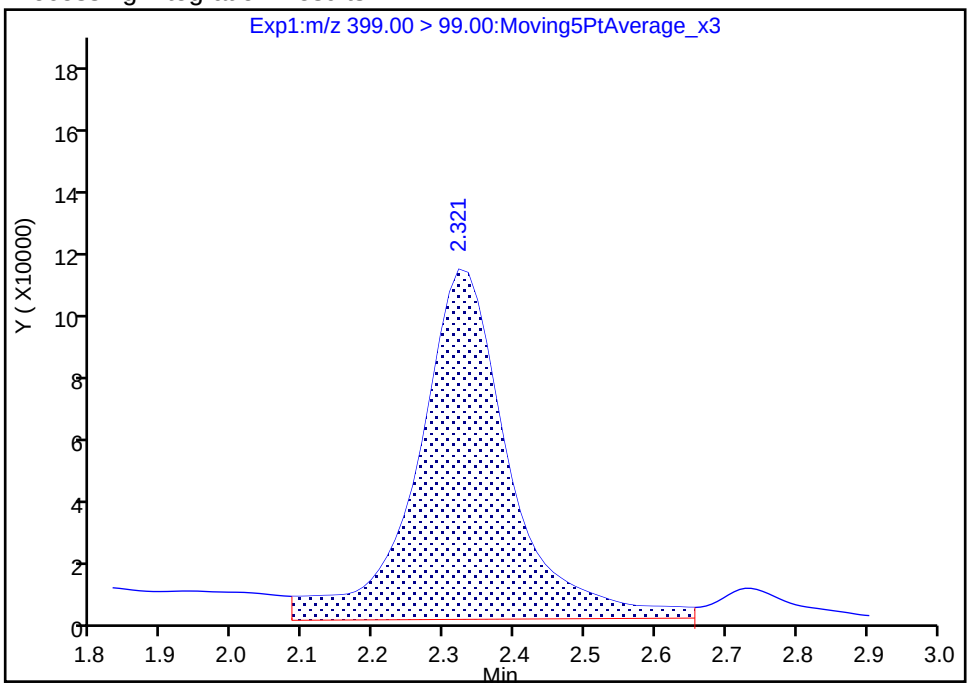
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

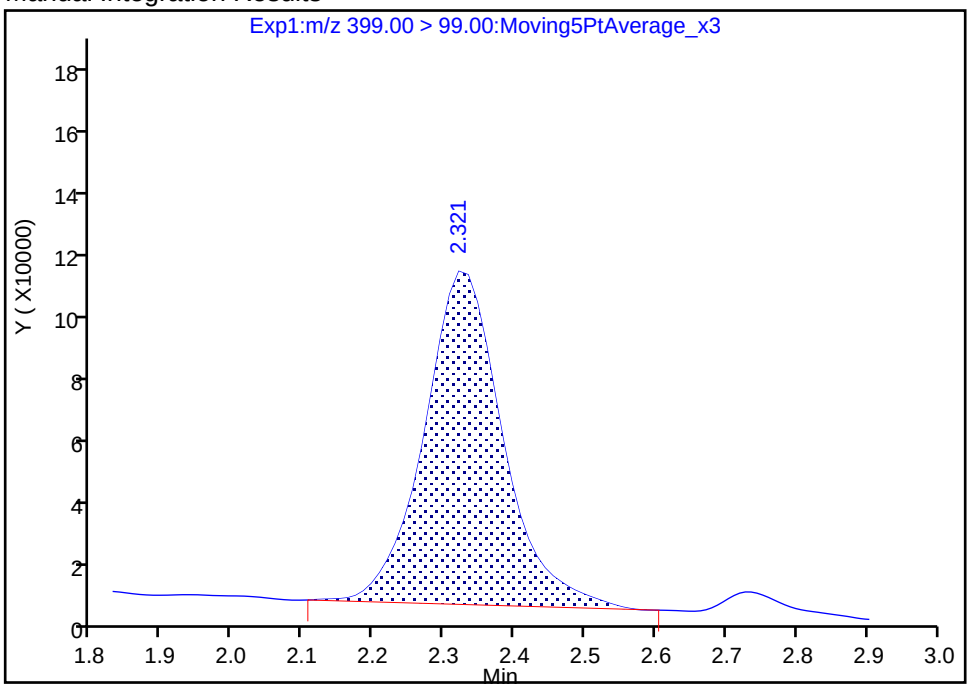
Processing Integration Results

RT: 2.32
Area: 985795
Amount: 1.057919
Amount Units: ng/ml




Manual Integration Results

RT: 2.32
Area: 799064
Amount: 0.785881
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:39:17
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

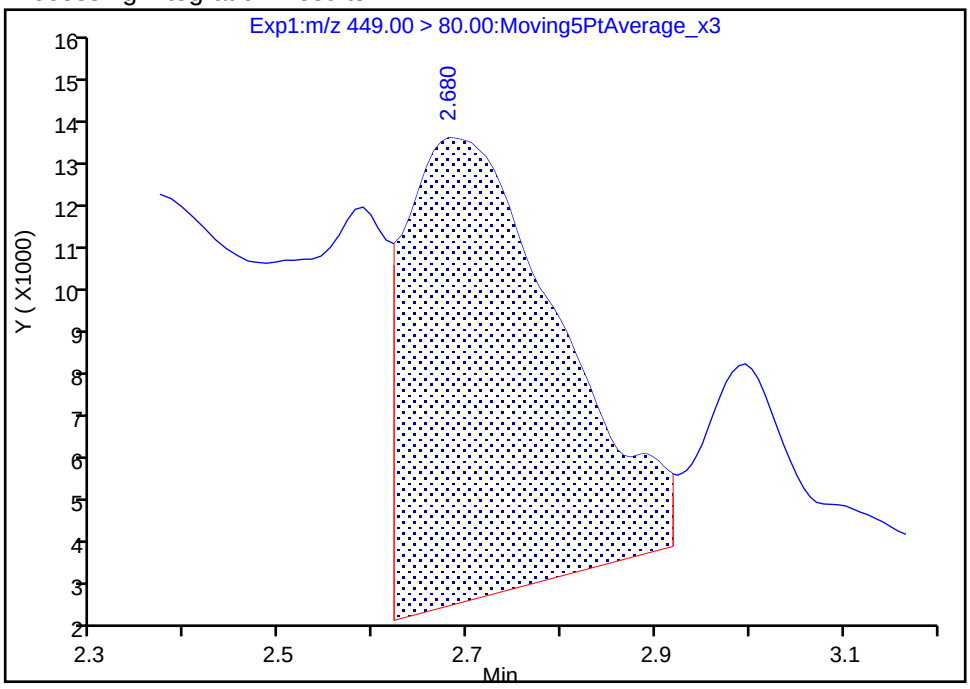
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

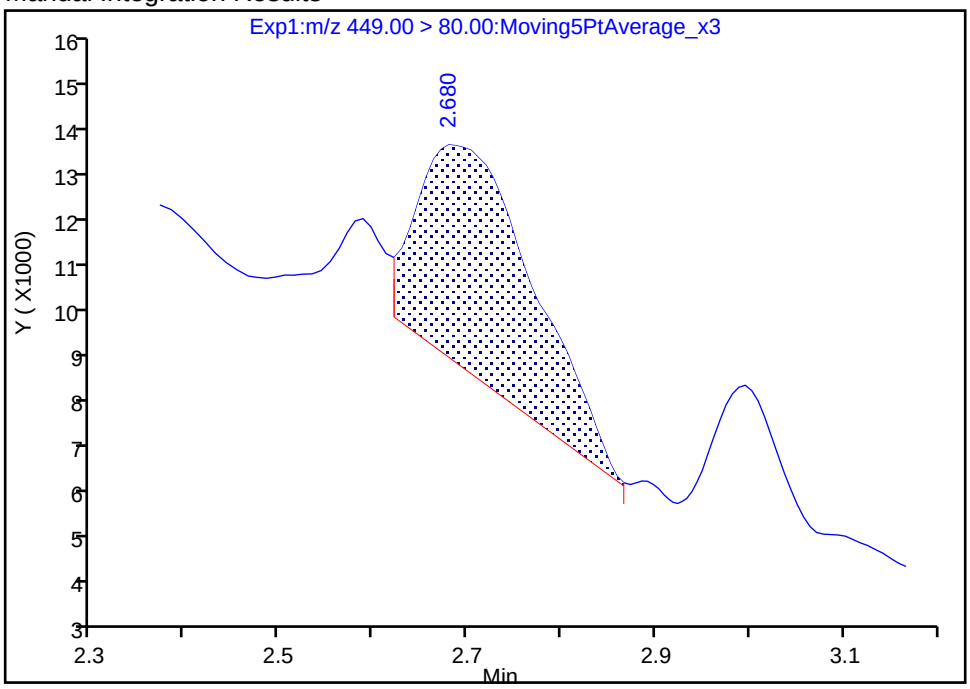
Processing Integration Results

RT: 2.68
Area: 117736
Amount: 0.039064
Amount Units: ng/ml




Manual Integration Results

RT: 2.68
Area: 41294
Amount: 0.013701
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:39:27

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

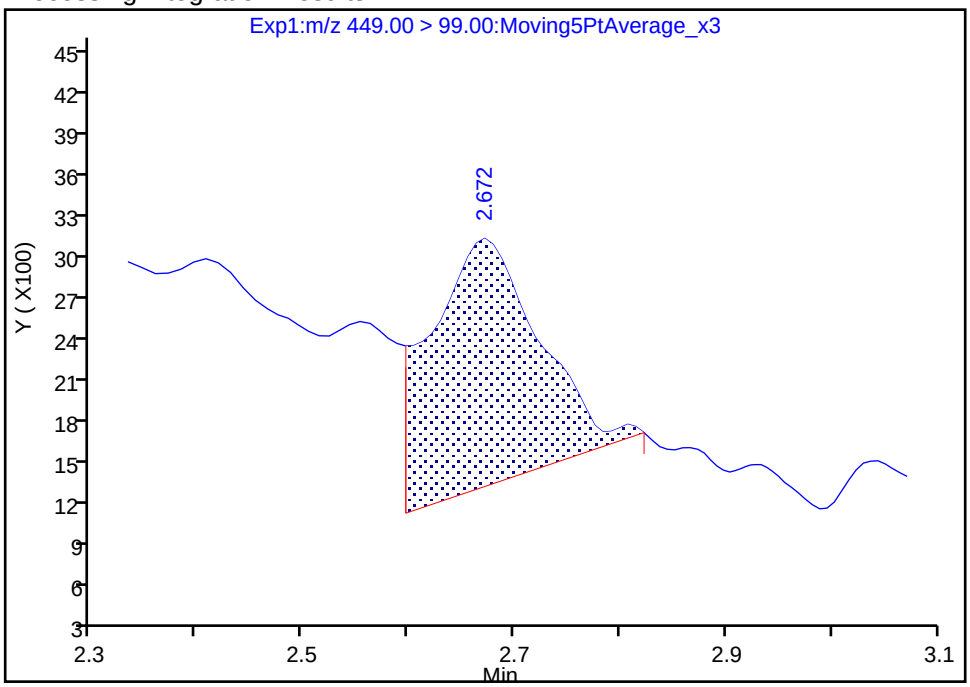
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

## 16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

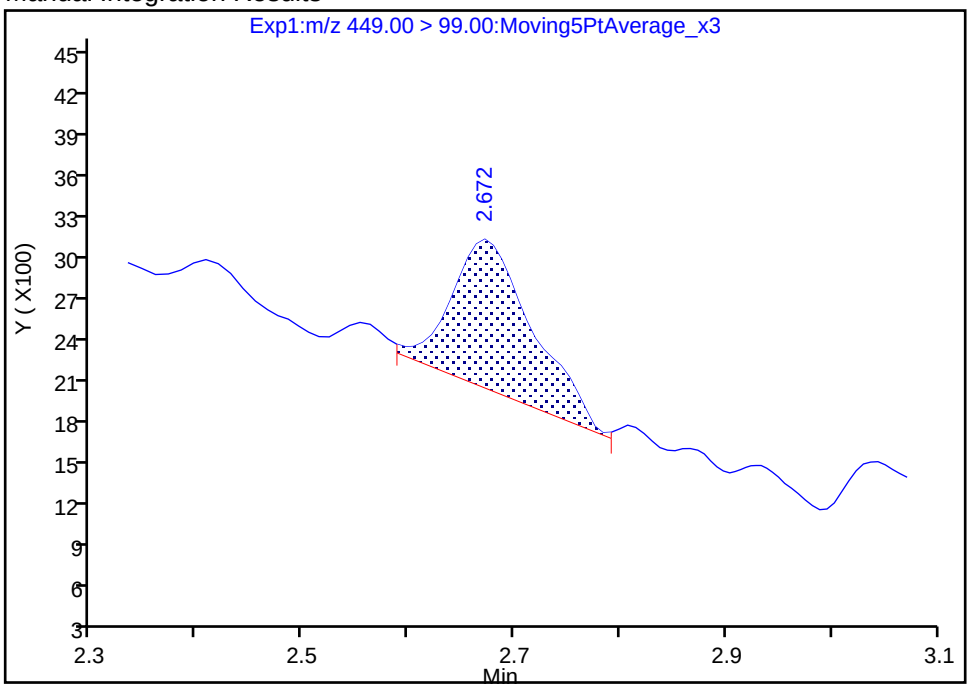
Processing Integration Results

RT: 2.67
Area: 12955
Amount: 0.039064
Amount Units: ng/ml




Manual Integration Results

RT: 2.67
Area: 5846
Amount: 0.013701
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:39:30

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

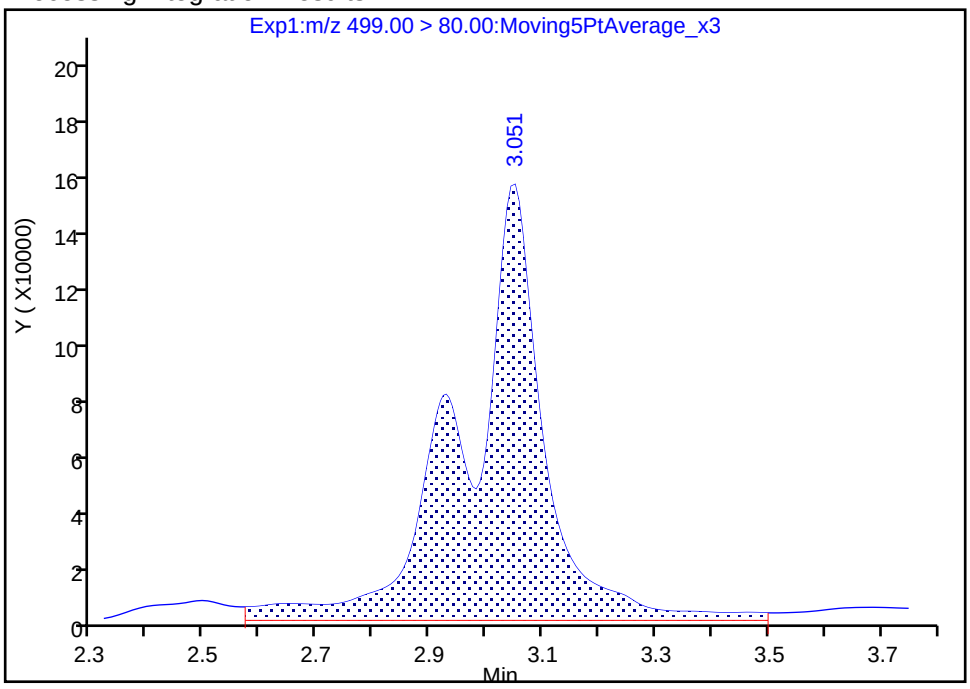
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

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

Signal: 1

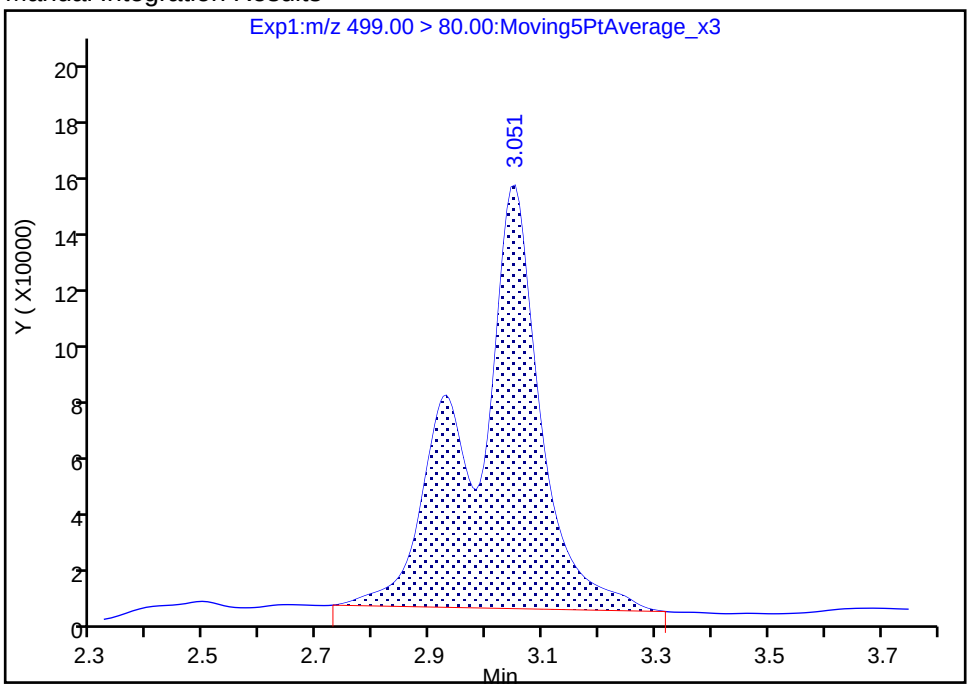
Processing Integration Results

RT: 3.05
Area: 1493641
Amount: 0.578009
Amount Units: ng/ml




Manual Integration Results

RT: 3.05
Area: 1255872
Amount: 0.485997
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:39:37

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

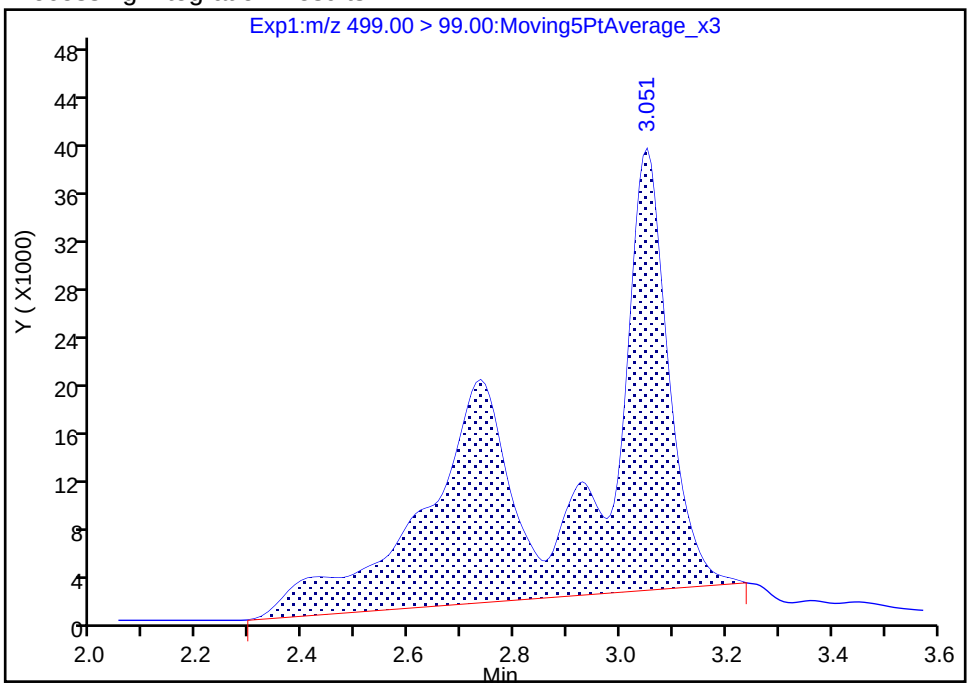
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

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

Signal: 2

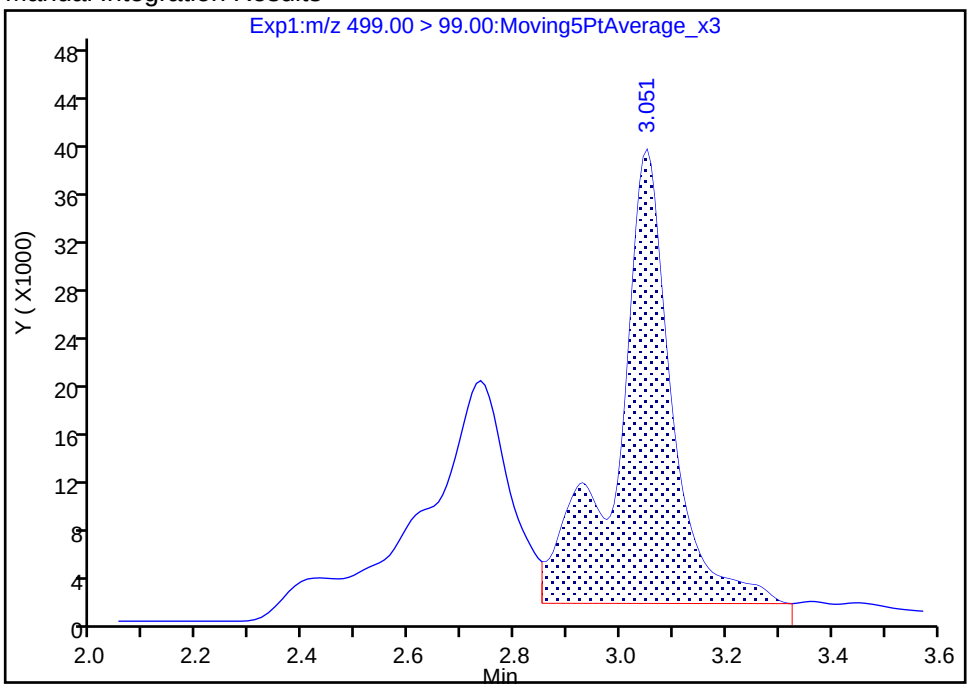
Processing Integration Results

RT: 3.05
Area: 461897
Amount: 0.578009
Amount Units: ng/ml




Manual Integration Results

RT: 3.05
Area: 273335
Amount: 0.485997
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:39:43
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

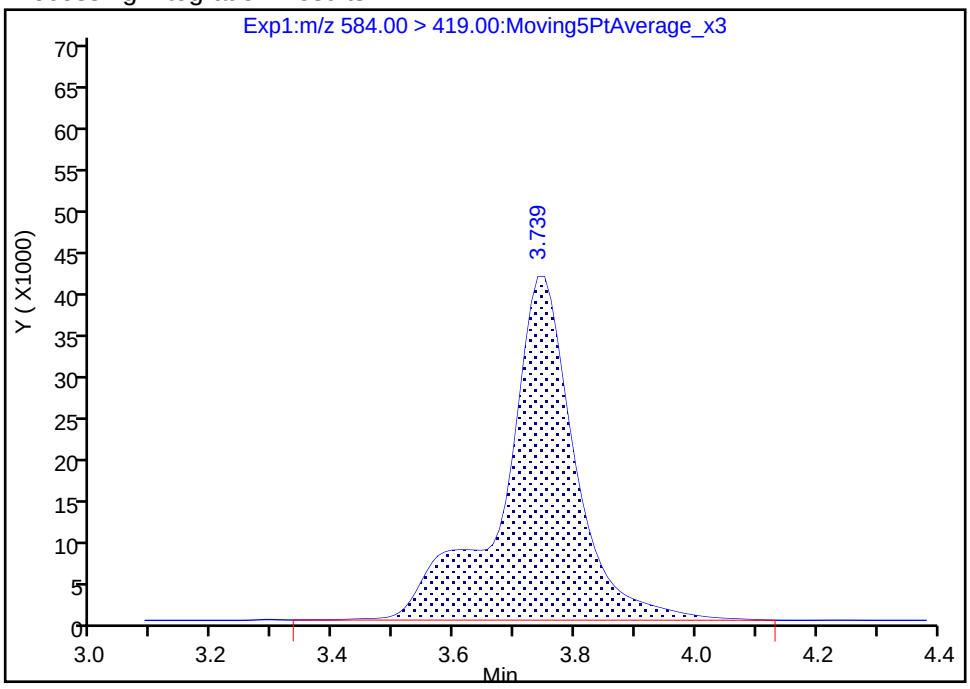
| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_012.d | | | | |
| Injection Date: | 08-Apr-2018 15:27:54 | Instrument ID: | A8_N | | |
| Lims ID: | 480-133255-C-2-A | Lab Sample ID: | 320-133255-2 | | |
| Client ID: | R9-032818-POND | | | | |
| Operator ID: | SACINSTLCMS01 | ALS Bottle#: | 6 | Worklist Smp#: | 9 |
| Injection Vol: | 2.0 ul | Dil. Factor: | 10.0000 | | |
| Method: | A8_N | Limit Group: | LC PFC ICAL | | |
| Column: | | Detector | EXP1 | | |

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

Signal: 1

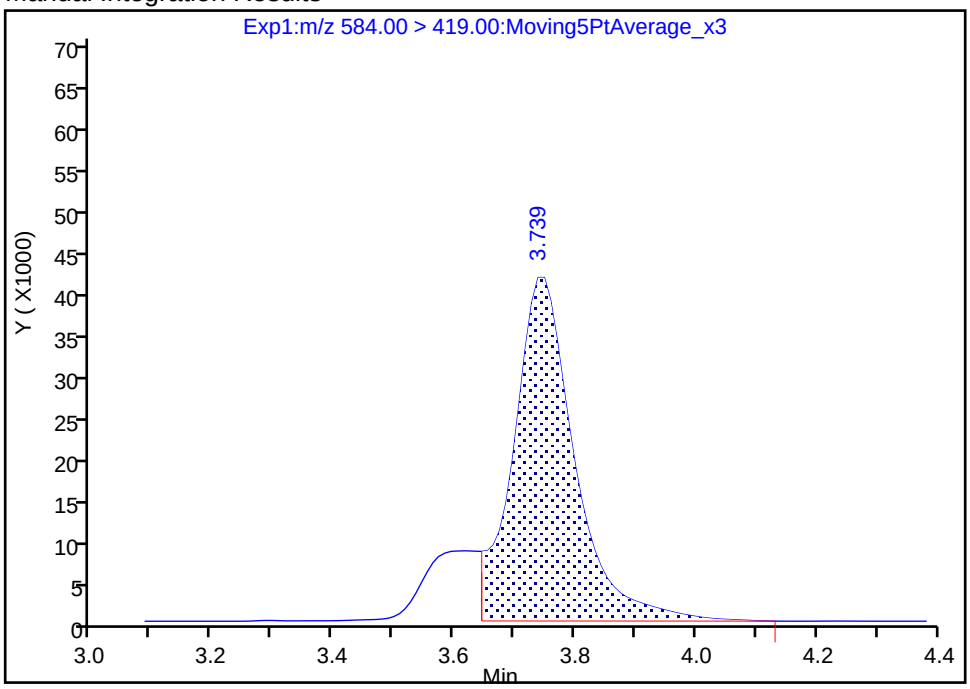
Processing Integration Results

RT: 3.74
Area: 344980
Amount: 0.278436
Amount Units: ng/ml




Manual Integration Results

RT: 3.74
Area: 291467
Amount: 0.235245
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 11:40:11

Audit Action: Manually Integrated Audit Reason: Split Peak

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

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1 Analy Batch No.: 215537

SDG No.:

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

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

Calibration Files:

| LEVEL: | LAB SAMPLE ID: | LAB FILE ID: |
|---|---|---|
| Level 1 | IC 320-215537/2 | 2018.03.29A_ICALB_002.d |
| Level 2 | IC 320-215537/3 | 2018.03.29A_ICALB_003.d |
| Level 3 | IC 320-215537/4 | 2018.03.29A_ICALB_004.d |
| Level 4 | IC 320-215537/5 | 2018.03.29A_ICALB_005.d |
| Level 5 | IC 320-215537/6 | 2018.03.29A_ICALB_006.d |
| Level 6 | IC 320-215537/7 | 2018.03.29A_ICALB_007.d |
| Level 7 | IC 320-215537/8 | 2018.03.29A_ICALB_008.d |

| ANALYTE | RRF | | | | | CURVE TYPE | COEFFICIENT | | | # | MIN RRF | %RSD | # | MAX %RSD | R^2 OR COD | # | MIN R^2 OR COD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LVL 1<br>LVL 6 | LVL 2<br>LVL 7 | LVL 3 | LVL 4 | LVL 5 | | B | M1 | M2 | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 0.8915<br>0.9577 | 0.9023<br>0.9406 | 0.9140 | 0.9051 | 0.9581 | AveID | | 0.9242 | | | | 3.0 | | 35.0 | | | |
| Perfluoropentanoic acid (PFPeA) | 1.2220<br>1.2408 | 1.2225<br>1.1629 | 1.1904 | 1.1561 | 1.1836 | AveID | | 1.1969 | | | | 2.7 | | 35.0 | | | |
| Perfluorobutanesulfonic acid (PFBS) | 77.330<br>79.402 | 79.922<br>76.189 | 78.392 | 76.753 | 84.255 | AveID | | 78.892 | | | | 3.5 | | 50.0 | | | |
| 4:2 FTS | 17.852<br>17.231 | 19.686<br>16.075 | 16.275 | 15.644 | 18.025 | AveID | | 17.255 | | | | 8.1 | | 50.0 | | | |
| Perfluorohexanoic acid (PFHxA) | 1.0295<br>1.0138 | 1.0079<br>1.0621 | 1.0176 | 0.9811 | 1.0511 | AveID | | 1.0233 | | | | 2.7 | | 35.0 | | | |
| Perfluoropentanesulfonic acid (PFPeS) | 73.648<br>73.909 | 67.432<br>67.079 | 68.106 | 70.202 | 78.033 | AveID | | 71.201 | | | | 5.8 | | 50.0 | | | |
| HFPO-DA (GenX) | 3.2400<br>3.3850 | 3.4440<br>3.4890 | 4.0163 | 3.0865 | 3.1491 | AveID | | 3.4014 | | | | 9.1 | | 35.0 | | | |
| Perfluoroheptanoic acid (PFHpA) | 1.2984<br>1.0384 | 0.9988<br>1.0329 | 1.0376 | 1.0673 | 1.1322 | AveID | | 1.0865 | | | | 9.4 | | 35.0 | | | |
| Perfluorohexanesulfonic acid (PFHxS) | 1.3241<br>1.0655 | 1.1881<br>1.0827 | 1.0477 | 0.9728 | 1.1375 | AveID | | 1.1169 | | | | 10.2 | | 35.0 | | | |
| Adona | 3.5522<br>3.5314 | 3.4555<br>2.9068 | 3.8872 | 3.6399 | 3.9734 | AveID | | 3.5638 | | | | 9.7 | | 50.0 | | | |
| 6:2FTS | 2.3438<br>1.7979 | 2.0189<br>1.8129 | 1.7183 | 1.6359 | 1.7453 | AveID | | 1.8676 | | | | 12.9 | | 35.0 | | | |
| Perfluorooctanoic acid (PFOA) | 1.2974<br>1.2077 | 1.3221<br>1.1286 | 1.1178 | 1.0855 | 1.1415 | AveID | | 1.1858 | | | | 7.8 | | 35.0 | | | |
| Perfluoroheptanesulfonic Acid (PFHpS) | 1.3460<br>1.4008 | 1.2410<br>1.2764 | 1.3969 | 1.2914 | 1.3764 | AveID | | 1.3327 | | | | 4.8 | | 50.0 | | | |
| Perfluorooctanesulfonic acid (PFOS) | 1.0668<br>1.1855 | 1.4058<br>1.1086 | 1.0916 | 1.0163 | 1.1239 | AveID | | 1.1426 | | | | 11.1 | | 35.0 | | | |

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

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

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1 Analy Batch No.: 215537

SDG No.:

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

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

| ANALYTE | RRF | | | | | CURVE TYPE | COEFFICIENT | | | # | MIN RRF | %RSD | # | MAX %RSD | R^2 OR COD | # | MIN R^2 OR COD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LVL 1<br>LVL 6 | LVL 2<br>LVL 7 | LVL 3 | LVL 4 | LVL 5 | | B | M1 | M2 | | | | | | | | |
| Perfluorononanoic acid (PFNA) | 1.0412<br>1.0598 | 0.9957<br>1.0389 | 1.0105 | 1.0188 | 1.0382 | AveID | | 1.0290 | | | | 2.1 | | 35.0 | | | |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate | 1.8406<br>1.9724 | 1.7118<br>1.8141 | 1.9877 | 1.8276 | 1.9356 | AveID | | 1.8700 | | | | 5.3 | | 50.0 | | | |
| Perfluorooctane Sulfonamide (FOSA) | 0.9593<br>0.9958 | 0.9707<br>0.9722 | 1.0050 | 0.9840 | 1.0271 | AveID | | 0.9877 | | | | 2.4 | | 35.0 | | | |
| Perfluorononanesulfonic acid (PFNS) | 0.8034<br>0.8395 | 0.8351<br>0.7725 | 0.7909 | 0.7579 | 0.8131 | AveID | | 0.8018 | | | | 3.8 | | 50.0 | | | |
| 8:2FTS | 1.5521<br>1.3396 | 1.3434<br>1.3264 | 1.2292 | 1.3193 | 1.3317 | AveID | | 1.3488 | | | | 7.3 | | 35.0 | | | |
| Perfluorodecanoic acid (PFDA) | 0.8917<br>1.0092 | 0.9828<br>1.0289 | 1.0404 | 0.9695 | 1.0022 | AveID | | 0.9893 | | | | 5.0 | | 35.0 | | | |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 0.9703<br>1.1179 | 1.1967<br>1.0681 | 1.0177 | 0.9690 | 1.0392 | AveID | | 1.0541 | | | | 7.8 | | 35.0 | | | |
| Perfluorodecanesulfonic acid (PFDS) | 0.7021<br>0.7404 | 0.7150<br>0.6562 | 0.6887 | 0.6714 | 0.6827 | AveID | | 0.6938 | | | | 4.1 | | 50.0 | | | |
| Perfluoroundecanoic acid (PFUnA) | 0.7928<br>0.8564 | 0.8601<br>0.8106 | 0.7503 | 0.7569 | 0.7893 | AveID | | 0.8023 | | | | 5.4 | | 35.0 | | | |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 0.8147<br>0.9883 | 0.9741<br>0.9090 | 0.9478 | 0.8654 | 0.9206 | AveID | | 0.9171 | | | | 6.7 | | 35.0 | | | |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate | 2.8436<br>3.0257 | 2.9980<br>2.5337 | 2.9592 | 2.8831 | 3.0740 | AveID | | 2.9025 | | | | 6.2 | | 50.0 | | | |
| Perfluorododecanoic acid (PFDoA) | 1.2686<br>1.1003 | 1.0370<br>1.0802 | 0.9877 | 1.0013 | 1.0904 | AveID | | 1.0808 | | | | 8.7 | | 35.0 | | | |
| Perfluorotridecanoic Acid (PFTriA) | 1.1081<br>1.2301 | 1.0821<br>1.2394 | 1.1038 | 1.1196 | 1.2088 | AveID | | 1.1560 | | | | 5.8 | | 50.0 | | | |
| Perfluorotetradecanoic acid (PFTeA) | 0.2350<br>0.2635 | 0.2284<br>0.2529 | 0.2585 | 0.2561 | 0.2538 | AveID | | 0.2497 | | | | 5.2 | | 50.0 | | | |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | 1.7643<br>0.9483 | 1.3416<br>0.9871 | 1.0187 | 0.9316 | 0.9677 | L2ID | 0.0203 | 0.9468 | | | | | | | 0.9990 | | 0.9900 |
| Perfluoro-n-octadecanoic acid (PFODA) | 0.9253<br>1.0321 | 0.9519<br>0.9634 | 1.0684 | 0.9831 | 1.0254 | AveID | | 0.9928 | | | | 5.1 | | 50.0 | | | |
| 13C4 PFBA | 1.3443<br>1.4161 | 1.3814<br>1.4288 | 1.3330 | 1.4005 | 1.3694 | Ave | | 1.3819 | | | | 2.6 | | 50.0 | | | |
| 13C5 PFPeA | 0.8934<br>0.8816 | 0.8827<br>0.9186 | 0.8869 | 0.9245 | 0.9080 | Ave | | 0.8994 | | | | 2.0 | | 50.0 | | | |
| 13C3-PFBS | 0.0196<br>0.0210 | 0.0203<br>0.0210 | 0.0208 | 0.0215 | 0.0201 | Ave | | 0.0206 | | | | 3.1 | | 50.0 | | | |
| M2-4:2FTS | 0.1565<br>0.1581 | 0.1593<br>0.1522 | 0.1552 | 0.1572 | 0.1627 | Ave | | 0.1573 | | | | 2.1 | | 50.0 | | | |

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

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

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1 Analy Batch No.: 215537

SDG No.:

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

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

| ANALYTE | RRF | | | | | CURVE TYPE | COEFFICIENT | | | # | MIN RRF | %RSD | # | MAX %RSD | R^2 OR COD | # | MIN R^2 OR COD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LVL 1<br>LVL 6 | LVL 2<br>LVL 7 | LVL 3 | LVL 4 | LVL 5 | | B | M1 | M2 | | | | | | | | |
| 13C2 PFHxA | 0.9740<br>1.0498 | 0.9825<br>0.9580 | 0.9718 | 0.9949 | 1.0104 | Ave | | 0.9916 | | | | 3.1 | | 50.0 | | | |
| 13C3 HFPO-DA | 0.0503<br>0.0487 | 0.0485<br>0.0516 | 0.0434 | 0.0506 | 0.0526 | Ave | | 0.0494 | | | | 6.1 | | 50.0 | | | |
| 13C4-PFHpA | 0.9616<br>1.0017 | 0.9462<br>0.9550 | 0.9331 | 0.9376 | 0.9381 | Ave | | 0.9533 | | | | 2.5 | | 50.0 | | | |
| 18O2 PFHxS | 1.2098<br>1.2100 | 1.1723<br>1.1489 | 1.1820 | 1.2367 | 1.1603 | Ave | | 1.1886 | | | | 2.6 | | 50.0 | | | |
| M2-6:2FTS | 0.2228<br>0.2146 | 0.2271<br>0.2099 | 0.2360 | 0.2204 | 0.2114 | Ave | | 0.2203 | | | | 4.2 | | 50.0 | | | |
| 13C4 PFOA | 0.9390<br>0.9042 | 0.9446<br>0.9340 | 0.9398 | 0.9524 | 0.9466 | Ave | | 0.9372 | | | | 1.7 | | 50.0 | | | |
| 13C4 PFOS | 0.8082<br>0.8127 | 0.8347<br>0.8617 | 0.7901 | 0.8588 | 0.8139 | Ave | | 0.8257 | | | | 3.3 | | 50.0 | | | |
| 13C5 PFNA | 0.7800<br>0.7950 | 0.8035<br>0.7975 | 0.7751 | 0.7957 | 0.8039 | Ave | | 0.7930 | | | | 1.4 | | 50.0 | | | |
| 13C8 FOSA | 1.1429<br>1.1665 | 1.1806<br>1.1851 | 1.1447 | 1.1790 | 1.1660 | Ave | | 1.1664 | | | | 1.5 | | 50.0 | | | |
| M2-8:2FTS | 0.2568<br>0.2599 | 0.2742<br>0.2425 | 0.2627 | 0.2471 | 0.2500 | Ave | | 0.2562 | | | | 4.2 | | 50.0 | | | |
| 13C2 PFDA | 0.6810<br>0.6901 | 0.6652<br>0.6633 | 0.6388 | 0.6714 | 0.6787 | Ave | | 0.6698 | | | | 2.5 | | 50.0 | | | |
| d3-NMeFOSAA | 0.3500<br>0.3525 | 0.3448<br>0.3896 | 0.3473 | 0.3638 | 0.3600 | Ave | | 0.3583 | | | | 4.3 | | 50.0 | | | |
| d5-NEtFOSAA | 0.3723<br>0.3641 | 0.3815<br>0.3697 | 0.3668 | 0.3972 | 0.3805 | Ave | | 0.3760 | | | | 3.0 | | 50.0 | | | |
| 13C2 PFUnA | 0.5415<br>0.5224 | 0.5653<br>0.5618 | 0.5325 | 0.5567 | 0.5471 | Ave | | 0.5468 | | | | 2.9 | | 50.0 | | | |
| 13C2 PFDoA | 0.6018<br>0.5961 | 0.5995<br>0.6273 | 0.6006 | 0.6258 | 0.6097 | Ave | | 0.6087 | | | | 2.1 | | 50.0 | | | |
| 13C2-PFTeDA | 0.7165<br>0.7795 | 0.7698<br>0.8064 | 0.7572 | 0.7919 | 0.7914 | Ave | | 0.7733 | | | | 3.8 | | 50.0 | | | |
| 13C2-PFHxDA | 1.1423<br>1.2360 | 1.1704<br>1.2118 | 1.1297 | 1.2003 | 1.2668 | Ave | | 1.1939 | | | | 4.2 | | 50.0 | | | |

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

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

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1 Analy Batch No.: 215537

SDG No.:

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

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

Calibration Files:

| LEVEL: | LAB SAMPLE ID: | LAB FILE ID: |
|---|---|---|
| Level 1 | IC 320-215537/2 | 2018.03.29A_ICALB_002.d |
| Level 2 | IC 320-215537/3 | 2018.03.29A_ICALB_003.d |
| Level 3 | IC 320-215537/4 | 2018.03.29A_ICALB_004.d |
| Level 4 | IC 320-215537/5 | 2018.03.29A_ICALB_005.d |
| Level 5 | IC 320-215537/6 | 2018.03.29A_ICALB_006.d |
| Level 6 | IC 320-215537/7 | 2018.03.29A_ICALB_007.d |
| Level 7 | IC 320-215537/8 | 2018.03.29A_ICALB_008.d |

| ANALYTE | IS REF | CURVE TYPE | RESPONSE | | | | | CONCENTRATION (NG/ML) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LVL 1<br>LVL 6 | LVL 2<br>LVL 7 | LVL 3 | LVL 4 | LVL 5 | LVL 1<br>LVL 6 | LVL 2<br>LVL 7 | LVL 3 | LVL 4 | LVL 5 |
| Perfluorobutanoic acid (PFBA) | | AveID | 54978<br>12187200 | 114587<br>21580046 | 553955 | 2290620 | 5777307 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluoropentanoic acid (PFPeA) | | AveID | 50084<br>9830479 | 99196<br>17152403 | 480043 | 1931372 | 4732902 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluorobutanesulfonic acid (PFBS) | | AveID | 61417<br>13230767 | 131921<br>22689760 | 655502 | 2631669 | 6580985 | 0.0221<br>4.42 | 0.0442<br>8.84 | 0.221 | 0.884 | 2.21 |
| 4:2 FTS | | AveID | 14980<br>3033560 | 34332<br>5058050 | 143786 | 566727 | 1487518 | 0.0234<br>4.67 | 0.0467<br>9.34 | 0.234 | 0.934 | 2.34 |
| Perfluorohexanoic acid (PFHxA) | | AveID | 45998<br>9564151 | 91036<br>16338328 | 449634 | 1763768 | 4676733 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluoropentanesulfonic acid (PFPeS) | | AveID | 62066<br>13067667 | 118105<br>21196987 | 604278 | 2554091 | 6467251 | 0.0235<br>4.69 | 0.0469<br>9.38 | 0.235 | 0.938 | 2.35 |
| HFPO-DA (GenX) | | AveID | 7478<br>1481837 | 15350<br>2889144 | 79234 | 282149 | 729503 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluoroheptanoic acid (PFHpA) | | AveID | 57274<br>9347366 | 86879<br>15839255 | 440174 | 1808460 | 4677284 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluorohexanesulfonic acid (PFHxS) | | AveID | 66874<br>10543701 | 116520<br>18176626 | 512387 | 1978319 | 5288566 | 0.0228<br>4.55 | 0.0455<br>9.10 | 0.228 | 0.910 | 2.28 |
| Adona | | AveID | 131706<br>25789461 | 265166<br>40218776 | 1396340 | 5648777 | 14240170 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| 6:2FTS | | AveID | 22713<br>3287357 | 39956<br>5791627 | 174781 | 617577 | 1539946 | 0.0237<br>4.74 | 0.0474<br>9.48 | 0.237 | 0.948 | 2.37 |
| Perfluorooctanoic acid (PFOA) | | AveID | 55886<br>9813194 | 114806<br>16926232 | 477643 | 1868120 | 4758293 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluoroheptanesulfonic Acid (PFHpS) | | AveID | 47511<br>9738630 | 90656<br>16813478 | 477719 | 1907896 | 4696005 | 0.0238<br>4.76 | 0.0476<br>9.52 | 0.238 | 0.952 | 2.38 |
| Perfluorooctanesulfonic acid (PFOS) | | AveID | 36705<br>8034226 | 100111<br>14234234 | 363900 | 1463610 | 3738022 | 0.0232<br>4.64 | 0.0464<br>9.28 | 0.232 | 0.928 | 2.32 |
| Perfluorononanoic acid (PFNA) | | AveID | 37255<br>7571474 | 73551<br>13303148 | 356101 | 1464985 | 3675243 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |

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

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1 Analy Batch No.: 215537

SDG No.:

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

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

| ANALYTE | IS REF | CURVE TYPE | RESPONSE | | | | | CONCENTRATION (NG/ML) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LVL 1<br>LVL 6 | LVL 2<br>LVL 7 | LVL 3 | LVL 4 | LVL 5 | LVL 1<br>LVL 6 | LVL 2<br>LVL 7 | LVL 3 | LVL 4 | LVL 5 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate | | AveID | 63605<br>13425151 | 122429<br>23393631 | 665453 | 2643424 | 6465289 | 0.0233<br>4.66 | 0.0466<br>9.32 | 0.233 | 0.932 | 2.33 |
| Perfluorooctane Sulfonamide (FOSA) | | AveID | 50297<br>10438342 | 105346<br>18498081 | 523091 | 2096455 | 5273555 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluorononanesulfonic acid (PFNS) | | AveID | 28595<br>5885424 | 61518<br>10261449 | 272737 | 1129121 | 2797665 | 0.0240<br>4.80 | 0.0480<br>9.60 | 0.240 | 0.960 | 2.40 |
| 8:2FTS | | AveID | 17515<br>2997433 | 32444<br>4947631 | 140627 | 564315 | 1404701 | 0.0240<br>4.79 | 0.0479<br>9.58 | 0.240 | 0.958 | 2.40 |
| Perfluorodecanoic acid (PFDA) | | AveID | 27858<br>6258242 | 60106<br>10958309 | 302194 | 1176291 | 2995028 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | | AveID | 15580<br>3541055 | 37929<br>6681300 | 160694 | 637079 | 1647643 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluorodecanesulfonic acid (PFDS) | | AveID | 25096<br>5212375 | 52893<br>8752766 | 238488 | 1004519 | 2358750 | 0.0241<br>4.82 | 0.0482<br>9.64 | 0.241 | 0.964 | 2.41 |
| Perfluoroundecanoic acid (PFUnA) | | AveID | 19693<br>4020256 | 44699<br>7311434 | 181675 | 761440 | 1901518 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | | AveID | 13913<br>3233549 | 34166<br>5395434 | 158064 | 621160 | 1542349 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate | | AveID | 99320<br>20815228 | 216712<br>33023539 | 1001338 | 4214763 | 10377874 | 0.0236<br>4.71 | 0.0471<br>9.42 | 0.236 | 0.942 | 2.36 |
| Perfluorododecanoic acid (PFDoA) | | AveID | 35020<br>5893687 | 57155<br>10879941 | 269716 | 1132386 | 2927481 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluorotridecanoic Acid (PFTriA) | | AveID | 30591<br>6588893 | 59640<br>12483957 | 301420 | 1266253 | 3245349 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluorotetradecanoic acid (PFTeA) | | AveID | 7726<br>1845416 | 16166<br>3274341 | 88991 | 366508 | 884583 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | | L2ID | 92453<br>10532699 | 144357<br>19206042 | 523255 | 2020619 | 5398203 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| Perfluoro-n-octadecanoic acid (PFODA) | | AveID | 48490<br>11463437 | 102429<br>18744405 | 548804 | 2132452 | 5719746 | 0.0250<br>5.00 | 0.0500<br>10.0 | 0.250 | 1.00 | 2.50 |
| 13C4 PFBA | 13PFOA | Ave | 6166712<br>6363039 | 6349810<br>5735604 | 6060888 | 6326878 | 6030203 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 13C5 PFPeA | 13PFOA | Ave | 4098537<br>3961451 | 4057226<br>3687266 | 4032497 | 4176477 | 3998575 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 13C3-PFBS | 13PFOA | Ave | 83555<br>87650 | 86826<br>78326 | 87970 | 90179 | 82172 | 2.33<br>2.33 | 2.33<br>2.33 | 2.33 | 2.33 | 2.33 |
| M2-4:2FTS | 13PFOA | Ave | 670675<br>663538 | 683814<br>570582 | 659047 | 663350 | 669149 | 2.34<br>2.34 | 2.34<br>2.34 | 2.34 | 2.34 | 2.34 |
| 13C2 PFHxA | 13PFOA | Ave | 4468019<br>4716939 | 4516262<br>3845737 | 4418534 | 4494490 | 4449369 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 13C3 HFPO-DA | 13PFOA | Ave | 230803<br>218882 | 222854<br>207020 | 197281 | 228536 | 231658 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |

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

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1 Analy Batch No.: 215537

SDG No.:

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

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

| ANALYTE | IS REF | CURVE TYPE | RESPONSE | | | | | CONCENTRATION (NG/ML) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LVL 1<br>LVL 6 | LVL 2<br>LVL 7 | LVL 3 | LVL 4 | LVL 5 | LVL 1<br>LVL 6 | LVL 2<br>LVL 7 | LVL 3 | LVL 4 | LVL 5 |
| 13C4-PFHpA | 13PF<br>OA | Ave | 4411051<br>4500718 | 4349189<br>3833624 | 4242345 | 4235886 | 4131012 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 18O2 PFHxS | 13PF<br>OA | Ave | 5250229<br>5143358 | 5097412<br>4362929 | 5084038 | 5285294 | 4833301 | 2.37<br>2.37 | 2.37<br>2.37 | 2.37 | 2.37 | 2.37 |
| M2-6:2FTS | 13PF<br>OA | Ave | 971099<br>916140 | 991613<br>800357 | 1019321 | 945777 | 884202 | 2.38<br>2.38 | 2.38<br>2.38 | 2.38 | 2.38 | 2.38 |
| 13C4 PFOA | 13PF<br>OA | Ave | 4307414<br>4062703 | 4341966<br>3749304 | 4272950 | 4302583 | 4168394 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 13C4 PFOS | 13PF<br>OA | Ave | 3544609<br>3490802 | 3668029<br>3306882 | 3434108 | 3709075 | 3426212 | 2.39<br>2.39 | 2.39<br>2.39 | 2.39 | 2.39 | 2.39 |
| 13C5 PFNA | 13PF<br>OA | Ave | 3578216<br>3572058 | 3693528<br>3201114 | 3523980 | 3594883 | 3540108 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 13C8 FOSA | 13PF<br>OA | Ave | 5242954<br>5241388 | 5426551<br>4756992 | 5204720 | 5326321 | 5134426 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| M2-8:2FTS | 13PF<br>OA | Ave | 1128441<br>1118796 | 1207568<br>932507 | 1144081 | 1069323 | 1054813 | 2.40<br>2.40 | 2.40<br>2.40 | 2.40 | 2.40 | 2.40 |
| 13C2 PFDA | 13PF<br>OA | Ave | 3124013<br>3100672 | 3057872<br>2662530 | 2904523 | 3033191 | 2988519 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| d3-NMeFOSAA | 13PF<br>OA | Ave | 1605692<br>1583848 | 1584763<br>1563764 | 1579046 | 1643657 | 1585449 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| d5-NEtFOSAA | 13PF<br>OA | Ave | 1707772<br>1635848 | 1753746<br>1483924 | 1667774 | 1794427 | 1675412 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 13C2 PFUnA | 13PF<br>OA | Ave | 2484047<br>2347134 | 2598573<br>2255059 | 2421277 | 2514905 | 2409033 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 13C2 PFDoA | 13PF<br>OA | Ave | 2760551<br>2678243 | 2755722<br>2518124 | 2730672 | 2827344 | 2684707 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 13C2-PFTeDA | 13PF<br>OA | Ave | 3287077<br>3502295 | 3538364<br>3237082 | 3442831 | 3577558 | 3484985 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |
| 13C2-PFHxDA | 13PF<br>OA | Ave | 5240268<br>5553497 | 5380000<br>4864202 | 5136479 | 5422645 | 5578235 | 2.50<br>2.50 | 2.50<br>2.50 | 2.50 | 2.50 | 2.50 |

Curve Type Legend:

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

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 29-Mar-2018 17:27:24 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:47:22 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 11:46:18

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.430 | 1.436 | -0.006 | 1.000 | 6166712 | 2.43 | | 97.3 | 50338 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.430 | 1.437 | -0.007 | 1.000 | 54978 | 0.0241 | | 96.5 | 19.5 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.702 | 1.702 | 0.0 | 0.556 | 4098537 | 2.48 | | 99.3 | 99404 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.702 | 1.706 | -0.004 | 1.000 | 50084 | 0.0255 | | 102 | 18.1 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.738 | 1.738 | 0.0 | 1.000 | 83555 | 2.21 | | 95.1 | 487 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.738 | 1.742 | -0.004 | 1.000 | 61417 | 0.0217 | | 98.0 | 42.6 | |
| 298.90 > 99.00 | 1.738 | 1.742 | -0.004 | 1.000 | 27306 | | 2.25(1.25-3.74) | 98.0 | 43.5 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.948 | 1.955 | -0.007 | 1.000 | 14980 | 0.0242 | | 103 | 890 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.948 | 1.955 | -0.007 | 1.000 | 670675 | 2.32 | | 99.5 | 10023 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.991 | 1.991 | 0.001 | 1.000 | 4468019 | 2.46 | | 98.2 | 159424 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.991 | 1.992 | -0.001 | 1.000 | 45998 | 0.0252 | | 101 | 64.0 | |
| 313.00 > 119.00 | 1.991 | 1.992 | -0.001 | 1.000 | 6508 | | 7.07(5.03-15.10) | 101 | 86.2 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.014 | 2.013 | 0.001 | 1.000 | 62066 | 0.0243 | | 103 | 2728 | |
| 349.00 > 99.00 | 2.014 | 2.013 | 0.001 | 1.000 | 19424 | | 3.20(1.36-4.07) | 103 | 499 | |
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.093 | 2.092 | 0.001 | 1.000 | 230803 | 2.55 | | 102 | 3834 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.093 | 2.092 | 0.001 | 1.000 | 7478 | 0.0238 | | 95.3 | 65.5 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.319 | 2.326 | -0.007 | 1.000 | 4411051 | 2.52 | | 101 | 104151 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | R |
| 363.00 > 319.00 | 2.332 | 2.327 | 0.005 | 1.006 | 57274 | 0.0299 | | 120 | 43.4 | R |
| 363.00 > 169.00 | 2.319 | 2.327 | -0.008 | 1.000 | 14474 | | 3.96(1.13-3.40) | 120 | 39.5 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.332 | 2.339 | -0.007 | 0.994 | 66874 | 0.0270 | | 119 | 321 | |
| 399.00 > 99.00 | 2.345 | 2.339 | 0.006 | 1.000 | 24503 | | 2.73(1.50-4.49) | 119 | 141 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.345 | 2.340 | 0.005 | 1.000 | 5250229 | 2.41 | | 102 | 72933 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.372 | 2.372 | 0.0 | 1.000 | 131706 | 0.0249 | | 99.7 | 3848 | |
| 377.00 > 85.00 | 2.372 | 2.372 | 0.0 | 1.000 | 78395 | | 1.68(0.84-2.53) | 99.7 | 1353 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.667 | 2.664 | 0.003 | 1.000 | 971099 | 2.40 | | 101 | 36585 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.667 | 2.664 | 0.003 | 1.000 | 22713 | 0.0297 | | 126 | 103 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.690 | 2.688 | 0.002 | 1.000 | 4307414 | 2.50 | | 100 | 62635 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.690 | 2.689 | 0.001 | | 4587408 | 2.50 | | | 82099 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.690 | 2.690 | 0.0 | 1.000 | 55886 | 0.0274 | | 109 | 15.6 | |
| 413.00 > 169.00 | 2.690 | 2.690 | 0.0 | 1.000 | 29511 | | 1.89(0.84-2.52) | 109 | 137 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.697 | 2.695 | 0.002 | 1.000 | 47511 | 0.0240 | | 101 | 2228 | |
| 449.00 > 99.00 | 2.690 | 2.695 | -0.005 | 0.997 | 13527 | | 3.51(1.94-5.82) | 101 | 344 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.063 | 3.060 | 0.003 | 1.000 | 3544609 | 2.34 | | 97.9 | 57925 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.063 | 3.060 | 0.003 | 1.000 | 36705 | 0.0217 | | 93.4 | 95.8 | |
| 499.00 > 99.00 | 3.056 | 3.060 | -0.004 | 0.998 | 9133 | | 4.02(2.31-6.93) | 93.4 | 90.5 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.063 | 3.061 | 0.002 | 1.000 | 3578216 | 2.46 | | 98.4 | 65837 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.063 | 3.064 | -0.001 | 1.000 | 37255 | 0.0253 | | 101 | 33.6 | |
| 463.00 > 169.00 | 3.063 | 3.064 | -0.001 | 1.000 | 8504 | | 4.38(1.90-5.69) | 101 | 156 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.270 | 3.272 | -0.002 | 1.000 | 63605 | 0.0229 | | 98.4 | 1085 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.393 | 3.388 | 0.005 | 1.000 | 5242954 | 2.45 | | 98.0 | 50202 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.393 | 3.389 | 0.004 | 1.000 | 50297 | 0.0243 | | 97.1 | 2125 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.412 | 3.409 | 0.003 | 1.000 | 28595 | 0.0240 | | 100 | 1160 | |
| 549.00 > 99.00 | 3.412 | 3.409 | 0.003 | 1.000 | 11257 | | 2.54(1.33-3.97) | 100 | 233 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.412 | 3.413 | -0.001 | 1.000 | 1128441 | 2.40 | | 100 | 46885 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.412 | 3.415 | -0.003 | 1.000 | 17515 | 0.0276 | | 115 | 142 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.421 | 3.423 | -0.002 | 1.000 | 3124013 | 2.54 | | 102 | 34604 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.430 | 3.427 | 0.003 | 1.003 | 27858 | 0.0225 | | 90.1 | 153 | |
| 513.00 > 169.00 | 3.421 | 3.427 | -0.006 | 1.000 | 5765 | | 4.83(2.36-7.09) | 90.1 | 172 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.579 | 3.578 | 0.001 | 1.000 | 1605692 | 2.44 | | 97.7 | 24728 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.579 | 3.581 | -0.002 | 1.000 | 15580 | 0.0230 | | 92.0 | 148 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.743 | 3.738 | 0.005 | 1.000 | 25096 | 0.0244 | | 101 | 720 | |
| 599.00 > 99.00 | 3.733 | 3.738 | -0.005 | 0.997 | 6754 | | 3.72(1.39-4.16) | 101 | 273 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.753 | 3.749 | 0.004 | 1.000 | 1707772 | 2.48 | | 99.0 | 4645 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.753 | 3.753 | 0.0 | 1.000 | 2484047 | 2.48 | | 99.0 | 53924 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.764 | 3.755 | 0.009 | 1.003 | 13913 | 0.0222 | | 88.8 | 325 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.753 | 3.755 | -0.002 | 1.000 | 19693 | 0.0247 | | 98.8 | 88.1 | |
| 563.00 > 169.00 | 3.753 | 3.755 | -0.002 | 1.000 | 6256 | | 3.15(2.12-6.36) | 98.8 | 230 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.910 | 3.910 | 0.0 | 1.000 | 99320 | 0.0231 | | 98.0 | 3306 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.051 | 4.052 | -0.001 | 1.000 | 35020 | 0.0293 | | 117 | 27.1 | |
| 613.00 > 169.00 | 4.051 | 4.052 | -0.001 | 1.000 | 6979 | | 5.02(2.13-6.40) | 117 | 123 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.051 | 4.052 | -0.001 | 1.000 | 2760551 | 2.47 | | 98.9 | 25063 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.319 | 4.316 | 0.003 | 1.000 | 30591 | 0.0240 | | 95.9 | 11.5 | |
| 663.00 > 169.00 | 4.308 | 4.316 | -0.008 | 0.997 | 9882 | | 3.10(1.25-3.76) | 95.9 | 176 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.562 | 4.558 | 0.004 | 1.000 | 3287077 | 2.32 | | 92.7 | 19784 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.562 | 4.558 | 0.004 | 1.000 | 7726 | 0.0235 | | 94.1 | 147 | |
| 713.00 > 219.00 | 4.552 | 4.558 | -0.006 | 0.998 | 7671 | | 1.01(0.71-2.13) | 94.1 | 202 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.974 | 4.977 | -0.003 | 1.000 | 92453 | 0.0252 | | 101 | 21.2 | |
| 813.00 > 169.00 | 4.974 | 4.977 | -0.003 | 1.000 | 16102 | | 5.74(2.86-8.58) | 101 | 164 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.974 | 4.977 | -0.003 | 1.000 | 5240268 | 2.39 | | 95.7 | 13910 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.342 | 5.344 | -0.002 | 1.000 | 48490 | 0.0233 | | 93.2 | 7.8 | |
| 913.00 > 169.00 | 5.342 | 5.344 | -0.002 | 1.000 | 5832 | | 8.31(3.83-11.48) | 93.2 | 96.3 | |

## QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

## Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:47:25 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_002.d

Injection Date: 29-Mar-2018 17:27:24 Instrument ID: A8_N

Lims ID: IC L1 Full

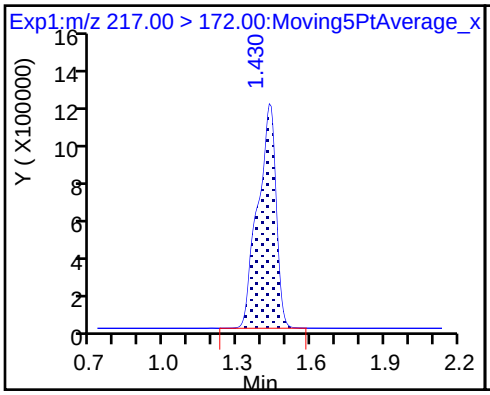
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

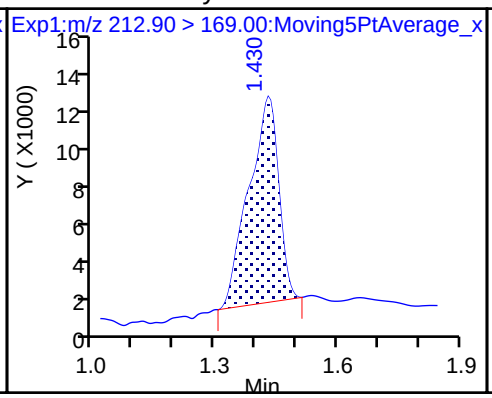
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

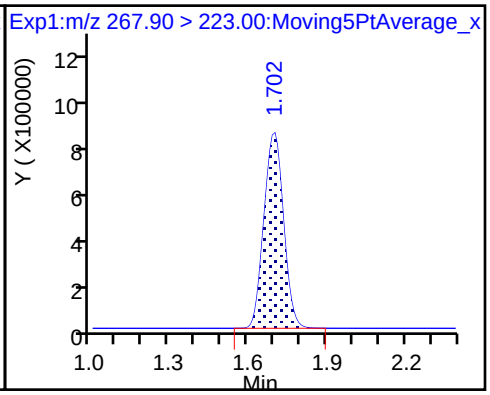
D 1 13C4 PFBA



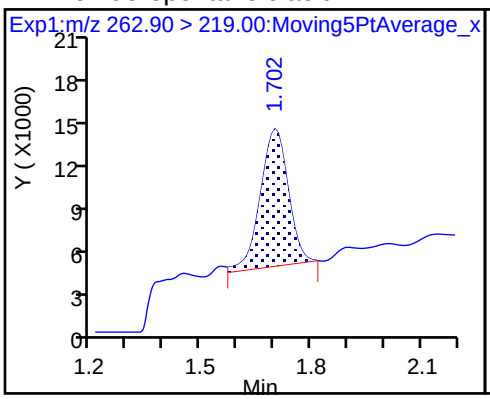

2 Perfluorobutyric acid



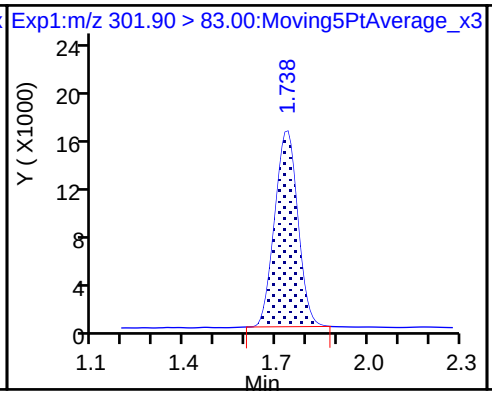

D 3 13C5-PFPeA



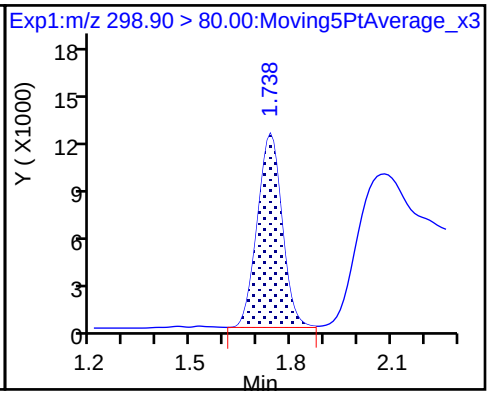

4 Perfluoropentanoic acid



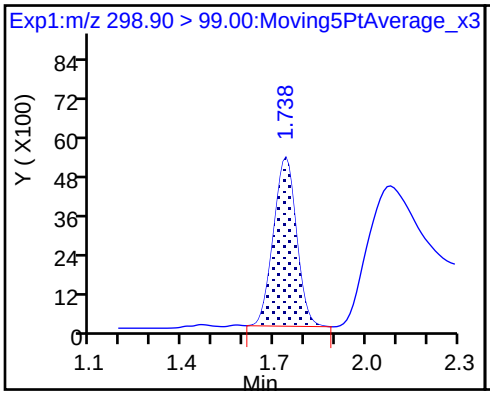

D 47 13C3-PFBS



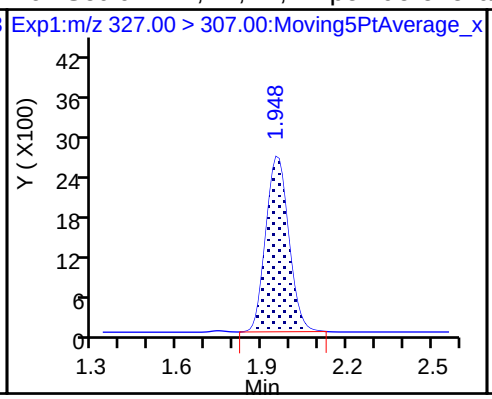

5 Perfluorobutanesulfonic acid



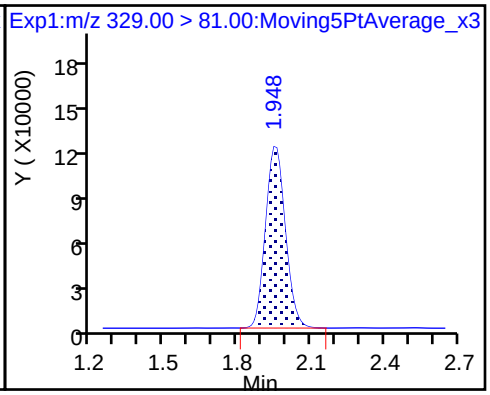

5 Perfluorobutanesulfonic acid



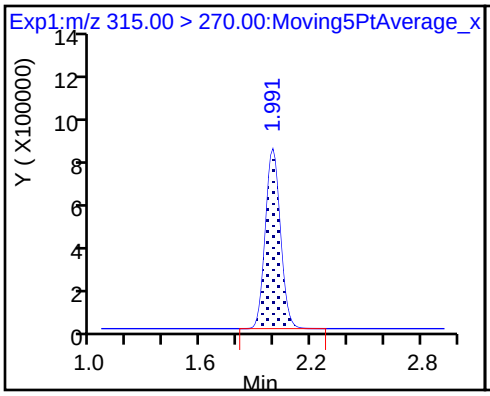

61 Sodium 1H,1H,2H,2H-perfluorohexane



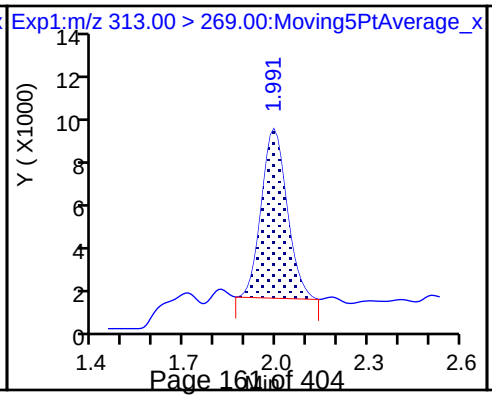

D 60 M2-4:2FTS



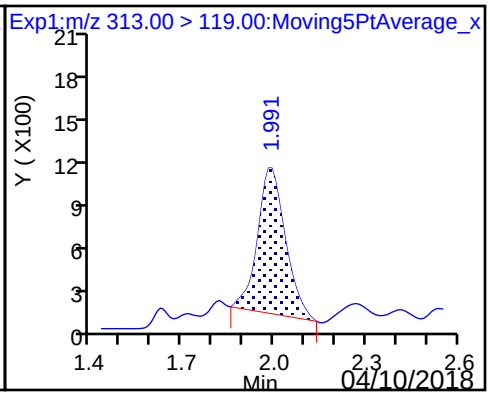

D 7 13C2 PFHxA



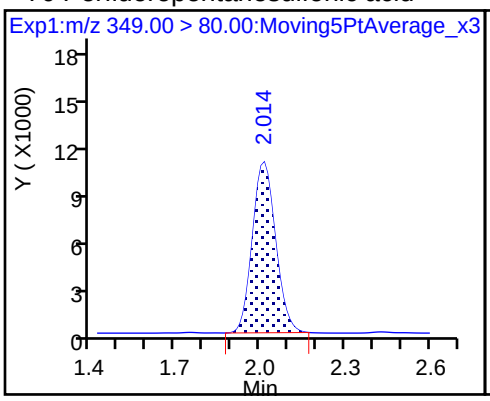

6 Perfluorohexanoic acid



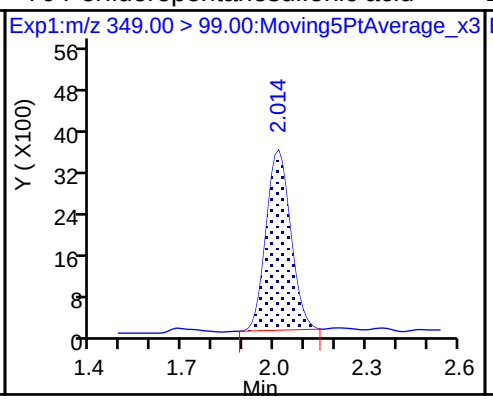

6 Perfluorohexanoic acid



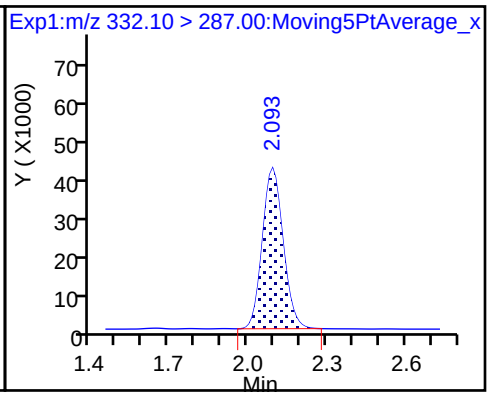
70 Perfluoropentanesulfonic acid



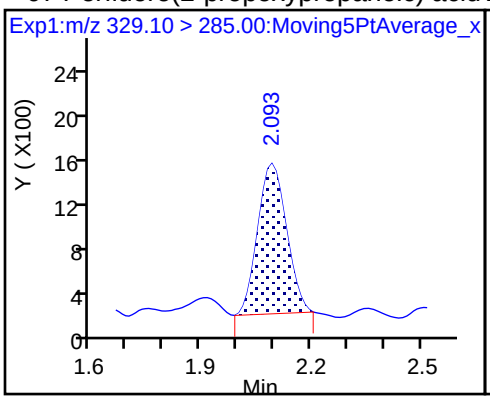

70 Perfluoropentanesulfonic acid



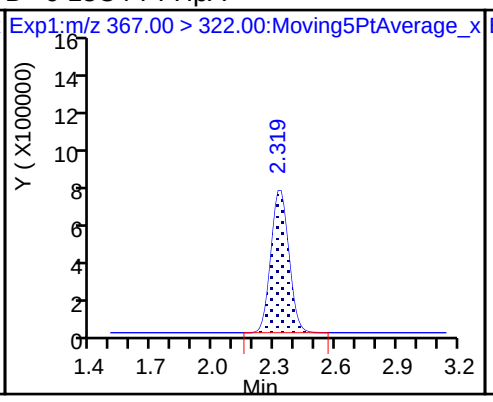

D 64 13C3 HFPO-DA



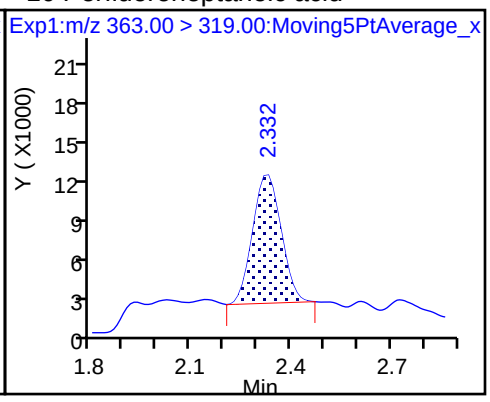

67 Perfluoro(2-propoxypropanoic) acid



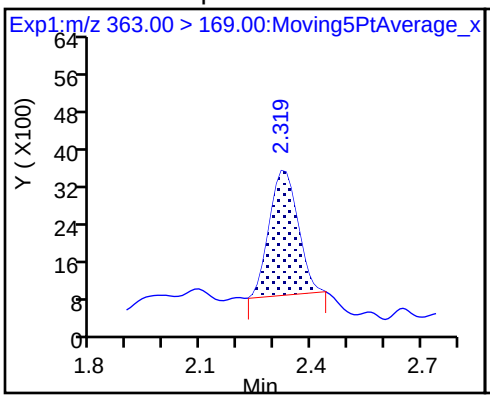

D 9 13C4-PFHpA



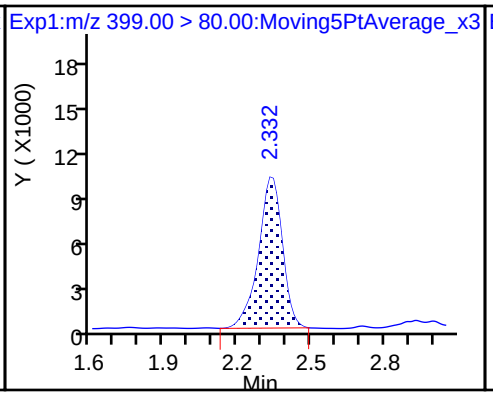

10 Perfluoroheptanoic acid



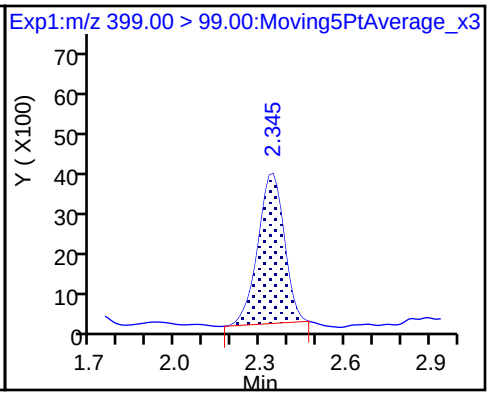

10 Perfluoroheptanoic acid



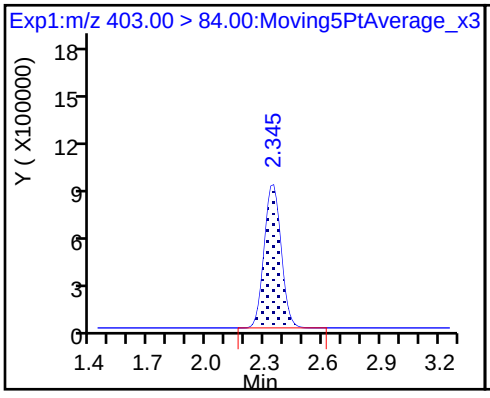

8 Perfluorohexanesulfonic acid



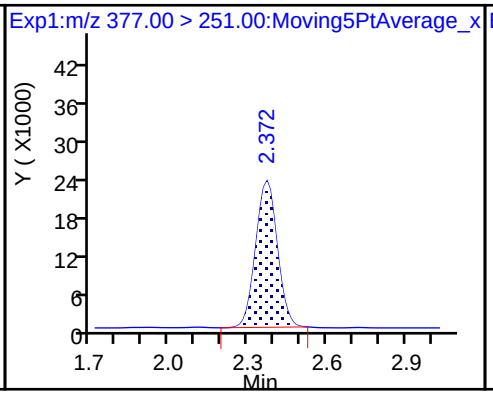

8 Perfluorohexanesulfonic acid



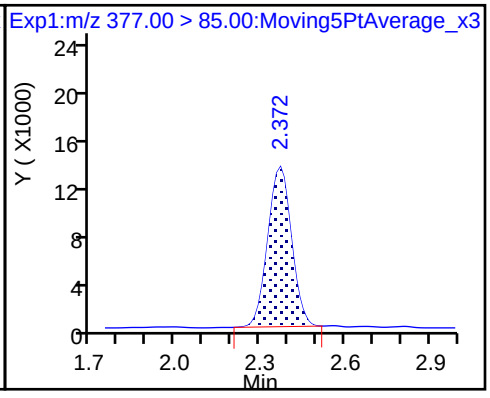

D 11 18O2 PFHxS



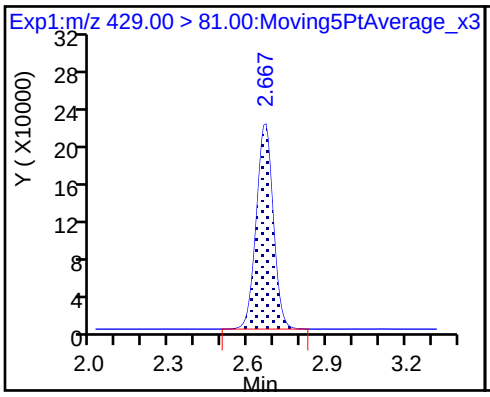

65 Adona



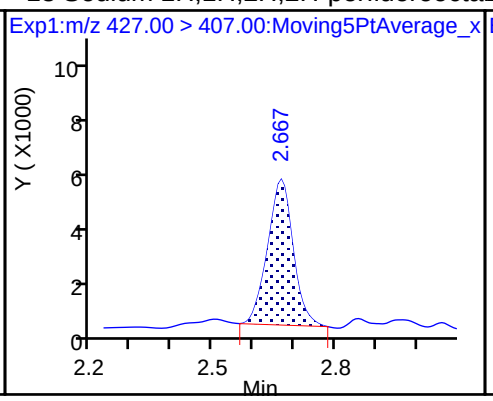

65 Adona



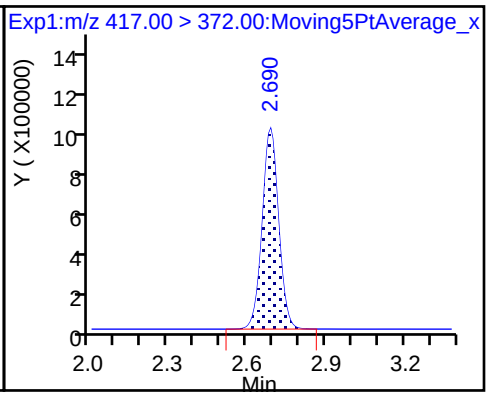
D 12 M2-6:2FTS



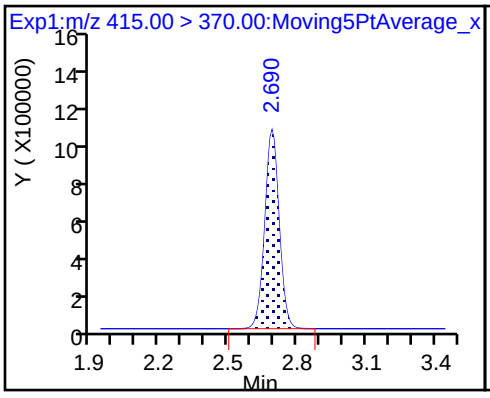

13 Sodium 1H,1H,2H,2H-perfluorooctane



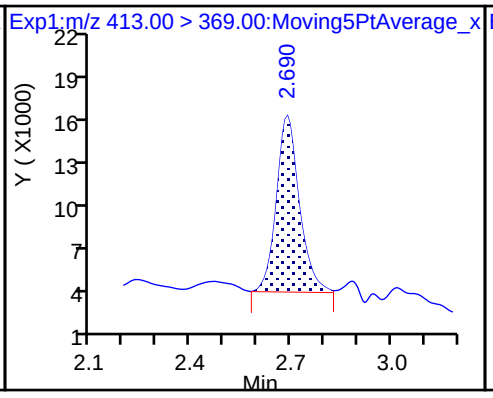

D 14 13C4 PFOA



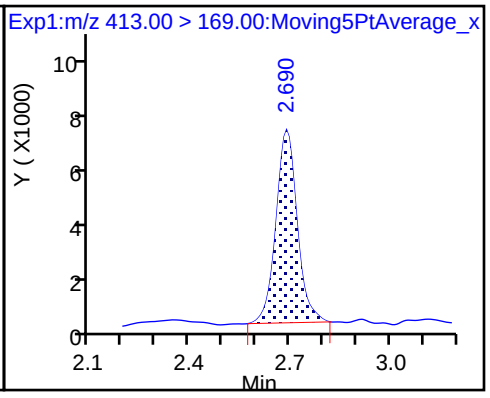

* 62 13C2-PFOA



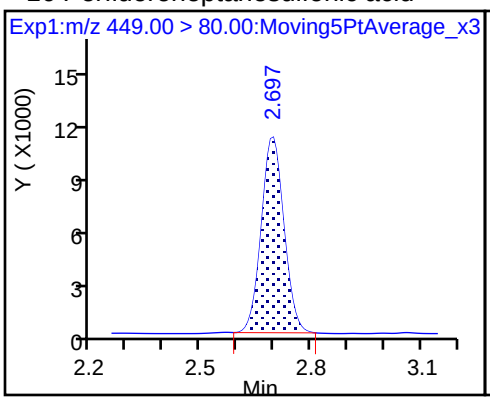

15 Perfluorooctanoic acid



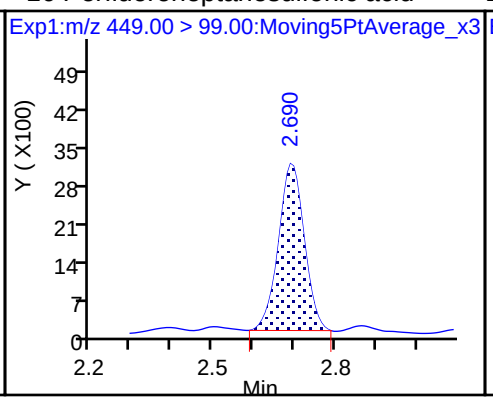

15 Perfluorooctanoic acid



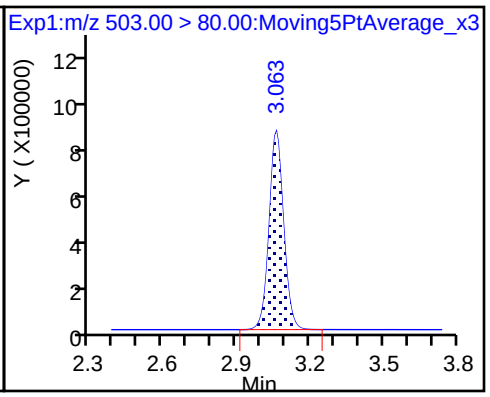

16 Perfluoroheptanesulfonic acid



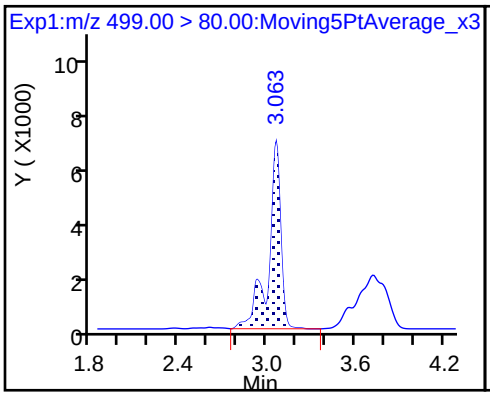

16 Perfluoroheptanesulfonic acid



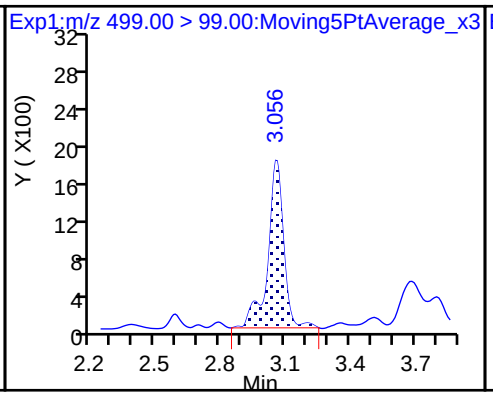

D 18 13C4 PFOS



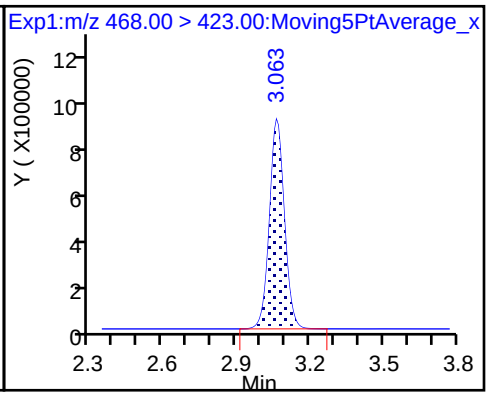

17 Perfluorooctane sulfonic acid



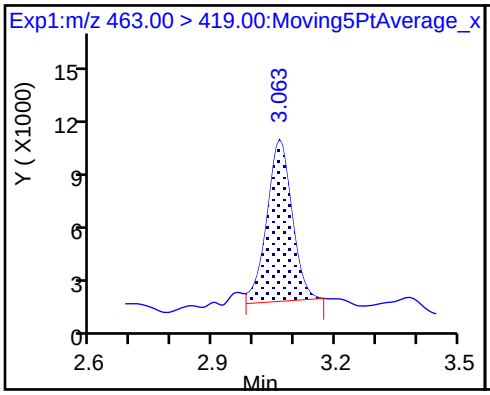

17 Perfluorooctane sulfonic acid



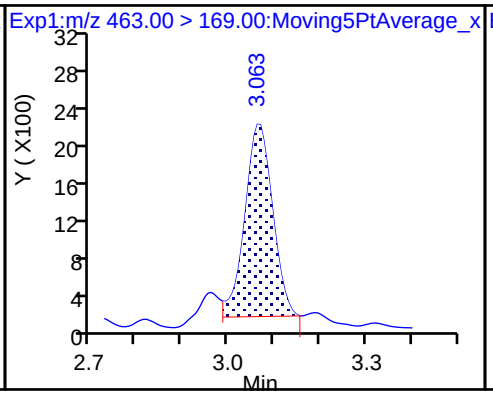

D 19 13C5 PFNA



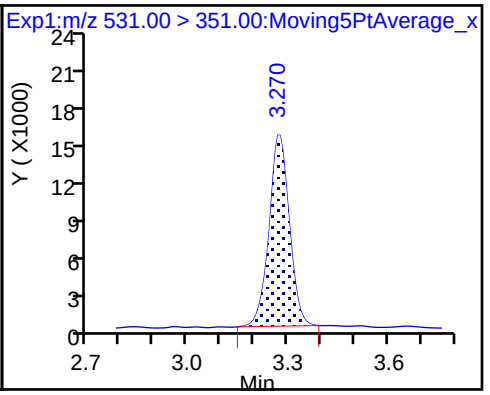
20 Perfluorononanoic acid



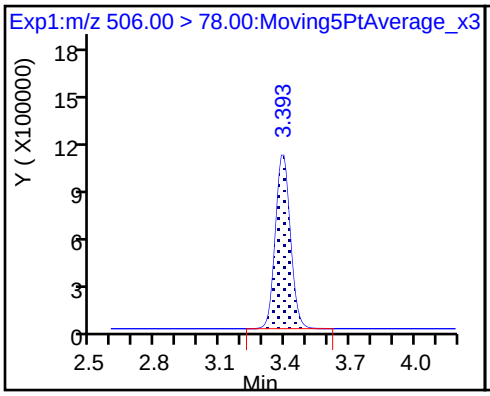

20 Perfluorononanoic acid



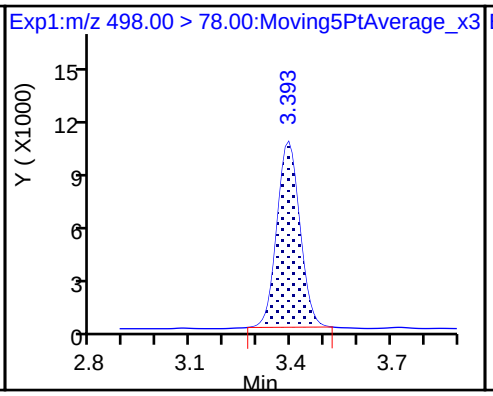

69 9-Chlorohexadecafluoro-3-oxanonane



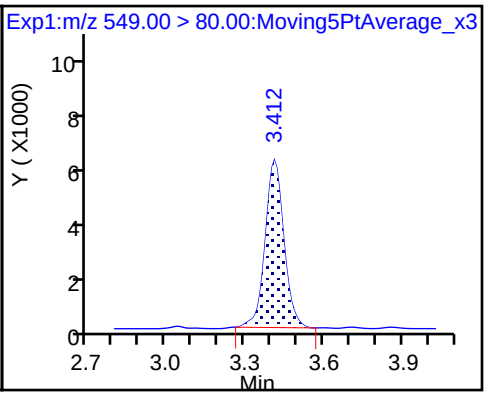

D 21 13C8 FOSA



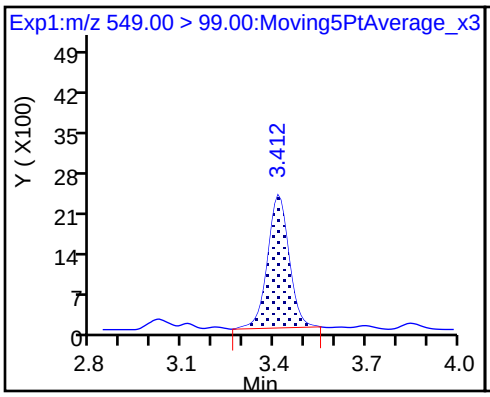

22 Perfluorooctane Sulfonamide



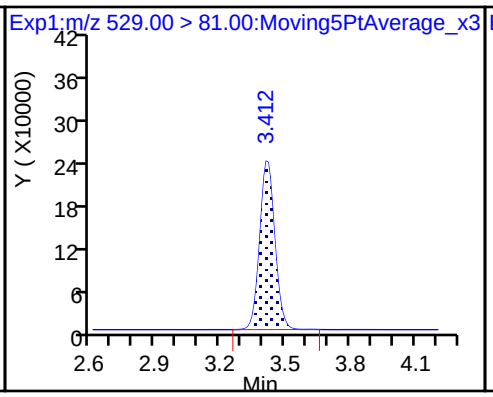

68 Perfluorononanesulfonic acid



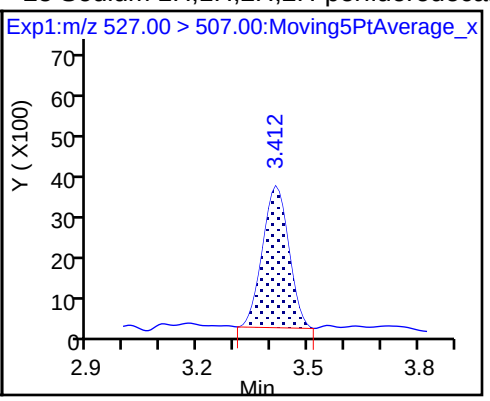

68 Perfluorononanesulfonic acid



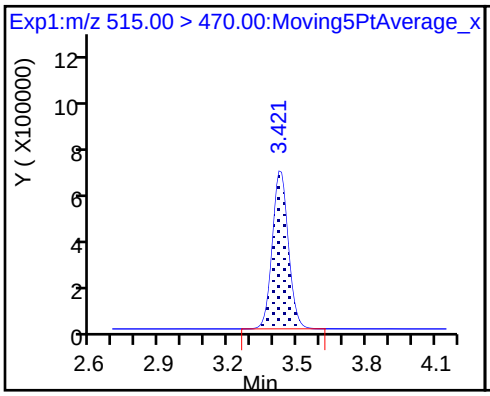

D 26 M2-8:2FTS



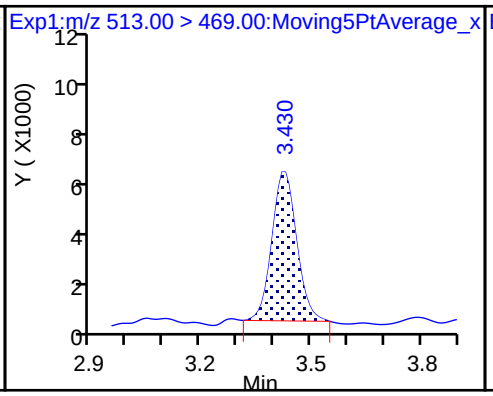

25 Sodium 1H,1H,2H,2H-perfluorodecane



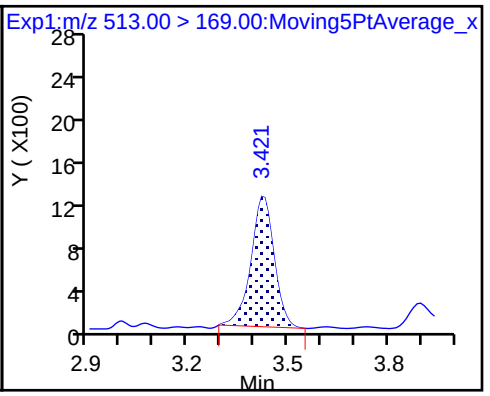

D 23 13C2 PFDA



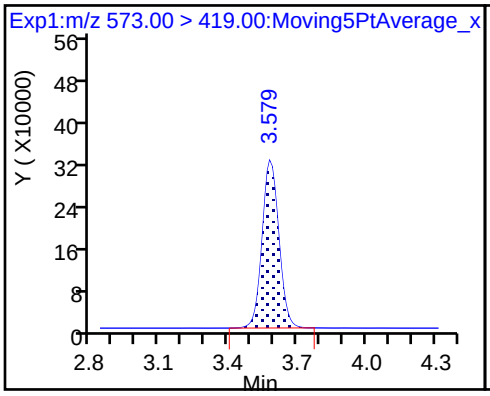

24 Perfluorodecanoic acid



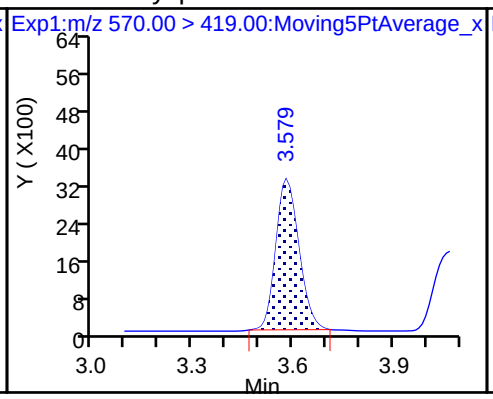

24 Perfluorodecanoic acid



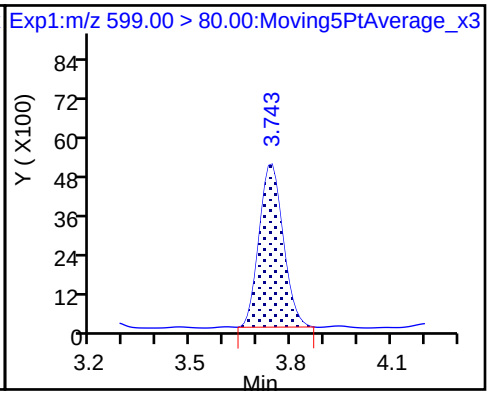
D 27 d3-NMeFOSAA



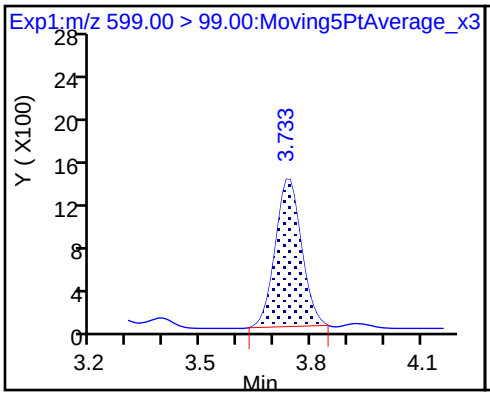

28 N-methyl perfluorooctane sulfonami



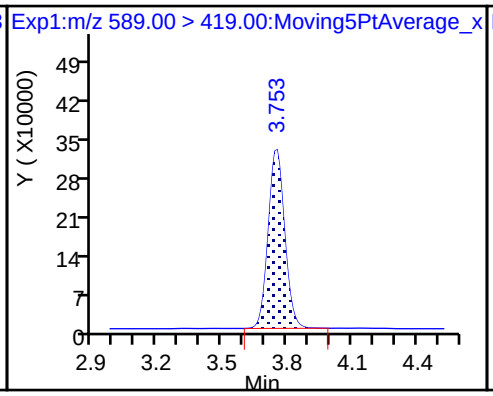

29 Perfluorodecane Sulfonic acid



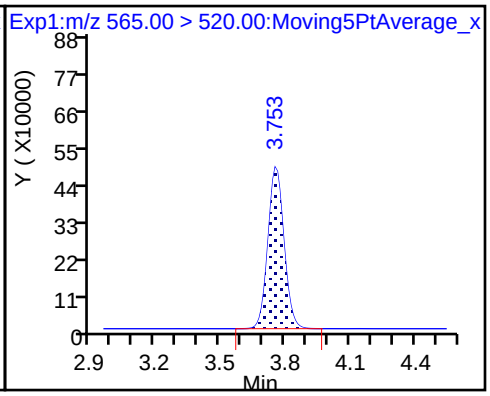

29 Perfluorodecane Sulfonic acid



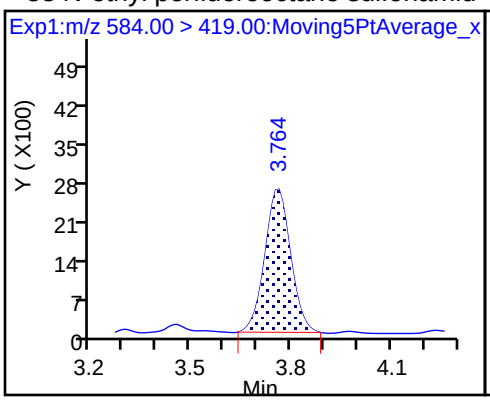

D 32 d5-NEtFOSAA



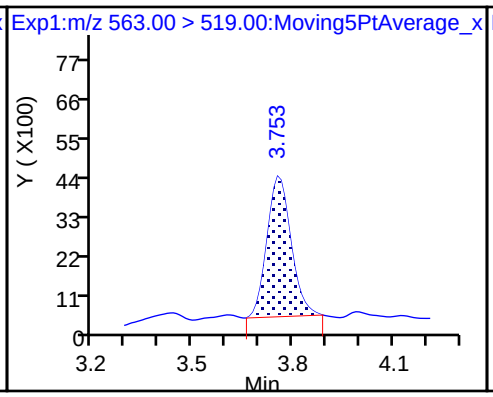

D 30 13C2 PFUnA



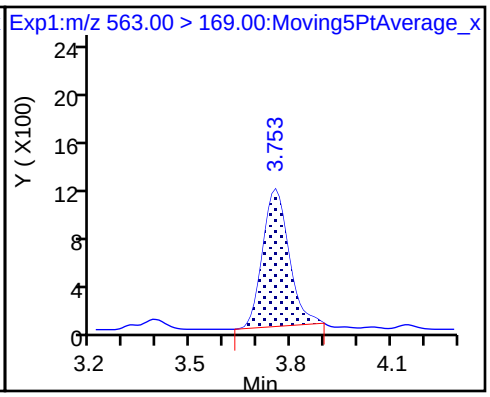

33 N-ethyl perfluorooctane sulfonamid



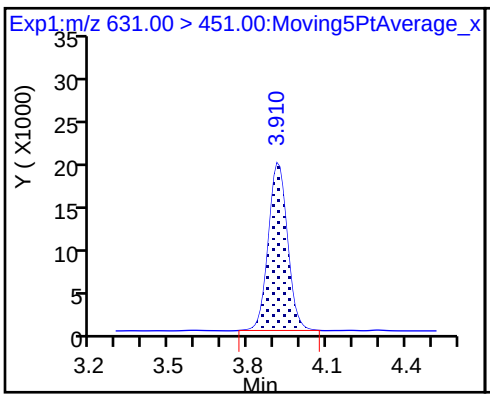

31 Perfluoroundecanoic acid



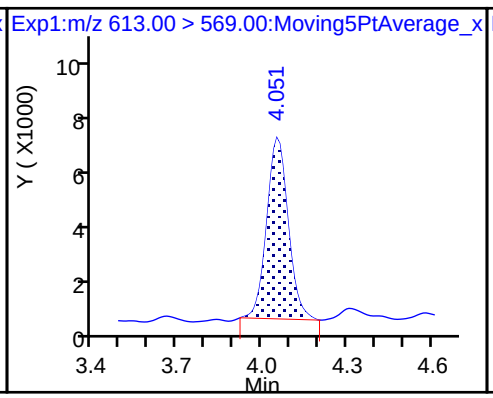

31 Perfluoroundecanoic acid



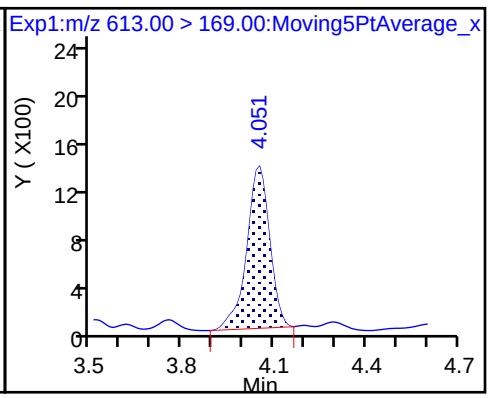

66 11-Chloroeicosafluoro-3-oxaundecan



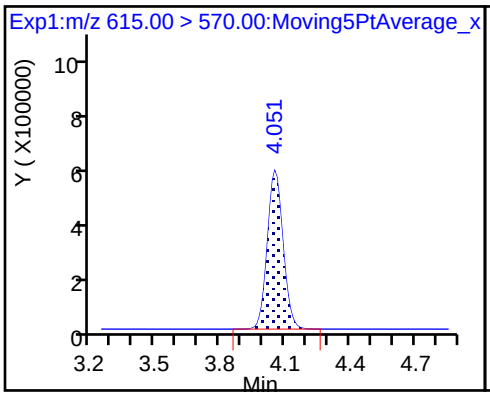

37 Perfluorododecanoic acid



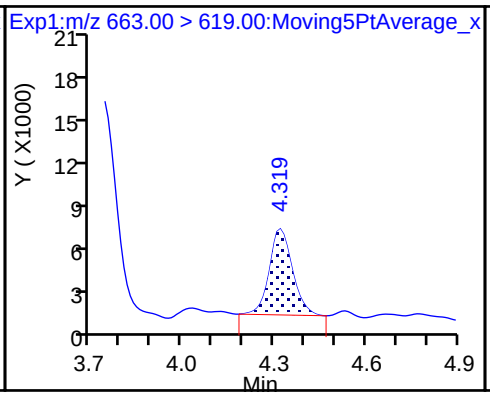

37 Perfluorododecanoic acid



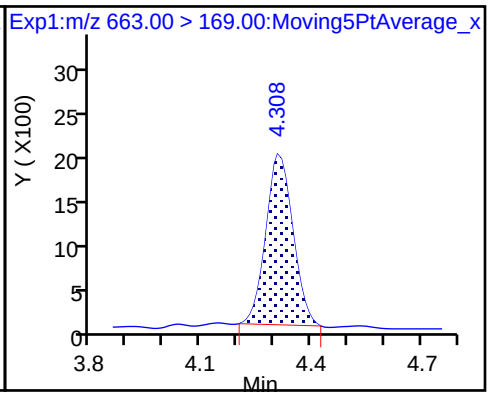
D 36 13C2 PFDoA



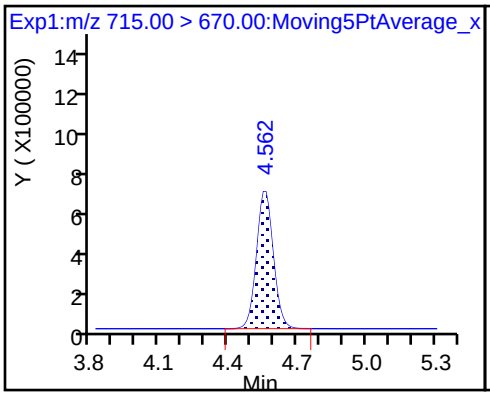

41 Perfluorotridecanoic acid



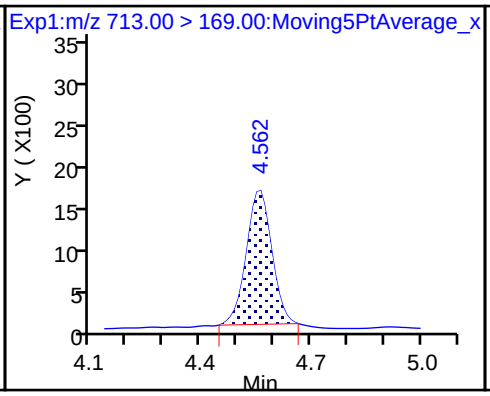

41 Perfluorotridecanoic acid



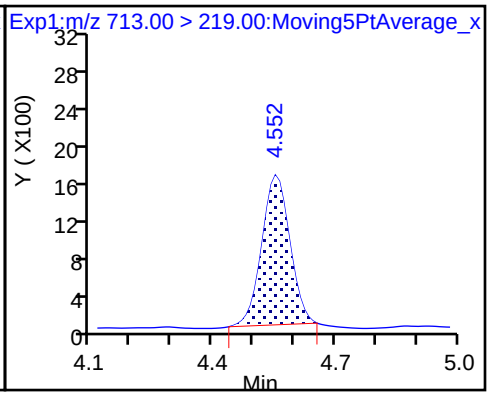

D 43 13C2-PFTeDA



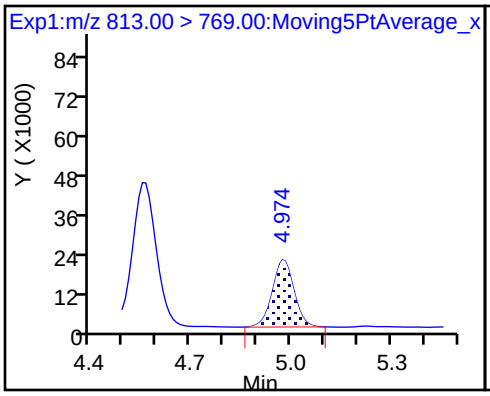

42 Perfluorotetradecanoic acid



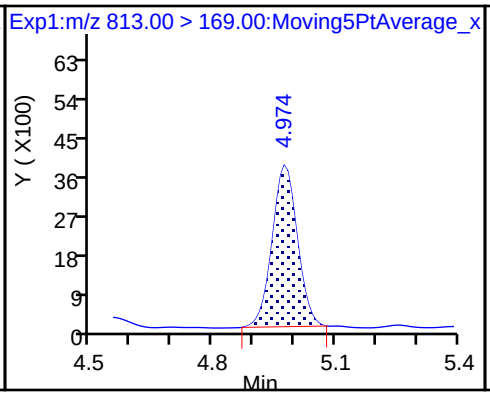

42 Perfluorotetradecanoic acid



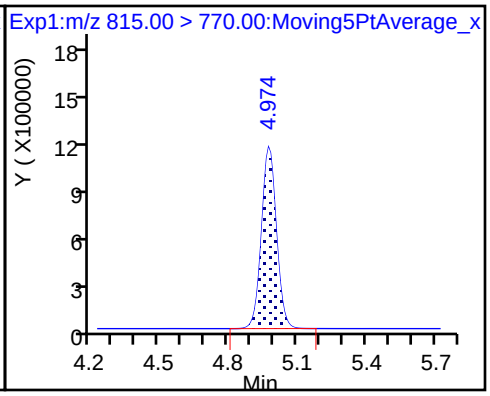

45 Perfluorohexadecanoic acid



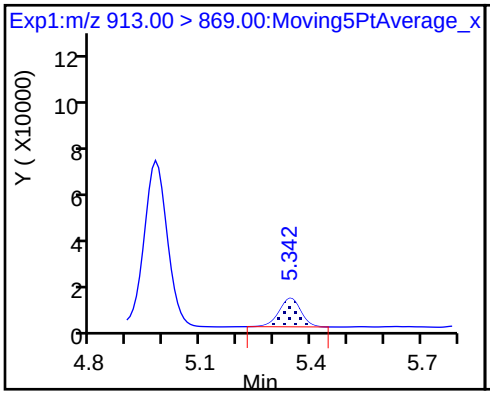

45 Perfluorohexadecanoic acid



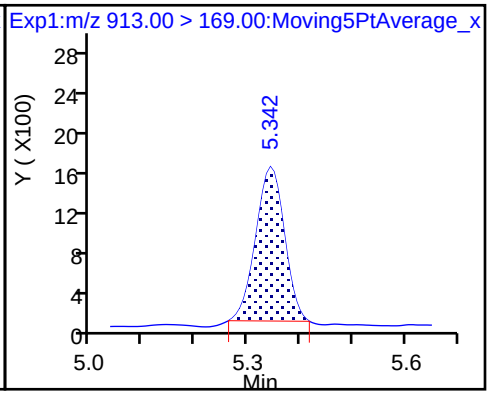

D 44 13C2-PFHxDA




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 29-Mar-2018 17:35:12 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:47:33 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 08:31:21

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.441 | 1.436 | 0.005 | 1.000 | 6349810 | 2.50 | | 100.0 | 62892 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.441 | 1.437 | 0.004 | 1.000 | 114587 | 0.0488 | | 97.6 | 42.3 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.702 | 1.702 | 0.0 | 0.556 | 4057226 | 2.45 | | 98.1 | 79100 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.711 | 1.706 | 0.005 | 1.005 | 99196 | 0.0511 | | 102 | 38.7 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.738 | 1.738 | 0.0 | 1.000 | 86826 | 2.29 | | 98.6 | 548 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.747 | 1.742 | 0.005 | 1.005 | 131921 | 0.0448 | | 101 | 91.8 | |
| 298.90 > 99.00 | 1.747 | 1.742 | 0.005 | 1.005 | 61156 | | 2.16(1.25-3.74) | 101 | 95.8 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.959 | 1.955 | 0.004 | 1.000 | 683814 | 2.36 | | 101 | 9417 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.959 | 1.955 | 0.004 | 1.000 | 34332 | 0.0533 | | 114 | 1560 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.992 | 1.991 | 0.002 | 1.000 | 4516262 | 2.48 | | 99.1 | 114603 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.992 | 1.992 | 0.0 | 1.000 | 91036 | 0.0492 | | 98.5 | 123 | |
| 313.00 > 119.00 | 2.004 | 1.992 | 0.012 | 1.006 | 9683 | | 9.40(5.03-15.10) | 98.5 | 120 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.015 | 2.013 | 0.002 | 1.000 | 118105 | 0.0444 | | 94.7 | 3501 | |
| 349.00 > 99.00 | 2.015 | 2.013 | 0.002 | 1.000 | 50910 | | 2.32(1.36-4.07) | 94.7 | 1502 | |
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.094 | 2.092 | 0.002 | 1.000 | 15350 | 0.0506 | | 101 | 127 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.094 | 2.092 | 0.002 | 1.000 | 222854 | 2.45 | | 98.2 | 3059 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.333 | 2.326 | 0.007 | 1.000 | 4349189 | 2.48 | | 99.3 | 90666 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.333 | 2.327 | 0.006 | 1.000 | 86879 | 0.0460 | | 91.9 | 64.2 | |
| 363.00 > 169.00 | 2.333 | 2.327 | 0.006 | 1.000 | 32712 | | 2.66(1.13-3.40) | 91.9 | 83.5 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.346 | 2.339 | 0.007 | 1.000 | 116520 | 0.0484 | | 106 | 646 | |
| 399.00 > 99.00 | 2.346 | 2.339 | 0.007 | 1.000 | 36295 | | 3.21(1.50-4.49) | 106 | 207 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.346 | 2.340 | 0.006 | 1.000 | 5097412 | 2.33 | | 98.6 | 84888 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.373 | 2.372 | 0.001 | 1.000 | 265166 | 0.0485 | | 97.0 | 6589 | |
| 377.00 > 85.00 | 2.373 | 2.372 | 0.001 | 1.000 | 160661 | | 1.65(0.84-2.53) | 97.0 | 2799 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.668 | 2.664 | 0.004 | 1.000 | 39956 | 0.0512 | | 108 | 205 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.668 | 2.664 | 0.004 | 1.000 | 991613 | 2.45 | | 103 | 32060 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.690 | 2.688 | 0.002 | 1.000 | 4341966 | 2.52 | | 101 | 71813 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.690 | 2.689 | 0.001 | | 4596582 | 2.50 | | | 88523 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.690 | 2.690 | 0.0 | 1.000 | 114806 | 0.0557 | | 111 | 33.8 | |
| 413.00 > 169.00 | 2.690 | 2.690 | 0.0 | 1.000 | 55627 | | 2.06(0.84-2.52) | 111 | 255 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.698 | 2.695 | 0.003 | 1.000 | 90656 | 0.0443 | | 93.1 | 4161 | |
| 449.00 > 99.00 | 2.698 | 2.695 | 0.003 | 1.000 | 24724 | | 3.67(1.94-5.82) | 93.1 | 644 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.063 | 3.060 | 0.003 | 1.000 | 100111 | 0.0571 | | 123 | 243 | |
| 499.00 > 99.00 | 3.063 | 3.060 | 0.003 | 1.000 | 22757 | | 4.40(2.31-6.93) | 123 | 232 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.063 | 3.060 | 0.003 | 1.000 | 3668029 | 2.42 | | 101 | 46995 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.063 | 3.061 | 0.002 | 1.000 | 3693528 | 2.53 | | 101 | 88431 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.070 | 3.064 | 0.006 | 1.002 | 73551 | 0.0484 | | 96.8 | 69.8 | |
| 463.00 > 169.00 | 3.063 | 3.064 | -0.001 | 1.000 | 20050 | | 3.67(1.90-5.69) | 96.8 | 343 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.277 | 3.272 | 0.005 | 1.000 | 122429 | 0.0427 | | 91.5 | 2323 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.385 | 3.388 | -0.003 | 1.000 | 5426551 | 2.53 | | 101 | 71507 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.395 | 3.389 | 0.006 | 1.003 | 105346 | 0.0491 | | 98.3 | 2796 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.413 | 3.409 | 0.004 | 1.000 | 61518 | 0.0500 | | 104 | 2616 | |
| 549.00 > 99.00 | 3.413 | 3.409 | 0.004 | 1.000 | 20319 | | 3.03(1.33-3.97) | 104 | 373 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.413 | 3.413 | 0.0 | 1.000 | 1207568 | 2.56 | | 107 | 35673 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.423 | 3.415 | 0.008 | 1.003 | 32444 | 0.0477 | | 99.6 | 331 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.423 | 3.423 | 0.0 | 1.000 | 3057872 | 2.48 | | 99.3 | 49113 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.432 | 3.427 | 0.005 | 1.003 | 60106 | 0.0497 | | 99.3 | 222 | |
| 513.00 > 169.00 | 3.423 | 3.427 | -0.004 | 1.000 | 10996 | | 5.47(2.36-7.09) | 99.3 | 277 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.582 | 3.578 | 0.004 | 1.000 | 1584763 | 2.41 | | 96.2 | 51662 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.582 | 3.581 | 0.001 | 1.000 | 37929 | 0.0568 | | 114 | 356 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.737 | 3.738 | -0.001 | 1.000 | 52893 | 0.0497 | | 103 | 1503 | |
| 599.00 > 99.00 | 3.737 | 3.738 | -0.001 | 1.000 | 15830 | | 3.34(1.39-4.16) | 103 | 320 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.747 | 3.749 | -0.002 | 1.000 | 1753746 | 2.54 | | 101 | 4660 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.758 | 3.753 | 0.005 | 1.000 | 2598573 | 2.58 | | 103 | 73614 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.758 | 3.755 | 0.003 | 1.003 | 34166 | 0.0531 | | 106 | 703 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.758 | 3.755 | 0.003 | 1.000 | 44699 | 0.0536 | | 107 | 178 | |
| 563.00 > 169.00 | 3.758 | 3.755 | 0.003 | 1.000 | 11584 | | 3.86(2.12-6.36) | 107 | 588 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.914 | 3.910 | 0.004 | 1.000 | 216712 | 0.0486 | | 103 | 8713 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.057 | 4.052 | 0.005 | 1.000 | 2755722 | 2.46 | | 98.5 | 18105 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.057 | 4.052 | 0.005 | 1.000 | 57155 | 0.0480 | | 96.0 | 43.3 | |
| 613.00 > 169.00 | 4.057 | 4.052 | 0.005 | 1.000 | 15975 | | 3.58(2.13-6.40) | 96.0 | 355 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.317 | 4.316 | 0.001 | 1.000 | 59640 | 0.0468 | | 93.6 | 23.5 | |
| 663.00 > 169.00 | 4.317 | 4.316 | 0.001 | 1.000 | 20700 | | 2.88(1.25-3.76) | 93.6 | 402 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.561 | 4.558 | 0.003 | 1.000 | 16166 | 0.0457 | | 91.5 | 253 | |
| 713.00 > 219.00 | 4.550 | 4.558 | -0.008 | 0.998 | 13055 | | 1.24(0.71-2.13) | 91.5 | 266 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.561 | 4.558 | 0.003 | 1.000 | 3538364 | 2.49 | | 99.6 | 20273 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.982 | 4.977 | 0.005 | 1.000 | 5380000 | 2.45 | | 98.0 | 13437 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.982 | 4.977 | 0.005 | 1.000 | 144357 | 0.0494 | | 98.9 | 34.6 | |
| 813.00 > 169.00 | 4.982 | 4.977 | 0.005 | 1.000 | 22803 | | 6.33(2.86-8.58) | 98.9 | 235 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.348 | 5.344 | 0.004 | 1.000 | 102429 | 0.0479 | | 95.9 | 17.9 | |
| 913.00 > 169.00 | 5.348 | 5.344 | 0.004 | 1.000 | 11835 | | 8.65(3.83-11.48) | 95.9 | 167 | |

## Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:47:39 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_003.d

Injection Date: 29-Mar-2018 17:35:12 Instrument ID: A8_N

Lims ID: IC L2 Full

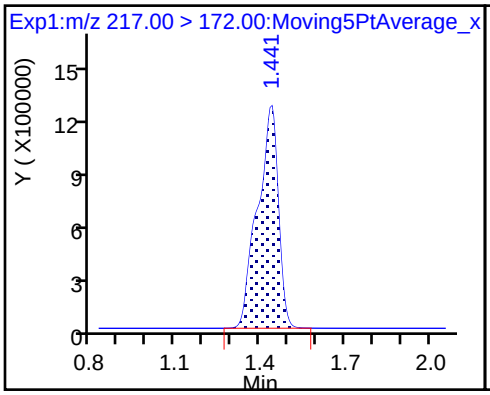
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

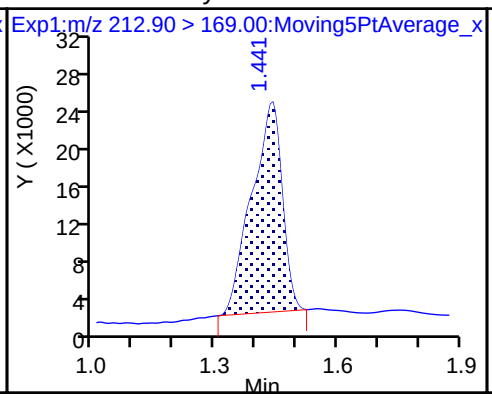
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

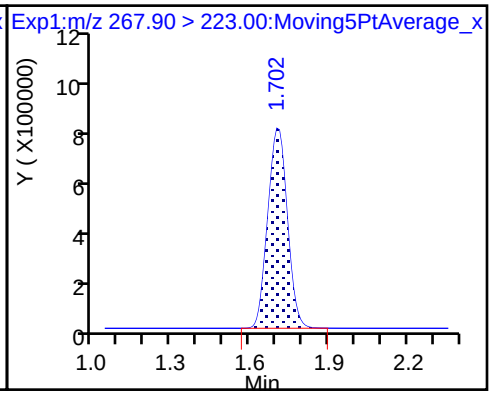
D 1 13C4 PFBA



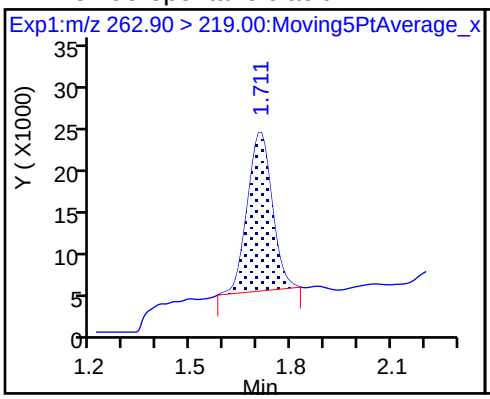

2 Perfluorobutyric acid



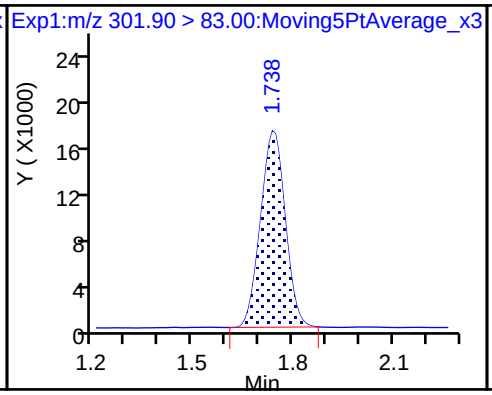

D 3 13C5-PFPeA



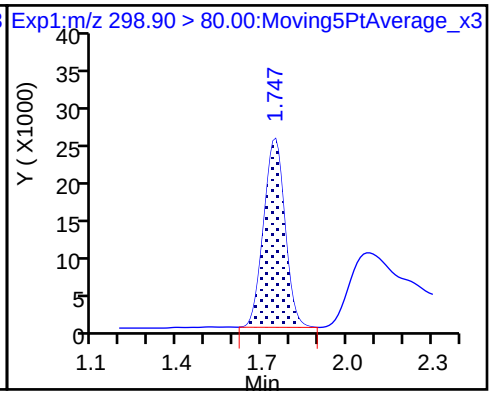

4 Perfluoropentanoic acid



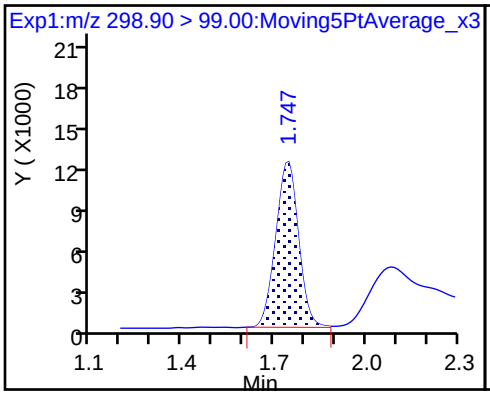

D 47 13C3-PFBS



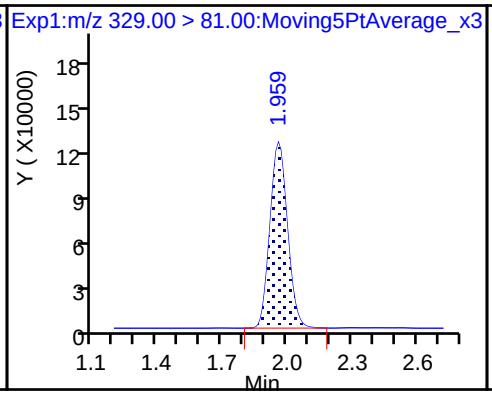

5 Perfluorobutanesulfonic acid



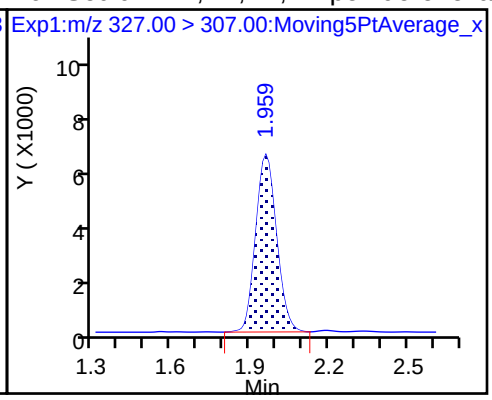

5 Perfluorobutanesulfonic acid



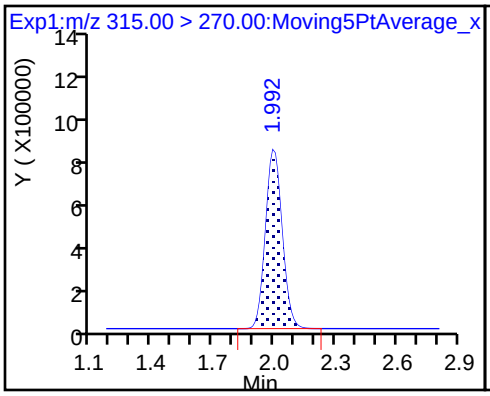

D 60 M2-4:2FTS



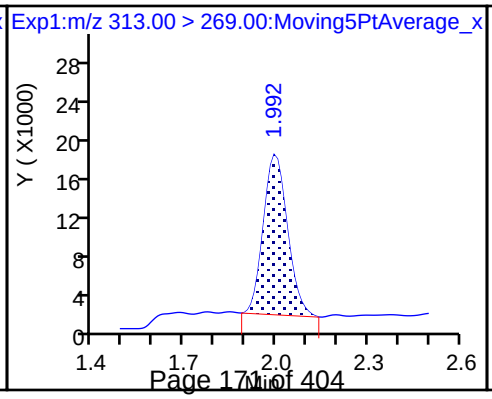

61 Sodium 1H,1H,2H,2H-perfluorohexane



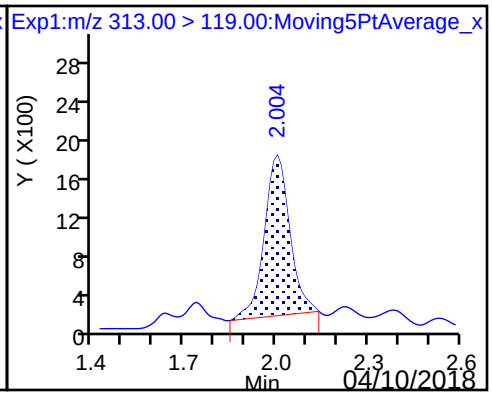

D 7 13C2 PFHxA



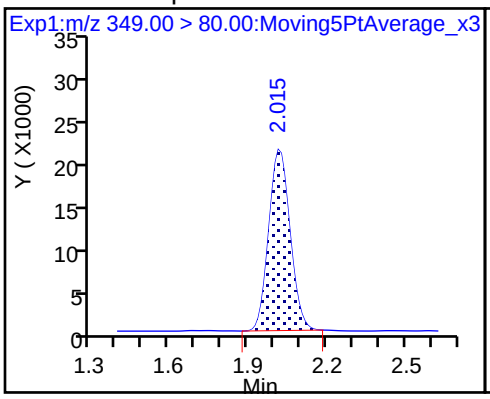

6 Perfluorohexanoic acid



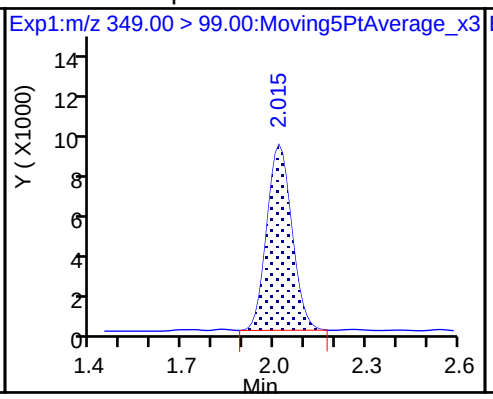

6 Perfluorohexanoic acid



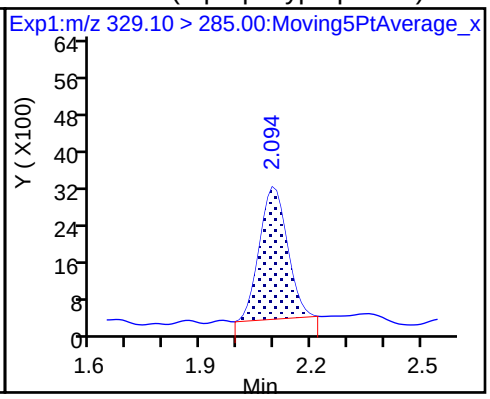
70 Perfluoropentanesulfonic acid



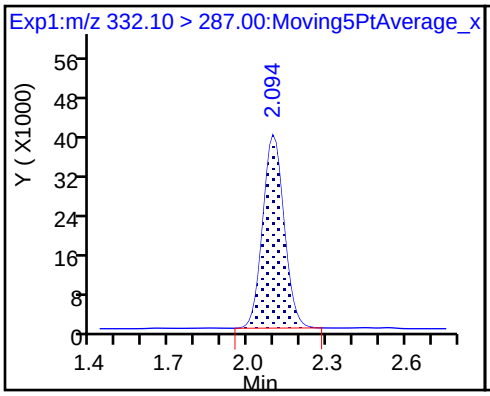

70 Perfluoropentanesulfonic acid



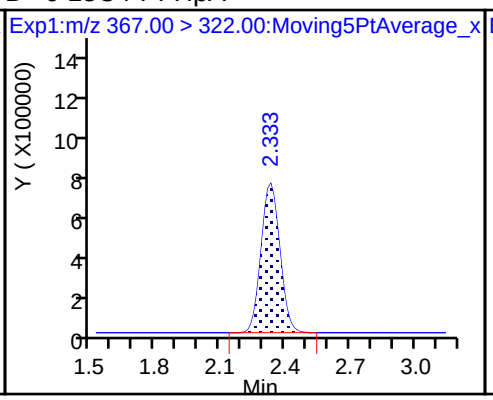

67 Perfluoro(2-propoxypropanoic) acid



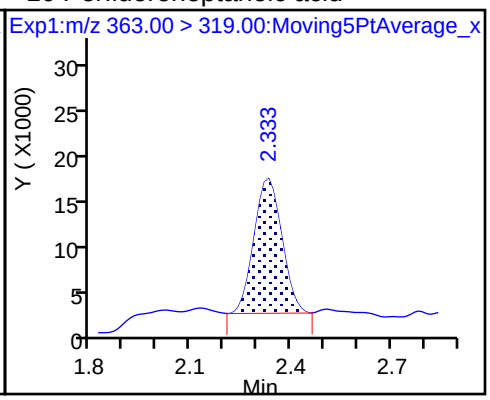

D 64 13C3 HFPO-DA



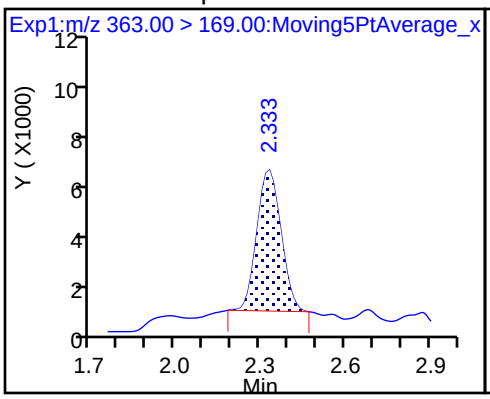

D 9 13C4-PFHpA



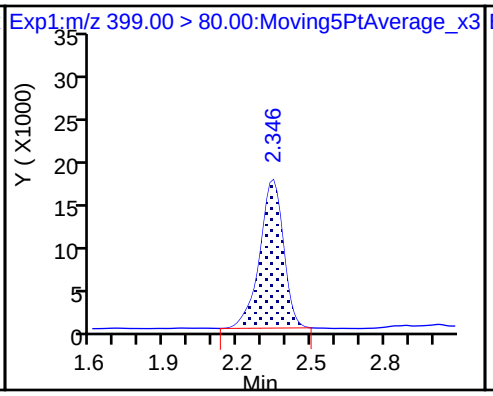

10 Perfluoroheptanoic acid



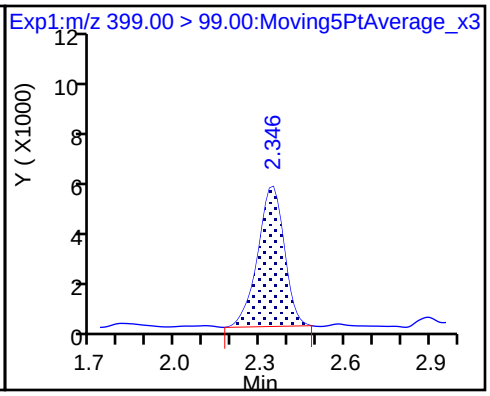

10 Perfluoroheptanoic acid



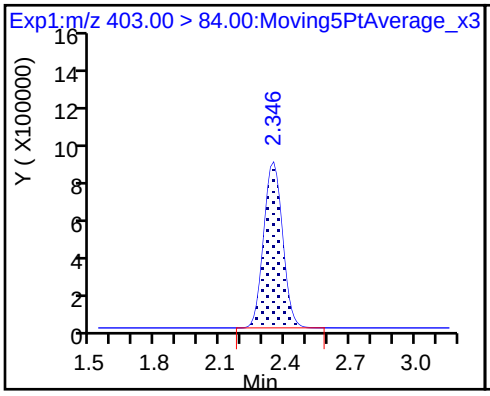

8 Perfluorohexanesulfonic acid



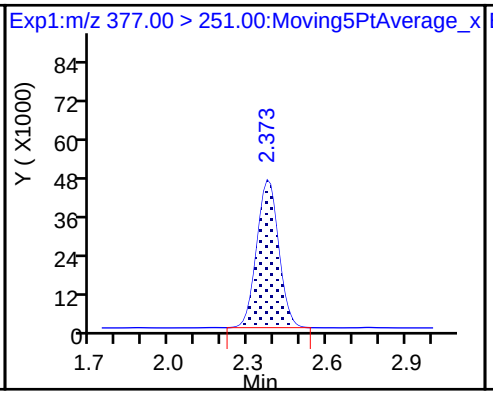

8 Perfluorohexanesulfonic acid



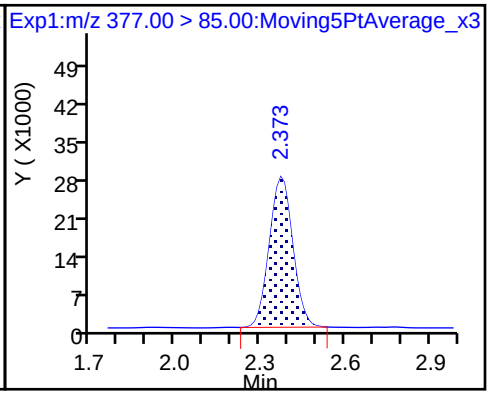

D 11 18O2 PFHxS



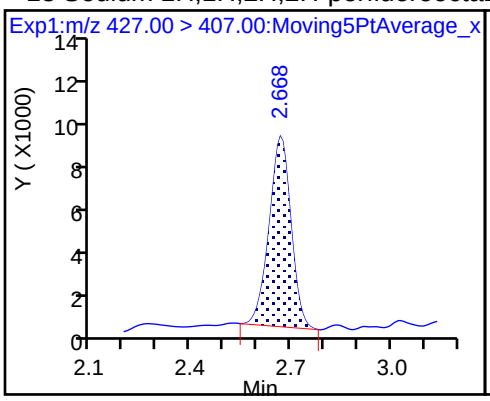

65 Adona



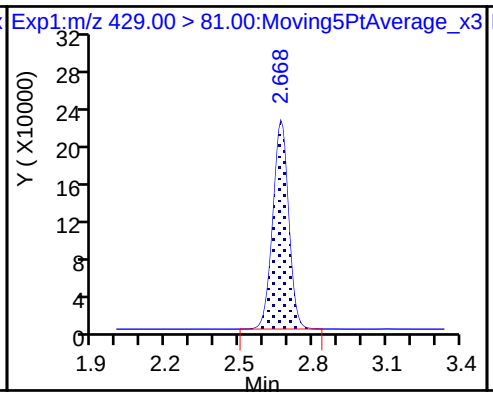

65 Adona



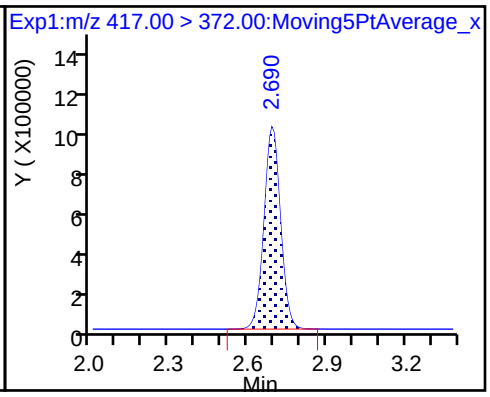
13 Sodium 1H,1H,2H,2H-perfluorooctane



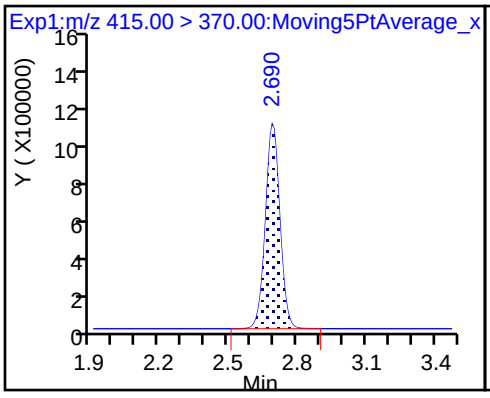

D 12 M2-6:2FTS



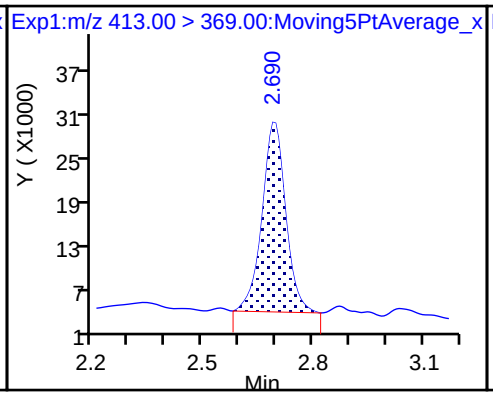

D 14 13C4 PFOA



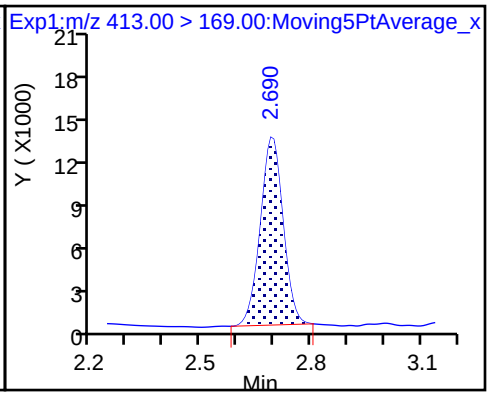

* 62 13C2-PFOA



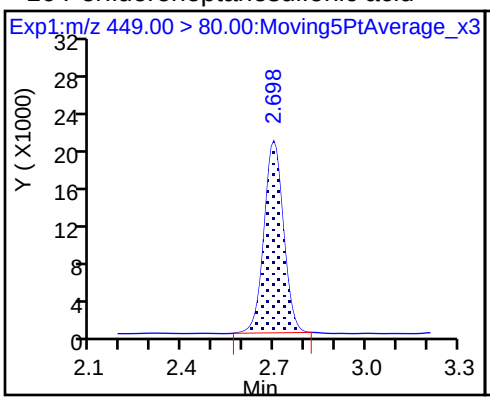

15 Perfluorooctanoic acid



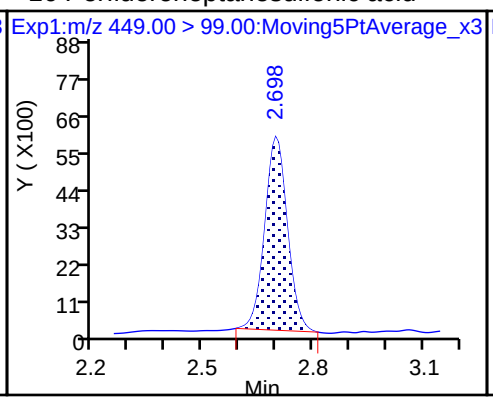

15 Perfluorooctanoic acid



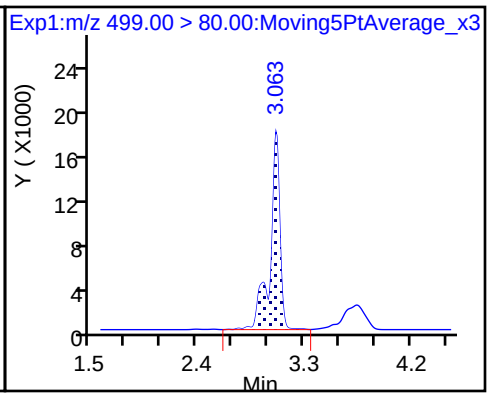

16 Perfluoroheptanesulfonic acid



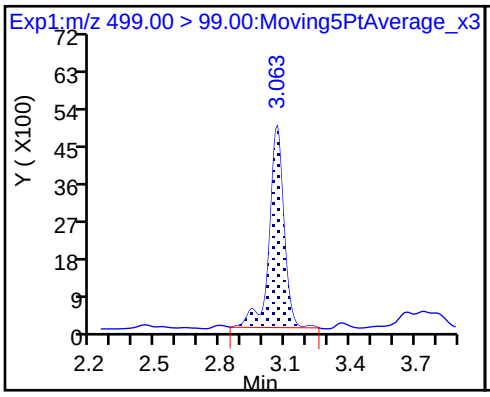

16 Perfluoroheptanesulfonic acid



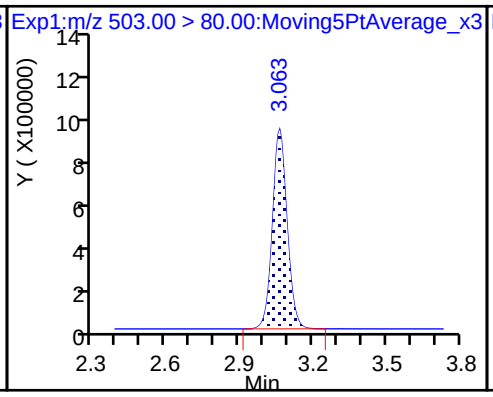

17 Perfluorooctane sulfonic acid



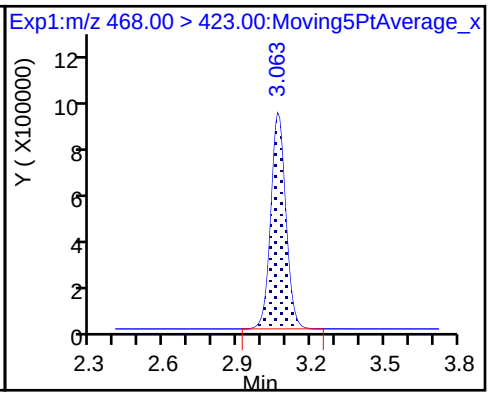

17 Perfluorooctane sulfonic acid



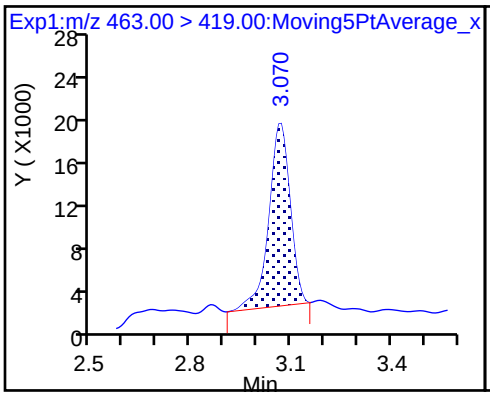

D 18 13C4 PFOS



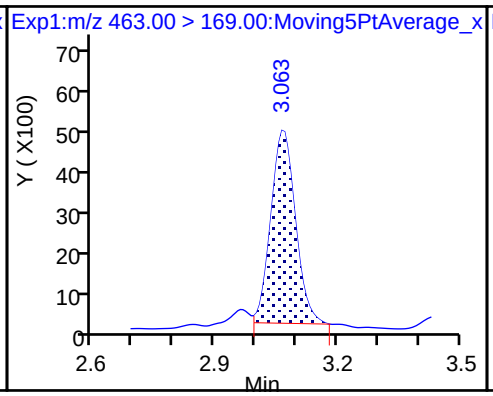

D 19 13C5 PFNA



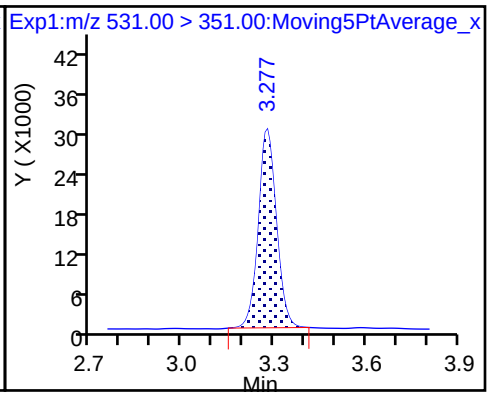
20 Perfluorononanoic acid



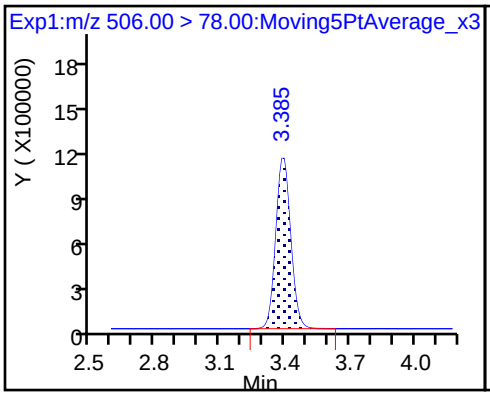

20 Perfluorononanoic acid



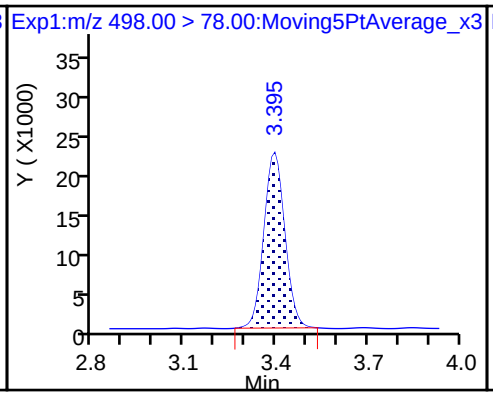

69 9-Chlorohexadecafluoro-3-oxanonane



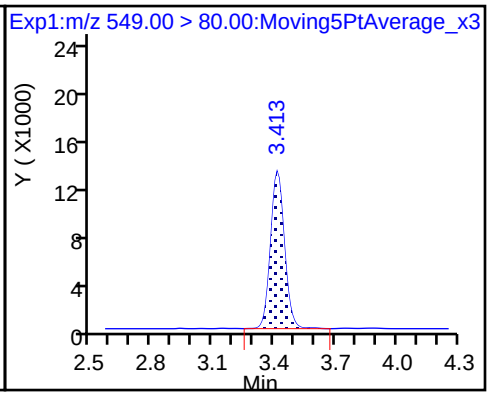

D 21 13C8 FOSA



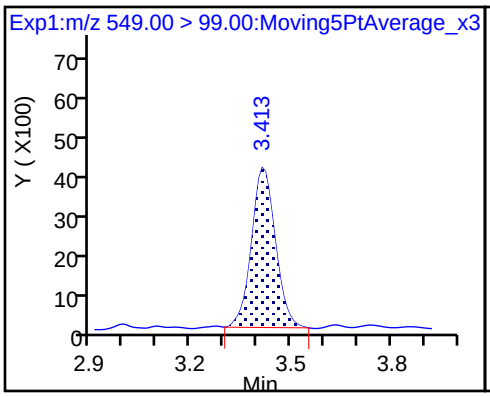

22 Perfluorooctane Sulfonamide



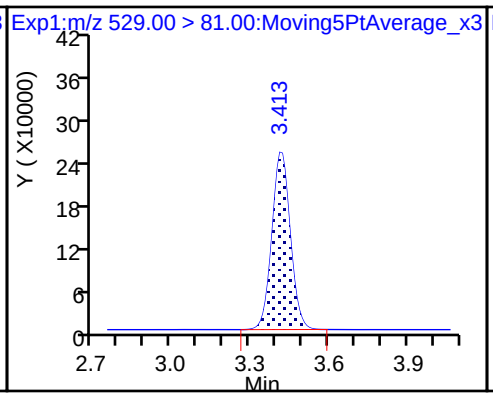

68 Perfluorononanesulfonic acid



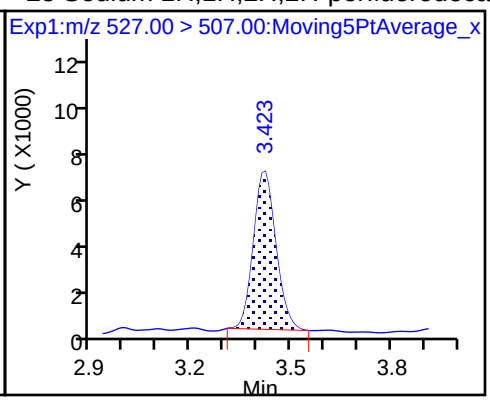

68 Perfluorononanesulfonic acid



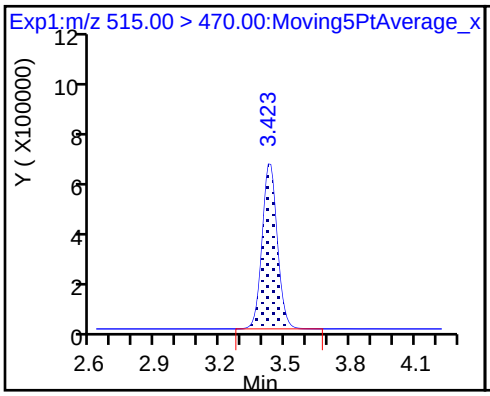

D 26 M2-8:2FTS



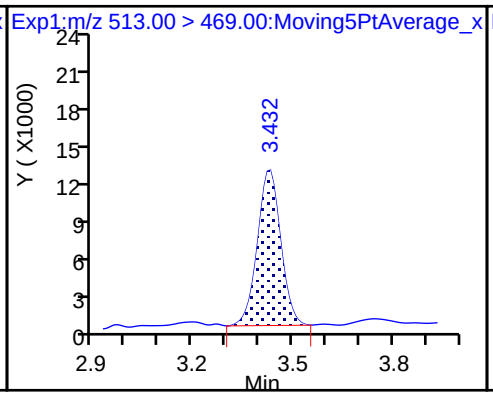

25 Sodium 1H,1H,2H,2H-perfluorodecane



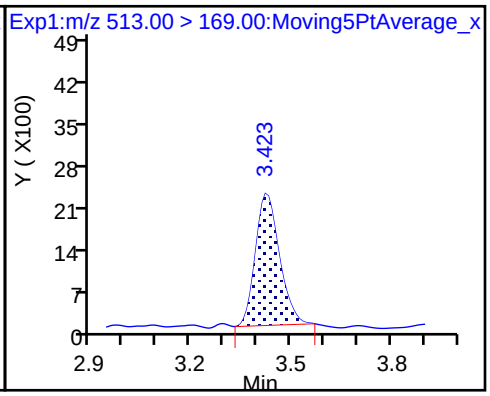

D 23 13C2 PFDA



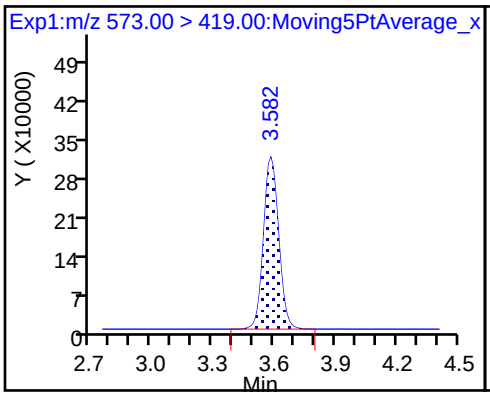

24 Perfluorodecanoic acid



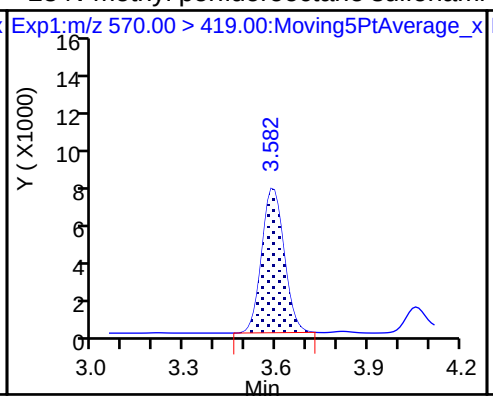

24 Perfluorodecanoic acid



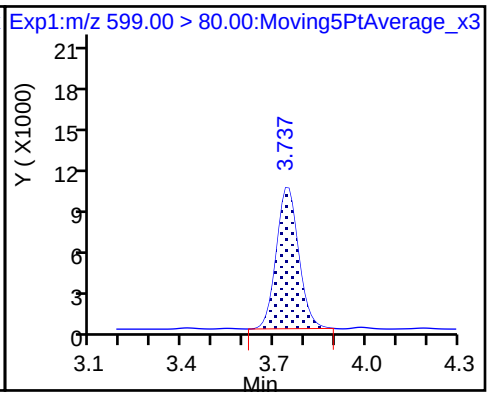
D 27 d3-NMeFOSAA



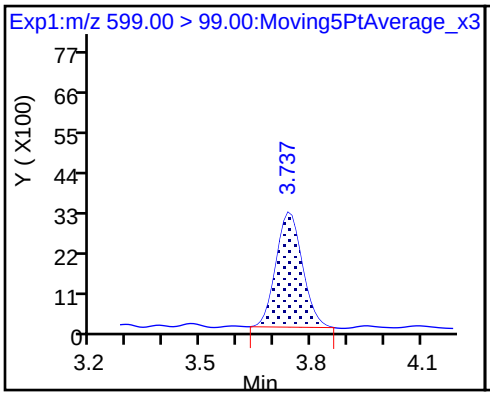

28 N-methyl perfluorooctane sulfonami



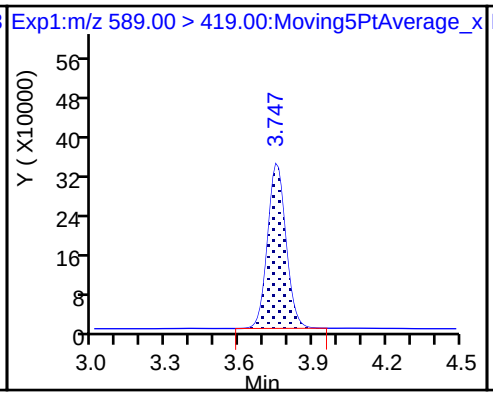

29 Perfluorodecane Sulfonic acid



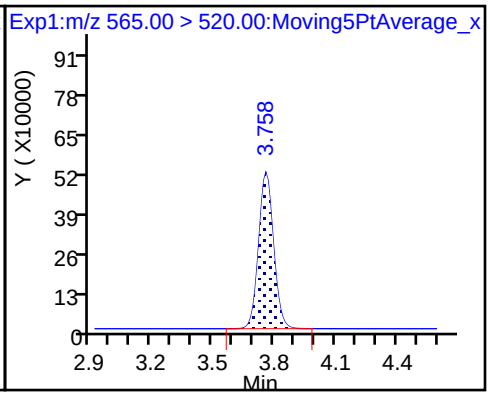

29 Perfluorodecane Sulfonic acid



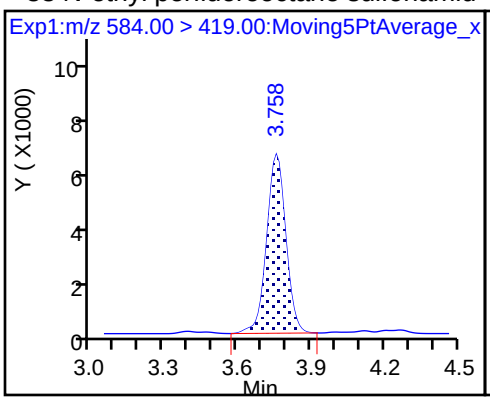

D 32 d5-NEtFOSAA



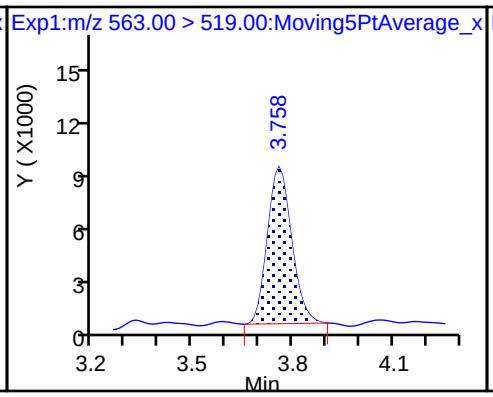

D 30 13C2 PFUnA



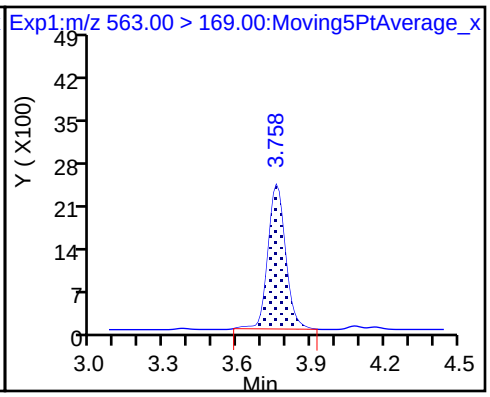

33 N-ethyl perfluorooctane sulfonamid



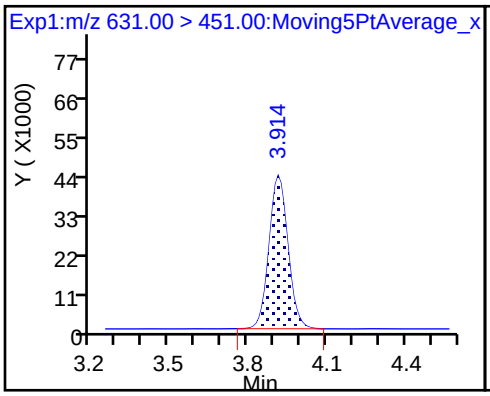

31 Perfluoroundecanoic acid



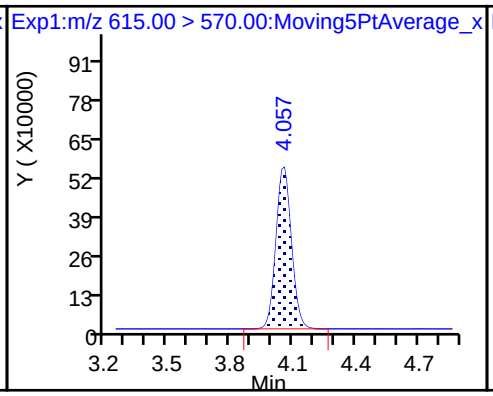

31 Perfluoroundecanoic acid



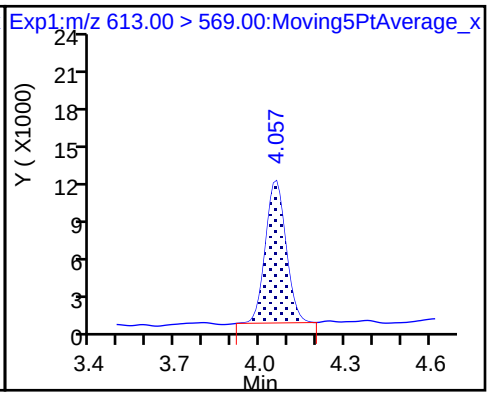

66 11-Chloroeicosafluoro-3-oxaundecan



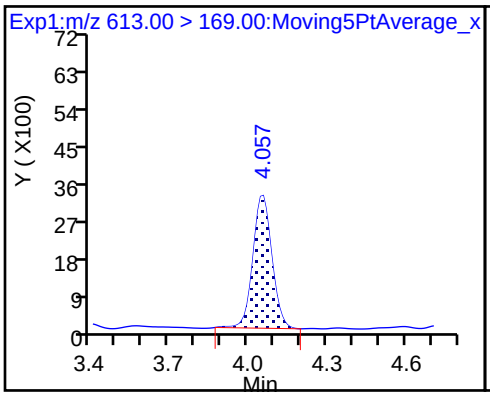

D 36 13C2 PFDoA



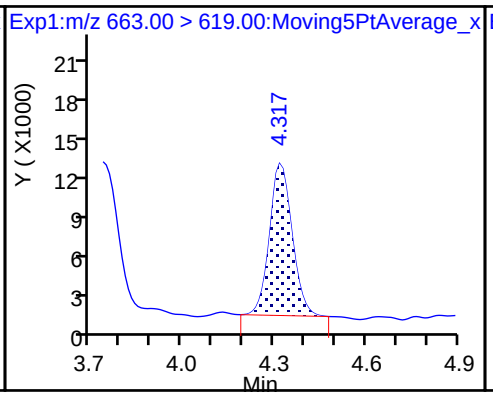

37 Perfluorododecanoic acid



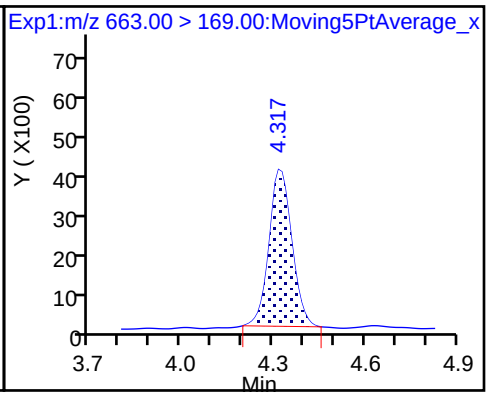
37 Perfluorododecanoic acid



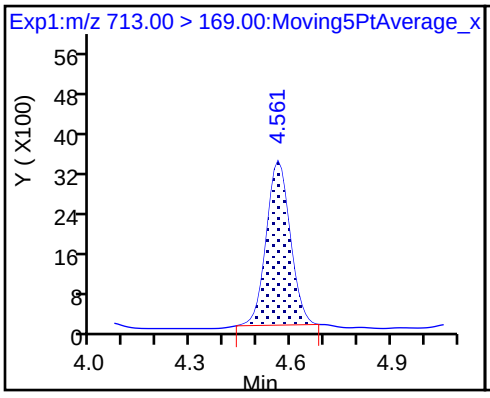

41 Perfluorotridecanoic acid



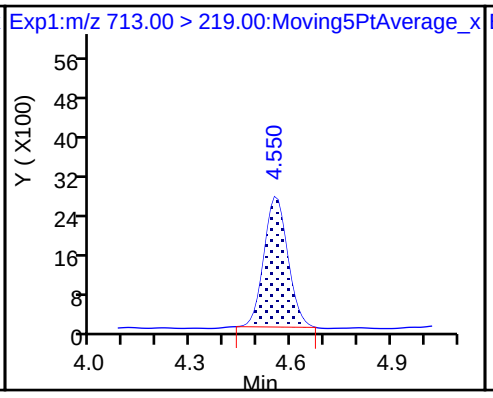

41 Perfluorotridecanoic acid



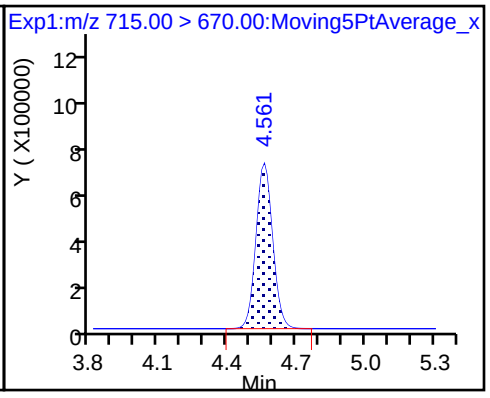

42 Perfluorotetradecanoic acid



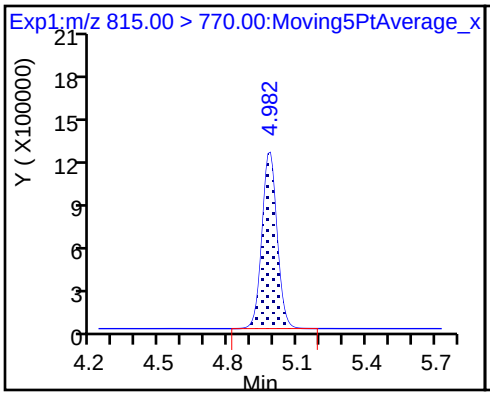

42 Perfluorotetradecanoic acid



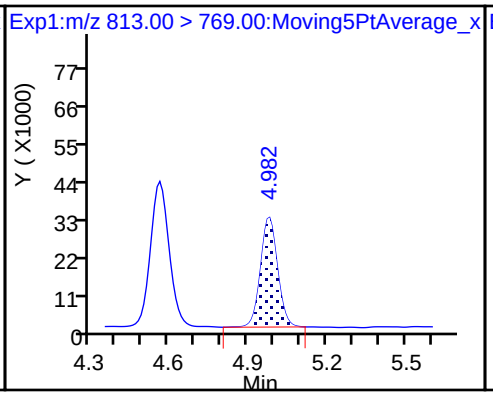

D 43 13C2-PFTeDA



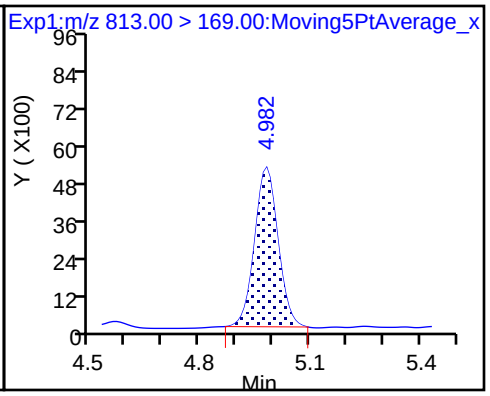

D 44 13C2-PFHxDA



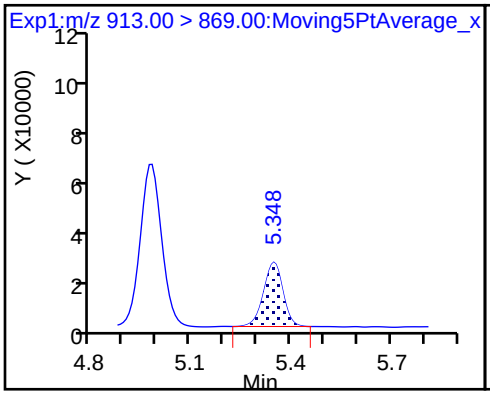

45 Perfluorohexadecanoic acid



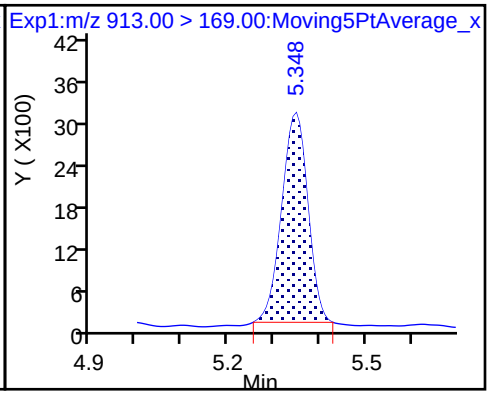

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 29-Mar-2018 17:43:00 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:47:44 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 08:30:51

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.436 | 1.436 | 0.0 | 1.000 | 6060888 | 2.41 | | 96.5 | 56962 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.436 | 1.437 | -0.001 | 1.000 | 553955 | 0.2472 | | 98.9 | 209 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.703 | 1.702 | 0.001 | 0.556 | 4032497 | 2.47 | | 98.6 | 98655 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.703 | 1.706 | -0.003 | 1.000 | 480043 | 0.2486 | | 99.5 | 187 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.739 | 1.738 | 0.001 | 1.000 | 87970 | 2.35 | | 101 | 533 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.739 | 1.742 | -0.003 | 1.000 | 655502 | 0.2196 | | 99.4 | 452 | |
| 298.90 > 99.00 | 1.739 | 1.742 | -0.003 | 1.000 | 270315 | | 2.42(1.25-3.74) | 99.4 | 452 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.961 | 1.955 | 0.006 | 1.000 | 143786 | 0.2202 | | 94.3 | 8707 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.961 | 1.955 | 0.006 | 1.000 | 659047 | 2.30 | | 98.7 | 8619 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.993 | 1.991 | 0.003 | 1.000 | 4418534 | 2.45 | | 98.0 | 132844 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.993 | 1.992 | 0.001 | 1.000 | 449634 | 0.2486 | | 99.4 | 672 | |
| 313.00 > 119.00 | 1.993 | 1.992 | 0.001 | 1.000 | 43865 | | 10.25(5.03-15.10) | 99.4 | 560 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.016 | 2.013 | 0.003 | 1.000 | 604278 | 0.2243 | | 95.7 | 15316 | |
| 349.00 > 99.00 | 2.016 | 2.013 | 0.003 | 1.000 | 229999 | | 2.63(1.36-4.07) | 95.7 | 5859 | |
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.095 | 2.092 | 0.003 | 1.000 | 197281 | 2.20 | | 87.9 | 3119 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.095 | 2.092 | 0.003 | 1.000 | 79234 | 0.2952 | | 118 | 621 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.322 | 2.326 | -0.004 | 1.000 | 4242345 | 2.45 | | 97.9 | 58841 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.322 | 2.327 | -0.005 | 1.000 | 440174 | 0.2387 | | 95.5 | 382 | |
| 363.00 > 169.00 | 2.322 | 2.327 | -0.005 | 1.000 | 167042 | | 2.64(1.13-3.40) | 95.5 | 414 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.335 | 2.339 | -0.004 | 1.000 | 512387 | 0.2134 | | 93.8 | 2668 | |
| 399.00 > 99.00 | 2.335 | 2.339 | -0.004 | 1.000 | 182072 | | 2.81(1.50-4.49) | 93.8 | 1118 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.335 | 2.340 | -0.005 | 1.000 | 5084038 | 2.35 | | 99.4 | 70453 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.374 | 2.372 | 0.002 | 1.000 | 1396340 | 0.2727 | | 109 | 30346 | |
| 377.00 > 85.00 | 2.374 | 2.372 | 0.002 | 1.000 | 777798 | | 1.80(0.84-2.53) | 109 | 15072 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.661 | 2.664 | -0.004 | 1.000 | 1019321 | 2.54 | | 107 | 29794 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.661 | 2.664 | -0.004 | 1.000 | 174781 | 0.2181 | | 92.0 | 926 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.691 | 2.688 | 0.002 | 1.000 | 4272950 | 2.51 | | 100 | 76270 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.691 | 2.689 | 0.001 | | 4546643 | 2.50 | | | 87379 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.691 | 2.690 | 0.0 | 1.000 | 477643 | 0.2357 | | 94.3 | 156 | |
| 413.00 > 169.00 | 2.691 | 2.690 | 0.0 | 1.000 | 240403 | | 1.99(0.84-2.52) | 94.3 | 957 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.698 | 2.695 | 0.003 | 1.000 | 477719 | 0.2495 | | 105 | 12384 | |
| 449.00 > 99.00 | 2.698 | 2.695 | 0.003 | 1.000 | 122111 | | 3.91(1.94-5.82) | 105 | 3153 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.057 | 3.060 | -0.003 | 1.000 | 3434108 | 2.29 | | 95.7 | 54984 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.057 | 3.060 | -0.003 | 1.000 | 363900 | 0.2216 | | 95.5 | 797 | |
| 499.00 > 99.00 | 3.057 | 3.060 | -0.003 | 1.000 | 84231 | | 4.32(2.31-6.93) | 95.5 | 698 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.064 | 3.061 | 0.003 | 1.000 | 3523980 | 2.44 | | 97.7 | 70645 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.064 | 3.064 | 0.0 | 1.000 | 356101 | 0.2455 | | 98.2 | 343 | |
| 463.00 > 169.00 | 3.064 | 3.064 | 0.0 | 1.000 | 90740 | | 3.92(1.90-5.69) | 98.2 | 3091 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.271 | 3.272 | -0.001 | 1.000 | 665453 | 0.2477 | | 106 | 11650 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.386 | 3.388 | -0.002 | 1.000 | 5204720 | 2.45 | | 98.1 | 61555 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.386 | 3.389 | -0.003 | 1.000 | 523091 | 0.2544 | | 102 | 15875 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.413 | 3.409 | 0.004 | 1.000 | 272737 | 0.2367 | | 98.6 | 9533 | |
| 549.00 > 99.00 | 3.413 | 3.409 | 0.004 | 1.000 | 111781 | | 2.44(1.33-3.97) | 98.6 | 2945 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.413 | 3.413 | 0.0 | 1.000 | 1144081 | 2.46 | | 103 | 33988 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.413 | 3.415 | -0.002 | 1.000 | 140627 | 0.2183 | | 91.1 | 1260 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.423 | 3.423 | 0.0 | 1.000 | 2904523 | 2.38 | | 95.4 | 40768 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.423 | 3.427 | -0.004 | 1.000 | 302194 | 0.2629 | | 105 | 1474 | |
| 513.00 > 169.00 | 3.423 | 3.427 | -0.004 | 1.000 | 58285 | | 5.18(2.36-7.09) | 105 | 2424 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.583 | 3.578 | 0.004 | 1.000 | 1579046 | 2.42 | | 96.9 | 44458 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.583 | 3.581 | 0.001 | 1.000 | 160694 | 0.2414 | | 96.5 | 1665 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.737 | 3.738 | -0.001 | 1.000 | 238488 | 0.2392 | | 99.3 | 7789 | |
| 599.00 > 99.00 | 3.737 | 3.738 | -0.001 | 1.000 | 75761 | | 3.15(1.39-4.16) | 99.3 | 2515 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.747 | 3.749 | -0.002 | 1.000 | 1667774 | 2.44 | | 97.6 | 5132 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.758 | 3.753 | 0.005 | 1.000 | 2421277 | 2.44 | | 97.4 | 58900 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.758 | 3.755 | 0.003 | 1.003 | 158064 | 0.2584 | | 103 | 2333 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.758 | 3.755 | 0.003 | 1.000 | 181675 | 0.2338 | | 93.5 | 762 | |
| 563.00 > 169.00 | 3.758 | 3.755 | 0.003 | 1.000 | 53494 | | 3.40(2.12-6.36) | 93.5 | 2615 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.914 | 3.910 | 0.004 | 1.000 | 1001338 | 0.2401 | | 102 | 22386 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.047 | 4.052 | -0.005 | 1.000 | 269716 | 0.2285 | | 91.4 | 196 | |
| 613.00 > 169.00 | 4.047 | 4.052 | -0.005 | 1.000 | 66650 | | 4.05(2.13-6.40) | 91.4 | 1457 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.047 | 4.052 | -0.005 | 1.000 | 2730672 | 2.47 | | 98.7 | 20860 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.317 | 4.316 | 0.001 | 1.000 | 301420 | 0.2387 | | 95.5 | 116 | |
| 663.00 > 169.00 | 4.317 | 4.316 | 0.001 | 1.000 | 102600 | | 2.94(1.25-3.76) | 95.5 | 1837 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.561 | 4.558 | 0.003 | 1.000 | 3442831 | 2.45 | | 97.9 | 17673 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.561 | 4.558 | 0.003 | 1.000 | 88991 | 0.2587 | | 103 | 1506 | |
| 713.00 > 219.00 | 4.550 | 4.558 | -0.008 | 0.998 | 67523 | | 1.32(0.71-2.13) | 103 | 1702 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.973 | 4.977 | -0.004 | 1.000 | 523255 | 0.2476 | | 99.0 | 127 | |
| 813.00 > 169.00 | 4.973 | 4.977 | -0.004 | 1.000 | 91462 | | 5.72(2.86-8.58) | 99.0 | 886 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.973 | 4.977 | -0.004 | 1.000 | 5136479 | 2.37 | | 94.6 | 13963 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.348 | 5.344 | 0.004 | 1.000 | 548804 | 0.2690 | | 108 | 95.1 | |
| 913.00 > 169.00 | 5.341 | 5.344 | -0.003 | 0.999 | 65998 | | 8.32(3.83-11.48) | 108 | 957 | |

## Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:47:48 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_004.d

Injection Date: 29-Mar-2018 17:43:00 Instrument ID: A8_N

Lims ID: IC L3 Full

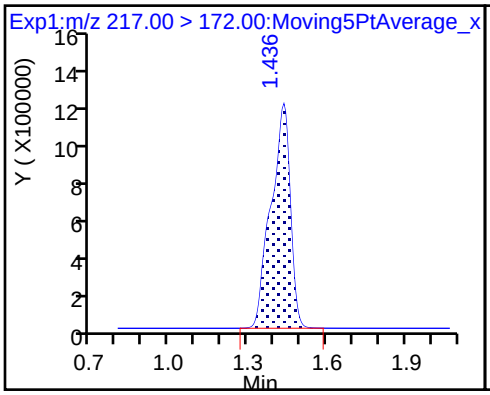
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

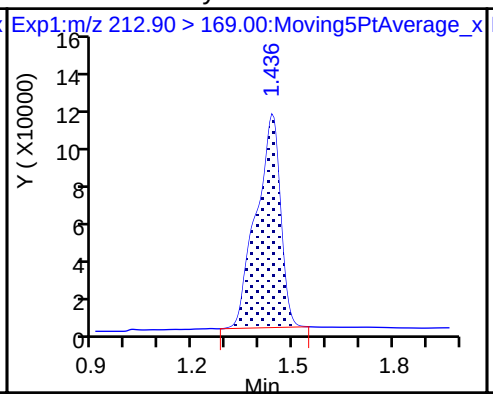
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

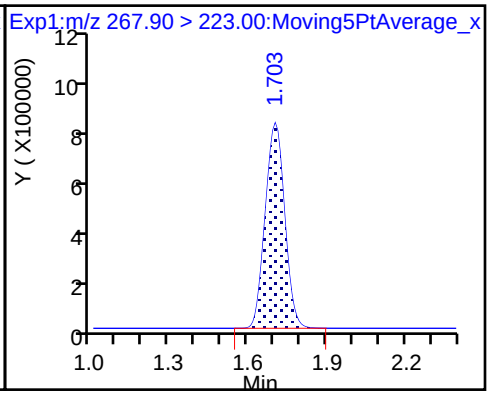
D 1 13C4 PFBA



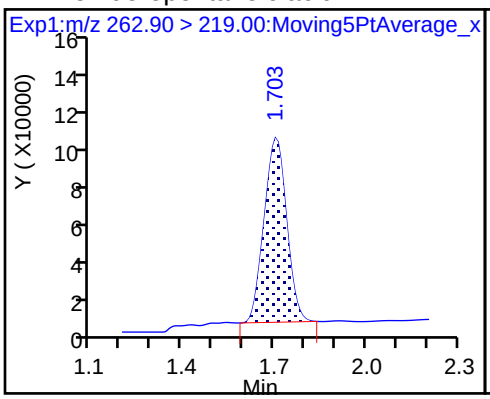

2 Perfluorobutyric acid



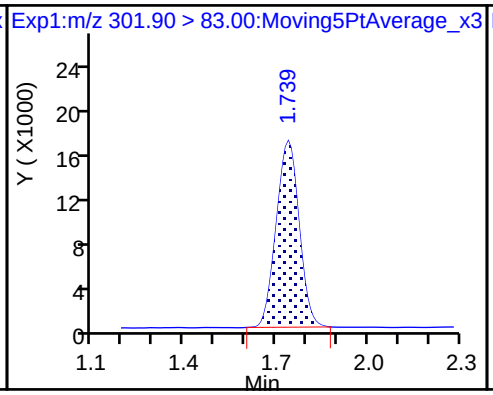

D 3 13C5-PFPeA



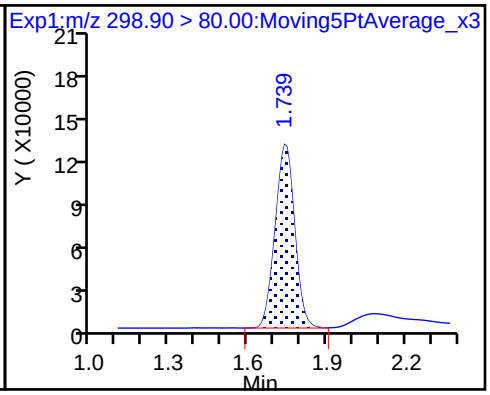

4 Perfluoropentanoic acid



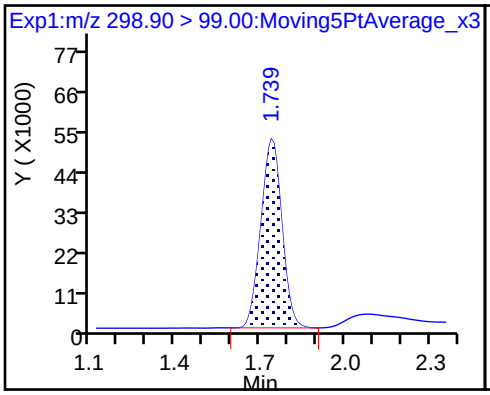

D 47 13C3-PFBS



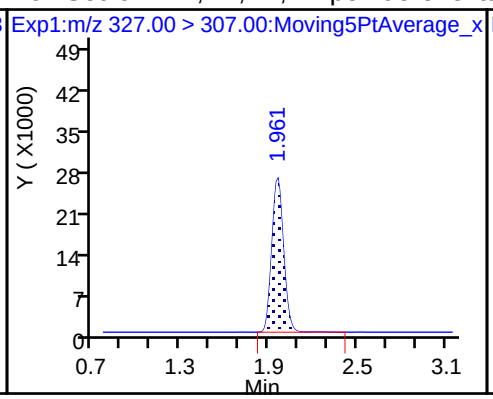

5 Perfluorobutanesulfonic acid



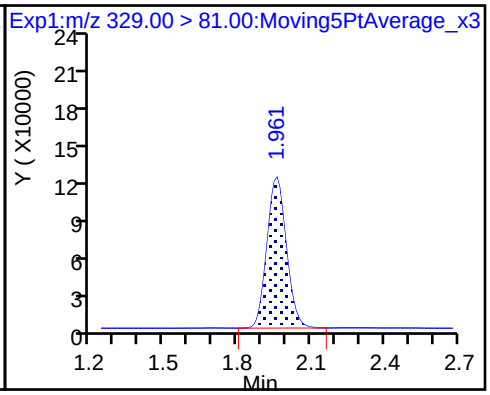

5 Perfluorobutanesulfonic acid



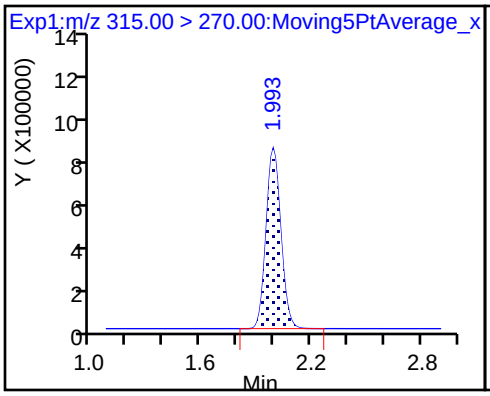

61 Sodium 1H,1H,2H,2H-perfluorohexane



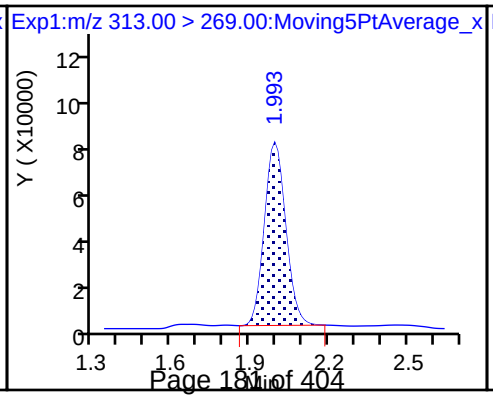

D 60 M2-4:2FTS



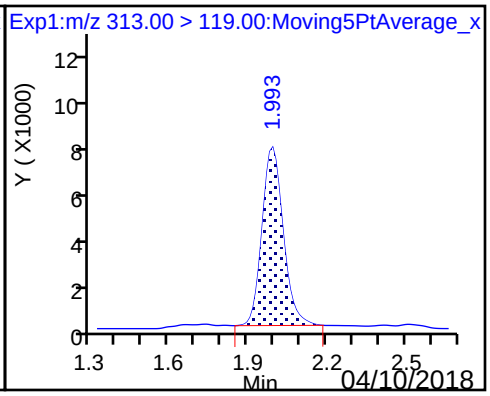

D 7 13C2 PFHxA



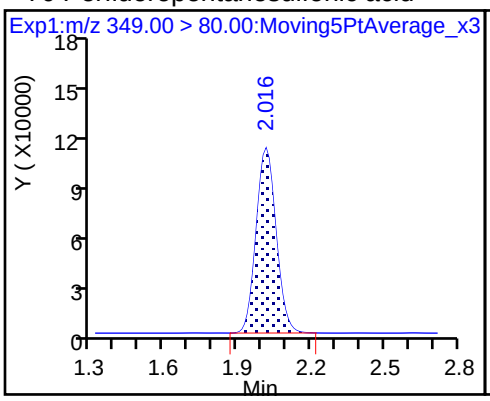

6 Perfluorohexanoic acid



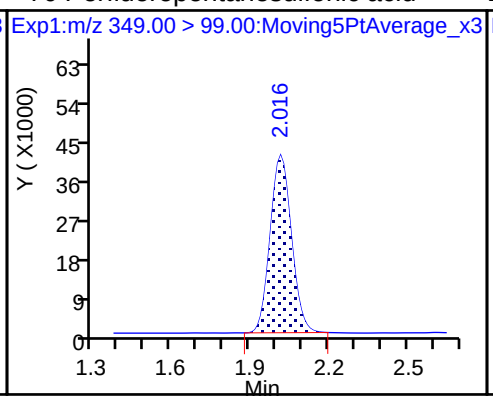

6 Perfluorohexanoic acid



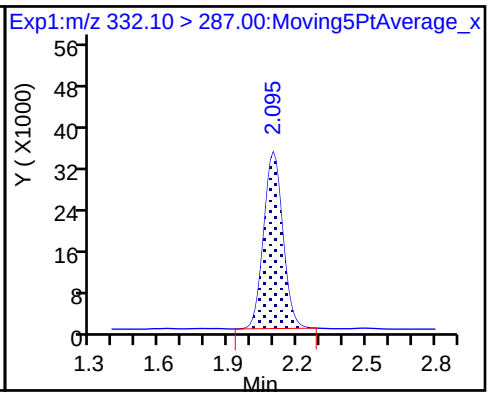
70 Perfluoropentanesulfonic acid



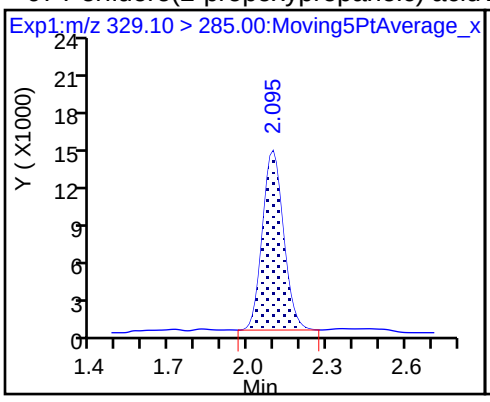

70 Perfluoropentanesulfonic acid



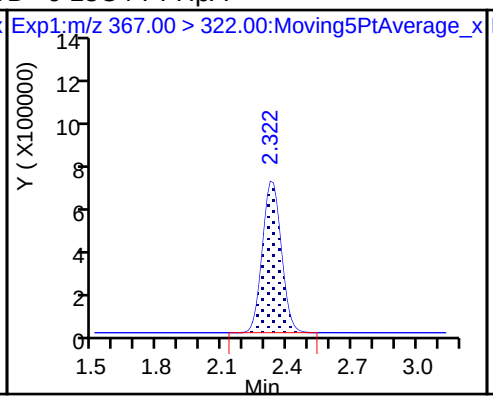

D 64 13C3 HFPO-DA



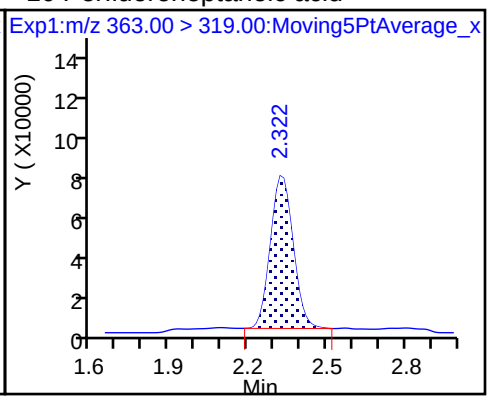

67 Perfluoro(2-propoxypropanoic) acid



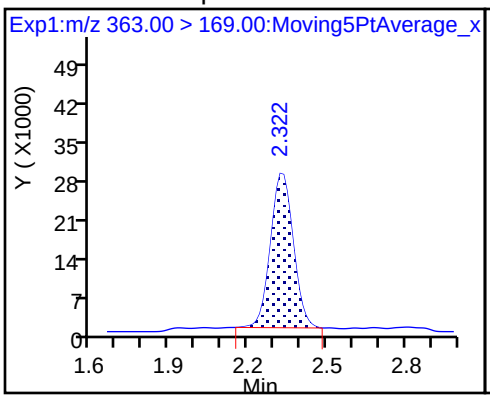

D 9 13C4-PFHpA



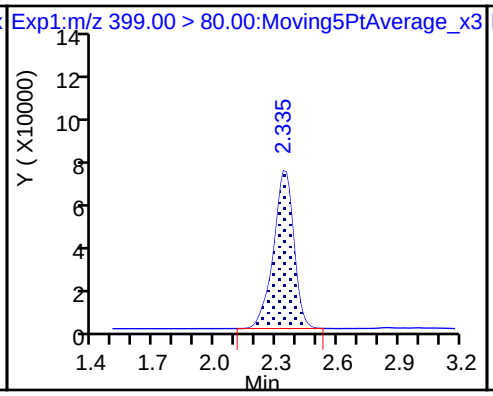

10 Perfluoroheptanoic acid



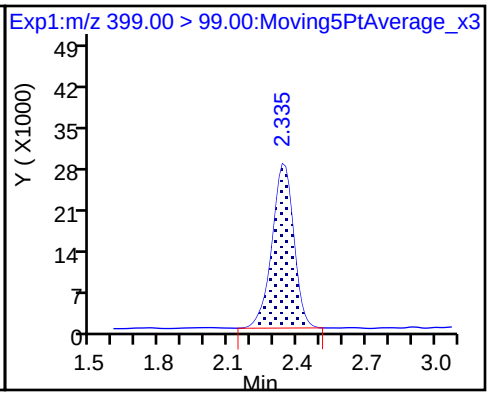

10 Perfluoroheptanoic acid



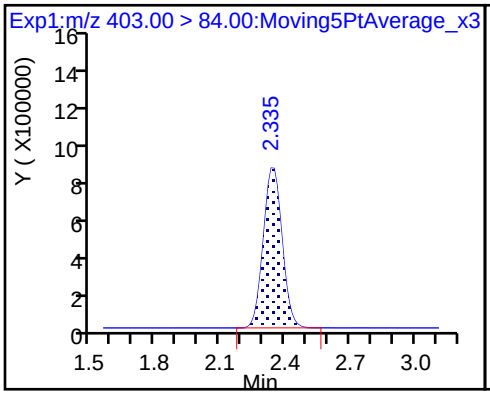

8 Perfluorohexanesulfonic acid



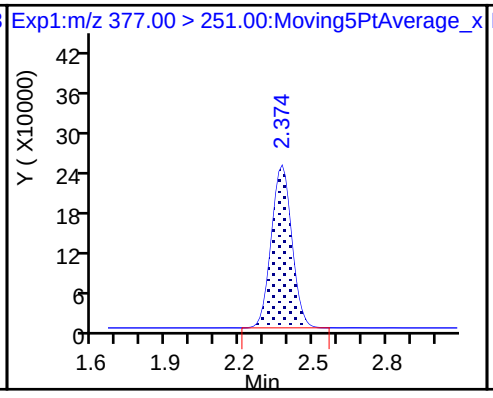

8 Perfluorohexanesulfonic acid



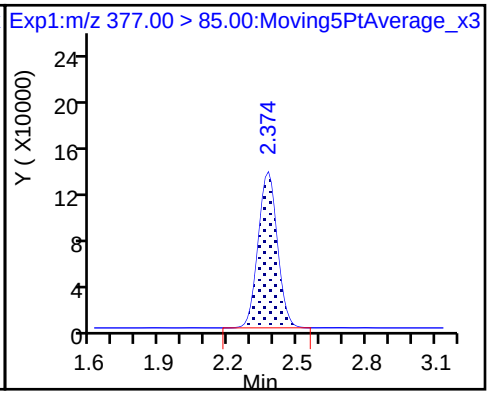

D 11 18O2 PFHxS



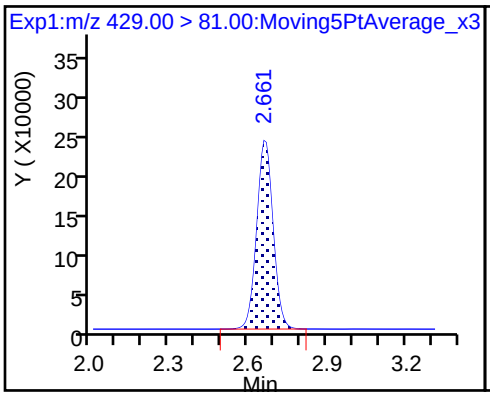

65 Adona



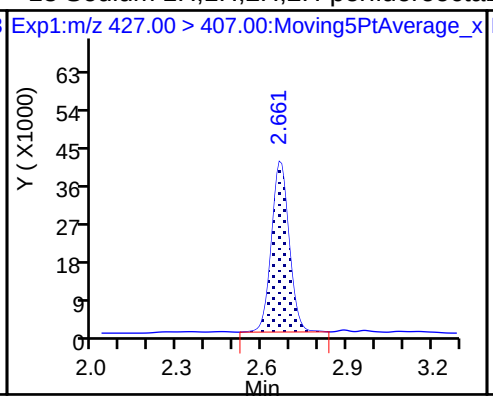

65 Adona



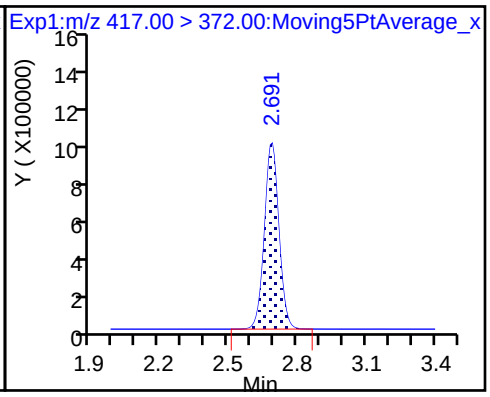
D 12 M2-6:2FTS



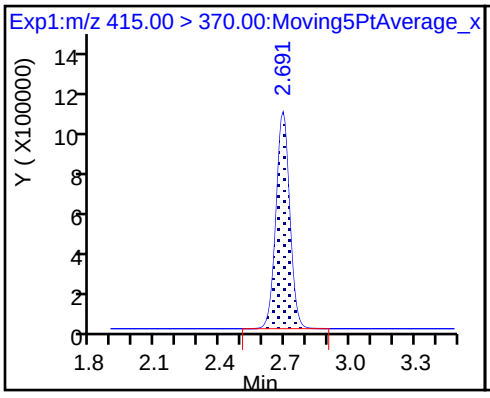

13 Sodium 1H,1H,2H,2H-perfluorooctane



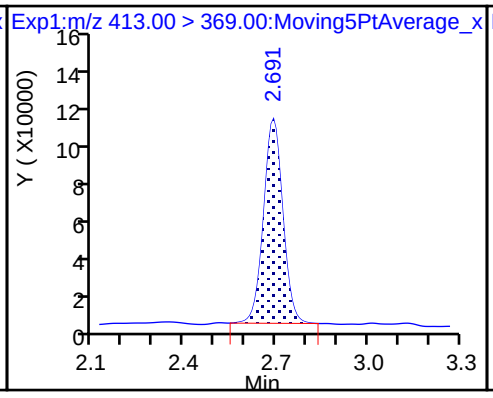

D 14 13C4 PFOA



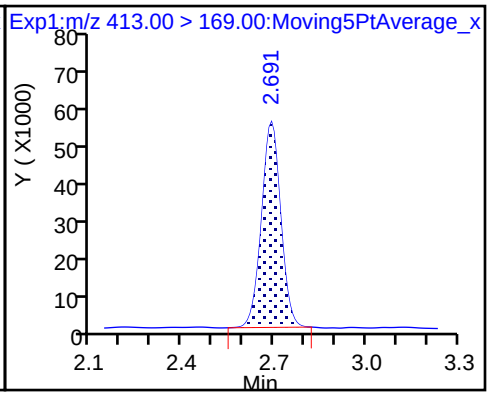

* 62 13C2-PFOA



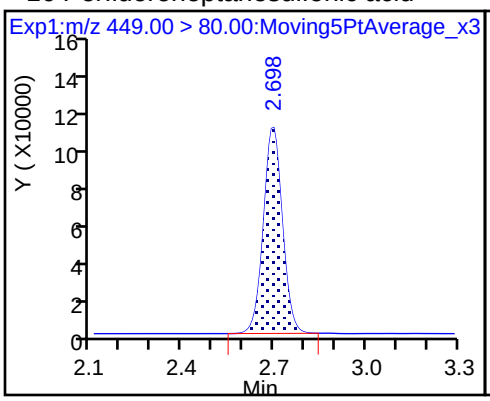

15 Perfluorooctanoic acid



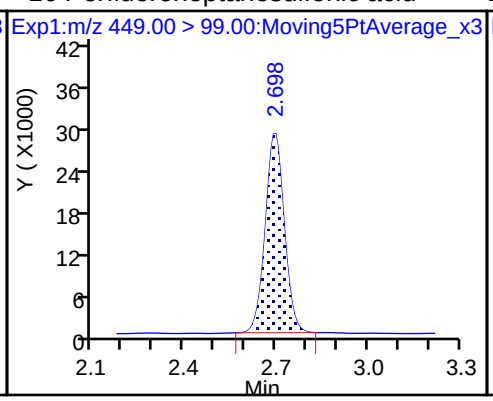

15 Perfluorooctanoic acid



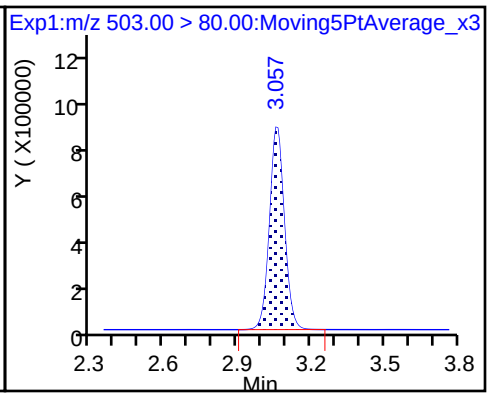

16 Perfluoroheptanesulfonic acid



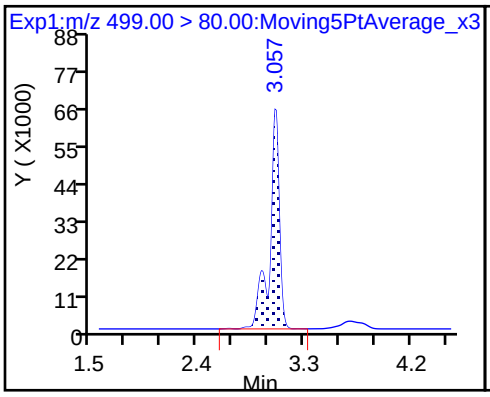

16 Perfluoroheptanesulfonic acid



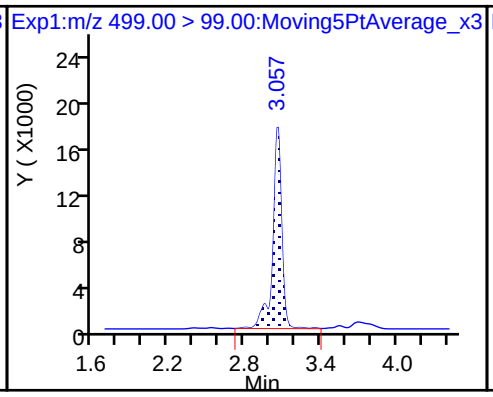

D 18 13C4 PFOS



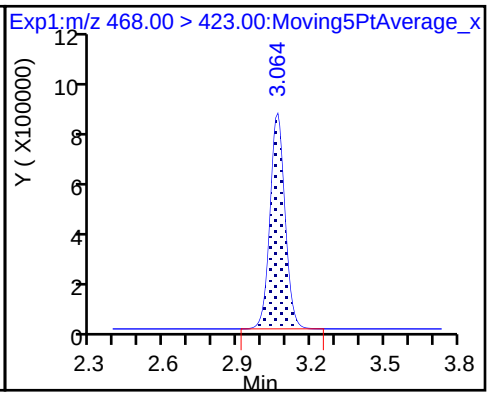

17 Perfluorooctane sulfonic acid



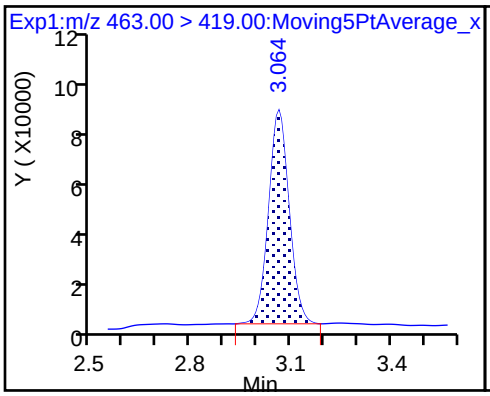

17 Perfluorooctane sulfonic acid



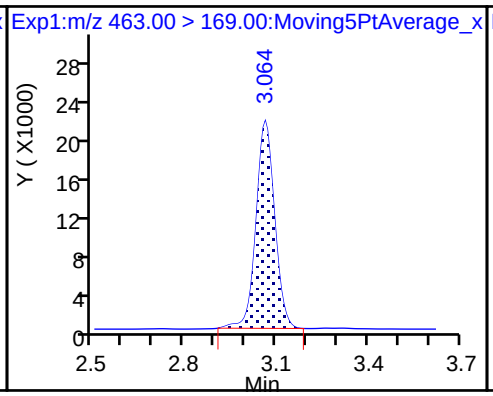

D 19 13C5 PFNA



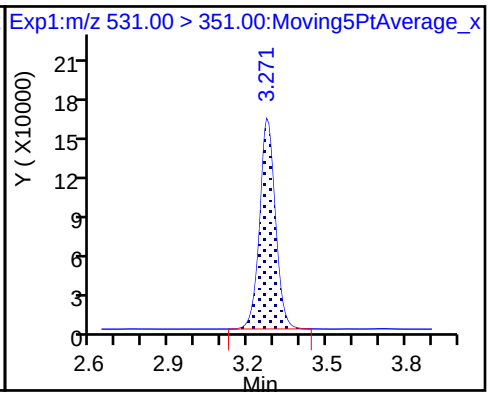
20 Perfluorononanoic acid



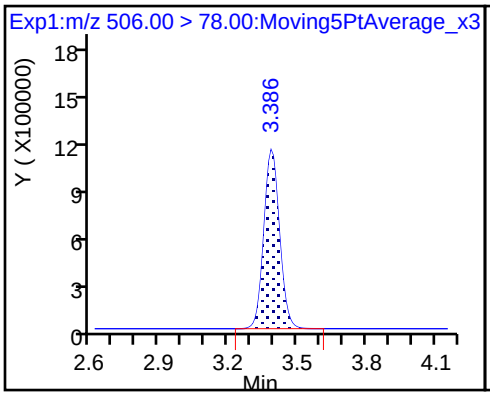

20 Perfluorononanoic acid



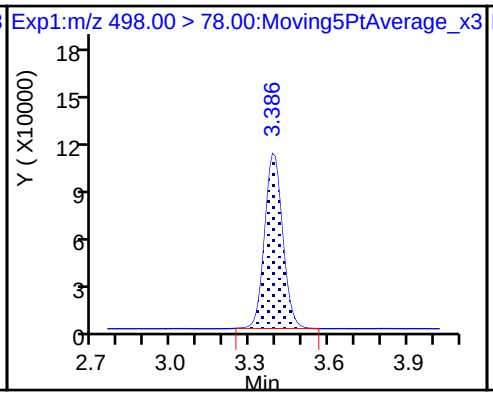

69 9-Chlorohexadecafluoro-3-oxanonane



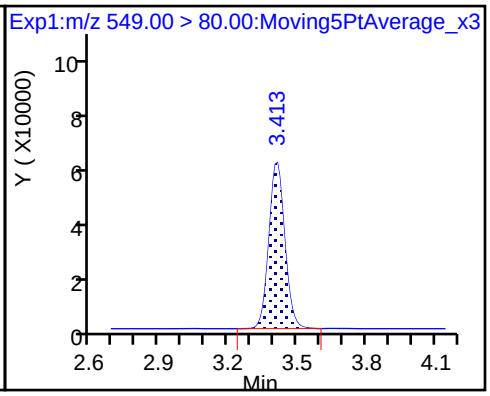

D 21 13C8 FOSA



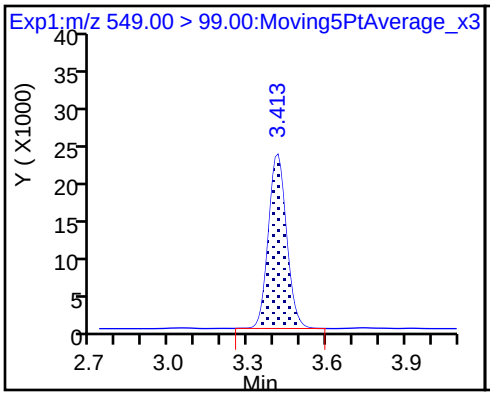

22 Perfluorooctane Sulfonamide



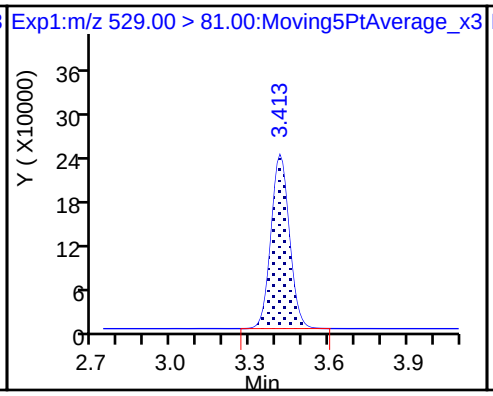

68 Perfluorononanesulfonic acid



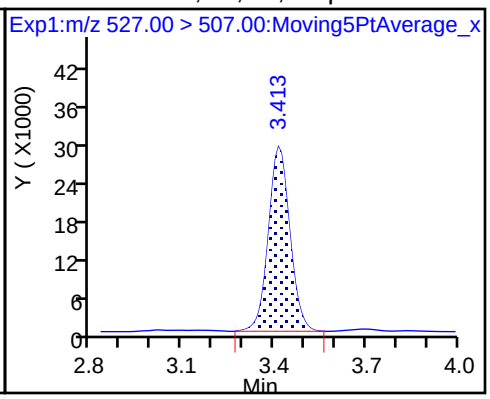

68 Perfluorononanesulfonic acid



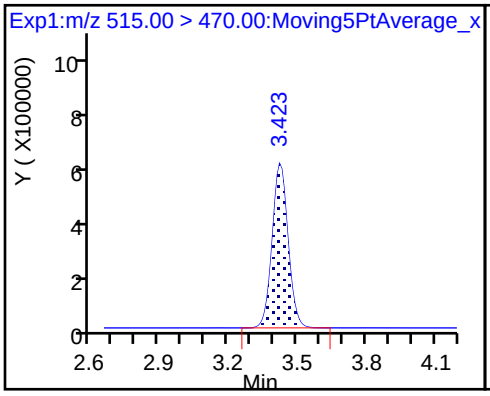

D 26 M2-8:2FTS



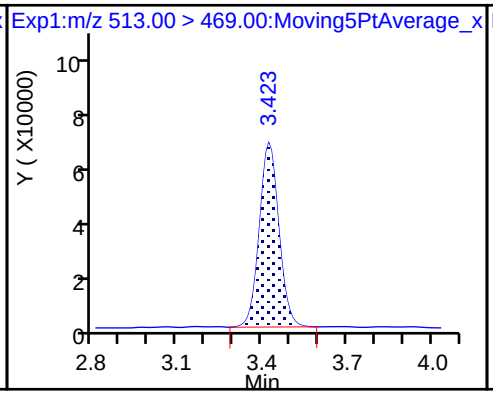

25 Sodium 1H,1H,2H,2H-perfluorodecane



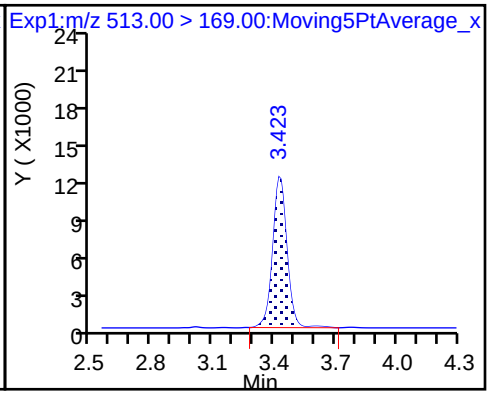

D 23 13C2 PFDA



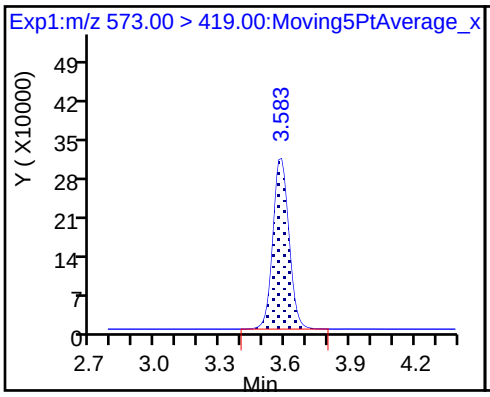

24 Perfluorodecanoic acid



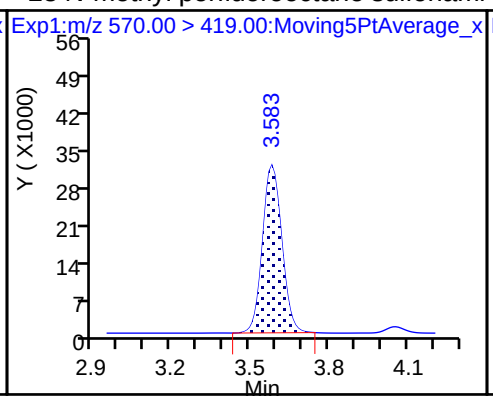

24 Perfluorodecanoic acid



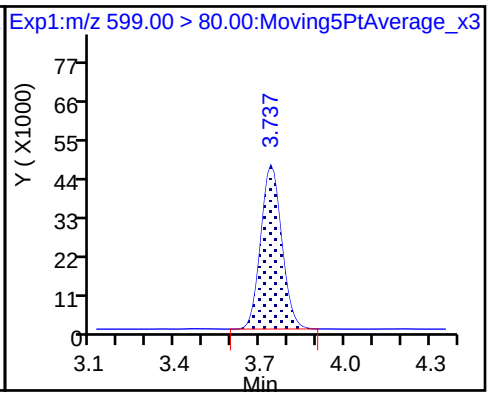
D 27 d3-NMeFOSAA



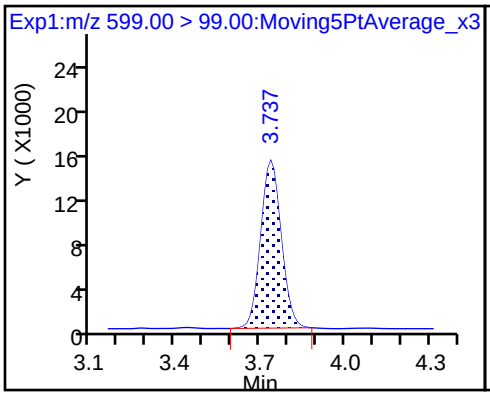

28 N-methyl perfluorooctane sulfonami



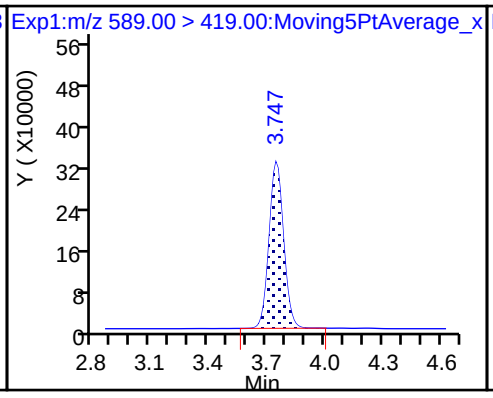

29 Perfluorodecane Sulfonic acid



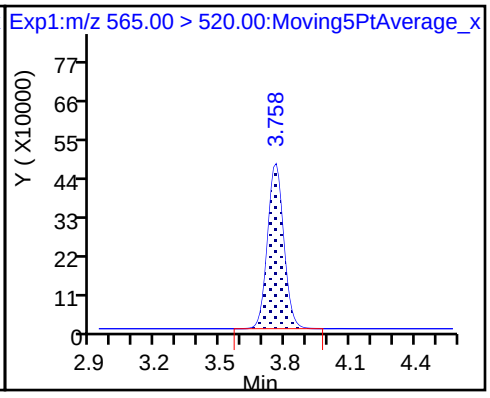

29 Perfluorodecane Sulfonic acid



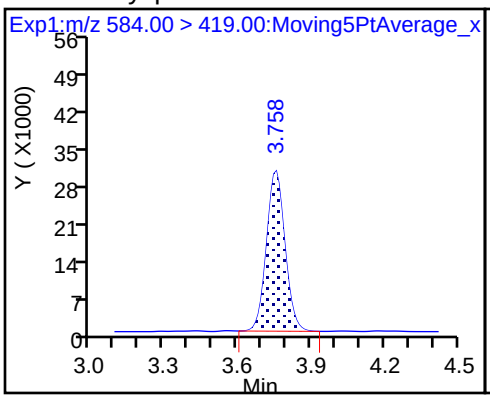

D 32 d5-NEtFOSAA



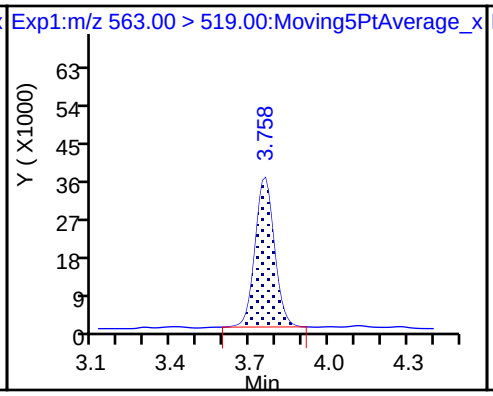

D 30 13C2 PFUnA



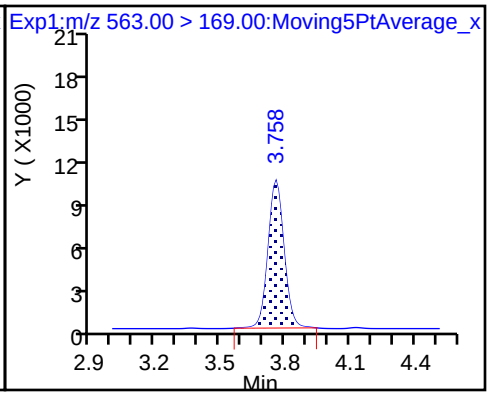

33 N-ethyl perfluorooctane sulfonamid



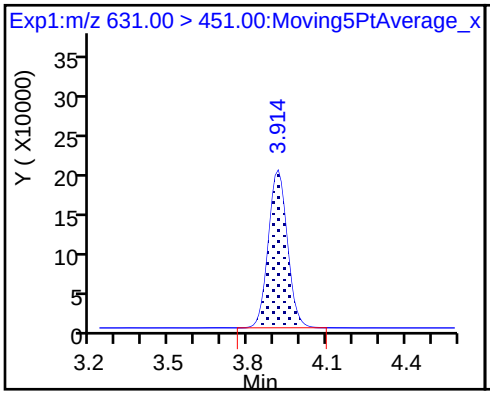

31 Perfluoroundecanoic acid



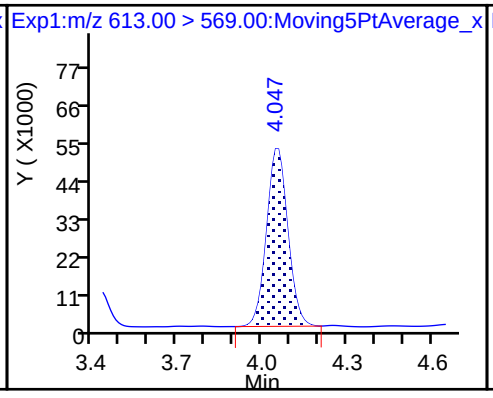

31 Perfluoroundecanoic acid



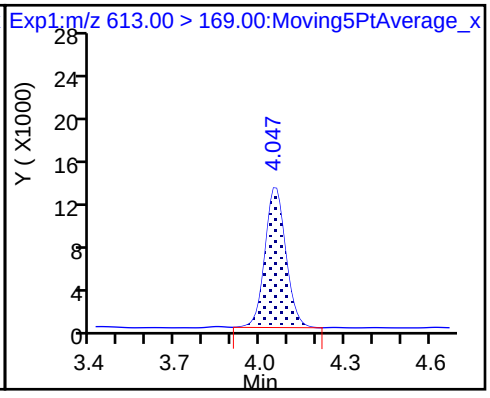

66 11-Chloroeicosafluoro-3-oxaundecan



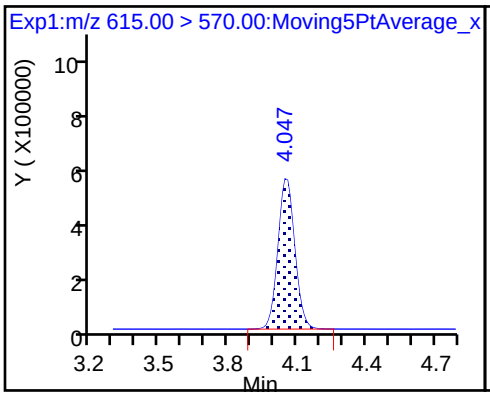

37 Perfluorododecanoic acid



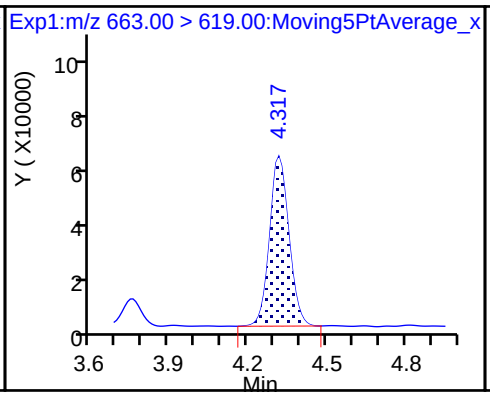

37 Perfluorododecanoic acid



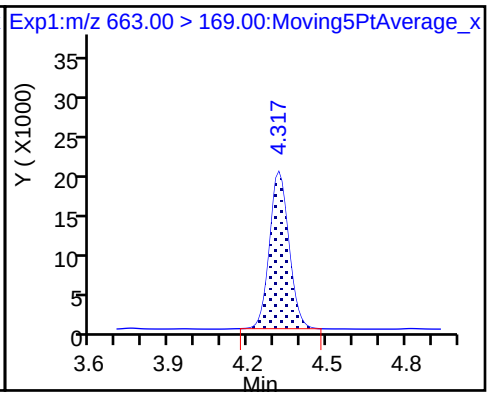
D 36 13C2 PFDoA



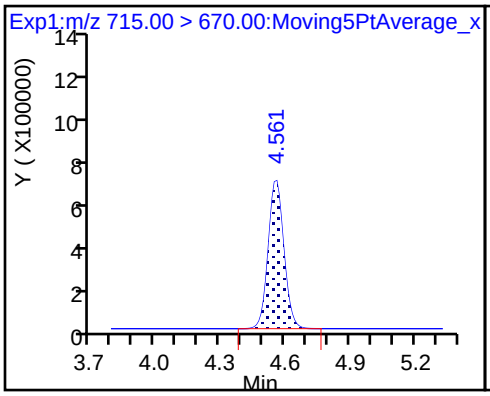

41 Perfluorotridecanoic acid



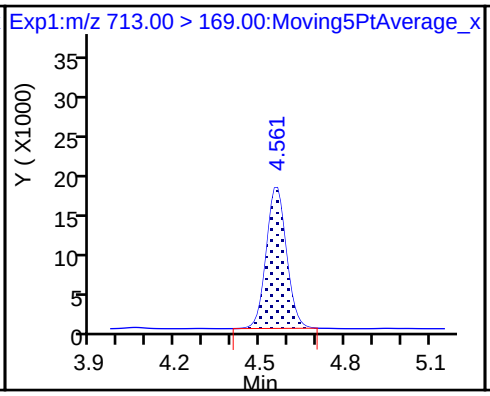

41 Perfluorotridecanoic acid



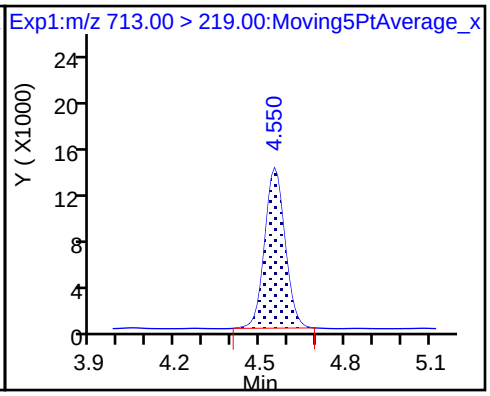

D 43 13C2-PFTeDA



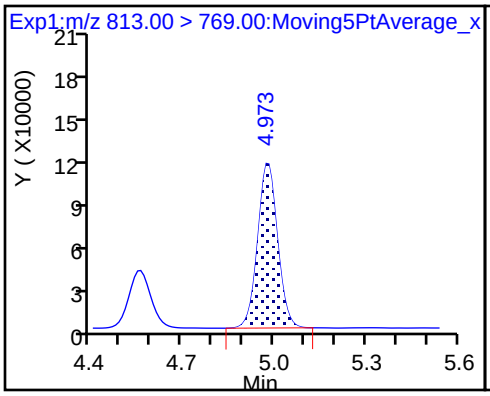

42 Perfluorotetradecanoic acid



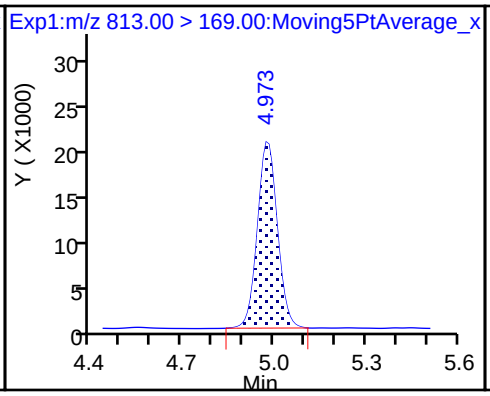

42 Perfluorotetradecanoic acid



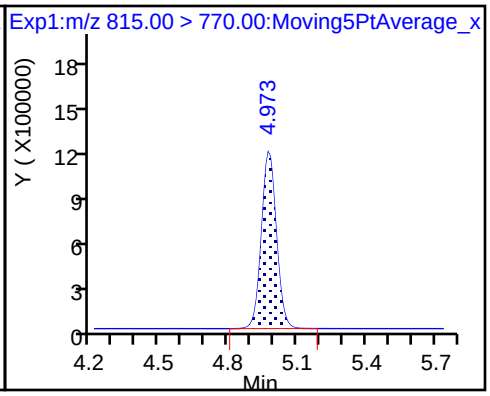

45 Perfluorohexadecanoic acid



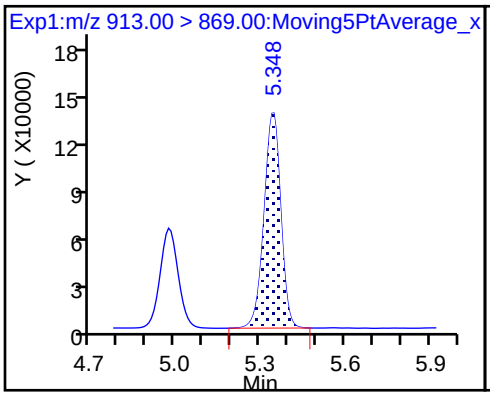

45 Perfluorohexadecanoic acid



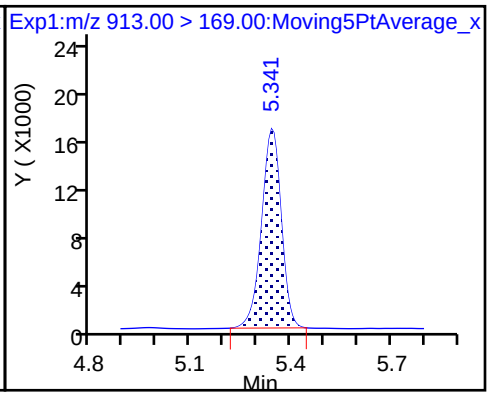

D 44 13C2-PFHxDA




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 29-Mar-2018 17:50:50 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:47:56 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 11:39:05

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.439 | 1.436 | 0.003 | 1.000 | 6326878 | 2.53 | | 101 | 66086 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.439 | 1.437 | 0.002 | 1.000 | 2290620 | 0.9794 | | 97.9 | 809 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.698 | 1.702 | -0.004 | 0.555 | 4176477 | 2.57 | | 103 | 116353 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.707 | 1.706 | 0.001 | 1.005 | 1931372 | 0.9659 | | 96.6 | 805 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.734 | 1.738 | -0.004 | 1.000 | 90179 | 2.42 | | 104 | 608 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.743 | 1.742 | 0.001 | 1.005 | 2631669 | 0.8600 | | 97.3 | 1869 | |
| 298.90 > 99.00 | 1.743 | 1.742 | 0.001 | 1.005 | 1083923 | | 2.43(1.25-3.74) | 97.3 | 1759 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.956 | 1.955 | 0.001 | 1.000 | 663350 | 2.33 | | 99.9 | 9283 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.956 | 1.955 | 0.001 | 1.000 | 566727 | 0.8468 | | 90.7 | 34287 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.988 | 1.991 | -0.002 | 1.000 | 4494490 | 2.51 | | 100 | 133459 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.988 | 1.992 | -0.004 | 1.000 | 1763768 | 0.9587 | | 95.9 | 2454 | |
| 313.00 > 119.00 | 1.988 | 1.992 | -0.004 | 1.000 | 174575 | | 10.10(5.03-15.10) | 95.9 | 1944 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.011 | 2.013 | -0.002 | 1.000 | 2554091 | 0.9248 | | 98.6 | 56514 | |
| 349.00 > 99.00 | 2.011 | 2.013 | -0.002 | 1.000 | 949421 | | 2.69(1.36-4.07) | 98.6 | 24112 | |
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.090 | 2.092 | -0.002 | 1.000 | 282149 | 0.9074 | | 90.7 | 2501 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.090 | 2.092 | -0.002 | 1.000 | 228536 | 2.56 | | 102 | 4106 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.329 | 2.326 | 0.003 | 1.000 | 4235886 | 2.46 | | 98.4 | 78022 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.329 | 2.327 | 0.002 | 1.000 | 1808460 | 0.9823 | | 98.2 | 1774 | |
| 363.00 > 169.00 | 2.329 | 2.327 | 0.002 | 1.000 | 676071 | | 2.67(1.13-3.40) | 98.2 | 1853 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.342 | 2.339 | 0.003 | 1.000 | 1978319 | 0.7926 | | 87.1 | 8809 | |
| 399.00 > 99.00 | 2.342 | 2.339 | 0.003 | 1.000 | 679646 | | 2.91(1.50-4.49) | 87.1 | 3957 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.342 | 2.340 | 0.002 | 1.000 | 5285294 | 2.46 | | 104 | 74091 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.369 | 2.372 | -0.003 | 1.000 | 5648777 | 1.02 | | 102 | 75524 | |
| 377.00 > 85.00 | 2.369 | 2.372 | -0.003 | 1.000 | 3138221 | | 1.80(0.84-2.53) | 102 | 54318 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.666 | 2.664 | 0.002 | 1.000 | 617577 | 0.8304 | | 87.6 | 3087 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.666 | 2.664 | 0.002 | 1.000 | 945777 | 2.38 | | 100 | 27031 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.688 | 2.688 | 0.0 | 1.000 | 4302583 | 2.54 | | 102 | 91031 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.688 | 2.689 | -0.001 | | 4517618 | 2.50 | | | 95988 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.688 | 2.690 | -0.002 | 1.000 | 1868120 | 0.9154 | | 91.5 | 659 | |
| 413.00 > 169.00 | 2.688 | 2.690 | -0.002 | 1.000 | 971134 | | 1.92(0.84-2.52) | 91.5 | 3751 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.696 | 2.695 | 0.001 | 1.000 | 1907896 | 0.9225 | | 96.9 | 34296 | |
| 449.00 > 99.00 | 2.696 | 2.695 | 0.001 | 1.000 | 526708 | | 3.62(1.94-5.82) | 96.9 | 12171 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.059 | 3.060 | -0.001 | 1.000 | 1463610 | 0.8254 | | 88.9 | 3157 | |
| 499.00 > 99.00 | 3.059 | 3.060 | -0.001 | 1.000 | 340322 | | 4.30(2.31-6.93) | 88.9 | 3568 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.059 | 3.060 | -0.001 | 1.000 | 3709075 | 2.49 | | 104 | 36433 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.059 | 3.061 | -0.002 | 1.000 | 3594883 | 2.51 | | 100 | 66385 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.059 | 3.064 | -0.005 | 1.000 | 1464985 | 0.99 | | 99.0 | 1530 | |
| 463.00 > 169.00 | 3.059 | 3.064 | -0.005 | 1.000 | 357225 | | 4.10(1.90-5.69) | 99.0 | 12362 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.273 | 3.272 | 0.001 | 1.000 | 2643424 | 0.9109 | | 97.7 | 30685 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.389 | 3.388 | 0.001 | 1.000 | 5326321 | 2.53 | | 101 | 62884 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.389 | 3.389 | 0.0 | 1.000 | 2096455 | 1.00 | | 99.6 | 44671 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.408 | 3.409 | -0.001 | 1.000 | 1129121 | 0.9075 | | 94.5 | 33891 | |
| 549.00 > 99.00 | 3.408 | 3.409 | -0.001 | 1.000 | 441645 | | 2.56(1.33-3.97) | 94.5 | 13287 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.417 | 3.413 | 0.004 | 1.000 | 1069323 | 2.31 | | 96.5 | 30865 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.417 | 3.415 | 0.002 | 1.000 | 564315 | 0.9371 | | 97.8 | 6369 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.426 | 3.423 | 0.003 | 1.000 | 3033191 | 2.51 | | 100 | 42271 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.426 | 3.427 | -0.001 | 1.000 | 1176291 | 0.9800 | | 98.0 | 5989 | |
| 513.00 > 169.00 | 3.426 | 3.427 | -0.001 | 1.000 | 221055 | | 5.32(2.36-7.09) | 98.0 | 9212 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.575 | 3.578 | -0.003 | 1.000 | 1643657 | 2.54 | | 102 | 32778 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.586 | 3.581 | 0.005 | 1.003 | 637079 | 0.9192 | | 91.9 | 4973 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.741 | 3.738 | 0.003 | 1.000 | 1004519 | 0.9329 | | 96.8 | 24501 | |
| 599.00 > 99.00 | 3.741 | 3.738 | 0.003 | 1.000 | 323257 | | 3.11(1.39-4.16) | 96.8 | 12606 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.751 | 3.749 | 0.002 | 1.000 | 1794427 | 2.64 | | 106 | 4050 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.751 | 3.753 | -0.002 | 1.000 | 2514905 | 2.55 | | 102 | 44805 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.751 | 3.755 | -0.004 | 1.000 | 621160 | 0.9436 | | 94.4 | 8623 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.751 | 3.755 | -0.004 | 1.000 | 761440 | 0.9434 | | 94.3 | 3964 | |
| 563.00 > 169.00 | 3.751 | 3.755 | -0.004 | 1.000 | 200870 | | 3.79(2.12-6.36) | 94.3 | 9833 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.908 | 3.910 | -0.002 | 1.000 | 4214763 | 0.9357 | | 99.3 | 70271 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.051 | 4.052 | -0.001 | 1.000 | 2827344 | 2.57 | | 103 | 21719 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.051 | 4.052 | -0.001 | 1.000 | 1132386 | 0.9264 | | 92.6 | 925 | |
| 613.00 > 169.00 | 4.051 | 4.052 | -0.001 | 1.000 | 273090 | | 4.15(2.13-6.40) | 92.6 | 6755 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.318 | 4.316 | 0.002 | 1.000 | 1266253 | 0.9685 | | 96.9 | 540 | |
| 663.00 > 169.00 | 4.318 | 4.316 | 0.002 | 1.000 | 420300 | | 3.01(1.25-3.76) | 96.9 | 6383 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.553 | 4.558 | -0.005 | 1.000 | 366508 | 1.03 | | 103 | 5270 | |
| 713.00 > 219.00 | 4.553 | 4.558 | -0.005 | 1.000 | 262673 | | 1.40(0.71-2.13) | 103 | 6532 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.553 | 4.558 | -0.005 | 1.000 | 3577558 | 2.56 | | 102 | 21734 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.975 | 4.977 | -0.002 | 1.000 | 5422645 | 2.51 | | 101 | 15201 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.975 | 4.977 | -0.002 | 1.000 | 2020619 | 0.9625 | | 96.2 | 475 | |
| 813.00 > 169.00 | 4.975 | 4.977 | -0.002 | 1.000 | 343500 | | 5.88(2.86-8.58) | 96.2 | 3339 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.344 | 5.344 | 0.0 | 1.000 | 2132452 | 0.99 | | 99.0 | 350 | |
| 913.00 > 169.00 | 5.344 | 5.344 | 0.0 | 1.000 | 278856 | | 7.65(3.83-11.48) | 99.0 | 3135 | |

## Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:00 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_005.d

Injection Date: 29-Mar-2018 17:50:50 Instrument ID: A8_N

Lims ID: IC L4 Full

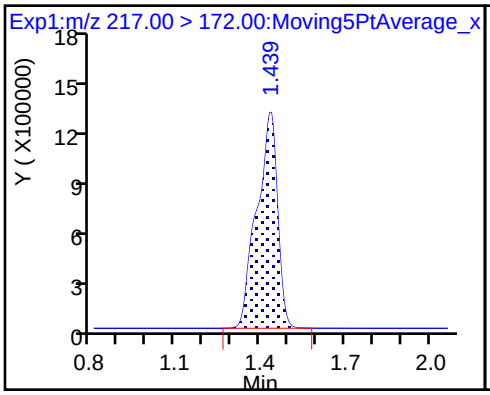
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

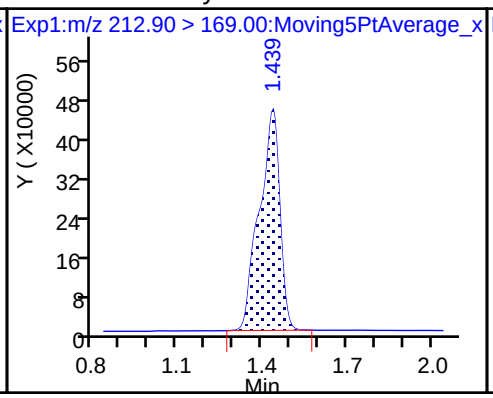
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

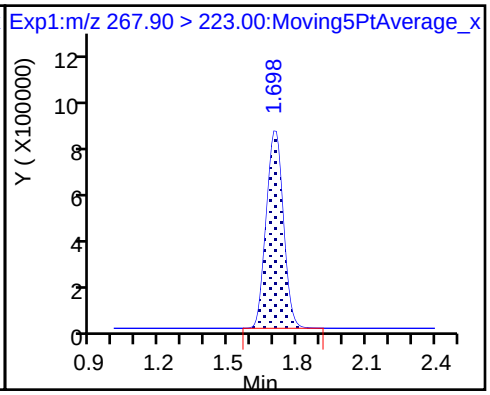
D 1 13C4 PFBA



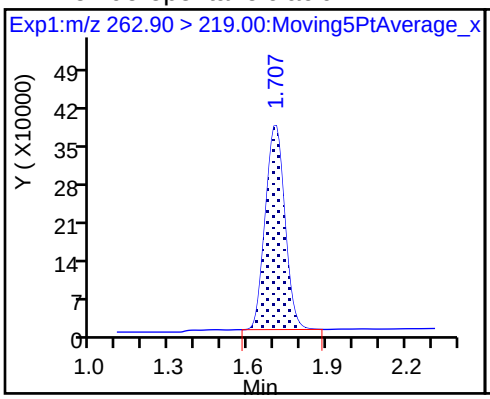

2 Perfluorobutyric acid



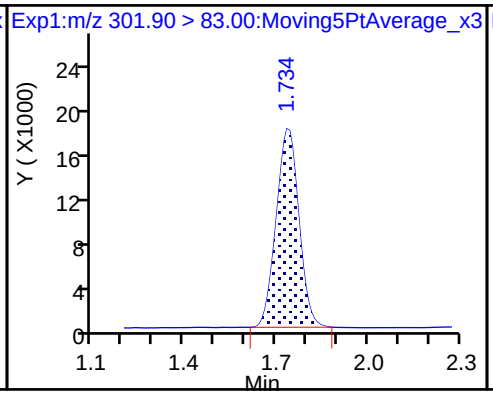

D 3 13C5-PFPeA



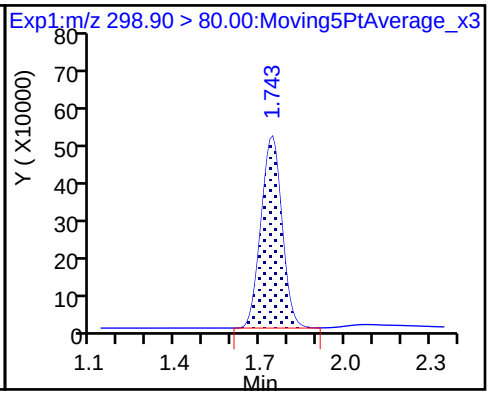

4 Perfluoropentanoic acid



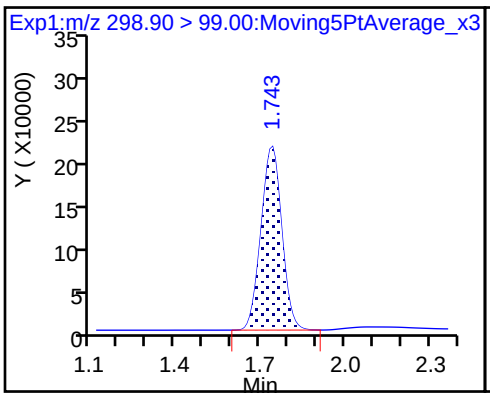

D 47 13C3-PFBS



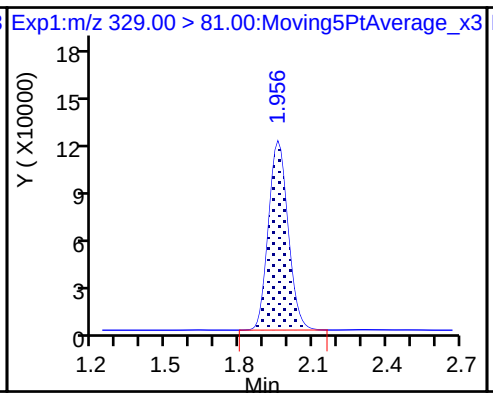

5 Perfluorobutanesulfonic acid



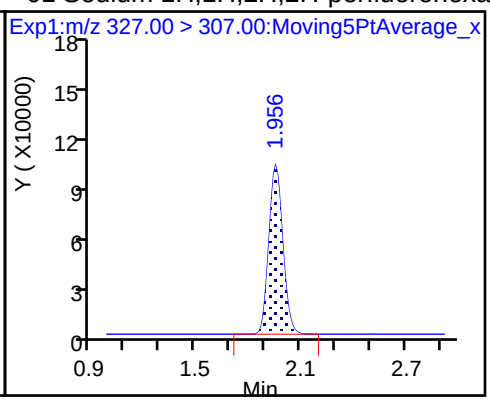

5 Perfluorobutanesulfonic acid



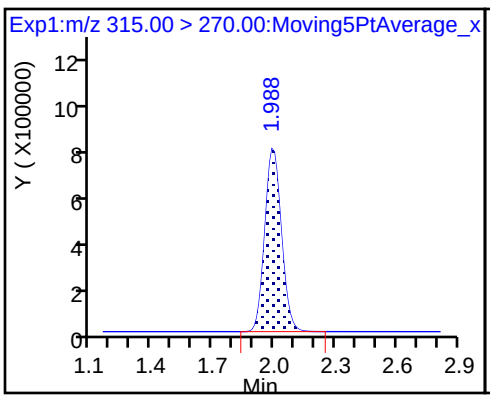

D 60 M2-4:2FTS



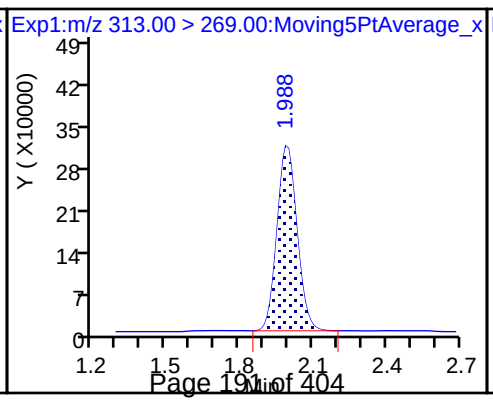

61 Sodium 1H,1H,2H,2H-perfluorohexane



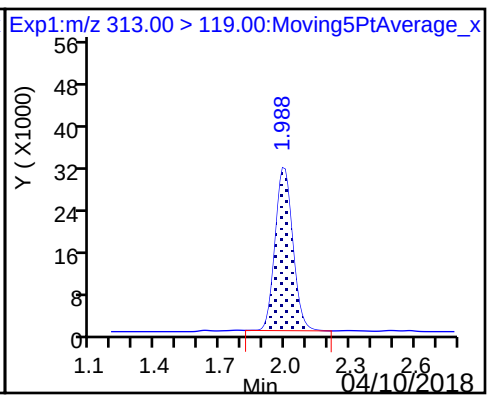

D 7 13C2 PFHxA



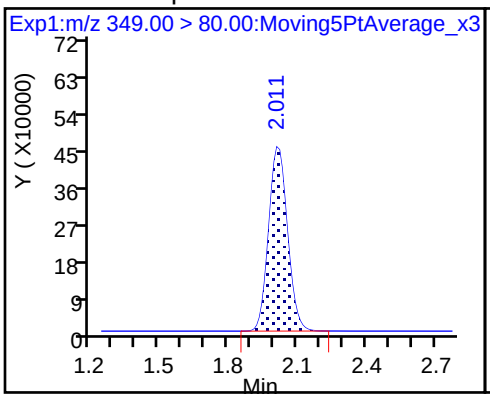

6 Perfluorohexanoic acid



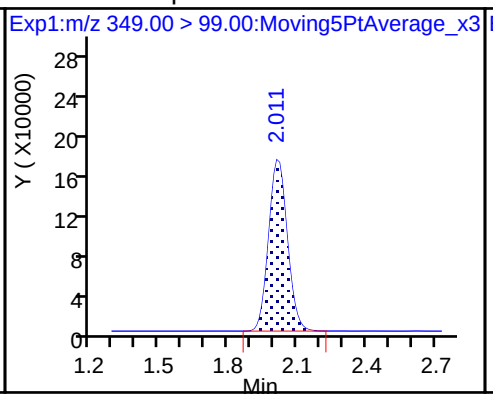

6 Perfluorohexanoic acid



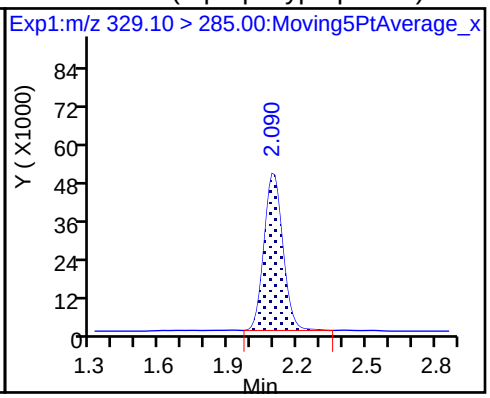
70 Perfluoropentanesulfonic acid



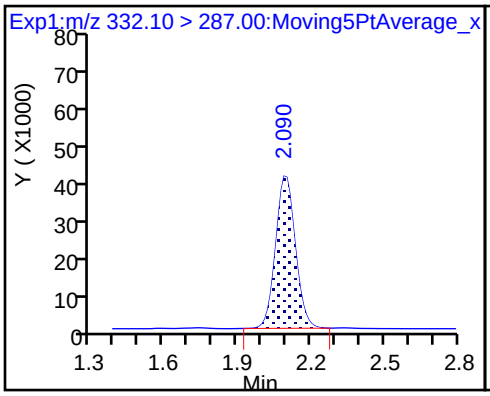

70 Perfluoropentanesulfonic acid



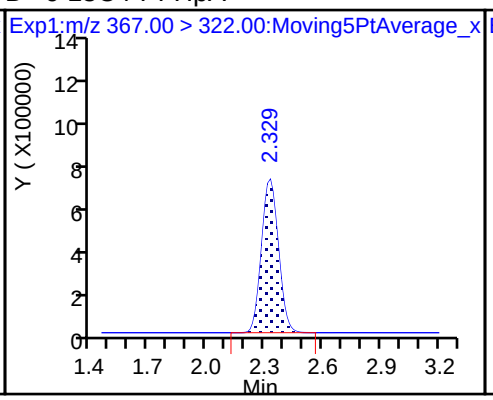

67 Perfluoro(2-propoxypropanoic) acid



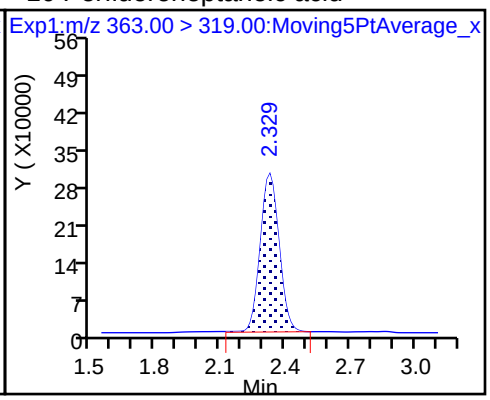

D 64 13C3 HFPO-DA



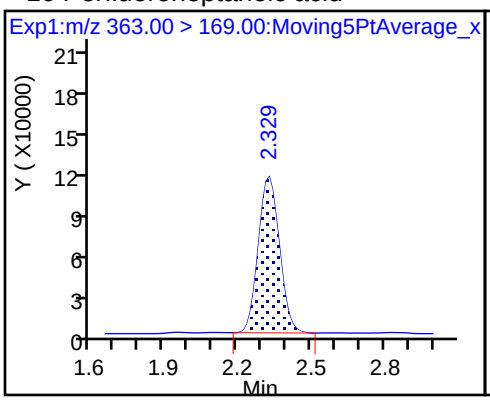

D 9 13C4-PFHpA



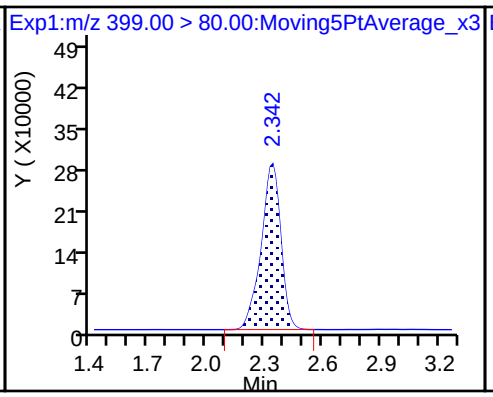

10 Perfluoroheptanoic acid



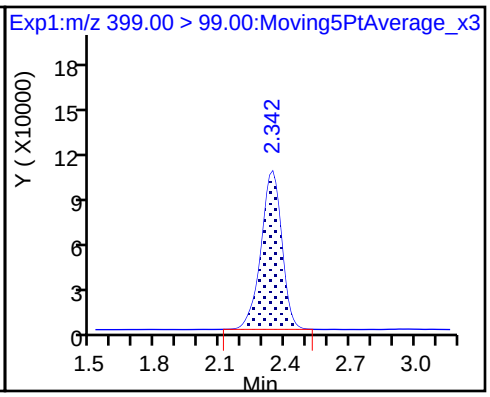

10 Perfluoroheptanoic acid



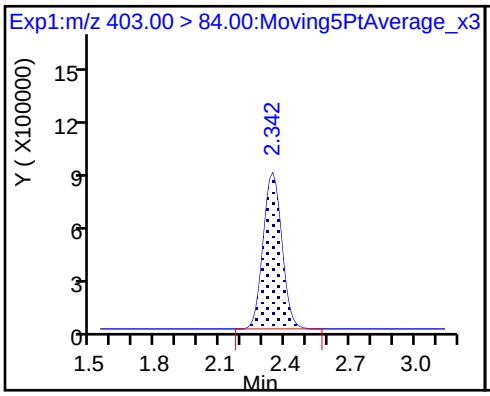

8 Perfluorohexanesulfonic acid



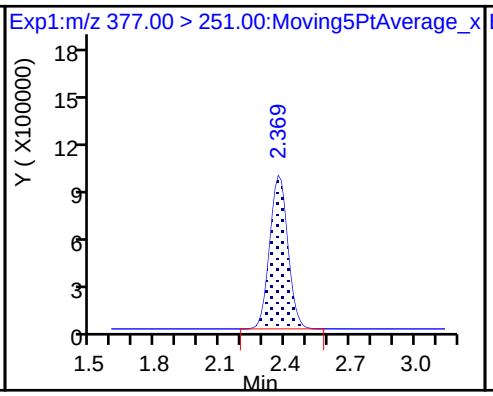

8 Perfluorohexanesulfonic acid



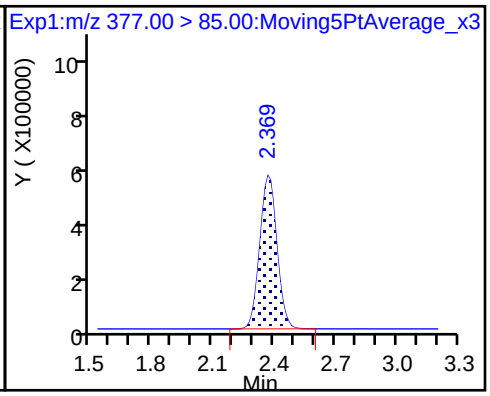

D 11 18O2 PFHxS



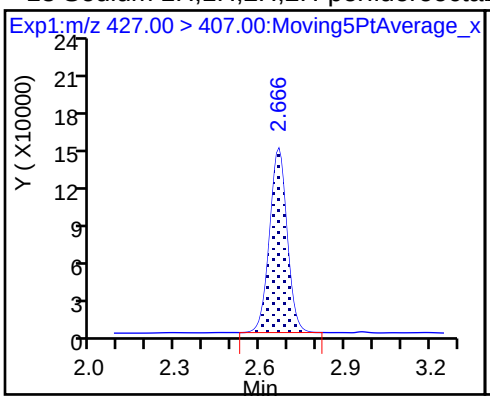

65 Adona



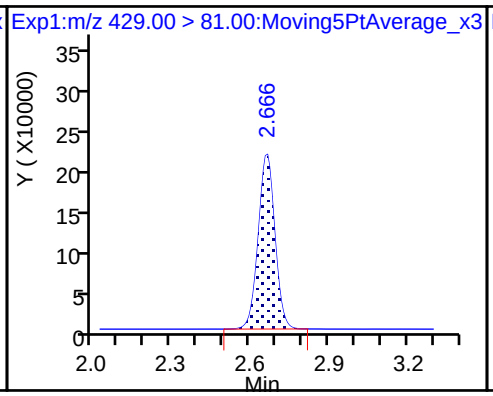

65 Adona



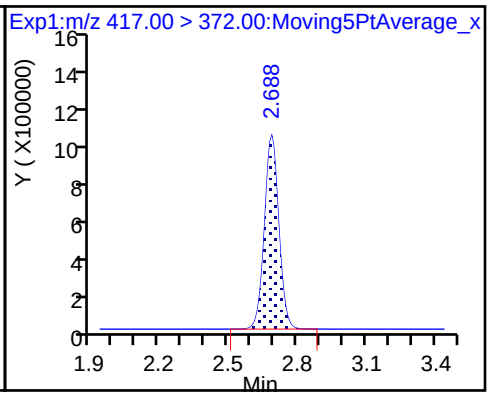
13 Sodium 1H,1H,2H,2H-perfluorooctane



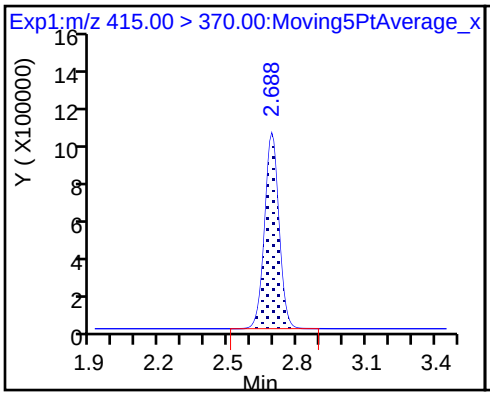

D 12 M2-6:2FTS



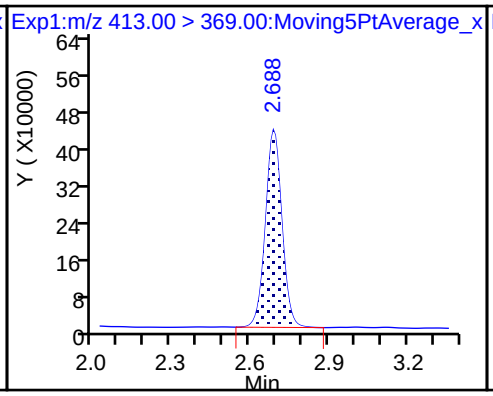

D 14 13C4 PFOA



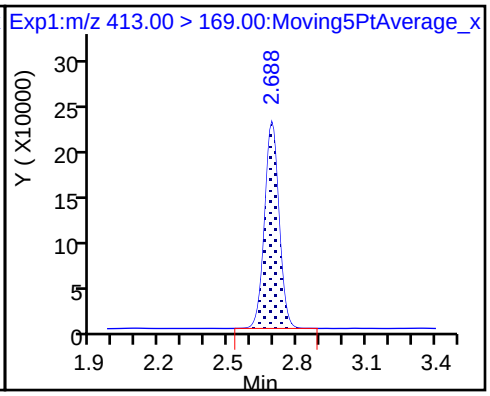

* 62 13C2-PFOA



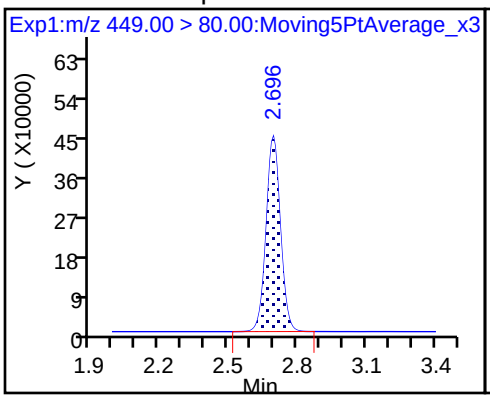

15 Perfluorooctanoic acid



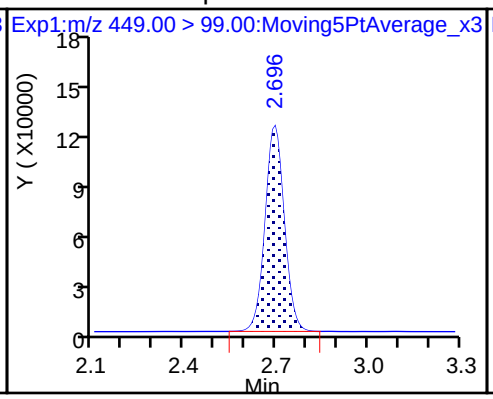

15 Perfluorooctanoic acid



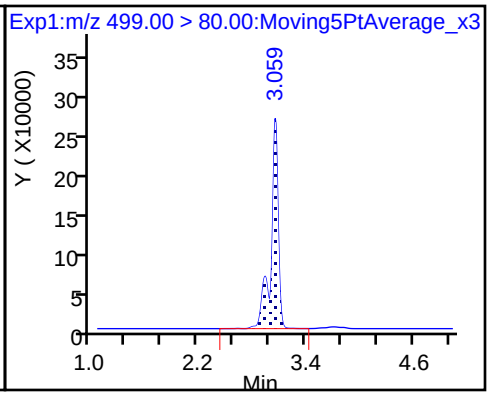

16 Perfluoroheptanesulfonic acid



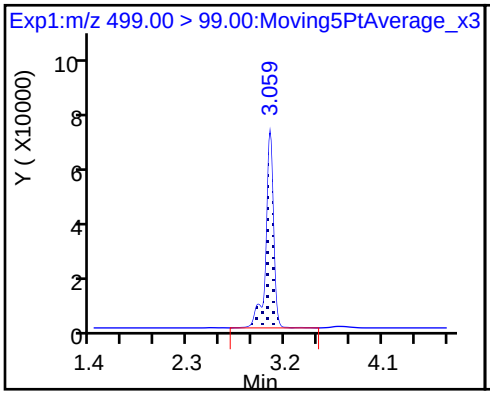

16 Perfluoroheptanesulfonic acid



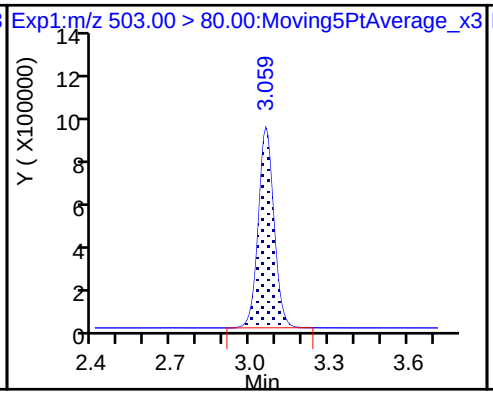

17 Perfluorooctane sulfonic acid



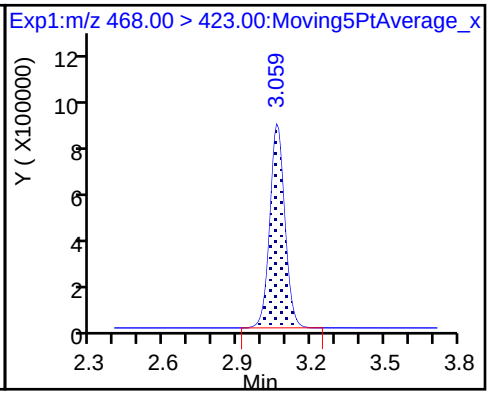

17 Perfluorooctane sulfonic acid



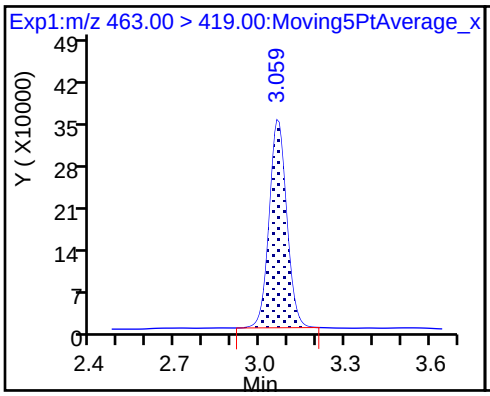

D 18 13C4 PFOS



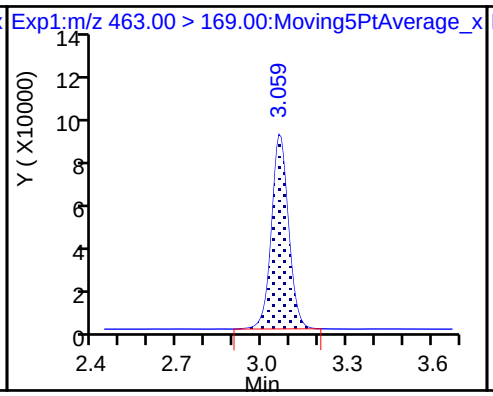

D 19 13C5 PFNA



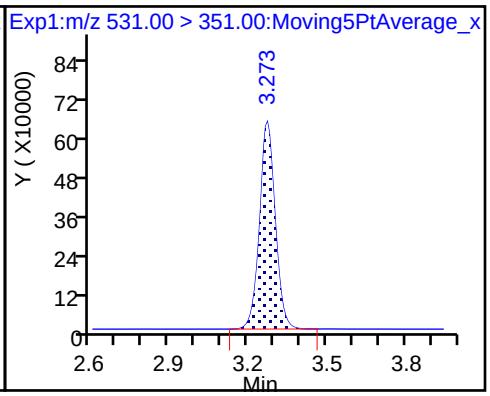
20 Perfluorononanoic acid



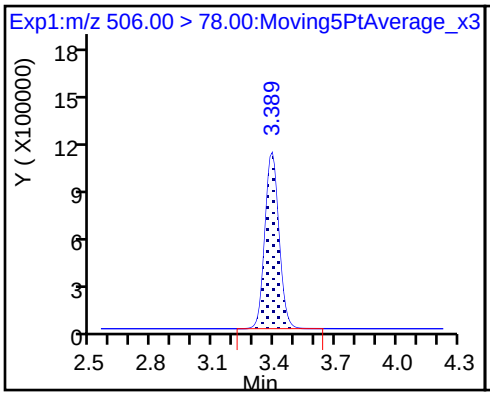

20 Perfluorononanoic acid



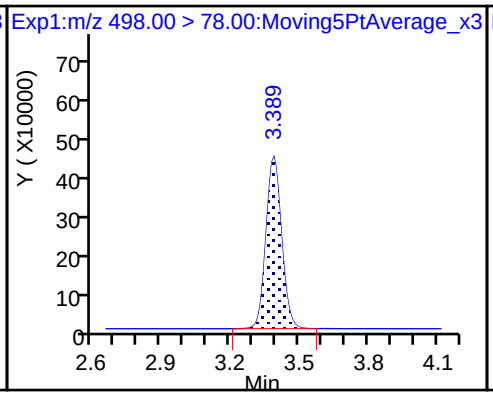

69 9-Chlorohexadecafluoro-3-oxanonane



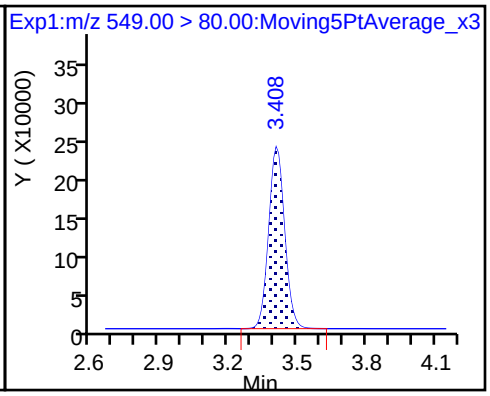

D 21 13C8 FOSA



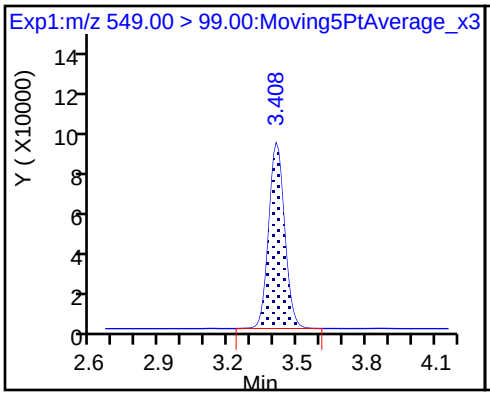

22 Perfluorooctane Sulfonamide



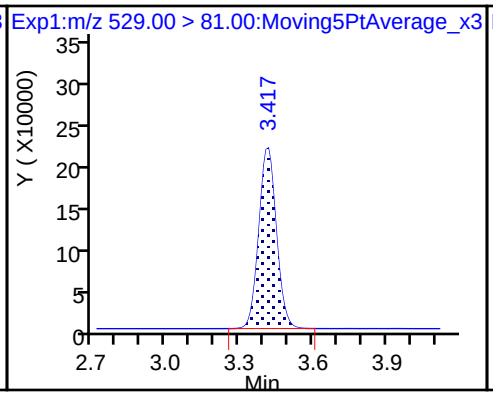

68 Perfluorononanesulfonic acid



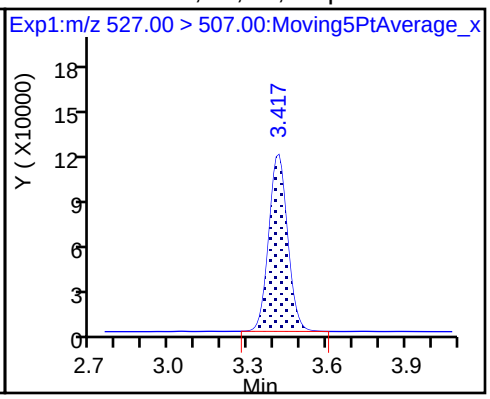

68 Perfluorononanesulfonic acid



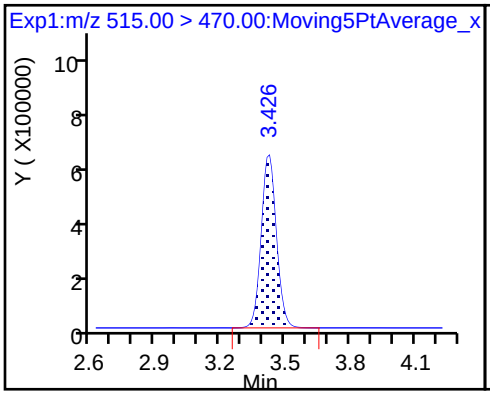

D 26 M2-8:2FTS



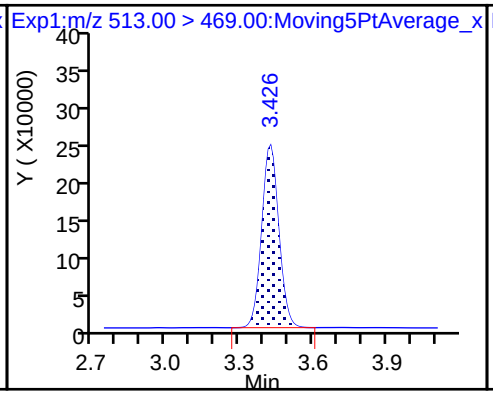

25 Sodium 1H,1H,2H,2H-perfluorodecane



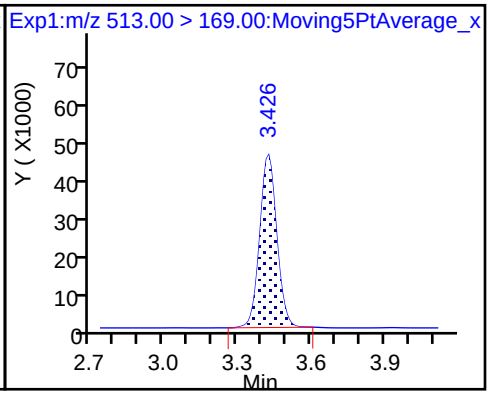

D 23 13C2 PFDA



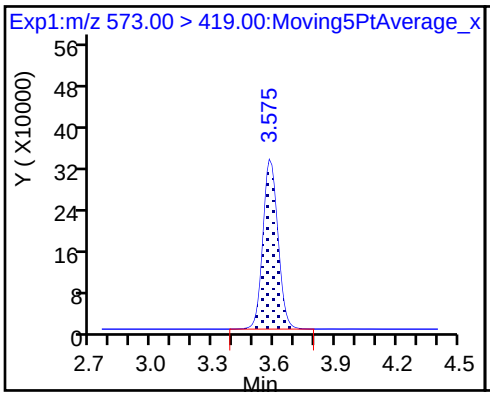

24 Perfluorodecanoic acid



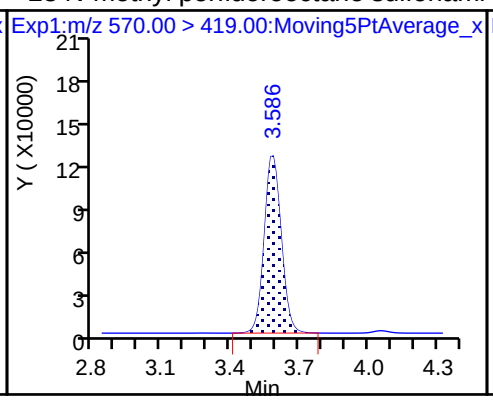

24 Perfluorodecanoic acid



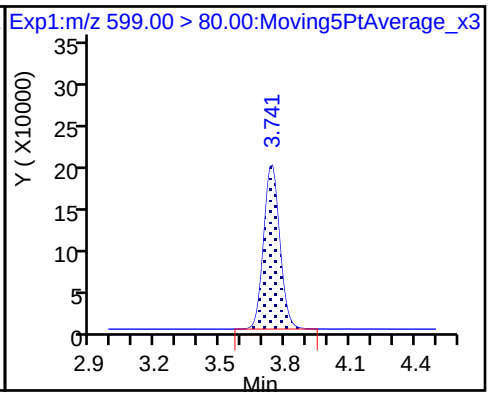
D 27 d3-NMeFOSAA



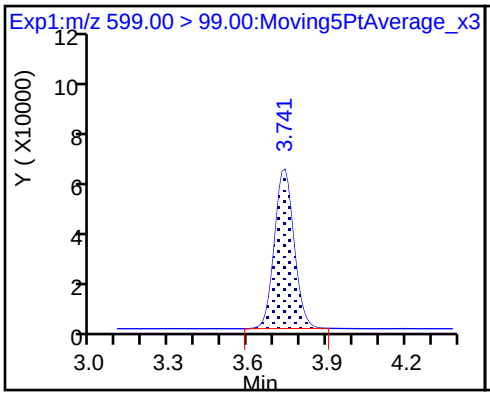

28 N-methyl perfluorooctane sulfonami



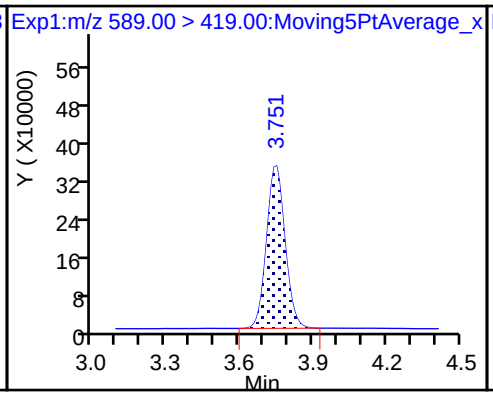

29 Perfluorodecane Sulfonic acid



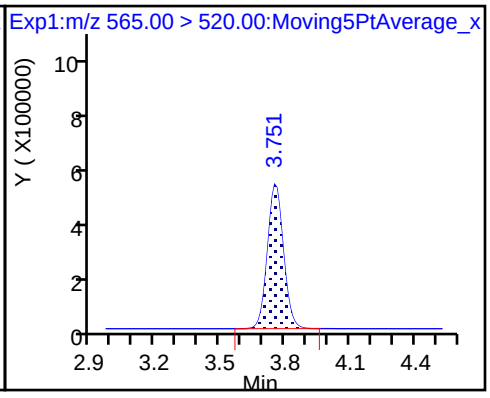

29 Perfluorodecane Sulfonic acid



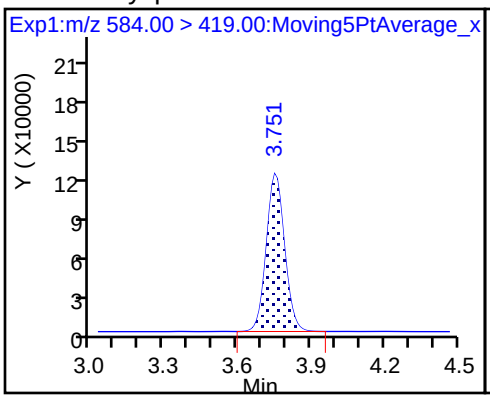

D 32 d5-NEtFOSAA



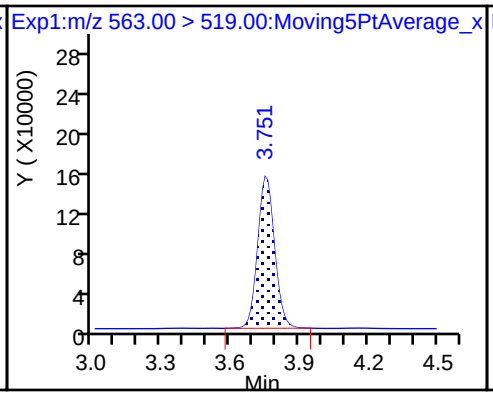

D 30 13C2 PFUnA



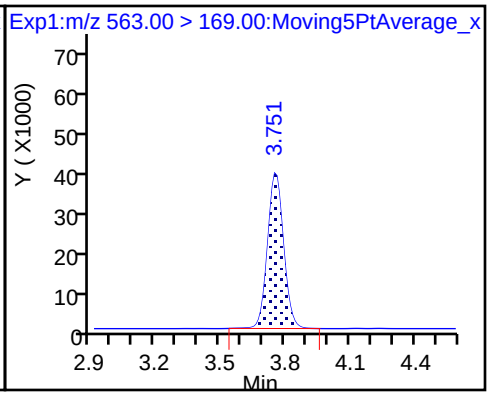

33 N-ethyl perfluorooctane sulfonamid



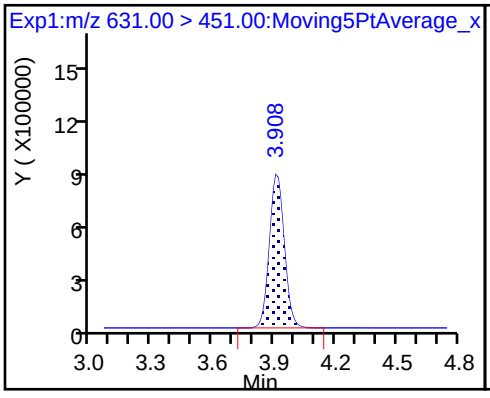

31 Perfluoroundecanoic acid



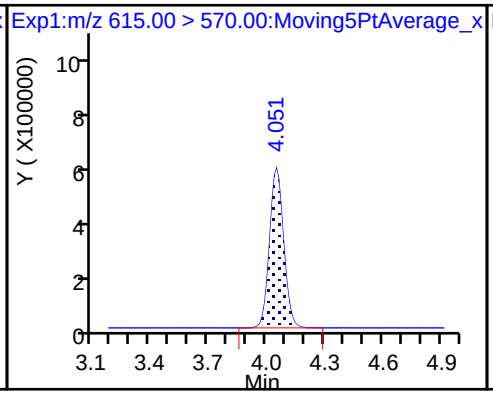

31 Perfluoroundecanoic acid



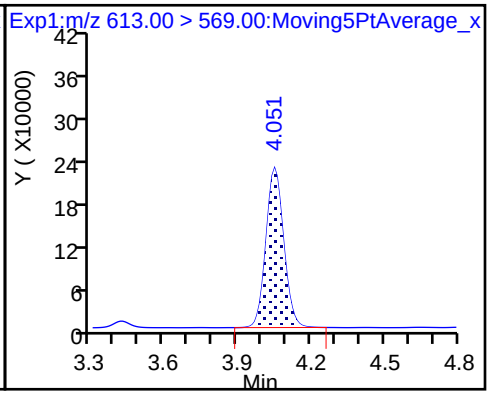

66 11-Chloroeicosafluoro-3-oxaundecan



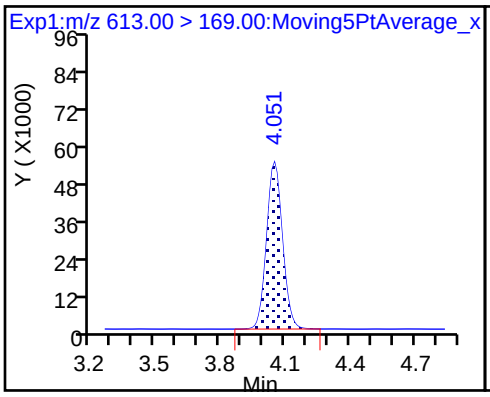

D 36 13C2 PFDoA



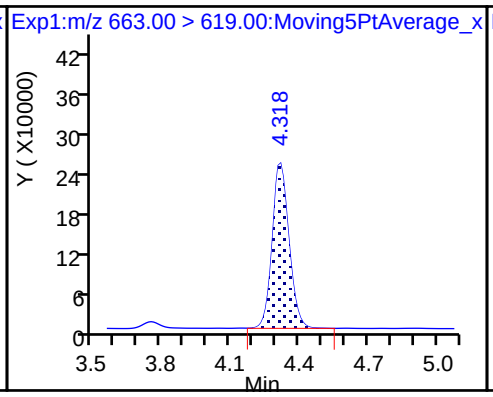

37 Perfluorododecanoic acid



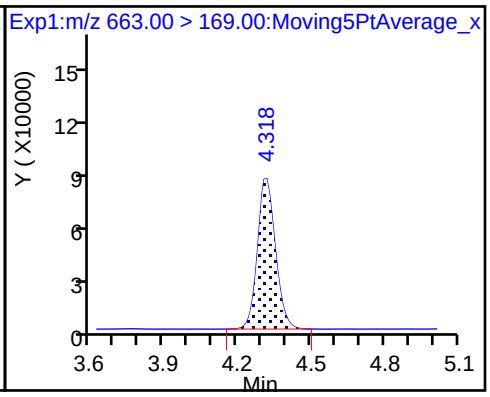
37 Perfluorododecanoic acid



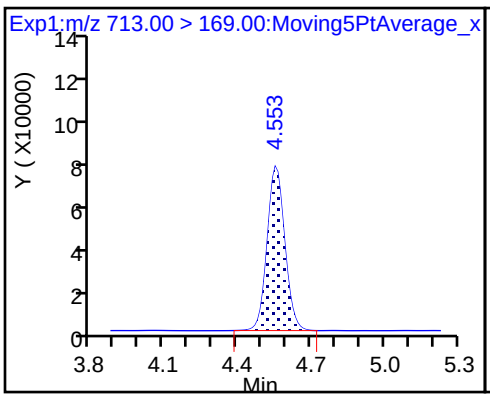

41 Perfluorotridecanoic acid



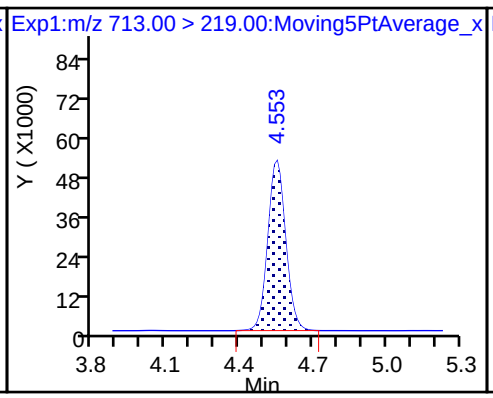

41 Perfluorotridecanoic acid



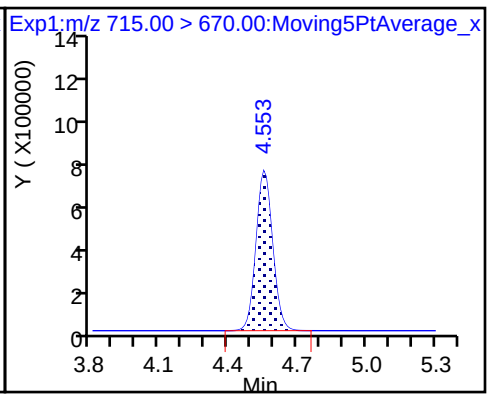

42 Perfluorotetradecanoic acid



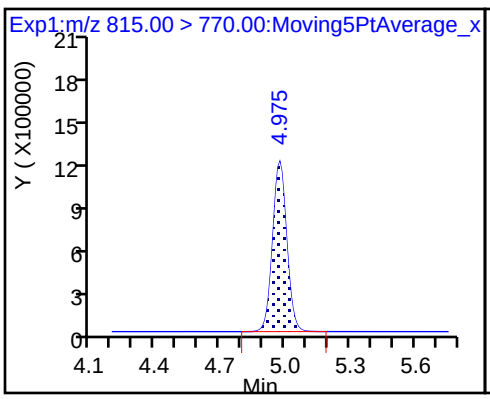

42 Perfluorotetradecanoic acid



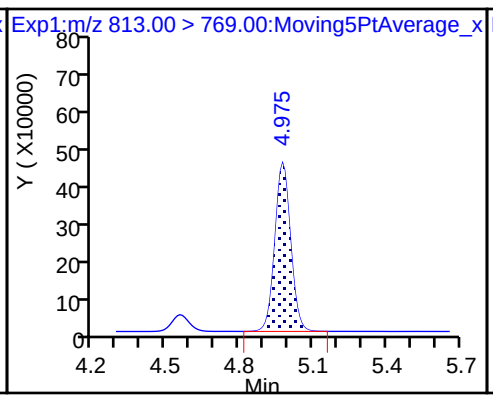

D 43 13C2-PFTeDA



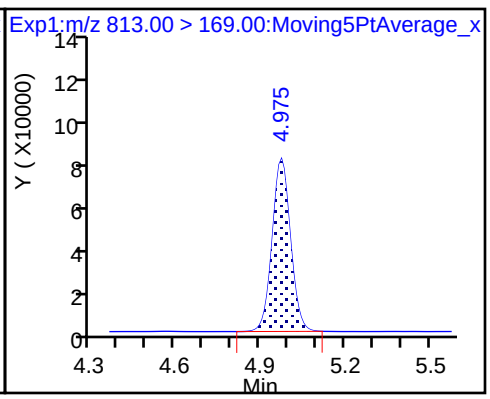

D 44 13C2-PFHxDA



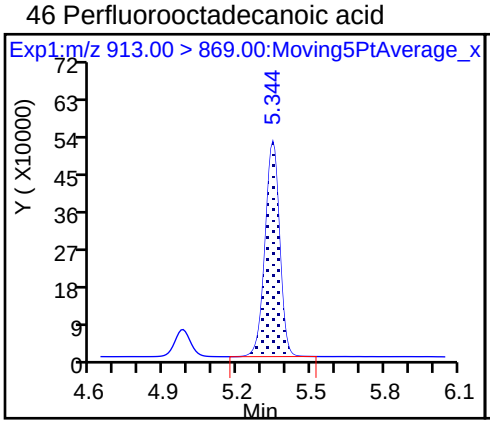

45 Perfluorohexadecanoic acid



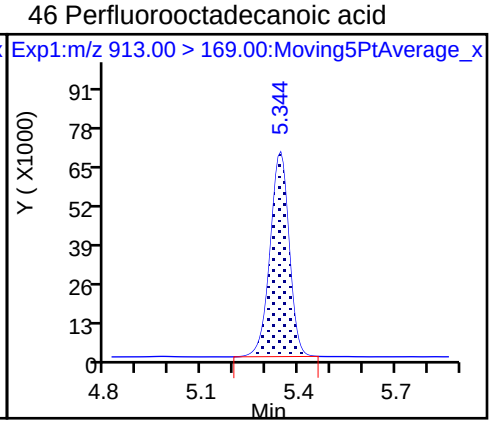

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 29-Mar-2018 17:58:39 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:48:09 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 09:09:32

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.441 | 1.436 | 0.005 | 1.000 | 6030203 | 2.48 | | 99.1 | 62199 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.441 | 1.437 | 0.004 | 1.000 | 5777307 | 2.59 | | 104 | 3457 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.712 | 1.702 | 0.010 | 0.559 | 3998575 | 2.52 | | 101 | 86313 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.712 | 1.706 | 0.006 | 1.000 | 4732902 | 2.47 | | 98.9 | 2193 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.739 | 1.738 | 0.001 | 1.000 | 82172 | 2.26 | | 97.4 | 490 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.748 | 1.742 | 0.006 | 1.005 | 6580985 | 2.36 | | 107 | 4397 | |
| 298.90 > 99.00 | 1.748 | 1.742 | 0.006 | 1.005 | 2674887 | | 2.46(1.25-3.74) | 107 | 4035 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.960 | 1.955 | 0.005 | 1.000 | 1487518 | 2.44 | | 104 | 90099 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.960 | 1.955 | 0.005 | 1.000 | 669149 | 2.41 | | 103 | 7608 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.993 | 1.991 | 0.003 | 1.000 | 4449369 | 2.55 | | 102 | 111826 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.993 | 1.992 | 0.001 | 1.000 | 4676733 | 2.57 | | 103 | 6804 | |
| 313.00 > 119.00 | 1.993 | 1.992 | 0.001 | 1.000 | 417474 | | 11.20(5.03-15.10) | 103 | 4326 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.016 | 2.013 | 0.003 | 1.000 | 6467251 | 2.57 | | 110 | 114345 | |
| 349.00 > 99.00 | 2.016 | 2.013 | 0.003 | 1.000 | 2239567 | | 2.89(1.36-4.07) | 110 | 49101 | |
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.095 | 2.092 | 0.003 | 1.000 | 231658 | 2.66 | | 107 | 4075 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.095 | 2.092 | 0.003 | 1.000 | 729503 | 2.31 | | 92.6 | 6426 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.334 | 2.326 | 0.008 | 1.000 | 4131012 | 2.46 | | 98.4 | 76582 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.334 | 2.327 | 0.007 | 1.000 | 4677284 | 2.61 | | 104 | 3860 | |
| 363.00 > 169.00 | 2.334 | 2.327 | 0.007 | 1.000 | 1694031 | | 2.76(1.13-3.40) | 104 | 5125 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.347 | 2.339 | 0.008 | 1.000 | 5288566 | 2.32 | | 102 | 18242 | |
| 399.00 > 99.00 | 2.347 | 2.339 | 0.008 | 1.000 | 1735055 | | 3.05(1.50-4.49) | 102 | 9372 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.347 | 2.340 | 0.007 | 1.000 | 4833301 | 2.31 | | 97.6 | 73949 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.372 | 2.372 | 0.0 | 1.000 | 14240170 | 2.79 | | 111 | 190651 | |
| 377.00 > 85.00 | 2.372 | 2.372 | 0.0 | 1.000 | 8381192 | | 1.70(0.84-2.53) | 111 | 86770 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.667 | 2.664 | 0.003 | 1.000 | 884202 | 2.28 | | 95.9 | 24949 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.667 | 2.664 | 0.003 | 1.000 | 1539946 | 2.21 | | 93.5 | 5122 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.690 | 2.688 | 0.002 | 1.000 | 4168394 | 2.53 | | 101 | 64136 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.690 | 2.689 | 0.001 | | 4403513 | 2.50 | | | 72111 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.697 | 2.690 | 0.007 | 1.003 | 4758293 | 2.41 | | 96.3 | 1602 | |
| 413.00 > 169.00 | 2.690 | 2.690 | 0.0 | 1.000 | 2531080 | | 1.88(0.84-2.52) | 96.3 | 10234 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.697 | 2.695 | 0.002 | 1.000 | 4696005 | 2.46 | | 103 | 51596 | |
| 449.00 > 99.00 | 2.697 | 2.695 | 0.002 | 1.000 | 1300851 | | 3.61(1.94-5.82) | 103 | 23065 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.063 | 3.060 | 0.003 | 1.000 | 3426212 | 2.36 | | 98.6 | 31614 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.063 | 3.060 | 0.003 | 1.000 | 3738022 | 2.28 | | 98.4 | 8399 | |
| 499.00 > 99.00 | 3.063 | 3.060 | 0.003 | 1.000 | 845589 | | 4.42(2.31-6.93) | 98.4 | 6210 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.063 | 3.061 | 0.002 | 1.000 | 3540108 | 2.53 | | 101 | 84407 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.070 | 3.064 | 0.006 | 1.002 | 3675243 | 2.52 | | 101 | 3854 | |
| 463.00 > 169.00 | 3.063 | 3.064 | -0.001 | 1.000 | 916459 | | 4.01(1.90-5.69) | 101 | 23909 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.277 | 3.272 | 0.005 | 1.000 | 6465289 | 2.41 | | 104 | 57970 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.394 | 3.388 | 0.006 | 1.000 | 5134426 | 2.50 | | 100.0 | 38523 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.394 | 3.389 | 0.005 | 1.000 | 5273555 | 2.60 | | 104 | 65764 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.413 | 3.409 | 0.004 | 1.000 | 2797665 | 2.43 | | 101 | 66092 | |
| 549.00 > 99.00 | 3.413 | 3.409 | 0.004 | 1.000 | 1086732 | | 2.57(1.33-3.97) | 101 | 32886 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.413 | 3.413 | 0.0 | 1.000 | 1054813 | 2.34 | | 97.6 | 30965 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.413 | 3.415 | -0.002 | 1.000 | 1404701 | 2.36 | | 98.7 | 16955 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.422 | 3.423 | -0.001 | 1.000 | 2988519 | 2.53 | | 101 | 34662 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.432 | 3.427 | 0.005 | 1.003 | 2995028 | 2.53 | | 101 | 18233 | |
| 513.00 > 169.00 | 3.432 | 3.427 | 0.005 | 1.003 | 534907 | | 5.60(2.36-7.09) | 101 | 12381 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.582 | 3.578 | 0.004 | 1.000 | 1585449 | 2.51 | | 100 | 34638 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.582 | 3.581 | 0.001 | 1.000 | 1647643 | 2.46 | | 98.6 | 11941 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.737 | 3.738 | -0.001 | 1.000 | 2358750 | 2.37 | | 98.4 | 65020 | |
| 599.00 > 99.00 | 3.737 | 3.738 | -0.001 | 1.000 | 855317 | | 2.76(1.39-4.16) | 98.4 | 33383 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.747 | 3.749 | -0.002 | 1.000 | 1675412 | 2.53 | | 101 | 3712 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.758 | 3.753 | 0.005 | 1.000 | 2409033 | 2.50 | | 100 | 42492 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.758 | 3.755 | 0.003 | 1.003 | 1542349 | 2.51 | | 100 | 26985 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.758 | 3.755 | 0.003 | 1.000 | 1901518 | 2.46 | | 98.4 | 8013 | |
| 563.00 > 169.00 | 3.758 | 3.755 | 0.003 | 1.000 | 507139 | | 3.75(2.12-6.36) | 98.4 | 24360 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.916 | 3.910 | 0.006 | 1.000 | 10377874 | 2.49 | | 106 | 103580 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.059 | 4.052 | 0.007 | 1.000 | 2927481 | 2.52 | | 101 | 2194 | |
| 613.00 > 169.00 | 4.059 | 4.052 | 0.007 | 1.000 | 732103 | | 4.00(2.13-6.40) | 101 | 11010 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.059 | 4.052 | 0.007 | 1.000 | 2684707 | 2.50 | | 100 | 18257 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.318 | 4.316 | 0.002 | 1.000 | 3245349 | 2.61 | | 105 | 1291 | |
| 663.00 > 169.00 | 4.318 | 4.316 | 0.002 | 1.000 | 1056833 | | 3.07(1.25-3.76) | 105 | 17392 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.563 | 4.558 | 0.005 | 1.000 | 3484985 | 2.56 | | 102 | 22350 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.563 | 4.558 | 0.005 | 1.000 | 884583 | 2.54 | | 102 | 13447 | |
| 713.00 > 219.00 | 4.553 | 4.558 | -0.005 | 0.998 | 623379 | | 1.42(0.71-2.13) | 102 | 11224 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.983 | 4.977 | 0.006 | 1.000 | 5398203 | 2.53 | | 101 | 1240 | |
| 813.00 > 169.00 | 4.983 | 4.977 | 0.006 | 1.000 | 886265 | | 6.09(2.86-8.58) | 101 | 6550 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.983 | 4.977 | 0.006 | 1.000 | 5578235 | 2.65 | | 106 | 15602 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.350 | 5.344 | 0.006 | 1.000 | 5719746 | 2.58 | | 103 | 885 | |
| 913.00 > 169.00 | 5.350 | 5.344 | 0.006 | 1.000 | 729616 | | 7.84(3.83-11.48) | 103 | 5795 | |

## Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:14 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_006.d

Injection Date: 29-Mar-2018 17:58:39 Instrument ID: A8_N

Lims ID: IC L5 Full

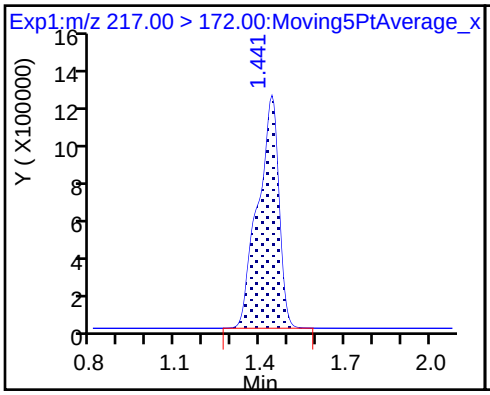
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

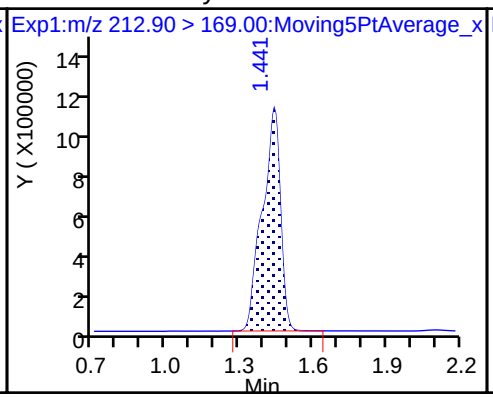
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

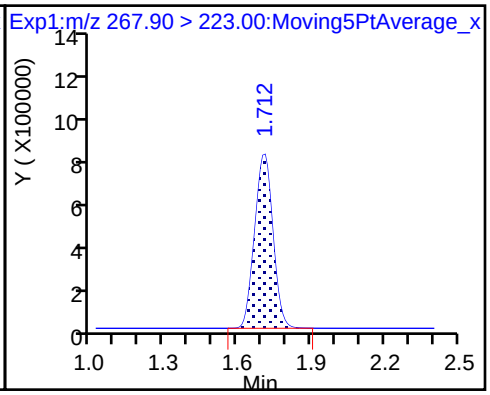
D 1 13C4 PFBA



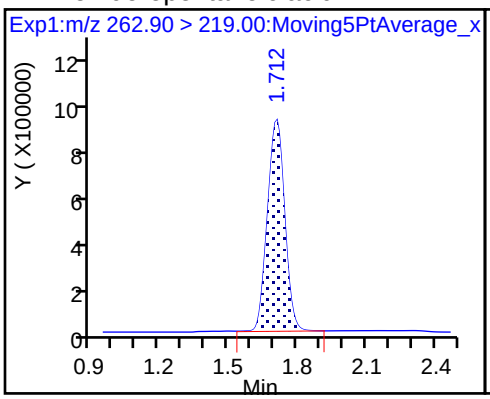

2 Perfluorobutyric acid



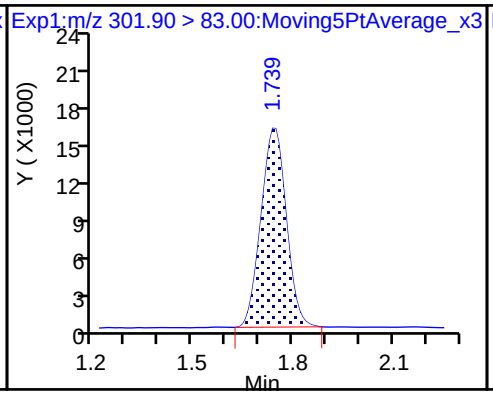

D 3 13C5-PFPeA



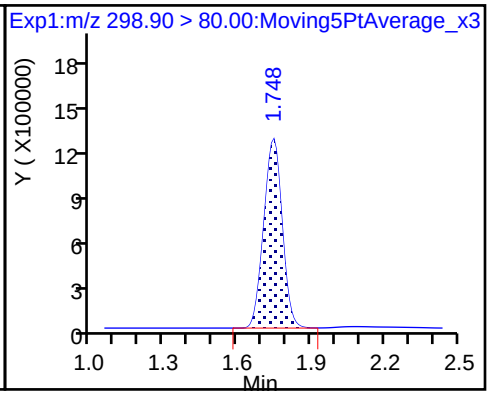

4 Perfluoropentanoic acid



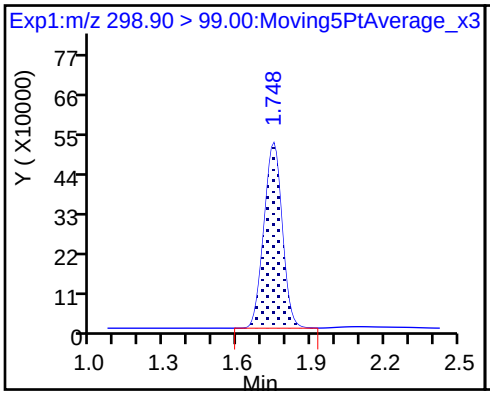

D 47 13C3-PFBS



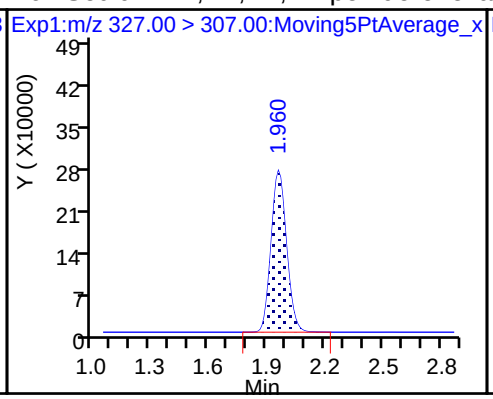

5 Perfluorobutanesulfonic acid



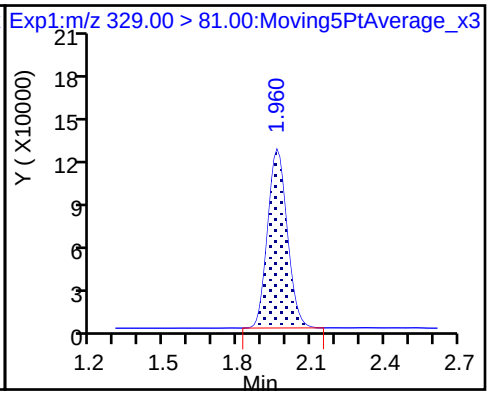

5 Perfluorobutanesulfonic acid



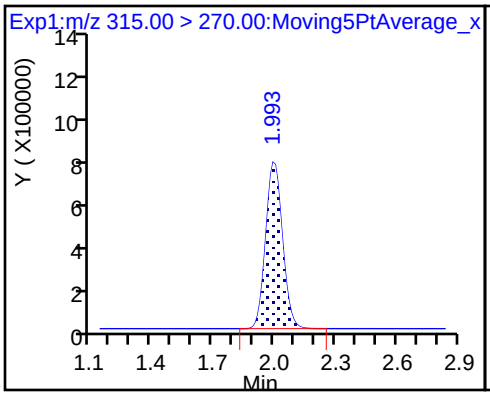

61 Sodium 1H,1H,2H,2H-perfluorohexane



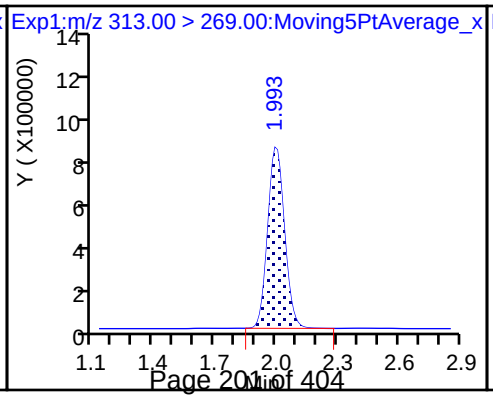

D 60 M2-4:2FTS



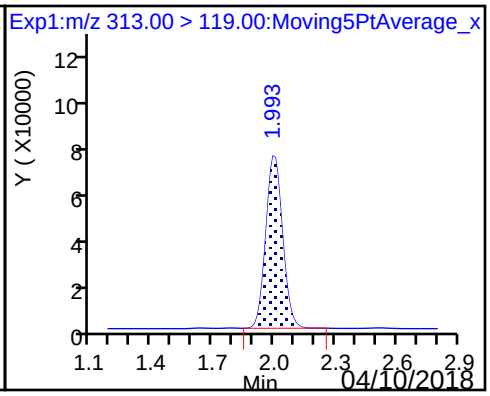

D 7 13C2 PFHxA



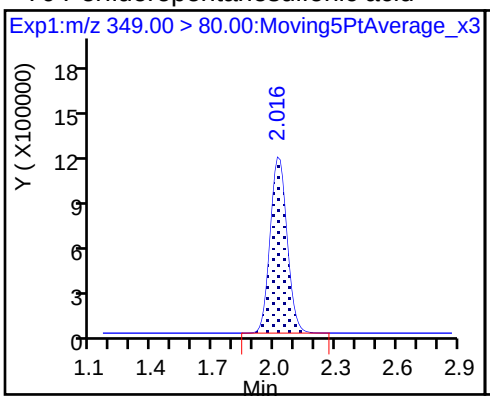

6 Perfluorohexanoic acid



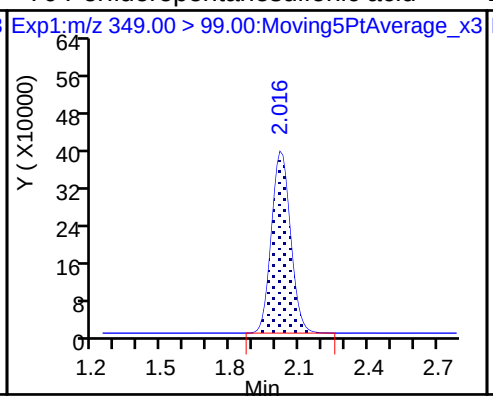

6 Perfluorohexanoic acid



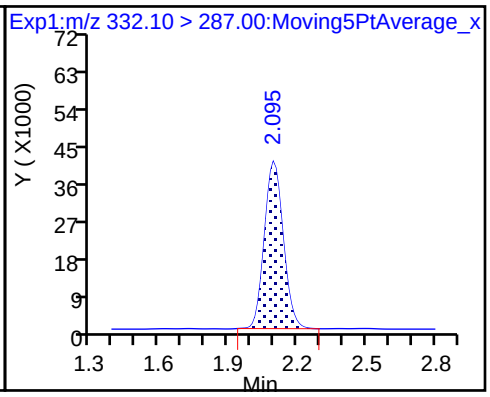
70 Perfluoropentanesulfonic acid



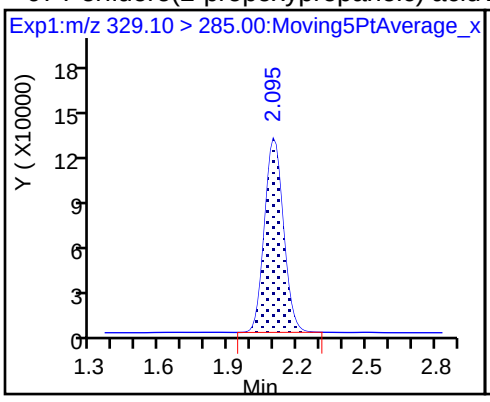

70 Perfluoropentanesulfonic acid



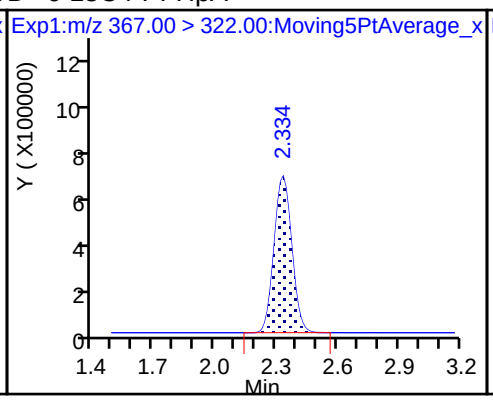

D 64 13C3 HFPO-DA



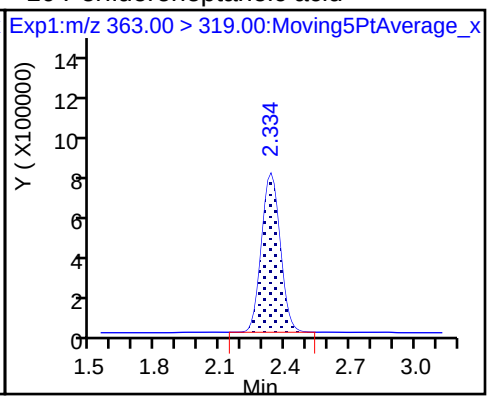

67 Perfluoro(2-propoxypropanoic) acid



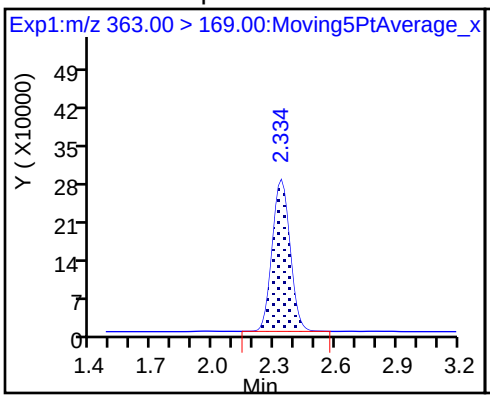

D 9 13C4-PFHpA



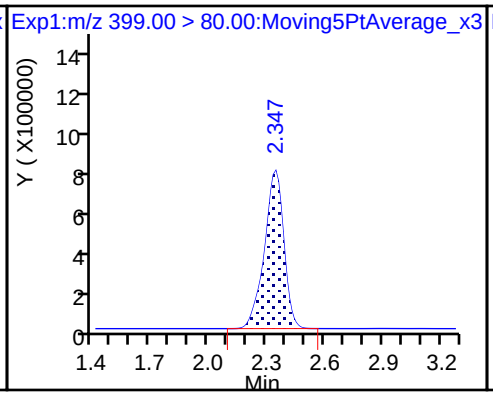

10 Perfluoroheptanoic acid



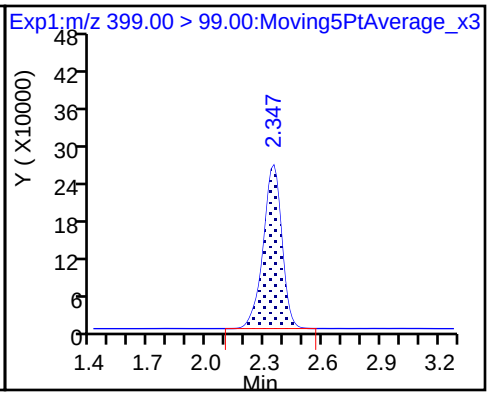

10 Perfluoroheptanoic acid



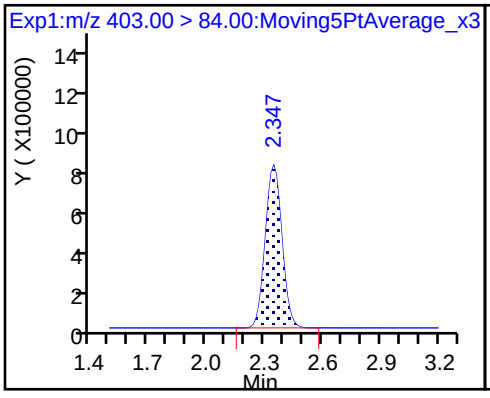

8 Perfluorohexanesulfonic acid



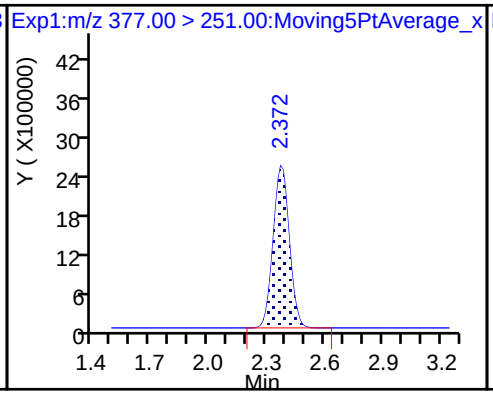

8 Perfluorohexanesulfonic acid



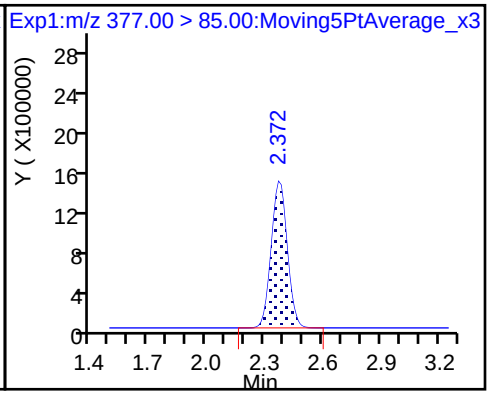

D 11 18O2 PFHxS



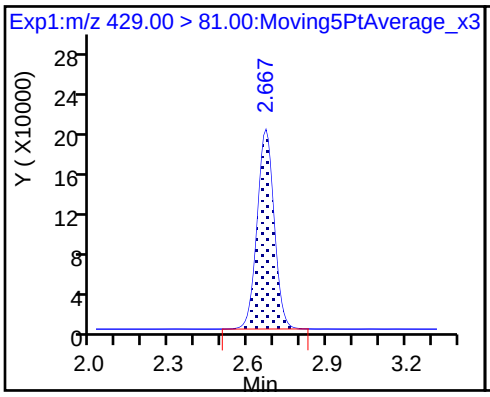

65 Adona



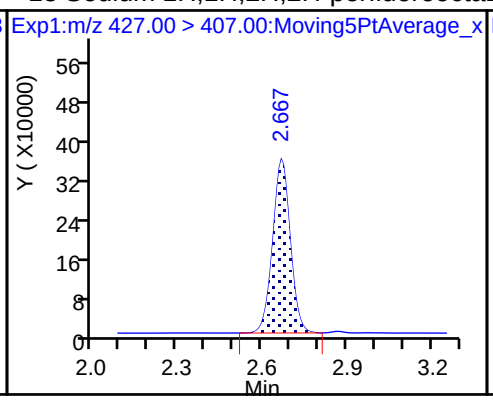

65 Adona



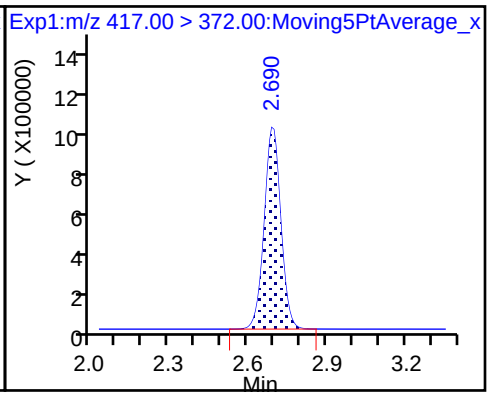
D 12 M2-6:2FTS



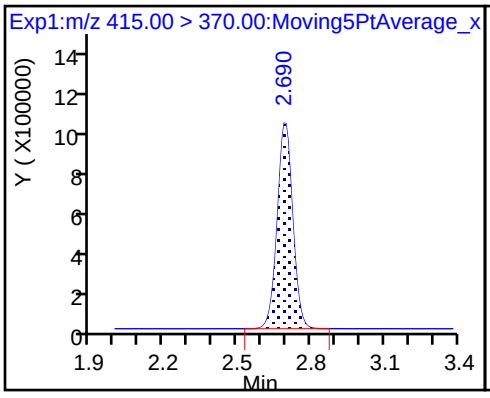

13 Sodium 1H,1H,2H,2H-perfluorooctane



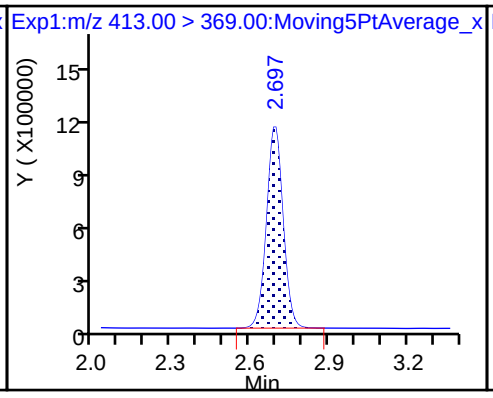

D 14 13C4 PFOA



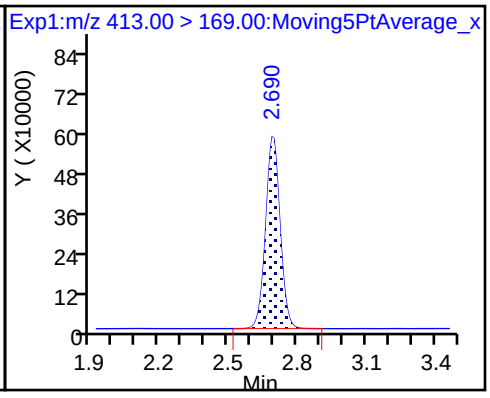

* 62 13C2-PFOA



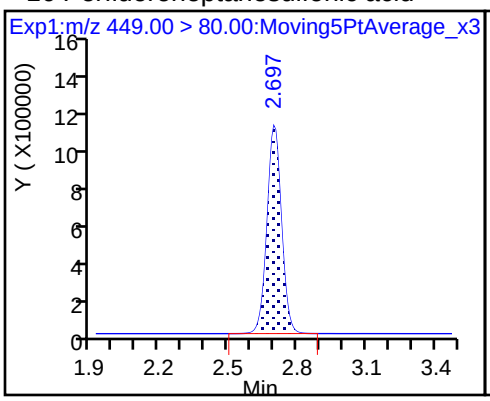

15 Perfluorooctanoic acid



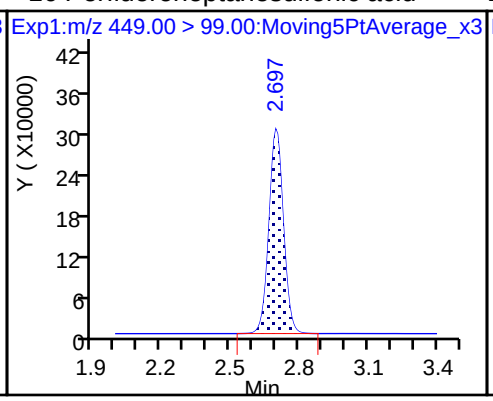

15 Perfluorooctanoic acid



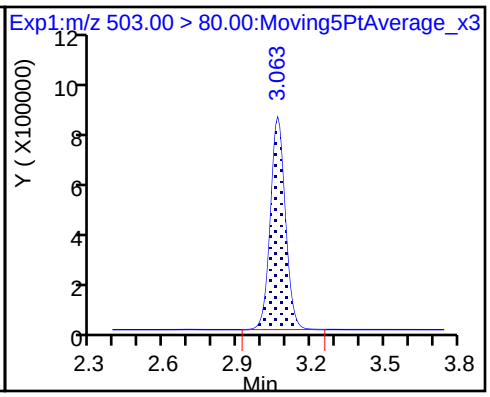

16 Perfluoroheptanesulfonic acid



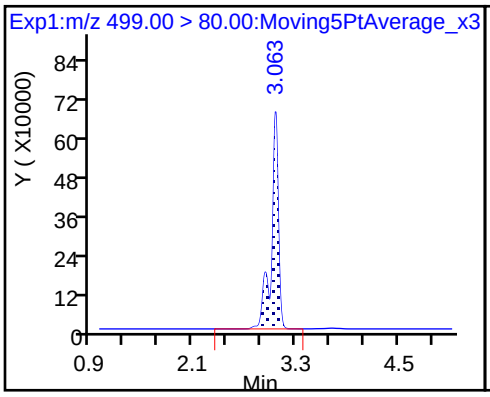

16 Perfluoroheptanesulfonic acid



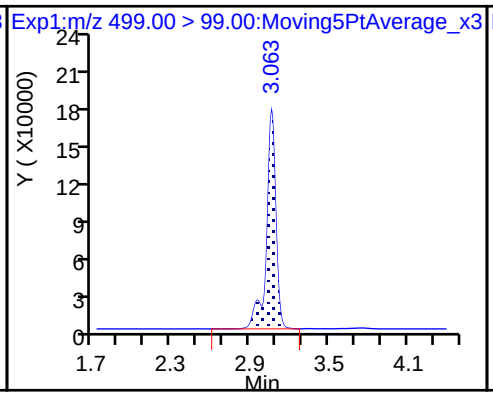

D 18 13C4 PFOS



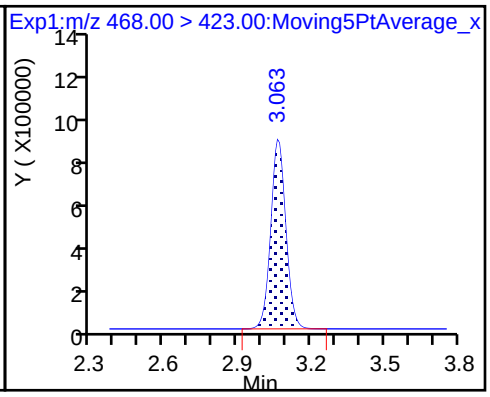

17 Perfluorooctane sulfonic acid



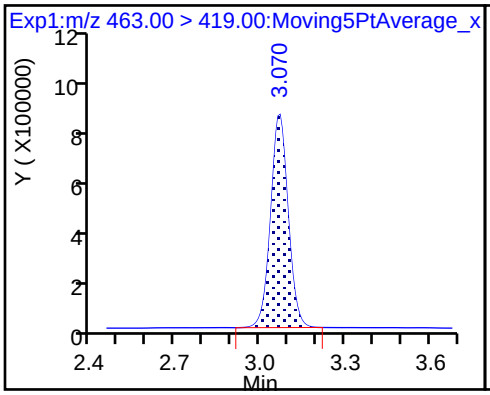

17 Perfluorooctane sulfonic acid



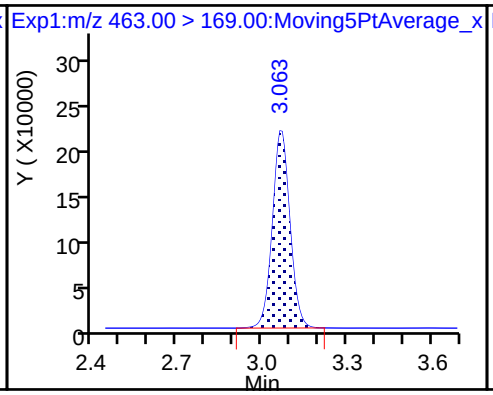

D 19 13C5 PFNA



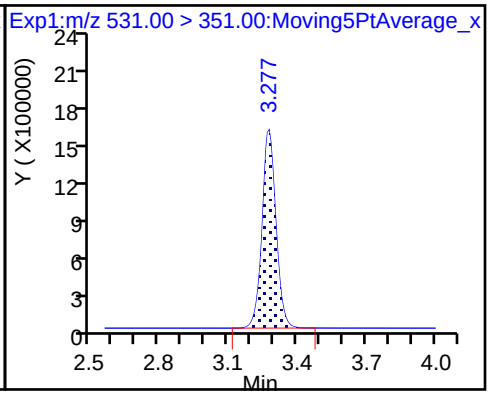
20 Perfluorononanoic acid



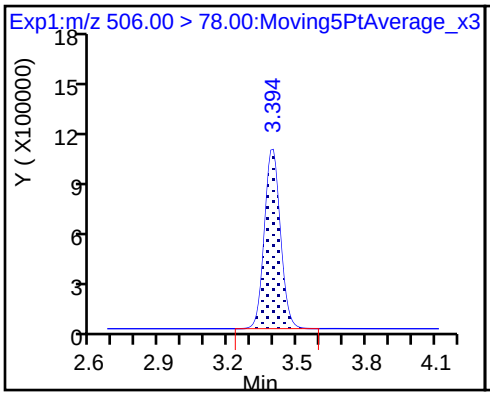

20 Perfluorononanoic acid



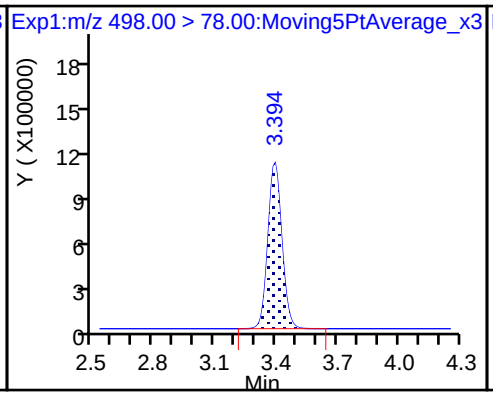

69 9-Chlorohexadecafluoro-3-oxanonane



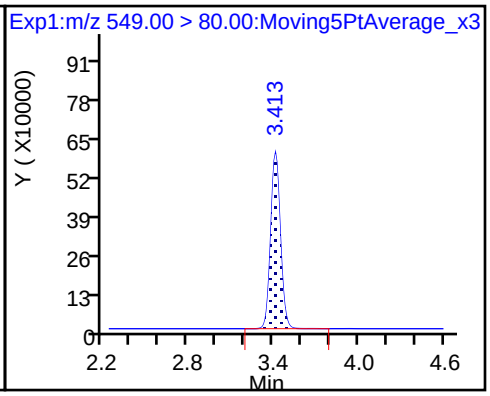

D 21 13C8 FOSA



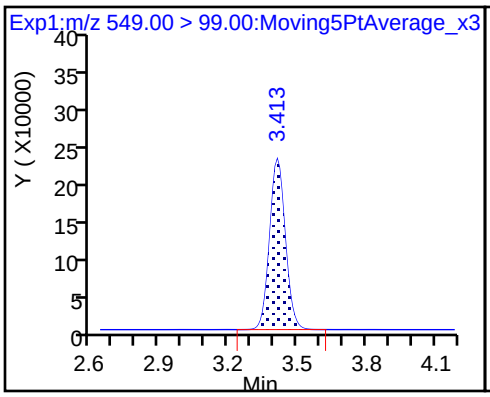

22 Perfluorooctane Sulfonamide



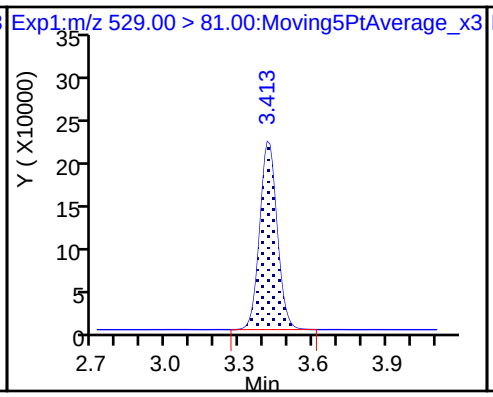

68 Perfluorononanesulfonic acid



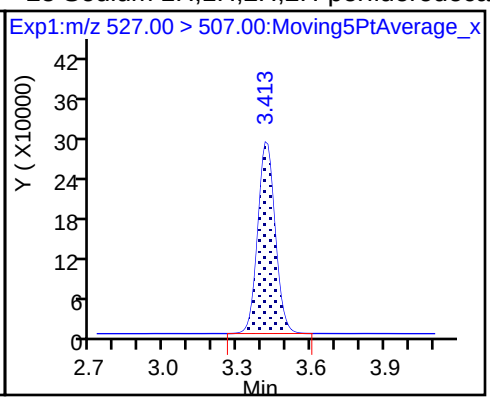

68 Perfluorononanesulfonic acid



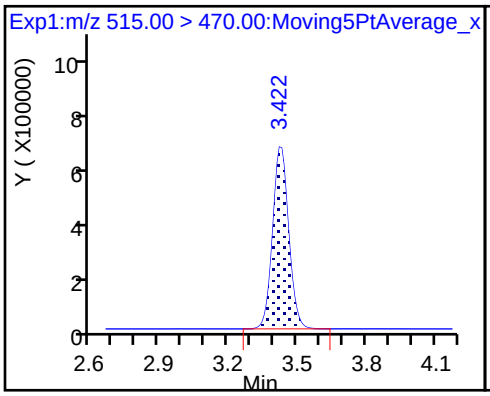

D 26 M2-8:2FTS



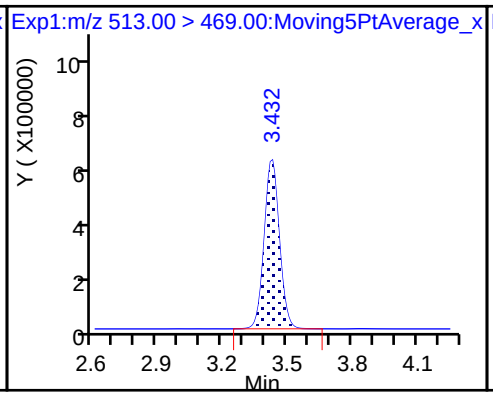

25 Sodium 1H,1H,2H,2H-perfluorodecane



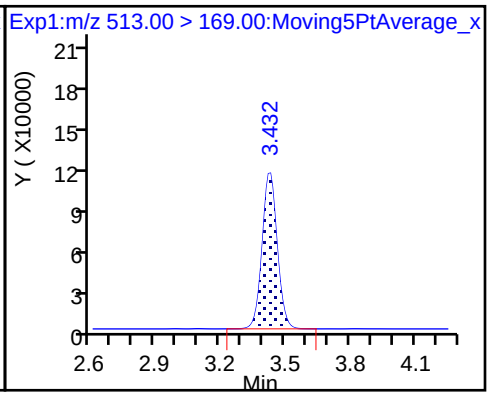

D 23 13C2 PFDA



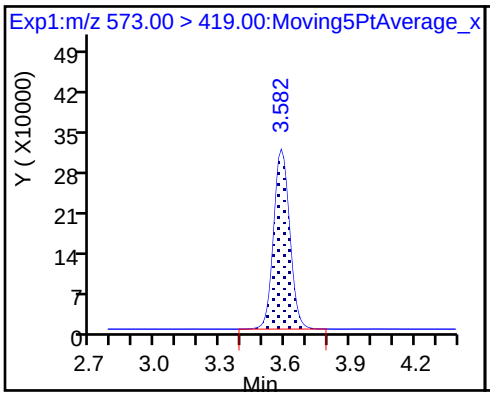

24 Perfluorodecanoic acid



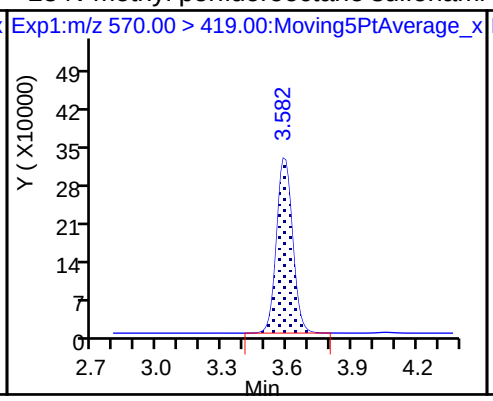

24 Perfluorodecanoic acid



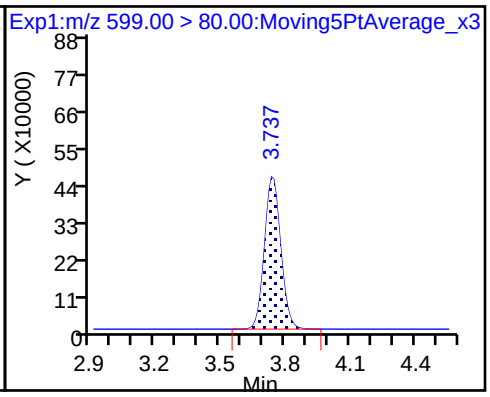
D 27 d3-NMeFOSAA



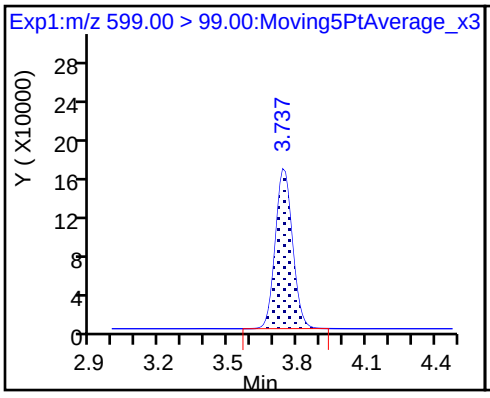

28 N-methyl perfluorooctane sulfonami



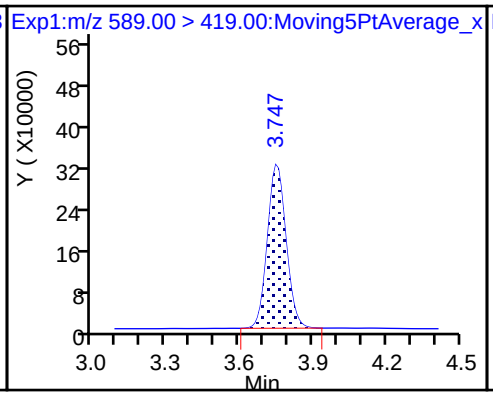

29 Perfluorodecane Sulfonic acid



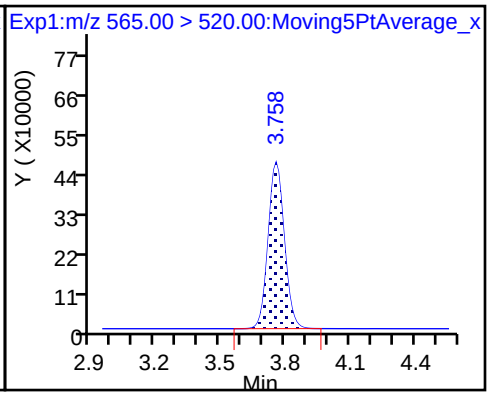

29 Perfluorodecane Sulfonic acid



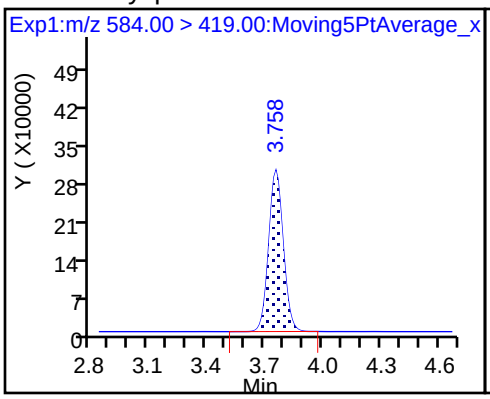

D 32 d5-NEtFOSAA



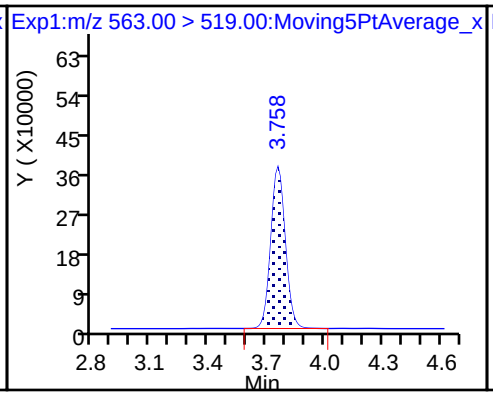

D 30 13C2 PFUnA



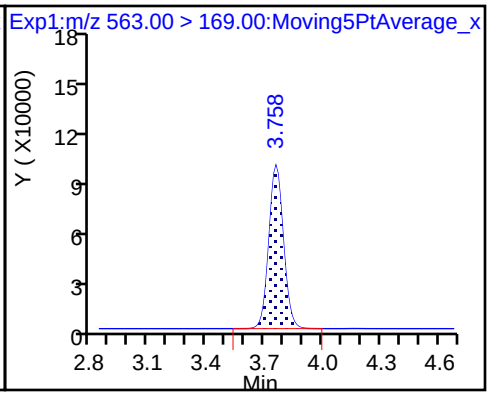

33 N-ethyl perfluorooctane sulfonamid



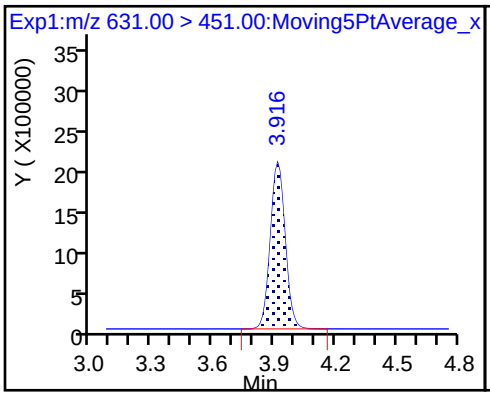

31 Perfluoroundecanoic acid



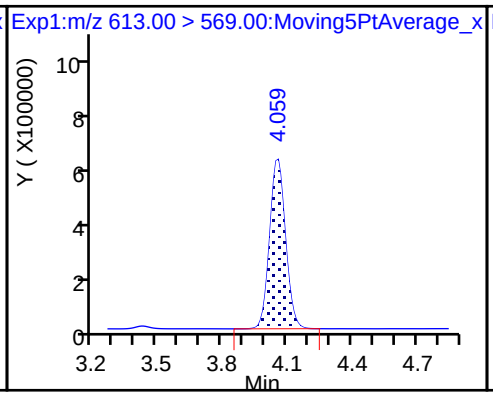

31 Perfluoroundecanoic acid



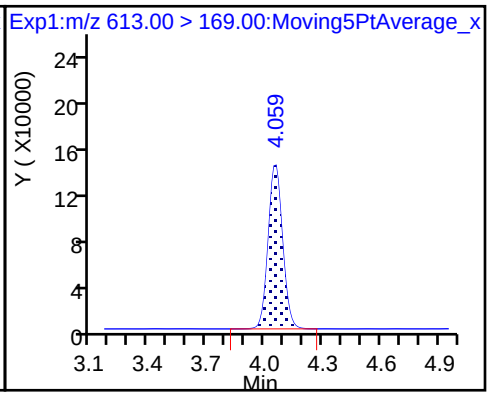

66 11-Chloroeicosafluoro-3-oxaundecan



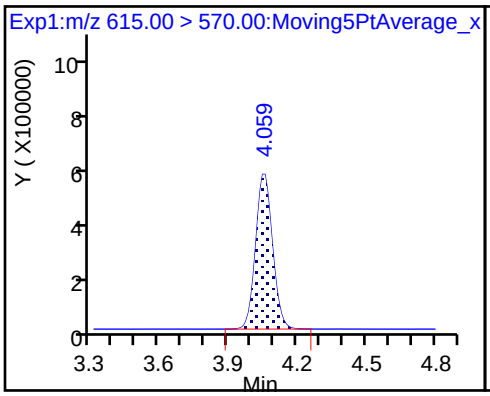

37 Perfluorododecanoic acid



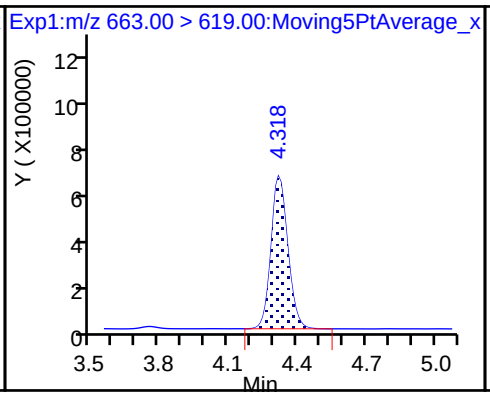

37 Perfluorododecanoic acid



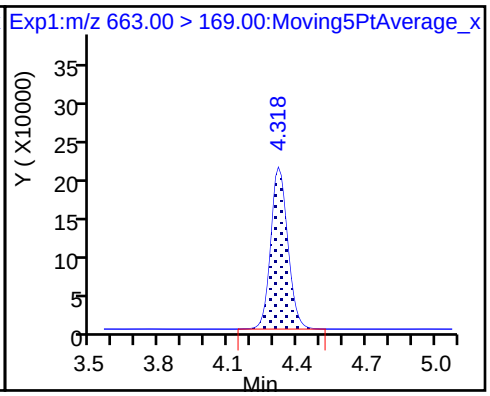
D 36 13C2 PFDoA



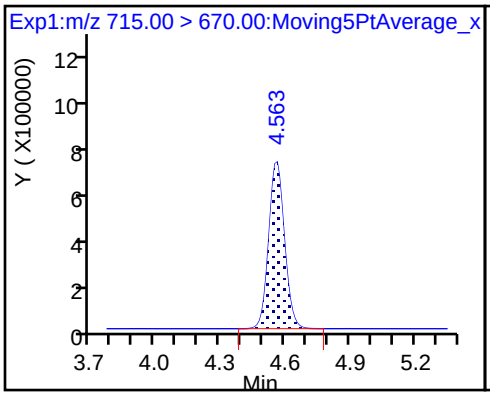

41 Perfluorotridecanoic acid



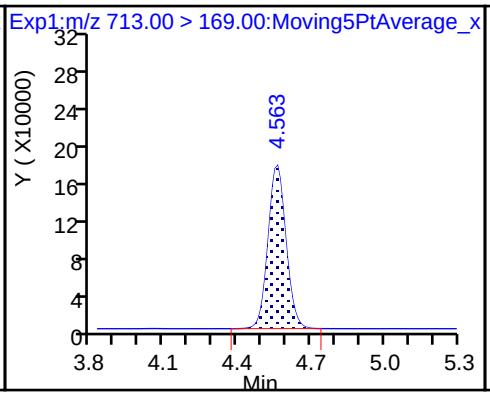

41 Perfluorotridecanoic acid



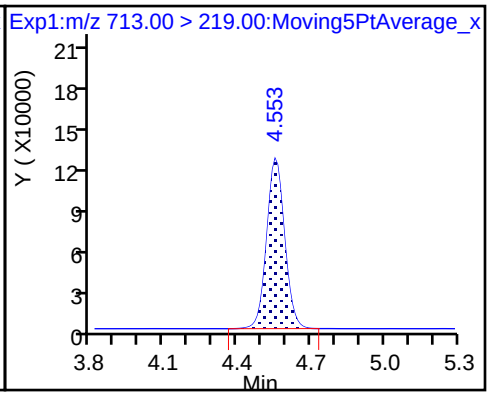

D 43 13C2-PFTeDA



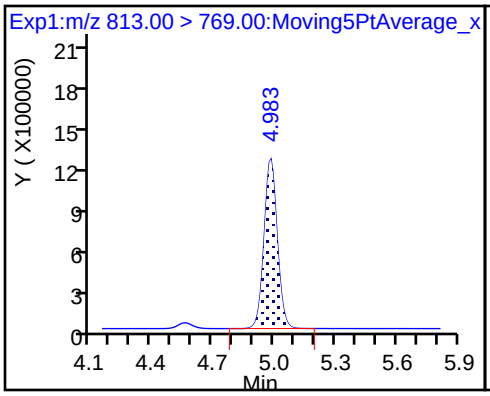

42 Perfluorotetradecanoic acid



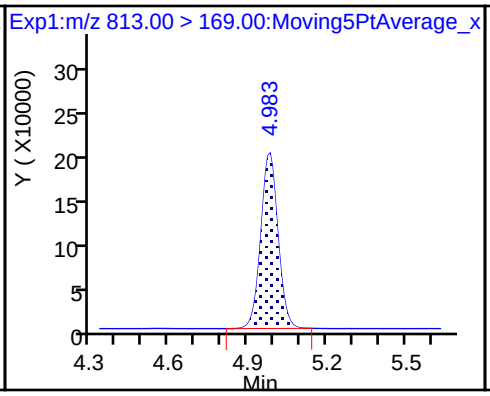

42 Perfluorotetradecanoic acid



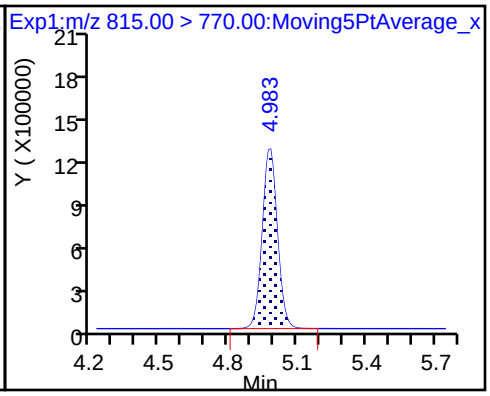

45 Perfluorohexadecanoic acid



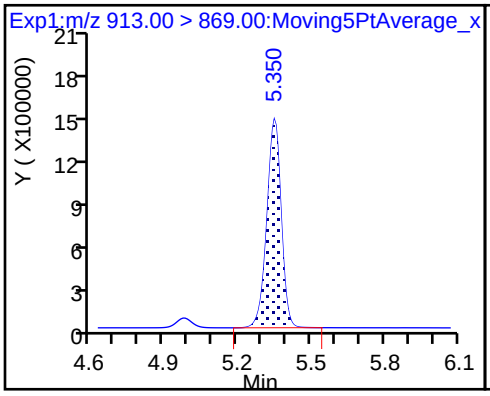

45 Perfluorohexadecanoic acid



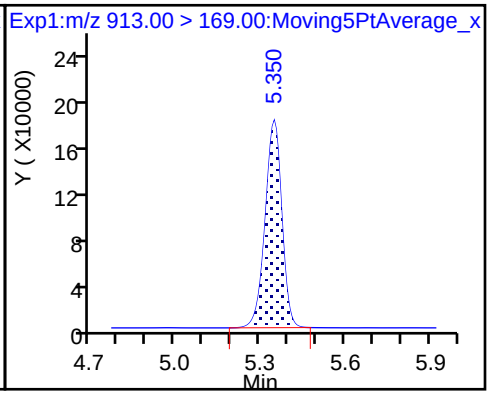

D 44 13C2-PFHxDA




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 29-Mar-2018 18:06:29 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:48:21 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 09:39:32

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.436 | 1.436 | 0.0 | 1.000 | 6363039 | 2.56 | | 102 | 54816 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.436 | 1.437 | -0.001 | 1.000 | 12187200 | 5.18 | | 104 | 6481 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.703 | 1.702 | 0.001 | 0.557 | 3961451 | 2.45 | | 98.0 | 97309 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.703 | 1.706 | -0.003 | 1.000 | 9830479 | 5.18 | | 104 | 4891 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.739 | 1.738 | 0.001 | 1.000 | 87650 | 2.37 | | 102 | 504 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.739 | 1.742 | -0.003 | 1.000 | 13230767 | 4.45 | | 101 | 8592 | |
| 298.90 > 99.00 | 1.739 | 1.742 | -0.003 | 1.000 | 5640052 | | 2.35(1.25-3.74) | 101 | 8383 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.950 | 1.955 | -0.005 | 1.000 | 663538 | 2.35 | | 101 | 9348 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.950 | 1.955 | -0.005 | 1.000 | 3033560 | 4.66 | | 99.9 | 184398 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.993 | 1.991 | 0.003 | 1.000 | 4716939 | 2.65 | | 106 | 121152 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.993 | 1.992 | 0.001 | 1.000 | 9564151 | 4.95 | | 99.1 | 15110 | |
| 313.00 > 119.00 | 1.993 | 1.992 | 0.001 | 1.000 | 872950 | | 10.96(5.03-15.10) | 99.1 | 8742 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.016 | 2.013 | 0.003 | 1.000 | 13067667 | 4.87 | | 104 | 259659 | |
| 349.00 > 99.00 | 2.016 | 2.013 | 0.003 | 1.000 | 4761447 | | 2.74(1.36-4.07) | 104 | 77322 | |
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.095 | 2.092 | 0.003 | 1.000 | 1481837 | 4.98 | | 99.5 | 13884 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.095 | 2.092 | 0.003 | 1.000 | 218882 | 2.47 | | 98.6 | 3534 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.321 | 2.326 | -0.005 | 1.000 | 4500718 | 2.63 | | 105 | 126673 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.321 | 2.327 | -0.006 | 1.000 | 9347366 | 4.78 | | 95.6 | 9088 | |
| 363.00 > 169.00 | 2.321 | 2.327 | -0.006 | 1.000 | 3572887 | | 2.62(1.13-3.40) | 95.6 | 9323 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.334 | 2.339 | -0.005 | 1.000 | 10543701 | 4.34 | | 95.4 | 35174 | |
| 399.00 > 99.00 | 2.334 | 2.339 | -0.005 | 1.000 | 3551342 | | 2.97(1.50-4.49) | 95.4 | 18598 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.334 | 2.340 | -0.006 | 1.000 | 5143358 | 2.41 | | 102 | 86865 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.372 | 2.372 | 0.0 | 1.000 | 25789461 | 4.95 | | 99.1 | 221483 | |
| 377.00 > 85.00 | 2.372 | 2.372 | 0.0 | 1.000 | 15807587 | | 1.63(0.84-2.53) | 99.1 | 105371 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.660 | 2.664 | -0.004 | 1.000 | 3287357 | 4.56 | | 96.3 | 17017 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.660 | 2.664 | -0.004 | 1.000 | 916140 | 2.31 | | 97.4 | 21243 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.682 | 2.688 | -0.006 | 1.000 | 4062703 | 2.41 | | 96.5 | 84227 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.690 | 2.689 | 0.001 | | 4493229 | 2.50 | | | 64333 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.690 | 2.690 | 0.0 | 1.003 | 9813194 | 5.09 | | 102 | 3288 | |
| 413.00 > 169.00 | 2.682 | 2.690 | -0.008 | 1.000 | 5156114 | | 1.90(0.84-2.52) | 102 | 16091 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.690 | 2.695 | -0.005 | 1.000 | 9738630 | 5.00 | | 105 | 86778 | |
| 449.00 > 99.00 | 2.690 | 2.695 | -0.005 | 1.000 | 2682283 | | 3.63(1.94-5.82) | 105 | 39216 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.056 | 3.060 | -0.004 | 1.000 | 8034226 | 4.81 | | 104 | 16486 | |
| 499.00 > 99.00 | 3.056 | 3.060 | -0.004 | 1.000 | 1733798 | | 4.63(2.31-6.93) | 104 | 13930 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.056 | 3.060 | -0.004 | 1.000 | 3490802 | 2.35 | | 98.4 | 31167 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.056 | 3.061 | -0.005 | 1.000 | 3572058 | 2.51 | | 100 | 77842 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.063 | 3.064 | -0.001 | 1.002 | 7571474 | 5.15 | | 103 | 11315 | |
| 463.00 > 169.00 | 3.056 | 3.064 | -0.008 | 1.000 | 1902565 | | 3.98(1.90-5.69) | 103 | 44805 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.270 | 3.272 | -0.002 | 1.000 | 13425151 | 4.92 | | 105 | 107518 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.385 | 3.388 | -0.003 | 1.000 | 5241388 | 2.50 | | 100 | 61882 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.385 | 3.389 | -0.004 | 1.000 | 10438342 | 5.04 | | 101 | 59624 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.403 | 3.409 | -0.006 | 1.000 | 5885424 | 5.03 | | 105 | 77768 | |
| 549.00 > 99.00 | 3.403 | 3.409 | -0.006 | 1.000 | 2251448 | | 2.61(1.33-3.97) | 105 | 39310 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.413 | 3.413 | 0.0 | 1.000 | 1118796 | 2.43 | | 101 | 38584 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.413 | 3.415 | -0.002 | 1.000 | 2997433 | 4.76 | | 99.3 | 31180 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.422 | 3.423 | -0.001 | 1.000 | 3100672 | 2.58 | | 103 | 50163 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.422 | 3.427 | -0.005 | 1.000 | 6258242 | 5.10 | | 102 | 35393 | |
| 513.00 > 169.00 | 3.422 | 3.427 | -0.005 | 1.000 | 1123617 | | 5.57(2.36-7.09) | 102 | 33516 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.571 | 3.578 | -0.007 | 1.000 | 1583848 | 2.46 | | 98.4 | 51851 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.582 | 3.581 | 0.001 | 1.003 | 3541055 | 5.30 | | 106 | 21924 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.736 | 3.738 | -0.002 | 1.000 | 5212375 | 5.14 | | 107 | 67650 | |
| 599.00 > 99.00 | 3.736 | 3.738 | -0.002 | 1.000 | 1752151 | | 2.97(1.39-4.16) | 107 | 42671 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.747 | 3.749 | -0.002 | 1.000 | 1635848 | 2.42 | | 96.8 | 4348 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.747 | 3.753 | -0.006 | 1.000 | 2347134 | 2.39 | | 95.5 | 41021 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.747 | 3.755 | -0.008 | 1.000 | 3233549 | 5.39 | | 108 | 38395 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.757 | 3.755 | 0.002 | 1.003 | 4020256 | 5.34 | | 107 | 13507 | |
| 563.00 > 169.00 | 3.747 | 3.755 | -0.008 | 1.000 | 1081558 | | 3.72(2.12-6.36) | 107 | 34506 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.905 | 3.910 | -0.005 | 1.000 | 20815228 | 4.91 | | 104 | 177470 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.048 | 4.052 | -0.004 | 1.000 | 2678243 | 2.45 | | 97.9 | 19671 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.048 | 4.052 | -0.004 | 1.000 | 5893687 | 5.09 | | 102 | 4450 | |
| 613.00 > 169.00 | 4.048 | 4.052 | -0.004 | 1.000 | 1477794 | | 3.99(2.13-6.40) | 102 | 17225 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.317 | 4.316 | 0.001 | 1.000 | 6588893 | 5.32 | | 106 | 2657 | |
| 663.00 > 169.00 | 4.317 | 4.316 | 0.001 | 1.000 | 2142952 | | 3.07(1.25-3.76) | 106 | 32063 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.552 | 4.558 | -0.006 | 1.000 | 1845416 | 5.27 | | 105 | 23086 | |
| 713.00 > 219.00 | 4.552 | 4.558 | -0.006 | 1.000 | 1280490 | | 1.44(0.71-2.13) | 105 | 17866 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.552 | 4.558 | -0.006 | 1.000 | 3502295 | 2.52 | | 101 | 21295 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.974 | 4.977 | -0.003 | 1.000 | 5553497 | 2.59 | | 104 | 14945 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.974 | 4.977 | -0.003 | 1.000 | 10532699 | 4.99 | | 99.7 | 2265 | |
| 813.00 > 169.00 | 4.974 | 4.977 | -0.003 | 1.000 | 1838779 | | 5.73(2.86-8.58) | 99.7 | 11748 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.342 | 5.344 | -0.002 | 1.000 | 11463437 | 5.20 | | 104 | 1718 | |
| 913.00 > 169.00 | 5.342 | 5.344 | -0.002 | 1.000 | 1443777 | | 7.94(3.83-11.48) | 104 | 8603 | |

## Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:25 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_007.d

Injection Date: 29-Mar-2018 18:06:29 Instrument ID: A8_N

Lims ID: IC L6 Full

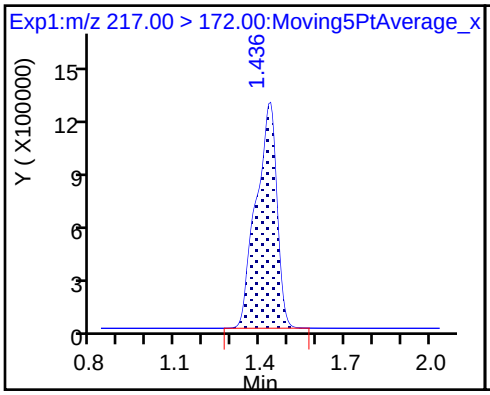
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

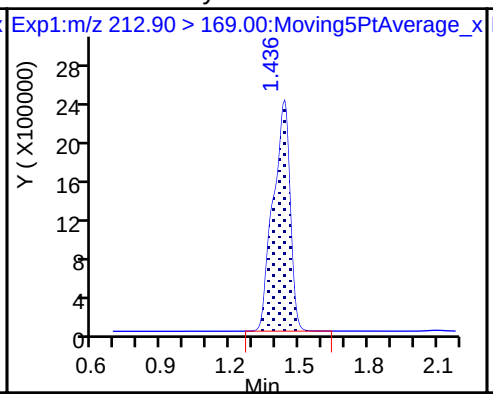
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

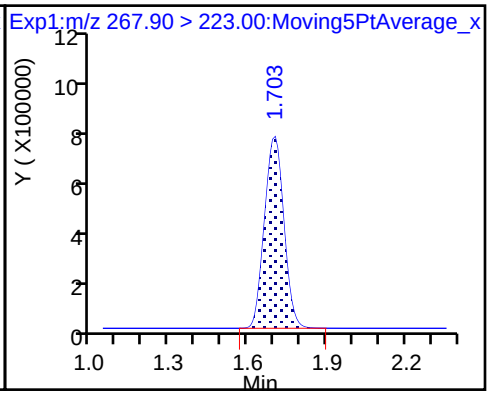
D 1 13C4 PFBA



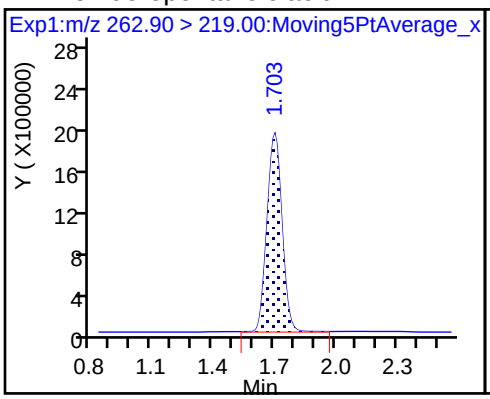

2 Perfluorobutyric acid



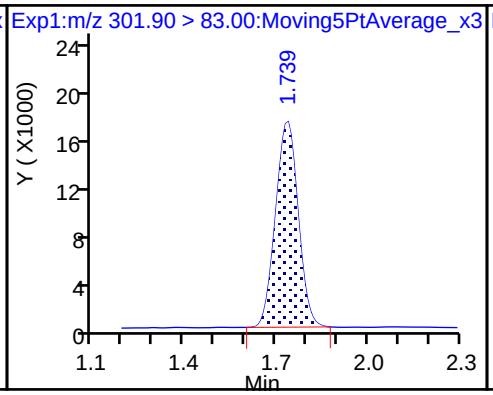

D 3 13C5-PFPeA



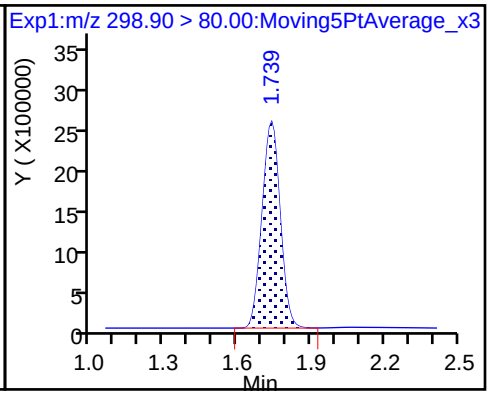

4 Perfluoropentanoic acid



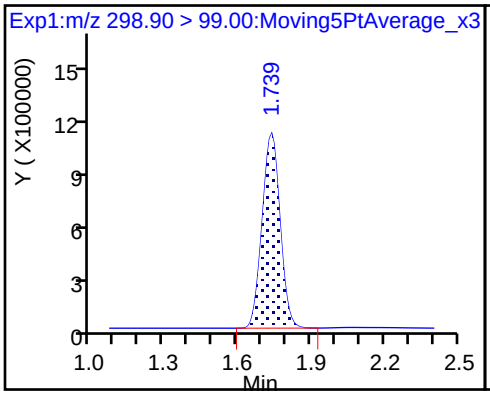

D 47 13C3-PFBS



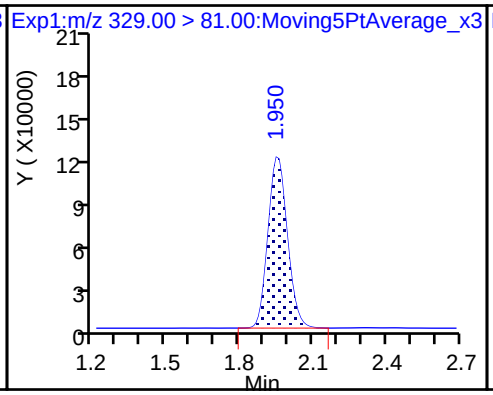

5 Perfluorobutanesulfonic acid



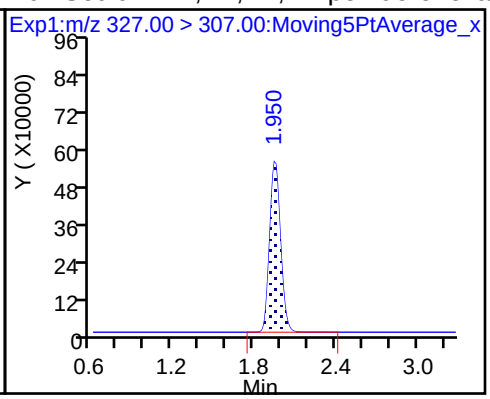

5 Perfluorobutanesulfonic acid



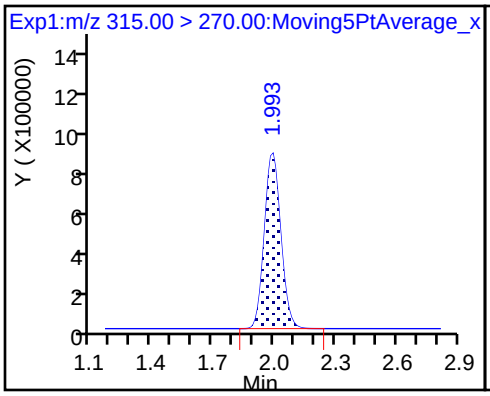

D 60 M2-4:2FTS



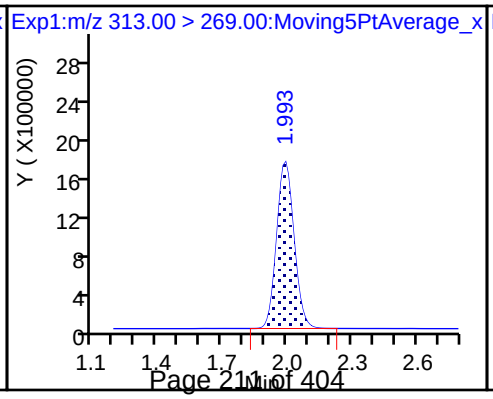

61 Sodium 1H,1H,2H,2H-perfluorohexane



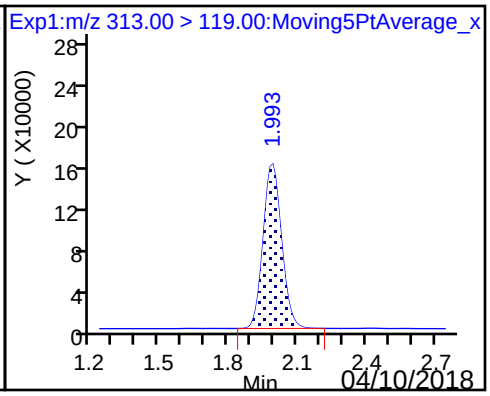

D 7 13C2 PFHxA



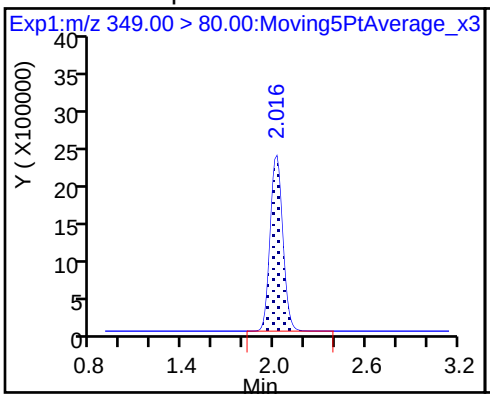

6 Perfluorohexanoic acid



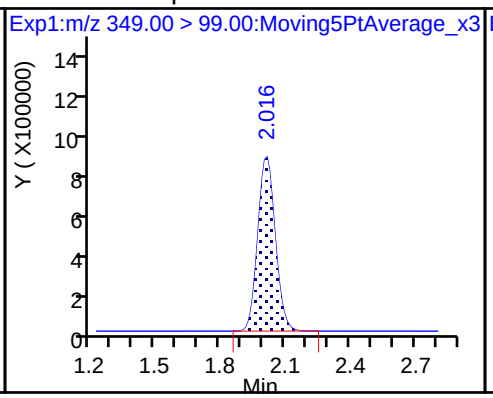

6 Perfluorohexanoic acid



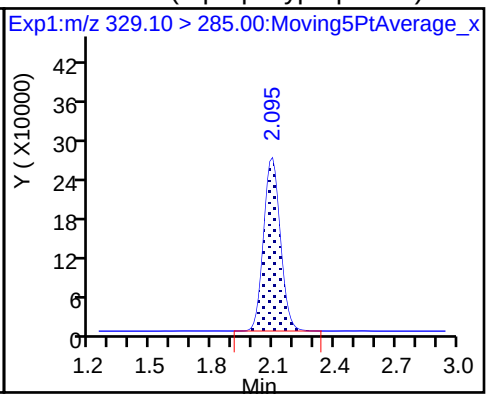
70 Perfluoropentanesulfonic acid



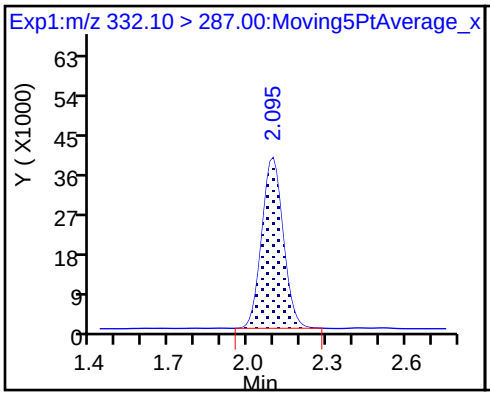

70 Perfluoropentanesulfonic acid



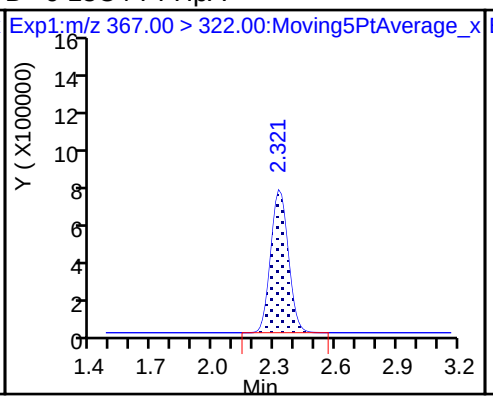

67 Perfluoro(2-propoxypropanoic) acid



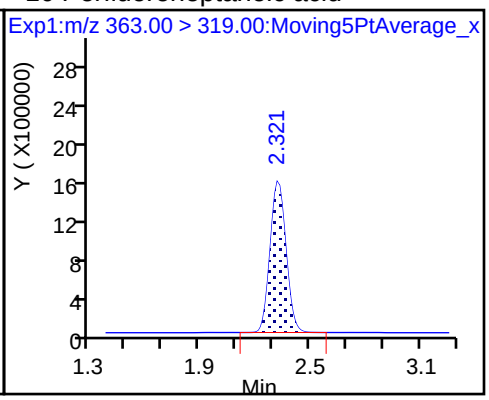

D 64 13C3 HFPO-DA



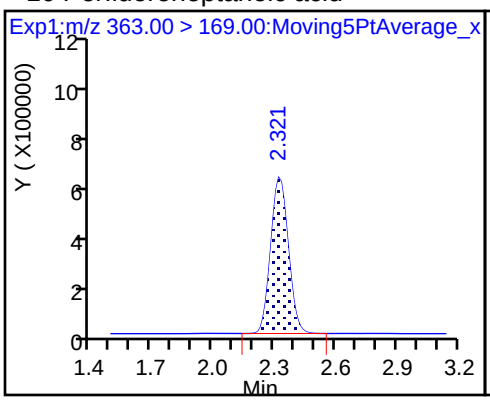

D 9 13C4-PFHpA



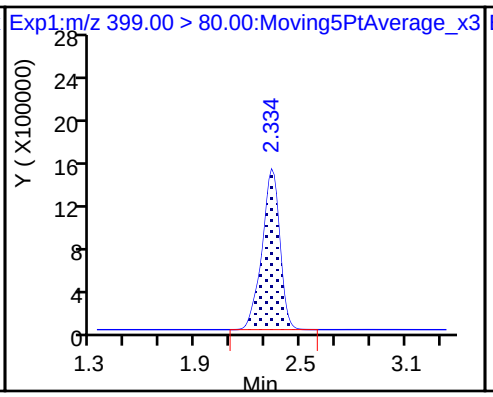

10 Perfluoroheptanoic acid



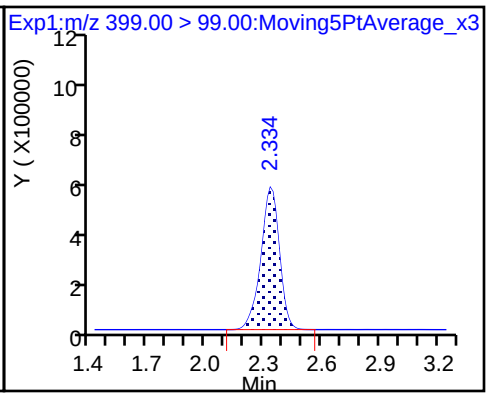

10 Perfluoroheptanoic acid



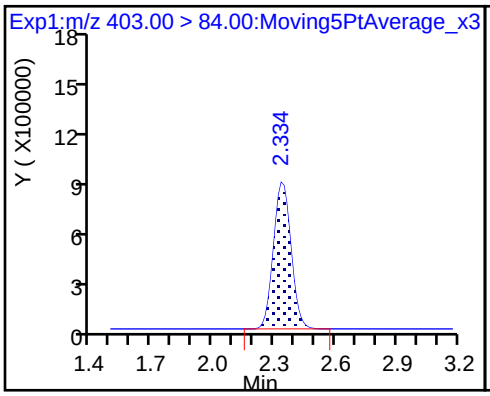

8 Perfluorohexanesulfonic acid



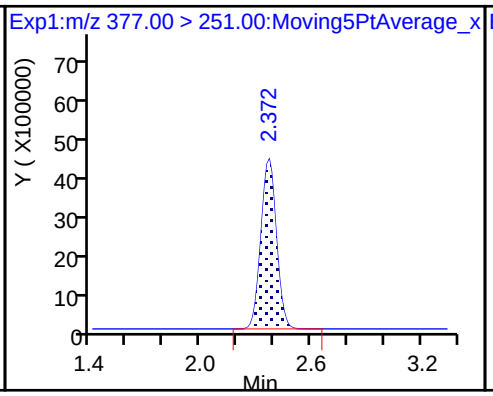

8 Perfluorohexanesulfonic acid



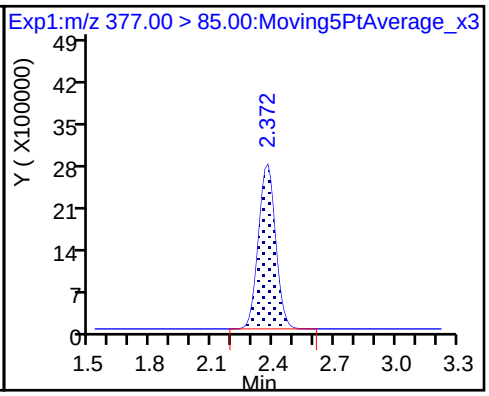

D 11 18O2 PFHxS



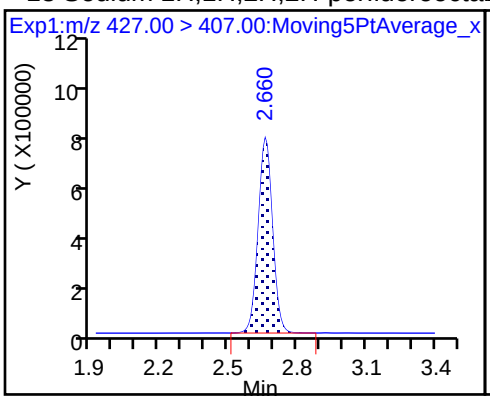

65 Adona



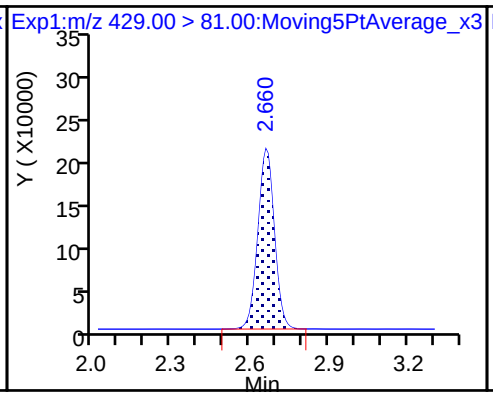

65 Adona



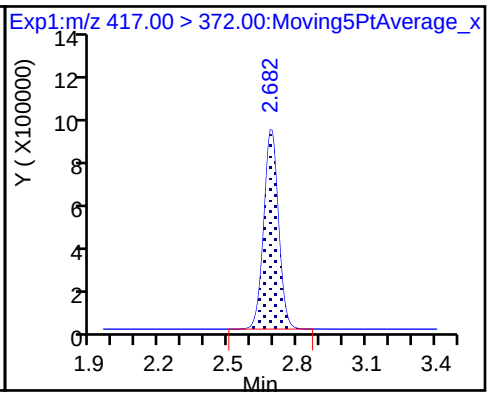
13 Sodium 1H,1H,2H,2H-perfluorooctane



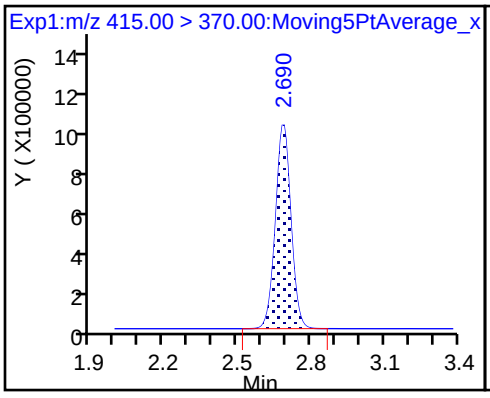

D 12 M2-6:2FTS



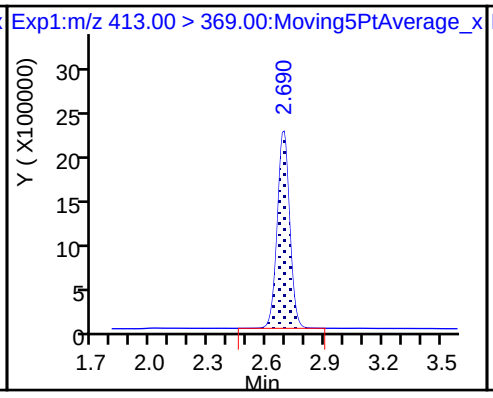

D 14 13C4 PFOA



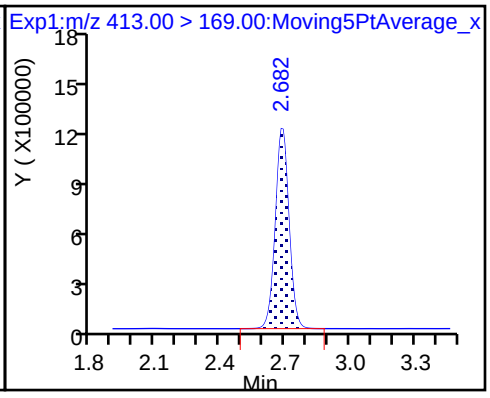

* 62 13C2-PFOA



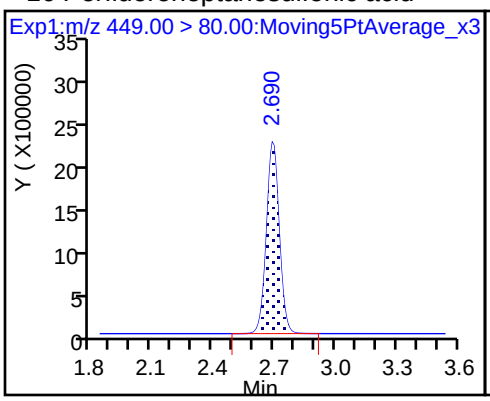

15 Perfluorooctanoic acid



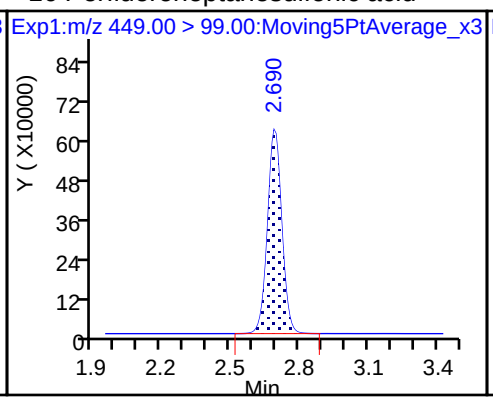

15 Perfluorooctanoic acid



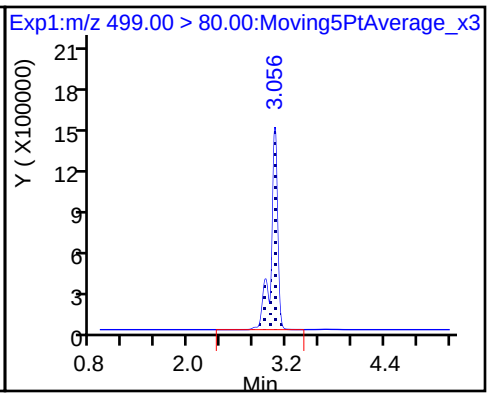

16 Perfluoroheptanesulfonic acid



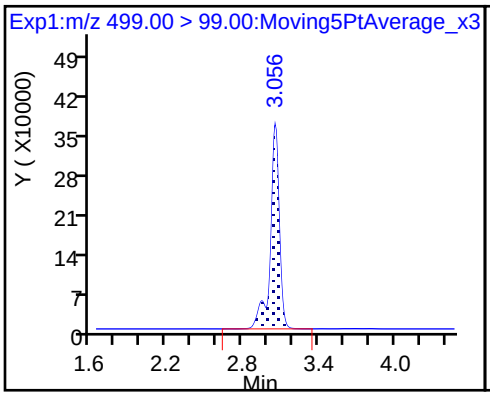

16 Perfluoroheptanesulfonic acid



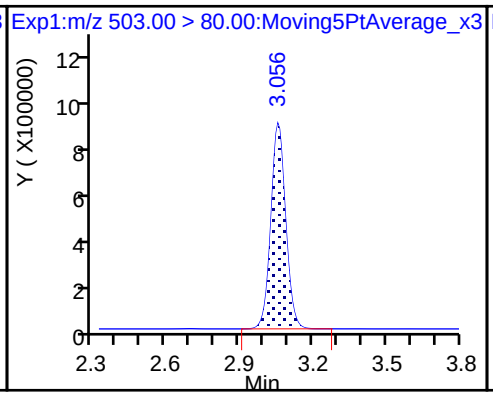

17 Perfluorooctane sulfonic acid



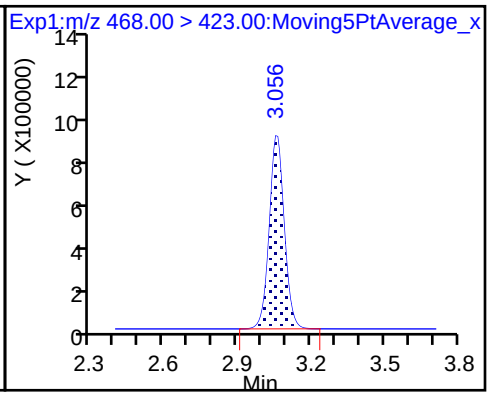

17 Perfluorooctane sulfonic acid



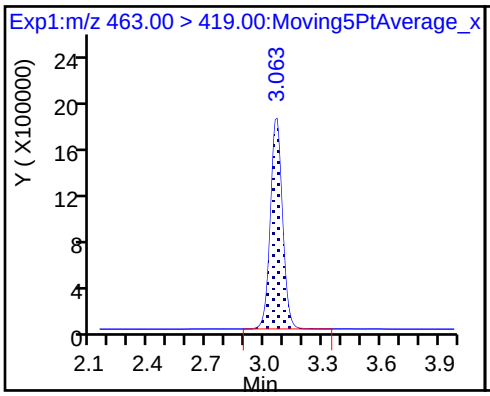

D 18 13C4 PFOS



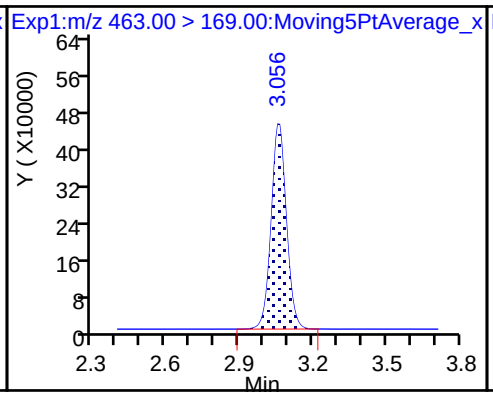

D 19 13C5 PFNA



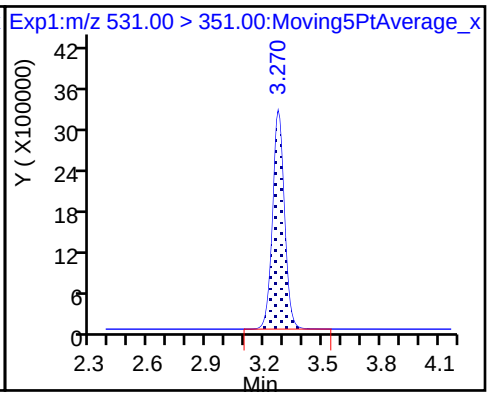
20 Perfluorononanoic acid



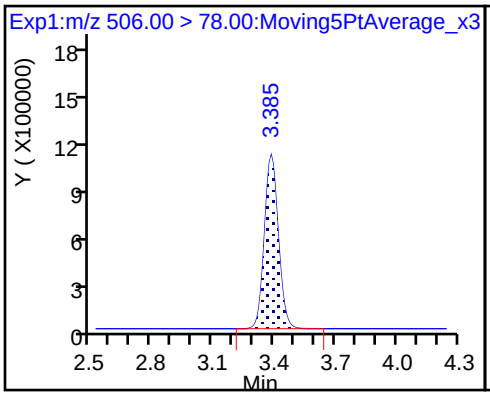

20 Perfluorononanoic acid



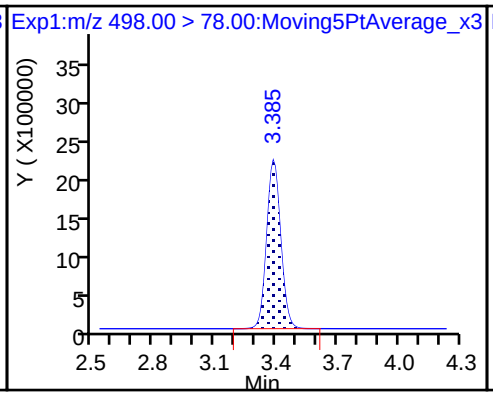

69 9-Chlorohexadecafluoro-3-oxanonane



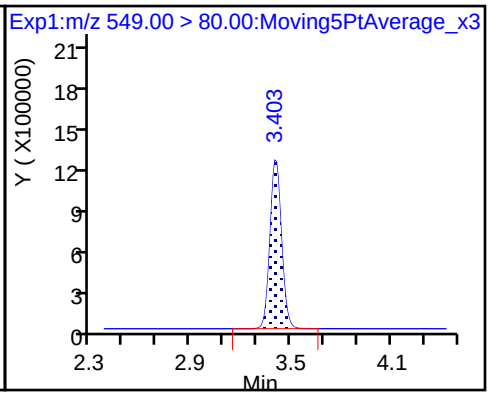

D 21 13C8 FOSA



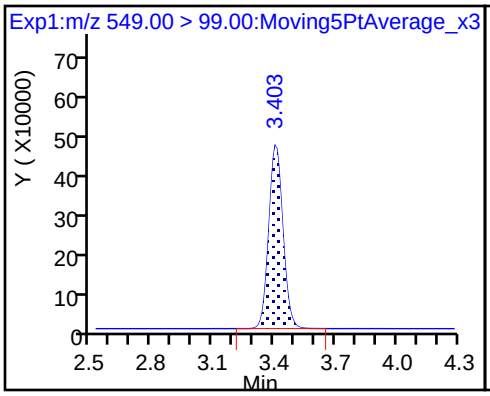

22 Perfluorooctane Sulfonamide



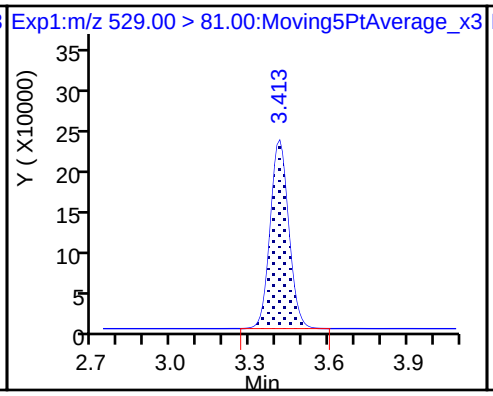

68 Perfluorononanesulfonic acid



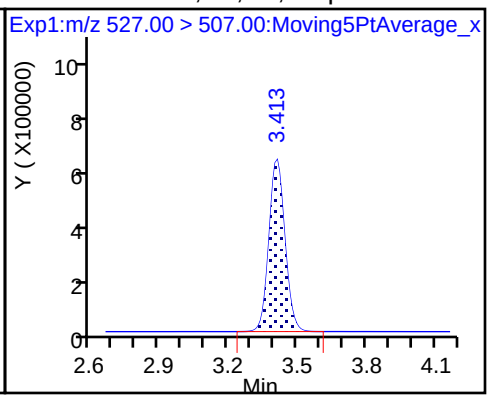

68 Perfluorononanesulfonic acid



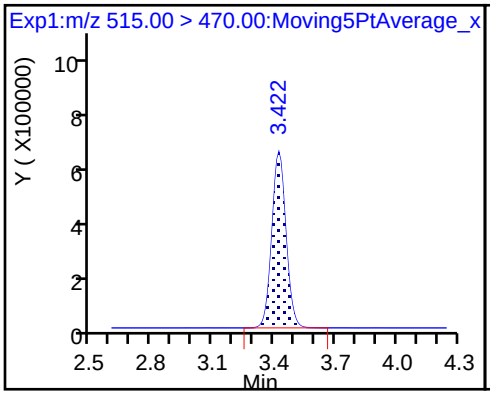

D 26 M2-8:2FTS



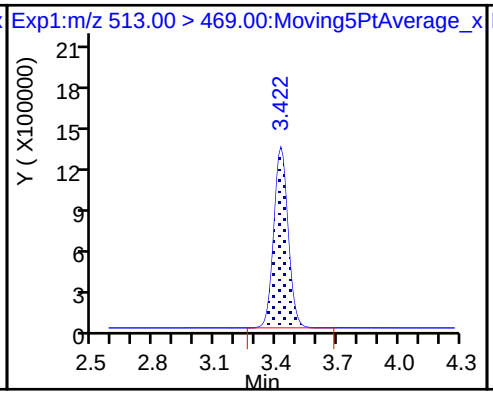

25 Sodium 1H,1H,2H,2H-perfluorodecane



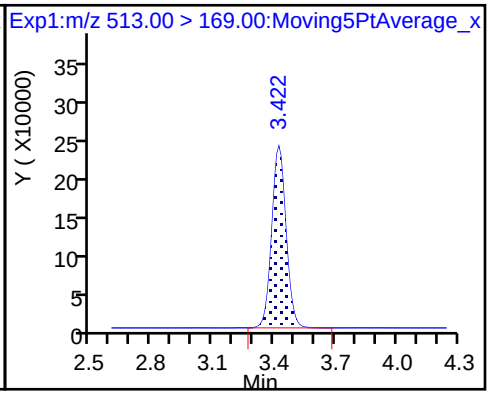

D 23 13C2 PFDA



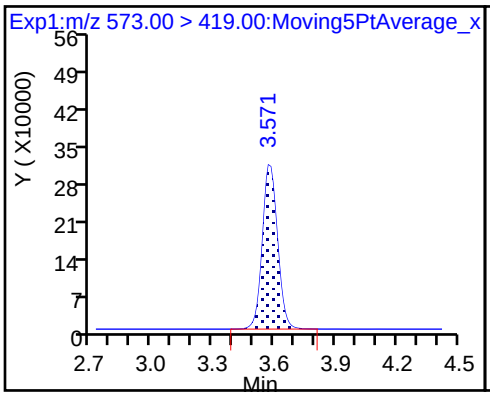

24 Perfluorodecanoic acid



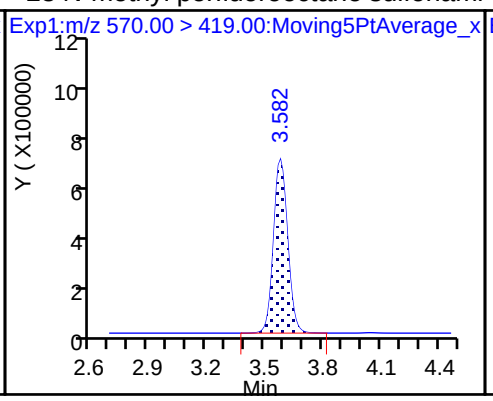

24 Perfluorodecanoic acid



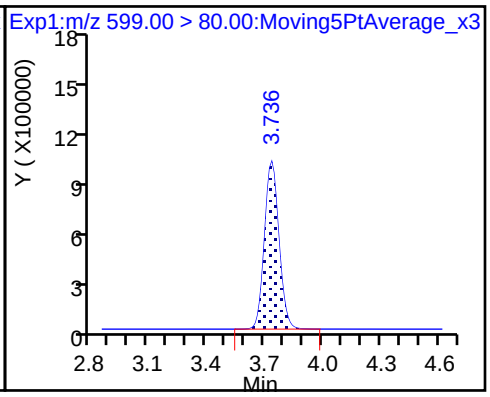
D 27 d3-NMeFOSAA



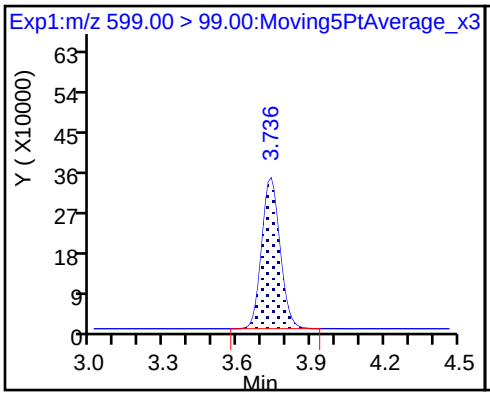

28 N-methyl perfluorooctane sulfonami



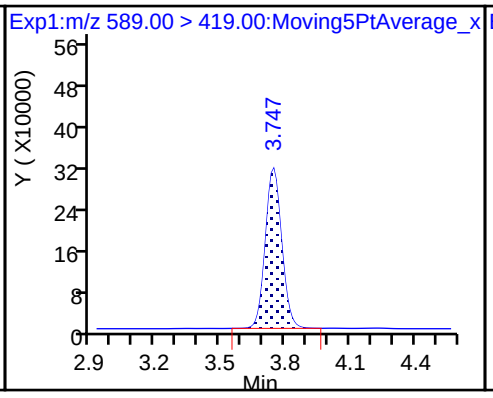

29 Perfluorodecane Sulfonic acid



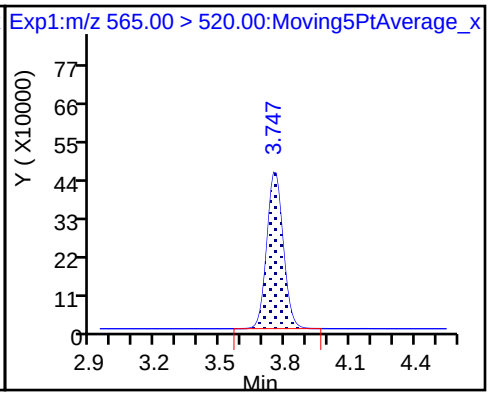

29 Perfluorodecane Sulfonic acid



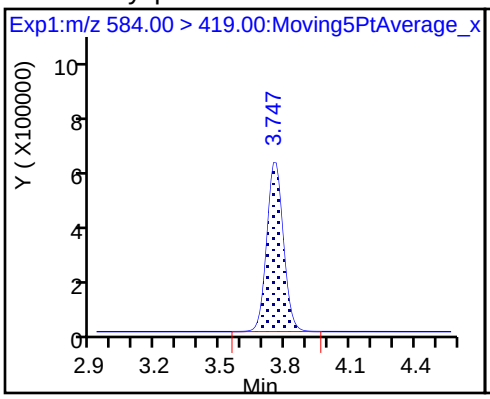

D 32 d5-NEtFOSAA



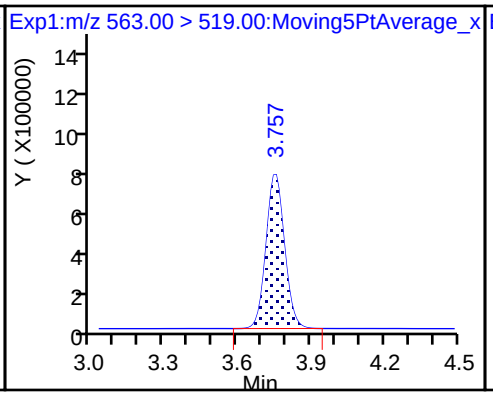

D 30 13C2 PFUnA



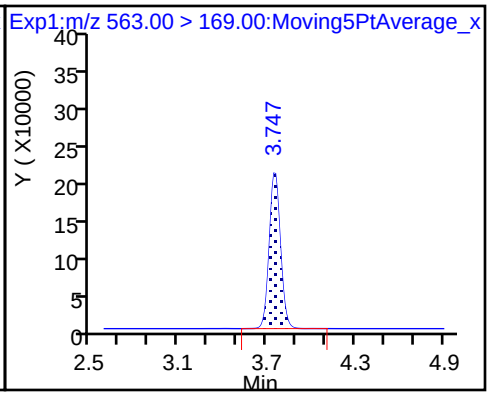

33 N-ethyl perfluorooctane sulfonamid



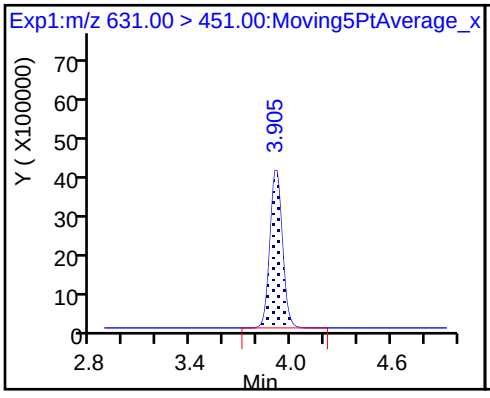

31 Perfluoroundecanoic acid



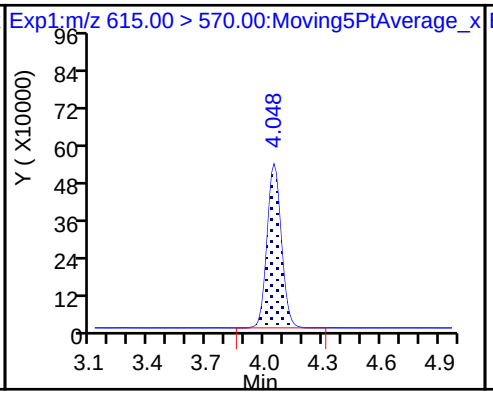

31 Perfluoroundecanoic acid



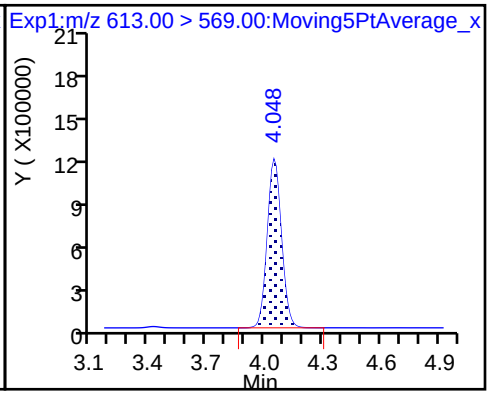

66 11-Chloroeicosafluoro-3-oxaundecan



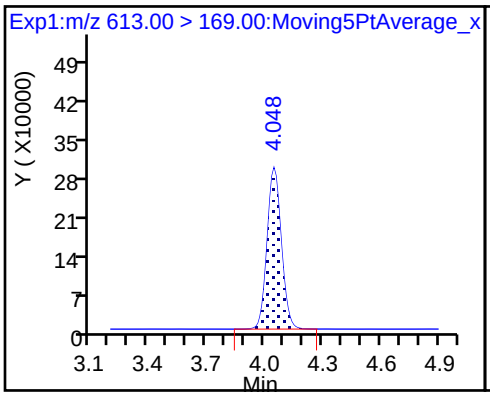

D 36 13C2 PFDoA



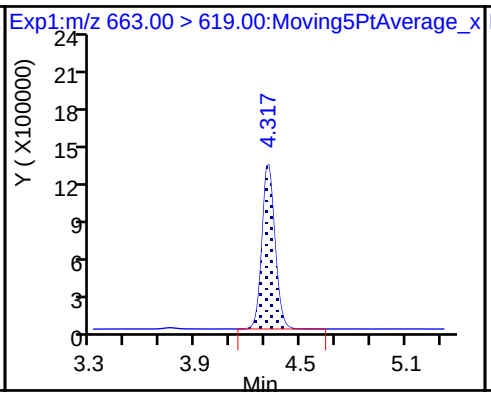

37 Perfluorododecanoic acid



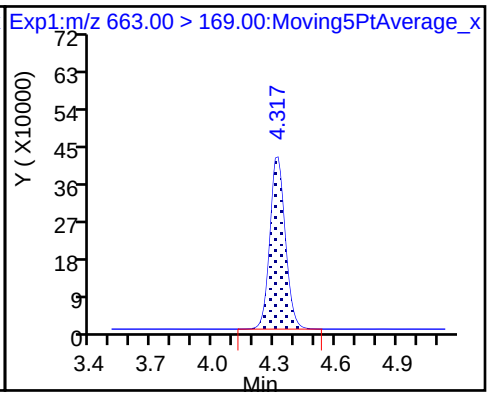
37 Perfluorododecanoic acid



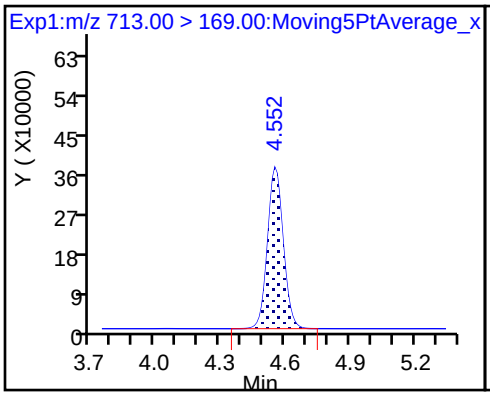

41 Perfluorotridecanoic acid



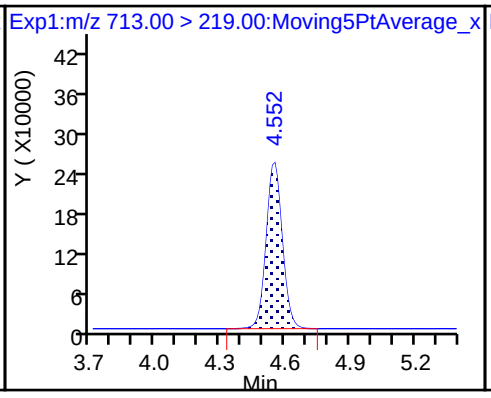

41 Perfluorotridecanoic acid



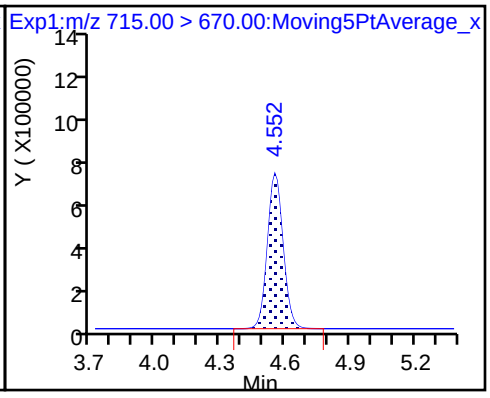

42 Perfluorotetradecanoic acid



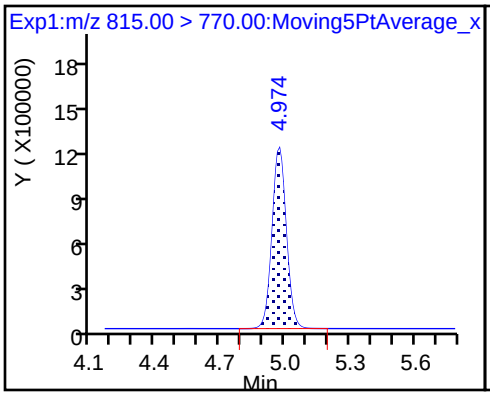

42 Perfluorotetradecanoic acid



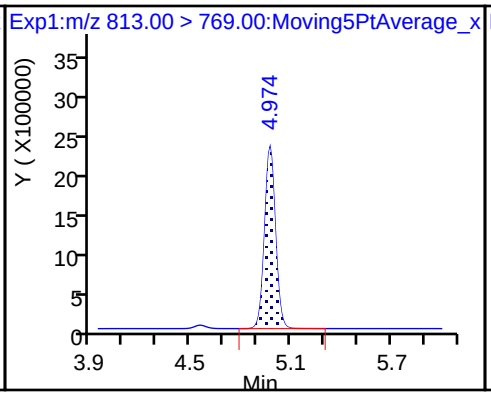

D 43 13C2-PFTeDA



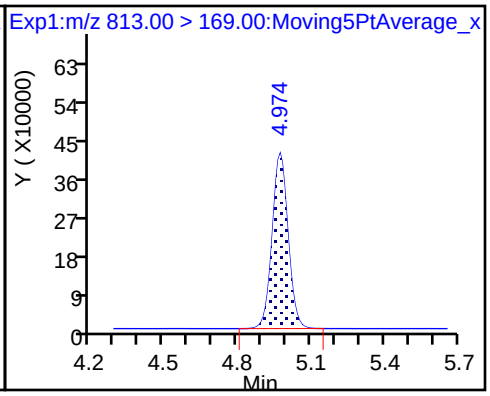

D 44 13C2-PFHxDA



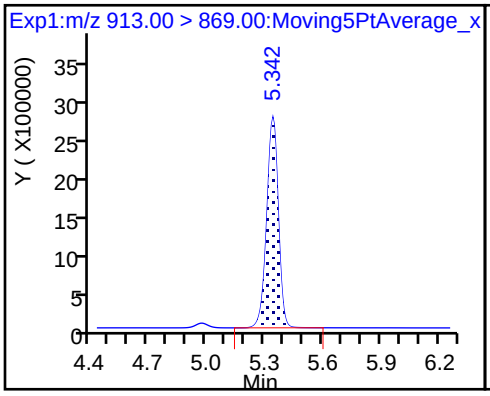

45 Perfluorohexadecanoic acid



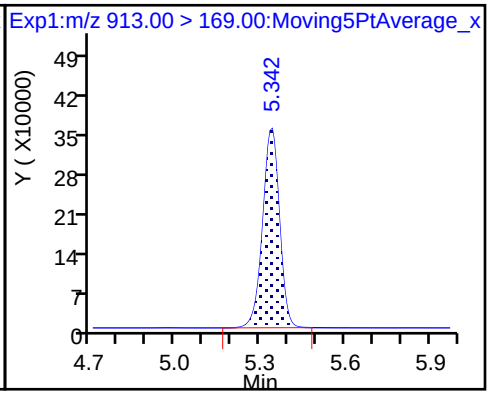

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 29-Mar-2018 18:14:21 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:48:31 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 09:48:44

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.430 | 1.436 | -0.006 | 1.000 | 5735604 | 2.58 | | 103 | 58531 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.436 | 1.437 | -0.001 | 1.004 | 21580046 | 10.2 | | 102 | 11632 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.694 | 1.702 | -0.008 | 0.554 | 3687266 | 2.55 | | 102 | 78635 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.703 | 1.706 | -0.003 | 1.005 | 17152403 | 9.72 | | 97.2 | 7365 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.739 | 1.738 | 0.001 | 1.000 | 78326 | 2.37 | | 102 | 501 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.739 | 1.742 | -0.003 | 1.000 | 22689760 | 8.54 | | 96.6 | 14590 | |
| 298.90 > 99.00 | 1.739 | 1.742 | -0.003 | 1.000 | 9957917 | | 2.28(1.25-3.74) | 96.6 | 14342 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.950 | 1.955 | -0.005 | 1.000 | 5058050 | 8.70 | | 93.2 | 228018 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.950 | 1.955 | -0.005 | 1.000 | 570582 | 2.26 | | 96.7 | 8489 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.982 | 1.991 | -0.008 | 1.000 | 3845737 | 2.42 | | 96.6 | 134352 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.993 | 1.992 | 0.001 | 1.006 | 16338328 | 10.4 | | 104 | 22572 | |
| 313.00 > 119.00 | 1.982 | 1.992 | -0.010 | 1.000 | 1517062 | | 10.77(5.03-15.10) | 104 | 17707 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.005 | 2.013 | -0.008 | 1.000 | 21196987 | 8.84 | | 94.2 | 244099 | |
| 349.00 > 99.00 | 2.005 | 2.013 | -0.008 | 1.000 | 8492802 | | 2.50(1.36-4.07) | 94.2 | 186040 | |
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.084 | 2.092 | -0.008 | 1.000 | 207020 | 2.61 | | 104 | 2646 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.084 | 2.092 | -0.008 | 1.000 | 2889144 | 10.3 | | 103 | 25368 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.321 | 2.326 | -0.005 | 1.000 | 3833624 | 2.50 | | 100 | 63922 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.321 | 2.327 | -0.006 | 1.000 | 15839255 | 9.51 | | 95.1 | 14396 | |
| 363.00 > 169.00 | 2.321 | 2.327 | -0.006 | 1.000 | 6592946 | | 2.40(1.13-3.40) | 95.1 | 19234 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.334 | 2.339 | -0.005 | 1.000 | 18176626 | 8.82 | | 96.9 | 48609 | |
| 399.00 > 99.00 | 2.334 | 2.339 | -0.005 | 1.000 | 6162005 | | 2.95(1.50-4.49) | 96.9 | 26079 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.334 | 2.340 | -0.006 | 1.000 | 4362929 | 2.29 | | 96.7 | 73318 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.372 | 2.372 | 0.0 | 1.000 | 40218776 | 8.16 | | 81.6 | 276919 | |
| 377.00 > 85.00 | 2.372 | 2.372 | 0.0 | 1.000 | 25804266 | | 1.56(0.84-2.53) | 81.6 | 154557 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.660 | 2.664 | -0.004 | 1.000 | 800357 | 2.26 | | 95.3 | 22425 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.660 | 2.664 | -0.004 | 1.000 | 5791627 | 9.20 | | 97.1 | 28921 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.682 | 2.688 | -0.006 | 1.000 | 3749304 | 2.49 | | 99.7 | 60903 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.682 | 2.689 | -0.007 | | 4014147 | 2.50 | | | 76434 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.682 | 2.690 | -0.008 | 1.000 | 16926232 | 9.52 | | 95.2 | 5748 | |
| 413.00 > 169.00 | 2.682 | 2.690 | -0.008 | 1.000 | 8823163 | | 1.92(0.84-2.52) | 95.2 | 19945 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.690 | 2.695 | -0.005 | 1.000 | 16813478 | 9.12 | | 95.8 | 151715 | |
| 449.00 > 99.00 | 2.690 | 2.695 | -0.005 | 1.000 | 4717497 | | 3.56(1.94-5.82) | 95.8 | 51657 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.056 | 3.060 | -0.004 | 1.000 | 3306882 | 2.49 | | 104 | 18604 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.056 | 3.060 | -0.004 | 1.000 | 14234234 | 9.00 | | 97.0 | 26257 | |
| 499.00 > 99.00 | 3.056 | 3.060 | -0.004 | 1.000 | 3253738 | | 4.37(2.31-6.93) | 97.0 | 29168 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.056 | 3.061 | -0.005 | 1.000 | 3201114 | 2.51 | | 101 | 68857 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.056 | 3.064 | -0.008 | 1.000 | 13303148 | 10.1 | | 101 | 13860 | |
| 463.00 > 169.00 | 3.056 | 3.064 | -0.008 | 1.000 | 3354345 | | 3.97(1.90-5.69) | 101 | 61290 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.270 | 3.272 | -0.002 | 1.000 | 23393631 | 9.04 | | 97.0 | 229068 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.385 | 3.388 | -0.003 | 1.000 | 4756992 | 2.54 | | 102 | 41758 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.385 | 3.389 | -0.004 | 1.000 | 18498081 | 9.84 | | 98.4 | 132507 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.403 | 3.409 | -0.006 | 1.000 | 10261449 | 9.25 | | 96.4 | 89713 | |
| 549.00 > 99.00 | 3.403 | 3.409 | -0.006 | 1.000 | 3784203 | | 2.71(1.33-3.97) | 96.4 | 36264 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.413 | 3.413 | 0.0 | 1.000 | 932507 | 2.27 | | 94.7 | 27454 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.413 | 3.415 | -0.002 | 1.000 | 4947631 | 9.42 | | 98.3 | 45864 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.422 | 3.423 | -0.001 | 1.000 | 2662530 | 2.48 | | 99.0 | 34367 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.422 | 3.427 | -0.005 | 1.000 | 10958309 | 10.4 | | 104 | 51617 | |
| 513.00 > 169.00 | 3.422 | 3.427 | -0.005 | 1.000 | 2047409 | | 5.35(2.36-7.09) | 104 | 70662 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.571 | 3.578 | -0.007 | 1.000 | 1563764 | 2.72 | | 109 | 31151 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.571 | 3.581 | -0.010 | 1.000 | 6681300 | 10.1 | | 101 | 34744 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.736 | 3.738 | -0.002 | 1.000 | 8752766 | 9.12 | | 94.6 | 88915 | |
| 599.00 > 99.00 | 3.736 | 3.738 | -0.002 | 1.000 | 3105143 | | 2.82(1.39-4.16) | 94.6 | 75140 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.747 | 3.749 | -0.002 | 1.000 | 1483924 | 2.46 | | 98.3 | 3885 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.747 | 3.753 | -0.006 | 1.000 | 2255059 | 2.57 | | 103 | 43512 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.747 | 3.755 | -0.008 | 1.000 | 5395434 | 9.91 | | 99.1 | 67492 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.747 | 3.755 | -0.008 | 1.000 | 7311434 | 10.1 | | 101 | 27118 | |
| 563.00 > 169.00 | 3.747 | 3.755 | -0.008 | 1.000 | 1915144 | | 3.82(2.12-6.36) | 101 | 40854 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.905 | 3.910 | -0.005 | 1.000 | 33023539 | 8.22 | | 87.3 | 221031 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.048 | 4.052 | -0.004 | 1.000 | 10879941 | 10.0 | | 99.9 | 7960 | |
| 613.00 > 169.00 | 4.048 | 4.052 | -0.004 | 1.000 | 2711112 | | 4.01(2.13-6.40) | 99.9 | 35603 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.048 | 4.052 | -0.004 | 1.000 | 2518124 | 2.58 | | 103 | 17246 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.306 | 4.316 | -0.010 | 1.000 | 12483957 | 10.7 | | 107 | 5334 | |
| 663.00 > 169.00 | 4.306 | 4.316 | -0.010 | 1.000 | 3993723 | | 3.13(1.25-3.76) | 107 | 49346 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.552 | 4.558 | -0.006 | 1.000 | 3237082 | 2.61 | | 104 | 15279 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.552 | 4.558 | -0.006 | 1.000 | 3274341 | 10.1 | | 101 | 29447 | |
| 713.00 > 219.00 | 4.542 | 4.558 | -0.016 | 0.998 | 2448380 | | 1.34(0.71-2.13) | 101 | 26681 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.974 | 4.977 | -0.003 | 1.000 | 19206042 | 10.4 | | 104 | 3791 | |
| 813.00 > 169.00 | 4.974 | 4.977 | -0.003 | 1.000 | 3117440 | | 6.16(2.86-8.58) | 104 | 14123 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.974 | 4.977 | -0.003 | 1.000 | 4864202 | 2.54 | | 101 | 13665 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.335 | 5.344 | -0.009 | 1.000 | 18744405 | 9.70 | | 97.0 | 2469 | |
| 913.00 > 169.00 | 5.335 | 5.344 | -0.009 | 1.000 | 2456528 | | 7.63(3.83-11.48) | 97.0 | 10562 | |

## Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:35 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Injection Date: 29-Mar-2018 18:14:21 Instrument ID: A8_N

Lims ID: IC L7 Full

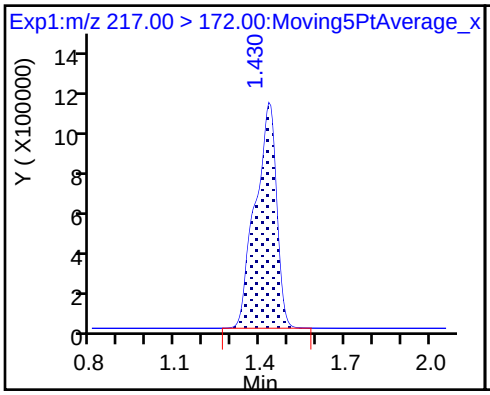
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

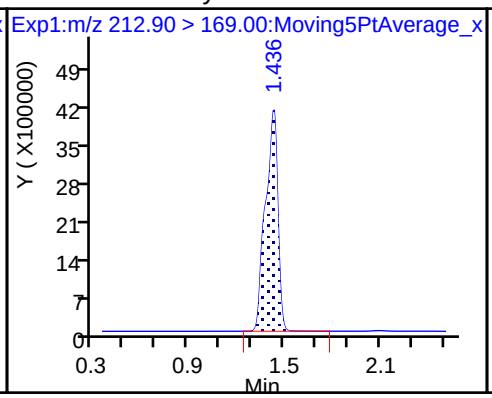
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

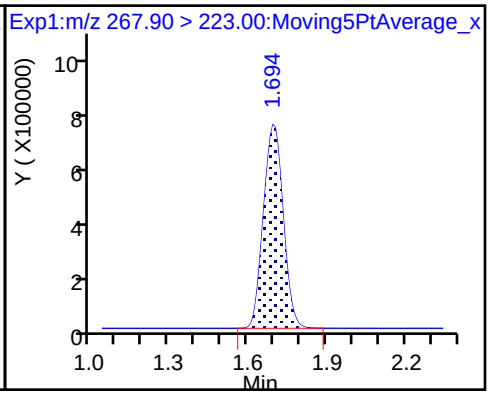
D 1 13C4 PFBA



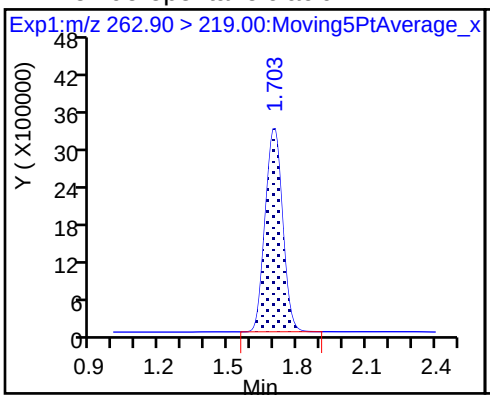

2 Perfluorobutyric acid



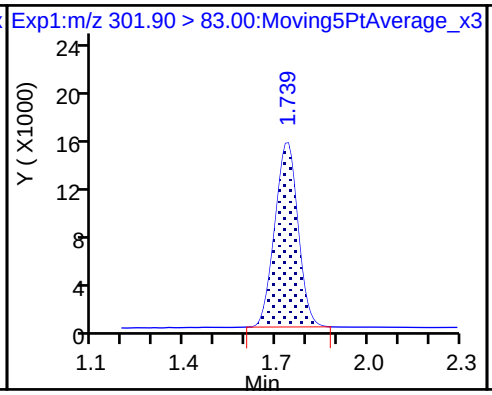

D 3 13C5-PFPeA



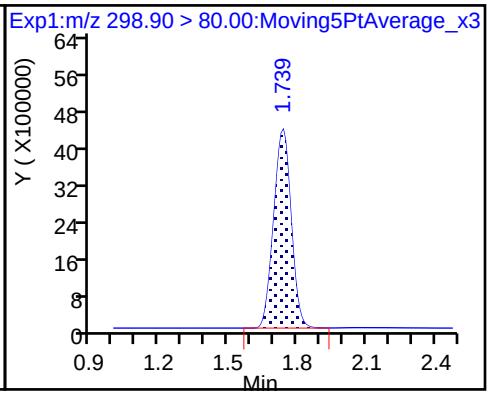

4 Perfluoropentanoic acid



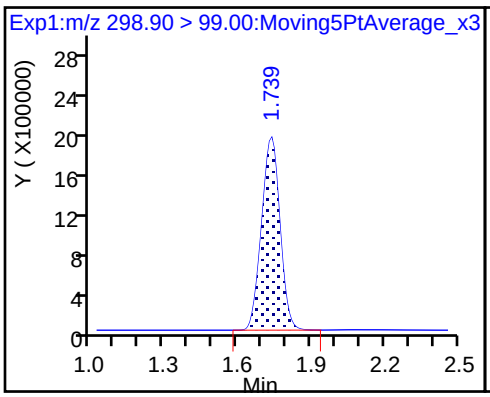

D 47 13C3-PFBS



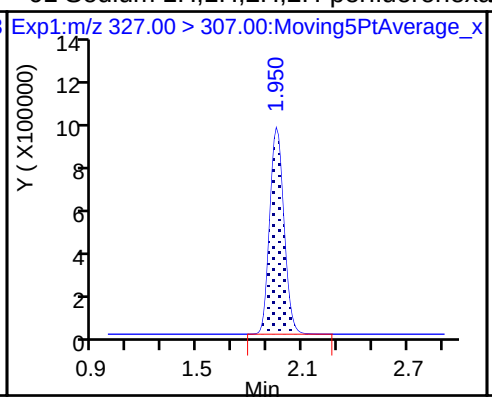

5 Perfluorobutanesulfonic acid



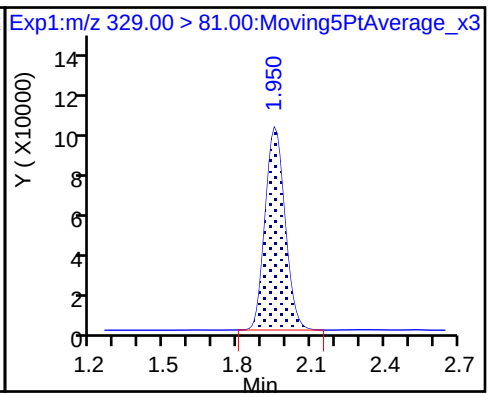

5 Perfluorobutanesulfonic acid



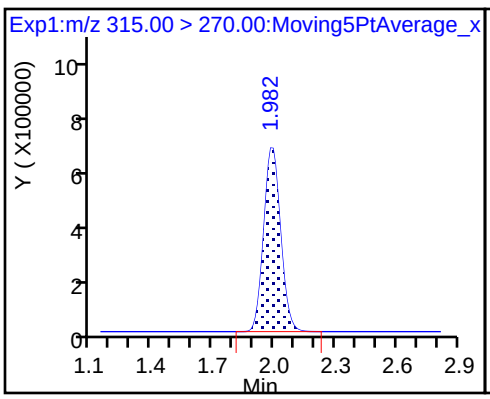

61 Sodium 1H,1H,2H,2H-perfluorohexa



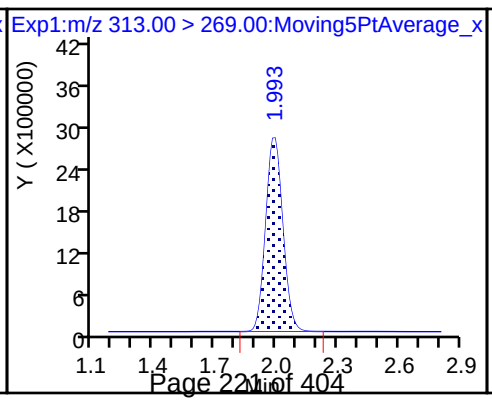

D 60 M2-4:2FTS



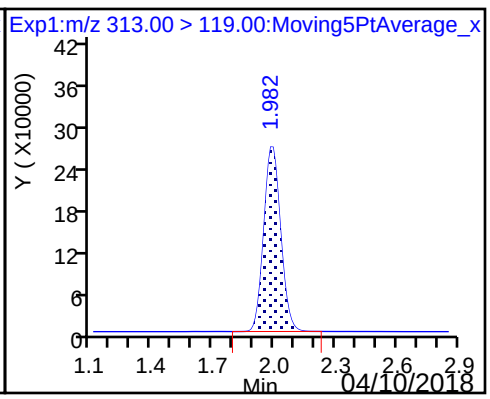

D 7 13C2 PFHxA



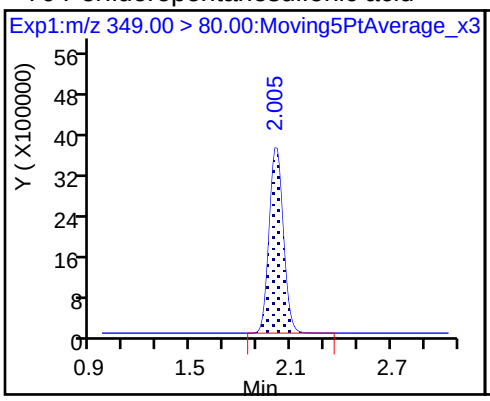

6 Perfluorohexanoic acid



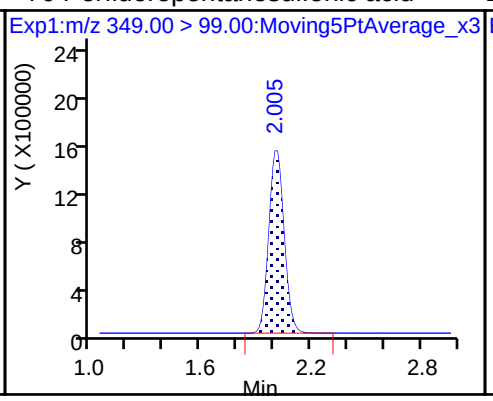

6 Perfluorohexanoic acid



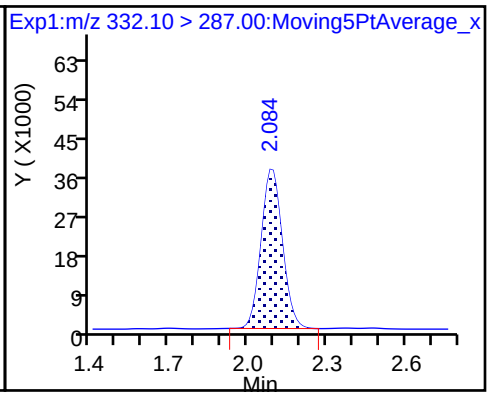
70 Perfluoropentanesulfonic acid



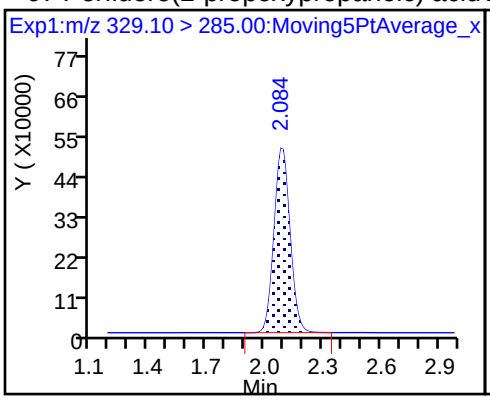

70 Perfluoropentanesulfonic acid



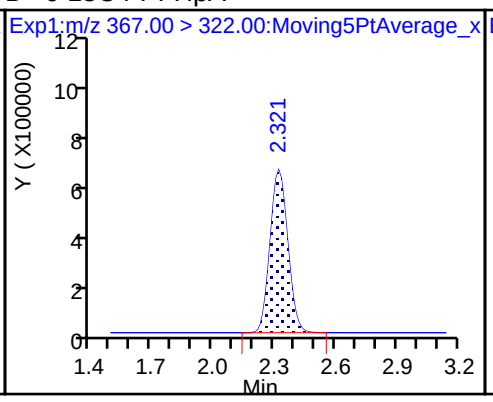

D 64 13C3 HFPO-DA



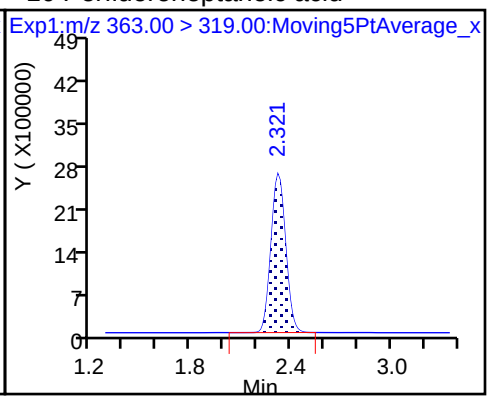

67 Perfluoro(2-propoxypropanoic) acid



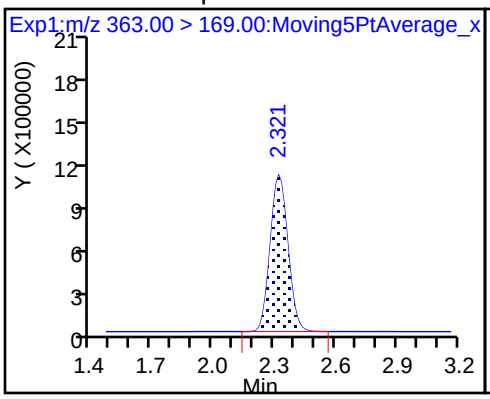

D 9 13C4-PFHpA



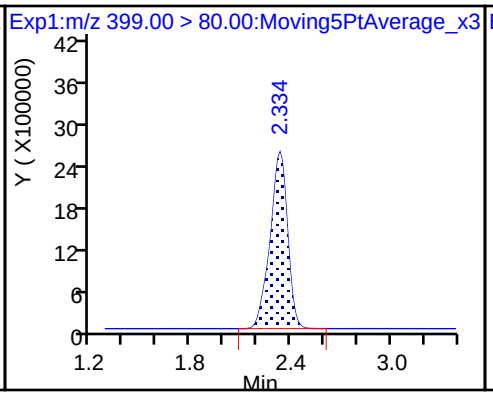

10 Perfluoroheptanoic acid



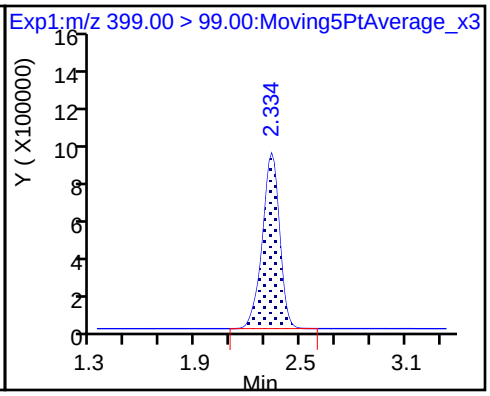

10 Perfluoroheptanoic acid



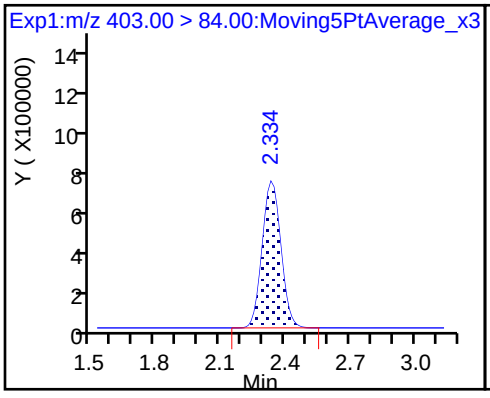

8 Perfluorohexanesulfonic acid



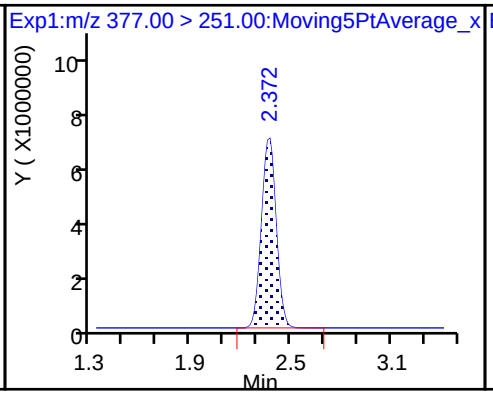

8 Perfluorohexanesulfonic acid



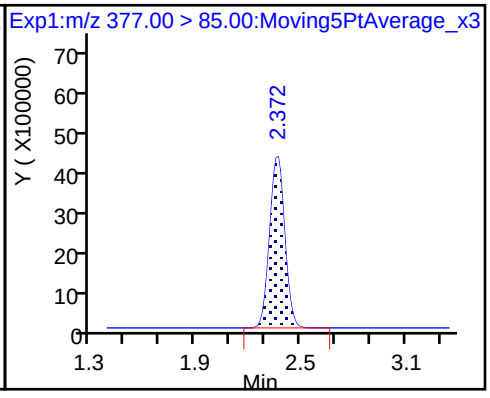

D 11 18O2 PFHxS



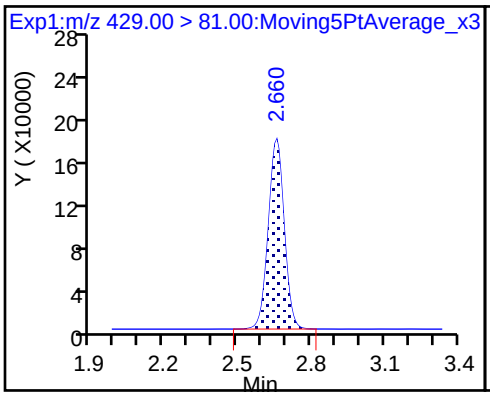

65 Adona



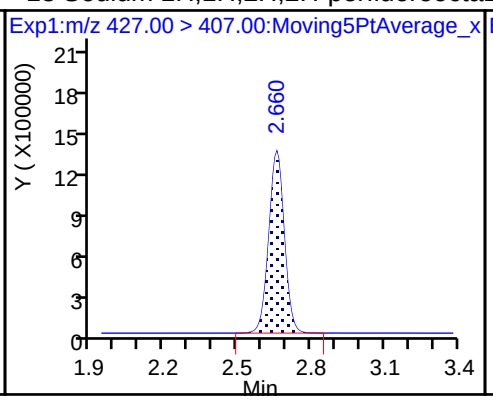

65 Adona



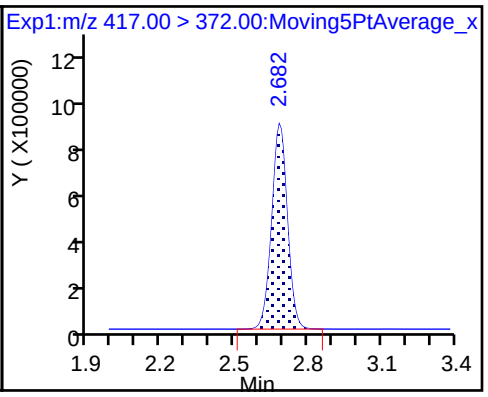
D 12 M2-6:2FTS



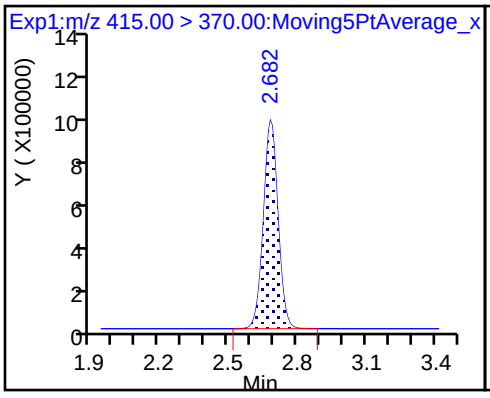

13 Sodium 1H,1H,2H,2H-perfluorooctane



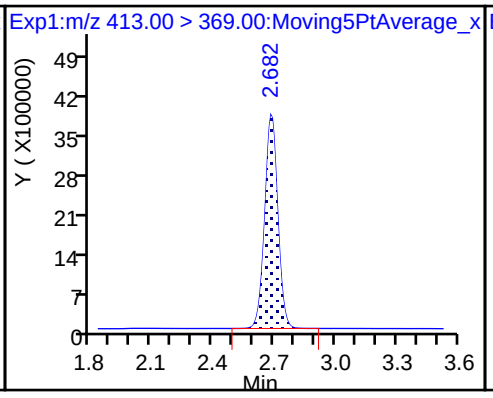

D 14 13C4 PFOA



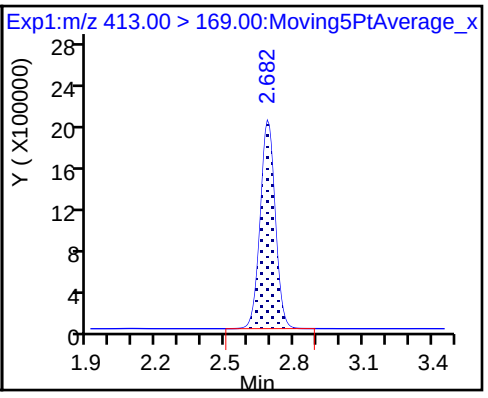

* 62 13C2-PFOA



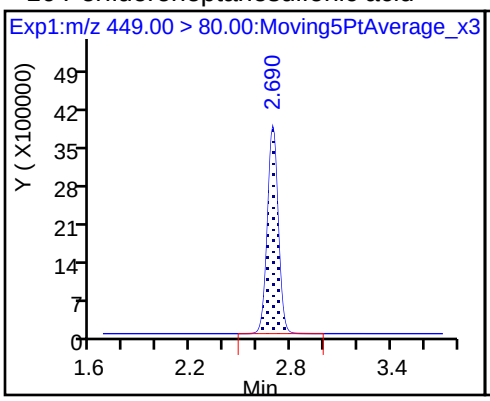

15 Perfluorooctanoic acid



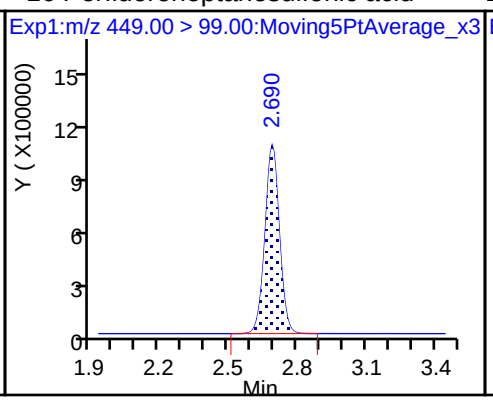

15 Perfluorooctanoic acid



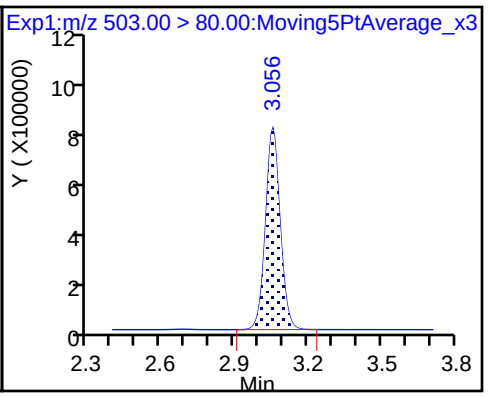

16 Perfluoroheptanesulfonic acid



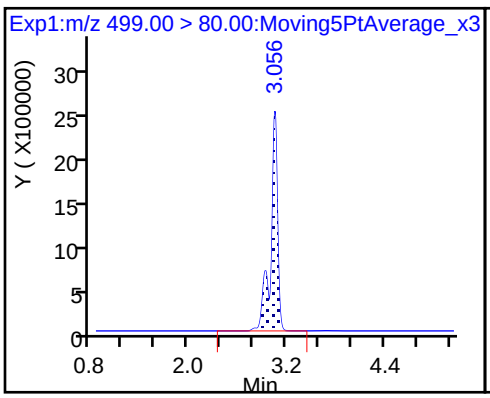

16 Perfluoroheptanesulfonic acid



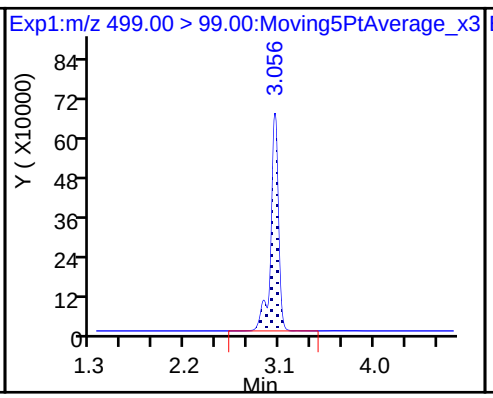

D 18 13C4 PFOS



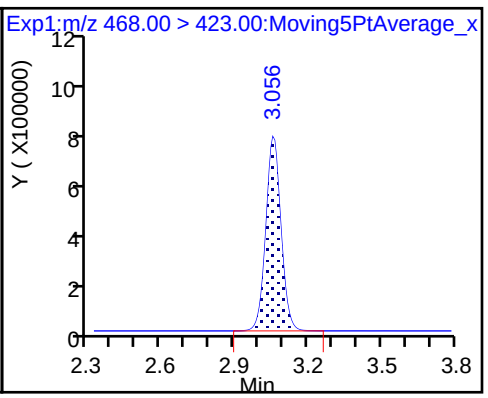

17 Perfluorooctane sulfonic acid



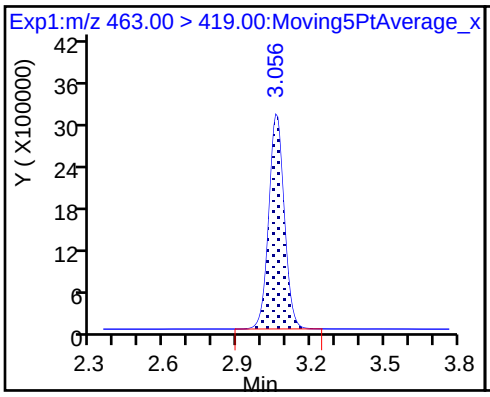

17 Perfluorooctane sulfonic acid



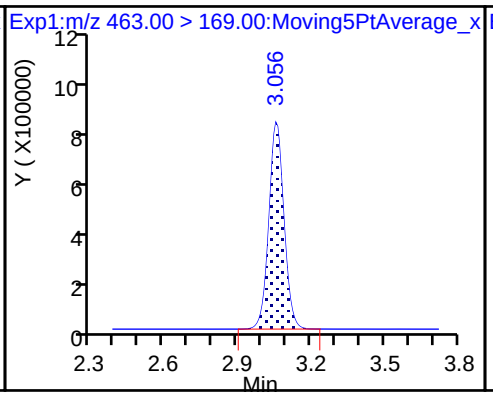

D 19 13C5 PFNA



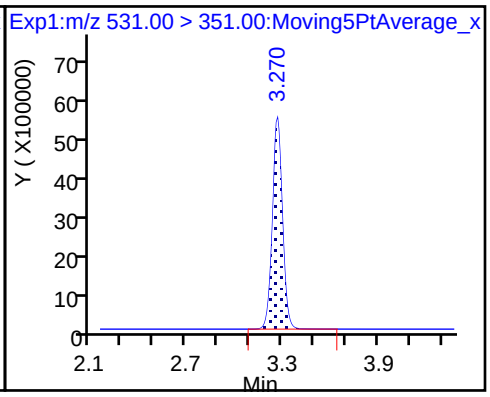
20 Perfluorononanoic acid



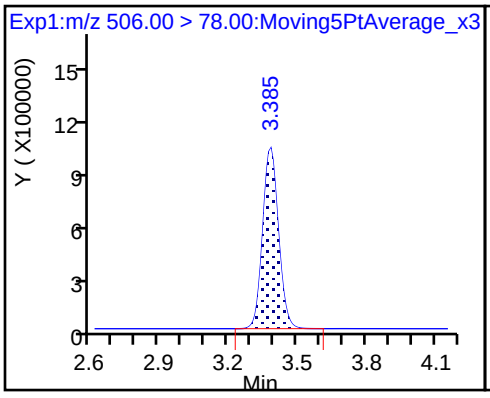

20 Perfluorononanoic acid



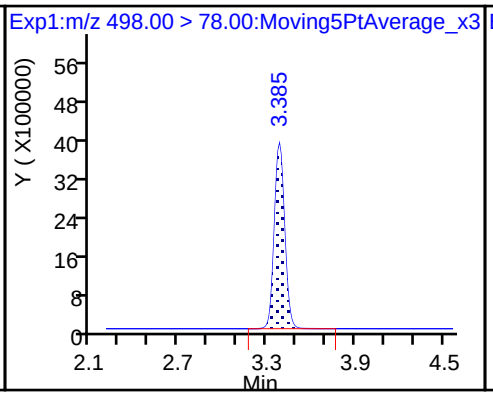

69 9-Chlorohexadecafluoro-3-oxanonane



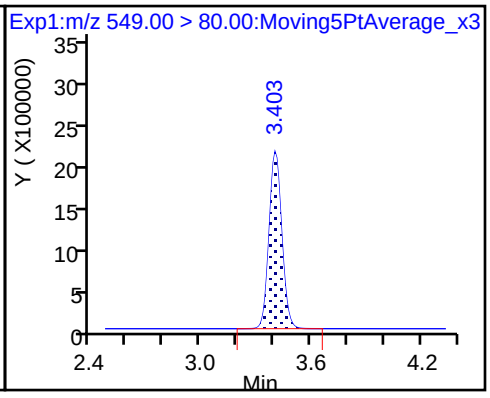

D 21 13C8 FOSA



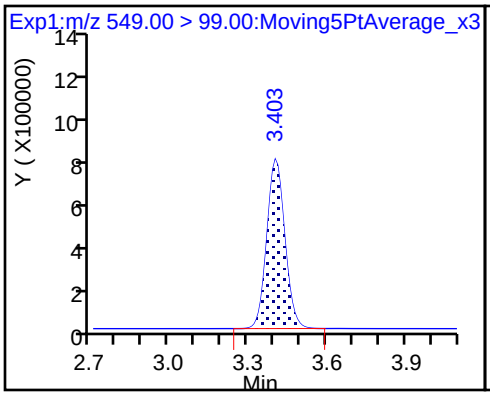

22 Perfluorooctane Sulfonamide



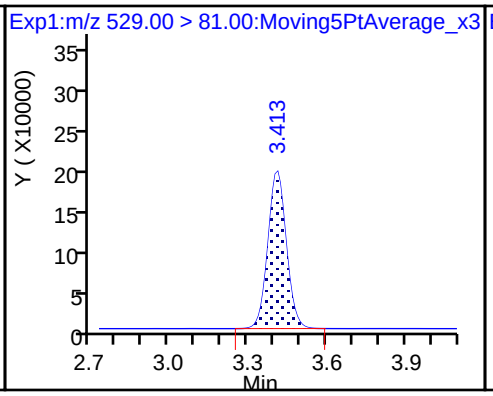

68 Perfluorononanesulfonic acid



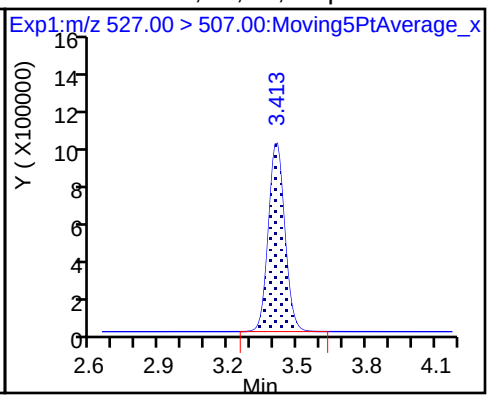

68 Perfluorononanesulfonic acid



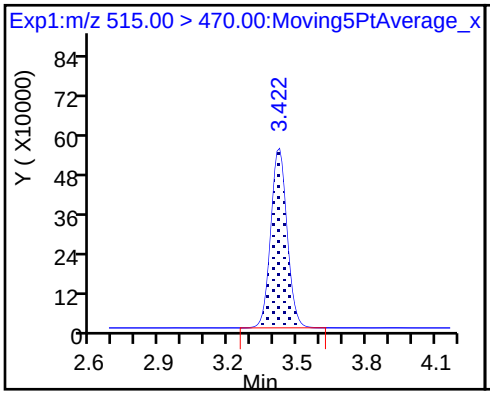

D 26 M2-8:2FTS



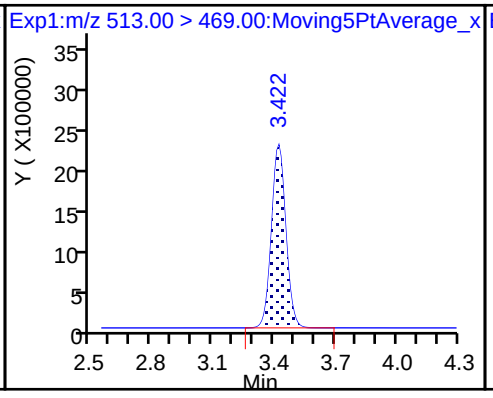

25 Sodium 1H,1H,2H,2H-perfluorodecane



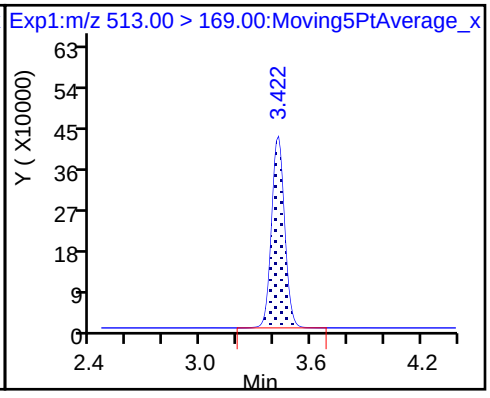

D 23 13C2 PFDA



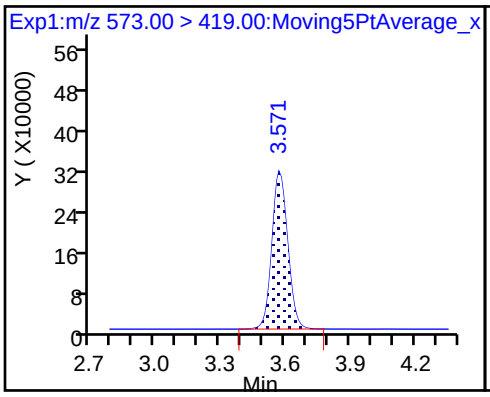

24 Perfluorodecanoic acid



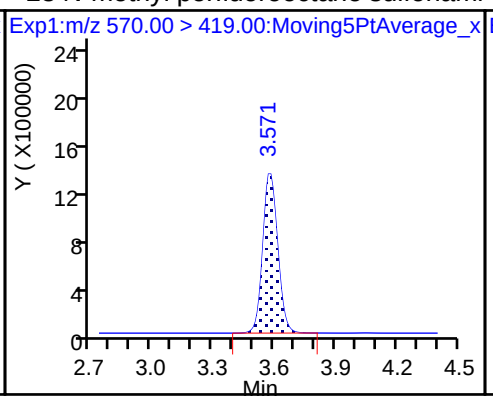

24 Perfluorodecanoic acid



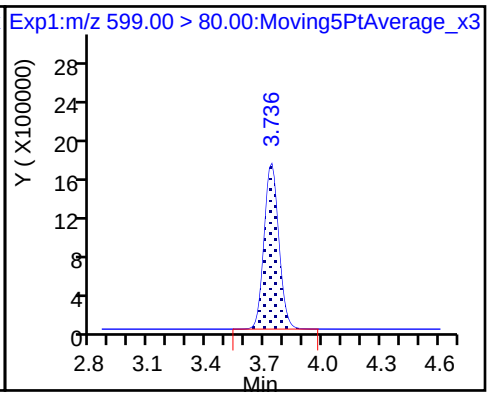
D 27 d3-NMeFOSAA



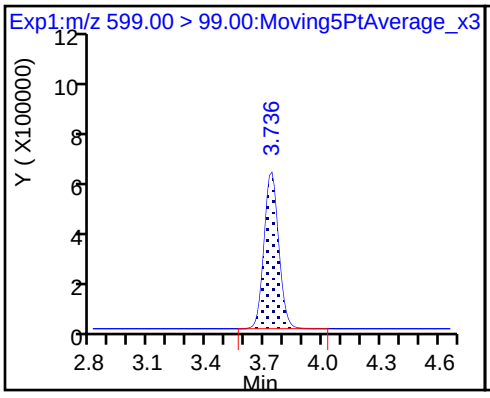

28 N-methyl perfluorooctane sulfonami



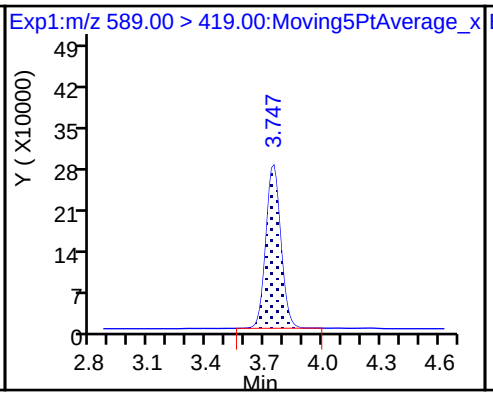

29 Perfluorodecane Sulfonic acid



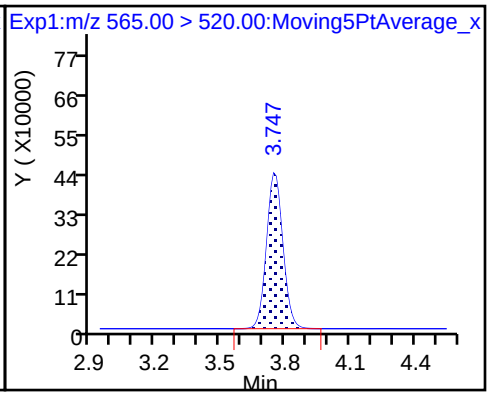

29 Perfluorodecane Sulfonic acid



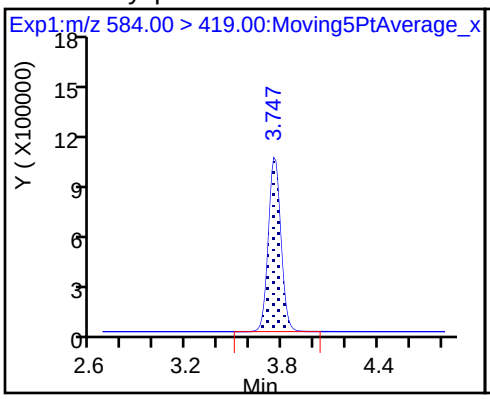

D 32 d5-NEtFOSAA



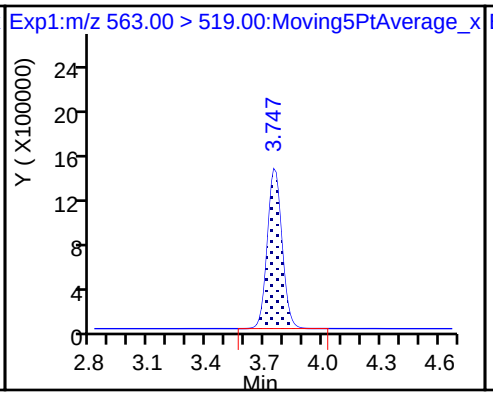

D 30 13C2 PFUnA



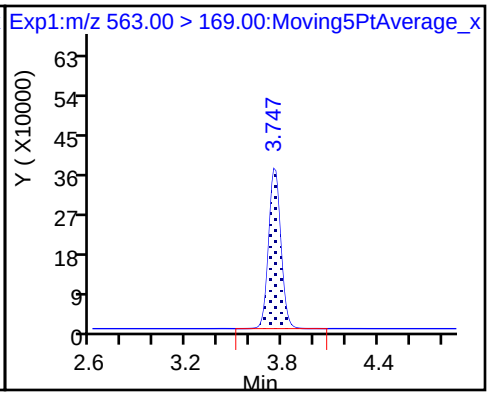

33 N-ethyl perfluorooctane sulfonamid



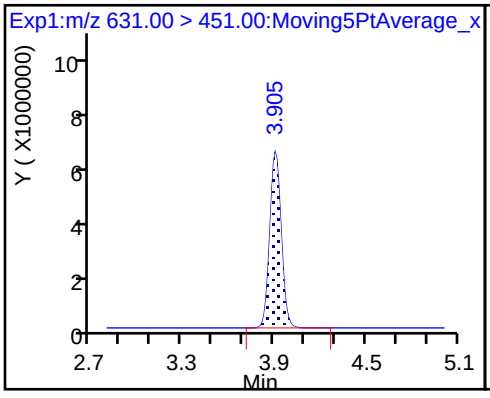

31 Perfluoroundecanoic acid



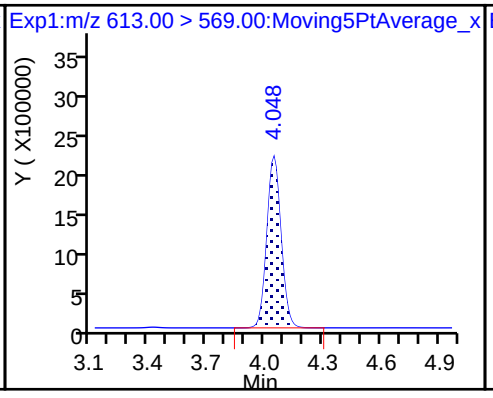

31 Perfluoroundecanoic acid



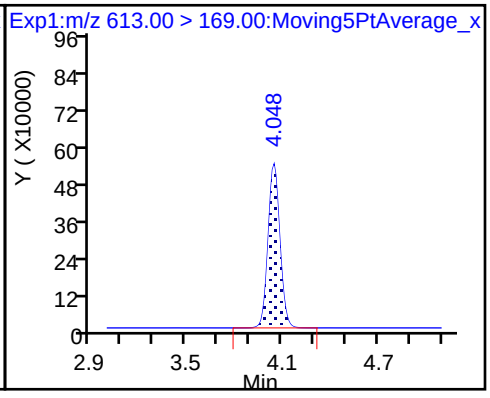

66 11-Chloroeicosafluoro-3-oxaundecan



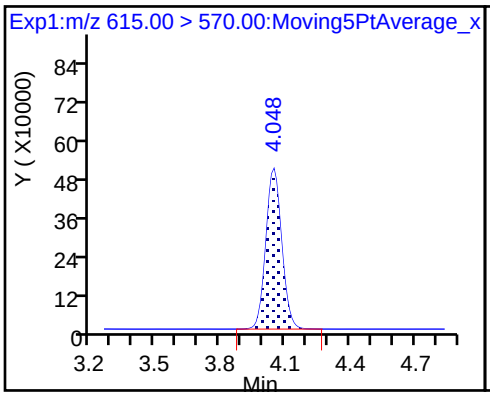

37 Perfluorododecanoic acid



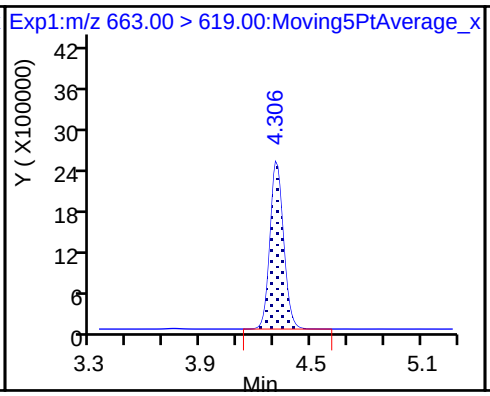

37 Perfluorododecanoic acid



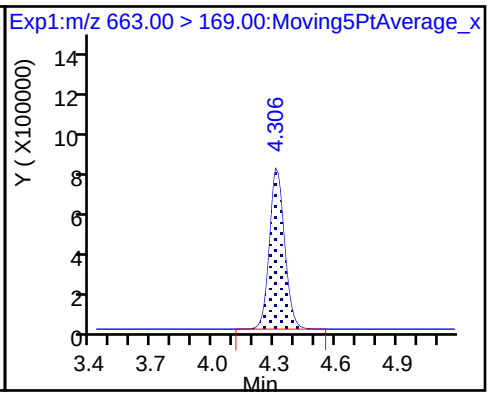
D 36 13C2 PFDoA



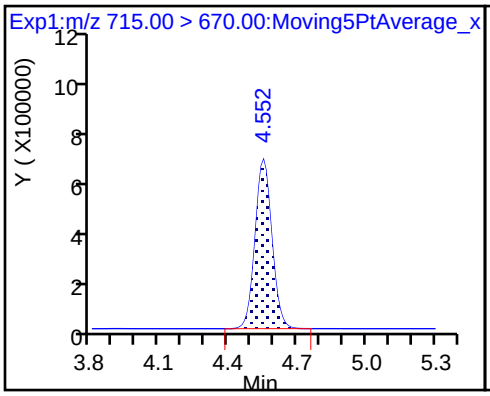

41 Perfluorotridecanoic acid



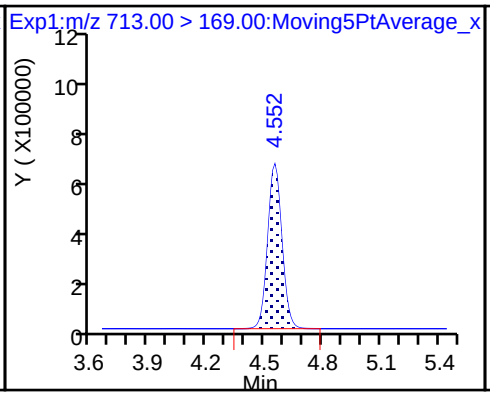

41 Perfluorotridecanoic acid



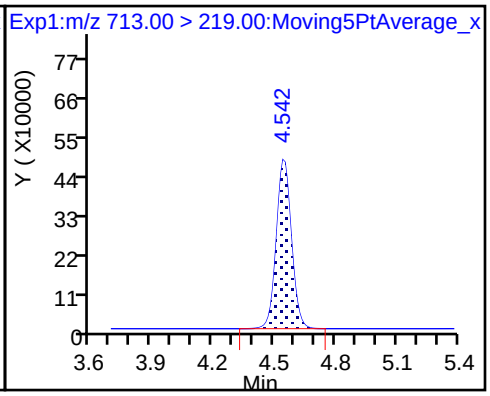

D 43 13C2-PFTeDA



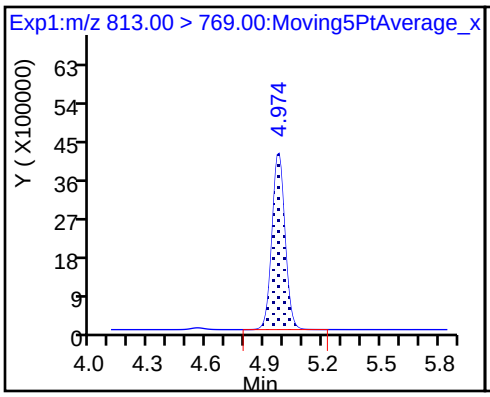

42 Perfluorotetradecanoic acid



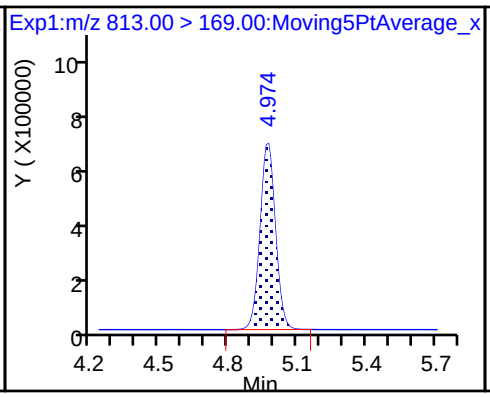

42 Perfluorotetradecanoic acid



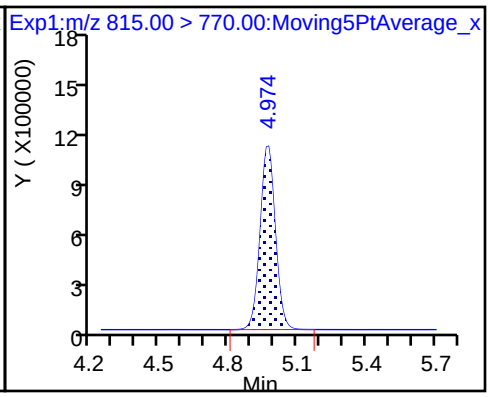

45 Perfluorohexadecanoic acid



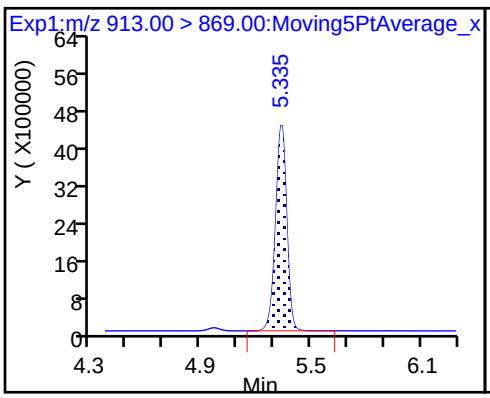

45 Perfluorohexadecanoic acid



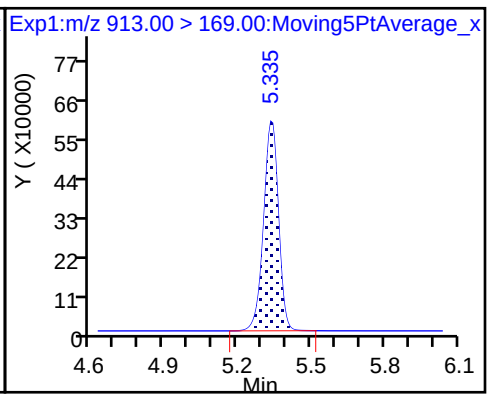

D 44 13C2-PFHxDA




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: ICV 320-215537/10 Calibration Date: 03/29/2018 18:29

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.03.29A_ICALB_010.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | AveID | 0.9242 | 0.9691 | | 2.62 | 2.50 | 4.9 | 40.0 |
| Perfluoropentanoic acid (PFPeA) | AveID | 1.197 | 1.180 | | 2.46 | 2.50 | -1.5 | 40.0 |
| Perfluorobutanesulfonic acid (PFBS) | AveID | 78.89 | 83.68 | | 2.35 | 2.21 | 6.1 | 50.0 |
| 4:2 FTS | AveID | 17.26 | 17.19 | | 2.33 | 2.34 | -0.4 | 50.0 |
| Perfluorohexanoic acid (PFHxA) | AveID | 1.023 | 0.9907 | | 2.42 | 2.50 | -3.2 | 40.0 |
| Perfluoropentanesulfonic acid (PFPeS) | AveID | 71.20 | 73.94 | | 2.44 | 2.35 | 3.9 | 50.0 |
| HFPO-DA (GenX) | AveID | 3.401 | 2.903 | | 2.13 | 2.50 | -14.7 | 40.0 |
| Perfluoroheptanoic acid (PFHpA) | AveID | 1.087 | 1.115 | | 2.57 | 2.50 | 2.7 | 40.0 |
| Perfluorohexanesulfonic acid (PFHxS) | AveID | 1.117 | 1.043 | | 2.13 | 2.28 | -6.6 | 40.0 |
| Adona | AveID | 3.564 | 3.450 | | 2.42 | 2.50 | -3.2 | 50.0 |
| 6:2FTS | AveID | 1.868 | 1.701 | | 2.16 | 2.38 | -8.9 | 40.0 |
| Perfluorooctanoic acid (PFOA) | AveID | 1.186 | 1.133 | | 2.39 | 2.50 | -4.4 | 40.0 |
| Perfluoroheptanesulfonic Acid (PFHpS) | AveID | 1.333 | 1.324 | | 2.36 | 2.38 | -0.7 | 50.0 |
| Perfluorononanoic acid (PFNA) | AveID | 1.029 | 1.006 | | 2.45 | 2.50 | -2.2 | 40.0 |
| Perfluorooctanesulfonic acid (PFOS) | AveID | 1.143 | 1.095 | | 2.22 | 2.31 | -4.2 | 40.0 |
| 9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate | AveID | 1.870 | 1.817 | | 2.27 | 2.33 | -2.8 | 50.0 |
| Perfluorooctane Sulfonamide (FOSA) | AveID | 0.9877 | 1.023 | | 2.59 | 2.50 | 3.6 | 40.0 |
| Perfluorononanesulfonic acid (PFNS) | AveID | 0.8018 | 0.7863 | | 2.35 | 2.40 | -1.9 | 50.0 |
| 8:2FTS | AveID | 1.349 | 1.180 | | 2.10 | 2.40 | -12.5 | 40.0 |
| Perfluorodecanoic acid (PFDA) | AveID | 0.9893 | 1.006 | | 2.54 | 2.50 | 1.7 | 40.0 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | AveID | 1.054 | 1.003 | | 2.38 | 2.50 | -4.9 | 40.0 |
| Perfluorodecanesulfonic acid (PFDS) | AveID | 0.6938 | 0.6843 | | 2.38 | 2.41 | -1.4 | 50.0 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | AveID | 0.9171 | 0.9283 | | 2.53 | 2.50 | 1.2 | 40.0 |
| Perfluoroundecanoic acid (PFUnA) | AveID | 0.8023 | 0.7388 | | 2.30 | 2.50 | -7.9 | 40.0 |
| 11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate | AveID | 2.902 | 2.846 | | 2.31 | 2.36 | -2.0 | 50.0 |
| Perfluorododecanoic acid (PFDoA) | AveID | 1.081 | 1.021 | | 2.36 | 2.50 | -5.6 | 40.0 |
| Perfluorotridecanoic Acid (PFTriA) | AveID | 1.156 | 1.208 | | 2.61 | 2.50 | 4.5 | 50.0 |
| Perfluorotetradecanoic acid (PFTeA) | AveID | 0.2497 | 0.2605 | | 2.61 | 2.50 | 4.3 | 50.0 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | L2ID | | 0.9134 | | 2.39 | 2.50 | -4.4 | 50.0 |

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Lab Sample ID: ICV 320-215537/10  Calibration Date: 03/29/2018 18:29

Instrument ID: A8_N  Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100  ID: 3.00(mm)  Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.03.29A_ICALB_010.d  Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluoro-n-octadecanoic acid (PFODA) | AveID | 0.9928 | 1.059 | | 2.67 | 2.50 | 6.7 | 50.0 |
| 13C4 PFBA | Ave | 1.382 | 1.385 | | 2.51 | 2.50 | 0.2 | 50.0 |
| 13C5 PFPeA | Ave | 0.8994 | 0.9172 | | 2.55 | 2.50 | 2.0 | 50.0 |
| 13C3-PFBS | Ave | 0.0206 | 0.0204 | | 2.31 | 2.33 | -0.8 | 50.0 |
| M2-4:2FTS | Ave | 0.1573 | 0.1544 | | 2.29 | 2.34 | -1.9 | 50.0 |
| 13C2 PFHxA | Ave | 0.9916 | 1.056 | | 2.66 | 2.50 | 6.5 | 50.0 |
| 13C3 HFPO-DA | Ave | 0.0494 | 0.0554 | | 2.81 | 2.50 | 12.2 | 50.0 |
| 13C4-PFHpA | Ave | 0.9533 | 0.9410 | | 2.47 | 2.50 | -1.3 | 50.0 |
| 18O2 PFHxS | Ave | 1.189 | 1.232 | | 2.45 | 2.37 | 3.6 | 50.0 |
| M2-6:2FTS | Ave | 0.2203 | 0.2135 | | 2.30 | 2.38 | -3.1 | 40.0 |
| 13C4 PFOA | Ave | 0.9372 | 0.9746 | | 2.60 | 2.50 | 4.0 | 50.0 |
| 13C4 PFOS | Ave | 0.8257 | 0.8710 | | 2.52 | 2.39 | 5.5 | 50.0 |
| 13C5 PFNA | Ave | 0.7930 | 0.8274 | | 2.61 | 2.50 | 4.3 | 50.0 |
| 13C8 FOSA | Ave | 1.166 | 1.176 | | 2.52 | 2.50 | 0.8 | 50.0 |
| M2-8:2FTS | Ave | 0.2562 | 0.2837 | | 2.65 | 2.40 | 10.7 | 40.0 |
| 13C2 PFDA | Ave | 0.6698 | 0.6846 | | 2.56 | 2.50 | 2.2 | 50.0 |
| d3-NMeFOSAA | Ave | 0.3583 | 0.3650 | | 2.55 | 2.50 | 1.9 | 50.0 |
| 13C2 PFUnA | Ave | 0.5468 | 0.5737 | | 2.62 | 2.50 | 4.9 | 50.0 |
| d5-NEtFOSAA | Ave | 0.3760 | 0.3766 | | 2.50 | 2.50 | 0.2 | 50.0 |
| 13C2 PFDoA | Ave | 0.6087 | 0.6206 | | 2.55 | 2.50 | 2.0 | 50.0 |
| 13C2-PFTeDA | Ave | 0.7733 | 0.8183 | | 2.65 | 2.50 | 5.8 | 50.0 |
| 13C2-PFHxDA | Ave | 1.194 | 1.281 | | 2.68 | 2.50 | 7.3 | 50.0 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_010.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 29-Mar-2018 18:29:58 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:48:50 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.436 | 1.436 | 0.0 | 1.000 | 5866875 | 2.51 | | 100 | 35721 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.436 | 1.437 | -0.001 | 1.000 | 5685461 | 2.62 | | | 3043 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.703 | 1.702 | 0.001 | 0.557 | 3884836 | 2.55 | | 102 | 94661 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.703 | 1.706 | -0.003 | 1.000 | 4582257 | 2.46 | | | 1820 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.739 | 1.738 | 0.001 | 1.000 | 80528 | 2.31 | | 99.2 | 536 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.739 | 1.742 | -0.003 | 1.000 | 6412695 | 2.35 | | | 4490 | |
| 298.90 > 99.00 | 1.739 | 1.742 | -0.003 | 1.000 | 2635203 | | 2.43(1.25-3.74) | | 4150 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.949 | 1.955 | -0.006 | 1.000 | 610659 | 2.29 | | 98.1 | 9238 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.949 | 1.955 | -0.006 | 1.000 | 1391984 | 2.33 | | | 62713 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.993 | 1.991 | 0.003 | 1.000 | 4471659 | 2.66 | | 106 | 132095 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.993 | 1.992 | 0.001 | 1.000 | 4430163 | 2.42 | | | 6896 | |
| 313.00 > 119.00 | 1.993 | 1.992 | 0.001 | 1.000 | 399932 | | 11.08(5.03-15.10) | | 5086 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.016 | 2.013 | 0.003 | 1.000 | 6018666 | 2.44 | | | 131994 | |
| 349.00 > 99.00 | 2.016 | 2.013 | 0.003 | 1.000 | 2182963 | | 2.76(1.36-4.07) | | 38268 | |
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.095 | 2.092 | 0.003 | 1.005 | 681292 | 2.13 | | | 6377 | |
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.083 | 2.092 | -0.009 | 1.000 | 234699 | 2.81 | | 112 | 3552 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.320 | 2.326 | -0.006 | 1.000 | 3985700 | 2.47 | | 98.7 | 93843 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.320 | 2.327 | -0.007 | 1.000 | 4445785 | 2.57 | | | 4554 | |
| 363.00 > 169.00 | 2.320 | 2.327 | -0.007 | 1.000 | 1739491 | | 2.56(1.13-3.40) | | 4797 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.333 | 2.339 | -0.006 | 1.000 | 4962874 | 2.13 | | | 20045 | |
| 399.00 > 99.00 | 2.333 | 2.339 | -0.006 | 1.000 | 1688661 | | 2.94(1.50-4.49) | | 8480 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.333 | 2.340 | -0.007 | 1.000 | 4936288 | 2.45 | | 104 | 91363 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.360 | 2.372 | -0.012 | 1.000 | 12726761 | 2.42 | | | 119055 | |
| 377.00 > 85.00 | 2.360 | 2.372 | -0.012 | 1.000 | 7744083 | | 1.64(0.84-2.53) | | 72762 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.661 | 2.664 | -0.003 | 1.000 | 1461178 | 2.16 | | | 9796 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.661 | 2.664 | -0.003 | 1.000 | 859005 | 2.30 | | 96.9 | 20963 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.683 | 2.688 | -0.005 | 1.000 | 4128027 | 2.60 | | 104 | 78774 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.683 | 2.689 | -0.006 | | 4235745 | 2.50 | | | 87767 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.683 | 2.690 | -0.007 | 1.000 | 4677462 | 2.39 | | | 1552 | |
| 413.00 > 169.00 | 2.683 | 2.690 | -0.007 | 1.000 | 2409069 | | 1.94(0.84-2.52) | | 9212 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.691 | 2.695 | -0.004 | 1.000 | 4639777 | 2.36 | | | 56672 | |
| 449.00 > 99.00 | 2.691 | 2.695 | -0.004 | 1.000 | 1202717 | | 3.86(1.94-5.82) | | 21160 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.057 | 3.060 | -0.003 | 1.000 | 3737562 | 2.22 | | | 8787 | |
| 499.00 > 99.00 | 3.057 | 3.060 | -0.003 | 1.000 | 720418 | | 5.19(2.31-6.93) | | 464 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.057 | 3.060 | -0.003 | 1.000 | 3526996 | 2.52 | | 105 | 40641 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.057 | 3.061 | -0.004 | 1.000 | 3504658 | 2.61 | | 104 | 83145 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.057 | 3.064 | -0.007 | 1.000 | 3526566 | 2.44 | | | 4049 | |
| 463.00 > 169.00 | 3.057 | 3.064 | -0.007 | 1.000 | 859845 | | 4.10(1.90-5.69) | | 29311 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.264 | 3.272 | -0.008 | 1.000 | 6249227 | 2.26 | | | 55847 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.385 | 3.388 | -0.003 | 1.000 | 4980134 | 2.52 | | 101 | 55607 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.385 | 3.389 | -0.004 | 1.000 | 5095974 | 2.59 | | | 40050 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.404 | 3.409 | -0.005 | 1.000 | 2784756 | 2.35 | | | 74221 | |
| 549.00 > 99.00 | 3.404 | 3.409 | -0.005 | 1.000 | 999926 | | 2.78(1.33-3.97) | | 29756 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.404 | 3.413 | -0.009 | 1.000 | 1151010 | 2.65 | | 111 | 29973 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.413 | 3.415 | -0.002 | 1.003 | 1361017 | 2.10 | | | 12730 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.423 | 3.423 | 0.0 | 1.000 | 2899919 | 2.56 | | 102 | 40184 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.423 | 3.427 | -0.004 | 1.000 | 2916936 | 2.54 | | | 14399 | |
| 513.00 > 169.00 | 3.423 | 3.427 | -0.004 | 1.000 | 530427 | | 5.50(2.36-7.09) | | 18164 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.572 | 3.578 | -0.006 | 1.000 | 1546192 | 2.55 | | 102 | 51215 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.572 | 3.581 | -0.009 | 1.000 | 1550394 | 2.38 | | | 12123 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.737 | 3.738 | -0.001 | 1.000 | 2436159 | 2.38 | | | 46929 | |
| 599.00 > 99.00 | 3.726 | 3.738 | -0.012 | 0.997 | 816763 | | 2.98(1.39-4.16) | | 17405 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.748 | 3.749 | -0.001 | 1.000 | 1595099 | 2.50 | | 100 | 4398 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.748 | 3.753 | -0.005 | 1.000 | 2429894 | 2.62 | | 105 | 67252 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.748 | 3.755 | -0.007 | 1.000 | 1480729 | 2.53 | | | 28105 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.748 | 3.755 | -0.007 | 1.000 | 1795273 | 2.30 | | | 7420 | |
| 563.00 > 169.00 | 3.748 | 3.755 | -0.007 | 1.000 | 481282 | | 3.73(2.12-6.36) | | 11523 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.905 | 3.910 | -0.005 | 1.000 | 9889084 | 2.31 | | | 180484 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.048 | 4.052 | -0.004 | 1.000 | 2628521 | 2.55 | | 102 | 23455 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.048 | 4.052 | -0.004 | 1.000 | 2683041 | 2.36 | | | 2117 | |
| 613.00 > 169.00 | 4.048 | 4.052 | -0.004 | 1.000 | 683577 | | 3.93(2.13-6.40) | | 12213 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.307 | 4.316 | -0.009 | 1.000 | 3176156 | 2.61 | | | 1265 | |
| 663.00 > 169.00 | 4.307 | 4.316 | -0.009 | 1.000 | 1022977 | | 3.10(1.25-3.76) | | 16879 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.552 | 4.558 | -0.006 | 1.000 | 902844 | 2.61 | | | 12080 | |
| 713.00 > 219.00 | 4.552 | 4.558 | -0.006 | 1.000 | 595672 | | 1.52(0.71-2.13) | | 13000 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.552 | 4.558 | -0.006 | 1.000 | 3466082 | 2.65 | | 106 | 20467 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.974 | 4.977 | -0.003 | 1.000 | 5424012 | 2.68 | | 107 | 13917 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.974 | 4.977 | -0.003 | 1.000 | 4954065 | 2.39 | | | 1097 | |
| 813.00 > 169.00 | 4.974 | 4.977 | -0.003 | 1.000 | 839472 | | 5.90(2.86-8.58) | | 5486 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.335 | 5.344 | -0.009 | 1.000 | 5746232 | 2.67 | | | 862 | |
| 913.00 > 169.00 | 5.335 | 5.344 | -0.009 | 1.000 | 687269 | | 8.36(3.83-11.48) | | 5386 | |

## Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:54 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_010.d

Injection Date: 29-Mar-2018 18:29:58 Instrument ID: A8_N

Lims ID: ICV Full

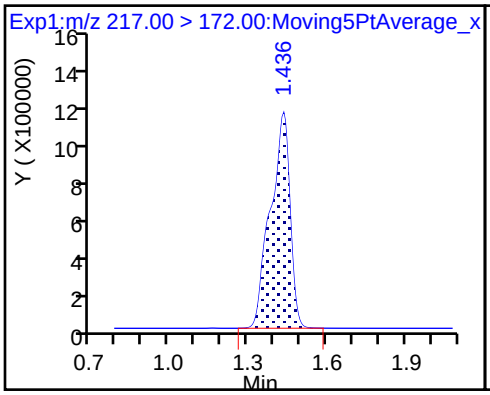
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

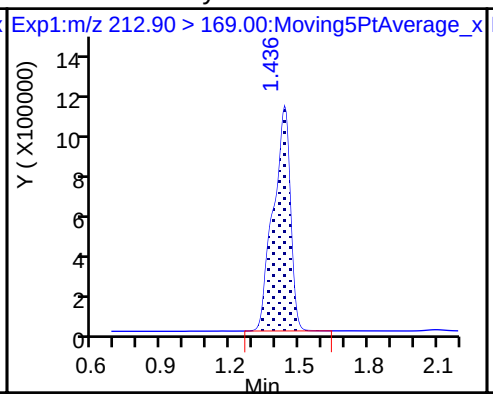
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

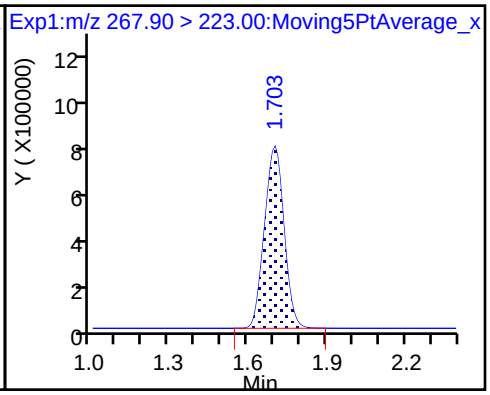
D 1 13C4 PFBA



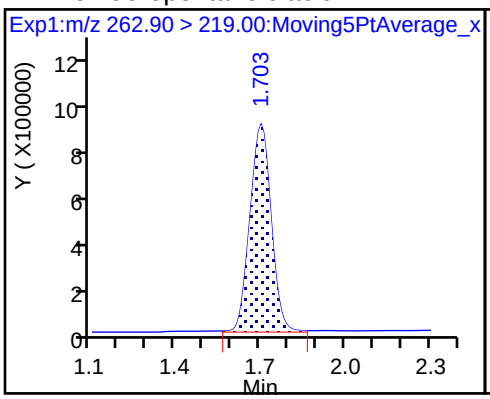

2 Perfluorobutyric acid



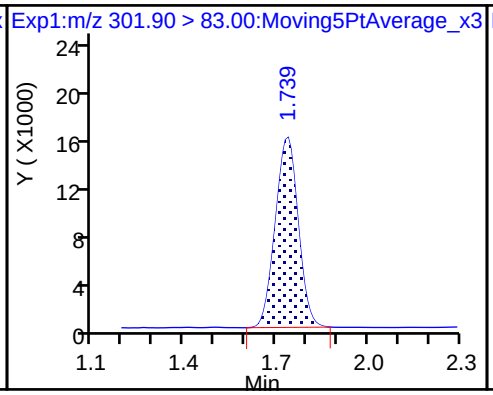

D 3 13C5-PFPeA



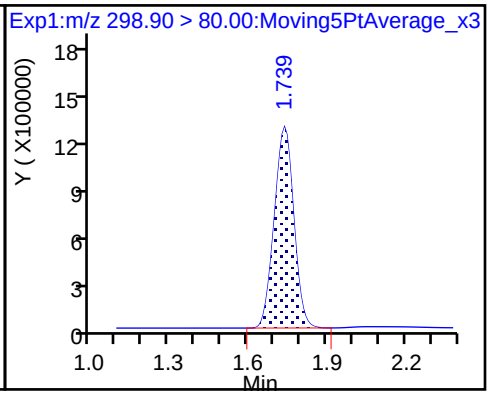

4 Perfluoropentanoic acid



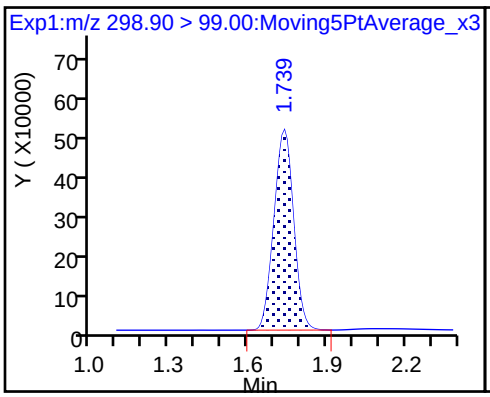

D 47 13C3-PFBS



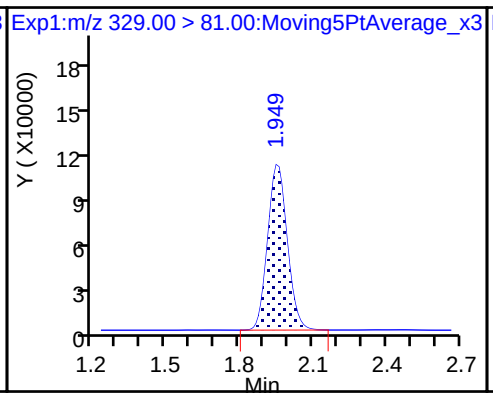

5 Perfluorobutanesulfonic acid



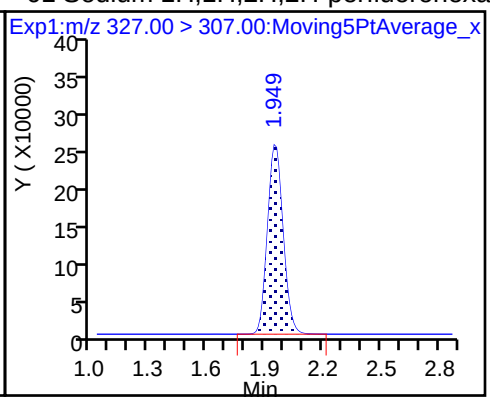

5 Perfluorobutanesulfonic acid



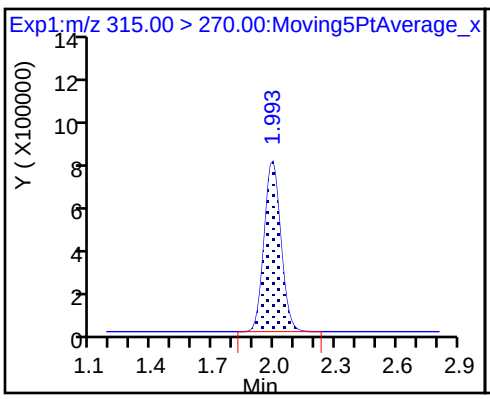

D 60 M2-4:2FTS



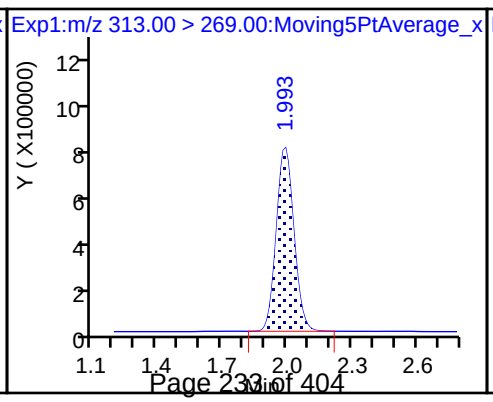

61 Sodium 1H,1H,2H,2H-perfluorohexane



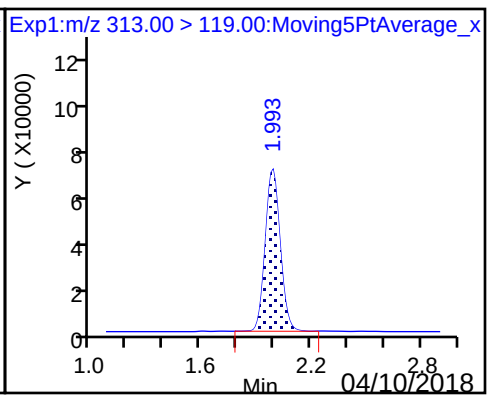

D 7 13C2 PFHxA



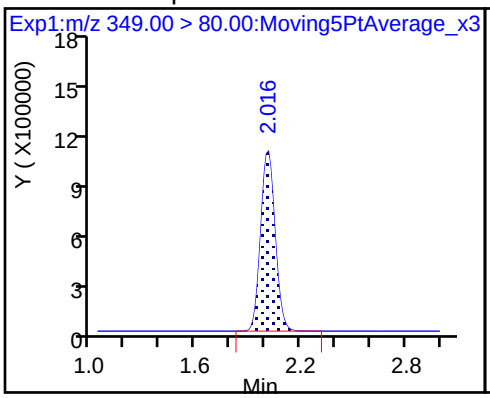

6 Perfluorohexanoic acid



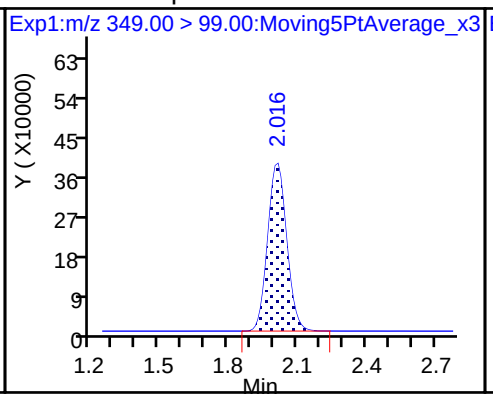

6 Perfluorohexanoic acid



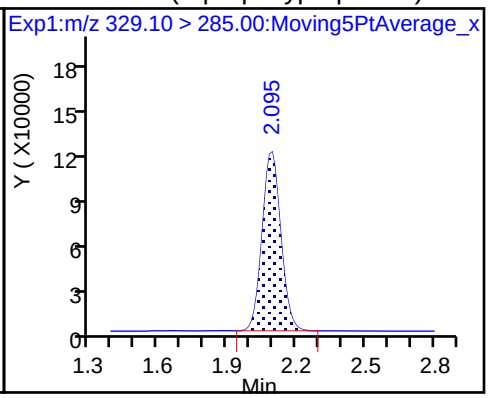
70 Perfluoropentanesulfonic acid



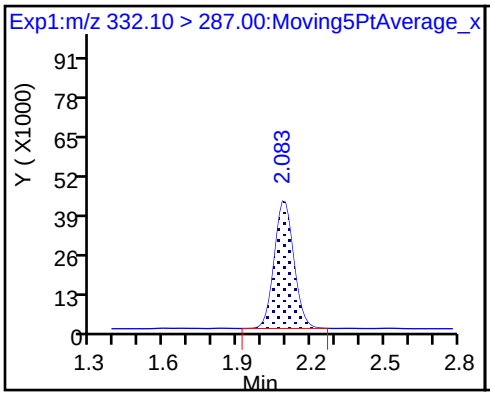

70 Perfluoropentanesulfonic acid



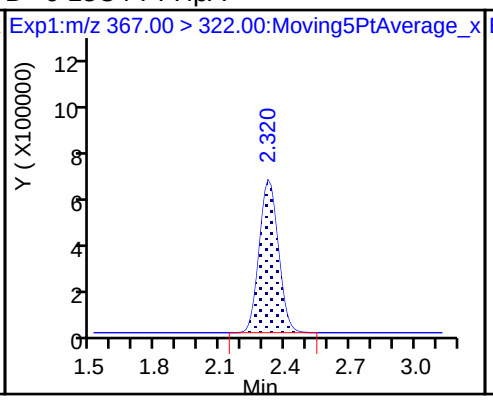

67 Perfluoro(2-propoxypropanoic) acid



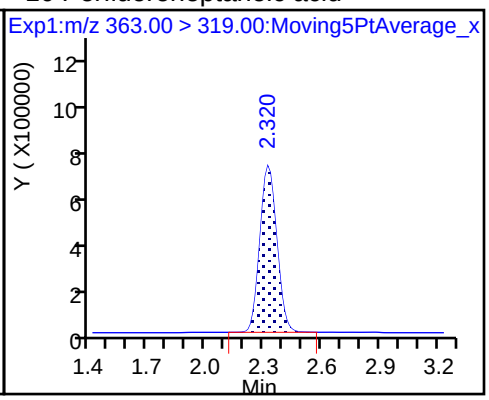

D 64 13C3 HFPO-DA



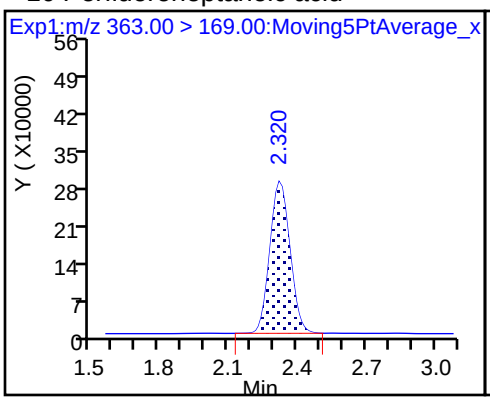

D 9 13C4-PFHpA



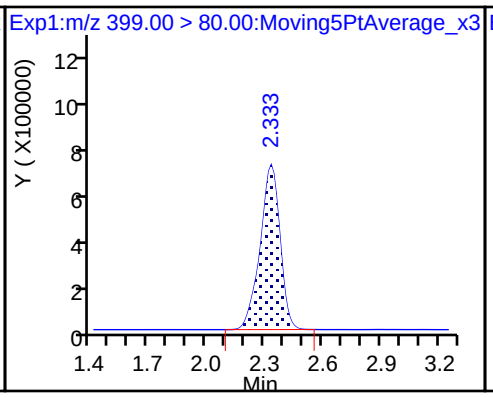

10 Perfluoroheptanoic acid



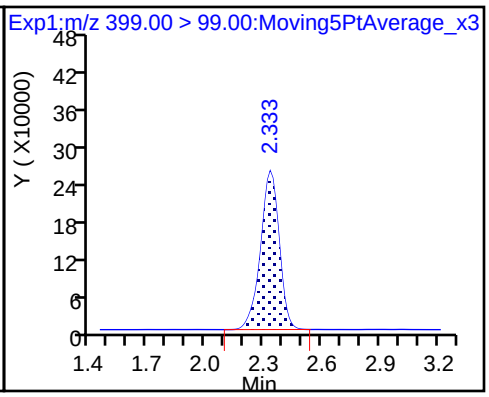

10 Perfluoroheptanoic acid



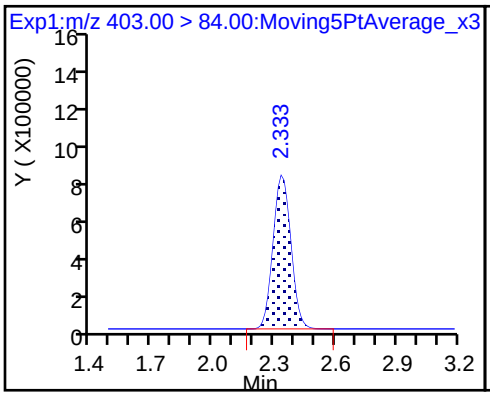

8 Perfluorohexanesulfonic acid



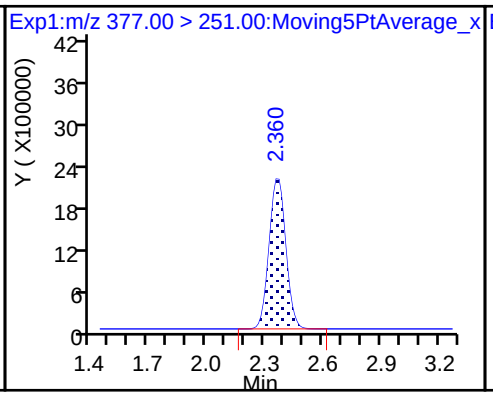

8 Perfluorohexanesulfonic acid



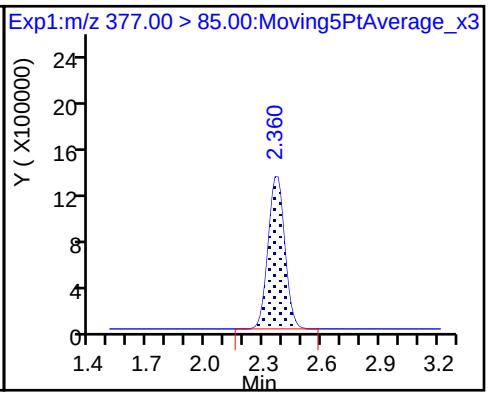

D 11 18O2 PFHxS



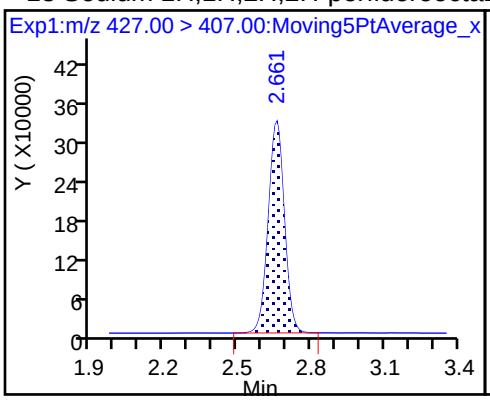

65 Adona



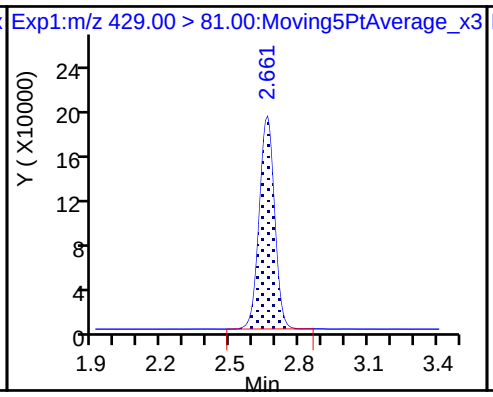

65 Adona



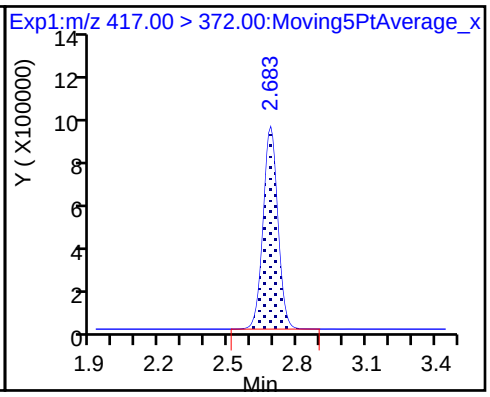
13 Sodium 1H,1H,2H,2H-perfluorooctane



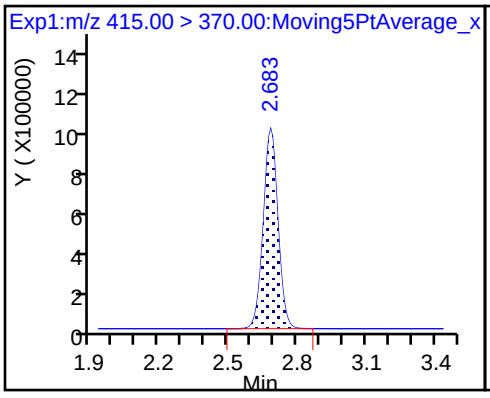

D 12 M2-6:2FTS



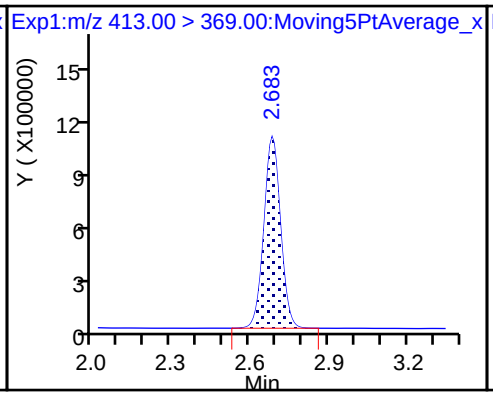

D 14 13C4 PFOA



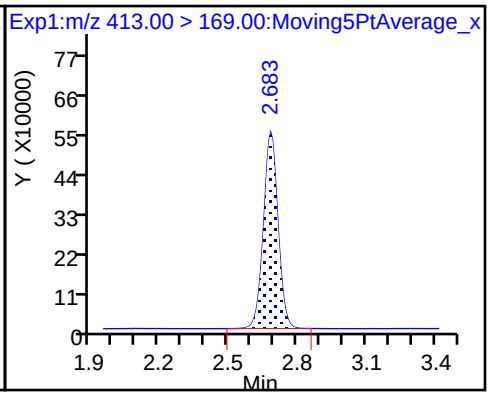

* 62 13C2-PFOA



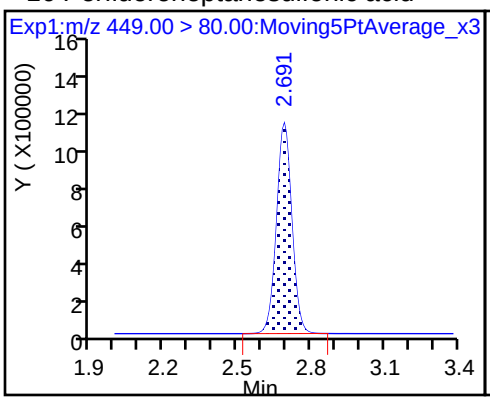

15 Perfluorooctanoic acid



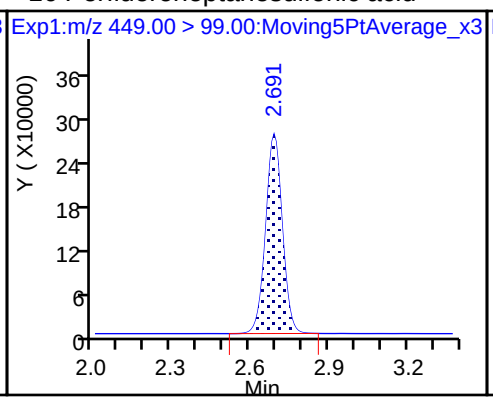

15 Perfluorooctanoic acid



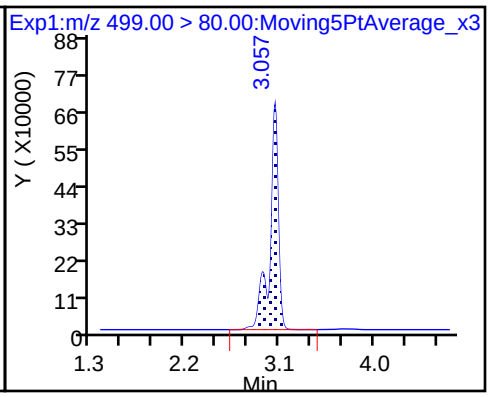

16 Perfluoroheptanesulfonic acid



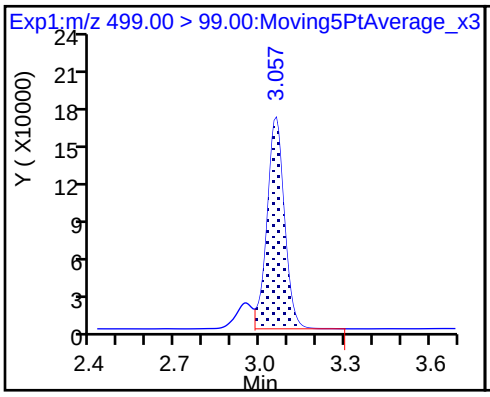

16 Perfluoroheptanesulfonic acid



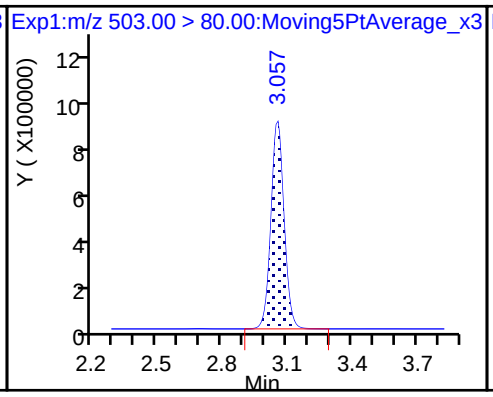

17 Perfluorooctane sulfonic acid



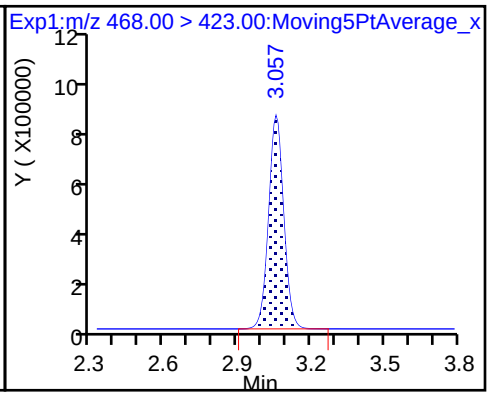

17 Perfluorooctane sulfonic acid



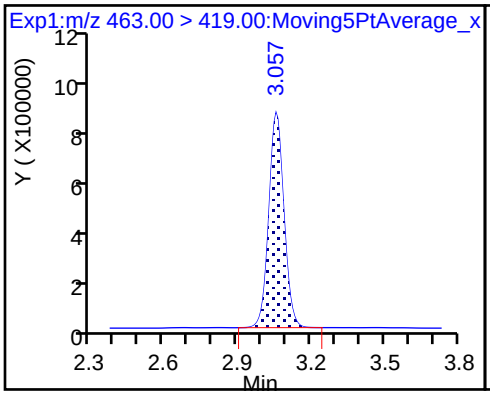

D 18 13C4 PFOS



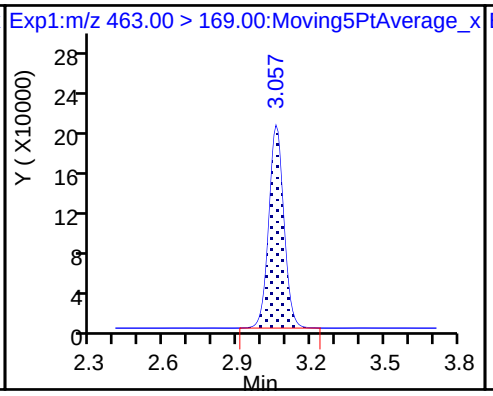

D 19 13C5 PFNA



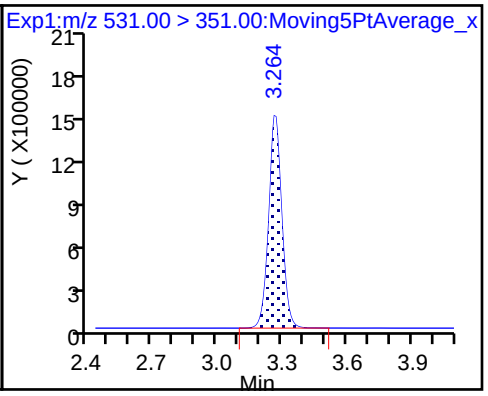
20 Perfluorononanoic acid



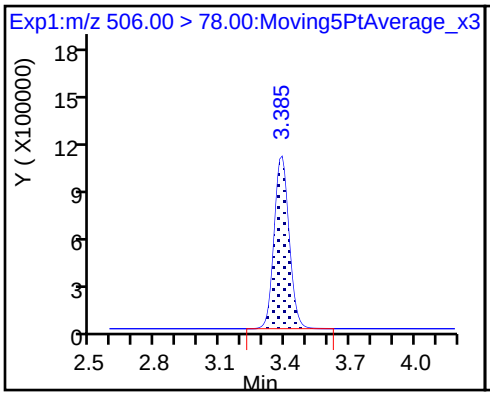

20 Perfluorononanoic acid



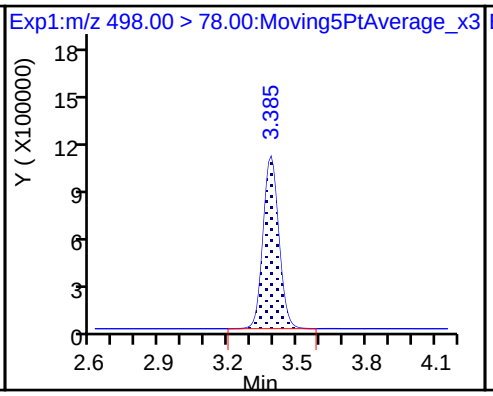

69 9-Chlorohexadecafluoro-3-oxanonane



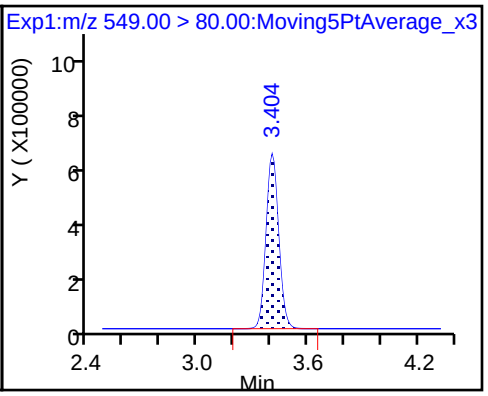

D 21 13C8 FOSA



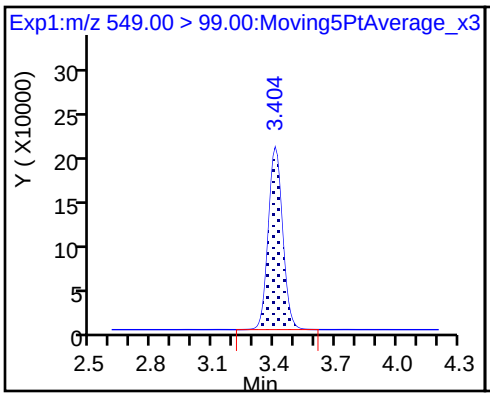

22 Perfluorooctane Sulfonamide



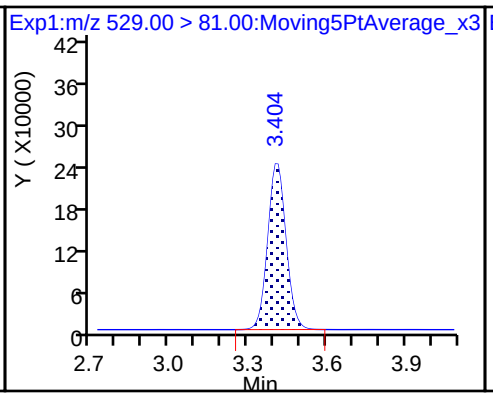

68 Perfluorononanesulfonic acid



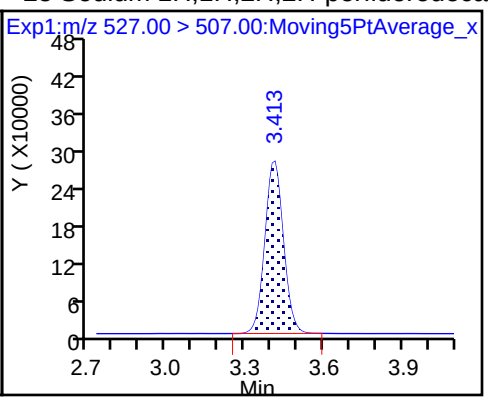

68 Perfluorononanesulfonic acid



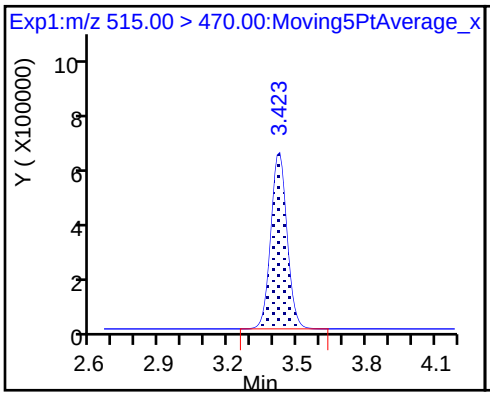

D 26 M2-8:2FTS



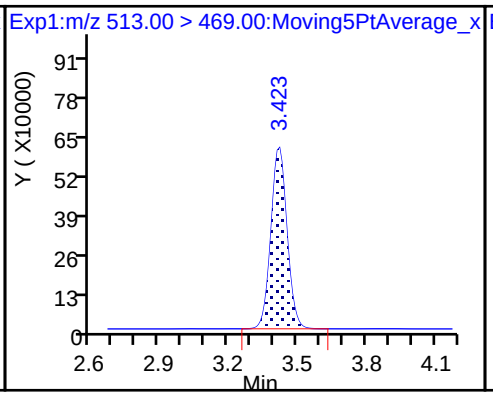

25 Sodium 1H,1H,2H,2H-perfluorodecane



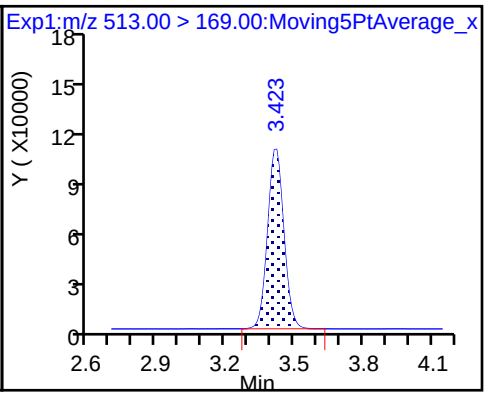

D 23 13C2 PFDA



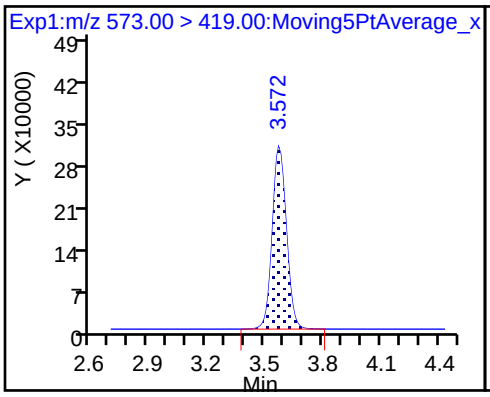

24 Perfluorodecanoic acid



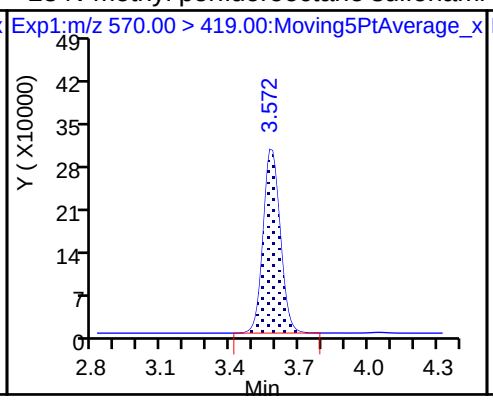

24 Perfluorodecanoic acid



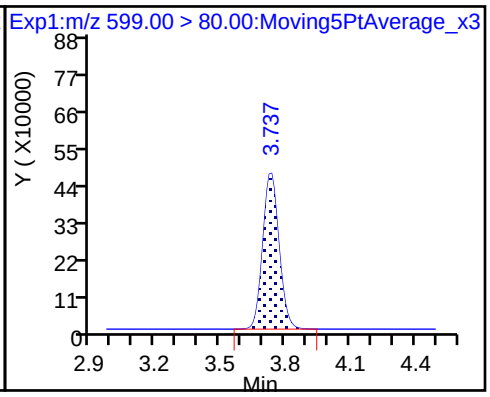
D 27 d3-NMeFOSAA



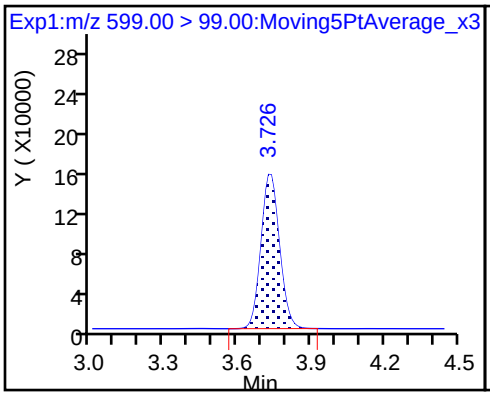

28 N-methyl perfluorooctane sulfonami



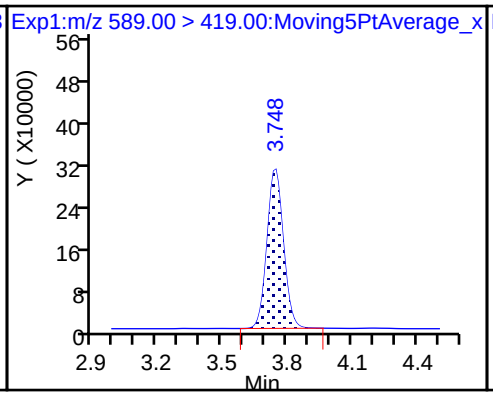

29 Perfluorodecane Sulfonic acid



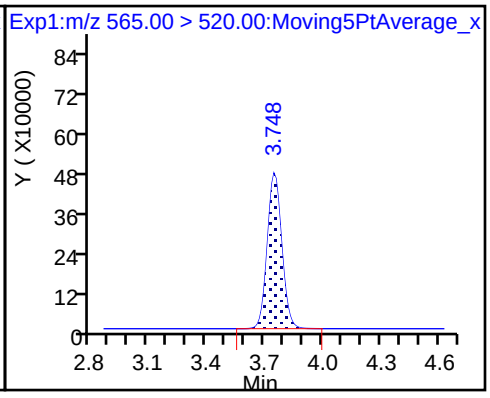

29 Perfluorodecane Sulfonic acid



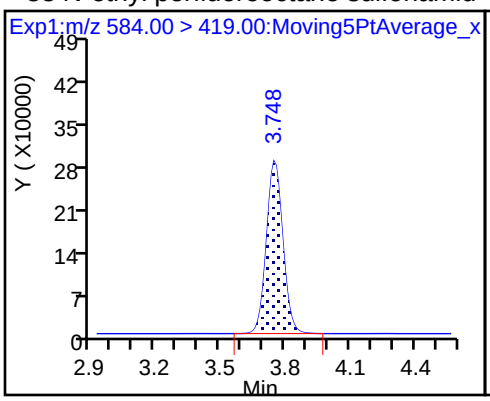

D 32 d5-NEtFOSAA



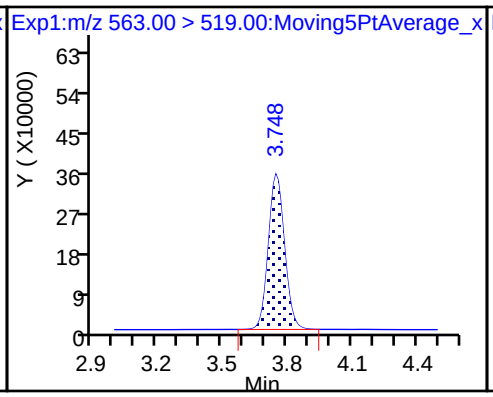

D 30 13C2 PFUnA



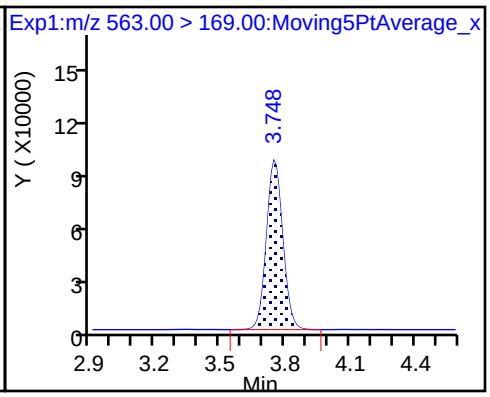

33 N-ethyl perfluorooctane sulfonamid



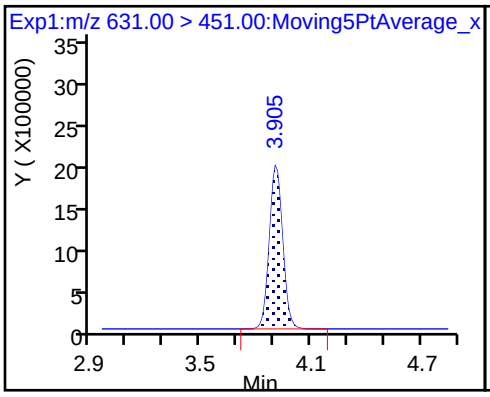

31 Perfluoroundecanoic acid



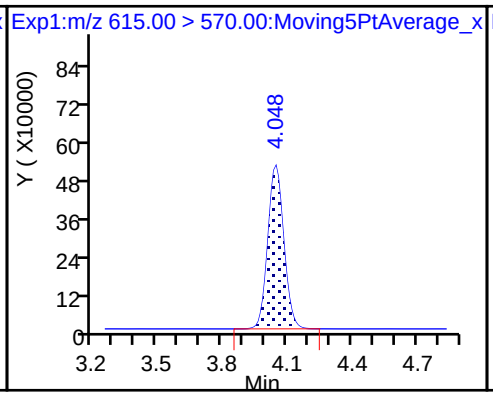

31 Perfluoroundecanoic acid



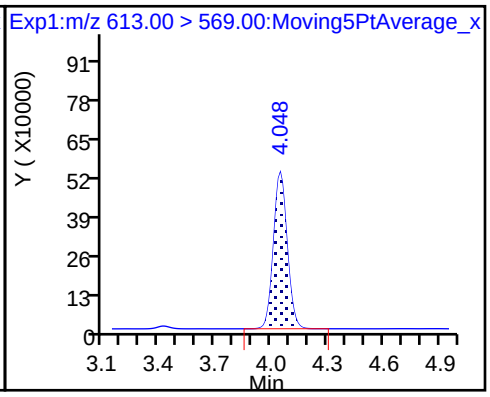

66 11-Chloroeicosafluoro-3-oxaundecan



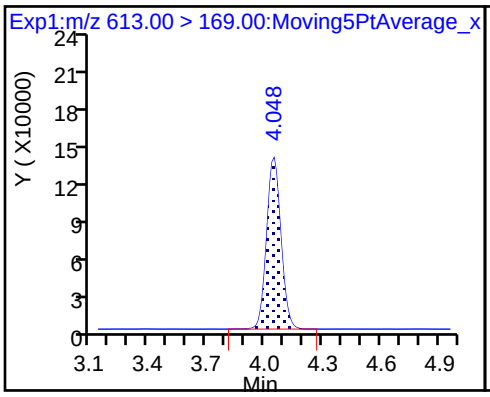

D 36 13C2 PFDoA



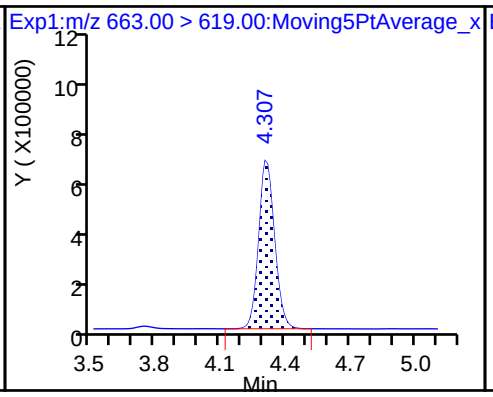

37 Perfluorododecanoic acid



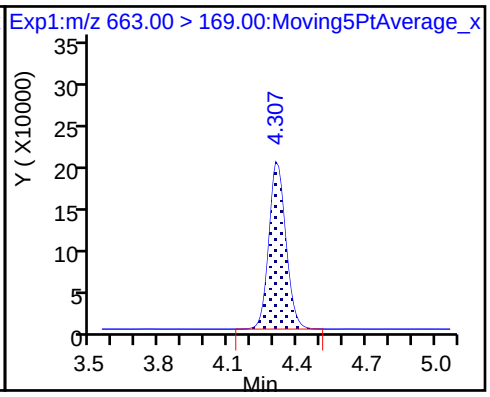
37 Perfluorododecanoic acid



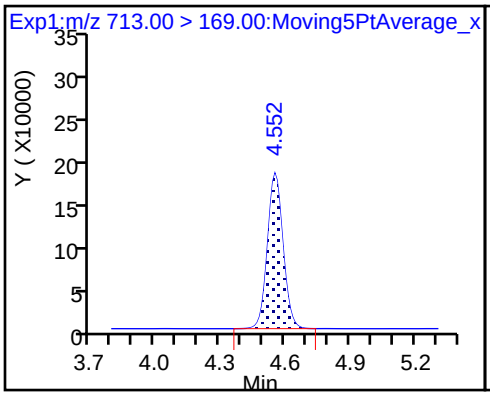

41 Perfluorotridecanoic acid



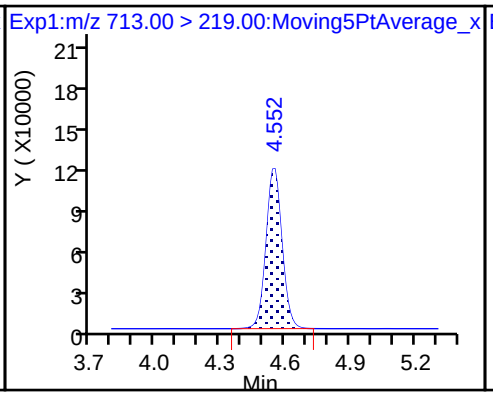

41 Perfluorotridecanoic acid



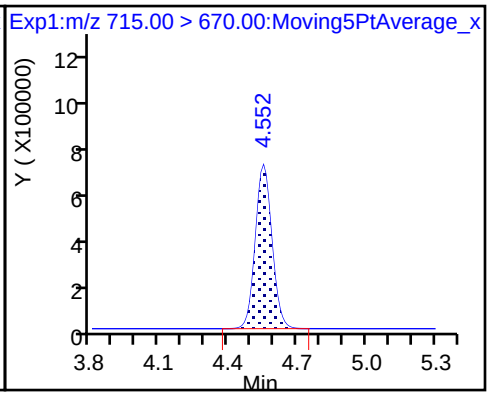

42 Perfluorotetradecanoic acid



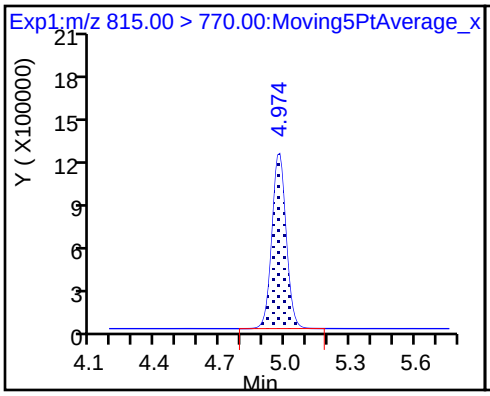

42 Perfluorotetradecanoic acid



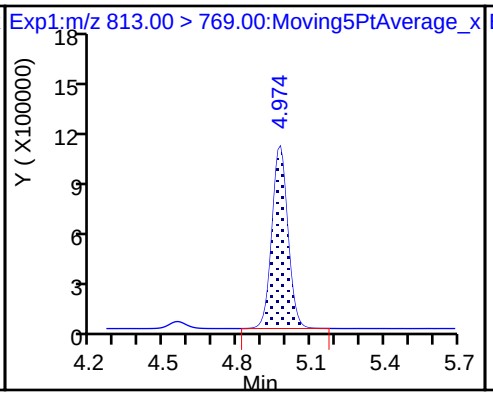

D 43 13C2-PFTeDA



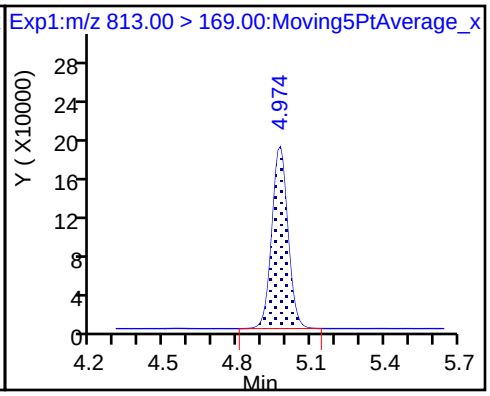

D 44 13C2-PFHxDA



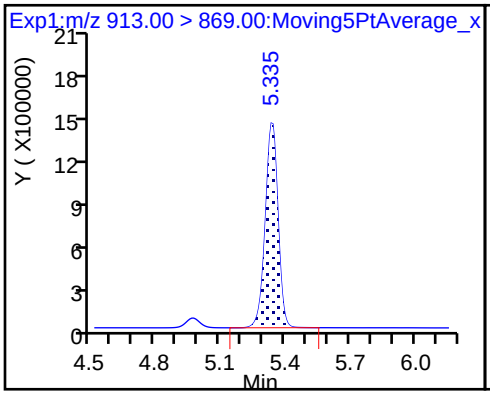

45 Perfluorohexadecanoic acid



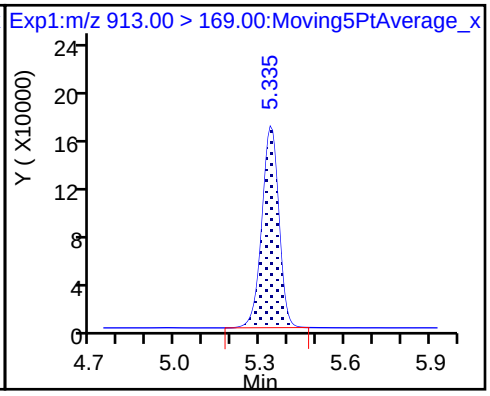

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCVL 320-216820/2 Calibration Date: 04/07/2018 09:08

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLA_005.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | AveID | 0.9242 | 0.9100 | | 0.0492 | 0.0500 | -1.5 | 50.0 |
| Perfluoropentanoic acid (PFPeA) | AveID | 1.197 | 1.237 | | 0.0517 | 0.0500 | 3.4 | 50.0 |
| Perfluorobutanesulfonic acid (PFBS) | AveID | 78.89 | 78.65 | | 0.0441 | 0.0442 | -0.3 | 50.0 |
| 4:2 FTS | AveID | 17.26 | 20.62 | | 0.130 | 0.0467 | 19.5 | |
| Perfluorohexanoic acid (PFHxA) | AveID | 1.023 | 1.021 | | 0.0499 | 0.0500 | -0.2 | 50.0 |
| Perfluoropentanesulfonic acid (PFPeS) | AveID | 71.20 | 72.43 | | 0.0477 | 0.0469 | 1.7 | 50.0 |
| HFPO-DA (GenX) | AveID | 3.401 | 3.041 | | 0.0447 | 0.0500 | -10.6 | 50.0 |
| Perfluoroheptanoic acid (PFHpA) | AveID | 1.087 | 1.004 | | 0.0462 | 0.0500 | -7.6 | 50.0 |
| Perfluorohexanesulfonic acid (PFHxS) | AveID | 1.117 | 1.202 | | 0.0490 | 0.0455 | 7.6 | 50.0 |
| Adona | AveID | 3.564 | 3.626 | | 0.0509 | 0.0500 | 1.8 | 50.0 |
| 6:2FTS | AveID | 1.868 | 1.664 | | 0.0500 | 0.0474 | -10.9 | 50.0 |
| Perfluorooctanoic acid (PFOA) | AveID | 1.186 | 1.148 | | 0.0484 | 0.0500 | -3.2 | 50.0 |
| Perfluoroheptanesulfonic Acid (PFHpS) | AveID | 1.333 | 1.295 | | 0.0463 | 0.0476 | -2.8 | 50.0 |
| Perfluorooctanesulfonic acid (PFOS) | AveID | 1.143 | 1.233 | | 0.0501 | 0.0464 | 7.9 | 50.0 |
| Perfluorononanoic acid (PFNA) | AveID | 1.029 | 1.037 | | 0.0504 | 0.0500 | 0.7 | 50.0 |
| 9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate | AveID | 1.870 | 1.750 | | 0.0436 | 0.0466 | -6.4 | 50.0 |
| Perfluorooctane Sulfonamide (FOSA) | AveID | 0.9877 | 0.9314 | | 0.0471 | 0.0500 | -5.7 | 50.0 |
| 8:2FTS | AveID | 1.349 | 1.182 | | 0.0500 | 0.0479 | -12.4 | 50.0 |
| Perfluorononanesulfonic acid (PFNS) | AveID | 0.8018 | 0.7772 | | 0.0465 | 0.0480 | -3.1 | 50.0 |
| Perfluorodecanoic acid (PFDA) | AveID | 0.9893 | 1.046 | | 0.0529 | 0.0500 | 5.8 | 50.0 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | AveID | 1.054 | 0.9859 | | 0.0780 | 0.0500 | -6.5 | 50.0 |
| Perfluorodecanesulfonic acid (PFDS) | AveID | 0.6938 | 0.6907 | | 0.0480 | 0.0482 | -0.4 | 50.0 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | AveID | 0.9171 | 0.8775 | | 0.0480 | 0.0500 | -4.3 | 50.0 |
| Perfluoroundecanoic acid (PFUnA) | AveID | 0.8023 | 0.9368 | | 0.0584 | 0.0500 | 16.8 | 50.0 |
| 11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate | AveID | 2.902 | 2.873 | | 0.0466 | 0.0471 | -1.0 | 50.0 |
| Perfluorododecanoic acid (PFDoA) | AveID | 1.081 | 1.091 | | 0.0505 | 0.0500 | 0.9 | 50.0 |
| Perfluorotridecanoic Acid (PFTriA) | AveID | 1.156 | 1.171 | | 0.0506 | 0.0500 | 1.3 | 50.0 |
| Perfluorotetradecanoic acid (PFTeA) | AveID | 0.2497 | 0.2293 | | 0.0459 | 0.0500 | -8.2 | 50.0 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | L2ID | | 1.344 | | 0.0496 | 0.0500 | -0.9 | 50.0 |

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCVL 320-216820/2 Calibration Date: 04/07/2018 09:08

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLA_005.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluoro-n-octadecanoic acid (PFODA) | AveID | 0.9928 | 1.014 | | 0.0511 | 0.0500 | 2.2 | 50.0 |
| 13C4 PFBA | Ave | 1.382 | 1.318 | | 2.38 | 2.50 | -4.6 | 50.0 |
| 13C5 PFPeA | Ave | 0.8994 | 0.8547 | | 2.38 | 2.50 | -5.0 | 50.0 |
| 13C3-PFBS | Ave | 0.0206 | 0.0189 | | 2.13 | 2.33 | -8.3 | 50.0 |
| M2-4:2FTS | Ave | 0.1573 | 0.1493 | | 2.22 | 2.34 | -5.1 | 50.0 |
| 13C2 PFHxA | Ave | 0.9916 | 0.9632 | | 2.43 | 2.50 | -2.9 | 50.0 |
| 13C3 HFPO-DA | Ave | 0.0494 | 0.0488 | | 2.47 | 2.50 | -1.2 | 50.0 |
| 13C4-PFHpA | Ave | 0.9533 | 0.9926 | | 2.60 | 2.50 | 4.1 | 50.0 |
| 18O2 PFHxS | Ave | 1.189 | 1.183 | | 2.35 | 2.37 | -0.5 | 50.0 |
| M2-6:2FTS | Ave | 0.2203 | 0.2027 | | 2.19 | 2.38 | -8.0 | 50.0 |
| 13C4 PFOA | Ave | 0.9372 | 0.9667 | | 2.58 | 2.50 | 3.1 | 50.0 |
| 13C4 PFOS | Ave | 0.8257 | 0.8045 | | 2.33 | 2.39 | -2.6 | 50.0 |
| 13C5 PFNA | Ave | 0.7930 | 0.8138 | | 2.57 | 2.50 | 2.6 | 50.0 |
| 13C8 FOSA | Ave | 1.166 | 1.078 | | 2.31 | 2.50 | -7.6 | 50.0 |
| M2-8:2FTS | Ave | 0.2562 | 0.2586 | | 2.42 | 2.40 | 1.0 | 50.0 |
| 13C2 PFDA | Ave | 0.6698 | 0.7202 | | 2.69 | 2.50 | 7.5 | 50.0 |
| d3-NMeFOSAA | Ave | 0.3583 | 0.4033 | | 2.81 | 2.50 | 12.6 | 50.0 |
| d5-NEtFOSAA | Ave | 0.3760 | 0.4048 | | 2.69 | 2.50 | 7.7 | 50.0 |
| 13C2 PFUnA | Ave | 0.5468 | 0.5737 | | 2.62 | 2.50 | 4.9 | 50.0 |
| 13C2 PFDoA | Ave | 0.6087 | 0.6375 | | 2.62 | 2.50 | 4.7 | 50.0 |
| 13C2-PFTeDA | Ave | 0.7733 | 0.8125 | | 2.63 | 2.50 | 5.1 | 50.0 |
| 13C2-PFHxDA | Ave | 1.194 | 1.303 | | 2.73 | 2.50 | 9.1 | 50.0 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 07-Apr-2018 09:08:59 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 08:26:39 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 08:18:54

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.424 | 1.424 | 0.0 | 1.000 | 117459 | 0.0492 | | 98.5 | 42.8 | |
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.424 | 1.425 | -0.001 | 1.000 | 6454114 | 2.38 | | 95.4 | 55596 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.692 | 1.693 | -0.001 | 1.000 | 103568 | 0.0517 | | 103 | 61.3 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.692 | 1.694 | -0.002 | 0.560 | 4186177 | 2.38 | | 95.0 | 90798 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.729 | 1.729 | 0.0 | 1.000 | 128640 | 0.0441 | | 99.7 | 469 | |
| 298.90 > 99.00 | 1.729 | 1.729 | 0.0 | 1.000 | 53927 | | 2.39(1.25-3.74) | | 394 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.729 | 1.730 | -0.001 | 1.000 | 86032 | 2.13 | | 91.7 | 541 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.938 | 1.938 | 0.0 | 1.000 | 35634 | 0.0558 | | 120 | 1945 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.938 | 1.950 | -0.012 | 1.000 | 683120 | 2.22 | | 94.9 | 5289 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.981 | 1.970 | 0.011 | 1.000 | 96383 | 0.0499 | | 99.8 | 188 | |
| 313.00 > 119.00 | 1.970 | 1.970 | 0.0 | 0.995 | 7350 | | 13.11(5.03-15.10) | | 88.2 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.981 | 1.982 | -0.001 | 1.000 | 4717748 | 2.43 | | 97.1 | 122824 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 1.991 | 1.992 | -0.001 | 1.000 | 125694 | 0.0477 | | 102 | 833 | |
| 349.00 > 99.00 | 2.003 | 1.992 | 0.011 | 1.006 | 49831 | | 2.52(1.36-4.07) | | 540 | |
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.071 | 2.071 | 0.0 | 1.000 | 14529 | 0.0447 | | 89.4 | 80.0 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.071 | 2.073 | -0.002 | 1.000 | 238923 | 2.47 | | 98.8 | 5315 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.319 | 2.307 | 0.012 | 1.000 | 126785 | 0.0490 | | 108 | 359 | |
| 399.00 > 99.00 | 2.319 | 2.307 | 0.012 | 1.000 | 40852 | | 3.10(1.50-4.49) | | 171 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | M |
| 363.00 > 319.00 | 2.306 | 2.307 | -0.001 | 1.000 | 97664 | 0.0462 | | 92.4 | 109 | M |
| 363.00 > 169.00 | 2.306 | 2.307 | -0.001 | 1.000 | 35447 | | 2.76(1.13-3.40) | | 150 | M |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.306 | 2.308 | -0.002 | 1.000 | 4861673 | 2.60 | | 104 | 76888 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.319 | 2.321 | -0.002 | 1.000 | 5480870 | 2.35 | | 99.5 | 78180 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.345 | 2.346 | -0.001 | 1.000 | 285801 | 0.0509 | | 102 | 5258 | |
| 377.00 > 85.00 | 2.345 | 2.346 | -0.001 | 1.000 | 159017 | | 1.80(0.84-2.53) | | 1905 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | M |
| 427.00 > 407.00 | 2.628 | 2.629 | -0.001 | 1.000 | 31327 | 0.0422 | | 89.1 | 229 | M |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.628 | 2.637 | -0.009 | 1.000 | 943089 | 2.18 | | 92.0 | 10717 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.660 | 2.653 | 0.007 | | 4898002 | 2.50 | | | 125818 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.660 | 2.660 | 0.0 | 1.000 | 4734724 | 2.58 | | 103 | 84491 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.660 | 2.660 | 0.0 | 1.000 | 108705 | 0.0484 | | 96.8 | 42.7 | |
| 413.00 > 169.00 | 2.652 | 2.660 | -0.008 | 0.997 | 59859 | | 1.82(0.84-2.52) | | 136 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.667 | 2.660 | 0.007 | 1.000 | 97153 | 0.0463 | | 97.2 | 841 | |
| 449.00 > 99.00 | 2.667 | 2.660 | 0.007 | 1.000 | 26895 | | 3.61(1.94-5.82) | | 499 | |
| 20 Perfluorononanoic acid | | | | | | | | | | M |
| 463.00 > 419.00 | 3.029 | 3.023 | 0.006 | 1.002 | 82650 | 0.0504 | | 101 | 150 | M |
| 463.00 > 169.00 | 3.022 | 3.023 | -0.001 | 1.000 | 18288 | | 4.52(1.90-5.69) | | 260 | M |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.022 | 3.023 | -0.001 | 1.000 | 90176 | 0.0501 | | 108 | 482 | |
| 499.00 > 99.00 | 3.029 | 3.023 | 0.006 | 1.002 | 19632 | | 4.59(2.31-6.93) | | 183 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.022 | 3.023 | -0.001 | 1.000 | 3767099 | 2.33 | | 97.4 | 26143 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.022 | 3.030 | -0.008 | 1.000 | 3986103 | 2.57 | | 103 | 91302 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.237 | 3.238 | -0.001 | 1.000 | 128533 | 0.0436 | | 93.6 | 1991 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | M |
| 498.00 > 78.00 | 3.357 | 3.359 | -0.002 | 1.000 | 98352 | 0.0471 | | 94.3 | 5409 | M |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.357 | 3.360 | -0.003 | 1.000 | 5279721 | 2.31 | | 92.4 | 58600 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.376 | 3.369 | 0.007 | 1.000 | 58801 | 0.0465 | | 96.9 | 610 | |
| 549.00 > 99.00 | 3.366 | 3.369 | -0.003 | 0.997 | 22861 | | 2.57(1.33-3.97) | | 330 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | M |
| 527.00 > 507.00 | 3.376 | 3.378 | -0.002 | 1.000 | 28684 | 0.0420 | | 87.6 | 950 | M |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.376 | 3.378 | -0.002 | 1.000 | 1213449 | 2.42 | | 101 | 10876 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | RM |
| 513.00 > 469.00 | 3.385 | 3.387 | -0.002 | 1.000 | 73823 | 0.0529 | | 106 | 241 | RM |
| 513.00 > 169.00 | 3.385 | 3.387 | -0.002 | 1.000 | 10386 | | 7.11(2.36-7.09) | | 170 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.385 | 3.387 | -0.002 | 1.000 | 3527275 | 2.69 | | 108 | 63345 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.544 | 3.537 | 0.007 | 1.000 | 1975365 | 2.81 | | 113 | 35029 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.544 | 3.546 | -0.002 | 1.000 | 38952 | 0.0468 | | 93.5 | 312 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.694 | 3.696 | -0.002 | 1.000 | 52473 | 0.0480 | | 99.6 | 575 | |
| 599.00 > 99.00 | 3.705 | 3.696 | 0.009 | 1.003 | 14213 | | 3.69(1.39-4.16) | | 357 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.705 | 3.707 | -0.002 | 1.000 | 1982679 | 2.69 | | 108 | 13683 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.715 | 3.718 | -0.003 | 1.000 | 52648 | 0.0584 | | 117 | 178 | |
| 563.00 > 169.00 | 3.726 | 3.718 | 0.008 | 1.003 | 9645 | | 5.46(2.12-6.36) | | 241 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.715 | 3.718 | -0.003 | 1.003 | 34794 | 0.0478 | | 95.7 | 360 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.715 | 3.718 | -0.003 | 1.000 | 2809975 | 2.62 | | 105 | 86828 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.872 | 3.875 | -0.002 | 1.000 | 213304 | 0.0466 | | 99.0 | 1835 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.005 | 4.007 | -0.002 | 1.000 | 68110 | 0.0505 | | 101 | 49.1 | |
| 613.00 > 169.00 | 4.005 | 4.007 | -0.002 | 1.000 | 15065 | | 4.52(2.13-6.40) | | 215 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.005 | 4.008 | -0.003 | 1.000 | 3122486 | 2.62 | | 105 | 22353 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.269 | 4.270 | -0.001 | 1.000 | 73102 | 0.0506 | | 101 | 42.1 | |
| 663.00 > 169.00 | 4.269 | 4.270 | -0.001 | 1.000 | 22919 | | 3.19(1.25-3.76) | | 224 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.509 | 4.511 | -0.002 | 1.000 | 18249 | 0.0459 | | 91.8 | 222 | |
| 713.00 > 219.00 | 4.499 | 4.511 | -0.012 | 0.998 | 11644 | | 1.57(0.71-2.13) | | 135 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.509 | 4.511 | -0.002 | 1.000 | 3979775 | 2.63 | | 105 | 21321 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.921 | 4.922 | -0.001 | 1.000 | 171509 | 0.0496 | | 99.1 | 39.1 | |
| 813.00 > 169.00 | 4.929 | 4.922 | 0.007 | 1.002 | 24707 | | 6.94(2.86-8.58) | | 153 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.921 | 4.922 | -0.001 | 1.000 | 6380430 | 2.73 | | 109 | 14695 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.276 | 5.276 | 0.0 | 1.000 | 129432 | 0.0511 | | 102 | 22.5 | |
| 913.00 > 169.00 | 5.276 | 5.276 | 0.0 | 1.000 | 12520 | | 10.34(3.83-11.48) | | 90.0 | |

## QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

## Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 08:26:40 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d

Injection Date: 07-Apr-2018 09:08:59 Instrument ID: A8_N

Lims ID: CCVL

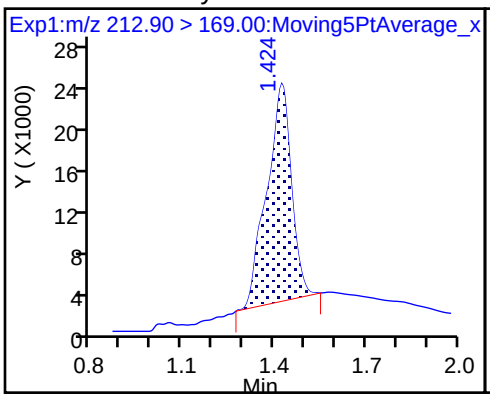
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

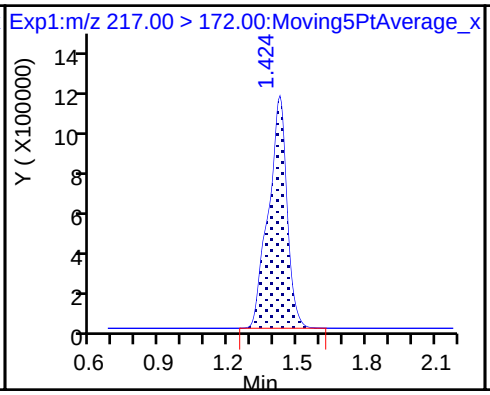
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

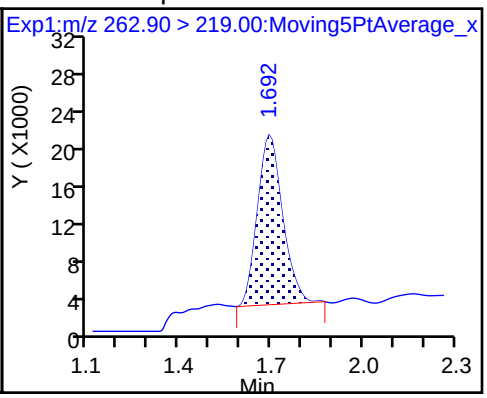
2 Perfluorobutyric acid



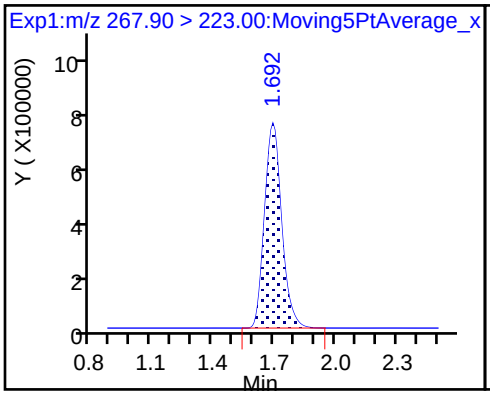

D 1 13C4 PFBA



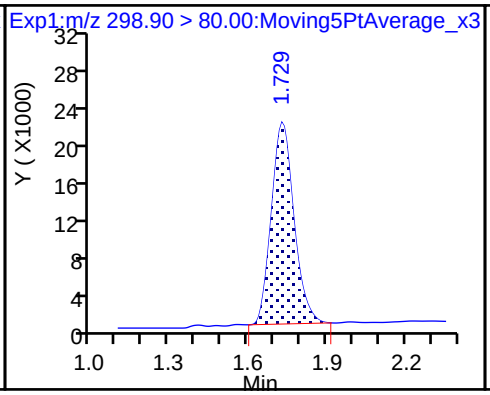

4 Perfluoropentanoic acid



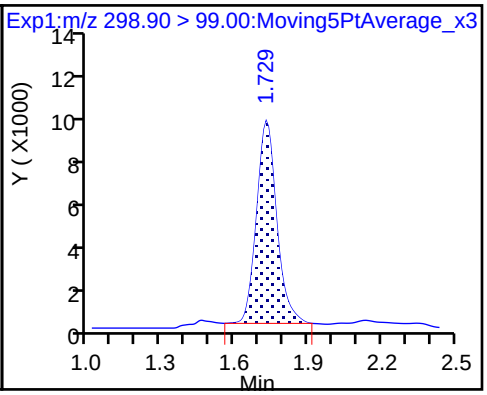

D 3 13C5-PFPeA



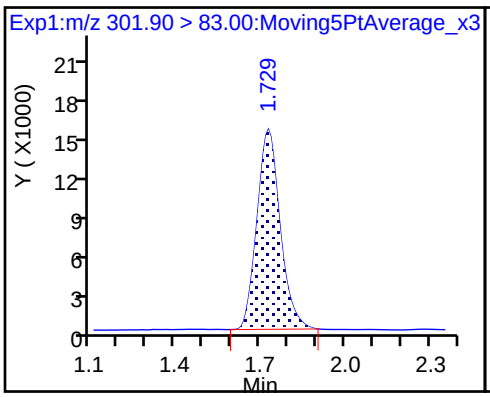

5 Perfluorobutanesulfonic acid



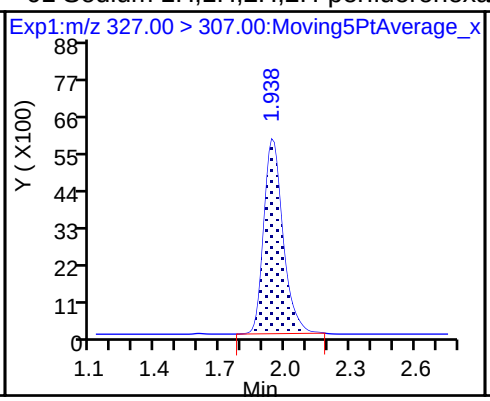

5 Perfluorobutanesulfonic acid



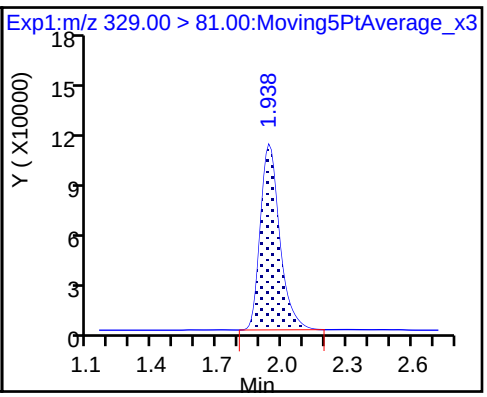

D 47 13C3-PFBS



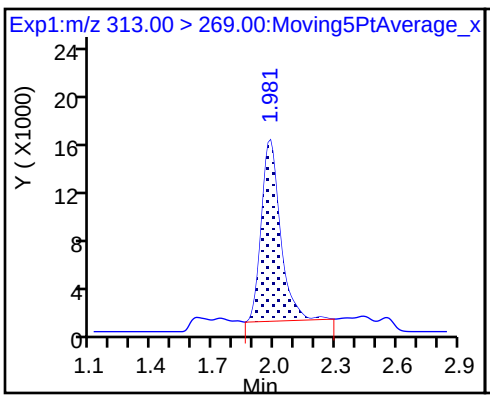

61 Sodium 1H,1H,2H,2H-perfluorohexane



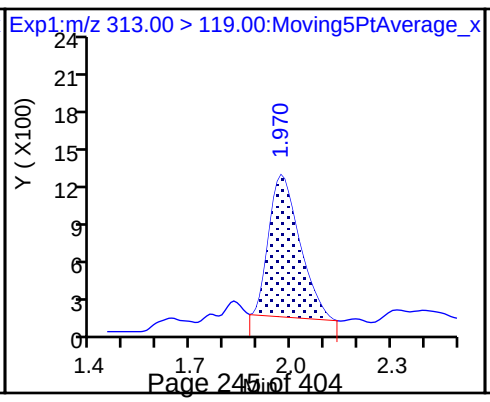

D 60 M2-4:2FTS



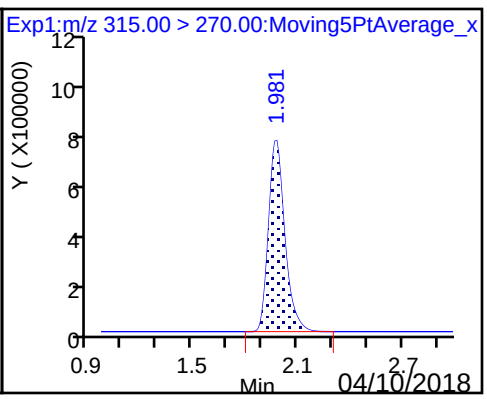

6 Perfluorohexanoic acid



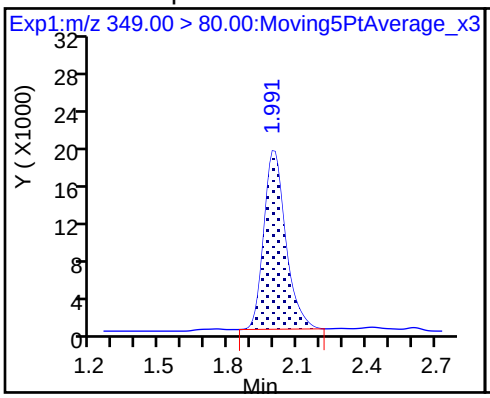

6 Perfluorohexanoic acid



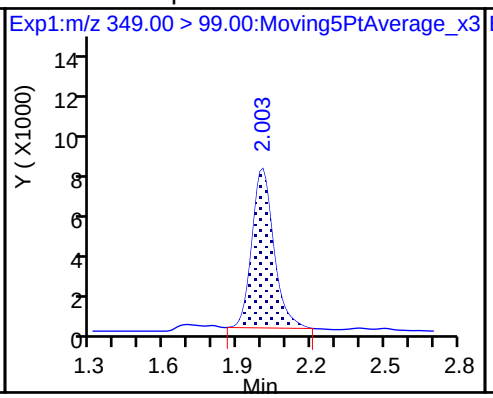

D 7 13C2 PFHxA



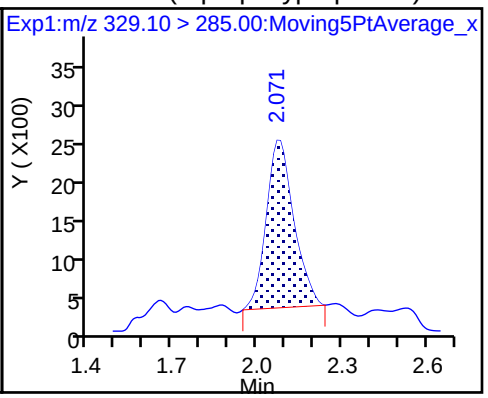
70 Perfluoropentanesulfonic acid



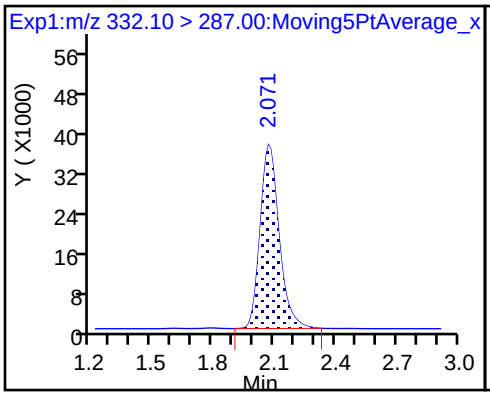

70 Perfluoropentanesulfonic acid



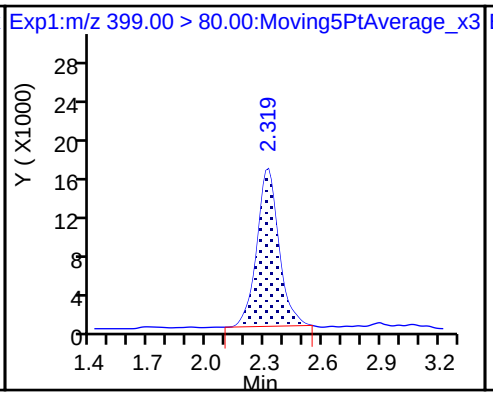

67 Perfluoro(2-propoxypropanoic) acid



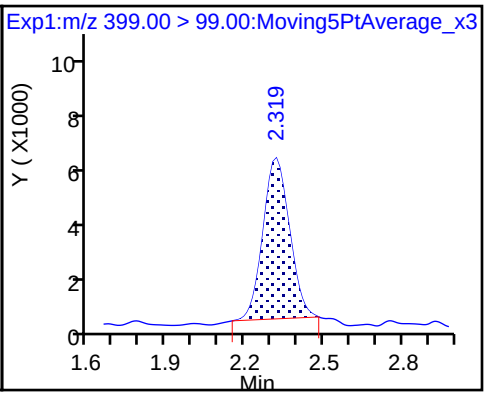

D 64 13C3 HFPO-DA



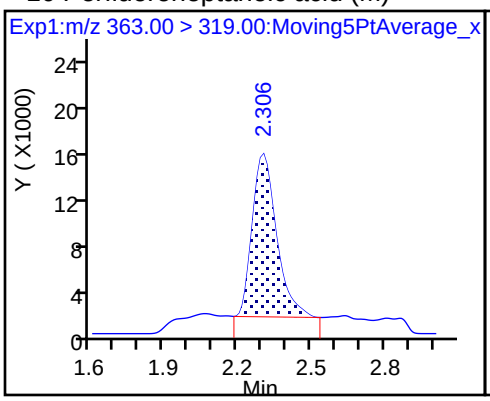

8 Perfluorohexanesulfonic acid



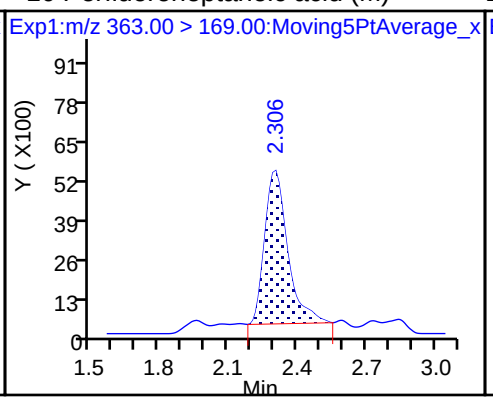

8 Perfluorohexanesulfonic acid



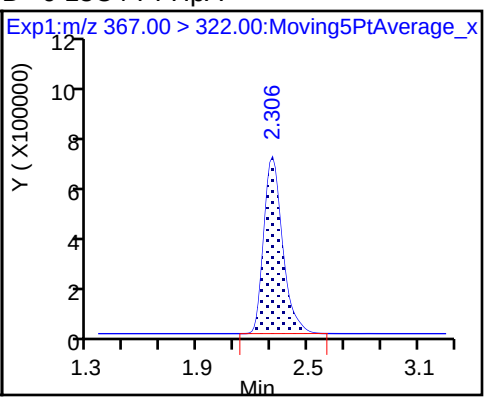

10 Perfluoroheptanoic acid (M)



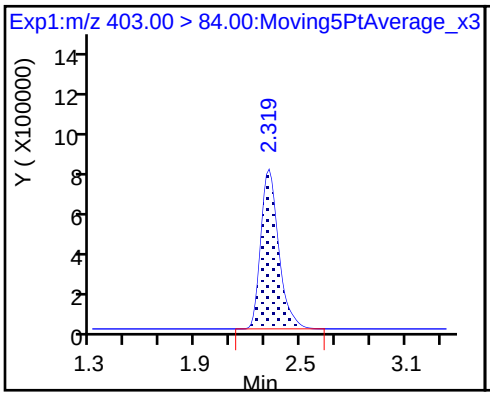

10 Perfluoroheptanoic acid (M)



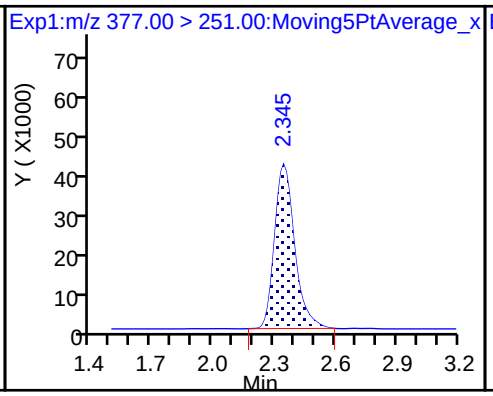

D 9 13C4-PFHpA



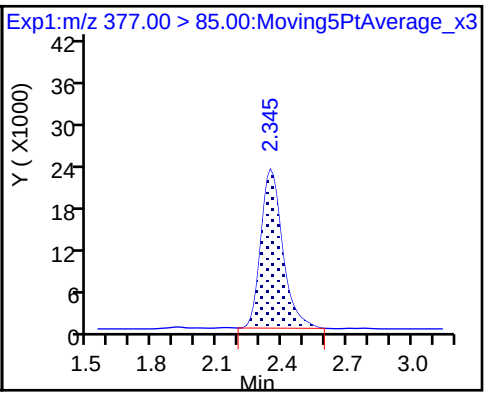

D 11 18O2 PFHxS



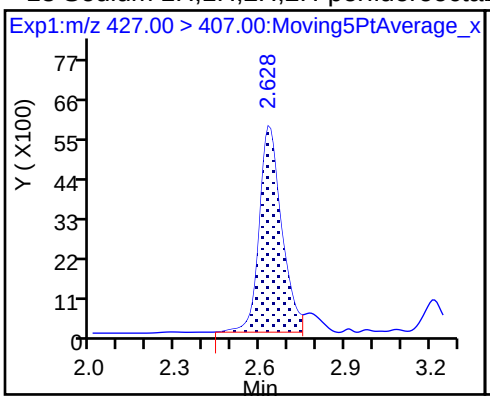

65 Adona



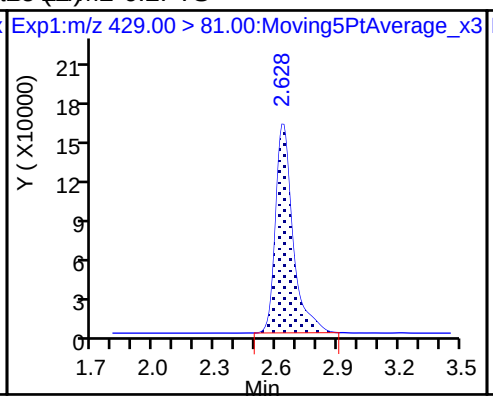

65 Adona



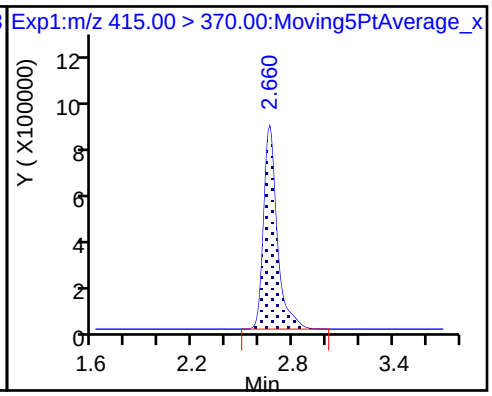
13 Sodium 1H,1H,2H,2H-perfluorooctane (M2-6:2FTS



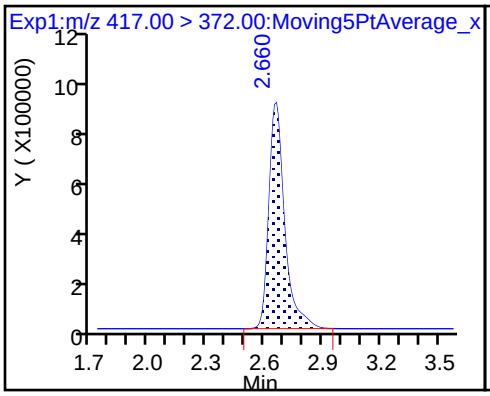

D 12 M2-6:2FTS



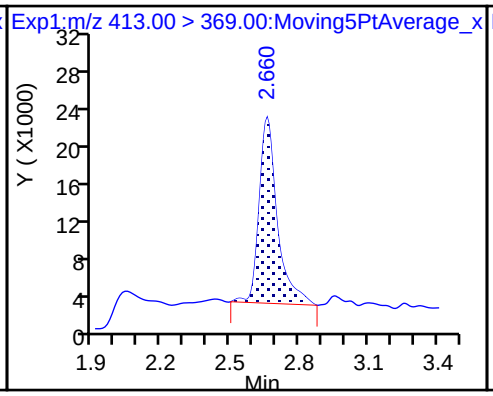

* 62 13C2-PFOA



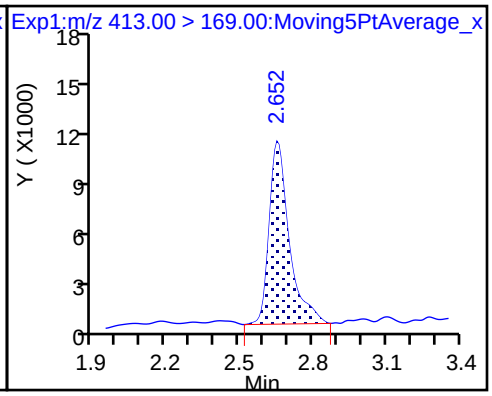

D 14 13C4 PFOA



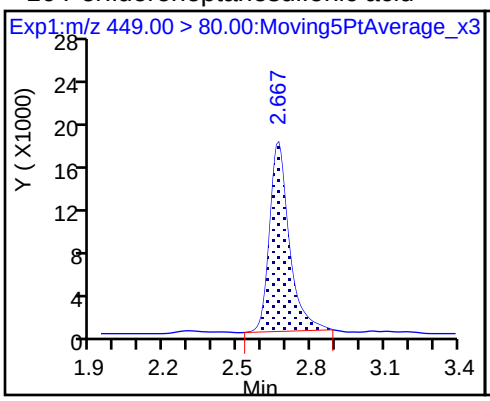

15 Perfluorooctanoic acid



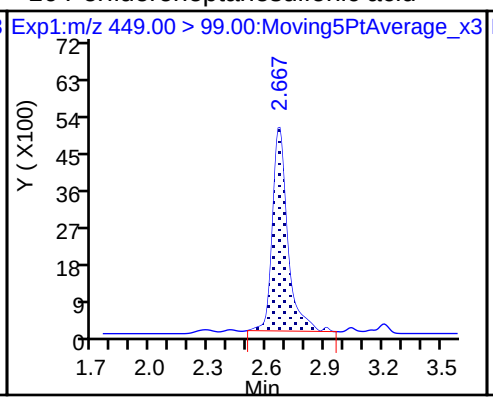

15 Perfluorooctanoic acid



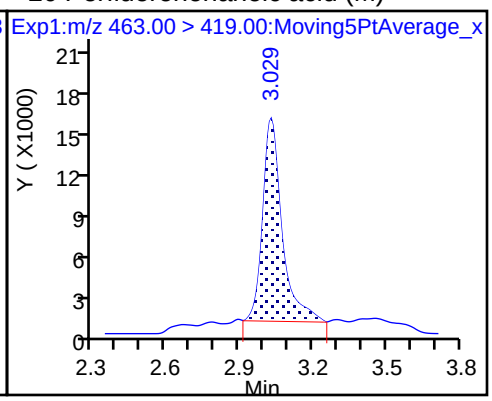

16 Perfluoroheptanesulfonic acid



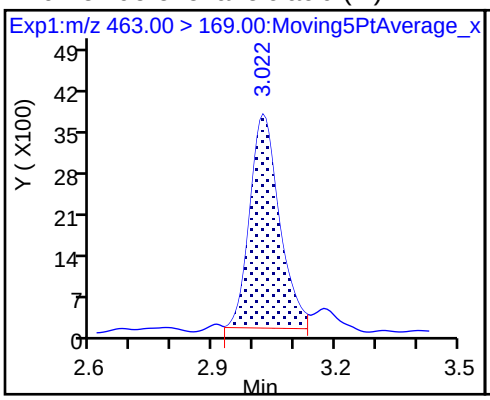

16 Perfluoroheptanesulfonic acid



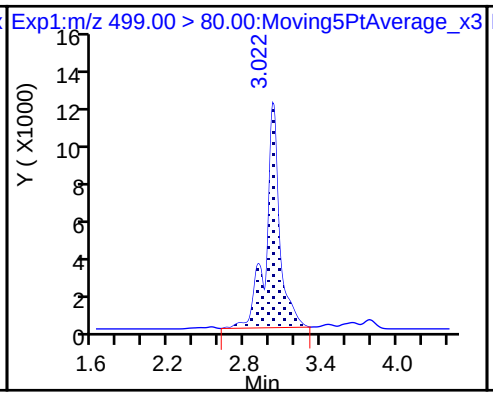

20 Perfluorononanoic acid (M)



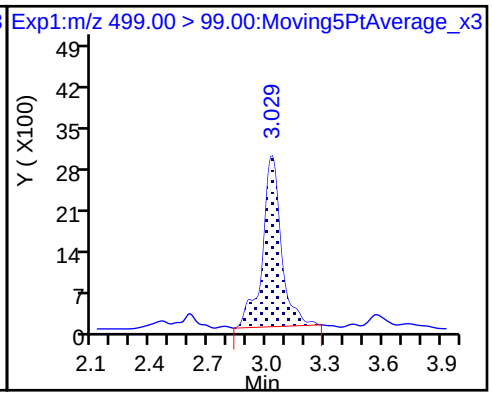

20 Perfluorononanoic acid (M)



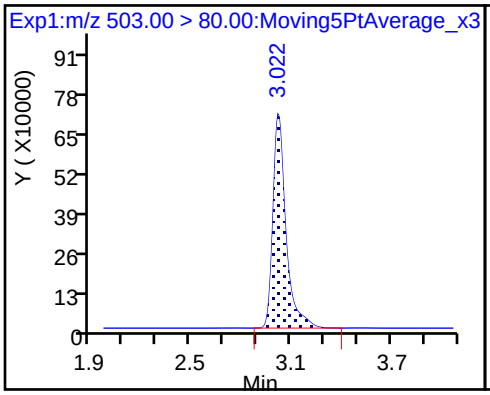

17 Perfluorooctane sulfonic acid



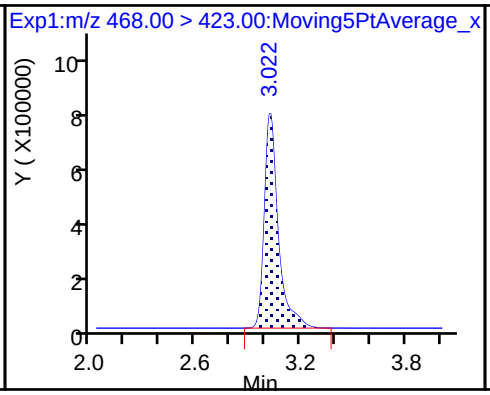

17 Perfluorooctane sulfonic acid



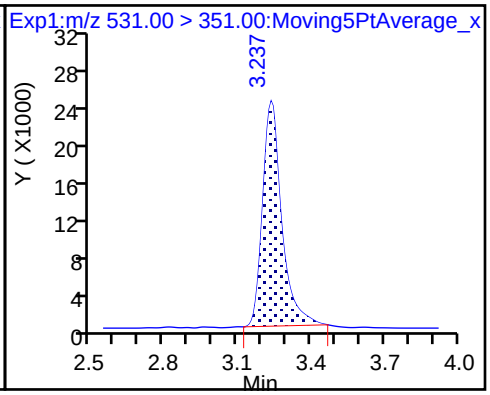
D 18 13C4 PFOS



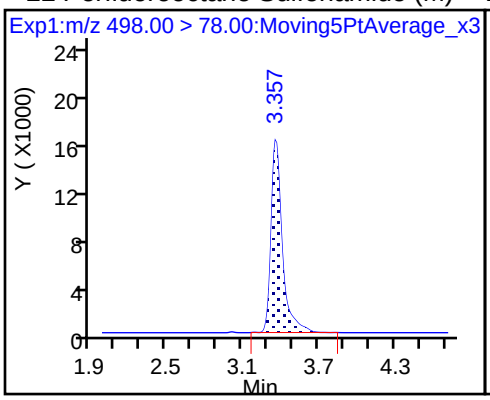

D 19 13C5 PFNA



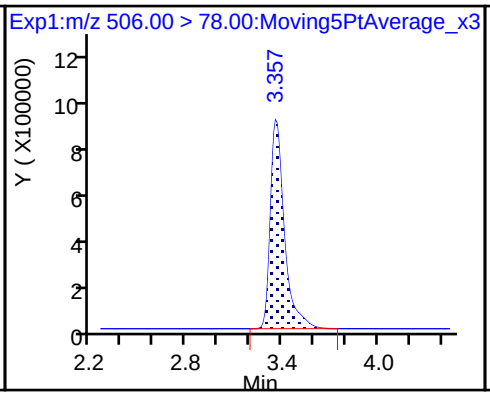

69 9-Chlorohexadecafluoro-3-oxanonane



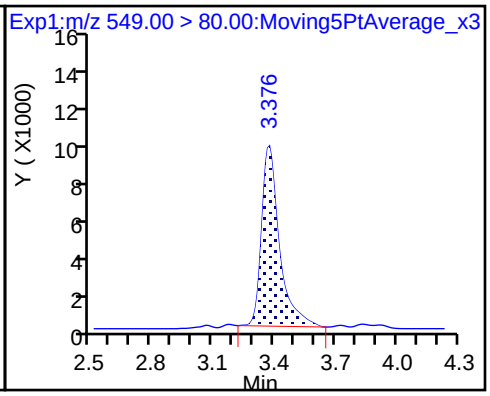

22 Perfluorooctane Sulfonamide (M)



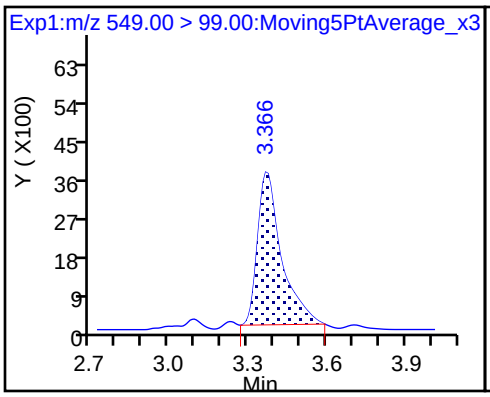

D 21 13C8 FOSA



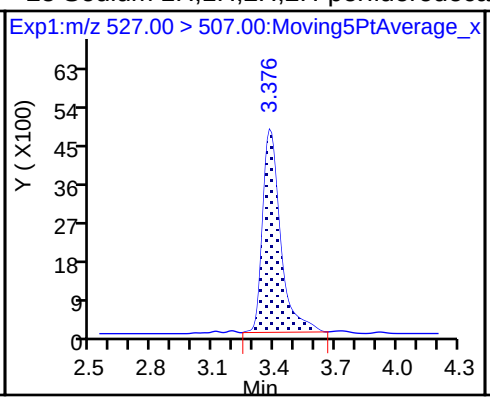

68 Perfluorononanesulfonic acid



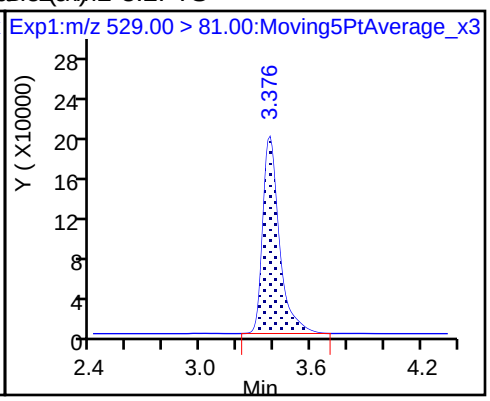

68 Perfluorononanesulfonic acid



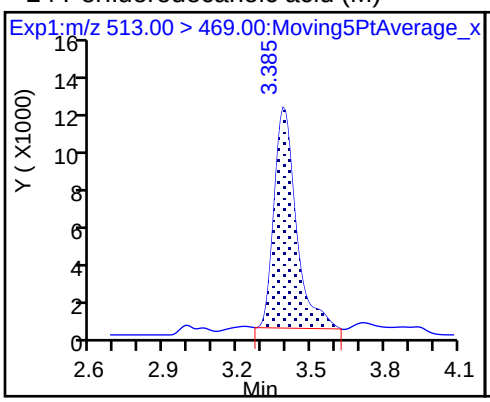

25 Sodium 1H,1H,2H,2H-perfluorodecane (M)



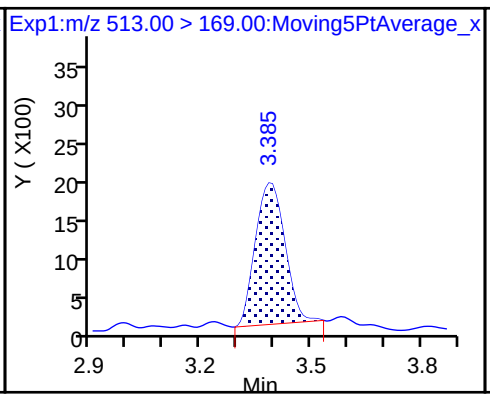

D 26 M2-8:2FTS



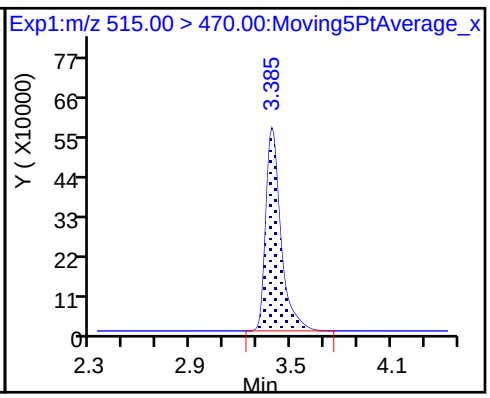

24 Perfluorodecanoic acid (M)



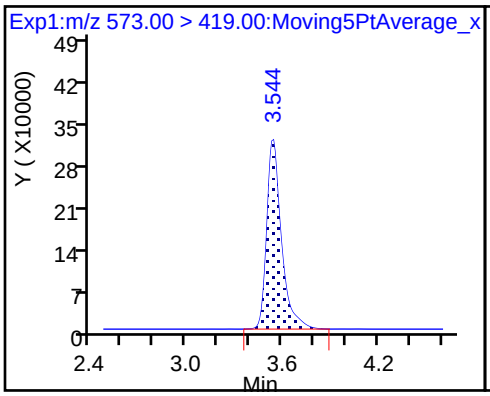

24 Perfluorodecanoic acid



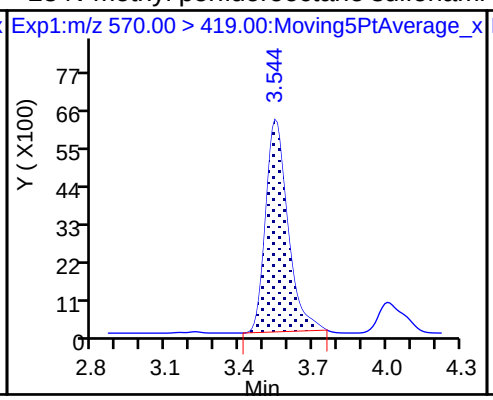

D 23 13C2 PFDA



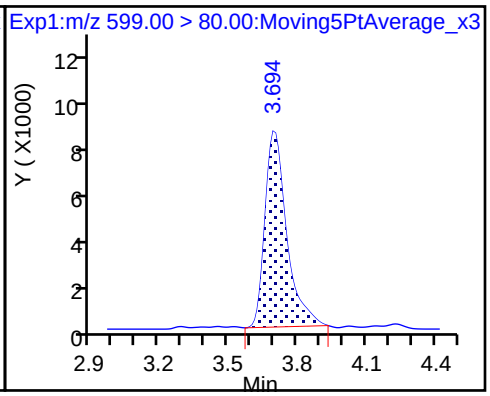
D 27 d3-NMeFOSAA



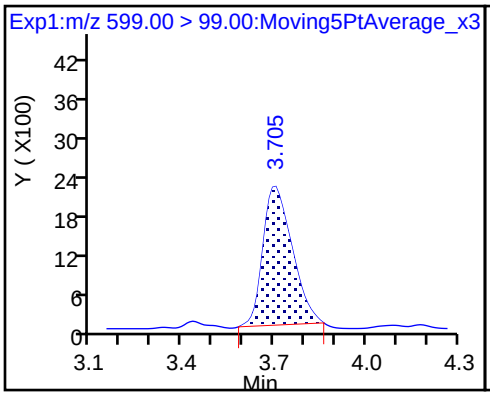

28 N-methyl perfluorooctane sulfonami



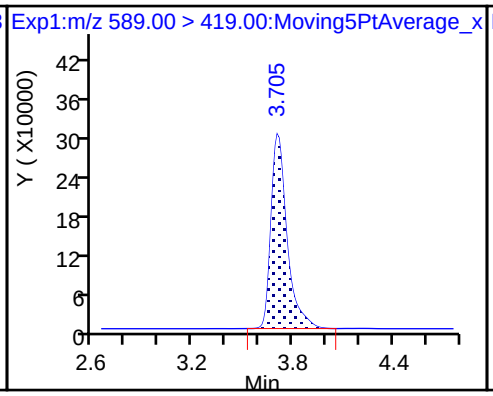

29 Perfluorodecane Sulfonic acid



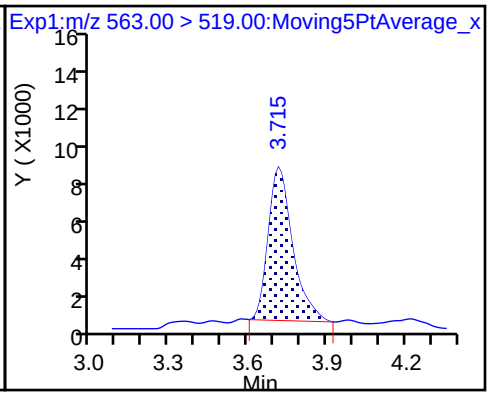

29 Perfluorodecane Sulfonic acid



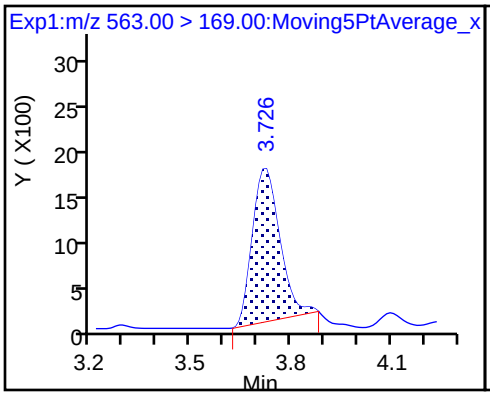

D 32 d5-NEtFOSAA



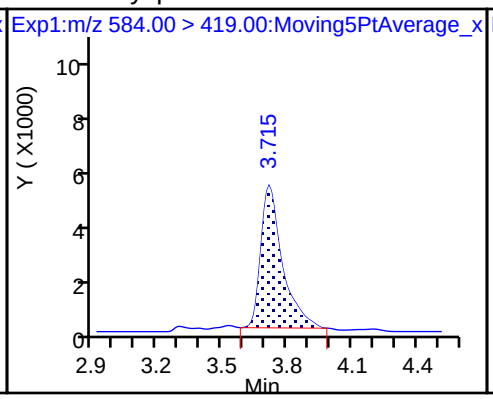

31 Perfluoroundecanoic acid



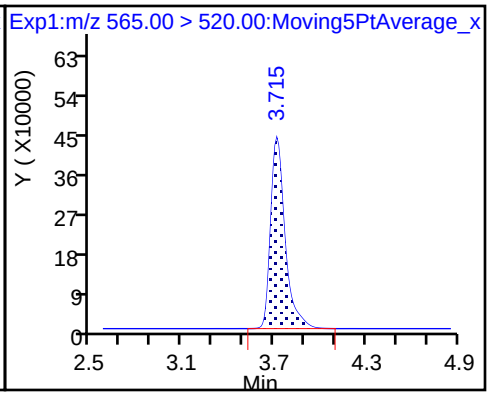

31 Perfluoroundecanoic acid



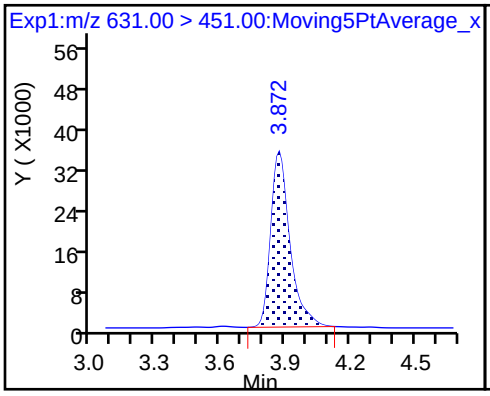

33 N-ethyl perfluorooctane sulfonamid



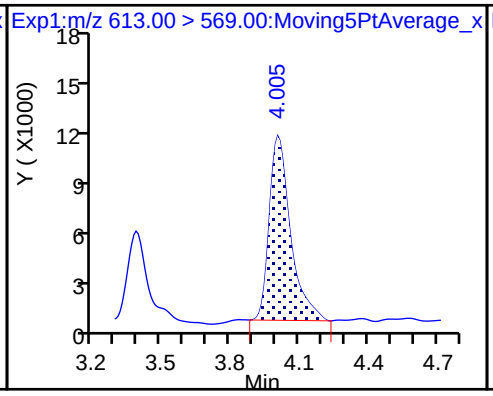

D 30 13C2 PFUnA



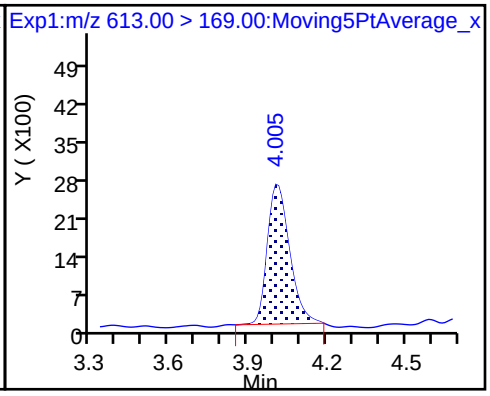

66 11-Chloroeicosafluoro-3-oxaundecan



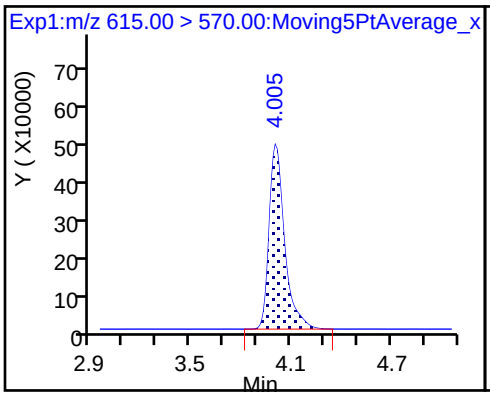

37 Perfluorododecanoic acid



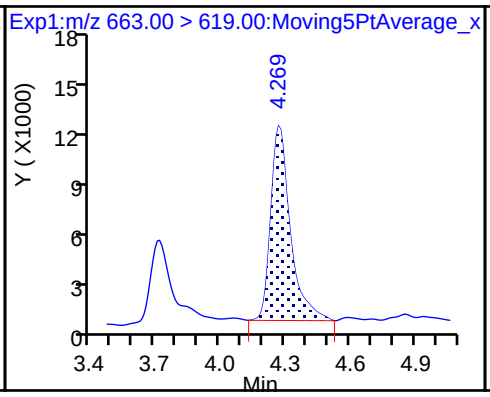

37 Perfluorododecanoic acid



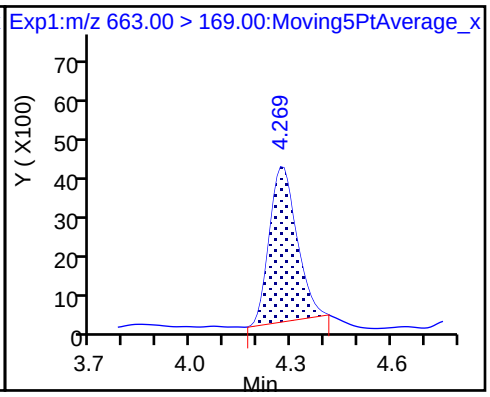
D 36 13C2 PFDoA



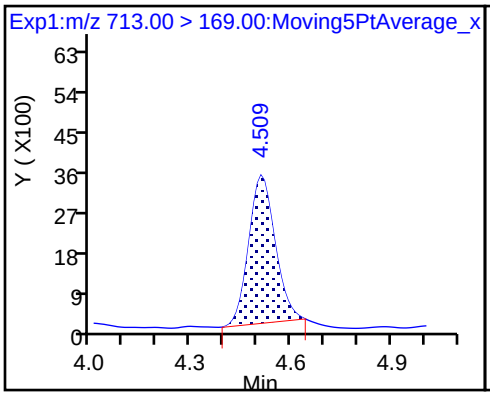

41 Perfluorotridecanoic acid



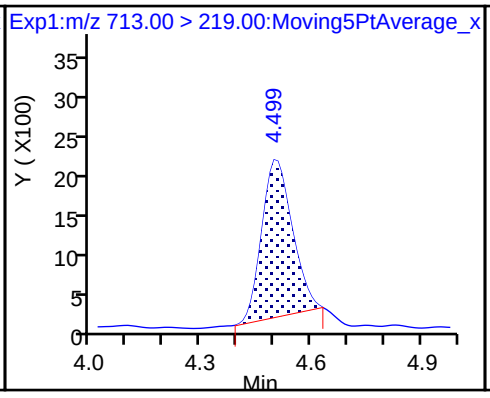

41 Perfluorotridecanoic acid



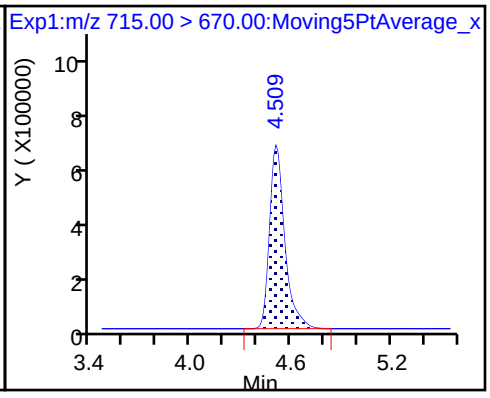

42 Perfluorotetradecanoic acid



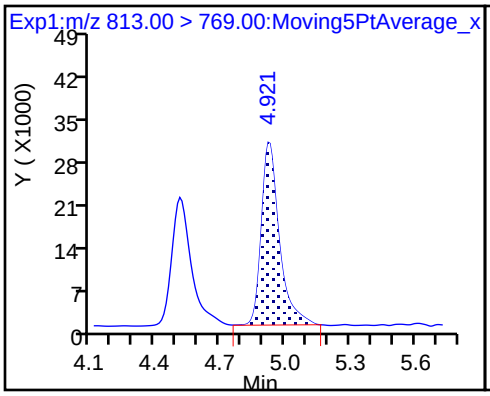

42 Perfluorotetradecanoic acid



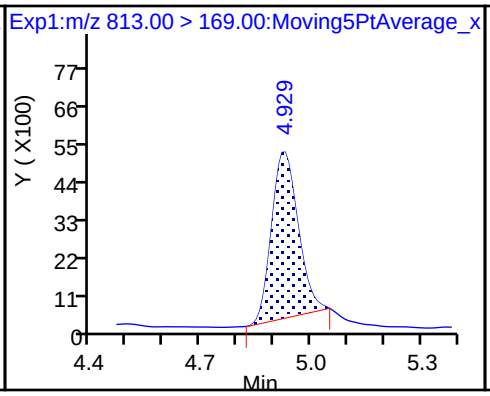

D 43 13C2-PFTeDA



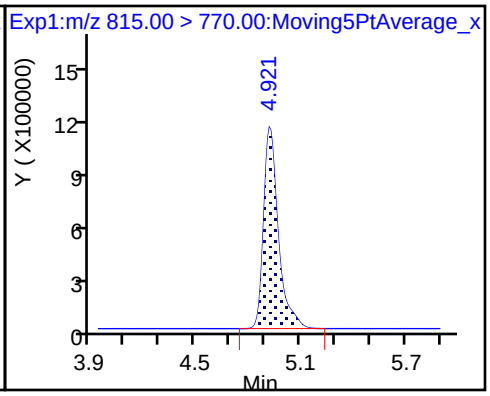

45 Perfluorohexadecanoic acid



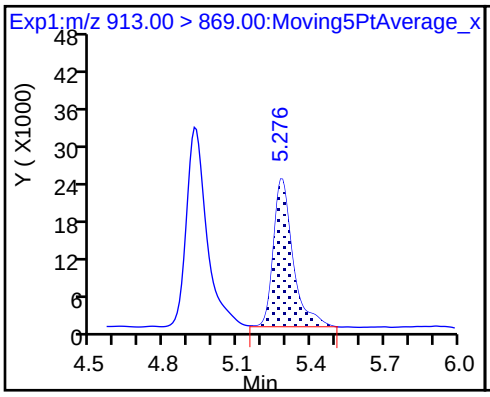

45 Perfluorohexadecanoic acid



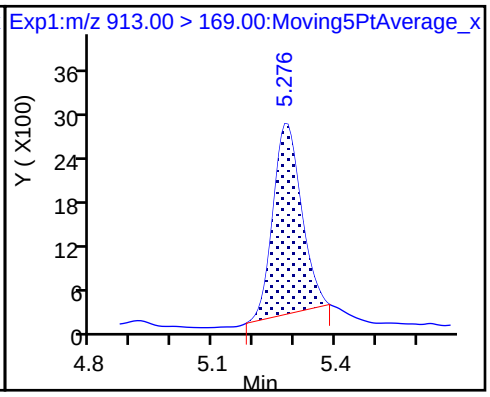

D 44 13C2-PFHxDA




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

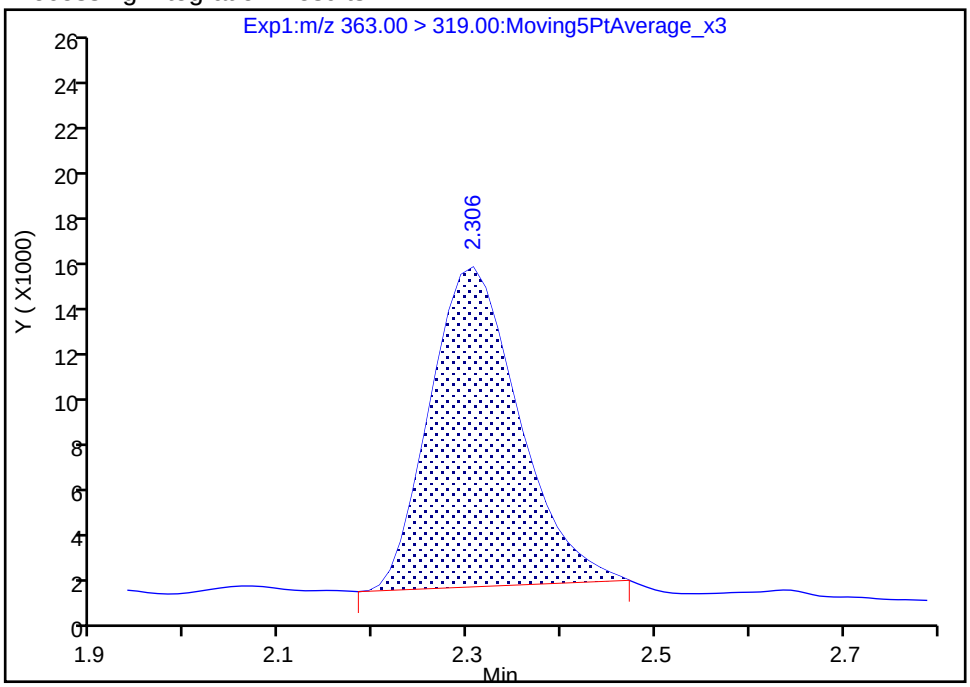
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d
Injection Date: 07-Apr-2018 09:08:59 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

## 10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

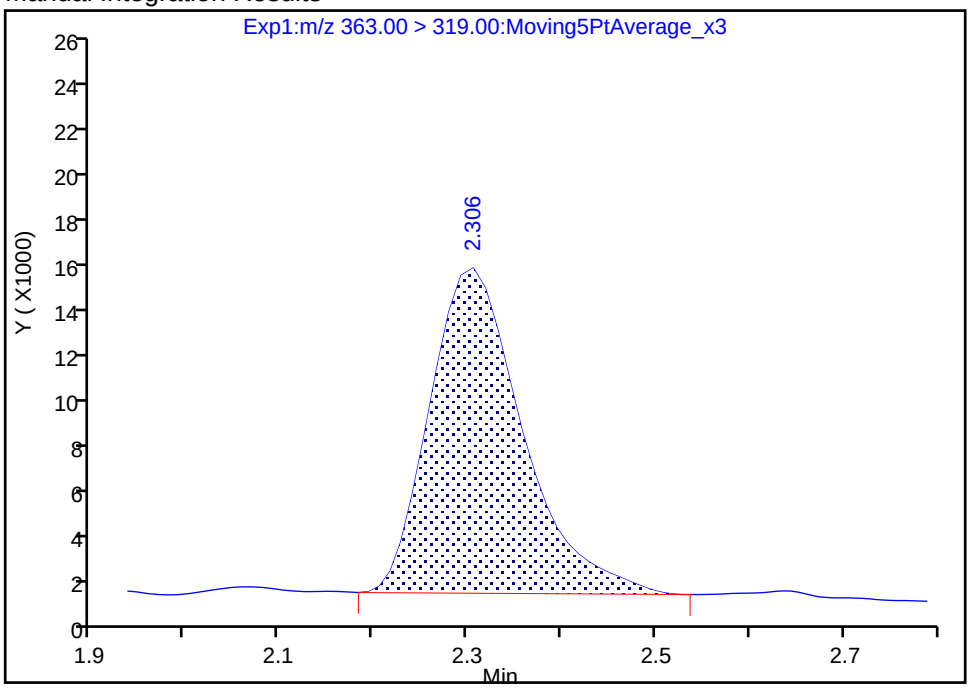
RT: 2.31
Area: 92083
Amount: 0.043580
Amount Units: ng/ml

Processing Integration Results




RT: 2.31
Area: 97664
Amount: 0.046222
Amount Units: ng/ml

Manual Integration Results




Reviewer: westendorfc, 09-Apr-2018 08:17:48
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

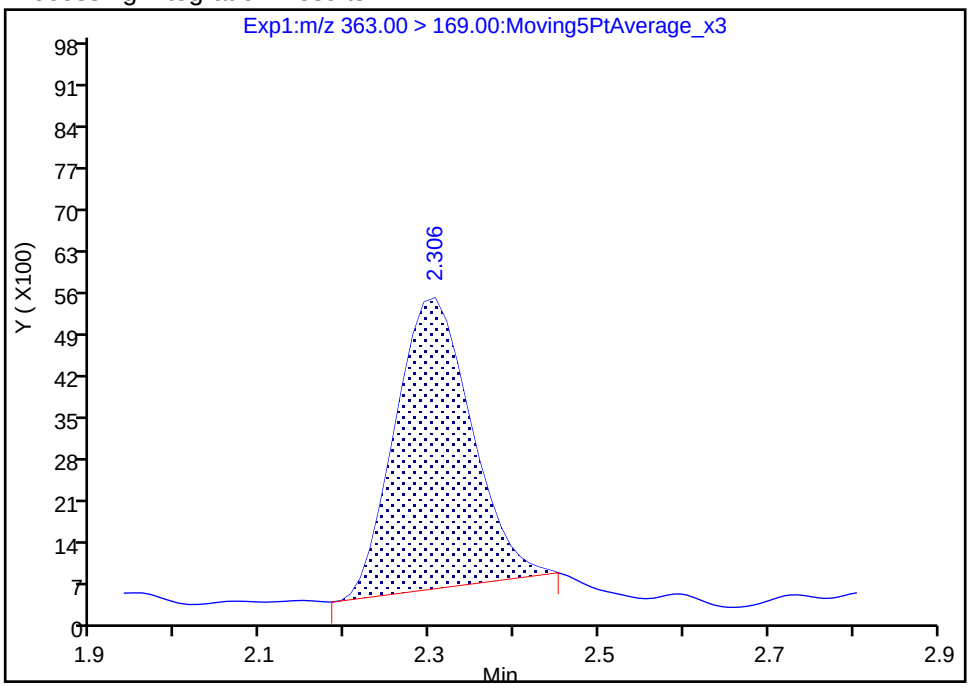
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d
Injection Date: 07-Apr-2018 09:08:59 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

## 10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

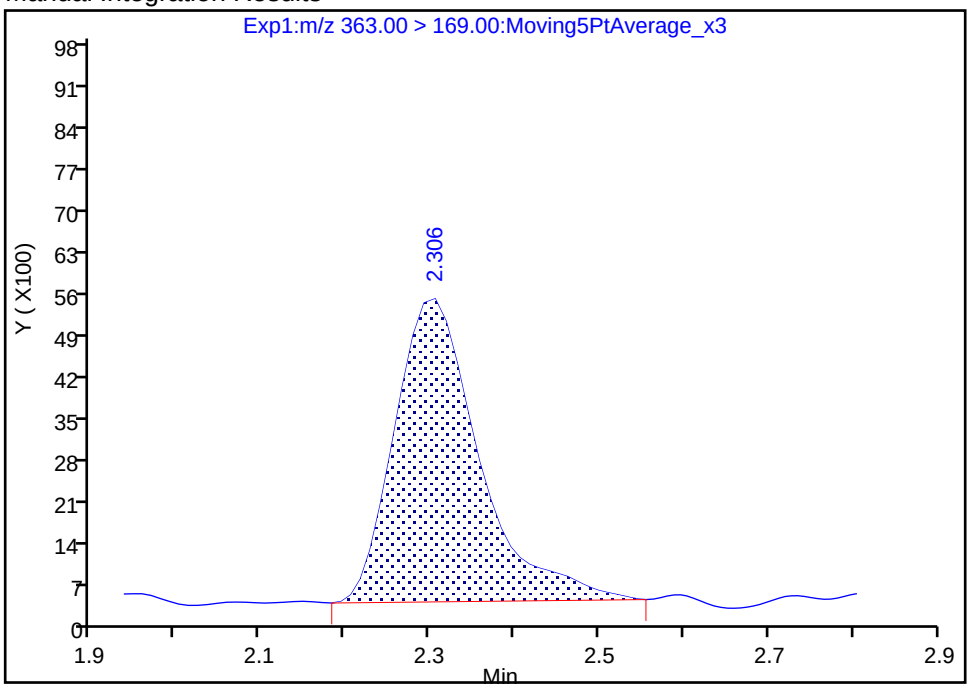
Processing Integration Results

RT: 2.31
Area: 30675
Amount: 0.043580
Amount Units: ng/ml




Manual Integration Results

RT: 2.31
Area: 35447
Amount: 0.046222
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 08:17:54
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

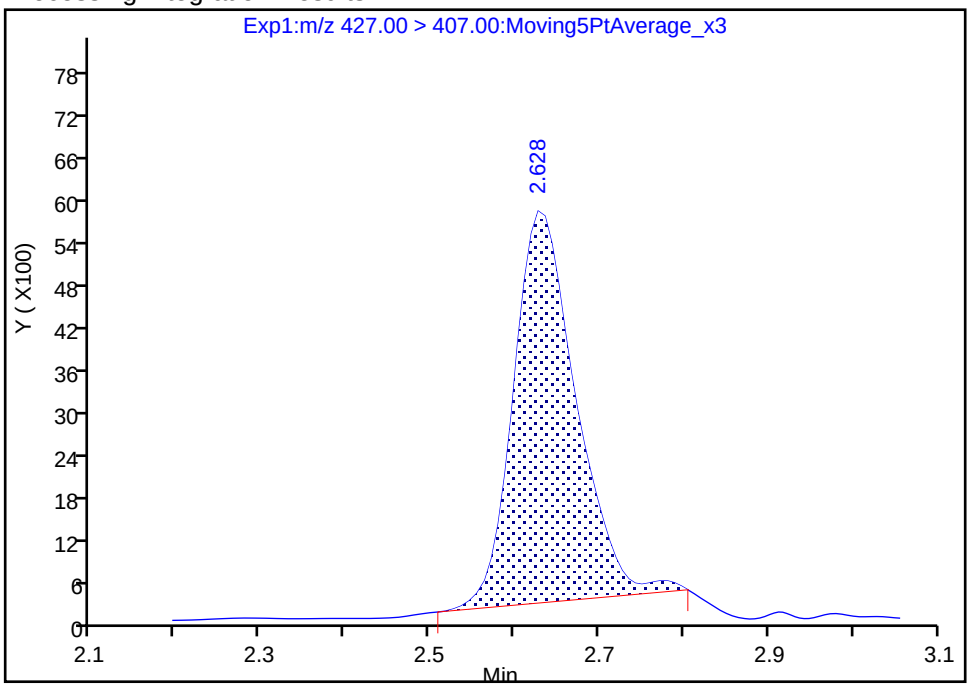
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d
Injection Date: 07-Apr-2018 09:08:59 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

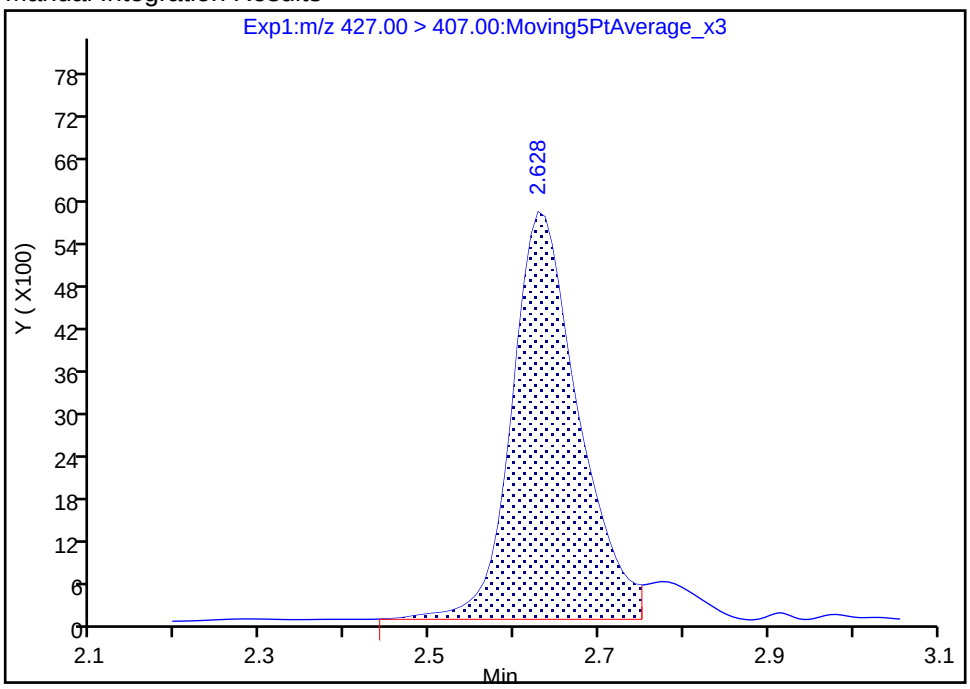
Processing Integration Results

RT: 2.63
Area: 28383
Amount: 0.038273
Amount Units: ng/ml




Manual Integration Results

RT: 2.63
Area: 31327
Amount: 0.042242
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 08:18:09
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

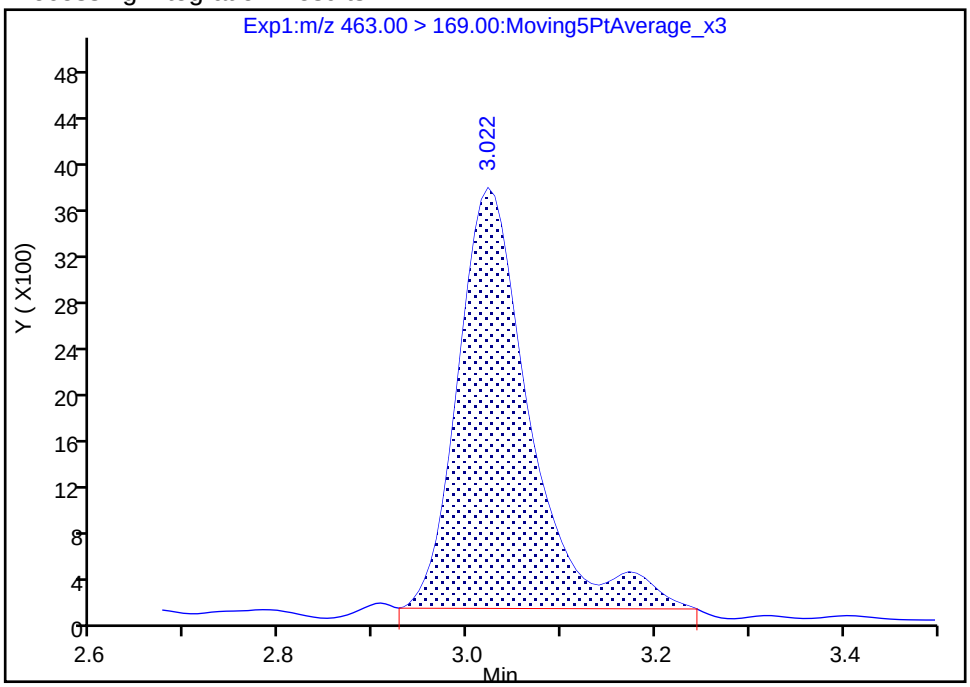
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d
Injection Date: 07-Apr-2018 09:08:59 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

## 20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

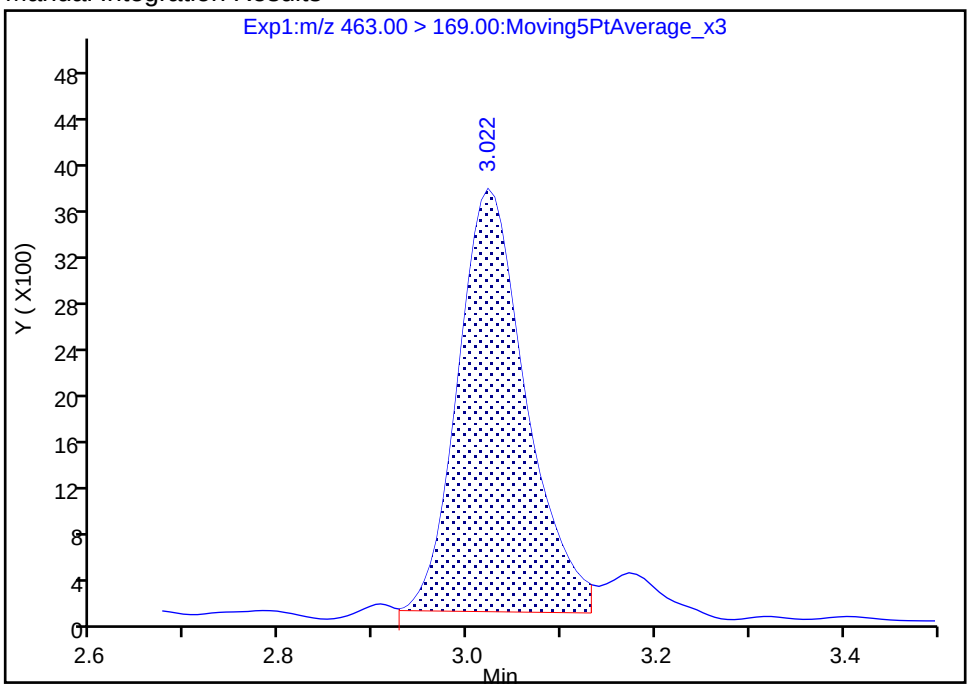
Processing Integration Results

RT: 3.02
Area: 19265
Amount: 0.044411
Amount Units: ng/ml




Manual Integration Results

RT: 3.02
Area: 18288
Amount: 0.050375
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 08:18:21
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

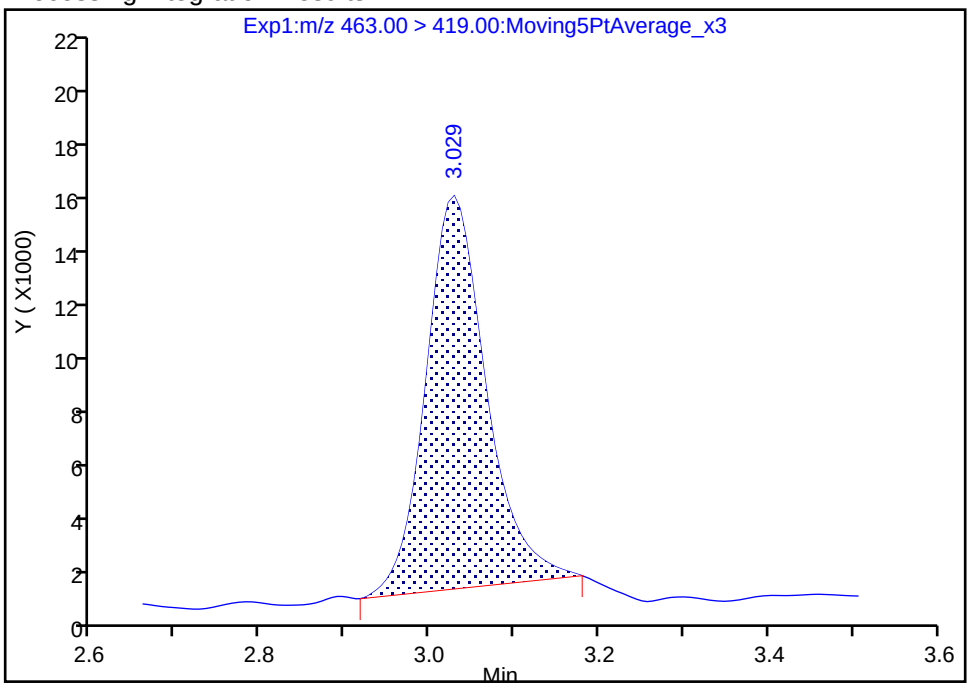
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d
Injection Date: 07-Apr-2018 09:08:59 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

## 20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

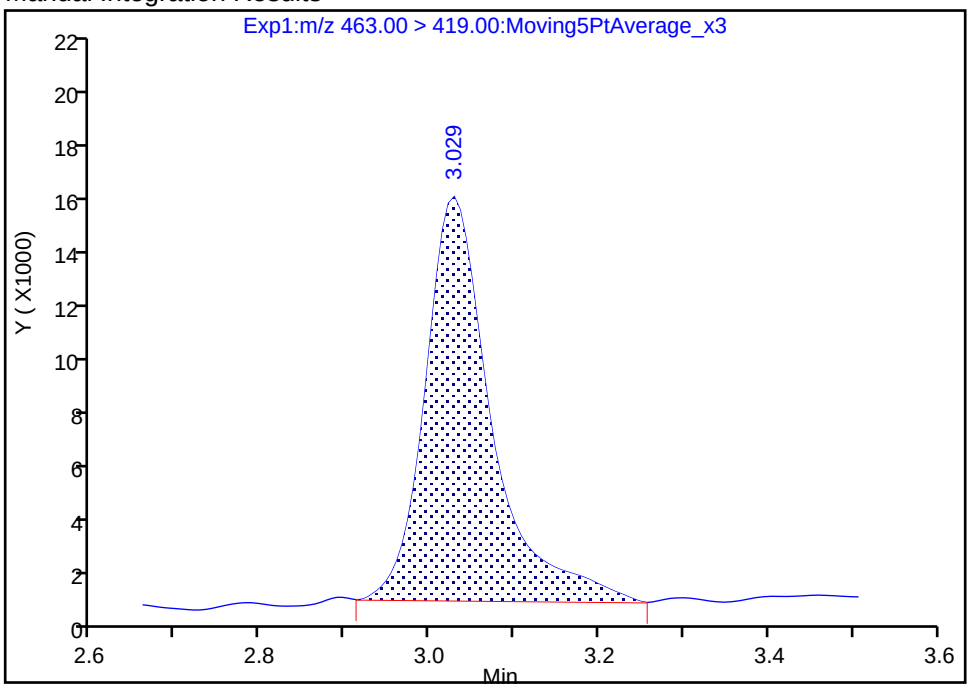
Processing Integration Results

RT: 3.03
Area: 72865
Amount: 0.044411
Amount Units: ng/ml




Manual Integration Results

RT: 3.03
Area: 82650
Amount: 0.050375
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 08:18:24
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

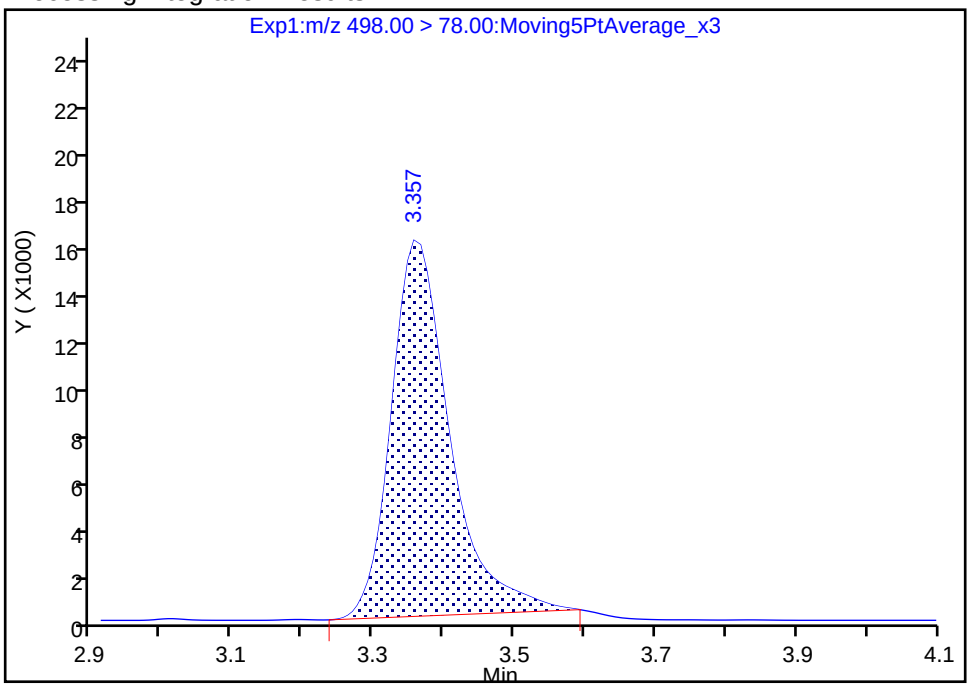
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d
Injection Date: 07-Apr-2018 09:08:59 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

## 22 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

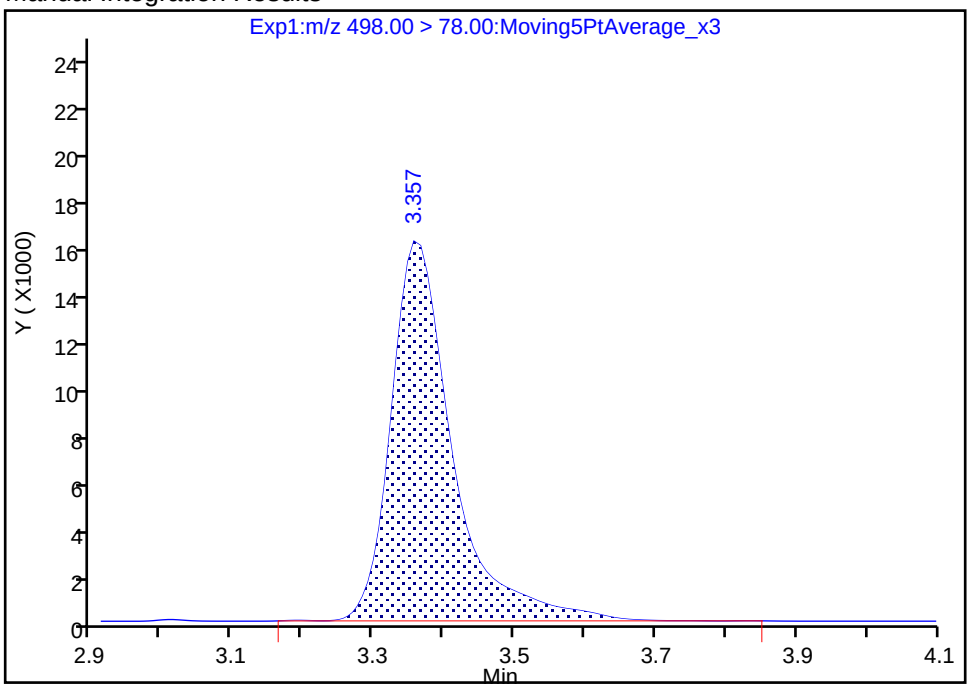
Processing Integration Results

RT: 3.36
Area: 92428
Amount: 0.044310
Amount Units: ng/ml




Manual Integration Results

RT: 3.36
Area: 98352
Amount: 0.047150
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 08:18:31
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

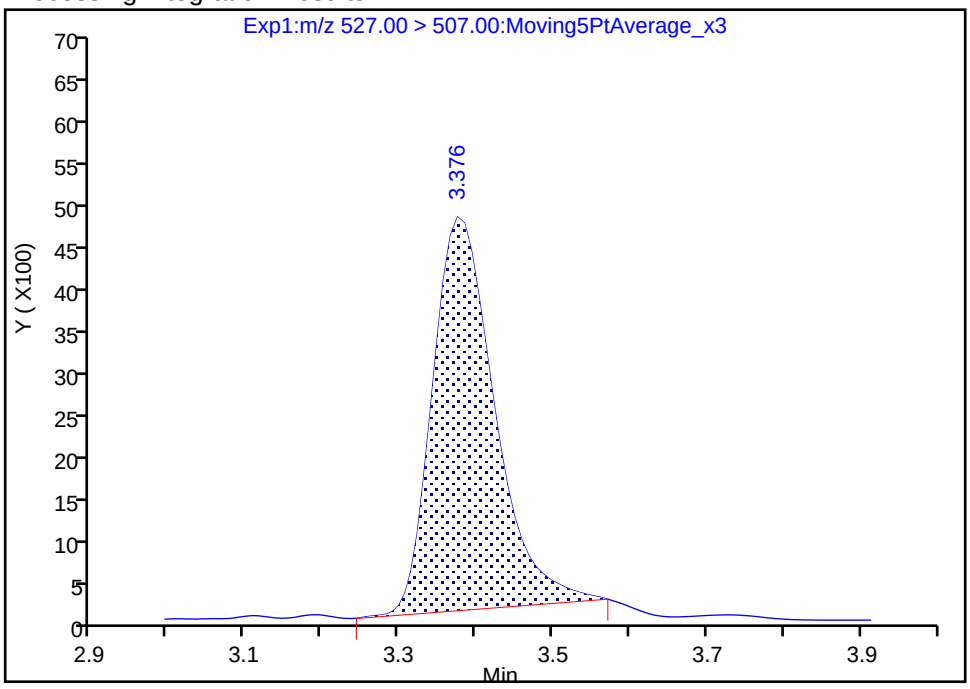
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d
Injection Date: 07-Apr-2018 09:08:59 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

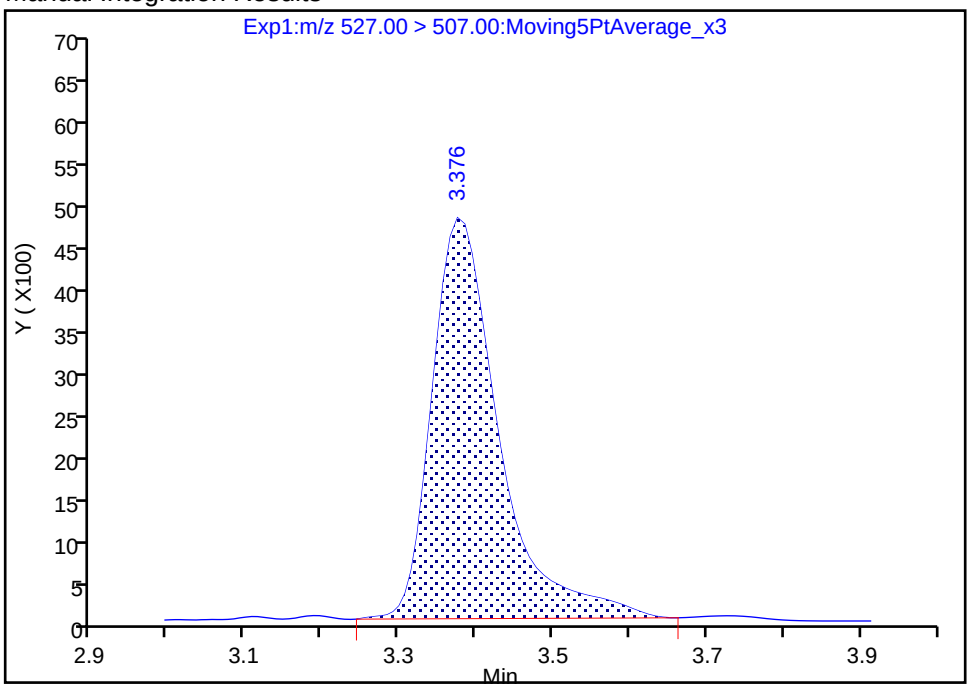
Processing Integration Results

RT: 3.38
Area: 26180
Amount: 0.038309
Amount Units: ng/ml




Manual Integration Results

RT: 3.38
Area: 28684
Amount: 0.041973
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 08:18:38
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

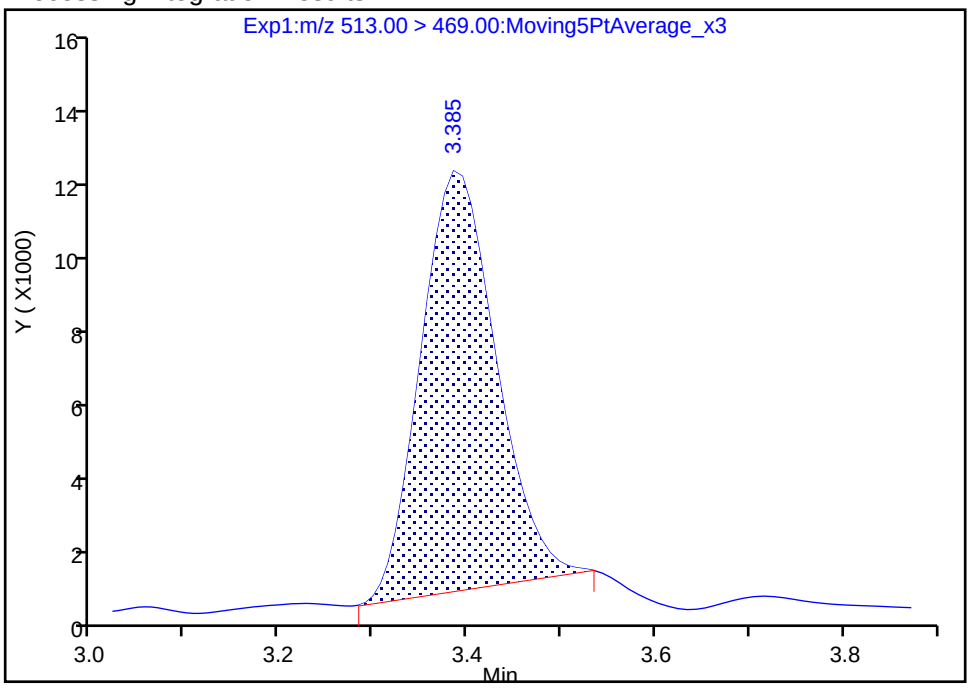
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_005.d
Injection Date: 07-Apr-2018 09:08:59 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

## 24 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

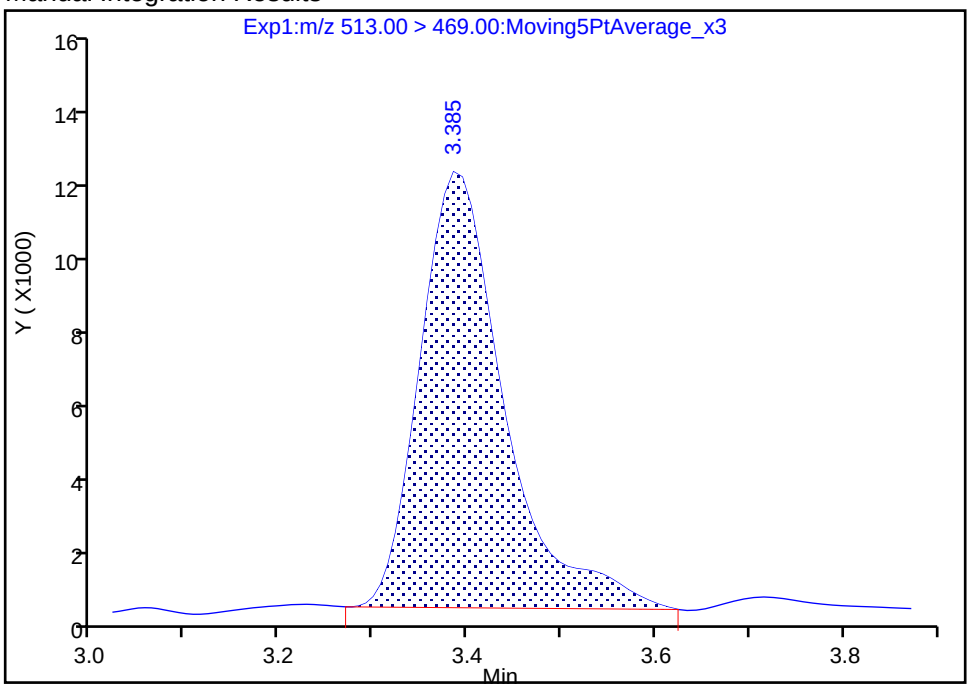
Processing Integration Results

RT: 3.39
Area: 63703
Amount: 0.045641
Amount Units: ng/ml




Manual Integration Results

RT: 3.39
Area: 73823
Amount: 0.052891
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 08:18:43
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216820/3 Calibration Date: 04/07/2018 09:16

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLA_006.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | AveID | 0.9242 | 0.9117 | | 0.987 | 1.00 | -1.3 | 40.0 |
| Perfluoropentanoic acid (PFPeA) | AveID | 1.197 | 1.136 | | 0.949 | 1.00 | -5.1 | 40.0 |
| Perfluorobutanesulfonic acid (PFBS) | AveID | 78.89 | 77.11 | | 0.864 | 0.884 | -2.3 | 50.0 |
| 4:2 FTS | AveID | 17.26 | 17.84 | | 0.966 | 0.934 | 3.4 | 50.0 |
| Perfluorohexanoic acid (PFHxA) | AveID | 1.023 | 1.010 | | 0.987 | 1.00 | -1.3 | 40.0 |
| Perfluoropentanesulfonic acid (PFPeS) | AveID | 71.20 | 71.96 | | 0.948 | 0.938 | 1.1 | 50.0 |
| HFPO-DA (GenX) | AveID | 3.401 | 3.026 | | 0.890 | 1.00 | -11.0 | 40.0 |
| Perfluoroheptanoic acid (PFHpA) | AveID | 1.087 | 1.052 | | 0.969 | 1.00 | -3.1 | 40.0 |
| Perfluorohexanesulfonic acid (PFHxS) | AveID | 1.117 | 1.011 | | 0.824 | 0.910 | -9.5 | 40.0 |
| Adona | AveID | 3.564 | 3.512 | | 0.985 | 1.00 | -1.5 | 50.0 |
| 6:2FTS | AveID | 1.868 | 1.703 | | 0.864 | 0.948 | -8.8 | 40.0 |
| Perfluoroheptanesulfonic Acid (PFHpS) | AveID | 1.333 | 1.299 | | 0.928 | 0.952 | -2.6 | 50.0 |
| Perfluorooctanoic acid (PFOA) | AveID | 1.186 | 1.085 | | 0.915 | 1.00 | -8.5 | 40.0 |
| Perfluorononanoic acid (PFNA) | AveID | 1.029 | 1.018 | | 0.989 | 1.00 | -1.1 | 40.0 |
| Perfluorooctanesulfonic acid (PFOS) | AveID | 1.143 | 1.061 | | 0.861 | 0.928 | -7.2 | 40.0 |
| 9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate | AveID | 1.870 | 1.873 | | 0.934 | 0.932 | 0.2 | 50.0 |
| Perfluorooctane Sulfonamide (FOSA) | AveID | 0.9877 | 1.008 | | 1.02 | 1.00 | 2.0 | 40.0 |
| 8:2FTS | AveID | 1.349 | 1.255 | | 0.891 | 0.958 | -7.0 | 40.0 |
| Perfluorononanesulfonic acid (PFNS) | AveID | 0.8018 | 0.7500 | | 0.898 | 0.960 | -6.5 | 50.0 |
| Perfluorodecanoic acid (PFDA) | AveID | 0.9893 | 0.9656 | | 0.976 | 1.00 | -2.4 | 40.0 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | AveID | 1.054 | 0.9790 | | 0.929 | 1.00 | -7.1 | 40.0 |
| Perfluorodecanesulfonic acid (PFDS) | AveID | 0.6938 | 0.6213 | | 0.863 | 0.964 | -10.5 | 50.0 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | AveID | 0.9171 | 0.9229 | | 1.01 | 1.00 | 0.6 | 40.0 |
| Perfluoroundecanoic acid (PFUnA) | AveID | 0.8023 | 0.7933 | | 0.989 | 1.00 | -1.1 | 40.0 |
| 11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate | AveID | 2.902 | 2.883 | | 0.936 | 0.942 | -0.7 | 50.0 |
| Perfluorododecanoic acid (PFDoA) | AveID | 1.081 | 0.9878 | | 0.914 | 1.00 | -8.6 | 40.0 |
| Perfluorotridecanoic Acid (PFTriA) | AveID | 1.156 | 1.078 | | 0.932 | 1.00 | -6.8 | 50.0 |
| Perfluorotetradecanoic acid (PFTeA) | AveID | 0.2497 | 0.2447 | | 0.980 | 1.00 | -2.0 | 50.0 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | L2ID | | 0.9144 | | 0.944 | 1.00 | -5.6 | 50.0 |

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216820/3  Calibration Date: 04/07/2018 09:16

Instrument ID: A8_N  Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100  ID: 3.00(mm)  Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLA_006.d  Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluoro-n-octadecanoic acid (PFODA) | AveID | 0.9928 | 0.9543 | | 0.961 | 1.00 | -3.9 | 50.0 |
| 13C4 PFBA | Ave | 1.382 | 1.327 | | 2.40 | 2.50 | -4.0 | 50.0 |
| 13C5 PFPeA | Ave | 0.8994 | 0.8687 | | 2.42 | 2.50 | -3.4 | 50.0 |
| 13C3-PFBS | Ave | 0.0206 | 0.0196 | | 2.21 | 2.33 | -4.9 | 50.0 |
| M2-4:2FTS | Ave | 0.1573 | 0.1463 | | 2.17 | 2.34 | -7.0 | 50.0 |
| 13C2 PFHxA | Ave | 0.9916 | 0.9613 | | 2.42 | 2.50 | -3.1 | 50.0 |
| 13C3 HFPO-DA | Ave | 0.0494 | 0.0479 | | 2.43 | 2.50 | -3.0 | 50.0 |
| 13C4-PFHpA | Ave | 0.9533 | 0.9270 | | 2.43 | 2.50 | -2.8 | 50.0 |
| 18O2 PFHxS | Ave | 1.189 | 1.167 | | 2.32 | 2.37 | -1.8 | 50.0 |
| M2-6:2FTS | Ave | 0.2203 | 0.2197 | | 2.37 | 2.38 | -0.3 | 40.0 |
| 13C4 PFOA | Ave | 0.9372 | 0.9483 | | 2.53 | 2.50 | 1.2 | 50.0 |
| 13C4 PFOS | Ave | 0.8257 | 0.8225 | | 2.38 | 2.39 | -0.4 | 50.0 |
| 13C5 PFNA | Ave | 0.7930 | 0.8183 | | 2.58 | 2.50 | 3.2 | 50.0 |
| 13C8 FOSA | Ave | 1.166 | 1.048 | | 2.25 | 2.50 | -10.1 | 50.0 |
| M2-8:2FTS | Ave | 0.2562 | 0.2464 | | 2.30 | 2.40 | -3.8 | 40.0 |
| 13C2 PFDA | Ave | 0.6698 | 0.7122 | | 2.66 | 2.50 | 6.3 | 50.0 |
| d3-NMeFOSAA | Ave | 0.3583 | 0.3965 | | 2.77 | 2.50 | 10.7 | 50.0 |
| 13C2 PFUnA | Ave | 0.5468 | 0.5853 | | 2.68 | 2.50 | 7.1 | 50.0 |
| d5-NEtFOSAA | Ave | 0.3760 | 0.4086 | | 2.72 | 2.50 | 8.7 | 50.0 |
| 13C2 PFDoA | Ave | 0.6087 | 0.6571 | | 2.70 | 2.50 | 7.9 | 50.0 |
| 13C2-PFTeDA | Ave | 0.7733 | 0.8065 | | 2.61 | 2.50 | 4.3 | 50.0 |
| 13C2-PFHxDA | Ave | 1.194 | 1.300 | | 2.72 | 2.50 | 8.9 | 50.0 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 07-Apr-2018 09:16:48 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 08:26:42 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 08:19:27

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.431 | 1.431 | 0.0 | 1.000 | 2370317 | 0.9865 | | 98.7 | 1091 | |
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.431 | 1.425 | 0.006 | 1.000 | 6499641 | 2.40 | | 96.0 | 52540 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | M |
| 262.90 > 219.00 | 1.704 | 1.704 | 0.0 | 1.005 | 1932254 | 0.9488 | | 94.9 | 1333 | M |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.695 | 1.694 | 0.001 | 0.558 | 4253852 | 2.41 | | 96.6 | 73978 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.740 | 1.740 | 0.0 | 1.005 | 2615190 | 0.8640 | | 97.7 | 11610 | |
| 298.90 > 99.00 | 1.740 | 1.740 | 0.0 | 1.005 | 1124640 | | 2.33(1.25-3.74) | | 7569 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.731 | 1.730 | 0.001 | 1.000 | 89199 | 2.21 | | 95.1 | 571 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.951 | 1.951 | 0.0 | 1.000 | 639325 | 0.9657 | | 103 | 35209 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.951 | 1.950 | 0.001 | 1.000 | 669132 | 2.17 | | 93.0 | 5024 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.983 | 1.983 | 0.0 | 1.000 | 1901993 | 0.9872 | | 98.7 | 3572 | |
| 313.00 > 119.00 | 1.983 | 1.983 | 0.0 | 1.000 | 178034 | | 10.68(5.03-15.10) | | 2852 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.983 | 1.982 | 0.001 | 1.000 | 4707011 | 2.42 | | 96.9 | 122408 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.005 | 2.005 | 0.0 | 1.000 | 2589444 | 0.9479 | | 101 | 21485 | |
| 349.00 > 99.00 | 2.005 | 2.005 | 0.0 | 1.000 | 923121 | | 2.81(1.36-4.07) | | 10966 | |
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.085 | 2.085 | 0.0 | 1.000 | 284014 | 0.8896 | | 89.0 | 1827 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.085 | 2.073 | 0.012 | 1.000 | 234662 | 2.43 | | 97.0 | 4457 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.323 | 2.323 | 0.0 | 1.000 | 2103537 | 0.8239 | | 90.5 | 5208 | |
| 399.00 > 99.00 | 2.323 | 2.323 | 0.0 | 1.000 | 719020 | | 2.93(1.50-4.49) | | 2923 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.310 | 2.310 | 0.0 | 1.000 | 1911065 | 0.9687 | | 96.9 | 2226 | |
| 363.00 > 169.00 | 2.310 | 2.310 | 0.0 | 1.000 | 742694 | | 2.57(1.13-3.40) | | 3678 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.310 | 2.308 | 0.002 | 1.000 | 4539395 | 2.43 | | 97.2 | 71587 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.323 | 2.321 | 0.002 | 1.000 | 5405811 | 2.32 | | 98.2 | 77135 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.349 | 2.349 | 0.0 | 1.000 | 5657753 | 0.9854 | | 98.5 | 90838 | |
| 377.00 > 85.00 | 2.349 | 2.349 | 0.0 | 1.000 | 3296577 | | 1.72(0.84-2.53) | | 47231 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.637 | 2.637 | 0.0 | 1.000 | 694564 | 0.8642 | | 91.2 | 8229 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.637 | 2.637 | 0.0 | 1.000 | 1022016 | 2.37 | | 99.7 | 14109 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.661 | 2.661 | 0.0 | | 4896716 | 2.50 | | | 86782 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.669 | 2.660 | 0.009 | 1.000 | 4643519 | 2.53 | | 101 | 117682 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.669 | 2.669 | 0.0 | 1.000 | 2015457 | 0.9151 | | 91.5 | 830 | |
| 413.00 > 169.00 | 2.669 | 2.669 | 0.0 | 1.000 | 1069869 | | 1.88(0.84-2.52) | | 3338 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.669 | 2.669 | 0.0 | 1.000 | 1991736 | 0.9276 | | 97.4 | 14363 | |
| 449.00 > 99.00 | 2.669 | 2.669 | 0.0 | 1.000 | 535362 | | 3.72(1.94-5.82) | | 9601 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.032 | 3.032 | 0.0 | 0.998 | 1631045 | 0.9890 | | 98.9 | 4529 | |
| 463.00 > 169.00 | 3.032 | 3.032 | 0.0 | 0.998 | 375628 | | 4.34(1.90-5.69) | | 11471 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | M |
| 499.00 > 80.00 | 3.032 | 3.032 | 0.0 | 1.000 | 1585783 | 0.8614 | | 92.8 | 16256 | M |
| 499.00 > 99.00 | 3.032 | 3.032 | 0.0 | 1.000 | 348079 | | 4.56(2.31-6.93) | | 5620 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.032 | 3.023 | 0.009 | 1.000 | 3850506 | 2.38 | | 99.6 | 20753 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.039 | 3.030 | 0.009 | 1.000 | 4006845 | 2.58 | | 103 | 105405 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.248 | 3.248 | 0.0 | 1.000 | 2812818 | 0.9336 | | 100 | 42517 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.371 | 3.371 | 0.0 | 1.000 | 2068938 | 1.02 | | 102 | 31483 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.371 | 3.360 | 0.011 | 1.000 | 5132110 | 2.25 | | 89.9 | 52720 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.380 | 3.380 | 0.0 | 1.000 | 1159990 | 0.8980 | | 93.5 | 15161 | |
| 549.00 > 99.00 | 3.380 | 3.380 | 0.0 | 1.000 | 456182 | | 2.54(1.33-3.97) | | 9667 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.380 | 3.380 | 0.0 | 1.000 | 580024 | 0.8911 | | 93.0 | 23102 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.380 | 3.378 | 0.002 | 1.000 | 1155772 | 2.30 | | 96.2 | 13180 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.399 | 3.399 | 0.0 | 1.003 | 1346858 | 0.9760 | | 97.6 | 4384 | |
| 513.00 > 169.00 | 3.389 | 3.399 | -0.010 | 1.000 | 244197 | | 5.52(2.36-7.09) | | 7959 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.389 | 3.387 | 0.002 | 1.000 | 3487272 | 2.66 | | 106 | 70848 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.548 | 3.537 | 0.011 | 1.000 | 1941667 | 2.77 | | 111 | 28230 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.548 | 3.548 | 0.0 | 1.000 | 760382 | 0.9288 | | 92.9 | 4970 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.709 | 3.709 | 0.0 | 1.000 | 964916 | 0.8632 | | 89.5 | 16730 | |
| 599.00 > 99.00 | 3.709 | 3.709 | 0.0 | 1.000 | 334971 | | 2.88(1.39-4.16) | | 8635 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.720 | 3.707 | 0.013 | 1.000 | 2000947 | 2.72 | | 109 | 13297 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.720 | 3.720 | 0.0 | 1.000 | 909504 | 0.9888 | | 98.9 | 4119 | |
| 563.00 > 169.00 | 3.720 | 3.720 | 0.0 | 1.000 | 243624 | | 3.73(2.12-6.36) | | 5369 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.720 | 3.720 | 0.0 | 1.000 | 738664 | 1.01 | | 101 | 7051 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.720 | 3.718 | 0.002 | 1.000 | 2866124 | 2.68 | | 107 | 73142 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.876 | 3.876 | 0.0 | 1.000 | 4374967 | 0.9356 | | 99.3 | 69288 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.020 | 4.020 | 0.0 | 1.000 | 1271255 | 0.9140 | | 91.4 | 935 | |
| 613.00 > 169.00 | 4.020 | 4.020 | 0.0 | 1.000 | 317227 | | 4.01(2.13-6.40) | | 3614 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.020 | 4.008 | 0.012 | 1.000 | 3217430 | 2.70 | | 108 | 24066 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.282 | 4.282 | 0.0 | 1.000 | 1387070 | 0.9323 | | 93.2 | 831 | |
| 663.00 > 169.00 | 4.282 | 4.282 | 0.0 | 1.000 | 448784 | | 3.09(1.25-3.76) | | 4296 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.522 | 4.522 | 0.0 | 1.000 | 386613 | 0.9799 | | 98.0 | 2921 | |
| 713.00 > 219.00 | 4.512 | 4.522 | -0.010 | 0.998 | 271077 | | 1.43(0.71-2.13) | | 3371 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.522 | 4.511 | 0.011 | 1.000 | 3949366 | 2.61 | | 104 | 19757 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.932 | 4.932 | 0.0 | 1.000 | 2328054 | 0.9443 | | 94.4 | 517 | |
| 813.00 > 169.00 | 4.932 | 4.932 | 0.0 | 1.000 | 377700 | | 6.16(2.86-8.58) | | 2022 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.932 | 4.922 | 0.010 | 1.000 | 6364850 | 2.72 | | 109 | 15718 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.285 | 5.285 | 0.0 | 1.000 | 2429538 | 0.9612 | | 96.1 | 431 | |
| 913.00 > 169.00 | 5.285 | 5.285 | 0.0 | 1.000 | 306025 | | 7.94(3.83-11.48) | | 2167 | |

## QC Flag Legend

Review Flags

M - Manually Integrated

## Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 08:26:44 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_006.d

Injection Date: 07-Apr-2018 09:16:48 Instrument ID: A8_N

Lims ID: CCV L4

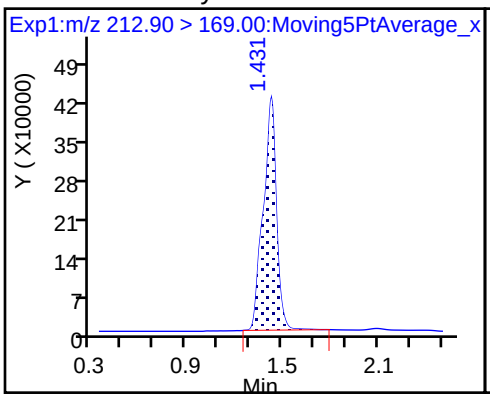
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

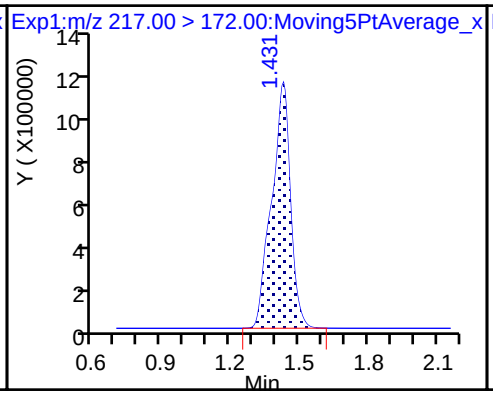
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

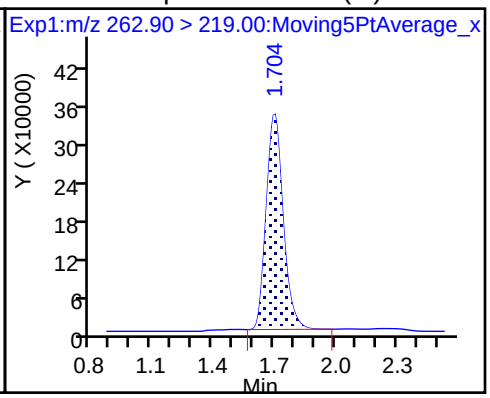
2 Perfluorobutyric acid



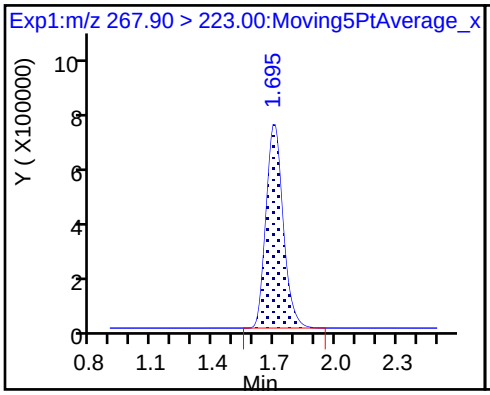

D 1 13C4 PFBA



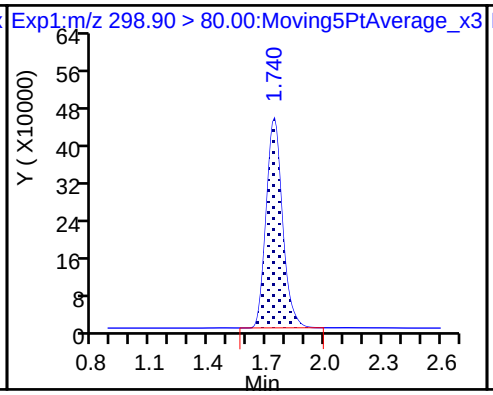

4 Perfluoropentanoic acid (M)



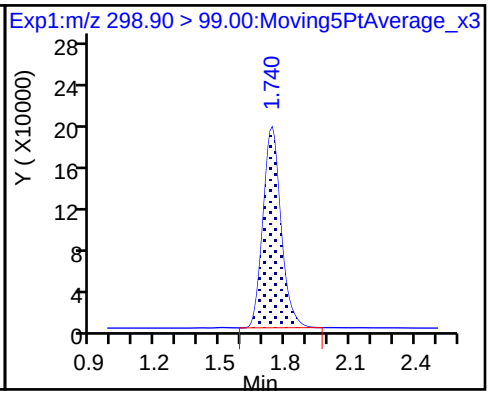

D 3 13C5-PFPeA



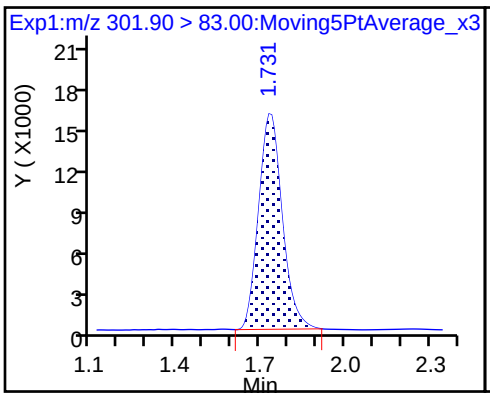

5 Perfluorobutanesulfonic acid



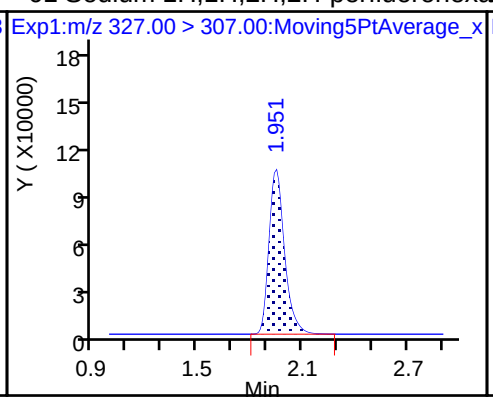

5 Perfluorobutanesulfonic acid



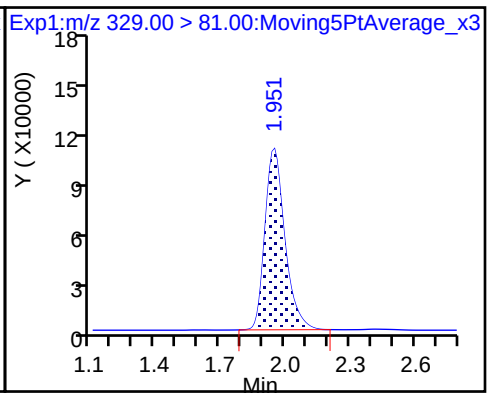

D 47 13C3-PFBS



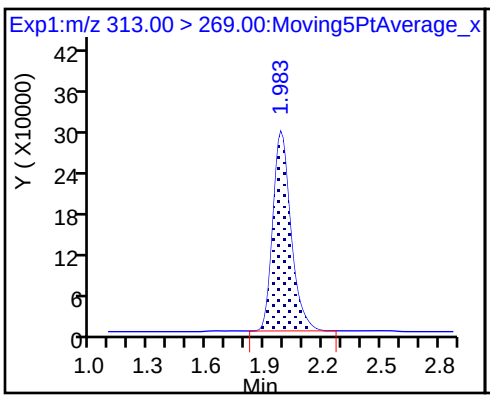

61 Sodium 1H,1H,2H,2H-perfluorohexane



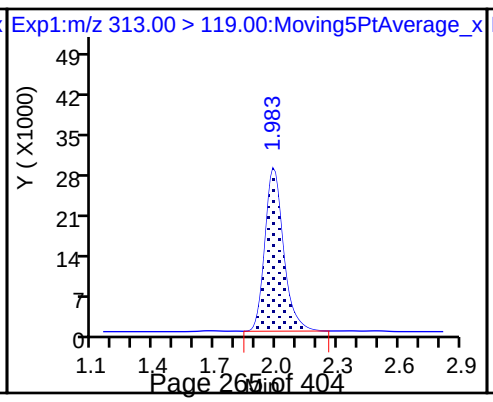

D 60 M2-4:2FTS



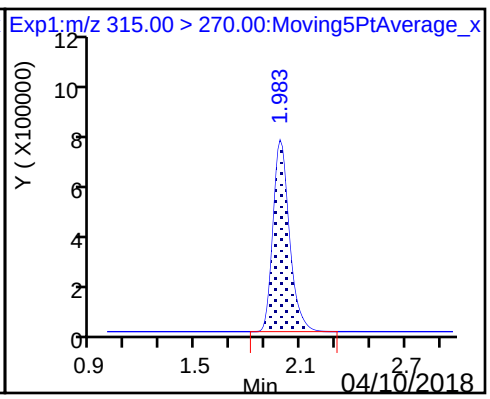

6 Perfluorohexanoic acid



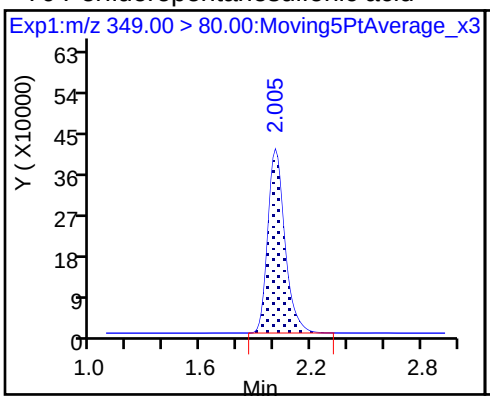

6 Perfluorohexanoic acid



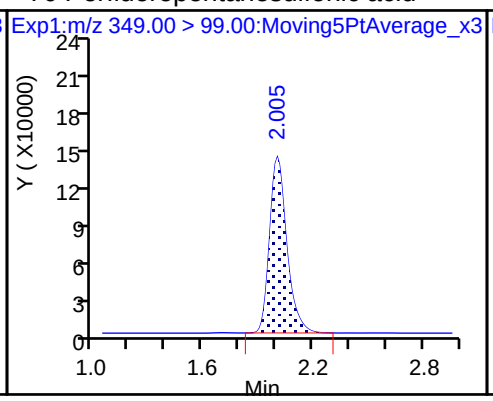

D 7 13C2 PFHxA



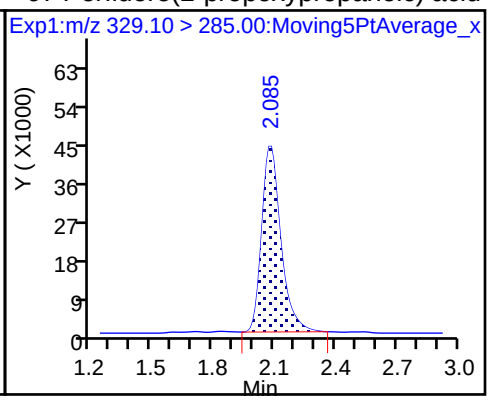
70 Perfluoropentanesulfonic acid



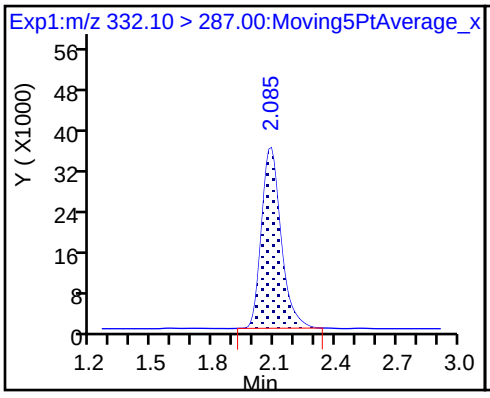

70 Perfluoropentanesulfonic acid



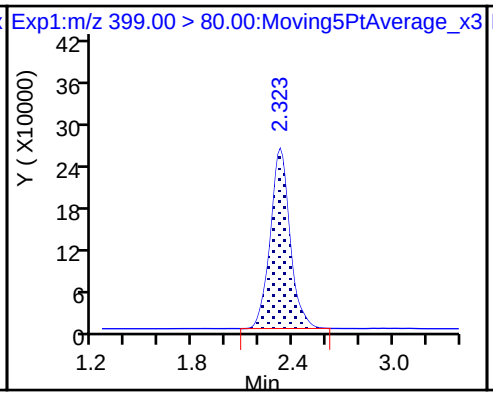

67 Perfluoro(2-propoxypropanoic) acid



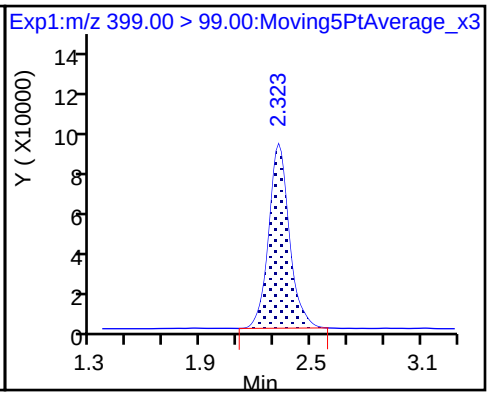

D 64 13C3 HFPO-DA



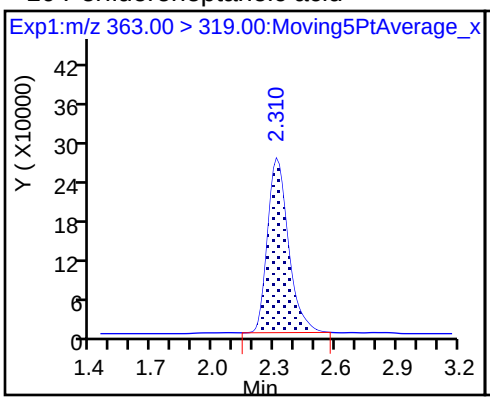

8 Perfluorohexanesulfonic acid



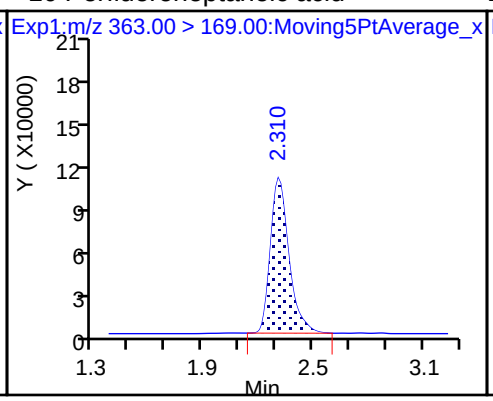

8 Perfluorohexanesulfonic acid



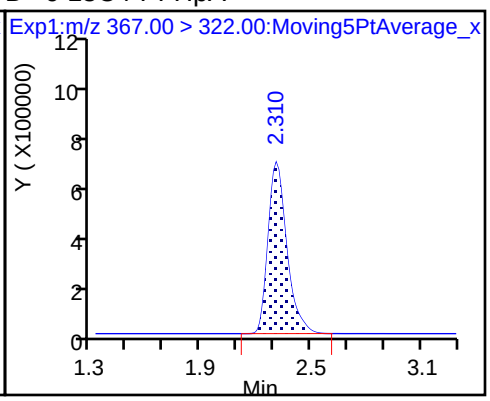

10 Perfluoroheptanoic acid



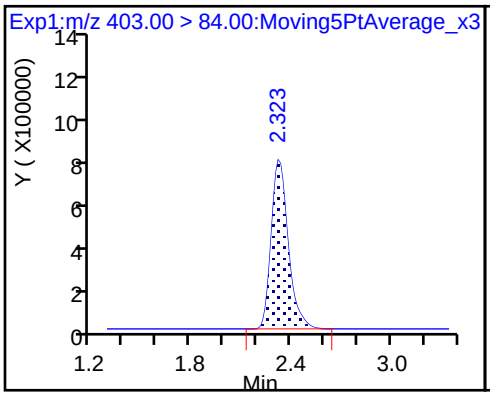

10 Perfluoroheptanoic acid



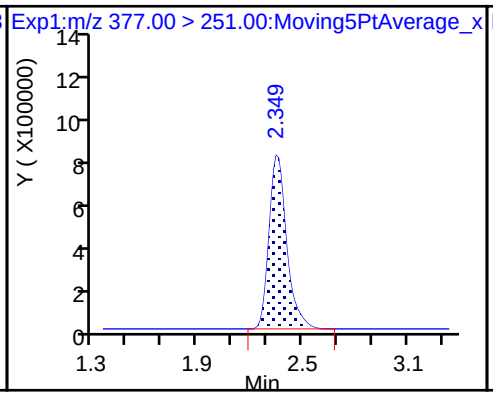

D 9 13C4-PFHpA



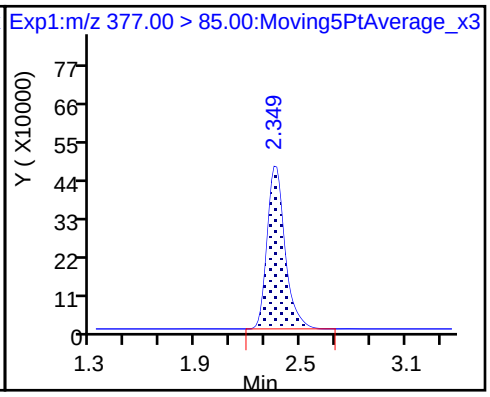

D 11 18O2 PFHxS



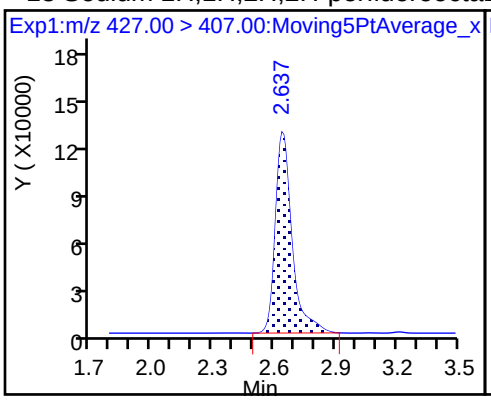

65 Adona



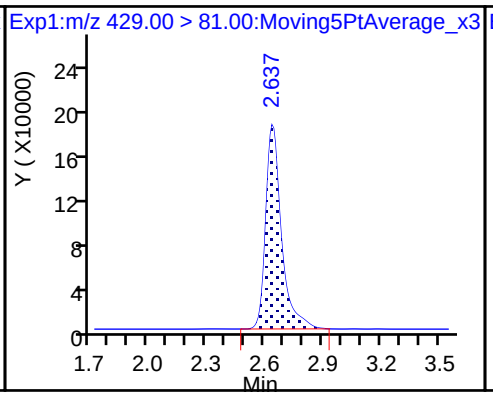

65 Adona



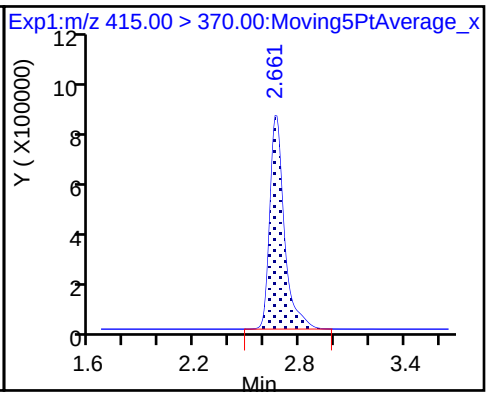
13 Sodium 1H,1H,2H,2H-perfluorooctane



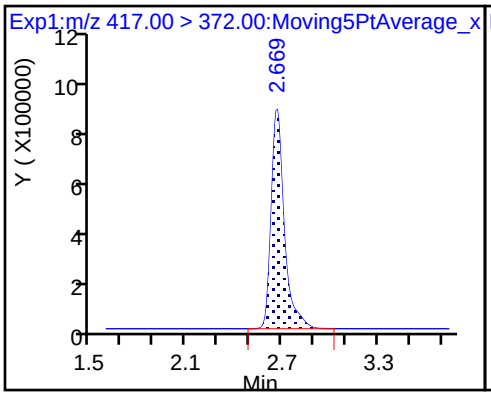

D 12 M2-6:2FTS



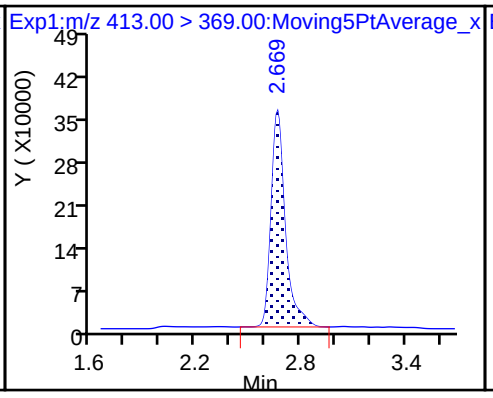

* 62 13C2-PFOA



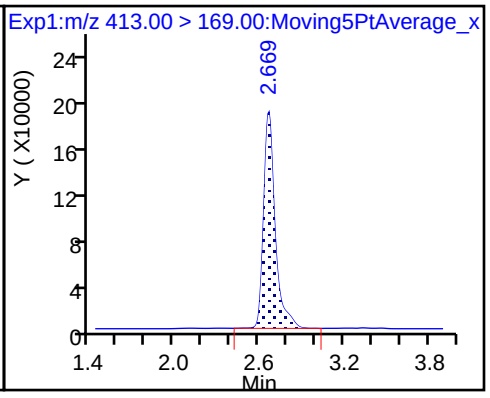

D 14 13C4 PFOA



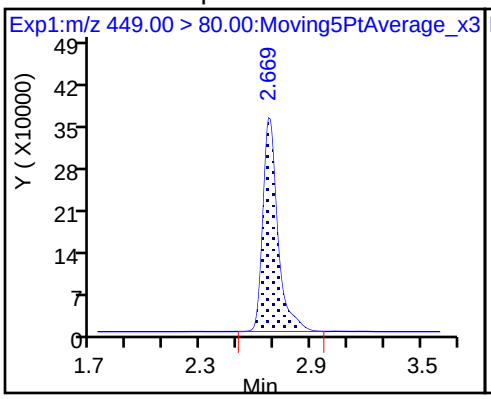

15 Perfluorooctanoic acid



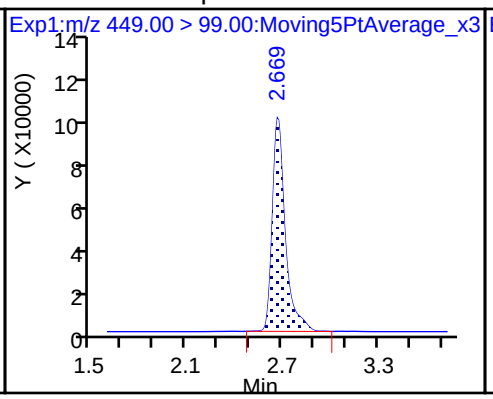

15 Perfluorooctanoic acid



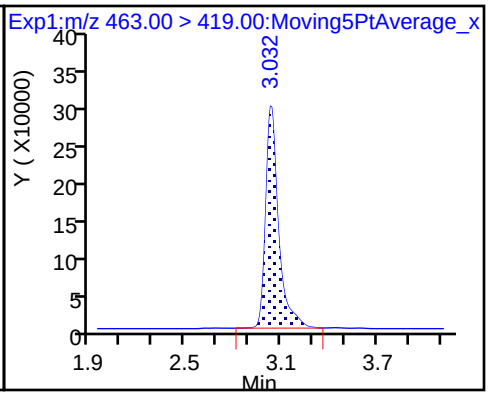

16 Perfluoroheptanesulfonic acid



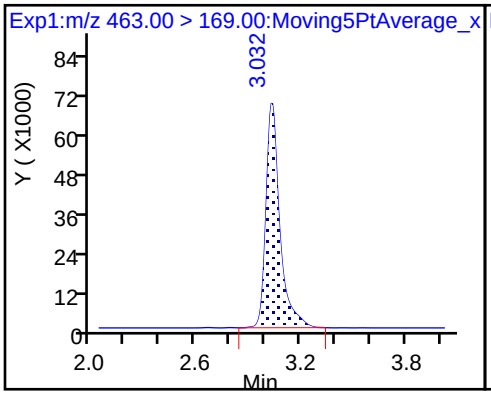

16 Perfluoroheptanesulfonic acid



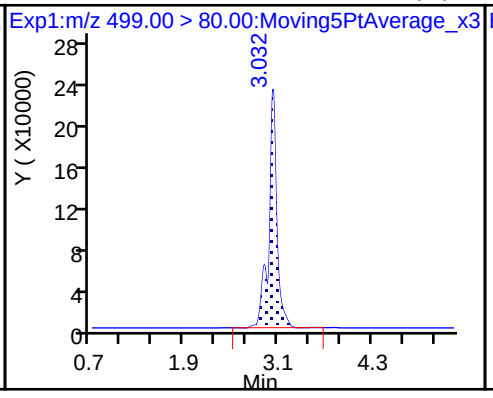

20 Perfluorononanoic acid



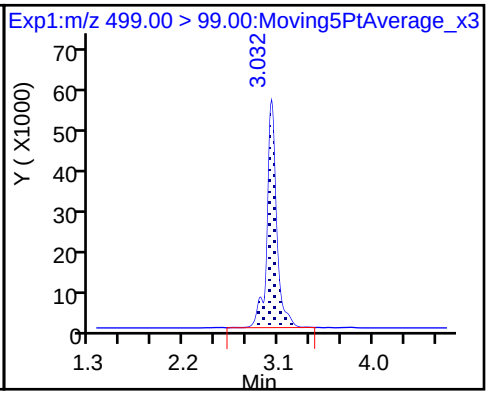

20 Perfluorononanoic acid



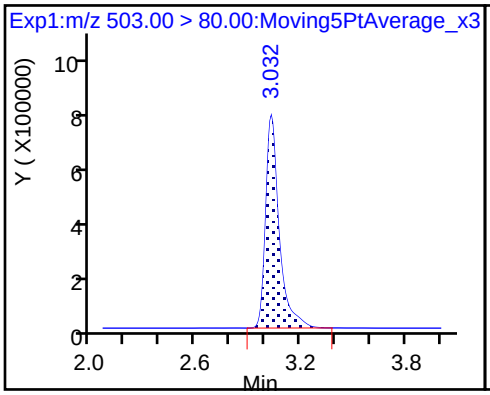

17 Perfluorooctane sulfonic acid (M)



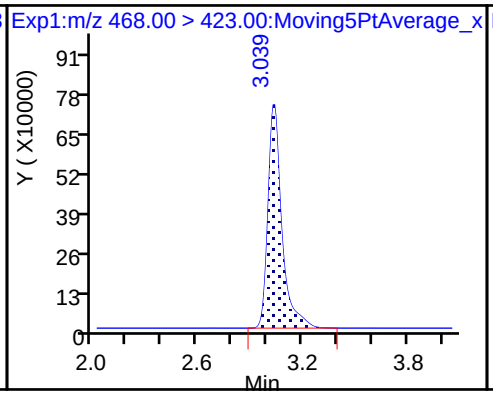

17 Perfluorooctane sulfonic acid



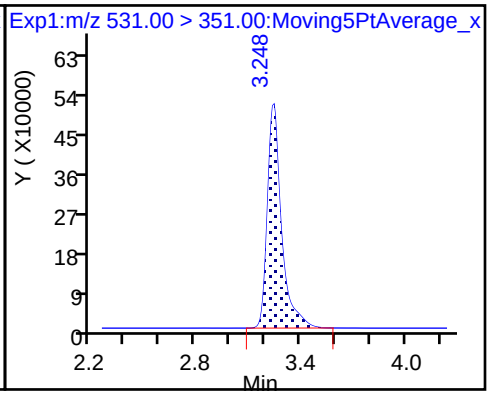
D 18 13C4 PFOS



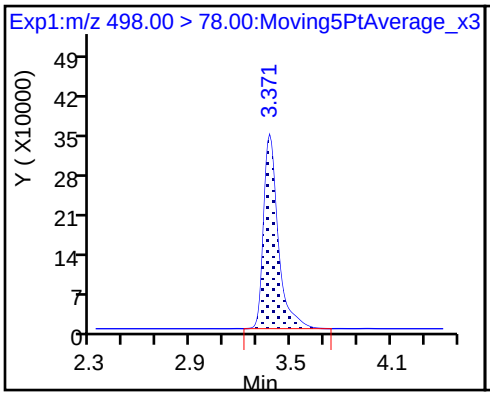

D 19 13C5 PFNA



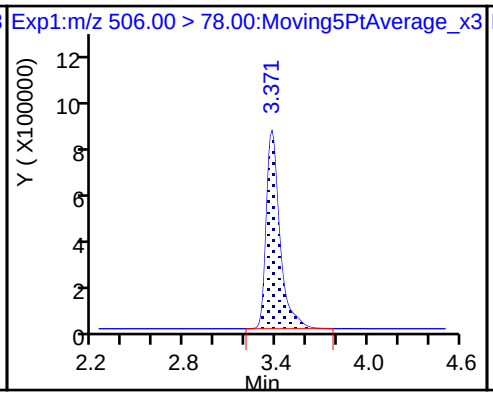

69 9-Chlorohexadecafluoro-3-oxanonane



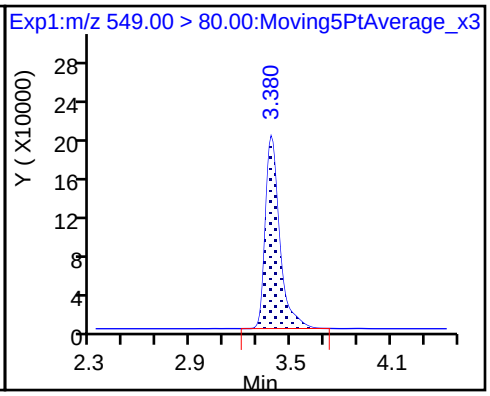

22 Perfluorooctane Sulfonamide



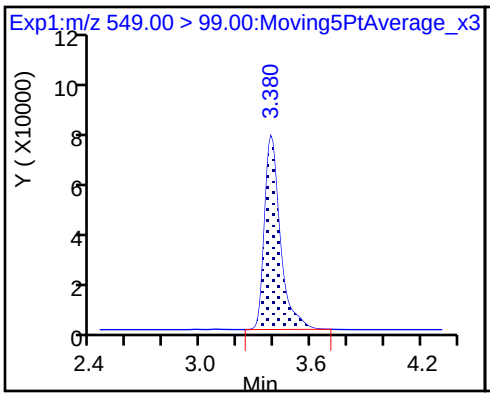

D 21 13C8 FOSA



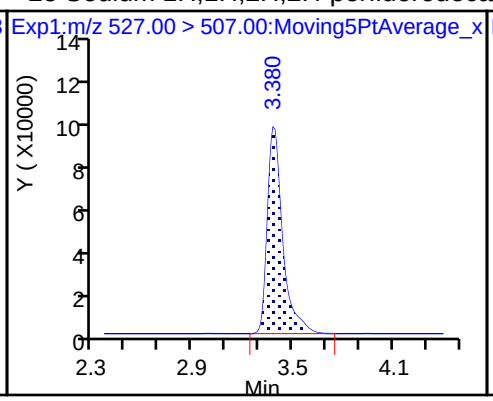

68 Perfluorononanesulfonic acid



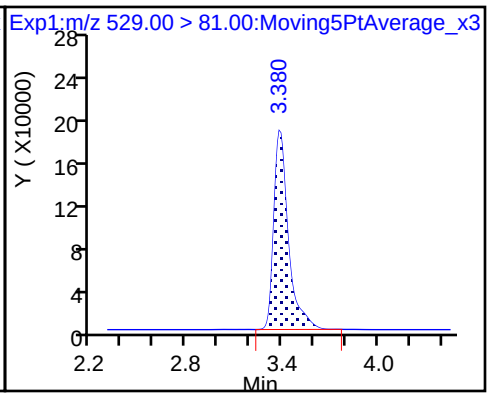

68 Perfluorononanesulfonic acid



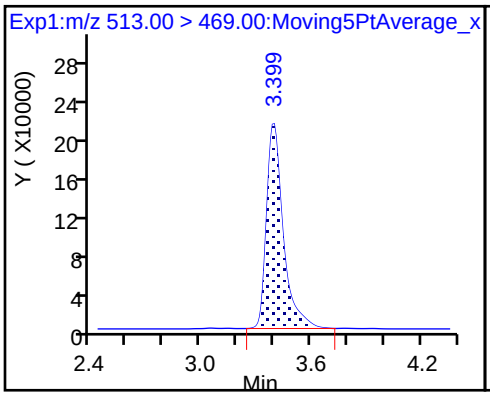

25 Sodium 1H,1H,2H,2H-perfluorodecane



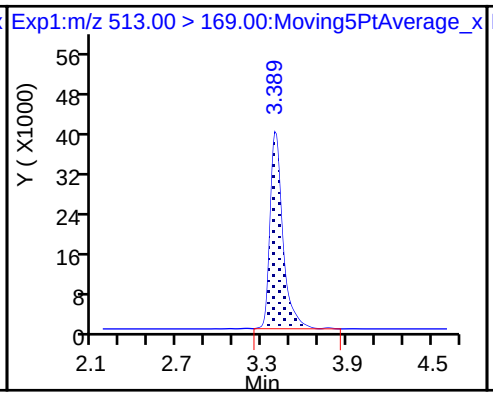

D 26 M2-8:2FTS



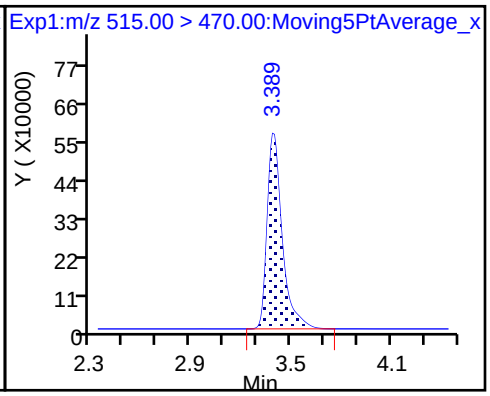

24 Perfluorodecanoic acid



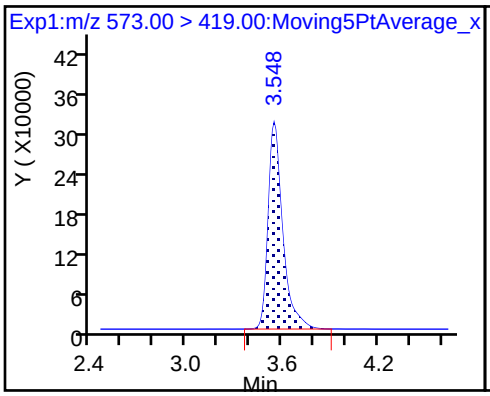

24 Perfluorodecanoic acid



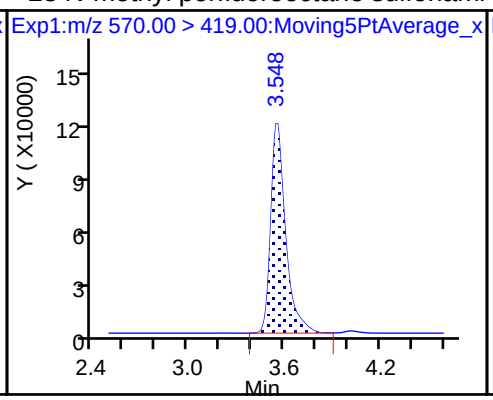

D 23 13C2 PFDA



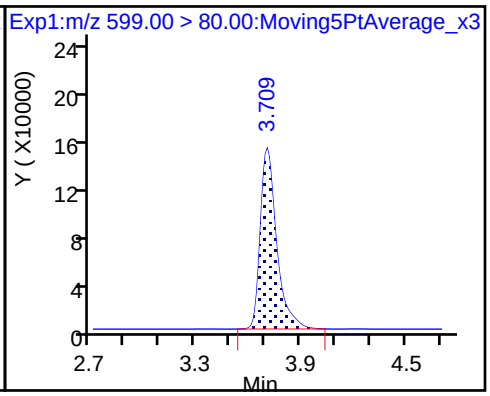
D 27 d3-NMeFOSAA



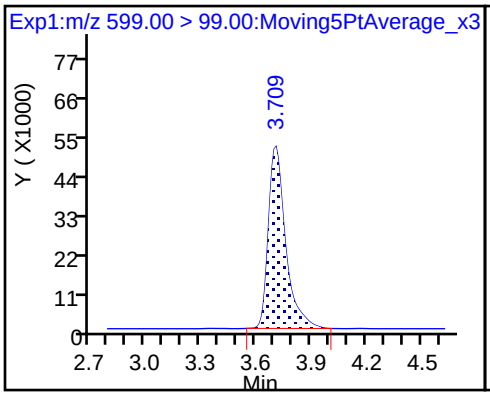

28 N-methyl perfluorooctane sulfonami



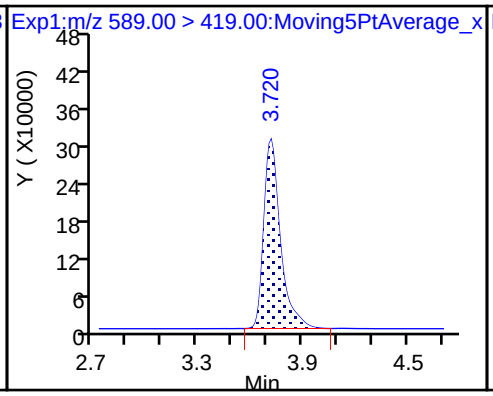

29 Perfluorodecane Sulfonic acid



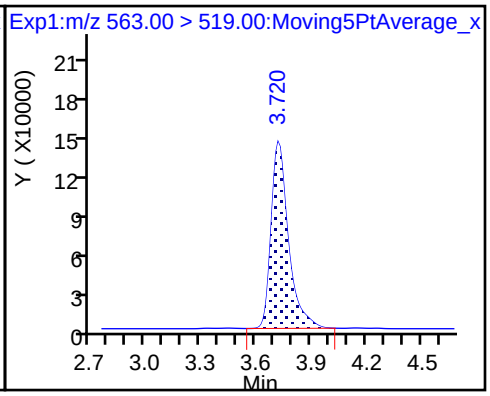

29 Perfluorodecane Sulfonic acid



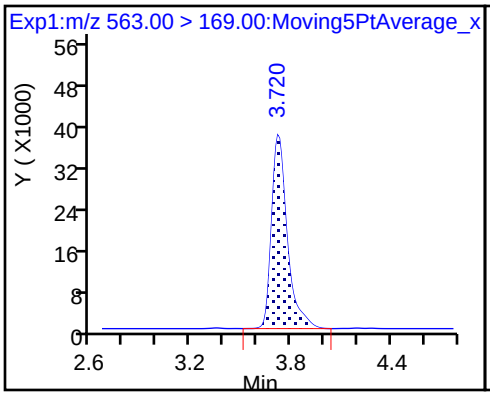

D 32 d5-NEtFOSAA



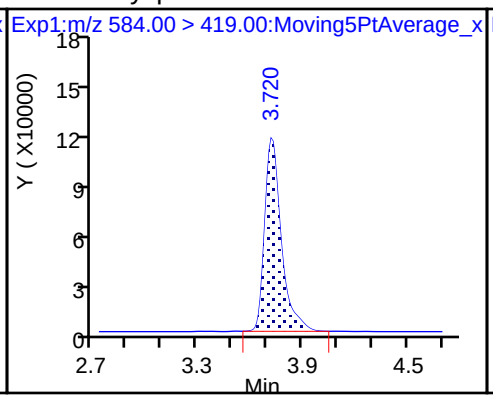

31 Perfluoroundecanoic acid



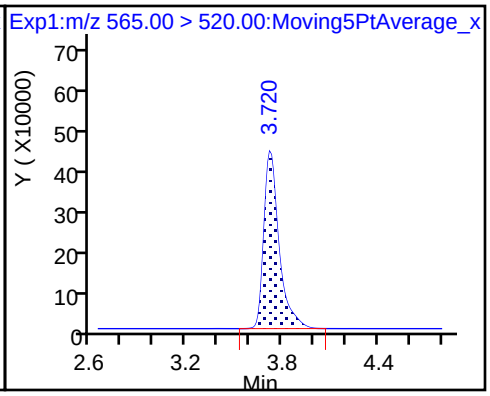

31 Perfluoroundecanoic acid



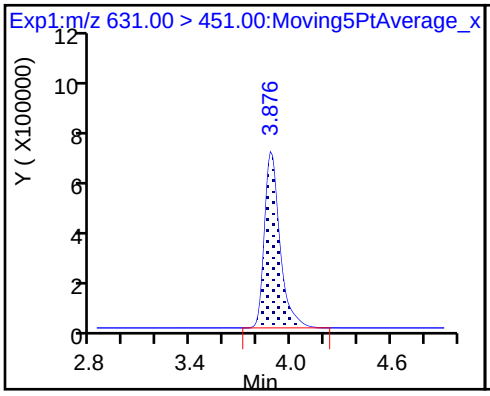

33 N-ethyl perfluorooctane sulfonamid



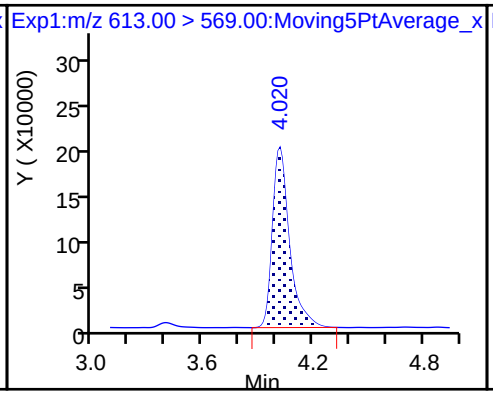

D 30 13C2 PFUnA



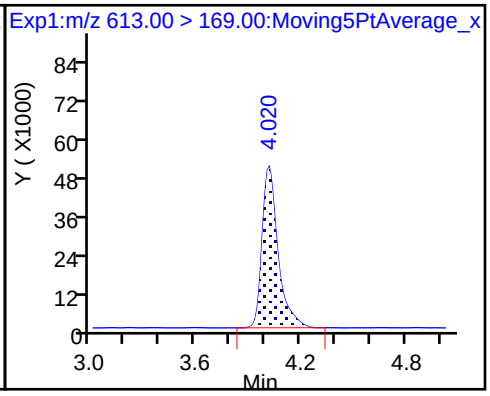

66 11-Chloroeicosafluoro-3-oxaundecan



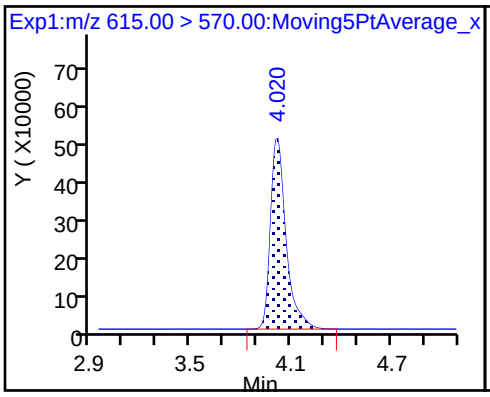

37 Perfluorododecanoic acid



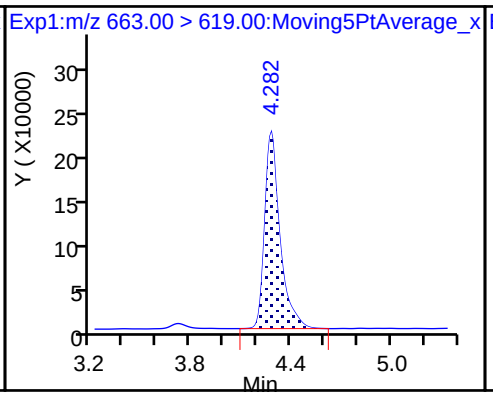

37 Perfluorododecanoic acid



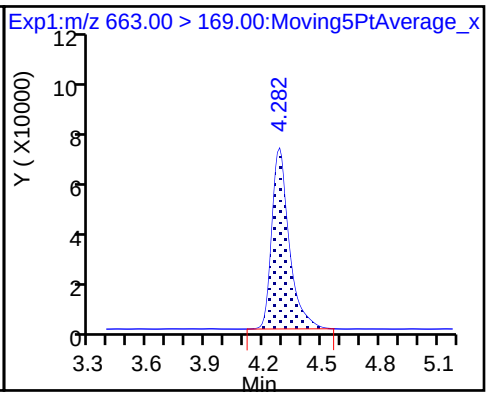
D 36 13C2 PFDoA



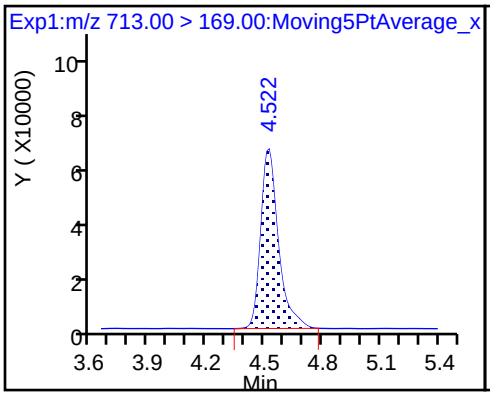

41 Perfluorotridecanoic acid



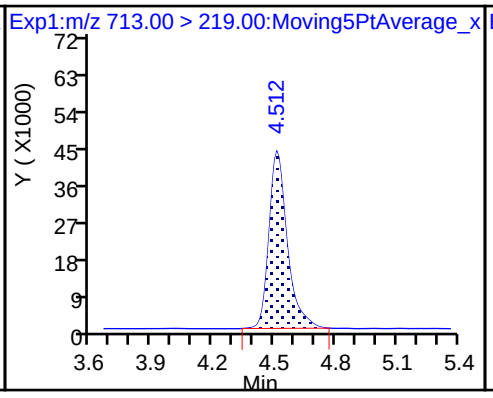

41 Perfluorotridecanoic acid



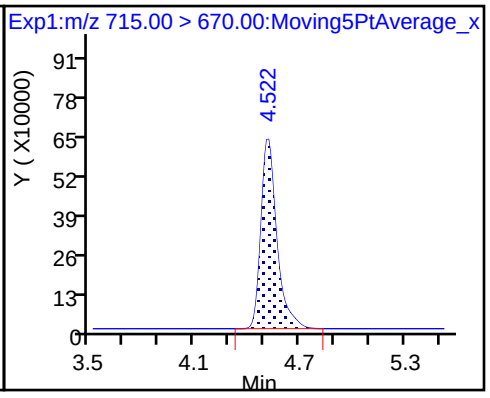

42 Perfluorotetradecanoic acid



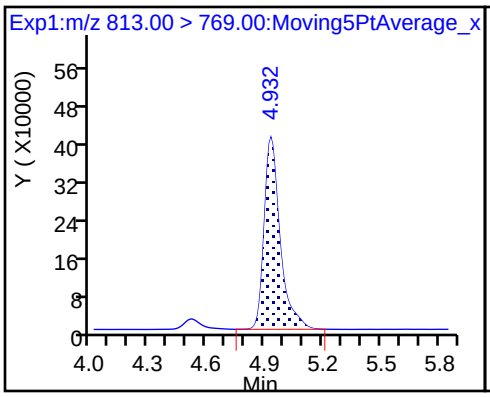

42 Perfluorotetradecanoic acid



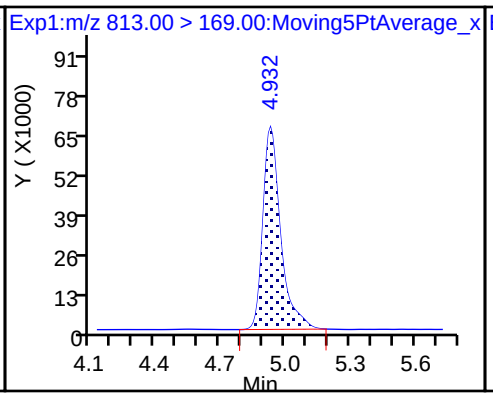

D 43 13C2-PFTeDA



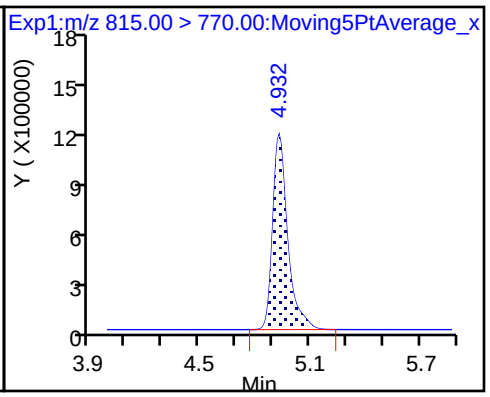

45 Perfluorohexadecanoic acid



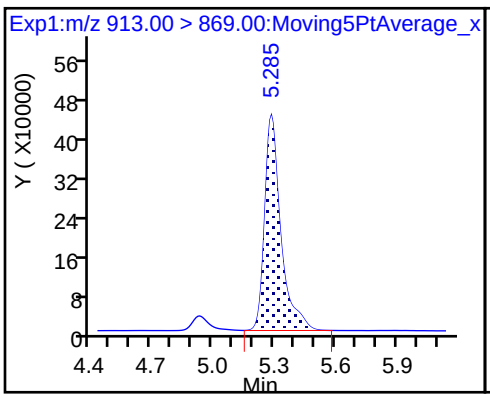

45 Perfluorohexadecanoic acid



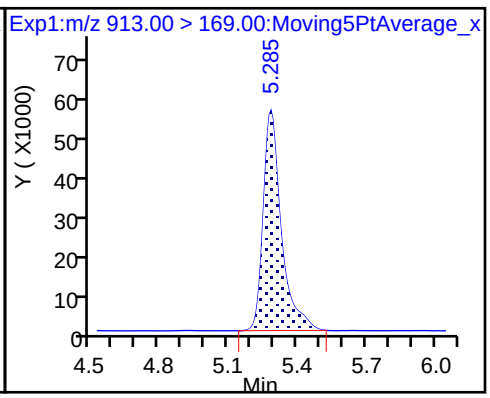

D 44 13C2-PFHxDA




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

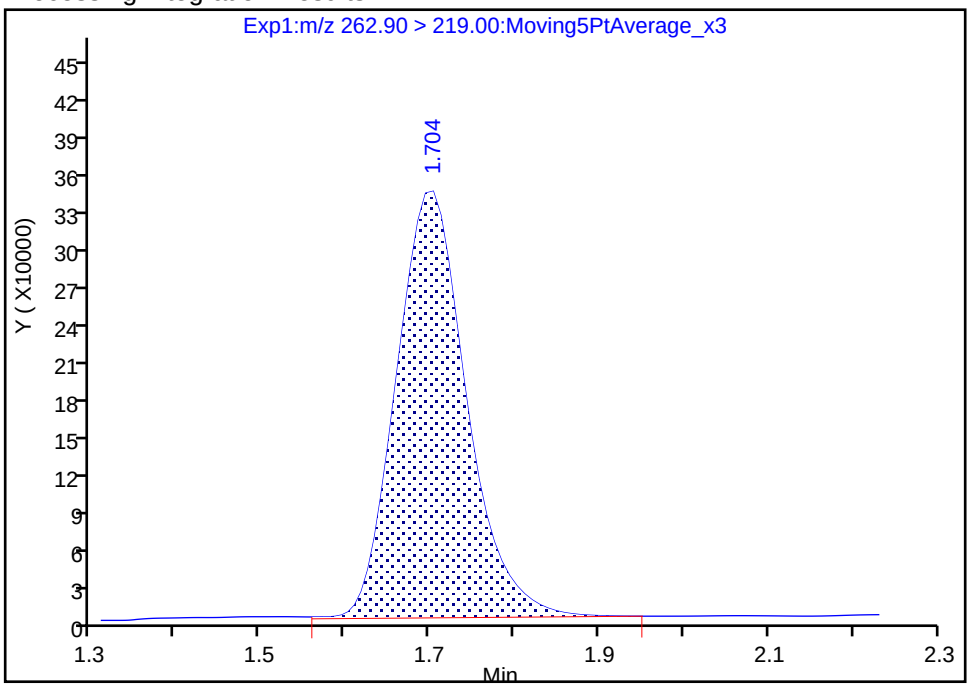
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_006.d
Injection Date: 07-Apr-2018 09:16:48 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

## 4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

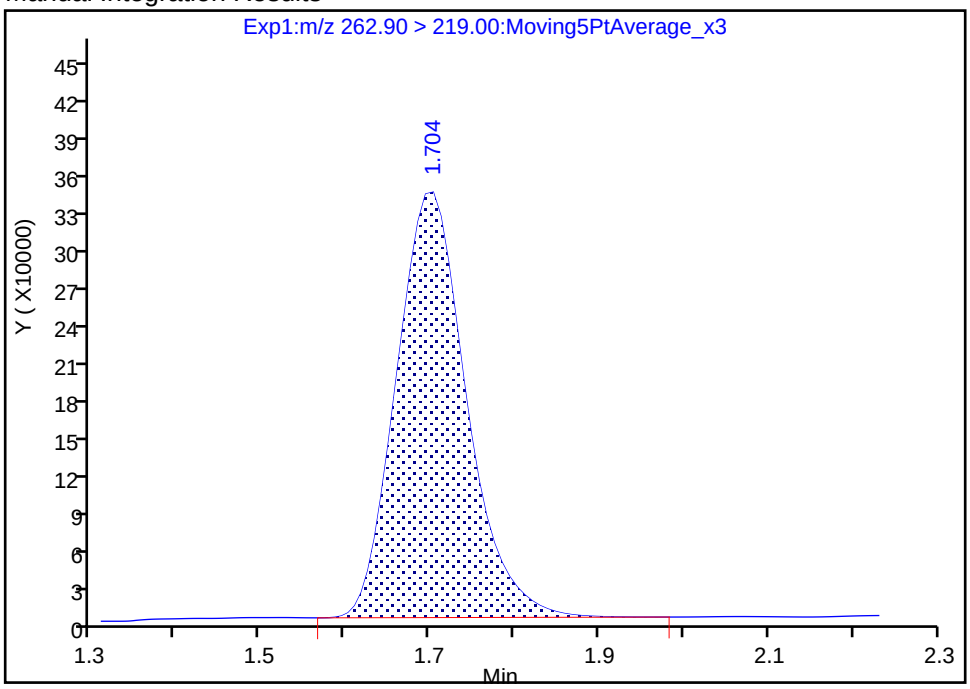
Processing Integration Results

RT: 1.70
Area: 1948838
Amount: 0.956913
Amount Units: ng/ml




Manual Integration Results

RT: 1.70
Area: 1932254
Amount: 0.948770
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 08:19:10
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

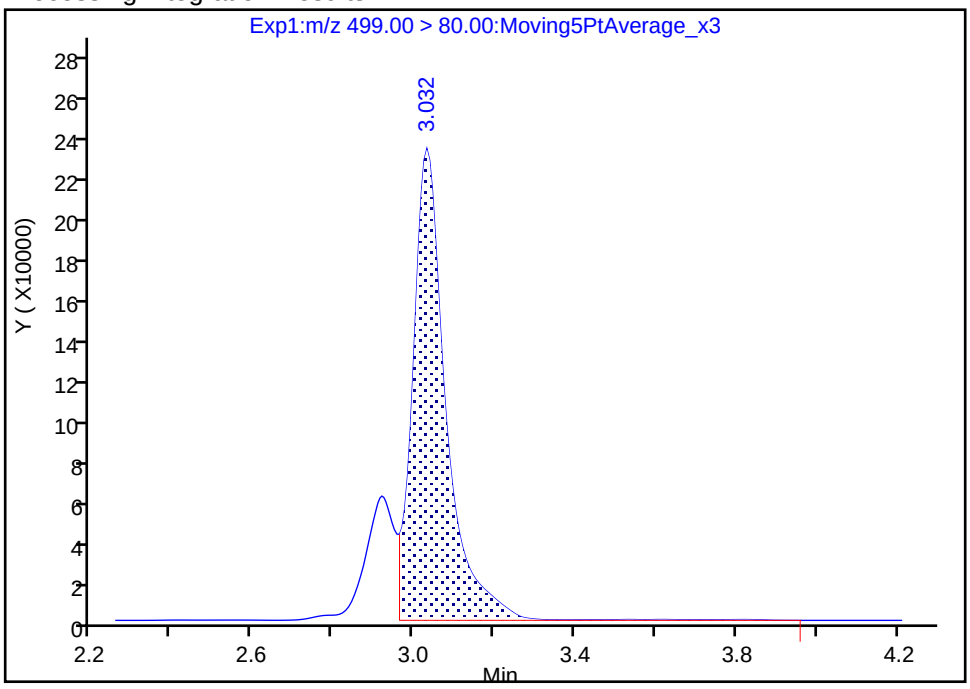
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b\2018.04.07LLA_006.d
Injection Date: 07-Apr-2018 09:16:48 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

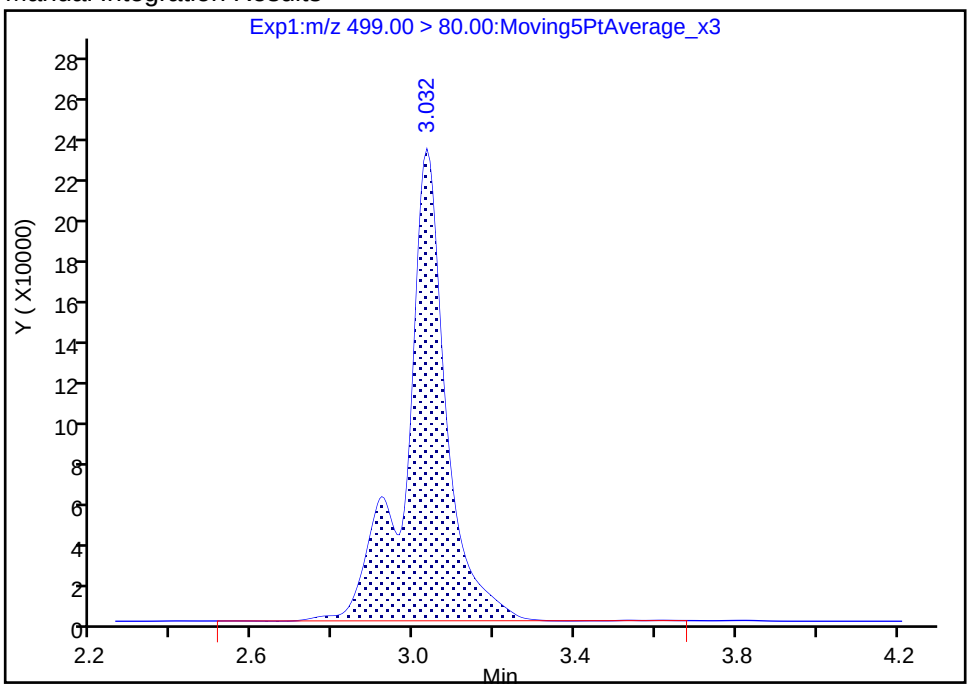
Processing Integration Results

RT: 3.03
Area: 1295945
Amount: 0.703975
Amount Units: ng/ml




Manual Integration Results

RT: 3.03
Area: 1585783
Amount: 0.861419
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 08:19:19
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216860/1 Calibration Date: 04/07/2018 14:45

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLA1_047.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | AveID | 0.9242 | 0.9562 | | 2.59 | 2.50 | 3.5 | 40.0 |
| Perfluoropentanoic acid (PFPeA) | AveID | 1.197 | 1.158 | | 2.42 | 2.50 | -3.2 | 40.0 |
| Perfluorobutanesulfonic acid (PFBS) | AveID | 78.89 | 82.16 | | 2.30 | 2.21 | 4.1 | 50.0 |
| 4:2 FTS | AveID | 17.26 | 17.82 | | 2.41 | 2.34 | 3.3 | 50.0 |
| Perfluorohexanoic acid (PFHxA) | AveID | 1.023 | 1.029 | | 2.51 | 2.50 | 0.6 | 40.0 |
| Perfluoropentanesulfonic acid (PFPeS) | AveID | 71.20 | 74.54 | | 2.46 | 2.35 | 4.7 | 50.0 |
| Perfluoroheptanoic acid (PFHpA) | AveID | 1.087 | 1.081 | | 2.49 | 2.50 | -0.5 | 40.0 |
| Perfluorohexanesulfonic acid (PFHxS) | AveID | 1.117 | 1.080 | | 2.20 | 2.28 | -3.3 | 40.0 |
| 6:2FTS | AveID | 1.868 | 1.739 | | 2.21 | 2.37 | -6.9 | 40.0 |
| Perfluorooctanoic acid (PFOA) | AveID | 1.186 | 1.144 | | 2.41 | 2.50 | -3.5 | 40.0 |
| Perfluoroheptanesulfonic Acid (PFHpS) | AveID | 1.333 | 1.370 | | 2.45 | 2.38 | 2.8 | 50.0 |
| Perfluorooctanesulfonic acid (PFOS) | AveID | 1.143 | 1.103 | | 2.24 | 2.32 | -3.5 | 40.0 |
| Perfluorononanoic acid (PFNA) | AveID | 1.029 | 1.001 | | 2.43 | 2.50 | -2.7 | 40.0 |
| Perfluorooctane Sulfonamide (FOSA) | AveID | 0.9877 | 1.029 | | 2.60 | 2.50 | 4.1 | 40.0 |
| 8:2FTS | AveID | 1.349 | 1.253 | | 2.23 | 2.40 | -7.1 | 40.0 |
| Perfluorononanesulfonic acid (PFNS) | AveID | 0.8018 | 0.8151 | | 2.44 | 2.40 | 1.7 | 50.0 |
| Perfluorodecanoic acid (PFDA) | AveID | 0.9893 | 0.9648 | | 2.44 | 2.50 | -2.5 | 40.0 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | AveID | 1.054 | 1.060 | | 2.51 | 2.50 | 0.5 | 40.0 |
| Perfluorodecanesulfonic acid (PFDS) | AveID | 0.6938 | 0.6899 | | 2.40 | 2.41 | -0.6 | 50.0 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | AveID | 0.9171 | 0.9247 | | 2.52 | 2.50 | 0.8 | 40.0 |
| Perfluoroundecanoic acid (PFUnA) | AveID | 0.8023 | 0.8059 | | 2.51 | 2.50 | 0.4 | 40.0 |
| Perfluorododecanoic acid (PFDoA) | AveID | 1.081 | 1.090 | | 2.52 | 2.50 | 0.9 | 40.0 |
| Perfluorotridecanoic Acid (PFTriA) | AveID | 1.156 | 1.254 | | 2.71 | 2.50 | 8.5 | 50.0 |
| Perfluorotetradecanoic acid (PFTeA) | AveID | 0.2497 | 0.2530 | | 2.53 | 2.50 | 1.3 | 50.0 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | L2ID | | 0.9385 | | 2.46 | 2.50 | -1.7 | 50.0 |
| Perfluoro-n-octadecanoic acid (PFODA) | AveID | 0.9928 | 1.041 | | 2.62 | 2.50 | 4.9 | 50.0 |
| 13C4 PFBA | Ave | 1.382 | 1.339 | | 2.42 | 2.50 | -3.1 | 50.0 |
| 13C5 PFPeA | Ave | 0.8994 | 0.8780 | | 2.44 | 2.50 | -2.4 | 50.0 |
| 13C3-PFBS | Ave | 0.0206 | 0.0195 | | 2.20 | 2.33 | -5.3 | 50.0 |
| M2-4:2FTS | Ave | 0.1573 | 0.1538 | | 2.28 | 2.34 | -2.2 | 50.0 |

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216860/1 Calibration Date: 04/07/2018 14:45

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLA1_047.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| 13C2 PFHxA | Ave | 0.9916 | 0.9451 | | 2.38 | 2.50 | -4.7 | 50.0 |
| 13C4-PFHpA | Ave | 0.9533 | 0.9061 | | 2.38 | 2.50 | -5.0 | 50.0 |
| 18O2 PFHxS | Ave | 1.189 | 1.176 | | 2.34 | 2.37 | -1.1 | 50.0 |
| M2-6:2FTS | Ave | 0.2203 | 0.2069 | | 2.23 | 2.38 | -6.1 | 40.0 |
| 13C4 PFOA | Ave | 0.9372 | 0.9277 | | 2.48 | 2.50 | -1.0 | 50.0 |
| 13C4 PFOS | Ave | 0.8257 | 0.8223 | | 2.38 | 2.39 | -0.4 | 50.0 |
| 13C5 PFNA | Ave | 0.7930 | 0.8449 | | 2.66 | 2.50 | 6.6 | 50.0 |
| 13C8 FOSA | Ave | 1.166 | 1.068 | | 2.29 | 2.50 | -8.5 | 50.0 |
| M2-8:2FTS | Ave | 0.2562 | 0.2548 | | 2.38 | 2.40 | -0.5 | 40.0 |
| 13C2 PFDA | Ave | 0.6698 | 0.7362 | | 2.75 | 2.50 | 9.9 | 50.0 |
| d3-NMeFOSAA | Ave | 0.3583 | 0.3847 | | 2.68 | 2.50 | 7.4 | 50.0 |
| d5-NEtFOSAA | Ave | 0.3760 | 0.4032 | | 2.68 | 2.50 | 7.2 | 50.0 |
| 13C2 PFUnA | Ave | 0.5468 | 0.6054 | | 2.77 | 2.50 | 10.7 | 50.0 |
| 13C2 PFDoA | Ave | 0.6087 | 0.6312 | | 2.59 | 2.50 | 3.7 | 50.0 |
| 13C2-PFTeDA | Ave | 0.7733 | 0.8276 | | 2.68 | 2.50 | 7.0 | 50.0 |
| 13C2-PFHxDA | Ave | 1.194 | 1.326 | | 2.78 | 2.50 | 11.0 | 50.0 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_047.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 07-Apr-2018 14:45:26 ALS Bottle#: 14 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub30

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 14:13:14 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 13:55:56

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.430 | 1.425 | 0.005 | 1.000 | 6105063 | 2.42 | | 96.9 | 56242 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.436 | 1.436 | 0.0 | 1.004 | 5837910 | 2.59 | | 103 | 2408 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.703 | 1.694 | 0.009 | 0.560 | 4002547 | 2.44 | | 97.6 | 114329 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.703 | 1.703 | 0.0 | 1.000 | 4635513 | 2.42 | | 96.8 | 2971 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.739 | 1.730 | 0.009 | 1.000 | 82660 | 2.20 | | 94.7 | 514 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.739 | 1.739 | 0.0 | 1.000 | 6455102 | 2.30 | | 104 | 29660 | |
| 298.90 > 99.00 | 1.739 | 1.739 | 0.0 | 1.000 | 2678380 | | 2.41(1.25-3.74) | | 28518 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.950 | 1.939 | 0.011 | 1.000 | 655040 | 2.28 | | 97.8 | 6028 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.950 | 1.950 | 0.0 | 1.000 | 1479740 | 2.41 | | 103 | 57523 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.982 | 1.971 | 0.011 | 1.000 | 4308275 | 2.38 | | 95.3 | 94232 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.982 | 1.982 | 0.0 | 1.000 | 4432958 | 2.51 | | 101 | 9586 | |
| 313.00 > 119.00 | 1.982 | 1.982 | 0.0 | 1.000 | 424966 | | 10.43(5.03-15.10) | | 7320 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.004 | 2.004 | 0.0 | 1.000 | 6214484 | 2.45 | | 105 | 47298 | |
| 349.00 > 99.00 | 2.004 | 2.004 | 0.0 | 1.000 | 2279727 | | 2.73(1.36-4.07) | | 24889 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.308 | 2.308 | 0.0 | 1.000 | 4130832 | 2.38 | | 95.0 | 96667 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.308 | 2.308 | 0.0 | 1.000 | 4465051 | 2.49 | | 99.5 | 5721 | |
| 363.00 > 169.00 | 2.308 | 2.308 | 0.0 | 1.000 | 1754978 | | 2.54(1.13-3.40) | | 8211 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.321 | 2.321 | 0.0 | 1.000 | 5070556 | 2.34 | | 98.9 | 71135 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.321 | 2.321 | 0.0 | 1.000 | 5268894 | 2.20 | | 96.7 | 12613 | |
| 399.00 > 99.00 | 2.321 | 2.321 | 0.0 | 1.000 | 1725789 | | 3.05(1.50-4.49) | | 7172 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.645 | 2.636 | 0.009 | 1.000 | 895815 | 2.23 | | 93.9 | 10363 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.645 | 2.645 | 0.0 | 1.000 | 1554847 | 2.21 | | 93.1 | 15892 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.668 | 2.660 | 0.008 | 1.000 | 4229258 | 2.47 | | 99.0 | 94172 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.668 | 2.668 | 0.0 | | 4558791 | 2.50 | | | 115155 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.668 | 2.668 | 0.0 | 1.000 | 4839620 | 2.41 | | 96.5 | 2127 | |
| 413.00 > 169.00 | 2.668 | 2.668 | 0.0 | 1.000 | 2529445 | | 1.91(0.84-2.52) | | 8371 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.675 | 2.675 | 0.0 | 1.000 | 4888957 | 2.45 | | 103 | 36439 | |
| 449.00 > 99.00 | 2.675 | 2.675 | 0.0 | 1.000 | 1281014 | | 3.82(1.94-5.82) | | 22642 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.033 | 3.026 | 0.007 | 1.000 | 3583545 | 2.38 | | 99.6 | 23353 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.040 | 3.026 | 0.014 | 1.000 | 3851861 | 2.66 | | 107 | 117830 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | M |
| 499.00 > 80.00 | 3.033 | 3.033 | 0.0 | 1.000 | 3837031 | 2.24 | | 96.5 | 176903 | M |
| 499.00 > 99.00 | 3.040 | 3.033 | 0.007 | 1.002 | 861045 | | 4.46(2.31-6.93) | | 17087 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.040 | 3.040 | 0.0 | 1.000 | 3856638 | 2.43 | | 97.3 | 9564 | |
| 463.00 > 169.00 | 3.040 | 3.040 | 0.0 | 1.000 | 965361 | | 4.00(1.90-5.69) | | 29299 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.371 | 3.362 | 0.009 | 1.000 | 4867497 | 2.29 | | 91.5 | 55994 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.371 | 3.371 | 0.0 | 1.000 | 5007162 | 2.60 | | 104 | 90064 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.390 | 3.390 | 0.0 | 1.000 | 1394522 | 2.23 | | 92.9 | 54206 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.390 | 3.390 | 0.0 | 1.000 | 2933126 | 2.44 | | 102 | 60640 | |
| 549.00 > 99.00 | 3.380 | 3.390 | -0.010 | 0.997 | 1092585 | | 2.68(1.33-3.97) | | 17814 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.390 | 3.380 | 0.010 | 1.000 | 1112745 | 2.38 | | 99.5 | 8748 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.399 | 3.389 | 0.010 | 1.000 | 3356215 | 2.75 | | 110 | 54550 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.399 | 3.399 | 0.0 | 1.000 | 3238179 | 2.44 | | 97.5 | 11493 | |
| 513.00 > 169.00 | 3.399 | 3.399 | 0.0 | 1.000 | 563645 | | 5.75(2.36-7.09) | | 13008 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.548 | 3.548 | 0.0 | 1.000 | 1753850 | 2.68 | | 107 | 24766 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.557 | 3.557 | 0.0 | 1.003 | 1858340 | 2.51 | | 101 | 11580 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.720 | 3.709 | 0.011 | 1.000 | 1837946 | 2.68 | | 107 | 18125 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.709 | 3.709 | 0.0 | 1.000 | 2492932 | 2.40 | | 99.4 | 28109 | |
| 599.00 > 99.00 | 3.709 | 3.709 | 0.0 | 1.000 | 853566 | | 2.92(1.39-4.16) | | 26340 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.730 | 3.720 | 0.010 | 1.000 | 2759764 | 2.77 | | 111 | 70235 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.730 | 3.730 | 0.0 | 1.003 | 1699484 | 2.52 | | 101 | 18125 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.730 | 3.730 | 0.0 | 1.000 | 2224014 | 2.51 | | 100 | 8024 | |
| 563.00 > 169.00 | 3.730 | 3.730 | 0.0 | 1.000 | 574143 | | 3.87(2.12-6.36) | | 17343 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.020 | 4.010 | 0.010 | 1.000 | 2877508 | 2.59 | | 104 | 22271 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.020 | 4.020 | 0.0 | 1.000 | 3136558 | 2.52 | | 101 | 2448 | |
| 613.00 > 169.00 | 4.020 | 4.020 | 0.0 | 1.000 | 779610 | | 4.02(2.13-6.40) | | 9330 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.282 | 4.282 | 0.0 | 1.000 | 3608619 | 2.71 | | 108 | 2240 | |
| 663.00 > 169.00 | 4.282 | 4.282 | 0.0 | 1.000 | 1081343 | | 3.34(1.25-3.76) | | 11687 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.523 | 4.513 | 0.010 | 1.000 | 3772988 | 2.68 | | 107 | 18862 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.523 | 4.523 | 0.0 | 1.000 | 954500 | 2.53 | | 101 | 7282 | |
| 713.00 > 219.00 | 4.513 | 4.523 | -0.010 | 0.998 | 682631 | | 1.40(0.71-2.13) | | 9008 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.932 | 4.924 | 0.008 | 1.000 | 6043011 | 2.78 | | 111 | 13812 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.932 | 4.932 | 0.0 | 1.000 | 5671334 | 2.46 | | 98.3 | 1284 | |
| 813.00 > 169.00 | 4.932 | 4.932 | 0.0 | 1.000 | 941015 | | 6.03(2.86-8.58) | | 4344 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.285 | 5.285 | 0.0 | 1.000 | 6292010 | 2.62 | | 105 | 1044 | |
| 913.00 > 169.00 | 5.292 | 5.285 | 0.007 | 1.001 | 765388 | | 8.22(3.83-11.48) | | 3677 | |

## QC Flag Legend

Review Flags

M - Manually Integrated

## Reagents:

LCPFC_LL5_00003 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 14:13:16 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_047.d

Injection Date: 07-Apr-2018 14:45:26 Instrument ID: A8_N

Lims ID: CCV L5

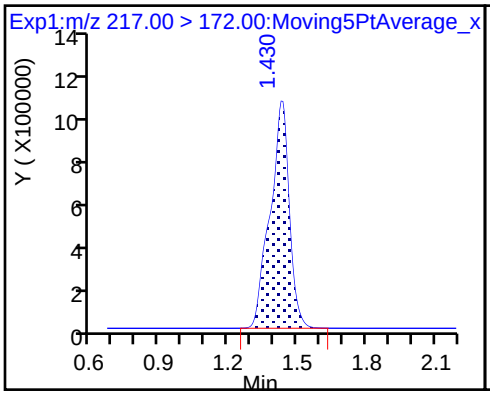
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 1

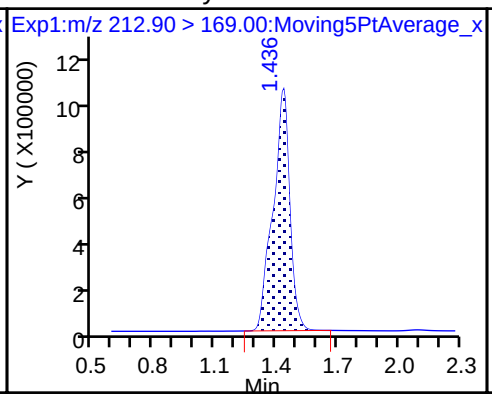
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

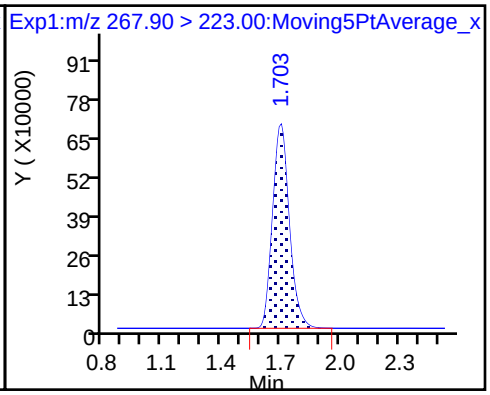
D 1 13C4 PFBA



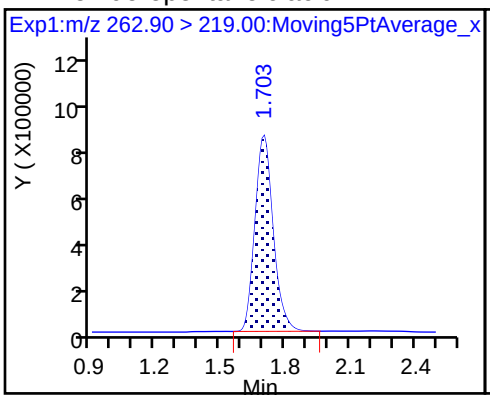

2 Perfluorobutyric acid



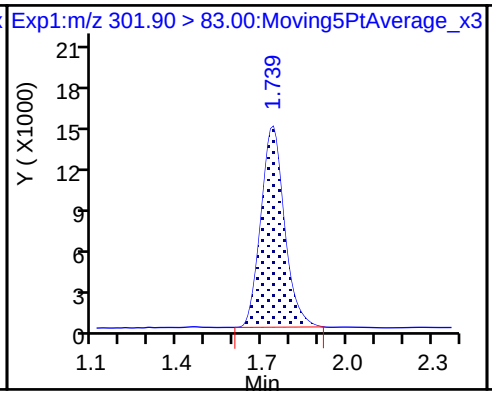

D 3 13C5-PFPeA



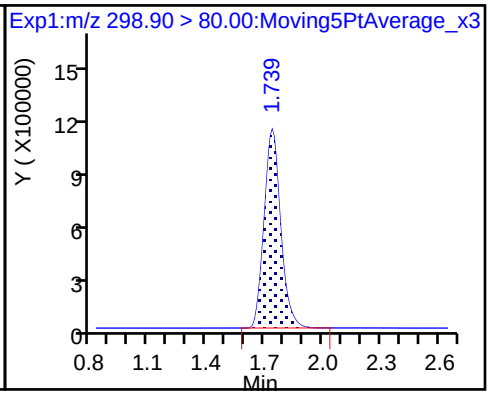

4 Perfluoropentanoic acid



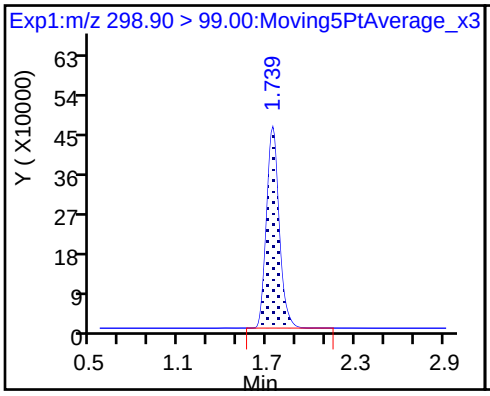

D 47 13C3-PFBS



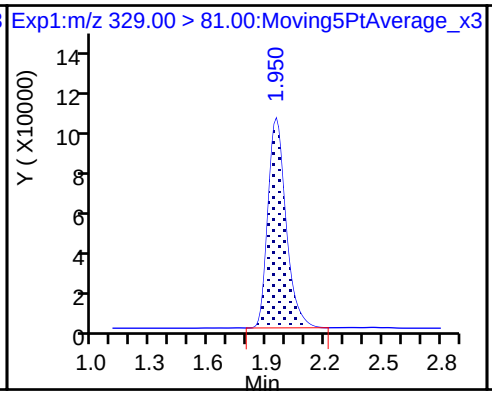

5 Perfluorobutanesulfonic acid



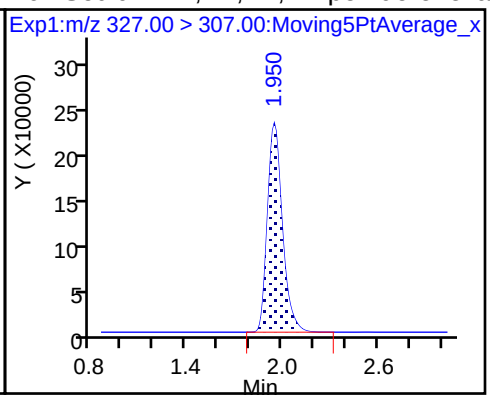

5 Perfluorobutanesulfonic acid



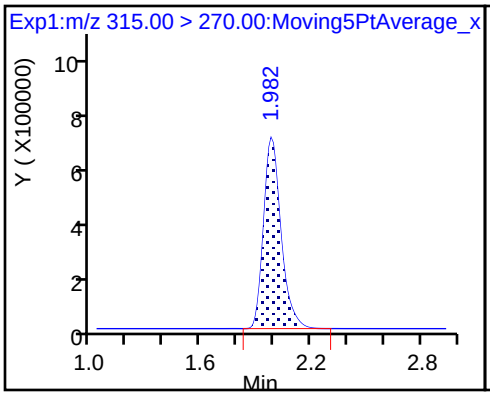

D 60 M2-4:2FTS



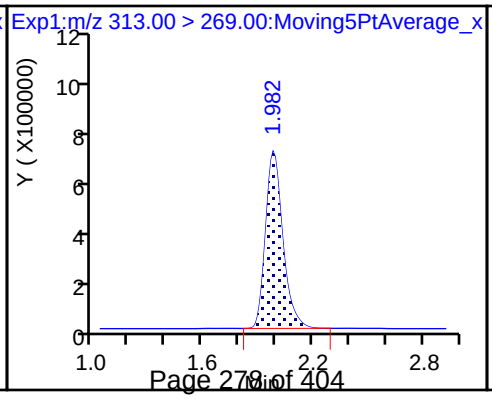

61 Sodium 1H,1H,2H,2H-perfluorohexane



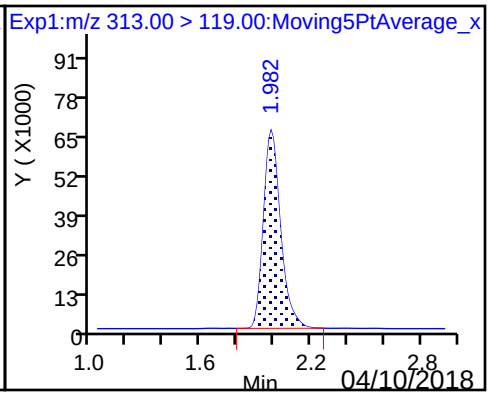

D 7 13C2 PFHxA



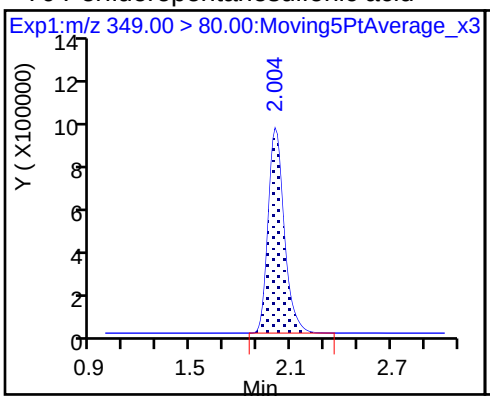

6 Perfluorohexanoic acid



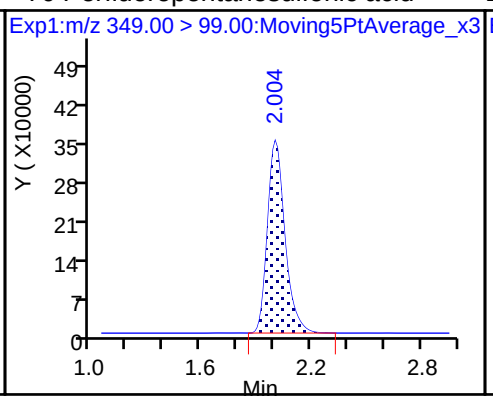

6 Perfluorohexanoic acid



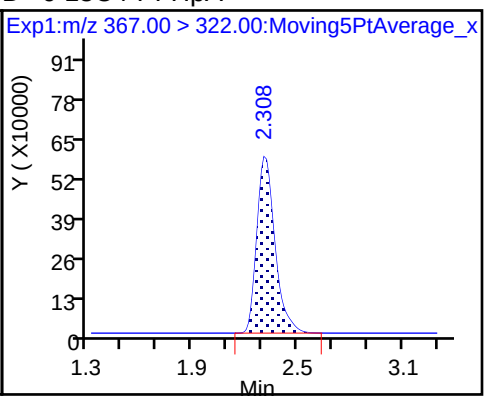
70 Perfluoropentanesulfonic acid



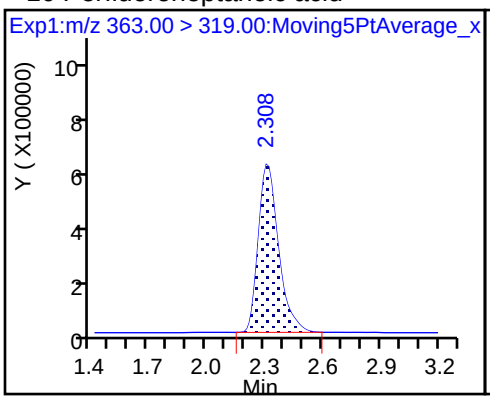

70 Perfluoropentanesulfonic acid



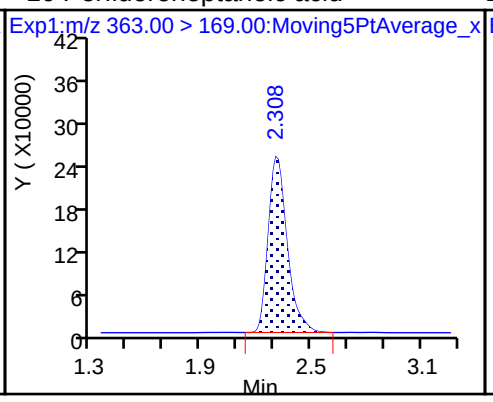

D 9 13C4-PFHpA



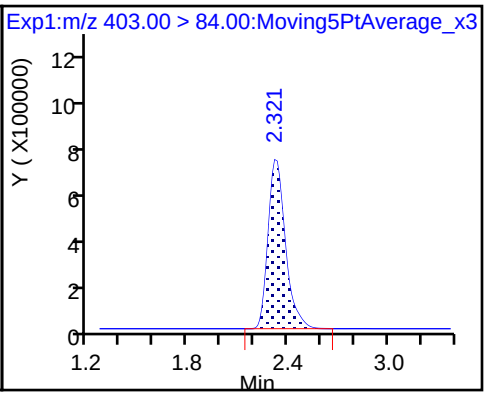

10 Perfluoroheptanoic acid



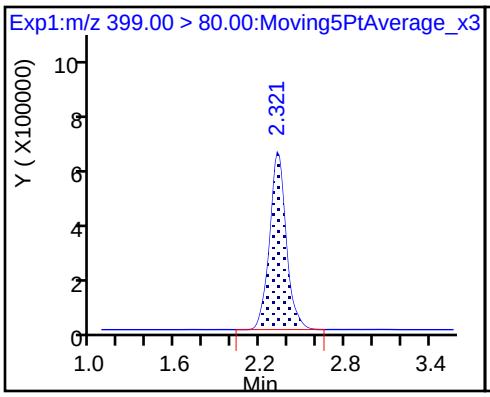

10 Perfluoroheptanoic acid



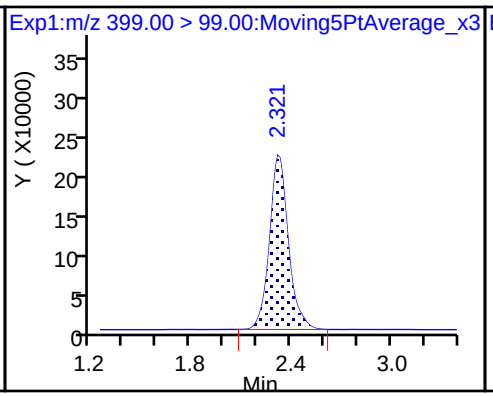

D 11 18O2 PFHxS



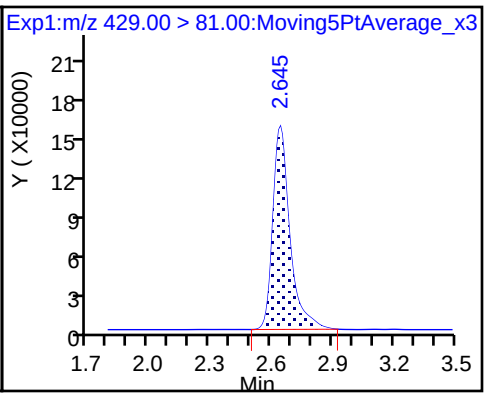

8 Perfluorohexanesulfonic acid



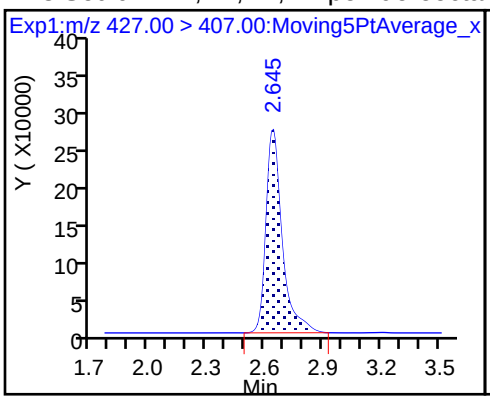

8 Perfluorohexanesulfonic acid



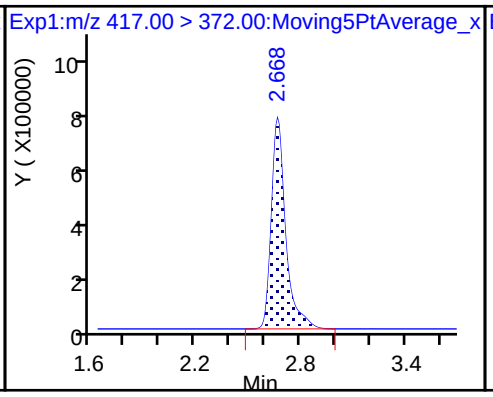

D 12 M2-6:2FTS



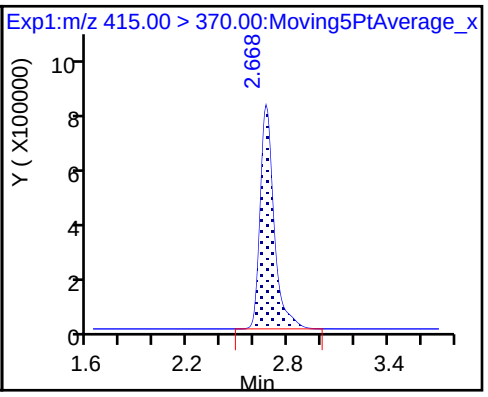

13 Sodium 1H,1H,2H,2H-perfluorooctane



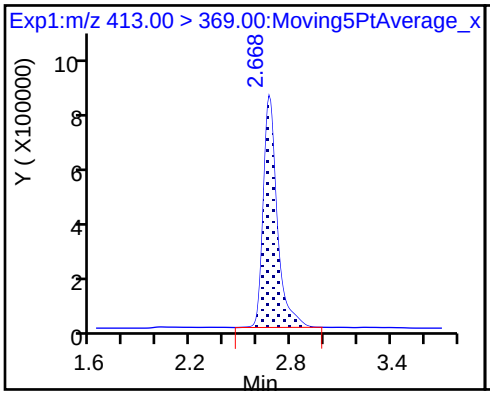

D 14 13C4 PFOA



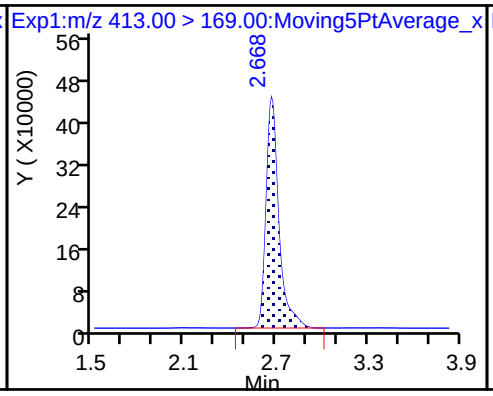

* 62 13C2-PFOA



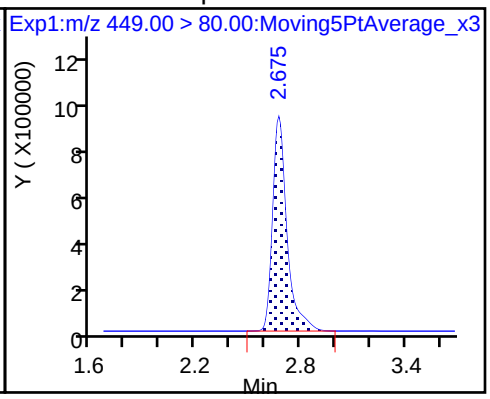
15 Perfluorooctanoic acid



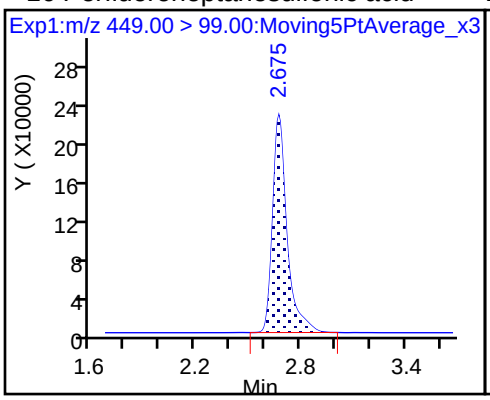

15 Perfluorooctanoic acid



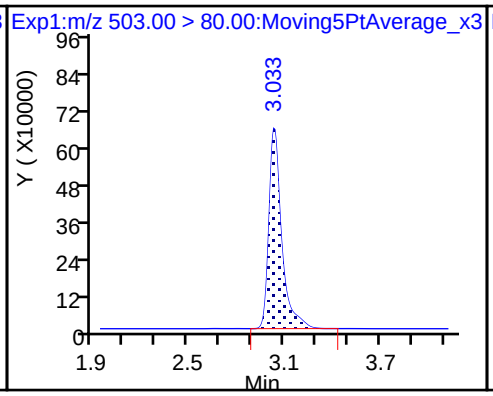

16 Perfluoroheptanesulfonic acid



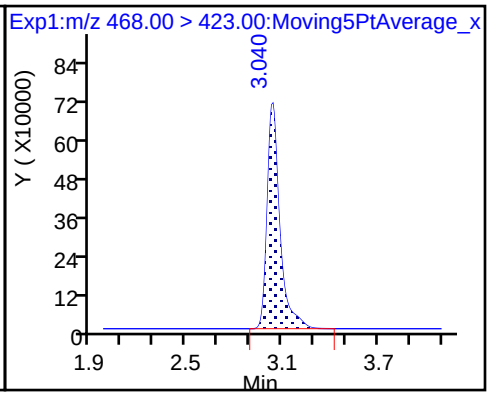

16 Perfluoroheptanesulfonic acid



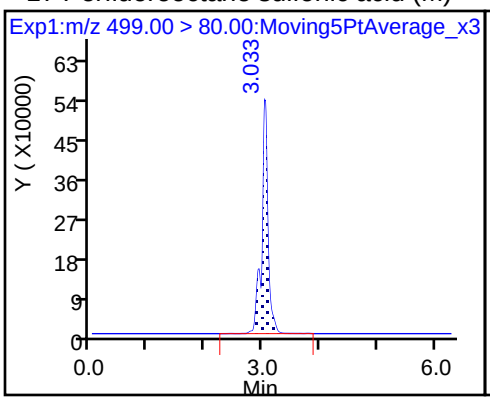

D 18 13C4 PFOS



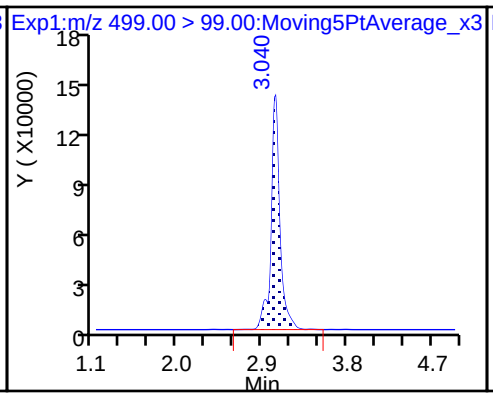

D 19 13C5 PFNA



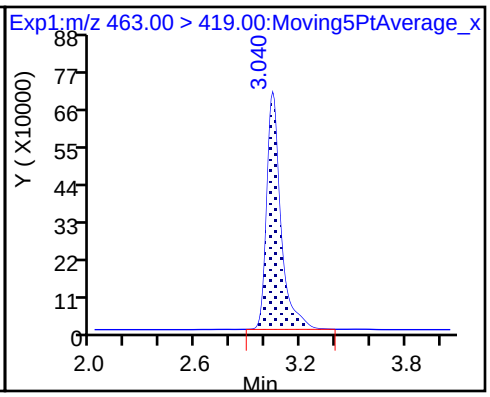

17 Perfluorooctane sulfonic acid (M)



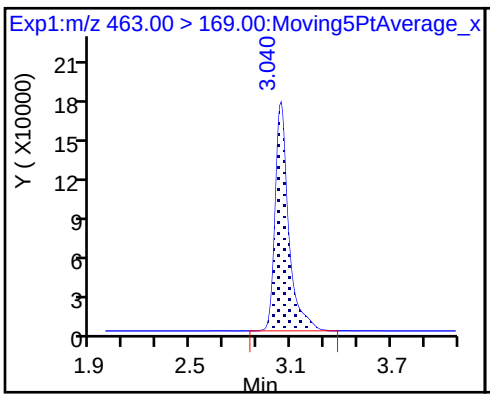

17 Perfluorooctane sulfonic acid



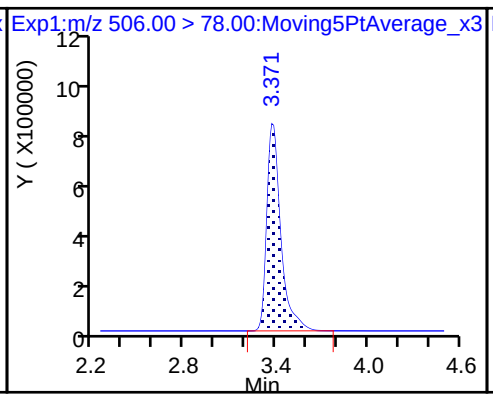

20 Perfluorononanoic acid



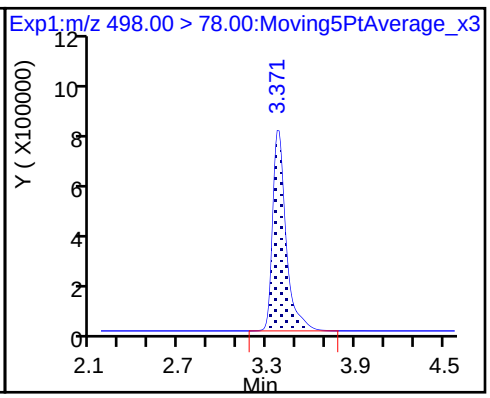

20 Perfluorononanoic acid



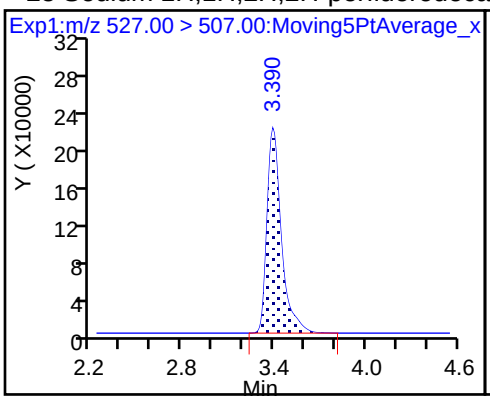

D 21 13C8 FOSA



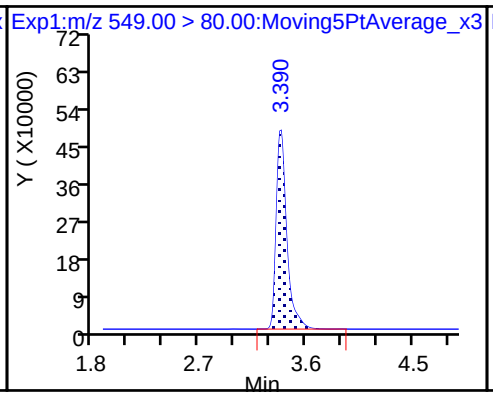

22 Perfluorooctane Sulfonamide



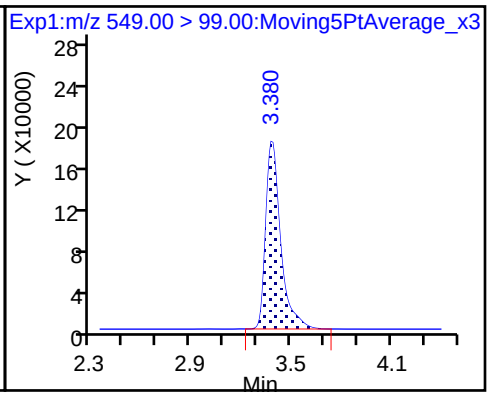
25 Sodium 1H,1H,2H,2H-perfluorodecane



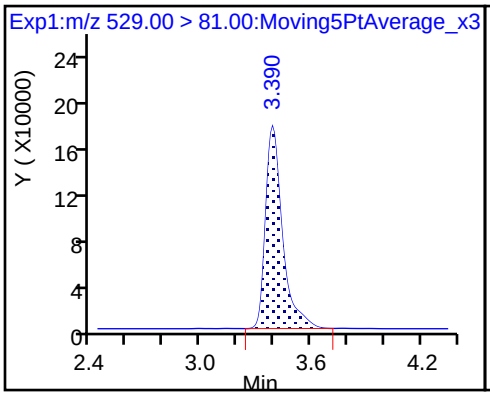

68 Perfluorononanesulfonic acid



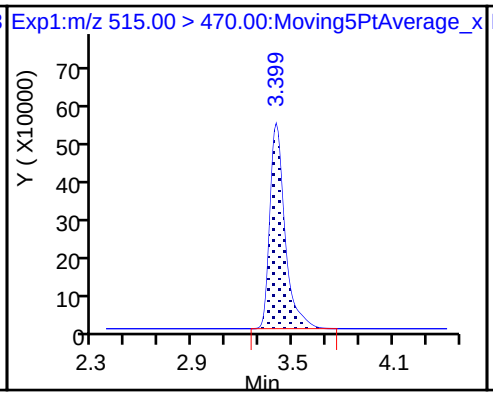

68 Perfluorononanesulfonic acid



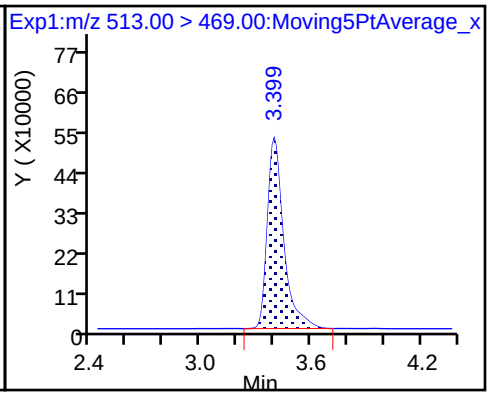

D 26 M2-8:2FTS



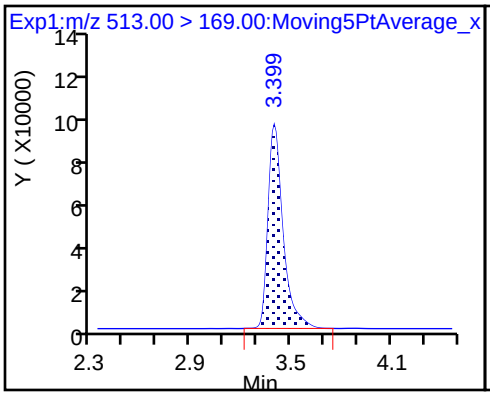

D 23 13C2 PFDA



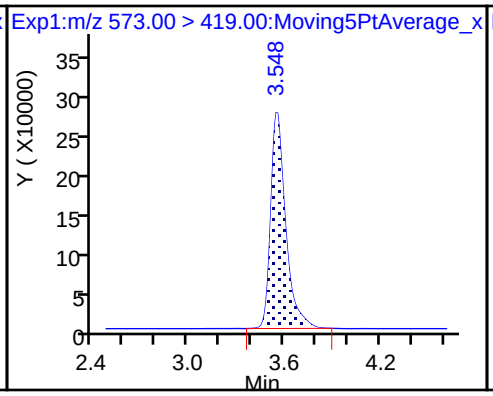

24 Perfluorodecanoic acid



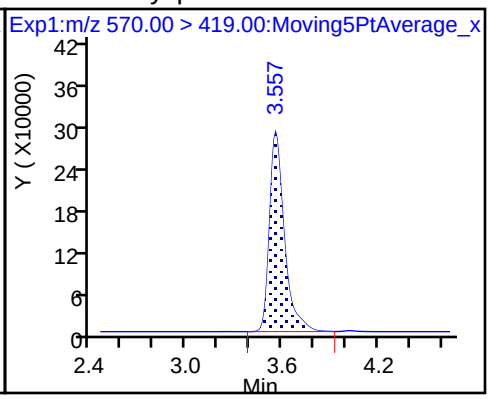

24 Perfluorodecanoic acid



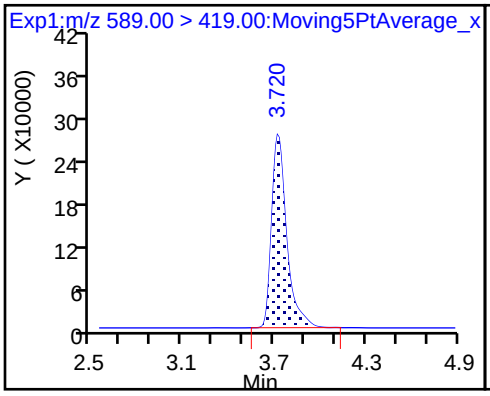

D 27 d3-NMeFOSAA



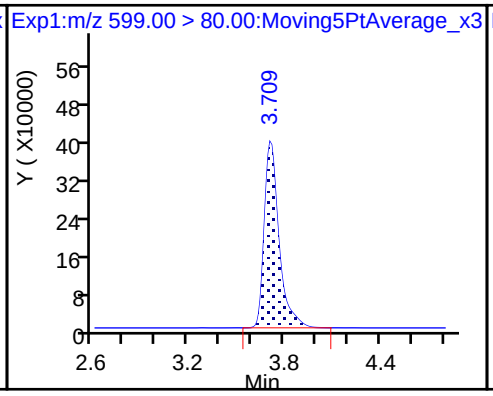

28 N-methyl perfluorooctane sulfonami



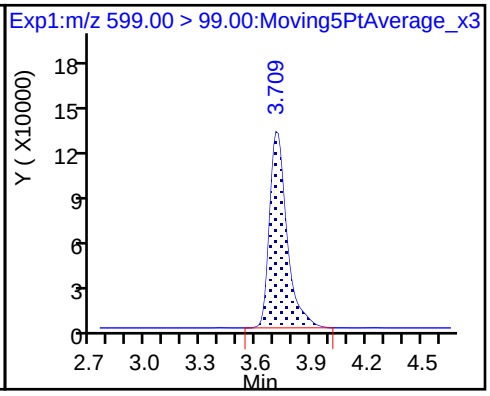

D 32 d5-NEtFOSAA



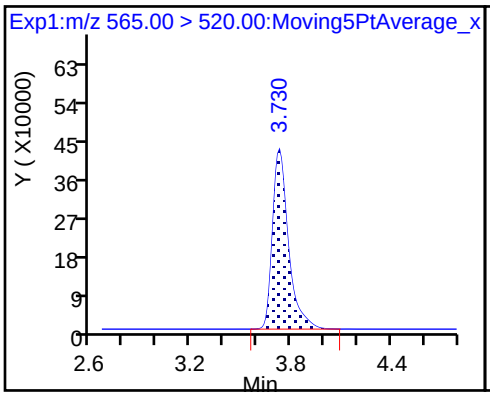

29 Perfluorodecane Sulfonic acid



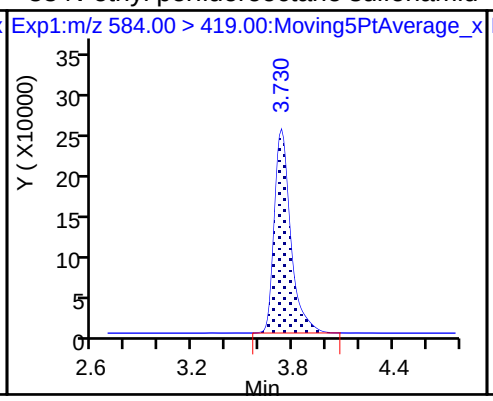

29 Perfluorodecane Sulfonic acid



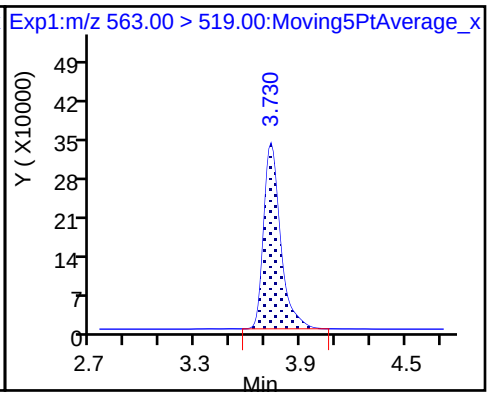
D 30 13C2 PFUnA



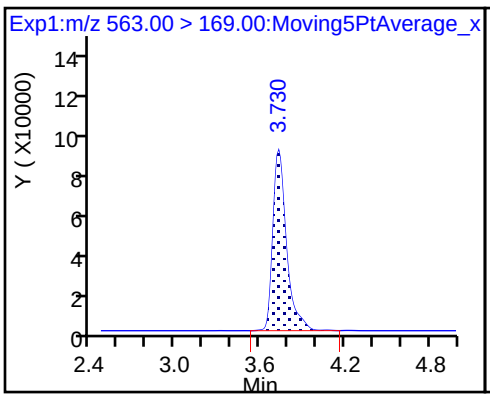

33 N-ethyl perfluorooctane sulfonamid



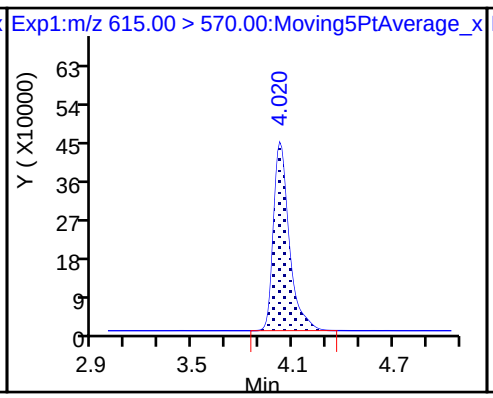

31 Perfluoroundecanoic acid



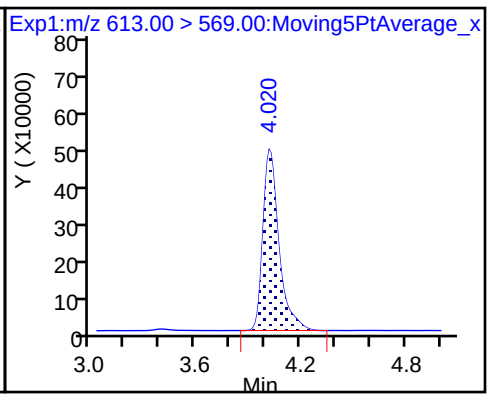

31 Perfluoroundecanoic acid



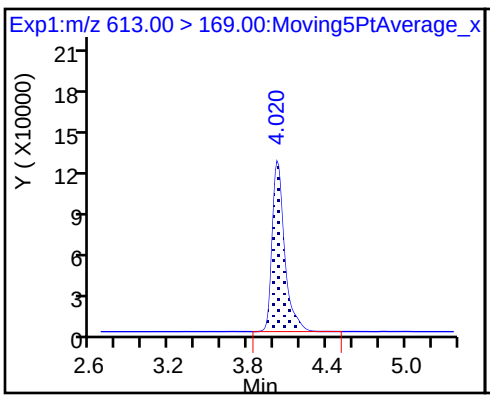

D 36 13C2 PFDoA



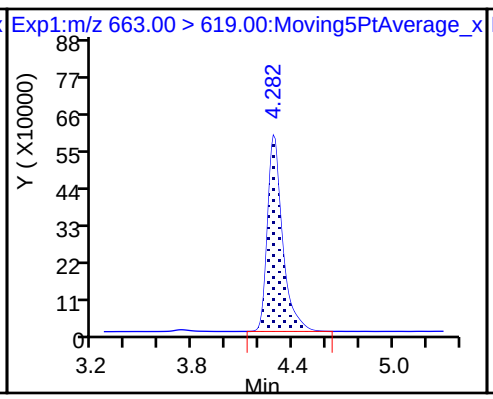

37 Perfluorododecanoic acid



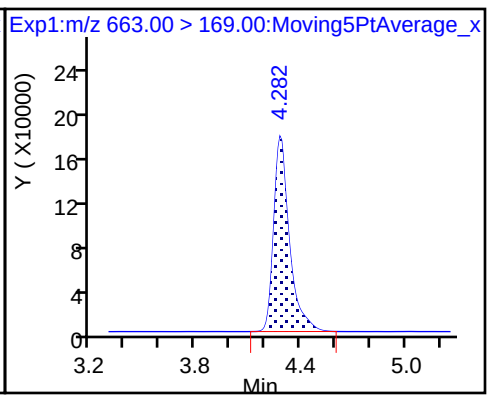

37 Perfluorododecanoic acid



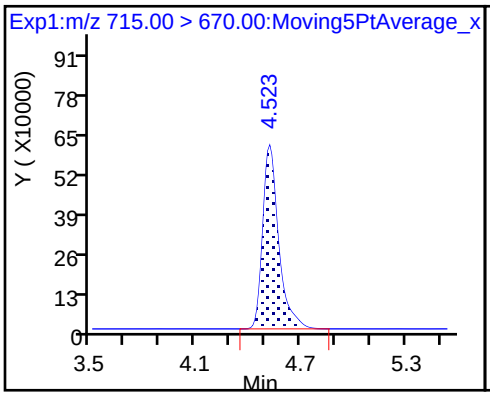

41 Perfluorotridecanoic acid



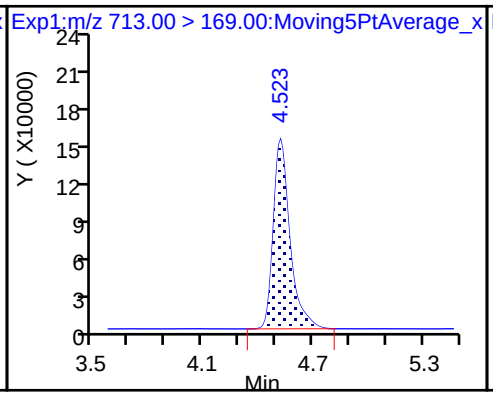

41 Perfluorotridecanoic acid



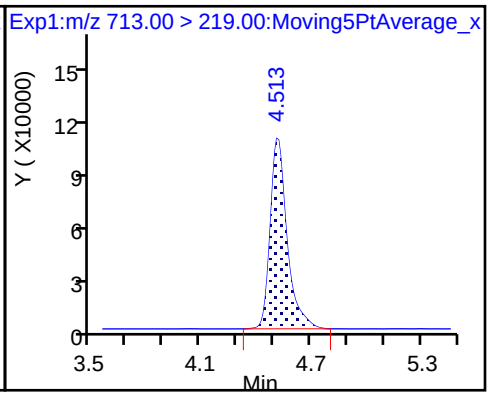

D 43 13C2-PFTeDA



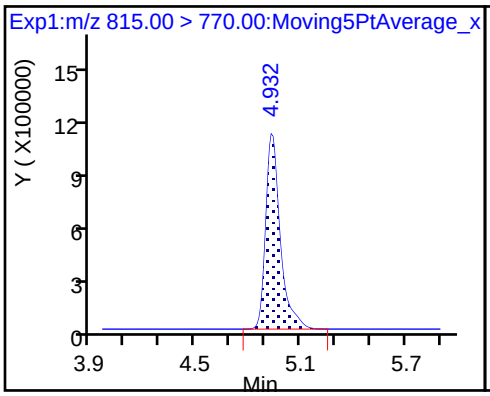

42 Perfluorotetradecanoic acid



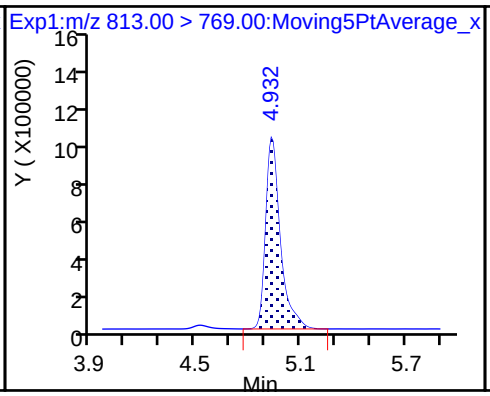

42 Perfluorotetradecanoic acid



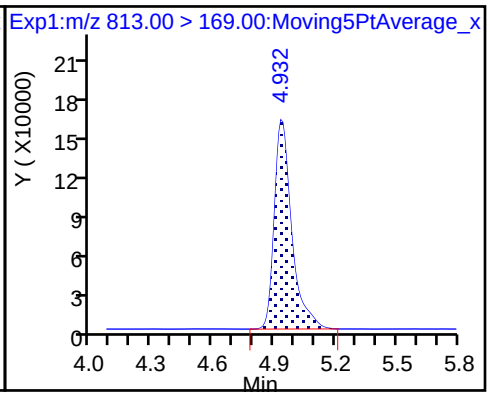
D 44 13C2-PFHxDA



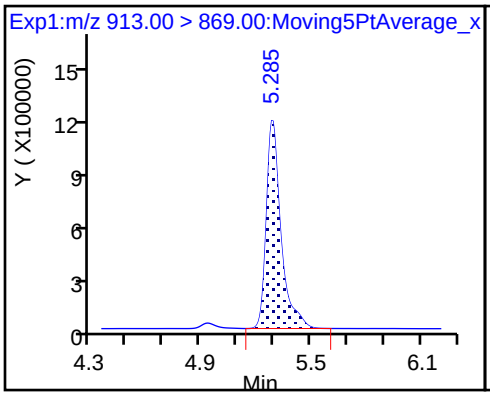

45 Perfluorohexadecanoic acid



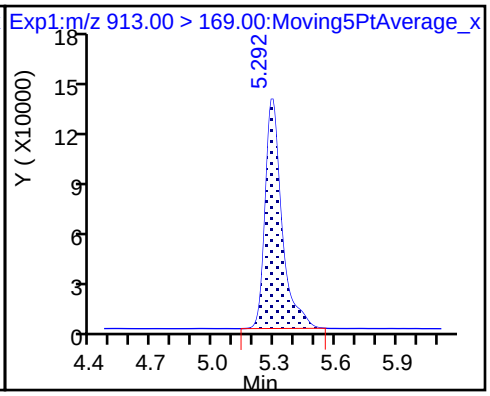

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

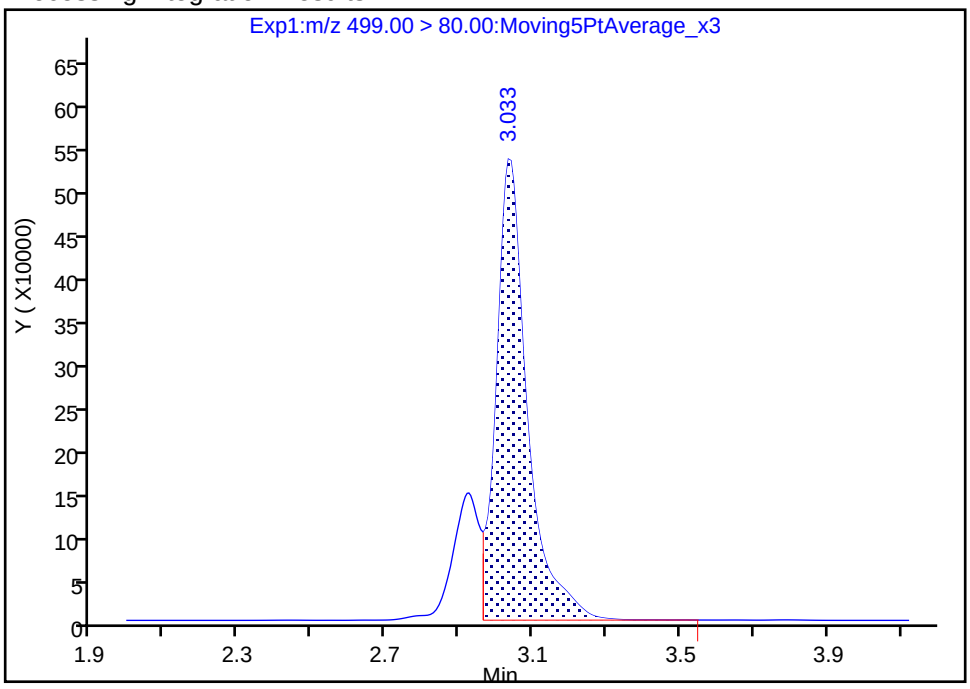
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_047.d
Injection Date: 07-Apr-2018 14:45:26 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

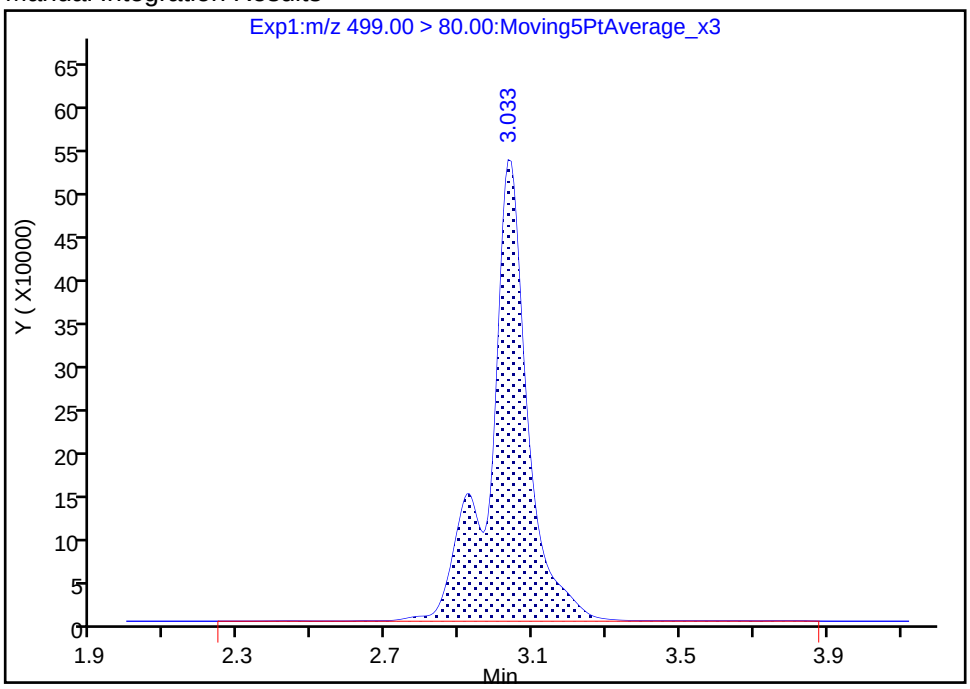
Processing Integration Results

RT: 3.03
Area: 3081516
Amount: 1.798623
Amount Units: ng/ml




Manual Integration Results

RT: 3.03
Area: 3837031
Amount: 2.239603
Amount Units: ng/ml




Reviewer: westendorfc, 09-Apr-2018 13:55:54
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216860/12 Calibration Date: 04/07/2018 16:11

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLA1_058.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | AveID | 0.9242 | 0.9207 | | 0.996 | 1.00 | -0.4 | 40.0 |
| Perfluoropentanoic acid (PFPeA) | AveID | 1.197 | 1.131 | | 0.945 | 1.00 | -5.5 | 40.0 |
| Perfluorobutanesulfonic acid (PFBS) | AveID | 78.89 | 77.95 | | 0.873 | 0.884 | -1.2 | 50.0 |
| 4:2 FTS | AveID | 17.26 | 16.17 | | 0.875 | 0.934 | -6.3 | 50.0 |
| Perfluorohexanoic acid (PFHxA) | AveID | 1.023 | 1.037 | | 1.01 | 1.00 | 1.3 | 40.0 |
| Perfluoropentanesulfonic acid (PFPeS) | AveID | 71.20 | 71.23 | | 0.938 | 0.938 | 0.0 | 50.0 |
| HFPO-DA (GenX) | AveID | 3.401 | 3.142 | | 0.924 | 1.00 | -7.6 | 40.0 |
| Perfluoroheptanoic acid (PFHpA) | AveID | 1.087 | 1.013 | | 0.932 | 1.00 | -6.8 | 40.0 |
| Perfluorohexanesulfonic acid (PFHxS) | AveID | 1.117 | 1.059 | | 0.863 | 0.910 | -5.2 | 40.0 |
| Adona | AveID | 3.564 | 3.596 | | 1.01 | 1.00 | 0.9 | 50.0 |
| 6:2FTS | AveID | 1.868 | 1.499 | | 0.761 | 0.948 | -19.7 | 40.0 |
| Perfluorooctanoic acid (PFOA) | AveID | 1.186 | 1.109 | | 0.935 | 1.00 | -6.5 | 40.0 |
| Perfluoroheptanesulfonic Acid (PFHpS) | AveID | 1.333 | 1.261 | | 0.901 | 0.952 | -5.4 | 50.0 |
| Perfluorooctanesulfonic acid (PFOS) | AveID | 1.143 | 1.032 | | 0.838 | 0.928 | -9.7 | 40.0 |
| Perfluorononanoic acid (PFNA) | AveID | 1.029 | 1.033 | | 1.00 | 1.00 | 0.3 | 40.0 |
| 9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate | AveID | 1.870 | 1.874 | | 0.934 | 0.932 | 0.2 | 50.0 |
| Perfluorooctane Sulfonamide (FOSA) | AveID | 0.9877 | 0.9834 | | 0.996 | 1.00 | -0.4 | 40.0 |
| 8:2FTS | AveID | 1.349 | 1.327 | | 0.942 | 0.958 | -1.6 | 40.0 |
| Perfluorononanesulfonic acid (PFNS) | AveID | 0.8018 | 0.7458 | | 0.893 | 0.960 | -7.0 | 50.0 |
| Perfluorodecanoic acid (PFDA) | AveID | 0.9893 | 0.9543 | | 0.965 | 1.00 | -3.5 | 40.0 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | AveID | 1.054 | 1.001 | | 0.950 | 1.00 | -5.0 | 40.0 |
| Perfluorodecanesulfonic acid (PFDS) | AveID | 0.6938 | 0.6729 | | 0.935 | 0.964 | -3.0 | 50.0 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | AveID | 0.9171 | 0.8715 | | 0.950 | 1.00 | -5.0 | 40.0 |
| Perfluoroundecanoic acid (PFUnA) | AveID | 0.8023 | 0.7883 | | 0.982 | 1.00 | -1.8 | 40.0 |
| 11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate | AveID | 2.902 | 2.840 | | 0.922 | 0.942 | -2.2 | 50.0 |
| Perfluorododecanoic acid (PFDoA) | AveID | 1.081 | 1.036 | | 0.958 | 1.00 | -4.2 | 40.0 |
| Perfluorotridecanoic Acid (PFTriA) | AveID | 1.156 | 1.159 | | 1.00 | 1.00 | 0.2 | 50.0 |
| Perfluorotetradecanoic acid (PFTeA) | AveID | 0.2497 | 0.2646 | | 1.06 | 1.00 | 5.9 | 50.0 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | L2ID | | 0.9407 | | 0.972 | 1.00 | -2.8 | 50.0 |

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216860/12  Calibration Date: 04/07/2018 16:11

Instrument ID: A8_N  Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100  ID: 3.00(mm)  Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLA1_058.d  Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluoro-n-octadecanoic acid (PFODA) | AveID | 0.9928 | 0.9939 | | 1.00 | 1.00 | 0.1 | 50.0 |
| 13C4 PFBA | Ave | 1.382 | 1.341 | | 2.43 | 2.50 | -2.9 | 50.0 |
| 13C5 PFPeA | Ave | 0.8994 | 0.8841 | | 2.46 | 2.50 | -1.7 | 50.0 |
| 13C3-PFBS | Ave | 0.0206 | 0.0196 | | 2.21 | 2.33 | -4.9 | 50.0 |
| M2-4:2FTS | Ave | 0.1573 | 0.1526 | | 2.27 | 2.34 | -3.0 | 50.0 |
| 13C2 PFHxA | Ave | 0.9916 | 0.9254 | | 2.33 | 2.50 | -6.7 | 50.0 |
| 13C3 HFPO-DA | Ave | 0.0494 | 0.0503 | | 2.54 | 2.50 | 1.8 | 50.0 |
| 13C4-PFHpA | Ave | 0.9533 | 0.9684 | | 2.54 | 2.50 | 1.6 | 50.0 |
| 18O2 PFHxS | Ave | 1.189 | 1.159 | | 2.31 | 2.37 | -2.5 | 50.0 |
| M2-6:2FTS | Ave | 0.2203 | 0.2284 | | 2.46 | 2.38 | 3.7 | 40.0 |
| 13C4 PFOA | Ave | 0.9372 | 0.9410 | | 2.51 | 2.50 | 0.4 | 50.0 |
| 13C4 PFOS | Ave | 0.8257 | 0.8419 | | 2.44 | 2.39 | 2.0 | 50.0 |
| 13C5 PFNA | Ave | 0.7930 | 0.8015 | | 2.53 | 2.50 | 1.1 | 50.0 |
| 13C8 FOSA | Ave | 1.166 | 1.071 | | 2.30 | 2.50 | -8.2 | 50.0 |
| M2-8:2FTS | Ave | 0.2562 | 0.2545 | | 2.38 | 2.40 | -0.6 | 40.0 |
| 13C2 PFDA | Ave | 0.6698 | 0.7411 | | 2.77 | 2.50 | 10.7 | 50.0 |
| d3-NMeFOSAA | Ave | 0.3583 | 0.4057 | | 2.83 | 2.50 | 13.2 | 50.0 |
| d5-NEtFOSAA | Ave | 0.3760 | 0.4254 | | 2.83 | 2.50 | 13.1 | 50.0 |
| 13C2 PFUnA | Ave | 0.5468 | 0.6088 | | 2.78 | 2.50 | 11.4 | 50.0 |
| 13C2 PFDoA | Ave | 0.6087 | 0.6363 | | 2.61 | 2.50 | 4.5 | 50.0 |
| 13C2-PFTeDA | Ave | 0.7733 | 0.7766 | | 2.51 | 2.50 | 0.4 | 50.0 |
| 13C2-PFHxDA | Ave | 1.194 | 1.176 | | 2.46 | 2.50 | -1.5 | 50.0 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_058.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 07-Apr-2018 16:11:21 ALS Bottle#: 13 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 14:13:39 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 14:00:06

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.430 | 1.425 | 0.005 | 1.000 | 6205559 | 2.43 | | 97.1 | 58284 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.430 | 1.430 | 0.0 | 1.000 | 2285313 | 1.00 | | 99.6 | 1145 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.694 | 1.694 | 0.0 | 0.558 | 4090094 | 2.46 | | 98.3 | 89472 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.694 | 1.694 | 0.0 | 1.000 | 1850078 | 0.9448 | | 94.5 | 1340 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.730 | 1.730 | 0.0 | 1.000 | 84273 | 2.21 | | 95.1 | 647 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.730 | 1.730 | 0.0 | 1.000 | 2497554 | 0.8734 | | 98.8 | 11062 | |
| 298.90 > 99.00 | 1.730 | 1.730 | 0.0 | 1.000 | 1040165 | | 2.40(1.25-3.74) | | 6939 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.950 | 1.939 | 0.011 | 1.000 | 659292 | 2.26 | | 97.0 | 7175 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.950 | 1.950 | 0.0 | 1.000 | 547557 | 0.8755 | | 93.7 | 28634 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.982 | 1.971 | 0.011 | 1.000 | 4280765 | 2.33 | | 93.3 | 130503 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.982 | 1.982 | 0.0 | 1.000 | 1775478 | 1.01 | | 101 | 4375 | |
| 313.00 > 119.00 | 1.982 | 1.982 | 0.0 | 1.000 | 165059 | | 10.76(5.03-15.10) | | 2306 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.004 | 2.004 | 0.0 | 1.000 | 2421666 | 0.9383 | | 100 | 20683 | |
| 349.00 > 99.00 | 2.004 | 2.004 | 0.0 | 1.000 | 871326 | | 2.78(1.36-4.07) | | 9488 | |
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.072 | 2.072 | 0.0 | 1.000 | 232481 | 2.54 | | 102 | 4429 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.072 | 2.072 | 0.0 | 1.000 | 292219 | 0.9239 | | 92.4 | 1999 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.308 | 2.308 | 0.0 | 1.000 | 1815552 | 0.9325 | | 93.2 | 2528 | |
| 363.00 > 169.00 | 2.308 | 2.308 | 0.0 | 1.000 | 712326 | | 2.55(1.13-3.40) | | 3518 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.308 | 2.308 | 0.0 | 1.000 | 4479886 | 2.54 | | 102 | 79150 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.321 | 2.321 | 0.0 | 1.000 | 2066186 | 0.8627 | | 94.8 | 5163 | |
| 399.00 > 99.00 | 2.321 | 2.321 | 0.0 | 1.000 | 678979 | | 3.04(1.50-4.49) | | 2707 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.321 | 2.321 | 0.0 | 1.000 | 5071342 | 2.31 | | 97.5 | 90166 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.347 | 2.347 | 0.0 | 1.000 | 5602247 | 1.01 | | 101 | 114468 | |
| 377.00 > 85.00 | 2.347 | 2.347 | 0.0 | 1.000 | 3191410 | | 1.76(0.84-2.53) | | 41887 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.637 | 2.636 | 0.001 | 1.000 | 1003644 | 2.46 | | 104 | 11929 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.637 | 2.637 | 0.0 | 1.000 | 600552 | 0.7609 | | 80.3 | 5017 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.668 | 2.660 | 0.008 | 1.000 | 4353276 | 2.51 | | 100 | 110127 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.660 | 2.660 | 0.0 | | 4626093 | 2.50 | | | 90432 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.668 | 2.668 | 0.0 | 1.000 | 1931320 | 0.9353 | | 93.5 | 922 | |
| 413.00 > 169.00 | 2.668 | 2.668 | 0.0 | 1.000 | 998382 | | 1.93(0.84-2.52) | | 3453 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.675 | 2.675 | 0.0 | 1.000 | 1869776 | 0.9006 | | 94.6 | 14054 | |
| 449.00 > 99.00 | 2.668 | 2.675 | -0.007 | 0.997 | 510376 | | 3.66(1.94-5.82) | | 6948 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.031 | 3.026 | 0.005 | 1.000 | 3723329 | 2.44 | | 102 | 23935 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.037 | 3.026 | 0.011 | 1.000 | 3707636 | 2.53 | | 101 | 83582 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.031 | 3.031 | 0.0 | 1.000 | 1491749 | 0.8380 | | 90.3 | 5780 | |
| 499.00 > 99.00 | 3.031 | 3.031 | 0.0 | 1.000 | 344773 | | 4.33(2.31-6.93) | | 4623 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.037 | 3.037 | 0.0 | 1.000 | 1531291 | 1.00 | | 100 | 3732 | |
| 463.00 > 169.00 | 3.037 | 3.037 | 0.0 | 1.000 | 383496 | | 3.99(1.90-5.69) | | 13885 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.246 | 3.246 | 0.0 | 1.000 | 2721641 | 0.9342 | | 100 | 45821 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.370 | 3.362 | 0.008 | 1.000 | 4953028 | 2.29 | | 91.8 | 62944 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.370 | 3.370 | 0.0 | 1.000 | 1948389 | 1.00 | | 99.6 | 28955 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.388 | 3.380 | 0.008 | 1.000 | 1128089 | 2.38 | | 99.4 | 8172 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.398 | 3.389 | 0.009 | 1.000 | 3428597 | 2.77 | | 111 | 80949 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.379 | 3.379 | 0.0 | 0.997 | 598775 | 0.9425 | | 98.4 | 23717 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.379 | 3.379 | 0.0 | 1.000 | 1115445 | 0.8930 | | 93.0 | 11473 | |
| 549.00 > 99.00 | 3.379 | 3.379 | 0.0 | 1.000 | 427502 | | 2.61(1.33-3.97) | | 7864 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.398 | 3.398 | 0.0 | 1.000 | 1308694 | 0.9646 | | 96.5 | 4958 | |
| 513.00 > 169.00 | 3.398 | 3.398 | 0.0 | 1.000 | 233270 | | 5.61(2.36-7.09) | | 6260 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.547 | 3.548 | -0.001 | 1.000 | 1876692 | 2.83 | | 113 | 34218 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.556 | 3.556 | 0.0 | 1.003 | 751756 | 0.9500 | | 95.0 | 4727 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.719 | 3.709 | 0.010 | 1.000 | 1967830 | 2.83 | | 113 | 13333 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.708 | 3.708 | 0.0 | 1.000 | 1010502 | 0.9349 | | 97.0 | 10618 | |
| 599.00 > 99.00 | 3.708 | 3.708 | 0.0 | 1.000 | 340687 | | 2.97(1.39-4.16) | | 3805 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.729 | 3.720 | 0.009 | 1.000 | 2816419 | 2.78 | | 111 | 87878 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.729 | 3.729 | 0.0 | 1.003 | 685979 | 0.9502 | | 95.0 | 11421 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.729 | 3.729 | 0.0 | 1.000 | 888041 | 0.9825 | | 98.2 | 3104 | |
| 563.00 > 169.00 | 3.729 | 3.729 | 0.0 | 1.000 | 232372 | | 3.82(2.12-6.36) | | 3952 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.886 | 3.886 | 0.0 | 1.000 | 4167592 | 0.9217 | | 97.8 | 44273 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.019 | 4.010 | 0.009 | 1.000 | 2943709 | 2.61 | | 105 | 24131 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.019 | 4.019 | 0.0 | 1.000 | 1219566 | 0.9583 | | 95.8 | 919 | |
| 613.00 > 169.00 | 4.019 | 4.019 | 0.0 | 1.000 | 296361 | | 4.12(2.13-6.40) | | 2929 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.281 | 4.281 | 0.0 | 1.000 | 1364453 | 1.00 | | 100 | 864 | |
| 663.00 > 169.00 | 4.281 | 4.281 | 0.0 | 1.000 | 429209 | | 3.18(1.25-3.76) | | 4613 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.522 | 4.513 | 0.009 | 1.000 | 3592611 | 2.51 | | 100 | 18612 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.522 | 4.522 | 0.0 | 1.000 | 380223 | 1.06 | | 106 | 3100 | |
| 713.00 > 219.00 | 4.511 | 4.522 | -0.011 | 0.998 | 251167 | | 1.51(0.71-2.13) | | 3103 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.931 | 4.924 | 0.007 | 1.000 | 5440015 | 2.46 | | 98.5 | 13964 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.931 | 4.931 | 0.0 | 1.000 | 2046888 | 0.9721 | | 97.2 | 494 | |
| 813.00 > 169.00 | 4.931 | 4.931 | 0.0 | 1.000 | 348409 | | 5.87(2.86-8.58) | | 1976 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.285 | 5.285 | 0.0 | 1.000 | 2162668 | 1.00 | | 100 | 417 | |
| 913.00 > 169.00 | 5.285 | 5.285 | 0.0 | 1.000 | 273519 | | 7.91(3.83-11.48) | | 1928 | |

## Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 14:13:41 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_058.d

Injection Date: 07-Apr-2018 16:11:21 Instrument ID: A8_N

Lims ID: CCV L4

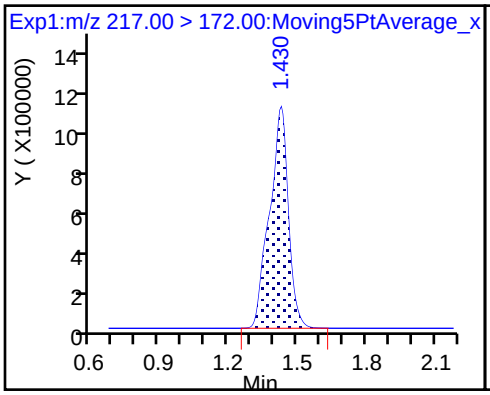
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 12

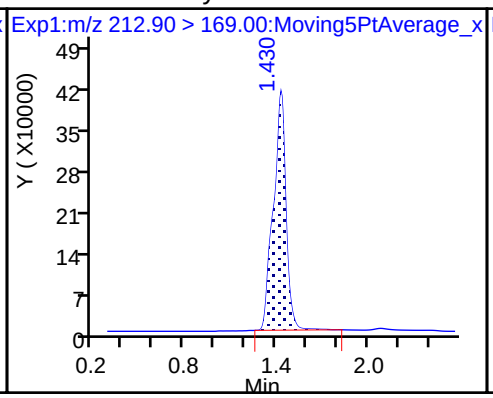
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

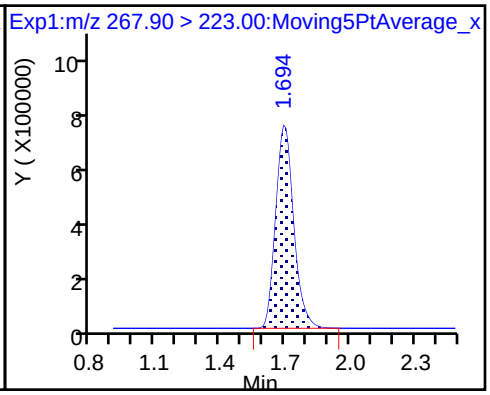
D 1 13C4 PFBA



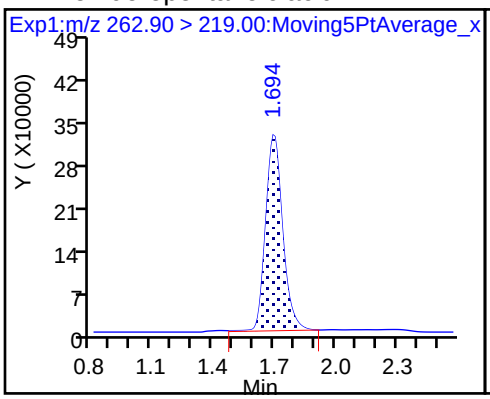

2 Perfluorobutyric acid



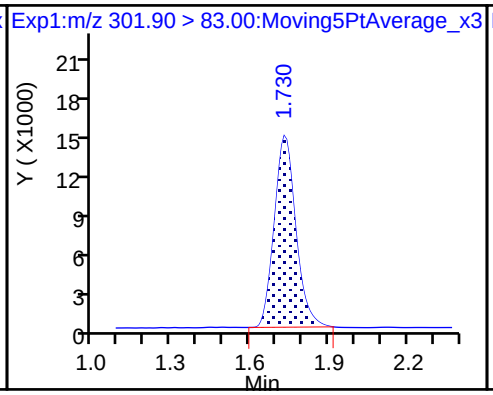

D 3 13C5-PFPeA



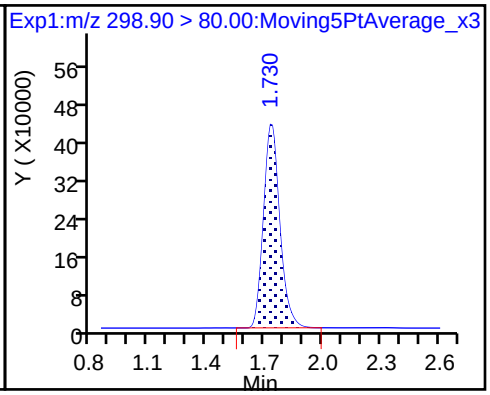

4 Perfluoropentanoic acid



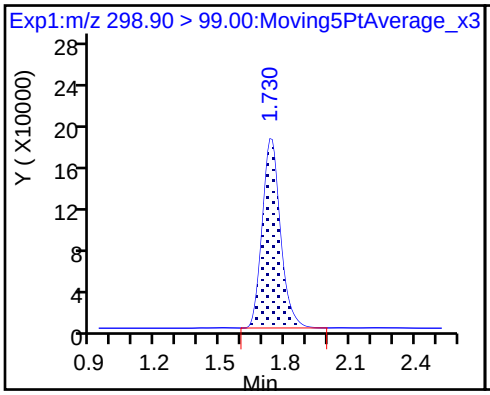

D 47 13C3-PFBS



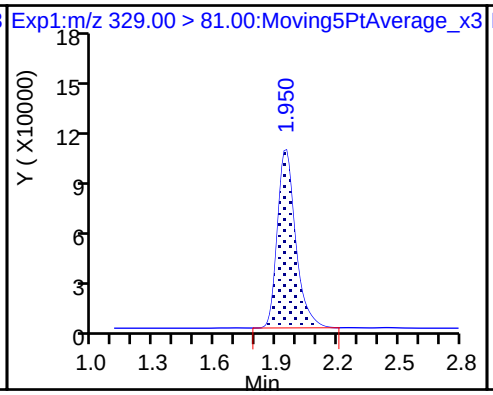

5 Perfluorobutanesulfonic acid



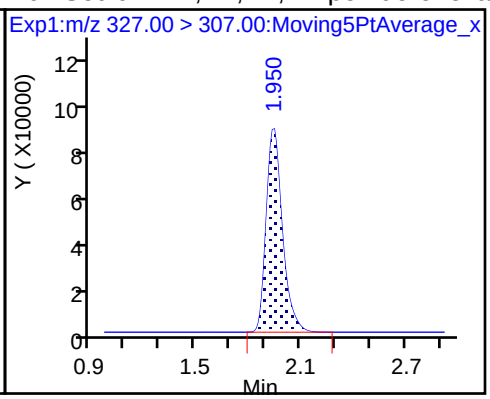

5 Perfluorobutanesulfonic acid



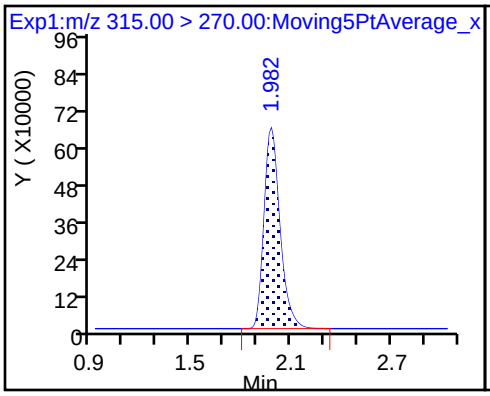

D 60 M2-4:2FTS



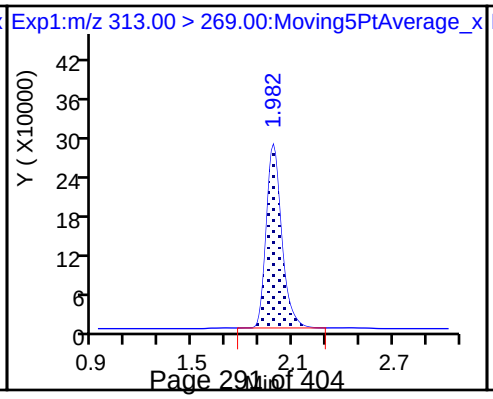

61 Sodium 1H,1H,2H,2H-perfluorohexane



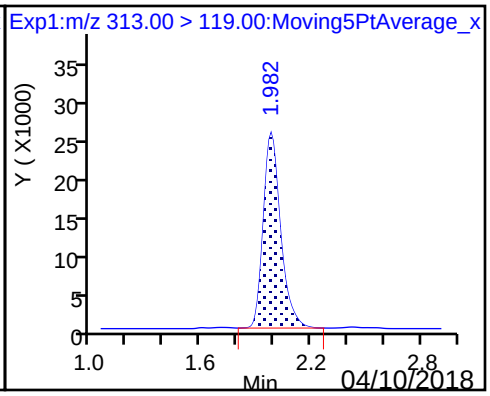

D 7 13C2 PFHxA



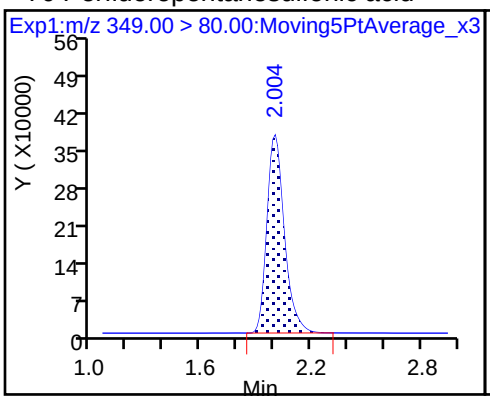

6 Perfluorohexanoic acid



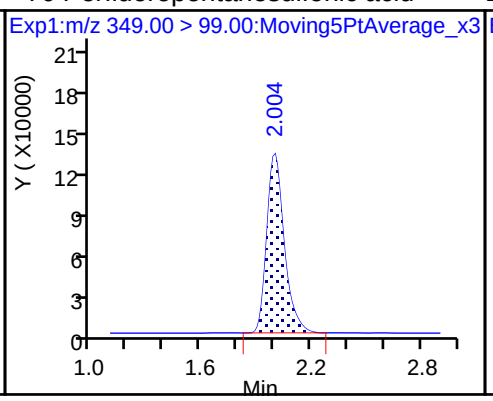

6 Perfluorohexanoic acid



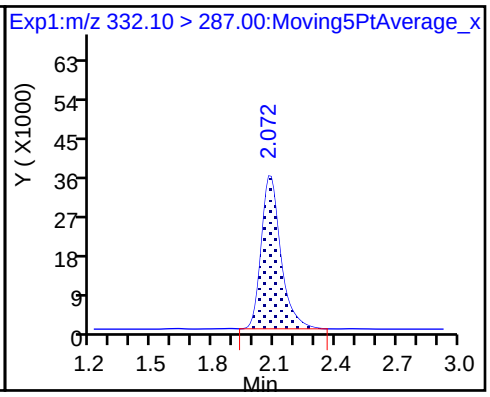
70 Perfluoropentanesulfonic acid



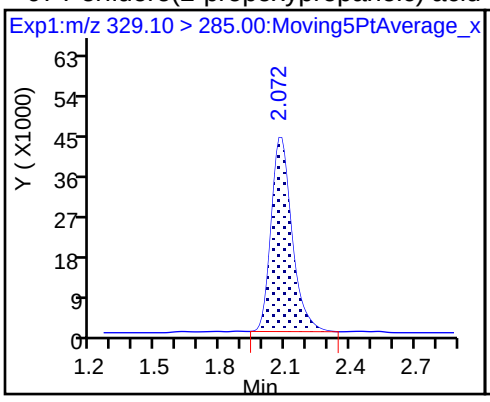

70 Perfluoropentanesulfonic acid



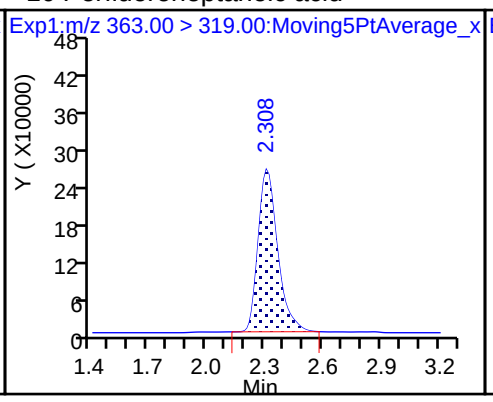

D 64 13C3 HFPO-DA



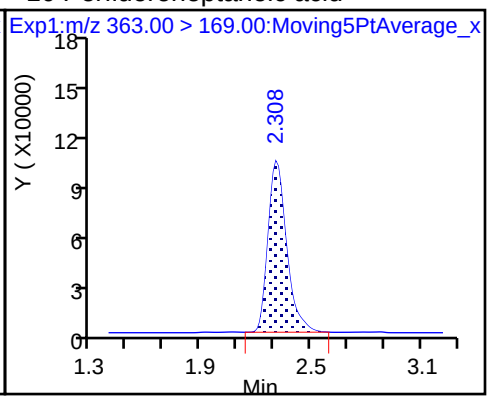

67 Perfluoro(2-propoxypropanoic) acid



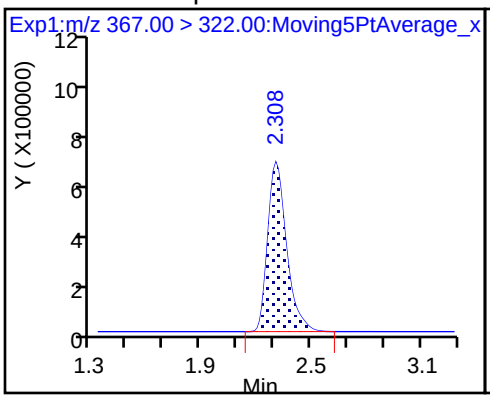

10 Perfluoroheptanoic acid



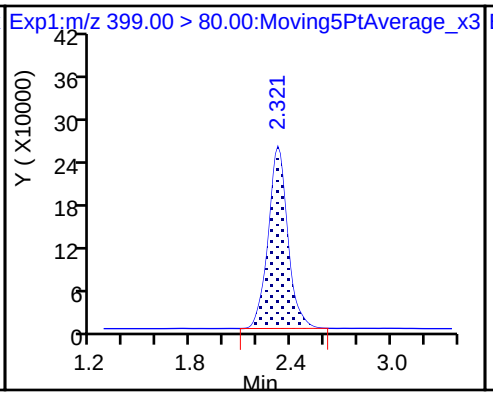

10 Perfluoroheptanoic acid



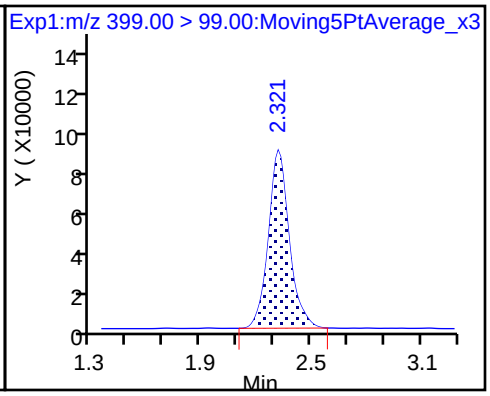

D 9 13C4-PFHpA



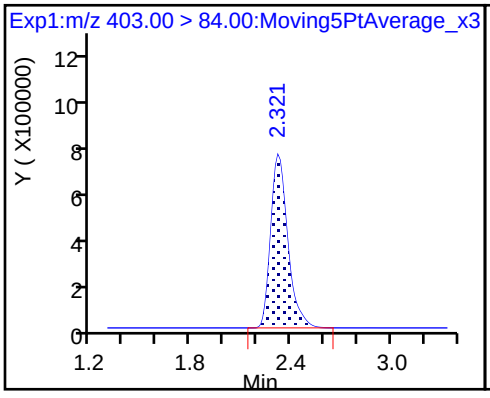

8 Perfluorohexanesulfonic acid



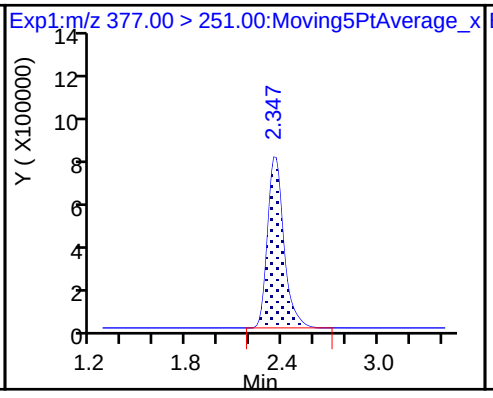

8 Perfluorohexanesulfonic acid



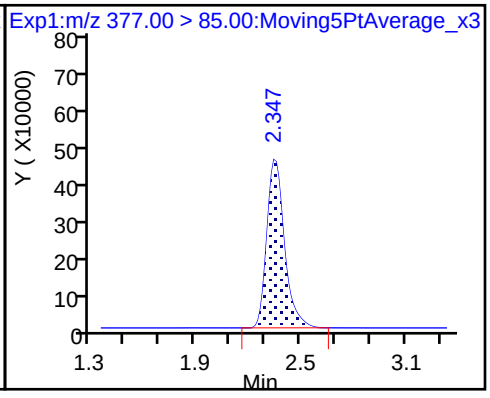

D 11 18O2 PFHxS



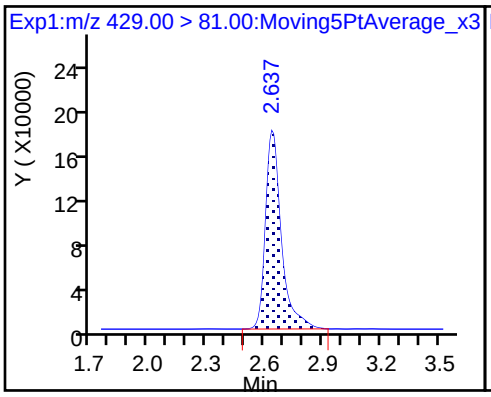

65 Adona



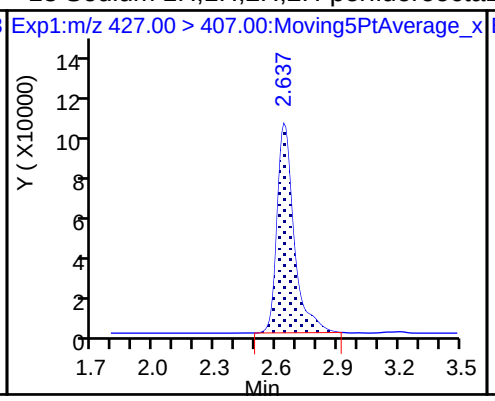

65 Adona



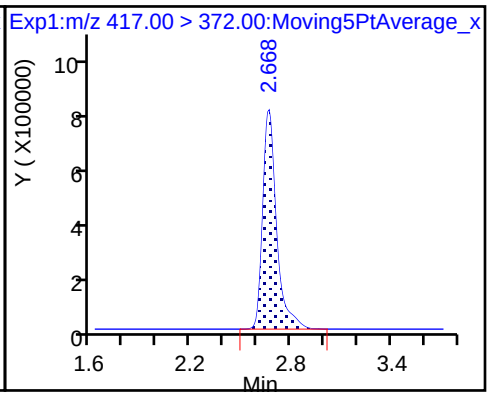
D 12 M2-6:2FTS



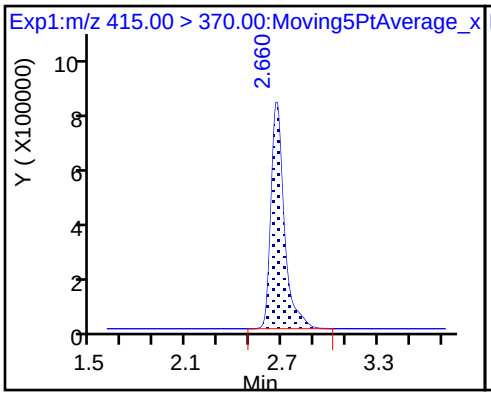

13 Sodium 1H,1H,2H,2H-perfluorooctane



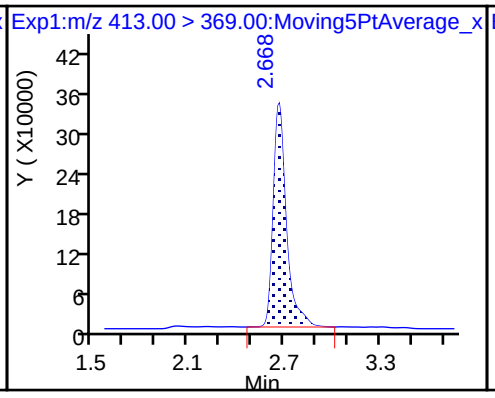

D 14 13C4 PFOA



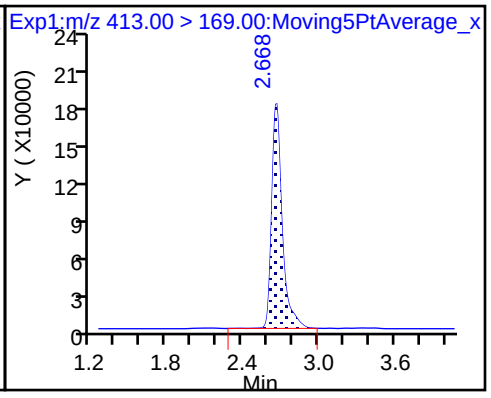

* 62 13C2-PFOA



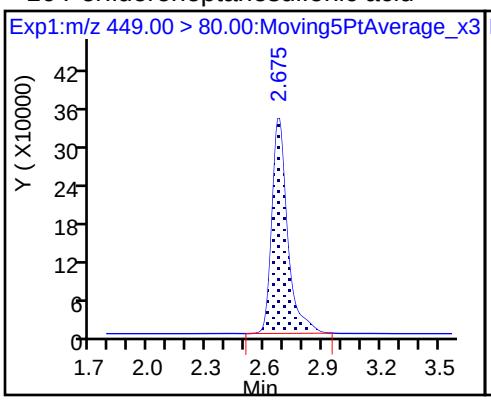

15 Perfluorooctanoic acid



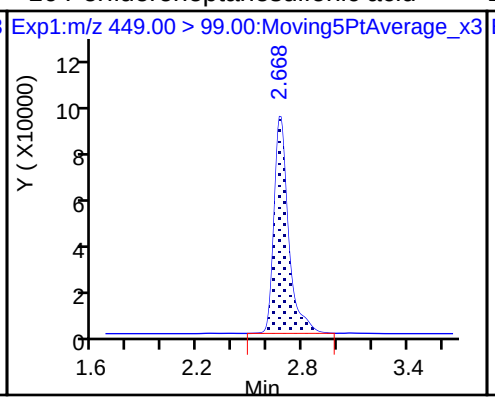

15 Perfluorooctanoic acid



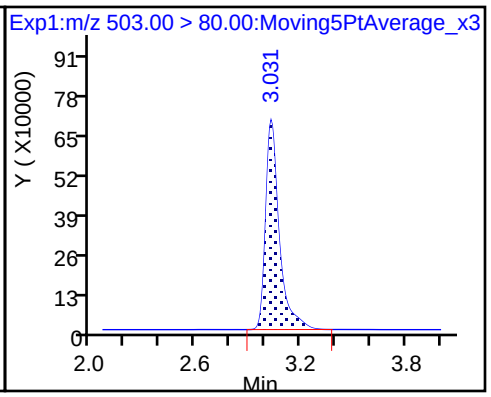

16 Perfluoroheptanesulfonic acid



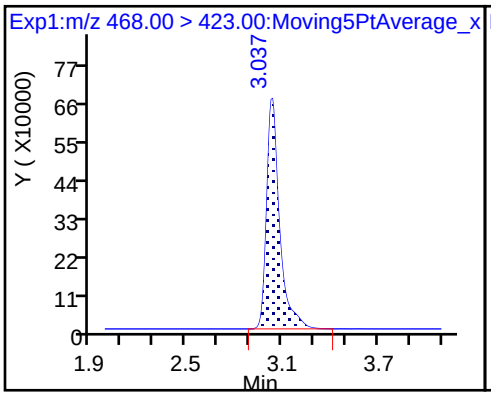

16 Perfluoroheptanesulfonic acid



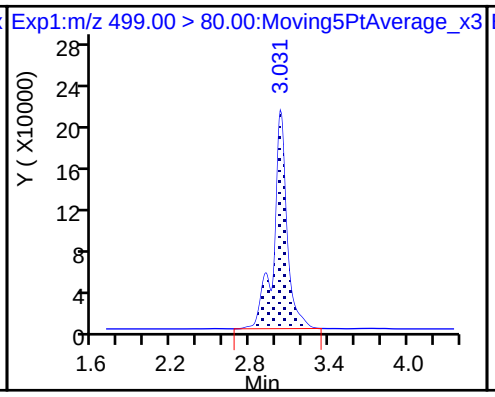

D 18 13C4 PFOS



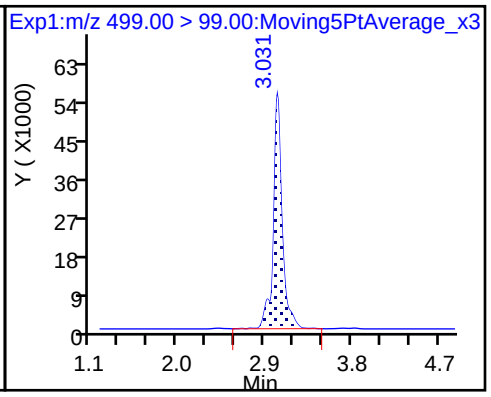

D 19 13C5 PFNA



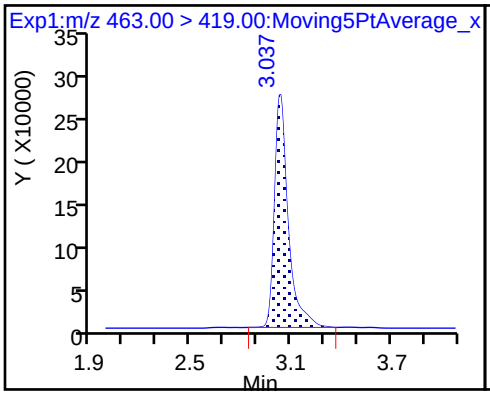

17 Perfluorooctane sulfonic acid



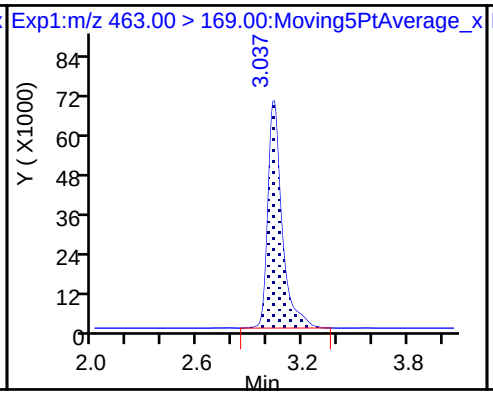

17 Perfluorooctane sulfonic acid



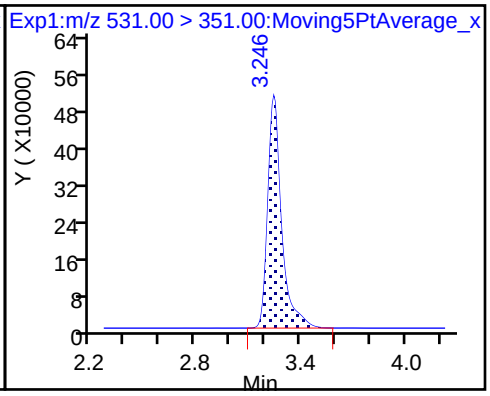
20 Perfluorononanoic acid



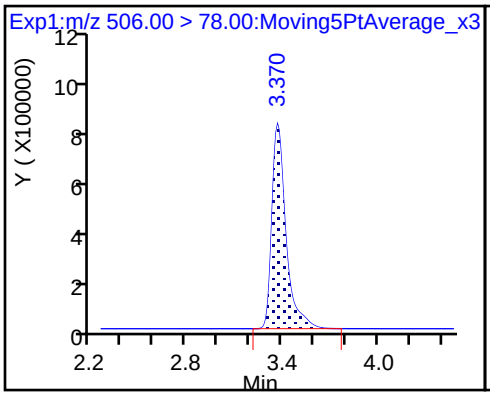

20 Perfluorononanoic acid



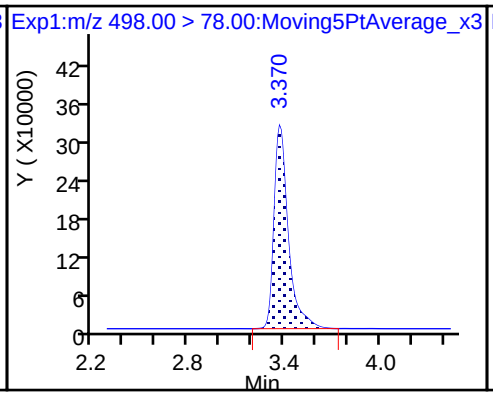

69 9-Chlorohexadecafluoro-3-oxanonane



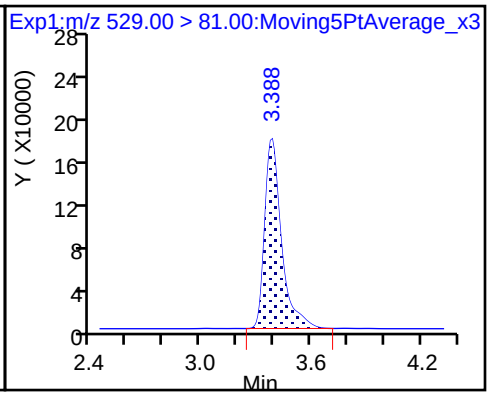

D 21 13C8 FOSA



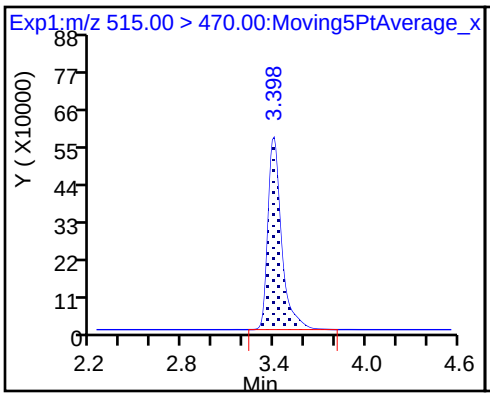

22 Perfluorooctane Sulfonamide



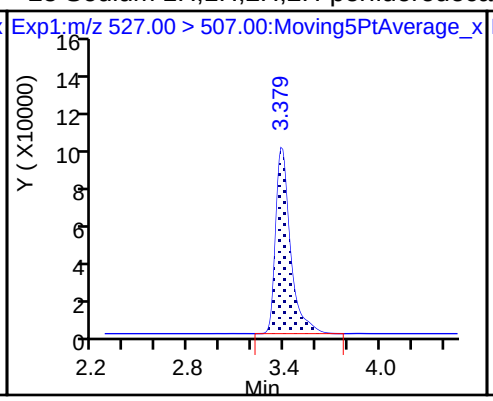

D 26 M2-8:2FTS



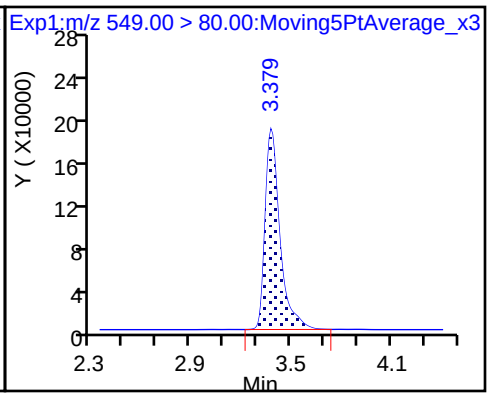

D 23 13C2 PFDA



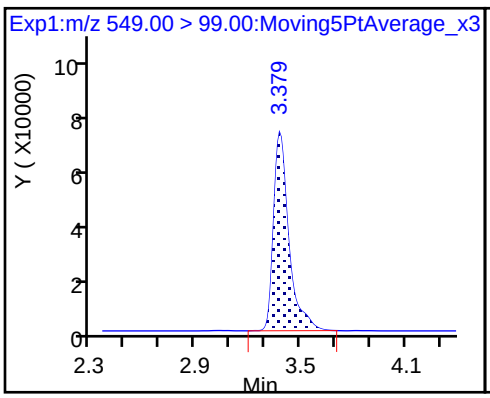

25 Sodium 1H,1H,2H,2H-perfluorodecane



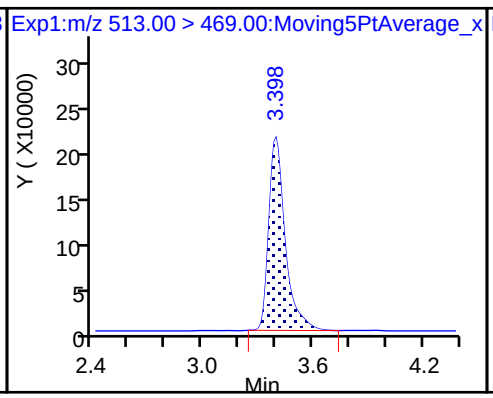

68 Perfluorononanesulfonic acid



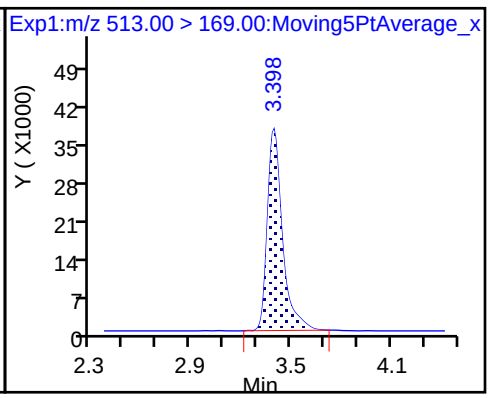

68 Perfluorononanesulfonic acid



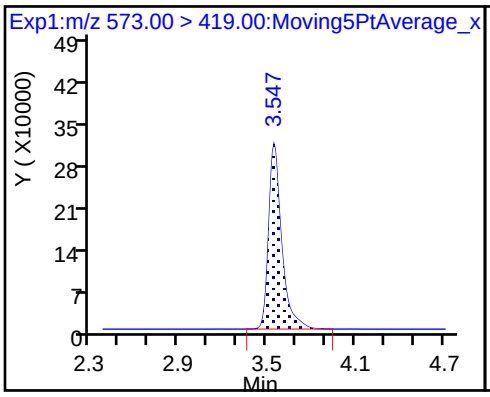

24 Perfluorodecanoic acid



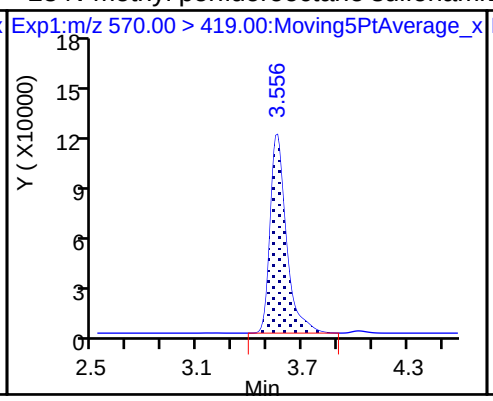

24 Perfluorodecanoic acid



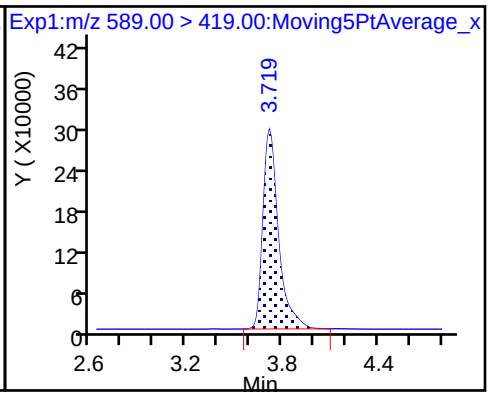
D 27 d3-NMeFOSAA



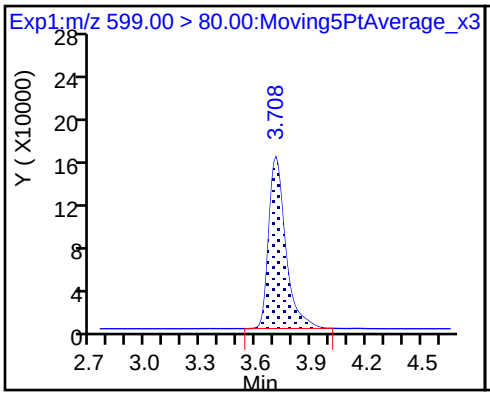

28 N-methyl perfluorooctane sulfonami



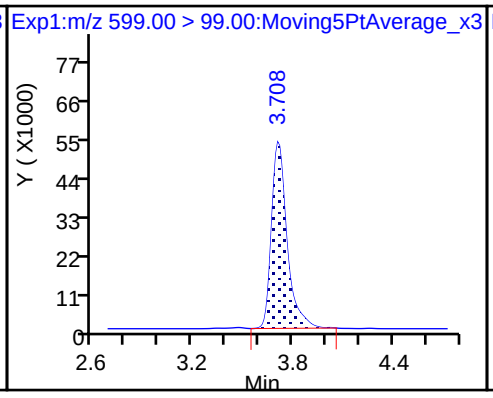

D 32 d5-NEtFOSAA



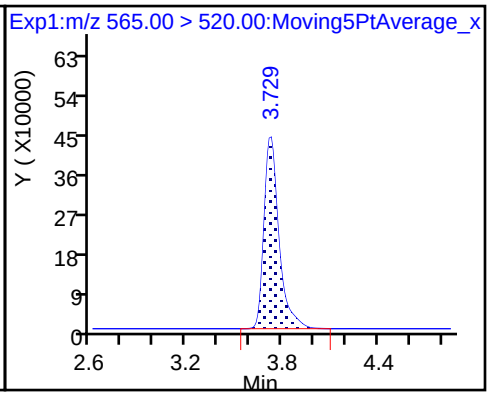

29 Perfluorodecane Sulfonic acid



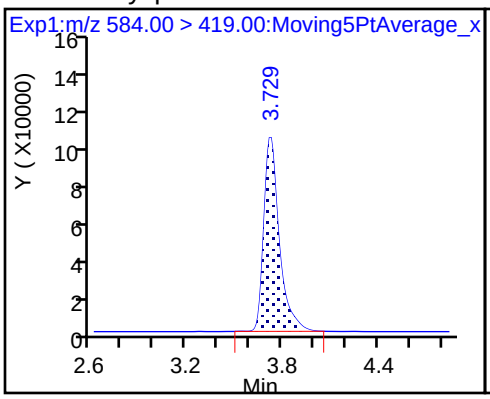

29 Perfluorodecane Sulfonic acid



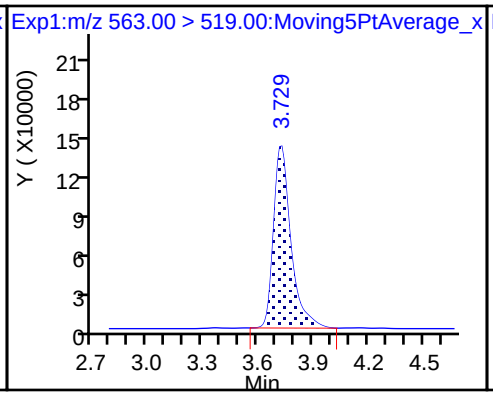

D 30 13C2 PFUnA



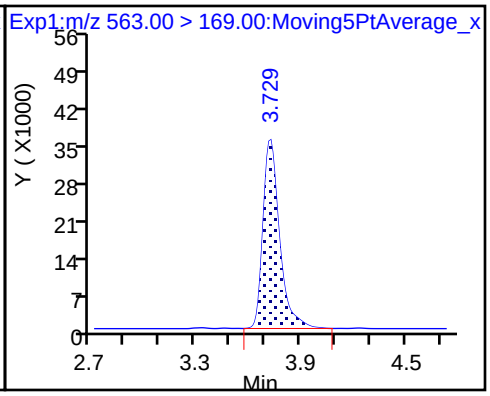

33 N-ethyl perfluorooctane sulfonamid



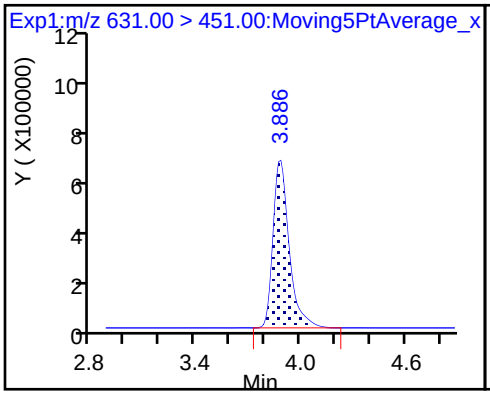

31 Perfluoroundecanoic acid



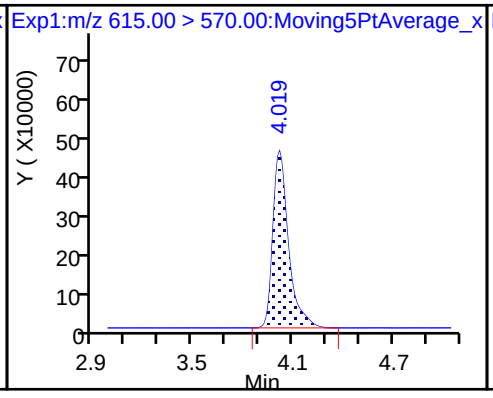

31 Perfluoroundecanoic acid



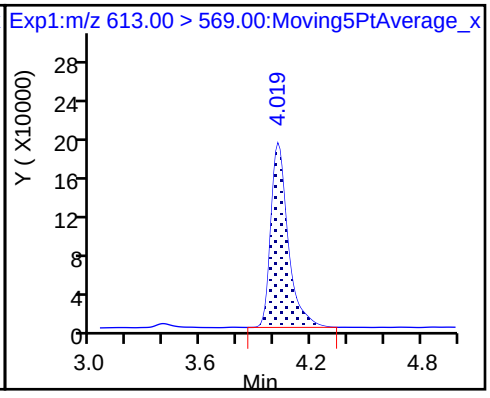

66 11-Chloroeicosafluoro-3-oxaundecan



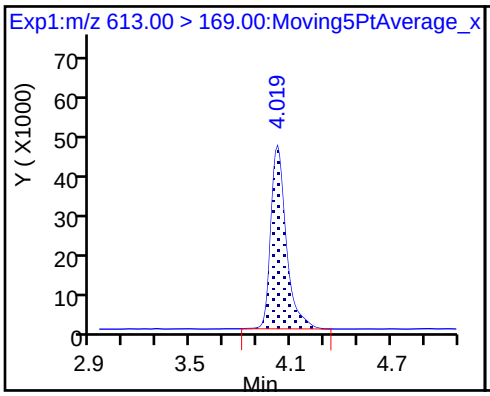

D 36 13C2 PFDoA



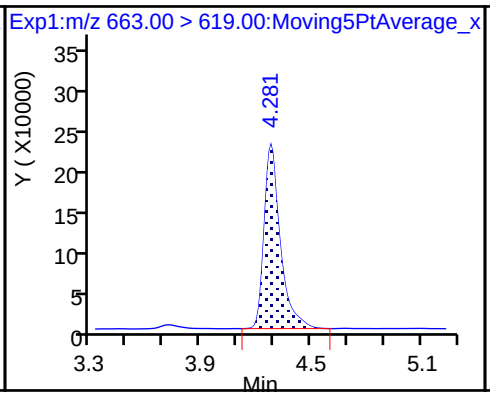

37 Perfluorododecanoic acid



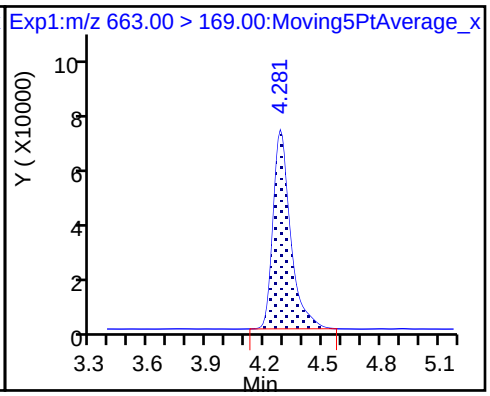
37 Perfluorododecanoic acid



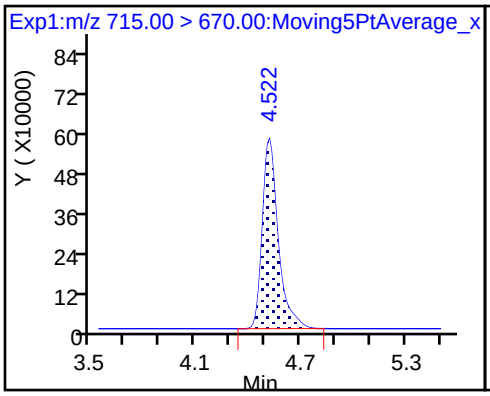

41 Perfluorotridecanoic acid



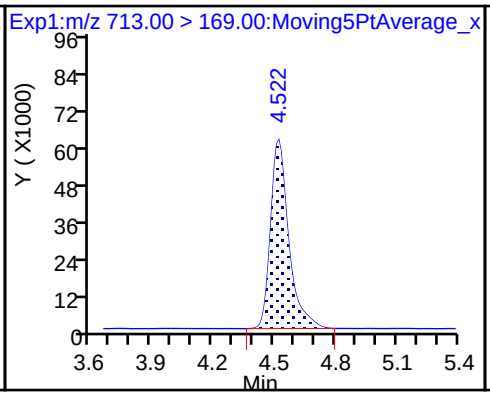

41 Perfluorotridecanoic acid



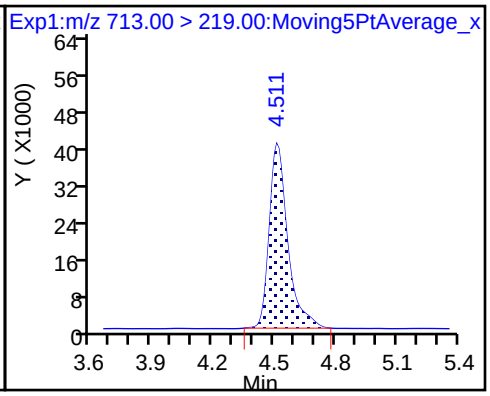

D 43 13C2-PFTeDA



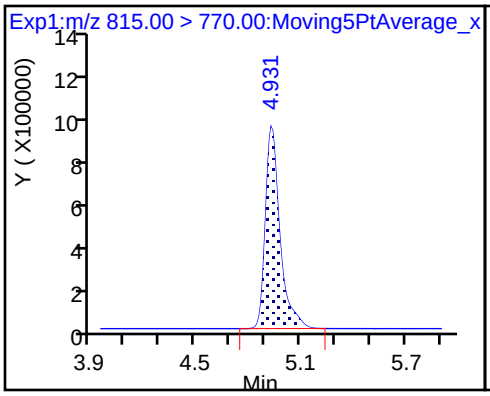

42 Perfluorotetradecanoic acid



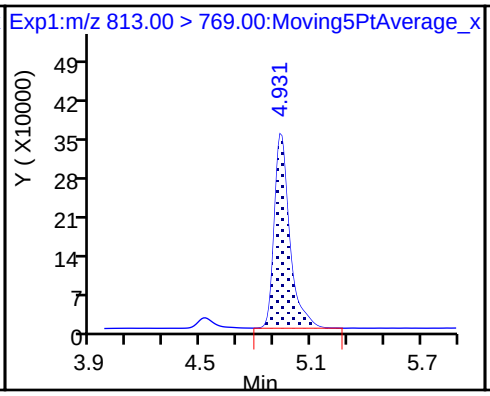

42 Perfluorotetradecanoic acid



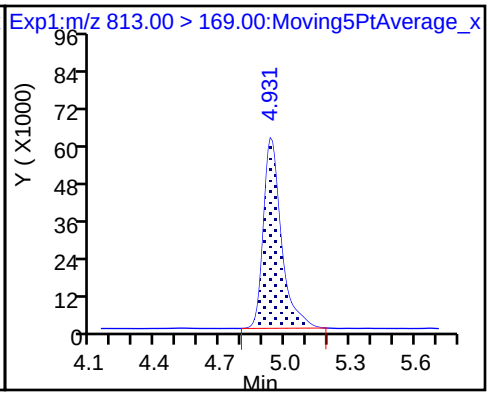

D 44 13C2-PFHxDA



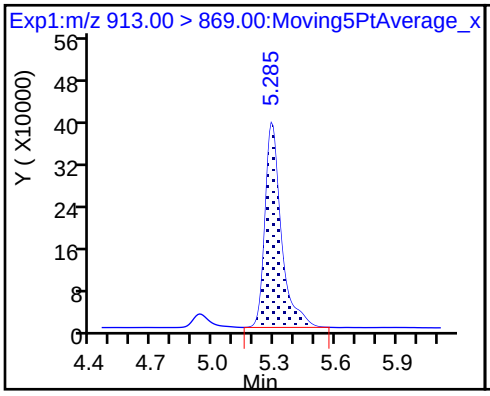

45 Perfluorohexadecanoic acid



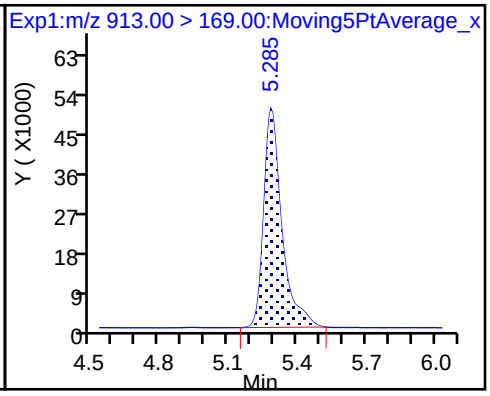

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCVL 320-216884/2 Calibration Date: 04/08/2018 14:32

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.08LLA_005.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | AveID | 0.9242 | 0.9463 | | 0.0512 | 0.0500 | 2.4 | 50.0 |
| Perfluoropentanoic acid (PFPeA) | AveID | 1.197 | 1.375 | | 0.0574 | 0.0500 | 14.9 | 50.0 |
| Perfluorobutanesulfonic acid (PFBS) | AveID | 78.89 | 82.12 | | 0.0460 | 0.0442 | 4.1 | 50.0 |
| 4:2 FTS | AveID | 17.26 | 17.68 | | 0.130 | 0.0467 | 2.4 | |
| Perfluorohexanoic acid (PFHxA) | AveID | 1.023 | 0.9891 | | 0.0483 | 0.0500 | -3.3 | 50.0 |
| Perfluoropentanesulfonic acid (PFPeS) | AveID | 71.20 | 69.13 | | 0.0455 | 0.0469 | -2.9 | 50.0 |
| HFPO-DA (GenX) | AveID | 3.401 | 2.199 | | 0.0323 | 0.0500 | -35.3 | 50.0 |
| Perfluoroheptanoic acid (PFHpA) | AveID | 1.087 | 1.230 | | 0.0566 | 0.0500 | 13.2 | 50.0 |
| Perfluorohexanesulfonic acid (PFHxS) | AveID | 1.117 | 1.245 | | 0.0507 | 0.0455 | 11.5 | 50.0 |
| Adona | AveID | 3.564 | 3.456 | | 0.0485 | 0.0500 | -3.0 | 50.0 |
| 6:2FTS | AveID | 1.868 | 1.616 | | 0.0500 | 0.0474 | -13.5 | 50.0 |
| Perfluorooctanoic acid (PFOA) | AveID | 1.186 | 1.206 | | 0.0508 | 0.0500 | 1.7 | 50.0 |
| Perfluoroheptanesulfonic Acid (PFHpS) | AveID | 1.333 | 1.199 | | 0.0428 | 0.0476 | -10.0 | 50.0 |
| Perfluorononanoic acid (PFNA) | AveID | 1.029 | 0.9107 | | 0.0443 | 0.0500 | -11.5 | 50.0 |
| Perfluorooctanesulfonic acid (PFOS) | AveID | 1.143 | 1.140 | | 0.0463 | 0.0464 | -0.3 | 50.0 |
| 9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate | AveID | 1.870 | 1.803 | | 0.0449 | 0.0466 | -3.6 | 50.0 |
| Perfluorooctane Sulfonamide (FOSA) | AveID | 0.9877 | 1.043 | | 0.0528 | 0.0500 | 5.6 | 50.0 |
| 8:2FTS | AveID | 1.349 | 1.124 | | 0.0500 | 0.0479 | -16.6 | 50.0 |
| Perfluorononanesulfonic acid (PFNS) | AveID | 0.8018 | 0.6480 | | 0.0388 | 0.0480 | -19.2 | 50.0 |
| Perfluorodecanoic acid (PFDA) | AveID | 0.9893 | 1.054 | | 0.0533 | 0.0500 | 6.6 | 50.0 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | AveID | 1.054 | 0.9739 | | 0.0780 | 0.0500 | -7.6 | 50.0 |
| Perfluorodecanesulfonic acid (PFDS) | AveID | 0.6938 | 0.7209 | | 0.0501 | 0.0482 | 3.9 | 50.0 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | AveID | 0.9171 | 0.9728 | | 0.0530 | 0.0500 | 6.1 | 50.0 |
| Perfluoroundecanoic acid (PFUnA) | AveID | 0.8023 | 0.7544 | | 0.0470 | 0.0500 | -6.0 | 50.0 |
| 11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate | AveID | 2.902 | 2.994 | | 0.0486 | 0.0471 | 3.2 | 50.0 |
| Perfluorododecanoic acid (PFDoA) | AveID | 1.081 | 1.018 | | 0.0471 | 0.0500 | -5.9 | 50.0 |
| Perfluorotridecanoic Acid (PFTriA) | AveID | 1.156 | 1.067 | | 0.0461 | 0.0500 | -7.7 | 50.0 |
| Perfluorotetradecanoic acid (PFTeA) | AveID | 0.2497 | 0.2816 | | 0.0564 | 0.0500 | 12.8 | 50.0 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | L2ID | | 1.334 | | 0.0490 | 0.0500 | -2.0 | 50.0 |

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCVL 320-216884/2  Calibration Date: 04/08/2018 14:32

Instrument ID: A8_N  Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100  ID: 3.00(mm)  Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.08LLA_005.d  Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluoro-n-octadecanoic acid (PFODA) | AveID | 0.9928 | 0.7874 | | 0.0397 | 0.0500 | -20.7 | 50.0 |
| 13C4 PFBA | Ave | 1.382 | 1.361 | | 2.46 | 2.50 | -1.5 | 50.0 |
| 13C5 PFPeA | Ave | 0.8994 | 0.8887 | | 2.47 | 2.50 | -1.2 | 50.0 |
| 13C3-PFBS | Ave | 0.0206 | 0.0206 | | 2.33 | 2.33 | 0.1 | 50.0 |
| M2-4:2FTS | Ave | 0.1573 | 0.1524 | | 2.26 | 2.34 | -3.1 | 50.0 |
| 13C2 PFHxA | Ave | 0.9916 | 1.014 | | 2.56 | 2.50 | 2.3 | 50.0 |
| 13C3 HFPO-DA | Ave | 0.0494 | 0.0613 | | 3.11 | 2.50 | 24.2 | 50.0 |
| 13C4-PFHpA | Ave | 0.9533 | 0.9294 | | 2.44 | 2.50 | -2.5 | 50.0 |
| 18O2 PFHxS | Ave | 1.189 | 1.212 | | 2.41 | 2.37 | 2.0 | 50.0 |
| M2-6:2FTS | Ave | 0.2203 | 0.2240 | | 2.41 | 2.38 | 1.7 | 50.0 |
| 13C4 PFOA | Ave | 0.9372 | 0.9266 | | 2.47 | 2.50 | -1.1 | 50.0 |
| 13C4 PFOS | Ave | 0.8257 | 0.8560 | | 2.48 | 2.39 | 3.7 | 50.0 |
| 13C5 PFNA | Ave | 0.7930 | 0.8154 | | 2.57 | 2.50 | 2.8 | 50.0 |
| 13C8 FOSA | Ave | 1.166 | 1.094 | | 2.35 | 2.50 | -6.2 | 50.0 |
| M2-8:2FTS | Ave | 0.2562 | 0.2722 | | 2.55 | 2.40 | 6.3 | 50.0 |
| 13C2 PFDA | Ave | 0.6698 | 0.7041 | | 2.63 | 2.50 | 5.1 | 50.0 |
| d3-NMeFOSAA | Ave | 0.3583 | 0.4323 | | 3.02 | 2.50 | 20.7 | 50.0 |
| d5-NEtFOSAA | Ave | 0.3760 | 0.4708 | | 3.13 | 2.50 | 25.2 | 50.0 |
| 13C2 PFUnA | Ave | 0.5468 | 0.6285 | | 2.87 | 2.50 | 15.0 | 50.0 |
| 13C2 PFDoA | Ave | 0.6087 | 0.6774 | | 2.78 | 2.50 | 11.3 | 50.0 |
| 13C2-PFTeDA | Ave | 0.7733 | 0.8639 | | 2.79 | 2.50 | 11.7 | 50.0 |
| 13C2-PFHxDA | Ave | 1.194 | 1.341 | | 2.81 | 2.50 | 12.3 | 50.0 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 08-Apr-2018 14:32:55 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 11:40:49 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 11:27:42

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.428 | 1.424 | 0.004 | 1.000 | 5857698 | 2.46 | | 98.5 | 58660 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.428 | 1.425 | 0.003 | 1.000 | 110865 | 0.0512 | | 102 | 45.9 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.717 | 1.693 | 0.024 | 0.559 | 3823986 | 2.47 | | 98.8 | 83539 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.717 | 1.703 | 0.014 | 1.000 | 105171 | 0.0574 | | 115 | 68.5 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.753 | 1.729 | 0.024 | 1.000 | 82514 | 2.33 | | 100 | 534 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.753 | 1.748 | 0.005 | 1.000 | 128821 | 0.0460 | | 104 | 461 | |
| 298.90 > 99.00 | 1.753 | 1.748 | 0.005 | 1.000 | 52297 | | 2.46(1.25-3.74) | | 366 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.967 | 1.938 | 0.029 | 1.000 | 612458 | 2.26 | | 96.9 | 5385 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.967 | 1.960 | 0.007 | 1.000 | 29296 | 0.0478 | | 102 | 1528 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 2.000 | 1.981 | 0.019 | 1.000 | 4363907 | 2.56 | | 102 | 113131 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 2.000 | 1.993 | 0.007 | 1.000 | 86324 | 0.0483 | | 96.7 | 140 | |
| 313.00 > 119.00 | 2.000 | 1.993 | 0.007 | 1.000 | 6822 | | 12.65(5.03-15.10) | | 69.4 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.022 | 2.016 | 0.006 | 1.000 | 115064 | 0.0455 | | 97.1 | 767 | |
| 349.00 > 99.00 | 2.022 | 2.016 | 0.006 | 1.000 | 45156 | | 2.55(1.36-4.07) | | 460 | |
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.113 | 2.082 | 0.031 | 1.000 | 263909 | 3.11 | | 124 | 5799 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.101 | 2.095 | 0.006 | 0.995 | 11608 | 0.0323 | | 64.7 | 65.0 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.329 | 2.306 | 0.023 | 1.000 | 3998782 | 2.44 | | 97.5 | 70178 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.342 | 2.319 | 0.023 | 1.000 | 4932311 | 2.41 | | 102 | 87185 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.329 | 2.321 | 0.008 | 1.000 | 98382 | 0.0566 | | 113 | 134 | |
| 363.00 > 169.00 | 2.329 | 2.321 | 0.008 | 1.000 | 44826 | | 2.19(1.13-3.40) | | 236 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.342 | 2.334 | 0.008 | 1.000 | 118184 | 0.0507 | | 112 | 312 | |
| 399.00 > 99.00 | 2.342 | 2.334 | 0.008 | 1.000 | 39932 | | 2.96(1.50-4.49) | | 184 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.381 | 2.372 | 0.009 | 1.000 | 254572 | 0.0485 | | 97.0 | 3723 | |
| 377.00 > 85.00 | 2.381 | 2.372 | 0.009 | 1.000 | 159915 | | 1.59(0.84-2.53) | | 2598 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.666 | 2.628 | 0.038 | 1.000 | 915454 | 2.41 | | 102 | 14824 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.689 | 2.660 | 0.029 | 1.000 | 3986731 | 2.47 | | 98.9 | 100299 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.666 | 2.660 | 0.006 | 1.000 | 29518 | 0.0410 | | 86.5 | 258 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.689 | 2.683 | 0.006 | | 4302682 | 2.50 | | | 76413 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.689 | 2.683 | 0.006 | 1.000 | 96157 | 0.0508 | | 102 | 40.2 | |
| 413.00 > 169.00 | 2.689 | 2.683 | 0.006 | 1.000 | 49742 | | 1.93(0.84-2.52) | | 142 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.704 | 2.690 | 0.014 | 1.000 | 84111 | 0.0428 | | 90.0 | 413 | |
| 449.00 > 99.00 | 2.696 | 2.690 | 0.006 | 0.997 | 25216 | | 3.34(1.94-5.82) | | 250 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.068 | 3.023 | 0.045 | 1.000 | 3508397 | 2.57 | | 103 | 104900 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.061 | 3.023 | 0.038 | 1.000 | 3521197 | 2.48 | | 104 | 25352 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.061 | 3.052 | 0.009 | 1.000 | 77911 | 0.0463 | | 99.7 | 284 | |
| 499.00 > 99.00 | 3.061 | 3.052 | 0.009 | 1.000 | 18750 | | 4.16(2.31-6.93) | | 155 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.061 | 3.052 | 0.009 | 0.998 | 63901 | 0.0443 | | 88.5 | 95.4 | |
| 463.00 > 169.00 | 3.068 | 3.052 | 0.016 | 1.000 | 18406 | | 3.47(1.90-5.69) | | 243 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.275 | 3.266 | 0.009 | 1.000 | 123819 | 0.0449 | | 96.4 | 2792 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.373 | 3.359 | 0.014 | 1.000 | 4707872 | 2.35 | | 93.8 | 51346 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.373 | 3.370 | 0.003 | 1.000 | 98207 | 0.0528 | | 106 | 3267 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.419 | 3.377 | 0.042 | 1.000 | 1122149 | 2.55 | | 106 | 9770 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.428 | 3.387 | 0.041 | 1.000 | 3029426 | 2.63 | | 105 | 60857 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.410 | 3.398 | 0.012 | 1.000 | 45823 | 0.0388 | | 80.8 | 449 | |
| 549.00 > 99.00 | 3.410 | 3.398 | 0.012 | 1.000 | 18260 | | 2.51(1.33-3.97) | | 220 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.410 | 3.407 | 0.003 | 0.997 | 25237 | 0.0399 | | 83.4 | 547 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | R |
| 513.00 > 469.00 | 3.428 | 3.417 | 0.011 | 1.000 | 63878 | 0.0533 | | 107 | 193 | R |
| 513.00 > 169.00 | 3.428 | 3.417 | 0.011 | 1.000 | 8332 | | 7.67(2.36-7.09) | | 167 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.577 | 3.536 | 0.041 | 1.000 | 1860036 | 3.02 | | 121 | 25998 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.588 | 3.575 | 0.013 | 1.003 | 36231 | 0.0462 | | 92.4 | 291 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.753 | 3.706 | 0.047 | 1.000 | 2025638 | 3.13 | | 125 | 23326 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.763 | 3.717 | 0.046 | 1.000 | 2704231 | 2.87 | | 115 | 58227 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.743 | 3.729 | 0.014 | 1.000 | 51193 | 0.0501 | | 104 | 448 | |
| 599.00 > 99.00 | 3.743 | 3.729 | 0.014 | 1.000 | 14429 | | 3.55(1.39-4.16) | | 271 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.763 | 3.750 | 0.013 | 1.000 | 40802 | 0.0470 | | 94.0 | 134 | |
| 563.00 > 169.00 | 3.763 | 3.750 | 0.013 | 1.000 | 9790 | | 4.17(2.12-6.36) | | 202 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.763 | 3.750 | 0.013 | 1.003 | 39411 | 0.0530 | | 106 | 511 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.920 | 3.907 | 0.013 | 1.000 | 207781 | 0.0486 | | 103 | 5570 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.061 | 4.007 | 0.054 | 1.000 | 2914676 | 2.78 | | 111 | 24602 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.051 | 4.040 | 0.011 | 0.997 | 59317 | 0.0471 | | 94.1 | 51.1 | |
| 613.00 > 169.00 | 4.061 | 4.040 | 0.021 | 1.000 | 16017 | | 3.70(2.13-6.40) | | 137 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.319 | 4.307 | 0.012 | 1.000 | 62196 | 0.0461 | | 92.3 | 38.1 | |
| 663.00 > 169.00 | 4.319 | 4.307 | 0.012 | 1.000 | 22282 | | 2.79(1.25-3.76) | | 193 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.562 | 4.510 | 0.052 | 1.000 | 3717054 | 2.79 | | 112 | 18872 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.572 | 4.553 | 0.019 | 1.002 | 20937 | 0.0564 | | 113 | 166 | |
| 713.00 > 219.00 | 4.562 | 4.553 | 0.009 | 1.000 | 16261 | | 1.29(0.71-2.13) | | 240 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.991 | 4.921 | 0.070 | 1.000 | 5770707 | 2.81 | | 112 | 14290 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.991 | 4.966 | 0.025 | 1.000 | 153910 | 0.0490 | | 98.0 | 37.1 | |
| 813.00 > 169.00 | 4.991 | 4.966 | 0.025 | 1.000 | 25135 | | 6.12(2.86-8.58) | | 145 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.362 | 5.336 | 0.026 | 1.000 | 90877 | 0.0397 | | 79.3 | 18.7 | |
| 913.00 > 169.00 | 5.362 | 5.336 | 0.026 | 1.000 | 10128 | | 8.97(3.83-11.48) | | 65.4 | |

## QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

## Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 11:40:51 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_005.d

Injection Date: 08-Apr-2018 14:32:55 Instrument ID: A8_N

Lims ID: CCVL

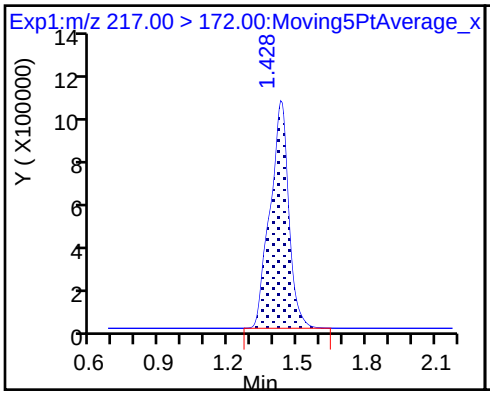
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

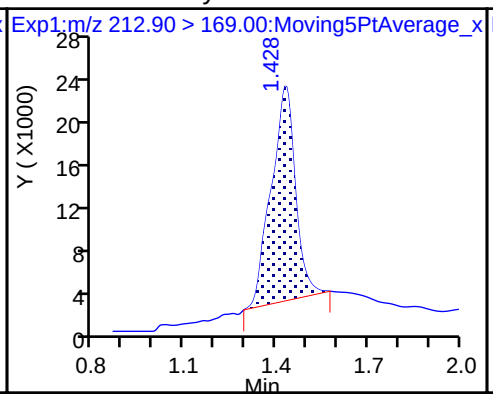
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

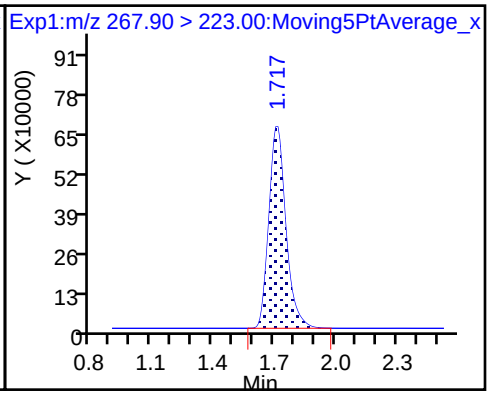
D 1 13C4 PFBA



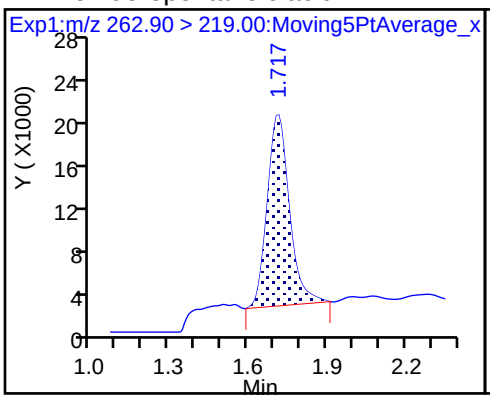

2 Perfluorobutyric acid



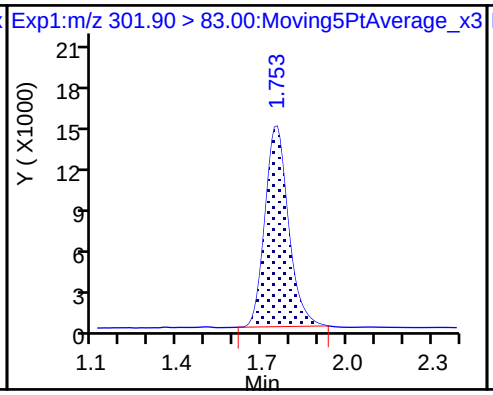

D 3 13C5-PFPeA



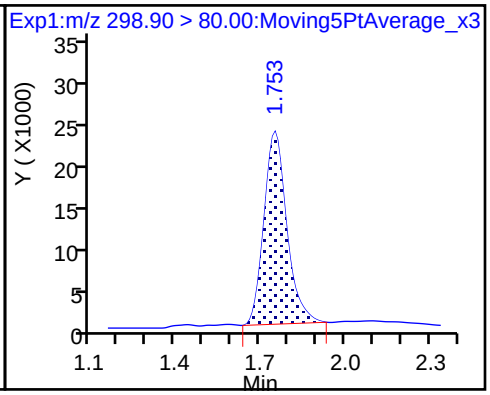

4 Perfluoropentanoic acid



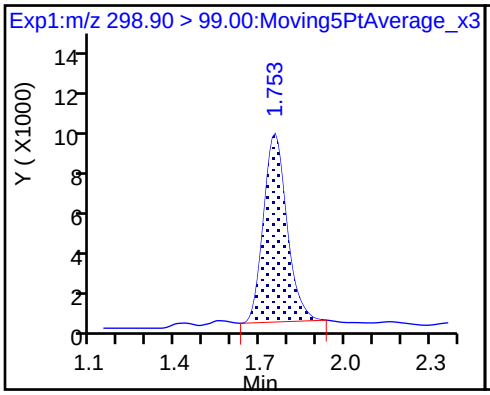

D 47 13C3-PFBS



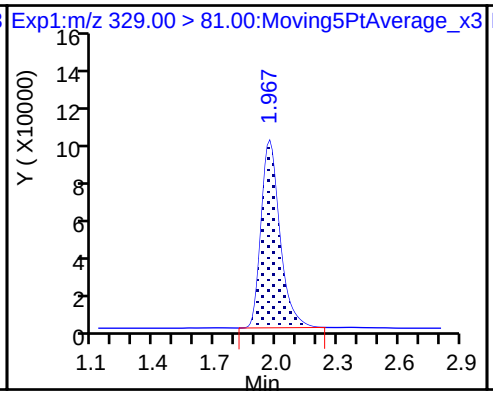

5 Perfluorobutanesulfonic acid



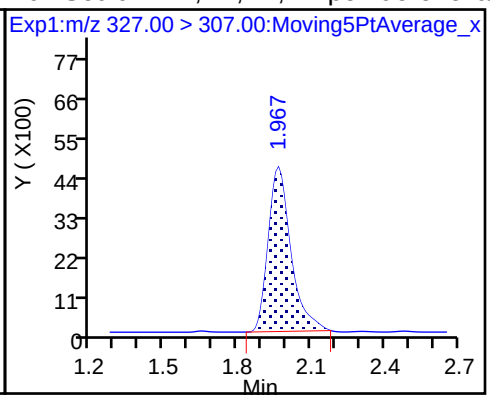

5 Perfluorobutanesulfonic acid



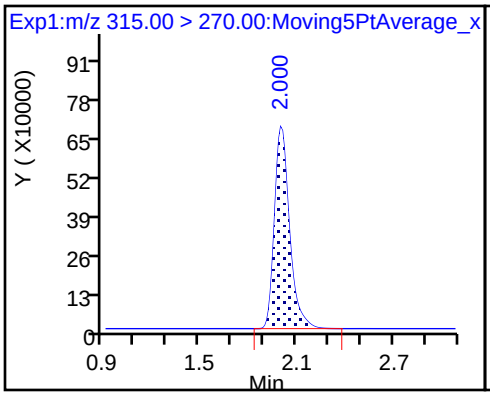

D 60 M2-4:2FTS



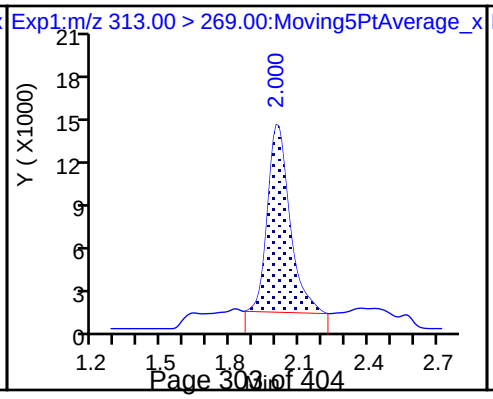

61 Sodium 1H,1H,2H,2H-perfluorohexane



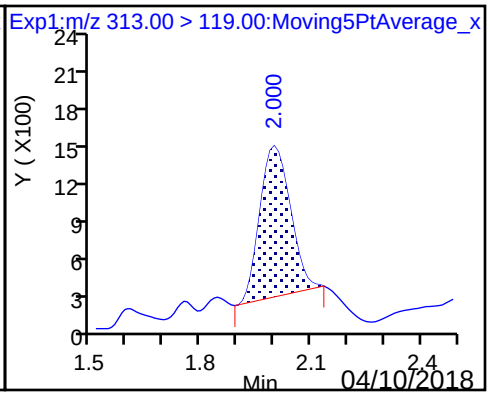

D 7 13C2 PFHxA



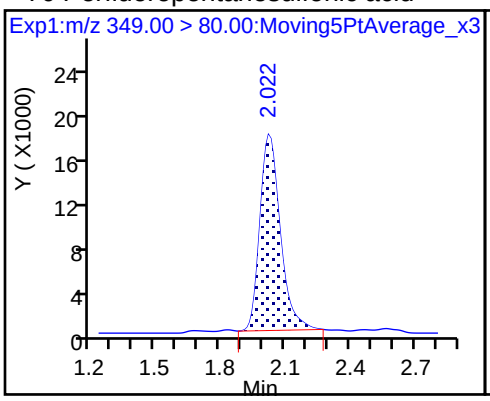

6 Perfluorohexanoic acid



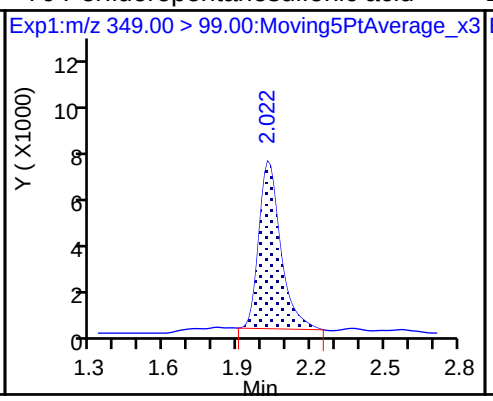

6 Perfluorohexanoic acid



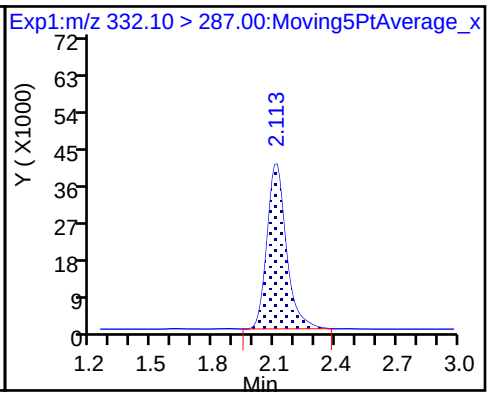
70 Perfluoropentanesulfonic acid



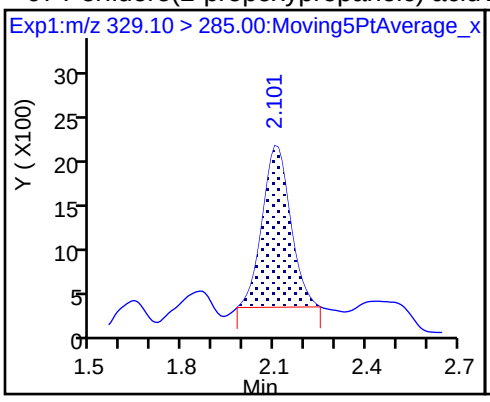

70 Perfluoropentanesulfonic acid



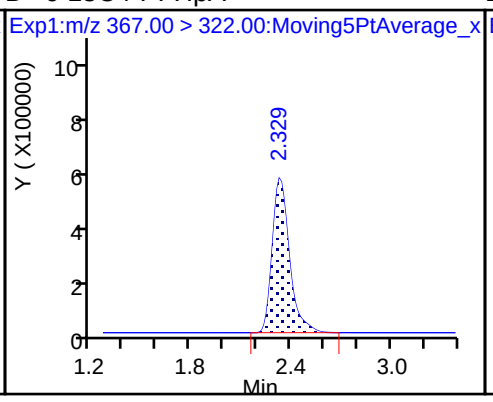

D 64 13C3 HFPO-DA



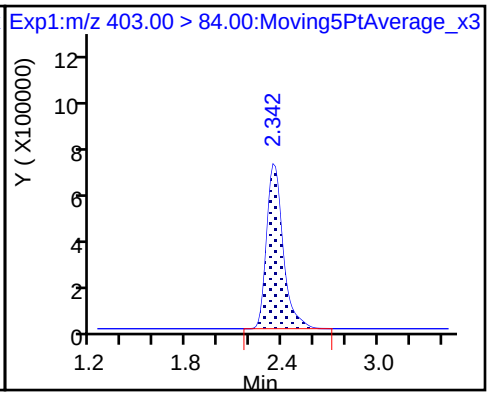

67 Perfluoro(2-propoxypropanoic) acid



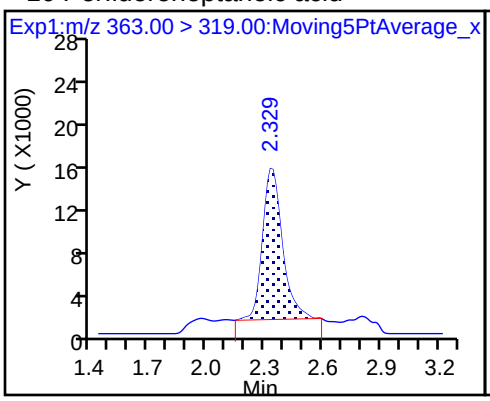

D 9 13C4-PFHpA



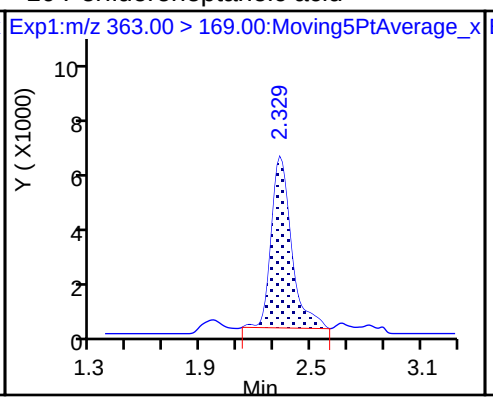

D 11 18O2 PFHxS



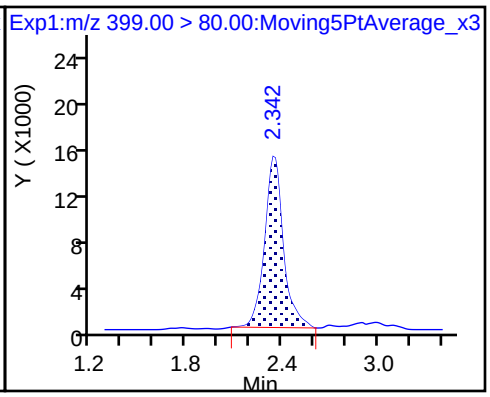

10 Perfluoroheptanoic acid



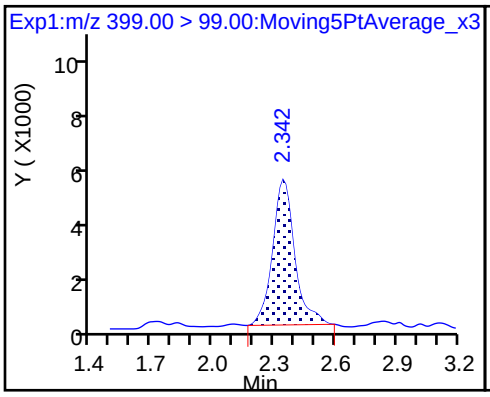

10 Perfluoroheptanoic acid



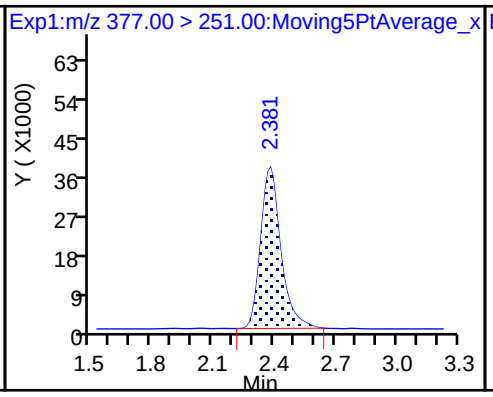

8 Perfluorohexanesulfonic acid



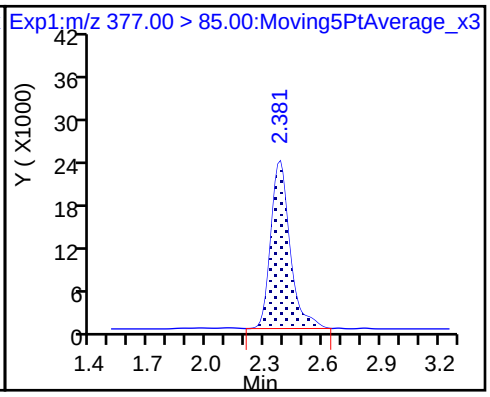

8 Perfluorohexanesulfonic acid



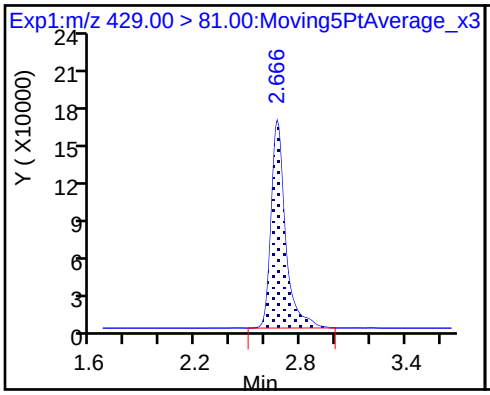

65 Adona



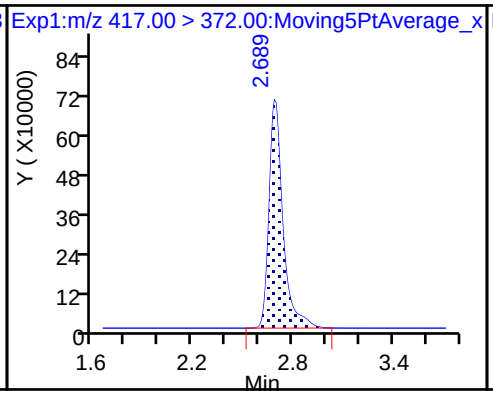

65 Adona



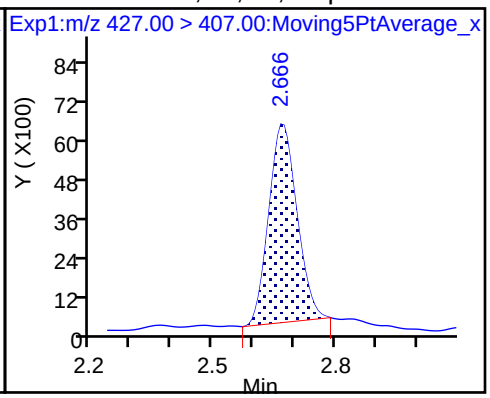
D 12 M2-6:2FTS



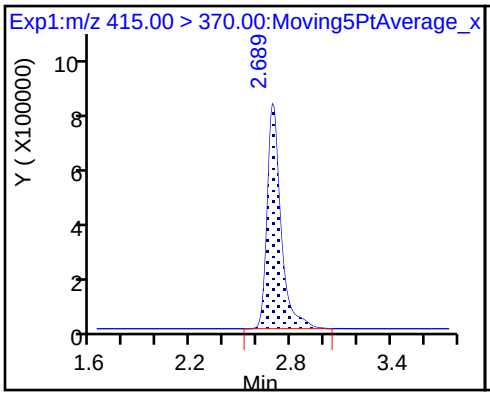

D 14 13C4 PFOA



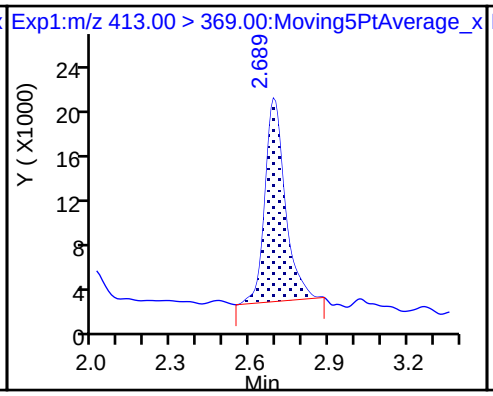

13 Sodium 1H,1H,2H,2H-perfluorooctane



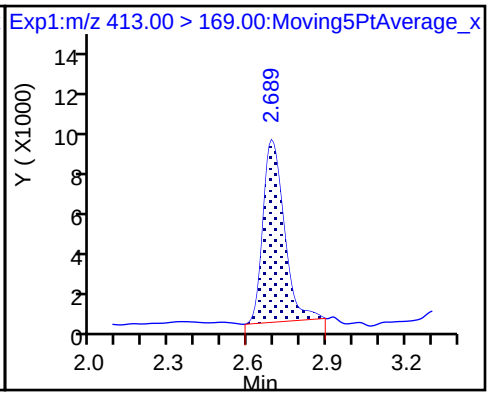

* 62 13C2-PFOA



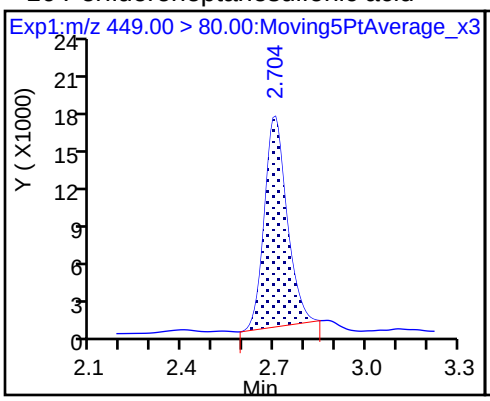

15 Perfluorooctanoic acid



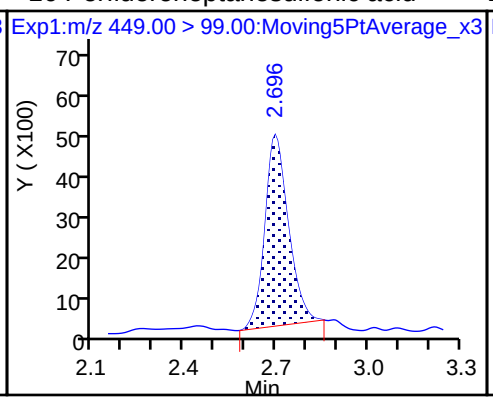

15 Perfluorooctanoic acid



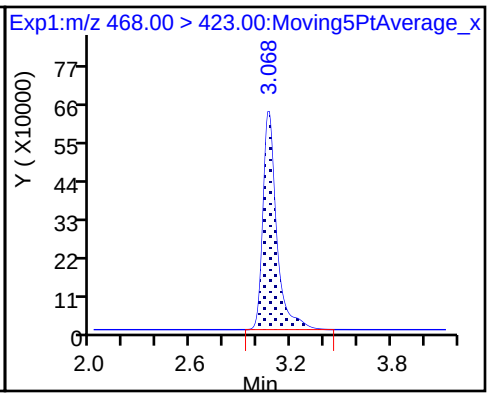

16 Perfluoroheptanesulfonic acid



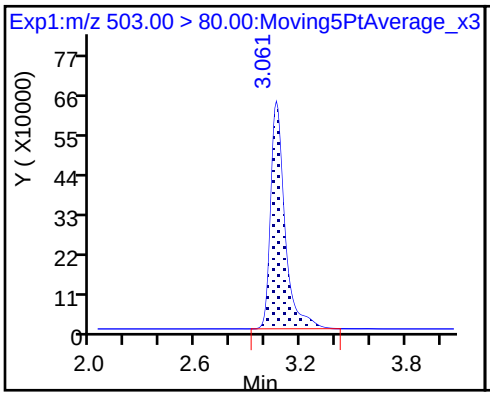

16 Perfluoroheptanesulfonic acid



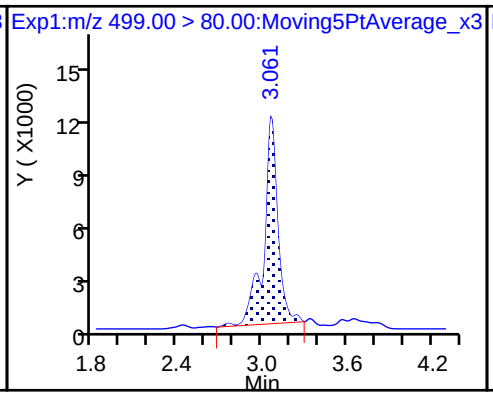

D 19 13C5 PFNA



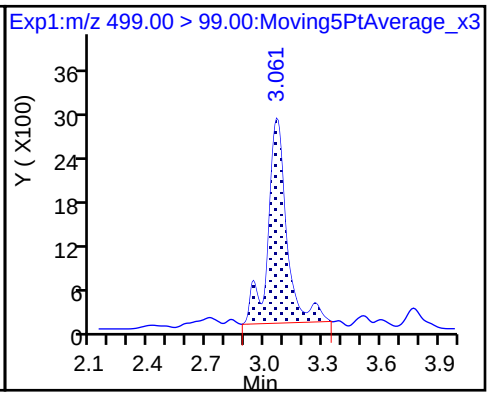

D 18 13C4 PFOS



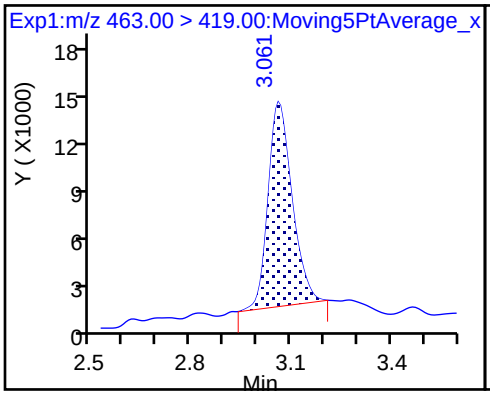

17 Perfluorooctane sulfonic acid



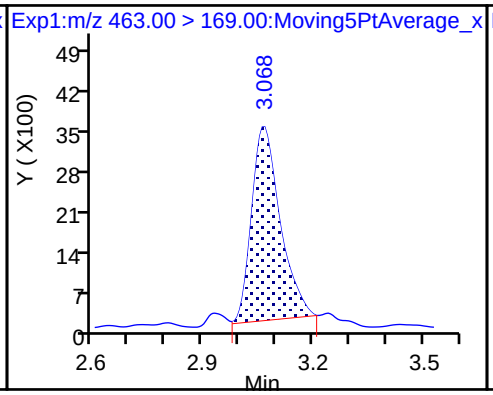

17 Perfluorooctane sulfonic acid



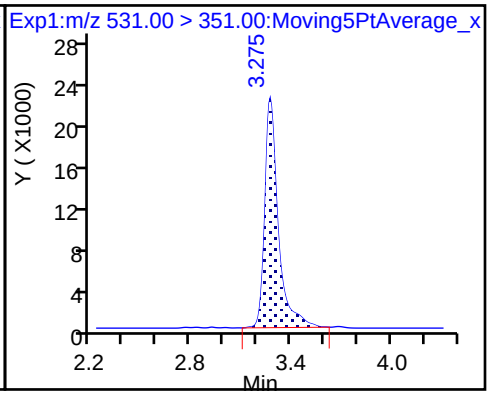
20 Perfluorononanoic acid



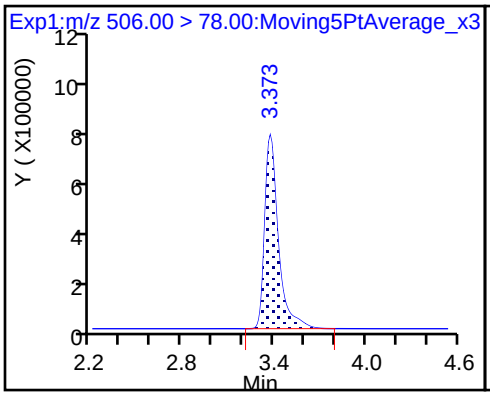

20 Perfluorononanoic acid



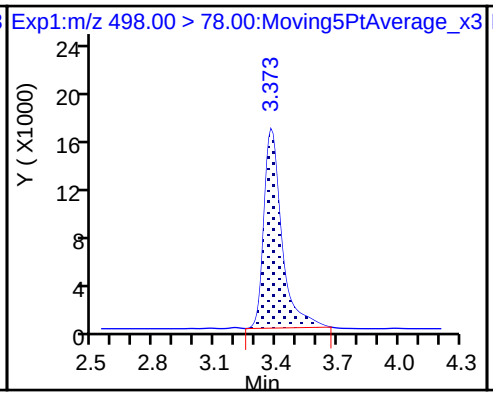

69 9-Chlorohexadecafluoro-3-oxanonane



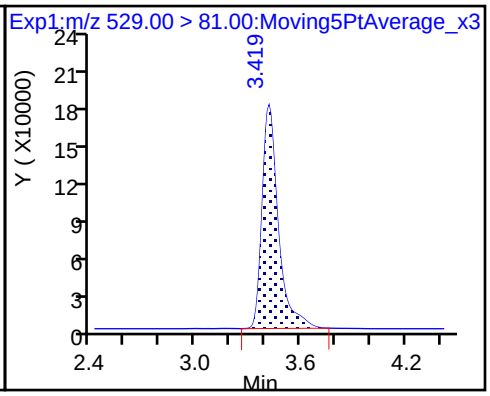

D 21 13C8 FOSA



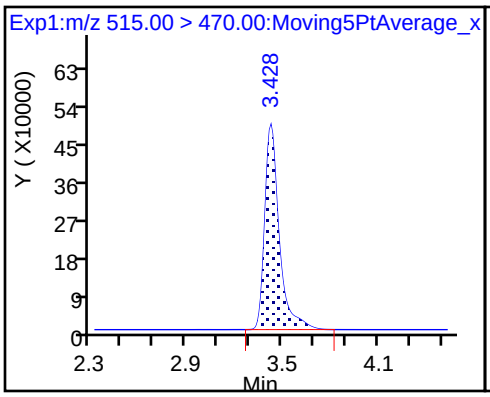

22 Perfluorooctane Sulfonamide



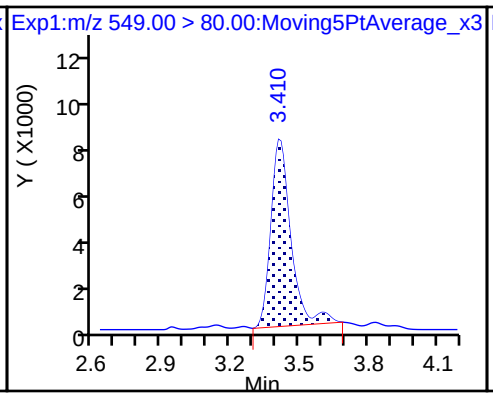

D 26 M2-8:2FTS



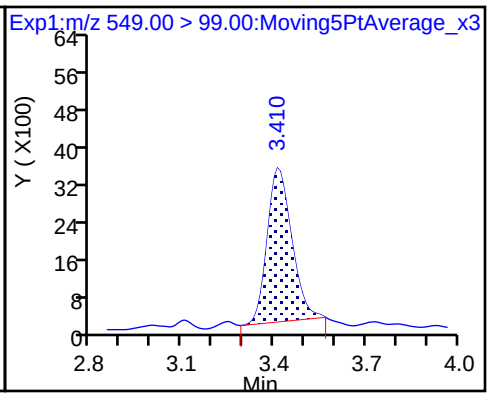

D 23 13C2 PFDA



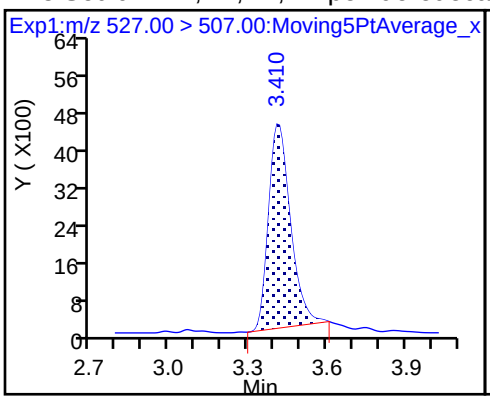

68 Perfluorononanesulfonic acid



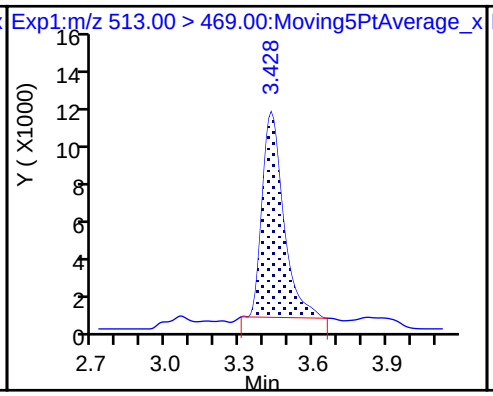

68 Perfluorononanesulfonic acid



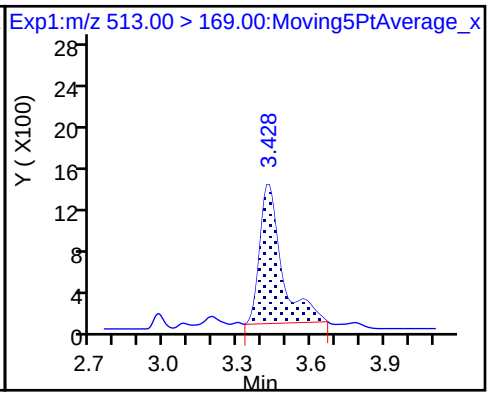

25 Sodium 1H,1H,2H,2H-perfluorodecane



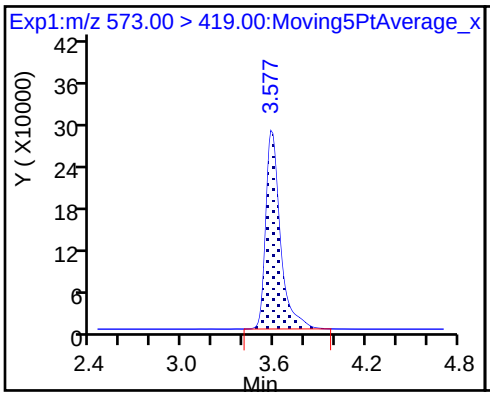

24 Perfluorodecanoic acid



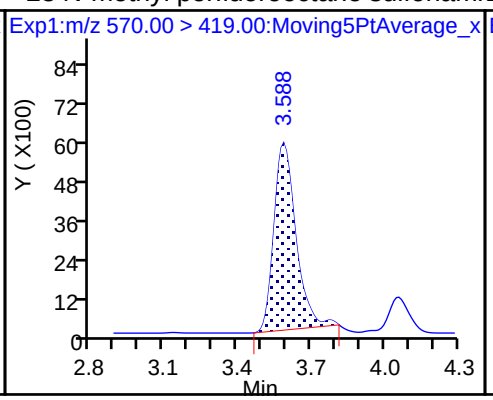

24 Perfluorodecanoic acid



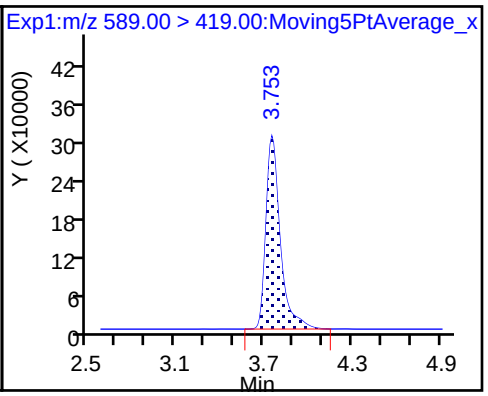
D 27 d3-NMeFOSAA



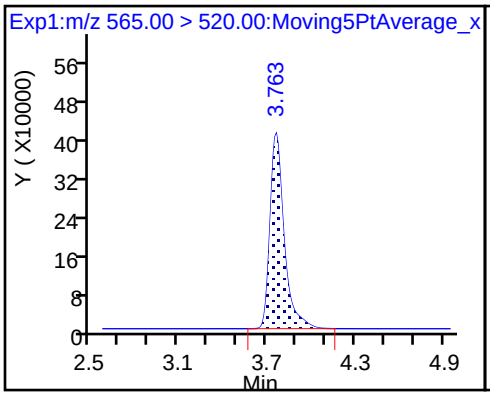

28 N-methyl perfluorooctane sulfonami



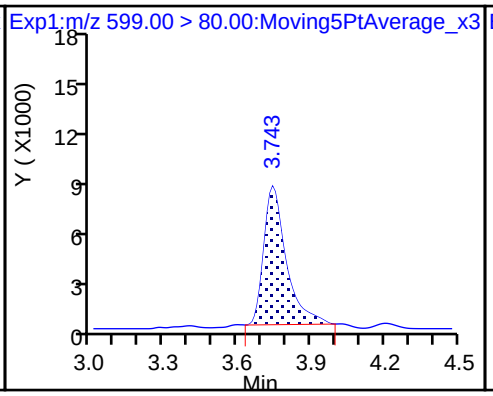

D 32 d5-NEtFOSAA



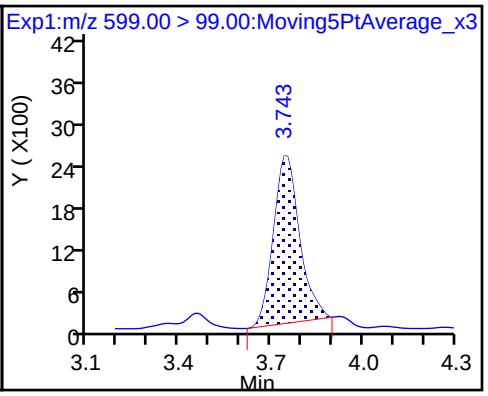

D 30 13C2 PFUnA



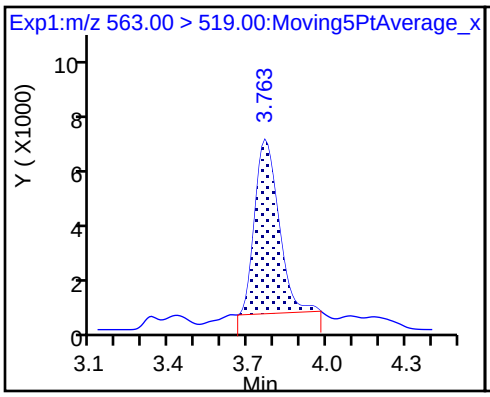

29 Perfluorodecane Sulfonic acid



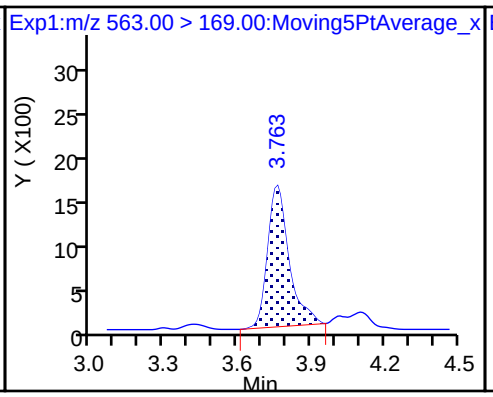

29 Perfluorodecane Sulfonic acid



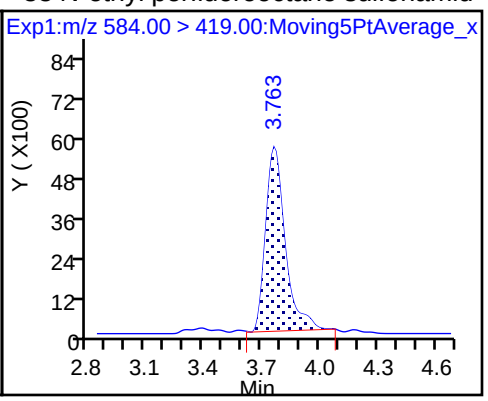

31 Perfluoroundecanoic acid



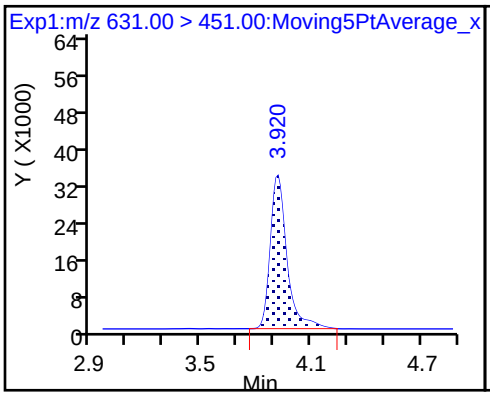

31 Perfluoroundecanoic acid



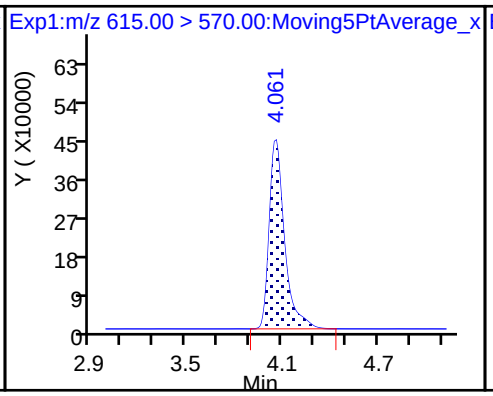

33 N-ethyl perfluorooctane sulfonamid



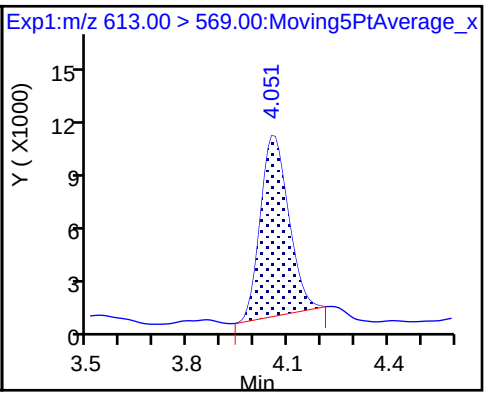

66 11-Chloroeicosafluoro-3-oxaundecan



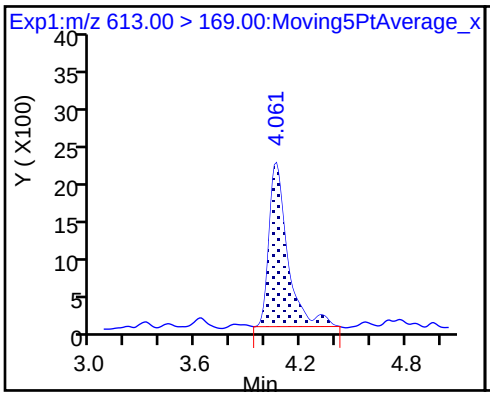

D 36 13C2 PFDoA



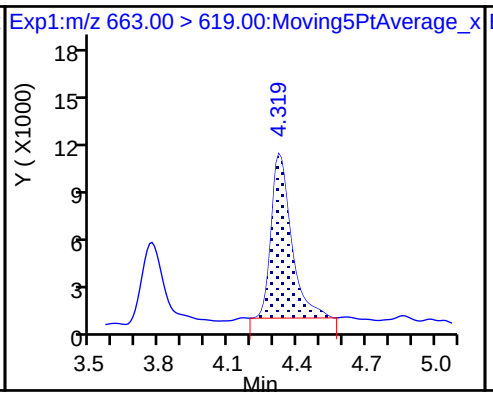

37 Perfluorododecanoic acid



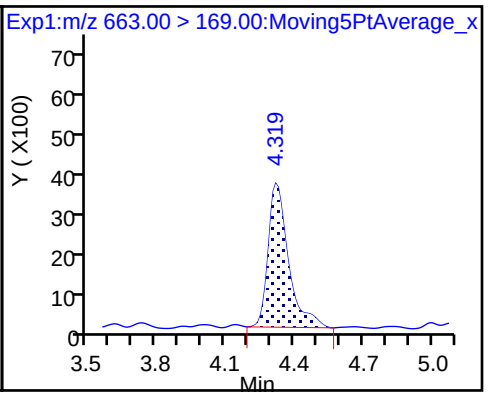
37 Perfluorododecanoic acid



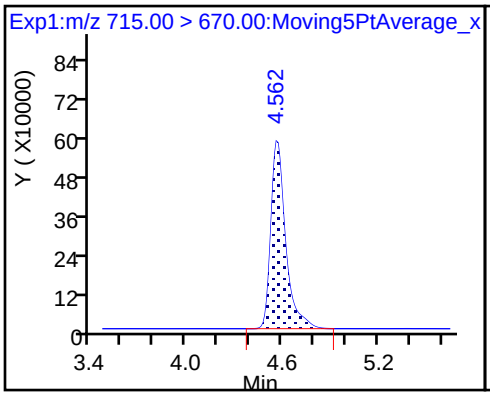

41 Perfluorotridecanoic acid



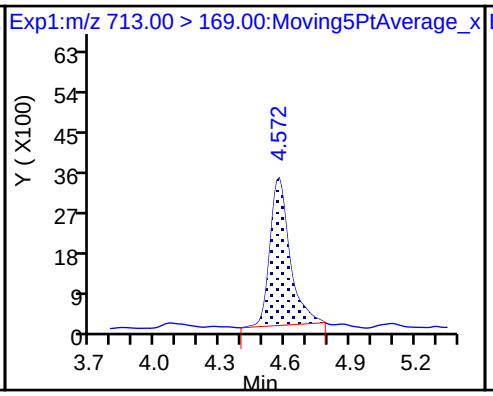

41 Perfluorotridecanoic acid



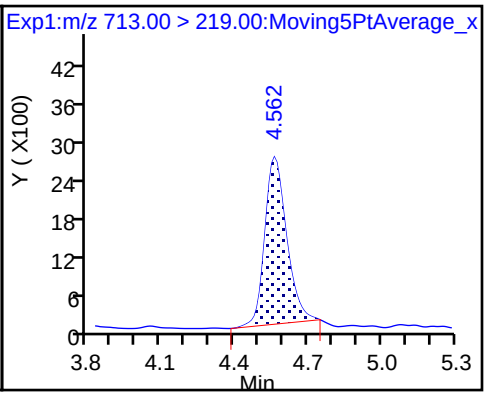

D 43 13C2-PFTeDA



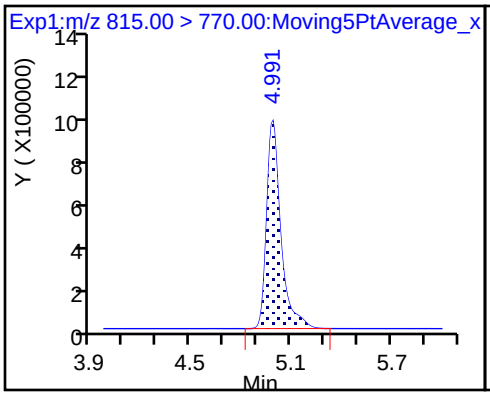

42 Perfluorotetradecanoic acid



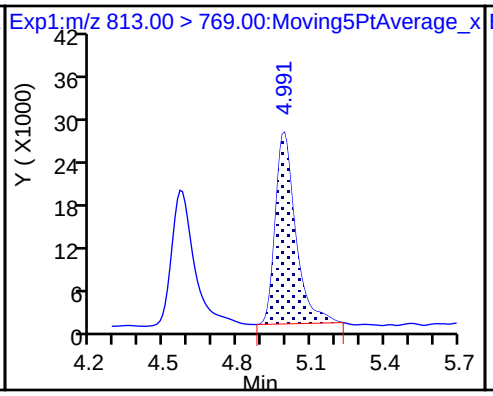

42 Perfluorotetradecanoic acid



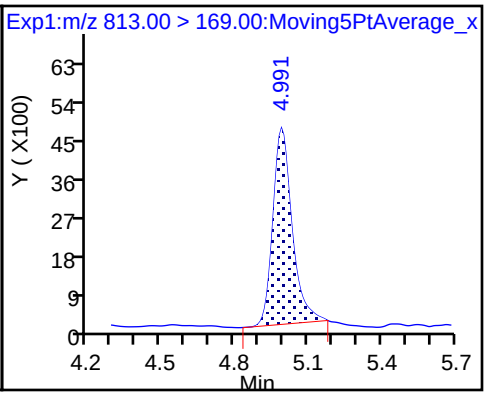

D 44 13C2-PFHxDA



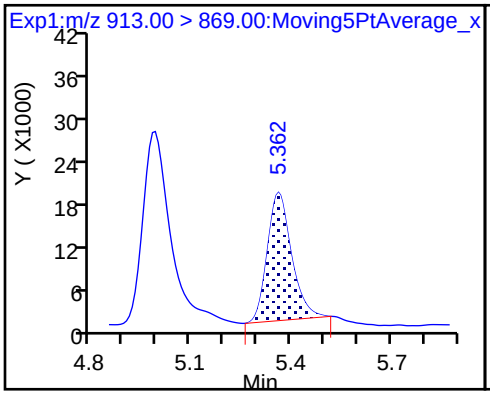

45 Perfluorohexadecanoic acid



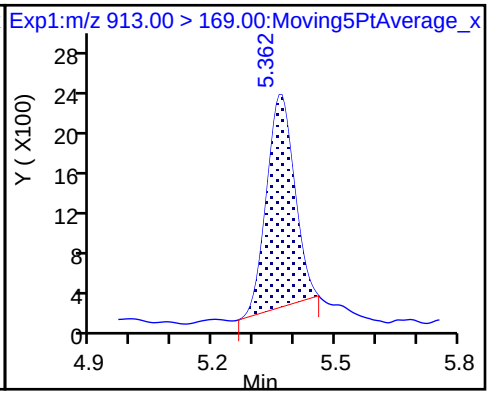

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216884/3 Calibration Date: 04/08/2018 14:40

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.08LLA_006.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | AveID | 0.9242 | 0.9447 | | 2.56 | 2.50 | 2.2 | 40.0 |
| Perfluoropentanoic acid (PFPeA) | AveID | 1.197 | 1.176 | | 2.46 | 2.50 | -1.7 | 40.0 |
| Perfluorobutanesulfonic acid (PFBS) | AveID | 78.89 | 78.76 | | 2.21 | 2.21 | -0.2 | 50.0 |
| 4:2 FTS | AveID | 17.26 | 16.51 | | 2.23 | 2.34 | -4.3 | 50.0 |
| Perfluorohexanoic acid (PFHxA) | AveID | 1.023 | 1.046 | | 2.55 | 2.50 | 2.2 | 40.0 |
| Perfluoropentanesulfonic acid (PFPeS) | AveID | 71.20 | 69.62 | | 2.29 | 2.35 | -2.2 | 50.0 |
| Perfluoroheptanoic acid (PFHpA) | AveID | 1.087 | 1.045 | | 2.40 | 2.50 | -3.8 | 40.0 |
| Perfluorohexanesulfonic acid (PFHxS) | AveID | 1.117 | 1.062 | | 2.16 | 2.28 | -5.0 | 40.0 |
| 6:2FTS | AveID | 1.868 | 1.669 | | 2.12 | 2.37 | -10.7 | 40.0 |
| Perfluoroheptanesulfonic Acid (PFHpS) | AveID | 1.333 | 1.289 | | 2.30 | 2.38 | -3.2 | 50.0 |
| Perfluorooctanoic acid (PFOA) | AveID | 1.186 | 1.148 | | 2.42 | 2.50 | -3.2 | 40.0 |
| Perfluorononanoic acid (PFNA) | AveID | 1.029 | 1.106 | | 2.69 | 2.50 | 7.5 | 40.0 |
| Perfluorooctanesulfonic acid (PFOS) | AveID | 1.143 | 1.124 | | 2.28 | 2.32 | -1.7 | 40.0 |
| Perfluorooctane Sulfonamide (FOSA) | AveID | 0.9877 | 1.024 | | 2.59 | 2.50 | 3.6 | 40.0 |
| Perfluorononanesulfonic acid (PFNS) | AveID | 0.8018 | 0.7777 | | 2.33 | 2.40 | -3.0 | 50.0 |
| 8:2FTS | AveID | 1.349 | 1.310 | | 2.33 | 2.40 | -2.9 | 40.0 |
| Perfluorodecanoic acid (PFDA) | AveID | 0.9893 | 1.041 | | 2.63 | 2.50 | 5.2 | 40.0 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | AveID | 1.054 | 1.057 | | 2.51 | 2.50 | 0.3 | 40.0 |
| Perfluorodecanesulfonic acid (PFDS) | AveID | 0.6938 | 0.6782 | | 2.36 | 2.41 | -2.3 | 50.0 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | AveID | 0.9171 | 0.9571 | | 2.61 | 2.50 | 4.4 | 40.0 |
| Perfluoroundecanoic acid (PFUnA) | AveID | 0.8023 | 0.8102 | | 2.52 | 2.50 | 1.0 | 40.0 |
| Perfluorododecanoic acid (PFDoA) | AveID | 1.081 | 1.037 | | 2.40 | 2.50 | -4.0 | 40.0 |
| Perfluorotridecanoic Acid (PFTriA) | AveID | 1.156 | 1.153 | | 2.49 | 2.50 | -0.3 | 50.0 |
| Perfluorotetradecanoic acid (PFTeA) | AveID | 0.2497 | 0.2611 | | 2.61 | 2.50 | 4.5 | 50.0 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | L2ID | | 0.9650 | | 2.53 | 2.50 | 1.1 | 50.0 |
| Perfluoro-n-octadecanoic acid (PFODA) | AveID | 0.9928 | 1.009 | | 2.54 | 2.50 | 1.7 | 50.0 |
| 13C4 PFBA | Ave | 1.382 | 1.297 | | 2.35 | 2.50 | -6.2 | 50.0 |
| 13C5 PFPeA | Ave | 0.8994 | 0.8483 | | 2.36 | 2.50 | -5.7 | 50.0 |
| 13C3-PFBS | Ave | 0.0206 | 0.0204 | | 2.30 | 2.33 | -1.2 | 50.0 |
| M2-4:2FTS | Ave | 0.1573 | 0.1489 | | 2.21 | 2.34 | -5.3 | 50.0 |

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216884/3  Calibration Date: 04/08/2018 14:40

Instrument ID: A8_N  Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100  ID: 3.00(mm)  Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.08LLA_006.d  Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| 13C2 PFHxA | Ave | 0.9916 | 0.9195 | | 2.32 | 2.50 | -7.3 | 50.0 |
| 13C4-PFHpA | Ave | 0.9533 | 0.8948 | | 2.35 | 2.50 | -6.1 | 50.0 |
| 18O2 PFHxS | Ave | 1.189 | 1.157 | | 2.30 | 2.37 | -2.7 | 50.0 |
| M2-6:2FTS | Ave | 0.2203 | 0.2091 | | 2.25 | 2.38 | -5.1 | 40.0 |
| 13C4 PFOA | Ave | 0.9372 | 0.8670 | | 2.31 | 2.50 | -7.5 | 50.0 |
| 13C4 PFOS | Ave | 0.8257 | 0.8221 | | 2.38 | 2.39 | -0.4 | 50.0 |
| 13C5 PFNA | Ave | 0.7930 | 0.7812 | | 2.46 | 2.50 | -1.5 | 50.0 |
| 13C8 FOSA | Ave | 1.166 | 1.062 | | 2.28 | 2.50 | -9.0 | 50.0 |
| M2-8:2FTS | Ave | 0.2562 | 0.2516 | | 2.35 | 2.40 | -1.8 | 40.0 |
| 13C2 PFDA | Ave | 0.6698 | 0.6762 | | 2.52 | 2.50 | 1.0 | 50.0 |
| d3-NMeFOSAA | Ave | 0.3583 | 0.3926 | | 2.74 | 2.50 | 9.6 | 50.0 |
| 13C2 PFUnA | Ave | 0.5468 | 0.5944 | | 2.72 | 2.50 | 8.7 | 50.0 |
| d5-NEtFOSAA | Ave | 0.3760 | 0.4091 | | 2.72 | 2.50 | 8.8 | 50.0 |
| 13C2 PFDoA | Ave | 0.6087 | 0.6341 | | 2.61 | 2.50 | 4.2 | 50.0 |
| 13C2-PFTeDA | Ave | 0.7733 | 0.7795 | | 2.52 | 2.50 | 0.8 | 50.0 |
| 13C2-PFHxDA | Ave | 1.194 | 1.265 | | 2.65 | 2.50 | 6.0 | 50.0 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_006.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 08-Apr-2018 14:40:43 ALS Bottle#: 14 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub30

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 11:40:53 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.430 | 1.424 | 0.006 | 1.000 | 5665970 | 2.35 | | 93.8 | 47269 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.430 | 1.430 | 0.0 | 1.000 | 5352848 | 2.56 | | 102 | 4022 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.711 | 1.693 | 0.018 | 0.560 | 3706911 | 2.36 | | 94.3 | 65748 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.711 | 1.711 | 0.0 | 1.000 | 4359237 | 2.46 | | 98.3 | 3134 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.747 | 1.729 | 0.018 | 1.000 | 82685 | 2.30 | | 98.8 | 457 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.747 | 1.747 | 0.0 | 1.000 | 6189912 | 2.21 | | 99.8 | 23232 | |
| 298.90 > 99.00 | 1.747 | 1.747 | 0.0 | 1.000 | 2591553 | | 2.39(1.25-3.74) | | 21604 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.959 | 1.938 | 0.021 | 1.000 | 607819 | 2.21 | | 94.7 | 5591 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.959 | 1.959 | 0.0 | 1.000 | 1370586 | 2.23 | | 95.7 | 54164 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 2.003 | 1.981 | 0.022 | 1.000 | 4017684 | 2.32 | | 92.7 | 88473 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 2.003 | 2.003 | 0.0 | 1.000 | 4200752 | 2.55 | | 102 | 9361 | |
| 313.00 > 119.00 | 1.991 | 2.003 | -0.012 | 0.994 | 391280 | | 10.74(5.03-15.10) | | 4582 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.025 | 2.025 | 0.0 | 1.000 | 5805767 | 2.29 | | 97.8 | 35451 | |
| 349.00 > 99.00 | 2.025 | 2.025 | 0.0 | 1.000 | 2087631 | | 2.78(1.36-4.07) | | 19969 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.332 | 2.306 | 0.026 | 1.000 | 3910058 | 2.35 | | 93.9 | 91623 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.345 | 2.319 | 0.026 | 1.000 | 4782688 | 2.30 | | 97.3 | 61123 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.332 | 2.332 | 0.0 | 1.000 | 4086081 | 2.40 | | 96.2 | 6076 | |
| 363.00 > 169.00 | 2.332 | 2.332 | 0.0 | 1.000 | 1695525 | | 2.41(1.13-3.40) | | 10744 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.345 | 2.345 | 0.0 | 1.000 | 4883697 | 2.16 | | 95.0 | 12331 | |
| 399.00 > 99.00 | 2.345 | 2.345 | 0.0 | 1.000 | 1652369 | | 2.96(1.50-4.49) | | 5767 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.660 | 2.628 | 0.032 | 1.000 | 868018 | 2.25 | | 94.9 | 10862 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.682 | 2.660 | 0.022 | 1.000 | 3788651 | 2.31 | | 92.5 | 95981 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.660 | 2.660 | 0.0 | 1.000 | 1445279 | 2.12 | | 89.3 | 15725 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.682 | 2.682 | 0.0 | | 4369632 | 2.50 | | | 68991 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.690 | 2.690 | 0.0 | 1.003 | 4350125 | 2.42 | | 96.8 | 2544 | |
| 413.00 > 169.00 | 2.690 | 2.690 | 0.0 | 1.003 | 2308328 | | 1.88(0.84-2.52) | | 8875 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.690 | 2.690 | 0.0 | 1.000 | 4409767 | 2.30 | | 96.8 | 45948 | |
| 449.00 > 99.00 | 2.690 | 2.690 | 0.0 | 1.000 | 1213025 | | 3.64(1.94-5.82) | | 15304 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.056 | 3.023 | 0.033 | 1.000 | 3413729 | 2.46 | | 98.5 | 101228 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.056 | 3.023 | 0.033 | 1.000 | 3434187 | 2.38 | | 99.6 | 19648 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.056 | 3.056 | 0.0 | 1.000 | 3746106 | 2.28 | | 98.3 | 73947 | |
| 499.00 > 99.00 | 3.056 | 3.056 | 0.0 | 1.000 | 827982 | | 4.52(2.31-6.93) | | 6954 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.056 | 3.056 | 0.0 | 1.000 | 3776413 | 2.69 | | 108 | 9535 | |
| 463.00 > 169.00 | 3.056 | 3.056 | 0.0 | 1.000 | 897414 | | 4.21(1.90-5.69) | | 31519 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.366 | 3.359 | 0.007 | 1.000 | 4639956 | 2.28 | | 91.0 | 54945 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.366 | 3.366 | 0.0 | 1.000 | 4748986 | 2.59 | | 104 | 56157 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.413 | 3.377 | 0.036 | 1.000 | 1053088 | 2.35 | | 98.2 | 8184 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.422 | 3.387 | 0.035 | 1.000 | 2954811 | 2.52 | | 101 | 52705 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.403 | 3.403 | 0.0 | 1.000 | 2681969 | 2.33 | | 97.0 | 21977 | |
| 549.00 > 99.00 | 3.403 | 3.403 | 0.0 | 1.000 | 1037278 | | 2.59(1.33-3.97) | | 19050 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.413 | 3.413 | 0.0 | 1.000 | 1379422 | 2.33 | | 97.1 | 30665 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.422 | 3.422 | 0.0 | 1.000 | 3075127 | 2.63 | | 105 | 12495 | |
| 513.00 > 169.00 | 3.422 | 3.422 | 0.0 | 1.000 | 538666 | | 5.71(2.36-7.09) | | 1627 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.571 | 3.536 | 0.035 | 1.000 | 1715616 | 2.74 | | 110 | 23716 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.582 | 3.582 | 0.0 | 1.003 | 1813725 | 2.51 | | 100 | 9618 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.747 | 3.706 | 0.041 | 1.000 | 1787566 | 2.72 | | 109 | 16880 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.747 | 3.717 | 0.030 | 1.000 | 2597413 | 2.72 | | 109 | 64648 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.737 | 3.737 | 0.0 | 1.000 | 2348499 | 2.36 | | 97.7 | 22349 | |
| 599.00 > 99.00 | 3.737 | 3.737 | 0.0 | 1.000 | 781720 | | 3.00(1.39-4.16) | | 17121 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.747 | 3.747 | 0.0 | 1.000 | 2104337 | 2.52 | | 101 | 8321 | |
| 563.00 > 169.00 | 3.747 | 3.747 | 0.0 | 1.000 | 492903 | | 4.27(2.12-6.36) | | 14635 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.747 | 3.747 | 0.0 | 1.000 | 1710947 | 2.61 | | 104 | 25457 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.047 | 4.007 | 0.040 | 1.000 | 2770970 | 2.60 | | 104 | 22819 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.047 | 4.047 | 0.0 | 1.000 | 2874735 | 2.40 | | 96.0 | 2325 | |
| 613.00 > 169.00 | 4.047 | 4.047 | 0.0 | 1.000 | 724219 | | 3.97(2.13-6.40) | | 5959 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.316 | 4.316 | 0.0 | 1.000 | 3195028 | 2.49 | | 99.7 | 1896 | |
| 663.00 > 169.00 | 4.316 | 4.316 | 0.0 | 1.000 | 1038281 | | 3.08(1.25-3.76) | | 8420 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.560 | 4.510 | 0.050 | 1.000 | 3406252 | 2.52 | | 101 | 14826 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.560 | 4.560 | 0.0 | 1.000 | 889227 | 2.61 | | 105 | 6664 | |
| 713.00 > 219.00 | 4.550 | 4.560 | -0.010 | 0.998 | 655099 | | 1.36(0.71-2.13) | | 8568 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.981 | 4.921 | 0.060 | 1.000 | 5527970 | 2.65 | | 106 | 12532 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.981 | 4.981 | 0.0 | 1.000 | 5334684 | 2.53 | | 101 | 1249 | |
| 813.00 > 169.00 | 4.981 | 4.981 | 0.0 | 1.000 | 874141 | | 6.10(2.86-8.58) | | 3864 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.354 | 5.354 | 0.0 | 1.000 | 5580313 | 2.54 | | 102 | 977 | |
| 913.00 > 169.00 | 5.354 | 5.354 | 0.0 | 1.000 | 694146 | | 8.04(3.83-11.48) | | 3375 | |

## Reagents:

LCPFC_LL5_00003 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 11:40:54 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_006.d

Injection Date: 08-Apr-2018 14:40:43 Instrument ID: A8_N

Lims ID: CCV L5

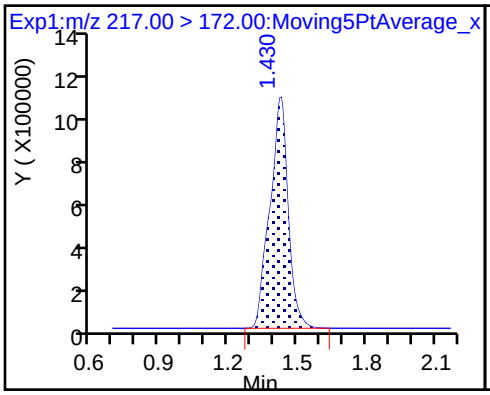
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 3

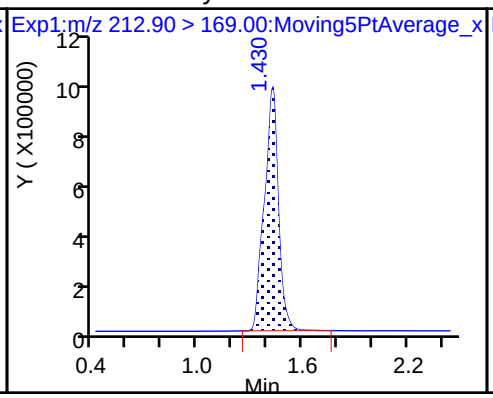
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

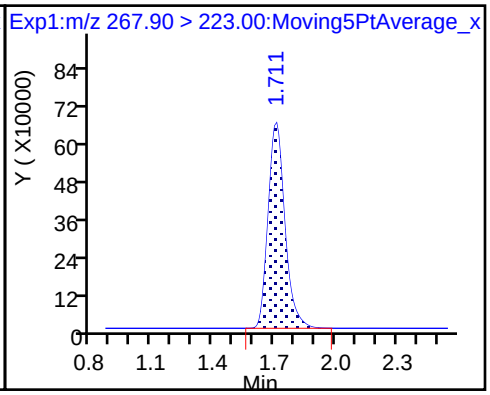
D 1 13C4 PFBA



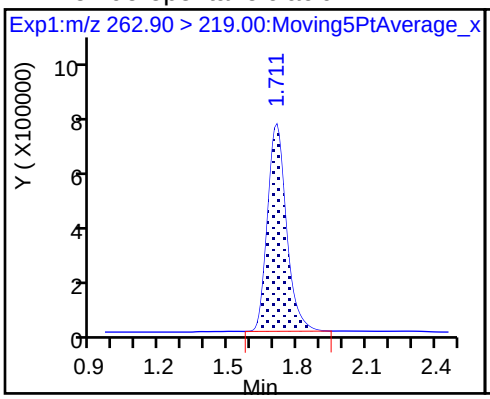

2 Perfluorobutyric acid



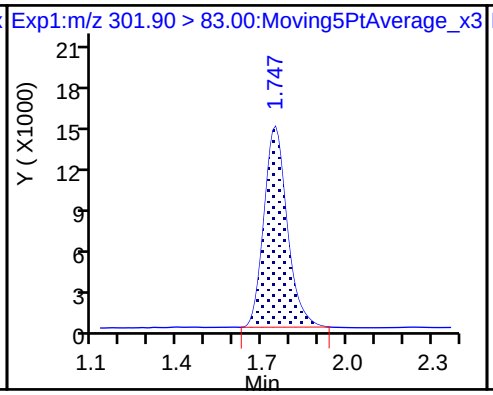

D 3 13C5-PFPeA



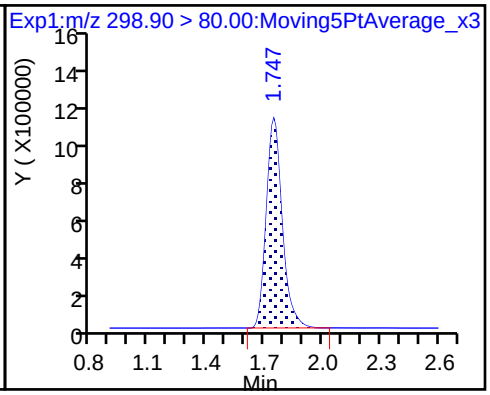

4 Perfluoropentanoic acid



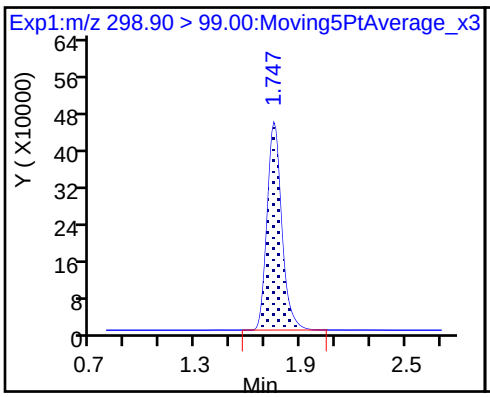

D 47 13C3-PFBS



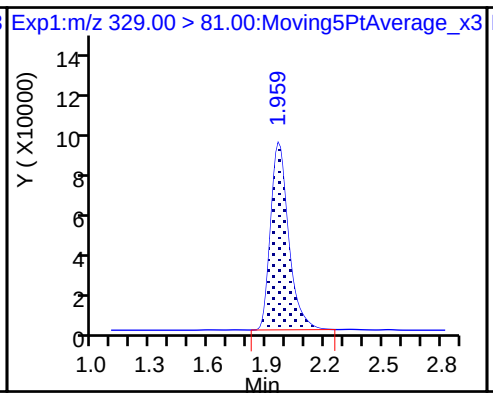

5 Perfluorobutanesulfonic acid



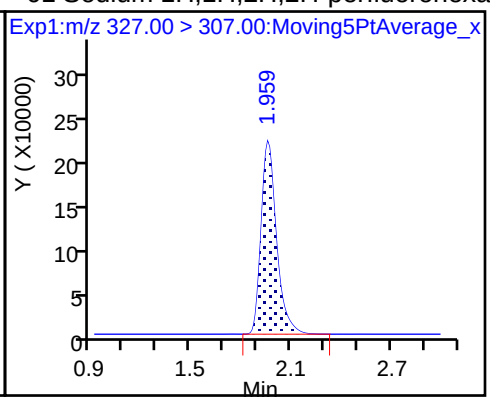

5 Perfluorobutanesulfonic acid



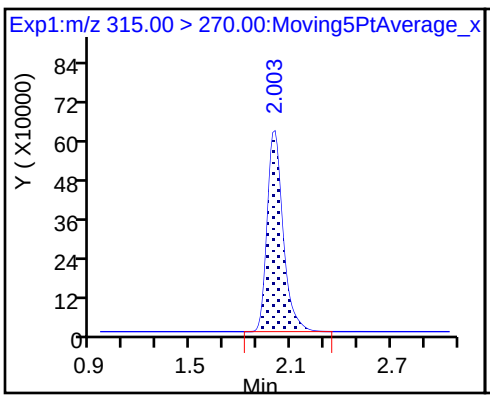

D 60 M2-4:2FTS



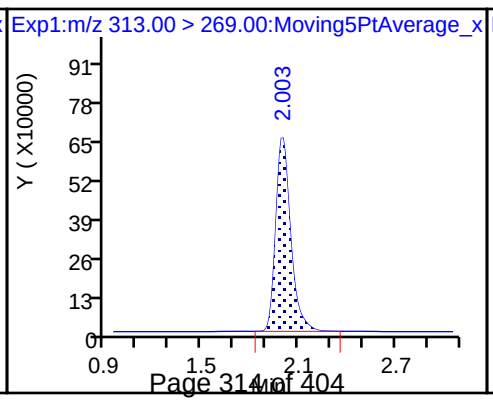

61 Sodium 1H,1H,2H,2H-perfluorohexane



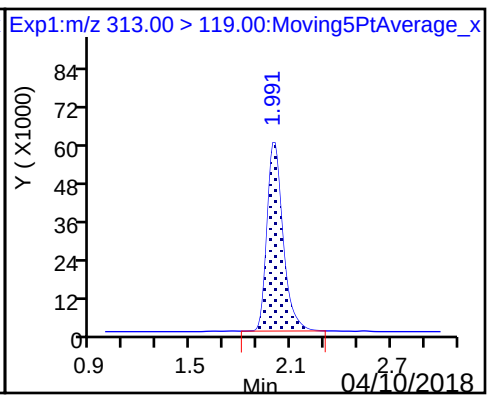

D 7 13C2 PFHxA



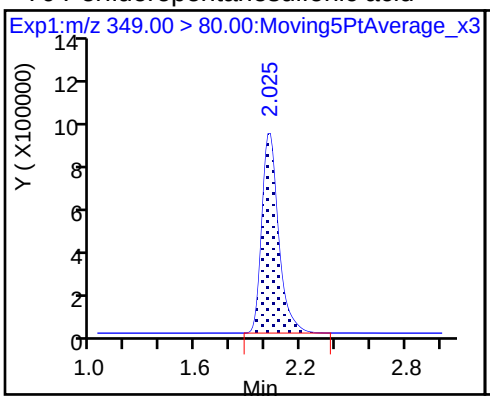

6 Perfluorohexanoic acid



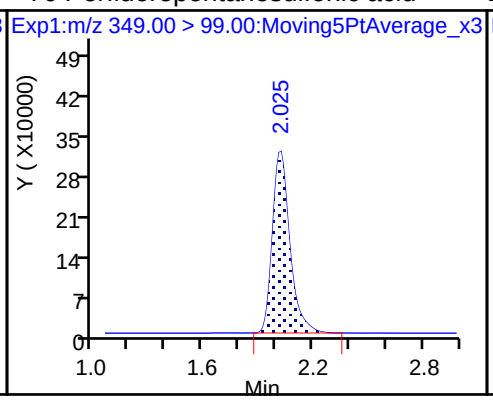

6 Perfluorohexanoic acid



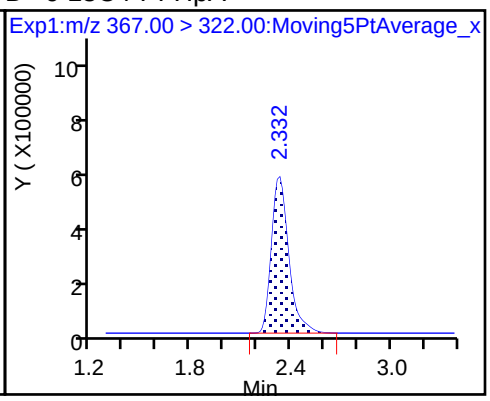
70 Perfluoropentanesulfonic acid



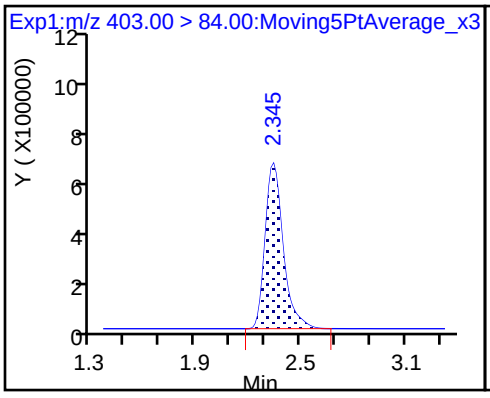

70 Perfluoropentanesulfonic acid



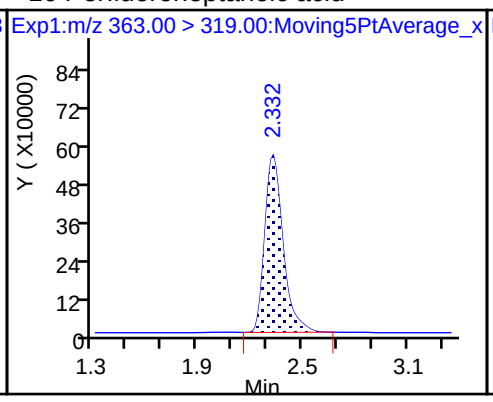

D 9 13C4-PFHpA



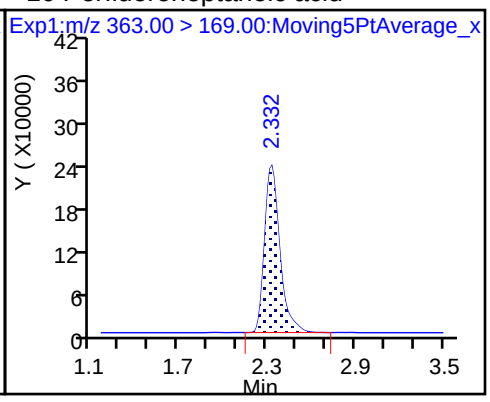

D 11 18O2 PFHxS



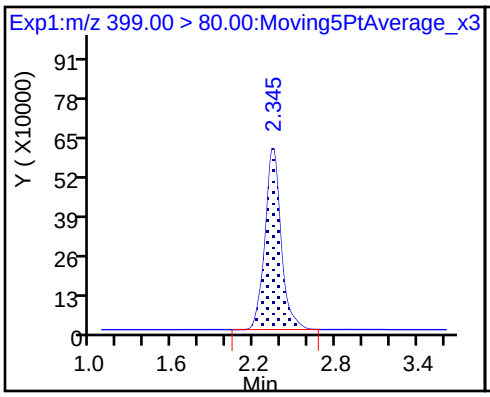

10 Perfluoroheptanoic acid



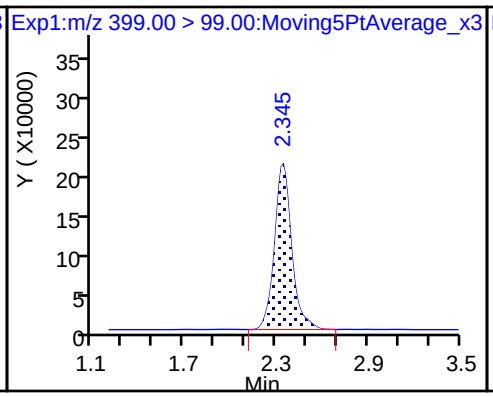

10 Perfluoroheptanoic acid



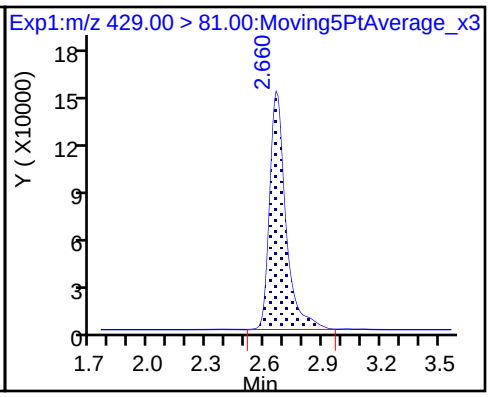

8 Perfluorohexanesulfonic acid



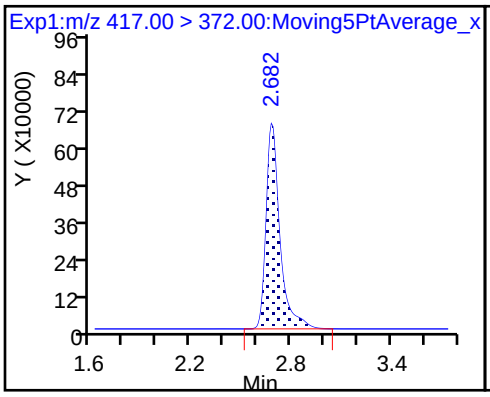

8 Perfluorohexanesulfonic acid



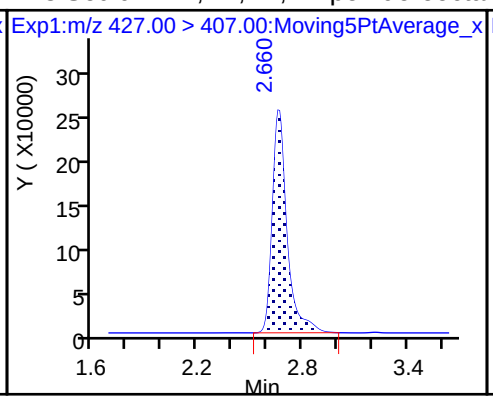

D 12 M2-6:2FTS



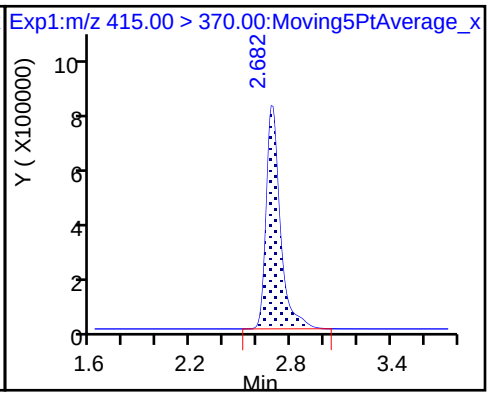

D 14 13C4 PFOA



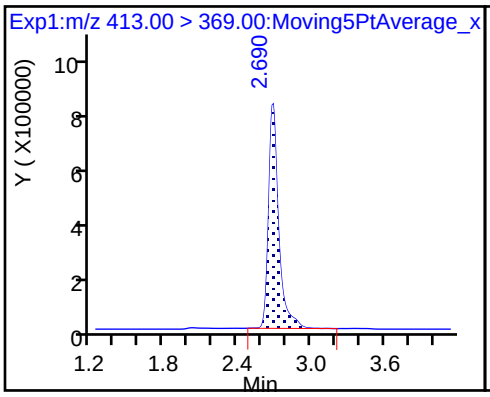

13 Sodium 1H,1H,2H,2H-perfluorooctane



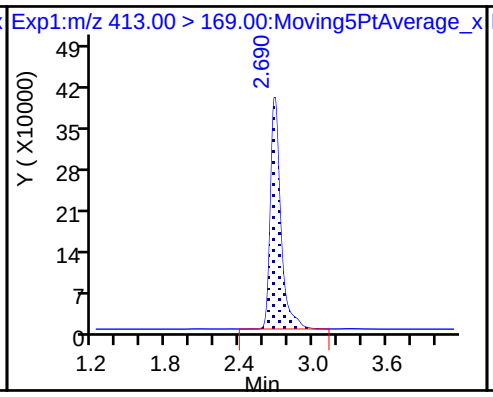

M2 13C2-PFOA



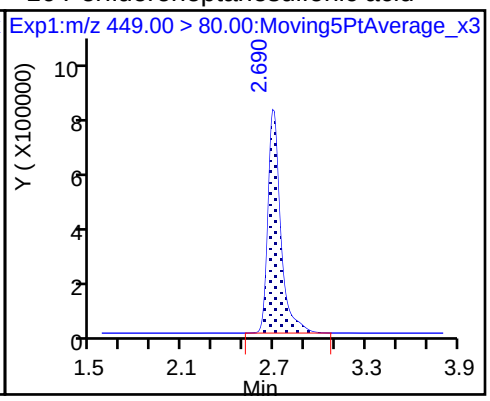
15 Perfluorooctanoic acid



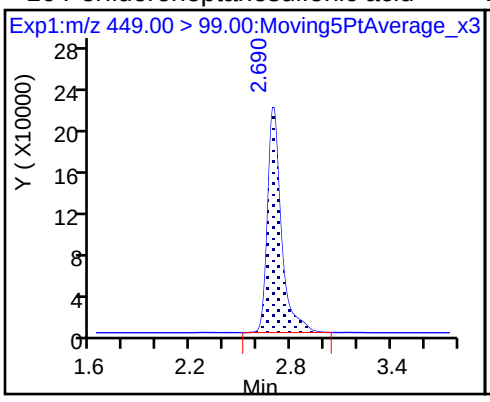

15 Perfluorooctanoic acid



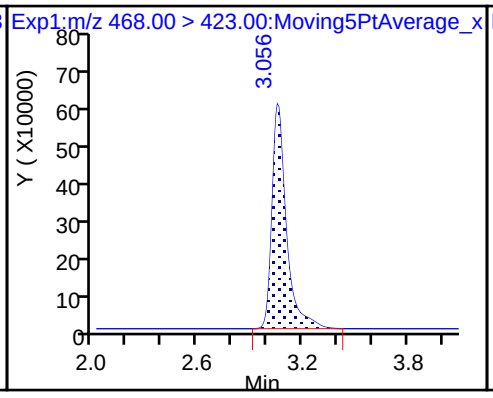

16 Perfluoroheptanesulfonic acid



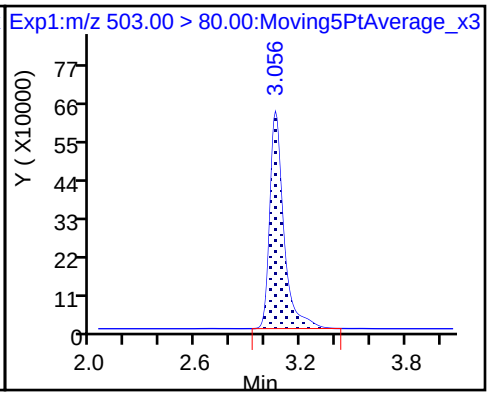

16 Perfluoroheptanesulfonic acid



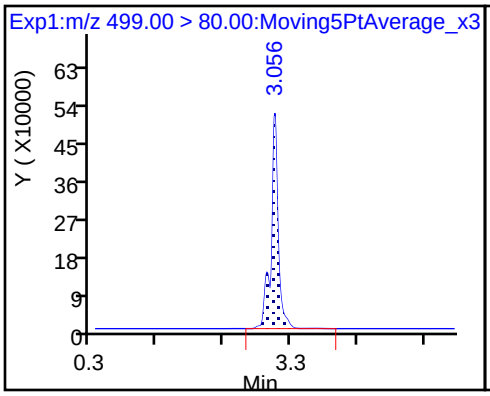

D 19 13C5 PFNA



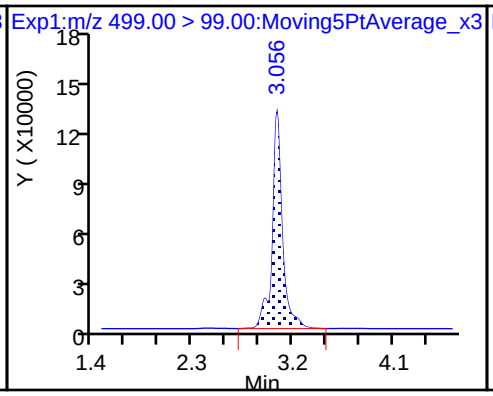

D 18 13C4 PFOS



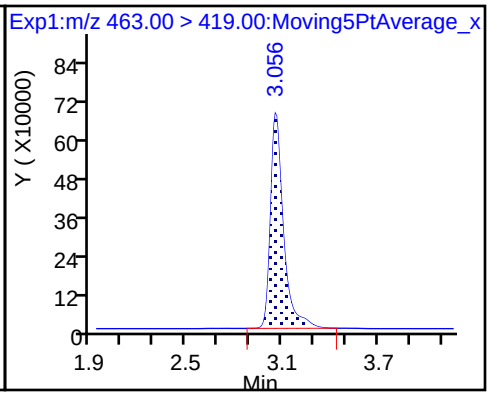

17 Perfluorooctane sulfonic acid



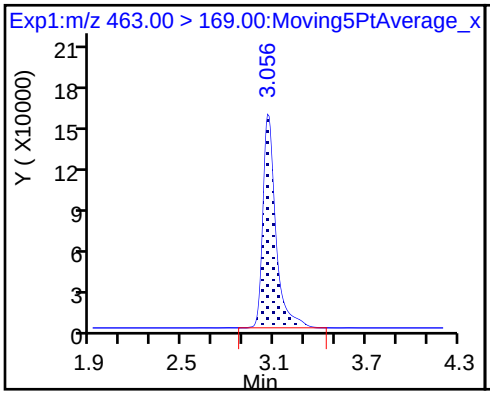

17 Perfluorooctane sulfonic acid



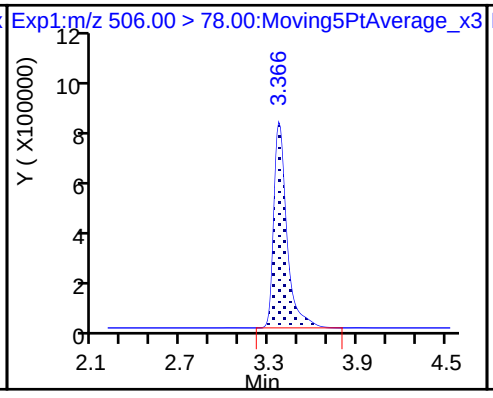

20 Perfluorononanoic acid



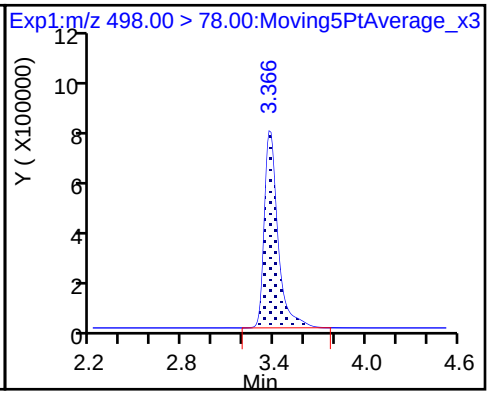

20 Perfluorononanoic acid



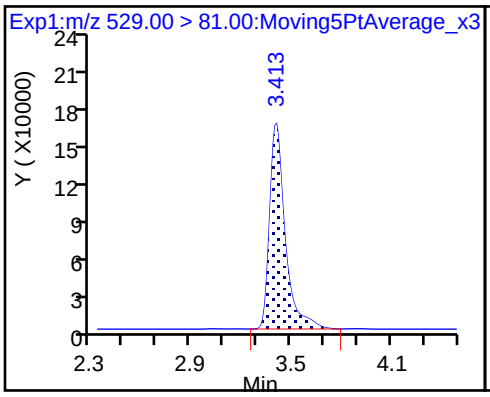

D 21 13C8 FOSA



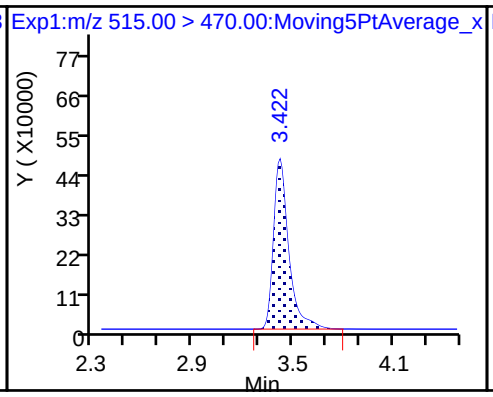

22 Perfluorooctane Sulfonamide



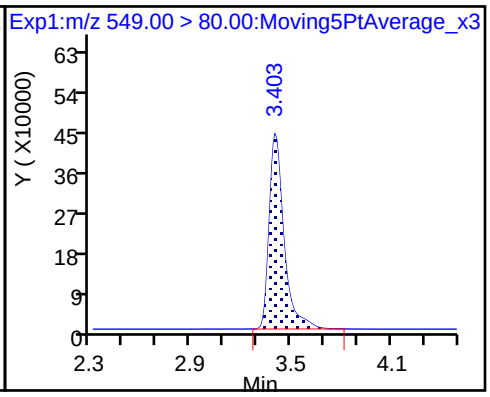
D 26 M2-8:2FTS



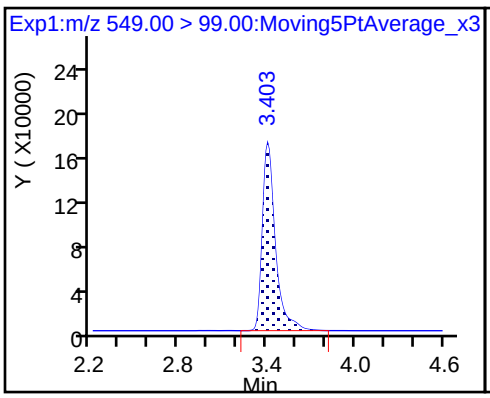

D 23 13C2 PFDA



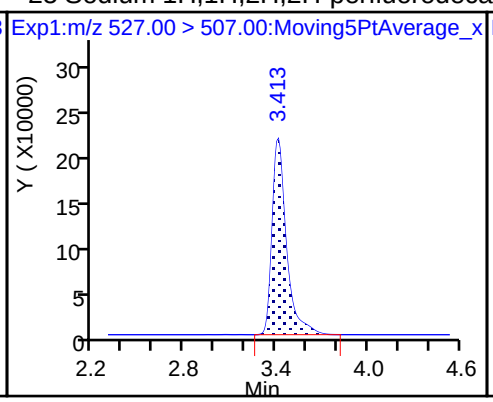

68 Perfluorononanesulfonic acid



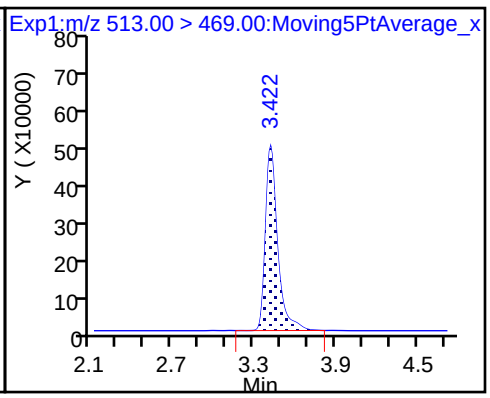

68 Perfluorononanesulfonic acid



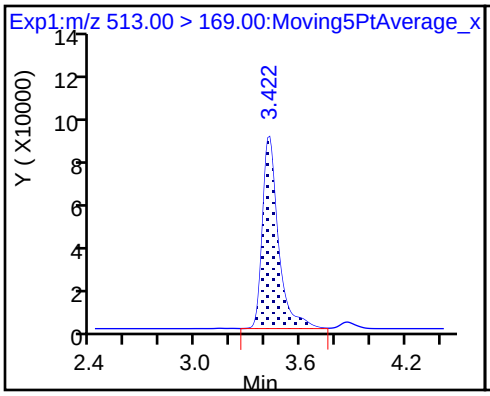

25 Sodium 1H,1H,2H,2H-perfluorodecan



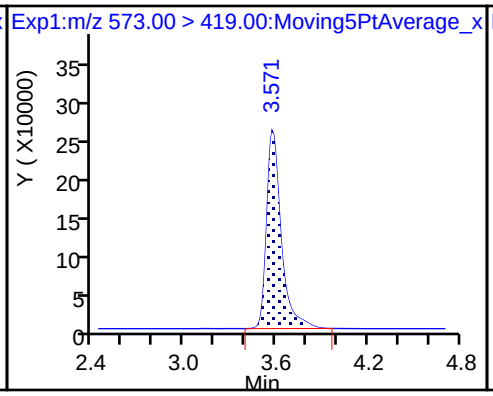

24 Perfluorodecanoic acid



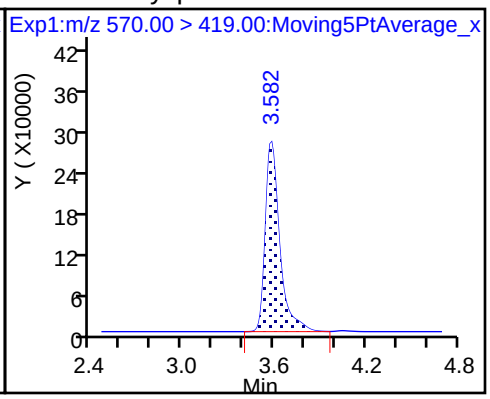

24 Perfluorodecanoic acid



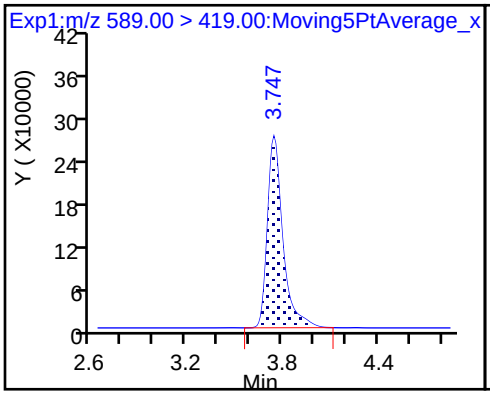

D 27 d3-NMeFOSAA



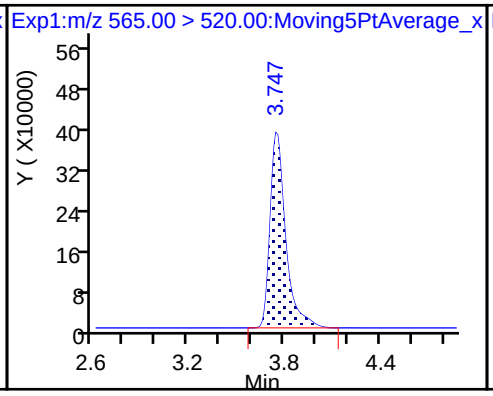

28 N-methyl perfluorooctane sulfonami



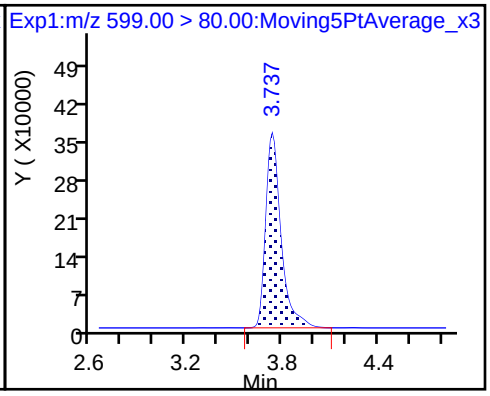

D 32 d5-NEtFOSAA



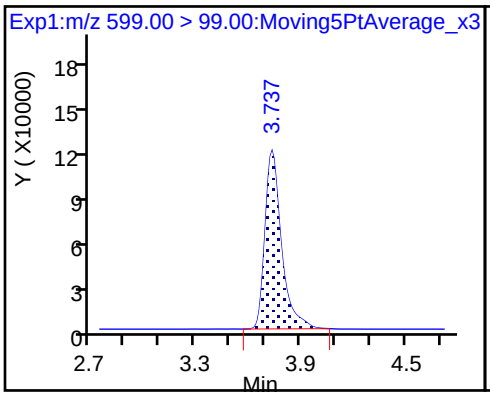

D 30 13C2 PFUnA



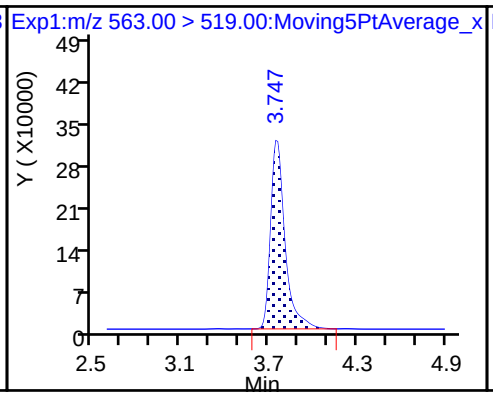

29 Perfluorodecane Sulfonic acid



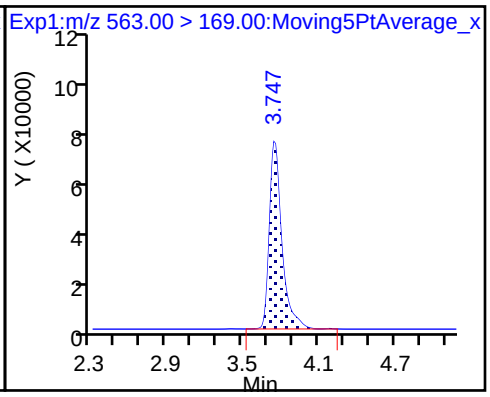
29 Perfluorodecane Sulfonic acid



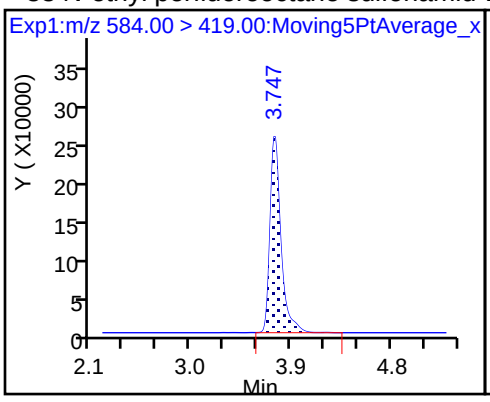

31 Perfluoroundecanoic acid



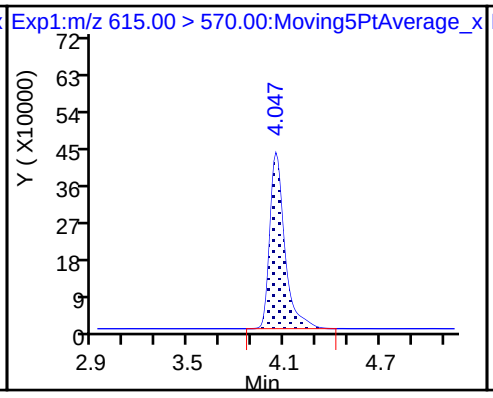

31 Perfluoroundecanoic acid



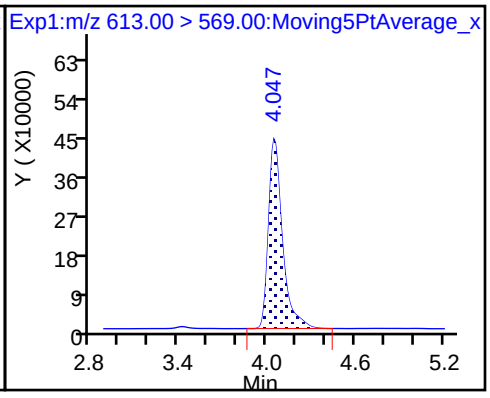

33 N-ethyl perfluorooctane sulfonamid



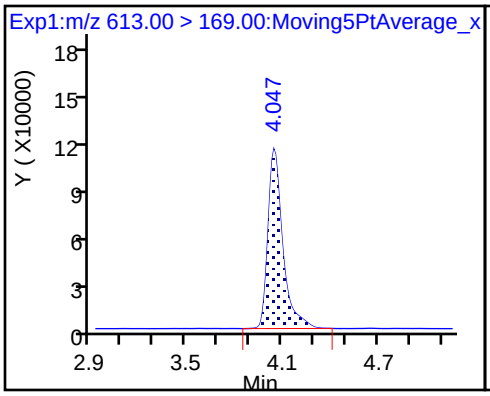

D 36 13C2 PFDoA



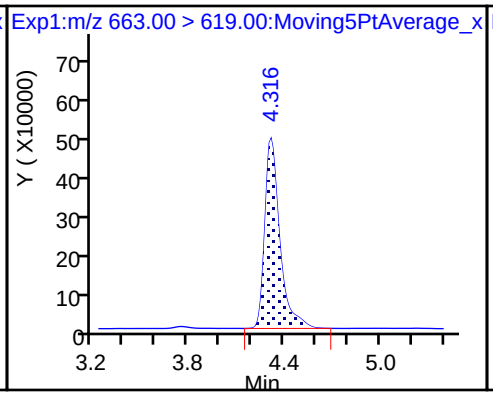

37 Perfluorododecanoic acid



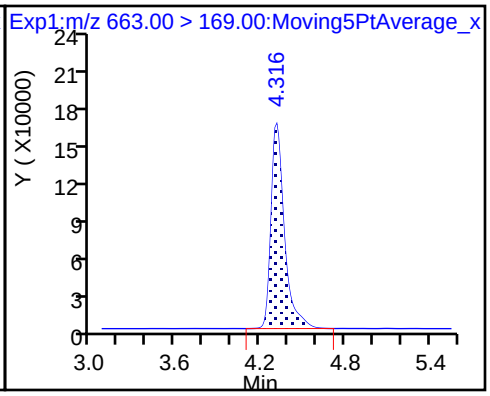

37 Perfluorododecanoic acid



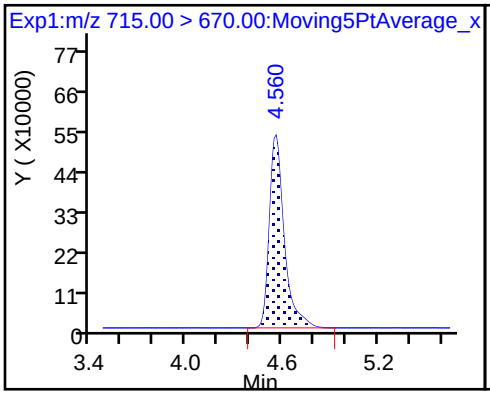

41 Perfluorotridecanoic acid



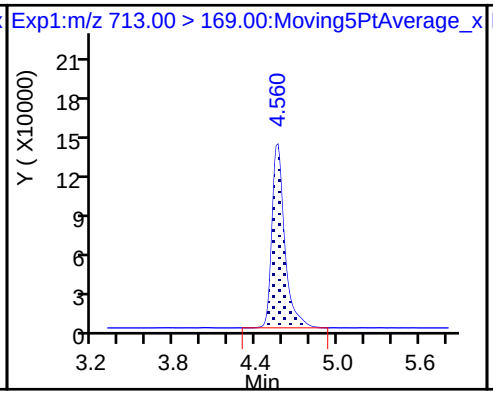

41 Perfluorotridecanoic acid



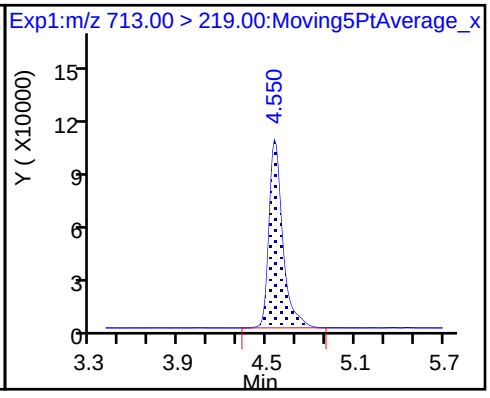

D 43 13C2-PFTeDA



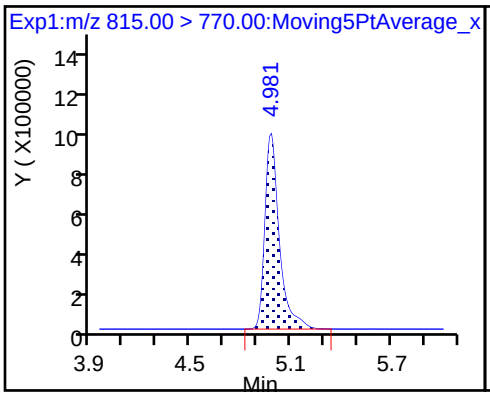

42 Perfluorotetradecanoic acid



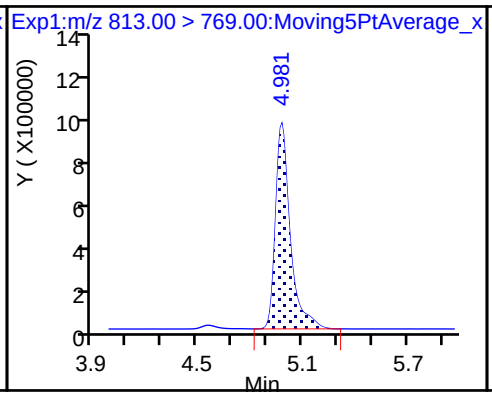

42 Perfluorotetradecanoic acid



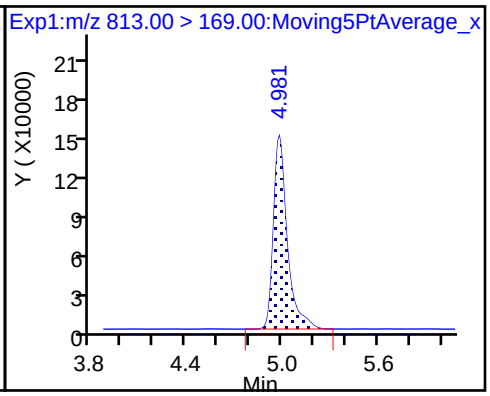
D 44 13C2-PFHxDA



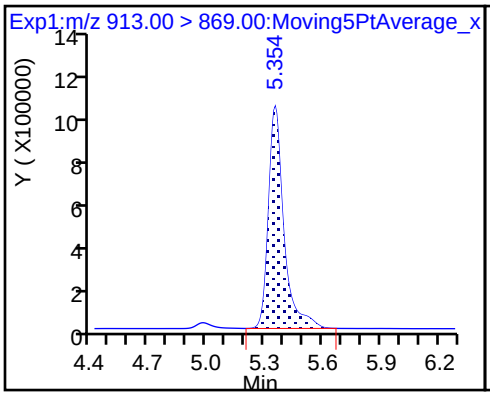

45 Perfluorohexadecanoic acid



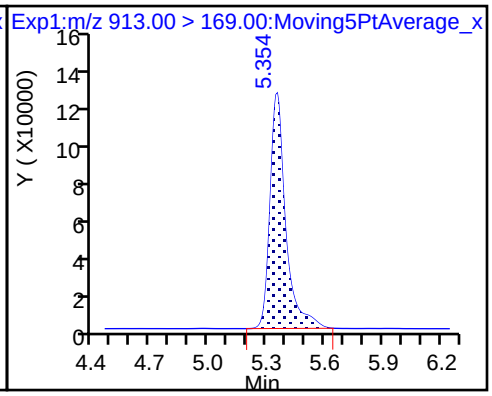

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216884/10 Calibration Date: 04/08/2018 15:35

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.08LLA_013.d Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | AveID | 0.9242 | 0.9354 | | 1.01 | 1.00 | 1.2 | 40.0 |
| Perfluoropentanoic acid (PFPeA) | AveID | 1.197 | 1.136 | | 0.949 | 1.00 | -5.1 | 40.0 |
| Perfluorobutanesulfonic acid (PFBS) | AveID | 78.89 | 78.16 | | 0.876 | 0.884 | -0.9 | 50.0 |
| 4:2 FTS | AveID | 17.26 | 15.06 | | 0.815 | 0.934 | -12.7 | 50.0 |
| Perfluorohexanoic acid (PFHxA) | AveID | 1.023 | 0.9683 | | 0.946 | 1.00 | -5.4 | 40.0 |
| Perfluoropentanesulfonic acid (PFPeS) | AveID | 71.20 | 70.78 | | 0.932 | 0.938 | -0.6 | 50.0 |
| HFPO-DA (GenX) | AveID | 3.401 | 3.212 | | 0.944 | 1.00 | -5.6 | 40.0 |
| Perfluoroheptanoic acid (PFHpA) | AveID | 1.087 | 1.041 | | 0.958 | 1.00 | -4.2 | 40.0 |
| Perfluorohexanesulfonic acid (PFHxS) | AveID | 1.117 | 1.050 | | 0.856 | 0.910 | -5.9 | 40.0 |
| Adona | AveID | 3.564 | 3.583 | | 1.01 | 1.00 | 0.5 | 50.0 |
| 6:2FTS | AveID | 1.868 | 1.516 | | 0.770 | 0.948 | -18.8 | 40.0 |
| Perfluorooctanoic acid (PFOA) | AveID | 1.186 | 1.089 | | 0.919 | 1.00 | -8.1 | 40.0 |
| Perfluoroheptanesulfonic Acid (PFHpS) | AveID | 1.333 | 1.335 | | 0.954 | 0.952 | 0.2 | 50.0 |
| Perfluorononanoic acid (PFNA) | AveID | 1.029 | 0.9868 | | 0.959 | 1.00 | -4.1 | 40.0 |
| Perfluorooctanesulfonic acid (PFOS) | AveID | 1.143 | 1.079 | | 0.876 | 0.928 | -5.6 | 40.0 |
| 9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate | AveID | 1.870 | 1.824 | | 0.909 | 0.932 | -2.4 | 50.0 |
| Perfluorooctane Sulfonamide (FOSA) | AveID | 0.9877 | 1.013 | | 1.03 | 1.00 | 2.5 | 40.0 |
| Perfluorononanesulfonic acid (PFNS) | AveID | 0.8018 | 0.7774 | | 0.931 | 0.960 | -3.0 | 50.0 |
| 8:2FTS | AveID | 1.349 | 1.180 | | 0.838 | 0.958 | -12.5 | 40.0 |
| Perfluorodecanoic acid (PFDA) | AveID | 0.9893 | 0.9946 | | 1.01 | 1.00 | 0.5 | 40.0 |
| N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | AveID | 1.054 | 1.021 | | 0.969 | 1.00 | -3.1 | 40.0 |
| Perfluorodecanesulfonic acid (PFDS) | AveID | 0.6938 | 0.6628 | | 0.921 | 0.964 | -4.5 | 50.0 |
| N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | AveID | 0.9171 | 0.9382 | | 1.02 | 1.00 | 2.3 | 40.0 |
| Perfluoroundecanoic acid (PFUnA) | AveID | 0.8023 | 0.7807 | | 0.973 | 1.00 | -2.7 | 40.0 |
| 11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate | AveID | 2.902 | 2.855 | | 0.927 | 0.942 | -1.6 | 50.0 |
| Perfluorododecanoic acid (PFDoA) | AveID | 1.081 | 1.031 | | 0.954 | 1.00 | -4.6 | 40.0 |
| Perfluorotridecanoic Acid (PFTriA) | AveID | 1.156 | 1.120 | | 0.968 | 1.00 | -3.2 | 50.0 |
| Perfluorotetradecanoic acid (PFTeA) | AveID | 0.2497 | 0.2510 | | 1.01 | 1.00 | 0.5 | 50.0 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | L2ID | | 0.9630 | | 0.996 | 1.00 | -0.4 | 50.0 |

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Lab Sample ID: CCV 320-216884/10  Calibration Date: 04/08/2018 15:35

Instrument ID: A8_N  Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100  ID: 3.00(mm)  Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.08LLA_013.d  Conc. Units: ng/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Perfluoro-n-octadecanoic acid (PFODA) | AveID | 0.9928 | 0.8995 | | 0.906 | 1.00 | -9.4 | 50.0 |
| 13C4 PFBA | Ave | 1.382 | 1.309 | | 2.37 | 2.50 | -5.3 | 50.0 |
| 13C5 PFPeA | Ave | 0.8994 | 0.8497 | | 2.36 | 2.50 | -5.5 | 50.0 |
| 13C3-PFBS | Ave | 0.0206 | 0.0198 | | 2.23 | 2.33 | -4.0 | 50.0 |
| M2-4:2FTS | Ave | 0.1573 | 0.1338 | | 1.99 | 2.34 | -14.9 | 50.0 |
| 13C2 PFHxA | Ave | 0.9916 | 0.9518 | | 2.40 | 2.50 | -4.0 | 50.0 |
| 13C3 HFPO-DA | Ave | 0.0494 | 0.0522 | | 2.64 | 2.50 | 5.8 | 50.0 |
| 13C4-PFHpA | Ave | 0.9533 | 0.9270 | | 2.43 | 2.50 | -2.8 | 50.0 |
| 18O2 PFHxS | Ave | 1.189 | 1.150 | | 2.29 | 2.37 | -3.3 | 50.0 |
| M2-6:2FTS | Ave | 0.2203 | 0.1932 | | 2.08 | 2.38 | -12.3 | 40.0 |
| 13C4 PFOA | Ave | 0.9372 | 0.9153 | | 2.44 | 2.50 | -2.3 | 50.0 |
| 13C4 PFOS | Ave | 0.8257 | 0.8133 | | 2.35 | 2.39 | -1.5 | 50.0 |
| 13C5 PFNA | Ave | 0.7930 | 0.7812 | | 2.46 | 2.50 | -1.5 | 50.0 |
| 13C8 FOSA | Ave | 1.166 | 1.071 | | 2.30 | 2.50 | -8.2 | 50.0 |
| M2-8:2FTS | Ave | 0.2562 | 0.2275 | | 2.13 | 2.40 | -11.2 | 40.0 |
| 13C2 PFDA | Ave | 0.6698 | 0.6772 | | 2.53 | 2.50 | 1.1 | 50.0 |
| d3-NMeFOSAA | Ave | 0.3583 | 0.3704 | | 2.58 | 2.50 | 3.4 | 50.0 |
| d5-NEtFOSAA | Ave | 0.3760 | 0.3763 | | 2.50 | 2.50 | 0.0 | 50.0 |
| 13C2 PFUnA | Ave | 0.5468 | 0.5765 | | 2.64 | 2.50 | 5.4 | 50.0 |
| 13C2 PFDoA | Ave | 0.6087 | 0.6300 | | 2.59 | 2.50 | 3.5 | 50.0 |
| 13C2-PFTeDA | Ave | 0.7733 | 0.7532 | | 2.44 | 2.50 | -2.6 | 50.0 |
| 13C2-PFHxDA | Ave | 1.194 | 1.107 | | 2.32 | 2.50 | -7.3 | 50.0 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_013.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 08-Apr-2018 15:35:43 ALS Bottle#: 13 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 11:41:11 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 11:40:33

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.425 | 1.424 | 0.001 | 1.000 | 6073089 | 2.37 | | 94.7 | 46700 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.425 | 1.425 | 0.0 | 1.000 | 2272279 | 1.01 | | 101 | 1196 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.703 | 1.693 | 0.010 | 0.558 | 3941269 | 2.36 | | 94.5 | 62665 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.703 | 1.703 | 0.0 | 1.000 | 1791030 | 0.9492 | | 94.9 | 927 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.739 | 1.729 | 0.010 | 1.000 | 85339 | 2.23 | | 96.0 | 1868 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.748 | 1.748 | 0.0 | 1.005 | 2536152 | 0.8758 | | 99.1 | 2802 | |
| 298.90 > 99.00 | 1.748 | 1.748 | 0.0 | 1.005 | 1065093 | | 2.38(1.25-3.74) | | 2343 | |
| D 60 M2-4:2FTS | | | | | | | | | | |
| 329.00 > 81.00 | 1.960 | 1.938 | 0.022 | 1.000 | 579713 | 1.99 | | 85.1 | 5061 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.960 | 1.960 | 0.0 | 1.000 | 516381 | 0.8153 | | 87.3 | 27447 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.993 | 1.981 | 0.012 | 1.000 | 4415135 | 2.40 | | 96.0 | 115152 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.993 | 1.993 | 0.0 | 1.000 | 1710020 | 0.9462 | | 94.6 | 2808 | |
| 313.00 > 119.00 | 1.993 | 1.993 | 0.0 | 1.000 | 157110 | | 10.88(5.03-15.10) | | 1733 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.016 | 2.016 | 0.0 | 1.000 | 2436976 | 0.9325 | | 99.4 | 22209 | |
| 349.00 > 99.00 | 2.016 | 2.016 | 0.0 | 1.000 | 894824 | | 2.72(1.36-4.07) | | 7600 | |
| D 64 13C3 HFPO-DA | | | | | | | | | | |
| 332.10 > 287.00 | 2.095 | 2.082 | 0.013 | 1.000 | 242267 | 2.64 | | 106 | 7190 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.095 | 2.095 | 0.0 | 1.000 | 311277 | 0.9444 | | 94.4 | 2405 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.321 | 2.306 | 0.015 | 1.000 | 4300066 | 2.43 | | 97.2 | 75453 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.334 | 2.319 | 0.015 | 1.000 | 5045779 | 2.29 | | 96.7 | 101565 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.321 | 2.321 | 0.0 | 1.000 | 1789972 | 0.9578 | | 95.8 | 2395 | |
| 363.00 > 169.00 | 2.321 | 2.321 | 0.0 | 1.000 | 688092 | | 2.60(1.13-3.40) | | 3069 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.334 | 2.334 | 0.0 | 1.000 | 2039500 | 0.8559 | | 94.1 | 3927 | |
| 399.00 > 99.00 | 2.334 | 2.334 | 0.0 | 1.000 | 688193 | | 2.96(1.50-4.49) | | 2454 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.372 | 2.372 | 0.0 | 1.000 | 5406879 | 1.01 | | 101 | 98570 | |
| 377.00 > 85.00 | 2.360 | 2.372 | -0.012 | 0.995 | 3085779 | | 1.75(0.84-2.53) | | 36902 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.653 | 2.628 | 0.025 | 1.000 | 851275 | 2.08 | | 87.7 | 12171 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.660 | 2.660 | 0.0 | 1.003 | 515255 | 0.7697 | | 81.2 | 5557 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.683 | 2.660 | 0.023 | 1.000 | 4245753 | 2.44 | | 97.7 | 69264 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.683 | 2.683 | 0.0 | | 4638678 | 2.50 | | | 139840 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.683 | 2.683 | 0.0 | 1.000 | 1850203 | 0.9187 | | 91.9 | 1039 | |
| 413.00 > 169.00 | 2.683 | 2.683 | 0.0 | 1.000 | 993857 | | 1.86(0.84-2.52) | | 3044 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.690 | 2.690 | 0.0 | 1.000 | 1918003 | 0.9537 | | 100 | 18432 | |
| 449.00 > 99.00 | 2.690 | 2.690 | 0.0 | 1.000 | 525007 | | 3.65(1.94-5.82) | | 6995 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.052 | 3.023 | 0.029 | 1.000 | 3623725 | 2.46 | | 98.5 | 80990 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.052 | 3.023 | 0.029 | 1.000 | 3606754 | 2.35 | | 98.5 | 36850 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.052 | 3.052 | 0.0 | 1.000 | 1511255 | 0.8764 | | 94.4 | 1479 | |
| 499.00 > 99.00 | 3.052 | 3.052 | 0.0 | 1.000 | 354068 | | 4.27(2.31-6.93) | | 7675 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.052 | 3.052 | 0.0 | 1.000 | 1430343 | 0.9590 | | 95.9 | 3929 | |
| 463.00 > 169.00 | 3.052 | 3.052 | 0.0 | 1.000 | 359858 | | 3.97(1.90-5.69) | | 10912 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.266 | 3.266 | 0.0 | 1.000 | 2566020 | 0.9093 | | 97.6 | 42429 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.370 | 3.359 | 0.011 | 1.000 | 4966535 | 2.29 | | 91.8 | 74854 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.370 | 3.370 | 0.0 | 1.000 | 2011831 | 1.03 | | 103 | 30240 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.407 | 3.377 | 0.030 | 1.000 | 1010903 | 2.13 | | 88.8 | 10573 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.417 | 3.387 | 0.030 | 1.000 | 3141125 | 2.53 | | 101 | 62158 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.398 | 3.398 | 0.0 | 1.000 | 1126227 | 0.9308 | | 97.0 | 15219 | |
| 549.00 > 99.00 | 3.398 | 3.398 | 0.0 | 1.000 | 442666 | | 2.54(1.33-3.97) | | 6126 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.407 | 3.407 | 0.0 | 1.000 | 477097 | 0.8380 | | 87.5 | 24056 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.417 | 3.417 | 0.0 | 1.000 | 1249686 | 1.01 | | 101 | 4911 | |
| 513.00 > 169.00 | 3.417 | 3.417 | 0.0 | 1.000 | 215291 | | 5.80(2.36-7.09) | | 3886 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.566 | 3.536 | 0.030 | 1.000 | 1718029 | 2.58 | | 103 | 26615 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.575 | 3.575 | 0.0 | 1.003 | 701929 | 0.9690 | | 96.9 | 4474 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.740 | 3.706 | 0.034 | 1.000 | 1745517 | 2.50 | | 100 | 16991 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.750 | 3.717 | 0.033 | 1.000 | 2673990 | 2.64 | | 105 | 101633 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.729 | 3.729 | 0.0 | 1.000 | 964271 | 0.9210 | | 95.5 | 10683 | |
| 599.00 > 99.00 | 3.729 | 3.729 | 0.0 | 1.000 | 328556 | | 2.93(1.39-4.16) | | 7235 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.750 | 3.750 | 0.0 | 1.000 | 835036 | 0.9730 | | 97.3 | 5225 | |
| 563.00 > 169.00 | 3.740 | 3.750 | -0.010 | 0.997 | 220239 | | 3.79(2.12-6.36) | | 5638 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.750 | 3.750 | 0.0 | 1.003 | 655047 | 1.02 | | 102 | 10816 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.907 | 3.907 | 0.0 | 1.000 | 4058834 | 0.9266 | | 98.4 | 58358 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.040 | 4.007 | 0.033 | 1.000 | 2922168 | 2.59 | | 103 | 21469 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.040 | 4.040 | 0.0 | 1.000 | 1204983 | 0.9538 | | 95.4 | 958 | |
| 613.00 > 169.00 | 4.040 | 4.040 | 0.0 | 1.000 | 296153 | | 4.07(2.13-6.40) | | 3421 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.307 | 4.307 | 0.0 | 1.000 | 1308638 | 0.9685 | | 96.8 | 788 | |
| 663.00 > 169.00 | 4.307 | 4.307 | 0.0 | 1.000 | 425423 | | 3.08(1.25-3.76) | | 4790 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.553 | 4.510 | 0.043 | 1.000 | 3493895 | 2.44 | | 97.4 | 17145 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.553 | 4.553 | 0.0 | 1.000 | 350740 | 1.00 | | 100 | 3220 | |
| 713.00 > 219.00 | 4.542 | 4.553 | -0.011 | 0.998 | 252732 | | 1.39(0.71-2.13) | | 3321 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.966 | 4.921 | 0.045 | 1.000 | 5135292 | 2.32 | | 92.7 | 12866 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.966 | 4.966 | 0.0 | 1.000 | 1978052 | 1.00 | | 99.6 | 479 | |
| 813.00 > 169.00 | 4.966 | 4.966 | 0.0 | 1.000 | 324919 | | 6.09(2.86-8.58) | | 1701 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.336 | 5.336 | 0.0 | 1.000 | 1847753 | 0.9060 | | 90.6 | 380 | |
| 913.00 > 169.00 | 5.336 | 5.336 | 0.0 | 1.000 | 230442 | | 8.02(3.83-11.48) | | 1628 | |

## Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 11:41:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b\2018.04.08LLA_013.d

Injection Date: 08-Apr-2018 15:35:43 Instrument ID: A8_N

Lims ID: CCV L4

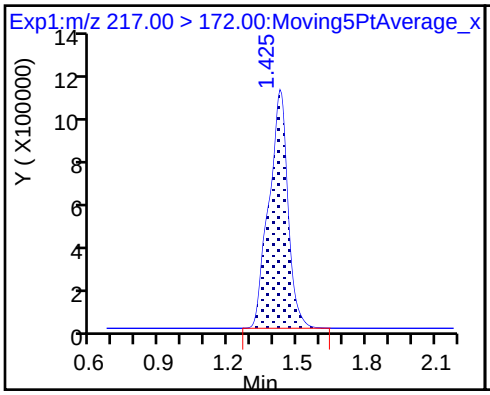
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 10

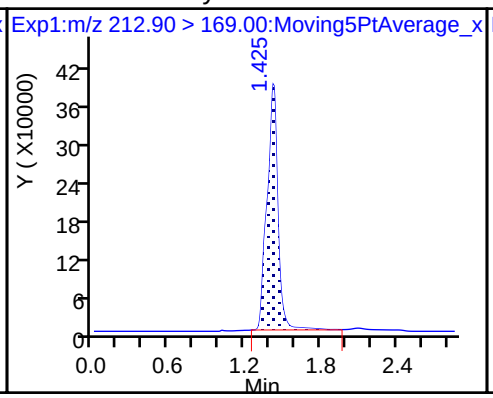
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

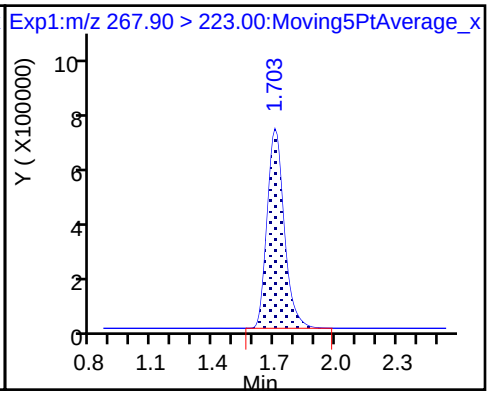
D 1 13C4 PFBA



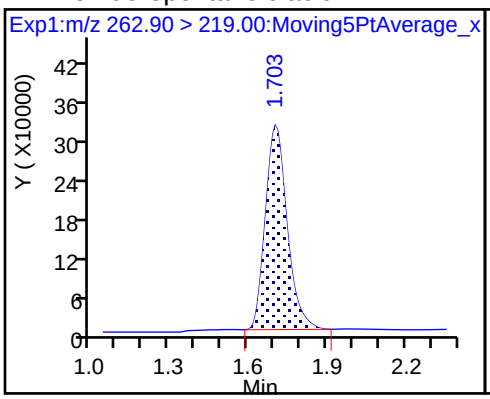

2 Perfluorobutyric acid



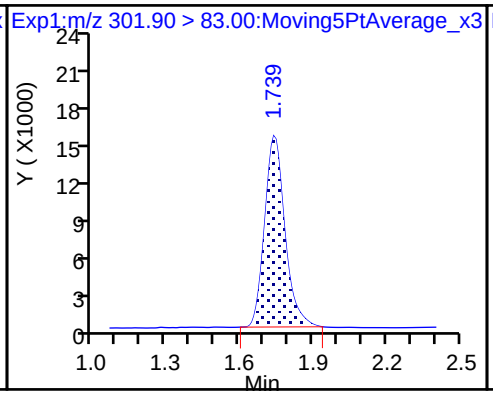

D 3 13C5-PFPeA



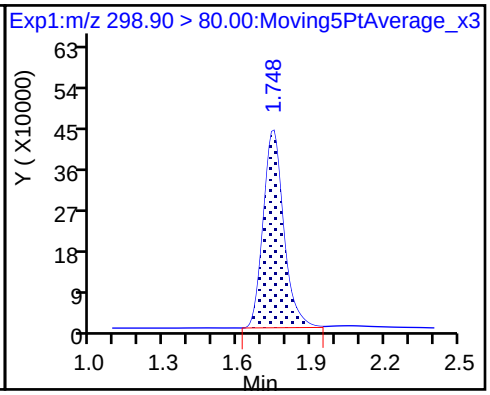

4 Perfluoropentanoic acid



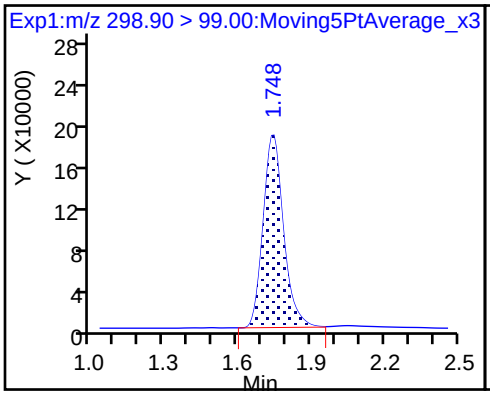

D 47 13C3-PFBS



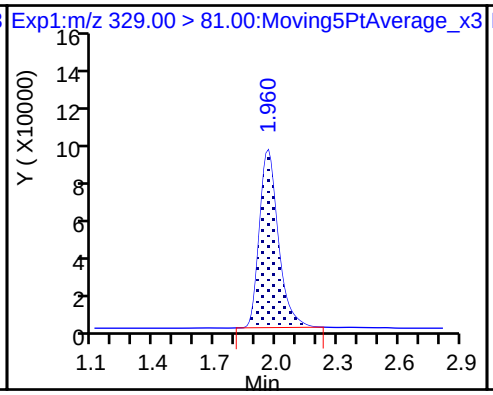

5 Perfluorobutanesulfonic acid



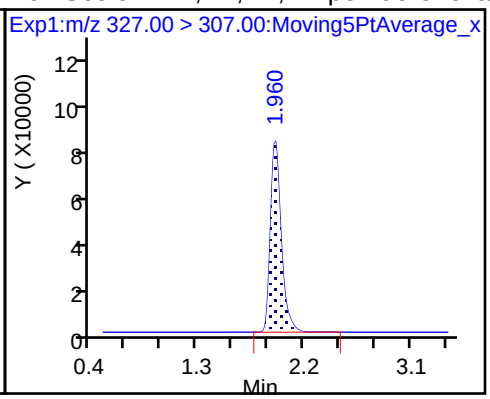

5 Perfluorobutanesulfonic acid



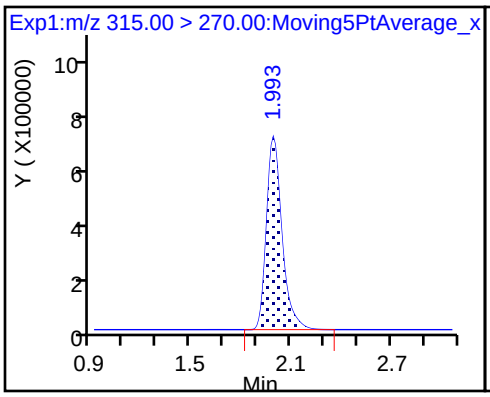

D 60 M2-4:2FTS



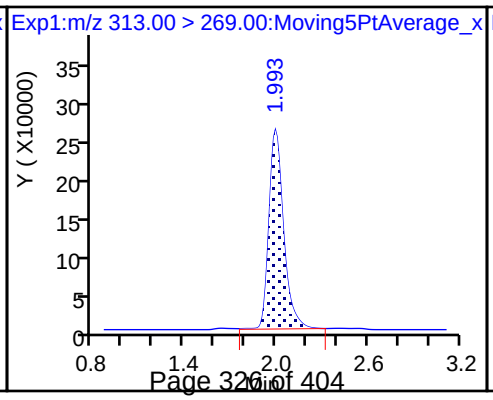

61 Sodium 1H,1H,2H,2H-perfluorohexane



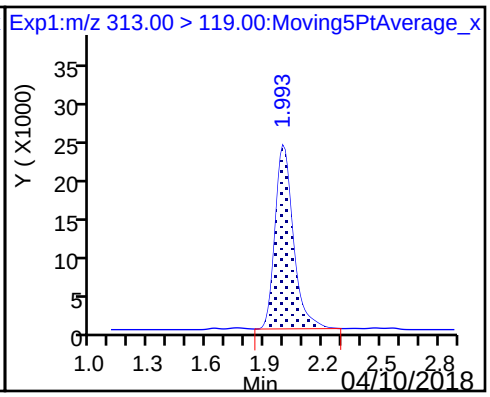

D 7 13C2 PFHxA



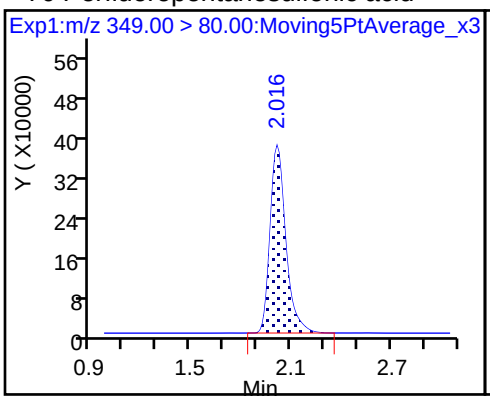

6 Perfluorohexanoic acid



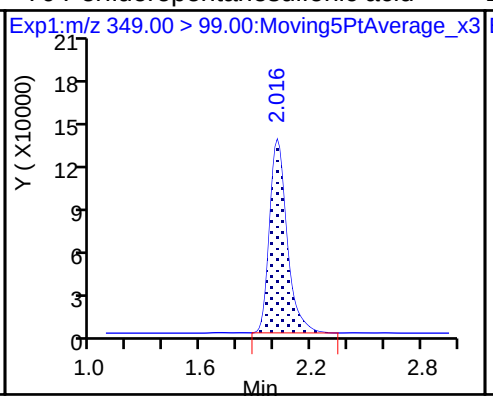

6 Perfluorohexanoic acid



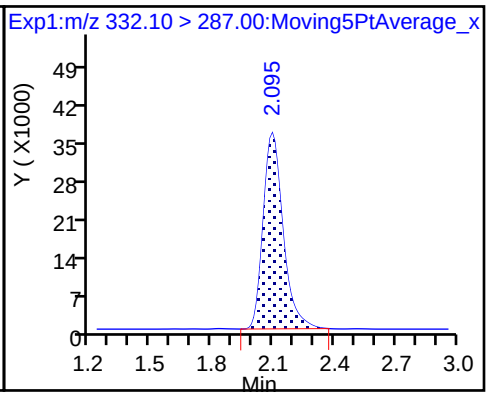
70 Perfluoropentanesulfonic acid



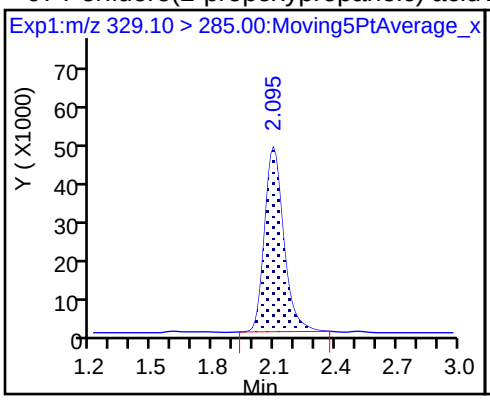

70 Perfluoropentanesulfonic acid



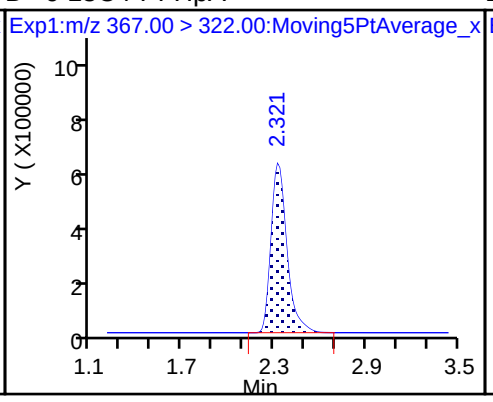

D 64 13C3 HFPO-DA



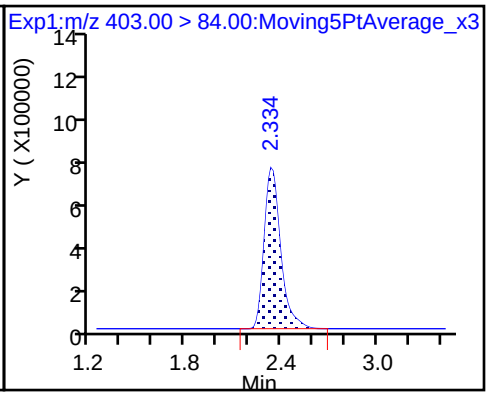

67 Perfluoro(2-propoxypropanoic) acid



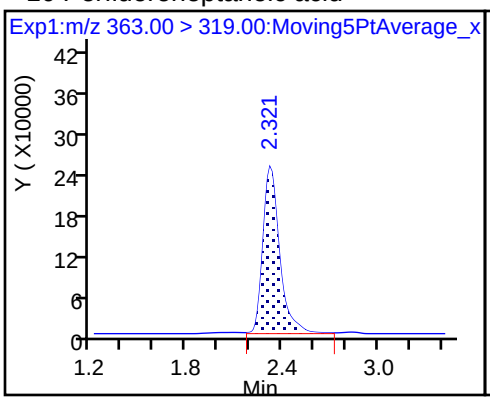

D 9 13C4-PFHpA



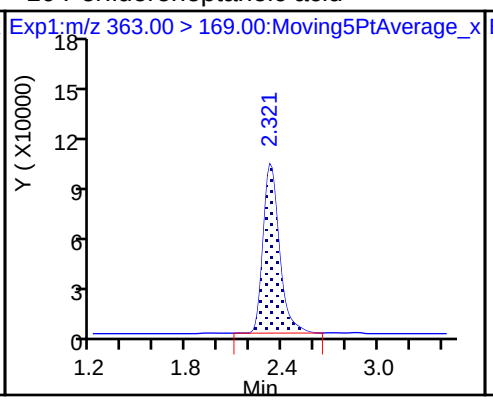

D 11 18O2 PFHxS



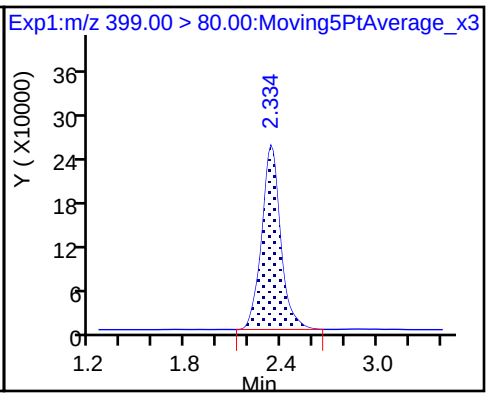

10 Perfluoroheptanoic acid



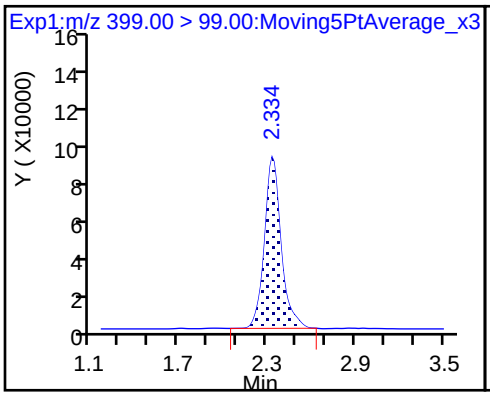

10 Perfluoroheptanoic acid



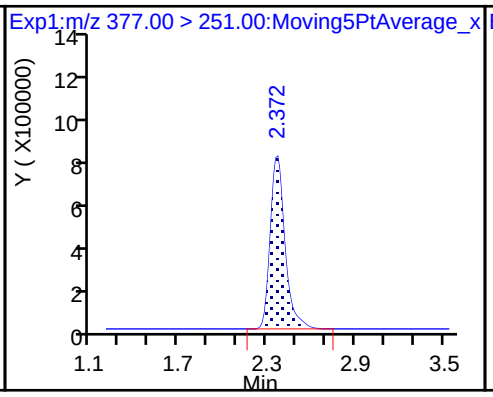

8 Perfluorohexanesulfonic acid



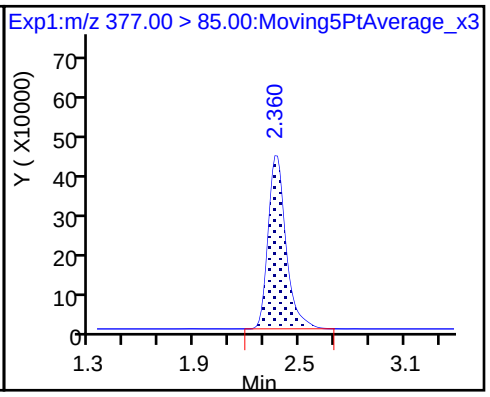

8 Perfluorohexanesulfonic acid



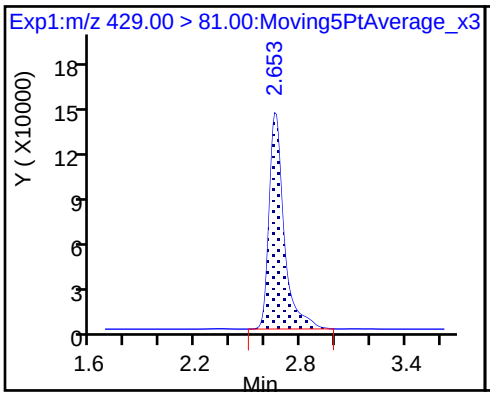

65 Adona



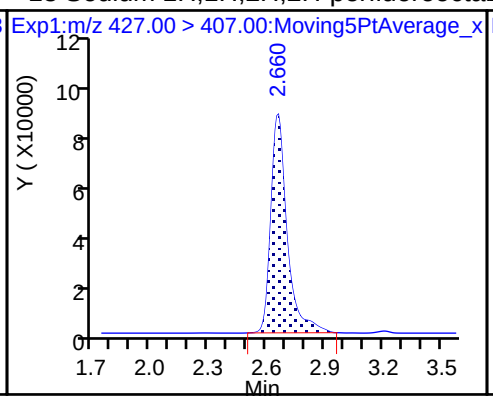

65 Adona



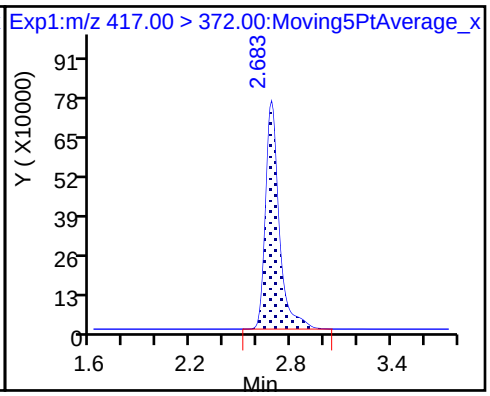
D 12 M2-6:2FTS



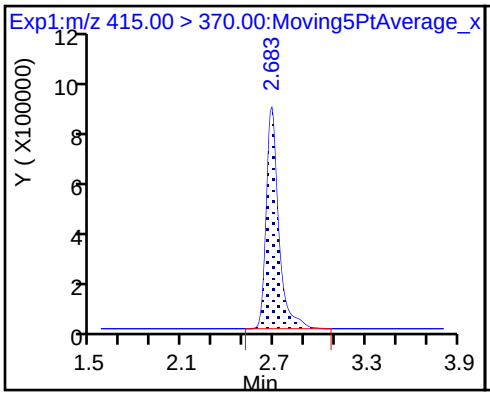

13 Sodium 1H,1H,2H,2H-perfluorooctane



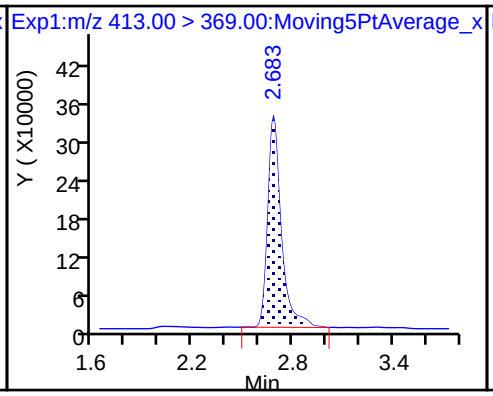

D 14 13C4 PFOA



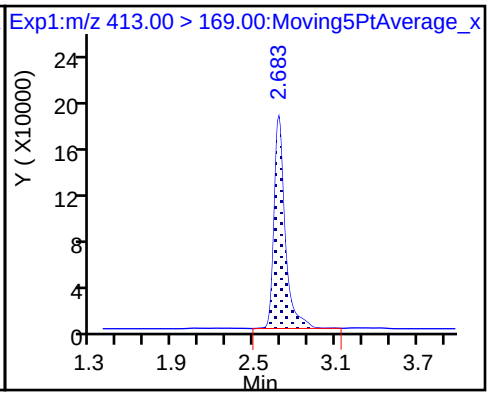

* 62 13C2-PFOA



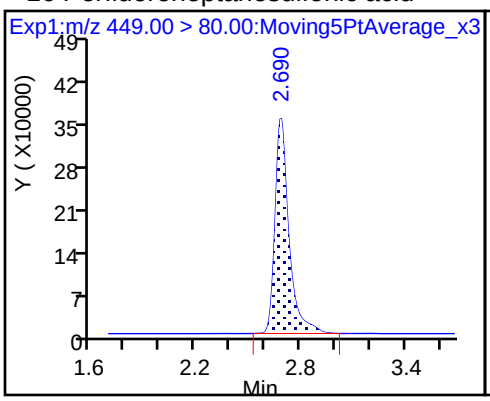

15 Perfluorooctanoic acid



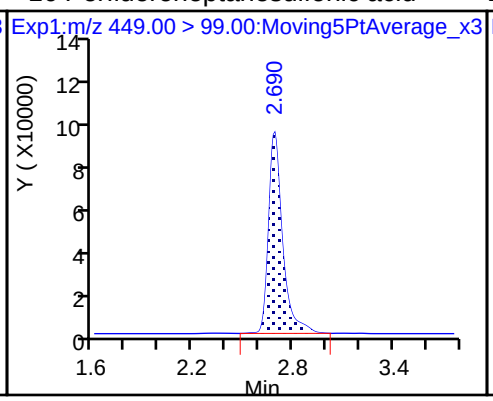

15 Perfluorooctanoic acid



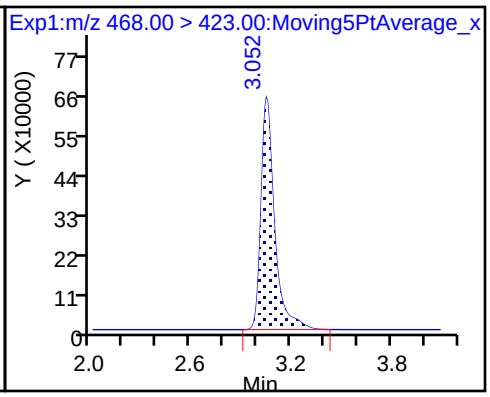

16 Perfluoroheptanesulfonic acid



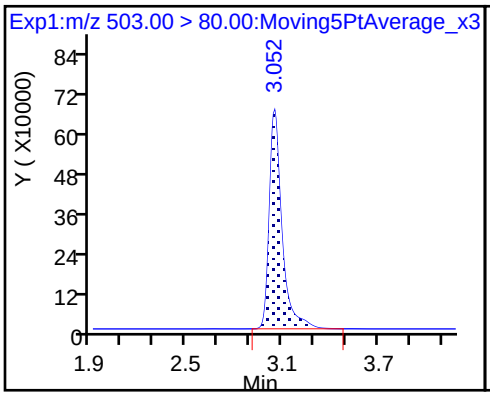

16 Perfluoroheptanesulfonic acid



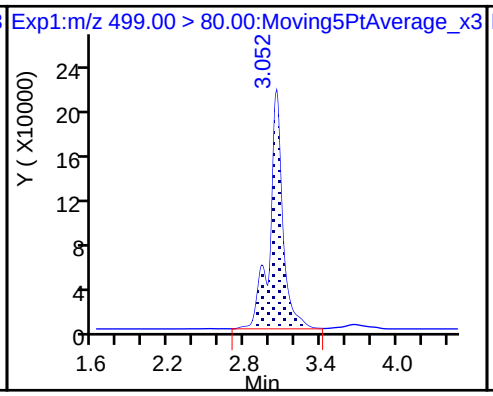

D 19 13C5 PFNA



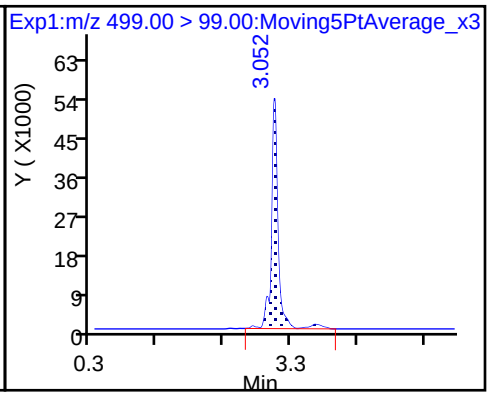

D 18 13C4 PFOS



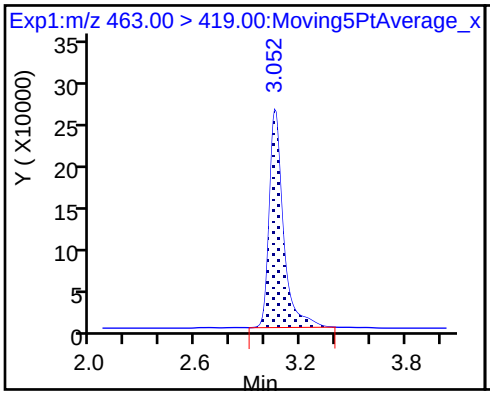

17 Perfluorooctane sulfonic acid



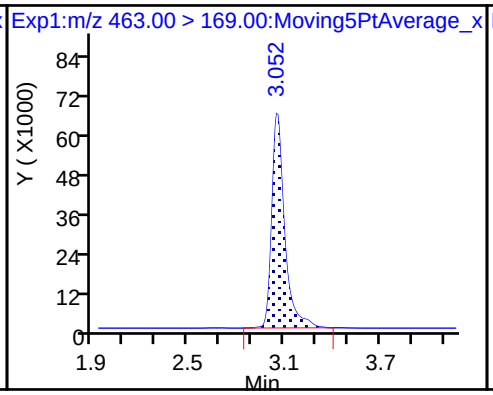

17 Perfluorooctane sulfonic acid



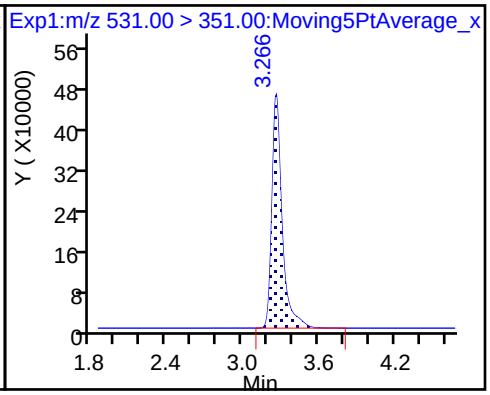
20 Perfluorononanoic acid



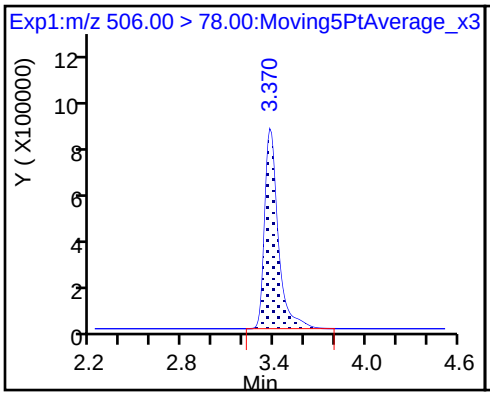

20 Perfluorononanoic acid



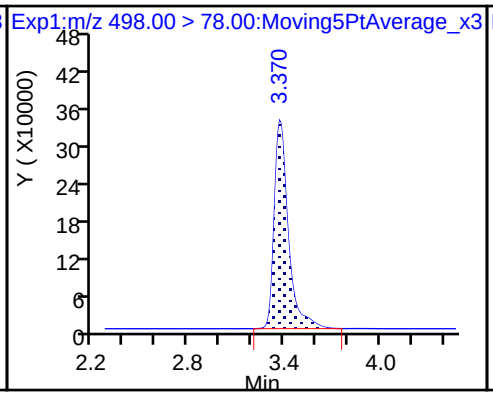

69 9-Chlorohexadecafluoro-3-oxanonane



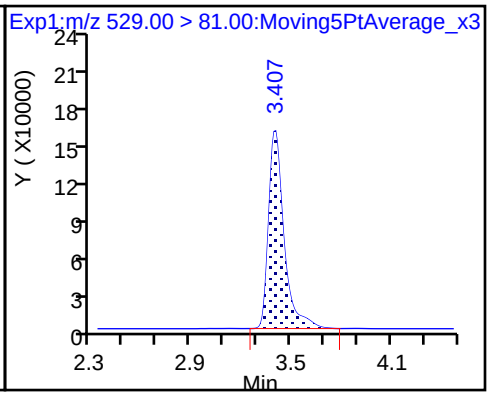

D 21 13C8 FOSA



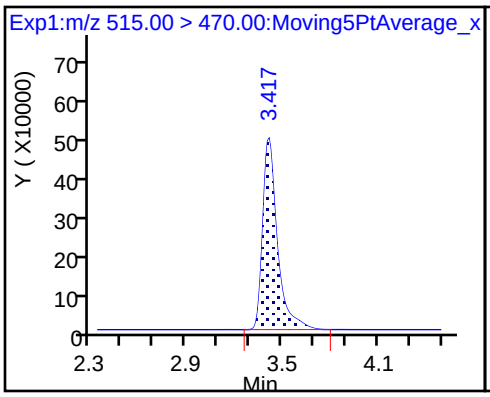

22 Perfluorooctane Sulfonamide



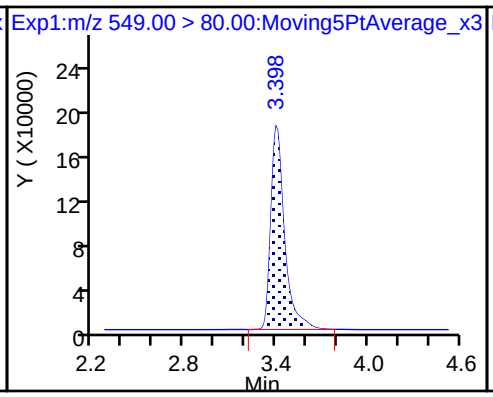

D 26 M2-8:2FTS



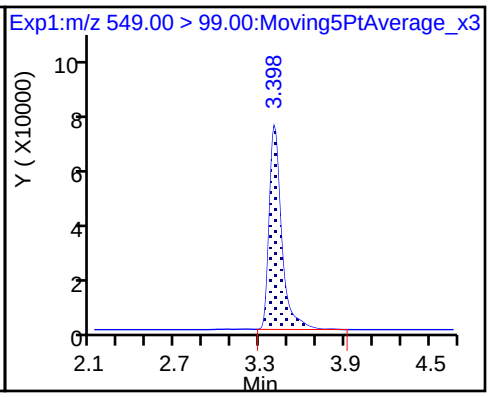

D 23 13C2 PFDA



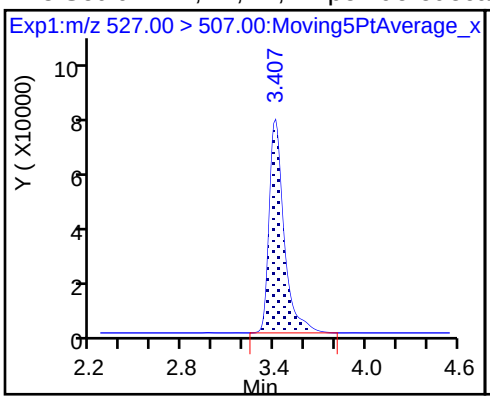

68 Perfluorononanesulfonic acid



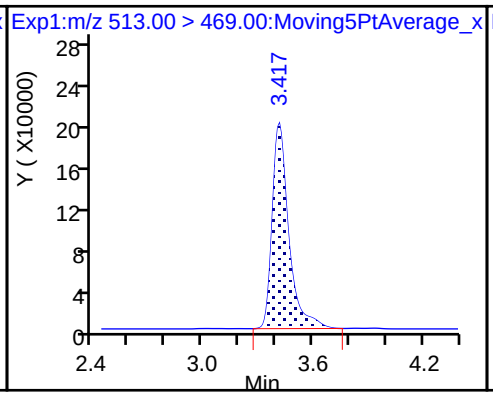

68 Perfluorononanesulfonic acid



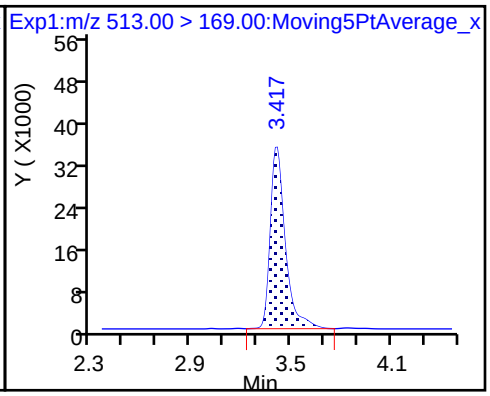

25 Sodium 1H,1H,2H,2H-perfluorodecane



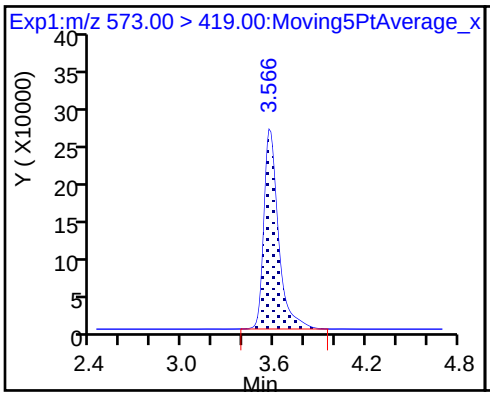

24 Perfluorodecanoic acid



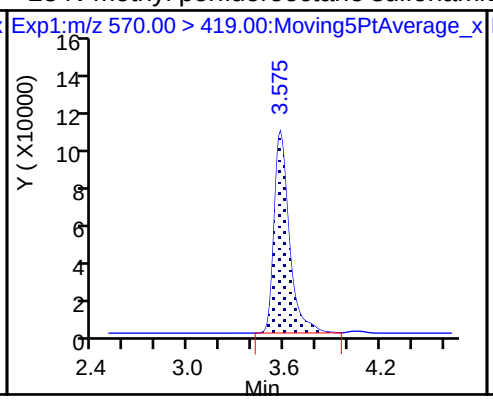

24 Perfluorodecanoic acid



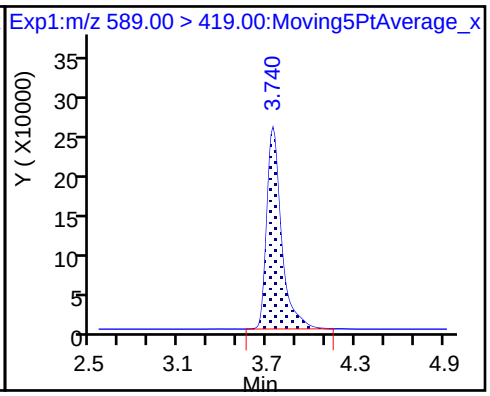
D 27 d3-NMeFOSAA



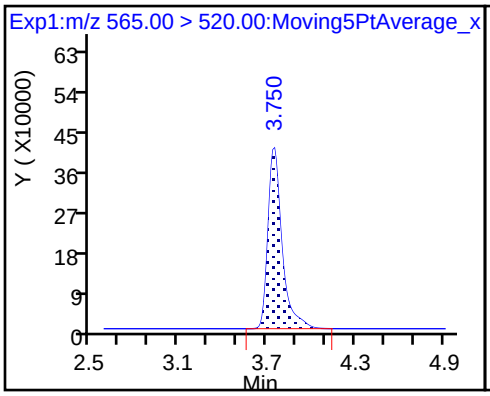

28 N-methyl perfluorooctane sulfonami



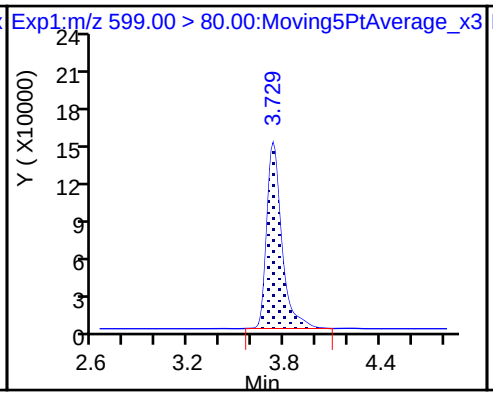

D 32 d5-NEtFOSAA



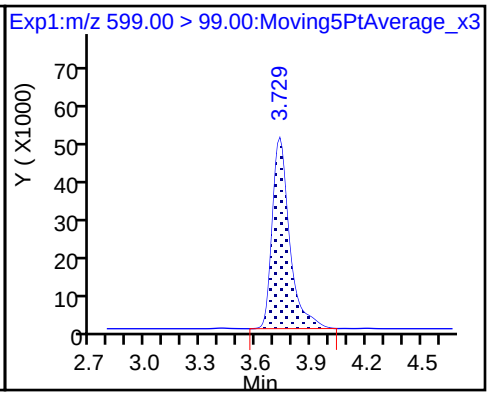

D 30 13C2 PFUnA



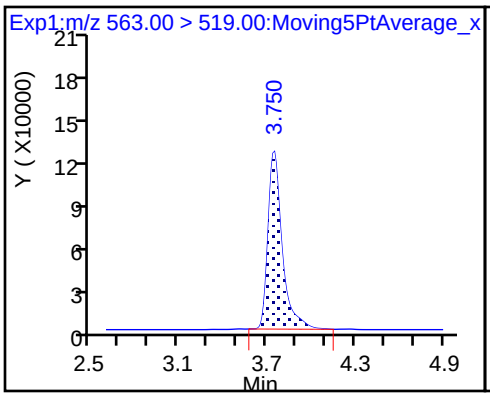

29 Perfluorodecane Sulfonic acid



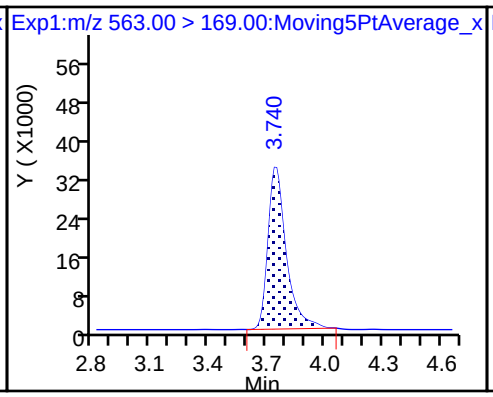

29 Perfluorodecane Sulfonic acid



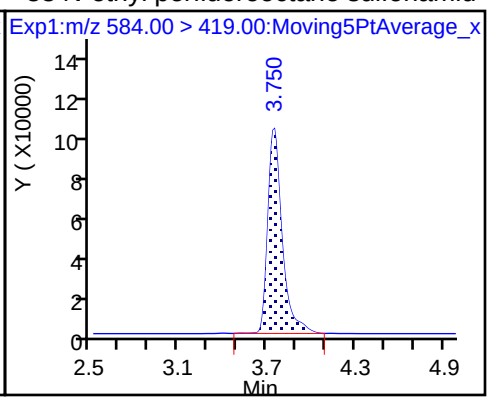

31 Perfluoroundecanoic acid



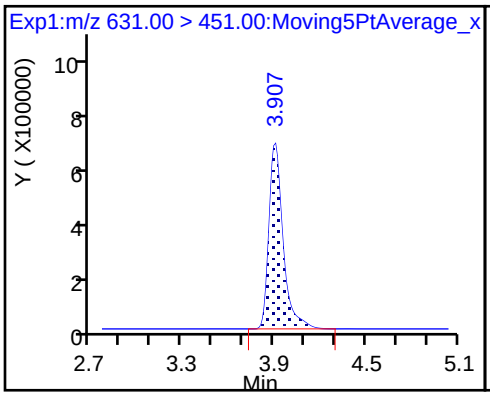

31 Perfluoroundecanoic acid



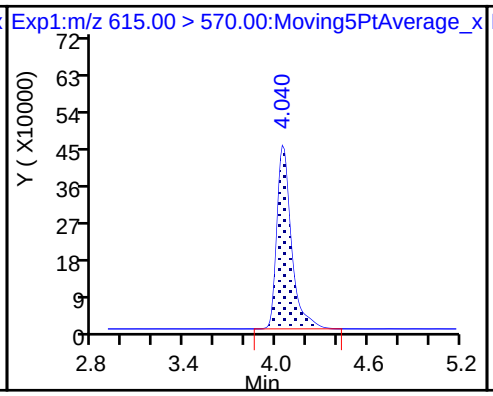

33 N-ethyl perfluorooctane sulfonamid



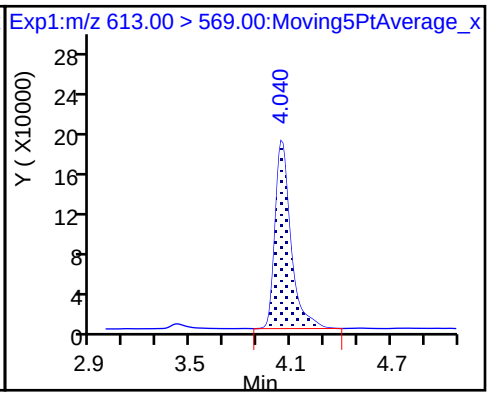

66 11-Chloroeicosafluoro-3-oxaundecan



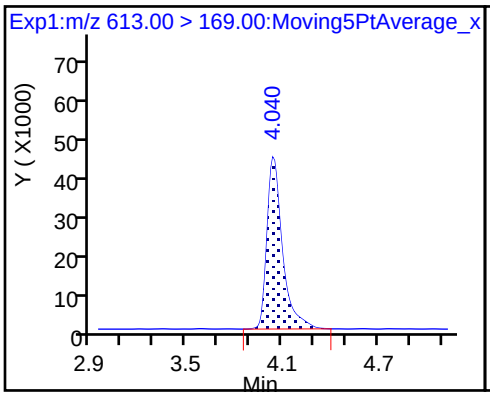

D 36 13C2 PFDoA



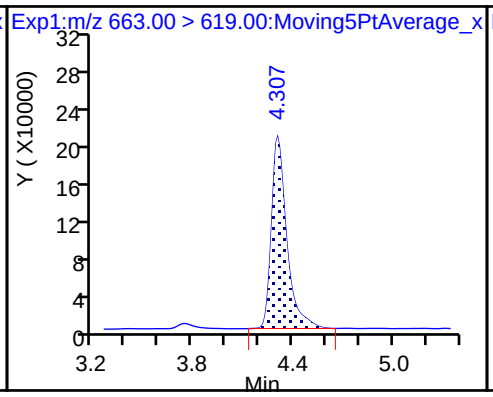

37 Perfluorododecanoic acid



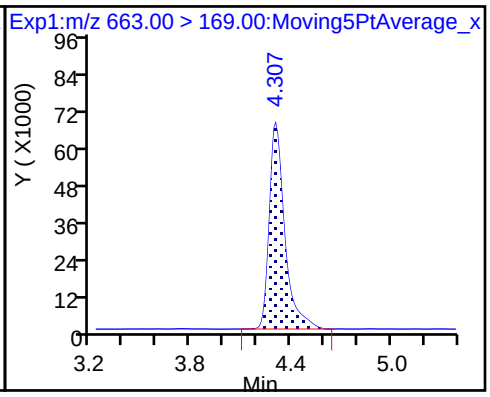
37 Perfluorododecanoic acid



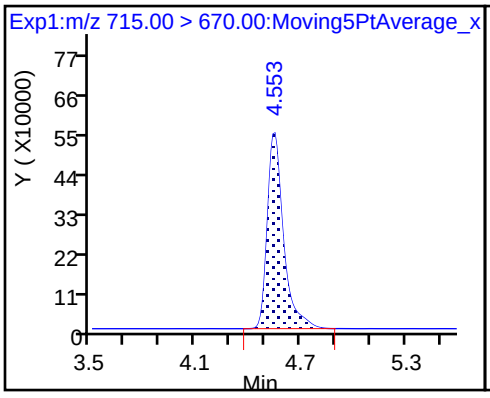

41 Perfluorotridecanoic acid



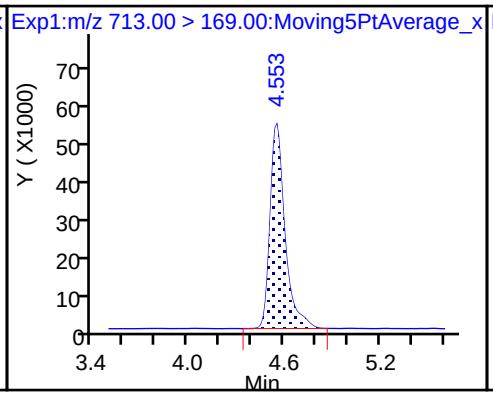

41 Perfluorotridecanoic acid



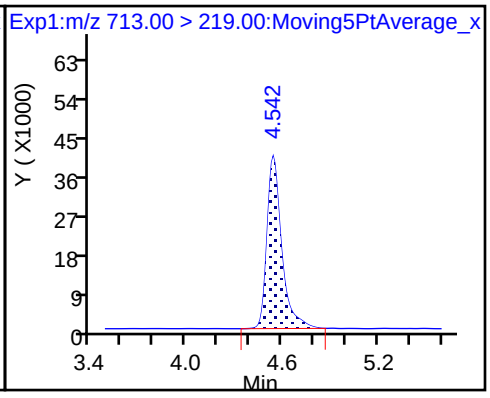

D 43 13C2-PFTeDA



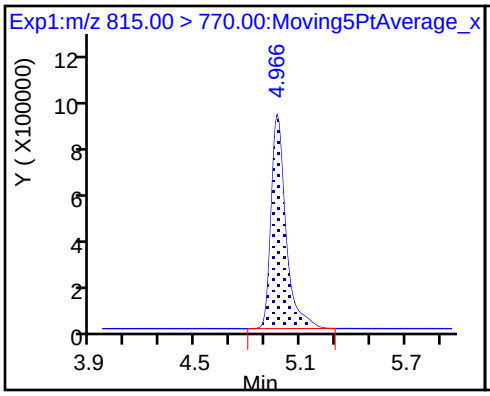

42 Perfluorotetradecanoic acid



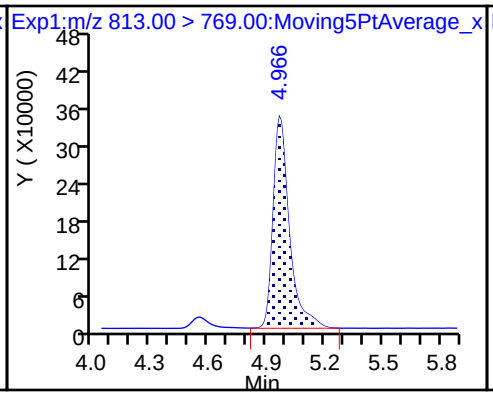

42 Perfluorotetradecanoic acid



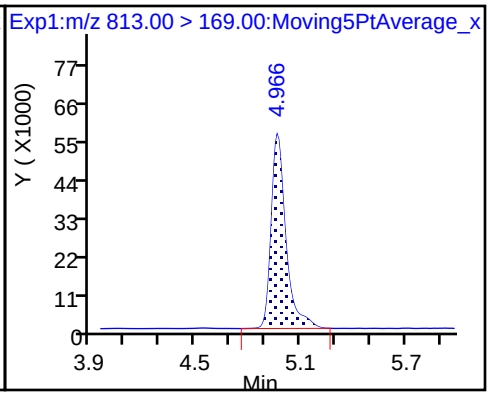

D 44 13C2-PFHxDA



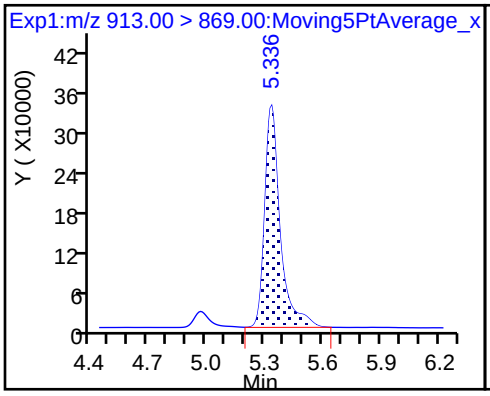

45 Perfluorohexadecanoic acid



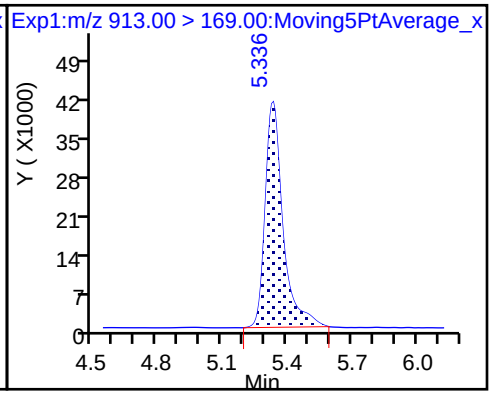

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-216477/1-A

Matrix: Water | Lab File ID: 2018.04.07LLA1_048.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/07/2018 14:53

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216860 | Units: ng/L

| CAS NO. | COMPOUND NAME | RESULT | Q | RL | MDL |
|---|---|---|---|---|---|
| 375-22-4 | Perfluorobutanoic acid (PFBA) | 0.35 | U | 2.00 | 0.35 |
| 2706-90-3 | Perfluoropentanoic acid (PFPeA) | 0.49 | U | 2.00 | 0.49 |
| 307-24-4 | Perfluorohexanoic acid (PFHxA) | 0.58 | U | 2.00 | 0.58 |
| 375-85-9 | Perfluoroheptanoic acid (PFHpA) | 0.25 | U | 2.00 | 0.25 |
| 335-67-1 | Perfluorooctanoic acid (PFOA) | 1.353 | J | 2.00 | 0.85 |
| 375-95-1 | Perfluorononanoic acid (PFNA) | 0.27 | U | 2.00 | 0.27 |
| 335-76-2 | Perfluorodecanoic acid (PFDA) | 0.31 | U | 2.00 | 0.31 |
| 2058-94-8 | Perfluoroundecanoic acid (PFUnA) | 1.10 | U | 2.00 | 1.10 |
| 307-55-1 | Perfluorododecanoic acid (PFDoA) | 0.55 | U | 2.00 | 0.55 |
| 72629-94-8 | Perfluorotridecanoic Acid (PFTriA) | 1.30 | U | 2.00 | 1.30 |
| 376-06-7 | Perfluorotetradecanoic acid (PFTeA) | 0.29 | U | 2.00 | 0.29 |
| 375-73-5 | Perfluorobutanesulfonic acid (PFBS) | 0.20 | U | 2.00 | 0.20 |
| 355-46-4 | Perfluorohexanesulfonic acid (PFHxS) | 0.240 | J | 2.00 | 0.17 |
| 375-92-8 | Perfluoroheptanesulfonic Acid (PFHpS) | 0.19 | U | 2.00 | 0.19 |
| 1763-23-1 | Perfluorooctanesulfonic acid (PFOS) | 0.54 | U | 2.00 | 0.54 |
| 335-77-3 | Perfluorodecanesulfonic acid (PFDS) | 0.32 | U | 2.00 | 0.32 |
| 754-91-6 | Perfluorooctane Sulfonamide (FOSA) | 0.35 | U | 2.00 | 0.35 |
| 2355-31-9 | N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 3.10 | U | 20.0 | 3.10 |
| 2991-50-6 | N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 1.90 | U | 20.0 | 1.90 |
| 27619-97-2 | 6:2FTS | 2.00 | U | 20.0 | 2.00 |
| 39108-34-4 | 8:2FTS | 2.00 | U | 20.0 | 2.00 |

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-216477/1-A

Matrix: Water | Lab File ID: 2018.04.07LLA1_048.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/07/2018 14:53

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216860 | Units: ng/L

| CAS NO. | ISOTOPE DILUTION | %REC | Q | LIMITS |
|---|---|---|---|---|
| STL00992 | 13C4 PFBA | 69 | | 25-150 |
| STL01893 | 13C5 PFPeA | 70 | | 25-150 |
| STL00993 | 13C2 PFHxA | 67 | | 25-150 |
| STL01892 | 13C4-PFHpA | 73 | | 25-150 |
| STL00990 | 13C4 PFOA | 73 | | 25-150 |
| STL00995 | 13C5 PFNA | 78 | | 25-150 |
| STL00996 | 13C2 PFDA | 81 | | 25-150 |
| STL00997 | 13C2 PFUnA | 78 | | 25-150 |
| STL00998 | 13C2 PFDoA | 79 | | 25-150 |
| STL02116 | 13C2-PFTeDA | 76 | | 25-150 |
| STL02337 | 13C3-PFBS | 69 | | 25-150 |
| STL00994 | 18O2 PFHxS | 71 | | 25-150 |
| STL00991 | 13C4 PFOS | 74 | | 25-150 |
| STL01056 | 13C8 FOSA | 63 | | 25-150 |
| STL02118 | d3-NMeFOSAA | 83 | | 25-150 |
| STL02117 | d5-NEtFOSAA | 79 | | 25-150 |
| STL02279 | M2-6:2FTS | 78 | | 25-150 |
| STL02280 | M2-8:2FTS | 77 | | 25-150 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_048.d
Lims ID: MB 320-216477/1-A
Client ID:
Sample Type: MB
Inject. Date: 07-Apr-2018 14:53:15 ALS Bottle#: 32 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-216477/1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 14:13:14 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 13:56:12

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.424 | 1.425 | -0.001 | 1.000 | 5700860 | 1.73 | | 69.1 | 56207 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.430 | 1.436 | -0.006 | 1.004 | 11613 | 0.005510 | | | 3.5 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.693 | 1.694 | -0.001 | 0.558 | 3743240 | 1.74 | | 69.8 | 72509 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.729 | 1.730 | -0.001 | 1.000 | 79204 | 1.61 | | 69.3 | 582 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.970 | 1.971 | -0.001 | 1.000 | 3985666 | 1.68 | | 67.4 | 124945 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.307 | 2.308 | -0.001 | 1.000 | 4160243 | 1.83 | | 73.1 | 97807 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | R |
| 399.00 > 80.00 | 2.320 | 2.321 | -0.001 | 1.000 | 13491 | 0.005993 | | | 38.0 | R |
| 399.00 > 99.00 | 2.320 | 2.321 | -0.001 | 1.000 | 2424 | | 5.57(1.50-4.49) | | 5.4 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.320 | 2.321 | -0.001 | 1.000 | 4766332 | 1.68 | | 71.0 | 97653 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.637 | 2.636 | 0.001 | 1.000 | 974915 | 1.85 | | 78.1 | 17470 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.637 | 2.645 | -0.008 | 1.000 | 2625 | 0.003424 | | | 30.4 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.661 | 2.660 | 0.001 | 1.000 | 4055991 | 1.81 | | 72.5 | 102057 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.661 | 2.668 | -0.007 | | 5966832 | 2.50 | | | 209246 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.661 | 2.668 | -0.007 | 1.000 | 65076 | 0.0338 | | | 25.1 | |
| 413.00 > 169.00 | 2.661 | 2.668 | -0.007 | 1.000 | 45563 | | 1.43(0.84-2.52) | | 117 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.029 | 3.026 | 0.003 | 1.000 | 3483506 | 1.77 | | 74.0 | 22092 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.036 | 3.026 | 0.010 | 1.000 | 3667504 | 1.94 | | 77.5 | 83766 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.043 | 3.040 | 0.003 | 1.002 | 1878 | 0.001244 | | | 2.4 | |
| 463.00 > 169.00 | 3.009 | 3.040 | -0.031 | 0.991 | 613 | | 3.06(1.90-5.69) | | 18.5 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.378 | 3.362 | 0.016 | 1.000 | 4405949 | 1.58 | | 63.3 | 92893 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.368 | 3.371 | -0.003 | 0.997 | 5675 | 0.003260 | | | 95.5 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.396 | 3.380 | 0.016 | 1.000 | 1127386 | 1.84 | | 77.0 | 12252 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.406 | 3.389 | 0.017 | 1.000 | 3247152 | 2.03 | | 81.2 | 62453 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.555 | 3.548 | 0.007 | 1.000 | 1764362 | 2.06 | | 82.5 | 31534 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.573 | 3.557 | 0.016 | 1.005 | 4491 | 0.006037 | | | 40.6 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.717 | 3.709 | 0.008 | 1.000 | 1768648 | 1.97 | | 78.8 | 13148 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.717 | 3.720 | -0.003 | 1.000 | 2553261 | 1.96 | | 78.3 | 56002 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.717 | 3.730 | -0.013 | 1.000 | 8539 | 0.0132 | | | 105 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.874 | 3.886 | -0.012 | 1.000 | 5008 | 0.001184 | | | 63.6 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.007 | 4.010 | -0.003 | 1.000 | 2851474 | 1.96 | | 78.5 | 29820 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.007 | 4.020 | -0.013 | 1.000 | 2789 | 0.002262 | | | 3.1 | |
| 613.00 > 169.00 | 4.017 | 4.020 | -0.003 | 1.003 | 1047 | | 2.66(2.13-6.40) | | 17.9 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.510 | 4.513 | -0.003 | 1.000 | 3504152 | 1.90 | | 75.9 | 20041 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.921 | 4.924 | -0.003 | 1.000 | 5380380 | 1.89 | | 75.5 | 12731 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.930 | 4.932 | -0.002 | 1.002 | 45056 | 0.000709 | | | 12.1 | |
| 813.00 > 169.00 | 4.930 | 4.932 | -0.002 | 1.002 | 6727 | | 6.70(2.86-8.58) | | 45.3 | |

## QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Report Date: 09-Apr-2018 14:13:20 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_048.d

Injection Date: 07-Apr-2018 14:53:15 Instrument ID: A8_N

Lims ID: MB 320-216477/1-A

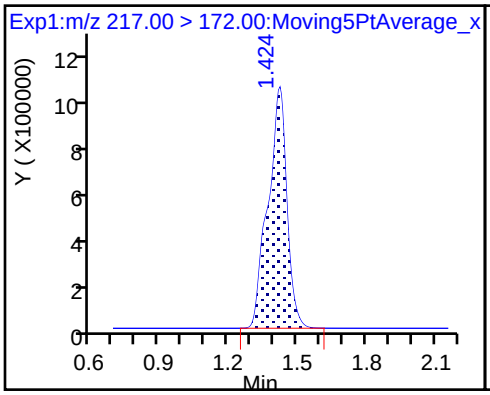
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 32 Worklist Smp#: 2

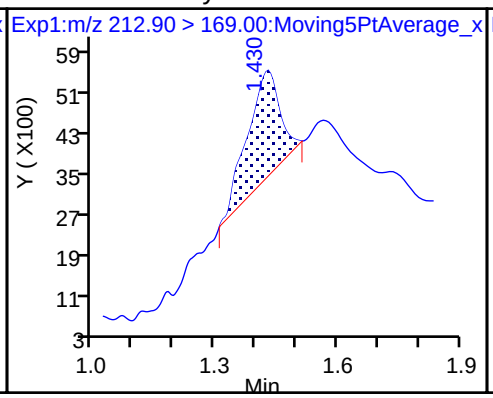
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

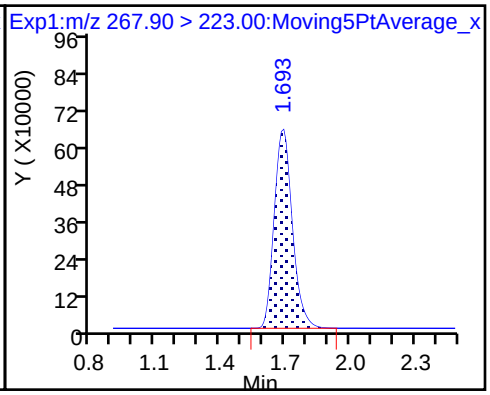
D 1 13C4 PFBA



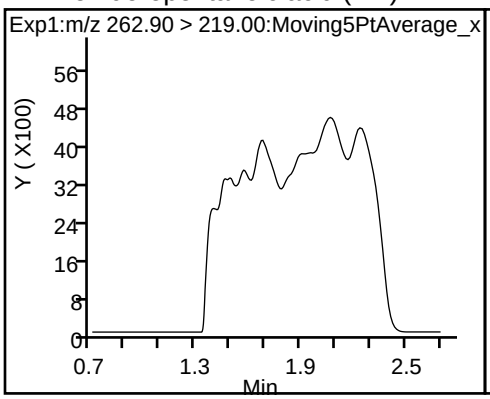

2 Perfluorobutyric acid



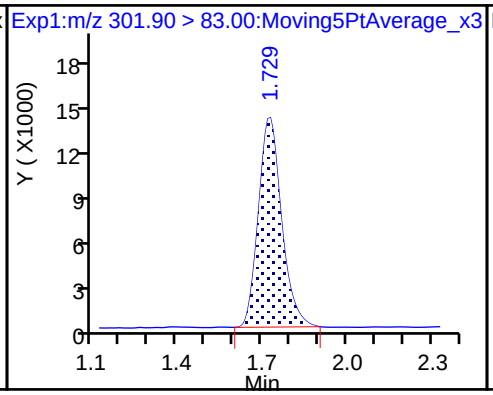

D 3 13C5-PFPeA



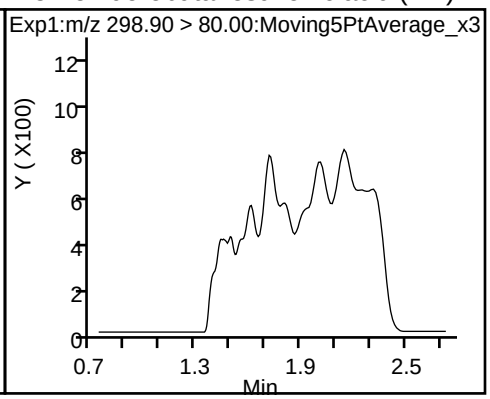

4 Perfluoropentanoic acid (ND)



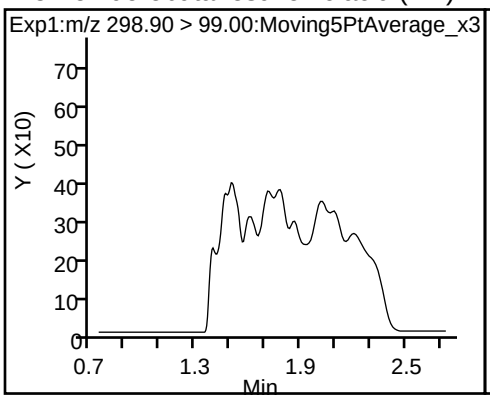

D 47 13C3-PFBS



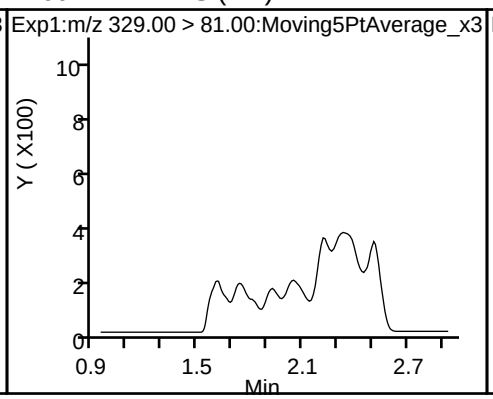

5 Perfluorobutanesulfonic acid (ND)



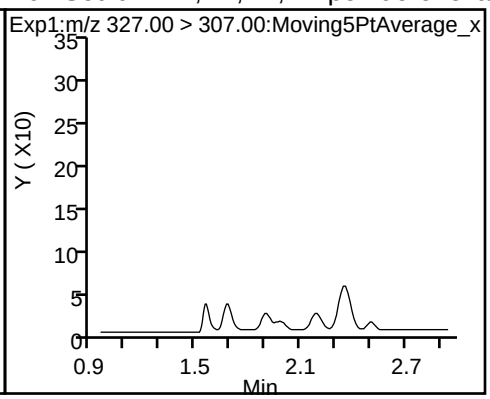

5 Perfluorobutanesulfonic acid (ND)



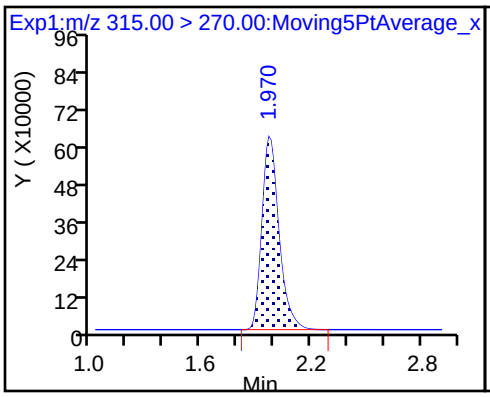

D 60 M2-4:2FTS (ND)



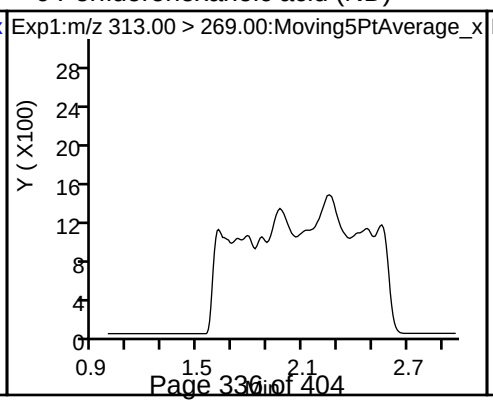

61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



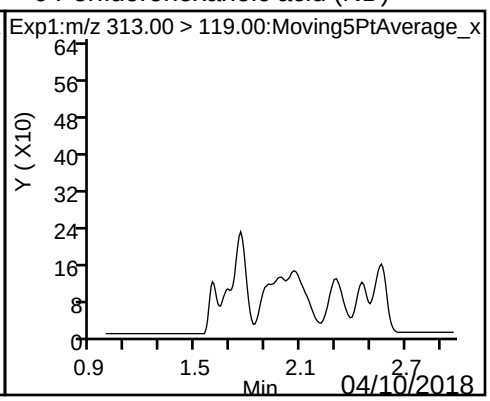

D 7 13C2 PFHxA



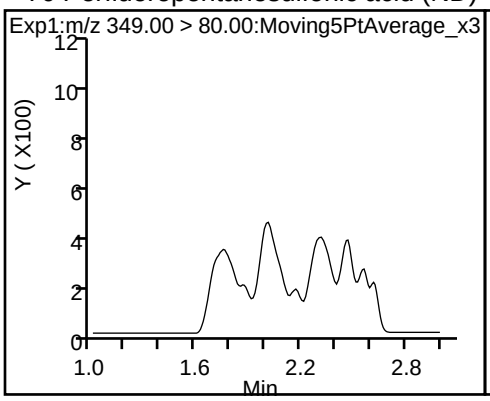

6 Perfluorohexanoic acid (ND)



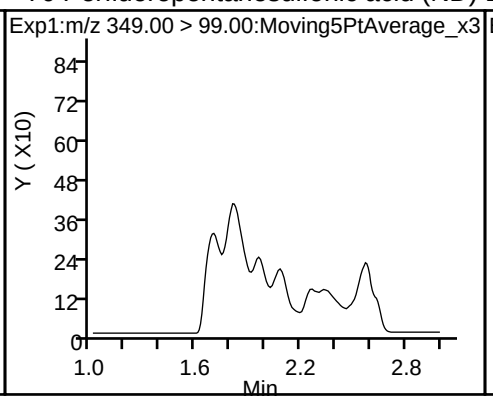

6 Perfluorohexanoic acid (ND)



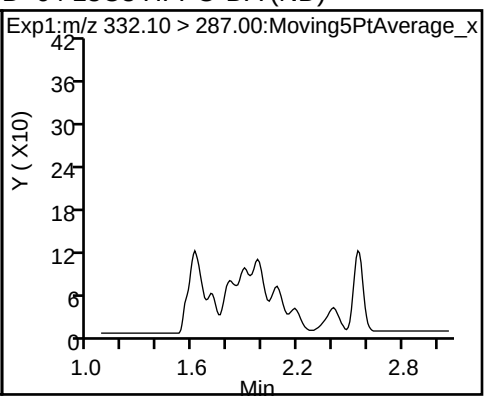
70 Perfluoropentanesulfonic acid (ND)



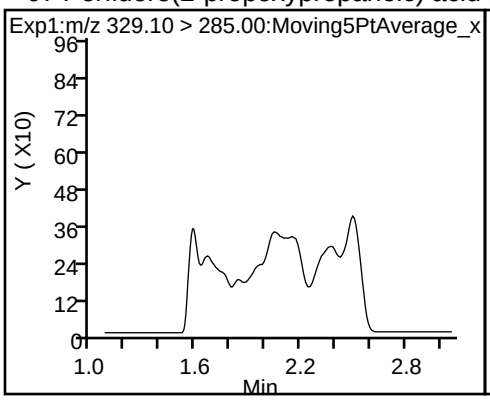

70 Perfluoropentanesulfonic acid (ND)



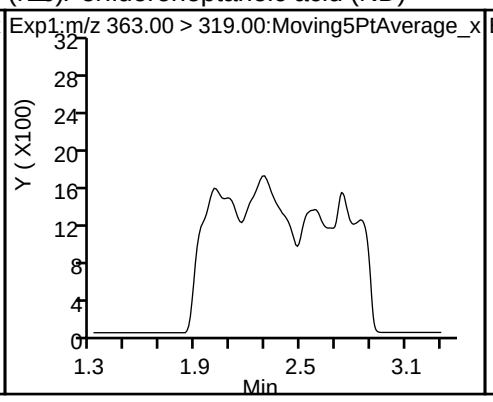

D 64 13C3 HFPO-DA (ND)



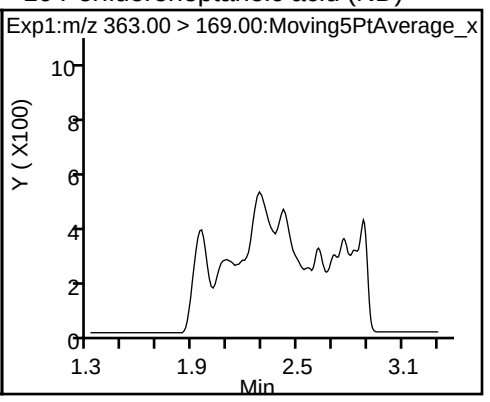

67 Perfluoro(2-propoxypropanoic) acid (ND)



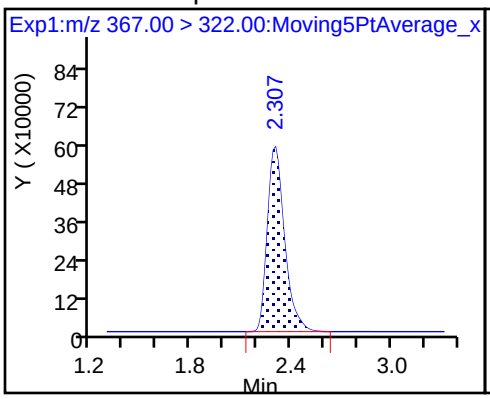

10 Perfluoroheptanoic acid (ND)



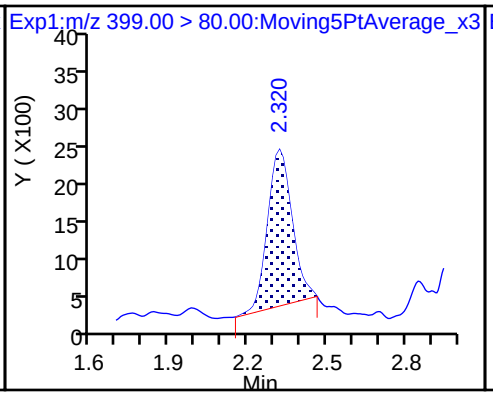

10 Perfluoroheptanoic acid (ND)



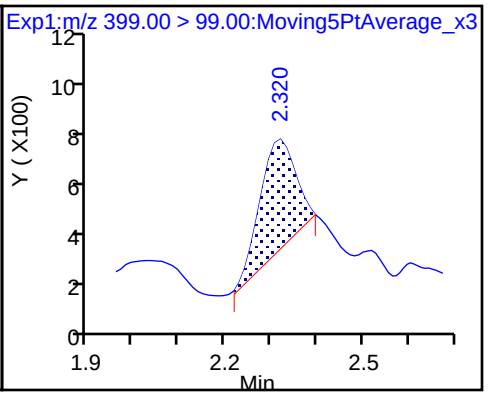

D 9 13C4-PFHpA



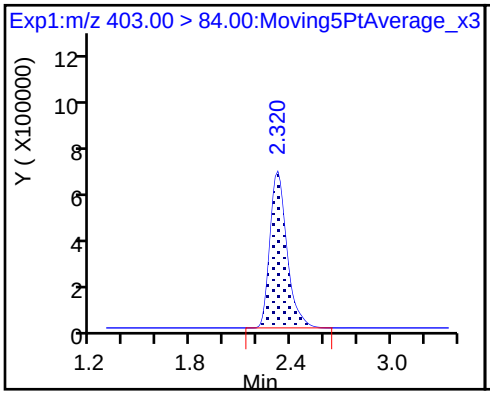

8 Perfluorohexanesulfonic acid



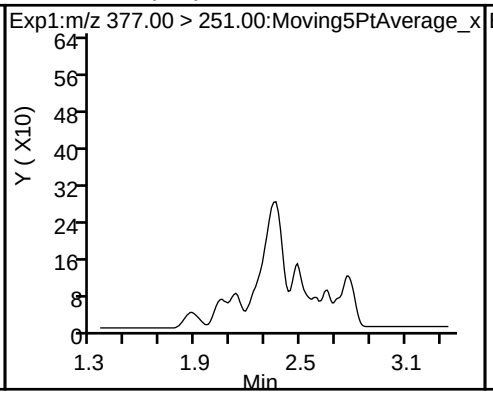

8 Perfluorohexanesulfonic acid



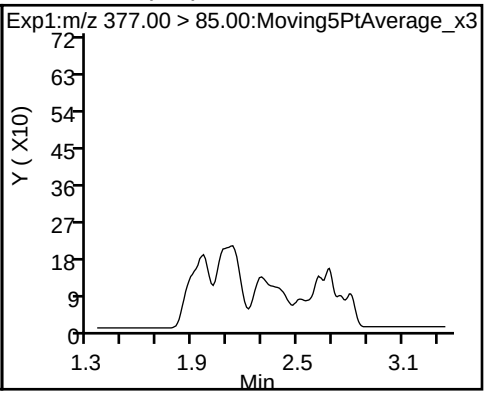

D 11 18O2 PFHxS



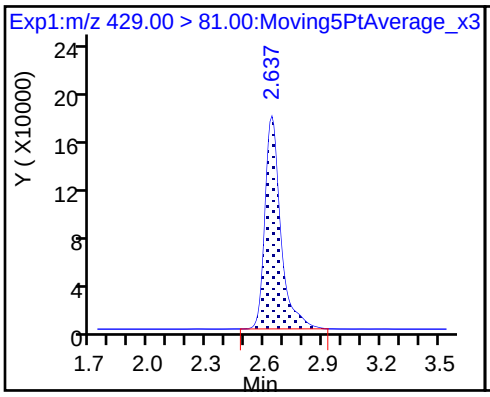

65 Adona (ND)



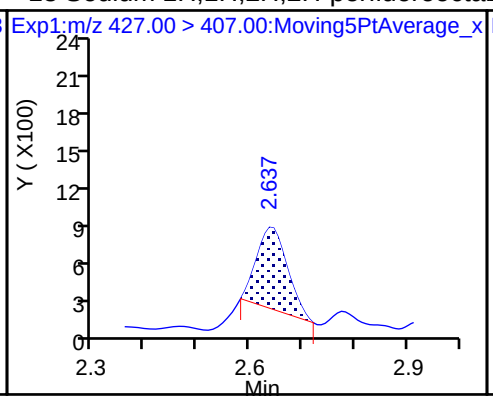

65 Adona (ND)



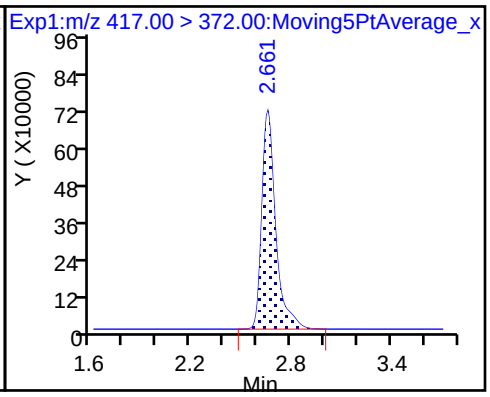
D 12 M2-6:2FTS



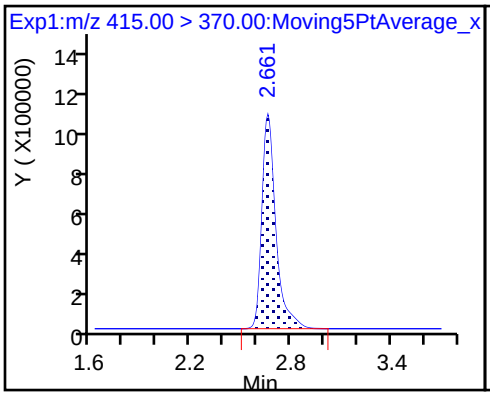

13 Sodium 1H,1H,2H,2H-perfluorooctane



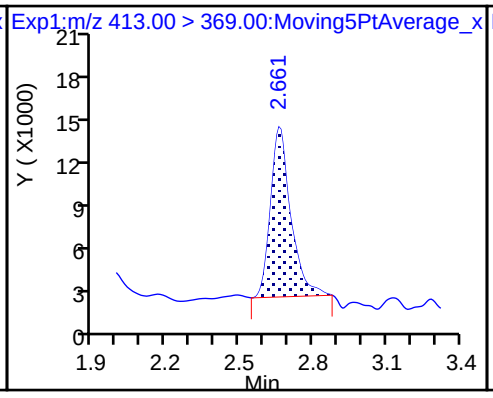

D 14 13C4 PFOA



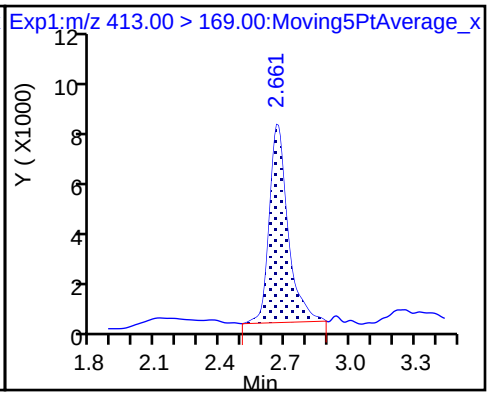

* 62 13C2-PFOA



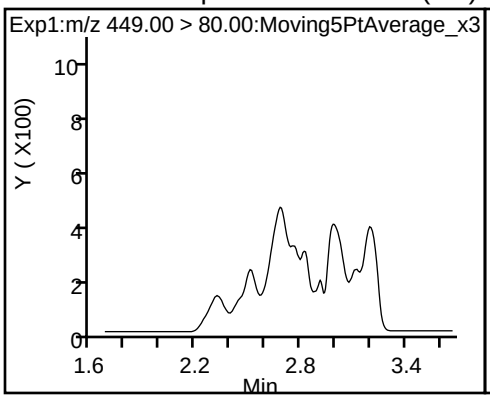

15 Perfluorooctanoic acid



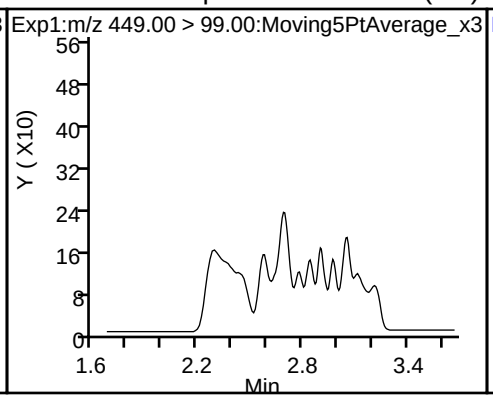

15 Perfluorooctanoic acid



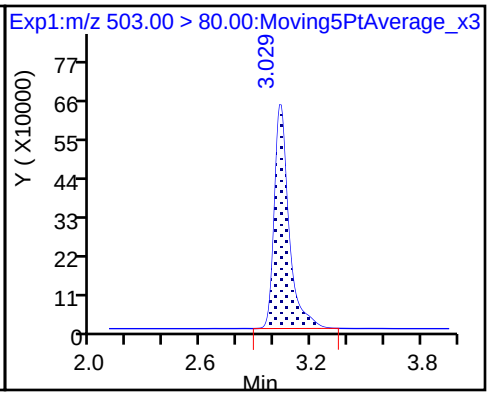

16 Perfluoroheptanesulfonic acid (ND)



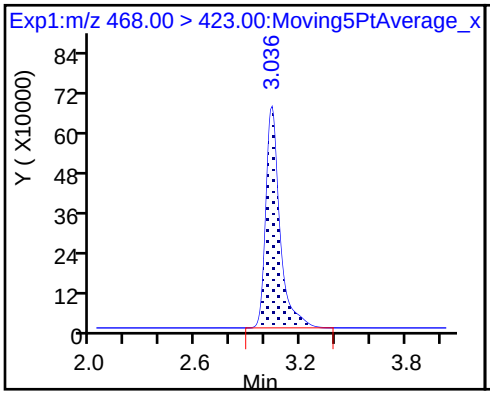

16 Perfluoroheptanesulfonic acid (ND)



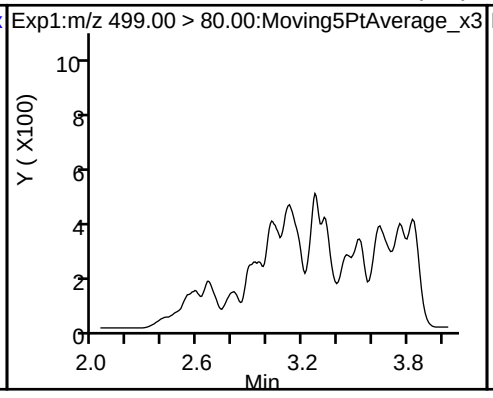

D 18 13C4 PFOS



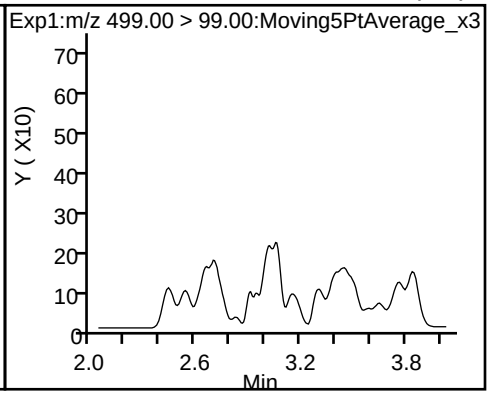

D 19 13C5 PFNA



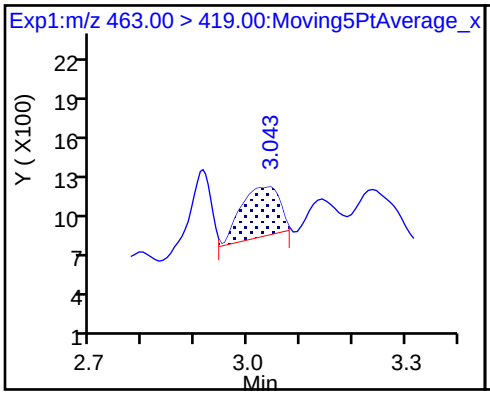

17 Perfluorooctane sulfonic acid (ND)



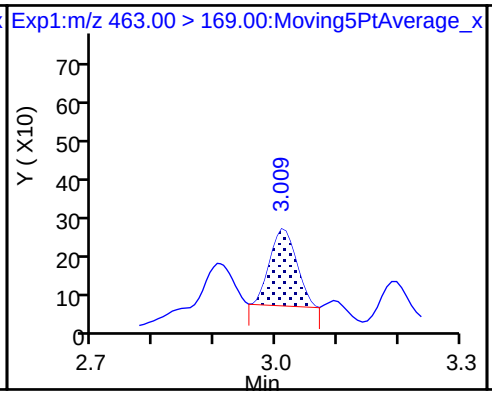

17 Perfluorooctane sulfonic acid (ND)



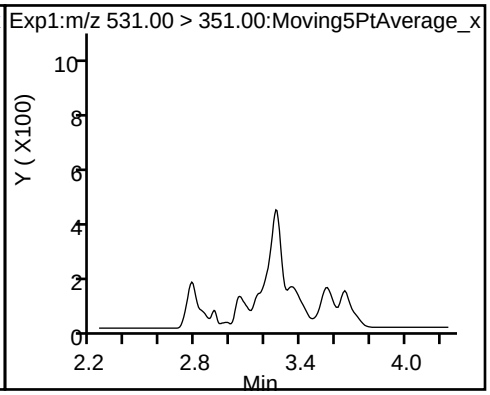
20 Perfluorononanoic acid



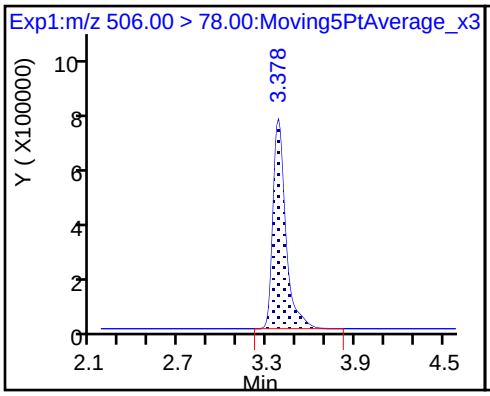

20 Perfluorononanoic acid



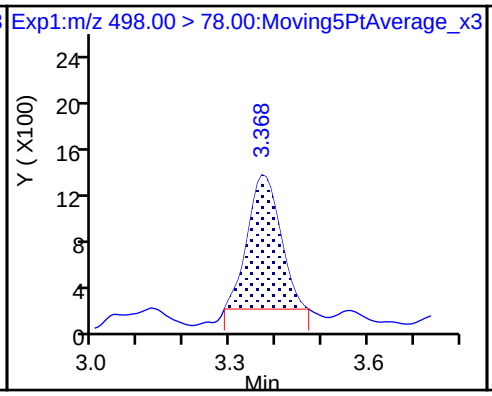

69 9-Chlorohexadecafluoro-3-oxanonane (ND)



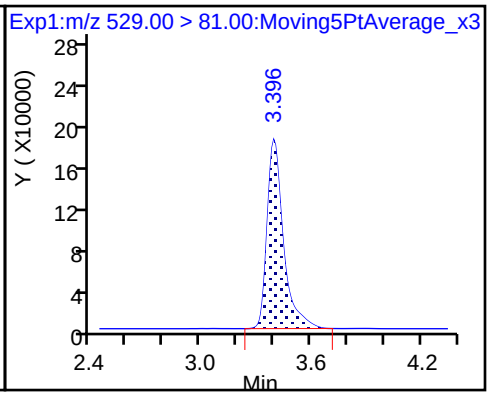

D 21 13C8 FOSA



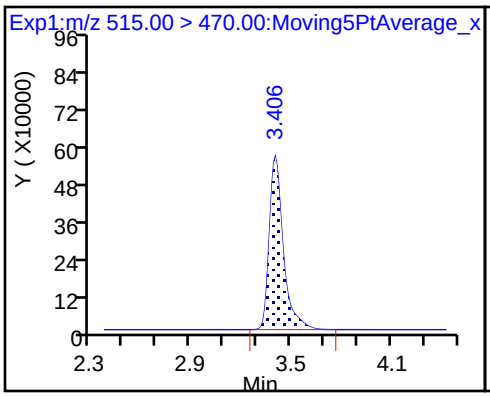

22 Perfluorooctane Sulfonamide



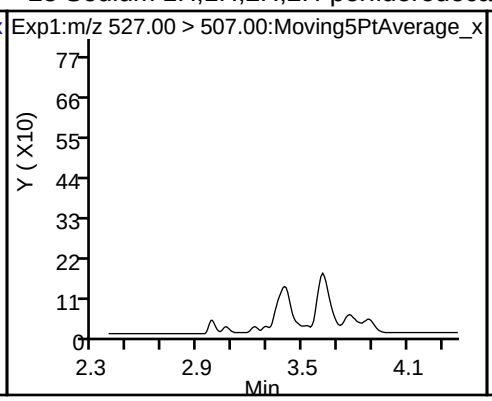

D 26 M2-8:2FTS



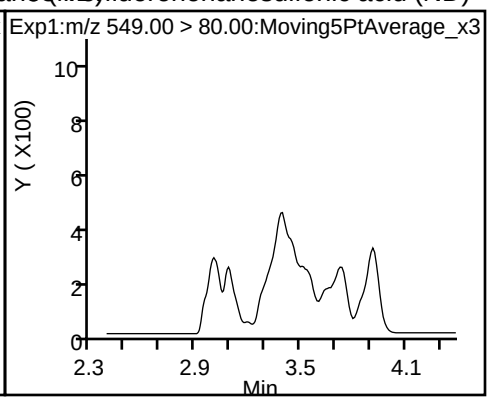

D 23 13C2 PFDA



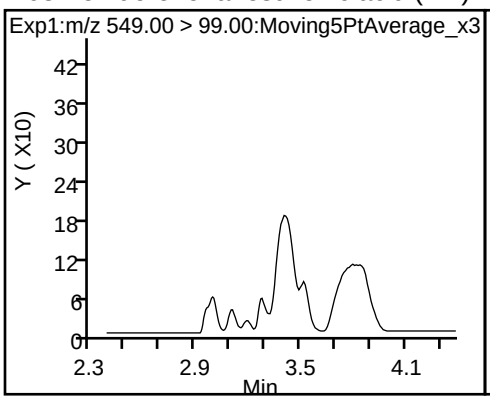

25 Sodium 1H,1H,2H,2H-perfluorodecanesulfonate



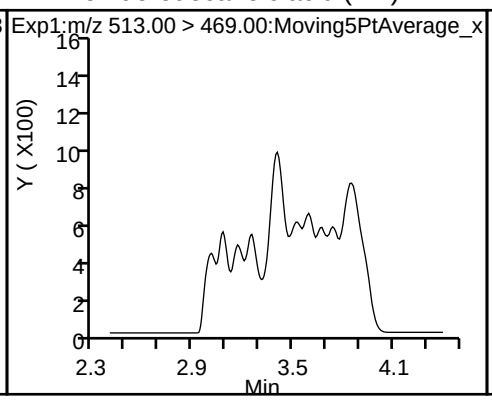

68 Perfluorononanesulfonic acid (ND)



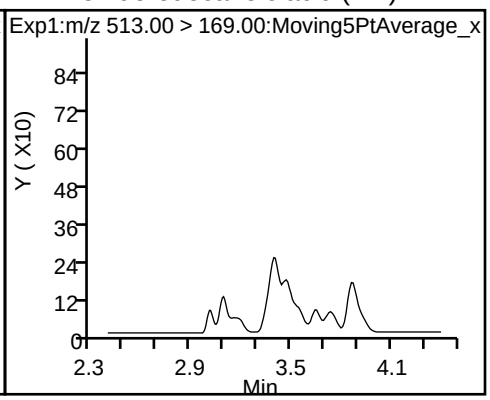

68 Perfluorononanesulfonic acid (ND)



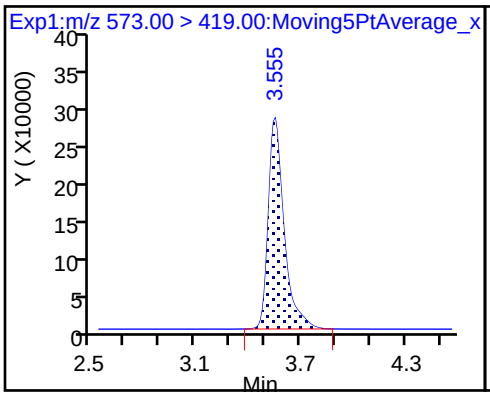

24 Perfluorodecanoic acid (ND)



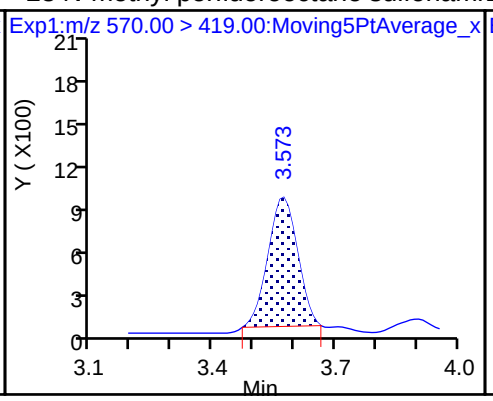

24 Perfluorodecanoic acid (ND)



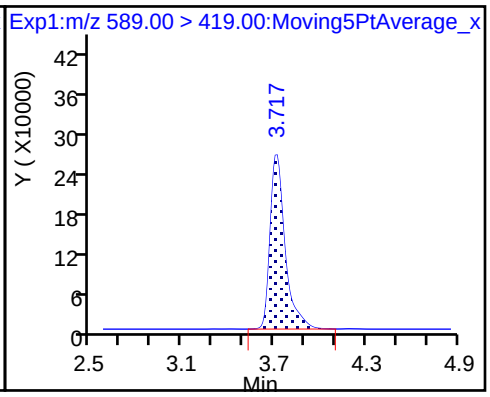
D 27 d3-NMeFOSAA



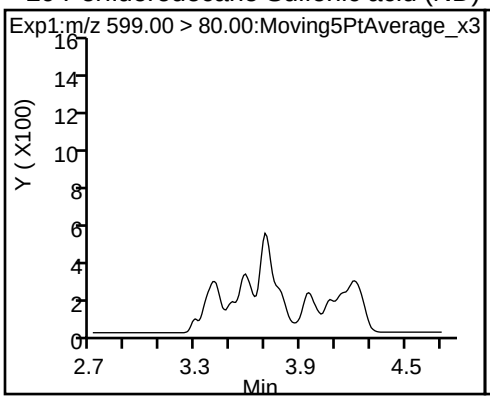

28 N-methyl perfluorooctane sulfonami



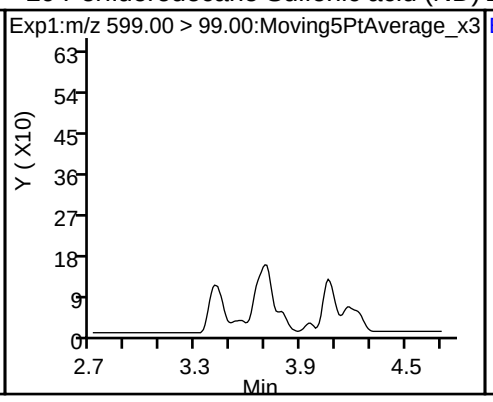

D 32 d5-NEtFOSAA



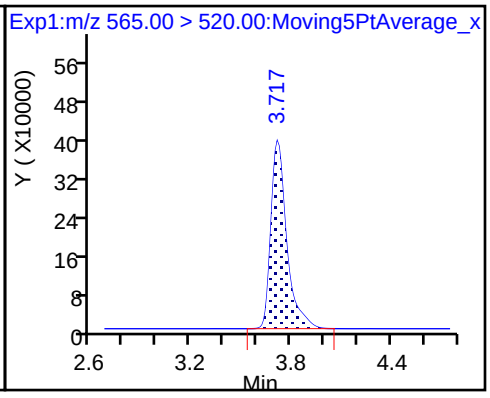

29 Perfluorodecane Sulfonic acid (ND)



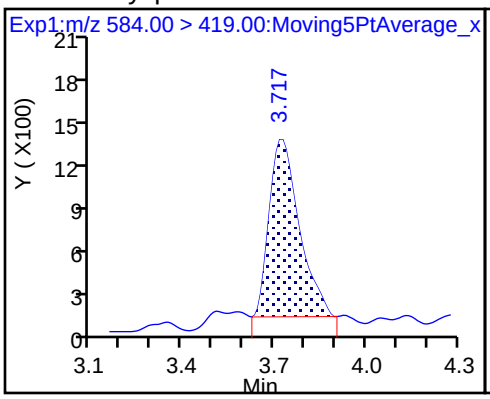

29 Perfluorodecane Sulfonic acid (ND)



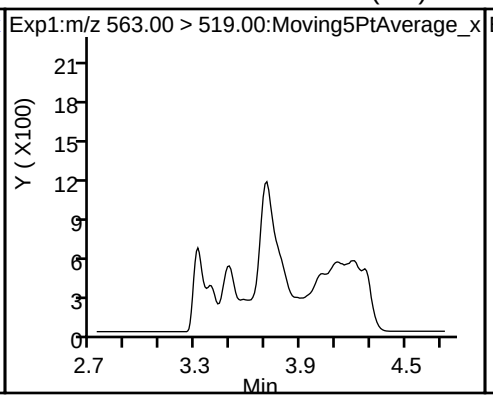

D 30 13C2 PFUnA



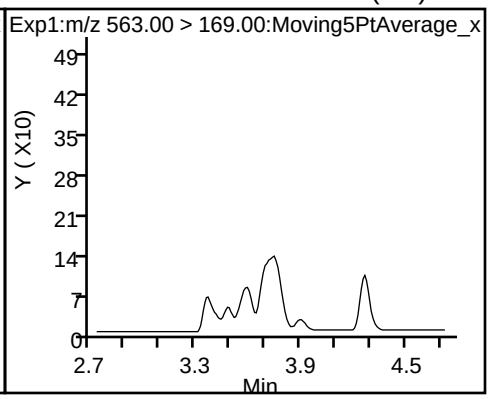

33 N-ethyl perfluorooctane sulfonamid



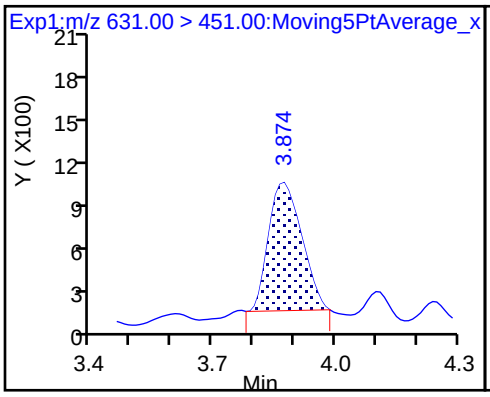

31 Perfluoroundecanoic acid (ND)



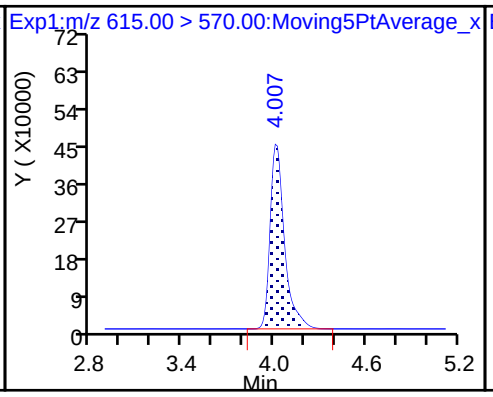

31 Perfluoroundecanoic acid (ND)



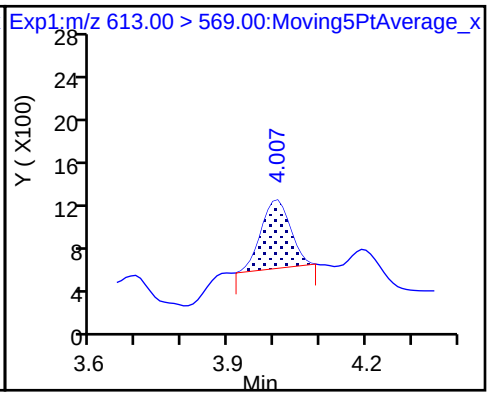

66 11-Chloroeicosafluoro-3-oxaundecan



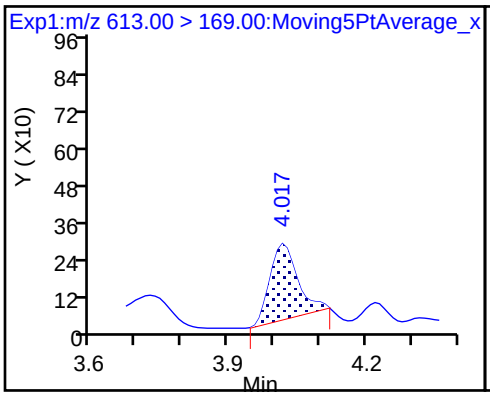

D 36 13C2 PFDoA



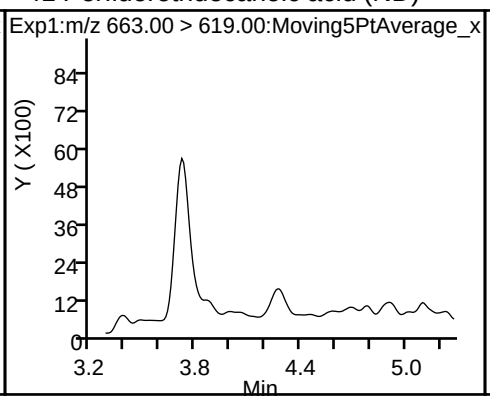

37 Perfluorododecanoic acid



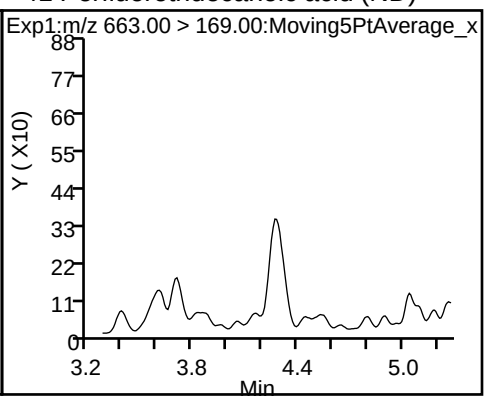
37 Perfluorododecanoic acid



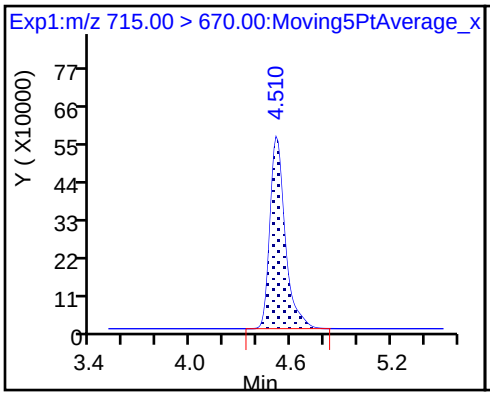

41 Perfluorotridecanoic acid (ND)



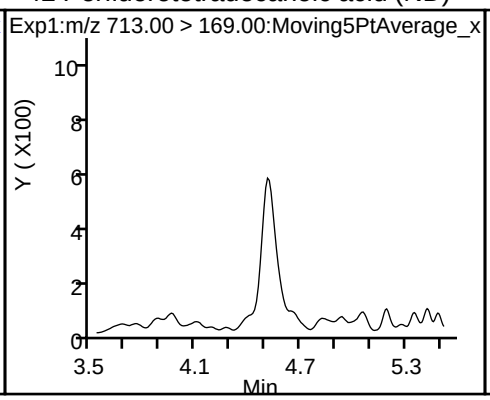

41 Perfluorotridecanoic acid (ND)



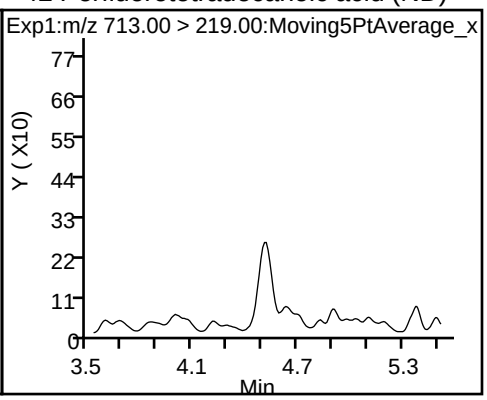

D 43 13C2-PFTeDA



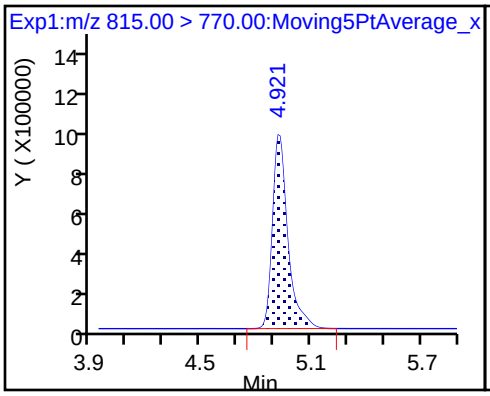

42 Perfluorotetradecanoic acid (ND)



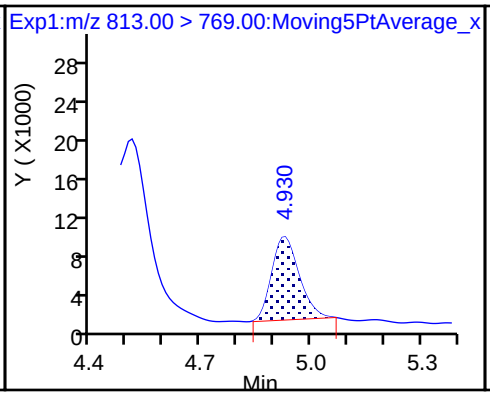

42 Perfluorotetradecanoic acid (ND)



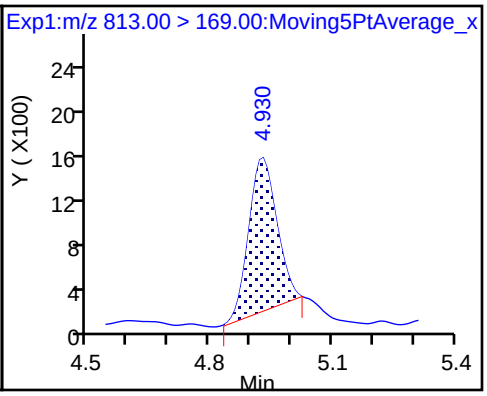

D 44 13C2-PFHxDA



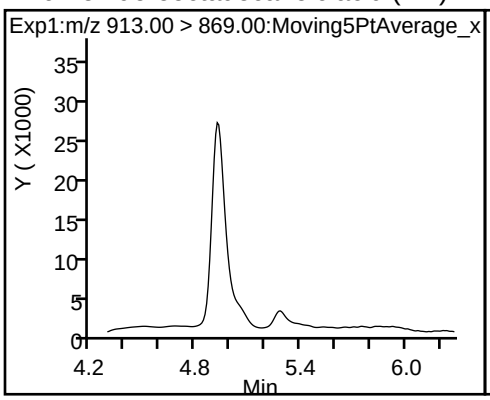

45 Perfluorohexadecanoic acid



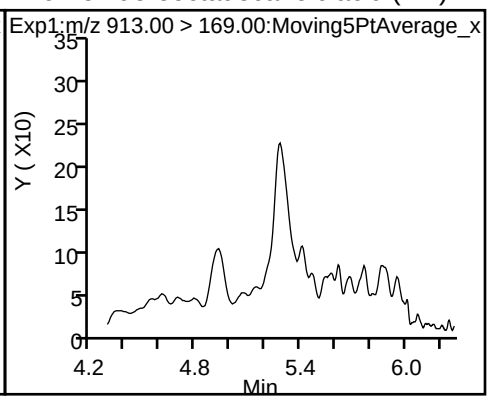

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid (ND)




46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-216477/2-A

Matrix: Water | Lab File ID: 2018.04.07LLA1_049.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/07/2018 15:01

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216860 | Units: ng/L

| CAS NO. | COMPOUND NAME | RESULT | Q | RL | MDL |
|---|---|---|---|---|---|
| 375-22-4 | Perfluorobutanoic acid (PFBA) | 38.98 | | 2.00 | 0.35 |
| 2706-90-3 | Perfluoropentanoic acid (PFPeA) | 34.85 | | 2.00 | 0.49 |
| 307-24-4 | Perfluorohexanoic acid (PFHxA) | 37.07 | | 2.00 | 0.58 |
| 375-85-9 | Perfluoroheptanoic acid (PFHpA) | 36.13 | | 2.00 | 0.25 |
| 335-67-1 | Perfluorooctanoic acid (PFOA) | 35.66 | | 2.00 | 0.85 |
| 375-95-1 | Perfluorononanoic acid (PFNA) | 36.68 | | 2.00 | 0.27 |
| 335-76-2 | Perfluorodecanoic acid (PFDA) | 38.96 | | 2.00 | 0.31 |
| 2058-94-8 | Perfluoroundecanoic acid (PFUnA) | 37.90 | | 2.00 | 1.10 |
| 307-55-1 | Perfluorododecanoic acid (PFDoA) | 36.22 | | 2.00 | 0.55 |
| 72629-94-8 | Perfluorotridecanoic Acid (PFTriA) | 36.73 | | 2.00 | 1.30 |
| 376-06-7 | Perfluorotetradecanoic acid (PFTeA) | 36.91 | | 2.00 | 0.29 |
| 375-73-5 | Perfluorobutanesulfonic acid (PFBS) | 33.58 | | 2.00 | 0.20 |
| 355-46-4 | Perfluorohexanesulfonic acid (PFHxS) | 32.60 | | 2.00 | 0.17 |
| 375-92-8 | Perfluoroheptanesulfonic Acid (PFHpS) | 34.25 | | 2.00 | 0.19 |
| 1763-23-1 | Perfluorooctanesulfonic acid (PFOS) | 33.20 | | 2.00 | 0.54 |
| 335-77-3 | Perfluorodecanesulfonic acid (PFDS) | 32.74 | | 2.00 | 0.32 |
| 754-91-6 | Perfluorooctane Sulfonamide (FOSA) | 37.51 | | 2.00 | 0.35 |
| 2355-31-9 | N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 37.58 | | 20.0 | 3.10 |
| 2991-50-6 | N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 40.77 | | 20.0 | 1.90 |
| 27619-97-2 | 6:2FTS | 31.88 | | 20.0 | 2.00 |
| 39108-34-4 | 8:2FTS | 36.19 | | 20.0 | 2.00 |

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-216477/2-A

Matrix: Water | Lab File ID: 2018.04.07LLA1_049.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/07/2018 15:01

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216860 | Units: ng/L

| CAS NO. | ISOTOPE DILUTION | %REC | Q | LIMITS |
|---|---|---|---|---|
| STL00992 | 13C4 PFBA | 83 | | 25-150 |
| STL01893 | 13C5 PFPeA | 86 | | 25-150 |
| STL00993 | 13C2 PFHxA | 86 | | 25-150 |
| STL01892 | 13C4-PFHpA | 91 | | 25-150 |
| STL00990 | 13C4 PFOA | 89 | | 25-150 |
| STL00995 | 13C5 PFNA | 94 | | 25-150 |
| STL00996 | 13C2 PFDA | 93 | | 25-150 |
| STL00997 | 13C2 PFUnA | 93 | | 25-150 |
| STL00998 | 13C2 PFDoA | 95 | | 25-150 |
| STL02116 | 13C2-PFTeDA | 94 | | 25-150 |
| STL02337 | 13C3-PFBS | 81 | | 25-150 |
| STL00994 | 18O2 PFHxS | 87 | | 25-150 |
| STL00991 | 13C4 PFOS | 88 | | 25-150 |
| STL01056 | 13C8 FOSA | 74 | | 25-150 |
| STL02118 | d3-NMeFOSAA | 95 | | 25-150 |
| STL02117 | d5-NEtFOSAA | 91 | | 25-150 |
| STL02279 | M2-6:2FTS | 90 | | 25-150 |
| STL02280 | M2-8:2FTS | 92 | | 25-150 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_049.d
Lims ID: LCS 320-216477/2-A
Client ID:
Sample Type: LCS
Inject. Date: 07-Apr-2018 15:01:03 ALS Bottle#: 33 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-216477/2-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 14:13:14 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 09-Apr-2018 13:56:22

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.430 | 1.425 | 0.005 | 1.000 | 5643501 | 2.08 | | 83.0 | 53686 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.430 | 1.436 | -0.006 | 1.000 | 2033019 | 0.9745 | | 97.4 | 805 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.694 | 1.694 | 0.0 | 0.556 | 3822165 | 2.16 | | 86.4 | 67410 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.703 | 1.703 | 0.0 | 1.005 | 1594242 | 0.8712 | | 87.1 | 996 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.730 | 1.730 | 0.0 | 1.000 | 75986 | 1.87 | | 80.6 | 432 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.739 | 1.739 | 0.0 | 1.005 | 2164303 | 0.8394 | | 95.0 | 9069 | |
| 298.90 > 99.00 | 1.739 | 1.739 | 0.0 | 1.005 | 911948 | | 2.37(1.25-3.74) | | 6447 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.949 | 1.950 | -0.001 | 1.000 | 521162 | 0.9241 | | 98.9 | 27756 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.982 | 1.971 | 0.011 | 1.000 | 4199887 | 2.15 | | 86.1 | 95356 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.982 | 1.982 | 0.0 | 1.000 | 1593210 | 0.9268 | | 92.7 | 3312 | |
| 313.00 > 119.00 | 1.982 | 1.982 | 0.0 | 1.000 | 151640 | | 10.51(5.03-15.10) | | 2051 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.004 | 2.004 | 0.0 | 1.000 | 2050807 | 0.8813 | | 94.0 | 16097 | |
| 349.00 > 99.00 | 2.004 | 2.004 | 0.0 | 1.000 | 768443 | | 2.67(1.36-4.07) | | 9396 | |
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.083 | 2.072 | 0.011 | 1.000 | 264647 | NR | | 0.0 | 1669 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.308 | 2.308 | 0.0 | 1.000 | 1676092 | 0.9032 | | 90.3 | 2183 | |
| 363.00 > 169.00 | 2.308 | 2.308 | 0.0 | 1.000 | 634744 | | 2.64(1.13-3.40) | | 3287 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.308 | 2.308 | 0.0 | 1.000 | 4269938 | 2.28 | | 91.0 | 76322 | |
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.321 | 2.321 | 0.0 | 1.000 | 1862507 | 0.8151 | | 89.6 | 5081 | |
| 399.00 > 99.00 | 2.321 | 2.321 | 0.0 | 1.000 | 584069 | | 3.19(1.50-4.49) | | 2055 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.321 | 2.321 | 0.0 | 1.000 | 4838362 | 2.07 | | 87.5 | 115466 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.360 | 2.347 | 0.013 | 1.000 | 4794758 | 0.9365 | | 93.7 | 99385 | |
| 377.00 > 85.00 | 2.360 | 2.347 | 0.013 | 1.000 | 2756386 | | 1.74(0.84-2.53) | | 33267 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.645 | 2.636 | 0.009 | 1.000 | 925594 | 2.14 | | 89.9 | 12209 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.645 | 2.645 | 0.0 | 1.000 | 580125 | 0.7970 | | 84.1 | 5910 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.668 | 2.660 | 0.008 | 1.000 | 4089312 | 2.22 | | 88.7 | 92185 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.668 | 2.668 | 0.0 | | 4919500 | 2.50 | | | 146025 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.668 | 2.668 | 0.0 | 1.000 | 1729009 | 0.8914 | | 89.1 | 707 | |
| 413.00 > 169.00 | 2.668 | 2.668 | 0.0 | 1.000 | 901641 | | 1.92(0.84-2.52) | | 2977 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.675 | 2.675 | 0.0 | 1.000 | 1639277 | 0.8562 | | 89.9 | 13289 | |
| 449.00 > 99.00 | 2.675 | 2.675 | 0.0 | 1.000 | 449278 | | 3.65(1.94-5.82) | | 5457 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.044 | 3.026 | 0.018 | 1.000 | 3433540 | 2.11 | | 88.4 | 28309 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.044 | 3.026 | 0.018 | 1.000 | 3661423 | 2.35 | | 93.9 | 129890 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.044 | 3.033 | 0.011 | 1.000 | 1362370 | 0.8299 | | 89.4 | 5548 | |
| 499.00 > 99.00 | 3.037 | 3.033 | 0.004 | 0.998 | 314439 | | 4.33(2.31-6.93) | | 3304 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.044 | 3.040 | 0.004 | 1.000 | 1382092 | 0.9171 | | 91.7 | 3122 | |
| 463.00 > 169.00 | 3.044 | 3.040 | 0.004 | 1.000 | 348268 | | 3.97(1.90-5.69) | | 8807 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.259 | 3.246 | 0.013 | 1.000 | 2397102 | 0.8923 | | 95.7 | 49631 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.387 | 3.362 | 0.025 | 1.000 | 4227437 | 1.84 | | 73.7 | 88641 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.387 | 3.371 | 0.016 | 1.000 | 1566262 | 0.9378 | | 93.8 | 37242 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.406 | 3.380 | 0.026 | 1.000 | 1106087 | 2.19 | | 91.6 | 9432 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.415 | 3.389 | 0.026 | 1.000 | 3065333 | 2.33 | | 93.0 | 102083 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.406 | 3.390 | 0.016 | 1.000 | 563595 | 0.9048 | | 94.4 | 15105 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.397 | 3.390 | 0.007 | 1.000 | 1001160 | 0.8692 | | 90.5 | 10064 | |
| 549.00 > 99.00 | 3.397 | 3.390 | 0.007 | 1.000 | 364203 | | 2.75(1.33-3.97) | | 5556 | |
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.415 | 3.399 | 0.016 | 1.000 | 1181324 | 0.9739 | | 97.4 | 4821 | |
| 513.00 > 169.00 | 3.415 | 3.399 | 0.016 | 1.000 | 199239 | | 5.93(2.36-7.09) | | 4750 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.555 | 3.548 | 0.007 | 1.000 | 1683005 | 2.39 | | 95.5 | 33315 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.564 | 3.557 | 0.007 | 1.003 | 666729 | 0.9395 | | 94.0 | 4440 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.718 | 3.709 | 0.009 | 1.000 | 1682689 | 2.27 | | 91.0 | 13172 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.707 | 3.709 | -0.002 | 1.000 | 815920 | 0.8186 | | 84.9 | 7929 | |
| 599.00 > 99.00 | 3.707 | 3.709 | -0.002 | 1.000 | 289448 | | 2.82(1.39-4.16) | | 4396 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.728 | 3.720 | 0.008 | 1.000 | 2488708 | 2.31 | | 92.5 | 61869 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.728 | 3.730 | -0.002 | 1.003 | 629119 | 1.02 | | 102 | 8838 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.728 | 3.730 | -0.002 | 1.000 | 756812 | 0.9475 | | 94.8 | 3203 | |
| 563.00 > 169.00 | 3.728 | 3.730 | -0.002 | 1.000 | 182928 | | 4.14(2.12-6.36) | | 3982 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.885 | 3.886 | -0.001 | 1.000 | 3630664 | 0.8707 | | 92.4 | 48728 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.018 | 4.010 | 0.008 | 1.000 | 2847974 | 2.38 | | 95.1 | 23445 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.018 | 4.020 | -0.002 | 1.000 | 1115000 | 0.9056 | | 90.6 | 906 | |
| 613.00 > 169.00 | 4.018 | 4.020 | -0.002 | 1.000 | 269077 | | 4.14(2.13-6.40) | | 2817 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.280 | 4.282 | -0.002 | 1.000 | 1209116 | 0.9181 | | 91.8 | 745 | |
| 663.00 > 169.00 | 4.280 | 4.282 | -0.002 | 1.000 | 377575 | | 3.20(1.25-3.76) | | 4336 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.521 | 4.513 | 0.008 | 1.000 | 3592835 | 2.36 | | 94.4 | 17603 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.521 | 4.523 | -0.002 | 1.000 | 331200 | 0.9228 | | 92.3 | 3527 | |
| 713.00 > 219.00 | 4.521 | 4.523 | -0.002 | 1.000 | 234215 | | 1.41(0.71-2.13) | | 2841 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.930 | 4.924 | 0.006 | 1.000 | 5566917 | 2.37 | | 94.8 | 12494 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.939 | 4.932 | 0.007 | 1.002 | 2002546 | 0.9284 | | 92.8 | 506 | |
| 813.00 > 169.00 | 4.939 | 4.932 | 0.007 | 1.002 | 321531 | | 6.23(2.86-8.58) | | 1776 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.291 | 5.285 | 0.006 | 1.000 | 2007648 | 0.9081 | | 90.8 | 388 | |
| 913.00 > 169.00 | 5.291 | 5.285 | 0.006 | 1.000 | 252658 | | 7.95(3.83-11.48) | | 1631 | |

## QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Report Date: 09-Apr-2018 14:13:22 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_049.d

Injection Date: 07-Apr-2018 15:01:03 Instrument ID: A8_N

Lims ID: LCS 320-216477/2-A

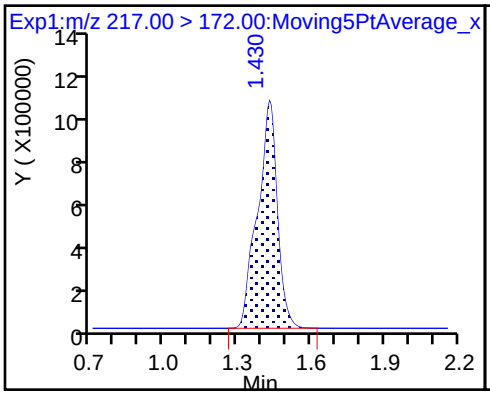
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 33 Worklist Smp#: 3

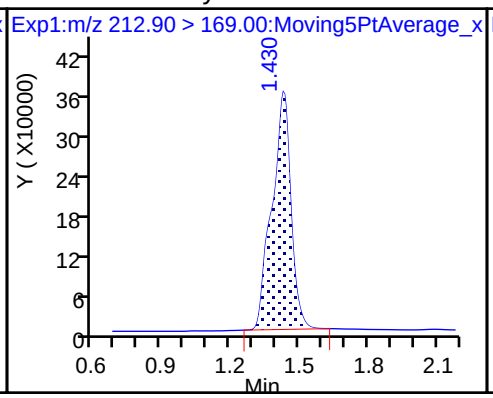
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

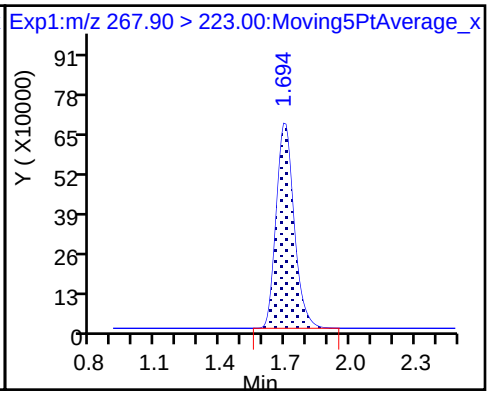
D 1 13C4 PFBA



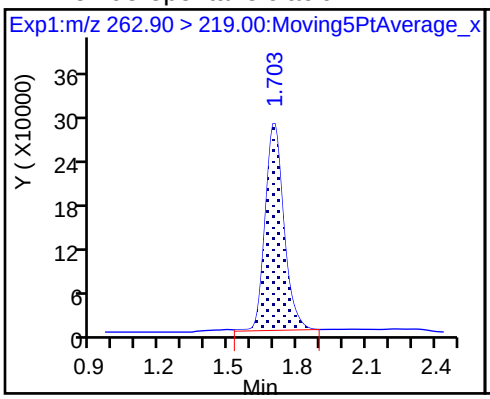

2 Perfluorobutyric acid



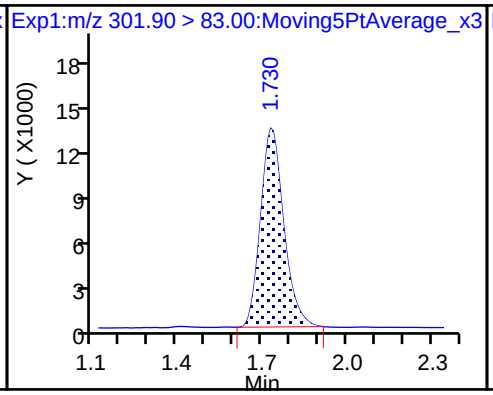

D 3 13C5-PFPeA



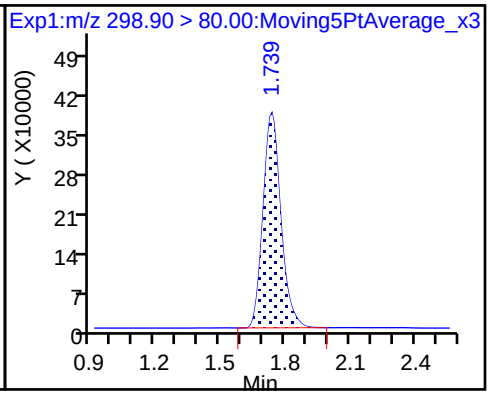

4 Perfluoropentanoic acid



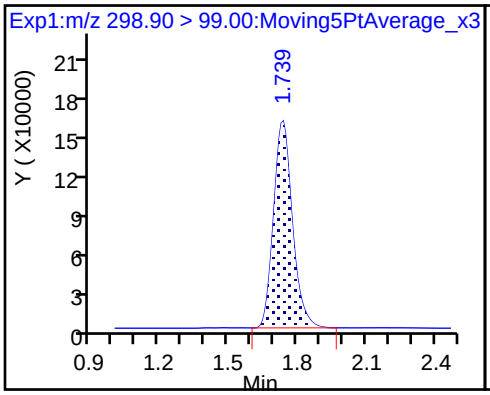

D 47 13C3-PFBS



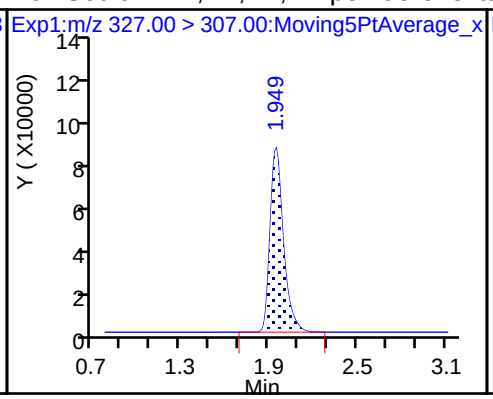

5 Perfluorobutanesulfonic acid



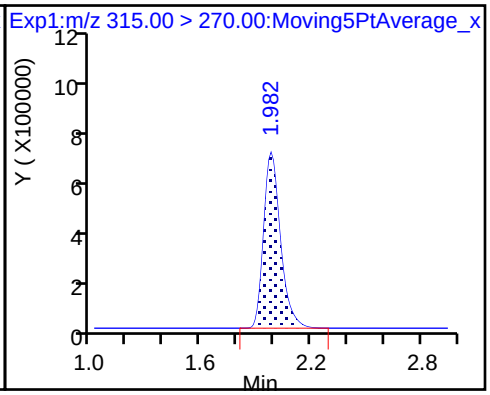

5 Perfluorobutanesulfonic acid



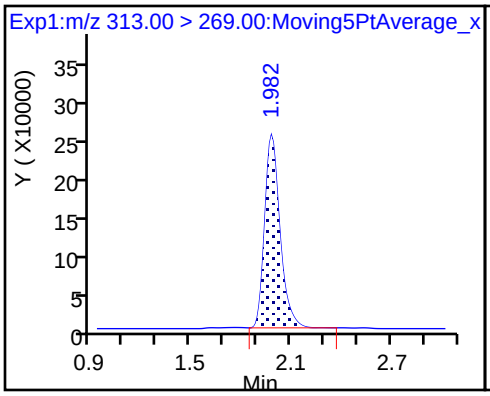

61 Sodium 1H,1H,2H,2H-perfluorohexa



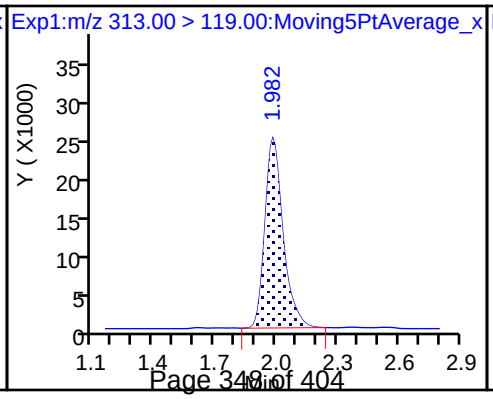

De 7 13C2 PFHxA



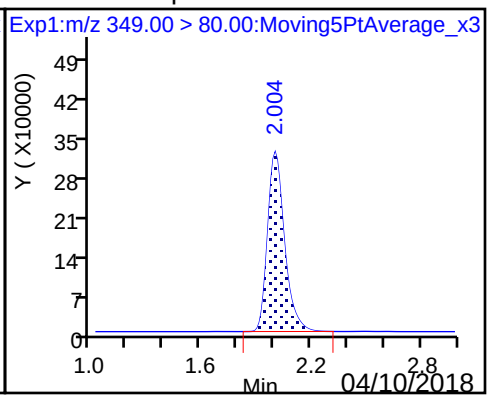

6 Perfluorohexanoic acid



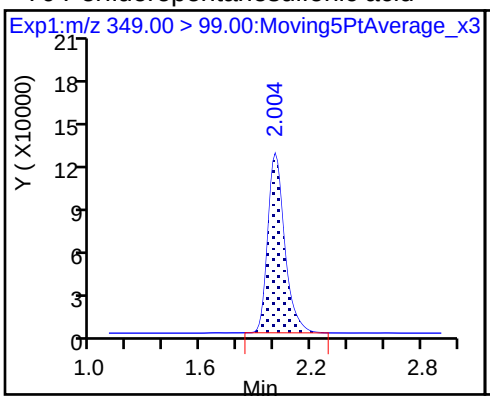

6 Perfluorohexanoic acid



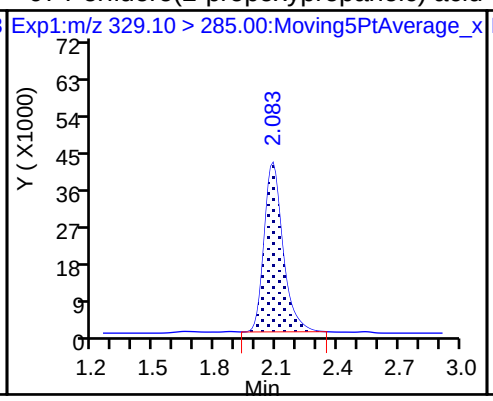

70 Perfluoropentanesulfonic acid



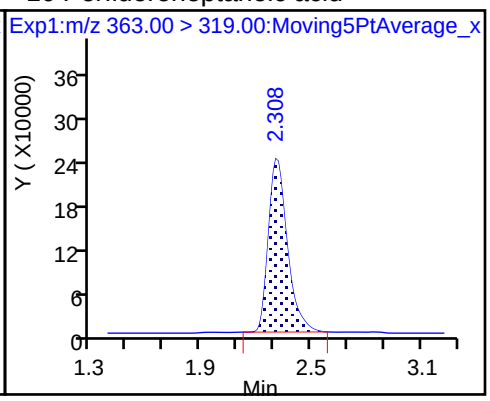
70 Perfluoropentanesulfonic acid



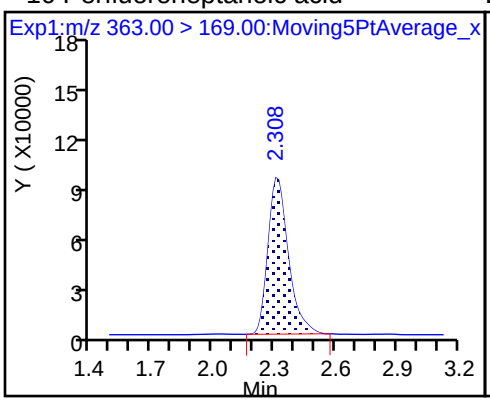

67 Perfluoro(2-propoxypropanoic) acid



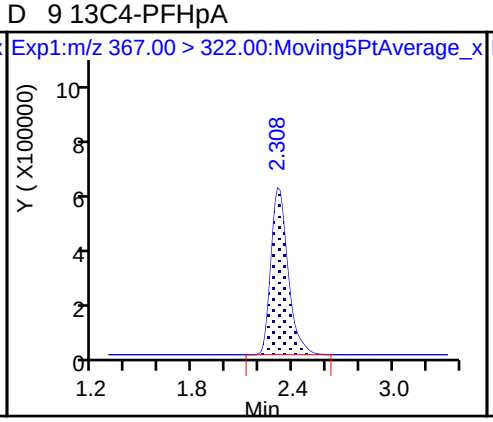

10 Perfluoroheptanoic acid



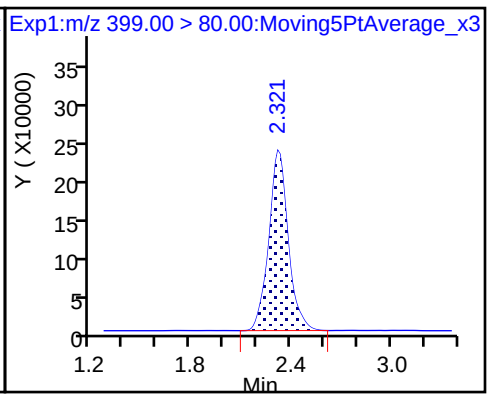

10 Perfluoroheptanoic acid



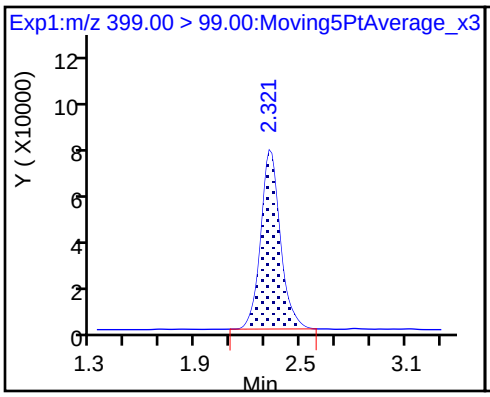

D 9 13C4-PFHpA



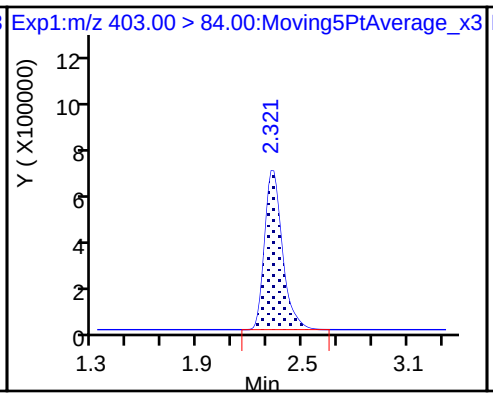

8 Perfluorohexanesulfonic acid



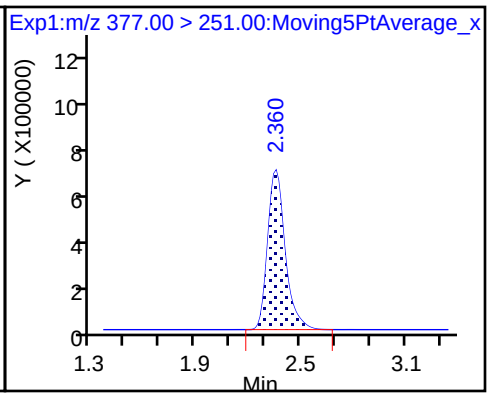

8 Perfluorohexanesulfonic acid




D 11 18O2 PFHxS




65 Adona

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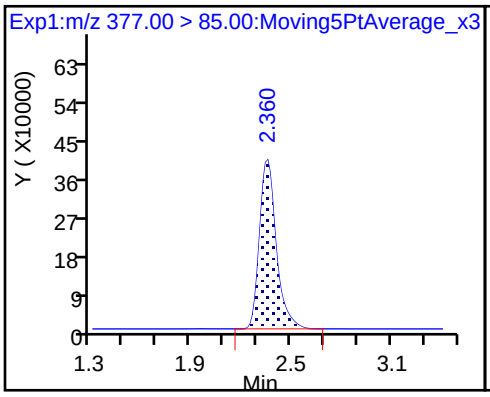
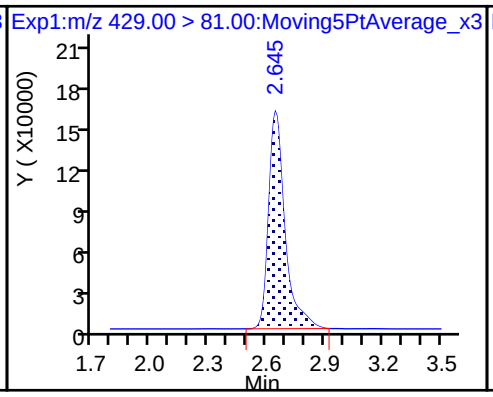
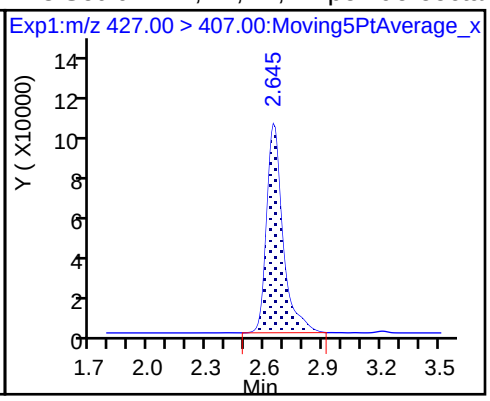


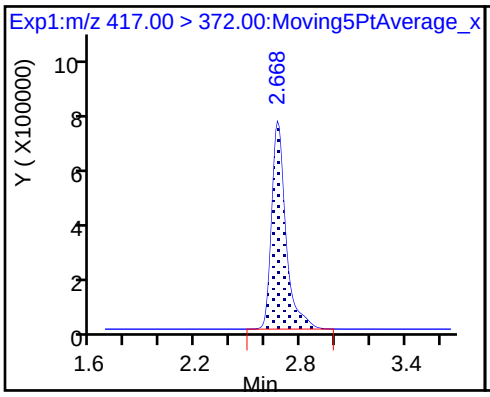

D 12 M2-6:2FTS



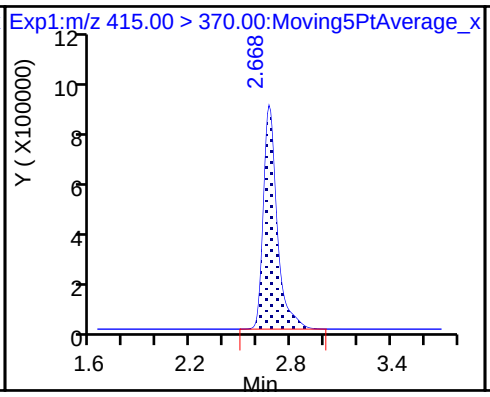

13 Sodium 1H,1H,2H,2H-perfluorooctane



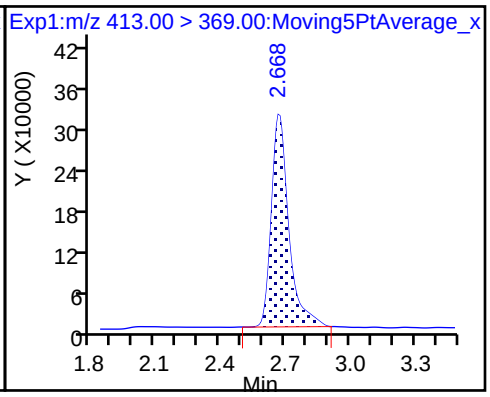
D 14 13C4 PFOA



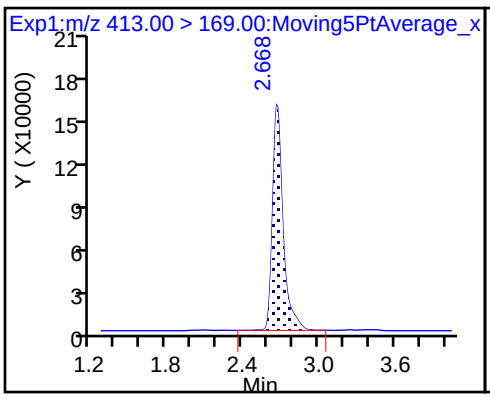

* 62 13C2-PFOA



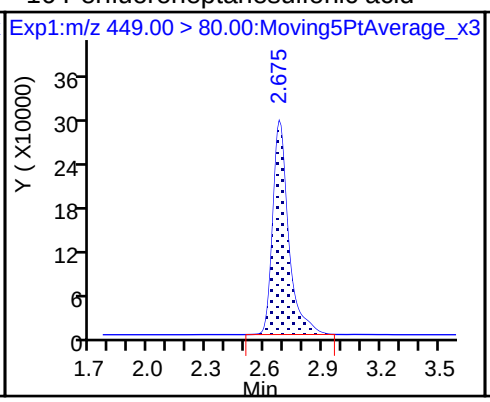

15 Perfluorooctanoic acid



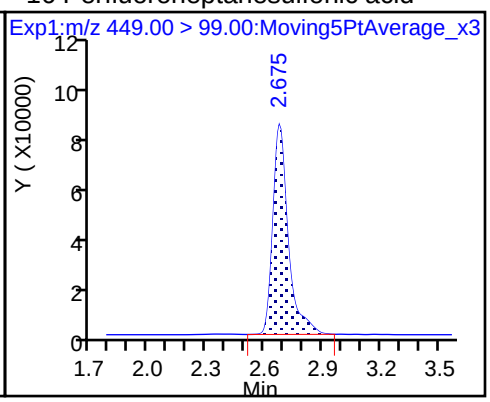

15 Perfluorooctanoic acid



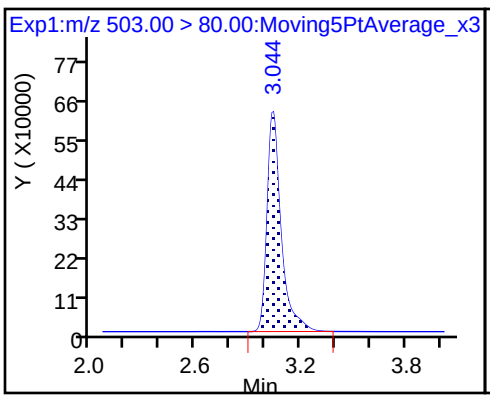

16 Perfluoroheptanesulfonic acid



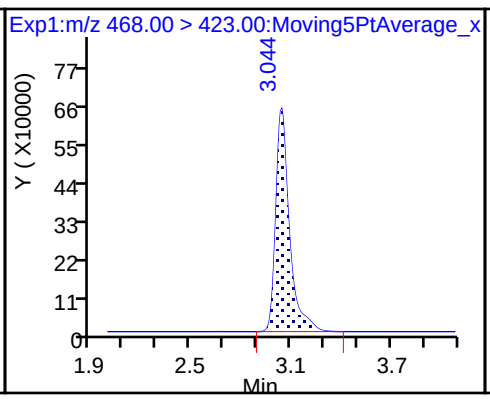

16 Perfluoroheptanesulfonic acid



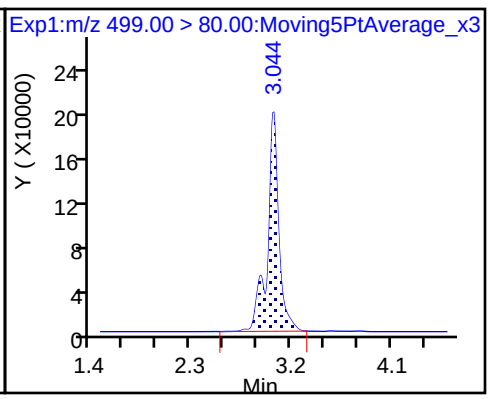

D 18 13C4 PFOS



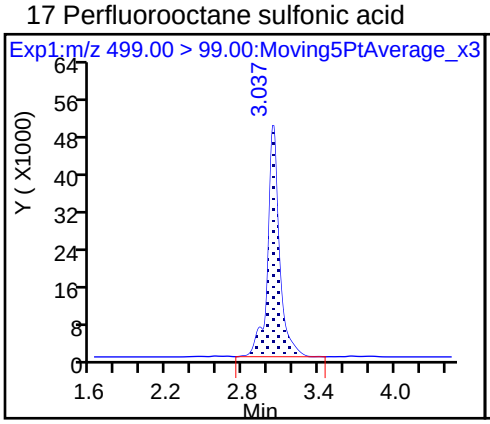

D 19 13C5 PFNA



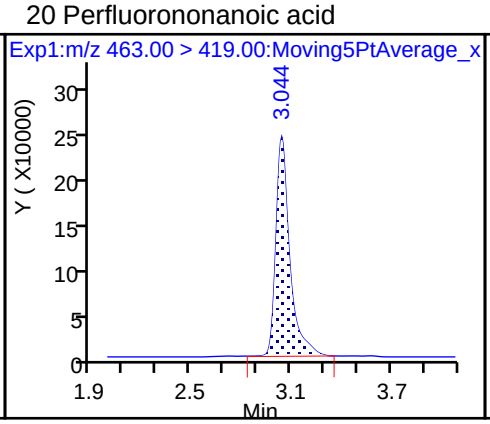

17 Perfluorooctane sulfonic acid



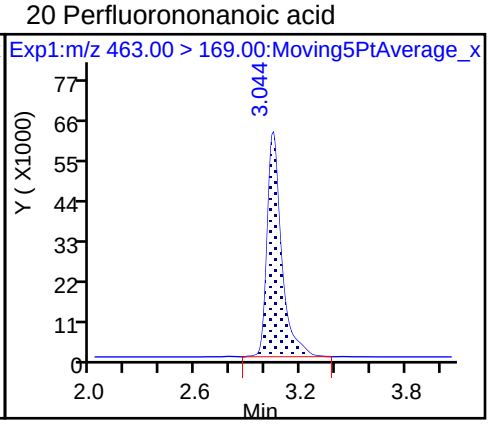

17 Perfluorooctane sulfonic acid



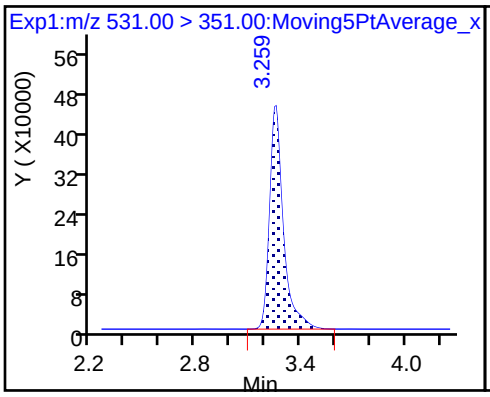

20 Perfluorononanoic acid



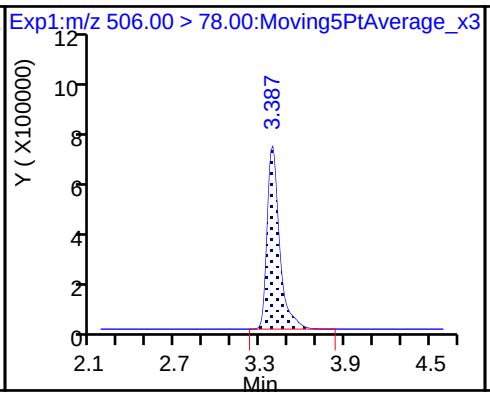

20 Perfluorononanoic acid



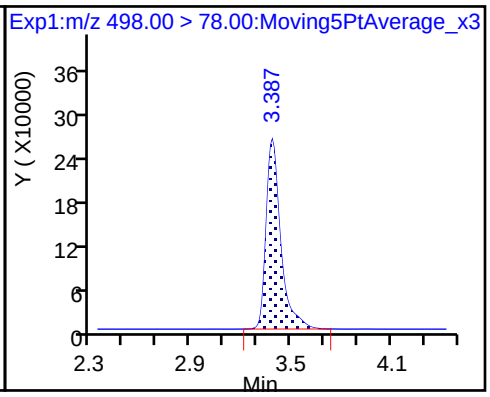
69 9-Chlorohexadecafluoro-3-oxanonane



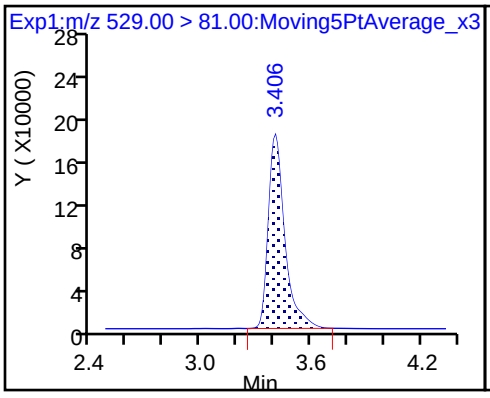

D 21 13C8 FOSA



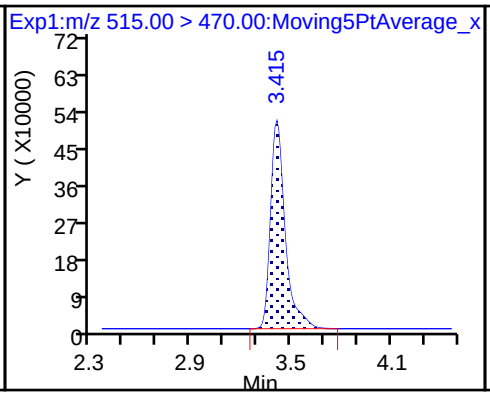

22 Perfluorooctane Sulfonamide



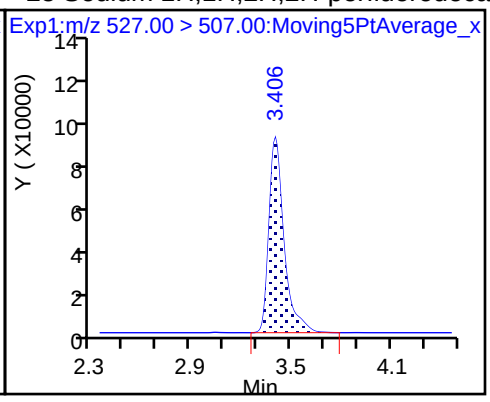

D 26 M2-8:2FTS



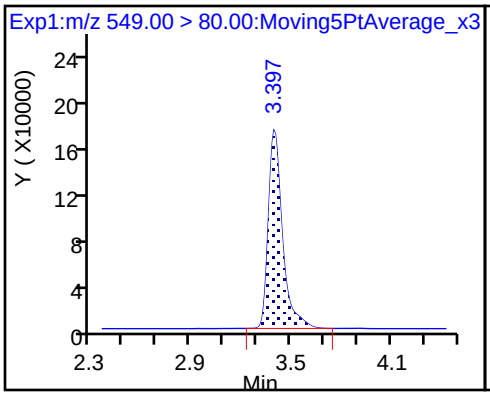

D 23 13C2 PFDA



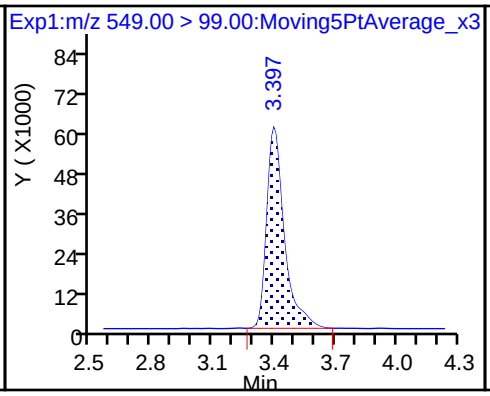

25 Sodium 1H,1H,2H,2H-perfluorodecane



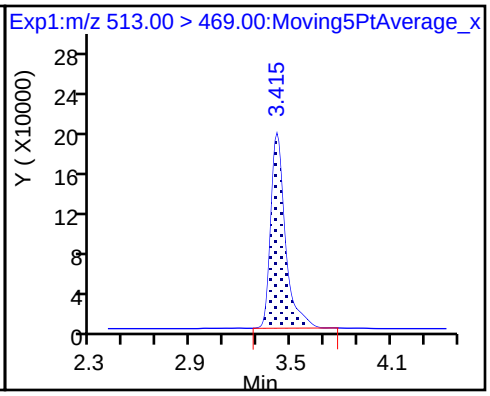

68 Perfluorononanesulfonic acid



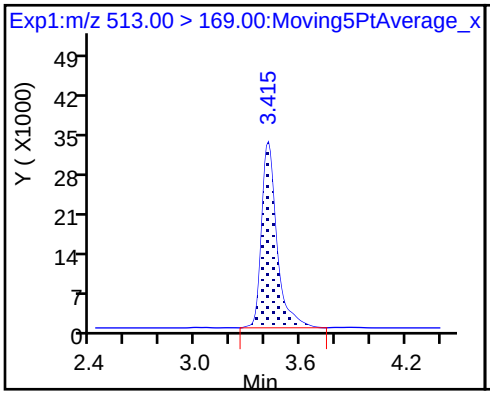

68 Perfluorononanesulfonic acid



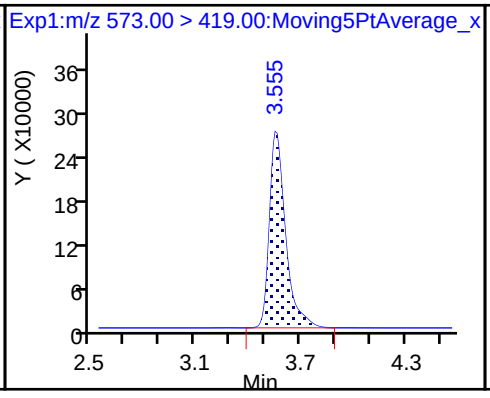

24 Perfluorodecanoic acid



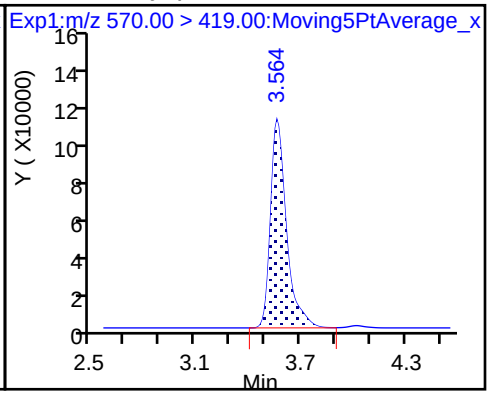

24 Perfluorodecanoic acid



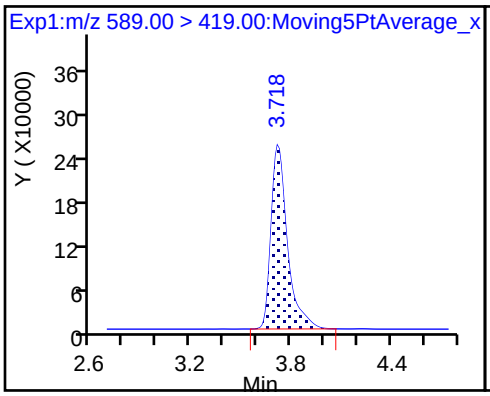

D 27 d3-NMeFOSAA



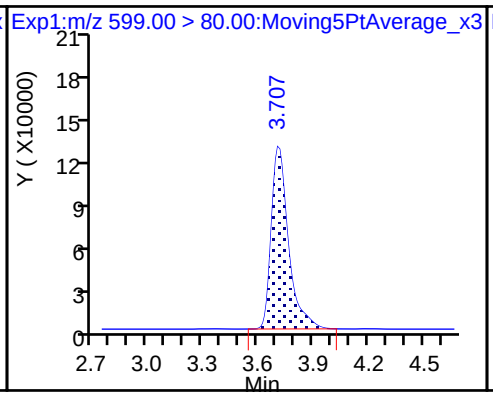

28 N-methyl perfluorooctane sulfonami



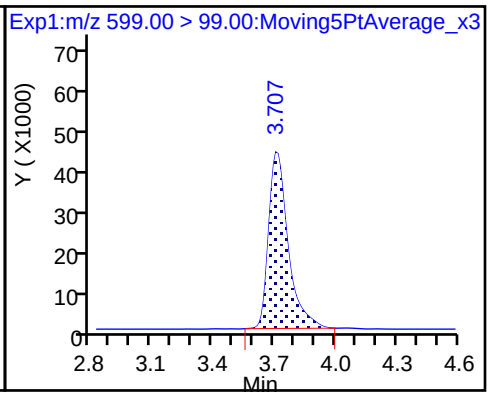
D 32 d5-NEtFOSAA



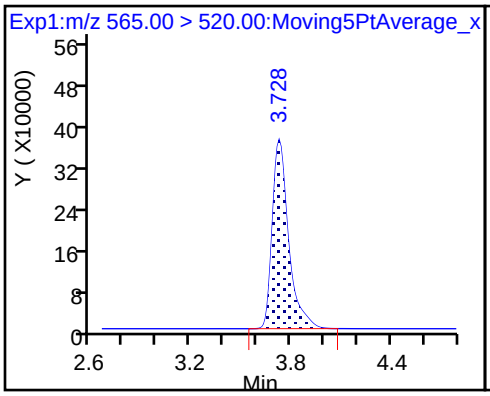

29 Perfluorodecane Sulfonic acid



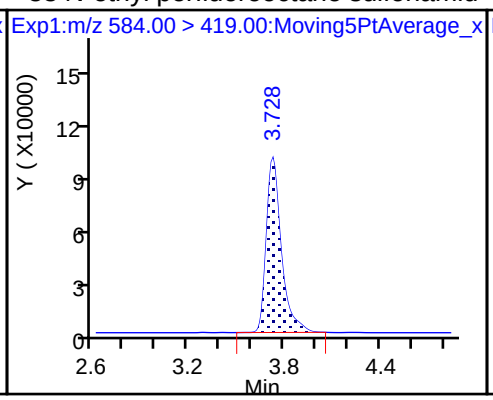

29 Perfluorodecane Sulfonic acid



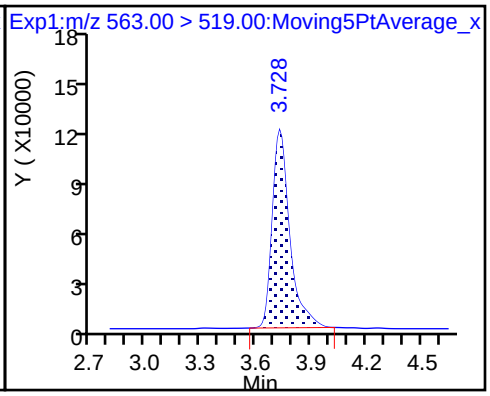

D 30 13C2 PFUnA



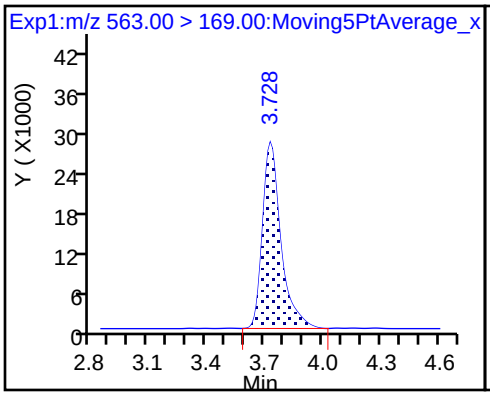

33 N-ethyl perfluorooctane sulfonamid



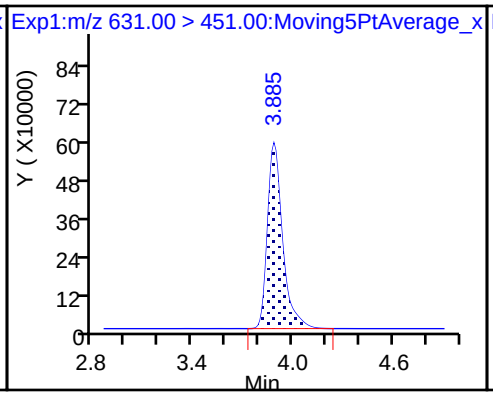

31 Perfluoroundecanoic acid



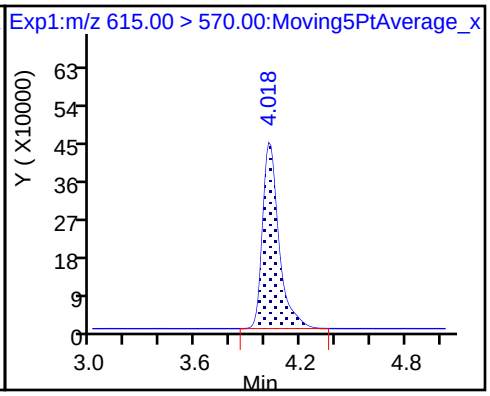

31 Perfluoroundecanoic acid



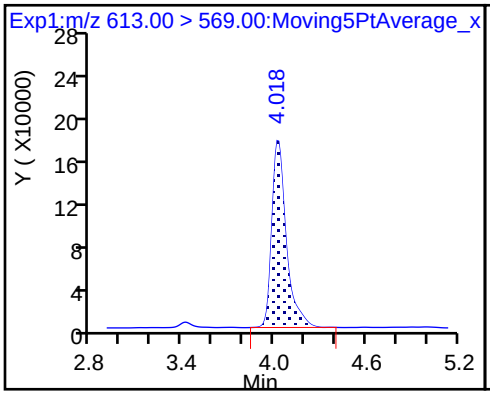

66 11-Chloroeicosafluoro-3-oxaundecan



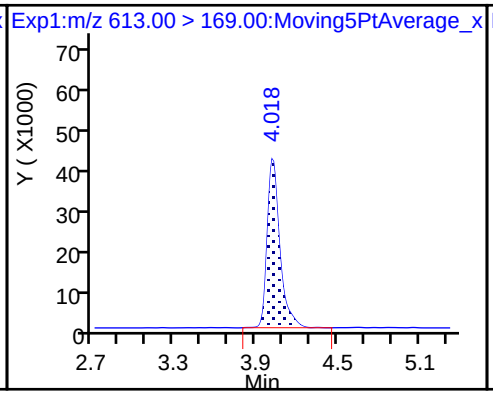

D 36 13C2 PFDoA



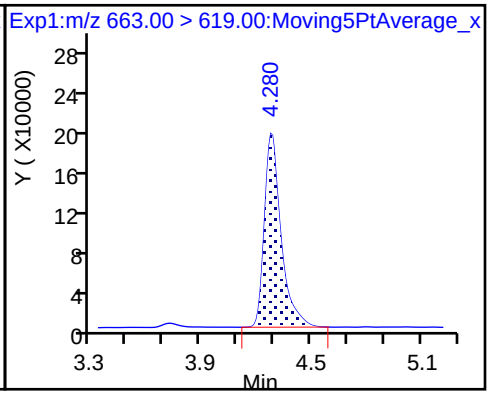

37 Perfluorododecanoic acid



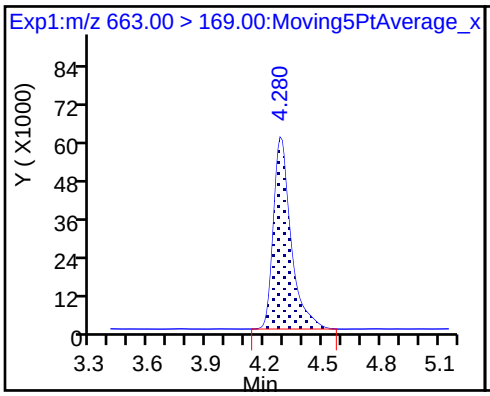

37 Perfluorododecanoic acid



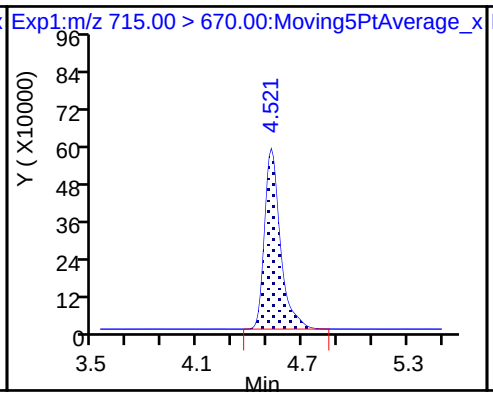

41 Perfluorotridecanoic acid



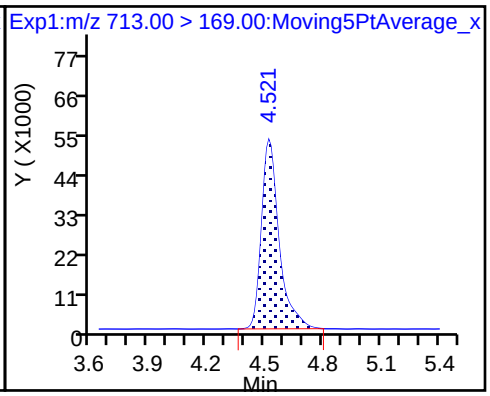
41 Perfluorotridecanoic acid



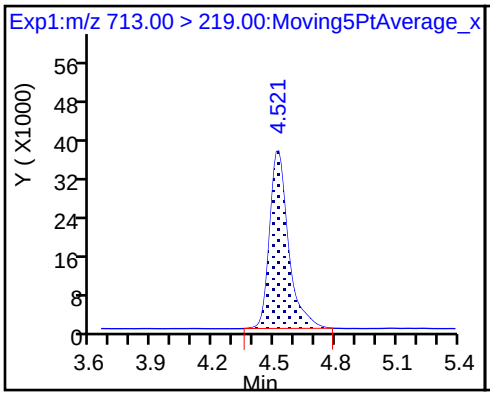

D 43 13C2-PFTeDA



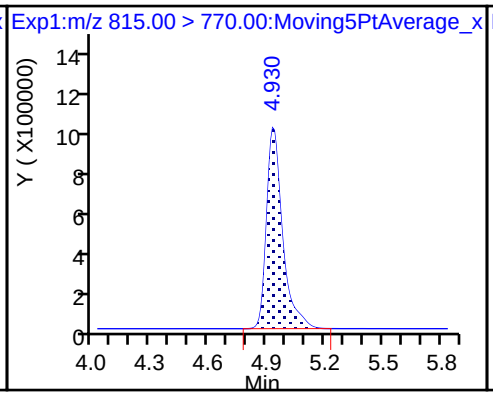

42 Perfluorotetradecanoic acid



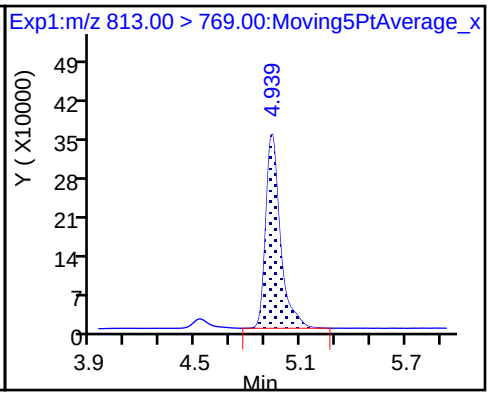

42 Perfluorotetradecanoic acid



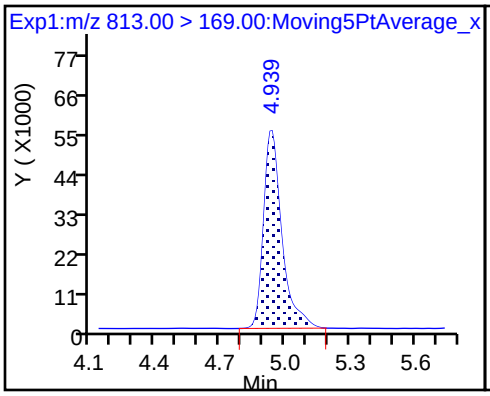

D 44 13C2-PFHxDA



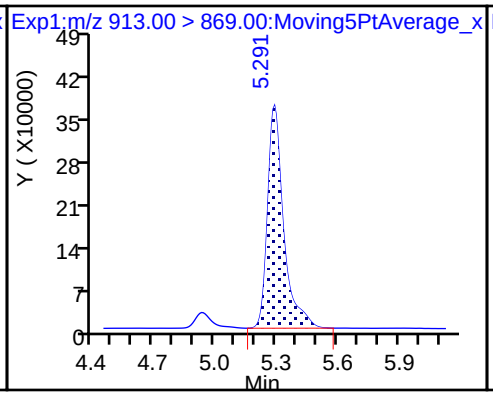

45 Perfluorohexadecanoic acid



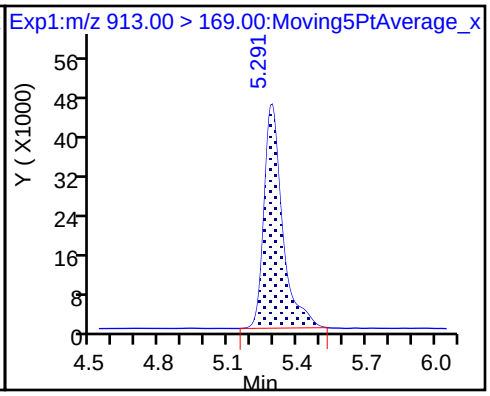

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-216477/3-A

Matrix: Water | Lab File ID: 2018.04.07LLA1_050.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/07/2018 15:08

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216860 | Units: ng/L

| CAS NO. | COMPOUND NAME | RESULT | Q | RL | MDL |
|---|---|---|---|---|---|
| 375-22-4 | Perfluorobutanoic acid (PFBA) | 39.53 | | 2.00 | 0.35 |
| 2706-90-3 | Perfluoropentanoic acid (PFPeA) | 35.96 | | 2.00 | 0.49 |
| 307-24-4 | Perfluorohexanoic acid (PFHxA) | 36.22 | | 2.00 | 0.58 |
| 375-85-9 | Perfluoroheptanoic acid (PFHpA) | 35.89 | | 2.00 | 0.25 |
| 335-67-1 | Perfluorooctanoic acid (PFOA) | 34.61 | | 2.00 | 0.85 |
| 375-95-1 | Perfluorononanoic acid (PFNA) | 36.92 | | 2.00 | 0.27 |
| 335-76-2 | Perfluorodecanoic acid (PFDA) | 38.38 | | 2.00 | 0.31 |
| 2058-94-8 | Perfluoroundecanoic acid (PFUnA) | 37.35 | | 2.00 | 1.10 |
| 307-55-1 | Perfluorododecanoic acid (PFDoA) | 37.13 | | 2.00 | 0.55 |
| 72629-94-8 | Perfluorotridecanoic Acid (PFTriA) | 37.50 | | 2.00 | 1.30 |
| 376-06-7 | Perfluorotetradecanoic acid (PFTeA) | 36.86 | | 2.00 | 0.29 |
| 375-73-5 | Perfluorobutanesulfonic acid (PFBS) | 33.62 | | 2.00 | 0.20 |
| 355-46-4 | Perfluorohexanesulfonic acid (PFHxS) | 34.37 | | 2.00 | 0.17 |
| 375-92-8 | Perfluoroheptanesulfonic Acid (PFHpS) | 33.89 | | 2.00 | 0.19 |
| 1763-23-1 | Perfluorooctanesulfonic acid (PFOS) | 33.59 | | 2.00 | 0.54 |
| 335-77-3 | Perfluorodecanesulfonic acid (PFDS) | 33.90 | | 2.00 | 0.32 |
| 754-91-6 | Perfluorooctane Sulfonamide (FOSA) | 36.58 | | 2.00 | 0.35 |
| 2355-31-9 | N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | 37.33 | | 20.0 | 3.10 |
| 2991-50-6 | N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | 37.06 | | 20.0 | 1.90 |
| 27619-97-2 | 6:2FTS | 32.88 | | 20.0 | 2.00 |
| 39108-34-4 | 8:2FTS | 31.47 | | 20.0 | 2.00 |

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 480-133255-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-216477/3-A

Matrix: Water | Lab File ID: 2018.04.07LLA1_050.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/05/2018 12:06

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/07/2018 15:08

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 216860 | Units: ng/L

| CAS NO. | ISOTOPE DILUTION | %REC | Q | LIMITS |
|---|---|---|---|---|
| STL00992 | 13C4 PFBA | 96 | | 25-150 |
| STL01893 | 13C5 PFPeA | 95 | | 25-150 |
| STL00993 | 13C2 PFHxA | 96 | | 25-150 |
| STL01892 | 13C4-PFHpA | 99 | | 25-150 |
| STL00990 | 13C4 PFOA | 101 | | 25-150 |
| STL00995 | 13C5 PFNA | 109 | | 25-150 |
| STL00996 | 13C2 PFDA | 109 | | 25-150 |
| STL00997 | 13C2 PFUnA | 113 | | 25-150 |
| STL00998 | 13C2 PFDoA | 111 | | 25-150 |
| STL02116 | 13C2-PFTeDA | 113 | | 25-150 |
| STL02337 | 13C3-PFBS | 93 | | 25-150 |
| STL00994 | 18O2 PFHxS | 94 | | 25-150 |
| STL00991 | 13C4 PFOS | 101 | | 25-150 |
| STL01056 | 13C8 FOSA | 90 | | 25-150 |
| STL02118 | d3-NMeFOSAA | 119 | | 25-150 |
| STL02117 | d5-NEtFOSAA | 112 | | 25-150 |
| STL02279 | M2-6:2FTS | 105 | | 25-150 |
| STL02280 | M2-8:2FTS | 121 | | 25-150 |

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_050.d
Lims ID: LCSD 320-216477/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 07-Apr-2018 15:08:53 ALS Bottle#: 34 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-216477/3-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 14:13:14 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| D 1 13C4 PFBA | | | | | | | | | | |
| 217.00 > 172.00 | 1.430 | 1.425 | 0.005 | 1.000 | 6287382 | 2.39 | | 95.7 | 54920 | |
| 2 Perfluorobutyric acid | | | | | | | | | | |
| 212.90 > 169.00 | 1.430 | 1.436 | -0.006 | 1.000 | 2296953 | 0.9882 | | 98.8 | 1089 | |
| D 3 13C5-PFPeA | | | | | | | | | | |
| 267.90 > 223.00 | 1.693 | 1.694 | -0.001 | 0.557 | 4040322 | 2.36 | | 94.5 | 73146 | |
| 4 Perfluoropentanoic acid | | | | | | | | | | |
| 262.90 > 219.00 | 1.693 | 1.703 | -0.010 | 1.000 | 1739091 | 0.8991 | | 89.9 | 1220 | |
| D 47 13C3-PFBS | | | | | | | | | | |
| 301.90 > 83.00 | 1.729 | 1.730 | -0.001 | 1.000 | 84222 | 2.15 | | 92.5 | 497 | |
| 5 Perfluorobutanesulfonic acid | | | | | | | | | | |
| 298.90 > 80.00 | 1.738 | 1.739 | -0.001 | 1.005 | 2402152 | 0.8406 | | 95.1 | 10439 | |
| 298.90 > 99.00 | 1.738 | 1.739 | -0.001 | 1.005 | 1012185 | | 2.37(1.25-3.74) | | 6277 | |
| 61 Sodium 1H,1H,2H,2H-perfluorohexane | | | | | | | | | | |
| 327.00 > 307.00 | 1.948 | 1.950 | -0.002 | 1.000 | 588762 | 0.9419 | | 101 | 23291 | |
| D 7 13C2 PFHxA | | | | | | | | | | |
| 315.00 > 270.00 | 1.981 | 1.971 | 0.010 | 1.000 | 4546435 | 2.41 | | 96.5 | 92452 | |
| 6 Perfluorohexanoic acid | | | | | | | | | | |
| 313.00 > 269.00 | 1.981 | 1.982 | -0.001 | 1.000 | 1685159 | 0.9055 | | 90.6 | 3365 | |
| 313.00 > 119.00 | 1.981 | 1.982 | -0.001 | 1.000 | 163347 | | 10.32(5.03-15.10) | | 2112 | |
| 70 Perfluoropentanesulfonic acid | | | | | | | | | | |
| 349.00 > 80.00 | 2.003 | 2.004 | -0.001 | 1.000 | 2350727 | 0.9114 | | 97.2 | 20045 | |
| 349.00 > 99.00 | 2.003 | 2.004 | -0.001 | 1.000 | 863379 | | 2.72(1.36-4.07) | | 9367 | |
| 67 Perfluoro(2-propoxypropanoic) acid | | | | | | | | | | |
| 329.10 > 285.00 | 2.082 | 2.072 | 0.010 | 1.000 | 266232 | NR | | 0.0 | 1809 | |
| 10 Perfluoroheptanoic acid | | | | | | | | | | |
| 363.00 > 319.00 | 2.306 | 2.308 | -0.002 | 1.000 | 1753448 | 0.8972 | | 89.7 | 2303 | |
| 363.00 > 169.00 | 2.306 | 2.308 | -0.002 | 1.000 | 730287 | | 2.40(1.13-3.40) | | 3474 | |
| D 9 13C4-PFHpA | | | | | | | | | | |
| 367.00 > 322.00 | 2.306 | 2.308 | -0.002 | 1.000 | 4496727 | 2.48 | | 99.3 | 92132 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 Perfluorohexanesulfonic acid | | | | | | | | | | |
| 399.00 > 80.00 | 2.319 | 2.321 | -0.002 | 1.000 | 2038572 | 0.8593 | | 94.4 | 5577 | |
| 399.00 > 99.00 | 2.319 | 2.321 | -0.002 | 1.000 | 657311 | | 3.10(1.50-4.49) | | 1885 | |
| D 11 18O2 PFHxS | | | | | | | | | | |
| 403.00 > 84.00 | 2.319 | 2.321 | -0.002 | 1.000 | 5023116 | 2.22 | | 94.0 | 102224 | |
| 65 Adona | | | | | | | | | | |
| 377.00 > 251.00 | 2.358 | 2.347 | 0.011 | 1.000 | 5165312 | 0.9174 | | 91.7 | 82794 | |
| 377.00 > 85.00 | 2.358 | 2.347 | 0.011 | 1.000 | 2985267 | | 1.73(0.84-2.53) | | 27033 | |
| D 12 M2-6:2FTS | | | | | | | | | | |
| 429.00 > 81.00 | 2.644 | 2.636 | 0.008 | 1.000 | 1049105 | 2.51 | | 105 | 13649 | |
| 13 Sodium 1H,1H,2H,2H-perfluorooctane | | | | | | | | | | |
| 427.00 > 407.00 | 2.644 | 2.645 | -0.001 | 1.000 | 678210 | 0.8221 | | 86.7 | 6805 | |
| D 14 13C4 PFOA | | | | | | | | | | |
| 417.00 > 372.00 | 2.667 | 2.660 | 0.007 | 1.000 | 4514404 | 2.53 | | 101 | 117486 | |
| * 62 13C2-PFOA | | | | | | | | | | |
| 415.00 > 370.00 | 2.667 | 2.668 | -0.001 | | 4751609 | 2.50 | | | 108228 | |
| 15 Perfluorooctanoic acid | | | | | | | | | | |
| 413.00 > 369.00 | 2.667 | 2.668 | -0.001 | 1.000 | 1852649 | 0.8652 | | 86.5 | 899 | |
| 413.00 > 169.00 | 2.667 | 2.668 | -0.001 | 1.000 | 993177 | | 1.87(0.84-2.52) | | 3860 | |
| 16 Perfluoroheptanesulfonic acid | | | | | | | | | | |
| 449.00 > 80.00 | 2.674 | 2.675 | -0.001 | 1.000 | 1784054 | 0.8473 | | 89.0 | 15416 | |
| 449.00 > 99.00 | 2.674 | 2.675 | -0.001 | 1.000 | 487443 | | 3.66(1.94-5.82) | | 8091 | |
| D 18 13C4 PFOS | | | | | | | | | | |
| 503.00 > 80.00 | 3.036 | 3.026 | 0.010 | 1.000 | 3775984 | 2.41 | | 101 | 26027 | |
| D 19 13C5 PFNA | | | | | | | | | | |
| 468.00 > 423.00 | 3.036 | 3.026 | 0.010 | 1.000 | 4102033 | 2.72 | | 109 | 125147 | |
| 17 Perfluorooctane sulfonic acid | | | | | | | | | | |
| 499.00 > 80.00 | 3.036 | 3.033 | 0.003 | 1.000 | 1516195 | 0.8399 | | 90.5 | 4699 | |
| 499.00 > 99.00 | 3.036 | 3.033 | 0.003 | 1.000 | 339753 | | 4.46(2.31-6.93) | | 3378 | |
| 20 Perfluorononanoic acid | | | | | | | | | | |
| 463.00 > 419.00 | 3.036 | 3.040 | -0.004 | 1.000 | 1558307 | 0.9229 | | 92.3 | 2723 | |
| 463.00 > 169.00 | 3.043 | 3.040 | 0.003 | 1.002 | 384957 | | 4.05(1.90-5.69) | | 9612 | |
| 69 9-Chlorohexadecafluoro-3-oxanonane | | | | | | | | | | |
| 531.00 > 351.00 | 3.251 | 3.246 | 0.005 | 1.000 | 2595985 | 0.8787 | | 94.3 | 45105 | |
| D 21 13C8 FOSA | | | | | | | | | | |
| 506.00 > 78.00 | 3.377 | 3.362 | 0.015 | 1.000 | 4962153 | 2.24 | | 89.5 | 76281 | |
| 22 Perfluorooctane Sulfonamide | | | | | | | | | | |
| 498.00 > 78.00 | 3.377 | 3.371 | 0.006 | 1.000 | 1792813 | 0.9145 | | 91.4 | 37015 | |
| D 26 M2-8:2FTS | | | | | | | | | | |
| 529.00 > 81.00 | 3.396 | 3.380 | 0.016 | 1.000 | 1412538 | 2.90 | | 121 | 10302 | |
| D 23 13C2 PFDA | | | | | | | | | | |
| 515.00 > 470.00 | 3.405 | 3.389 | 0.016 | 1.000 | 3459536 | 2.72 | | 109 | 82027 | |
| 25 Sodium 1H,1H,2H,2H-perfluorodecane | | | | | | | | | | |
| 527.00 > 507.00 | 3.396 | 3.390 | 0.006 | 1.000 | 625956 | 0.7869 | | 82.1 | 33913 | |
| 68 Perfluorononanesulfonic acid | | | | | | | | | | |
| 549.00 > 80.00 | 3.396 | 3.390 | 0.006 | 1.000 | 1093901 | 0.8636 | | 90.0 | 7986 | |
| 549.00 > 99.00 | 3.396 | 3.390 | 0.006 | 1.000 | 420658 | | 2.60(1.33-3.97) | | 6392 | |

| Signal | RT | EXP RT | DLT RT | REL RT | Response | Amount ng/ml | Ratio(Limits) | %Rec | S/N | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 Perfluorodecanoic acid | | | | | | | | | | |
| 513.00 > 469.00 | 3.405 | 3.399 | 0.006 | 1.000 | 1313619 | 0.9596 | | 96.0 | 5064 | |
| 513.00 > 169.00 | 3.405 | 3.399 | 0.006 | 1.000 | 256381 | | 5.12(2.36-7.09) | | 4345 | |
| D 27 d3-NMeFOSAA | | | | | | | | | | |
| 573.00 > 419.00 | 3.554 | 3.548 | 0.006 | 1.000 | 2025875 | 2.97 | | 119 | 40661 | |
| 28 N-methyl perfluorooctane sulfonami | | | | | | | | | | |
| 570.00 > 419.00 | 3.563 | 3.557 | 0.006 | 1.003 | 797223 | 0.9333 | | 93.3 | 4413 | |
| D 32 d5-NEtFOSAA | | | | | | | | | | |
| 589.00 > 419.00 | 3.717 | 3.709 | 0.008 | 1.000 | 1996805 | 2.79 | | 112 | 18811 | |
| 29 Perfluorodecane Sulfonic acid | | | | | | | | | | |
| 599.00 > 80.00 | 3.706 | 3.709 | -0.003 | 1.000 | 929030 | 0.8475 | | 87.9 | 8394 | |
| 599.00 > 99.00 | 3.706 | 3.709 | -0.003 | 1.000 | 314655 | | 2.95(1.39-4.16) | | 6258 | |
| D 30 13C2 PFUnA | | | | | | | | | | |
| 565.00 > 520.00 | 3.727 | 3.720 | 0.007 | 1.000 | 2934506 | 2.82 | | 113 | 88058 | |
| 33 N-ethyl perfluorooctane sulfonamid | | | | | | | | | | |
| 584.00 > 419.00 | 3.727 | 3.730 | -0.003 | 1.003 | 678674 | 0.9265 | | 92.6 | 11258 | |
| 31 Perfluoroundecanoic acid | | | | | | | | | | |
| 563.00 > 519.00 | 3.727 | 3.730 | -0.003 | 1.000 | 879474 | 0.9338 | | 93.4 | 2770 | |
| 563.00 > 169.00 | 3.727 | 3.730 | -0.003 | 1.000 | 215854 | | 4.07(2.12-6.36) | | 5401 | |
| 66 11-Chloroeicosafluoro-3-oxaundecan | | | | | | | | | | |
| 631.00 > 451.00 | 3.884 | 3.886 | -0.002 | 1.000 | 3739590 | 0.8155 | | 86.6 | 49150 | |
| D 36 13C2 PFDoA | | | | | | | | | | |
| 615.00 > 570.00 | 4.017 | 4.010 | 0.007 | 1.000 | 3200430 | 2.77 | | 111 | 33412 | |
| 37 Perfluorododecanoic acid | | | | | | | | | | |
| 613.00 > 569.00 | 4.017 | 4.020 | -0.003 | 1.000 | 1284212 | 0.9282 | | 92.8 | 1019 | |
| 613.00 > 169.00 | 4.017 | 4.020 | -0.003 | 1.000 | 326300 | | 3.94(2.13-6.40) | | 3325 | |
| 41 Perfluorotridecanoic acid | | | | | | | | | | |
| 663.00 > 619.00 | 4.279 | 4.282 | -0.003 | 1.000 | 1387255 | 0.9374 | | 93.7 | 928 | |
| 663.00 > 169.00 | 4.279 | 4.282 | -0.003 | 1.000 | 431459 | | 3.22(1.25-3.76) | | 4668 | |
| D 43 13C2-PFTeDA | | | | | | | | | | |
| 715.00 > 670.00 | 4.521 | 4.513 | 0.008 | 1.000 | 4143991 | 2.82 | | 113 | 28588 | |
| 42 Perfluorotetradecanoic acid | | | | | | | | | | |
| 713.00 > 169.00 | 4.521 | 4.523 | -0.002 | 1.000 | 381436 | 0.9214 | | 92.1 | 3215 | |
| 713.00 > 219.00 | 4.511 | 4.523 | -0.012 | 0.998 | 284309 | | 1.34(0.71-2.13) | | 3809 | |
| D 44 13C2-PFHxDA | | | | | | | | | | |
| 815.00 > 770.00 | 4.931 | 4.924 | 0.006 | 1.000 | 6379891 | 2.81 | | 112 | 13808 | |
| 45 Perfluorohexadecanoic acid | | | | | | | | | | |
| 813.00 > 769.00 | 4.931 | 4.932 | -0.002 | 1.000 | 2221959 | 0.8982 | | 89.8 | 552 | |
| 813.00 > 169.00 | 4.931 | 4.932 | -0.002 | 1.000 | 384184 | | 5.78(2.86-8.58) | | 2241 | |
| 46 Perfluorooctadecanoic acid | | | | | | | | | | |
| 913.00 > 869.00 | 5.284 | 5.285 | -0.001 | 1.000 | 2408979 | 0.9508 | | 95.1 | 421 | |
| 913.00 > 169.00 | 5.284 | 5.285 | -0.001 | 1.000 | 298477 | | 8.07(3.83-11.48) | | 1753 | |

## QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Report Date: 09-Apr-2018 14:13:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b\2018.04.07LLA1_050.d

Injection Date: 07-Apr-2018 15:08:53 Instrument ID: A8_N

Lims ID: LCSD 320-216477/3-A

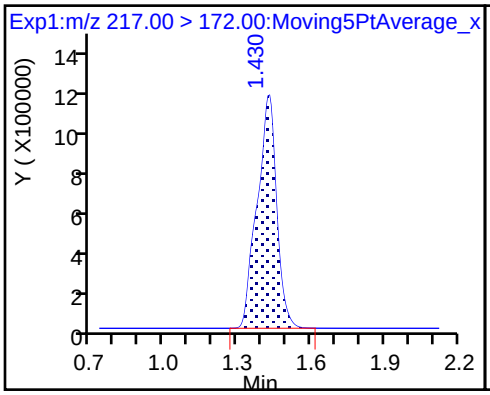
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 34 Worklist Smp#: 4

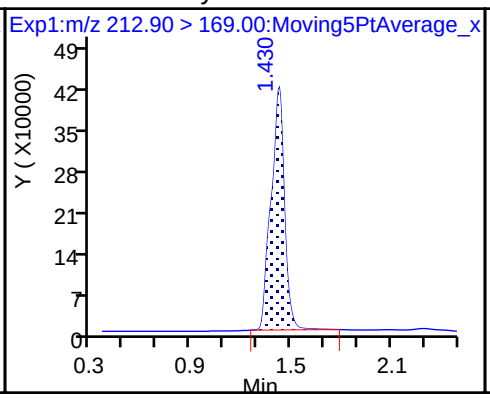
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

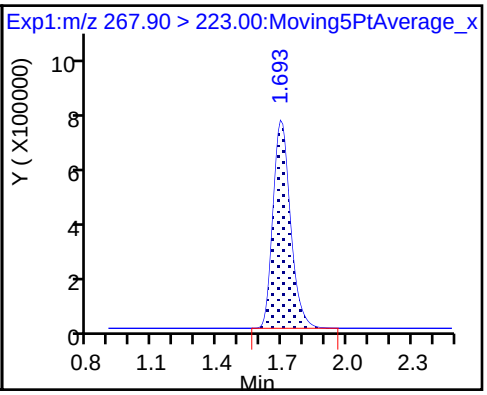
D 1 13C4 PFBA



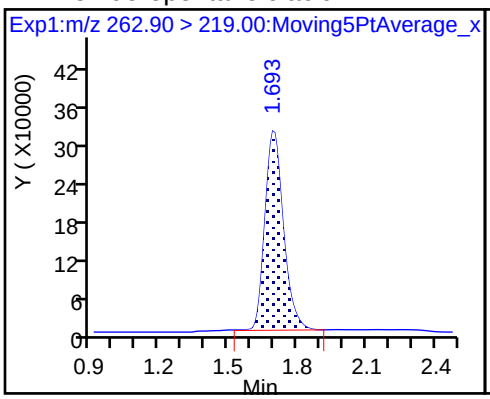

2 Perfluorobutyric acid



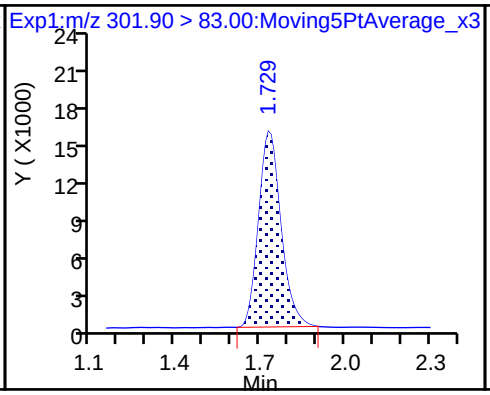

D 3 13C5-PFPeA



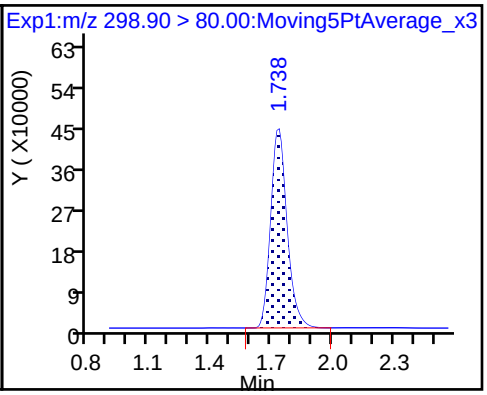

4 Perfluoropentanoic acid



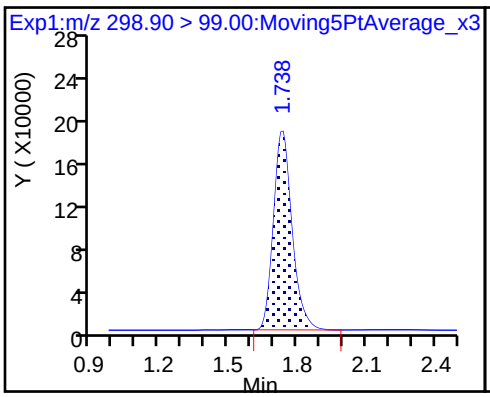

D 47 13C3-PFBS



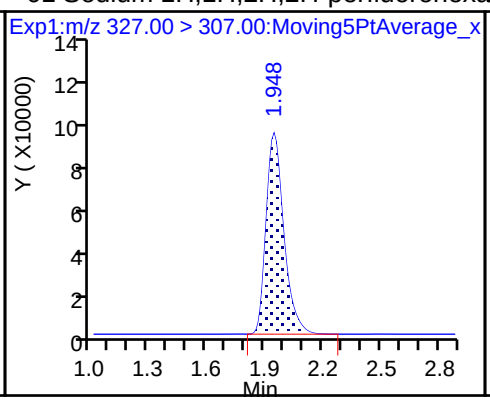

5 Perfluorobutanesulfonic acid



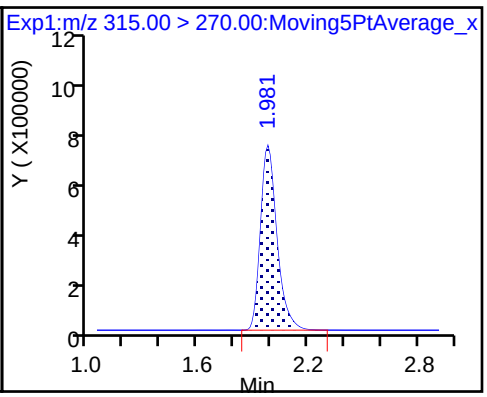

5 Perfluorobutanesulfonic acid



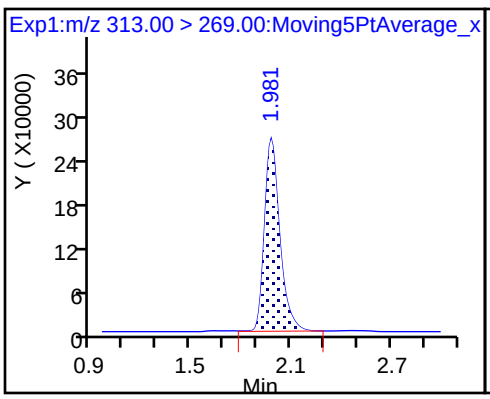

61 Sodium 1H,1H,2H,2H-perfluorohexa



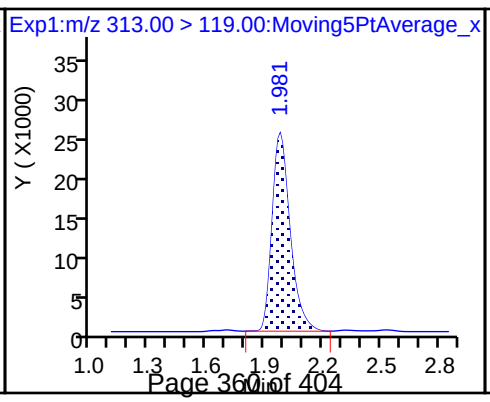

De 7 13C2 PFHxA



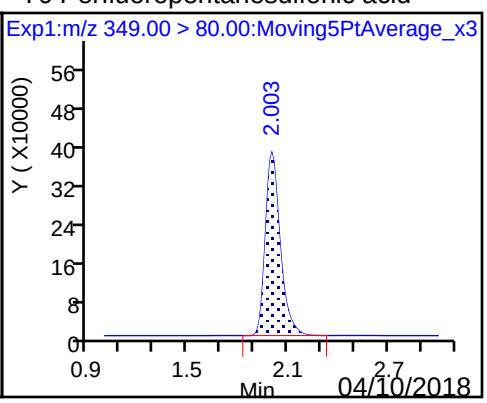

6 Perfluorohexanoic acid



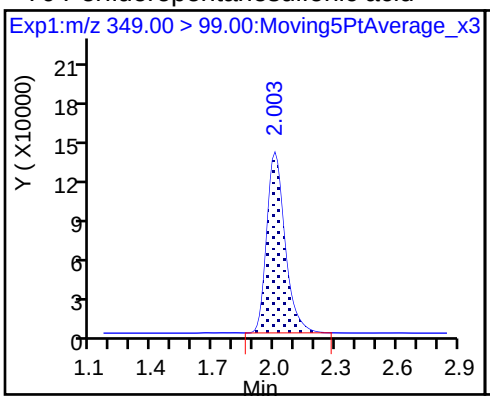

6 Perfluorohexanoic acid



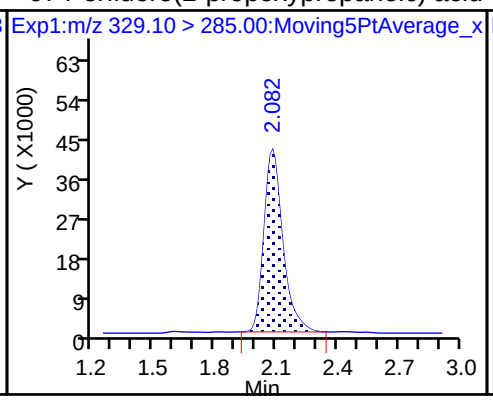

70 Perfluoropentanesulfonic acid



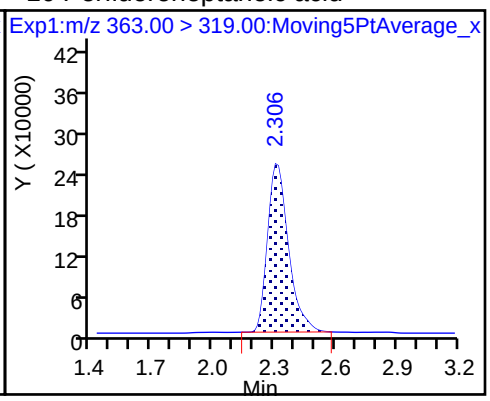
70 Perfluoropentanesulfonic acid



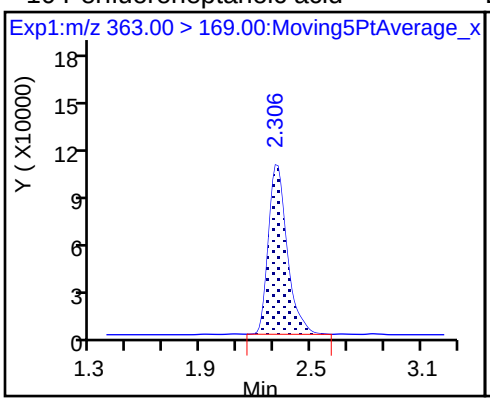

67 Perfluoro(2-propoxypropanoic) acid



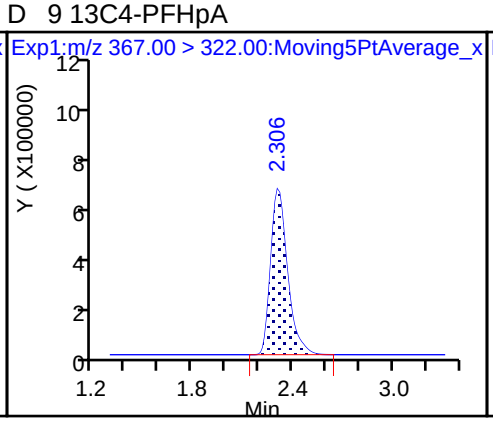

10 Perfluoroheptanoic acid



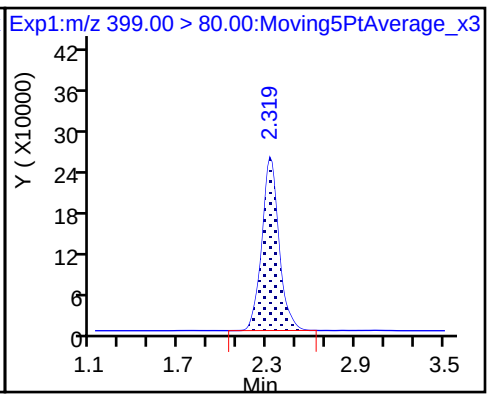

10 Perfluoroheptanoic acid



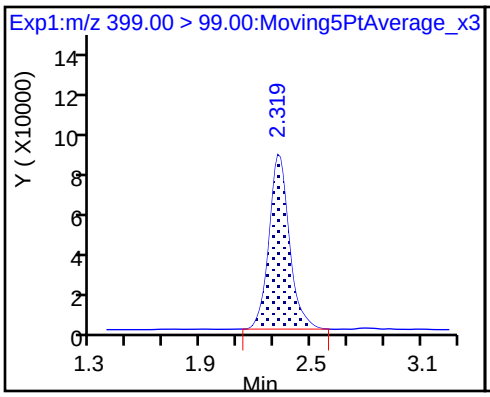

D 9 13C4-PFHpA



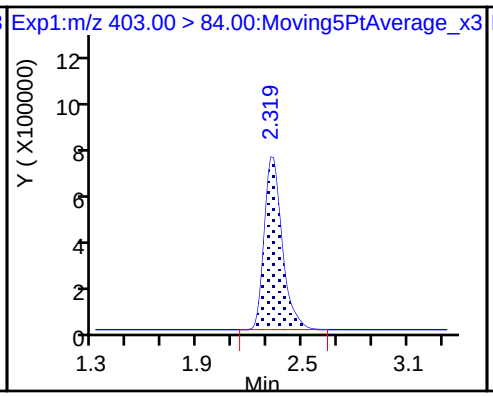

8 Perfluorohexanesulfonic acid



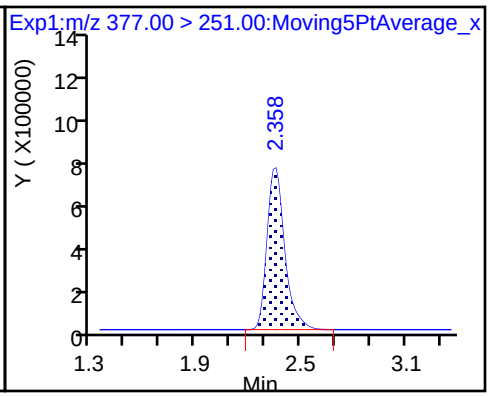

8 Perfluorohexanesulfonic acid




D 11 18O2 PFHxS




65 Adona

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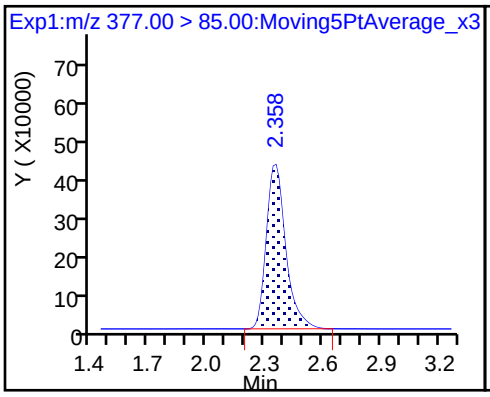
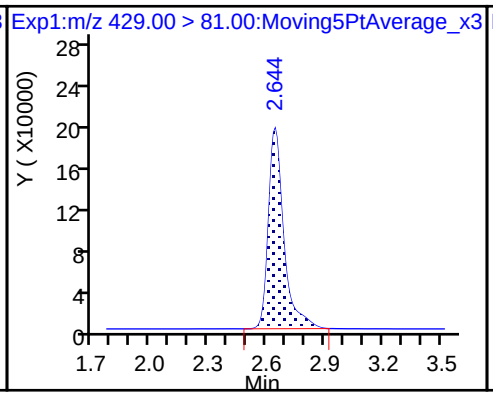
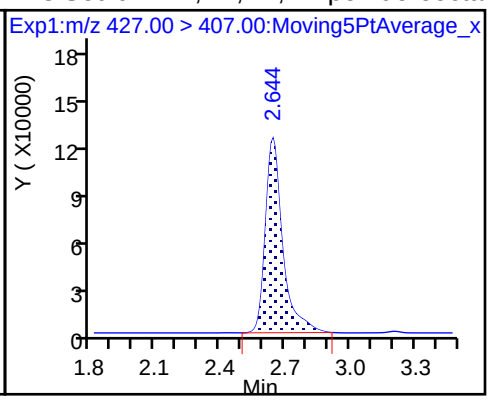


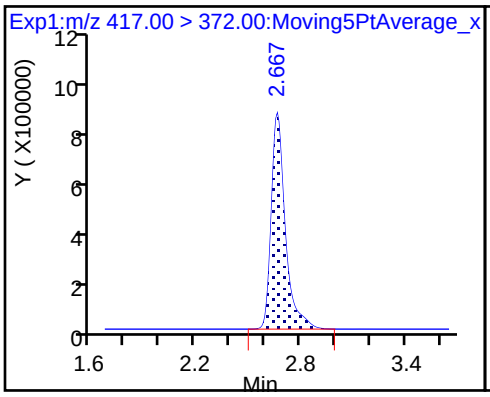

D 12 M2-6:2FTS



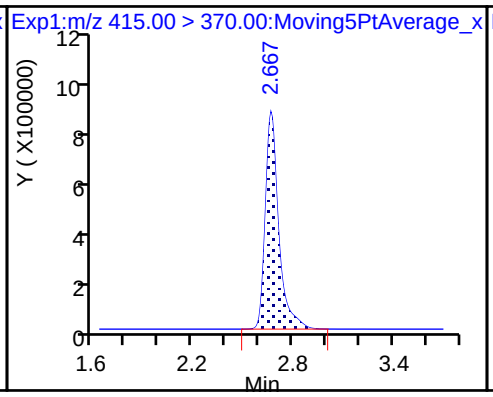

13 Sodium 1H,1H,2H,2H-perfluorooctane



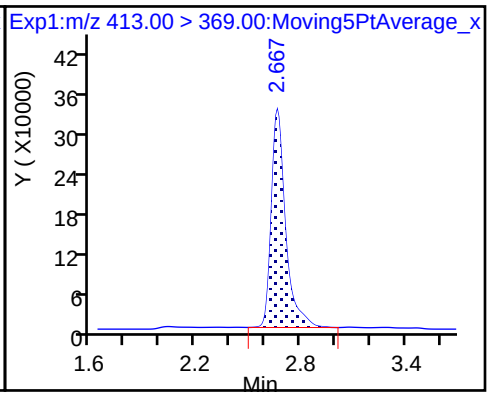
D 14 13C4 PFOA



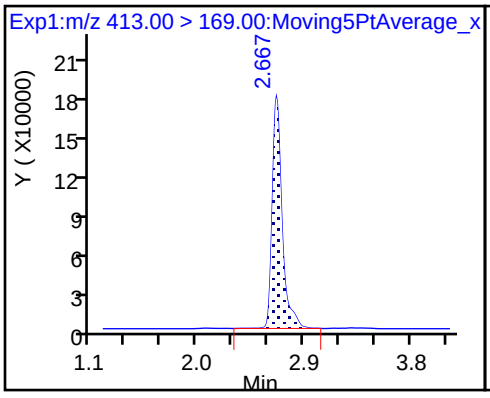

* 62 13C2-PFOA



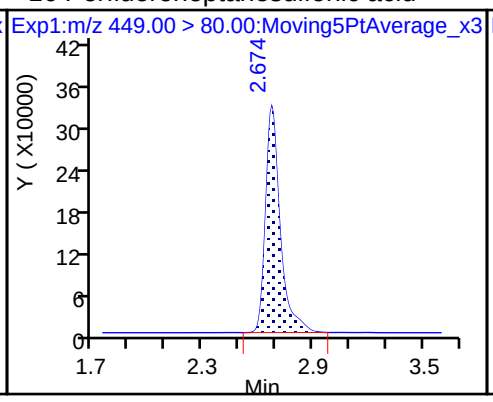

15 Perfluorooctanoic acid



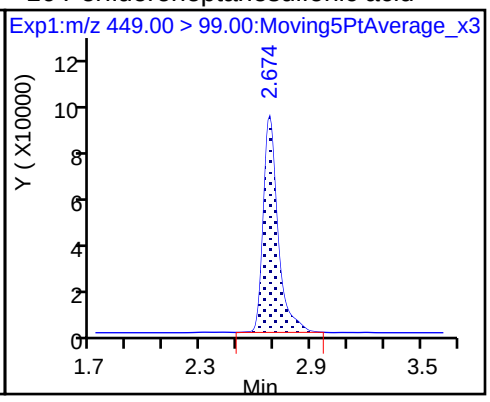

15 Perfluorooctanoic acid



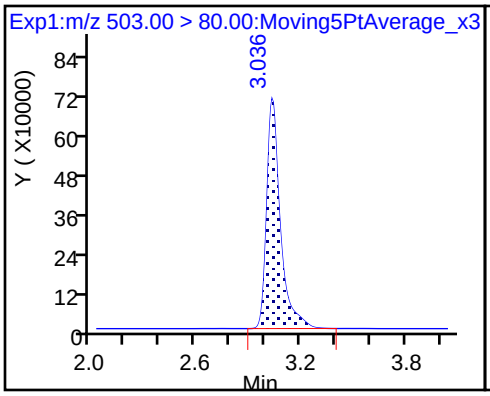

16 Perfluoroheptanesulfonic acid



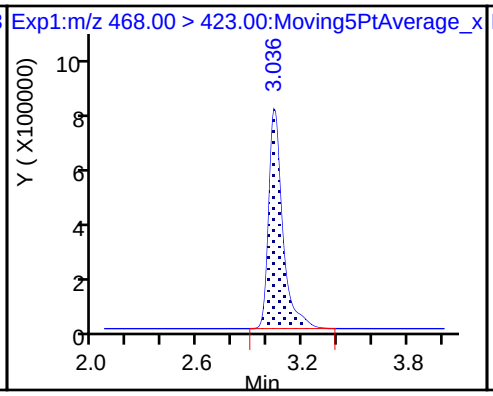

16 Perfluoroheptanesulfonic acid



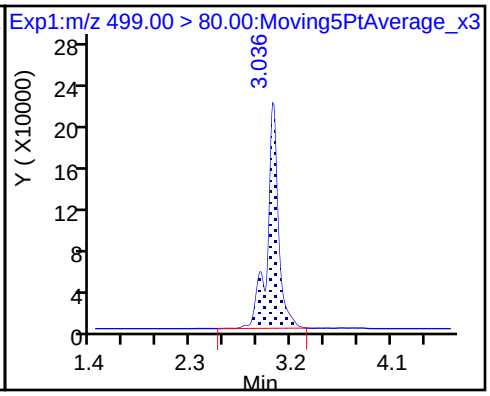

D 18 13C4 PFOS



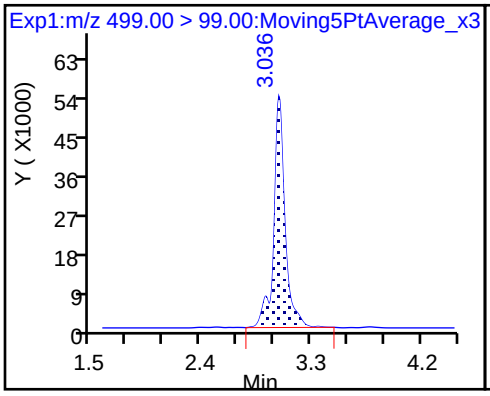

D 19 13C5 PFNA



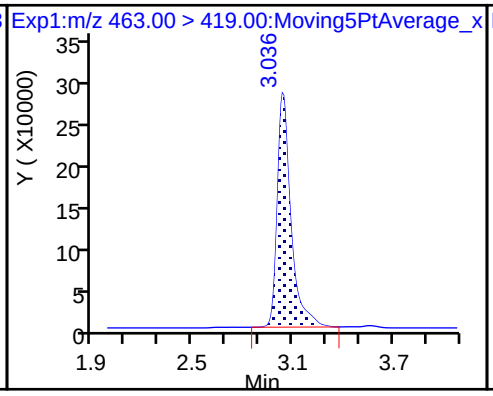

17 Perfluorooctane sulfonic acid



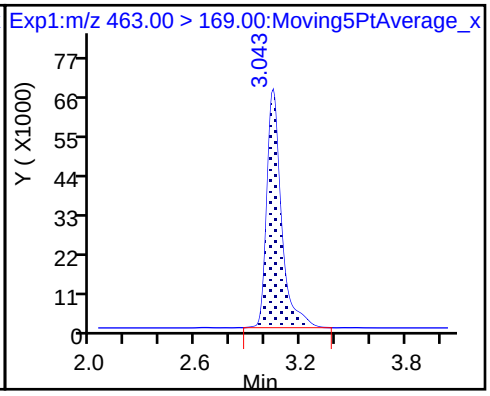

17 Perfluorooctane sulfonic acid



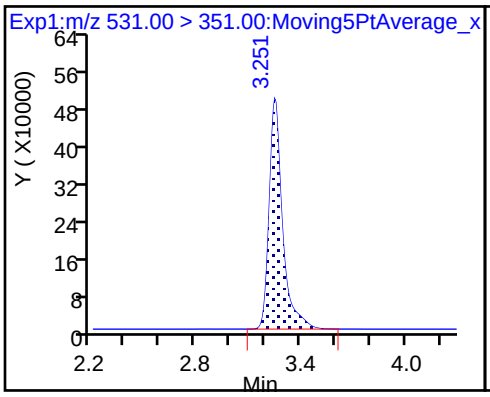

20 Perfluorononanoic acid



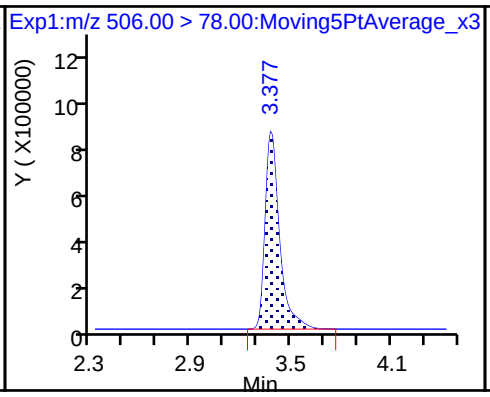

20 Perfluorononanoic acid



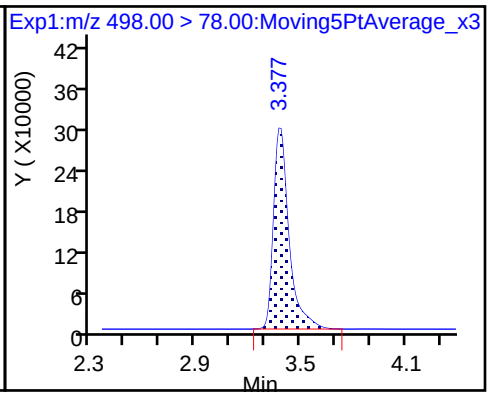
69 9-Chlorohexadecafluoro-3-oxanonane



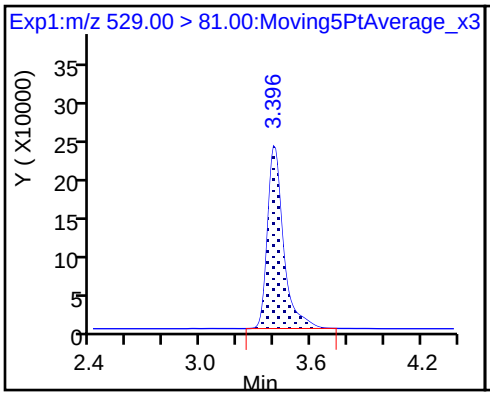

D 21 13C8 FOSA



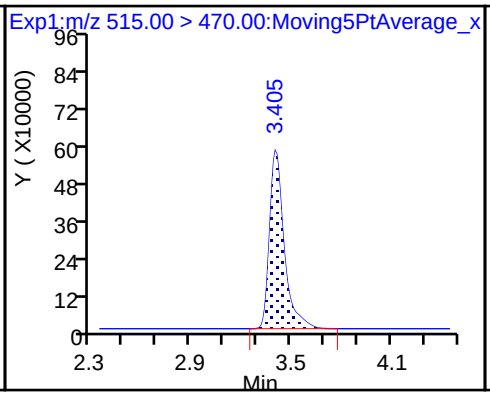

22 Perfluorooctane Sulfonamide



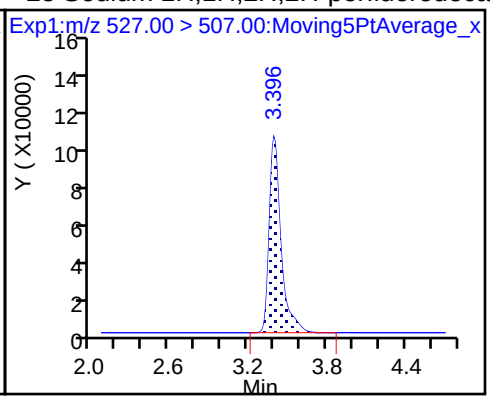

D 26 M2-8:2FTS



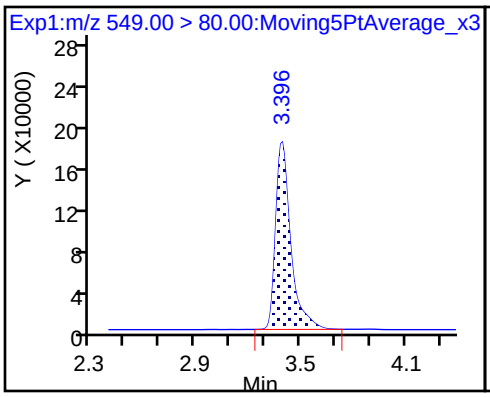

D 23 13C2 PFDA



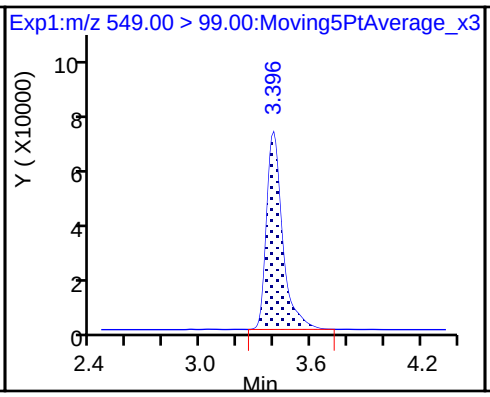

25 Sodium 1H,1H,2H,2H-perfluorodecane



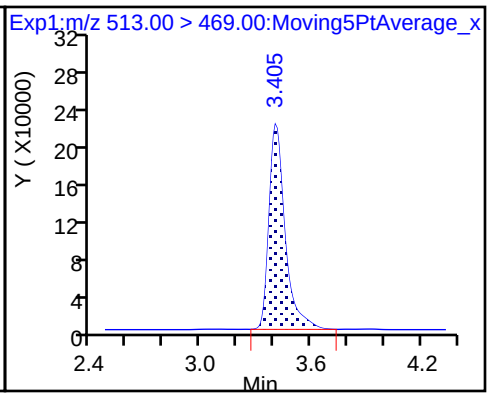

68 Perfluorononanesulfonic acid



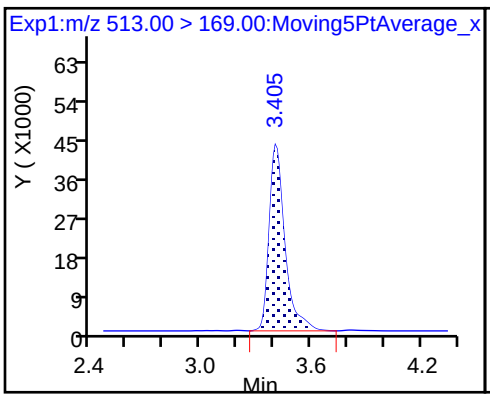

68 Perfluorononanesulfonic acid



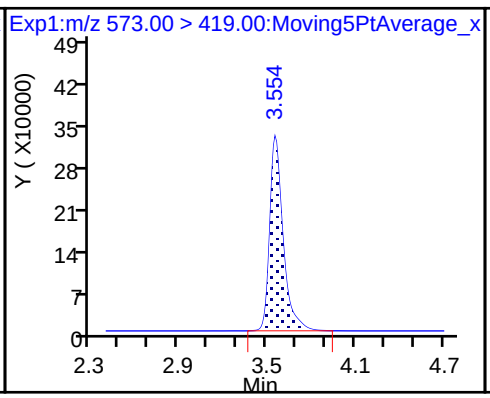

24 Perfluorodecanoic acid



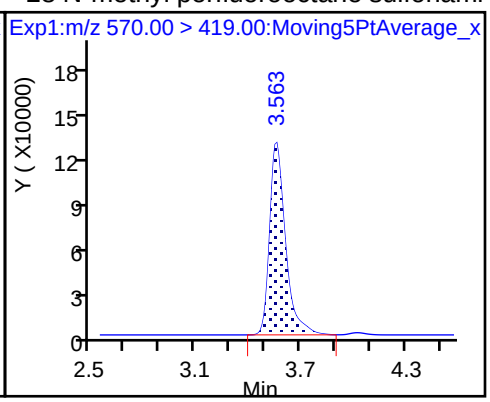

24 Perfluorodecanoic acid



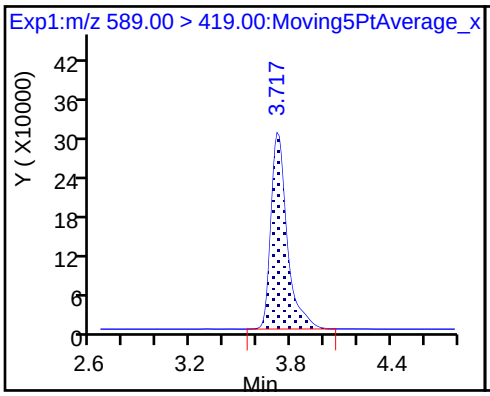

D 27 d3-NMeFOSAA



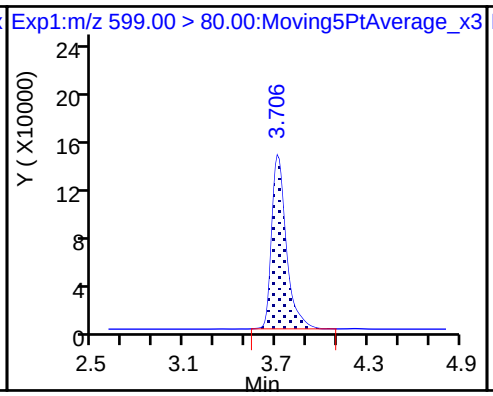

28 N-methyl perfluorooctane sulfonami



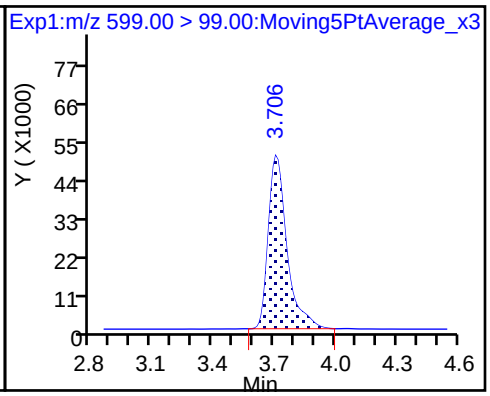
D 32 d5-NEtFOSAA



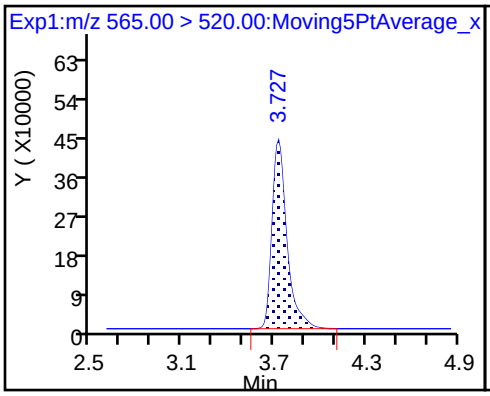

29 Perfluorodecane Sulfonic acid



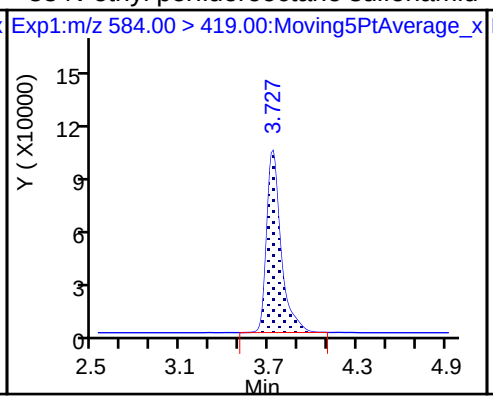

29 Perfluorodecane Sulfonic acid



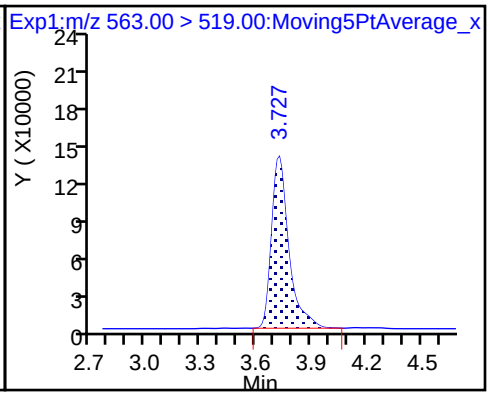

D 30 13C2 PFUnA



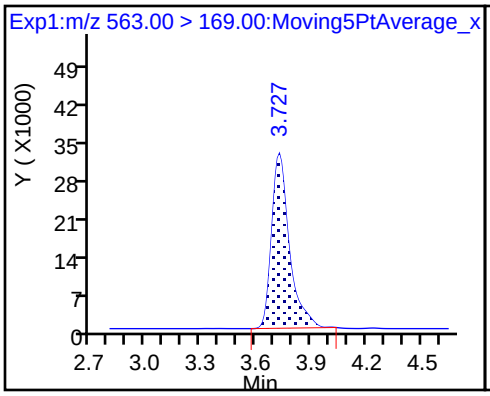

33 N-ethyl perfluorooctane sulfonamid



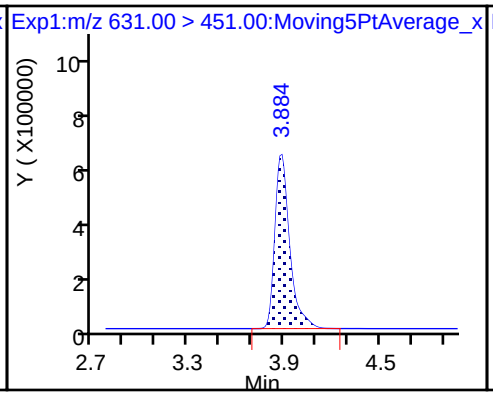

31 Perfluoroundecanoic acid



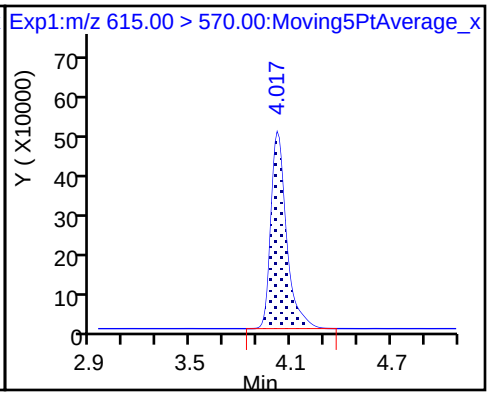

31 Perfluoroundecanoic acid



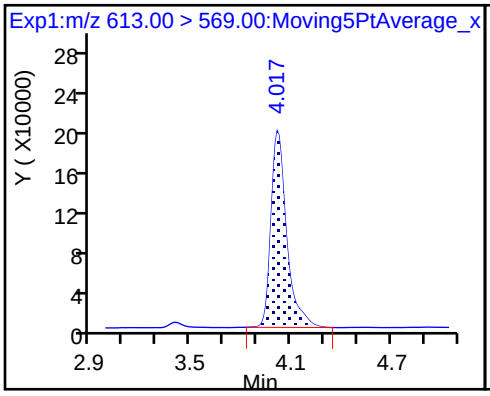

66 11-Chloroeicosafluoro-3-oxaundecan



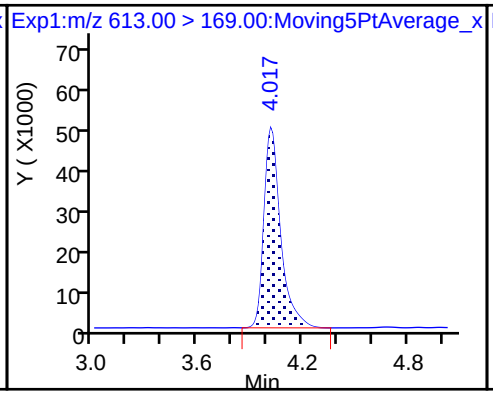

D 36 13C2 PFDoA



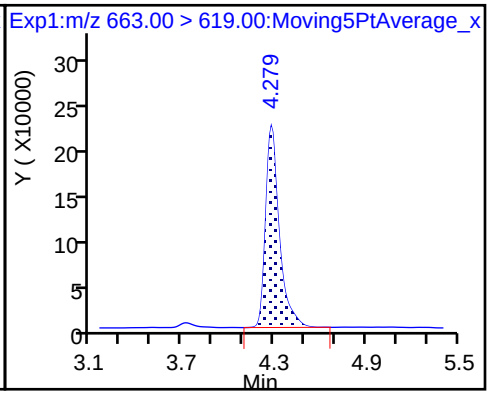

37 Perfluorododecanoic acid



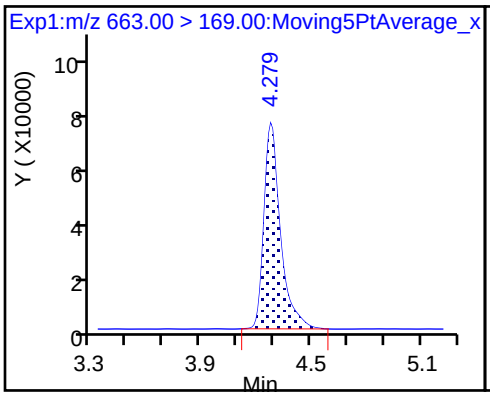

37 Perfluorododecanoic acid



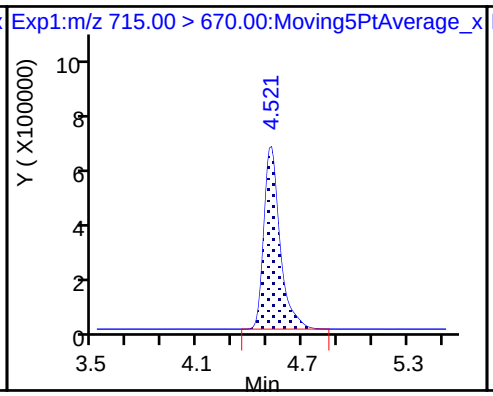

41 Perfluorotridecanoic acid



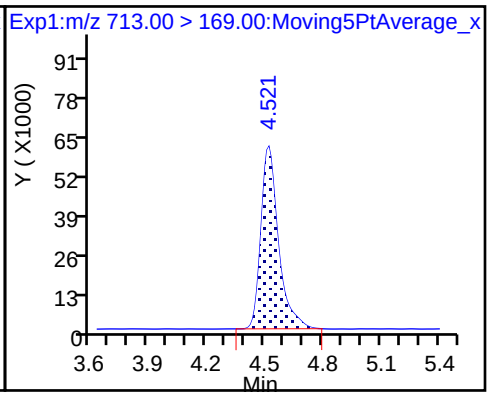
41 Perfluorotridecanoic acid



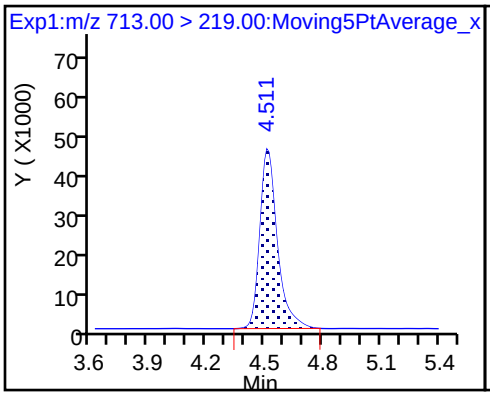

D 43 13C2-PFTeDA



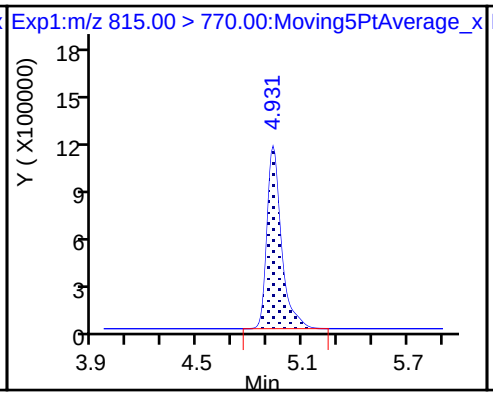

42 Perfluorotetradecanoic acid



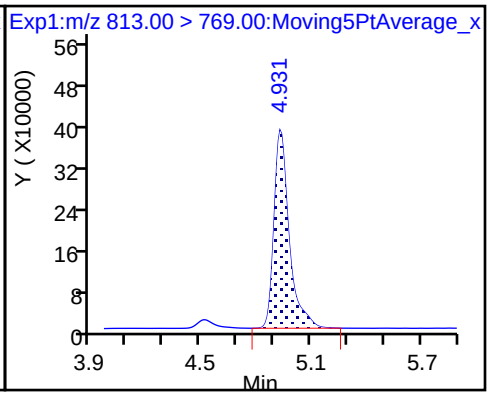

42 Perfluorotetradecanoic acid



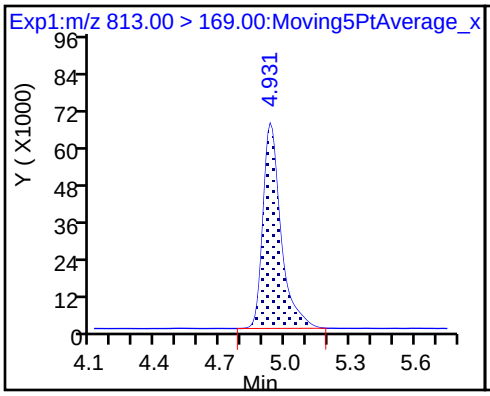

D 44 13C2-PFHxDA



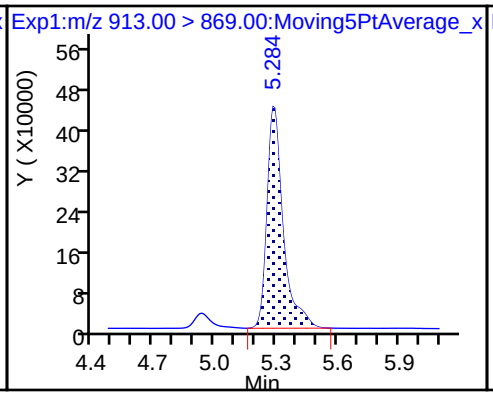

45 Perfluorohexadecanoic acid



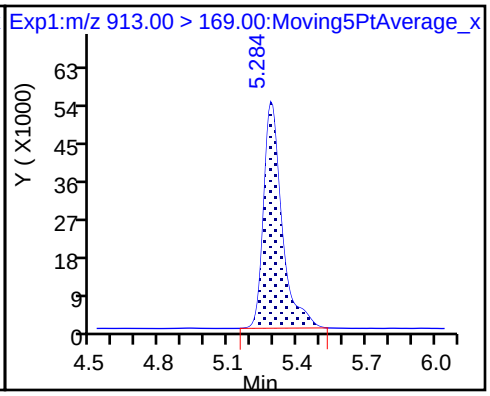

45 Perfluorohexadecanoic acid




46 Perfluorooctadecanoic acid




46 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Instrument ID: A8_N Start Date: 03/29/2018 17:19

Analysis Batch Number: 215537 End Date: 03/29/2018 18:37

| LAB SAMPLE ID | CLIENT SAMPLE ID | DATE ANALYZED | DILUTION FACTOR | LAB FILE ID | COLUMN ID |
|---|---|---|---|---|---|
| ZZZZZ | | 03/29/2018 17:19 | 1 | | GeminiC18 3x100 3(mm) |
| IC 320-215537/2 | | 03/29/2018 17:27 | 1 | 2018.03.29A_ICALB 002.d | GeminiC18 3x100 3(mm) |
| IC 320-215537/3 | | 03/29/2018 17:35 | 1 | 2018.03.29A_ICALB 003.d | GeminiC18 3x100 3(mm) |
| IC 320-215537/4 | | 03/29/2018 17:43 | 1 | 2018.03.29A_ICALB 004.d | GeminiC18 3x100 3(mm) |
| IC 320-215537/5 ICIS | | 03/29/2018 17:50 | 1 | 2018.03.29A_ICALB 005.d | GeminiC18 3x100 3(mm) |
| IC 320-215537/6 | | 03/29/2018 17:58 | 1 | 2018.03.29A_ICALB 006.d | GeminiC18 3x100 3(mm) |
| IC 320-215537/7 | | 03/29/2018 18:06 | 1 | 2018.03.29A_ICALB 007.d | GeminiC18 3x100 3(mm) |
| IC 320-215537/8 | | 03/29/2018 18:14 | 1 | 2018.03.29A_ICALB 008.d | GeminiC18 3x100 3(mm) |
| ICB 320-215537/9 | | 03/29/2018 18:22 | 1 | 2018.03.29A_ICALB 009.d | GeminiC18 3x100 3(mm) |
| ICV 320-215537/10 | | 03/29/2018 18:29 | 1 | 2018.03.29A_ICALB 010.d | GeminiC18 3x100 3(mm) |
| CCB 320-215537/11 | | 03/29/2018 18:37 | 1 | | GeminiC18 3x100 3(mm) |

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Instrument ID: A8_N Start Date: 04/07/2018 09:01

Analysis Batch Number: 216820 End Date: 04/07/2018 11:45

| LAB SAMPLE ID | CLIENT SAMPLE ID | DATE ANALYZED | DILUTION FACTOR | LAB FILE ID | COLUMN ID |
|---|---|---|---|---|---|
| CCB 320-216820/1 | | 04/07/2018 09:01 | 1 | 2018.04.07LLA_004.d | GeminiC18 3x100 3(mm) |
| CCVL 320-216820/2 | | 04/07/2018 09:08 | 1 | 2018.04.07LLA_005.d | GeminiC18 3x100 3(mm) |
| CCV 320-216820/3 CCVIS | | 04/07/2018 09:16 | 1 | 2018.04.07LLA_006.d | GeminiC18 3x100 3(mm) |
| CCV 320-216820/14 | | 04/07/2018 10:42 | 1 | | GeminiC18 3x100 3(mm) |
| CCV 320-216820/22 | | 04/07/2018 11:45 | 1 | | GeminiC18 3x100 3(mm) |

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Instrument ID: A8_N Start Date: 04/07/2018 14:45

Analysis Batch Number: 216860 End Date: 04/07/2018 17:29

| LAB SAMPLE ID | CLIENT SAMPLE ID | DATE ANALYZED | DILUTION FACTOR | LAB FILE ID | COLUMN ID |
|---|---|---|---|---|---|
| CCV 320-216860/1 | | 04/07/2018 14:45 | 1 | 2018.04.07LLA1_047.d | GeminiC18 3x100 3(mm) |
| MB 320-216477/1-A | | 04/07/2018 14:53 | 1 | 2018.04.07LLA1_048.d | GeminiC18 3x100 3(mm) |
| LCS 320-216477/2-A | | 04/07/2018 15:01 | 1 | 2018.04.07LLA1_049.d | GeminiC18 3x100 3(mm) |
| LCSD 320-216477/3-A | | 04/07/2018 15:08 | 1 | 2018.04.07LLA1_050.d | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 15:16 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 15:24 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 15:32 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 15:40 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 15:47 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 15:55 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 16:03 | 1 | | GeminiC18 3x100 3(mm) |
| CCV 320-216860/12 | | 04/07/2018 16:11 | 1 | 2018.04.07LLA1_058.d | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 16:19 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 16:26 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 16:34 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 16:42 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 16:50 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 16:58 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 17:06 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/07/2018 17:21 | 1 | | GeminiC18 3x100 3(mm) |
| CCV 320-216860/22 | | 04/07/2018 17:29 | 1 | | GeminiC18 3x100 3(mm) |

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-133255-1

SDG No.:

Instrument ID: A8_N Start Date: 04/08/2018 14:25

Analysis Batch Number: 216884 End Date: 04/08/2018 15:35

| LAB SAMPLE ID | CLIENT SAMPLE ID | DATE ANALYZED | DILUTION FACTOR | LAB FILE ID | COLUMN ID |
|---|---|---|---|---|---|
| CCB 320-216884/1 | | 04/08/2018 14:25 | 1 | 2018.04.08LLA_004.d | GeminiC18 3x100 3(mm) |
| CCVL 320-216884/2 | | 04/08/2018 14:32 | 1 | 2018.04.08LLA_005.d | GeminiC18 3x100 3(mm) |
| CCV 320-216884/3 CCVIS | | 04/08/2018 14:40 | 1 | 2018.04.08LLA_006.d | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/08/2018 14:48 | 1 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/08/2018 14:56 | 20 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/08/2018 15:04 | 20 | | GeminiC18 3x100 3(mm) |
| ZZZZZ | | 04/08/2018 15:12 | 10 | | GeminiC18 3x100 3(mm) |
| 480-133255-1 | | 04/08/2018 15:20 | 10 | 2018.04.08LLA_011.d | GeminiC18 3x100 3(mm) |
| 480-133255-2 | | 04/08/2018 15:27 | 10 | 2018.04.08LLA_012.d | GeminiC18 3x100 3(mm) |
| CCV 320-216884/10 | | 04/08/2018 15:35 | 1 | 2018.04.08LLA_013.d | GeminiC18 3x100 3(mm) |

537 (modified)

# LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Batch Number: 216477  Batch Start Date: 04/05/18 12:03  Batch Analyst: Kolstad, Kate M

Batch Method: 3535  Batch End Date: 04/06/18 12:50

| Lab Sample ID | Client Sample ID | Method Chain | Basis | GrossWeight | TareWeight | InitialAmount | FinalAmount | LCMPFC_ALL_SU 00046 | LCPFC-IS 00033 |
|---|---|---|---|---|---|---|---|---|---|
| MB 320-216477/1 | | 3535, 537 (modified) | | | | 250.0 mL | 10.0 mL | 500 uL | 500 uL |
| LCS 320-216477/2 | | 3535, 537 (modified) | | | | 250.0 mL | 10.0 mL | 500 uL | 500 uL |
| LCSD 320-216477/3 | | 3535, 537 (modified) | | | | 250.0 mL | 10.0 mL | 500 uL | 500 uL |
| 480-133255-C-1 | R9-032818-C1 | 3535, 537 (modified) | T | 275.73 g | 29.40 g | 246.3 mL | 10.0 mL | 500 uL | 500 uL |
| 480-133255-C-2 | R9-032818-POND | 3535, 537 (modified) | T | 281.55 g | 29.62 g | 251.9 mL | 10.0 mL | 500 uL | 500 uL |

| Lab Sample ID | Client Sample ID | Method Chain | Basis | LCPFCSP 00139 | AnalysisComment | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MB 320-216477/1 | | 3535, 537 (modified) | | | | | | | |
| LCS 320-216477/2 | | 3535, 537 (modified) | | 500 uL | | | | | |
| LCSD 320-216477/3 | | 3535, 537 (modified) | | 500 uL | | | | | |
| 480-133255-C-1 | R9-032818-C1 | 3535, 537 (modified) | T | | amber color at FV | | | | |
| 480-133255-C-2 | R9-032818-POND | 3535, 537 (modified) | T | | amber color at FV | | | | |

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

# LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento  Job No.: 480-133255-1

SDG No.:

Batch Number: 216477  Batch Start Date: 04/05/18 12:03  Batch Analyst: Kolstad, Kate M

Batch Method: 3535  Batch End Date: 04/06/18 12:50

| Batch Notes | |
|---|---|
| Analyst ID - Aliquot Step | VPM |
| Balance ID | QA-078 |
| Batch Comment | Client labels match: KMK |
| Analyst ID - Final Volume Step | VPM |
| H2O ID | 4-5-18 |
| Hexane ID | 1175189 |
| Internal Standard ID# | 1178675 |
| Manifold ID | 16, 11 |
| Methanol ID | 1197244 |
| Sodium Hydroxide ID | 1196582 |
| Pipette ID | I46360G |
| Analyst ID - Reagent Drop | KMK |
| Analyst ID - IS Reagent Drop | VPM |
| Analyst ID - IS Reagent Drop Witness | SKD |
| Analyst ID - SU Reagent Drop | KMK |
| Analyst ID - SU Reagent Drop Witness | TWL |
| Solvent Lot # | 1195172 |
| Solvent Name | 0.3%NH4OH/MeOH |
| SOP Number | WS-LC-0025 |
| SPE Cartridge Type | Oasis WAX 500MG |
| Solid Phase Extraction Disk ID | 003737320A |

| Basis | Basis Description |
|---|---|
| T | Total/NA |

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

# HPLC/LCMS Data Review Checklist

240-93167, 480-133240, 480-133255

Job Number(s): 480-132666, 37458, 36824

Work List ID(s): 56387, 56398, 56388, 56437

Extraction Batch: 215517, 216477

Analysis Batch(es): 216857, 216884, 216860, 217026

Delivery Rank 2, 4

Due Date: ———

| A. Calibration/Instrument Run QC | 1st Level | 2nd Level | N/A |
|---|---|---|---|
| 1. ICAL locked in Chrom and TALS? ICAL Batch# | ✓ | ✓ | |
| 2. ICAL, CCV Frequency & Criteria met. | ✓ | ✓ | |
| • $RF_{average}$ criteria appropriate for the method. | ✓ | ✓ | |
| • Linear Regression criteria appropriate if required ($r \geq 0.995$). | ✓ | ✓ | |
| • Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$). | | | ✓ |
| • For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005? | ✓ | ✓ | |
| • All curve points show calculated concentrations. | ✓ | ✓ | |
| 3. Peaks correctly ID'd by data system. | ✓ | ✓ | |
| 5. Tune check frequency & criteria met and Tune check report attached. | | | ✓ |
| B. QA/QC | | | |
| 1. Are all QC samples properly linked in TALS? | ✓ | ✓ | |
| 2. Method blank, LCS/LCSD and MS/SD frequencies met. | ✓ | ✓ | |
| 3. LCS/LCSD and MB data are within control limits. If not, NCM is present. | ✓ | ✓ | |
| 4. Are MS/MSD recoveries and RPD within control limits? | | | ✓ |
| 5. Holding Times were met for prep and analytical. | ✓ | ✓ | |
| 6. IS/Surrogate recoveries meet criteria or properly noted. | ✓ | ✓ | |
| C. Sample Analysis | | | |
| 1. Was correct analysis performed and were project instructions followed? | ✓ | ✓ | |
| 2. If required, are compounds within RT windows? | ✓ | ✓ | |
| 3. If required, are positive hits confirmed and >40% RPD flagged? | | | ✓ |
| 4. Manual Integrations reviewed and appropriate. | ✓ | ✓ | |
| 5. All analytes correctly reported. (Primary, secondary, acceptable status) | ✓ | ✓ | |
| 6. Correct reporting limits used. (based on client request, prep factors, and dilutions) | ✓ | ✓ | |
| D. Documentation | | | |
| 1. Are all non-conformances documented/attached? NCM# | ✓ | ✓ | |
| 2. Do results make sense (e.g. dilutions, etc.)? | ✓ | ✓ | |
| 3. Have all flags been reviewed for appropriateness? | ✓ | ✓ | |
| 4. For level 3 and 4 reports, have forms and raw data been reviewed? | | ✓ | |
| 5. Was QC Checker run for this job? | ✓ | ✓ | |

**Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.*

1st Level (Analyst): CBW Date: 4/9/18

2nd Level Reviewer: mwwy Date: 4/10/2018

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 07APR2018NCA_PFC Worklist Num: 56376
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

| Lab ID | Worklist ID | Sample Type | Inj Date/Time | File Name | Vial | Dil Factor | Client ID | Fract |
|---|---|---|---|---|---|---|---|---|
| CCB | 320-0056376-001 | CCB | 07-Apr-2018 09:01:11 | 2018.04.07LLA_004.d | 20 | 1.0 | | sv |
| CCVL | 320-0056376-002 | CCVL | 07-Apr-2018 09:08:59 | 2018.04.07LLA_005.d | 21 | 1.0 | | sv |
| CCV L4 | 320-0056376-003 | CCVIS | 07-Apr-2018 09:16:48 | 2018.04.07LLA_006.d | 13 | 1.0 | | sv |
| MB 320-213404/1-A | 320-0056376-004 | MB | 07-Apr-2018 09:24:36 | 2018.04.07LLA_007.d | 1 | 1.0 | | sv |
| LCS 320-213404/2-A | 320-0056376-005 | LCS | 07-Apr-2018 09:32:24 | 2018.04.07LLA_008.d | 2 | 1.0 | | sv |
| 320-36960-A-4-A | 320-0056376-006 | Client | 07-Apr-2018 09:40:14 | 2018.04.07LLA_009.d | 3 | 1.0 | BNA01-SB1-01 | sv |
| 320-36960-A-4-B MS | 320-0056376-007 | MS | 07-Apr-2018 09:48:06 | 2018.04.07LLA_010.d | 4 | 1.0 | BNA01-SB1-01 | sv |
| 320-36960-A-4-C MSD | 320-0056376-008 | MSD | 07-Apr-2018 09:55:57 | 2018.04.07LLA_011.d | 5 | 1.0 | BNA01-SB1-01 | sv |
| 320-36960-A-5-A | 320-0056376-009 | Client | 07-Apr-2018 10:03:50 | 2018.04.07LLA_012.d | 6 | 1.0 | BNA01-SB1-02 | sv |
| 320-36960-A-6-A | 320-0056376-010 | Client | 07-Apr-2018 10:11:38 | 2018.04.07LLA_013.d | 7 | 1.0 | BNA03-SB1-01 | sv |
| 320-36960-A-7-A | 320-0056376-011 | Client | 07-Apr-2018 10:19:27 | 2018.04.07LLA_014.d | 8 | 1.0 | BNA03-SB1-01D | sv |
| 320-36960-A-8-A | 320-0056376-012 | Client | 07-Apr-2018 10:27:15 | 2018.04.07LLA_015.d | 9 | 1.0 | BNA03-SB1-02 | sv |
| 320-36960-A-9-A | 320-0056376-013 | Client | 07-Apr-2018 10:35:03 | 2018.04.07LLA_016.d | 10 | 1.0 | BNA03-SB2-01 | sv |
| CCV L5 | 320-0056376-014 | CCV | 07-Apr-2018 10:42:53 | 2018.04.07LLA_017.d | 14 | 1.0 | | sv |
| 320-36960-A-10-A | 320-0056376-015 | Client | 07-Apr-2018 10:50:40 | 2018.04.07LLA_018.d | 11 | 1.0 | BNA03-SB2-01D | sv |
| 320-36960-A-11-A | 320-0056376-016 | Client | 07-Apr-2018 10:58:29 | 2018.04.07LLA_019.d | 12 | 1.0 | BNA03-SB2-02 | sv |
| 320-36960-A-12-A | 320-0056376-017 | Client | 07-Apr-2018 11:06:21 | 2018.04.07LLA_020.d | 13 | 1.0 | BNA04-SB1-01 | sv |
| 320-36960-A-13-A | 320-0056376-018 | Client | 07-Apr-2018 11:14:11 | 2018.04.07LLA_021.d | 14 | 1.0 | BNA04-SB1-02 | sv |
| 320-36960-A-14-A | 320-0056376-019 | Client | 07-Apr-2018 11:22:01 | 2018.04.07LLA_022.d | 15 | 1.0 | BNA05-SB1-01 | sv |
| 320-36960-A-15-A | 320-0056376-020 | Client | 07-Apr-2018 11:29:55 | 2018.04.07LLA_023.d | 16 | 1.0 | BNA05-SB1-02 | sv |
| 320-36960-A-18-A | 320-0056376-021 | Client | 07-Apr-2018 11:37:45 | 2018.04.07LLA_024.d | 17 | 1.0 | BNA05-SD1-01 | sv |
| CCV L4 | 320-0056376-022 | CCV | 07-Apr-2018 11:45:36 | 2018.04.07LLA_025.d | 13 | 1.0 | | sv |

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 07APR2018NCE_PFC Worklist Num: 56387
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56387.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

| Lab ID | Worklist ID | Sample Type | Inj Date/Time | File Name | Vial | Dil Factor | Client ID | Fract |
|---|---|---|---|---|---|---|---|---|
| CCV L4 | 320-0056387-001 | CCV | 07-Apr-2018 13:27:11 | 2018.04.07LLA1_037.d | 13 | 1.0 | | sv |
| MB 320-215517/1-A | 320-0056387-002 | MB | 07-Apr-2018 13:34:59 | 2018.04.07LLA1_038.d | 24 | 1.0 | | sv |
| LCS 320-215517/2-A | 320-0056387-003 | LCS | 07-Apr-2018 13:42:47 | 2018.04.07LLA1_039.d | 25 | 1.0 | | sv |
| LCSD 320-215517/3-A | 320-0056387-004 | LCSD | 07-Apr-2018 13:50:35 | 2018.04.07LLA1_040.d | 26 | 1.0 | | sv |
| 480-132666-C-1-A | 320-0056387-005 | Client | 07-Apr-2018 13:58:24 | 2018.04.07LLA1_041.d | 27 | 100. | SANITARY DISCHARGE | sv |
| 480-132666-C-2-A | 320-0056387-006 | Client | 07-Apr-2018 14:06:14 | 2018.04.07LLA1_042.d | 28 | 100. | PUMP STATION 2 | sv |
| 480-132666-C-3-A | 320-0056387-007 | Client | 07-Apr-2018 14:14:05 | 2018.04.07LLA1_043.d | 29 | 100. | LEACH HOUSE 4P | sv |
| 480-132666-C-4-A | 320-0056387-008 | Client | 07-Apr-2018 14:21:56 | 2018.04.07LLA1_044.d | 30 | 1.0 | RINSE BLANK 1 | sv |
| 480-132666-C-5-A | 320-0056387-009 | Client | 07-Apr-2018 14:29:48 | 2018.04.07LLA1_045.d | 31 | 1.0 | RINSE BLANK 2 | sv |
| CCV L5 | 320-0056387-010 | CCV | 07-Apr-2018 14:37:36 | 2018.04.07LLA1_046.d | 14 | 1.0 | | sv |

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 07APR2018NCF_PFC Worklist Num: 56388
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

| Lab ID | Worklist ID | Sample Type | Inj Date/Time | File Name | Vial | Dil Factor | Client ID | Fract |
|---|---|---|---|---|---|---|---|---|
| CCV L5 | 320-0056388-001 | CCV | 07-Apr-2018 14:45:26 | 2018.04.07LLA1_047.d | 14 | 1.0 | | sv |
| MB 320-216477/1-A | 320-0056388-002 | MB | 07-Apr-2018 14:53:15 | 2018.04.07LLA1_048.d | 32 | 1.0 | | sv |
| LCS 320-216477/2-A | 320-0056388-003 | LCS | 07-Apr-2018 15:01:03 | 2018.04.07LLA1_049.d | 33 | 1.0 | | sv |
| LCSD 320-216477/3-A | 320-0056388-004 | LCSD | 07-Apr-2018 15:08:53 | 2018.04.07LLA1_050.d | 34 | 1.0 | | sv |
| 320-37458-A-1-A | 320-0056388-005 | Client | 07-Apr-2018 15:16:41 | 2018.04.07LLA1_051.d | 35 | 1.0 | VP-3 85' | sv |
| 320-37458-A-2-A | 320-0056388-006 | Client | 07-Apr-2018 15:24:29 | 2018.04.07LLA1_052.d | 36 | 1.0 | FB01 | sv |
| 320-37458-A-3-A | 320-0056388-007 | Client | 07-Apr-2018 15:32:16 | 2018.04.07LLA1_053.d | 37 | 1.0 | VP-3 80' | sv |
| 320-37458-A-4-A | 320-0056388-008 | Client | 07-Apr-2018 15:40:05 | 2018.04.07LLA1_054.d | 38 | 1.0 | VP-3 75' | sv |
| 320-37458-A-5-A | 320-0056388-009 | Client | 07-Apr-2018 15:47:54 | 2018.04.07LLA1_055.d | 39 | 1.0 | VP-3 70 | sv |
| 320-37458-A-6-A | 320-0056388-010 | Client | 07-Apr-2018 15:55:44 | 2018.04.07LLA1_056.d | 40 | 1.0 | VP-3 65' | sv |
| 320-37458-A-12-A | 320-0056388-011 | Client | 07-Apr-2018 16:03:32 | 2018.04.07LLA1_057.d | 41 | 1.0 | DUP02 | sv |
| CCV L4 | 320-0056388-012 | CCV | 07-Apr-2018 16:11:21 | 2018.04.07LLA1_058.d | 13 | 1.0 | | sv |
| 240-93167-D-1-A | 320-0056388-013 | Client | 07-Apr-2018 16:19:10 | 2018.04.07LLA1_059.d | 42 | 1.0 | W-17358-032218-DA-010 | sv |
| 240-93167-A-4-A | 320-0056388-014 | Client | 07-Apr-2018 16:26:58 | 2018.04.07LLA1_060.d | 43 | 1.0 | PFAS-FB-17358-032218-DA | sv |
| 480-133240-A-1-A | 320-0056388-015 | Client | 07-Apr-2018 16:34:47 | 2018.04.07LLA1_061.d | 44 | 1.0 | 633027-P105 | sv |
| 480-133240-A-2-A | 320-0056388-016 | Client | 07-Apr-2018 16:42:35 | 2018.04.07LLA1_062.d | 45 | 1.0 | 633027-P106S | sv |
| 480-133240-A-3-A | 320-0056388-017 | Client | 07-Apr-2018 16:50:25 | 2018.04.07LLA1_063.d | 46 | 1.0 | 633027-P106D | sv |
| 480-133255-C-1-A | 320-0056388-018 | Client | 07-Apr-2018 16:58:20 | 2018.04.07LLA1_064.d | 47 | 1.0 | R9-032818-C1 | sv |
| 480-133255-C-2-A | 320-0056388-019 | Client | 07-Apr-2018 17:06:11 | 2018.04.07LLA1_065.d | 48 | 1.0 | R9-032818-POND | sv |
| RB | 320-0056388-020 | RB | 07-Apr-2018 17:14:02 | 2018.04.07LLA1_066.d | 54 | 1.0 | | sv |
| 320-36824-B-2-A | 320-0056388-021 | Client | 07-Apr-2018 17:21:53 | 2018.04.07LLA1_067.d | 49 | 1.0 | C81Q18-185PENNPEDRD- | sv |
| CCV L5 | 320-0056388-022 | CCV | 07-Apr-2018 17:29:44 | 2018.04.07LLA1_068.d | 14 | 1.0 | | sv |

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 08APR2018NC_2A_PFC Worklist Num: 56398
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

| Lab ID | Worklist ID | Sample Type | Inj Date/Time | File Name | Vial | Dil Factor | Client ID | Fract |
|---|---|---|---|---|---|---|---|---|
| CCB | 320-0056398-001 | CCB | 08-Apr-2018 14:25:07 | 2018.04.08LLA_004.d | 20 | 1.0 | | sv |
| CCVL | 320-0056398-002 | CCVL | 08-Apr-2018 14:32:55 | 2018.04.08LLA_005.d | 21 | 1.0 | | sv |
| CCV L5 | 320-0056398-003 | CCVIS | 08-Apr-2018 14:40:43 | 2018.04.08LLA_006.d | 14 | 1.0 | | sv |
| MB 320-215517/1-A | 320-0056398-004 | MB | 08-Apr-2018 14:48:32 | 2018.04.08LLA_007.d | 1 | 1.0 | | sv |
| 480-132666-C-1-A | 320-0056398-005 | Client | 08-Apr-2018 14:56:24 | 2018.04.08LLA_008.d | 2 | 20.0 | SANITARY DISCHARGE | sv |
| 480-132666-C-2-A | 320-0056398-006 | Client | 08-Apr-2018 15:04:17 | 2018.04.08LLA_009.d | 3 | 20.0 | PUMP STATION 2 | sv |
| 240-93167-D-1-A | 320-0056398-007 | Client | 08-Apr-2018 15:12:08 | 2018.04.08LLA_010.d | 4 | 10.0 | W-17358-032218-DA-010 | sv |
| 480-133255-C-1-A | 320-0056398-008 | Client | 08-Apr-2018 15:20:03 | 2018.04.08LLA_011.d | 5 | 10.0 | R9-032818-C1 | sv |
| 480-133255-C-2-A | 320-0056398-009 | Client | 08-Apr-2018 15:27:54 | 2018.04.08LLA_012.d | 6 | 10.0 | R9-032818-POND | sv |
| CCV L4 | 320-0056398-010 | CCV | 08-Apr-2018 15:35:43 | 2018.04.08LLA_013.d | 13 | 1.0 | | sv |

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 09APR2018NCA_PFC Worklist Num: 56411
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

| Lab ID | Worklist ID | Sample Type | Inj Date/Time | File Name | Vial | Dil Factor | Fract |
|---|---|---|---|---|---|---|---|
| CCB | 320-0056411-001 | CCB | 09-Apr-2018 08:41:13 | 2018.04.09LLA_004.d | 20 | 1.0 | sv |
| CCVL | 320-0056411-002 | CCVL | 09-Apr-2018 08:49:02 | 2018.04.09LLA_005.d | 21 | 1.0 | sv |
| CCV L4 | 320-0056411-003 | CCVIS | 09-Apr-2018 08:56:49 | 2018.04.09LLA_006.d | 13 | 1.0 | sv |
| MB 320-215980/1-A | 320-0056411-004 | MB | 09-Apr-2018 09:04:38 | 2018.04.09LLA_007.d | 1 | 1.0 | sv |
| CCV L5 | 320-0056411-005 | CCV | 09-Apr-2018 09:12:28 | 2018.04.09LLA_008.d | 14 | 1.0 | sv |

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 09APR2018NCB_PFC Worklist Num: 56437
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56437.b
Anaylysis Type: SemiVOA Creator: Westendorf, Cary B
Inj Volume: 2.00 Inj Vol Units: ul

| Lab ID | Worklist ID | Sample Type | Inj Date/Time | File Name | Vial | Dil Factor | Client ID | Fract |
|---|---|---|---|---|---|---|---|---|
| CCV L5 | 320-0056437-001 | CCV | 09-Apr-2018 11:40:06 | 2018.04.09LLA_012.d | 14 | 1.0 | | sv |
| 480-132666-C-3-A | 320-0056437-002 | Client | 09-Apr-2018 11:47:57 | 2018.04.09LLA_013.d | 2 | 20.0 | LEACH HOUSE 4P | sv |
| 480-132666-C-1-A | 320-0056437-003 | Client | 09-Apr-2018 11:55:46 | 2018.04.09LLA_014.d | 3 | 1.0 | SANITARY DISCHARGE | sv |
| RB | 320-0056437-004 | RB | 09-Apr-2018 12:03:36 | 2018.04.09LLA_015.d | 54 | 1.0 | | sv |
| RB | 320-0056437-005 | RB | 09-Apr-2018 12:11:24 | 2018.04.09LLA_016.d | 54 | 1.0 | | sv |
| 480-132666-C-2-A | 320-0056437-006 | Client | 09-Apr-2018 12:19:10 | 2018.04.09LLA_017.d | 4 | 1.0 | PUMP STATION 2 | sv |
| RB | 320-0056437-007 | RB | 09-Apr-2018 12:26:59 | 2018.04.09LLA_018.d | 54 | 1.0 | | sv |
| RB | 320-0056437-008 | RB | 09-Apr-2018 12:34:46 | 2018.04.09LLA_019.d | 54 | 1.0 | | sv |
| 480-132666-C-3-A | 320-0056437-009 | Client | 09-Apr-2018 12:42:33 | 2018.04.09LLA_020.d | 5 | 1.0 | LEACH HOUSE 4P | sv |
| RB | 320-0056437-010 | RB | 09-Apr-2018 12:50:25 | 2018.04.09LLA_021.d | 54 | 1.0 | | sv |
| RB | 320-0056437-011 | RB | 09-Apr-2018 12:58:14 | 2018.04.09LLA_022.d | 54 | 1.0 | | sv |
| CCV L4 | 320-0056437-012 | CCV | 09-Apr-2018 13:06:05 | 2018.04.09LLA_023.d | 13 | 1.0 | | sv |

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 07APR2018NCE_PFC Worklist Number: 56387
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56387.b
QC Batching: Disabled Limit Group Batching: Enabled

| QC Batch: 1 | LC PFC_DOD ICAL<br>Raw Batch: 216856 | LC PFC ICAL<br>Raw Batch: 216857 | LC PFC_QSM5-1 ICAL<br>Raw Batch: 216858 |
|---|---|---|---|
| # 1 CCV L4<br># 2 MB 320-215517/1-A<br># 3 LCS 320-215517/2-A<br># 4 LCSD 320-215517/3-A<br># 5 480-132666-C-1-A<br># 6 480-132666-C-2-A<br># 7 480-132666-C-3-A<br># 8 480-132666-C-4-A<br># 9 480-132666-C-5-A<br>#10 CCV L5 | # 1 CCV L4<br>#10 CCV L5 | # 1 CCV L4<br># 2 MB 320-215517/1-A<br># 3 LCS 320-215517/2-A<br># 4 LCSD 320-215517/3-A<br># 5 480-132666-C-1-A<br># 6 480-132666-C-2-A<br># 7 480-132666-C-3-A<br># 8 480-132666-C-4-A<br># 9 480-132666-C-5-A<br>#10 CCV L5 | # 1 CCV L4<br>#10 CCV L5 |

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 07APR2018NCF_PFC Worklist Number: 56388
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56388.b
QC Batching: Disabled Limit Group Batching: Enabled

| QC Batch 1 | LC PFC_DOD ICAL Raw Batch 216859 | LC PFC ICAL Raw Batch 216860 | LC PFC_QSM5-1 ICAL Raw Batch 216861 |
|---|---|---|---|
| # 1 CCV L5 | # 1 CCV L5 | # 1 CCV L5 | # 1 CCV L5 |
| # 2 MB 320-216477/1-A | | # 2 MB 320-216477/1-A | |
| # 3 LCS 320-216477/2-A | | # 3 LCS 320-216477/2-A | |
| # 4 LCSD 320-216477/3-A | | # 4 LCSD 320-216477/3-A | |
| # 5 320-37458-A-1-A | | # 5 320-37458-A-1-A | |
| # 6 320-37458-A-2-A | | # 6 320-37458-A-2-A | |
| # 7 320-37458-A-3-A | | # 7 320-37458-A-3-A | |
| # 8 320-37458-A-4-A | | # 8 320-37458-A-4-A | |
| # 9 320-37458-A-5-A | | # 9 320-37458-A-5-A | |
| #10 320-37458-A-6-A | | #10 320-37458-A-6-A | |
| #11 320-37458-A-12-A | | #11 320-37458-A-12-A | |
| #12 CCV L4 | #12 CCV L4 | #12 CCV L4 | #12 CCV L4 |
| #13 240-93167-D-1-A | | #13 240-93167-D-1-A | |
| #14 240-93167-A-4-A | | #14 240-93167-A-4-A | |
| #15 480-133240-A-1-A | | #15 480-133240-A-1-A | |
| #16 480-133240-A-2-A | | #16 480-133240-A-2-A | |
| #17 480-133240-A-3-A | | #17 480-133240-A-3-A | |
| #18 480-133255-C-1-A | | #18 480-133255-C-1-A | |
| #19 480-133255-C-2-A | | #19 480-133255-C-2-A | |
| #20 RB | | #20 RB | |
| #21 320-36824-B-2-A | | #21 320-36824-B-2-A | |
| #22 CCV L5 | #22 CCV L5 | #22 CCV L5 | #22 CCV L5 |

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 08APR2018NC_2A_PFC Worklist Number: 56398
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56398.b
QC Batching: Disabled Limit Group Batching: Enabled

| QC Batch: 1 | LC PFC_DOD ICAL Raw Batch: 216883 | LC PFC ICAL Raw Batch: 216884 | LC PFC_QSM5-1 ICAL Raw Batch: 216885 |
|---|---|---|---|
| # 1 CCB | # 1 CCB | # 1 CCB | # 1 CCB |
| # 2 CCVL | # 2 CCVL | # 2 CCVL | # 2 CCVL |
| # 3 CCV L5 | # 3 CCV L5 | # 3 CCV L5 | # 3 CCV L5 |
| # 4 MB 320-215517/1-A | | # 4 MB 320-215517/1-A | |
| # 5 480-132666-C-1-A | | # 5 480-132666-C-1-A | |
| # 6 480-132666-C-2-A | | # 6 480-132666-C-2-A | |
| # 7 240-93167-D-1-A | | # 7 240-93167-D-1-A | |
| # 8 480-133255-C-1-A | | # 8 480-133255-C-1-A | |
| # 9 480-133255-C-2-A | | # 9 480-133255-C-2-A | |
| #10 CCV L4 | #10 CCV L4 | #10 CCV L4 | #10 CCV L4 |

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 09APR2018NCB_PFC Worklist Number: 56437
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56437.b
QC Batching: Disabled Limit Group Batching: Enabled

| QC Batch: 1 | LC PFC ICAL<br>Raw Batch: 217026 | LC PFC_QSM5-1 ICAL<br>Raw Batch: 217027 | LC PFC_DOD ICAL<br>Raw Batch: 217028 |
|---|---|---|---|
| # 1 CCV L5 | # 1 CCV L5 | # 1 CCV L5 | # 1 CCV L5 |
| # 2 480-132666-C-3-A | # 2 480-132666-C-3-A | | |
| # 3 480-132666-C-1-A | # 3 480-132666-C-1-A | | |
| # 4 RB | # 4 RB | # 4 RB | # 4 RB |
| # 5 RB | # 5 RB | # 5 RB | # 5 RB |
| # 6 480-132666-C-2-A | # 6 480-132666-C-2-A | | |
| # 7 RB | # 7 RB | # 7 RB | # 7 RB |
| # 8 RB | # 8 RB | # 8 RB | # 8 RB |
| # 9 480-132666-C-3-A | # 9 480-132666-C-3-A | | |
| #10 RB | #10 RB | #10 RB | #10 RB |
| #11 RB | #11 RB | #11 RB | #11 RB |
| #12 CCV L4 | #12 CCV L4 | #12 CCV L4 | #12 CCV L4 |

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

37 AS 4/7/18 AS 4/4/18

Batch Number: 320-215517 ✓

Method Code: 320-3535_PFC-320

Analyst: Kolstad, Kate M

Batch Open: 3/29/2018 5:13:00PM

Batch End: 3/31/2018 12:54:00PM

## Solid-Phase Extraction (SPE)

4/5

| | Input Sample Lab ID (Analytical Method) | SDG (Job #) | GrossWt TareWt | InitAmnt FinAmnt | PHs Rcvd | PHs Adj1 | PHs Adj2 | Due Date | Analytical TAT | Dlv Rank | Comments | Output Sample Lab ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MB~320-215517/1 N/A | N/A | | 250.00 mL | NA | | | N/A | N/A | N/A | R1 | MB 320-215517/1-A |
| | | | | 10.00 mL | | | | | | | | |
| 2 | LCS~320-215517/2 N/A | N/A | | 250.00 mL | NA | | | N/A | N/A | N/A | | LCS 320-215517/2-A |
| | | | | 10.00 mL | | | | | | | | |
| 3 | LCSD~320-215517/3 N/A | N/A | | 250.00 mL | NA | | | N/A | N/A | N/A | | LCSD 320-215517/3-A |
| | | | | 10.00 mL | | | | | | | | |
| 4 | 480-132666-C-1 (PFC_IDA) | N/A (480-132666-1) | 276.69 g | 247.8 mL | NA | | | 3/27/18 | 8_Days | 2 | Dark brown. 100X screen | 480-132666-C-1-A |
| | | | 28.93 g | 10.00 mL | | | | | | | | 20X |
| 5 | 480-132666-C-2 (PFC_IDA) | N/A (480-132666-1) | 279.53 g | 251.5 mL | NA | | | 3/27/18 | 8_Days | 2 | Dark brown. | 480-132666-C-2-A |
| | | | 28.05 g | 10.00 mL | | | | | | | | 20X |
| 6 | 480-132666-C-3 (PFC_IDA) | N/A (480-132666-1) | 279.11 g | 250.3 mL | NA | | | 3/27/18 | 8_Days | 2 | Dark brown. | 480-132666-C-3-A |
| | | | 28.82 g | 10.00 mL | | | | | | | | 20X |
| 7 | 480-132666-C-4 (PFC_IDA) | N/A (480-132666-1) | 276.51 g | 248.8 mL | NA | | | 3/27/18 | 8_Days | 2 | | 480-132666-C-4-A |
| | | | 27.76 g | 10.00 mL | | | | | | | | |
| 8 | 480-132666-C-5 (PFC_IDA) | N/A (480-132666-1) | 274.38 g | 244.7 mL | NA | | | 3/27/18 | 8_Days | 2 | | 480-132666-C-5-A |
| | | | 29.69 g | 10.00 mL | | | | | | | | |



04/10/2018

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215517

Analyst: Kolstad, Kate M

Batch Open: 3/29/2018 5:13:00PM

Method Code: 320-3535_PFC-320

Batch End:

## Batch Notes

| | |
|---|---|
| Manifold ID | 14 |
| Methanol ID | 1197667 |
| Hexane ID | 1175187 |
| Sodium Hydroxide ID | 1196582 |
| First Start time | NA |
| First End time | NA |
| SPE Cartridge Type | WAX 500mg |
| Solid Phase Extraction Disk ID | 600333717 2A |
| Balance ID | QA-078 |
| H2O ID | 3/27/18 |
| Pipette ID | N32761F |
| Solvent Name | 0.3%NH4OH/MeOH |
| Solvent Lot # | 1195189 |
| Analyst ID - Reagent Drop | KMK |
| Analyst ID - SU Reagent Drop | KMK |
| Analyst ID - SU Reagent Drop Witness | AAR |
| Acid Name | NA |
| Acid ID | NA |
| Reagent ID | NA |
| Reagent Lot Number | NA |
| Analyst ID - IS Reagent Drop | KMK |

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215517

Analyst: Kolstad, Kate M

Batch Open: 3/29/2018 5:13:00PM

Method Code: 320-3535_PFC-320

Batch End:

| | |
|---|---|
| Analyst ID - IS Reagent Drop Witness | JER |
| Internal Standard ID# | 1178673 |
| Analyst ID - Concentration | NA |
| Analyst ID - Aliquot Step | KMK |
| Analyst ID - Final Volume Step | KMK |
| SOP Number | WS-LC-0025 |
| Batch Comment | Client labels match: KMK |

## Comments

Login Comments for Job 132666: L4Reviewed(Bflo):
~Sub method:PFC_IDA.~

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215517

Method Code: 320-3535_PFC-320

Analyst: Kolstad, Kate M

Batch Open: 3/29/2018 5:13:00PM

Batch End:

## Reagent Additions Worksheet

| Lab ID | Reagent Code | Amount Added | Final Amount | By | Witness |
|---|---|---|---|---|---|
| MB 320-215517/1 | LCMPFC_ALL_SU_00044 | 500 uL | 10.00 mL | KMK 3-29-18 | aak 3/29/18 |
| LCS 320-215517/2 | LCMPFC_ALL_SU_00044 | 500 uL | 10.00 mL | | |
| LCS 320-215517/2 | LCPFCSP_00138 | 500 uL | 10.00 mL | | |
| LCSD 320-215517/3 | LCMPFC_ALL_SU_00044 | 500 uL | 10.00 mL | | |
| LCSD 320-215517/3 | LCPFCSP_00138 | 500 uL | 10.00 mL | | |
| 480-132666-C-1 | LCMPFC_ALL_SU_00044 | 500 uL | 10.00 mL | | |
| 480-132666-C-2 | LCMPFC_ALL_SU_00044 | 500 uL | 10.00 mL | | |
| 480-132666-C-3 | LCMPFC_ALL_SU_00044 | 500 uL | 10.00 mL | | |
| 480-132666-C-4 | LCMPFC_ALL_SU_00044 | 500 uL | 10.00 mL | | |
| 480-132666-C-5 | LCMPFC_ALL_SU_00044 | 500 uL | 10.00 mL | | |

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215517

Analyst: Kolstad, Kate M

Batch Open: 3/29/2018 5:13:00PM

Method Code: 320-3535_PFC-320

Batch End:

**Other Reagents:**

| Reagent | Amount/Units | Lot#: |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

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# Sacramento
# Preparation Data Review Checklist

Preparation Batch Number(s) 215517 Test 3535_PFC

Earliest Holding Time 3-29-18

| Batch Information | 1st Level Reviewer | 2nd Level Reviewer |
|---|---|---|
| Date and time accurate and entered into TALS correctly | ✓ | ✓ |
| All necessary batch information complete and entered into TALS correctly | ✓ | ✓ |
| BD, FV, and AL initials are transcribed into the batch comment | ✓ | ✓ |
| **Sample List Tab** | **1st Level Reviewer** | **2nd Level Reviewer** |
| Samples identified to the correct method | ✓ | ✓ |
| Holding time violation NCM filed | NA | NA |
| MS/MSD or MS/DU NCM filed | ✓ | ✓ |
| NCM for any anomalies filed | ✓ | ✓ |
| All NCMs include method code, matrix, and prep batch | ✓ | ✓ |
| Method/sample/login/QAS checked and correct | ✓ | ✓ |
| Batch contains no more than 20 live samples | ✓ | ✓ |
| **Worksheet Tab** | **1st Level Reviewer** | **2nd Level Reviewer** |
| All samples properly preserved | ✓ | ✓ |
| Weights in anticipated range and not targeted | ✓ | ✓ |
| All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check) | ✓ | ✓ |
| The pH is transcribed properly in TALS | ✓ | ✓ |
| All additional information is transcribed into TALS and is correct and raw data is attached | ✓ | ✓ |
| Comments/Observations are transcribed correctly in TALS | ✓ | ✓ |
| **Reagents Tab** | **1st Level Reviewer** | **2nd Level Reviewer** |
| All necessary reagents not expired and checked into TALS | ✓ | ✓ |
| All spike amounts correct and added to necessary samples and QC | ✓ | ✓ |
| Internal Standard is added to the reagents | ✓ | ✓ |
| All units are correctly transcribed into TALS | ✓ | ✓ |

1st Level Reviewer: KMK Date: 3-31-18

2nd Level Reviewer: VDM Date: 4/11/18

Comments: _____

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Test America – Sacramento

Sample Dilution Record

**Method ID** PFC – IDA

**Analyst (Print Name)** Amani Royce **Reagent ID** LC_80:20_00002

**Date** 4/7/18

| Job # | Sample # | Original F.V. (uL) | Aliquot (uL) | Dilution F.V. (uL) | Dilution Factor |
|---|---|---|---|---|---|
| 320-37045 | 13 | 10,000 | 30 | 300 | 10X |
| 480-132665 | 1 | | 15 | 1500 | 100x |
| ↓ | 2 | | ↓ | ↓ | 100x |
| 480-132666 | 1 | | | | ↓ |
| ↓ | 2 | | | | |
| | 3 | | | | |
| 320-36960 | 4 | | 60 | 300 | 5 |
| ↓ | 4MS | | ↓ | ↓ | ↓ |
| ↓ | 4MSD | ↓ | | | |

aak 4/7/18

**Comments:**

TestAmerica
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Test America – Sacramento

Sample Dilution Record

**Method ID** PFC - IDA

**Analyst (Print Name)** Alyssa Hannigan **Reagent ID** LC . 80:20 _ 9002

**Date** 4/8/18

| Job # | Sample # | Original F.V. (uL) | Aliquot (uL) | Dilution F.V. (uL) | Dilution Factor |
|---|---|---|---|---|---|
| 132 6616 | 1 | 10,000 | 15 | 300 | 20 |
| " | 2 | 10,000 | 15 | 300 | 20 |

ABH 4/8/18

**Comments:**

Q:\Document-Management\Forms\QA-747 SampleDilutionRecord.doc 1/29/20187 RE

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Test America – Sacramento

Sample Dilution Record

**Method ID** PFC-IDA

**Analyst (Print Name)** Cary Westendorf **Reagent ID** LC-80:20-00002

**Date** 4/9/18

| Job # | Sample # | Original F.V. (uL) | Aliquot (uL) | Dilution F.V. (uL) | Dilution Factor |
|---|---|---|---|---|---|
| 480-132666 | 3 | 10,000 | 15 | 300 | 20 |

CBW 4/9/18

**Comments:**

47 AS 4/7/18 AS 4/8/18

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-216477

Method Code: 320-3535_PFC-320

Analyst: Kolstad, Kate M

Batch Open: 4/5/2018 12:03:00PM

Batch End: 4/6/2018 12:50:00PM

## Solid-Phase Extraction (SPE)

Due: 4/16

| | Input Sample Lab ID (Analytical Method) | SDG (Job #) | GrossWt TareWt | InitAmnt FinAmnt | PHs Rcvd | PHs Adj1 | PHs Adj2 | Due Date | Analytical TAT | Dlv Rank | Comments | Output Sample Lab ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MB~320-216477/1 N/A | N/A | | 250.0 mL<br>10.0 mL | NA | | | N/A | N/A | N/A | | MB 320-216477/1-A |
| 2 | LCS~320-216477/2 N/A | N/A | | 250.0 mL<br>10.0 mL | NA | | | N/A | N/A | N/A | | LCS 320-216477/2-A |
| 3 | LCSD~320-216477/3 N/A | N/A | | 250.0 mL<br>10.0 mL | NA | | | N/A | N/A | N/A | | LCSD 320-216477/3-A |
| 4 | 320-37458-A-1 (PFC_IDA) 4/14 | N/A (320-37458-1) | 279.41 g<br>27.56 g | 251.9 mL<br>10.0 mL | NA | | | 4/16/18 | 15_Day_Rush | 2 | | 320-37458-A-1-A |
| 5 | 320-37458-A-2 (PFC_IDA) | N/A (320-37458-1) | 277.64 g<br>28.40 g | 249.2 mL<br>10.0 mL | NA | | | 4/16/18 | 15_Day_Rush | 2 | | 320-37458-A-2-A |
| 6 | 320-37458-A-3 (PFC_IDA) | N/A (320-37458-1) | 279.80 g<br>27.40 g | 252.4 mL<br>10.0 mL | NA | | | 4/16/18 | 15_Day_Rush | 2 | | 320-37458-A-3-A |
| 7 | 320-37458-A-4 (PFC_IDA) | N/A (320-37458-1) | 276.76 g<br>27.56 g | 249.2 mL<br>10.0 mL | NA | | | 4/16/18 | 15_Day_Rush | 2 | | 320-37458-A-4-A |
| 8 | 320-37458-A-5 (PFC_IDA) | N/A (320-37458-1) | 278.08 g<br>27.59 g | 250.5 mL<br>10.0 mL | NA | | | 4/16/18 | 15_Day_Rush | 2 | | 320-37458-A-5-A |
| 9 | 320-37458-A-6 (PFC_IDA) | N/A (320-37458-1) | 276.37 g<br>27.50 g | 248.9 mL<br>10.0 mL | NA | | | 4/16/18 | 15_Day_Rush | 2 | | 320-37458-A-6-A |
| 10 | 320-37458-A-12 (PFC_IDA) | N/A (320-37458-1) | 275.35 g<br>28.42 g | 246.9 mL<br>10.0 mL | NA | | | 4/16/18 | 15_Day_Rush | 2 | | 320-37458-A-12-A |

Page 392 of 404

04/10/2018

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-216477 Analyst: Kolstad, Kate M Batch Open: 4/5/2018 12:03:00PM

Method Code: 320-3535_PFC-320 Batch End: 4/6/2018 12:50:00PM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 240-93167-D-1 (PFC_IDA) 4/13 | N/A (240-93167-2) | 277.12 g<br>27.15 g | 250 mL<br>10.0 mL | NA | | | 4/10/18 | 12_Days | 4 | 10X |  |
| 12 | 240-93167-A-4 (PFC_IDA) | N/A (240-93167-2) | 274.98 g<br>27.30 g | 247.7 mL<br>10.0 mL | NA | | | 4/10/18 | 12_Days | 4 | |  |
| 13 | 480-133240-A-1 (PFC_IDA) 4/11 | N/A (480-133240-1) | 280.72 g<br>27.42 g | 253.3 mL<br>10.0 mL | NA | | | 4/9/18 | 8_Days | 4 | |  |
| 14 | 480-133240-A-2 (PFC_IDA) | N/A (480-133240-1) | 277.97 g<br>28.75 g | 249.2 mL<br>10.0 mL | NA | | | 4/9/18 | 8_Days | 4 | |  |
| 15 | 480-133240-A-3 (PFC_IDA) | N/A (480-133240-1) | 283.61 g<br>27.41 g | 256.2 mL<br>10.0 mL | NA | | | 4/9/18 | 8_Days | 4 | |  |
| 16 | 480-133255-C-1 (PFC_IDA) 4/11 | N/A (480-133255-1) | 275.73 g<br>29.40 g | 246.3 mL<br>10.0 mL | NA | | | 4/9/18 | 8_Day_Rush | 4 | amber color at FV 10X |  |
| 17 | 480-133255-C-2 (PFC_IDA) | N/A (480-133255-1) | 281.55 g<br>29.62 g | 251.9 mL<br>10.0 mL | NA | | | 4/9/18 | 8_Day_Rush | 4 | amber color at FV 10X |  |
| 18 | 320-36824-B-2 (PFC_IDA) 4/4 | N/A (320-36824-2) | 280.36 g<br>29.95 g | 250.4 mL<br>10.0 mL | NA | | | 4/4/18 | 8_Days | 4 | |  |



04/10/2018

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-216477
Method Code: 320-3535_PFC-320

Analyst: Kolstad, Kate M

Batch Open: 4/5/2018 12:03:00PM
Batch End: 4/6/2018 12:50:00PM

## Batch Notes

| | |
|---|---|
| Manifold ID | 16, 11 |
| Methanol ID | 1197244 |
| Hexane ID | 1175189 |
| Sodium Hydroxide ID | 1196582 |
| First Start time | NA |
| First End time | NA |
| SPE Cartridge Type | Oasis WAX 500MG |
| Solid Phase Extraction Disk ID | 003737320A |
| Balance ID | QA-078 |
| H2O ID | 4-5-18 |
| Pipette ID | I46360G |
| Solvent Name | 0.3%NH4OH/MeOH |
| Solvent Lot # | 1195172 |
| Analyst ID - Reagent Drop | KMK |
| Analyst ID - SU Reagent Drop | KMK |
| Analyst ID - SU Reagent Drop Witness | TWL |
| Acid Name | NA |
| Acid ID | NA |
| Reagent ID | NA |
| Reagent Lot Number | NA |
| Analyst ID - IS Reagent Drop | VPM |

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-216477 Analyst: Kolstad, Kate M Batch Open: 4/5/2018 12:03:00PM

Method Code: 320-3535_PFC-320 Batch End: 4/6/2018 12:50:00PM

| | |
|---|---|
| Analyst ID - IS Reagent Drop | SKD |
| Witness | |
| Internal Standard ID# | 1178675 |
| Analyst ID - Concentration | NA |
| Analyst ID - Aliquot Step | VPM |
| Analyst ID - Final Volume Step | VPM |
| SOP Number | WS-LC-0025 |
| Batch Comment | Client labels match: KMK |

## Comments

240-93167-D-1

Method Comments:

240-93167-A-4

Method Comments:

Login Comments for Job 133240: L4Reviewed(Bflo):n/a - all sub only.

Login Comments for Job 133255: L4Reviewed(Bflo):
~Sub method:PFC_IDA.~

Login Comments for Job 36824: -2 Late 537 MOD 4/4/18; -1 Late 537 MOD 3/19/18

320-36824-B-2

Method Comments: DuPont QAS_LCSD req

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-216477
Analyst: Kolstad, Kate M
Batch Open: 4/5/2018 12:03:00PM
Method Code: 320-3535_PFC-320
Batch End:

## Reagent Additions Worksheet

| Lab ID | Reagent Code | Amount Added | Final Amount | By | Witness |
|---|---|---|---|---|---|
| MB 320-216477/1 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | SKD 4/6/18 ~~SKD~~ KMK 4-5-18 | TMC 4/5/18 |
| LCS 320-216477/2 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| LCS 320-216477/2 | LCPFCSP_00139 | 500 uL | 10.0 mL | | |
| LCSD 320-216477/3 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| LCSD 320-216477/3 | LCPFCSP_00139 | 500 uL | 10.0 mL | | |
| 320-37458-A-1 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 320-37458-A-2 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 320-37458-A-3 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 320-37458-A-4 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 320-37458-A-5 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 320-37458-A-6 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 320-37458-A-12 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 240-93167-D-1 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 240-93167-A-4 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 480-133240-A-1 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 480-133240-A-2 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 480-133240-A-3 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |
| 480-133255-C-1 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | | |

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-216477

Analyst: Kolstad, Kate M

Batch Open: 4/5/2018 12:03:00PM

Method Code: 320-3535_PFC-320

Batch End:

| | | | | | |
|---|---|---|---|---|---|
| 480-133255-C-2 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | KMK 4-5-18 | Due 4/5/18 |
| 320-36824-B-2 | LCMPFC_ALL_SU_00046 | 500 uL | 10.0 mL | ↓ | ↓ |

**Other Reagents:**

| Reagent | Amount/Units | Lot#: |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

Page 397 of 404

04/10/2018

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# Sacramento
# Preparation Data Review Checklist

Preparation Batch Number(s) 216477 Test PFC_1DA (L)

Earliest Holding Time ~~4-5-18~~ 3/14/18 (was on hold)

| Batch Information | 1st Level Reviewer | 2nd Level Reviewer |
|---|---|---|
| Date and time accurate and entered into TALS correctly | ✓ | ✓ |
| All necessary batch information complete and entered into TALS correctly | ✓ | ✓ |
| BD, FV, and AL initials are transcribed into the batch comment | ✓ | ✓ |
| **Sample List Tab** | **1st Level Reviewer** | **2nd Level Reviewer** |
| Samples identified to the correct method | ✓ | ✓ |
| Holding time violation NCM filed | ✓ | ✓ |
| MS/MSD or MS/DU NCM filed | ✓ | ✓ |
| NCM for any anomalies filed | ✓ | ✓ |
| All NCMs include method code, matrix, and prep batch | ✓ | ✓ |
| Method/sample/login/QAS checked and correct | ✓ | ✓ |
| Batch contains no more than 20 live samples | ✓ | ✓ |
| **Worksheet Tab** | **1st Level Reviewer** | **2nd Level Reviewer** |
| All samples properly preserved | ✓ | ✓ |
| Weights in anticipated range and not targeted | ✓ | ✓ |
| All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check) | ✓ | ✓ |
| The pH is transcribed properly in TALS | NA | ✓ |
| All additional information is transcribed into TALS and is correct and raw data is attached | ✓ | ✓ |
| Comments/Observations are transcribed correctly in TALS | ✓ | ✓ |
| **Reagents Tab** | **1st Level Reviewer** | **2nd Level Reviewer** |
| All necessary reagents not expired and checked into TALS | ✓ | ✓ |
| All spike amounts correct and added to necessary samples and QC | ✓ | ✓ |
| Internal Standard is added to the reagents | ✓ | ✓ |
| All units are correctly transcribed into TALS | ✓ | ✓ |

1st Level Reviewer: VPM Date: 4/6/18

2nd Level Reviewer: KMK Date: 4-6-18

Comments: _____

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Test America – Sacramento

Sample Dilution Record

**Method ID** PFC - IDA

**Analyst (Print Name)** Alyssa Hannigan **Reagent ID** LC 80:20 0002

**Date** 4/8/18

| Job # | Sample # | Original F.V. (uL) | Aliquot (uL) | Dilution F.V. (uL) | Dilution Factor |
|---|---|---|---|---|---|
| 240-93167 | 1 | 10,000 | 30 | 300 | 10 |
| 480-133255 | 1 | ↓ | ↓ | ↓ | 10 |
| 11 | 2 | | | | 10 |

AB# 4/8/18

**Comments:**

Q:\Document-Management\Forms\QA-747 SampleDilutionRecord.doc 1/29/20187 RE

# Shipping and Receiving Documents

**TestAmerica Buffalo**
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

# Chain of Custody Record

TestAmerica — THE LEADER IN ENVIRONMENTAL TESTING

480-133255 COC

| Client Information | Sampler: Steve McDonnell | Lab PM: Johnson, Orlette S | Carrier Tracking No(s): | COC No: 480-110583-25703.1 |
|---|---|---|---|---|
| Client Contact: Nancy Loster | Phone: 716-851-7220 | E-Mail: orlette.johnson@testamericainc.com | | Page: Page 1 of 1 |
| Company: New York State D.E.C. | | | | Job #: |

| Address: 270 Michigan Avenue | Due Date Requested: | Analysis Requested |
|---|---|---|
| City: Buffalo | TAT Requested (days): 10 | |
| State, Zip: NY, 14203 | | |
| Phone: 518-402-8671(Tel) | PO #: Callout ID: | |
| Email: nancy.loster@dec.ny.gov | WO #: | |
| Project Name: Leachates-Hyland LF | Project #: 48017617 | |
| Site: Hyland Landfill 6653 Herdman Rd Angelica, NY | SSOW#: | |

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (w=water, s=solid, o=wastetoil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | PFC_IDA - PFAS, Standard List (21 Analytes) | 82700_SIM_MS_ID - SIM List 1,4-Dioxane | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | N | N | | |
| R9-032818-C1 | 03/28/18 | 11:25a | G | Water | | | 2 | 2 | | |
| R9-032818-POND | 03/28/18 | 11:50a | G | Water | | | 2 | 2 | | |
| | | | | Water | | | | | | |

**Possible Hazard Identification**
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ■ Unknown ☐ Radiological

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) Category B

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Steven McDonnell | 03/28/18 14:10 | NYSDEC | | 3/29/18 1410 | TAB. |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: |
|---|---|---|

Ver: 08/04/2016

**TestAmerica Buffalo**
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

# Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Johnson, Orlette S | Carrier Tracking No(s): | COC No: 480-41090.1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: orlette.johnson@testamericainc.com | State of Origin: New York | Page: Page 1 of 1 |
| Company: TestAmerica Laboratories, Inc. | | Accreditations Required (See note): Federal - USEPA UCMR; NELAP - New York | | Job #: 480-133255-1 |
| Address: 880 Riverside Parkway, | Due Date Requested: 4/9/2018 | | | |
| City: West Sacramento | TAT Requested (days): | | | |
| State, Zip: CA, 95605 | | | | |
| Phone: 916-373-5600(Tel) 916-372-1059(Fax) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: Leachates-PFCs, Dioxanes Region 9 | Project #: 48017617 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

| | |
|---|---|
| A - HCL | M - Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D - Nitric Acid | P - Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F - MeOH | R - Na2S2O3 |
| G - Amchlor | S - H2SO4 |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U - Acetone |
| J - DI Water | V - MCAA |
| K - EDTA | W - pH 4-5 |
| L - EDA | Z - other (specify) |

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (Wastewater, Sewage, Groundwater, Tissue, Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | PFC_IDA/3536_PFC PFAS, Standard List (21 Analytes) | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | |
| R9-032818-C1 (480-133255-1) | 3/28/18 | 11:25 Eastern | | Water | | | X | 2 | |
| R9-032818-POND (480-133255-2) | 3/28/18 | 11:50 Eastern | | Water | | | X | 2 | |

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1 | Special Instructions/QC Requirements: |

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: | | |
|---|---|---|---|---|---|
| Relinquished by: Christopher Cikolb | Date/Time: 3/29/18 1700 | Company: TA | Received by: | Date/Time: 3/30/18 900 | Company: TA-Sac |
| Relinquished by: | Date/Time: | Company: | Received by: | Date/Time: | Company: |
| Relinquished by: | Date/Time: | Company: | Received by: | Date/Time: | Company: |

| Custody Seals Intact: ☒ Yes ☐ No | Custody Seal No.: 009733, 009732, 009731 | Cooler Temperature(s) °C and Other Remarks: 1.5, 1.2, 1.9 |
|---|---|---|

Ver: 09/20/2016

# Login Sample Receipt Checklist

Client: New York State D.E.C. Job Number: 480-133255-1

**Login Number: 133255** **List Source: TestAmerica Buffalo**
**List Number: 1**
**Creator: Wallace, Cameron**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity either was not measured or, if measured, is at or below background | True | |
| The cooler's custody seal, if present, is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the sample IDs on the containers and the COC. | True | |
| Samples are received within Holding Time (Excluding tests with immediate HTs).. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter. | N/A | |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Sampling Company provided. | True | NYSDEC |
| Samples received within 48 hours of sampling. | True | |
| Samples requiring field filtration have been filtered in the field. | True | |
| Chlorine Residual checked. | N/A | |

# Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-133255-1

**Login Number: 133255**
**List Number: 2**
**Creator: Her, David A**

**List Source: TestAmerica Sacramento**
**List Creation: 03/30/18 01:18 PM**

| 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. | True | 009733, 009732, 009731 |
| 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 | 1.5c, 1.2c, 1.9c |
| 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? | False | Received project as a subcontract. |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |